Honeywell

THE POWER OF **CONNECTED**

Thor VM1A

Vehicle-Mounted Computer

powered by Android™ 8

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.

For our latest contact information, see www.honeywellaidc.com/locations.

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Limited Warranty

For warranty information, go to www.honeywellaidc.com and click **Get Resources** > **Product Warranty**.

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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 con-nectivity 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 vehi-cle, connects to vehicle power, and provides conditioned input power for the com-puter. The computer 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 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.

Contact Technical Assistance for information on the latest upgrades for your VM1A.

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
Large, high definition, bright color, outdoor-readable display with responsive multi-touch capacitive touch panel
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 8 GB (SDXC/SDHC/SDIO-compliant)
Value-added software components supporting specialized imaging and OCR functions

Note: *To learn more, see* Specifications and Reference Materials *beginning on page 133.*

Features of the VM1A

Front View - Thor VM1A

Power Button

Microphone

Ambient Light Sensor

Speakers

Back View - Thor VM1A

Antenna Connectors

SD Card Access Panel

UPS Discharge Button Access Panel

Dock Contact Pads

Provision for Laptop Security Cable

Provision for Padlock

Quick Release Handle
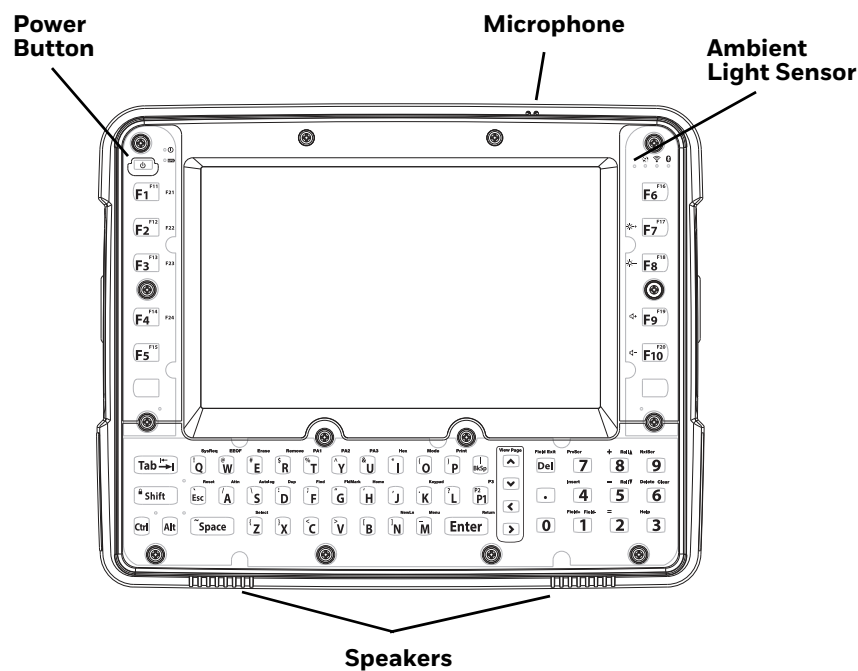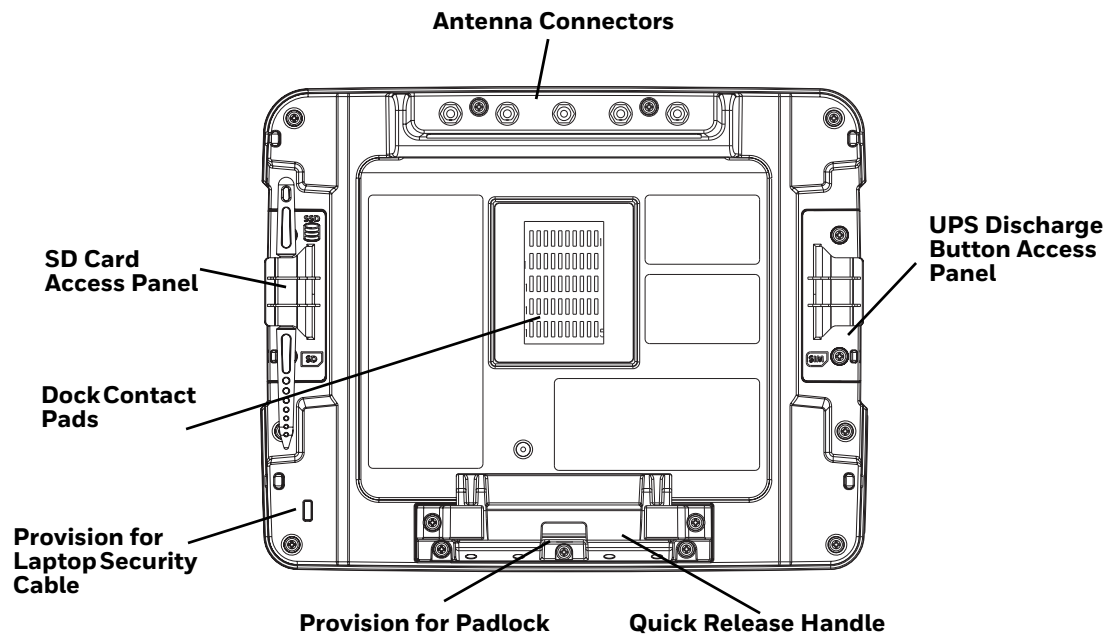
Access Panels - Thor VM1A

SD Card Access Panel with door removed

SIM Card Access Panel with Door Removed

SD (Secure Digital) Memory Card Slot
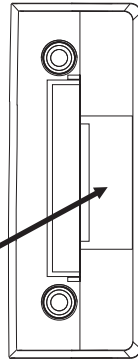
UPS Battery Disconnect Button

Access Panel Door is labeled with SSD **and**

SD

.
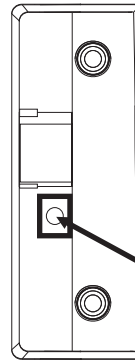
Access Panel Door is labeled with SIM **.**

Power Management Modes

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

On Mode

When the computer is attached to vehicle power, an 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 peripher-als, such as a scanner, function normally. The display remains on until the display, sleeps.

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

Sleep Mode

When the computer enters sleep mode, all LEDs are off. Pressing the power button returns the computer to On.

When in Sleep Mode, the status LED:

• is green, if external power is attached.

• is off, if external power is not attached.

Off Mode

By default, the computer turns off if the user presses the power button when the computer is On. This behavior can be configured on the Advanced tab of the Power control panel.

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 conditioned 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).

Power input is fused for protection and the fuse is externally accessible, see Power Management Modes.

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 power 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. The user can Replace 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 –20ºC (–4ºF) 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 state 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 to a different location to charge the UPS battery.

When the VM1A is operated in an environment where the UPS battery is not able to charge due to temperature extremes, the computer should be removed to a location within the safe charging temperature range during off hours. A discharged UPS battery cannot protect against data loss in the event vehicle power is interrupted.

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 (or 4 hours for some earlier software revisions) 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, remove the VM1A from the dock and Disconnect UPS Battery. Reinstall the computer in the dock and power on.

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
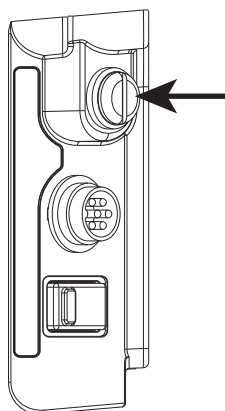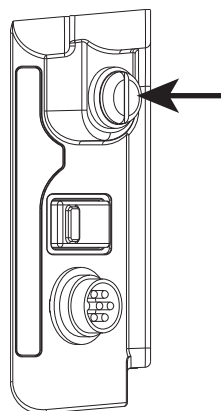
Standard Dock   **Enhanced Dock**

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. The fuse is accessed by unscrewing the cap as indicated.

Should it need replacement, replace with same size, rating, and type of fuse:

- Littelfuse 0215008.MXP
- Cooper Bussmann BK1/S506-8-R
- Bel Fuse 5HT 8-R
- or equivalent.

Fuse has voltage on it even when power is off. Always disconnect input power before changing the fuse.

Disconnect UPS Battery

⚠️ **Caution:** **The UPS battery must be disconnected before you ship the Thor VM1A, Replace UPS Battery, or Replace Front Panel.**

Equipment Required

The following equipment is user-supplied:

- Torquing 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.

2. If the VM1A remains in the dock, disconnect the power cable from the dock. Shutdown the computer. Place the computer face down on a stable surface. Using a #2 Phillips bit loosen the M3 screws and then remove the tethered access panel with the SIM label. This panel is on the right hand side when the computer is face down with the top away from the user.
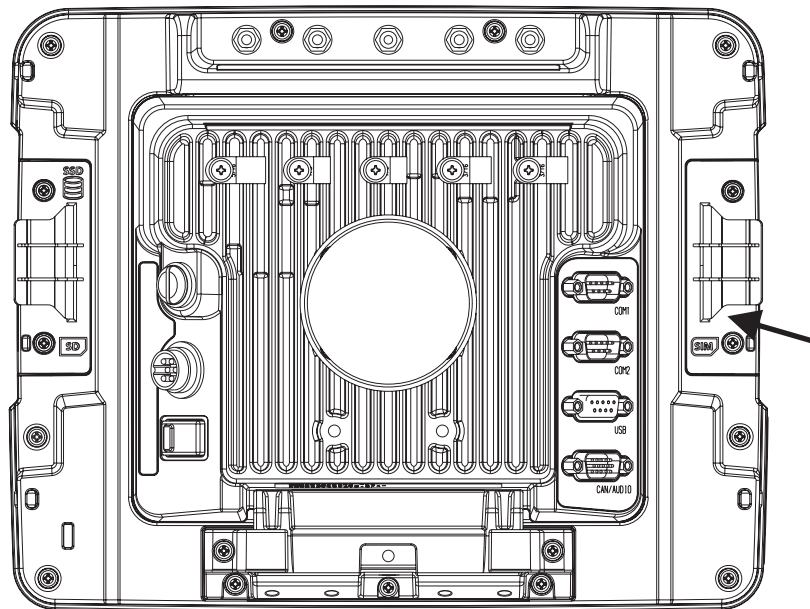
3. Locate the small push button.
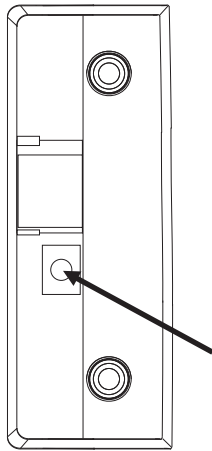
4. Press the push button to disconnect the UPS. The UPS battery maintains its charge but is disconnected from the power circuitry of the computer.

5. Reattach the access panel, torquing the M3 screws to 4–5 inch pounds using a #2 Phillips bit.

6. When the computer is attached to external power, the UPS battery is automatically reconnected.

7. Restart the computer.

Replace 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:

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

Replacement Procedure

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

1. Place the VM1A on a clean, well-lit surface before performing the UPS battery replacement.

2. Shutdown the computer.

3. Remove the computer from the dock.

4. Disconnect UPS Battery.

5. Loosen the fourteen (14) captive M3 screws holding the front panel. Use a #2 Phillips bit.
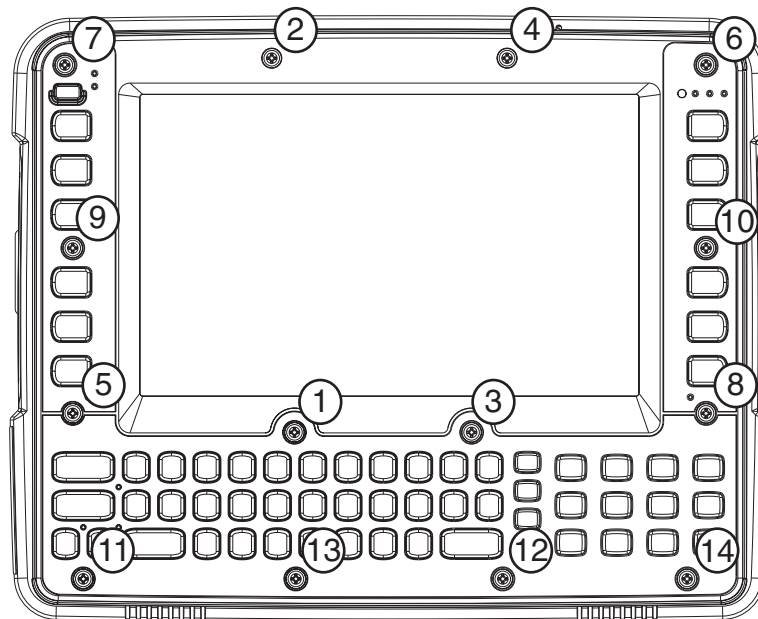
6. Carefully lift the front panel away from the device.

