

**Honeywell**

# Thor VM1A

Vehicle-Mounted Computer  
powered by Android™ 8

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**User Guide**

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# Customer Support

## Technical Assistance

To search our knowledge base for a solution or to log in to the Technical Support portal and report a problem, go to [www.hsmcontactsupport.com](http://www.hsmcontactsupport.com).

For our latest contact information, see [www.honeywellaidc.com/locations](http://www.honeywellaidc.com/locations).

## Product Service and Repair

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For ongoing and future product quality improvement initiatives, the computer comes equipped with an embedded device lifetime counter function. Honeywell may use the lifetime counter data for future statistical reliability analysis as well as ongoing quality, repair and service purposes.

## Limited Warranty

For warranty information, go to [www.honeywellaidc.com](http://www.honeywellaidc.com) and click **Get Resources > Product Warranty**.



# ABOUT THE COMPUTER FEATURES

This chapter introduces the Thor VM1A Vehicle-Mounted Computer. Use this chapter to learn about the basic computer features and functions.

## About the Thor VM1A Vehicle-Mounted Computer

The Thor VM1A Vehicle-Mounted Computer (VMC) is a rugged, vehicle mounted computer powered by Android and capable of wireless data communications from a fork-lift truck or any properly configured vehicle. VM1A is built on the Mobility Edge™ platform and can deliver real-time connectivity, advanced data capture, and future-proof investment protection. The computer is equipped for fast Wi-Fi connectivity with a WLAN 802.11 a/b/g/n/ac radio and Bluetooth (v5.0) technology that includes Bluetooth Low Energy (BLE) support.

The computer is designed for use with a vehicle dock. The dock installs in the vehicle, connects to vehicle power, and provides conditioned input power for the computer. The VM1A is designed to be easily removed from the dock and be moved from one vehicle dock to another.



**Caution:** Before shipping the Thor VM1A, be sure to **Disconnect the UPS Battery**.

VM1A contains a UPS battery which, when fully charged, can power the computer for a minimum of 30 minutes for when the computer is not attached to a dock, is being switched to another dock, or the vehicle power is interrupted.

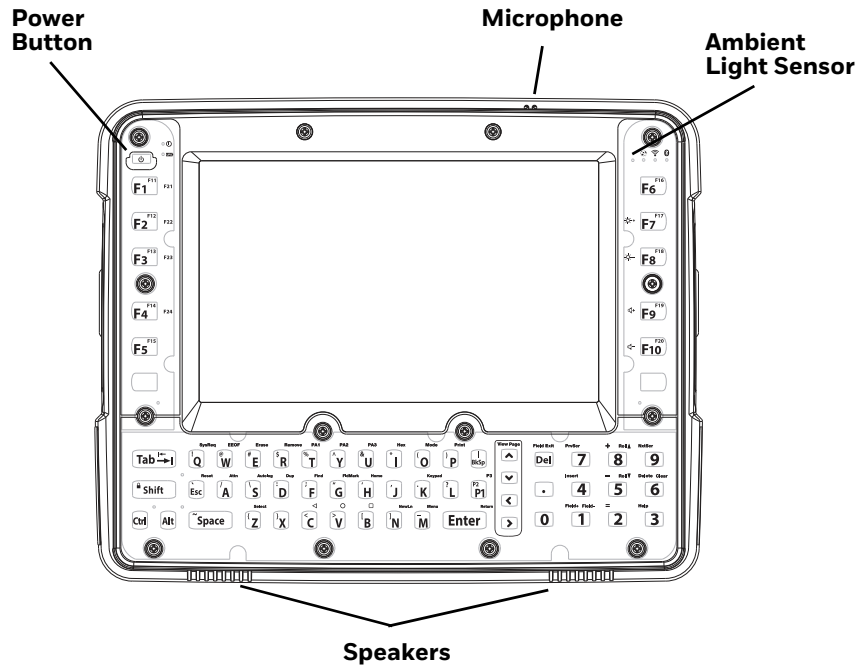
# Model Overview

Available Features
Android 8 operating system, upgradeable through Android R
2.2 GHz Qualcomm Snapdragon™ 660 octacore processor
4GB SDRAM, 32 GB flash memory
WXGA displays available for indoor and brighter outdoor options
Integrated ambient light sensor, proximity sensor, accelerometer, gyroscope3, magnetometer, and pressure sensors
64-key QWERTY keypad
WLAN IEEE 802.11 a/b/g/n/ac radio; Wi-Fi certified
Bluetooth™ V5.0 and Bluetooth Low Energy (BLE) technology support
NFC technology for short-range wireless data exchange
Mid-tier rugged specifications with IP66 sealing
Customer-accessible SD™ slot for removable memory cards up to 512 GB (SDXC/SDHC/SDIO-compliant)

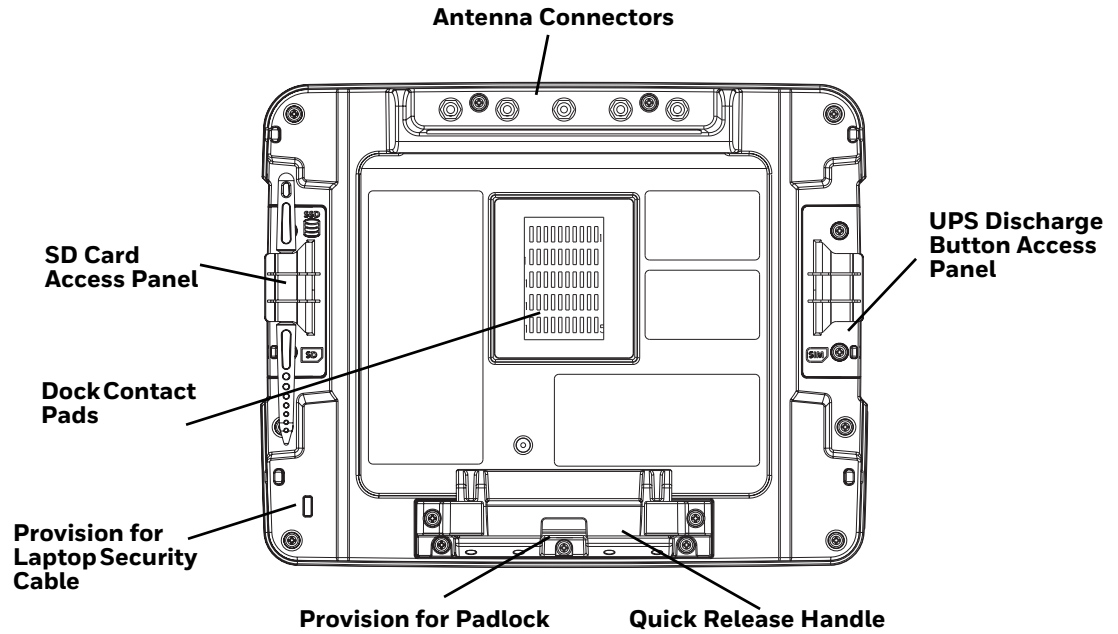
**Note:** To learn more, see [Specifications and Reference Materials](#) beginning on page 137.

## Features of the VM1A

### Front View - Thor VM1A

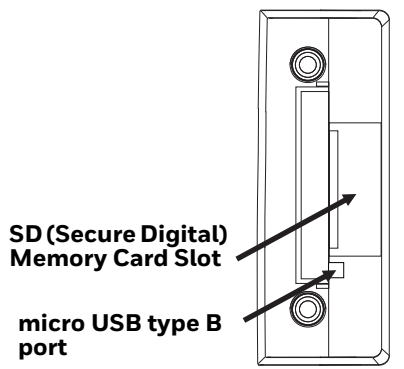


# Back View - Thor VM1A



# Access Panels - Thor VM1A

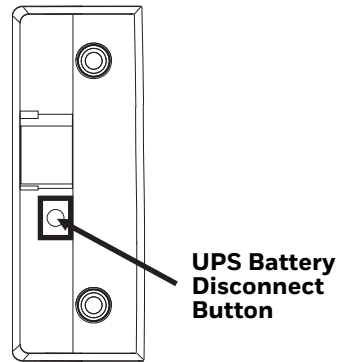
SD Card Access Panel with door removed



Access Panel Door is labeled with  and



SIM Access Panel with Door Removed



Access Panel Door is labeled with  .



# Power Management Modes

The Thor VM1A has three power modes: On, Sleep, and Off.

## On Mode

When the computer is attached to vehicle power, external power supply, or is operating from the UPS battery and the power button is pressed, the computer is in the On mode. In this mode, the keypad, touch screen, and any attached peripherals, such as a scanner, function normally. The display remains On unless the unit transitions to Sleep Mode or screen blanking is activated.

When in On mode, the status LED is solid green.

## Sleep Mode

When the computer enters Sleep mode, all LEDs are off. Sleep mode occurs when the power button is pressed momentarily or the inactivity timer expires.

When in Sleep Mode, the status LED:

- is green, if external power is attached.
- is off, if external power is not attached.

To wake the computer from Sleep Mode, momentarily press the power button.

## Off Mode

When the power button is held, an option menu appears, and Power Off is selected.

The computer is also Off when it is not connected to a power source and the UPS battery is depleted. However, an internal Real Time Clock (RTC) powered by an internal battery, maintains the date and time while the computer is Off.

# About the Power Supply

## Vehicle DC Power Supply

Vehicle power input for the dock is 10V to 60V DC and is accepted without the need to perform any manual operation within the dock, see [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#). The dock provides a regulated power output for the VM1A. By using a specified DC/DC power supply, input voltage of 50-150V DC can be accepted, see [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Top of Lid\)](#) or [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Side of Lid\)](#).

Input power to VM1A is fused for protection and the fuse is externally accessible, see [Fuse](#).



## External AC Power Supply

If DC power is not available, for example, in an office environment, an optional external Universal Input Power Supply can be used to convert AC wall outlet to an appropriate DC level. AC to DC power input for the computer is delivered to the dock via an optional external power supply and adapter cable. See [External AC/DC Power Supply](#).

## Uninterruptible Power Supply

- The VM1A contains an internal UPS battery backup. The user can [Replace the UPS Battery](#).
- The UPS battery is automatically charged when the computer is placed in a powered dock, provided the [Safe Charging Temperature Range](#) is met.
- When external power is removed, the UPS automatically powers the computer with no user intervention. When running on UPS power, the power management time outs may be different than when vehicle power is applied.
- The UPS allows the computer to continue operation when not mounted in a dock or when the vehicle battery is being swapped. When fully charged, the UPS battery is designed to power the computer for a minimum of 30 minutes at temperatures of 20°C (68°F) or greater.
- If operating on UPS power and the UPS battery becomes critically low, the computer performs a controlled shutdown.
- If there is no external power available, there must be 10% or greater power in the UPS battery or the computer does not power On.
- The UPS status LED and the Battery Control Panel can be used to monitor the status of the UPS battery.



**Caution: Safety requirements restrict the temperature at which the Li-Ion UPS battery can be charged. Charging is disabled if the temperature is outside of the 0° to 35°C safe charging range. In order to maintain UPS charge, the Thor VM1A should have power applied while the unit is within the safe charging range for at least an hour each day.**

## Safe Charging Temperature Range

The internal temperature of the VM1A is the trigger for UPS battery charging.

- The UPS battery is not charged when the internal temperature is below 0°C (32°F). This corresponds to an ambient (room) temperature of approximately -10°C (-14°F).
- The UPS battery is not charged when the internal temperature is above 45°C (113°F). This corresponds to an ambient (room) temperature of approximately 35°C (95°F).

- If the UPS battery cannot be charged due to a temperature extreme, the **UPS Status LED** is amber. Move the VM1A to a different location to charge the UPS battery.

## Charging Timeout

- A fully discharged UPS battery normally recharges in less than 4 hours when the computer is in a powered dock and within the safe charging temperature range.
- If the UPS battery is not charged before an 8 hour timeout period expires, the **UPS Status LED** is amber.
- The charge timeout is reset if charging resumes upon application of external power.
- The charge timeout is reset if charging resumes when the computer enters the permissible temperature range for charging.
- If the charge timeout occurs frequently, the UPS battery should be replaced.

## Charging and Power Management

Charging of the UPS battery continues when the computer is in power management (Display Off or Sleep mode).

## Backup Battery

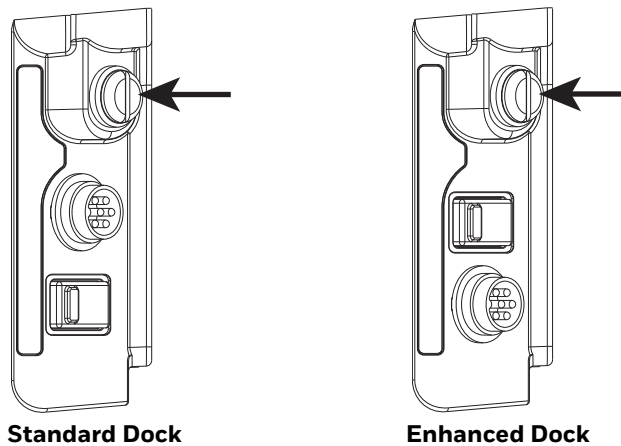
The Thor VM1A has a permanent Lithium battery installed to maintain time, date, and CMOS setup information for a minimum of 90 days. The lithium battery is not user serviceable and should last five years with normal use before it requires replacement.



**Warning: Improper replacement or repair could damage the battery, cause overheating, risk of explosion, and result in injury. The battery should be disposed of properly. The battery should not be disassembled or crushed. The battery should not be heated above 212°F (100°C) or incinerated. The battery must be recycled or disposed of separately from household waste.**

**Note:** *The backup battery should only be changed by authorized service personnel.*

# Fuse



The VM1A uses an 8A time delay (slow blow) fuse that is externally accessible and user replaceable. The fuse is located on the back of the dock and is accessed by unscrewing the cap.

Should the fuse need replacement, replace with similar type or rating of the below fuse specs:

- Littelfuse O215008.MXP,
- Cooper Bussmann BK1/S506-8-R,
- Bel Fuse 5HT 8-R,
- or equivalent.



**Caution: Fuse has voltage on it even when power is Off. Always disconnect input power before changing the fuse.**

## Disconnect the UPS Battery



**Caution: The UPS battery must be disconnected before you ship the Thor VM1A, [Replace the UPS Battery](#), or [Replace the Front Panel](#).**

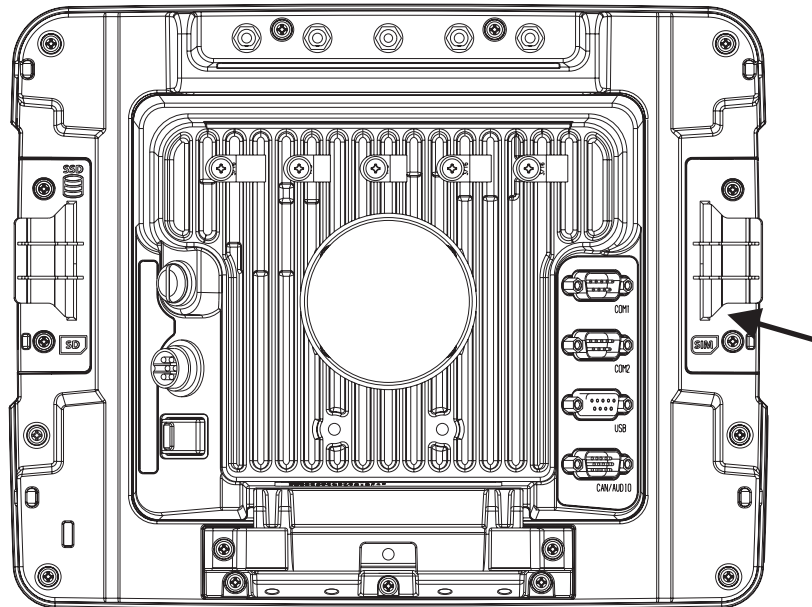
## Equipment Required

The following equipment is user-supplied:

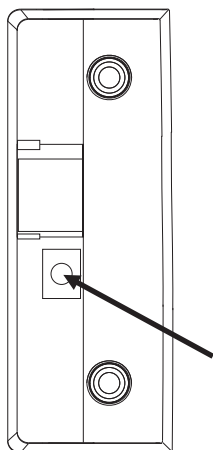
- Torque tool capable of measuring inch pounds
- #2 Phillips screwdriver bit

## Disconnect Procedure

1. For convenience, the VM1A can be removed from the dock, though it is not necessary. If the VM1A remains in the dock, disconnect the power cable from the dock.
2. Press and hold the **Power** button until the options menu appears. Tap **Power Off**.
3. If the computer was removed from the dock, place the computer face down on a stable surface.
4. Using a #2 Phillips bit loosen the M3 screws and then remove the tethered access panel with the SIM label.



5. Locate the small push button.



6. Press the push button to disconnect the UPS. The UPS battery maintains its charge but is disconnected from the power circuitry of the computer.

7. Reattach the access panel, torque the M3 screws to 4-5 inch pounds using a #2 Phillips bit.
8. When the computer is attached to external power, the UPS battery is automatically reconnected.
9. Press the **Power** button to turn on the computer.

## Replace the UPS Battery

The UPS battery in the VM1A is field replaceable. Should the UPS battery fail, it can easily be replaced to minimize downtime.

### Equipment Required

The following equipment is user-supplied:

- Torque tool capable of measuring inch pounds
- #2 Phillips screwdriver bit

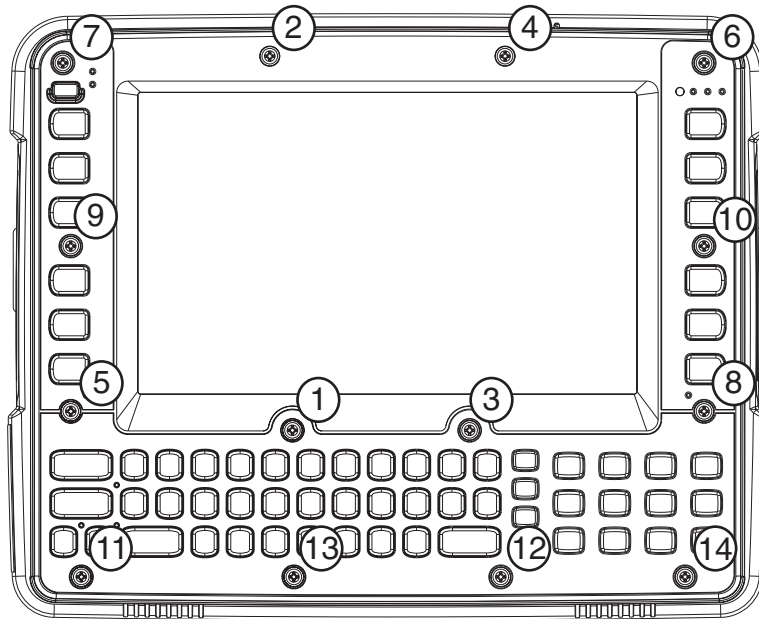
### Replacement Procedure



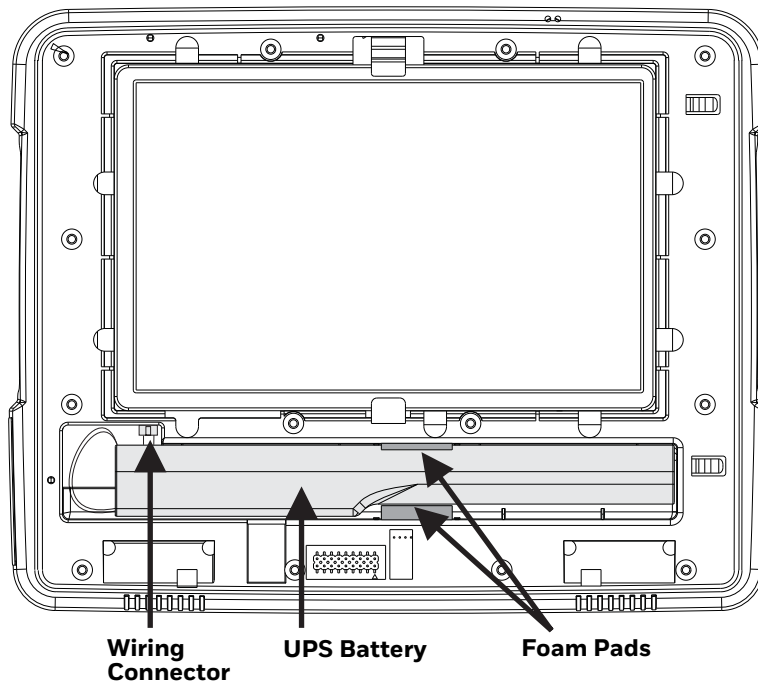
**Caution:** Before replacing the Thor VM1A front panel, **Disconnect the UPS Battery.**

1. Place the VM1A on a clean, well-lit surface before performing the UPS battery replacement.
2. Press and hold the **Power** button until the options menu appears. Tap **Power Off**.
3. Remove the computer from the dock.
4. **Disconnect the UPS Battery.**

5. Loosen the fourteen (14) captive M3 screws holding the front panel. Use a #2 Phillips bit.

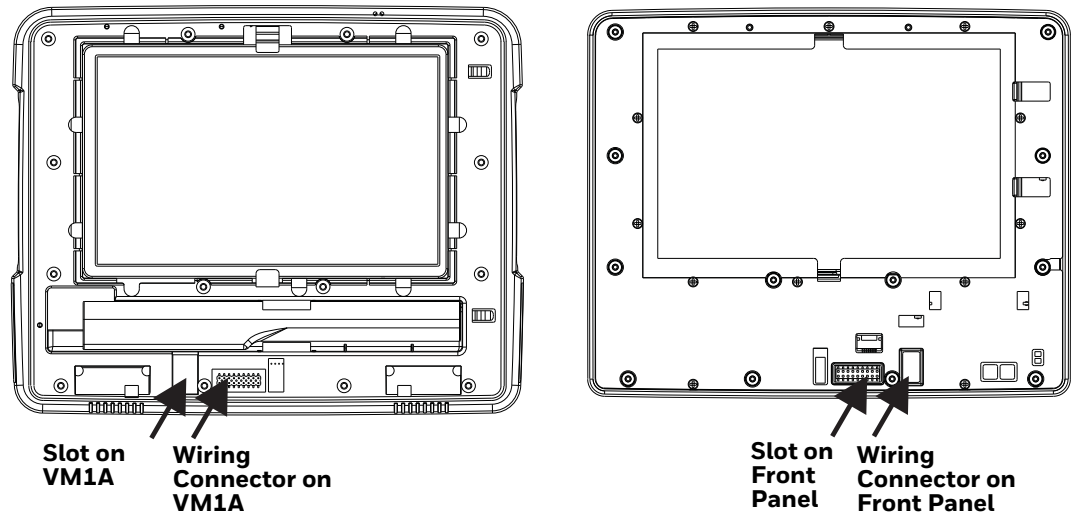


6. Carefully lift the front panel away from the device.
7. Note the orientation of the UPS battery. Lift the UPS battery out of the battery well and place it outside the well. Do not pull on the wires attaching the battery to the computer while lifting the battery.



8. Locate the retaining tab on the wiring connector for the UPS battery. Press on the tab and gently disconnect the UPS battery wiring.

9. Remove the old battery and set it aside.
10. Inspect the battery well to verify the two foam pads are still in place.
11. Align the wiring connector on the new UPS battery with the connector on the computer. Gently press the connector into place until the retaining tab snaps into place.
12. Place the UPS battery into the well. Note the orientation of the battery in the illustration below. The flat surface of the battery points toward the bottom of the VM1A. Make sure all wires are inside the battery well so they are not pinched when the front panel is reinstalled.









13. Position the front panel so the tab on the back of the front panel lines up with the slot on the VM1A. Be sure the two wiring connectors are also aligned.
14. Gently press the front panel into place.
15. Tighten the fourteen (14) captive M3 screws. In the order shown in step 5, use a #2 Phillips bit and torque the screws to 6–7 inch pounds.
16. Reinstall the computer in the dock.
17. When the computer is placed in the powered dock, the UPS battery automatically reconnects. The UPS battery automatically begins charging from the powered dock.
18. Press the **Power** button to turn on the computer.

## About the Battery Status

Use the battery icon in the Status bar to see the charge level of your battery. If you want more detailed information on your battery, such as usage time, charge remaining on the battery, or battery health information, open the


**Settings** app  and tap **Battery**.

## Battery Status Icons

Icon	Status
	The battery charge is at 100%.
	The battery charge is at 50%.
	The battery charge is low. You need to charge the battery soon.
	The battery is critically low. You need to connect the computer to a dock.
	The computer is connected to the dock and the battery is charging.
	There is a battery error.

## Check the Battery Level and Usage


In addition to the Battery status icon and LED, you can monitor the battery status from the Settings app.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Battery**.

The current percentage of battery power remaining and the amount of usage time left on the battery appear on the screen. A list shows the battery usage for individual apps and services. For usage details, select one of the apps or services in the list. You can also access the Battery saver feature from the battery screen.

## Enable Airplane Mode

If you do not need to connect to any wireless networks, you can enable Airplane mode to turn Off the radios and save battery power.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings** .
3. In the **Network and Internet** section, tap the toggle button next to **Airplane mode**. An airplane icon appears in the status bar to indicate Airplane mode is turned On.

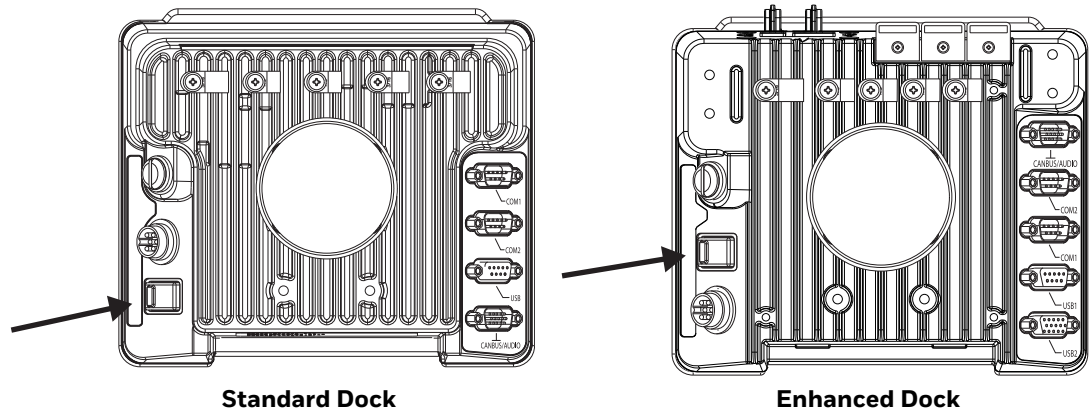


# Power On the Computer



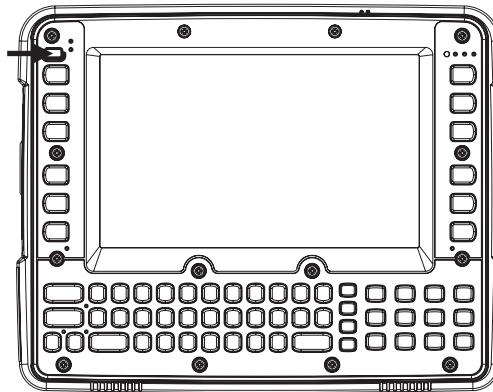
**Caution:** If a USB drive, such as a thumb drive, is attached to the Thor VM1A, the device will attempt to boot from the USB drive. Remove the USB drive and power up the computer again.

The dock has a power switch on the back. The “On” side of this rocker switch has a raised bump to allow the state of the switch to be determined when the switch may not be easily viewed, for example, after the dock is mounted in a vehicle.



After external power has been connected and the computer has been mounted in the dock, press the side of the power switch with the raised bump to pass power from the dock to the computer.

Next locate the **Power** button on the front of the VM1A.



Press the power button to turn the computer On. When the Welcome Screen is displayed or an application begins, the power up sequence is complete.

After initial power On, the computer can be configured to automatically power On. See [Power Management Modes](#) for more information.

# Power Cable Cautions



## Caution: When routing the power cable:

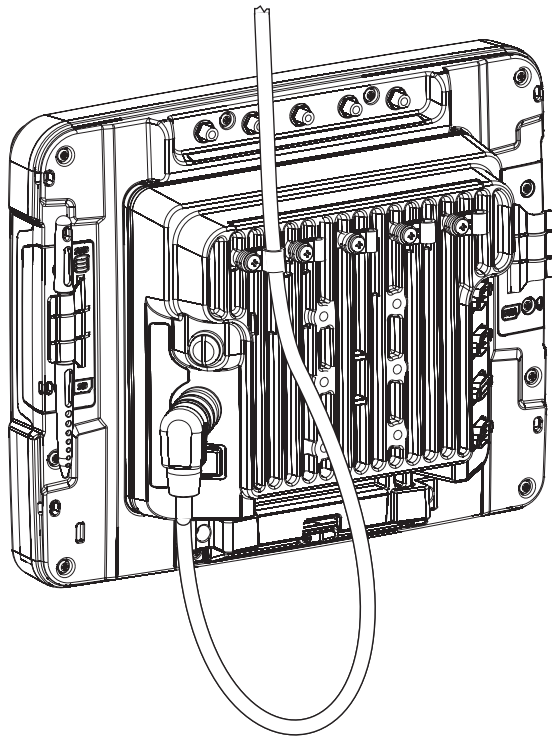
- Route power cable away from the outside of the fork truck.
- Choose a mounting location so that the power cable does not extend outside the vehicle and that provides sufficient clearance so that the power cable (especially the dock connector end) is not pressed against part of the vehicle.
- Use the proper [Strain Relief Cable Clamps](#) to secure cable.
- The power cable is less flexible in low temperature environments. Avoid sharp bends.



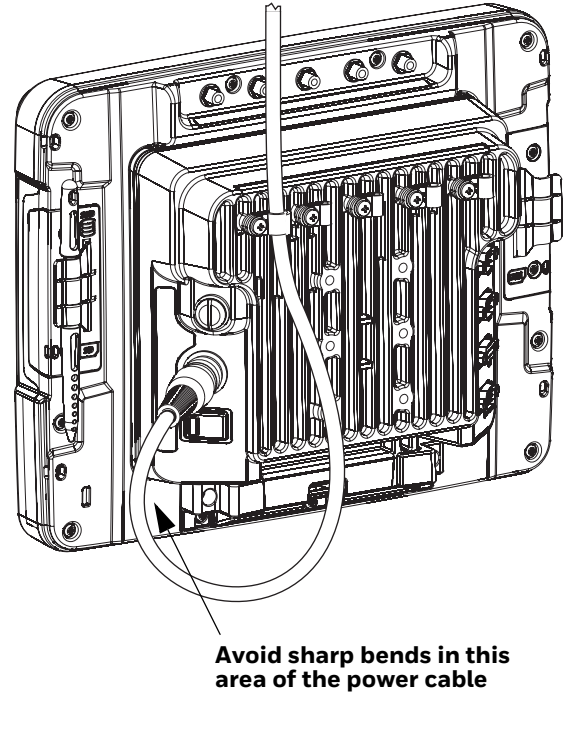
## Caution: Regularly inspect power cable for damage, especially in low temperature environments. Contact [Technical Assistance](#) for replacement cable options.

