Honeywell

MX9

Hand-Held Computer

Microsoft® Windows® CE 5 Operating System

Cradle Reference Guide

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Vehicle Power Supply Connection Safety Statement

Vehicle Power Supply Connection: If the supply connection is made directly to the battery, a ten A slow-blow fuse should be installed in the positive lead within 5 inches (12.7 cm.) of the battery positive (+) terminal. (US)

Raccordement de l'alimentation du véhicule Si l'alimentation est raccordée directement à la batterie, un fusible à action retardée de 10 A doit être installé sur le câble positif à moins de 12,7 cm de la borne positive (+) de la batterie. (FR)

EL forsyning af køretøjet. Er forsyningsforbindelsen direkte tilknyttet til batteriet og og tilsluttet til den positive part indenfor 12,7 cm (+ delen). vil der være en langsom tændelse af 10 ampere. (DK)

Kytkentä ajoneuvon virtalähteeseen Jos virtaa otetaan suoraan akusta, 10 ampeerin hidas sulake on asennettava positiiviseen johtoon enintään 12 cm:n etäisyydelle akun positiivisesta (+) navasta. (FI)

Anschluss an Fahrzeugbatterie Bei direktem Anschluss an die Fahrzeugbatterie sollte eine träge 10A-Sicherung in die positive Leitung zwischengeschaltet werden, und zwar nicht weiter als ca. 13 cm von der positiven (+) Batterieklemme entfernt. (DE)

Σύνδεση Τροφοδοτικού Ισχύος Οχήματος Αν η σύνδεση του τροφοδοτικού γίνει κατευθείαν στη μπαταρία, μια ασφάλεια βραδείας τήξης των 10A θα πρέπει να τοποθετηθεί στο θετικό καλώδιο εντός 5 ιντσών (12,7 εκ.) του θετικού (+) ακροδέκτη της μπαταρίας. (GR)

Collegamento dell'alimentazione del veicolo Se il collegamento dell'alimentazione viene stabilito direttamente con la batteria, è necessario installare un fusibile ad azione lenta da 10 A nel conduttore positivo a meno di 5 in. (12,7 cm) dal terminale positivo (+) della batteria. (IT)

Tilkople strømforsyningen til kjøretøyet Hvis strømforsyningen koples direkte til batteriet, skal det installeres en 10 A treg sikring i den positive ledningen innen 12,7 cm fra plusspolen (+) på batteriet. (NO)

Ligação do fornecimento de corrente do veículo Se a ligação de fornecimento de corrente for ligada directamente à bateria, deve instalar-se um fusível de 10A no terminal positivo, a 12,7 cm. do terminal positivo (+) da bateria. (PT)

Conexión de suministro eléctrico para el vehículo Si el suministro eléctrico se proporciona directamente a la batería, se debe instalar un fusible de retardo de 10 A en el conductor positivo, como máximo a 12,7 cm (5 pulgadas) del terminal positivo (+). (ES)

Fordonets strömförsörjningskoppling Om strömkopplingen görs direkt till batteriet, måste en 10A-säkring installeras i den positivt laddade ledningen inom 12.7 cm från batteriets pluspol (+). (SE)

Taşıt Güç Kaynağı Bağlantısı Kaynak bağlantısı doğrudan aküye yapılırsa, pozitif bağlantı kablosu üzerinde akünün pozitif (+) kutbuna 12.7 cm mesafede 10A'lık yavaş atan bir sigorta monte edilmelidir. (TR)

Legend: Danish – DK; English – US; Finnish – FI; French- - FR; German – DE; Greek – GR; Italian – IT; Norwegian – NO; Portuguese – PT; Spanish – ES; Swedish – SE; Turkish – TR.

Table of Contents

Chapter 1: Introduction

The MX9 is a rugged, portable, hand-held computer with a Microsoft® Windows® CE 5 operating system. There are two optional cradles available for the MX9:

- A desktop cradle that secures the MX9, recharges batteries and enables communications between the MX9 and another device.
- A powered vehicle-mount cradle that secures the MX9, isolates it from shock and vibration and recharges the battery.

About This Guide

This MX9 Cradle Reference Guide provides instruction for the end-user, installer or system administrator to follow when setting up or using an MX9 cradle.

Chapter 2: Desktop Cradle

Unpacking Your Desktop Cradle

After you open the shipping carton containing the product, take the following steps:

- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

The MX9 cradle is available in three configurations:

- Without a power supply. A power supply must be ordered separately.
- With a power supply and a US power cord.
- With a power supply but without a power cord. A country specific power cord must be provided.

Communications cables for the MX9 are available separately.

Overview

An MX9 docked in a cradle may be equipped with a Microsoft® Windows Mobile® 6.5 operating system or a Microsoft® Windows® CE 5 operating system. This MX9 Cradle Reference Guide has been developed for an MX9 with a Windows CE 5 operating system.

The MX9 desktop cradle restrains the MX9, re-charges batteries, and enables serial, audio, USB host, USB client or Ethernet communication with a PC, scanner, printer or other peripheral device. MX9 keypad data entries can be mixed with cradle-tethered serial scanner bar code data entries while the MX9 is in a powered cradle. Bluetooth device connection and use, while the MX9 is docked, are managed by the MX9Control Panel Bluetooth program, not the cradle.

Using a wall AC adapter the desktop cradle can also recharge a spare MX9 battery in approximately 4 hours. The MX9 battery recharging is managed by the docked MX9 power management configuration. The MX9 can be either On or in Suspend Mode while in the cradle. Special purpose and power cables are available from Honeywell.

Wireless host/client communications can occur whether the cradle is receiving external power or not as wireless functions draw power from the main battery in the MX9.

The MX9 cradle is not certified for use in Hazardous Locations.

Preparing the Cradle for Use

Note: Keep dirt and foreign objects out of the cradle. Do not short circuit any of the charging terminals (pins), as this action could result in injury or property damage.

Honeywell recommends a stable, horizontal surface out of the way of:

- inclement weather conditions,
- extremely high concentrations of dust or wind blown debris,
- accidental knocks, bumps or other shocks to the cradle and items in the cradle bays.
- Leave enough space at cable connectors to ensure cables are protected from jostling, tugging or being disconnected by passing objects.