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.

Wiring Connector   **UPS Battery**   **Foam Pads**
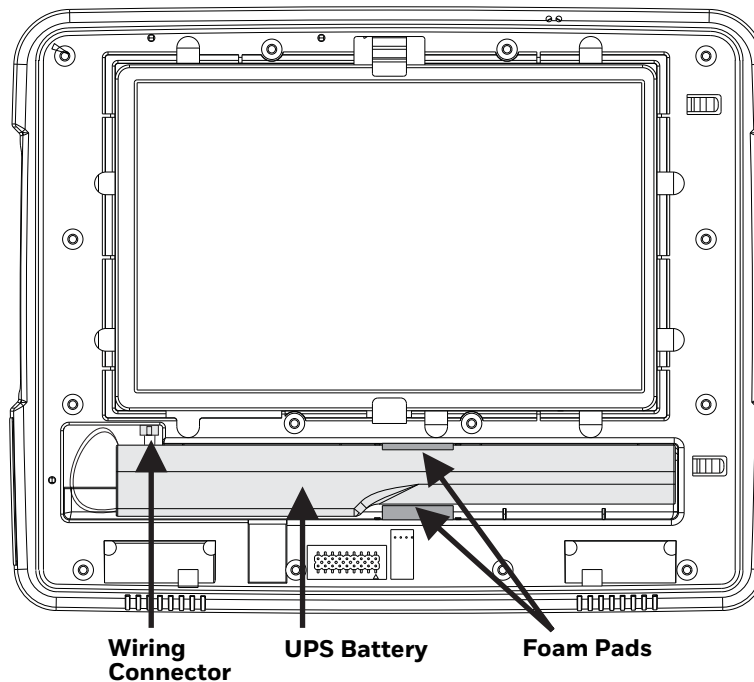
8. Locate the retaining tab on the wiring connector for the UPS battery. Press on the tab and gently disconnect the UPS battery wiring.

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.

Slot on VM1A **Wiring Connector on VM1A**   **Slot on Front Panel** **Wiring Connector on Front Panel**
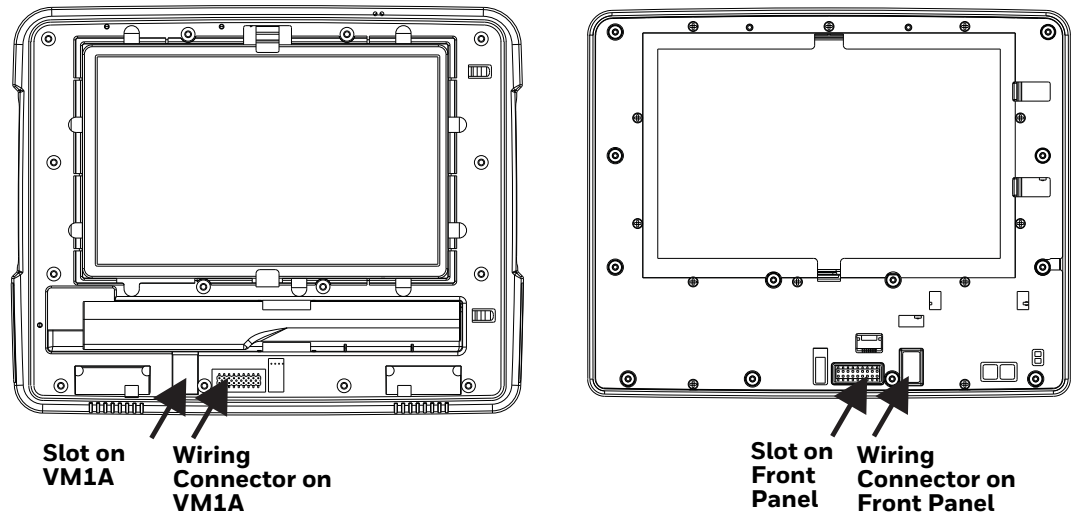
13. Position the front panel so the tab on the back of the front panel lines up with the slot on the VM1A. Be sure the two wiring connectors are also aligned.

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. Restart 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 or replace the battery soon.
	The battery is critically low. You need to replace the battery now or connect the computer to a charging accessory.
	The computer is connected to external power and the battery is charging.
	There is a battery error. Install another battery. If the problem persists, call Honeywell Technical Support.

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 and cannot. Remove the USB drive and power up the comuter again.

The dock has a power switch on the back.

| Standard Dock | Enhanced Dock |
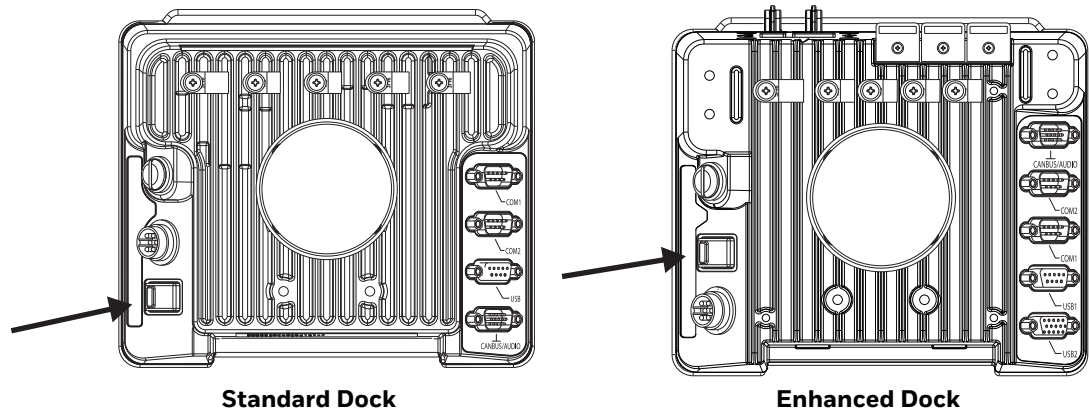
The "On" side of this rocker switch has a raised bump to allow the state of the switch to be determined when the switch may not be easily viewed, for example, after the dock is mounted in a vehicle. After external power has been connected and the computer has been mounted in the dock, press the side 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.
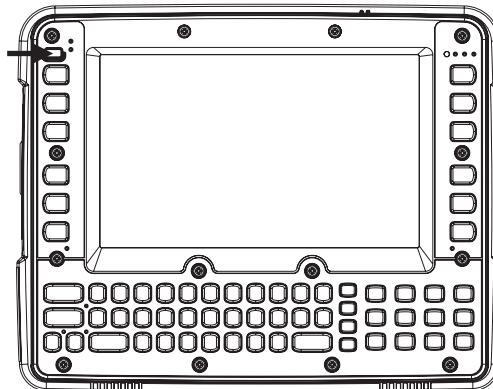
Press the power button to turn the computer on. When the Welcome Screen is displayed or an application begins, the power up sequence is complete.

After initial power on, the computer can be configured to automatically power on. See Power Controls 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
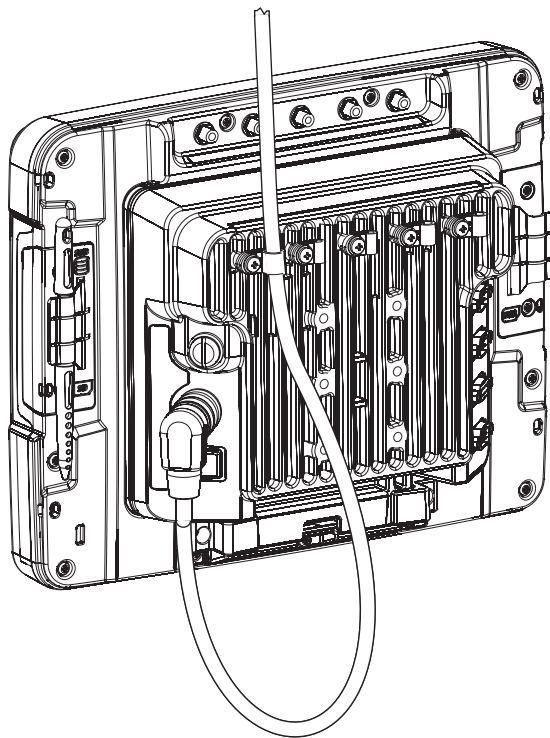
Power Cable with right-angle connector   **Power cable with straight connector**
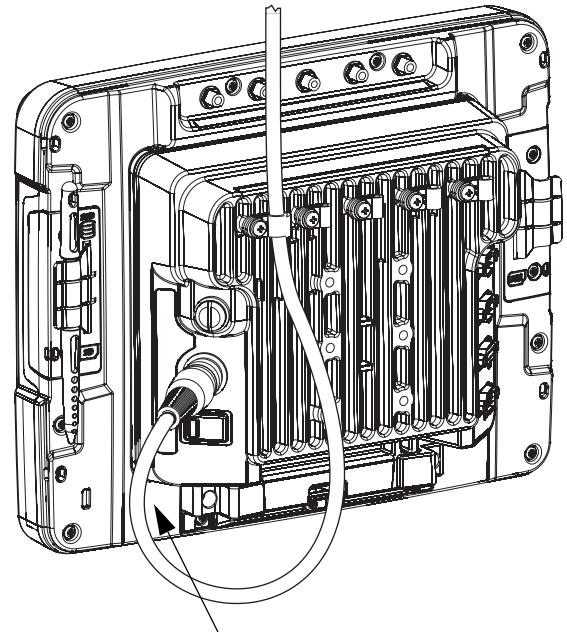
Avoid sharp bends in this area of the power cable

Auto-On Behavior

Select the desired Ignition Control / Auto-On behavior.

The computer Auto-On options can be configured using the Auto-On Behavior control panel. Please refer to that section for more details on the options below.

For information on the Ignition input signal see 10–60 VDC Direct Power Connection and Auto-ON Control Wiring Diagram for 10–60 VDC Direct Connection.

Standard

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.

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.

Once you complete the initial setup, the Welcome screen no longer appears when you power on the computer and **Provisioning mode** is automatically turned Off (disabled). To learn more About Provisioning Mode see page 53.

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.

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**.

- 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 cable sends the signal that the vehicle is in motion. If the 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** > **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 blacked 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 Detection Method

Select the motion detection method.

The computer supports the screen blanking box to determine motion. Select the port (COM1 or COM2) to which the blanking box is attached.

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.

Change password

By default, no password is assigned to screen blanking. If a password is set, the password must be entered to access the screen blanking user interface to view or change configuration parameters.

To set a password:

1. Tap the **Change Password** button.
2. Enter the current password. If no password is assigned, leave this entry blank.
3. Enter and confirm the new password. To remove a previously set password, leave the new password blank.
4. Tap **OK** to confirm changes or **Cancel** to discard changes.

Set Zoom Area

The ZoomArea 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. Tap the **Set Zoom Area** button.
4. 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.*

5. If the selected area is not satisfactory, repeat the step above to reselect an area.

6. 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.

To see how the zoom area would be displayed during screen blanking, see Test Zoom Area.

Test Zoom Area

Tap the **Test Zoom Area** button.

- The zoom image is displayed.

About the Keypad
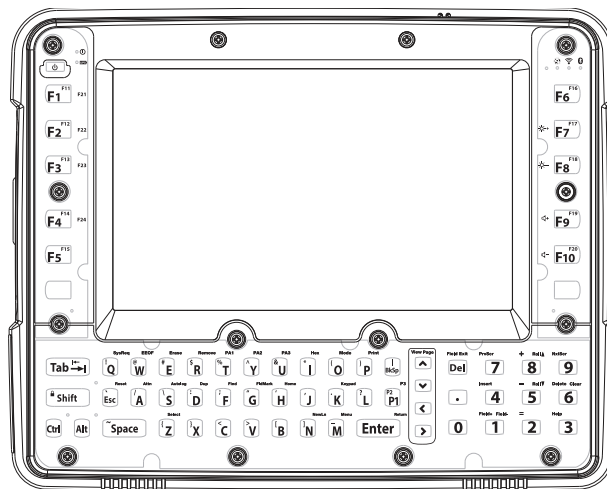
The Thor VM1A has a QWERTY keyboard.

