



mesa

rugged notepad

owner's manual

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P/N 22813.X2



**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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## Mesa Rugged Notepad

The Mesa Rugged Notepad™ from Juniper Systems is designed for collecting data in rugged environments. Features include:

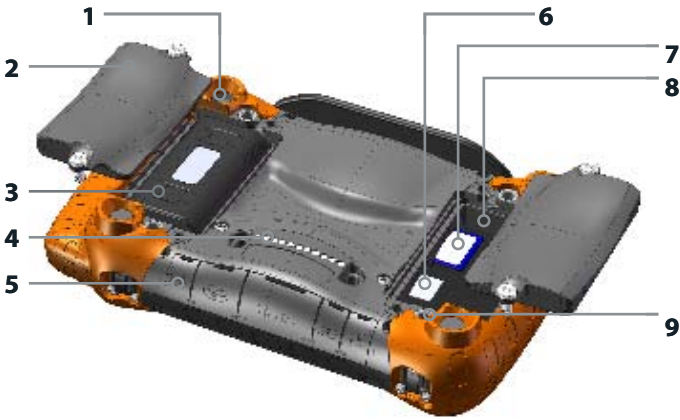
- Windows Mobile® 6.5.
- Large daylight readable VGA display
- Large on-screen buttons for touch-friendly operation
- Rugged environmentally sealed design
- Bluetooth® wireless technology
- Wi-Fi 802.11b/g, U.S. and international
- Dual battery option for long operating life
- 3.2 MP camera and internal GPS (Geo models)
- Cellular modem option for Geo models

## The Anatomy of the Mesa

### Mesa Front View: Buttons, Touchscreen, Speaker, LEDs



## Mesa Back View: Battery Compartments, Card Slots



- 1** Camera lens (Geo model)
- 2** Battery door with quarter turn latches
- 3** Battery compartment #2 (battery pack installed)
- 4** Mobile Dock connections
- 5** Connector protector
- 6** SIM card slot
- 7** SD card slot
- 8** Battery compartment #1
- 9** External accessory mount (4 on back)

## Mesa Side View, Connector Module



- 1** User replaceable connector module
- 2** 12V DC power input jack
- 3** Audio jack
- 4** Cable restraint mount
- 5** RS-232C 9-pin D-sub connector
- 6** USB host, full size A
- 7** USB client, mini B
- 8** Hand strap tether (one on each corner)

## Performing Initial Tasks

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



### Apply a Screen Protector

Before using the Mesa, apply a screen protector to the surface of the touchscreen to protect it and make it scratch-proof. Screen protectors are included with the Mesa. Refer to the installation instructions in the package for specific details.

1. Clean the screen with the dust-free cloth. Compressed air can be used to blow off any remaining dust. *Note: Do not use paper towels or a cleaning solution on the touchscreen.*
2. Attach the screen protector as instructed.



3. Use the installation card to push air bubbles out (it may take a few days for air bubbles to get worked out).
4. Never use sharp objects to adjust or remove the screen protector.

## Charge the Battery Pack(s)

Install and charge the Li-Ion battery pack(s). The Mesa is designed to use 1 or 2 battery packs. Using two battery packs extends the operating time of the unit. Geo 3G models should always use two battery packs.

Complete the following steps:

1. The battery compartments are located on the back of the Mesa. Loosen the quarter turn latches holding the battery compartment door(s) in place using a coin or similar object (loosen them enough to slightly lift the door, making it easier to grab). Remove the door(s).

*Note: If you are using one battery, for the best ergonomics we recommend you use battery compartment #1 on the bottom designated for battery 1 as shown in the following graphic.*



2. Place the Li-Ion battery pack(s) in the compartment(s). Make sure the connectors on the battery pack(s) line up with the connectors inside the compartment(s).



3. Replace the door(s) and tighten the latches.



**CAUTION:** The Mesa is not totally sealed against water and dust when battery doors are not installed and properly latched.

4. Plug the AC wall power charger that came with the Mesa into a wall socket. Plug the other end into the DC power jack on the Mesa.



## Perform Set Up

1. The Mesa powers on and begins the startup process. A progress indicator is shown on the screen.
2. Follow the on-screen instructions.
3. The Clock and Alarms control panel is shown. Adjust the time zone, date and time if necessary and tap *OK*.
4. Tap on the screen again to complete the set up process.
5. The Home screen appears.



10. Charge the battery pack(s) at room temperature (68° F or 20° C) for 2 to 3 hours if you are using one pack and 4 to 6 hours if you are using 2 packs.

## Adjust the Hand Strap

A hand strap is included with the Mesa. It is attached to the left side of the Mesa along with a stylus, leaving your right hand free to operate the Mesa. Put your hand between the strap and the Mesa from the front and adjust the hand strap to fit securely against the back of your hand.

You can move the hand strap to different locations to meet your needs. There are four hand strap tethers (one on each corner). Your hand strap can be attached and threaded in a manner similar to the drawings shown below.



**Review the Manual**

Once you have attached a screen protector, charged the battery pack(s), and adjusted the hand strap the Mesa is ready to use. Review the rest of this manual to learn about the functionality of the Mesa.

# 2

## Hardware Components

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## **Mesa Hardware Components**

This chapter discusses the Mesa Rugged Notepad hardware features and usage.

### **Navigating Around Your Mesa**

#### **Using Gestures and Making Selections**

The Windows® Mobile operating system enhances the Mesa's ability to recognize touch gestures, making it easy to use a finger to navigate. The Mesa buttons can also be used. Navigation options vary depending on the screen you are on. Here is a partial list of options:

#### ***Vertical and Horizontal Movement***

1. Flick up, down or sideways on the touchscreen.
2. For more precise positioning, touch, hold, and move the screen in the desired direction.
3. Use the scroll bar if it is available.
4. Use the arrow buttons on the five-way directional button.
5. On control panels press the left or right arrow keys at the top of the screen to scroll horizontally (this feature replaces tabs).


#### ***Making a Selection***



1. Press or tap the item you want to select, turn on, or activate.
2. Press and hold an icon to bring up a configuration screen, menu, or list.
3. Press the action button in the center of the five-way directional button.



## Home Screen and Windows Start Menu

There are two screens you need to be aware of as you read this manual and use the Mesa: the Home screen and Windows Start menu.

The Home screen is your main control center for the Mesa. The content varies based on which model you have and can be customized. It is automatically shown when the Mesa is turned on. You can get to it from any other screen by pressing and releasing the Home screen  button.

The Windows Start menu gives you access to all of the applications on the Mesa. You can get to it from any screen by pressing and holding the Home screen  button or tapping the Windows soft key (tile)  on the display.



Home Screen



Windows Start Menu

More information about these screens is located in *Chapter 3, Programs and Settings*.

## Display and Touchscreen


The Mesa has a bright color display and touchscreen with a diagonal viewing area of 5.7 inches (145 mm). It is easy to view outdoors and sealed against water and dust.

### Adjusting Display Settings

To adjust the default display settings including the text size, alignment and orientation, go to the Screen control panel, *Start > Settings > System > Screen*. There are also shortcuts to some of the settings described in the text that follows.



### Screen Orientation



The Mesa screen can be used in either portrait or landscape mode. The default is portrait mode. To switch the screen orientation, press and release the screen orientation button . The default landscape orientation is right-handed. To select left-handed orientation, go to *Start > Settings > System > Screen*.


### Screen Alignment

The Mesa touchscreen is precalibrated. If it needs to be adjusted, tap the *Align Screen* button and follow the prompts.



## Disabling and Enabling the Touchscreen

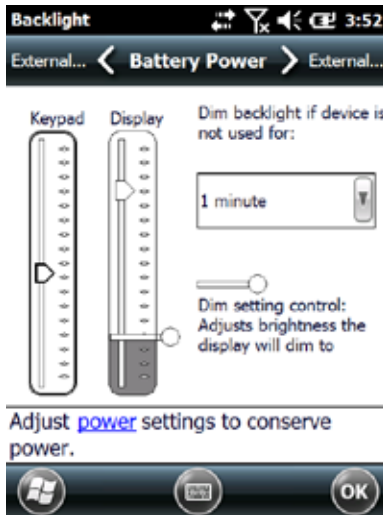
You can disable the touchscreen. This is useful when you are running an application and you want to see the screen, but you want to avoid accidental touchscreen activation. It can also be disabled for cleaning purposes. Options:

- Press and hold the screen orientation button .
- Press and hold the power button  to bring up the Power Button menu. *Select Disable TS.*

The touchscreen disable icon  is shown in the title bar until the touchscreen is enabled again.

## Adjusting the Display Backlight

Dimming or turning off the display backlight saves battery power when the device is running. Adjust the display brightness by using the brightness down  and brightness up  buttons. You can also make brightness adjustments through the Backlight control panel, *Start > Settings > System > Backlight.*



The display has a minimum brightness setting that it dims to when the Mesa is not in use. Power is conserved, yet the

display is still partially visible. Adjust the dim time interval and setting as needed. To use the Mesa, tap on the display to bring the display backlight back up to the brightness setting.