Note: The MX9 must have a main battery installed when it is docked in a cradle.

The main battery in the MX9 is recharged when the MX9 is docked in a powered desktop cradle and when it is docked in a powered vehicle cradle.

Quick Start - Desktop Cradle

The following list outlines, in a general way, the process to follow when preparing the MX9 desktop cradle for use. Refer to the following sections in this document for more details.

1. Connect the cradle end of the power adapter cable to the Power port on the back of the cradle.
2. Attach the AC power connector to a dependable power source.
3. Attach any desired external cabled devices to the ports on the cradle.
4. The desktop cradle is ready for use.

Battery Charging in a Desktop Cradle

The MX9 main battery recharging is managed by the Power Management settings in the MX9.

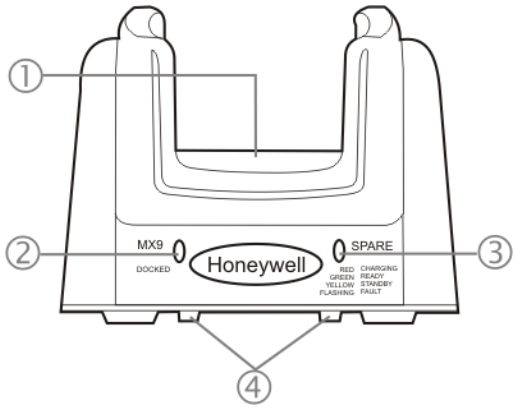
Refer to **Start > Settings > Control Panel > Power** on the MX9.

The spare battery in the spare battery well re-charges with or without an MX9 in the dock. The spare battery is fully charged in approximately four hours.

The cradle must be receiving power from an external power source before the main battery in the docked MX9 or spare battery pack charging can take place.

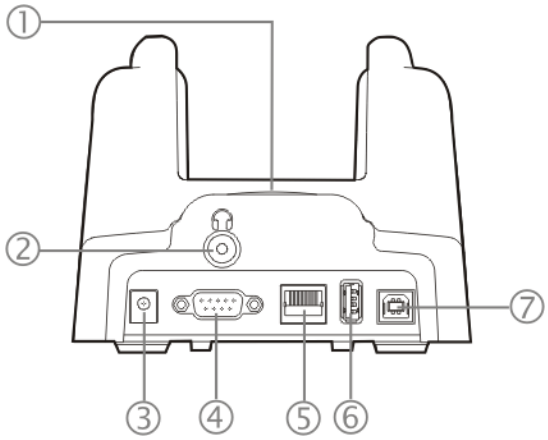
Components

Front View



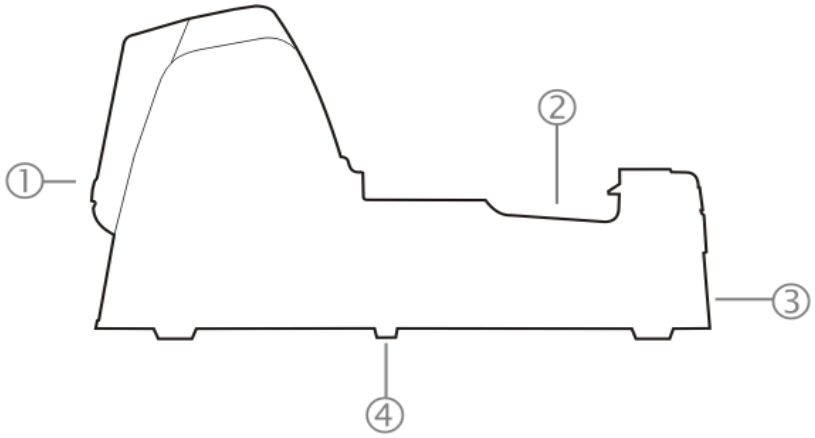
1. MX9 Cradle Docking/Charging Bay
2. MX9 Docked LED
3. Spare Battery LED
4. Table Mounting Holes

Back View



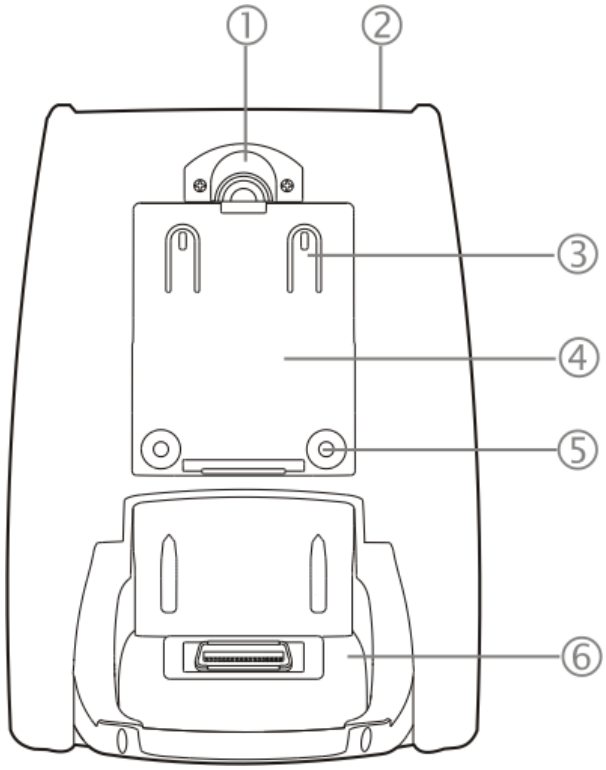
1. Spare Battery Charging Bay
2. Headset Audio Cable port
3. AC/DC Power port
4. Serial port
5. Ethernet port
6. USB Client port
7. USB Host port