- Because the keyboard only has 64 keys, all functions are not visible (or printed on the keyboard). Therefore the keyboard supports what is called hidden keys -- keys that are accessible but not visible on the keyboard.

- The keyboard does not have a **NumLock** indicator or key. **NumLock** is always On.

The keyboard keys are backlit.

- 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, which is configured in the Power Options control panel.

The computer has an integrated keypad with five programmable keys and an available external keyboard.

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 Y cable attaches to the computer and provides a USB connector. Please refer to documentation provided with the USB keyboard or mouse for more information on their operation.

Keyboard LEDs
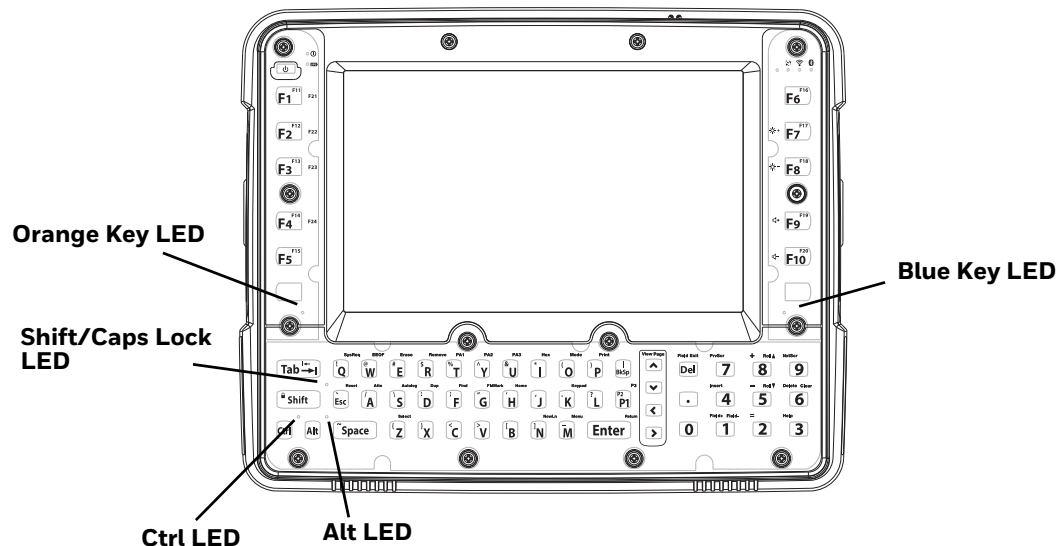
The keyboard LEDs are located near the specified key.

Blue Key LED

LED Behavior	Status
Solid Blue	• Indicates the Blue Key modifier key is active. Blue Key mode is invoked for the next keypress only. • Pressing the Blue Key a second time exit this modifier mode and turns off the LED.
Off	Blue Key mode is not involved

Orange Key LEDs

LED Behavior	Status
Solid Red	• Indicates the Orange Key modifier key is active. Orange Key modes in invoked for the next keypress only. • Pressing the Orange key followed by the Shift key places the system in Caps Lock mode. • To exit Caps Lock mode, press Orange Key + Shift again.
Off	Neither Orange Key or Caps Lock mode is invoked

Shift LEDs

LED Behavior	Status
Solid Green	• Indicates the keypad is in Caps Lock mode. Caps Lock mode is invoked until canceled. • Pressing the Orange key followed by the Shift key places the system in Caps Lock mode. • To exit Caps Lock mode, press Orange Key + Shift again.
Off	Neither Shift or Caps Lock mode is invoked

Ctrl LED

LED Behavior	Status
Solid Green	• Indicates the Ctrl modifier key is active. Ctrl mode is invoked for the next keypress only. • Pressing the Ctrl key a second time exits this modifier mode and turns off the LED.
Off	Ctrl mode is not invoked.

Alt LED

LED Behavior	Status
Solid Green	• Indicates the Alt modifier key is active. Alt mode is invoked for the next keypress only. • Pressing the Alt key a second time exits this modifier mode and turns off the LED.
Off	Alt mode is not invoked.

System LEDs

SYS (System Status) LED ⟶ ○ ⏻

UPS (Uninterruptible Power Supply) LED ⟶ ○ UPS
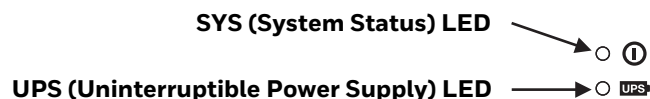
SYS (System Status) LED

LED Behavior	System State
Solid Green	• On • On but Display Off
Green blinking very slowly External power present (1/2 sec on, 4 1/2 sec. off)	• Sleep
Off External power present	• Sleep • Off
Off External power not present	• Sleep • Off
Green blinking slowly External power present (1/2 sec. on, 1 1/2 sec. off)	CPU temperature less than –20ºC. Heater warning CPU for 30 sec.
Green blinking slowly External power not present (1/2 sec. on, 1 1/2 sec. off)	CPU temperature less than –20ºC. Need to move unit to warmer environment.

UPS Status LED

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

External Power Present

LED Behavior	Status
Off	• No UPS charging • UPS charged
Solid Green	UPS charging
Solid Amber	• Any charging fault • Out of Safe Charging Temperature Range. Charging only occurs between approximately -10°C and 35°C ambient temperature. • No UPS present • Charging Timeout. Not fully charged after 4 or 8 hours depending on software revision.

External Power Not Present

LED Behavior	Status
Off	• Unit off • UPS not present
Solid Green	UPS supplying power and discharging
Solid Amber	Approximately 2 minutes runtime until shutdown

Connection LEDs

Bluetooth LED
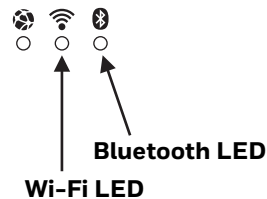
Wi-Fi LED

Wi-Fi LED

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

Bluetooth LED

LED Behavior	Status
Blue Blinking Slowly	Bluetooth is paired but not connected to a device
Blue Blinking Medium	Bluetooth is paired and connected to a device

LED Behavior	Status
Blue Blinking Fast	Bluetooth is discovering Bluetooth devices
Off	Bluetooth hardware has been turned off

The Bluetooth LED blinks once every 6 seconds when the Bluetooth client is paired but not connected. It blinks once for a very short time every 2 seconds when paired and connected. It blinks every second when in discovery. The LED is off when the Bluetooth client is off.

About the Audio Features

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

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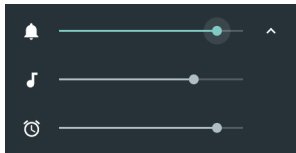
Use the stylus or the Volume buttons to adjust each volume type.

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

Enable Vibrate Mode

You can use the **Blue Key + F10** keypress to quickly enable Vibrate mode so the computer vibrates instead of emitting sound for notifications and rings. If you still want to hear alarms, turn on the Alarms only feature.

1. Press the **Blue Key + F10** keys until the computer vibrates.

2. To turn on the Alarms only feature, press the **Blue Key + F10** keys again with the volume slider open.
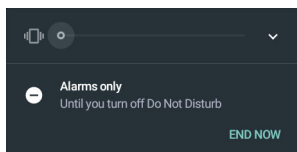
The status bar at the top of the screen indicates the active mode:

- When Vibrate mode is active, ⫿☐⫿ appears.

- When Alarms only mode is active, the Do Not Disturb icon ⊖ appears.

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

Setting	Description
Media Volume Alarm Volume Ring Volume Vibrate on tap	Use the sliders to set the volume for media (e.g., music, videos, and games), alarms and rings (notifications and ringtones).
Do not disturb	Select to set which notifications to let through when you have Do not disturb turned on and when you want to be left alone.
Default notification ringtone	Select a notification sound.
Default alarm ringtone	Select a alarm sound.
Phone Ringtone	Select a default ringtone.
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.

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:

- Torquing tool capable of measuring inch pounds
- SD card up to 8 GB
- #2 Phillips screwdriver bit

Installation Procedure

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. Shutdown the computer.
4. Place the computer face down on a stable surface.

5. Using a #2 Phillips bit loosen the M3 screws and then remove the tethered 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.
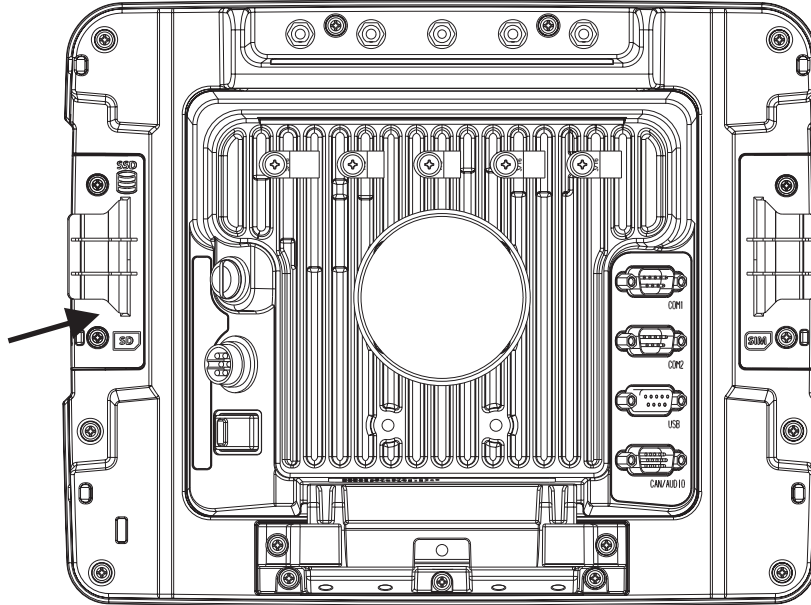
6. Locate the SD card installation slot.
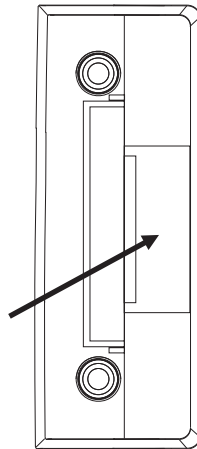
7. Slide the SD card into the slot. The label side (front) of the SD card faces toward the back of the computer.

8. Reattach the access panel, torquing the screws to 4-5 inch pounds.

9. If removed, reinstall the computer in the dock.

10. Restart the computer.

Scanners

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

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 application 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.

— Notification /Status Bar

— Search Bar

— Home Screen Panel

— Tap ∧ or swipe up from the bottom of the screen to access all apps.

— Favorites Tray

— Virtual Navigation Buttons
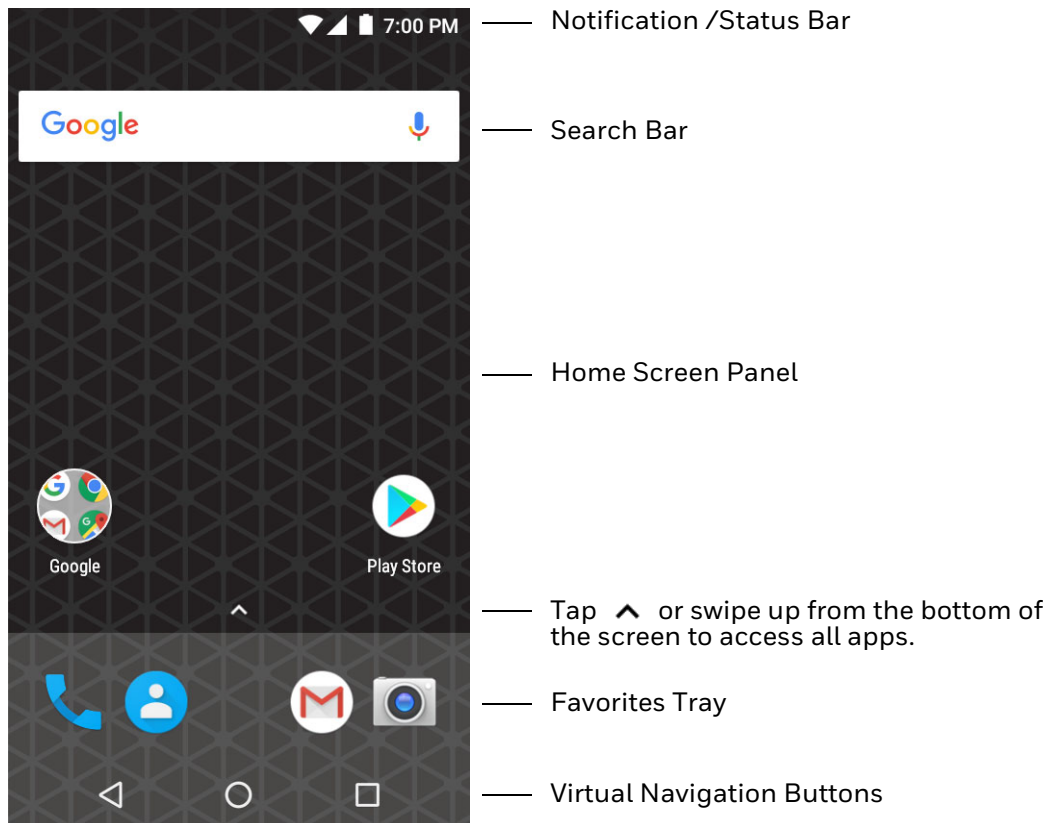
Home Screen Features

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.
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.