### **Keypad Features**

The Mesa has fifteen buttons with symbols indicating their functions as shown below. Features include:

- Top row: four function buttons
- Bottom row: eleven navigation buttons
- Six reassignable button functions
- Buttons are sealed and backlight illuminated









Buttons and their functions:


Button	Press and Release	Press and Hold
	Camera (Geo models) or Pictures and Videos (Std)	Task Manager
	Notes	Record Audio Note (press and hold to record, press to stop)
	Screen Brightness Down	<Repeat Key>
	Screen Brightness Up	<Repeat Key>
	Home Screen	Start/Windows Screen
	Left Soft Key	No Function
	Rotate Screen	Touchscreen Disable/Enable
	Action	Done/OK
	Left	<Repeat Key>
	Up	<Repeat Key>
	Down	<Repeat Key>
	Right	<Repeat Key>
	Enter	Done/OK
	Right Soft Key	No Function
	Power, Suspend/Resume	Power Button Menu

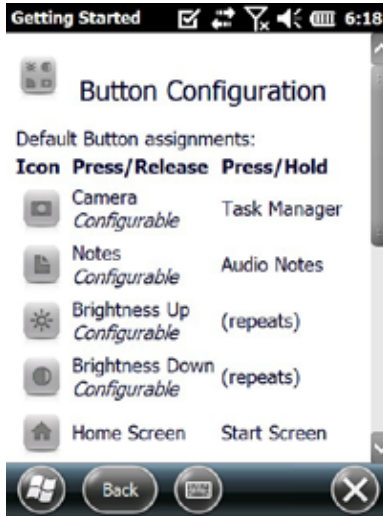
### Reassignable Button Functions

The press and release functions of the following buttons can be reassigned allowing you to create unique shortcuts and directly open specific programs that you use often:

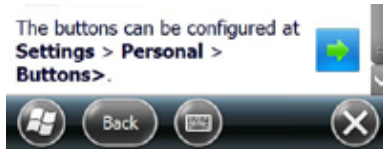
- |   |                 |   |                |
|---|-----------------|---|----------------|
|  | Camera/Pictures |  | Notes          |
|  | Brightness Down |  | Brightness Up  |
|  | Left Soft Key   |  | Right Soft Key |

Follow these steps to reassign button functions:

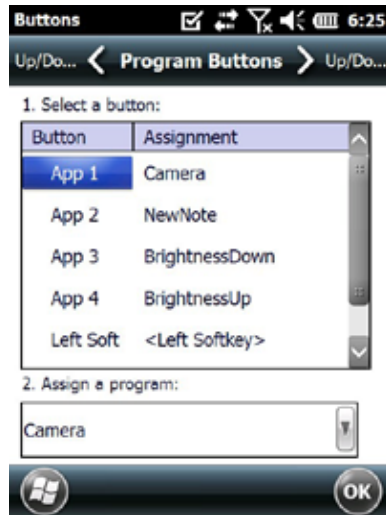
1. From the Home screen, tap Getting Started . If Getting Started is not on your Home screen, go to *Start > Settings > Personal > Buttons*. Select *Configure Buttons* from the list. A list of default button assignments is displayed.



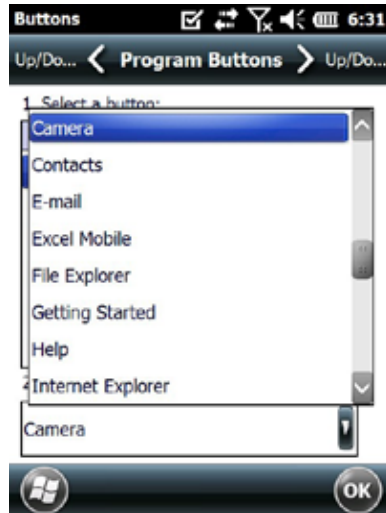
2. Scroll to the bottom of the screen. Select the shortcut to *Settings > Personal > Buttons*.



3. A list of reassignable buttons is shown in 1. Select a button. Select the button you want to reassign.



5. Select the down arrow button shown in 2. *Assign a program.*
6. A list of programs is shown. Select the program you want to reassign to the selected button. Tap *OK*.



## Power Management

The Mesa uses 1 or 2 Li-Ion rechargeable battery packs.

### Battery Life

Battery life on a full charge is generally up to eight hours per pack (this can vary significantly depending on the application, backlight usage, and radio usage).

Battery packs last approximately 300-500 charging cycles. This is impacted by the use conditions, environment, etc.

### Charging Battery Packs

To charge battery packs, refer to the instructions in *Chapter 1, Getting Started*. It typically takes 2 to 3 hours to fully charge 1 battery pack and 4 to 6 hours to charge 2 battery packs.

We recommend that you keep the Mesa battery pack(s) charging when they are not in use for up to two weeks. When you plug the Mesa into the wall charger that comes with the Mesa or the optional Travel Charger, the batteries are prevented from being overcharged.

Mesa Li-Ion battery packs are charged most efficiently at room temperature (68°F or 20°C). Only charge battery packs in temperatures between 32°F and 104°F (0°C and 40°C).



**CAUTION:** The Mesa is not totally sealed against water and dust when battery doors are not installed and properly latched.

### Adjusting Power Settings

You can view and adjust the power settings from the Power control panel. From the Home screen tap the battery gadget. You can also go to *Start > Settings > System > Power* or tap on the top title bar from any screen and select the battery icon in the scrollable list of applications that drops down. A Power control panel with a graphic representing battery status similar to the following is shown:










Time to Empty: 13 hrs



Go to the Advanced set up screen to select how long the Mesa should stay on when it is not in use. As mentioned under “Adjusting the Backlight,” dimming the display backlight saves battery power. Radios can also use a lot of power. You can conserve power by disabling them when not in use from the Home screen or *Start > Settings > Connections*.

### Viewing Battery Status

You can view the status of the battery pack(s) from the Home screen if the battery gadget is enabled. Depending on the status of the battery pack(s), one of the following icons is shown:

-  Battery pack(s) power as a percent
-  Battery pack(s) charging
-  Battery pack(s) low
-  External power in use
-  Charging error

### **Charging Errors**

Charging errors are caused by the following:

- Battery pack(s) is too hot to charge
- Battery pack(s) is too cold to charge
- Cannot charge for unknown reason

If you have a charging error, make sure the battery pack(s) is inserted correctly, the battery door(s) is closed properly, and you are within the charging temperature range.

### **LED Activity Indicators**

There are LED activity indicators located underneath the bottom row of buttons that indicate the following:

- Red, solid: Waiting to boot/startup, finished charging (when external power is applied)
- Red, blinking: External power applied, charging
- Green: Suspend and resume notification
- Blue: Not shown unless programmed

The blue and green LEDs are user programmable through application software.

### **SD Cards**

The Mesa has a slot for an SD card located in battery compartment 1. To insert or remove a card follow these steps:

1. Suspend or power off the Mesa if the only power source is from a battery pack in battery compartment 1.
2. Loosen the screws to battery compartment 1 and remove the door.



**CAUTION:** The Mesa is not totally sealed against water and dust when battery doors are not installed and properly latched.

3. Remove the battery pack.

- An image on the battery compartment label shows the correct location and orientation for the card. Push the SD card into the slot to insert it. To remove an SD card, push it into the slot then release it to eject the card.



- Replace the battery pack and attach the battery door.
- Resume the Mesa if it was suspended in step 1.

## Connector Module



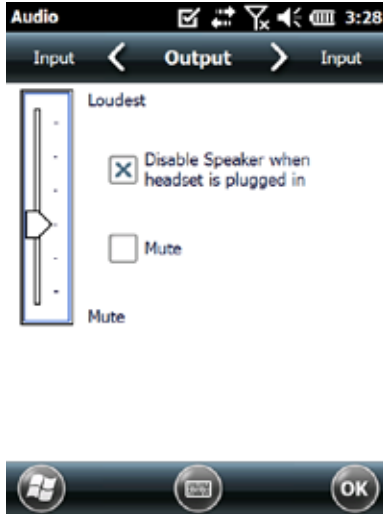
The Mesa has the following jacks and connectors:

- Power input jack, 12 VDC for power input and battery charging
- Microphone/Speaker jack: 3.5mm, supports speaker/mic or stereo output (speaker cutoff)
- RS-232C 9-pin D-sub connector, 5 V @500 mA available on DTR pin 4 and pin 9 under program control
- USB host, full size A
- USB client, mini B

The connector module is user-replaceable. A connector protector covers the ports to keep debris out.

## Audio Features

The Mesa has a speaker, microphone, and audio jack. To adjust audio settings, select the top title bar, then the speaker icon from the horizontal-scrolling list that appears. You can also go to *Start > Settings > System > Audio*. The Audio control panel appears.



### Speaker

The speaker sound is loud and clear. Listen to audio notes, video sound, and music files.

### Microphone

Use the microphone to record audio notes or add sound to a video when using the camera function (Geo units).

### Audio Jack

The audio jack supports a stereo headset or headset/microphone combination with 3.5mm connections. The onboard speaker and microphone can be disabled when a headset is plugged in.

# 3

## Programs and Settings

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## Mesa Programs and Setting

This chapter discusses the Mesa Rugged Notepad programs and settings.

### The Home Screen

The Home screen is your main control center for the Mesa. View vital system information and quickly access functions and applications that are frequently used. The default home screen for a basic unit is shown below. If you have a Geo model or a cellular modem, different functions are shown. You can customize the Home screen.



### Title Bar and Status Icons

The title bar is at the top of every screen. It identifies the page and shows status icons indicating functions like connectivity status, audio, power, and time. Tap the title bar to bring up

larger, touchable icons in a horizontal-scrolling bar. Select a function to view the settings and adjust them as desired.




Title Bar

Pop Up Status Icon Bar

## Dashboard

The dashboard consists of a background image and up to six dashboard gadgets that serve as functional indicators and control buttons.


In most situations, tap on a gadget to turn a function on/off. Tap and hold to go to a control panel or launch an application.