Side View



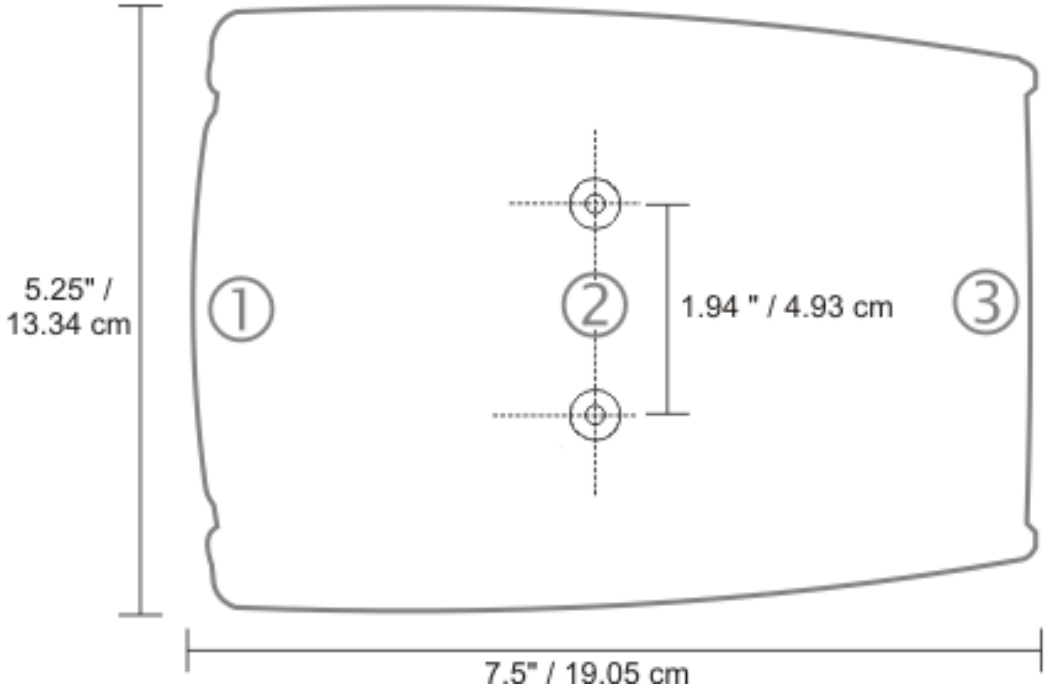
1. Front / MX9 Docking/Charging Bay
2. Spare Battery Charging Bay
3. Back / Power port
4. Table Mounting Holes

Top View



1. Spare Battery Charging Bay Battery Catch
2. Power port
3. Spare Battery Spring
4. Spare Battery Charging Bay
5. Desktop Table Mounting Holes
6. MX9 Docking/Charging Bay

Desktop Mounting Footprint



Not to Scale

1	Front
2	Table Mounting Hole Guides
3	Back

Bolts, washers, screws, screwdriver or wrench needed when attaching the MX9 desktop cradle to a protected flat surface are not supplied by Honeywell.

Periodically check the table mounting hardware and re-tighten if necessary. Table mounting hardware can be finger-tightened.

Note: Do not over-tighten the table mounting hardware. If the cradle is cracked, it must be replaced before being placed into service. Contact Technical Assistance for help.

Tethered Scanners and the MX9 Cradles

An MX9 powered cradle supports tethered scanner attachment. A powered cradle provides 5V power to a tethered scanner.

Note: Pressing an MX9 Scan button has no effect on tethered bar code scanners connected to a powered desktop cradle. Tethered scanners read bar code scans only when the trigger on the tethered scanner is pressed.

A tethered scanner can be connected to the 9-pin RS232 Serial Interface port on the desktop cradle or to the Serial Interface port on the back of the vehicle cradle.

MX9 keypad data entries can be mixed with tethered scanner bar code data entries. Any tethered scanner that decodes the bar code internally and outputs an RS232 data stream may be used. It sends the data to the MX9 in ASCII format.

Tethered scanners send scanned data to the MX9 when the MX9 is in a powered cradle and the scanners are connected to the Serial Interface port on the cradle.

When a tethered scanner is connected to the Serial Interface port on a powered cradle, the MX9 must be configured as follows:

Start > Settings > Control Panel > Data Collection > Main then select either **Device 1, Device 2 or Device 3**

There is no software in the desktop cradle.

Bluetooth device connection and use, while the MX9 is docked, are managed by the MX9 Bluetooth client, not the cradle.

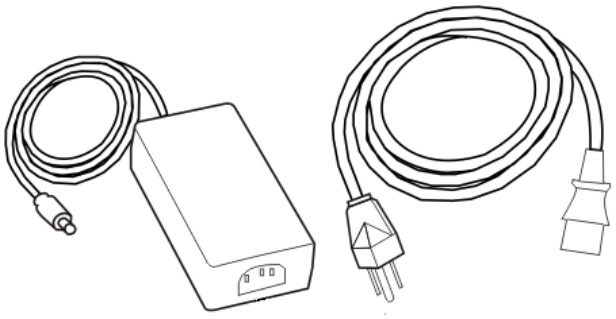
Note: The cradle must be powered by an external power source to enable tethered scanner use.

Assemble/Attach the AC Power Adapter

Note: Connect the cable to the cradle first, then to an AC source.

The external Power Supply for the cradle is shipped with the cradle. Contact Technical Assistance if there is no AC cable.

The Power connector is located on the back of the cradle.



Plug the AC power plug into any AC wall outlet with a dependable power source.

Firmly press the adapter end of the power cable into the 3 pin connector on the power adapter.

Firmly press the cradle end of the power cable into the single connector on the back of the cradle.

AC power is now being supplied to the AC power adapter and the cradle.

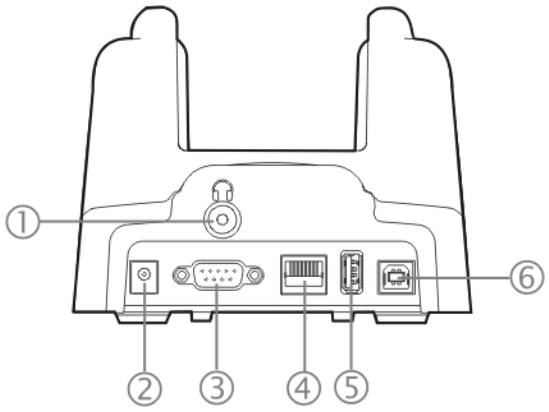
Connect Cables

Note: Route all cables to ensure they are protected from jostling, tugging or being disconnected by passing objects.