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	📳	Vibrate mode is turned On
😊	New text message or multimedia message	✈	Airplane mode is turned On.
❗	Error with text or multimedia message delivery	✱	Bluetooth is turned On.
✉	New email	💿!	SD card is full

Icon	Description	Icon	Description
⬦	Computer is connected to a PC with a USB cable	‹⋯›	Computer is connected with Ethernet
🔄	Synchronizing data	▼	Wi-Fi network connected with full signal strength
🔄!	Error with sync or sign-in	▽	WiFi network connected but no signal strength

Remap a Button

You can change the default function of the virtual buttons.

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 you want to remap or select one of the virtual buttons.

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 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. The computer vibrates, and then switches to a smaller view of the Home screen panels.
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 a Widget:

1. Tap and hold an empty section of the Home screen.
2. Tap **Widgets**.
3. Tap and hold the Widget you want to add.
4. Drag and drop the Widget into place on the Home screen.

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 at the top of the Home screen to help you find anything you need on the computer or on the web.

1. At the top of any 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.

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 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 Technical Support Downloads Portal.
	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.
Power Tools		
	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.
	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.
	EZConfig	EZConfig supports advanced customization and configuration of the hand held computer. EZConfig includes a standard XML editor and configuration bar code scanner feature.
	Config Apps	Config Apps provides the ability to enable, disable, and uninstall applications.

Icon	Application	Description
	WiFi Diagnostic	Use application to: • 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. • Use the Route utility to view packet destination gateway information across the subnets. • Use the IPConfig utility to view IP parameters for the on-board network adapters. • Use the Ping utility to verify communication links or to make sure a specific IP address is working.
	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 an 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 > **Browse Products** > **Software**.

About Honeywell Enterprise Browser

Enterprise Browser for Microsoft® Internet Explorer® 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.

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.

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**.

3 CONFIGURE THE COMPUTER

Use this chapter to learn about the available methods for configuring your com-puter. You can also use this chapter to learn how to configure network communica-tion 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.

Note: *To view a simplified settings menu without descriptions, swipe right from the left edge of the Settings screen.*

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. You 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	• Turn Wi-Fi on or off. • Lists available Wi-Fi networks in range and the connection status when the radio is turned on. • Add a network Wi-Fi connection. • 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. • Tap ⋮ to reset Wi-Fi and Bluetooth.
Data usage	• Manage data usage. • View Wi-Fi data use statistics for the current data use cycle. • Turn the Data saver feature on or off. • Turn network restrictions for metered WLAN networks on or off.
Hotspot & tethering	• Enable or disable USB tethering or Bluetooth tethering for sharing data connections.
Ethernet	• Turn Ethernet connection on and off. • Configure Ethernet connections and set up proxy settings when Ethernet setting is turned on.
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	• Turn the Bluetooth radio on or off. • Lists Bluetooth enabled devices in range when the radio is turned on. • Connect to a Bluetooth Device. • Tap ⋮ to rename the computer and show received files.
Cast	• Enable wireless display. • Connect to nearby devices.
NFC	• 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.

Thor VM1A Vehicle-Mounted Computer

Setting	Description
Android Beam	• 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.
Printing	Configure print options.
USB	Configure USB connection.

Apps & notifications

Setting	Description
Apps	• View a list of all apps installed on the computer or system services running.
Notifications	• Tap an app to set the notification settings for only that app. • Tap ⚙, and then On the lock screen to set what notifications appear on the lock screen (i.e., Don't show notifications at all, Show all notification content, or Hide sensitive notification content) • Tap ⋮, and then Reset app preferences to restore all app notification defaults.
App permissions	• View and manage app permissions. • Tap ⋮, to show or hide system services or to reset app preferences.
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	• View battery usage data and the current battery state. • Access Battery Saver and Battery Optimization features.
Battery Saver	• Turn the Battery Saver on or off. • Set time to turn on automatically.
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.

Device

Setting	Description
Display	Adjust display settings.
	• Turn Adaptive brightness on or off or set the Brightness level manually if Adaptive brightness is turned off.
	• Set the wallpaper.
	• Set Sleep mode timeout length (minutes).
	• Set Keypad backlight.
	• Turn screen auto-rotation on or off.
	• Set screen font size and display size.
	• Set the screen saver.
	• Turn Ambient display on or off..
Sound	• Adjust volume levels for media, alarms, and rings (notifications).
	• Configure the Do not disturb feature.
	• Set what emergency information you want to receive and how you want to receive it.
	• Other Sounds: Turn sounds on or off for touch, charging, screen lock, and vibration on tap.
Storage	Shows the remaining amount of storage in IPSM card and Internal shared storage. If a microSD card is installed, storage amounts appear for the card.
Security & Location	• Set device security settings (e.g., screen lock).
	• View encryption status.
	• Manage administrator privileges and enable/disable installation of apps from unknown sources.
	• Manage credentials and trusted agents.
	• Turn screen pinning on or off.
	• View app usage access.
	• Turn location services on or off.
	• Set location mode accuracy.
	• View location request history.
Users & Accounts	• Modify the owner profile name and add profiles other people who use the computer.
	• Activate a different user profile.
	• Tap Emergency information to 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.
	• Add and manage Corporate or Email account on the computer.
Accessibility	Set accessibility levels, such as larger display text and enabling text-to-speech output.
Google	Set up and manage your Google accounts and services.

Honeywell Settings

Setting	Description
Digital Scan Button	Enable and configure the optional digital scan button. To learn more, see About the Optional Digital Scan Button on page 37.
Honeywell Power	Turn unattended mode on or off.
HXLogger	The HXLogger is an advanced diagnostic log service that provides a basic log service, plug-ins for modified log services, and a log manager. • Tap **HXLogger** 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. • Tap **Plugin** to view and enable additional log services and custom plug-ins. • Tap **Manager**, to change the default log path, delete logs or upload logs for technical support troubleshooting.
Key Remap	Change (remap) a button or key function. To learn more, see Remap a Button on page 23.
Misc	Turn on or off miscellaneous features. • Permanent Caps Lock Enable • Touch Screen Disable • Enable Keypad Backlight • USB Powered in Suspend • 5V on COM1 • 5V on COM2
Power Mode	• Set Power Mode to AC/DC, Auto-On, Ignition Control, or UPS. • Set Power Schedule for Switch state to Sleep and Switch state to Shutdown.
Provisioning Mode	Enable or disable unrestricted installation of applications, certificates, configuration files, and licenses. Provisioning mode is turned off by default. To learn more About Provisioning Mode, see page 70.
Scanning	Configure the imager.
Screen Blanking	Configure screen blanking settings. To learn more, see page 17.
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.

System

Setting	Description
Language & input	• Set the active language.
	• Configure auto-typing features such as capitalization, punctuation, spell check, and the personal dictionary.
	• Set and manage Keyboard and input methods (Virtual and Physical).
	• Set text-to-speech output.
	• Adjusts the pointer speed.
Date & time	Configure all date and time settings
Backup	Perform a Factory Reset. To learn more, see About a Factory Data Reset on page 76.
Developer options	Enable developer-specific options such as USB debugging and SD card protection. This option only Developer appears under System settings if you enable the feature. To learn more, see Unlock Developer Options on page 29.
Reset options	• Perform an Enterprise Reset. To learn more, see About an Enterprise Data Reset on page 75.
	• Perform a Factory Reset. To learn more, see About a Factory Data Reset on page 76.
	• Reset Wi-Fi, Bluetooth, and app preferences.
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 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.

By default, the 802.11 radio is disabled.

1. Swipe up from the bottom of the Home screen to access all apps.

2. Tap **Settings** ⚙ > **Network & Internet**.

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, tap ⚙, and then 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**. 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 ⚙. The Configure Wi-Fi menu appears.

4. Select a setting to modify:

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

   • Tap **Keep WLAN on during sleep**, and then select either **Always**, **Only when plugged in** or **Never**.

Connect to an Ethernet Network

To connect the computer to an Ethernet network, you need an eHomeBase or NetBase.

1. Make sure the base is connected to your Ethernet network.

2. Place the computer in the base.

3. Swipe up from the bottom of the Home screen to access all apps.

4. Tap **Settings** ⚙ > **Network & Internet** > **Ethernet**. The Ethernet setting is turned **On** by default.

5. 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. If DHCP is working, the Ethernet base should indicate that communication with the network is occurring.

6. (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**.

7. 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** ⬤ . A list of available Bluetooth devices appears.

4. Select a device on the list to initiate a pairing request.

5. 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.
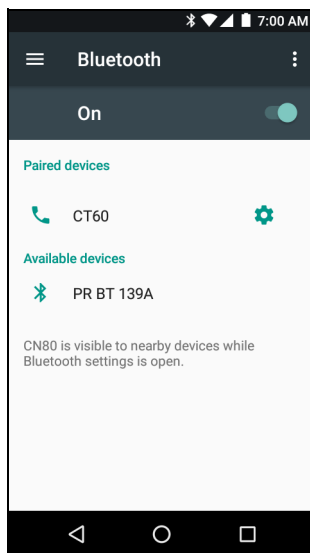
6. (Optional) Once paired to a device, you can connect manually to the device. Tap the device under Paired devices. The word "Connected" appears under the paired device name.

   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 ⋮ , and then select a one of the following options:

   • Tap **Rename this device** to change the device name. Type the new name and then tap **Rename**.

   • Tap **Show received files** to view statistics on the received files.

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**.

Connect to Scanner

NEED INFO ON SCANNER EDGE

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 Information

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

1. Go to 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*
     Click on **Software** > **Software and Tools**.

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

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.*

Enable or Disable Provisioning Mode

1. Swipe up from the bottom of the Home screen to access all apps.

2. Tap **Settings**   > **Provisioning mode** under *Honeywell Settings*.

3. Tap the button to toggle the provisioning On or Off.

CHAPTER
4

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 a minimum of 30 minutes when the unit is not mounted in the dock.