# Power Cable Routing

Power Cable with right-angle connector




Power cable with straight connector



Avoid sharp bends in this area of the power cable

# Power Mode

Select the desired power mode behavior.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell settings** > **Power Mode**.
3. Choose one of the following options:
  - **AC/DC**
  - **Ignition Control**
  - **Auto-On**
  - **UPS**
4. Select Power Schedule for **Sleep** and **Shutdown**.
5. Tap **Apply**.

## AC/DC

The computer is turned On and Off manually by the user using the power button on the front of the device.

## Ignition Control

The computer is turned On automatically when a signal is received via the Ignition Input wire, which is part of the DC Power Cable.

## Auto-On

The computer automatically powers up when power is provided. Auto-On is recommended when the VM1A is powered by AC. The computer will automatically power up after a power outage.

## UPS

The computer is turned On or Off manually by the user using the power button on the front of the device. The computer will shutdown automatically after one hour of inactivity.

## Power Schedule

Set the duration of time to put the VM1A into Sleep Mode or Shutdown.

**Note:** *The device will sleep or shutdown after the timeout of inactivity.*

## Welcome Screen

The first time you power On the computer, a Welcome screen appears.

During the manual setup process, follow the prompts on the screen as the wizard has you:

- Set the default language.
- Set up the Wi-Fi network connections.
- Set the time, date, and time zone.
- Personalize (name) the computer.
- Set up security and privacy options.
- Calibrate the touch screen (not required for PCAP touch screen).

Once you complete the initial setup, the Welcome screen no longer appears when you power on the computer and **Provisioning mode**, see [page 57](#), is automatically turned Off (disabled).

## Touch Screen Calibration

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **eGalaxCalibrator**.
3. Choose one of the following options:
  - **Draw Test**
  - **4 Points Calibration**
  - **9 Points Calibration**
  - **25 Points Calibration**
  - **Reset Parameter**
  - **About**
4. Follow the on-screen prompts to touch the targets, hold and then lift the stylus to complete the calibration process.

**Note:** *Touch screen calibration is not necessary with the optional Projective Capacitance (PCAP) touch screen.*

## Unlock the Screen

The screen lock automatically activates every time the computer is turned On or when the computer wakes from sleep mode.


- Swipe up from the lock icon at the bottom of the screen.

The level of security provided depends on the type of lock set (e.g., Swipe, Pattern, PIN, or Password). The default setting (Swipe) provides no protection against unauthorized access to your computer.

## Change the Screen Lock to Protect the Computer


After you start using the computer, you should change the screen lock to prevent unauthorized persons from accessing the computer without a password, pin, or pattern to unlock the touch screen once it has been locked.

The recommended setting for the Screen Lock is to enable a Password lock. Use a strong password value (e.g., include numbers, characters, special characters, and mix character case).

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Security & location** > **Screen lock**.
3. Choose one of the following options:
  - **None**
  - **Swipe**
  - **Pattern**
  - **PIN**
  - **Password**
4. Follow the on-screen prompts to complete the setup.
5. Exit the Settings app.

## Configure the Screen Backlight

The display has an ambient light sensor that automatically adjusts the backlight intensity to conserve power and ensure the display is readable. You can also manually set the backlight intensity if you do not want to use the automated adaptive brightness feature.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Display**.
3. Choose one of the following options:
  - To have the computer automatically adjust the brightness for your work environment, turn on the **Adaptive brightness** setting. You can tap **Adaptive brightness** to toggle the feature on or off.


- To set the brightness level manually, verify the **Adaptive brightness** feature is turned Off, and tap **Brightness Level**. Adjust the slider to set the brightness level.

To set the brightness level manually, verify the Adaptive brightness feature is turned off, and tap **Brightness level**.

- Use the **Blue Key + F7** keypress to increase backlight brightness
- Use the **Blue Key + F8** keypress to decrease backlight brightness.

## Screen Blanking

Screen blanking (blackout) can be enabled when the vehicle is in motion. Once screen blanking is enabled, the display is blanked out (or a preselected zoom area is displayed) any time when the vehicle is in motion. If the screen blanking cable is removed, screen blanking is disabled and the display remains On.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell Settings** > **Screen Blanking**.

## Motion Detection Action

Determine what to do when motion is detected:

- **Display Always Active** - The display does not change when motion is detected.
- **Display Black** - The display is blanked out when motion is detected.
- **Display Freeze** - The display is frozen at the time motion is detected.
- **Zoom Zone** - A preconfigured zoom area is displayed when motion is detected.

## Motion Timeout Settings

Screen blanking can be configured to provide delays.

- **Delay on Motion** - Configure the delay between motion detection and screen blanking. The default is 2 seconds.
- **Delay on Stop** - Configure the delay between motion stopping and the screen resuming normal behavior. The default is 2 seconds.

## Motion Detection Source

Select the Motion Detection Source. The computer supports the screen blanking box to determine motion.

Select the port (COM1 or COM2) the blanking box is attached.

# Zoom Zone

## Set Zoom Area

The Zoom Area can be selected from the current active desktop display. To set the zoom area:


1. Display the desired content on the VM1A desktop.
2. Open the Screen Blanking interface.
3. Select **Zoom Zone** in Motion Detection Action.
4. Tap the **Set Zoom Area** button.
5. Select the desired zoom area by tapping on the upper left corner of the desired area and dragging to the lower right corner of the desired area. The selected area is highlighted by a red outline.

**Note:** *Be sure to select the desired area from the upper left corner to the lower right. Selecting the area from a different corner may result in nothing (a black box) being displayed.*

6. If the selected area is not satisfactory, repeat the step above to reselect an area.
7. To save, tap the check mark in the upper right corner.

## Show Zoom Area

Tap the **Show Zoom Area** button to show the currently selected zoom area. The selected area is highlighted in red.

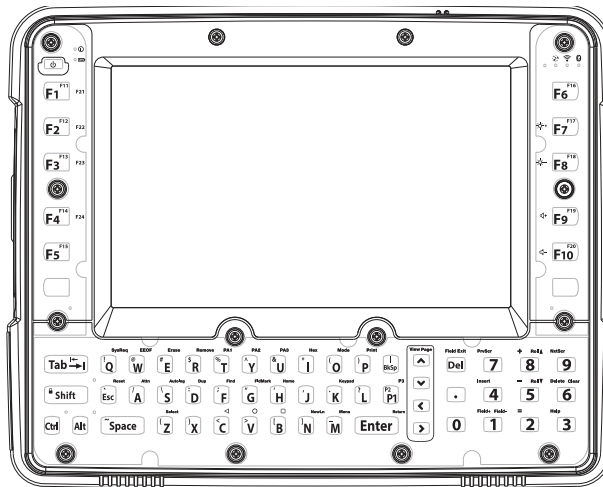
When finished, tap the back button .

## Test Zoom Area

Tap the **Test Zoom Area** button.

- The zoom image is displayed.

# About the Keypad



The keyboard keys are backlit.

- Standard ANSI key labels are printed on the keys. Some commands, 5250 and 3270, are printed above the keys and are accessed by pressing either the blue or orange keys first. For keypress order, [Keypad Blue Map](#).
- By default, the keyboard backlight follows the display backlight. When the display backlight is On, the keyboard backlight is On.
- If the display backlight brightness is increased (or decreased) the keyboard backlight brightness is increased (or decreased).

The keyboard backlight and the display share the same timer. To configure the backlight, see [Configure the Screen Backlight](#) on page 17.

## Keyboard Options

The Orange, Blue, ALT, CTRL, and Shift key are sticky keys. The [Keyboard LEDs](#) identify the active sticky modifier mode state of the keyboard.

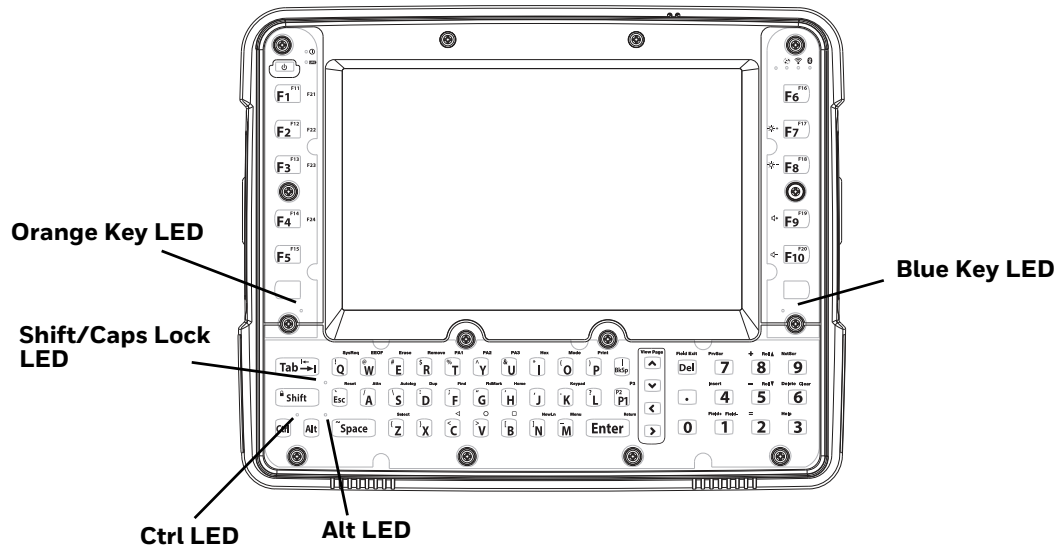
## USB Keyboard/Mouse

A standard USB keyboard or mouse can be attached to the computer using the appropriate adapter cable.

The VM1052CABLE USB Y cable attaches to the dock and provides a type A USB connector.



# Keyboard LEDs



The keyboard LEDs are located near the specified key.

## Blue Key LED

LED Behavior	Status
Solid Blue	<ul style="list-style-type: none"> <li>Indicates the Blue Key modifier key is active. Blue Key mode is invoked for the next keypress only.</li> <li>Pressing the Blue Key a second time exits this modifier mode and turns off the LED.</li> </ul>
Off	Blue Key mode is not involved.

## Orange Key LED

LED Behavior	Status
Solid Red	<ul style="list-style-type: none"> <li>Indicates the Orange Key modifier key is active. Orange Key modes in invoked for the next keypress only.</li> <li>Pressing the Orange key a second time exits this modifier mode and turns off the LED.</li> <li>Pressing the Orange key followed by the Shift key places the system in Caps Lock mode.</li> <li>To exit Caps Lock mode, press the Shift key again.</li> </ul>
Off	Neither Orange Key or Caps Lock mode is invoked.

## Shift LED

LED Behavior	Status
Solid Green	<ul style="list-style-type: none"> <li>Indicates the keypad is in Caps Lock mode. Caps Lock mode is invoked until canceled.</li> <li>Pressing the Orange key followed by the Shift key places the system in Caps Lock mode.</li> <li>To exit Caps Lock mode, press the Shift key again.</li> </ul>
Off	Neither Shift or Caps Lock mode is invoked.

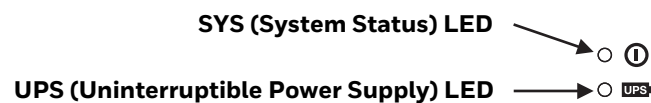
## Ctrl LED

LED Behavior	Status
Solid Green	<ul style="list-style-type: none"> <li>Indicates the Ctrl modifier key is active. Ctrl mode is invoked for the next keypress only.</li> <li>Pressing the Ctrl key a second time exits this modifier mode and turns off the LED.</li> </ul>
Off	Ctrl mode is not invoked.

## Alt LED

LED Behavior	Status
Solid Green	<ul style="list-style-type: none"> <li>Indicates the Alt modifier key is active. Alt mode is invoked for the next keypress only.</li> <li>Pressing the Alt key a second time exits this modifier mode and turns off the LED.</li> </ul>
Off	Alt mode is not invoked.

## System LEDs



### SYS (System Status) LED

LED Behavior	System State
Solid White	<ul style="list-style-type: none"> <li>On</li> <li>On, but in Sleep Mode</li> </ul>
Blinking White	<ul style="list-style-type: none"> <li>CPU temperature is less than -20°C. The unit must be moved to an environment warmer than -20°C before it will boot up.</li> </ul>

LED Behavior	System State
Off	• Off

## UPS Status LED

The behavior of the UPS LED depends if external power is connected or not.

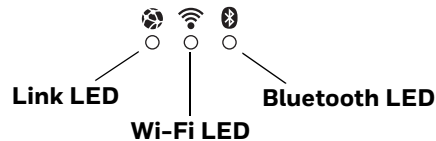
### External Power Present

LED Behavior	Status
Solid Green	UPS is more than 50% charged
Solid Amber	UPS is less than 50% charged
Blinking Red	Battery error

### External Power Not Present

LED Behavior	Status
Blinking Green	UPS is more than 30% charged
Blinking Amber	UPS is less than 30% charged
Off	Unit is off

## Connection LEDs



### Link LED

LED Behavior	Status
Solid Green	Indicates a connection to Host. By default, the Link LED is disabled.
Blinking Green	Indicates a ping response has been received within five times of the user specified response time.
Off	Indicates no connection to Host.

### Wi-Fi LED

LED Behavior	Status
Solid White	Indicates a connection with an IP address to an Access Point.
Off	Indicates no connection to an Access Point.

## Bluetooth LED

LED Behavior	Status
Solid Blue	Bluetooth is paired and connected to a device.
Blinking Blue	Bluetooth is discovering and connecting to Bluetooth devices.
Off	Bluetooth hardware has been turned off.

## About the Audio Features

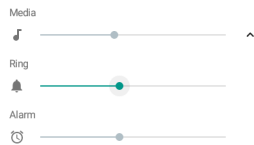
The computer has speakers, a microphone, and several software tools to configure sound volume.

### Adjust Speaker Volume




1. The speaker volume can be adjusted via the keypad:
  - Use the **Blue Key + F9** keypress to increase speaker volume
  - Use the **Blue Key + F10** keypress to decrease speaker volume
2. The volume slider appears.



3. Tap the down arrow  to expand the options.




Use the stylus or the Volume buttons to adjust each volume type.

- Use the  slider for notifications.
- Use the  slider for media (e.g., music, videos and other media).
- Use the  slider for alarms.

## Audio Settings

This section describes the audio and sound settings you can configure in the Settings app.

- To change audio settings, start the **Settings** app  and tap **Sound**.

## Sound Settings

**Note:** Phone calls are not supported with VM1A.

Setting	Description
Media Volume Alarm Volume Ring Volume	Use the sliders to set the volume for media (e.g., music, videos, and games) and alarms.
Do Not Disturb Preferences	Set app priority allowances, block visual disturbances, and set automatic rules.
Phone Ringtone	Select a default ringtone.
Advanced	
Default notification sound	Select a notification sound.
Default alarm sound	Select a alarm sound.
Other sounds	
Dial pad sounds	Enable or disable an audio tone when you touch the numbers.
Screen locking sounds	Enable or disable an audio tone when the screen is locked.
Charging sounds	Enable or disable an audio tone when the computer is charging.
Touch sounds	Enable or disable audio sounds when you use the touch screen.
Emergency alerts	Select to configure Emergency alert settings. Turn alerts on or off, specify tone, vibrate or text-to-speech.

## About the Defroster

Thor VM1A comes equipped with LCD window defroster to support extended use in freezers as well as transitions into and out of freezer areas.

The defroster can be set to:

- **Automatic**  
Turn On automatically to defrost the window based on external temperature changes and timers.
- **Manual**  
The user can control the defroster by manually turning it On or Off.


## Automatic mode

This is the default mode of operation for the defroster. The defroster activation is controlled by the specifications entered by the user. When the temperature of the computer is below the Defroster enable temperature, the defroster will turn On. The defroster will turn Off after the temperature is reached.

## How Automatic Mode Works

Automatic defroster management saves power since the defroster is automatically controlled by the system based on Defroster enable temperature. Automatic mode is enabled by default.

### Turn the Defroster On/Off in Automatic Mode

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Defroster**.
3. Tap the **Automatic/Manual** button to switch between the Automatic or Manual mode. The active mode appears on the button. When Automatic mode is enabled, the Defroster Off button is not active.
4. Select the desired Defroster enable temperature.


## Manual mode

When enabled, defroster activation is controlled solely by the user. No temperature monitoring and timers are used to control the defroster. The user must manually turn the defroster On or Off.


### How Manual Mode Works

Manual mode gives you full control over turning the defroster On or Off. When Manual mode is enabled, automatic mode no longer used to control the defroster's behavior. To turn the defroster on/off, you must tap a button on the Defroster screen in the Settings app. Manual mode is disabled by default.

### Turn Manual Mode On/Off

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Defroster**.
3. Tap the **Automatic/Manual** button to switch between the Automatic or Manual mode. The active mode appears on the button. When Manual mode is enabled, the Defroster On/Off button is active.
4. Tap the **Defroster On/Off** button to control the defroster.

## Configure the Defroster in the Settings App

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Defroster**.
3. Modify the defroster parameters.

4. Tap **Update** to apply the changes.
5. Tap **OK**.

## Defroster Parameters

You can configure the following **Defroster** parameters in the **Settings** app to fit your specific application environment.

Defroster Setting	Description
Defroster	Enable or Disable the Defroster feature and temperature monitoring. Tap the switch button at the top of the screen to toggle the feature On or Off. The default is On.
Defroster enabled temperature	Set the temperature (°C) that the computer must fall to before the system determines cold storage entry and defroster use.
Defroster State	Shows current state of defroster, <b>On</b> or <b>Off</b> .
Temperature	Shows detected LCD window temperature
Manual/Automatic	Tap the button to switch between <b>Automatic</b> mode or <b>Manual</b> mode. To learn more about the modes, see <a href="#">How Automatic Mode Works</a> on page 26 and <a href="#">Manual mode</a> on page 26.
Defroster On/Off	Tap the button to switch between <b>On</b> and <b>Off</b> .

## Insert a SD Card

You can use a SD card to increase file storage capacity or to install software. Honeywell recommends the use of Single Level Cell (SLC) industrial grade SD or SDHC memory cards with the computer for maximum performance and durability.

**Note:** *Format the memory card before initial use.*

## Equipment Required

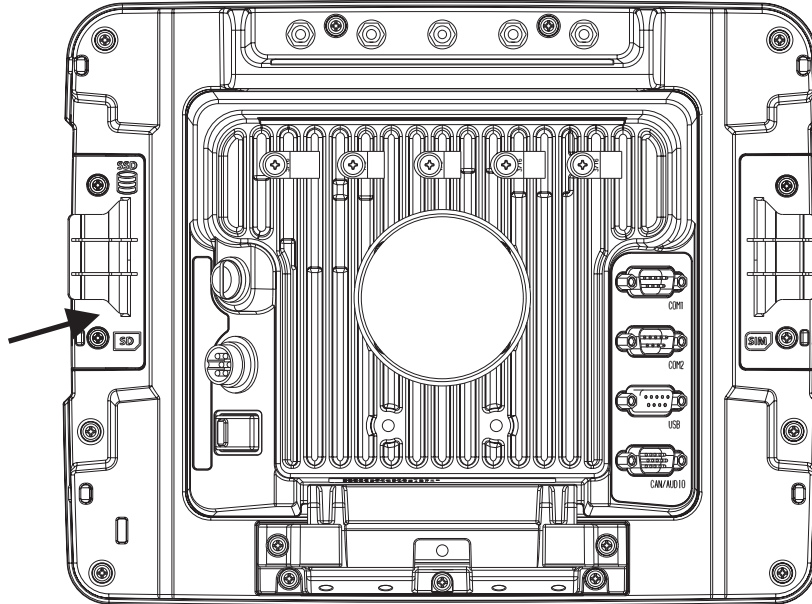
The following equipment is user-supplied:

- Torque tool capable of measuring inch pounds
- SD card up to 512 GB
- #2 Phillips screwdriver bit

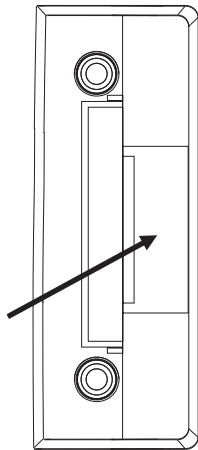
## Installation Procedure

1. For convenience, the computer can be removed from the dock, though it is not necessary. If the computer remains in the dock, disconnect the power cable from the dock.
2. Press and hold the **Power** button until the options menu appears. Tap **Power Off**.

3. If the computer was removed from the dock, place the computer face down on a stable surface.
4. Using a #2 Phillips bit loosen the M3 screws and then remove the access panel with the SD label. This panel is on the left hand side when the computer is face down with the top away from the user.



5. Locate the SD card installation slot.



6. Slide the SD card into the slot. The label side (front) of the SD card faces toward the back of the computer.
7. Reattach the access panel, torquing the screws to 4-5 inch pounds.
8. If removed, reinstall the computer in the dock.
9. Press the **Power** button to turn on the computer.



# Scanners

VM1A supports external scanners through USB, Serial Port, and Bluetooth.

For more information:

- [Connect a Bluetooth Scanner](#) for connecting Bluetooth Scanners
- [Connect a Tethered Scanner](#) for connecting a scanner through the serial port
- [USB Scanner](#) for connecting a scanner through USB

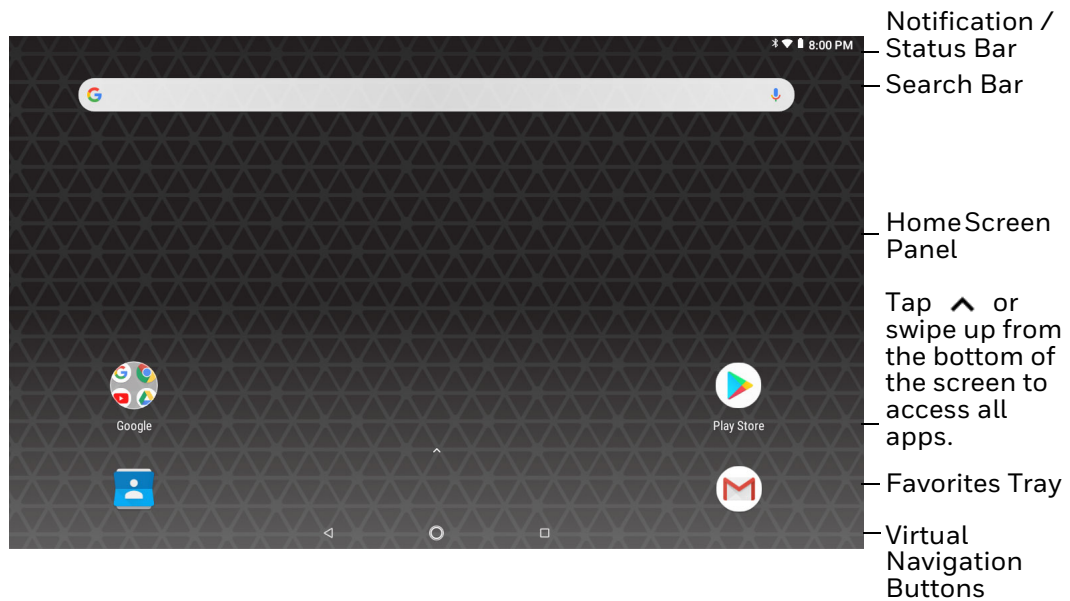


# ABOUT THE USER INTERFACE AND APPLICATIONS

Use this chapter to learn about the user interface and how to interact with the screen. You can also use this chapter to learn about the Honeywell applications on the computer.

## About the User Interface

The Android 8 operating system provides a touch-friendly and easy-to-navigate user interface. When you turn On the VM1A, the Home screen is the first screen that appears after language provision and the startup Wizard is complete.



### Home Screen Features




Item	Description
Notifications panel / Status bar	Status icons to the left tell you when an app has sent notifications, such as an arriving message. System icons to the right display the current wireless and network connection state and battery level.

Item	Description
Search bar	Search the Internet or the computer using Google™. Touch the microphone icon in the search box to initiate a voice search or command.
Home Screen Panel	You can create more than one custom Home screen panel. Swipe left or right on the Home to switch between your custom panels.
Favorites tray	App icons in the customizable tray are visible on all Home screen panels.

## Navigation Buttons

Your computer has virtual buttons on the front panel below the Favorites tray for easy navigation and quick feature access when using the computer.

### Navigation Buttons

Button	Description	
	Back	Return to the previous screen.
	Home	Return to the Home screen.
	Recent Apps	View and switch between recently used apps.









To access the navigation buttons on the keypad:




- Use the **Blue Key + C** keypress to return to the previous screen.
- Use the **Blue Key + V** keypress to return to the Home screen.
- Use the **Blue Key + B** keypress to view and switch between recently used apps.

## About Status Bar Icons

Status and notification icons show you the current status of your network, the battery, notifications, and sounds. Use the table below to understand some of the most common icons.


### Status and Notification Icons

Icon	Description	Icon	Description
	Pending alarm and Alarm is set		Airplane mode is turned On.
	New email		Bluetooth is turned On.
	Computer is connected to a PC with a USB cable		SD card is full
	Synchronizing data		Error with sync or sign-in

Icon	Description	Icon	Description
	Wi-Fi network connected with full signal strength		Wi-Fi network connected but no signal strength
	Computer is connected with Ethernet		



## Remap a Button or Key

You can change the default function of the physical buttons and keys.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell settings** > **Key Remap**.
3. Tap the plus sign (+).
4. Press the button or key you want to remap.
5. Tap **OK**.
6. Tap **Keys** or **Applications** to view the available functions.
7. Select the function you want assigned to the button. The function you selected now appears next to the button or key name.

## Restore Default Button Action

To restore the button default action:

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell settings** > **Key remap**.
3. Tap the clean icon .
4. Choose the remapped button(s) you want restored to the default setting.
  - Tap the check box next to the button.


OR

  - Tap **All Select** to choose all the buttons.
5. Tap **Delete**.

## View and Manage Notifications

You can view recent events on the computer, manage system notifications, change a setting, or quickly respond to an app notification by opening the notifications panel.

When a notification icon appears in the status bar at the top of the screen:

1. Swipe down from the top of the screen to open the notifications panel.
2. Respond to the notification. You can take one of the following actions:
  - Tap the notification to open the associated app.
  - Tap a quick-reply or action command (e.g., Reply, Archive) if available.
  - Swipe the notification sideways, off the screen to dismiss it. Note that some notifications cannot be dismissed.
  - Slide the notification left or right to reveal the settings icon . Choose between **Show notifications silently**, **Don't silence**, or **More Settings**.

To close the notification panel, swipe up from the bottom of the screen, or tap the Back or Home buttons.

## Open Quick Settings

Use the Quick Settings screen to quickly access common settings. Tap an icon to toggle the feature on/off or to open additional settings.

- To open Quick Settings, swipe down twice from the status bar at the top of the screen.
- To close Quick Settings, tap the top of the screen, Back or Home buttons.

## Customize the Home Screen

You can add application icons to any Home screen for easier access.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap and hold the app you want to add.
3. Drag and drop the app icon into place.
  - If you want to add another home screen, drag the icon to the right edge of the screen before releasing the icon.
  - If you want to create a folder, drag and drop the icon on top of another icon.

To add widgets or customize the look of the Home Screen:

1. Tap and hold an empty section of the Home screen.
2. Select either **Wallpapers**, **Widgets**, or **Home Settings**.

## Customize the Favorites Tray

Modify the Favorites tray to contain the apps you use the most.

1. Tap and hold the app icon you want to replace on the Favorites tray.
2. Drag and drop the app on “**X Remove**” at the top of the screen.
3. Swipe up from the bottom of the screen to access all apps.
4. Tap and hold the icon of the app you want to add.
5. Drag and drop the icon into position on the Favorites tray.

## Use Google™ Search

Use the Google Search field on the Home screen to help you find anything you need on the computer or on the web.

1. On the Home screen, tap inside the Google Search box and begin to type your search term.

As you type, suggestions from Google web search appear below the Search box, and results from the computer (such as apps or contacts) appear below the web search results.

2. Tap a suggestion to search for it immediately, or touch the arrow to add the term to the search field without starting to search.

## About Screen Gestures

Use the stylus to manipulate icons, buttons, menus, the on-screen keyboard, and other items on the screen.

- **Tap**

Tap to select something, toggle a setting on or off, or activate a field for text entry. An on-screen keyboard automatically appears for text entry.

- **Tap and hold**

Tap and hold an item but do not lift the stylus until an action occurs.

- **Drag and drop**

Tap and hold an item, and then slide your stylus across the screen until you reach the target position. Lift your stylus off the screen to drop the item in place.

- **Swipe**

Quickly move your stylus across the screen, without pausing when you first touch. For example, you can swipe a Home screen left or right to view the other Home screens.

- **Slide**


Slowly move your stylus across the screen, without pausing when you first touch. For example, you can slide a notification to the left until the Settings gear is revealed.

- **Double-tap**

Tap quickly twice on a web page, map, or other screen to zoom in. Double-tap again to zoom out.

## Set the Time Zone

The computer gets the current date and time from its network connection. If preferred, you can change this behavior and manually set the time zone for your location.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **System** > **Date & time**.
3. Tap **Automatic time zone** to turn off the feature.
4. Tap **Select time zone** and choose the time zone for your location.

## Set PCAP Touch Screen Sensitivity Mode

To set the PCAP touch screen sensitivity press the **Blue Key + F6** to toggle between **Normal Mode** (stylus/finger/light glove) and **Thick Glove Mode**.
















# About Honeywell Applications

Honeywell applications help you troubleshoot and connect your computer to other devices and networks. Some of the applications in this table are located in the Power Tools app. To learn more about Honeywell Power Tools, go to [www.honeywellaidc.com](http://www.honeywellaidc.com) to download the *Dolphin Power Tools User Guide*.

## Honeywell Applications Available on the Computer

Icon	Application	Description
	AutoInstall Settings	Enable the AutoInstall feature, to automatically install *.zip or *.apk files containing applications saved in the Internal shared storage\honeywell\autoinstall folder and IPSM card\honeywell\autotinstall folder on the computer during the power-up boot or reboot process.
	Demos	Honeywell Demo apps demonstrate the basic capabilities of the computer and are not intended as functional business solutions. The demos included, demonstrate scanning, signature capture, NFC functionality, and printing via Bluetooth technology. Information on how to create custom applications for your Honeywell computer can be found in the Honeywell Software Development Kit (SDK) for Android, available from the <a href="#">Technical Support Downloads Portal</a> .
	HUpgrader	Use to the HUpgrader app to view the current OTA version on the computer, check for updates, or initiate an OTA upgrade from storage.
	Scanner Edge	Use the Scanner Edge app to connect or disconnect a Bluetooth scanner. <ul style="list-style-type: none"> <li>View connected devices.</li> <li>Pair with a Bluetooth Scanner.</li> <li>Disconnect a Bluetooth Scanner.</li> </ul>
<b>Power Tools</b>		
	BattMon	BattMon provides information on the charge status and health of the battery, and provides access to activate battery status notifications and battery charging history logs.
	Config Apps	Config Apps provides the ability to enable, disable, and uninstall applications.
	Configure Autorun	Configure Autorun provides the ability to set applications to automatically run after a reboot.
	Diagnostic Information	Diagnostic Information provides access to system statistics, notifications and version information about the computer.