The cradle must be receiving power from an external power source before MX9 battery charging can begin.

Connect Input/Output and Power Cables

Note: Periodically test the connections for stability and adjust as necessary.



1. Headset Audio port
2. Power port
3. Serial (RS232) port
4. Ethernet port
5. USB Client port
6. USB Host port

Desktop Cradle Connector Icons

2 - Power	3 - Serial	4 - Ethernet	5,6 - USB A and USB B

Headset Audio Cable

Firmly press the cradle end into the MX9 Headset Audio port (1) on the back of the cradle. Test the connection for stability.

Power Cable

Assemble the power cable by first plugging the AC end into an electric socket, then plug the other end into the AC adapter. The cradle cord is secured to the AC adapter. Firmly press the cradle end of the power cable into the MX9 Power port (2) on the back of the cradle. Test cable connections for stability.

Serial Cable

The serial cable is connected to the Serial port (3) on the back of the desktop cradle. The serial cable end can originate with a tethered scanner, a desktop/laptop PC, a printer or another serial device.

Align the RS232 serial cable end (female) carefully to the Serial Interface port (male) on the back of the desktop cradle. Press the ends together and finger tighten the screws on either side of the connector. Test the connection for stability.

Ethernet RJ-45 Cable

Firmly press the cradle end into the MX9 Ethernet RJ-45 port (4) connector on the back of the cradle until it clicks into place. Test the connection for stability.

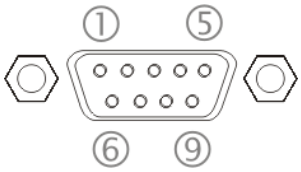
USB Host and USB Client Cable

Firmly press the cable end into the MX9 USB Client (5) or USB Host (6) Port connector on the back of the cradle. Test the connections for stability.

Pinout - RS232 Connector

Note: Tethered scanners must be connected to powered cradles.

The connector is industry-standard RS232 and is a PC/AT standard 9-pin D male connector.

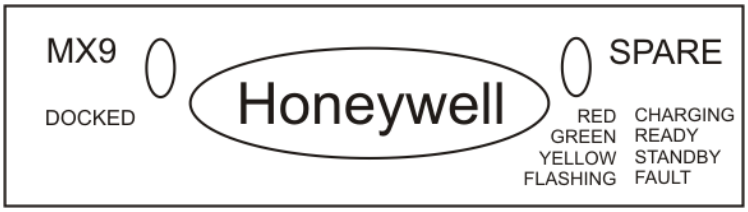


Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RXD	Received Data – Input
3	TXD	Transmitted Data – Output
4	DTR	Data Terminal Ready
5	GND	Signal/Power Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear To Send
9	RI or Power	+5 VDC sourced by the Cradle

Note: Pin 9 of this port is connected to +5 VDC. Only approved cables are to be used for communication between the cradle and external devices.

Cradle LEDs

When the desktop cradle AC/DC power supply cable begins to supply power to the cradle, the cradle LEDs flash yellow, red, green for three seconds then turn off. The cradle is ready for use.



Docked LED

When Docked LED is …	It means ….
Off	MX9 not inserted or no power applied
Red	MX9 docked and power applied.

The cradle must be connected to a power source.

Spare Battery LED

When Spare LED is …	It means ….
Off	Battery pack not inserted or no power applied
Green	Battery pack fully charged
Red	Battery pack charging
Yellow / Amber	Battery pack temperature out of range
Flashing Red	Battery pack fault or failure

Note: The cradle must be connected to AC power. Spare battery charging does not require an MX9 be docked in the docking bay.

MX9 Mobile Device System Status LED

The MX9 System Status LED is located at the top of the keypad.

When the LED is . . .	The Status is . . .	Comment
Blinking Red	Power Fail	Replace the main battery with a fully charged main battery. Or Connect the MX9 to external AC power to allow the internal charger to charge the main battery e.g., dock in a powered cradle.
Steady Red	Main Battery Low	Low Battery Warning. Replace the main battery with a fully charged main battery. Or dock the MX9 in a powered cradle.
Blinking Green	Display Off	No user intervention required.
No Color	Good	No user intervention required.

Docking and Undocking the MX9

When the MX9 is in Suspend Mode it wakes up when it is docked in a powered cradle. There is no change in mode state settings or behavior when the MX9 is docked in a cradle without a power source.

MX9 mode states while the MX9 is in a powered cradle e.g., suspend, resume, display backlight, etc., are managed by the MX9 OS Power settings.

If the cradle is not permanently attached to the work surface, stabilize the cradle with one hand while inserting or removing the MX9 with the other hand.

The MX9 is inserted into the charging pocket with the keypad facing forward.

Dock the MX9

Remove any cables attached to the base of the MX9.

Carefully press the MX9 straight down into the docking bay until the multi-pin connector at the base of the MX9 clicks into place with the multi-pin charging/communication connector at the bottom of the docking bay. The MX9 cradle is designed to secure the MX9 facing front.

The cradle's Docked LED illuminates.

Undock the MX9

Remove the MX9 from the cradle by pulling it straight up and out of the docking bay. If necessary, brace the cradle with one hand while the other hand removes the MX9.

The cradle's Docked LED turns Off.

Insert / Remove a Spare Battery

Prerequisites: The steps outlined in Assemble/Attach the AC Power Adapter have been completed and the cradle has a dependable power source. The cradle has been bolted to a stable surface, if required.

Note: Do not drop or slam the spare battery into the charging pocket. Damage may result.

A fully depleted spare battery recharges in approximately four hours in the MX9 powered cradle. Charging time may take longer if a tethered scanner, connected to the Serial port and drawing power from the cradle, is used.