You can switch between two color schemes and select which gadgets are shown. Tap on the menu  soft key and select *Switch Color Scheme* to change color schemes or *Configure* to select gadgets. The current gadgets are covered with a blue symbol as shown below. Tap on the gadget you want to replace.





A list of available dashboard gadgets is shown. Tap on your selection. The dashboard icon changes when you make a selection. If “None” is selected, the space becomes blank.


### ***Dashboard Gadget Functions***


 Wi-Fi: Shows the state of the Wi-Fi radio and provides the name of the wireless network that it is attached to.


 Bluetooth: Shows the state of the Bluetooth radio.


 Battery Status: Shows the status of the current battery pack(s).


 Email: Shows the current number of unread email messages. If there are multiple email accounts, the total number of unread messages is aggregated from all accounts.


 Calendar: Shows the next appointment.

 Tasks: Shows the current number of tasks.

 Clock and Alarms: Shows the current time and date. Tap to set a reminder alarm.

 GPS Status (Geo model): Shows the current state of GPS reception and the state of the GPS receiver. It also shows the number of satellites in view, the number of satellites used to calculate the fix (SV), the type of fix (2D, 3D, etc) and the quality of the fix (PDOP).

 GPS Compass (Geo model): Provides the function to mark a waypoint and navigation (bearing, heading, distance) to a marked waypoint.

 3G Data Modem: (Geo model with cell modem): Shows the on/off state of the optional cellular modem.






 Texting (Geo model with cell modem): Shows the current



number of unread text messages.

### **Gadget Color Indicators**



Wi-Fi, *Bluetooth*, GPS and 3G data modem gadgets indicate status using these colors:

-  Gray: Off or inactive
-  Yellow: Partial state (getting satellite fix, etc.)
-  Green: Active and available
-  Blue: Notification state (on or connected)
-  Red: Error state, powering up or down, no GPS fix, or unavailable (3G data modem is red when power is changing from on/off. Wi-Fi is red when an access point is available, but not connected.)

### **Favorites Bar**

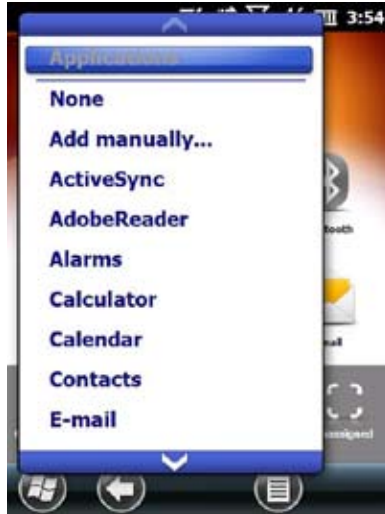
The favorites bar consists of shortcuts to specific applications. It is located below the dashboard when the screen is in portrait mode and to the side of the dashboard when it is in landscape mode. Tap on a shortcut icon to launch an application.



You can use it to jump between the applications you use most. While running an application, press the home key  and select a different application from your favorites. To return to the first application, press the home key  again, then tap on the first

application you were running.

You can customize which application shortcuts are shown. Tap and hold on the shortcut you want to change to bring up a list of available applications.





Tap on your selection. The icon on the home screen changes to the icon associated with the new application.








### **Tile Bar**

Touchable tiles (or soft keys) are shown in the tile bar at the bottom of each screen. For the Home screen, the tile bar consists of the start tile that takes you to the Start menu, the back tile that takes you to the last application that was running, and the menu tile that gives you the ability to customize dashboard.


### ***Touchable Tiles***

There is space for five touchable tiles on a tile bar. They function as defined for Windows Mobile and the active application. Tap on tiles to perform actions or open associated menus or set up screens. You can also press the left  soft key

(button) on the Mesa's bottom navigation keypad to select the tile in the second position and the right  soft key to select the tile in the fourth position. Tile examples:

-  Start
-  Close
-  Navigate back
-  Menu
-  Lock
-  Edit
-  Delete

### **Suspend, Reset, Power Off, and Restore the Mesa**

Use the power button  and the power menu to suspend, reset, power off or restore the Mesa. To access the power button menu, press and hold the power button.



## **Suspending and Resuming the Mesa**

We recommend suspending your Mesa if you plan to turn it off for less than two weeks. While it is suspended, you should attach it to a wall charger when not in use.

Suspending the Mesa is different from powering it off. When the device is suspended it goes into a very low power mode. When it is resumed, the Mesa resumes where it was before it was suspended.

To suspend your Mesa, press and release the power button. To resume the device from suspend mode, press and release the power button again.

When the Mesa starts to suspend, the backlight shuts off and the green LED turns on. It can take several seconds to fully suspend, especially when the cell modem is on.. The green LED turns off when suspend is complete. Some battery power is used during suspend.

## **Resetting the Mesa**

It can be helpful to reset the Mesa when it is unresponsive, slow, or programs won't launch. You may be asked to perform a reset when an application is installed.



**CAUTION:** Be aware that during a reset, applications are terminated and unsaved work may be lost.

Follow these steps to reset your Mesa:

1. Save your open files and close any running programs.
2. Press and hold the Power button until the Power Button menu appears.
3. Choose Reset.

You can also reset the Mesa by pressing the power button for 10 seconds or until the screen goes dark. After a few seconds, the Mesa automatically turns on. This method is useful if your Mesa locks up.

## Powering Off and Powering On the Mesa

To preserve battery power, we recommend you power off the Mesa if it will not be used for two weeks or longer.

**⚠ CAUTION:** Be aware that when the Mesa is powered off, it closes all programs and powers down all system components except for the real-time clock. Unlike suspend mode, the device resets when it is powered on again. Any unsaved data is lost.




1. Save all open files and close any running programs.
2. Press and hold the power button until the power menu appears.
3. Tap Power Off. A warning dialog appears. Tap OK.

To power on your Mesa, press the power button.

## Restoring the Mesa to its Factory State

Follow the steps below to restore user storage, settings, and icons on your Mesa to their original factory defaults.

**⚠ CAUTION:** Restoring the Mesa to its original factory state permanently erases data saved on the Mesa, any software you installed, and any changes you made to the Mesa (including settings changes).

To restore factory defaults (clean boot), press and hold the rotate  + up  + return  buttons simultaneously. The first tick mark lights up and the Mesa looks to see if these keys are being pressed. If so, the backlight dims and the boot process stalls until all these keys are released. The backlight returns to normal brightness and the boot process continues.

## Communicating with a Desktop Computer

The Mesa can connect to a desktop or laptop computer allowing you to synchronize information and download software and files.

## **Installing the Software**

Install free synchronization software from Microsoft on your desktop computer.

1. Go to the Microsoft website on your PC.
2. Locate the Windows Mobile downloads section of the website. If your computer is running Windows® 2000 or Windows® XP, select ActiveSync® software to download. If it is running Windows Vista™ or Windows® 7, select Windows Mobile® Device Center.
3. Follow the download instructions on the website.


## **Establishing a Partnership**

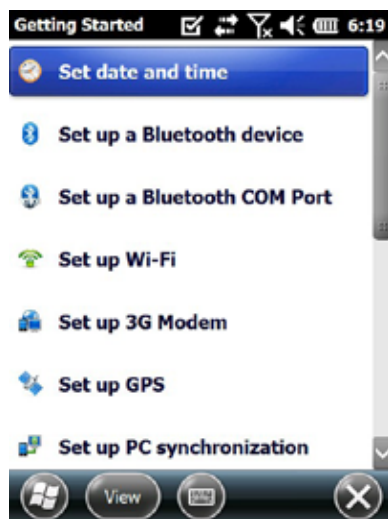
1. Plug the USB Client end (mini B) of the USB communications cable into the Mesa.
2. Plug the USB Host end (full size A) of the USB communications cable into your desktop computer.
3. Establish an ActiveSync® or Windows Mobile® Device Center partnership by following the instructions on the desktop computer screen.
4. Once a partnership is established, the synchronization software automatically opens. Follow the steps on the screen.

*Note: For more information about connecting the Mesa to a desktop computer using either ActiveSync® or Windows Mobile® Device Center visit Microsoft's Windows Mobile® website.*

## **Getting Started Screen and Online Help**

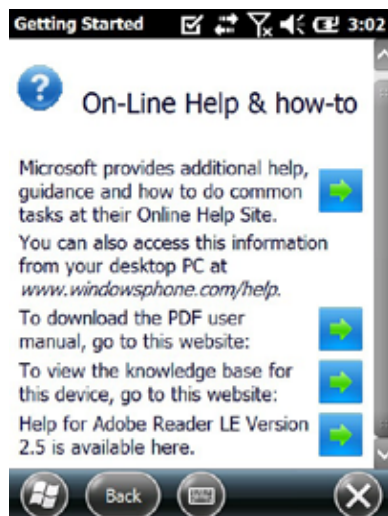
### **Getting Started Screen**

The Getting Started screen provides information on current settings, help for setting up features and applications, shortcuts to set up screens and online help. From the Home screen tap on the Getting Started icon  to see a list of topics (or go to *Start > Getting Started >*).



## Online Help

Online help is available from Getting Started. Tap on Online help & how-to from the list:



You must be connected to the internet to access online help. Select from the help topics.

### **Information for Software Developers**

For Mesa SDK information, go to our website: <http://www.junipersys.com/index.php/Juniper-Systems/support/Developers/Mesa-Rugged-Notepad>.