There are three available vehicle-mount docks:

- VM1D Standard Dock
- VM3D Enhanced Dock
- VMXD Enhanced Dock

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

SKUs	VM1001VMCRADLE (with RAM ball) VM1002VMCRADLE VM1003VMCRADLE
Power Connection	Direct or DC/DC power supply
Serial Ports	COM1 and COM2
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: This dock is designed for DC power vehicle-mounted applications only.**

SKUs	VM3001VMCRADLE
Power Connection	Direct or DC/DC power supply
Serial Ports	COM1 and COM2
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 connection on top of dock
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

VMXD Enhanced Dock

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

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 (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 connection on top of dock
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
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 connection on top of dock
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

Features of the Dock

Front View - Dock

Dock Contact Pads
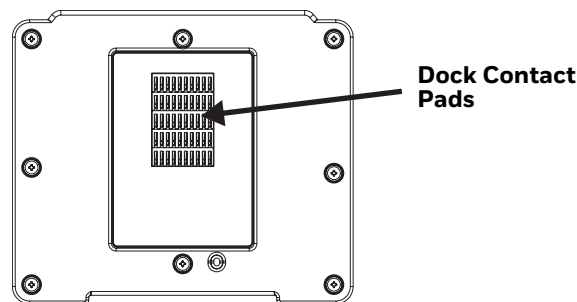
Back View - Dock

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

Standard Dock
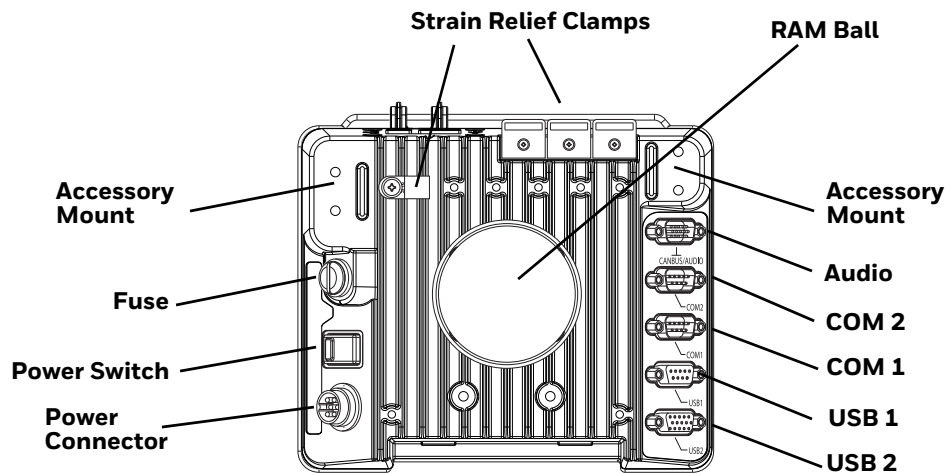
RAM Ball

Strain Relief Clamps

Fuse

Power Connector

Power Switch

COM 1

COM 2

USB

Audio

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 water tight plugs.

Note: *Dock USB Client Port is not supported with VM1A computers.*
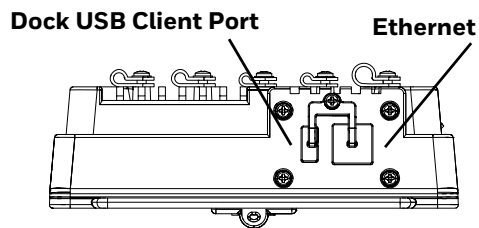
Dock I/O Pin Cover
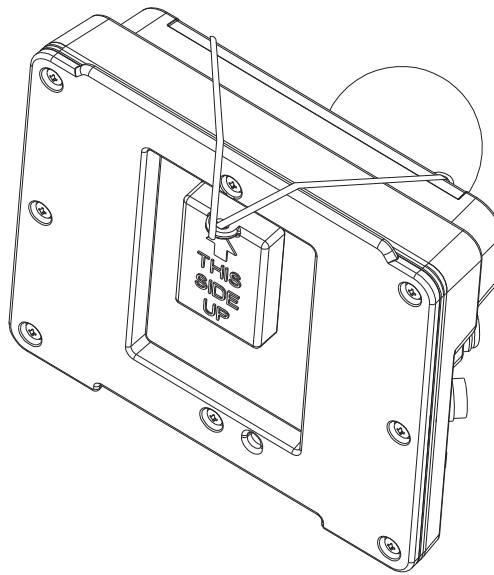
The dock contains a tethered I/O Pin Cover to protect the I/O pins on the dock when a VM1A is not mounted in the dock.

- 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
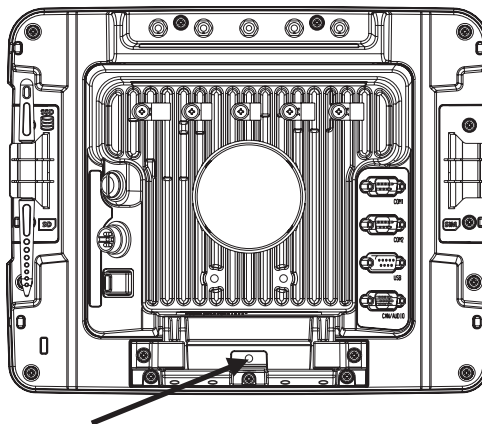
It may be desirable to secure the VM1A in the dock so it cannot be removed from the dock. The quick release handle on the computer is notched to allow a user supplied standard padlock to be placed through a hole in the bracket on the back of

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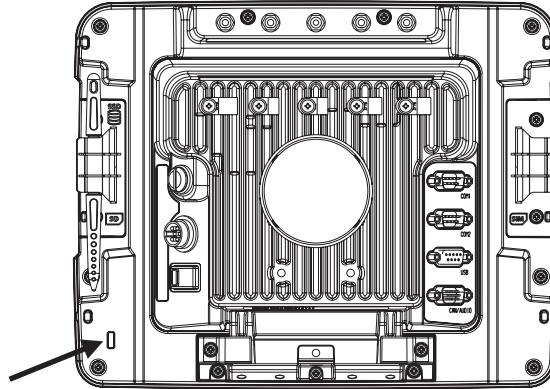
The VM1A can be secured with a standard laptop security cable using the slot on the back.

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)

Standard Dock

Enhanced Dock
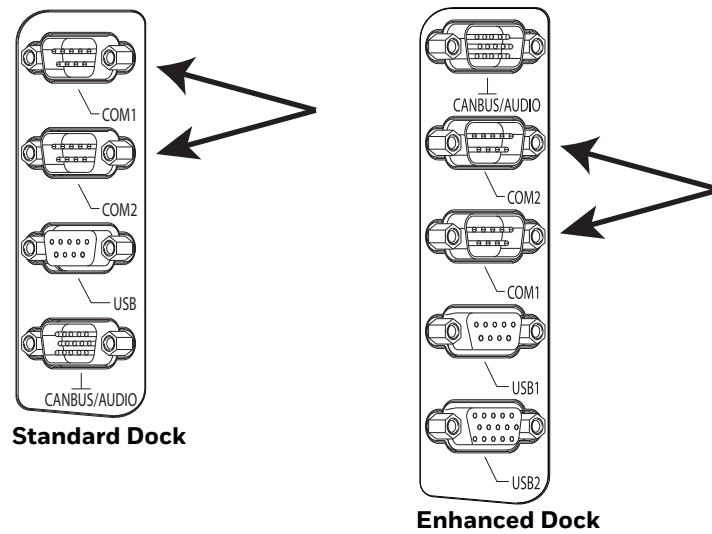
The COM1 and COM2 connectors are D-9 male connectors located on the back of the dock.

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 for an external bar code scanner.

See Connect Serial Device for more information.

If a COM port is not being used for a scanner, it can be used for Screen Blanking when the vehicle is in motion.

USB Connector(s)

Standard Dock

Enhanced Dock
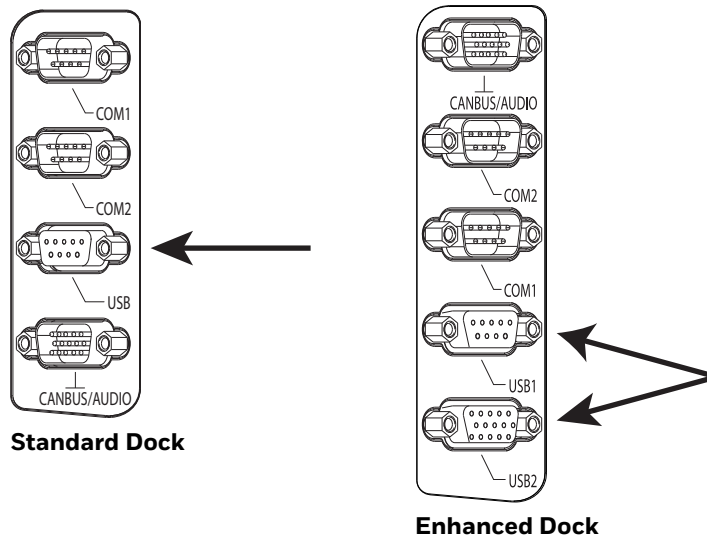
The USB or USB1 connector is a D-9 female connector located on the back of the dock. See USB and USB1 Connector for connector pinout detail.

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

Standard Dock

Enhanced Dock
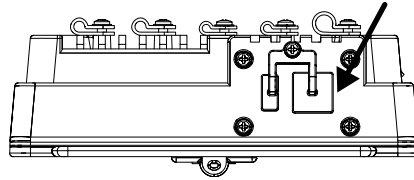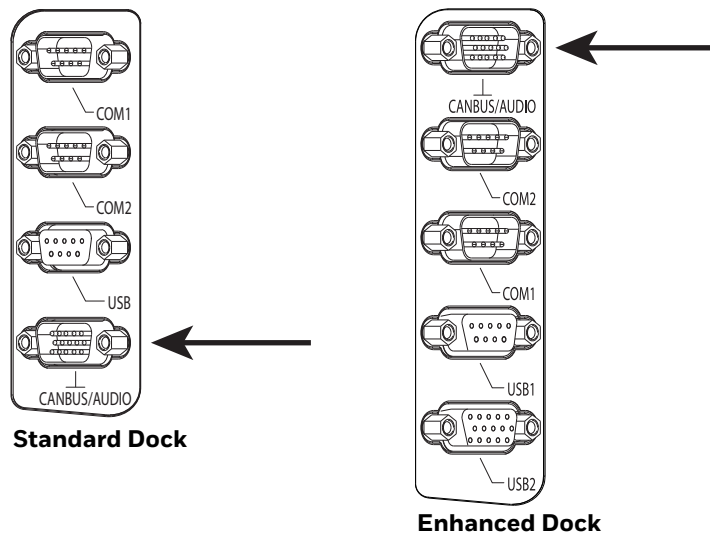
The Audio connector is a D-15 male connector located on the back of the dock.

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

Standard Dock   **Enhanced Dock**
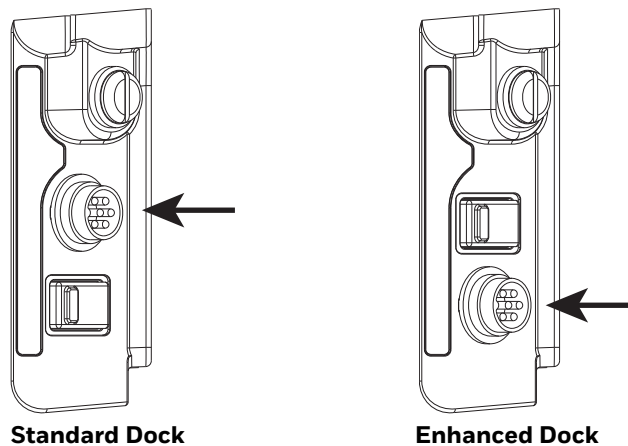
Power is supplied to the VM1A through the power connector. Additionally, this assembly provides a connection point for the vehicle's chassis ground to be connected internally to the conductive chassis of the computer.

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. Other docks have different power requirements.

See Power Supply Connector for connector pinout detail. See Connect Power for more information on connecting power to the VM1A.

Antenna Connections
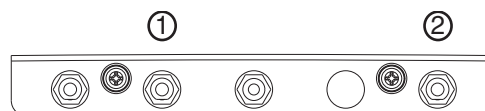
The VM1A is equipped with an 802.11 radio and can be ordered with internal antennas or external remote mount antennas. When the computer is ordered with internal antennas, the external antenna connectors are not used.

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

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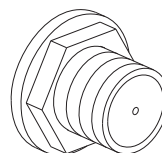
When the VM1A is ordered with the internal antenna option, the 802.11 antenna connectors on the back are not connected to the 802.11 radio. Instead the internal antenna connector is connected to the 802.11 radio.

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

Internal 802.11 Antenna

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

Vehicle Remote Antenna

The external antennas can be remotely mounted on the vehicle. See Mount the 802.11 Remote Antenna for instructions. External antenna kit is available for the 802.11 Wi-Fi radio.

MOUNTING AND INSTALLING

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: Use the existing power supply and wiring with a VMXD enhanced dock.
- To replace a VX6, VX7, or CV61: Use the appropriate adapter 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 the dock. 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 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 a minimum of 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 all the hardware required for vehicle mounting.

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 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
   - 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.