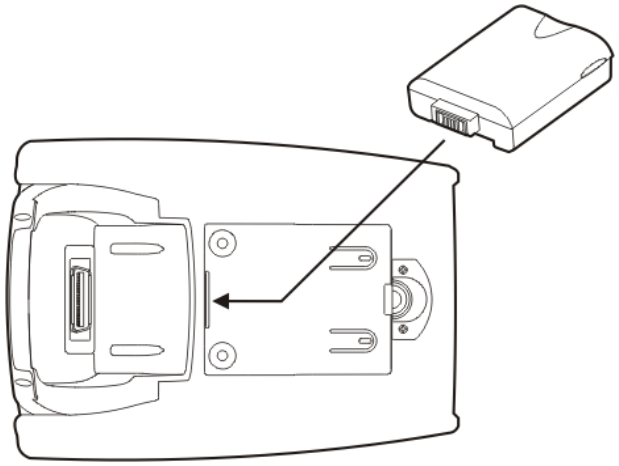
The spare battery charger will be able to recover a battery that has had its safety circuit tripped.

The spare battery well is molded in the shape of the MX9 main battery. The spare battery can be inserted in the battery well in only one direction.

When there is an MX9, with or without a handle, docked in the cradle, a spare battery can still be inserted in the charging bay.

You do not need to undock the MX9 before inserting or removing a Spare battery.

Stabilize the cradle with one hand when inserting/removing the Spare battery, if necessary.



Insert Spare Battery

Hold the battery with the charging terminals (1) facing down, toward the charging pocket.

Tilt the end (with the charging terminals) into the re-charging terminals at the front end of the spare battery charging bay. Slide the battery forward until it is fully inserted into the battery bay.

Push down on the spare battery until the catch clicks into place, securing the spare battery in the battery bay. This will ensure the charging contacts on the spare battery connect with the re-charging contacts in the battery bay.

The Spare charging bay LED illuminates.

Remove Spare Battery

A green Spare battery LED signifies the spare battery is charged.

Remove the Spare battery by sliding the latch in and pulling the Spare battery up, with a hinging motion, and out of the charging bay.

The Spare charging bay LED turns Off.

MX9 Desktop Cradle Help

The following is intended as an aid in determining whether the MX9 battery pack or the cradle battery charger may be malfunctioning.

Problem	Cause	Solution
Battery pack does not fit in battery well.	Different manufacturer's battery pack, or there is an object in the battery well.	Check if the battery pack is Honeywell part number 161888-0001 or a low temperature battery 161915-0001. If not, do not use. Remove the object from the battery well.
No battery pack in spare battery charging well, but the charging LED is on.	Dirt or foreign objects are in the battery well.	Unplug cradle from outlet. Remove any dirt or foreign objects from battery well. If the LED continues to stay ON, the cradle may be defective. Return charger to an authorized Honeywell service center.
Cradle is plugged into a live outlet, battery pack is inserted, but RED LED is OFF and no other LEDs are on, or all LEDs are off.	Battery pack is not making contact with charging terminals in the battery well. Faulty battery pack. New battery pack, same result.	Push battery pack in firmly. Do not "slam" the battery pack into the battery well. Replace battery pack. Contact Honeywell for replacement options.
When you first put a fully charged battery pack in the battery well, the RED LED comes on, indicating the battery pack is charging.	During the first few minutes, the charger checks the battery pack for correct voltage and charge state. During this time the LED is RED and is continuously ON. After charging is complete, the LED is GREEN.	There is nothing wrong with the battery pack or charging pocket.
LED is flashing RED at any station. LED is flashing RED at any station.	Current could not be sourced through the battery pack due to age, exhaustion or damage to the cell(s). Or The battery pack does not communicate with the charger.	Contact Honeywell for battery pack replacement options.
	The charger's timeout period has expired.	Make sure that the battery pack temperature is within specification and retry charging. If problem repeats, contact Honeywell for battery pack replacement options.
Solid YELLOW LED when battery pack is inserted in the cradle.	The battery pack is too hot or too cold to charge.	Remove battery pack from the cradle and allow it to adjust to room temperature. If the battery pack is left in the cradle, it will cool down or warm to a temperature upon which the cradle will begin the charge cycle. However, depending on the temperature of the MX9 battery, it may take 2-3 hours to

Problem	Cause	Solution
		adjust. The battery pack can cool down faster if the battery is not in the battery well.
MX9 docked in cradle but cannot work with accessory cables connected to cradle.	MX9 not fully seated in cradle Foreign objects inside docking bay or cable connectors	Reseat the MX9 fully into the docking bay. Remove the foreign objects and reseat the MX9 into the docking bay.
MX9 docked in cradle but Docked LED does not light up.	MX9 not fully docked. Power supply not connected.	Check the docking bay is clear of foreign objects and reseat the MX9 fully into the docking bay. Check that power is applied to the Power Jack at the rear of the MX9 Desktop Cradle.

Maintenance

Inspect the rubber feet and replace them if missing, broken or cracked. Check the cradle regularly for excessive wear at pressure points. If the cradle is mounted to a stable surface, check surface mounting connections periodically and re-tighten as necessary.

If the cradle becomes cracked or broken at any time, it must be taken out of service and replaced. Contact Technical Assistance for a replacement cradle.

There are no serviceable parts in the desktop cradle. Do not attempt to open the unit.

Cleaning

Do not use paper towels or harsh-chemical-based cleaning fluids since they may result in damage to the surfaces and/or battery charging terminals (pins).

Use a clean soft cloth to wipe any dirt, moisture or grease from the MX9, spare battery packs, charging contacts (pins) or the cradle.

Do not use any liquid to clean the battery pack, MX9, cradle, or charging pockets. Spray or dampen the cleaning cloth with liquids/sprays. If possible, clean only those areas which are soiled.

Lint/particulates can be removed from the connectors, charging terminals and charging/docking pockets with clean, filtered canned air.

Technical Specifications – Desktop Cradle

Note: Do not store MX9 batteries above 140°F (60°C) for extended periods.

Weight	18 oz / 500 grams
Dimensions	H 4 in x W 5.25 in x L 7.5 in
Temperature	
Operating	32° F to 122° F / 0° C to 50° C (charger On, no charging in progress)32° F to 104° F / 0° C to 40° C (charger On, no charging in progress)
Charging	50° F to 104° F / 10° C to 40° C(spare battery charger is charging)
Storage	-4° F to 158° F / -20° C to 70° C
Humidity	5% to 90% (non-condensing) at 104° F / 40° C
IEC 60529	Compliant to IP40
Ports	Power, Serial, Headset/Audio, USB A and USB B, Ethernet

Chapter 3: Powered Vehicle Mount Cradle

Unpacking Your Vehicle Mount Cradle

After you open the shipping carton containing the product, take the following steps:

- Check for damage during shipment. Report damage immediately to the carrier who delivered the carton.
- Make sure the items in the carton match your order.
- Save the shipping container for later storage or shipping.