# 4

## Bluetooth Wireless Communication

- 42 *Creating a Partnership*
- 44 *Microsoft Bluetooth Control Panel*
- 46 *Serial Device (COM) Control Panel*



## **Bluetooth® Wireless Communication**

The Mesa has built-in Bluetooth® wireless technology, allowing you to connect it to other wireless devices with Bluetooth technology. Minimum performance between similar objects in an unobstructed environment is approximately 100 feet (30 meters).

The Mesa provides simple configuration options for the following types of *Bluetooth* devices:

1. Devices such as headphones, keyboards, and modems (to connect to the internet with an external cell phone).
2. Serial devices that use a *Bluetooth* COM port such as GPS receivers, bar code scanners, and other data collection devices.

### **Creating a Partnership**

To create a partnership between the Mesa and another device with *Bluetooth* technology:

1. Turn both devices on.
2. Place them within at least 100 feet (30 meters) of one another.
3. Make *Bluetooth* discoverable on both devices.

Bluetooth on the Mesa is on and discoverable by default. The gadget on the Home screen turns green.



4. Tap and hold the *Bluetooth* icon to bring up the dialog box shown below.



If the *Bluetooth* gadget is not on your Home screen, you can get to the desired control panel by selecting *Getting Started* and

either *Set up a Bluetooth device* or *Set up a Bluetooth COM Port*. You can also go to *Start > Settings > Connections*.

*Note: If the Bluetooth radio is turned on and then the Mesa is suspended, wireless Bluetooth turns off to save battery power. When the Mesa resumes (turns on), the radio turns on automatically.*

## Microsoft Bluetooth Control Panel

To create a partnership between the Mesa and another device such as headphones, keyboards, and modems, follow these steps:

1. Select the *Headphones, Modem, Keyboard* option. The following *Bluetooth* control panel, *Devices* screen is shown:



2. Tap *Add New Device*. The Mesa searches for other devices with wireless *Bluetooth* technology and displays them in a list. Select the device you want to connect to and tap *Next*.
3. A passcode screen is shown.



- a. If the device has an assigned passcode, enter the number and press *Next*.
  - b. If a passcode is required but has not been assigned, enter an alphanumeric passcode between 1 and 16 characters in length. Press *Next*.
  - c. If a passcode is not required, leave the box blank and press *Next*.  
*Note: If you are unsure whether the device requires a passcode and whether one has already been assigned to the device, see the user documentation that came with the device.*
4. This process should connect you to the desired device.
  5. *Bluetooth* settings can be adjusted as needed.

## Serial Device (COM) Control Panel

To set up a *Bluetooth* COM port, follow these steps:

1. Select the *GPS, Barcode scanner (COM)* option. The following Bluetooth COM configuration screen is shown. Select *Discover Devices*.



2. A list of discovered devices is shown. Select the device you want to connect to from the list and tap *Connect*. A COM port is automatically assigned for the device. You can

change it to another COM port.

3. The Mesa automatically tries to discover the PIN. You might be required to enter a PIN.



4. You should now be connected to the COM device.





# 5

## Wi-Fi Wireless Communication

50 *Connecting to a Wi-Fi Network*




## Wi-Fi Wireless Communication

The Mesa has built-in Wi-Fi wireless communication to connect to the Internet or a work network

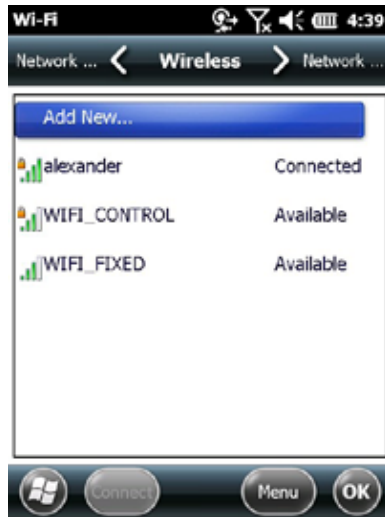
### Connecting to a Wi-Fi Network

To use Wi-Fi, you need to be in range of an access point to make a connection. To actively look for a network connection complete the following steps:

1. From the Home screen, turn Wi-Fi on by tapping the Wi-Fi gadget . The Mesa automatically starts scanning the area for available Wi-Fi networks. (If this gadget is not on the Home screen, go to *Getting Started* and select *Set up Wi-Fi* or go to *Start > Settings > Connections > Wireless Manager*).



2. Tap-hold the Wi-Fi Icon to go to the Wi-Fi control panel. When the Mesa completes the scan, a list of available networks and their strengths appears on the Wireless screen.



3. Tap on the network you want to connect to. If you want to add a new network, select *Add New* from the top of the list.
4. Configuration and authentication set up screens are shown. Depending on the network you are connecting to, you may need to make some selections from pull down lists and enter information like a passkey. Some information may not be required or will appear automatically. When you are finished with the set up screens, press *Finish*.
5. Select *Network Adapters* from the horizontal scrolling configuration options. For connection options, select *The Internet* or *Work (for office networks)*. Other settings can be modified if necessary.
6. If you selected *The Internet*, you can open Internet Explorer and begin using the internet.

Once a Wi-Fi network is set up, the icon on the Home Page turns blue and the name of the network is shown.

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

### **Wi-Fi Dialog Box**

Note: Whenever Wi-Fi is turned on, the following dialog box might pop up indicating the Wi-Fi networks the Mesa has located. You can select a new network and set it up without going to the Wi-Fi control panel. Through the menu button, you can disable this dialog box from popping up in the future.



### **Adjusting Wi-Fi Settings**

To add a new Wi-Fi network or edit settings, select the *Menu* soft key and make a selection from the pull-down list.

# 6

## Geo Models

54 *GPS*


59 *Camera*



## Mesa Geo Model

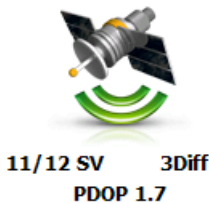
The Mesa Geo model has GPS with 2 to 5 meter accuracy and a 3.2MP camera. Juniper Geotagging™ gives the Mesa the ability to embed and emboss photos with the date, time and GPS position. A 3G Data Modem is an optional feature.

## GPS

To use GPS, tap on the satellite gadget  to turn it on. The GPS starts looking for satellites to use for a fix.



Once enough satellites are found, the following information is shown:

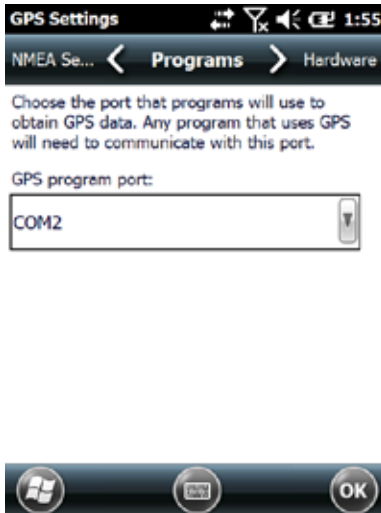


- 11/12 SV The number of satellites currently in view followed by the number of satellites used for the current position.
- 3Diff The type of fix you have. Three satellites are required for a 2D fix while 4 are required for a 3D fix. 3Diff means SBAS (WAAS/EGNOS/MSAS) signal is being used for GPS solution.
- PDOP A measure of accuracy. The lower the number, the more accurate the fix is.

*Note: When you suspend the Mesa, the receiver is in a low power mode to retain its almanac. When you resume the Mesa, it takes a few seconds to get a fix.*

### GPS Settings

Internal GPS uses COM7 at 38400 baud. To make changes to the GPS settings or set up an external GPS, press and hold the GPS gadget to go to the GPS Settings control panel.



Several applications can share the COM port set up as the GPS program port using the GPS Intermediate Driver (GPSID).

## **GPS Intermediate Driver**

### ***GPS Receiver Access for Multiple Programs***

The GPS Intermediate Driver (GPSID) is used to allow more than one program to use data from the GPS receiver. The GPS Control Panel Settings page controls how the GPSID is used. On Geo units, the internal GPS is on COM7 and communicates at 38400 baud. These settings are found on the Hardware page of the GPS Control Panel. If some other GPS receiver is to be used, this is where you connect that GPS receiver so that the GPSID can access it.

The GPSID can output the data on another COM port in a way that allows multiple programs to access the same COM port. This is called the Program Port and defaults to COM2 on Geo models. This can be set up on the Programs page of the GPS Control Panel.


The Camera as well as both the GPS Status and GPS Compass gadgets use the GPSID to obtain the GPS information. Turning off the GPSID (through the hardware port) will disable these functions.

*NOTE: If an application accesses the GPS module directly on COM7, then the GPSID will not have access to the GPS. This will prevent the Camera Geotag and GPS gadgets from functioning.*

## **GPS Accuracy**

The GPS antenna is in the extended antenna bumper. Don't put your hand or another object over the cap. This will reduce accuracy. The more items between you and satellites, the lower the accuracy will be.

## **GPS Compass**

The compass is a navigation tool. You can set a waypoint and navigate back to that location. To use the compass, turn GPS on by tapping on the GPS gadget  and wait until you have a fix.

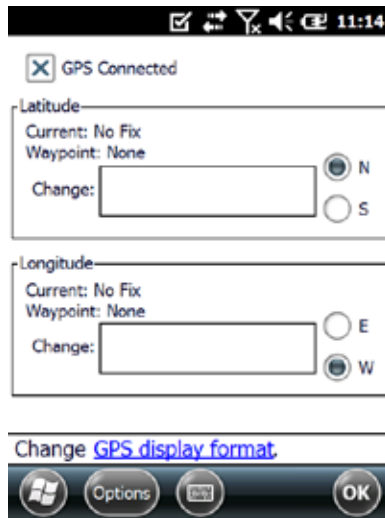


## Compass Gadget Functions

- Compass gadget is turned off.
- Waypoint tool. Tap it to mark a waypoint.
- No GPS fix.
- Arrow keys show your current heading or bearing.
- This flag indicates that you are close to the waypoint. Information about how many feet away you are, the elevation, and degrees is also shown.