Icon	Application	Description
	EZConfig	EZConfig supports advanced customization and configuration of the hand held computer. EZConfig includes a standard XML editor and configuration bar code scanner feature.
	WiFi Diagnostic	Use application to: <ul style="list-style-type: none"> <li>• View Wi-Fi radio status information about a connected access point or a list of other available access points in range of the Wi-Fi radio.</li> <li>• Use the Route utility to view packet destination gateway information across the subnets.</li> <li>• Use the IPConfig utility to view IP parameters for the on-board network adapters.</li> <li>• Use the Ping utility to verify communication links or to make sure a specific IP address is working.</li> </ul>
	Wireless Tether	Use to enable range tracking and customize out-of-range alerts for Bluetooth devices paired and tethered to your hand held computer.

## Applications You Can Download to the Computer

You can download Honeywell applications to extend the capabilities of the computer. You may need to purchase a license to run some applications. To learn more about the applications described in this section and other Honeywell software solutions, go to [www.honeywellaidc.com](http://www.honeywellaidc.com) > **Browse Products** > **Software**.

### About Honeywell Enterprise Browser

Enterprise Browser is a locked-down enterprise Web client application designed for Honeywell computers. It provides a controlled Web application environment that helps enterprises increase productivity and reduce IT management expenses. You can configure Enterprise Browser for your specific application requirements and design custom web applications that run through the Enterprise Browser to provide your users with an easy-to-use yet controlled experience.

If Enterprise Browser is not included on your computer model, you can download a trial version for evaluation. After the evaluation period expires, you need to purchase a license. For more information about Enterprise Browser, visit [www.honeywellaidc.com](http://www.honeywellaidc.com).

### About Honeywell Launcher

Launcher is a configurable locked-down menu program designed for Honeywell computers that prevents end-users from accessing the start menu and other non-authorized applications. Use Launcher to provide a platform where your computer users are limited to running only company-approved applications and prevent

them from initiating unauthorized configuration changes. You can also use Honeywell Launcher together with Honeywell Enterprise Browser to create a single-purpose device configuration.

If Launcher is not included on your computer model, you can download a trial version of the software for evaluation. After the evaluation period expires, you need to purchase a license. For more information about Launcher, visit [www.honeywellaidc.com](http://www.honeywellaidc.com).



## Honeywell SmartTE

Honeywell SmartTE is a wireless terminal emulation and centralized management software program. SmartTE is designed to centralize wireless session/client configurations, secure end-to-end wireless data transmission, program screen recognition, track unique devices and usage, and provide visible analytical and application data.

For more information, please contact [Technical Assistance](#) on page ix.

## Unlock Developer Options

Developer options only appear in the Settings app if you unlock the feature. If you are a developer working with the computer, you can easily unlock the additional settings to use for testing and debugging applications under development for the computer.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **System** > **About phone**.
3. Tap **Build number** seven times. A message appears informing you that you are now a developer.
4. Open **Settings**  and scroll to the bottom of the list.
5. Tap **Developer options**.



# CONFIGURE THE COMPUTER

Use this chapter to learn about the available methods for configuring your computer. You can also use this chapter to learn how to configure network communication and wireless security.


## How to Configure the Computer

You can configure many parameters on the computer such as the bar code symbologies it decodes or the network settings. The values you set for these parameters determine how the computer operates.


You configure the computer using the Settings app.

### Start the Settings App

The Settings app is available from the all apps menu and the notification panel.

- Swipe up from the bottom of the Home screen to access all apps, and then tap Settings .

OR



- Swipe down from the top of the Home screen, and then select  in the status bar.


### About the Structure of the Settings App

Use this section to learn about the structure of the Settings app so you can find parameters quickly.

**Note:** *The Settings app varies by computer model and OS version. Your computer may not include all the features outlined in this section.*

When you open the Settings app, suggestions may appear at the top of the list.

- Tap  or  to expand or collapse the suggestion list.

- Tap a suggestion to open the settings screen or app relevant to the suggestion.
- Tap the , and then **Remove** to dismiss the suggestion.


### Network & Internet

Setting	Description
Wi-Fi	<ul style="list-style-type: none"> <li>• Turn Wi-Fi on or off.</li> <li>• Lists available Wi-Fi networks in range and the connection status when the radio is turned on.</li> <li>• Add a network Wi-Fi connection.</li> <li>• Tap Wi-Fi preferences to view saved networks, turn public network notifications on or off, modify WLAN radio sleep settings, view MAC and IP address information.</li> </ul>
Data usage	<ul style="list-style-type: none"> <li>• Manage data usage.</li> <li>• View Wi-Fi data use statistics for the current data use cycle.</li> <li>• Turn network restrictions for metered WLAN networks on or off.</li> </ul>
Hotspot & tethering	<ul style="list-style-type: none"> <li>• Enable or disable USB tethering or Bluetooth tethering for sharing data connections.</li> </ul>
Ethernet	<ul style="list-style-type: none"> <li>• Turn Ethernet connection on and off.</li> <li>• Configure Ethernet connections and set up proxy settings when Ethernet setting is turned on.</li> </ul>
VPN	Set the password parameters for a virtual private network (VPN) connection.
Airplane mode	Turn Airplane mode on or off.

### Connected devices

Setting	Description
Bluetooth	<ul style="list-style-type: none"> <li>• Turn the Bluetooth radio on or off.</li> <li>• Lists Bluetooth enabled devices in range when the radio is turned on.</li> <li>• Connect to a Bluetooth Device.</li> </ul>
Cast	<ul style="list-style-type: none"> <li>• Enable wireless display.</li> <li>• Connect to nearby devices.</li> </ul>
NFC	<ul style="list-style-type: none"> <li>• Turn Near Field Communication (NFC) on or off. When the NFC radio is enabled, data exchanges are allowed when the computer touches another NFC enabled device.</li> </ul>
Android Beam	<ul style="list-style-type: none"> <li>• Turn the Android Beam feature on or off. When NFC is enabled, this feature is accessible. You can beam app content to another NFC capable device by holding the devices close together. The app determines what content is transmitted to the other device.</li> </ul>
Printing	Configure print options.
USB	Configure USB connection.

## Apps & notifications

Setting	Description
Apps	<ul style="list-style-type: none"> <li>View a list of all apps installed on the computer or system services running.</li> </ul>
Notifications	<ul style="list-style-type: none"> <li>Tap App notifications to set the notification settings for each app.</li> <li>Tap On the lock screen to set Show all notification content or Don't show notifications at all.</li> <li>Turn Allow notification dots and blink light On or Off.</li> <li>Select Default notification sound.</li> </ul>
App permissions	<ul style="list-style-type: none"> <li>View and manage app permissions.</li> <li>Tap , to show or hide system services or to reset app preferences.</li> </ul>
Advanced	
Default apps	View and manage app defaults.
Emergency alerts	View and manage emergency notifications.
Special app access	Manage apps with special access.

## Battery

Setting	Description
Battery	<ul style="list-style-type: none"> <li>View battery usage data and the current battery state.</li> <li>Access Battery Saver and Battery Optimization features.</li> </ul>
Battery Saver	<ul style="list-style-type: none"> <li>Turn the Battery Saver on or off.</li> <li>Set time to turn on automatically.</li> </ul>
Battery Percentage	Enable battery percentage in status bar.
Adaptive Brightness	Turn adaptive brightness on or off.
Sleep	Configure sleep mode time frame.
Ambient display	Turn on or off to show new notifications on wake screen.

## Display

In the Settings app, select **Display** to access the following settings.

Setting	Description
Brightness level	Set the Brightness level manually if Adaptive brightness feature is turned Off.
Night light	Activate the Night light feature to adjust the screen tint to a light amber for easier viewing and reading in dim light or for the hours you use the device before going to sleep. Set the feature to stay on or define a schedule to automatically turn the feature On/Off. You can manually adjust the intensity of the amber hue once the feature is activated.
Adaptive brightness	Set how the screen in sleep mode responds when new notifications are received (e.g., wake or do not wake).

Setting	Description
Wallpaper	Set the wallpaper.
Advanced	
Sleep	Set the inactivity time limit before the unit automatically turns of the screen to save battery power (seconds or minutes).
Keypad Back-light	Set the inactivity time limit before the keypad backlight automatically turns off (seconds or minutes).
Font size	Set the default on-screen text size.
Screen Saver	Set the screen saver.
Ambient display	Set how the screen in sleep mode responds when new notifications are received (e.g., wake or do not wake).

## Sound

In the Settings app, select **Sound** to modify the audio and sound settings. To learn more, see [Audio Settings](#) on page 24.

## Storage

In the Settings app, select Storage to view statistics on available and used storage space on the device and on any portable storage cards installed.

## Security & Location

In the Settings app, select **Security & Location** view latest Security scan results, security updates and phone encryption status. Access additional settings related to device security.

Setting	Description
Screen Lock	Activate and configure a screen lock (i.e., None, Swipe, Pattern, Pin, Password).
Lock screen preferences	Configure the following lock screen parameters: <ul style="list-style-type: none"> <li>Select notifications you want shown on the lock screen.</li> <li>Enable or disable adding users from the lock screen.</li> <li>Customize the lock screen message.</li> </ul>
Smart Lock	Define safe conditions or locations where your phone will stay unlocked (e.g. On-body, Trusted places, Trusted devices, Voice Match).
Location	<ul style="list-style-type: none"> <li>Turn location services (Google and GPS satellite data) On or Off.</li> <li>View and manage app-level location service permissions.</li> <li>Set location mode accuracy and view location request history.</li> <li>Turn Wi-Fi and/or Bluetooth scanning On or Off. When enabled system apps and services are allowed to detect Wi-Fi networks or Bluetooth devices at any time to improve location services.</li> </ul>
Show passwords	Enable or disable showing characters briefly as you type.
Device admin apps	Manage administrator privileges.
Encryption & credentials	View encryption status and manage trusted credentials (e.g., view, install, clear, and edit).



Setting	Description
Trusted agents	View and enable/disable trusted agent apps such as, Smart Lock by Google on the device. Trusted agents bypass security based on set parameters.
Screen pinning	Enable or disable the screen pinning feature. When enabled you can pin the device screen to a recently used app where it stays until you unpin the app via the security method chosen.
Apps with usage access	View and manage apps with usage permission.

## Users & Accounts

In the Settings app, select **Users & accounts** to access the following settings.

Setting	Description
Users	<ul style="list-style-type: none"> <li>Modify the owner profile name and add profiles for other people who use the computer.</li> <li>Activate a different user profile.</li> </ul>
Add account	Select to add and manage Corporate or Email account on the computer.
Emergency Information	Enter emergency information for the active user profile. The information you enter may be used by first responders in an emergency. Anyone can read the information from the emergency dialer without unlocking the computer.
Automatically sync data	Turn auto-sync On or Off for accounts. Turning the feature On allows apps to refresh data automatically.
Add users from lock screen	Enable or disable allowing users to be added from the lock screen.

## Honeywell Settings

Setting	Description
Digital Scan Button	Enable and configure the optional digital scan button. To learn more, see <a href="#">About the Optional Digital Scan Button</a> on page 37.
Honeywell Power	Turn unattended mode on or off.
HXLogger	<p>The HXLogger is an advanced diagnostic log service that provides a basic log service, plug-ins for modified log services, and a log manager.</p> <ul style="list-style-type: none"> <li>Tap <b>HXLogger</b> to turn the basic log service on or off. When enabled the service records app and system diagnostic troubleshooting information into four basic log files: main log file, radio log, event log, and kernel log.</li> <li>Tap <b>Plugin</b> to view and enable additional log services and custom plug-ins.</li> <li>Tap <b>Manager</b>, to change the default log path, delete logs or upload logs for technical support troubleshooting.</li> </ul>
I/O Ports	<ul style="list-style-type: none"> <li>Turn USB Powered in Sleep On/Off.</li> <li>Turn 5V on COM1 On/Off.</li> <li>Turn 5V on COM2 On/Off.</li> <li>Set COM1 settings.</li> <li>Set COM2 settings.</li> </ul>

Setting	Description
Key Remap	Change (remap) a button or key function. To learn more, see <a href="#">Remap a Button or Key</a> on page 33.
Link LED Indicator	Set Link LED Indicator settings: IP address, ping rate, failed ping count threshold, degraded link threshold, and failed link threshold.
Misc	Turn on or off miscellaneous features. <ul style="list-style-type: none"> <li>Permanent Caps Lock Enable</li> <li>Touch Screen Disable</li> <li>Enable Keypad Backlight</li> </ul>
Power Mode	<ul style="list-style-type: none"> <li>Set Power Mode to AC/DC, Auto-On, Ignition Control, or UPS.</li> <li>Set Power Schedule for Switch state to Sleep and Switch state to Shutdown.</li> </ul>
Provisioning Mode	Enable or disable unrestricted installation of applications, certificates, configuration files, and licenses. Provisioning mode is turned off by default. To learn more <a href="#">About Provisioning Mode</a> , see page 70.
Scanning	Enable or disable serial scanner COM1 and COM2. Configure serial scanner COM1 and COM2
Screen Blanking	Configure screen blanking settings. To learn more, see <a href="#">page 18</a> .
Staging Hub Agent	Use this agent and settings to connect the computer to the Honeywell Staging Hub Foundation software platform; a centralized software platform IT integrators and administrators can use as a solution for managing, monitoring and deploying Honeywell devices in a connected workspace environment.
Web Applications	Enables access for the Honeywell Mobility SDK for Web apps and lets you set a port.

## Google

In the Settings app, select **Google** to Set up and manage your Google accounts and services.

## System

Setting	Description
Language & input	<ul style="list-style-type: none"> <li>Set the active language.</li> <li>Configure auto-typing features such as capitalization, punctuation, spell check, and the personal dictionary.</li> <li>Set and manage Keyboard and input methods (Virtual and Physical).</li> <li>Set text-to-speech output.</li> <li>Adjusts the pointer speed.</li> </ul>
Date & time	Configure all date and time settings
Backup	Perform a Factory Reset. To learn more, see <a href="#">About a Factory Data Reset</a> on page 76.
Developer options	Enable developer-specific options such as USB debugging and SD card protection. This option only appears under System settings if you enable the feature. To learn more, see <a href="#">Unlock Developer Options</a> on page 39.

Setting	Description
Reset options	<p>Select from the following reset options:</p> <ul style="list-style-type: none"> <li>Reset Wi-Fi, Mobile &amp; Bluetooth Use to reset all network settings, including Wi-Fi, Mobile data and Bluetooth.</li> <li>Reset app preferences. Use reset app preference back to defaults. This apps you disabled, notification changes, default app actions set, background data restrictions for apps and permission restrictions.</li> <li>Enterprise data reset. To learn more, see <a href="#">About an Enterprise Data Reset</a> on page 125.</li> <li>Erase all data (factory reset). To learn more, see <a href="#">About a Factory Data Reset</a> on page 126.</li> </ul>
About phone	View device-specific information including the model number, operating system version, software patch version, radio versions, build number and legal information.




## About Network Communications

You can easily add the computer to your wireless or wired data collection network. Connect the VM1A to your computer using:

- 802.11 a/b/g/n/ac radio communications.
- Ethernet communications.
- Bluetooth communications.
- USB and serial communications.

## Connect to a Wi-Fi Network

The computer contains an 802.11 a/b/g/n/ac radio to transfer data using wireless communications. Before you connect to a Wi-Fi network, you need to know about your network security protocol and its required credentials.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **Wi-Fi**.
3. Tap **Off**  to toggle Wi-Fi radio **On** . A list of discovered networks appears.
4. On the list, tap a network name to initiate a connection.

To add a network if it does not appear on the list:

- a. Navigate to the end of the discovered network list, and then tap **Add network**.
- b. Type the Wi-Fi network name (SSID).
- c. Choose a security protocol and add any required information.
- d. Tap **Save**.

5. Enter any required information if the network is secured (e.g., password, key or certificate name).
6. Tap **Connect**.


Once you connect to a saved Wi-Fi network:

- Tap the network name on the list to view details (e.g., status, signal strength, speed, frequency, security type). Select **Cancel** to close details screen.
- The computer automatically connects to the same network when the network is in range and the WLAN radio is turned on.
- To remove a network from your saved list, tap and hold the network name and select **Forget network**. You can do this for networks you no longer use.
- To modify a network from your saved list, tap and hold the network name and select **Modify network**. You can do this if you changed your network password.
- To view a list of only your saved networks and select **Saved networks**.

## Configure Proxy Settings for a Wi-Fi Network


If you need to connect to network resources through a proxy server, you can configure settings for the proxy server for each Wi-Fi network you add. By default, the Wi-Fi networks you add are not configured to connect through a proxy server.

**Note:** Proxy settings apply only to the Wi-Fi network you modify. You must change proxy settings for each network requiring a proxy server.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **Wi-Fi**. The list of available Wi-Fi networks appears.
3. Tap and hold the name of a connected network, and then tap **Modify network**.
4. Tap **Advanced options**.
5. Under Proxy, tap **None** to open menu, and then select **Manual**.
6. Enter the proxy settings for the network.
7. Tap **Save**.

## Disable Wi-Fi Notifications and Set WLAN Radio Sleep Parameter


By default, when Wi-Fi is enabled, you receive notifications in the Status bar when the computer discovers a wireless network. You can disable these notifications.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet**. Verify the WLAN radio is turned on.
3. Tap **Wi-Fi**.
4. Tap **Wi-Fi Preferences**.

5. Tap the **Open Network notification** to toggle the setting on or off.

## Connect to an Ethernet Network

To connect the computer to an Ethernet network.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **Ethernet**. The Ethernet setting is turned **On** by default.
3. Tap **Ethernet**.

The Ethernet connection screen shows the current Ethernet connection. By default, the computer assumes a DHCP connection, and that your network has assigned an IP address automatically.

4. (Optional) To assign a static IP address.
  - a. Tap **DHCP** and then select **Static** from the list.
  - b. Enter the required network information, and then tap **Apply**.
5. Tap **Save**.


## How to Connect to Virtual Private Networks

The computer supports connecting to virtual private networks (VPNs). This section describes how to add and connect to VPNs. To configure VPN access, you must obtain details from your network administrator. You view and change VPN settings in the Settings app.

**Note:** Before you can add or connect to a VPN network, you must enable a screen lock method.


### Add a VPN


Before you can connect to a VPN, you must create a VPN profile.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **VPN**.
3. Tap **+** to add a VPN new profile.
4. Enter the required information for the VPN connection. If needed, swipe up on the screen to access all the required information fields.
5. Tap **Save**. The VPN name appears in the VPN list.

### Connect to a VPN



Once a VPN profile is created, you can connect to the VPN at any time.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **VPN**.
3. Tap the name of the VPN in the list.
4. Enter any necessary credentials when prompted.
5. Tap **Connect**.

A  appears in the status bar and a notification is received. To disconnect from the VPN, tap the notification.

## Edit VPN Information

Editing an existing VPN profile be done from the VPN screen.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Network & Internet** > **VPN**.
3. Tap and hold the name of the VPN in the list.
4. Tap  to the right of the VPN profile you want to edit.
5. Edit the VPN settings as necessary.
6. When you are done, tap **Save**.

## About Wireless Security

The computer provides these security solutions for your wireless network:

- Wi-Fi Protected Access 2 (WPA2™)
- Wi-Fi Protected Access (WPA)
- 802.1x

Honeywell recommends WPA2 security with PSK (Personal) or 802.1x (Enterprise) key management.

Before you set security, you need to enable the radio, set the date, and set the SSID on your computer. To use 802.1x security, you need to load a root certificate on your computer. To use transport layer security (TLS) with 802.1x security, you also need to load a user certificate.

Use the Settings app to access and configure all wireless security settings.

## About Certificates

You can use digital certificates to identify the computer for network access or authentication to servers. To use a certificate to identify your device, you must install it in the trusted credential storage on the computer.


Android supports DER-encoded X.509 certificates saved in files with a .crt or .cer file extension. To install a valid certificate with a .der or other extension, you must change the extension to .crt or .cer to install it.

Android also supports X.509 certificates saved in PKCS#12 key store files with a .p12 or .pfx extension. To install a valid key store file with another extension, you must change the extension to .p12 or .pfx to install it. When you install a certificate from a PKCS#12 key store, Android also installs any accompanying private key or certificate authority certificates.

## Load a Certificate


To use a certificate, you must install it in the trusted credential storage on the computer.

**Note:** Apps such as email and browsers that support certificates allow you to install certificates directly from within the app. For more information, see the help that comes with the app.

1. Copy the certificate or key store from your PC to the computer.
2. Swipe up from the bottom of the Home screen to access all apps.
3. Tap **Settings**  > **Security & location** > **Encryption & credentials**.
4. Tap **Install from storage**. Navigate to the location where you saved the certificate or key store.
5. Tap the certificate or key store to install it. If prompted, enter the key store password and tap **OK**.
6. Select **VPN and apps** or **Wi-Fi**.
7. Enter a name for the certificate and tap **OK**.

## Disable or Remove Certificates

If a user or system certificate is compromised, or your organization chooses not to trust it, you can disable or remove the certificate.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Security & location** > **Encryption & credentials** > **Trusted credentials**.

The trusted credentials screen has two tabs:

- **System** shows Certificate Authorities (CA) certificates permanently installed on the computer. They can only be disabled.
  - **User** shows CA certificates you have installed yourself. You can remove these certificates.
3. Tap the name of the certificate to you want to disable or remove. The Security certificate screen appears.

4. Scroll to the bottom of the screen and tap **Disable** (for System certificates) or **Remove** (for User certificates).
5. Tap **OK**.




**Note:** You can enable a disabled System certificate but if you remove a User certificate, you must install it again to enable it.

## About Bluetooth Communications

Your computer is equipped to communicate with other devices using Bluetooth technology. The Bluetooth radio must be turned on to discover, pair and connect to other Bluetooth devices. System bar icons indicate Bluetooth radio status.

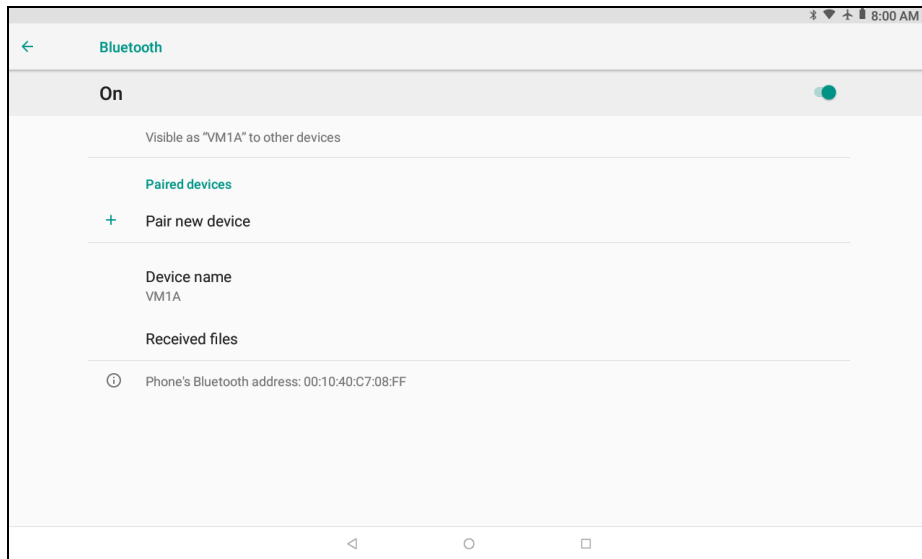
## Connect a Bluetooth Device

To connect to a Bluetooth device, you must turn on the Bluetooth radio and then select the device from a list of discovered devices.



1. Swipe up from the bottom of the Home screen to access all apps.
  2. Tap **Settings**  > **Connected devices** > **Bluetooth**.
  3. If necessary, tap **Off**  to toggle the Bluetooth radio **On** .
  4. Tap **Pair New Device**.
  5. Select a device on the list to initiate a pairing request.
  6. When the pairing request message appears:
    - Verify the pairing PIN is the same on both device, and then tap **Pair**.
- OR
- If the pairing request requires a PIN, enter the **PIN**, and then tap **Pair**.



When the device is successfully paired with the computer, the device name appears under Paired devices.




7. (Optional) Once paired to a device, you can connect manually to the device. Tap the device under Paired devices. The word “Connected” appears under the paired device name.

The status icon changes from  to .

- To disconnect a paired device, tap the name of the paired device and then tap **OK** when the “Disconnect?” screen appears.


## Rename the Computer and View File History


You can change the name of the computer to make it easier to identify when pairing with other Bluetooth enabled devices and view statistics about received files.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Connected Devices** > **Bluetooth**.
3. Tap on **Device name**. Type new name and then tap **Rename**.

## Rename or Unpair a Paired Device

You can rename a paired device to make it easier to identify on the list or unpair the device to remove it from the paired list.




1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Connected devices** > **Bluetooth**.

3. Tap  next to the paired device.
4. Take one of the following actions:
  - To rename the device, type the new name, and then tap **OK**.
  - To allow **Internet connection sharing** or **Contact Sharing**, tap the check box next to the setting.
  - To unpair the device, tap **Forget**.

## About the Scanner Edge App



Your mobile computer is equipped to communicate with scanners using Bluetooth technology through the Scanner Edge app. The Bluetooth radio must be turned on. System bar icons indicate Bluetooth radio status.

To turn on the Bluetooth radio:

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Connected devices** > **Bluetooth**.
3. If necessary, tap **Off**  to toggle the Bluetooth radio **On** .



## Connect a Bluetooth Scanner

To connect to a Bluetooth scanner, the Bluetooth radio must be turned on and then scan a pairing bar code with the Bluetooth scanner.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Scanner Edge** .
3. Tap the menu icon  and then tap **Pair BT Scanner**.
4. For Honeywell branded scanners tap **Honeywell** or for Intermec branded scanners tap **Intermec**.
5. Scan the **Scan to connect barcode** displayed on screen.
6. When the scanner is successfully paired with the computer, the scanner name appears under Connected Device.

## Unpair a Paired Scanner

You can unpair the scanner to remove it from the Connected Device list.

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Scanner Edge** .
3. Tap the menu icon  and then tap **Disconnect BT Scanner**.
4. Tap **Honeywell** or **Intermec**.
5. Scan the **Scan to disconnect barcode** displayed on screen.

## USB Troubleshooting


- If you have a problem with your workstation computer recognizing the USB device, try downloading and installing the Honeywell-aidc-usb-driver. The driver is part of the Honeywell\_Mobility SDK\_Android software.zip file. To learn where to get the software, see [Developer Information](#) on page 69.
- Check to make sure you have enabled the USB for file transfer. To learn more, see [Configure USB Connection and Transfer Files](#) on page 18.

## How to Share Your Data Connection

You can share the data connection through USB tethering or Bluetooth tethering.

### Share the Data Connection Through USB or Bluetooth

You can share your data connection with another device through tethering. After you connect the computer to another device through a USB connection, you can share the computer's data connection through USB tethering. Or, if the device is Bluetooth-capable, you can configure the computer to share the data connection with the device through Bluetooth tethering.

1. Connect the computer to another device through a USB connection.
2. Swipe up from the bottom of the Home screen to access all apps.
3. Tap **Settings**  > **Network & Internet** > **Hotspot & tethering**
4. Tap the type of tether to initiate:
  - Tap **USB tethering** to enable the connection.
  - Tap **Bluetooth tethering** to enable the connection.  
The device is now sharing the computer data connection.
5. To stop sharing the connection, disconnect the USB cable, or tap **USB tethering** or **Bluetooth tethering** again to turn off the feature.

# About Near Field Communication (NFC)

NFC technology provides the ability for short-range, wireless data transfer between the VM1A and NFC tags or other NFC enabled devices placed in close proximity to the back of the computer. All VM1A computers support the following modes of operation:

- NFC tag reader/writer mode: The computer reads and/or writes digital information from or to an NFC tag.
- Peer-to-Peer (P2P) mode: The computer uses Android Beam and/or Bluetooth technology to transfer screen content (e.g., a picture, contact information, Web page URL, or file) between NFC enabled devices.
- NFC card emulation mode: The computer emulates an NFC card (smart card) that an external card reader can access. You can download and install apps for card emulation mode from the Google Play™ store. Some examples include digital wallets (e-wallets) offered by your bank or credit card company and Google Pay™. The app you install determines the type of emulation mode used: Card Emulation with a Secure Element or Host-based Card Emulation. Secure element use is common for financial transactions that require a high level of security in order to provide a secure memory and execution environment for running custom smart card applets and storing your personal information (e.g., account information and credentials).

**Note:** *When using a Universal Integrated Circuit (UICC) card for NFC Secure Element NFC link encryption, install the card in SIM slot 1.*

## Developer and Device Management Information

To download the Honeywell Mobility SDK for Android, Enterprise Provisioner, and Staging Hub:

1. Go to [www.honeywellaidc.com](http://www.honeywellaidc.com).
2. Select **Get Resources > Software**.
3. Click on the *Technical Support Downloads Portal* link, <https://hsmftp.honeywell.com>.
4. Create an account if you have not already created one. You must login to download the software.
5. Install the *Honeywell Download Manager* tool on your workstation (e.g., laptop or desktop computer) prior to trying to download any files.
6. Navigate to the software:
  - *Honeywell Mobility SDK for Android*  
Click on **Software > Software and Tools > Developer Library > SDKs for Android**.

- *Enterprise Provisioner and Staging Hub*  
Click on **Software > Software and Tools > Device Management > Staging Hub Foundation > Current**.

7. Select **Download** next to the software zip file.

For more information about Honeywell Mobility SDK for Android, Enterprise Provisioner, and Staging Hub, visit [www.honeywellaidc.com](http://www.honeywellaidc.com).

## About Provisioning Mode


Once you complete the out-of-box initial setup process, Provisioning mode is automatically turned off to improve device security against unwanted modifications to the system.

When Provisioning mode is turned off (disabled):

- Configuration bar codes do not scan and process.
- \honeywell\autoinstall folders are inaccessible.

**Note:** To learn more about network and security for Honeywell computers with Android operating systems, go to [www.honeywellaidc.com](http://www.honeywellaidc.com).

## Enable or Disable Provisioning Mode

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell Settings > Provisioning mode**.
3. Tap the button to toggle the provisioning On or Off.



# ABOUT THE VM DOCKS

Use this chapter to learn about the available docks for the VM1A.

## About the Docks

The Thor computer assembly consists of two parts: the VM1A computer and the dock. The computer contains an internal UPS battery that, once fully charged, powers the computer for approximately 30 minutes when the unit is not mounted in the dock.

There are three available vehicle-mount docks:

- [VM1D Standard Dock](#)
- [VM3D Enhanced Dock](#)
- [Enhanced Dock with Thor VX8/VX9 Screen Blanking](#)

Additionally an off-vehicle dock is available for the computer for use in environment such as an office where AC power is available:

- [VMXD Enhanced Dock for Off-Vehicle Use](#)

All docks provide:

- A mount for the computer. The dock attaches to a vehicle via a RAM or U bracket mount or to a RAM table stand for use in an office environment.
- Conditioned power for the VM1A. The vehicle-mount docks accept 10-60VDC power input directly or 50-150VDC power input with a DC/DC converter. The off-vehicle dock requires an AC/DC power supply.
- Mobility of the VM1A, since the dock remains attached to the vehicle the computer can easily be moved from one vehicle equipped with a dock to another.
- I/O ports.
- Strain relief provisions for cables.
- Headset connection via an adapter cable. When a headset is not attached, the microphone and speakers are active.