The MX9 vehicle mount cradle one of the following power supply options:

- A power cable for 12V vehicles
- DC/DC power supply for non-12V vehicles
- AC/DC power supply with US power cord
- AC/DC power supply, requires country specific C14 type power cord.

The available RAM mount options include:

- RAM ball base for vehicle
- RAM ball base for MX9
- 2 Screws (to attach RAM ball to MX9)
- Standard RAM arm or RAM arm with locking knob

The installer must supply hardware to attach the RAM ball base to the vehicle.

Communications cables for the MX9 are available separately.

Overview

Vehicle mounted cradles and brackets are specifically designed for vehicle mount applications. The vehicle mounted assembly restrains the MX9 and isolates it from shock and vibration.

Overhead, dash and roof support pillar mounting is via a RAM Mount accessory which includes all the hardware and squeeze plates required for vehicle mounting.

In most cases, disconnect any power and peripheral cables from the MX9 before it is secured in the vehicle mounted assembly.

Never put the MX9 into the vehicle mounted assembly until the assembly is securely fastened to the vehicle.

The MX9 must have a main battery installed when it is docked in a vehicle mounted cradle.

The main battery in the MX9 is recharged when the MX9 is docked in a powered vehicle cradle.

Preparing the Powered Vehicle Mounted Cradle for Use

The powered vehicle mounted assembly 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.
- There must be enough clearance at the back of the cradle to accept an MX9 with a trigger handle.
- There must be at least 2” clearance at the back of the vehicle cradle for power, serial interface and the MX9 Input/Output cables.

Quick Start

The following list outlines, in a general way, the process to follow when preparing the MX9 powered vehicle mounted cradle for use. Refer to the following sections in this document for more details.

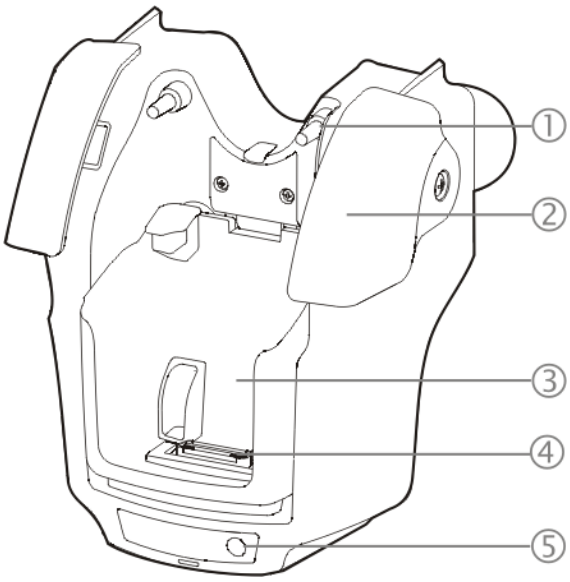
1. Attach the vehicle mounting assembly to the vehicle.
2. Attach the cradle assembly to the vehicle mounting assembly.
3. Secure the MX9 in the mounted vehicle cradle.
4. Adjust the MX9 to the best viewing angle.
5. Connect peripheral cables.
6. Secure the DC/DC or 12 VDC power connector from the vehicle mounted power supply to the Power port.
7. Secure all cables in strain relief cable clamps.

The MX9 in the powered vehicle mounted assembly is ready for use.

Components

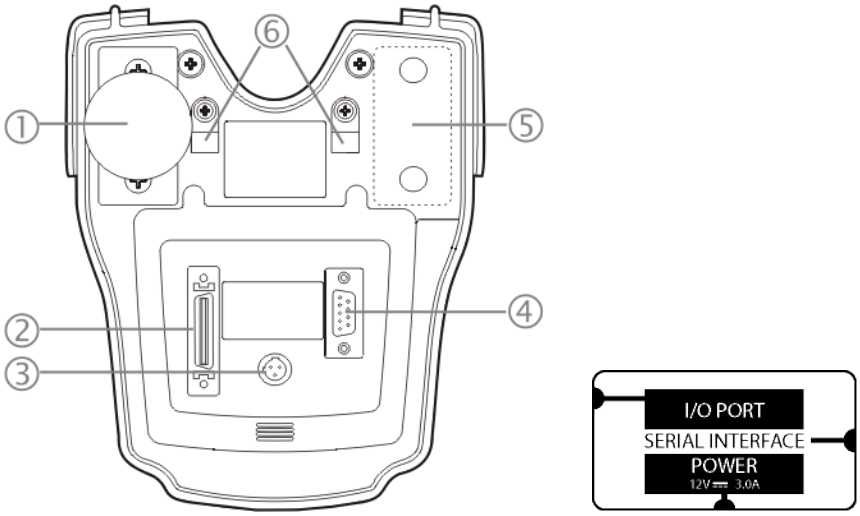
Before installation begins, verify you have the applicable vehicle mounting bracket assembly components necessary for your mount type.

Front



1	Docking Guide Pin (left)
2	Release Latch (left)
3	Docking Bay
4	Charge/Communicate port
5	Power LED

Back



1	RAM Bracket Upper Ball Mount
2	Input/Output port
3	Power connector
4	Serial Interface port
5	Alternate RAM Bracket Upper Ball Mount
6	Strain Relief Cable Clamps

RAM Bracket Mounting

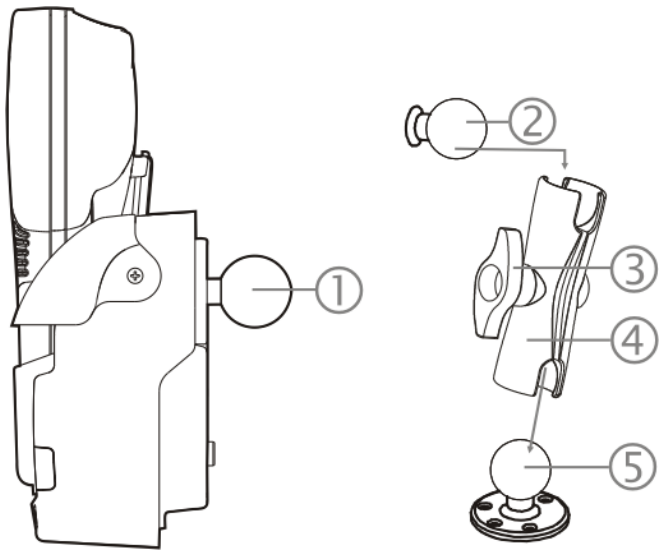
RAM Bracket Assembly mounting holes are on the back of the cradle. The mounting screws fit in Pim nuts and are automatically secured.