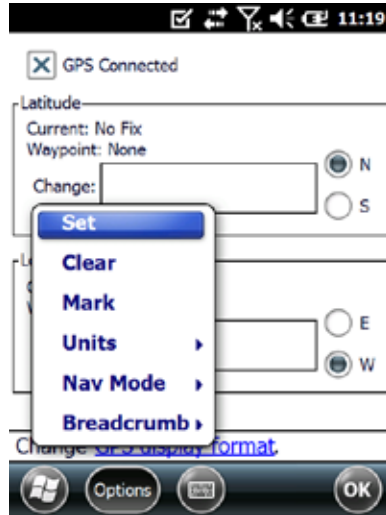
### Navigation Settings

You can also enter a known waypoint. Tap and hold the compass gadget to see the following dialogue box: Enter the desired latitude and longitude.



### Navigation Options

Select the *Options* softkey to set, clear, or mark a waypoint, set up a breadcrumb trail, change the units of measurement, or turn the power on or off.



- **Set:** Take the coordinates in the “Change” boxes and set these as the new waypoint.
- **Clear:** Clear the waypoint (goes back to the blue flag).
- **Mark:** Take the current GPS coordinate and set this as the new waypoint.
- **Units:** Displays units in either feet/miles for U.S. or meters/km for metric.
- **Nav Mode:**


Bearing – The arrow icon and angle displayed are referenced off of North. Position the top of the device toward North and the arrow will point in the direction to travel to get to the waypoint. When in this mode an ‘N’ is displayed before the angle.

Heading – The arrow icon and angle displayed show the direction to travel to get to the waypoint relative to the current direction of travel. This is a GPS Compass and movement is needed to obtain direction information. If movement is too slow, this data cannot be determined and the stationary icon is displayed.

- **Breadcrumb:** This is an independent function from everything else in this gadget. Setting this logs points at specific time intervals into the GPSTrack.gpx file.

There are three files created, 2 for waypoints and 1 for the breadcrumbing. Waypoint information is saved in both the GPSTrack.gpx and GPSTrack.csv. Both files contain the same information, but in different formats. The breadcrumb data is stored in the GPSTrack.gpx file. These files can be used in programs like Google Earth.


## Camera

To use the camera, press the camera button . The camera turns on and the Pictures and Videos application opens.

*Note: The camera is always in landscape mode.*

Select the *Menu* soft key for a pull-down list of options. You can change the default settings, including video or still photo, brightness, resolution, type of file, autofocus option, etc.

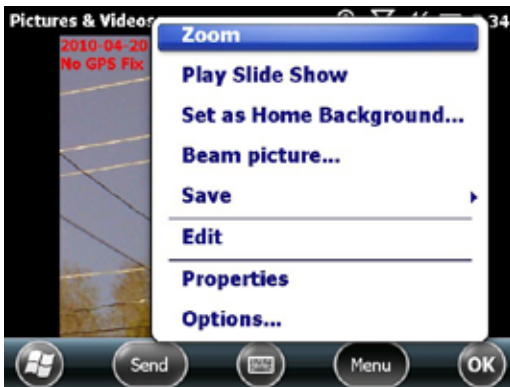


Take a picture by pressing the camera button .




To view your photo library select the *Thumbnails* softkey.

Select the *Menu* softkey to edit a particular picture, play a slide show, etc.

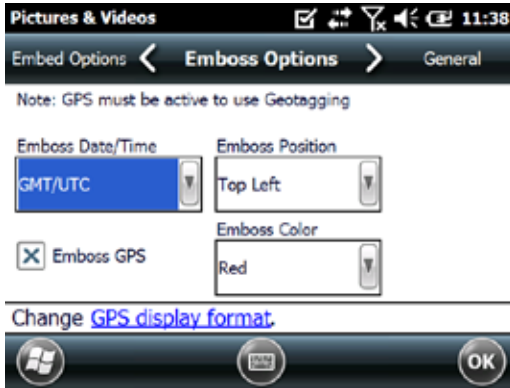


## Geotagging

When pictures are geotagged, the date, time, latitude, and longitude are included with and/or on the image. To use this feature, follow these steps:

1. Turn on GPS by tapping the GPS gadget  on the Home screen and wait for a fix.

2. Select Geotag from the menu. The following Geotag Options screen is shown:



Select the options you want.

*Embed*: select this option to build the GPS information into a jpg file. This allows you to put the image into programs like Google Earth, sort images by location, etc. The information does not appear on the image.

*Emboss*: this option embosses the GPS information on the picture making it part of the image. Select the embossing location.

## Videos

Select Video to from the *Menu* soft key. Adjust settings as desired. To take a video, press the camera button to start recording. Press it again to end the video. Sound is recorded along with the video image.



# 7

## 3G Data Modem

- 64 *Set up an Account with a Wireless Provider*
- 64 *Install the SIM Card*
- 66 *Set up the Cell Modem*
- 67 *Wireless Safety*
- 68 *Maintenance of Your Modem*



## 3G Data Modem

The 3G data modem is an option for Mesa Geo models, adding Wide Area Network data modem capability to the Mesa. The modem is installed at the factory.

The modem is a cellular data modem, type GSM/UMTS. It is five band modem compatible. The modem operates in different modes depending on the wireless provider and the signal strength. Data speeds will vary anywhere from 10 or 20 Kbps when using GPRS to over 1 Mbps when using HSDPA.

### 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 SIM card. You will need to provide the following information when setting up an account:

1. Billing Information and business ID such as your Federal Tax I.D. or VAT number.
2. The wireless services required. Specify that you need data service only. You do not need voice or messaging service.
3. You may be asked for the modem's IMEI number, which can be found here: *Start > Settings > System > System Information > 3G Modem* with the modem powered on.
4. You may be asked to provide the modem's model number. This number allows the carrier to verify this modem as one of its approved models. If asked for this by the carrier, it is a Juniper Systems Mesa.

### Install the SIM Card

When you set up your wireless account, you are given a SIM card. To insert or remove a card follow these steps:

1. Suspend or power off the Mesa if there is no battery in compartment 2.
2. The SIM card slot is located in battery compartment 1. Loosen the screws to the door and remove it.



3. Remove the battery pack.



**CAUTION:** The Mesa is not totally sealed against water and dust when battery doors are not installed and properly latched.

4. An image on the battery compartment label shows the correct location and orientation for the SIM card. Push the card into the slot until it catches. To the right of the slot is a latch to help hold the card in place. Slide it to the left over the right end of the card towards the lock icon.




To remove the SIM card, slide the latch to the right. Press and release the card to partially eject it. You may need tweezers or needle-nose pliers to grab hold of the card to remove it.

5. Replace the battery pack and attach the battery door.
6. Resume or power on the Mesa.

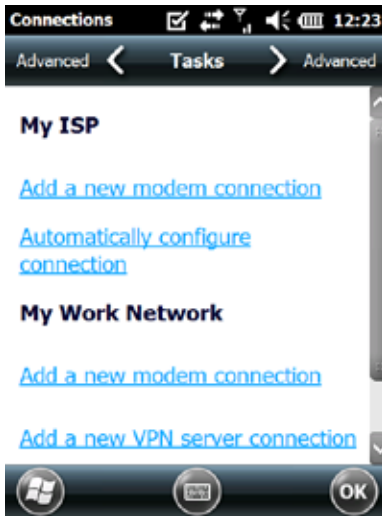
*Note: If the modem was on before shutting the Mesa down to insert the SIM card, you are prompted to configure the data connection when you reboot. See the instructions on the following pages.*

## Set up the Cell Modem

Tap on the 3G modem gadget . After about 30 seconds it turns green, indicating that the modem is available.



Once it is available, configure it to make a connection. Tap and hold the modem gadget to open the Connections control panel.



Select “Automatically configure connection.” The name of your carrier appears. Tap *Next*. A progress is shown: on the next screen while your internet settings are configured.

You can now access the internet. Open Internet Explorer to test your setup.

### **Connection Problems**

If the connection fails to automatically configure, there might not be a signal where you are located. You can try repeating the set up process.

## **Wireless Safety**

### **RF Interference Issues**

It is important to follow any special regulations regarding the use of radio equipment due in particular to the possibility of radio frequency, RF, interference. Please follow the safety advice given below carefully.

- Switch OFF your cell modem when in an aircraft. The use of cellular telephones in an aircraft may endanger the operation of the aircraft, disrupt the cellular network and is illegal.
- Switch OFF your cell modem in hospitals and any other place where medical equipment may be in use.
- Respect restrictions on the use of radio equipment in fuel depots, chemical plants or where blasting operations are in progress.
- There may be a hazard associated with the operation of your cell modem close to inadequately protected personal medical devices such as hearing aids and pacemakers. Consult the manufacturers of the medical device to determine if it is adequately protected.
- Operation of your cell modem close to other electronic equipment may also cause interference if the equipment is inadequately protected. Observe any warning signs and manufacturers’ recommendations.

## **Maintenance of Your Modem**

Your cell modem is the product of advanced engineering, design, and craftsmanship and should be treated with care. The suggestions below will help you to enjoy this product for many years.