Mount Kit	Components
RAM Ball Mount (Size D)	• RAM Ball (Size D) • RAM Arm (Size D, length varies by kit) • Hardware: Screws and washers
RAM Clamp Mount (Size D)	• RAM Ball (Size D) • RAM Arm (Size D, length varies by kit) • RAM Clamp • Hardware: Screws and washers
RAM Plate Mount with RAM Ball (Size D)	• 2 RAM Balls (Size D) • RAM Arm (Size D, length varies by kit) • RAM Plate • Hardware: Screws, washers, and nuts
Accessory Mounting Kit (Optional for Enhanced Dock)	• Accessory RAM Ball • Scanner Holder • RAM Arm (Size D, length varies by kit) • Hardware: Screws, washers, and nuts

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

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

- Sockets
- Screwdriver
- 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: *Torquing tool is not supplied by Honeywell.*

Step 3.   Attach the mount to the vehicle.

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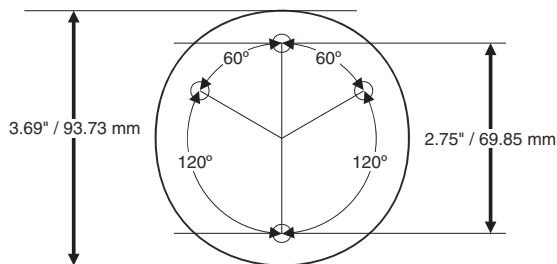
3. Attach the RAM ball base to the vehicle mounting surface using three or four 1/4 bolts (not included) or equivalent fasteners. If the mounting kit includes cone washers, use those as illustrated below.
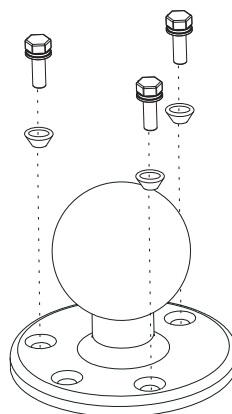
RAM Clamp Mount

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.)

2.56" / 65.02mm   1.84" (46.74mm)
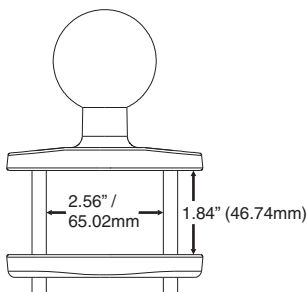
2. Position the upper clamp piece with ball on the beam. Place the bolts through the holes in the upper clamp piece. Position the lower clamp piece below the beam. Align the bolts with the holes in the lower clamp piece. Place the nylon locking nuts on the bolts and tighten the bolts.

Bolts

Upper clamp piece

Lower clamp piece

Nuts
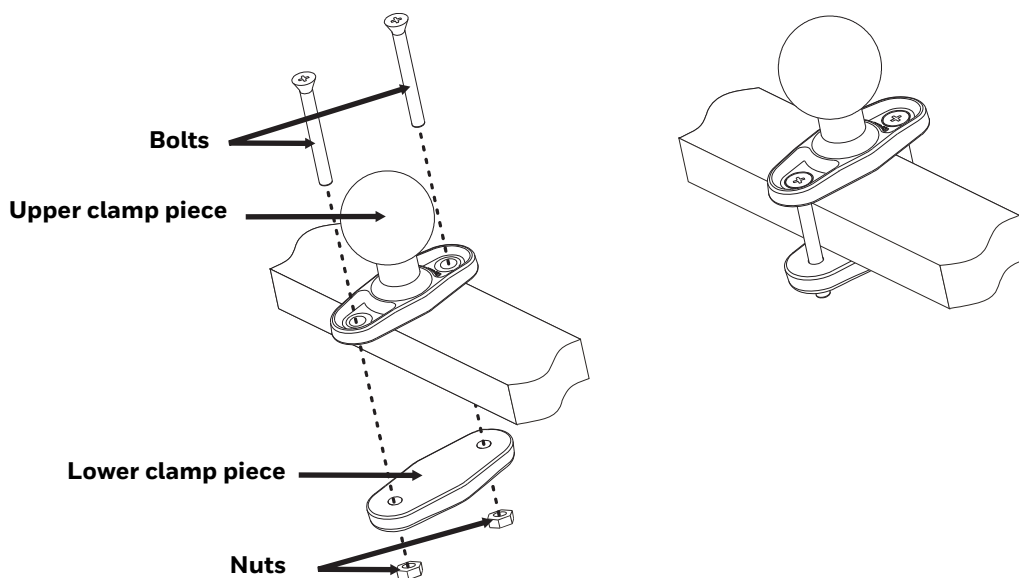
RAM Plate Mount with RAM Ball

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.)
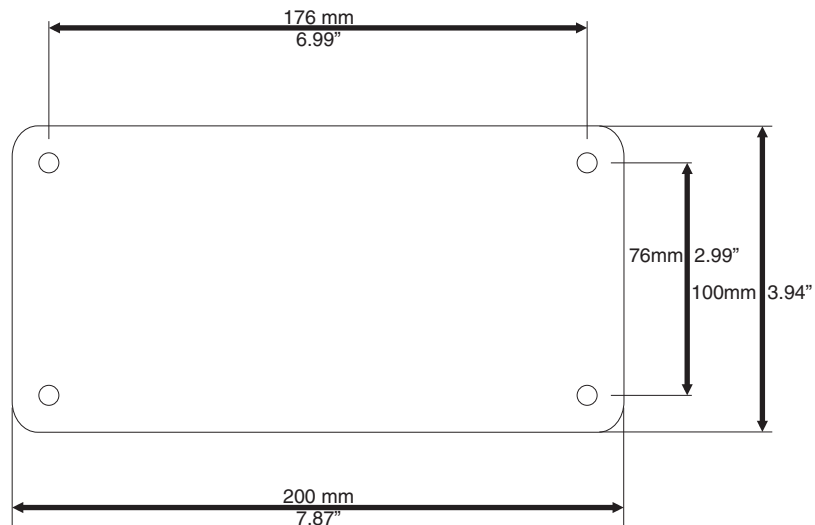
3. If not already attached, attach the RAM ball to the RAM ball plate using three M6 nuts and washers.
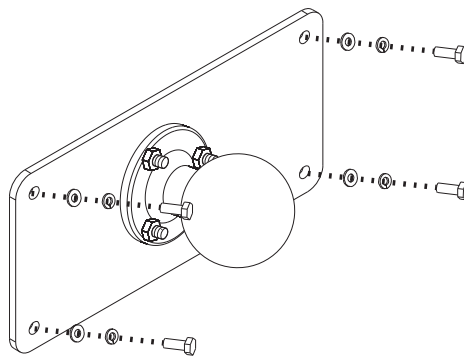
Attach RAM Mount Ball to the Dock

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.
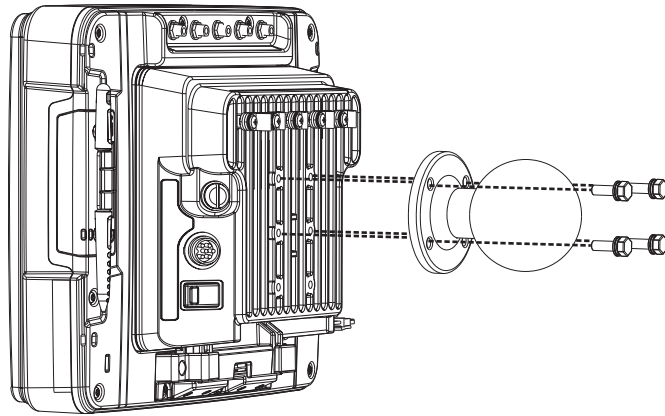
Attach Thor VM1A Assembly to RAM Mount

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 using the supplied RAM wrench.
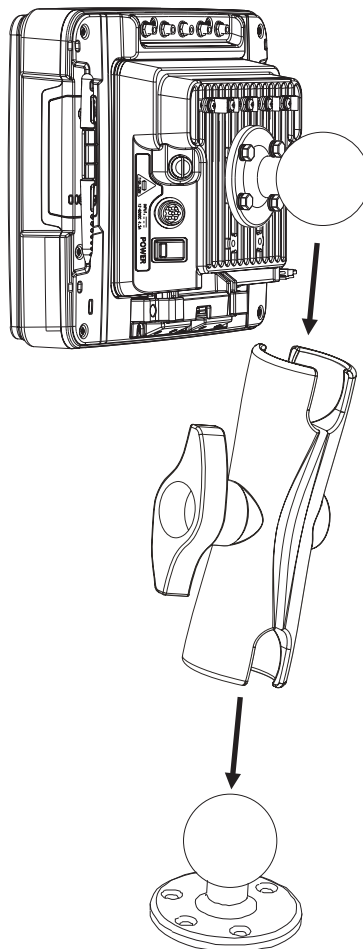
Step 3.   Place the computer into the dock.

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.)
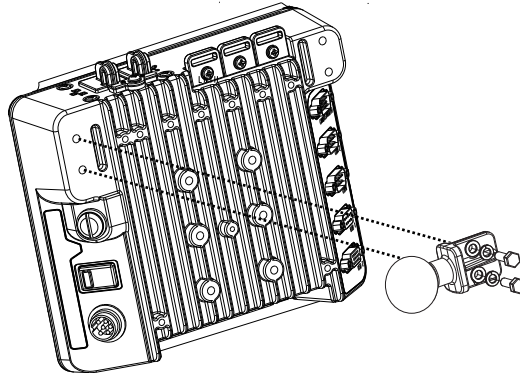
2. Attach the RAM ball to the back of the scanner holder.
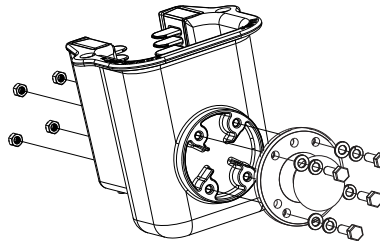
3. Slip the RAM arm over the accessory RAM ball.

4. Slip the RAM ball on the scanner holder into the RAM arm.
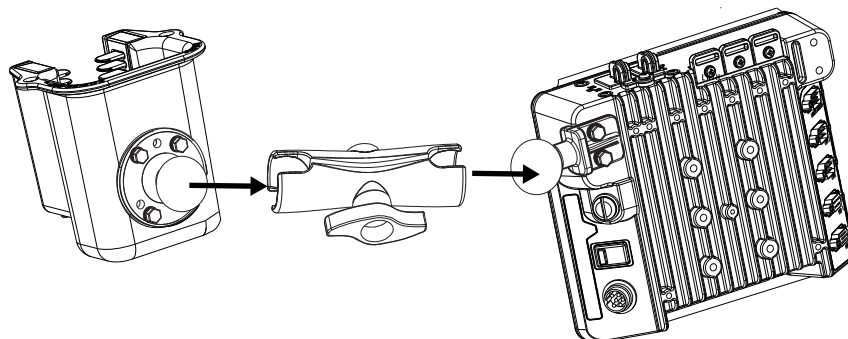
5. Tighten the knob on the RAM arm while adjusting to the desired angle.