The number of RAM balls attached to the back of the vehicle mount cradle are dependent upon the desired RAM mount configuration.

The figure shown below is an example *only*.

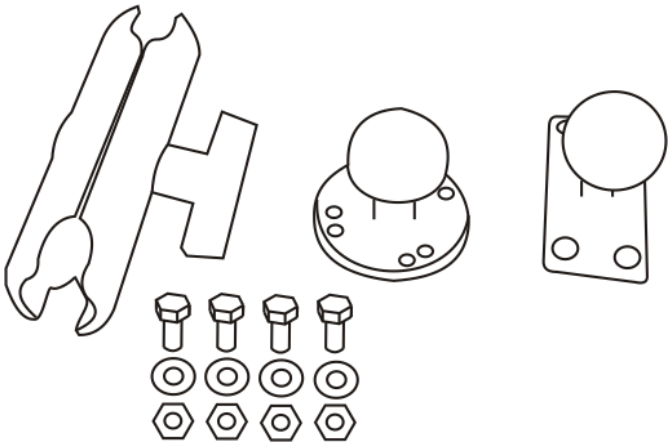
RAM ball mounting screws are included in the mounting kit. Contact Technical Assistance for the MX9 RAM Mount Kit for the vehicle cradle.

RAM Bracket Mounting Points



1	RAM ball mounted on the back of the vehicle cradle
2	Connecting the vehicle cradle to the assembled RAM Mount Kit
3	Adjusting knob
4	RAM arm
5	RAM ball base mounted to the vehicle

Vehicle Cradle RAM Ball Assembly

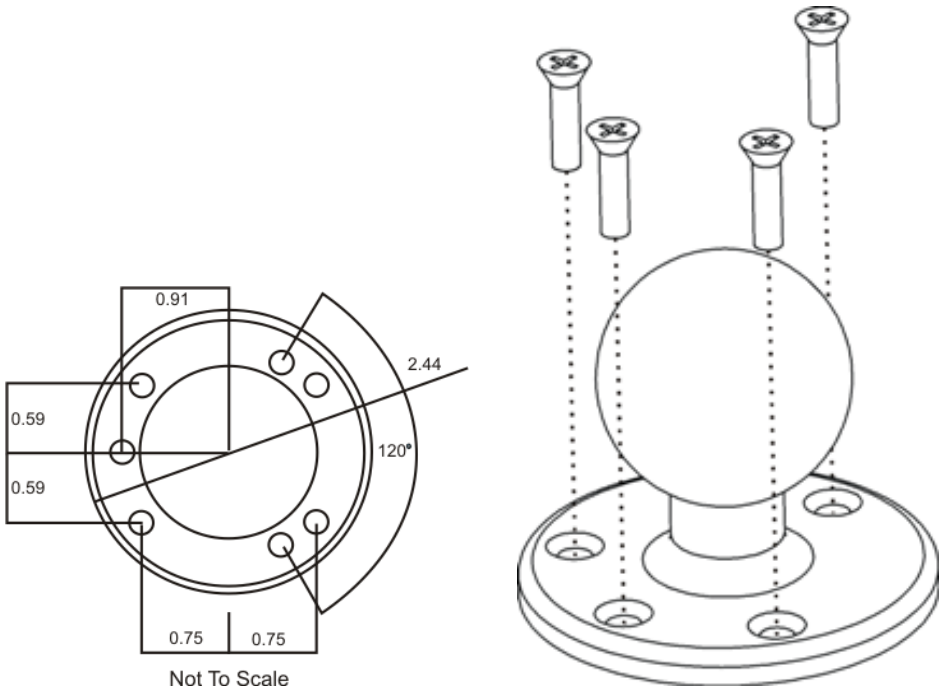


1. Fasten the RAM ball with the circular mounting base (shown in the middle in above photo) to the vehicle.
2. Fasten the RAM ball with the rectangular mounting base (shown on the right in above photo) to the back of the vehicle cradle .
3. Loosen the knob on the squeeze arm (shown on the left in above photo).
4. Place either RAM ball opening in the squeeze arm over the vehicle mounted RAM ball.
5. Place the remaining RAM ball opening over the vehicle cradle mounted RAM ball.
6. Tighten the knob on the squeeze arm until the vehicle cradle is secured to the vehicle.

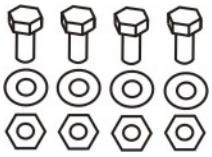
Adjust the position of the secured vehicle cradle by slightly loosening the squeeze arm knob, rotating the cradle and then re-tightening the squeeze arm knob.

Periodically test the mounting device and re-tighten bolts, RAM balls and/or squeeze arm adjustment knob as needed.

RAM Circular Base Footprint



Not To Scale



Bolts, washers and nuts for mounting the RAM ball to the vehicle are supplied by Honeywell.
Qty 4 – Hex Cap 1/4-20 x 3/4 bolts
Qty 4 – 1/4 flat washer
Qty 4 – 1/4-20 nylon insert lock nuts

Note: Mount to the most rigid surface available.

DC to DC Power Supply Installation

For use with Honeywell power supplies:

- 9000301PWRSPLY – Power Supply, 18-60VDC with cable
- 9000302PWRSPLY – Power Supply, 60-110VDC with cable

Connecting Electrical Cables to Power Sources

The DC to DC power supply is used to provide vehicle power to the MX9 when placed in a DC powered vehicle dock.