- Do not attempt to disassemble the cell modem. There are no user serviceable parts inside.
- Do not place the cell modem alongside computer discs, credit or travel cards, or other magnetic media. The modem may affect the information contained on discs or cards.

# 8

## Storage, Maintenance and Recycling

- 70 *Storing the Mesa and Battery Packs*
- 71 *Protecting the Touchscreen*
- 71 *Cleaning the Mesa*
- 72 *Recycling the Mesa and Batteries*



## **Storage, Maintenance and Recycling**

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

### **Storing the Mesa and Battery Pack(s)**

When the Mesa is not being charged and is suspended, it draws a small amount of power. This power draw is used to maintain the memory (RAM) of the Mesa in the same state it was when it was suspended. We recommend charging the Mesa each night or weekend when it is in suspend mode.

If the Mesa is not charged while in suspend mode and the battery reaches a low charge, it automatically powers off to prevent further drain on the battery.

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

### **Storing the Mesa for Less Than Two Weeks**

To protect the files on your Mesa and the unit itself during storage periods of less than two weeks, complete the following steps:

1. Close all application programs.
2. Plug the Mesa into the AC wall adapter that was shipped with your Field PC.


### **Storing the Mesa for More than Two Weeks**

To protect the files on your Mesa and the unit itself during storage periods of two weeks or more, complete the following steps:

1. Charge the battery pack(s) 30% to 50%.
2. Close all running programs and turn off the Mesa.
3. Remove the battery pack(s).
4. Place the battery pack(s) in a dry location.

## Protecting the Touchscreen


Protect the touchscreen from impact, pressure, or abrasive substances that could damage it. To further protect the touchscreen, apply one of the screen protectors that came with the Mesa. To apply a screen protector, follow the directions that come with it in the package.

 **CAUTION:** Be sure to replace the screen protector as often as the screen protector instructions recommend.

## Cleaning the Mesa

### Touchscreen

1. Disable the touchscreen by pressing and holding the touchscreen disable/enable button or press the power button briefly to suspend the device.
2. Remove the screen protector if you want to clean underneath it.
3. Apply warm water or a mild cleaning solution to a microfiber cloth and gently wipe off the touchscreen.

 **CAUTION:** Do not use tissues, paper towels, soft bristle brushes, or harsh cleaning solutions on the touchscreen.

4. Rinse the touchscreen with water and dry it with a microfiber cloth.
5. Apply a screen protector. (To clean a screen protector, follow the instructions provided with the package.)
6. Enable the touchscreen by pressing the touchscreen disable/enable button or press the power button to resume the device.

### Case, Bumpers and Communication Module

Make sure the battery doors are securely installed. Use warm water, a mild cleaning solution, and a soft bristle brush to clean the case, bumpers and connector module.

**!** **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.

### ***Safe Cleaners to Use***

The Mesa can be cleaned safely with the following cleaners:

- Windex® (S.C. Johnson & Son, Inc.)
- Formula 409® (Clorox)
- Citrus Wonder Cleaner (Mer-Maids)
- Citrus All Purpose Cleaner (Wonder Tablitz)
- Greased Lightening® Multi-Purpose Cleaner and Degreaser
- Orange Clean® (Orange Glo International)
- Fantastik® OxyPower® (S.C. Johnson @ Son, Inc.)
- Oil Eater Orange Cleaner Citrus Degreaser (Kafko International, Ltd.)

**!** **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 any visual change becomes apparent, promptly rinse and wash with a known mild cleaning solution.

### **Recycling the Mesa and Batteries**

When the Mesa reaches the end of its life, it must not be disposed of with municipal waste. It is your responsibility to dispose of your waste equipment by handing it over to a designated collection point for the recycling of waste electrical and electronic equipment. If you cannot find a location, contact Juniper Systems for information about disposal.

The Li-Ion battery packs for your Field PC are recyclable. Avoid placing them in the trash or municipal waste system.



To find the nearest battery recycling center in the USA, visit the Rechargeable Battery Recycling Corporation's website at *www.rbrc.org/call2recycle/index.html* or call 1-800-8-battery.



# 9

## Warranty and Repair Information

76 *Limited Product Warranty*

78 *Extended Warranties*

79 *Repairing the Mesa*



## Limited Product Warranty

Juniper Systems, Inc. ("JS") warrants that the Mesa Rugged Notepad shall be free from defects in materials and workmanship, under normal intended use, for a period of 12 months from the date of shipment.

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:

- battery packs,
- media containing the Field PC programs,
- desktop computer programs,
- user documentation, and
- accessories.

## 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.

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.

### **Remedy**

In the event a defect in materials or workmanship is discovered and reported to JS within the specified warranty period, 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.

### **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.

### **Warranty Repairs**

To obtain warranty repair or service on the Mesa, submit a repair order on our website at [www.junipersys.com](http://www.junipersys.com) > Support > Repairs or contact an authorized repair center within the applicable warranty period. Products returned for repair or service without proper authorization may acquire an additional handling fee and/or delay in the repair. The customer is responsible to prepay all shipping costs when sending equipment to a repair center. The repair center will return the repaired equipment by the same method it was received with costs of shipping prepaid.

### **Governing Law**

This warranty is governed by the laws of Utah, 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.

### **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
- Repair turnaround within 10 working days of receipt unless special circumstances exist
- Shipping costs to return device to customer

### **Extended Warranties**

The Mesa can be warranted up to 5 years (including the standard warranty period) through the purchase of an extended warranty.

Extended warranties apply only to the Mesa, not battery packs, media containing the Mesa programs, desktop computer programs, user documentation, and accessories. Parts that are excessively worn are not covered under all warranty plans. These may include, but are not limited to, the keyboard elastomer and switch matrix, hand straps, touchscreens, and connector modules.

### **Warranty Information**

Warranty information for the Mesa Rugged Notepad is located on our website at: [www.junipersys.com](http://www.junipersys.com) > Support > Warranty. You can evaluate and order warranty extensions, check warranty status, and view warranty terms and conditions.

### **Repairing the Mesa**



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

Information about repairs, upgrades, and evaluations is located on our website at: [www.junipersys.com](http://www.junipersys.com) > Support > 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.

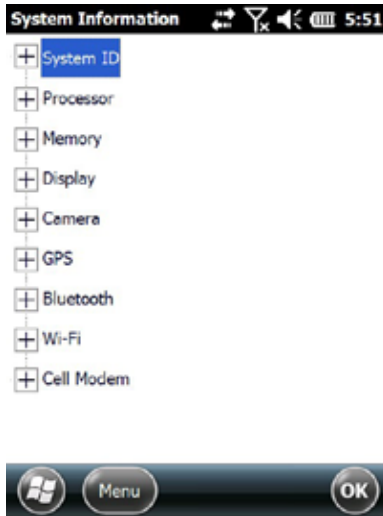
Before returning a unit, please get permission by submitting a repair order from our website and waiting for confirmation or by contacting a repair center directly. Be prepared to provide the following information:

- Product serial number (inside the battery compartment; also found in System Information screen as described on the following page)
- Your name
- Name and shipping address of company/university/agency
- Best contact method(s) (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)

### System Information for your Mesa

When you contact a repair center you need some unique system ID information for your Mesa (serial number, model number, etc.). Tap *Start > Settings > System > System Information* to view the following menu. Select *System ID*.



Specifications on the processor, memory, display, camera (Geo models), GPS (Geo models), Bluetooth, Wi-Fi, and cell modem (optional accessory) are also located on the System Information Screen.

You can also create a system information file to send to the repair center by pressing the *Menu* soft key and selecting *Create Info File*.



# A

## Specifications



## Mesa Rugged Notepad Specifications

FEATURE	SPECIFICATION
Operating System	<ul style="list-style-type: none"> <li>■ Microsoft® Windows Mobile® 6.5</li> <li>■ English, French, German, Spanish</li> </ul>
Processor	<ul style="list-style-type: none"> <li>■ Marvell XScale 806 Mhz Processor</li> </ul>
Memory	<ul style="list-style-type: none"> <li>■ 256 MB RAM</li> </ul>
Primary Data Storage	<ul style="list-style-type: none"> <li>■ 4 GB Flash Storage</li> </ul>
SD Card Slot	<ul style="list-style-type: none"> <li>■ SD/SDHC slot, full sized, user accessible</li> </ul>
Physical Features	<ul style="list-style-type: none"> <li>■ Dimensions, standard: 5.3" x 7.5" x 2" (136 mm x 200 mm x 51 mm)</li> <li>■ Dimensions, Geo model: 5.3" x 8.6" x 2" (136 mm x 220 mm x 51 mm)</li> <li>■ Weight, Mesa standard with one battery: 1.9 lbs (862 g), Mesa Geo with two batteries: 2.34 lbs (1061g), Mesa Geo 3G with two batteries and cell modem: 2.36 lbs (1070 g)</li> <li>■ Magnesium alloy case front, plastic back</li> <li>■ Impact absorbing elastomer bumpers</li> <li>■ Four mounting holes for external accessories, #8-32 thread rectangular pattern, 3.45" x 4.11" (87.63 mm x 104.39 mm), .3" deep (7.62 mm)</li> <li>■ Hand strap, adjustable, attach to any side</li> </ul>
Display	<ul style="list-style-type: none"> <li>■ 5.7" (145 mm) color VGA LCD</li> <li>■ 640 x 480 pixel resolution</li> <li>■ LED backlight</li> <li>■ Outdoor viewable</li> <li>■ Portrait or landscape orientation</li> </ul>