Install U Bracket Mount

Note: *This mounting system does not have a provision for an integrated scanner holder. This accessory can be mounted remotely, 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)	• U Bracket • Adapter Bracket • Hardware: screws, flat washers, and lock washers
Adapter Bracket without U Bracket	• Adapter Bracket • Hardware: screws, flat washers, and lock washers

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: *Torquing 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.
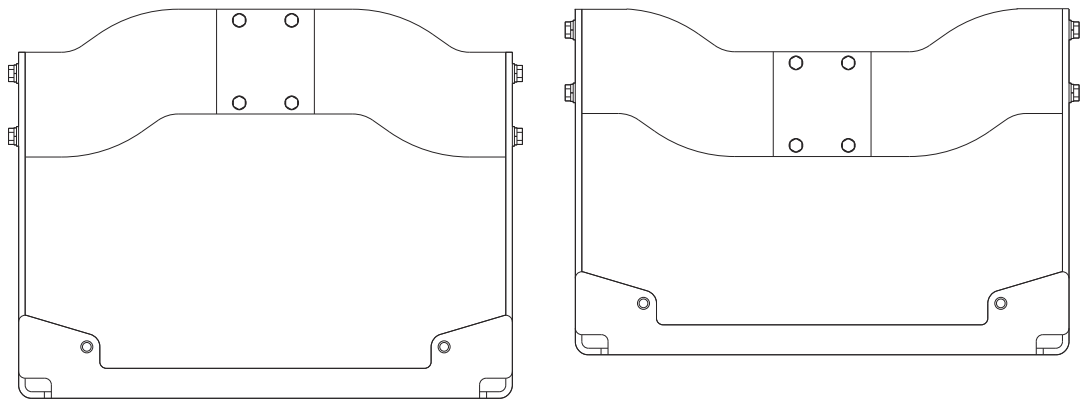
- Additionally, the slotted U bracket allows the computer to be mounted vertically or tilted forward or backward for best viewing angle.
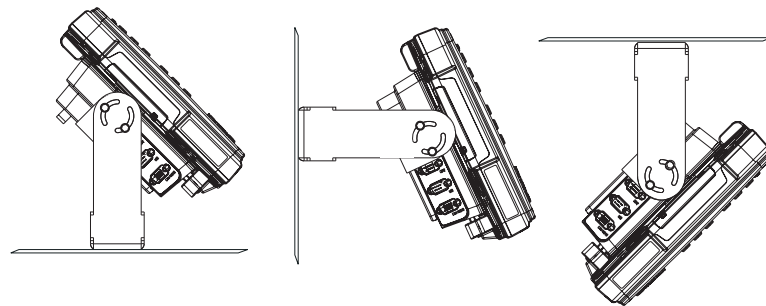
Step 4.   Install U Bracket to Vehicle

1. Position the bracket to allow access to the switches and ports on the bottom of the computer.

2. 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. It is recommended to use lock washers and flat washers on the fasteners.*

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

1. 14.40 in / 359.2 mm
2. 12.10 in / 307.3 mm
3. 6.05 in / 153.6 mm
4. 1.02 in / 25.9mm
5. 3.38 in / 85.85 mm
6. Vehicle Mount Footprint
7. 0.406 in / 10.312 mm
8. 0.88 in / 22.3 mm
9. 1.25 in / 31.75 mm
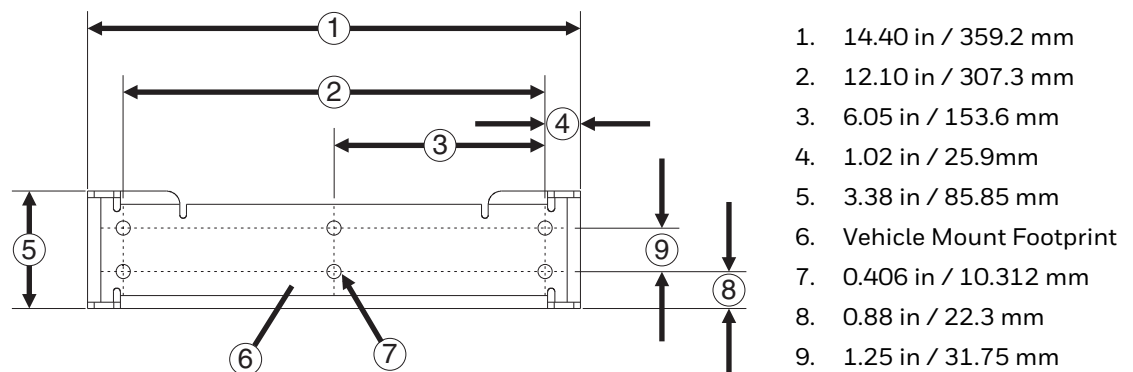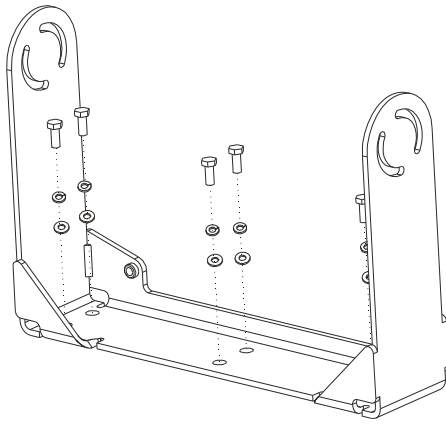
Step 5.   If the dock has a RAM ball attached, the RAM ball must be removed from the dock to use the U Bracket mount. The hardware used to attach the RAM ball to the dock is not reused for the U Bracket mount.

Step 6.   Attached the Adapter Bracket to dock.

1. 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.*

2. 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.
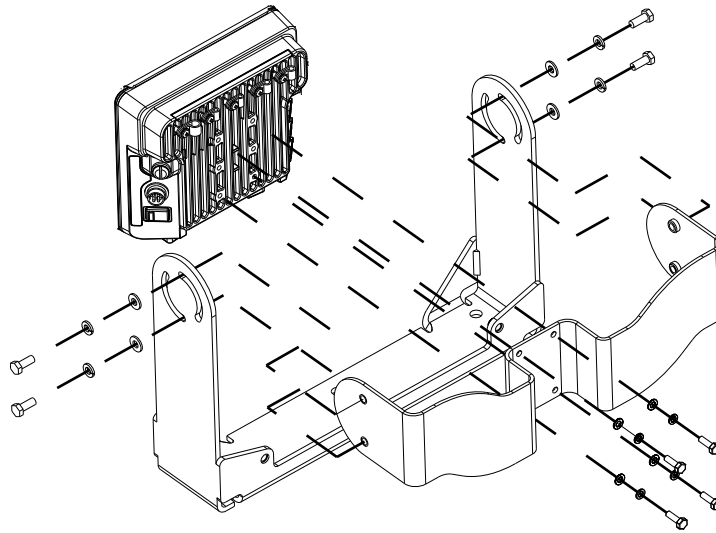
3. If the computer is not already mounted to the dock, Place Thor VM1A in the Dock.

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 screws 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 using the supplied RAM wrench.
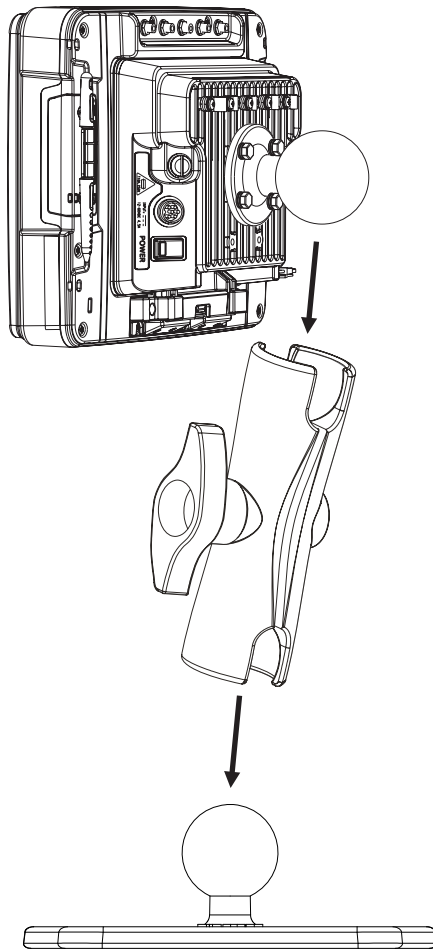
5. If the computer is not already mounted to the dock, Place Thor VM1A in the Dock.

Place Thor VM1A in the Dock

Back of VM1A

Front of Dock

Upper Lip on Dock

Notch on VM1A

Lower Lip on Dock

Release Lever
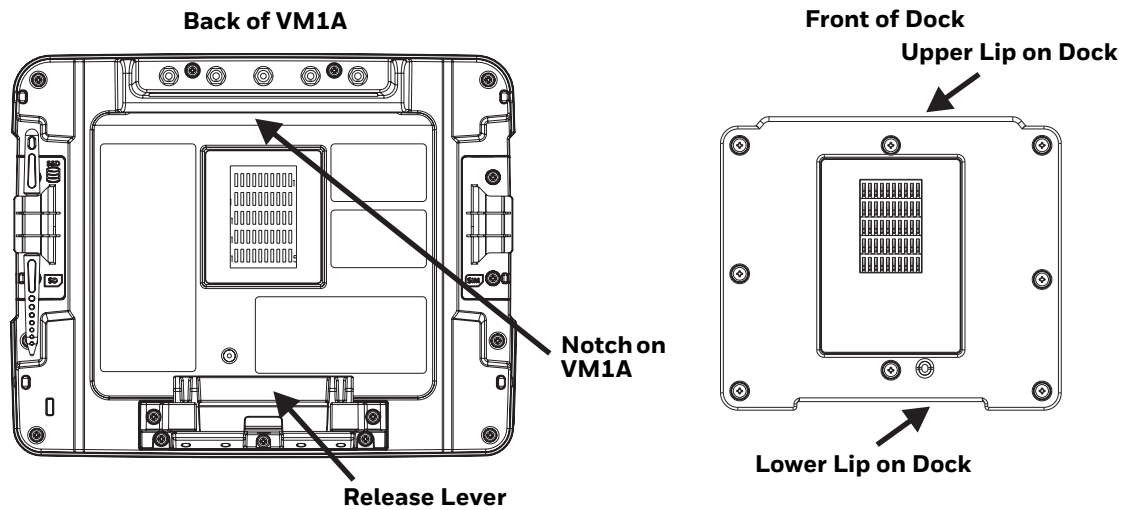
1. Locate the notch on the upper rear of the VM1A.

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 has connectors for external antennas, do not power up the computer without the external antennas connected. Damage to the WLAN radio may result.**

The Remote Antenna Installation Kit consists of two brackets (base plate and right angle), cable, and antenna. Tools are not included.
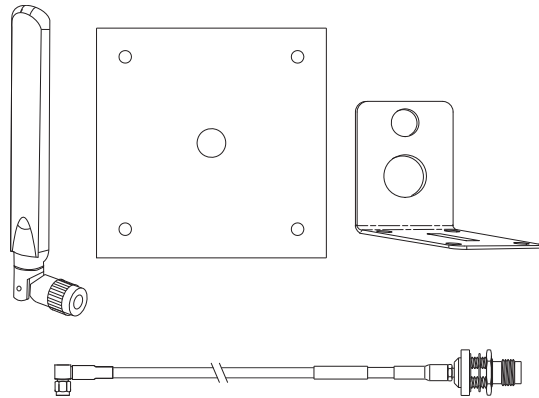
The desired remote antenna bracket is mounted on the top of a forklift, truck, or other vehicle and cabled to the computer inside the vehicle.

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

Mount the 802.11 Remote Antenna

Components
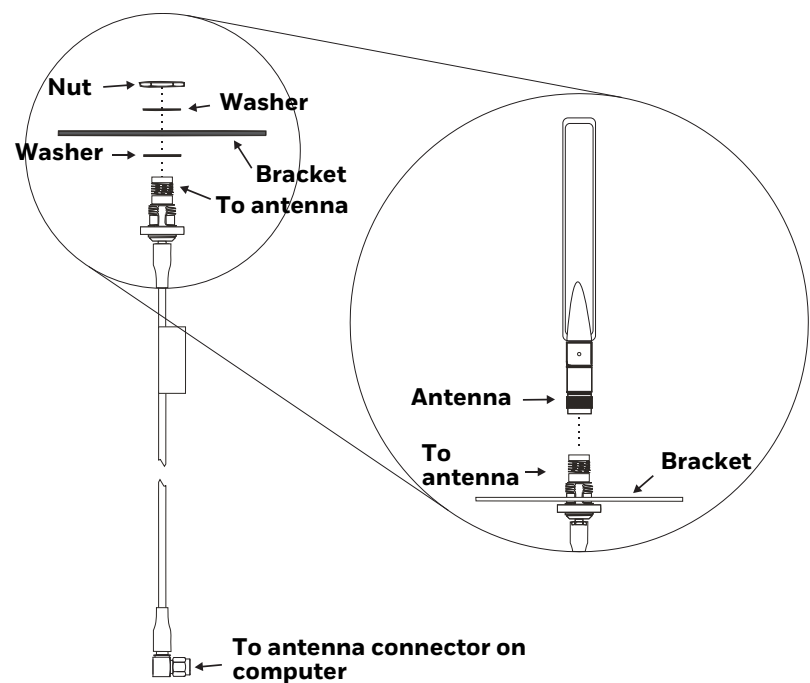
Typical Installation
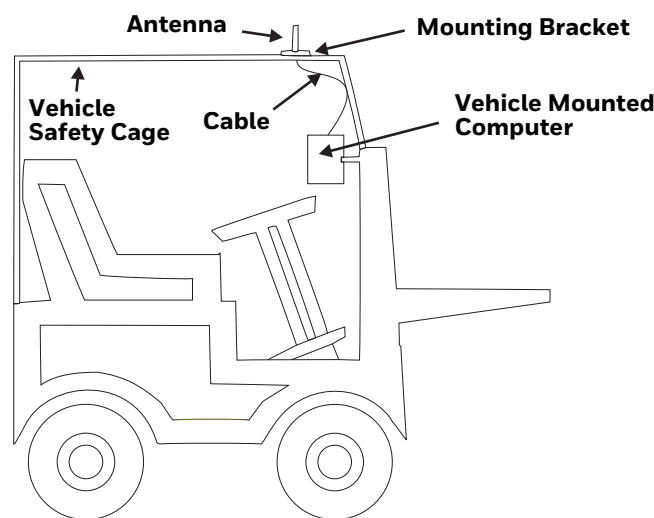
Instructions

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 must be mounted at least 12 inches (304.8mm) apart.