# Dock Overview

## VM1D Standard Dock



**Caution: In order to comply with US power efficiency requirements this dock should not be used in the US for AC power applications.**

SKUs	VM1001VMCRADLE (with power cable) VM1002VMCRADLE (with RAM ball) VM1003VMCRADLE
Serial Ports	COM1 and COM2 by means of DB9 male connectors
USB Ports	USB port provides host connection via an adapter cable
Ethernet	N/A
Audio	Headset connection via an adapter cable
Screen Blanking	Supported via COM1 and COM2 connectors
Ignition Control	Supported

## VM3D Enhanced Dock



**Caution: In order to comply with US power efficiency requirements this dock should not be used in the US for AC power applications.**

SKUs	VM3001VMCRADLE
Serial Ports	COM1 and COM2 by means of DB9 male connectors
USB Ports	USB1 port provides host connection via an adapter cable USB2 port provides two USB host ports via an adapter cable Direct USB host type A connection
Ethernet	RJ-45 Ethernet connection on top of dock
Audio	Headset connection via an adapter cable
Screen Blanking	Supported via COM1 and COM2 connectors
Ignition Control	Supported



## Enhanced Dock with Thor VX8/VX9 Screen Blanking

This dock is designed for use when the Thor VM1A is replacing a Thor VX8 or Thor VX9. This dock utilizes the existing vehicle wiring from the earlier computer and supports screen blanking through that wiring.

SKUs	VMX004VMCRADLE
Power Connection	Direct or DC/DC power supply
Serial Ports	COM1 and COM2 by means of DB9 male connectors (See note below)
USB Ports	USB1 port provides host connection via an adapter cable USB2 port provides two USB host ports via an adapter cable Direct USB host type A connection
Ethernet	RJ-45 Ethernet connection on top of dock
Audio	Headset connection via an adapter cable
Screen Blanking	Supported via COM1 and COM2 connectors
Ignition Control	Not supported

**Note:** For the VMX Enhanced Dock: COM1 is used for screen blanking (via the power cable connector) and is unavailable when the screen blanking box is attached. When a screen blanking box is attached, any external serial device, such as a scanner, must be connected to the COM2 port on the dock. If a screen blanking box is not connected via the power cable, the COM1 port on the dock is available for a serial device.

## VMXD Enhanced Dock for Off-Vehicle Use

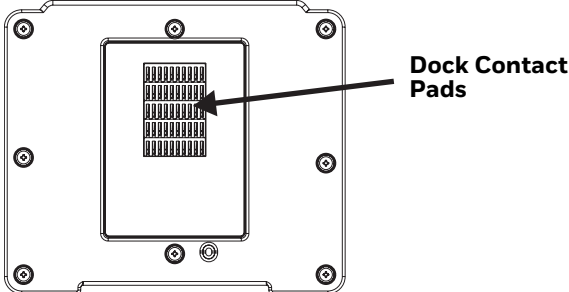


**Caution: This dock is designed for AC power (non vehicle-mounted) applications only.**

SKUs	VMX005VMCRADLE
Power Connection	AC/DC adapter
Serial Ports	COM1 and COM2 by means of DB9 male connectors
USB Ports	USB1 port provides host connection via an adapter cable USB2 port provides two USB host ports via an adapter cable Direct USB host type A connection
Ethernet	RJ-45 Ethernet connection on top of dock
Audio	Headset connection via an adapter cable
Screen Blanking	Not supported
Ignition Control	Not supported

# Features of the Dock

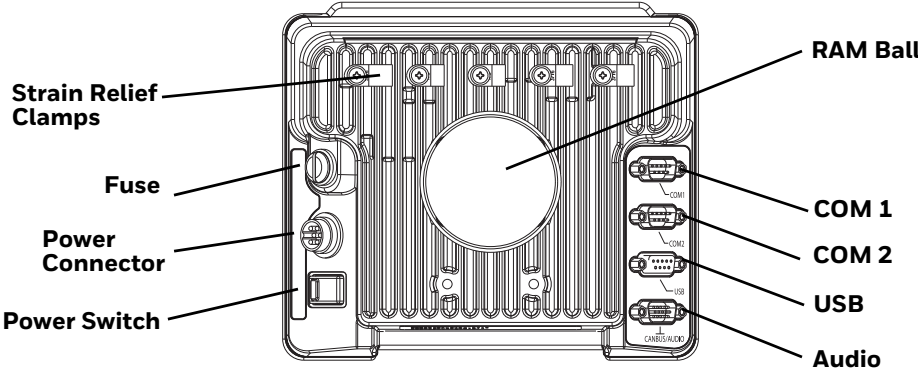
## Front View - Dock



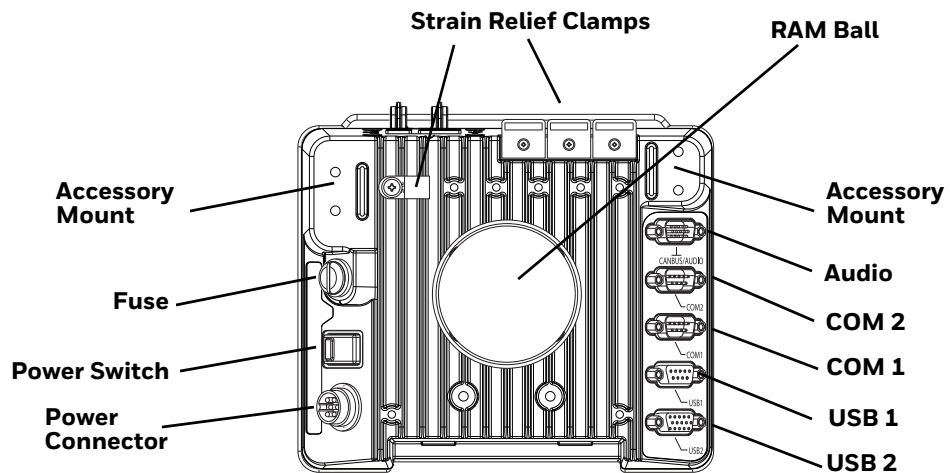
## Back View - Dock

The connectors on the back of the dock vary by dock model.

### Standard Dock



## Enhanced Dock

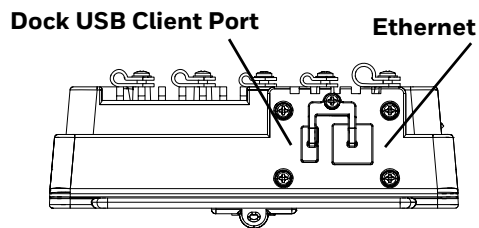


**Note:** For the VMX Enhanced Dock: COM1 is used for screen blanking (via the power cable connector) and is unavailable when the screen blanking box is attached. When a screen blanking box is attached, any external serial device, such as a scanner, must be connected to the COM2 port on the dock. If a screen blanking box is not connected via the power cable, the COM1 port on the dock is available for a serial device.

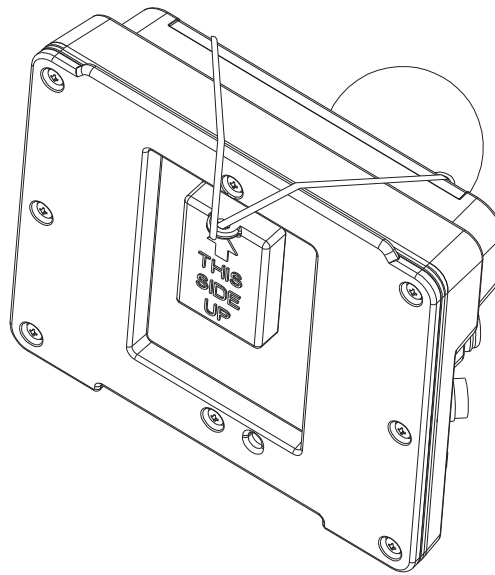
## Top View - Enhanced Dock

Only the Enhanced Dock has these connectors on the top. The connectors are located behind the dust plugs.

**Note:** Dock USB Client Port is not supported with VM1A computers.

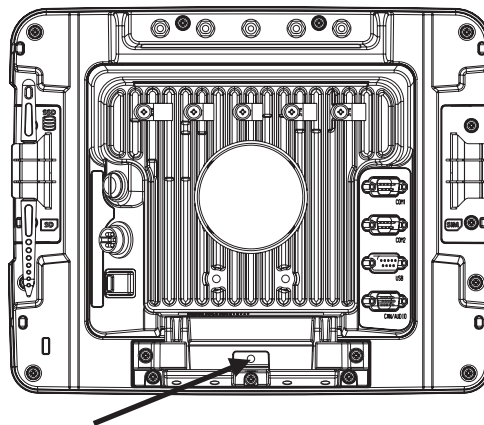


## Dock I/O Pin Cover



- When the computer is not installed in the dock, use the I/O Pin Cover to protect the pins on the dock, as shown.
- When the computer is installed in the dock, the I/O Pin Cover can be placed out of the way behind the dock.

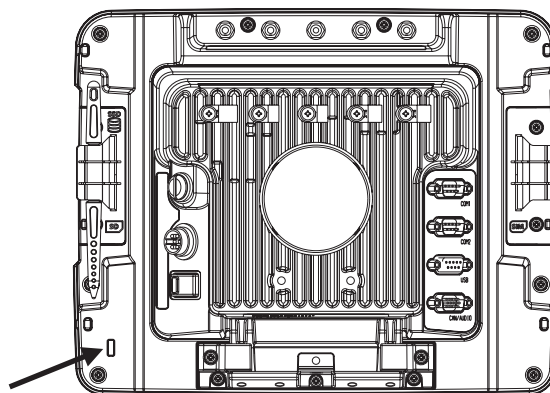
## Padlock



It may be desirable to secure the VM1A in the dock so it cannot be removed from the dock. The quick release handle on the computer is notched to allow a user supplied small padlock to be placed through a hole in the bracket on the back of the computer in the location shown below. Once the padlock is installed, the release handle cannot be moved so the VM1A cannot be removed from the dock. The padlock shackle must be smaller than 3/16" (4.76mm).

A cable tie wrap can be used instead of a padlock, if desired.

## Laptop Security Cable

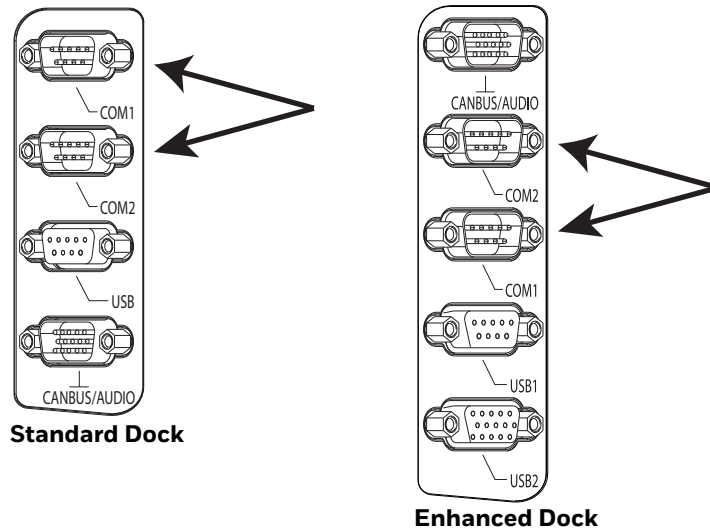


The VM1A can be secured with a standard laptop security cable using the slot on the back.

## External Connectors Overview

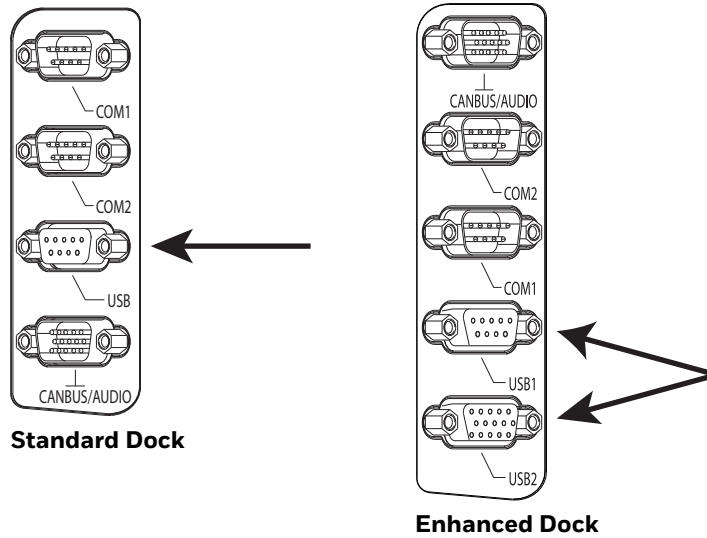
- Power the VM1A Off before attaching a cable to any port (serial, USB, Audio, etc.).
- The external I/O connectors for the computer are located on the right side of the dock (when viewed from the back).
- The [Power Supply Connector](#) is on the left side of the dock (when viewed from the back).
- Antenna connectors are located on the top rear of the computer.

## Serial Connector (COM1 and COM2)



- The COM1 and COM2 connectors are D-9 male connectors located on the back of the dock.
- Power the VM1A Off before attaching a cable to any port (serial, USB, Audio, etc.).
- The serial connectors are industry standard RS-232, PC/AT standard 9-pin “D” male connector. See [COM1 and COM2 Connector](#) for connector pinout detail.
- Pin 9 is configured to provide +5V, 500mA for an external bar code scanner.
- See [Connect Serial Device](#) for more information.
- If a COM port is not being used for a peripheral, it can be used for [Screen Blanking Installation](#) when the vehicle is in motion.

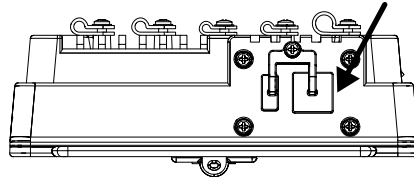
# USB Connector(s)



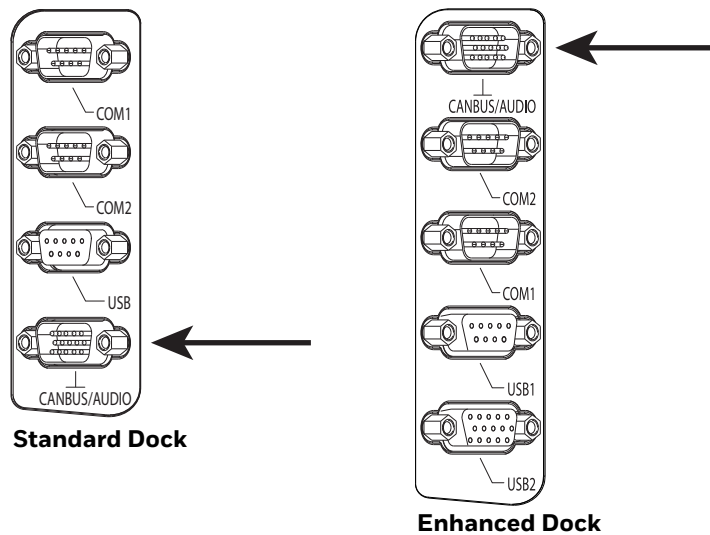
- The USB or USB1 connector is a D-9 female connector located on the back of the dock. See [USB and USB1 Connector](#) for connector pinout detail.
- See [Connect USB Host](#) for more information.
- The USB-2 connector is a D-15 female connector located on the back of the dock. See [USB2 Connector](#) for connector pinout detail.
- Power the VM1A Off before attaching a cable to any port (serial, USB, Audio, etc.).

## Ethernet Connector

An Ethernet port is located on the top of the Enhanced Dock. Lift the cover to access the Ethernet port.



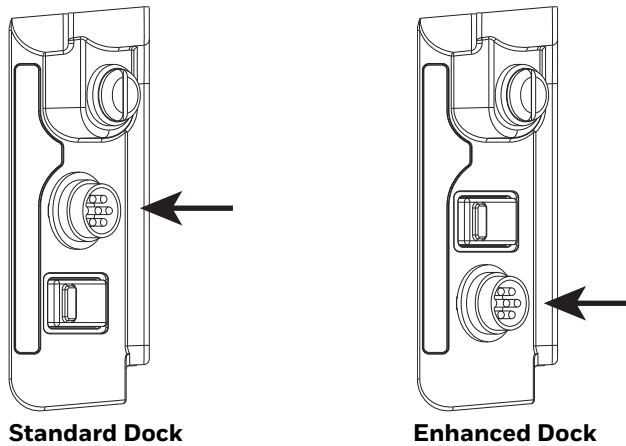
## Audio Connector



- The Audio connector is a D-15 male connector located on the back of the dock.
- See [Audio Connector](#) for connector pinout detail.
- A headset cable attaches to the Audio connector and provides a quick connect connection for a headset. See [Connect Headset Cable](#) for more information.



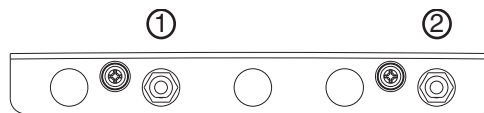
# Power Supply Connector



- Power is supplied to the VM1A through the power connector. Additionally, this assembly provides a connection point for the vehicle’s chassis ground to be connected internally to the conductive chassis of the computer.
- The computer’s internal power supply can accept DC input voltages in the range of 10 to 60 Volts DC when using the VM1D standard dock or VM3D enhanced dock. The VMXD dock DC input voltage is 13.2VDC from the AC/DC power supply.
- See [Power Supply Connector](#) for connector pinout detail. See [Connect Power](#) for more information on connecting power to the VM1A.

# Antenna Connections

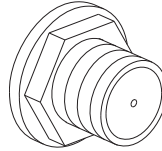
The VM1A is equipped with an 802.11 WLAN radio and can be ordered with internal antennas or configured to support external antennas. When the computer is ordered with internal antennas, the external antenna connectors are not used.



1. WI-FI (MAIN) (Red label) 802.11 Main External SMA Antenna Connector
2. WI-FI (AUX) (Yellow label) 802.11 Auxiliary External SMA Antenna Connector

## External Antenna Connector

When the VM1A is ordered with the internal antenna option, the 802.11 antenna connectors on the back are not connected to the 802.11 radio. Instead the internal antenna connector is connected to the 802.11 radio.



Remove the rubber cap, if present, from the antenna connector before connecting an external antenna.

## Internal 802.11 Antennas

If the internal 802.11 antenna option is ordered, antennas are mounted inside the computer. The internal antennas are not user accessible.

## External Antennas

The external antennas can be remotely mounted on the vehicle (VM1277AN-TENNA) or connected directly to the SMA connectors on the VM1A (VM2276AN-TENNA). See [Mount the 802.11 Remote Antenna](#) for instructions.

Use this chapter to learn how to mount the VM1A.

## About Mounting the VM1A



**Warning: The correct dock must be selected for the installation:**

- For a vehicle installation with 10-60 VDC direct connection: Use either a VM1D standard dock or a VM3D enhanced dock.
- For a vehicle installation with 60-144 VDC connection: Use a DC/DC power supply with either a VM1D standard dock or a VM3D enhanced dock.
- To replace a Thor VX8 or Thor VX9 on a vehicle: Use the existing power supply, if applicable, and the existing power cable with either a VM1D standard dock or VM3D enhanced dock.
- To replace a VX6, VX7, or CV61: Use the appropriate adapter power cable and either a VM1D standard dock or a VM3D enhanced dock. Voltage must be 10-60 VDC.
- For an AC powered application: Use an AC/DC power supply and the VMXD off-vehicle enhanced dock.

The VM1A is designed to be mounted to a dock in a vehicle with either a RAM mount or U Bracket system. A power cable is provided with some dock models. An integrated scanner mount is also offered. Optional communication cables are available.

Vehicle mounting brackets are specifically designed for vehicle mount applications. The vehicle mounted assembly restrains the VM1A and isolates it from shock and vibration. A RAM metal table stand is also available to secure the computer and dock when in an office environment.

The vehicle mount holds the dock and the VM1A attaches to the dock. The dock remains attached to the vehicle, however, the computer has a quick release located on the lower rear side that allows the computer to easily be removed from the dock.

The computer can be operated for approximately 30 minutes from an internal UPS battery when not attached to a dock. The computer can be transferred from one dock equipped vehicle to another for easy portability. The dock provides accessory attachment and conditioned power for the computer.

Overhead, dash, and roof support pillar mounting is via a RAM Mount or U-bracket accessory which includes most of the hardware required for vehicle mounting.



**Warning: Never put the computer into the vehicle mounted assembly until the assembly is securely fastened to the vehicle.**

## Select Mounting Location

The VM1A should be secured to an area in the vehicle where it:

- Does not obstruct the driver's vision or safe vehicle operation.
- Will be protected from rain or inclement weather.
- Will be protected from extremely high concentrations of dust or wind-blown debris.
- Can be easily accessed by a user seated in the driver's seat while the vehicle is not in operation.

## General Mounting Outline

The following list outlines, in a general way, the process to follow when mounting the VM1A in a vehicle.

1. [Install RAM Mount](#) or [Install U Bracket Mount or Adapter](#) to the vehicle
2. [Place Thor VM1A in the Dock.](#)
3. Secure accessories, such as, a scanner holder, to either and integrated or remote mounting bracket.
4. Adjust the computer to the best viewing angle.
5. [Mount the 802.11 Remote Antenna](#), if necessary.
6. Connect power for any peripherals.
7. Connect vehicle power:
  - [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#)
  - [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Top of Lid\)](#)
  - [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Side of Lid\)](#)
  - [Thor VX8/Thor VX9 Adapter Cable](#)
  - [VX5/VX6/VX7 Adapter Cable](#)
8. Secure all cables in [Strain Relief Cable Clamps](#).

The VM1A is ready for use.

## Install RAM Mount



**Caution:** This device is intended to transmit RF energy. For protection against RF exposure to humans and in accordance with FCC rules and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20 cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.

Step 1. Before installation begins, verify you have the applicable vehicle mounting assembly components necessary. Refer to the Thor VM Series Vehicle Mount Computer Accessory Guide for information on RAM mount kits and components on [www.honeywellaidc.com](http://www.honeywellaidc.com). Kits do not include the hardware required to mount the base to the vehicle since requirements vary from vehicle to vehicle.

Step 2. You will need the following tools for mounting the RAM:

- Sockets
- Ratchet wrench
- Screwdriver
- Drill and bits, if using a round or place base
- Torque wrench capable of torquing to 20 inch pounds (1.10 N/m).

For these nuts...	Torque to
10-32 lock nuts	17-20in/lb (0-95 - 1.10 N/m)

**Note:** Tools are not supplied by Honeywell.

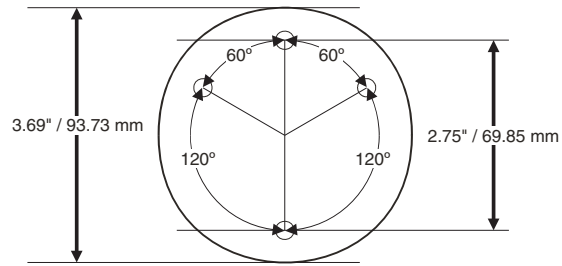
Step 3. Attach the base to the vehicle.

## RAM Ball Mount

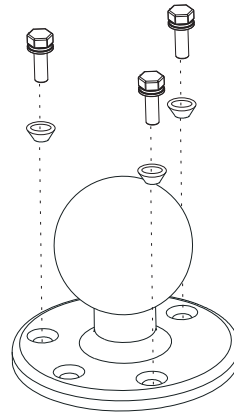
1. Determine the position for mounting the RAM ball base. Be sure to position the RAM bracket to allow access to the switches and ports on the bottom of the computer.

**Note:** Mount to the most rigid surface available.

2. Drill and tap holes for three 1/4 bolts. (Drawing not to scale.)

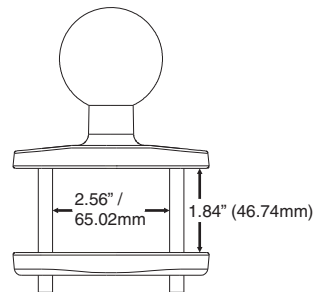


3. Attach the RAM ball base to the vehicle mounting surface using three or four 1/4 bolts (not included) or equivalent fasteners. If the mounting kit includes cone washers, use those as illustrated below.

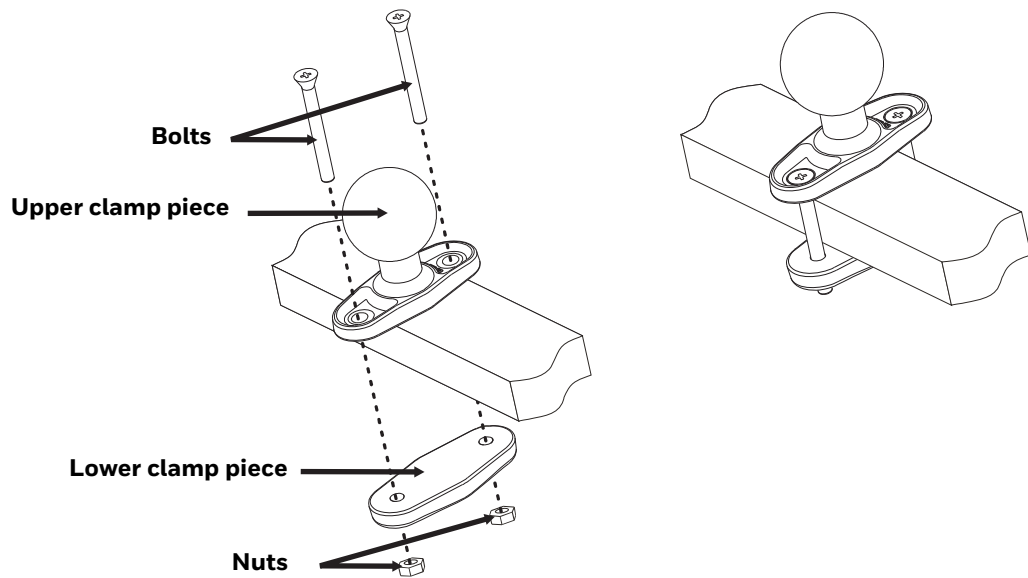


## RAM Clamp Mount

1. Determine the position for mounting the RAM clamp mount. The clamp mount can be used on a beam (such as on a fork lift truck) up to 2.5" (63.5 mm) wide and approximately 2" (50.8 mm) thick. The clamp may be attached to a thicker beam by substituting longer bolts (not included). Be sure to position the RAM clamp mount to allow access to the switches and ports on the bottom of the computer. (Drawing not to scale.)



2. Position the upper clamp piece with ball on the beam. Place the bolts through the holes in the upper clamp piece. Position the lower clamp piece below the beam. Align the bolts with the holes in the lower clamp piece. Place the nylon locking nuts on the bolts and tighten the bolts.

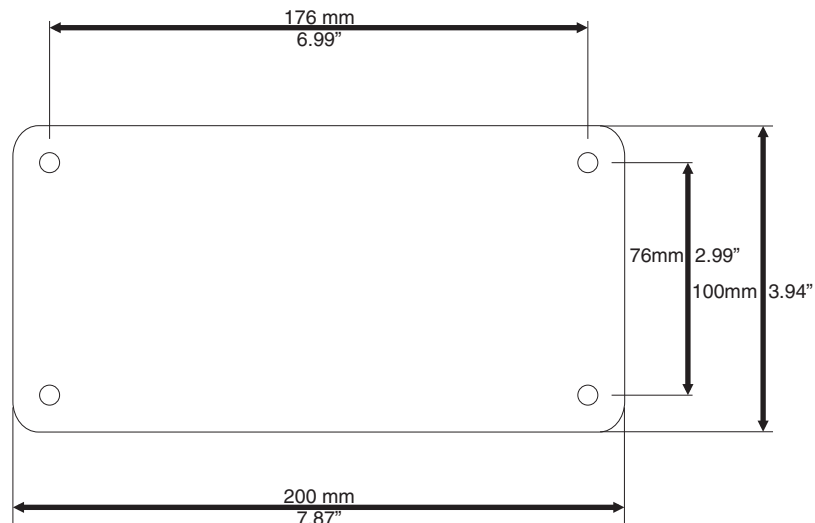


## RAM Plate Mount with RAM Ball

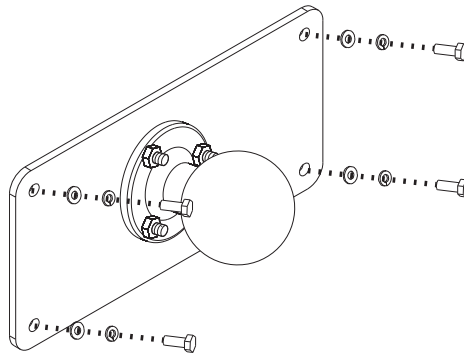
1. Determine the position for mounting the RAM ball plate. Be sure to position the RAM plate to allow access to the switches and ports on the bottom of the computer.

**Note:** Mount to the most rigid surface available.

2. Attach the RAM ball plate to the vehicle mounting surface using four 1/4 bolts (not included) or equivalent fasteners. (Drawing not to scale.)

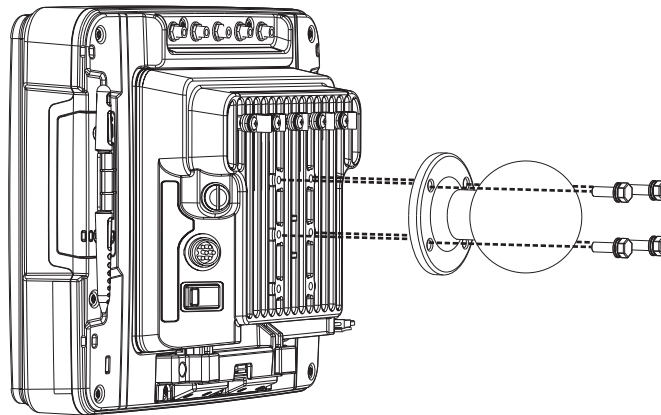


3. If not already attached, attach the RAM ball to the RAM ball plate using three M6 nuts and washers.



## Attach RAM Mount Ball to the Dock

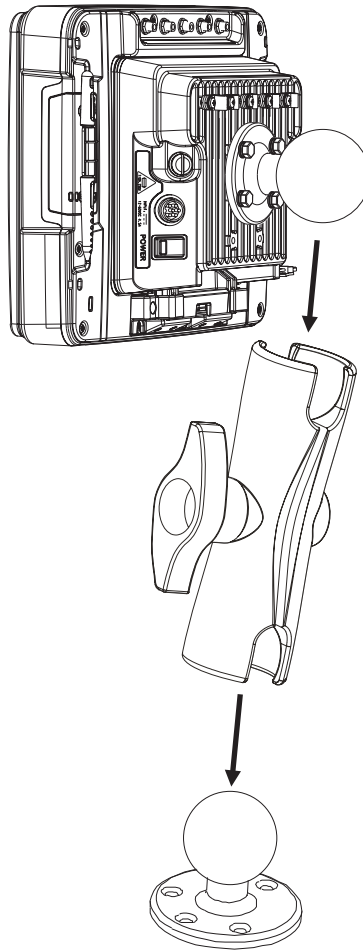
1. Turn the computer off before attaching the RAM mount ball.
2. Place the computer face down on a stable surface.
3. Position the RAM ball on the rear of the dock, aligning the holes on the back of the dock with the holes on the RAM ball base. Attach with four M5 screws, flat washers and lock washers.