FEATURE	SPECIFICATION
Touchscreen	<ul style="list-style-type: none"> <li>■ Resistive technology for use with finger or stylus</li> <li>■ Touchscreen disable function</li> </ul>
Keyboard	<ul style="list-style-type: none"> <li>■ 15 control buttons (6 reassignable)</li> <li>■ Function keys</li> <li>■ Five-way directional button</li> <li>■ Backlight</li> <li>■ On-screen keyboard</li> </ul>
Batteries	<ul style="list-style-type: none"> <li>■ Rechargeable Li-Ion battery pack 7.4VDC 2550mAh, 18.87Wh</li> <li>■ 2 battery pack compartments</li> <li>■ Run time of 8 to 16 hours</li> <li>■ Charging time 2 to 6 hours</li> <li>■ Built-in battery intelligence</li> <li>■ User-replaceable without tools</li> </ul>
Connector I/O Module	<ul style="list-style-type: none"> <li>■ RS-232C 9-pin D-sub connector, +5V @ 500 mA available on DTR pin 4 (can also be configured on ring in pin 9 via software configuration)</li> <li>■ USB Host (Full A)</li> <li>■ USB Client (Mini B)</li> <li>■ 12VDC jack for power input and battery charging, +12V DC 1.5A</li> <li>■ 3.5mm audio jack, supports speaker/microphone or stereo output (pin detect).</li> <li>■ Connector protector</li> </ul>
Wireless Connectivity	<ul style="list-style-type: none"> <li>■ Bluetooth® wireless technology 2.0 +EDR Class 1,</li> <li>■ Wi-Fi 802.11b/g, U.S. and international</li> </ul>

FEATURE	SPECIFICATION
Audio	<ul style="list-style-type: none"> <li>■ Speaker, forward facing, loud, clear</li> <li>■ Microphone, low noise</li> <li>■ 3.5mm audio jack, supports stereo headset and microphone at the same time (speaker disable)</li> </ul>
Activity Indicators	<ul style="list-style-type: none"> <li>■ Red: boot/startup status, power applied/charging status</li> <li>■ Green: suspend/resume status, application programmable</li> <li>■ Blue: application programmable</li> <li>■ On screen boot/startup indication</li> </ul>
Temperature Specifications	<ul style="list-style-type: none"> <li>■ Operating Temperature: -4° to 122° F (-20° to 50° C) <i>Note: Bluetooth® wireless technology is rated to -4 degrees F (-20 degrees C)</i></li> <li>■ Storage Temperature: *-22° to 158° F (-30° to 70° C)</li> <li>■ Battery Charging Temperature: 32° to 104° F (0° to 40° C)</li> </ul>
Dust and Water Sealing	<ul style="list-style-type: none"> <li>■ IP67 rating, waterproof and dustproof</li> </ul>
Shock Resistance	<ul style="list-style-type: none"> <li>■ Withstands multiple 4' (1.2 m) drops onto concrete</li> </ul>
Environmental	<ul style="list-style-type: none"> <li>■ MIL-STD810G standard for water, humidity, sand and dust, vibration, altitude, shock, low temperature, high temperature, temperature shock</li> </ul>
Warranties	<ul style="list-style-type: none"> <li>■ 12 months for Mesa unit and optional cell modem</li> <li>■ 90 days for accessories</li> <li>■ Extended warranty options</li> </ul>

FEATURE	SPECIFICATION
Software Included	<ul style="list-style-type: none"> <li>■ ActiveSync</li> <li>■ Adobe Reader LE</li> <li>■ Alarms</li> <li>■ Calculator</li> <li>■ Calendar</li> <li>■ Contacts</li> <li>■ E-Mail</li> <li>■ File Explorer</li> <li>■ Getting Started</li> <li>■ Help</li> <li>■ Internet Explorer</li> <li>■ Internet Sharing</li> <li>■ Juniper Home Screen, customizable with selectable dashboard gadgets and program shortcuts</li> <li>■ Marketplace</li> <li>■ Messaging</li> <li>■ Microsoft MyPhone</li> <li>■ Microsoft® Office Excel Mobile</li> <li>■ Microsoft® Office OneNote Mobile</li> <li>■ Microsoft® Office PowerPoint Mobile</li> <li>■ Microsoft® Office Word Mobile</li> <li>■ Notes</li> <li>■ Pictures &amp; Videos</li> <li>■ Remote Desktop Mobile</li> <li>■ Search</li> <li>■ Settings</li> <li>■ Task Manager</li> <li>■ Tasks</li> <li>■ Text Messaging</li> <li>■ Windows Live</li> <li>■ Windows Media</li> </ul>

FEATURE	SPECIFICATION
Configurations	<ul style="list-style-type: none"> <li>■ Standard U.S. (4GB storage, U.S. Wi-Fi, Bluetooth)</li> <li>■ Standard International (4GB storage, International Wi-Fi, Bluetooth)</li> <li>■ Geo U.S. (4GB storage, U.S. Wi-Fi, Bluetooth, Camera, GPS)</li> <li>■ Geo International (4GB storage, International Wi-Fi, Bluetooth, Camera, GPS)</li> <li>■ Geo 3G U.S. (4GB storage, U.S. Wi-Fi, Bluetooth, Camera, GPS, GSM Data Modem)</li> <li>■ Geo 3G International (4GB storage, International Wi-Fi, Bluetooth, Camera, GPS, GSM Data Modem)</li> </ul>
Camera (Geo models)	<ul style="list-style-type: none"> <li>■ 3MP resolution</li> <li>■ Autofocus</li> <li>■ JPEG image format</li> <li>■ Juniper Geotagging; embed and/or emboss photo with date, time and GPS position</li> </ul>
GPS (Geo models)	<ul style="list-style-type: none"> <li>■ 2 to 5 meter typical accuracy</li> <li>■ GPS receiver is a uBlox NEO</li> <li>■ Integrated real-time SBAS capability, support for WAAS, MSAS, EGNOS</li> <li>■ File format NMEA-0183 v2.3, default strings: GGA, GSA, GLL, GSV, TXT, RMC, VTG</li> <li>■ Track 12 or more satellites simultaneously</li> <li>■ Juniper Home Screen GPS signal quality indicator</li> <li>■ Juniper Home Screen GPS compass</li> </ul>

FEATURE	SPECIFICATION
3G Data Modem (Geo model option)	<ul style="list-style-type: none"> <li>■ Factory installed option</li> <li>■ Five band GSM/GPRS/EDGE, 850/900/1800/1900/2100 MHz data speeds</li> <li>■ Does not support voice calls</li> <li>■ Communicates on GSM-based networks</li> </ul>
Certifications and Standards	<ul style="list-style-type: none"> <li>■ FCC Class B</li> <li>■ CE Marking (applicable EMC, R&amp;TTE, and LVD directives)</li> <li>■ Industry Canada</li> <li>■ EN60950 Safety</li> <li>■ Bluetooth SIG qualification</li> <li>■ USB client</li> <li>■ IP67</li> <li>■ Designed to MIL-STD 810G</li> </ul>
Standard Accessories	<ul style="list-style-type: none"> <li>■ Li-Ion battery(s)</li> <li>■ Hand strap</li> <li>■ Stylus</li> <li>■ USB sync cable</li> <li>■ Wall charger Input: 100-240VAC, 50/60Hz, 0.5A Output: 12VDC, 1.5A</li> <li>■ Screen protectors: 1 Ultra-Clear, 1 Anti-Glare</li> <li>■ Connector protector</li> <li>■ Documentation CD</li> </ul>
Optional Accessories	<ul style="list-style-type: none"> <li>■ Shoulder strap</li> <li>■ Serial cable</li> <li>■ Cigarette Lighter Charging Adaptor</li> <li>■ Travel charger (for 1 or 2 batteries)</li> <li>■ Mesa Mobile Dock with desktop base or vehicle mount</li> </ul>





# B

## Warnings and Regulatory Information

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## Product Warnings

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



### 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.



### **Wall Charger Warnings**

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

Plug the wall charger into an electrical outlet that is easily accessible at all times.

Do not place anything on the 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 wall charger from the electrical outlet, pull on the plug, not the cord.

Use only wall chargers intended for the Mesa. Using any other external power source can damage your product and void your warranty.

## **Mesa Certifications and Standards**

### **United States and Canada**

In compliance with the FCC rules, 47 CFR 15.19(a)(3), and the 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 also complies with Part 15 of the FCC Rules. Operation of this equipment is subject to the following two conditions:

1. The device may not cause harmful interference.
2. 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 Field PC 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.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

## General Safety



**CAUTION:** This device has been evaluated for use in close proximity to the body. Use only accessories approved by Juniper Systems. The use of third party accessories may not comply with FCC and international RF exposure requirements. To comply with FCC and other national RF exposure requirements do not co-locate this device with other transmitters.

This device operates in compliance with the FCC radio frequency exposure limits for an uncontrolled environment. Users must follow instructions provided in the user documentation to satisfy compliance with FCC radio frequency exposure requirements.

There cannot be any alteration to the authorized antenna system. The antenna shipped with the cell modem is the only one authorized for use.

This cell modem is compliant with FCC regulations when operated within the temperature range of -30°C to +50°C. Do not operate the cell modem outside of this temperature range.

## European Union (CE Marking)



Products bearing the CE marking comply with the 2004/108/EC (EMC Directive), 1999/5/EC (R&TTE Directive), 2006/95/EC (Low Voltage Directive) issued by the Commission of the European Community.