2. Attach the female connector of the coaxial cable to the antenna connector on the vehicle mounted computer.

3. Secure the whip antenna to the mounting bracket.

4. Connect the antenna cable to the whip antenna.

5. 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.

6. Connect the cable to the antenna connector (Wi-Fi Main or Wi-Fi Aux) on the computer. If only one antenna is used, be sure to connect it to the Wi-Fi Main connector.

7. 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.

- 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.

- CV61 Adapter Cable – For applications where the VM1A replaces a previously installed CV61.

- Screen Blanking – Optional connection to blank the VM1A display while the vehicle is in motion.

For the VMXD Enhanced Dock, power options include:

- **VMXD Enhanced Dock with Thor VX8/Thor VX9 Power Cable** – For applications where a Thor VM1A (with a VMXD Enhanced Dock) replaces a previously installed Thor VX8 or Thor VX9.

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:** Use caution when routing the power cable. See **12–48 VDC Vehicles (10–60 VDC Direct Connection).**

⚠ **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. 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 and is one of two styles below:

Power cable with right angle connector and 6 wires:

⚠ **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)

Power cable with straight connector and 4 wires:
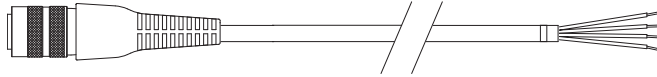
Wire Color	Connection
Red	DC + (10-60 VDC)
Black	DC -
Green	Ground
Blue	Ignition Input (optional)

Note: *Correct electrical polarity is required for safe and proper installation. See the figures below for additional wire color-coding specifics.*

The Thor VM1A DC input wires (Red, Red/White DC+ and Black, Black/White DC–) and the Blue ignition input wire are galvanically isolated. The Green ground input is used for electrostatic discharge (ESD) protection.

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^2) 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 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 feature, install the screen blanking box or switch.

11. Press the Power Switch on the back of the dock.

12. Press the Power Button on the front to turn on the computer.

Once installation is complete, remember to start the computer and configure the Auto-On Behavior.

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 Auto-On Behavior 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.*

Existing Circuitry On Vehicle

Battery

Main Switch

+Vo   -Vo   Ignition

Fuse - See
Fuse Warning

See **Caution** statements

Cable for optional
screen blanking
connection

Quick Mount
Smart Dock

COM1 or COM2
Connector

Red/White (if present)
Red
Black/White (if present)
Black
Green
Blue

Circular
Power
Connector

> ⚠ **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 Auto-On Behavior 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.

Existing Circuitry On Vehicle

Battery

Main Switch

+Vo   -Vo

Fuse - See
Fuse Warning

See **Caution** statements

Quick Mount
Smart Dock

Cable for optional
screen blanking
connection

COM1 or COM2
Connector

Red/White (if present)
Red
Black/White (if present)
Black
Green
Blue
(not connected)

Circular
Power
Connector

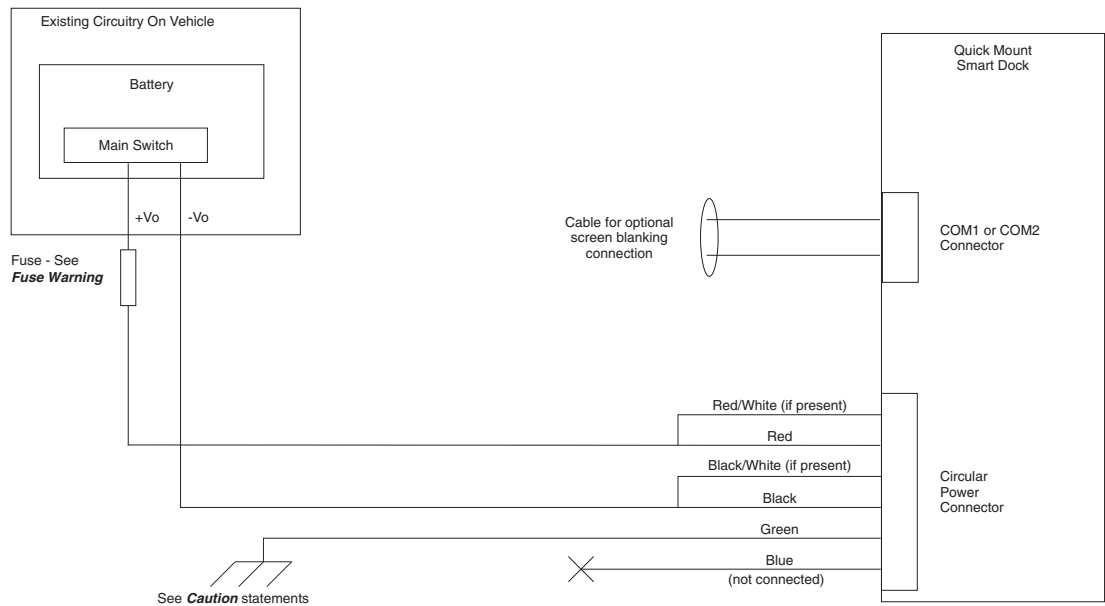⚠ **!**   **Caution: For battery powered vehicles:**

- V$_{IN}$+ (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.

- V$_{IN}$- (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:**

- V$_{IN}$+ (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.

- V$_{IN}$- (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 Control Wiring Diagram for 10-60 VDC Direct Connection

Ignition wire must be left unconnected. Standard must be selected from the Auto-On Behavior control panel.

Existing Circuitry On Vehicle

Battery

Main Switch

+Vo   -Vo

Fuse - See
Fuse Warning

See *Caution* statements

Quick Mount
Smart Dock

Cable for optional
screen blanking
connection

COM1 or COM2
Connector

Red/White (if present)
Red
Black/White (if present)
Black
Green
Blue
(not connected)

Circular
Power
Connector
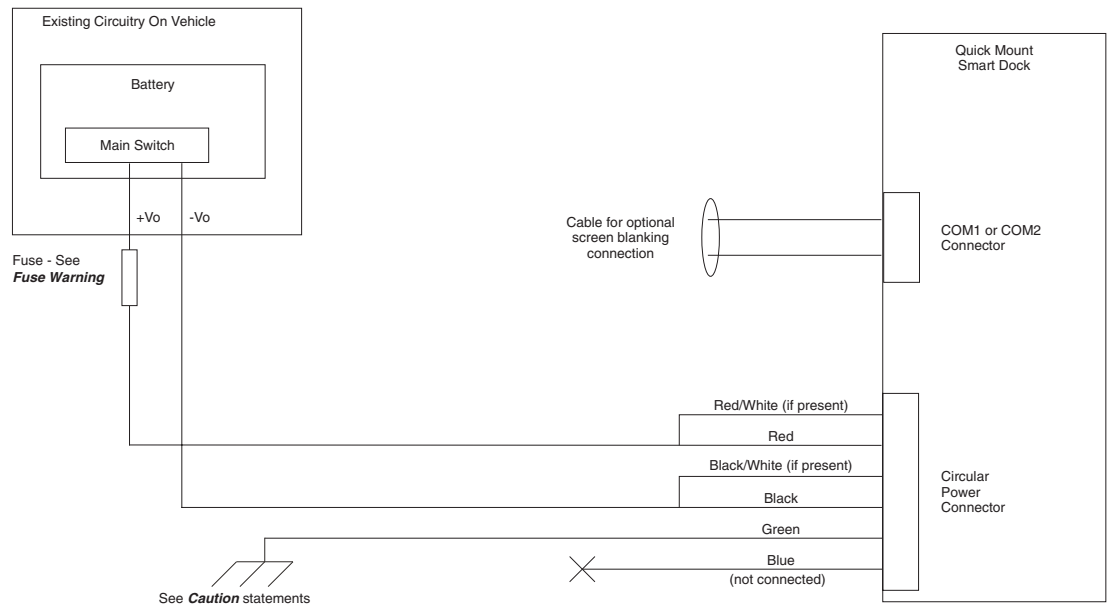
⚠ **Caution: For battery powered vehicles:**

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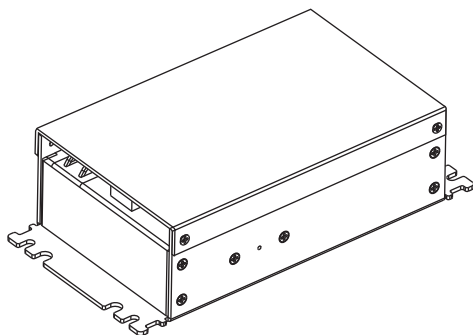
⚠ **Warning: For proper and safe installation, follow the Fuse Requirements for 10-60 VDC Direct Connection.**

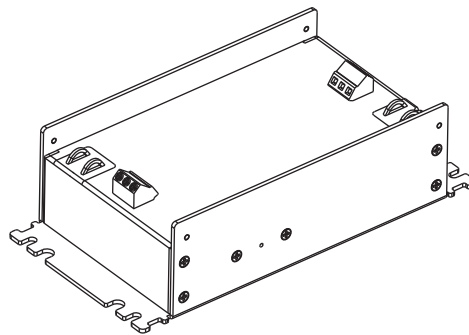# 60-144 VDC Vehicles (50-150 VDC Power Supply, Screws on Side of Lid)

> ⚠ **Caution:** These instruction are for use with the **VM1D Standard Dock** and **VM3D Enhanced Dock** only.

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

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.

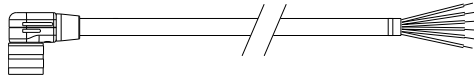*Note:* *For North America, a UL Listed fuse is to be used.*

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

The DC power cable is included with the dock and is one of the two styles below:

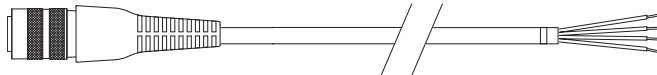### Power cable with right angle connector and 6 wires:

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)

Power cable with straight connector and 4 wires:

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

Note: *Correct electrical polarity is required for safe and proper installation. See Wiring Diagram for 50-150 VDC Power Supply, Screws on Top of Lid for additional wire color-coding specifics.*

The Thor VM1A DC input wires (Red, Red/White DC+ and Black, Black/White DC–) and the Blue ignition input wire are galvanically isolated. The Green ground input is used for electrostatic discharge (ESD) protection.

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.

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 or a single red wire) 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 or a single black wire) to the output. See Power Cable Identification for 50-150VDC Power Supply, Screws on Side of Lid.

Note: *The input block has V$_{IN}$+, V$_{IN}$– and GND terminals. The output block has V$_O$+ and V$_O$– terminals.*
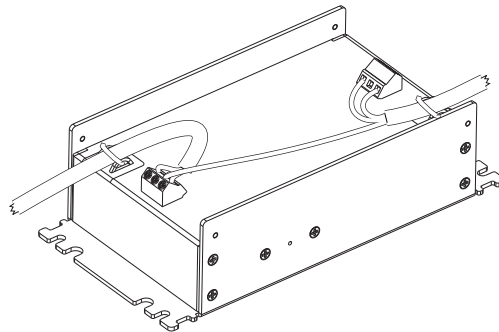
8. Connect the ground (green) wire from the computer to the GND terminal on the input side of the DC/DC power supply.

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.