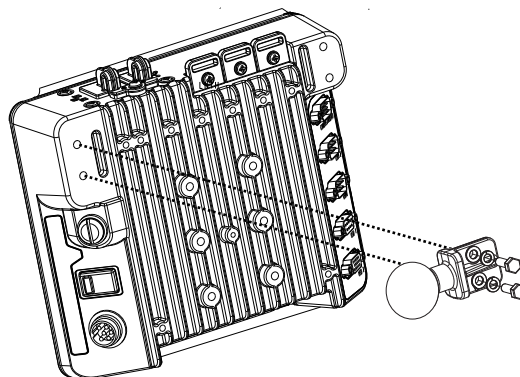
## Attach Thor VM1A Assembly to RAM Mount

1. Slip the Size D RAM arm over the ball on the vehicle RAM mount (RAM Ball mount shown).
2. Insert the ball on the dock into the RAM arm and tighten the knob on the RAM arm.

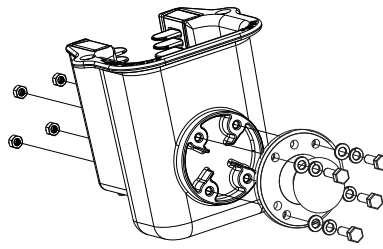




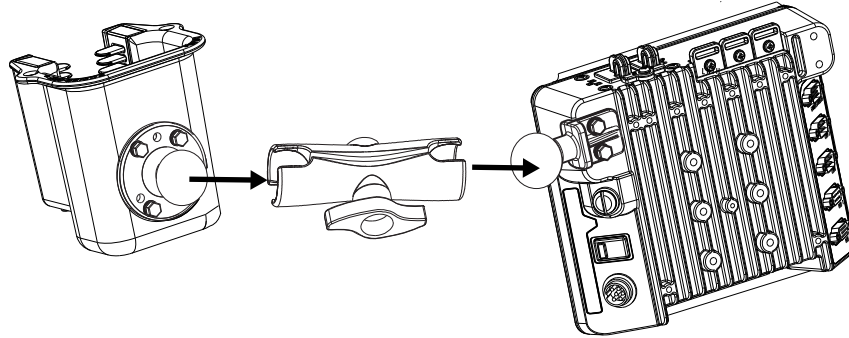
- Step 3. Place the computer onto the dock.
- Step 4. Attach the optional scanner holder to the Enhanced Dock.
1. Attach the accessory RAM ball to Enhanced Dock. There are two mounting provisions, one on either side of the Enhanced dock and either can be used to mount the scanner holder. (Some components omitted for detail clarity.)



2. Attach the RAM ball to the back of the scanner holder.



3. Slip the RAM arm over the accessory RAM ball.
4. Slip the RAM ball on the scanner holder into the RAM arm.



5. Tighten the knob on the RAM arm while adjusting to the desired angle.

## Install U Bracket Mount or Adapter

**Note:** This mounting system does not have a provision for an integrated scanner holder. This accessory can be mounted separately, if desired. Contact [Technical Assistance](#) for details.



**Caution:** This device is intended to transmit RF energy. For protection against RF exposure to humans and in accordance with FCC rules and Industry Canada rules, this transmitter should be installed such that a minimum separation distance of at least 20 cm (7.8 in.) is maintained between the antenna and the general population. This device is not to be co-located with other transmitters.

- Step 1. Before installation begins, verify you have the applicable vehicle mounting assembly components necessary.

Mount Kit	Components
Adapter Bracket with U Bracket (For new installations only) (VM1010BRKTKIT)	<ul style="list-style-type: none"> <li>• U Bracket</li> <li>• Adapter Bracket</li> <li>• Hardware: screws, flat washers, and lock washers</li> </ul>
Adapter Bracket without U Bracket (VM1010BRACKET)	<ul style="list-style-type: none"> <li>• Adapter Bracket</li> <li>• Hardware: screws, flat washers, and lock washers</li> </ul>

**Note:** Individual RAM mounting components are also available.

Step 2. You will need the following tools for mounting the RAM:

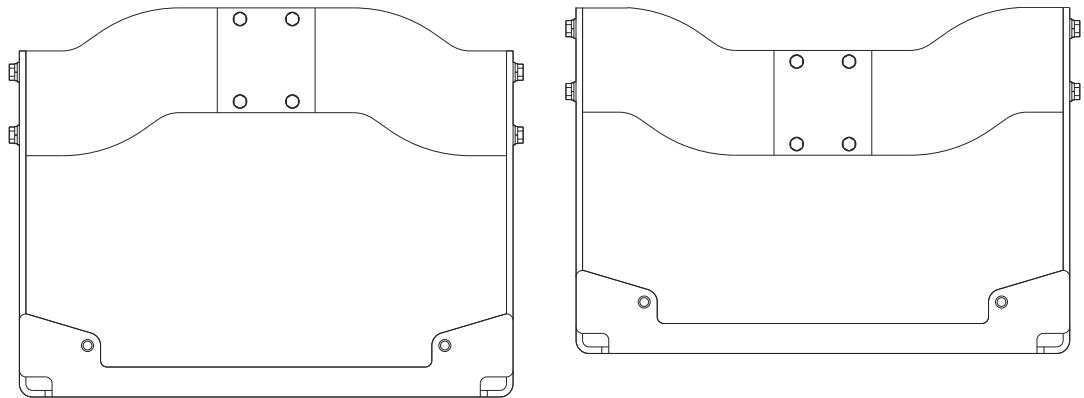
- Sockets
- Torque wrench capable of torquing to 50 inch pounds (5.64±.56 N/m).

For these bolts...	Torque to
1/4-20x5/8 Bolts	50 in/lb (5.6 N/m)
M5x16mm Bolts	35 in/lb (4.0 N/m)
1/4 Bolts (user supplied)	50.0±5 in/lb (5.64±.56 N/m)

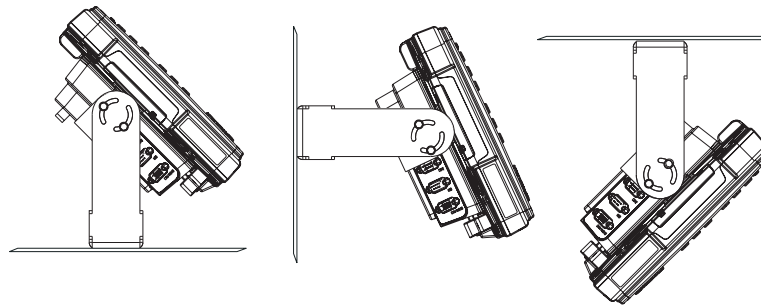
**Note:** Torque tool is not supplied by Honeywell.

Step 3. Determine the mounting position.

- The adapter bracket can be mounted in a high or low position, depending on viewing position, as shown below.



- Additionally, the slotted U bracket allows the computer to be mounted vertically or tilted forward or backward for best viewing angle.



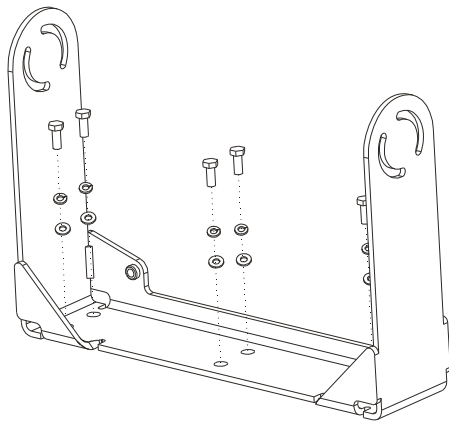
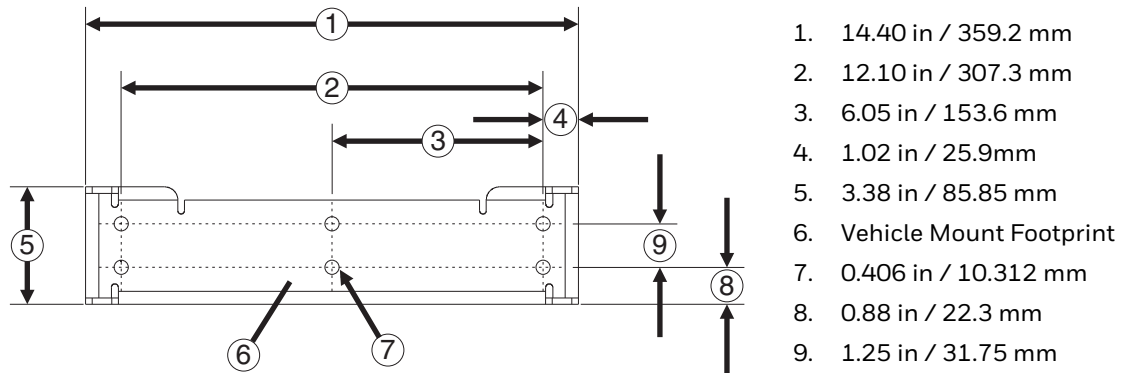
Step 4. Install U Bracket to Vehicle

1. Position the bracket to allow access to the switches and ports on the bottom of the computer. Skip this step if installing a U Bracket mount adapter bracket.

- Attach the bottom mounting bracket to the vehicle mounting surface using a minimum of four 1/4 bolts (or equivalent) fasteners. (Drawing no to scale.)

**Note:** 1/4 bolts and washers not included and vary per vehicle type. It is recommended to use lock washers and flat washers on the fasteners.

**Note:** Mount to the most rigid surface available.



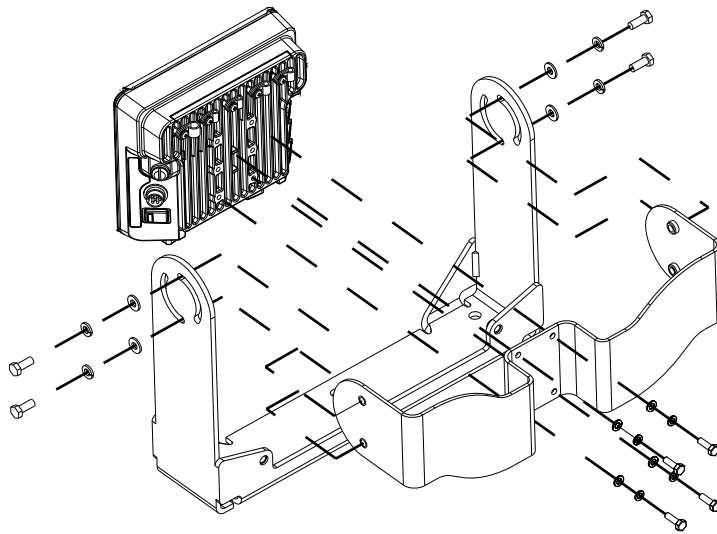
Step 5. If the dock has a RAM ball attached, the RAM ball must be removed from the dock to use the U Bracket mount. The hardware used to attach the RAM ball to the dock is not reused for the U Bracket mount.

Step 6. Attached the Adapter Bracket to dock.

- Attach the Adapter Bracket to the dock using four each M5x16mm bolt, M5 lock washer and M5 flat washer. Torque to 35 in/lbs (4.0 N/m).

**Note:** For the steps below, always place the lock washer on the bolt before the flat washer.

- Attach the Adapter Bracket assembly to the U Bracket using 4 each 1/4- 20x5/8 bolt, 1/4 lock washer and 1/4 flat washer.

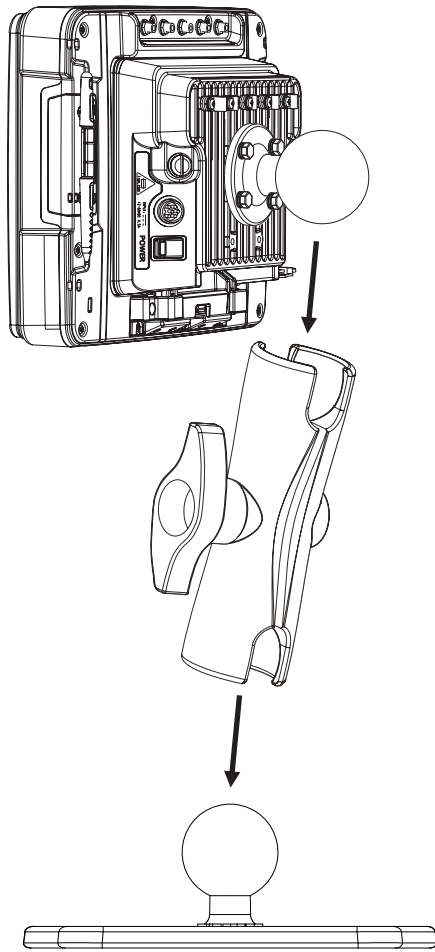


3. If the computer is not already mounted to the dock, [Place Thor VM1A in the Dock.](#)
4. Adjust the computer to the desired viewing angle.
5. Torque the 14-20 bolts to 50 in/lbs (5.6 N/m).

## Install Table Stand

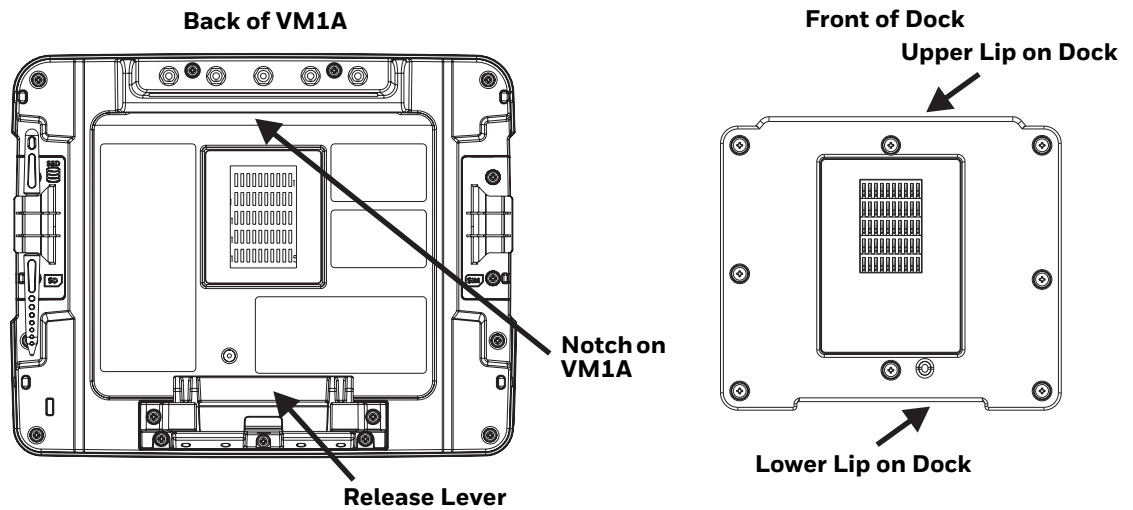
When the VM1A is used in an office environment, it can be mounted in a table stand. To use the table stand:

1. Attach the RAM ball to the RAM Metal Table Stand with the supplied bolts and nuts.
2. If not present, attach a RAM ball to the VMXD off-vehicle dock.
3. Slide the size D RAM arm over the ball on the table mount.
4. Insert the ball on the dock into the RAM arm and tighten the knob on the RAM arm.



5. If the computer is not already mounted to the dock, [Place Thor VM1A in the Dock.](#)

# Place Thor VM1A in the Dock



1. Locate the notch on the upper rear of the VM1A.
2. Slide this notch over the top lip of the dock. Slide the VM1A from side to side on the dock to make sure it fully engages on the lip of the dock. If the computer cannot be slid side to side, the lip is engaged.
3. Pull the quick release lever on the computer down and push the computer against the dock.
4. Release the quick release lever. The quick release lever catches the lower lip on the dock and secures the computer to the dock. Be sure the red quick release lever is pushed all the way in to secure the computer to the dock.
5. If necessary, adjust the viewing angle of the computer.

When the Thor VM1A is placed in the dock, the following may happen:

- If the computer is Off and power is connected to the dock, the computer may boot when placed in the dock. See [Auto-On](#).
- If the computer is On and power is connected to the dock, the power management timers may change when the computer is placed in the dock. See [Power Options](#).

When the Thor VM1A is removed from the dock, the following may happen:

- If the computer is On and power is connected to the dock, the power management timers may change when the computer is placed in the dock. See [Select a Power Scheme](#).

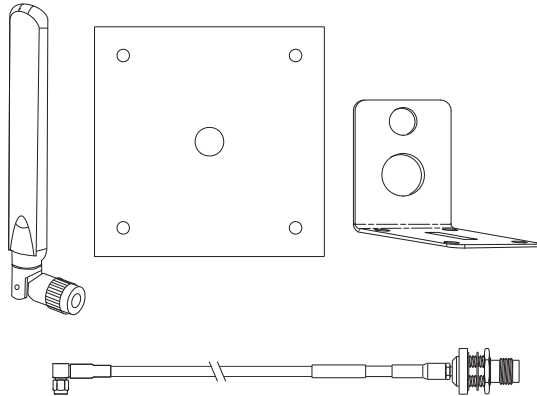
# About the 802.11 Remote Antenna

Remote antennas are available for the 802.11 WLAN radio.



**Caution:** If the Thor VM1A is setup for use with external antennas, do not power up the computer without the external antennas connected. Damage to the WLAN radio may result. Never operate with only one external antenna connected.

The Remote Antenna Installation Kit consists of two brackets (base plate and right angle), cable, and antenna. Tools are not included.



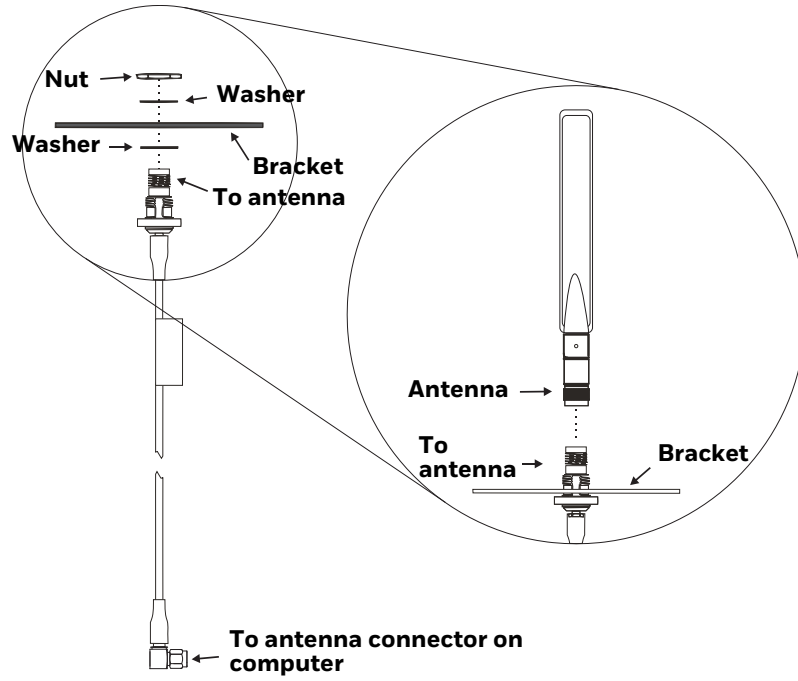
The desired remote antenna bracket is mounted on the top of a forklift, truck, or other vehicle and cabled to the computer inside the vehicle.

The Vehicle Remote Mount Antenna cannot be used by devices with internal antennas.

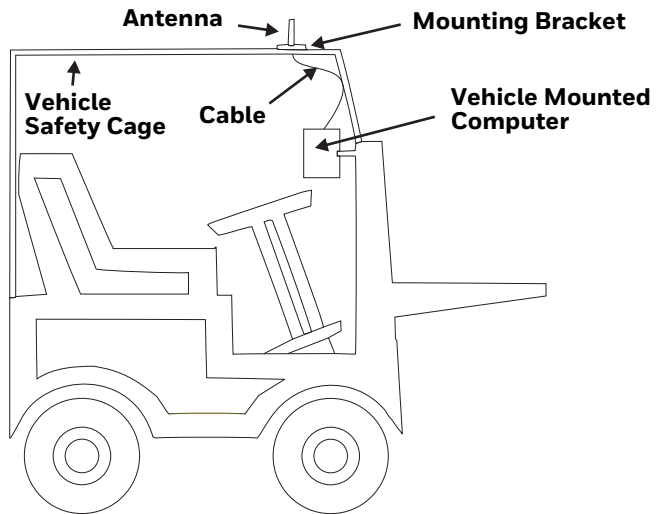


# Mount the 802.11 Remote Antenna

## Components



## Typical Installation



## Instructions

1. Attach and secure the desired mounting bracket to the highest point on the safety cage, following these precautions:
  - The plate must be mounted so the antenna is not damaged while the vehicle or any of its parts are moving.
  - The antenna mounting portion of the bracket must be parallel to the floor.
  - If using two antennas, they should be mounted at least 12 inches (304.8mm) apart for best performance.
2. Secure the whip antenna to the mounting bracket.
3. Connect the antenna cable to the whip antenna.
4. Use cable ties to secure the coaxial cable to the vehicle as necessary. Make sure the cable is routed so it is not damaged by any moving parts of the vehicle.
5. Connect the cable to the antenna connector (Wi-Fi Main or Wi-Fi Aux) on the computer.
6. Repeat the steps above for the second 802.11 antenna.

## Connect Power

See [Power Supply Connector](#) for connector pinout.

For the VM1D Standard Dock and VM3D Enhanced Dock, power options include:

- [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#) - Direct connection to vehicle power.
- [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Side of Lid\)](#) - Requires the use of a DC/DC power supply.
- [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Top of Lid\)](#) - Requires the use of a DC/DC power supply.
- [VX5/VX6/VX7 Adapter Cable](#) - For applications where the VM1A replaces a previously installed VX6 or VX7.
- [Thor VX8/Thor VX9 Adapter Cable](#) - For applications where the Thor VM1A (with a VM1D Standard Dock or VM3D Enhanced dock (replaces a previously installed Thor VX8 or Thor VX9.
- [CV60/CV61 Adapter Cable](#) - For applications where the VM1A replaces a previously installed CV61.
- [Screen Blanking Installation](#) - Optional connection to blank the VM1A display while the vehicle is in motion.

When using the Thor VM1A with AC power, use the VMXD Enhanced Dock for Off-Vehicle Use and:

- [External AC/DC Power Supply](#) - For use when DC power is not available to power the computer, such as in an office environment.

# 12-48 VDC Vehicles (10-60 VDC Direct Connection)



**Caution:** For installation by trained service personnel only.



**Caution:** These instructions for use with **VM1D Standard Dock** and **VM3D Enhanced Dock** only.

## Fuse Requirements for 10-60 VDC Direct Connection



**Warning:** For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery's positive (+) terminal. If an unused fuse holder is not available on the vehicle, use **VM3055FUSE** (or equivalent) to install the fuse as shown below:

- For 12VDC input, use the 10A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than 12VDC.
- For 24VDC input, use the 6A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than 24VDC.
- For 36VDC input, use the 4A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than 36VDC.
- For 48VDC input, use the 3A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than 48VDC.

**Note:** For North America, a UL Listed fuse is to be used.

## Power Cable Identification for 10-60 VDC Direct Connection

The DC power cable is included with the dock:



**Caution:** Twist the red and red/white wires together and twist the black and black/white wires together before connecting to vehicle power.



Wire Color	Connection
Red	DC + (10-60 VDC)
Red/White	DC + (10-60 VDC)
Black	DC -
Black/White	DC -
Green	Ground
Blue	Ignition Input (optional)

## 10-60 VDC Direct Power Connection

1. The Thor VM1A must not be mounted in the dock. The power switch on the dock must be turned Off. The power cable must be UNPLUGGED from the dock.
2. While observing the [Fuse Requirements for 10-60 VDC Direct Connection](#), connect the power cable as close as possible to the actual battery terminals of the vehicle (if using unswitched power).
3. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized “crimp” type electrical terminals are an accepted method of termination. Please select electrical connectors sized for use with 20AWG (0.81mm<sup>2</sup>) conductors.
4. Refer to the wiring diagrams following this section for wire colors and connections:
  - [Ignition Control Wiring Diagram for 10-60 VDC Direct Power](#)
  - [Auto-On Control Wiring Diagram for 10-60 VDC Direct Connection](#)
  - [Manual On/Off Control Wiring Diagram for 10-60 VDC Direct Connection](#)
5. Route the power cable the shortest way possible removing any left-over cable. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, when routing this cable it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
6. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
7. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
8. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
9. [Place Thor VM1A in the Dock](#)
10. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch.
11. [Power On the Computer](#).

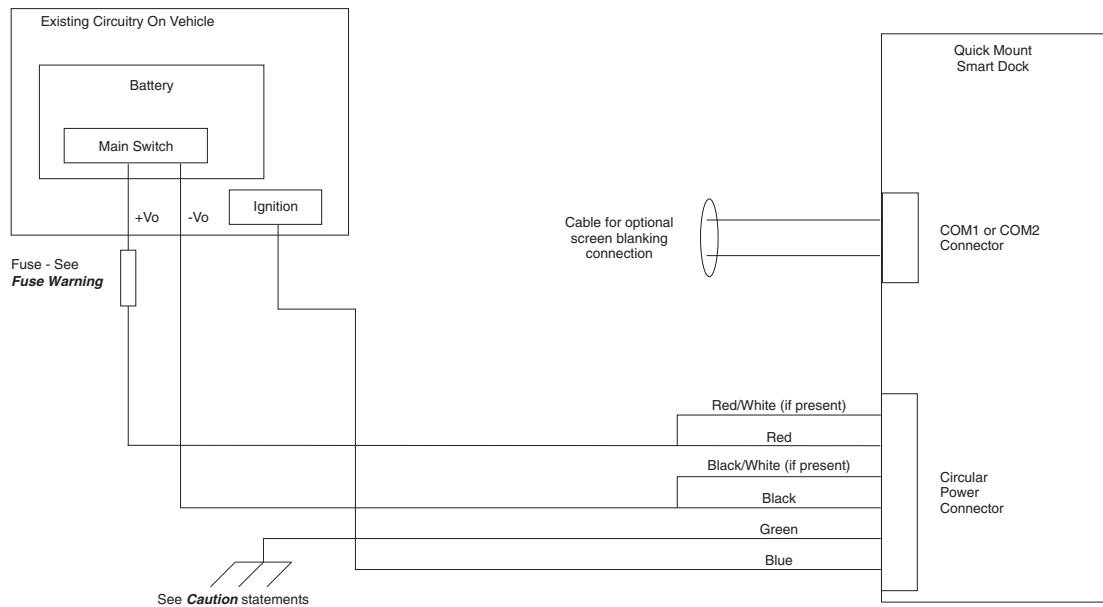
Once installation is complete, remember to start the computer and configure the [Power Mode](#).

See the [Auto-On](#) control panel.

## Ignition Control Wiring Diagram for 10-60 VDC Direct Power

Ignition wire must be connected and Ignition Control must be selected on the [Power Mode](#) control panel. When switched vehicle power is available the Thor VM1A ignition signal wire can be connected (less than 1mA over input voltage range) to the switched circuit to allow the computer to power on when the vehicle is switched on and go into shut down (see note below) when the vehicle is switched off.

**Note:** When the vehicle is switched off, the Thor VM1A treats this event as a power button press. The default setting for a power button press is to power the device off, however additional options are available on the [Advanced](#) tab of the [Power Options](#) control panel.



### Caution: For battery powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.
- GND (green wire) must be connected to the vehicle chassis ground.



### Caution: For internal combustion engine powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.

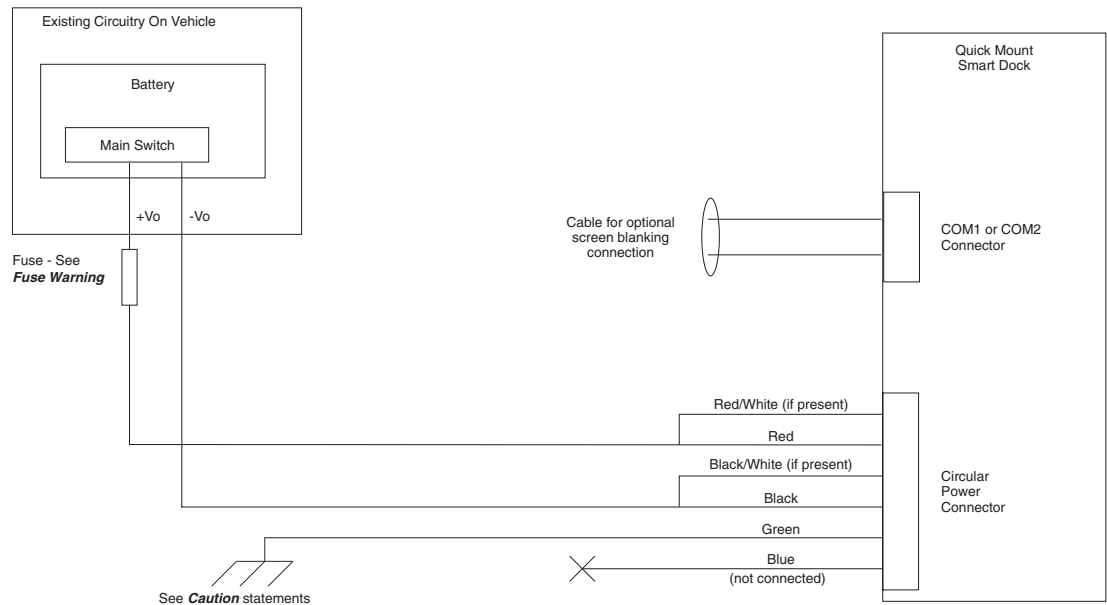
- GND (green wire) is connected to the vehicle chassis ground, which can also be battery negative.



**Warning:** For proper and safe installation, follow the **Fuse Requirements for 10-60 VDC Direct Connection**.

## Auto-On Control Wiring Diagram for 10-60 VDC Direct Connection

Auto-ON must be selected on the **Power Mode** control panel. The vehicle supply connections should be made to vehicle switched power to allow the terminal to automatically powerup when vehicle power is switched on or when the power switch on the back of the dock is placed in the On position. The Ignition wire is not used and should be left disconnected.



### Caution: For battery powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.
- GND (green wire) must be connected to the vehicle chassis ground.



### Caution: For internal combustion engine powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.

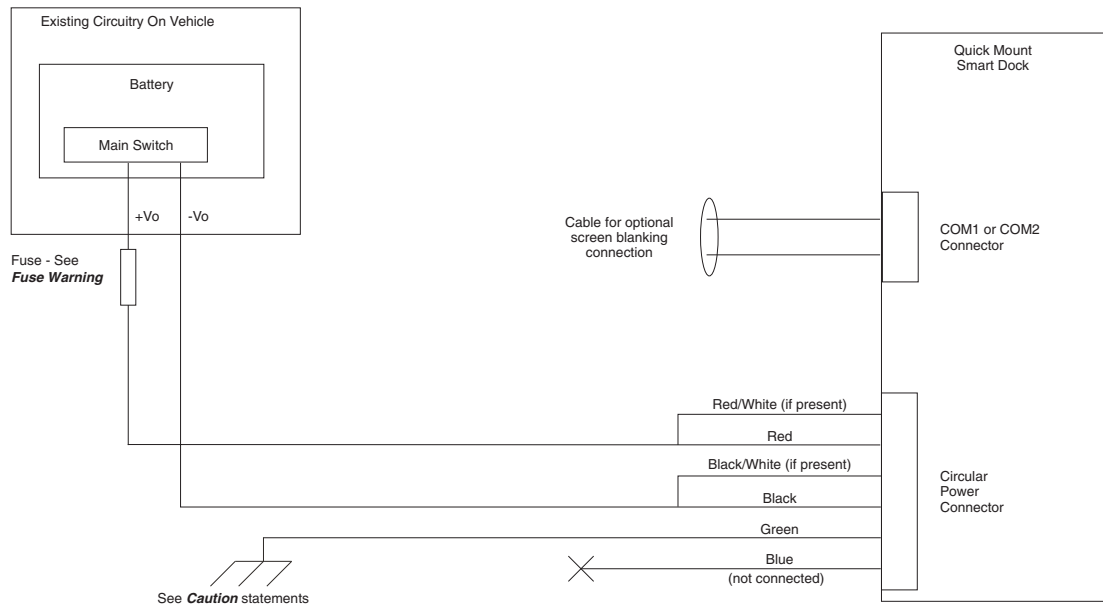
- GND (green wire) is connected to the vehicle chassis ground, which can also be battery negative.