CE compliance of this device is valid only if powered with/by a CE-marked wall charger provided by the manufacturer. Compliance with these directives implies conformity to the following standards:

- EN 55022 (CISPR 22) Electromagnetic Interference
- EN 55024 (IEC 61000-4-2, 3, 4, 5, 6, 8, 11) Electromagnetic Immunity
- EN 60950 (IEC 60950) Product Safety

- ETSI EN 300 328 Radio
- ETSI EN 301 489-1, -7, -17 EMC for Radio Equipment
- ETSI EN 301 511 GSM
- ETSI EN 300 440 GPS

The telecommunication functions of this device may be used in the following EU and EFTA countries: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovak Republic, Romania, Slovenia, Spain, Sweden, Switzerland, and United Kingdom.

Restrictions apply to the operation of the 802.11b/g radio in this device. Use of channel 14 is outside of the band of frequencies permitted in the European Union and should not be used.

***France (Radio Restrictions)***

Restrictions apply to the operation of the Bluetooth radio in this device. This equipment may be used indoors. Due to the potential that this radio may transmit in excess of 10mW in the band 2454 to 2483.5 MHz, outdoor operation is restricted.

Restrictions apply to the operation of the 802.11b/g radio in this device. This equipment may be used indoors on channels 1 to 13. Outdoor operation is permitted on channels 1 to 8, as transmit power in the band 2454 to 2483.5 MHz is limited to 10 mW. The latest requirements may be found at: <http://www.art-telecom.fr>

# C

## Charging and Docking Accessories

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## Mesa Mobile Dock

The Mesa Mobile Dock is an optional accessory that provides a mounting station for the Mesa Rugged Notepad and additional communication options.



*Note: The Mesa Mobile Dock is not functional as a stand alone device. It requires the Mesa to be functional. For example, it is not a stand alone powered USB hub.*

### Communication Options

The mobile dock provides additional communication ports for use with sensors and other external devices, supplementing the ports on the Mesa. Some Mesa ports are still accessible.



- 1** 12V DC power input jack
- 2** USB client
- 3** RS-232 serial ports
- 4** USB host ports

- 1.** Power input jack, 12 VDC for power input and battery charging: This jack is used to power the mobile dock and the Mesa. The power port on the Mesa is not accessible when it is in the mobile dock. The additional communication ports on the dock are powered directly from the Mesa or by applying power to the mobile dock. The following accessories can be used to provide power and charge the Mesa batteries:



- a. AC wall power charger provided with the Mesa;
  - b. Cigarette lighter power adapter (optional accessory).
2. USB client: This is a through connection to the Mesa USB client port. This port on the Mesa is not accessible when it is in the mobile dock.
3. RS-232 serial ports: The mobile dock provides two additional RS-232 ports. The RS-232 port on the Mesa is still accessible when it is in the mobile dock, providing three ports total.  
*Note: The dock serial ports do not have 5V power available on their DTR or RI pins for powering devices.*
4. USB host ports: The mobile dock provides two additional USB host ports. The USB host port on the Mesa is still accessible when it is in the mobile dock, providing three ports total. Each port has 500mA available when external power is plugged into the mobile dock. If external power is not plugged into the dock and they are drawing power from the Mesa, 100mA is available on each USB host ports. In this scenario it is recommended that no more than 300mA total be drawn from the USB host ports.
5. The audio jack of the Mesa is accessible when the Mesa is in the mobile dock.

### **Mounting Options**

Accessories are available for using the mobile dock as a desktop base, mounting it onto a vehicle, and mounting it onto a pole. You can also attach it directly to a wall.

#### ***Mesa Dock Desktop Base Kit***

The desktop kit (optional mobile dock accessory) allows the mobile dock to be used on a desktop or other flat, stationary surface. The kit includes a desktop base and four screws.

Installing the desktop base:

1. At the back of the dock near the bottom there are two screw

holes, one on the left and one on the right. Place screws into these holes and screw them in half-way.

2. Slide the desktop base up so the screw slots on the back slide onto the screws and tighten them.



3. In the front of the desktop base and on the dock near the bottom there are two screw holes, one on the left and one on the right. Place screws into these holes, screw them in all the way, and tighten them. The desktop base is now ready to use.



### **Mobile Dock Vehicle Kit**

The vehicle kit (optional mobile dock accessory) allows the mobile dock to be used in a vehicle or in another mobile mounting application. The kit includes two RAM mount bases, a RAM mount arm, four screws, and four 8-32 nuts.

*Note: Additional attachments are available for the vehicle kit from National Products Inc. at [www.ram-mount.com](http://www.ram-mount.com).*

Installing the vehicle kit:

1. From the front of the dock you see four hex holes. Press a nut into each hole. Use a screwdriver or similar object to press them firmly into place.



2. From the back of the dock, align the ram mount with the screw holes.



3. Insert the four screws into these holes, screw them in all the way, and tighten them.



4. Attach the arm to the two RAM mounts (one on each end). The mobile dock is now ready to use in a vehicle, on a pole, etc.



#### Vehicle power considerations:

When powering the dock from a vehicle, especially in a permanent situation, be familiar with the power setup. Power configuration options and recommendations:

- *The Mesa suspends when battery power is being used (default setting), insuring that the both the Mesa batteries and the vehicle battery are not fully depleted. In this configuration, the Mesa is powered and charging its batteries whenever vehicle power is applied. When the vehicle is turned off, the Mesa does not receive external power and suspends after the time set in the power management settings (default is 3 minutes). In a suspended state, the power to the mobile dock is shut off and the Mesa draws very little power (about 25mW).*
- *The mobile dock is connected to a power port that draws current directly from the battery power of the vehicle. The Mesa and dock remain powered and the batteries are charged even if the vehicle is turned off. Be aware that this configuration drains the vehicle battery. Consult the vehicle's user manual for instructions on appropriate use of the power port.*

- *The mobile dock is connected to a key switched battery port of the vehicle. The vehicle power is not depleted by the Mesa when the vehicle is turned off. Be aware that with this configuration the Mesa continues to power the dock ports, depleting the Mesa batteries.*

### **Wall Mount**

You can mount the mobile dock to a wall. Use 2 size 8 wood screws and attach the dock to a wall stud or plywood panel.

### **Attaching the Mesa to the Mobile Dock**

Follow these instructions to place the Mesa into the mobile dock:

1. Attach the connector protector to the Mesa and close the individual port covers so the Mesa docks properly. If the hand strap is in the way, remove or move it.
2. Align the Mesa with the lower mounting points on the mobile dock.



2. Press the Mesa back to secure it to mobile dock. The top latch snaps into place.

*Note: Tighten the security bolt when the mobile dock is used in a vehicle.*



## Releasing the Mesa from the Mobile Dock

To release the Mesa from the mobile dock, lift up on the top latch. Pull the Mesa forward and remove it. *Note: Loosen the security bolt if the mobile dock is being used in a vehicle.*



## Maintenance

### *Environmental Issues*

The mobile dock sheds water when used in its normal configuration, but is not sealed against water. Avoid using the dock in situations where water can enter the connector ports.

### *Protecting the Docking Pins*

Do not touch the docking pins (spring loaded contacts) with conductive items when power is plugged into the dock. Do not drop items on the dock that can damage the pins.



Keep debris off of the docking pins and the connectors to maintain the best performance.

## Mesa Travel Charger

The Mesa Travel Charger is an optional accessory that allows you to charge Mesa battery packs on the go. One or two battery packs can be charged at once.



### How to Use the Travel Charger

1. Battery pack(s) should be charged at room temperature (68° F or 20° C)
2. Place the travel charger on a flat surface where it will be undisturbed.
3. The following accessories can be used to provide power to the travel charger:
  - a. AC wall power charger provided with the Mesa;
  - b. Cigarette lighter power adapter (optional accessory).Plug a power adapter into the power input jack on the back of the travel charger. Plug the other end into a wall outlet or a vehicle cigarette lighter outlet.
4. Insert one or two battery packs into the charging slots. Make sure you insert them fully. You will feel a slight catch.

### Charge Time

Two depleted batteries (in the charger at same time):  
approximately 3.5 hours to fully charge.

One depleted battery: approximately 2.6 hours to fully charge.

### LED Indicators

Each battery compartment has a green and red LED. The LED states indicate the following:

LED State	Indicates
Red LED On	Battery pack charging
Green LED On	Battery pack fully charged
Red Flashing LED	Battery pack or charging fault

### ***Battery Pack or Charging Faults and Remedies***

Possible causes for a flashing red LED:

- **Over-discharged battery:** The battery pack is severely depleted. The red LED flashes a few seconds after the battery is inserted. If the red LED continues to flash for a couple of minutes, remove the battery pack. It might be faulty, requiring replacement.
- **Pre-charge time out:** A low battery pack is inserted and the voltage does not reach an acceptable charge level. The red LED flashes 30 minutes into the charge. The battery pack might be at the end of its life or faulty, requiring replacement. Note: Do not confuse this with the out-of-temperature fault (next case).
- **Out-of-temperature range for safe charging:** The charger senses the battery pack is too cold ( $< 0^{\circ}\text{C}$ ,  $32^{\circ}\text{F}$ ) or too hot ( $> 40^{\circ}\text{C}$ ,  $104^{\circ}\text{F}$ ) for safe charging. This can occur at any time in the charge cycle. The red LED continues to flash, even after the battery pack is removed. Reset the charger by inserting a battery pack with an acceptable temperature or remove and reapply the external power to the charger. Bring the temperature of the battery pack into the safe charging range. If the problem persists, the battery pack might be faulty, requiring replacement.
- **Charge cycle time out:** The battery pack does not reach full charge within eight hours. The battery pack might be at the end of its life or faulty, requiring replacement.



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