**Warning:** For proper and safe installation, follow the **Fuse Requirements for 10-60 VDC Direct Connection.**

## Manual On/Off Control Wiring Diagram for 10-60 VDC Direct Connection

Ignition wire must be left unconnected. Standard must be selected from the **Power Mode** control panel.



### Caution: For battery powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.
- GND (green wire) must be connected to the vehicle chassis ground.



### Caution: For internal combustion engine powered vehicles:

- VIN+ (red wire) is connected to battery positive. If there is a red wire and a red/white wire, twist them together and connect to battery positive.
- VIN- (black wire) must be connected to battery negative. If there is a black wire and a black/white wire, twist them together and connect to battery negative.

- GND (green wire) is connected to the vehicle chassis ground, which can also be battery negative.



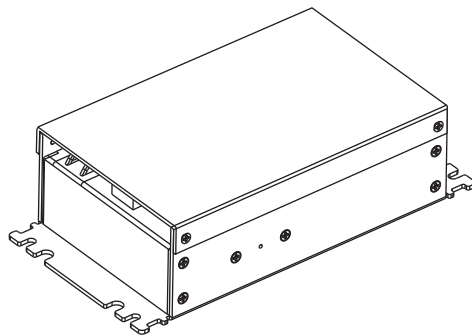
**Warning:** For proper and safe installation, follow the [Fuse Requirements for 10-60 VDC Direct Connection](#).

## 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Side of Lid)

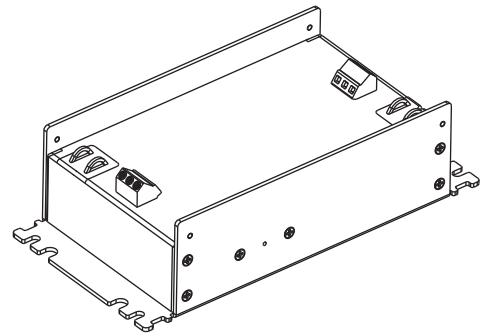



**Caution:** These instructions are for use with the [VM1D Standard Dock](#) and [VM3D Enhanced Dock](#) only.

This option requires DC/DC external power supply Honeywell Part no. 9000313PWRSPPLY.



Shown with Lid Attached  
Lid is secured with screws on the side of lid.



Shown with Lid Removed  
Input and output connector blocks under lid.  
One positive (VIN+), negative (VIN-), and ground (  ) connection in input block.  
One positive (Vo+) and negative (Vo-) connection in output block.

If the DC/DC power supply does not have screws in the side of the lid, see [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Top of Lid\)](#).



**Caution:** For installation by trained service personnel only.



**Caution:** Usage in areas where moisture can affect the power supply connections should be avoided. The power supply should be mounted in a dry location within the vehicle or placed in a suitable protective enclosure.



**Caution:** Use caution when routing the power cable. See [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#).



## Fuse Requirements 50-150VDC Power Supply, Screws on Side of Lid



**Warning:** For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery's positive (+) terminal. Use VM3055FUSE (or equivalent) to install the fuse as shown below:

For all voltages, use the 3A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than the vehicle input voltage.

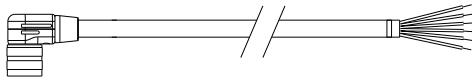
**Note:** For North America, a UL Listed fuse is to be used.

## Power Cable Identification for 50-150VDC Power Supply, Screws on Side of Lid

The DC power cable is included with the dock:



**Caution:** Twist the red and red/white wires together and twist the black and black/white wires together before connecting to vehicle power.



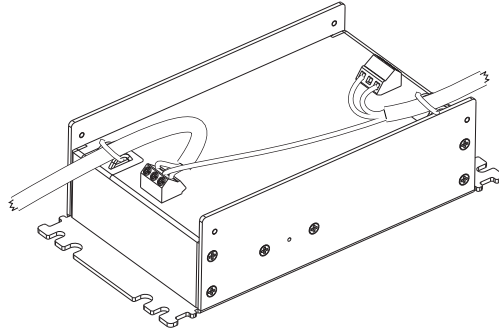
Wire Color	Connection
Red	DC + (10-60 VDC)
Red/White	DC + (10-60 VDC)
Black	DC -
Black/White	DC -
Green	Ground
Blue	Ignition Input (optional)

## Vehicle 50-150 VDC Power Connection

1. Please review the [Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid](#), before beginning power cable install.
2. The computer must not be mounted in the dock. The power switch on the dock must be turned Off. The power cable must be UNPLUGGED from the dock.
3. Route the cable from the VM1A to the DC/DC power supply. Route the power cable the shortest way possible. The cable is rated for a maximum temperature of 105°C (221°F). When routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
4. Cut the cable to length and strip the wire ends. Retain the portion of the cut off cable for use in the connection to the vehicle.

5. Remove the lid from the DC/DC power supply.
6. Connect the stripped end of the positive wires (red and red/white twisted together) to the output block. See [Power Cable Identification for 10-60 VDC Direct Connection](#).
7. Connect the stripped end of the negative wires (black and black/white twisted together) to the output. See [Power Cable Identification for 50-150VDC Power Supply, Screws on Side of Lid](#).

**Note:** The input block has VIN+, VIN- and GND terminals. The output block has VO+ and VO- terminals.



8. Use the portion of the power cable that was previously cut off to connect from the DC/DC power supply input side the vehicle electrical system. Connect the ground (green) wire from the computer to the GND terminal on the input side of the DC/DC power supply.
9. Route the wiring from the DC/DC power supply to the vehicle's electrical system. Do not connect to vehicle power at this time.
10. Strip the wire ends and connect to the input side of the DC/DC power supply.
11. Use looms and wire ties to secure all wiring as shown.
12. Reattach the cover with the screws.
13. Connect the DC/DC power supply to the vehicle's electrical system as directed below:



**Caution: For battery powered vehicles only.**

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground



**Caution: For internal combustion engine power vehicles.**

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative

- GND is connected to the vehicle chassis ground, which can also be battery negative
14. While observing the [Fuse Requirements 50-150VDC Power Supply, Screws on Side of Lid](#) connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.



**Caution: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.**

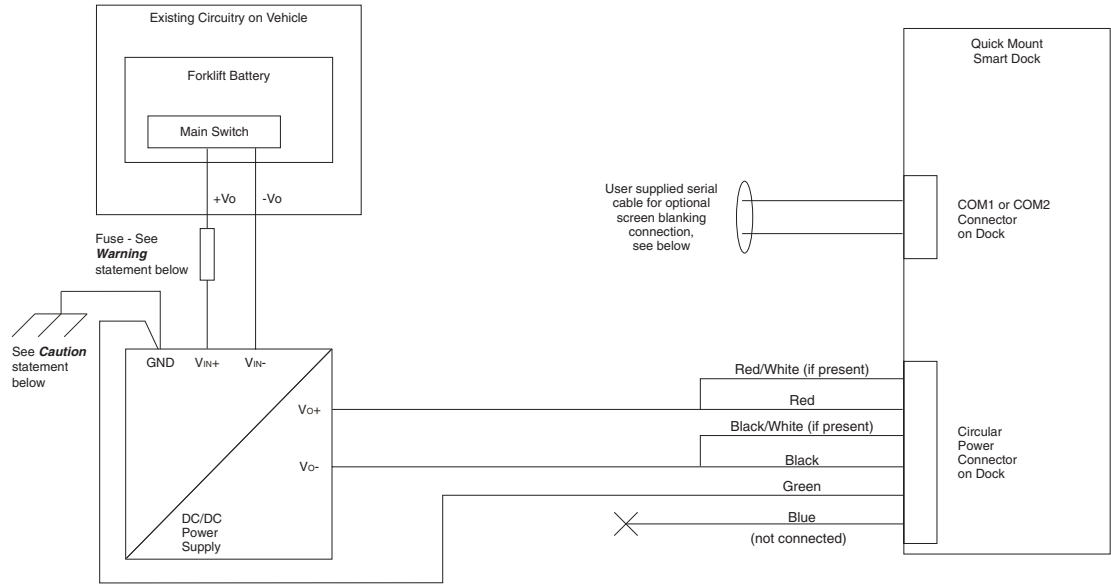
15. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized “crimp” type electrical terminals are an accepted method of termination. Select electrical connectors sized for use with 18AWG (1mm<sup>2</sup>) conductors.
16. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate the outer cable jacket.
17. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely. Flip the power switch on the back of the dock to On.
18. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
19. [Place Thor VM1A in the Dock](#).
20. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch.
21. [Power On the Computer](#).

Once installation is complete, remember to start the computer and configure the [Power Mode](#).

See the [Auto-On](#) control panel.

**Note:** *Ignition control is not available for trucks over 60VDC.*

## Wiring Diagram for 50-150VDC Power Supply, Screws on Side of Lid



### Caution: For battery powered vehicles:

- GND must be connected to the vehicle chassis ground.



### Caution: For internal combustion engine powered vehicles:

- GND is connected to the vehicle chassis ground, which can also be battery negative.



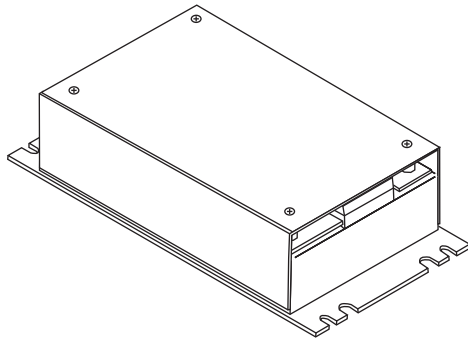
### Warning: For proper and safe installation, follow the [Fuse Requirements 50-150VDC Power Supply, Screws on Side of Lid](#).

## 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Top of Lid)

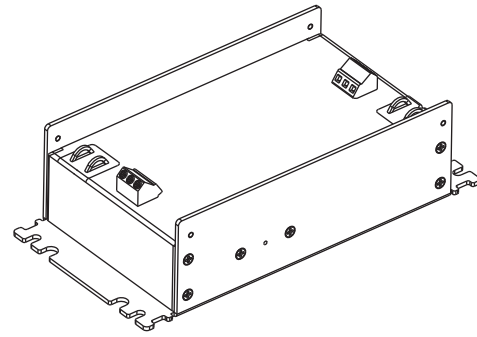


### Caution: These instructions are for use with [VM1D Standard Dock](#) and [VM3D Enhanced Dock](#) only.

This option requires DC/DC power supply Honeywell Part no. VX89303PWRSPLY shown below.



Shown with Lid Attached  
Lid is secured with screws on the side of lid.



Shown with Lid Removed  
Input and output connector blocks under lid.  
Two positive (+), negative (-), and ground (⊖) connection per terminal block.

If the DC/DC power supply does not have screws in the top of the lid, see [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Side of Lid\)](#).



**Caution:** For installation by trained service personnel only.



**Caution:** Usage in areas where moisture can affect the power supply connections should be avoided. The power supply should be mounted in a dry location within the vehicle or placed in a suitable protective enclosure.



**Caution:** Use caution when routing the power cable. See [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#).

## Fuse Requirements for 50-150 VDC Power Supply, Screws on Top of Lid



**Warning:** For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery's positive (+) terminal. Use VM3055FUSE (or equivalent) to install the fuse as shown below:

For all voltages, use the 3A fuse from the kit or a slow blow fuse that has a DC voltage rating greater than the vehicle input voltage.

**Note:** For North America, a UL Listed fuse is to be used.

## Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid

The DC power cable is included with the dock:



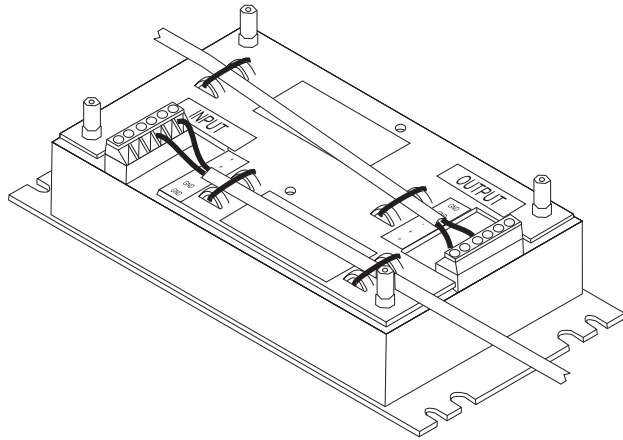
**Caution:** Twist the red and red/white wires together and twist the black and black/white wires together before connecting to vehicle power.

Wire Color	Connection
Red	DC + (10-60 VDC)
Red/White	DC + (10-60 VDC)
Black	DC -
Black/White	DC -
Green	Ground
Blue	Ignition Input (optional)

## Vehicle 50-150 VDC Power Connection

1. Please review the [Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid](#), before beginning power cable install.
2. The Thor VM1A must not be mounted in the dock. The power switch on the dock must be turned Off. The power cable must be UNPLUGGED from the dock.
3. Route the cable from the computer to the DC/DC power supply. Route the power cable the shortest way possible. The cable is rated for a maximum temperature of 105°C (221°F). When routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
4. Cut the cable to length and strip the wire ends. Retain the portion that was cut off for use in connecting to the vehicle power.
5. Remove the lid from the DC/DC power supply.
6. Connect the stripped end of the positive wires (red and red/white twisted together) to the output block. See [Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid](#).
7. Connect the stripped end of the negative wires (black and black/white twisted together) to the output. See [Power Cable Identification for 50-150 VDC Power Supply, Screws on Top of Lid](#).

**Note:** The input and output blocks each have two + (positive), two – (negative) and two ⊕ (ground) connectors. Either connector in the block can be used to connect the matching polarity wire.



8. Route the wiring from the DC/DC power supply to the vehicle's electrical system using the portion of the power cable previously cut off. Do not connect to vehicle power at this time.
9. Strip the wire ends and connect to the input side of the DC/DC power supply.
10. Use looms and wire ties to secure all wiring as shown.
11. Reattach the cover with the screws.
12. Connect the DC/DC power supply to the vehicle's electrical system as directed below:



**Caution: For battery powered vehicles:**

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground



**Caution: For internal combustion engine powered vehicles:**

- VIN+ is connected to battery positive
- VIN- must be connected to battery negative
- GND must be connected to the vehicle chassis ground

13. While observing the [Fuse Requirements for 50-150 VDC Power Supply, Screws on Top of Lid](#), connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.



**Caution: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.**

14. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized “crimp” type electrical terminals are an accepted method

of termination. Select electrical connectors sized for use with 18AWG (1mm<sup>2</sup>) conductors.

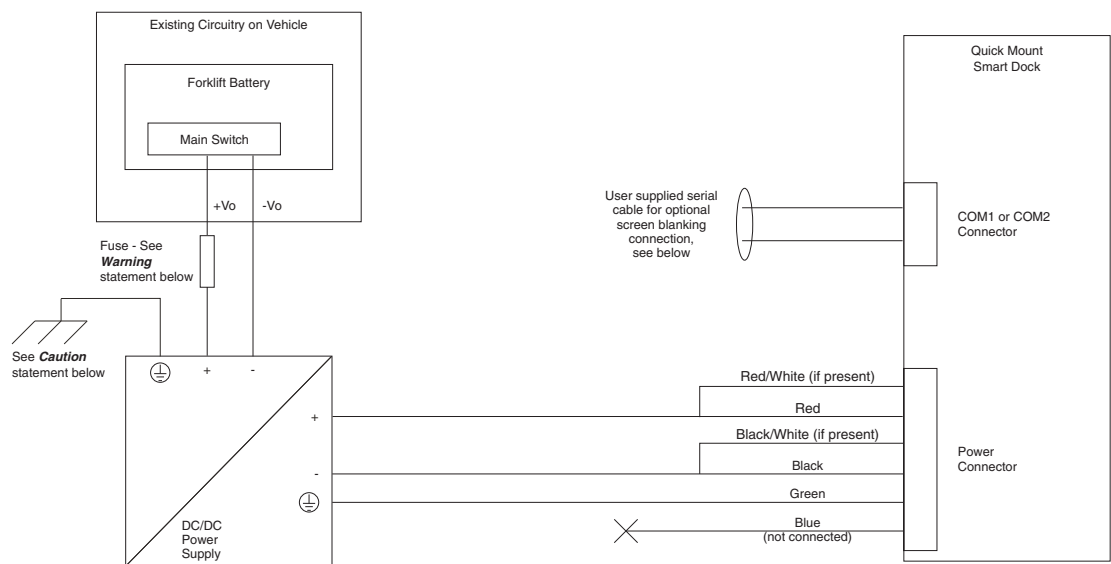
15. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate the outer cable jacket.
16. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely. Flip the power switch on the back of the dock to On.
17. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
18. [Place Thor VM1A in the Dock.](#)
19. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch.
20. [Power On the Computer.](#)

Once installation is complete, remember to start the computer and configure the [Power Mode](#).

See the [Auto-On](#) control panel.

**Note:** Ignition control is not available for trucks over 60VDC.

### Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid



**Caution:** For battery powered vehicles:



- GND must be connected to the vehicle chassis ground.



**Caution: For internal combustion engine powered vehicles:**

- GND is connected to the vehicle chassis ground, which can also be battery negative.



**Warning: For proper and safe installation, follow the [Fuse Requirements for 50-150 VDC Power Supply, Screws on Top of Lid](#).**

## VX5/VX6/VX7 Adapter Cable



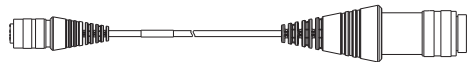
**Caution: These instructions are for use with [VM1D Standard Dock](#) and [VM3D Enhanced Dock](#) only.**

An adapter cable (VM1077CABLE) is available to attach the Thor VM1A to a vehicle previously equipped with a VX5/VX6/VX7 DC power cable. The adapter cable has a 5-pin connector to match with the VX5/VX6/VX7 power supply cable on one end and a 6-pin connector to match to the VM1A on the other end. This section assumes the VX5/VX6/VX7 power cable is properly connected to vehicle power. Refer to the X5, VX6, or VX7 Vehicle Mounting Reference Guide for details.



**Warning: Because the VX5/VX6/VX7 supports 10-60 VDC power input, verify input voltages before using this adapter cable with an existing VX5, VX6, or VX7 power connection installation.**

**To Power Connector on Dock**



**To VX5/VX6/VX7 Power Supply Cable**

When this adapter cable is used, there is no provision for an ignition switch input. Therefore the vehicle ignition monitoring function is not available when using this cable.

## Connect to VX5/VX6/VX7 Power Cable

1. Connect the adapter cable to the VX5/VX6/VX7 power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.

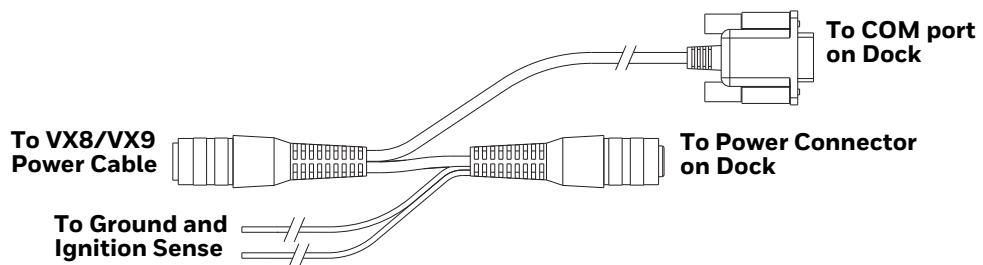
3. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
4. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
6. [Place Thor VM1A in the Dock](#)
7. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch.
8. [Power On the Computer](#).

## Thor VX8/Thor VX9 Adapter Cable



**Caution:** These instructions are for use with **VM1D Standard Dock** and **VM3D Enhanced Dock** only. This cable is not used for the **VMXD Enhanced Dock**.

An adapter cable is available to attach the Thor VM1A to a vehicle previously equipped with a VX8/VX9 DC power cable. with a screen blanking box installed. If screen blanking is not used, the VX8/VX9 power cable can be connected directly to the dock power connector and an adapter cable is not required. The adapter cable has a 6-pin connector to match the VX8/VX9 power supply cable on one end and a 6-pin connector to match the VM1A on the other end. The cable also has bare wires for ground and ignition sense connection plus a D9 cable to connect to a COM port on the dock to provide a screen blanking signal. This section assumes the VX8/VX9 power cable is properly connected to vehicle power. Refer to the VX8 or VX9 Vehicle Mounting Reference Guide for details.



## Connect to Thor VX8/VX9 Power Cable

1. Connect the adapter cable to the Thor VX8/VX9 power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. Connect the green wire to vehicle ground.



### **Caution: For battery powered vehicles:**

- GND (green wire) must be connected to the vehicle chassis ground.



### **Caution: For internal combustion engine powered vehicles:**

- GND (green wire) is connected to the vehicle chassis ground, which can also be battery negative.
3. If ignition control will be used, connect the blue wire to an ignition switched circuit (less than 1mA over input voltage range). If ignition control is not used, the blue wire can be left disconnected,
  4. If the VX8/VX9 cable is connected to a screen blanking box or switch, connect the D9 connector to a COM port on the dock.
  5. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, when routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
  6. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
  7. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
  8. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
  9. [Place Thor VM1A in the Dock](#).
  10. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch if not previously installed.
  11. [Power On the Computer](#).

# CV60/CV61 Adapter Cable



**Caution:** These instructions are for use with **VM1D Standard Dock** and **VM3D Enhanced Dock** only.

An adapter cable is available to attach the Thor VM1A to a vehicle previously equipped with a CV60 (VM3078CABLE) or CV61 (VM3079CABLE) DC power cable. The adapter cable has a 5-pin connector to match with the CV60 or CV61 power supply cable on one end and a 6-pin connector to match to the VM1A on the other end. This section assumes the CV60 or CV61 power cable is properly connected to vehicle power. Refer to the CV60 or CV61 documentation for details.

**To Power Connector on Dock**



**To VM1A Power Supply Cable**

When this adapter cable is used, there is no provision for an ignition switch input. Therefore the vehicle ignition monitoring function is not available when using this cable.

## Connect to CV60 or CV61 Power Cable

1. Connect the adapter cable to the CV60 or CV61 power cable by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
2. The cable is rated for a maximum temperature of 105°C (221°F). Therefore, routing this cable, it should be protected from physical damage and from surfaces that might exceed this temperature. Cable should be protected from physical damage from moving parts. Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate. Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
3. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.
4. Connect the watertight connector end of the power cable to the dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. Secure the power cable to the computer using the [Strain Relief Cable Clamps](#).
6. [Place Thor VM1A in the Dock](#)
7. If using the [Screen Blanking Installation](#) feature, install the screen blanking box or switch.
8. [Power On the Computer](#).

# Screen Blanking Installation

Screen blanking (blackout) can be enabled when the vehicle is in motion. Once screen blanking is enabled, the display is blanked out (or a preselected zoom area is displayed) any time when the cable sends the signal that the vehicle is in motion. If the cable is removed, screen blanking is disabled and the display remains on.

Prerequisite: The steps outlined in either [12-48 VDC Vehicles \(10-60 VDC Direct Connection\)](#), [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Side of Lid\)](#) or [60-144 VDC Vehicles \(50-150 VDC Power Supply, Screws on Top of Lid\)](#) have been completed.

Screen blanking is accomplished by either a Screen Blanking Box or a user supplied switch.



**Caution: For installation by trained service personnel only.**

## Fuse Requirements for Screen Blanking



**Warning: For proper and safe installation, the input power lead to the Screen Blanking Box requires a 3 Amp maximum time delay (slow blow) high interrupting rating fuse.**

**Note:** For North America, a UL Listed fuse is to be used. The fuse and the fuse holder must be supplied by the user.

## Screen Blanking Cable

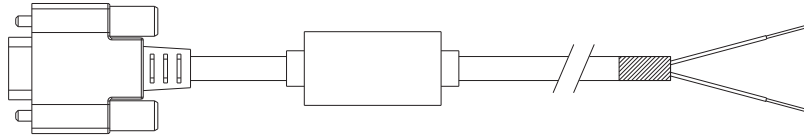
Refer to [Screen Blanking](#) to configure the VM1A for screen blanking.

When routing any additional cables for screen blanking:

- Route the cable the shortest way possible removing any left-over cable
- Route the cables so they are protected from physical damage and from surfaces that might exceed the cable's rated temperature threshold.
- Cable should be protected from physical damage from moving parts
- Do not expose the cable to chemicals or oil that may cause the wiring insulation to deteriorate
- Always route the cable so that it does not interfere with safe operation and maintenance of the vehicle.
- Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate outer cable jacket.

## Honeywell Screen Blanking Box Cable

An optional Honeywell Screen Blanking Box Cable is available (VM1080CABLE).



DB9 Female	Function with Screen Blanking Box	Wire color
1 -6, 9	Not Used	
7 (RTS)	Connected to Screen Blanking Box, unswitched side	Black (see note)
8 (CTS)	Connected to Screen Blanking Box, switched side	Gray (see note)

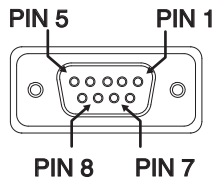
**Note:** Wire colors only apply to optional Honeywell Screen Blanking Box Cable, VM1080CABLE. Wire colors may vary in a user-supplied cable.

The optional Honeywell Screen Blanking Box Cable, VM1080CABLE, is installed as follows:

1. Connect the gray wire of the cable to the switched side of the Screen Blanking Box.
2. Connect the black wire of the cable to the unswitched side of the Screen Blanking Box.
3. Connect the D9 serial connector to either COM1 or COM2 serial port on the dock.

## User-Supplied Cable for Screen Blanking

A user-supplied cable can be used as well. Pins 7 and 8 must be connected as detailed below. No other pins are to be connected.

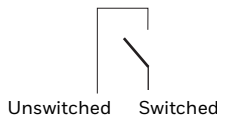


DB9 Female	Function with Screen Blanking Box	Function with Switch
1 -6, 9	Not Used	Not Used
7 (RTS)	Connected to Screen Blanking Box, unswitched side	Connected to Switch
8 (CTS)	Connected to Screen Blanking Box, switched side	Connected to Switch

The user-supplied cable is installed as follows:

1. Connect the wire from Pin 8 of the cable to the switched side of the Screen Blanking Box or to a user-supplied switch.
2. Connect the wire from Pin 7 of the cable to the unswitched side of the Screen Blanking Box or to a user-supplied switch.
3. Connect the D9 serial connector to either COM1 or COM2 serial port on the dock.

## Screen Blanking Box

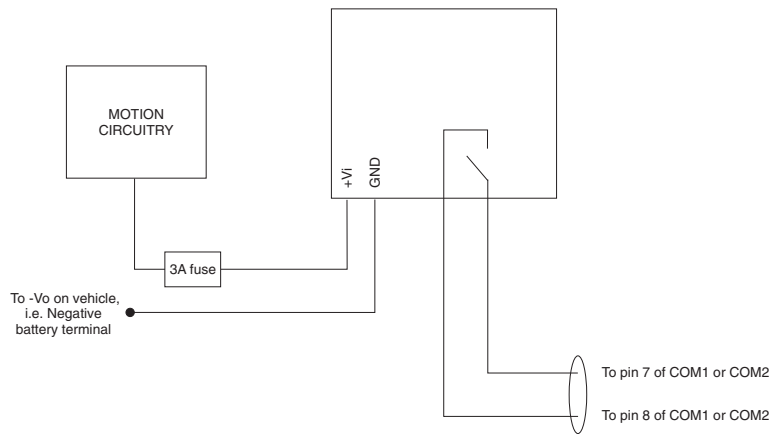
Screen Blanking Box Terminal	Connection
+VI	Input from vehicle motion sensing circuitry. Please refer to label on Screen Blanking Box for allowable voltage input range.
GND	DC -
	<p>These two terminals are for connecting a serial cable:</p> <ul style="list-style-type: none"> <li>• If using an optional Honeywell screen blanking cable, VM1080CABLE, connect the <i>gray</i> wire to the <i>switched</i> side of the connection and connect the <i>black</i> wire to the <i>unswitched</i> side.</li> <li>• If using a user-supplied cable, the cable must be constructed so that Pin 7 (RTS) connects to <i>switched</i> side of the connection and Pin 8 (CTS) connects to the <i>unswitched</i> side.</li> </ul>

It is assumed that the motion sensing circuitry in the illustrations below is powered by internal vehicle circuitry.

Please refer to the appropriate illustration below for Screen Blanking Box wiring diagrams.



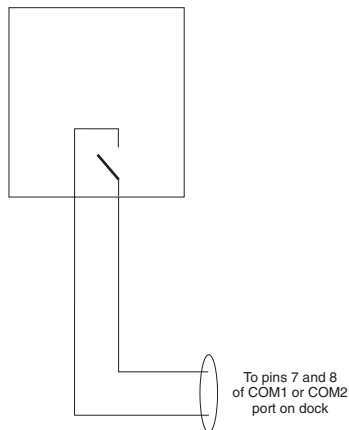
**Warning:** Do not exceed the maximum input voltage, either 60 or 72VDC, specified on the Screen Blanking Box label when using this configuration.



**Note:** The black and gray wire colors in the illustration only apply to the optional Honeywell Screen Blanking Box Cable, VM1080CABLE. The wire colors may be different in a user-supplied cable.

## Screen Blanking with Switch

In applications where it is impractical to use the screen blanking box due to vehicle voltage or lack of a motion sensing signal, screen blanking can be controlled via a user supplied switch or relay that provides an electrical conductive connection on vehicle motion.



Pins 7 and 8 must be connected as shown in the illustration above. No other pins are to be connected.



## Enhanced Dock with Thor VX8/Thor VX9 Screen Blanking



**Caution:** This dock (VMX004VMCRADLE) is recommended for use when replacing an existing Thor VX8 or Thor VX9 where screen blanking is used. This dock eliminates the need for wiring changes by enabling the existing VX8/VX9 power cable and screen blanking box to be used when the VX8/VX9 is replaced by Thor VM1A. These instructions are for this dock model only! The Ignition Control feature is not available when this dock is used.



**Warning:** The external DC/DC converter previously used with the Thor VX8 or Thor VX9 must be left in place to provide ground isolations. Connecting the dock power input directly to vehicle power could result in a safety hazard or equipment damage.



**Warning:** The cable shielding must be connected to chassis ground. Consult the instructions later in this section for the respective power supply type.



**Caution:** COM1 is used for screen blanking (via the power cable connector) and is unavailable when the screen blanking box is attached. When a screen blanking box is attached, any external serial device, such as a scanner, must be connected to the COM2 port on the dock. If a screen blanking box is not connected via the power cable, the COM1 port on the dock is available for a serial device connection.



**Caution:** These instructions for use with [Enhanced Dock with Thor VX8/VX9 Screen Blanking](#) only.

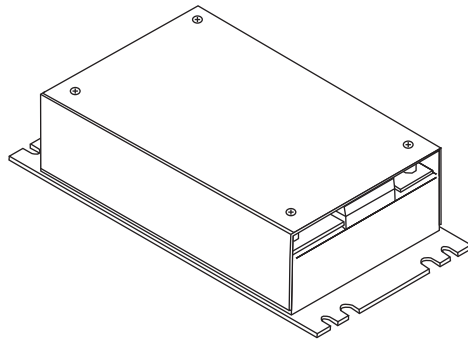
Determine the type of power supply used with the previous Thor VX8 or Thor VX9 installation:

- [DC/DC Power Supply with Screws on Top of Lid](#)
- [DC/DC Power Supply with Screws on Side of Lid](#)

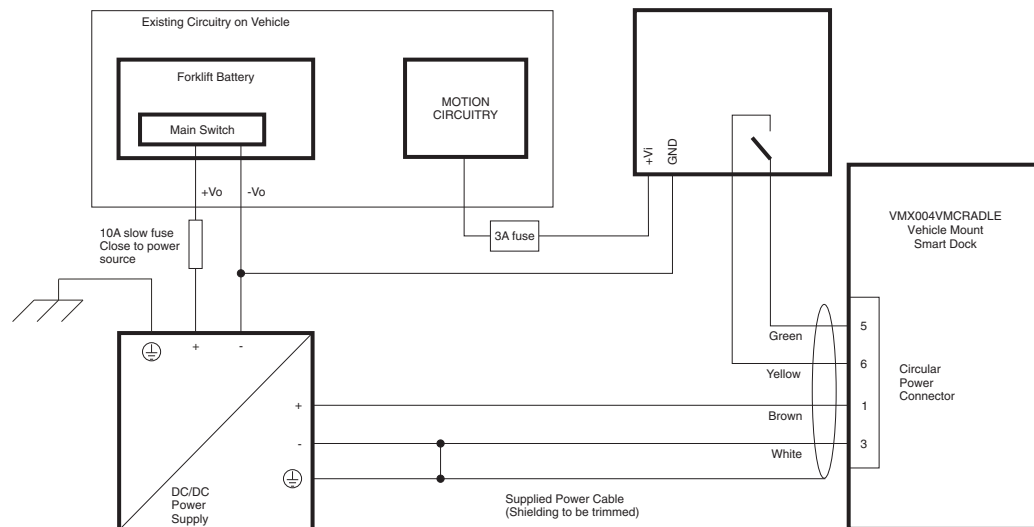
## DC/DC Power Supply with Screws on Top of Lid



**Caution:** Inspect the cable shield to verify it is connected to chassis ground. If there is no connection from the cable shield to chassis ground, one must be added at this time. Use a jumper wire to connect the cable shield to chassis ground as shown below for the appropriate type of power supply installed on the vehicle. A jumper wire, as shown in the illustrations below, may be present to attach the chassis ground to the white wire of the power cable. This wire is not necessary but can be left in place if present. For proper screen blanking, verify the yellow and green wires are attached to the screen blanking box as shown in the illustrations below.



For this model, follow the diagram below to attach the power cable shield to chassis ground:



**Caution:** For battery powered vehicles:

- VIN+ is connected to battery positive.
- VIN- must be connected to battery negative.

- GND must be connected to the vehicle chassis ground.



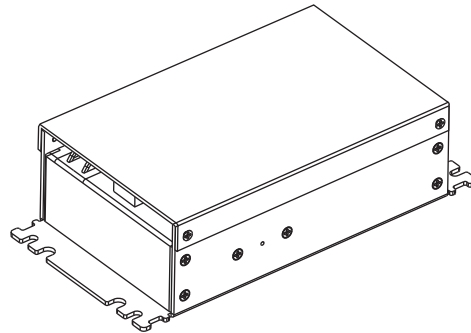
**Caution: For internal combustion engine powered vehicles:**

- VIN+ is connected to battery positive.
- VIN- is connected to battery negative.
- GND is connected to the vehicle chassis ground, which can also be battery negative.

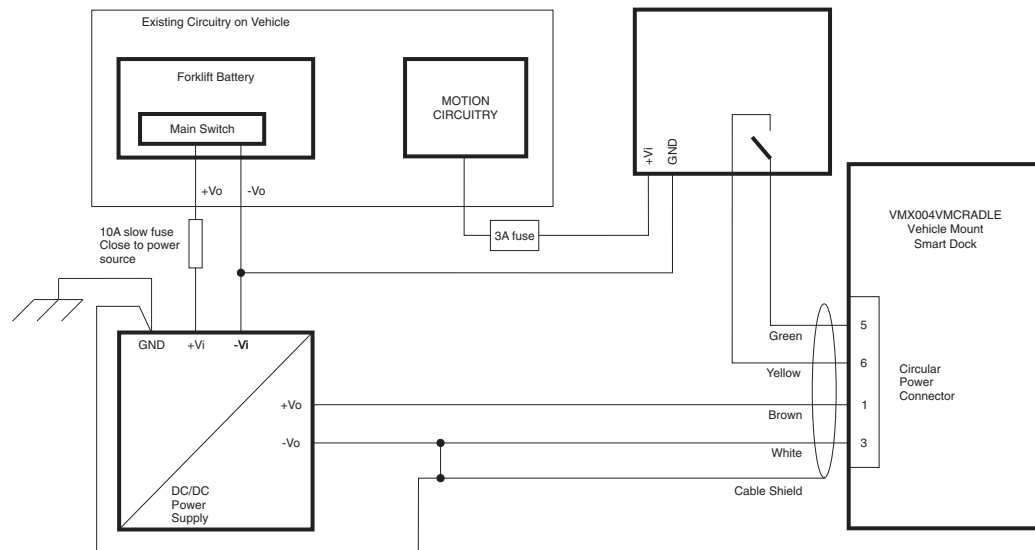
## DC/DC Power Supply with Screws on Side of Lid



**Caution: Inspect the cable shield to verify it is connected to chassis ground. If there is no connection from the cable shield to chassis ground, one must be added at this time. Use a jumper wire to connect the cable shield to chassis ground as shown below for the appropriate type of power supply installed on the vehicle. A jumper wire, as shown in the illustrations below, may be present to attach the chassis ground to the white wire of the power cable. This wire is not necessary but can be left in place if present. For proper screen blanking, verify the yellow and green wires are attached to the screen blanking box as shown in the illustrations below.**



For this model, follow the diagram below to attached the power cable shield to chassis ground:



**Caution: For battery powered vehicles:**

- VIN+ is connected to battery positive.
- VIN- must be connected to battery negative.
- GND must be connected to the vehicle chassis ground.



**Caution: For internal combustion engine powered vehicles:**

- VIN+ is connected to battery positive.
- VIN- is connected to battery negative.
- GND is connected to the vehicle chassis ground, which can also be battery negative.

## External AC/DC Power Supply



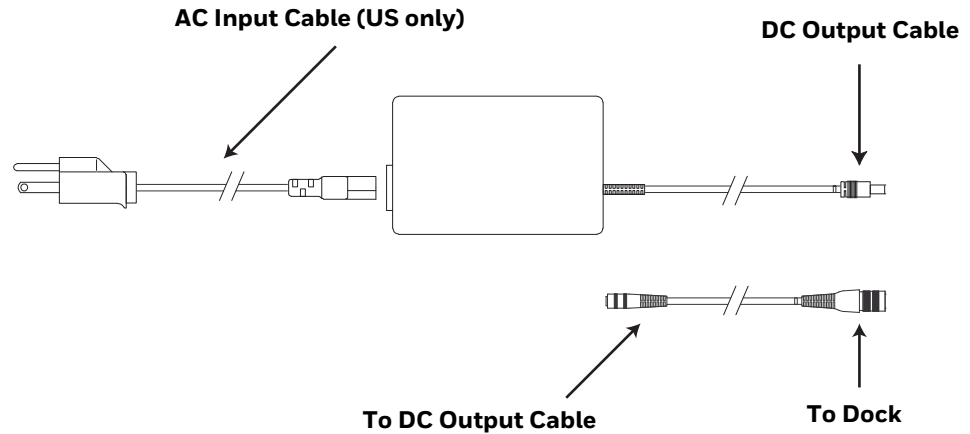
**Caution: These instructions for use with [VMXD Enhanced Dock for Off-Vehicle Use](#) only.**

The optional external AC/DC power supply is for use in environments, such as an office, where DC power is not available.

**Note:** *The Honeywell-approved AC/DC Power Supply and Adapter Cable (VM1078CABLE) are only intended for use in a 40°C (104°F) maximum ambient temperature environment.*

In North America, this unit is intended for use with a UL Listed ITE power supply with output rated 15 VDC, 4 Amp (maximum), 60 W (maximum). Outside North America, this unit is intended for use with an IEC certified ITE power supply with output rated 15 VDC, 4 Amp (maximum), 60 W (maximum).

The external power supply may be connected to either a 120V, 60Hz supply or, outside North America, to a 230V, 50Hz supply, using the appropriate detachable cordset. In all cases, connect to a properly grounded source of supply provided with maximum 15 Amp overcurrent protection (10 Amp for 230V circuits).

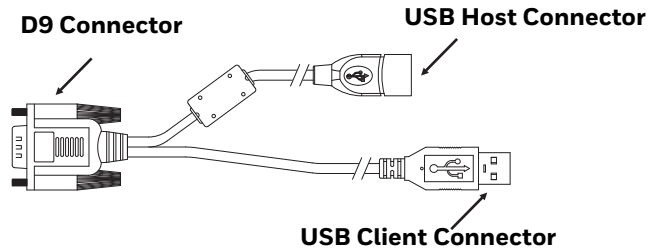


## Connect External Power Supply

1. Connect the provided detachable cordset (US only, all others must order cable separately) to the external power supply (IEC 320 connector).
2. Plug cordset into appropriate, grounded, electrical supply receptacle (AC mains).
3. Connect the DC output cable end to the corresponding connector on the adapter cable. (VM1301PWRSPPLY or VM1302PWRSPPLY)
4. Connect the watertight connector end of the Adapter Cable to the VMXD Off-Vehicle Dock power connector by aligning the connector pins to the power connector; push down on the watertight connector and twist it to fasten securely.
5. [Power On the Computer.](#)

# Connect USB Host

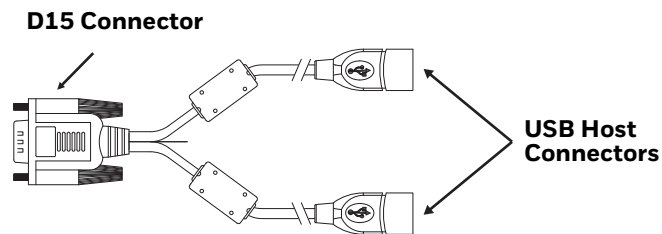
## Host/Client Y Cable



See [USB and USB1 Connector](#) for connector pinouts.

1. Seat the D9 connector firmly over the USB (Standard Dock) or USB1 (Enhanced Dock) connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. The USB-host connector provides a connector for a USB device such as a USB thumb drive. The VM1A does not support the USB client port on this cable.
4. Secure the cables to the computer with [Strain Relief Cable Clamps](#).

## Dual Host Y Cable



See [USB2 Connector](#) for connector pinouts.

1. Seat the D15 connector firmly over the USB2 (Enhanced Dock only) connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. The USB-host connectors provide a connector for a USB device such as a USB thumb drive.
4. Secure the cables to the computer with [Strain Relief Cable Clamps](#).

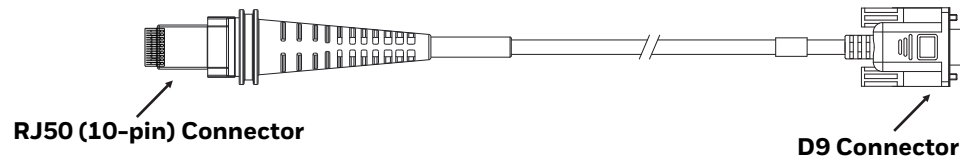
## USB Scanner

There are several ways to attach a USB scanner:

- A USB scanner can be attached to the host port on either USB adapter Y-cable.

- Certain USB scanners can be attached directly to the USB or USB-1 connector using cable CBL-501-300-S00, as shown below.

To use the CBL-501-300-S00 cable:

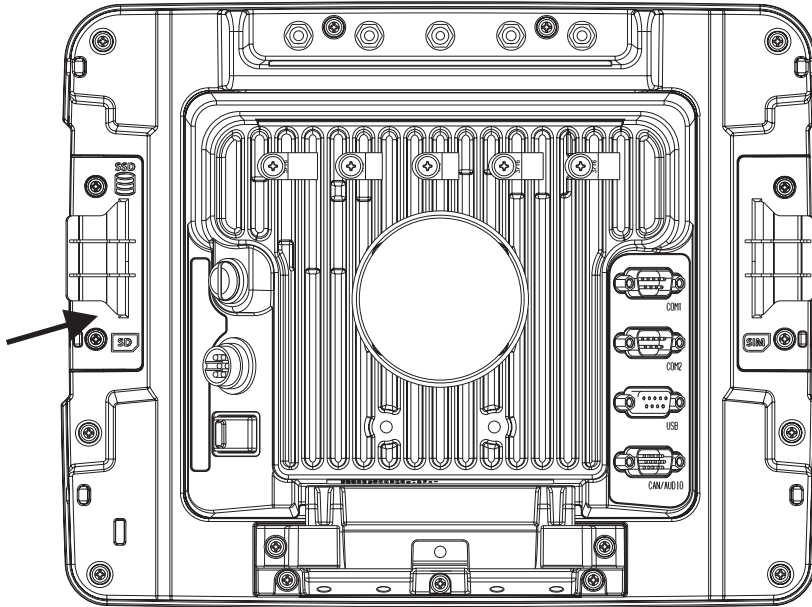


1. Seat the D9 connector of the cable over the USB or USB11 connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. Follow the instructions provided with the scanner to attach the RJ50 end of the cable to the scanner.

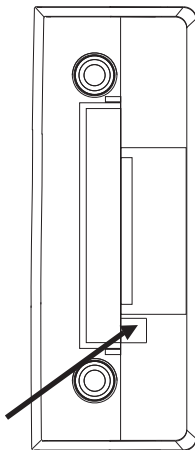
See [USB Host to Scanner Cable](#) for pinout details.


## Connect USB Client

1. For convenience, the computer can be removed from the dock, though it is not necessary.
2. If the computer remains in the dock, disconnect the power cable from the dock.
3. Press and hold the **Power** button until the options menu appears. Tap **Power Off**.
4. Place the computer face down on a stable surface.
5. Using a #2 Phillips bit loosen the M3 screws and then remove the access panel with the SD label. This panel is on the left hand side when the computer is face down with the top away from the user.



6. Insert the micro USB type B cable into the port below the SD card slot.



7. If removed, reinstall the computer in the dock.
8. Insert the USB type A cable into the PC.
9. Press the **Power** button.
10. Swipe up from the bottom of the Home screen to access all apps.
11. Tap **Settings**  > **Connected Devices** > **USB**.
12. Choose one of the following options:
  - **Charge this device**
  - **Transfer files**
  - **Transfer photos (PTP)**



## Connect Serial Device

**Note:** Pin 9 of the COM port is configured to provide +5V.

See [COM1 and COM2 Connector](#) for connector pinouts.

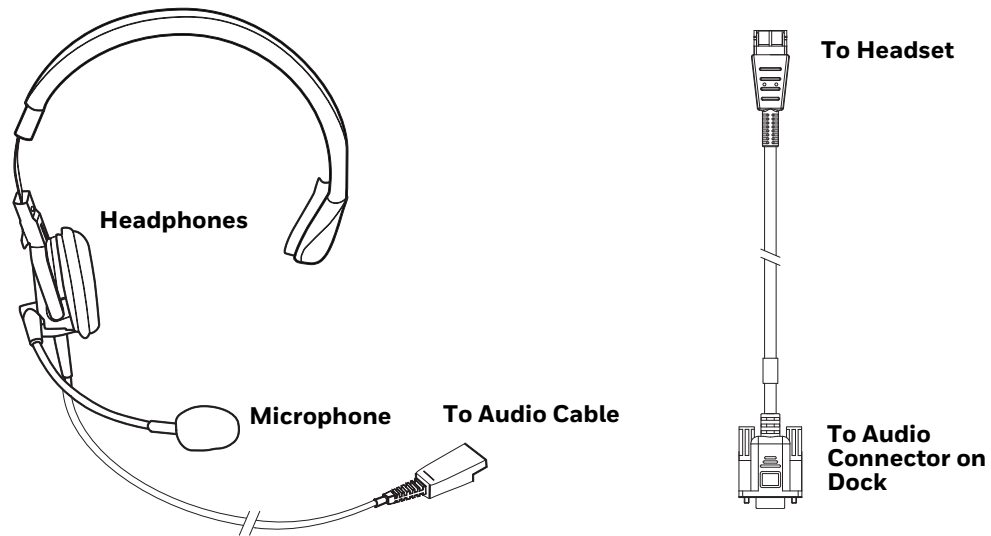
1. Seat the cable end connector firmly over the serial COM port on the dock.
2. Turn the thumbscrews in a clockwise direction. Do not over tighten.
3. Secure the cables to the computer with [Strain Relief Cable Clamps](#).
4. Connect the other cable end to the desired serial device.

## Connect a Tethered Scanner

1. The scanner cable is attached to either the COM1 or COM2 port on the dock.
2. Connect the serial cable for the scanner as directed above.
3. When the computer is powered on, it provides power to the serial scanner.
4. Configure the Data Collection (DC) Wedge to manipulate scanned data as desired.

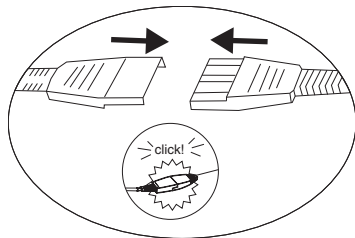
# Connect Headset Cable

The Audio connector supports a headset adapter cable.

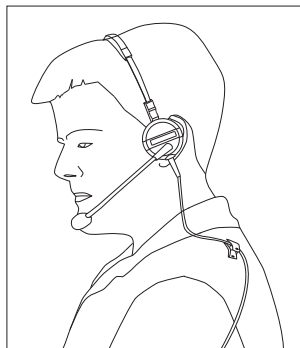


See [Audio Connector](#) for connector pinouts.

1. Seat the D15 cable end connector firmly over the Audio Connector on the dock.
2. Tighten the thumbscrews in a clockwise direction. Do not over tighten.
3. Slide the cable ends together until they click shut. Do not twist or bend the connectors. The internal microphone and speakers are automatically disabled when the headset is connected.



## Adjust Headset/Microphone and Secure Cable



The headset consists of an earpiece, a microphone, a clothing clip, and a cable.

1. Do not twist the microphone boom when adjusting the microphone. The microphone should be adjusted to be about two finger widths from your mouth.
2. Make sure the microphone is pointed at your mouth. Note the small “Talk” label near the mouthpiece. Make sure the Talk label is in front of your mouth. The microphone cable can be routed over or under clothing.
3. Follow the safety guidelines below when wearing the headset.

### Under Clothing

- Leave the cable exposed only at the top of the collar.
- Be sure to leave a small loop of cable to allow movement of your head.

### Over Clothing

- Use clothing clips to hold the cable close to your body.
- Tuck the cable under the belt, but leave a small loop where it goes under the belt.
- Do not wear the cable on the front of your body. It may get in your way or get caught on protruding objects.

## Strain Relief Cable Clamps

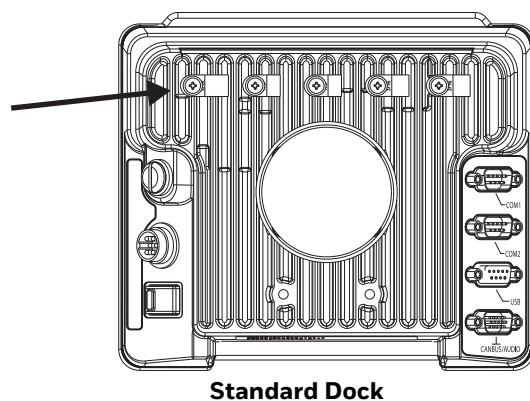
Equipment Required: Phillips screwdriver (not supplied by Honeywell)

There are five strain relief cable clamps secured to the Standard Dock.

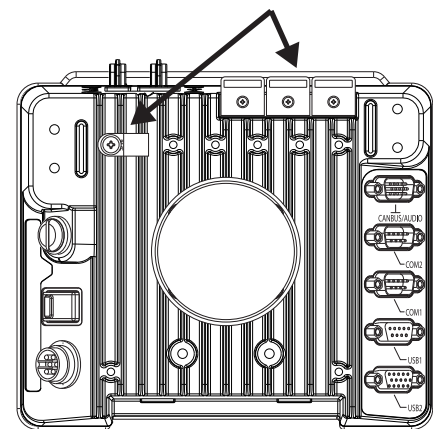
There is one strain relief cable clamp and three strain relief brackets for securing cables to the Enhanced Dock.

Use the strain relief clamps to secure audio, power, and I/O cables attached to the dock.

Use the left-most strain relief clamp for the power cable.



Standard Dock



Enhanced Dock

To use the strain relief clamp(s):

1. Determine the proper strain relief cable clamp. There are three sizes of cable clamps on the Standard Dock which should be matched to the cable to be secured. For example, the largest clamp (on the left when viewing the back of the dock) is designed to secure the power cable. For the Enhanced Dock there is a single cable clamp. Use this clamp for the power cable, Use the brackets for all other cables.
2. Remove the strain relief clamp from the computer by turning the screw counterclockwise. Put the screw aside in a safe location.
3. Slide the strain relief clamp over the cable.
4. Using a Phillips screwdriver and the screw that was removed, refasten the clamp holding the cable to the dock. Do not stretch the cable. Leave enough slack in the cable to allow it to be connected and disconnected easily when needed.
5. Continue in this manner until all cables are secured to the dock.

To use the strain relief brackets (Enhanced Dock only):

1. Secure the cable to the bracket with plastic tie straps (cable ties).
2. If necessary, the cable ties can be trimmed to length after installation. Cut the excess tie length off flush and not at an angle to prevent sharp edges that may cause cuts.

# MANAGE AND MAINTAIN THE COMPUTER

Use this chapter to understand how to upgrade software, reset, and maintain the computer.

## About Software Updates

Honeywell provides patches and security updates for existing software products at no additional charge. Software upgrades (from one major version to another) may involve additional charges. Some licensed software that Honeywell distributes requires user registration and log in before the software can be downloaded.



Support for Honeywell Safety and Productivity Solutions products is available online through the [Technical Support Portal](#).

Software downloads can be accessed through the [Technical Support Downloads Portal](#).

1. Go to [www.honeywellaidc.com](http://www.honeywellaidc.com).
2. Select **Get Resources** > **Software**.
3. Click on the *Technical Support Downloads Portal* link, <https://hsmftp.honeywell.com>.
4. Create an account if you have not already created one. You must login to download the software.
5. Install the *Honeywell Download Manager* tool on your workstation (e.g., laptop or desktop computer) prior to trying to download any files.
6. Locate the app or upgrade you want to download in the Software directory tree.
7. Select **Download**. Follow the prompts to download the file.

# Install Software Updates with AutoInstall

**Important:** *The Thor VM1A must have power for the entire length of the upgrade process or it could become unstable.*

1. Swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Honeywell Settings** > **Provisioning mode**.
3. Tap the toggle button to turn Provisioning mode **On**.
4. Save the upgrade file (\*.zip or \*.apk) in one of the following folders on the VM1A computer:
  - **Internal shared storage\honeywell\autoinstall**  
Software upgrades saved to this folder for installation, do not persist when a Full factory reset or Enterprise data reset is performed.
  - **IPSM card\honeywell\autoinstall**  
Software upgrades saved to this folder, do not persist when a Full factory reset is performed. However, the upgrade does persist if an Enterprise data reset is performed.
5. Swipe up from the bottom of the Home screen to access all apps.
6. Tap **AutoInstall Settings**  and verify **Autoinstall** is enabled .
7. Tap **Packages Update** from the AutoInstall Settings screen.



The computer automatically initiates a reboot and installs the software upgrade. The system update screen appears during the upgrade process. When the update is finished, the lock screen appears.
8. Once installation is complete, turn Provisioning mode **Off**.

**Note:** *Some updates do not require the computer to reboot before installation.*

## Optional SD Card Method

The VM1A comes equipped with a SD card socket. You can install an upgrade from a SD card you insert in the computer.

**Important:** *The Thor VM1A must have power for the entire length of the upgrade process or it could become unstable.*

1. On the computer, swipe up from the bottom of the Home screen to access all apps.
2. Tap **Settings**  > **Provisioning mode** under *Honeywell Settings*.
3. Tap the toggle button to turn Provisioning mode **On**.
4. Tap **AutoInstall Settings** . Verify **AutoInstall** is enabled .

5. Press and hold the **Power** button, and then tap **Power off**.
6. On your workstation (e.g., laptop, desktop computer), format the SD card and create a **\honeywell\autoinstall** folder on the root of the card.
7. Save the upgrade file in the **autoinstall** folder.
8. Install the SD card, and then press the **Power** button.

The computer automatically runs the upgrade found in the autoinstall folder on the card. The system update screen appears during the upgrade process. When the upgrade is finished, the lock screen appears.


9. Once installation is complete, turn Provisioning mode **Off**.

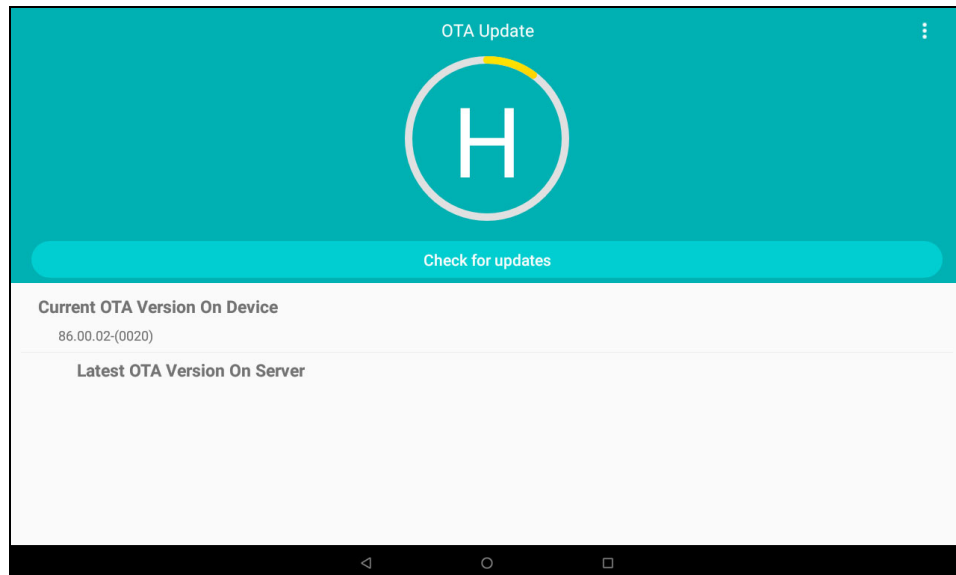
## About the Honeywell Upgrader


Use the Honeywell Upgrader app (HUpgrader) to check for and install OTA updates or view the current OTA version installed on the computer.

## Install OTA Updates

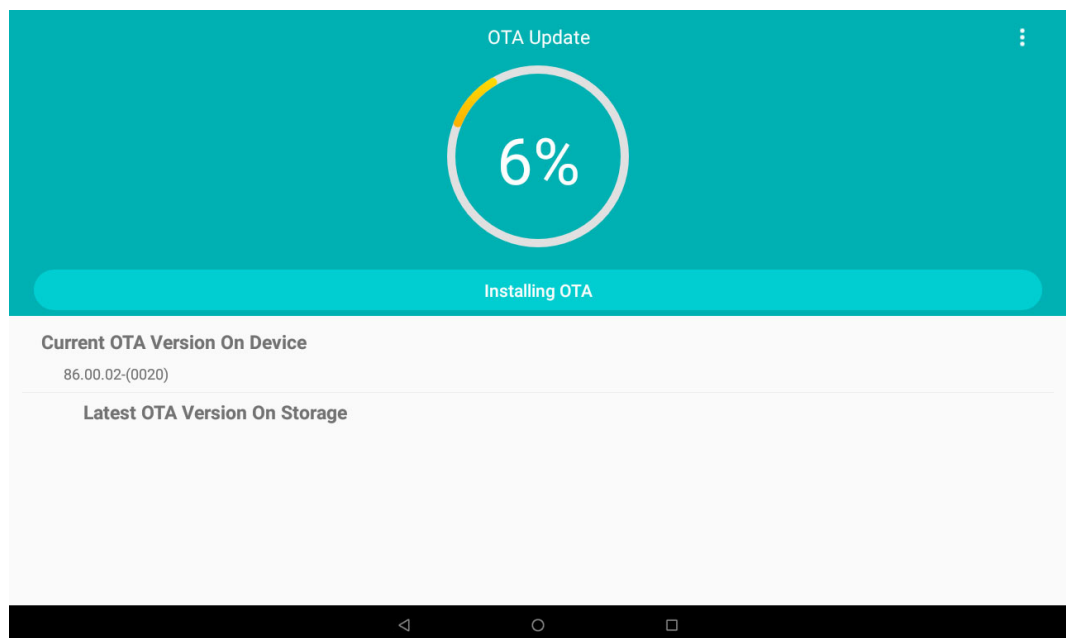
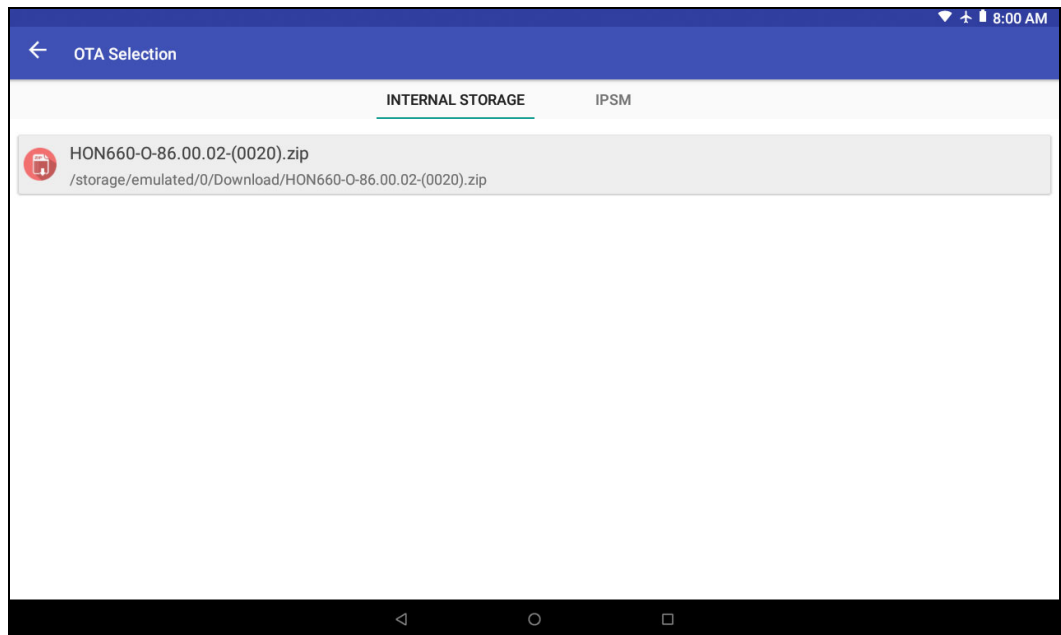
To use the HUpgrader to install an OTA update file downloaded from the [Technical Support Downloads Portal](#):

1. Save the OTA file (\*.zip) in the following folder on the VM1A computer:
  - **Internal shared storage\Download**
2. Tap **HUpgrader**  to open the Honeywell Updater app.



3. Tap  in the upper right corner, and then tap **Select OTA from storage**.

4. Select the storage location (i.e., Internal Storage) where you saved the file.
5. Tap the OTA update file. The computer examines the file, and then starts the installation.



6. Once the installation is complete (100%), select **OK** when prompted to **Reboot** the computer. The computer reboots and finishes the update.



# Restart (Reboot) the Computer

You may need to restart the computer to correct conditions where an application stops responding to the system.

1. Save your files and close any open applications.
2. Press and hold the **Power** button until the options screen appears.
3. Tap **Restart**.

If the touch panel display is unresponsive:

- Press and hold the **Power** button for approximately 8 seconds until the computer reboots.

## About an Enterprise Data Reset

You can perform an Enterprise data reset if a Reboot did not improve the condition and all other troubleshooting methods have not resolved the issue. This method provides a clean configuration for troubleshooting by erasing all data from the **Internal shared storage** location on the computer. Data is not erased from the **IPSM Card** location.





**Caution:** An Enterprise data reset results in data loss, only perform this procedure if all other recovery methods have failed. All personal content is erased including, but not limited to emails, pictures, contacts, Google account information, system settings and app settings.

**Note:** *This method of recovery may not be available if your system administrator has set policies to prevent the reset use.*

## Before You Begin

- If you recently reset your Google Account password, wait 24 hours before performing a Enterprise data reset.
- Make sure you have your screen lock password, PIN or pattern if you activated one. You will need this to reset the computer.
- If you have a Google Account, back up your data and settings to your Google Account so you can restore them if needed.
- Connect the computer to an external power source or make sure you have a full battery charge.
- Make sure you have an Internet connection.

## Enterprise Data Reset the Computer

1. Swipe up from the bottom of the Home screen to access all apps.
2. Select **Settings**  > **System** > **Reset Options**.
3. Tap **Enterprise data reset**.
4. Tap **Reset Phone**.
5. If prompted, type your screen lock security pattern, PIN, or password and tap next (  ).
6. Tap **Erase Everything**. A message appears informing you an Enterprise data reset is being performed.

## About a Factory Data Reset

A Factory Data Reset should only be performed if you have exhausted all other troubleshooting options. This method reverts the computer back to the factory state by erasing all data in **Internal shared storage** and the **IPSM Card** storage locations on the computer.





**Caution:** A factory data reset results in data loss. Perform this procedure only if all other recovery methods have failed and have no other option. All personal content is erased including, but not limited to emails, pictures, contacts, Google account information, system settings and app settings.

**Note:** *This method of recovery may not be available if your system administrator has set policies to prevent the reset use.*

## Before You Begin

- If you added a Google Account to the computer, make sure you have your Google username and password associated with the computer. If you do not have the username and password, you will not be able to use the computer after the reset. This is a security measure that prevents unauthorized users from using the device if they try a Full factory reset.
- If you did not add a Google Account to the computer, the extra security level is not enabled and you will not need a Google username and password.
- If you recently reset your Google Account password, wait 24 hours before performing a Full factory reset.
- Connect the computer to an external power source or make sure you have a full battery charge.
- Make sure you have an Internet connection.

## Factory Data Reset the Computer

1. Swipe up from the bottom of the Home screen to access all apps.
2. Select **Settings**  > **System** > **Reset Options**.
3. Tap **Erase all data (factory reset)**.
4. Tap **Reset Phone**.
5. If prompted, type your screen lock security pattern, PIN, or password and tap next (  ).
6. Tap **Erase Everything**. A message appears informing you a Full factory reset is being performed.

## Clean the Computer

To keep the computer in good working order, you may need to clean the touch screen. Clean the touch screen as often as needed for the environment in which you are using the computer. The computer withstands application of the following cleaning agents when applied to a clean soft cloth and removed immediately with a dry soft cloth:

- Acetic acid, 10% in water
  - Ethyl alcohol, 10% in water
  - Mild soap solutions
1. Press the **Power** button to put the computer into Sleep mode.
  2. Dip a clean cloth towel in the cleaning agent and wring out the excess.
  3. Wipe dry.
  4. Let the computer completely air dry before using again.

## Maintenance - Vehicle Mounted Devices

Check the vehicle mounting hardware frequently and re-tighten if necessary.

If the vehicle mounting hardware and connections become broken, loose or cracked, the assembly must be taken out of service and replaced. Contact [Technical Assistance](#) for help.

# Replace the Front Panel

## Front Panel Options

The front panel of the computer is field replaceable. The front panel assembly contains the keypad, touch screen and optional defroster. Should any of these components fail, the front panel assembly can easily be replaced to reduce downtime. The replacement front panel is available in these configurations:

- Thor VM1A replacement front panel, indoor resistive (VM1A540FRONTPNL)
- Thor VM1A replacement front panel, outdoor resistive (VM1A541FRONTPNL)
- Thor VM1A replacement front panel, defroster resistive (VM1A542FRONTPNL)
- Thor VM1A replacement front panel, PCAP indoor (VM1A543FRONTPNL)
- Thor VM1A replacement front panel, PCAP outdoor (VM1A544FRONTPNL)

## Equipment Required

The following equipment is user-supplied:

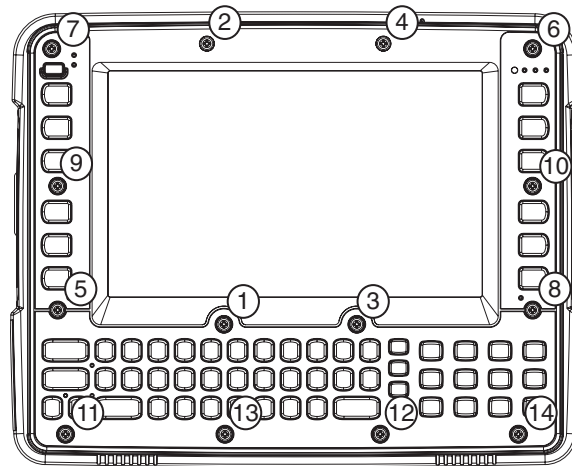
- Torque tool capable of measuring inch pounds
- #2 Phillips screwdriver bit

## Replacement Procedure

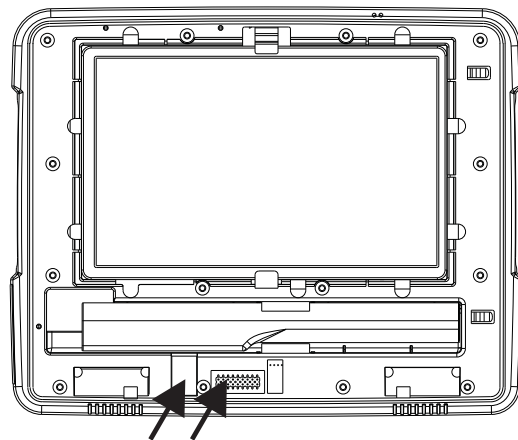


**Caution:** Before replacing the Thor VM1A front panel, **Disconnect the UPS Battery.**

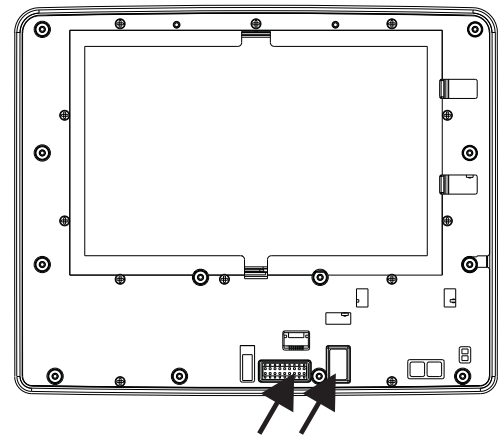
1. Place the computer on a clean, well-lit surface before performing the front panel replacement.
2. Press and hold the **Power** button until the options menu appears. Tap **Power Off**.
3. Remove the computer from the dock.
4. [Disconnect the UPS Battery.](#)
5. Loosen the fourteen (14) captive M3 screws holding the front panel. Use a #2 Phillips bit.



6. Carefully lift the front panel away from the device.



**Alignment Slot on Thor VM1A**   **Wiring Connector on Thor VM1A**






**Wiring Connector on Front Panel**   **Alignment Key on Front Panel**

7. Position the replacement front panel so the tab on the back of the front panel lines up with the alignment slot on the VM1A. Be sure the two wiring connectors are also aligned.
8. Position the replacement front panel so wiring connector on the back of the front panel lines up with the connector on the computer.
9. Gently press the front panel into place.
10. Tighten the fourteen (14) captive M3 screws. In the order shown in the top figure above, use a #2 Phillips bit and torque the screws to 6-7 inch pounds.
11. Reinstall the computer in the dock.
12. When the computer is placed in the powered dock, the UPS battery automatically reconnects.
13. Press the **Power** button to turn on the computer.
14. The computer is ready for use.



## Keypad Key Map

To get this Key/Function	Press These Keys in this Order	
Power On/Suspend/Restart	Power	
Blue Key	Blue Key	
Orange Key	Orange Key	
Volume Up	Blue Key	F9
Volume Down	Blue Key	F10
Display Backlight Brightness Up	Blue Key	F7
Display Backlight Brightness Down	Blue Key	F8
PCAP Touch Screen Sensitivity Mode	Blue Key	F6
Shift	Shift	
Alt	Alt	
Ctrl	Ctrl	
Esc	Esc	
Space	Space	
Caps Lock	Orange Key	Shift
Enter	Enter	
Delete	Del	
. (VK_DECIMAL)	.	
Back Space	BkSp	
Insert	Orange Key	4
Tab	Tab	
Back Tab	Orange Key	Tab
 Back	Blue Key	C
 Home	Blue Key	V
 Recent Apps	Blue Key	B
Up Arrow	Up Arrow	
Down Arrow	Down Arrow	

To get this Key/Function	Press These Keys in this Order	
Right Arrow	Right Arrow	
Left Arrow	Left Arrow	
Page Up	Blue Key	Up Arrow
Page Down	Blue Key	Down Arrow
End	Blue Key	Right Arrow
Home	Blue Key	Left Arrow
F1 - F10	F1 - F10	
F11 - F20	Orange Key	F1 - F10
a	A	
b	B	
c	C	
d	D	
e	E	
f	F	
g	G	
h	H	
i	I	
j	J	
k	K	
l	L	
m	M	
n	N	
o	O	
p	P	
q	Q	
r	R	
s	S	
t	T	
u	U	
v	V	
w	W	
x	X	
y	Y	
z	Z	
A	Shift	A
B	Shift	B
C	Shift	C
D	Shift	D
E	Shift	E



To get this Key/Function	Press These Keys in this Order	
F	Shift	F
G	Shift	G
H	Shift	H
I	Shift	I
J	Shift	J
K	Shift	K
L	Shift	L
M	Shift	M
N	Shift	N
O	Shift	O
P	Shift	P
Q	Shift	Q
R	Shift	R
S	Shift	S
T	Shift	T
U	Shift	U
V	Shift	V
W	Shift	W
X	Shift	X
Y	Shift	Y
Z	Shift	Z
	Orange Key	Bksp
~	Orange Key	Space
:	Orange Key	D
#	Orange Key	E
;	Orange Key	F
"	Orange Key	G
'	Orange Key	H
*	Orange Key	I
,	Orange Key	J
.(VK_PERIOD)	Orange Key	K
?	Orange Key	L
_	Orange Key	M
`	Orange Key	ESC
(	Orange Key	O
)	Orange Key	P
!	Orange Key	Q
\$	Orange Key	R
\	Orange Key	S

To get this Key/Function	Press These Keys in this Order	
%	Orange Key	T
&	Orange Key	U
@	Orange Key	W
^	Orange Key	Y
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
0	0	
>	Orange Key	V
[	Orange Key	N
]	Orange Key	B
=	Orange Key	2
{	Orange Key	Z
}	Orange Key	X
/	Orange Key	A
-	Orange Key	5
+	Orange Key	8
<	Orange Key	C
F11	Orange Key	F1
F12	Orange Key	F2
F13	Orange Key	F3
F14	Orange Key	F4
F15	Orange Key	F5
F16	Orange Key	F6
F17	Orange Key	F7
F18	Orange Key	F8
F19	Orange Key	F9
F20	Orange Key	F10
P2	Orange Key	P1
View ^	Orange Key	^
View v	Orange Key	v
View <	Orange Key	<

To get this Key/Function	Press These Keys in this Order	
View >	Orange Key	>
Field Exit	Orange Key	Del
PrvScr	Orange Key	7
Field +	Orange Key	1
NxtScr	Orange Key	9
Delete	Orange Key	6
Help	Orange Key	3
F21	Blue Key	F1
F22	Blue Key	F2
F23	Blue Key	F3
F24	Blue Key	F4
SysReq	Blue Key	Q
EEOF	Blue Key	W
Erase	Blue Key	E
Remove	Blue Key	R
PA1	Blue Key	T
PA2	Blue Key	Y
PA3	Blue Key	U
Hex	Blue Key	I
Mode	Blue Key	O
Print	Blue Key	P
Reset	Blue Key	ESC
Attn	Blue Key	A
Autolog	Blue Key	S
Dup	Blue Key	D
Find	Blue Key	F
FldMrk	Blue Key	G
Home	Blue Key	H
Keypad	Blue Key	K
OK	Blue Key	P1
Select	Blue Key	Z
NewLn	Blue Key	N
Menu	Blue Key	M
Return	Blue Key	Enter
Field-	Blue Key	1
Roll ^	Blue Key	8
Roll v	Blue Key	5
Clear	Blue Key	6



# SPECIFICATIONS AND REFERENCE MATERIALS

## Technical Specifications

### Thor VM1A

Processor	2.2 GHz Qualcomm Snapdragon™ 660 octacore processor
Memory	4 GB SDRAM
Storage Expansion	User installable, supports 512GB SD card
Operating System	Android 8, upgradeable through Android R
Radio Modules	802.11 a/b/g/n/ac radio / Bluetooth
Scanner Options	No integrated scanner, Optional serial, USB or Bluetooth scanners
Display Technology	Intel GMA 500 graphics processor, WVGA compatible Active matrix TFT Resolution: 1280x768 pixels 400 NIT (indoor) or 900 NIT (outdoor) brightness 8" (measured horizontal) display Transmissive with LED backlight Automatic brightness control on outdoor display Vehicle motion screen blanking available
Keyboard	Integrated keyboard, 64-key QWERTY
Touch Screen	eGalaxCalibrator Mercury Impact resistant Signature capture capability Resistive and Capacitive (PCAP) options Optional defroster resistive Field replaceable front panel optional indoor, outdoor, defroster resistive, indoor PCAP, or outdoor PCAP
External Connectors	Optional external 802.11 antenna connectors Additional connectors on dock
Beeper	Minimum loudness greater than 95dBm at 10 cm in front of unit
Power Supply	10 to 60 VDC isolated
Uninterruptible Power Supply	Internal UPS battery, field replaceable, 30-minute life at 20°C (68°F)
Backup Battery (RCT)	Internal lithium battery maintains Real Time Clock

## VM1D Standard Dock



**Caution: This dock is designed for DC power vehicle-mounted applications only.**

SKUs	VM1001VMCRADLE (with DC power cable) VM1002VMCRADLE (with RAM ball) VM1003VMCRADLE (dock only)
Power Connector	6-pin connector: Direct 10-60 VDC input power Optional external converter for extended range DC (60-150 VDC)
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connector	15-pin male, Audio connector supports either audio/microphone via adapter cable
USB Connector	9-pin female, USB connector supports USB host port via adapter cable
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type of fuse: <ul style="list-style-type: none"> <li>• Littlefuse 0215008.MXP</li> <li>• Cooper Bussmann BK1/S506-8-R</li> <li>• Bel Fuse 5HT 8-R</li> <li>• or equivalent</li> </ul>
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC  <b>Note:</b> Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.

## VM3D Enhanced Dock



**Caution: This dock is designed for DC power vehicle-mounted applications only.**

SKUs	VM3001VMCRADLE
Power Connector	6-pin connector: Direct 10-60 VDC input power Optional external converter for extended range DC (60-150 VDC)
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connector	15-pin male, Audio connector supports either audio/microphone via adapter cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB type A Host connector behind waterproof cap
Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch

Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type of fuse: <ul style="list-style-type: none"> <li>• Littlefuse 0215008.MXP</li> <li>• Cooper Bussmann BK1/S506-8-R</li> <li>• Bel Fuse 5HT 8-R</li> <li>• or equivalent</li> </ul>
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC  <b>Note:</b> Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.

## VMXD Enhanced Dock



**Caution: This dock is designed for DC power vehicle-mounted applications only.**

SKUs	VMX004VMCRADLE (when replacing VX8 or VX9 installation that uses screen blanking)
Power Connector	6-pin connector: 13.2 VDC input power; requires DC power supply Connector is also used for screen blanking via COM1 CTS and RTS signals
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9 Do not use COM1 when screen blanking box is attached to avoid port conflicts
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connector	15-pin male, Audio connector supports either audio/microphone via adapter cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB type A Host connector behind waterproof cap
Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 13.2 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type of fuse: <ul style="list-style-type: none"> <li>• Littlefuse 0215008.MXP</li> <li>• Cooper Bussmann BK1/S506-8-R</li> <li>• Bel Fuse 5HT 8-R</li> <li>• or equivalent</li> </ul>
External Power Supply	50-150 VDC DC power supply available for vehicles over 60 VDC  <b>Note:</b> Use dock VMX005VMCRADLE (VMXD Enhanced Dock of Off-Vehicle Use) in AC power applications.

# VMXD Enhanced Dock for Off-Vehicle Use (QM3AC)



**Caution: This dock is designed for AC power (non vehicle-mounted) applications only.**

SKUs	VMX005VMCRADLE
Power Connector	6-pin connector: 15 VDC input power via required AC/DC power
COM1 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
COM2 Connector	9-pin male, RS-232 serial port, COM1 with power on pin 9
CANbus/Audio Connetor	15-pin male, Audio connector supports either audio/microphone via adapter cable
USB1 Connector	9-pin female, USB connector supports USB host port via adapter cable
USB2 Connector	15-pin female, USB connector supports two USB host ports via adapter cable
USB Host Connector	One USB type A Host connector behind waterproof cap
Ethernet	One RJ45 Ethernet connector behind waterproof cap
Power Switch	Sealed power switch
Input Power	DC Input Voltage: 10-60 VDC, Input Current: 4.6 Amps (typical) Input Fuse: 8A Time Delay, Replace with same size, rating and type o f fuse: <ul style="list-style-type: none"> <li>• Littlefuse 0215008.MXP</li> <li>• Cooper Bussmann BK1/S506-8-R</li> <li>• Bel Fuse 5HT 8-R</li> <li>• or equivalent</li> </ul>
External Power Supply	AC Adapter, 120-240 VAC to 15 VDC required  <b>Note:</b> <i>This dock for use in AC power applications. See other docks for DC power applications.</i>

## Dimensions

### Thor VM1A

Width	10.6" (26.8 cm)
Height	8.4" (21.4 cm)
Depth	1.7" (4.3 cm)
Weight	5.6 lb. (2.5 kg)



## VM1D Standard Dock

**Note:** The RAM ball is not included in the following measurements.

Length	7.1" (18.0 cm)
Width	6.1" (15.5 cm)
Height	2.5" (6.4 cm), measurement includes strain relief cable clamps
Weight	3.2 lb. (1.5 kg)

## VM3D and VMXD Enhanced Dock

**Note:** The RAM ball is not included in the following measurements.

Length	7.1" (18.0 cm)
Width	6.1" (15.5cm)
Height	2.1" (5.4 cm), measurement includes strain relief cable clamps
Weight	2.4 lb. (1.1 kg)

## Environmental Specifications

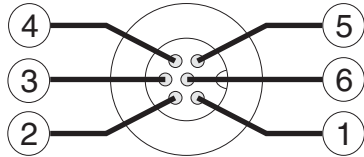
### Thor VM1A and Dock

Operating Temperature	Standard: -4°F to 122°F (-20°C to 50°C) [non-condensing] Cold Storage: -22°F to 122°F (-30°C to 50°C) [condensing]
Storage Temperature	Standard and Cold Storage: -22°F to 140°F (-30°C to 60°C) [non-condensing]
ESD	8 KV air, 4kV direct contact
Operating Humidity	Standard: Up to 90% non-condensing at 104°F (40°C) Cold Storage: 100%
Water and Dust	IEC 60529 compliant to IP66
Vibration	MIL-STD-810F, composite wheeled vehicles
Crash	SAE-J1455

# Port and Connector Pinouts

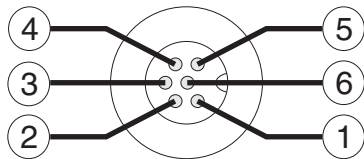
## Power Supply Connector

### VM1D Standard Dock and VM3D Enhanced Dock



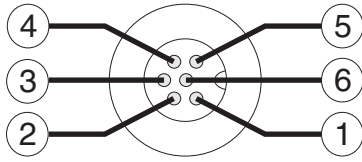
Pin	Signal	Description
1	V In+	10-60V DC Input +
2	V In+	10-60V DC Input +
3	V In-	Input -
4	V In-	Input -
5	GND	Chassis ground
6	Ignition	+0V to 60V to start terminal

### VMXD Enhanced Dock



Pin	Signal	Description
1	V In+	13.2V DC input + provided by AC/DC adapter
2	V In+	13.2V DC input + provided by AC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	COM1 RTS	Screen Blanking Box + The green wire in the power cable must be connected to the switched side of the screen blanking box. See the applicable wiring diagram below.
6	COM1 CTS	Screen Blanking Box - The white wire in the power cable must be connected to the unswitched side of the screen blanking box. See the applicable wiring diagram below.
Cable shell provides chassis ground connection.		

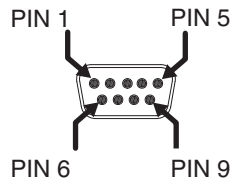
## VMXD Enhanced Dock for Off-Vehicle Use (QM3AC)



Pin	Signal	Description
1	V In+	15V DC Input + provided by AC/DC adapter
2	V In+	15V DC Input + provided by AC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	GND	No Connection
6	Ignition	No Connection

VMXD enhanced dock for off-vehicle use requires adapter cable VM1076CABLE to connect the dock to the AC/DC adapter. This cable is included in the AC kit for off-vehicle use.

## COM1 and COM2 Connector

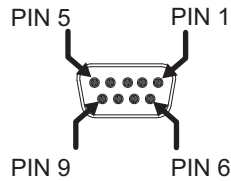


Pin	Signal	Description
1	V In+	15V DC Input + provided by AC/DC adapter
2	V In+	15V DC Input + provided by AC/DC adapter
3	V In-	Input -
4	V In-	Input -
5	GND	No Connection
6	Ignition	No Connection

VMXD Enhanced Dock only: Because the power supply connector port for the VMXD Enhanced Dock contains COM1 RTS and CTS signals, the COM1 port on the dock should not be used when the power cable is used for screen blanking to avoid port conflicts.

# USB and USB1 Connector

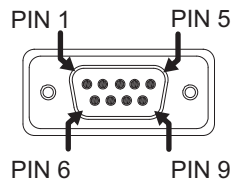
The Standard Dock has a USB connector. The Enhanced Dock has a USB1 connector.



Pin	Signal	Description
1	DCD	Data Carrier Detect - Input
2	RXD	Receive Data - Input
3	TXD	Transmit Data - Output
4	DTR	Data Terminal Ready - Output
5	GND	Signal/Power Ground
6	DSR	Data Set Ready - Input
7	RTS	Request to Send - Output
8	CTS	Clear to Send - Input
9	+5VDC	Bar Code Scanner Power - 500mA max
Shell	CGND	Chassis Ground

# USB Host/Client Y Cable

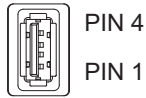
## D9 Male Connector



Pin	Signal	Description
1	GND	Common ground
2	USBC_D+	USB client data signal (not used)
3	USBC_D-	USB client data signal (not used)
4	USB_H1_PWR	USB host 1; 5V output power
5	GND	Common ground
6	GND	Common ground
7	USB_H1_D+	USB host 1 data signal
8	USB_H1_D-	USB host 1 data signal

Pin	Signal	Description
9	USBC_VBUS	USB client 5V detect from attached host (not used)

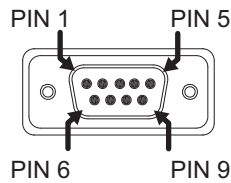
## USB Host Connector



Pin	Signal	Description
1	5V_USB	USB Power, Current Limited
2	USB_H1_D-	USB D-
3	USB_H1_D+	USB D+
4	GND	USB Power Return
Shell	CGND	Chassis Ground

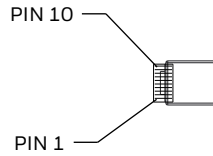
## USB Host to Scanner Cable

### D9 Male Connector



Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	USB_H1_PWR	USB host 5V output power
5	GND	Common ground
6	Not used	
7	USB_H1_D+	USB host 1 data signal (twisted pair)
8	USB_H1_D-	USB host 1 data signal (twisted pair)
9	USBC_VBUS	USB client 5V detect from attached host

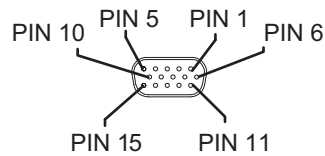
## RJ50 Connector



Pin	Signal	Description
1	Drain	To D9 connector shell
2	Not used	
3	GND	Common Ground
4	Not used	
5	Not used	
6	Not used	
7	USB_H1_PWR	USB host 5V output power
8	Not used	
9	USB_H1_D+	USB host 1 data signal (twisted pair)
10	USB_H1_D-	USB host 1 data signal (twisted pair)

## USB2 Connector

The USB2 connector is only present on the Enhanced Dock.

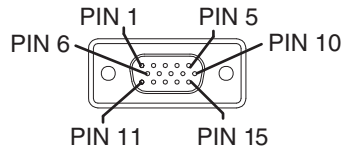


Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	Not used	
5	Not used	
6	USB_H2_PWR	USB host 2 5V output power
7	USB_H2_D+	USB host 2 data signal
8	USB_H2_D-	USB host 2 data signal
9	GND	Common ground
10	GND	Common ground
11	USB_H3_PWR	USB host 3 5V output power
12	USB_H3_D+	USB host 3 data signal
13	USB_H3_D-	USB host 3 data signal

Pin	Signal	Description
14	GND	Common ground
15	GND	Common ground

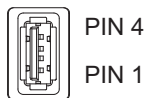
## USB Dual Host Y Cable

### D15 Male Connector



Pin	Signal	Description
1	Not Used	
2	Not Used	
3	Not Used	
4	Not Used	
5	Not Used	
6	USB_H2_PWR	USB host 2 5V output power
7	USB_H2_D+	USB host 2 data signal
8	USB_H2_D-	USB host 2 data signal
9	GND	Common ground
10	GND	Common ground
11	USB_H3_PWR	USB host 3 5V output power
12	USB_H3_D+	USB host 3 data signal
13	USB_H3_D-	USB host 3 data signal
14	GND	Common ground
15	GND	Common ground

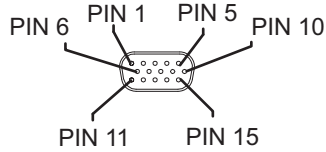
### USB Host Connectors



Pin	Signal	Description
1	5V_USB	USB Power, Current Limited
2	USB_H2_D-	USB D-
3	USB_H2_D+	USB D+
4	GND	USB Power Return

Pin	Signal	Description
Shell	CGND	Chassis Ground

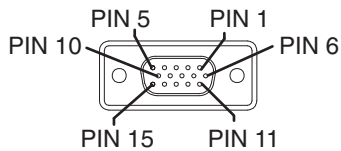
## Audio Connector



Pin	Signal	Description
1	-	CAN reserved
2	CAN_L	CAN_L bus line dominant low
3	CAN_GND	CAN Ground
4	-	CAN reserved
5	GND	Optional ground
6	Audio return	Headset return
7	Audio output	Headset output
8	Mic input	Microphone input
9	Mic return	Microphone output
10	Audio return	
11	GND	Optional ground
12	CAN_SHLD	
13	CAN_H	CAN_H bus line dominant high
14	-	CAN reserved
15	CAN_V+	Optional CAN external Power Supply

## Headset Adapter Cable

### D15 Female Connector

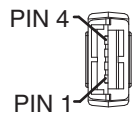


Pin	Signal	Description
1	Not used	
2	Not used	
3	Not used	
4	Not used	



Pin	Signal	Description
5	Not used	
6	Audio return	Headset return
7	Audio output	Headset output
8	Mic input	Microphone input
9	Mic return	Microphone return
10	Not used	
11	Not used	
12	Not used	
13	Not used	
14	Not used	
15	Not used	

## Quick Connect Headset Connector



Pin	Signal	Description
1	Mic input	Microphone input
2	Mic return	Microphone return
3	Audio output	Headset output
4	Audio return	Headset return



## AGENCY INFORMATION

Thor VM1A vehicle-mount computers meet or exceed the requirements of all applicable standards organizations for safe operation. The best way to ensure safe operation is to use the vehicle-mounted computer according to the agency guidelines in this user guide and on the regulatory sheet shipped with the vehicle-mounted computer. Read all guidelines before using your vehicle-mounted computer. To download product documentation for the Thor VM1A computer, go to [www.honeywellaidc.com](http://www.honeywellaidc.com).

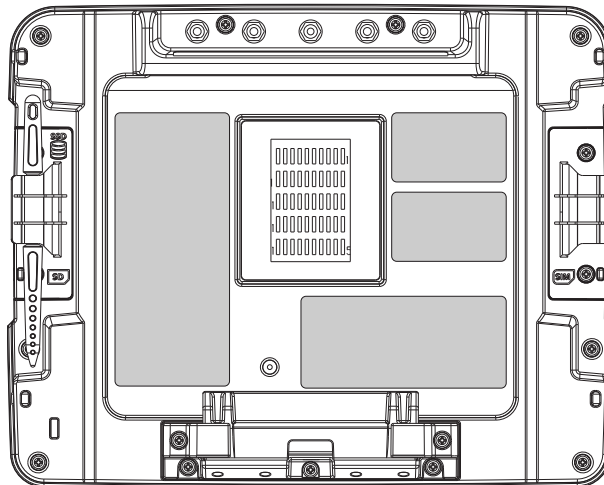
This documentation is relevant for the following Thor models: VM1A-LON.

The EU declaration of conformity, if applicable, and other publicly downloadable certificates are available at [www.honeywellaidc.com/compliance](http://www.honeywellaidc.com/compliance).

## Label Locations

Compliance labels are located in the dock well area on the back of the Thor VM1A, as indicated by the shaded areas below. The VM1A must be removed from the dock to view the labels.

Model number, serial number and other identifiers are located on these labels.







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