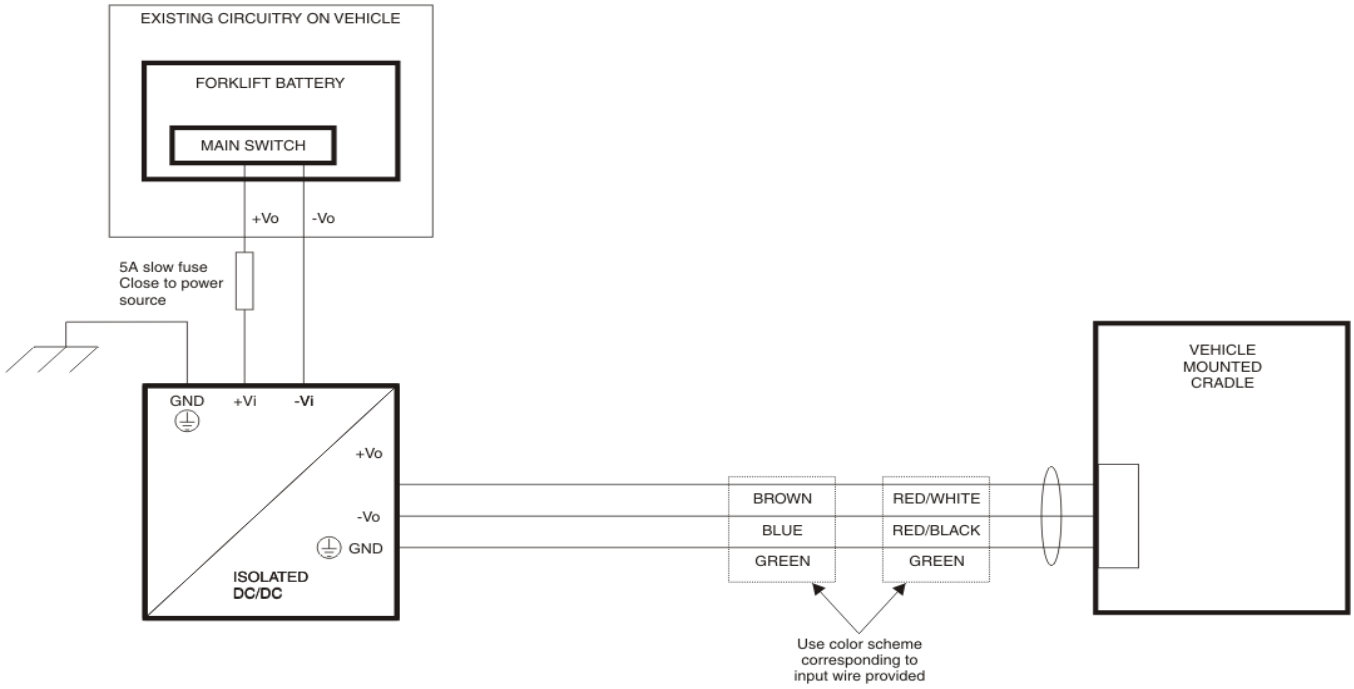
Specifications for Electrical Supply

Input Voltage	Always observe input voltage range specified on the DC to DC power supply.
Output Voltage	12 VDC ± 10%
Power	50 W
Fuse	5 A (slow blow fuse). Fuses are USER SUPPLIED

Note: Refer to the Wiring Schematic for wiring colors and connections.

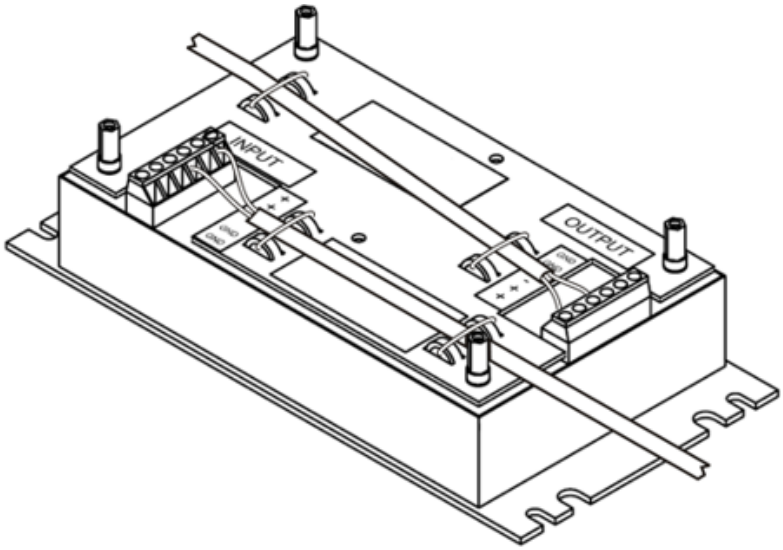
Caution: 	For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. This fused circuit requires a five Amp maximum time delay (slow blow) high interrupting rating fuse. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery positive (+) terminal. Note: For North America, a UL Listed fuse is to be used.
Caution: 	For installation by trained service personnel only.

Wiring Schematic



How To Connect Vehicle Electrical Connection

1. The vehicle cradle must be empty.
2. Begin by connecting the power cable to the MX9's vehicle cradle. Work from this connection with the last connection being to the vehicle's power source.
3. Route the cable from the cradle to the DC to DC converter.
4. Cut the cable to length and strip the wire ends. 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.
5. Remove the DC to DC converter lid screws. Put them in a safe place.
6. Remove the lid from the DC to DC converter.
7. Attach the stripped wire ends to the **output** side of the DC to DC converter.
8. Attach the stripped wire ends to the **input** side of the DC to DC converter.
9. The input and output blocks each have two + plus and two – minus connectors. Either connector in the block can be used to connect the matching polarity wire. The input and output blocks also each have two chassis ground connections. When connecting the MX9 cradle to vehicle power, use one chassis ground connector in each block.



10. Wire colors depend on the type of device attached. Please refer to this illustration for wire colors.
11. Use the looms and wire ties to secure all wiring as shown above, then reattach the cover with the screws.
12. Connect the DC to DC converter to the vehicle's electrical system.
13. While observing the fuse requirements specified here, connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.

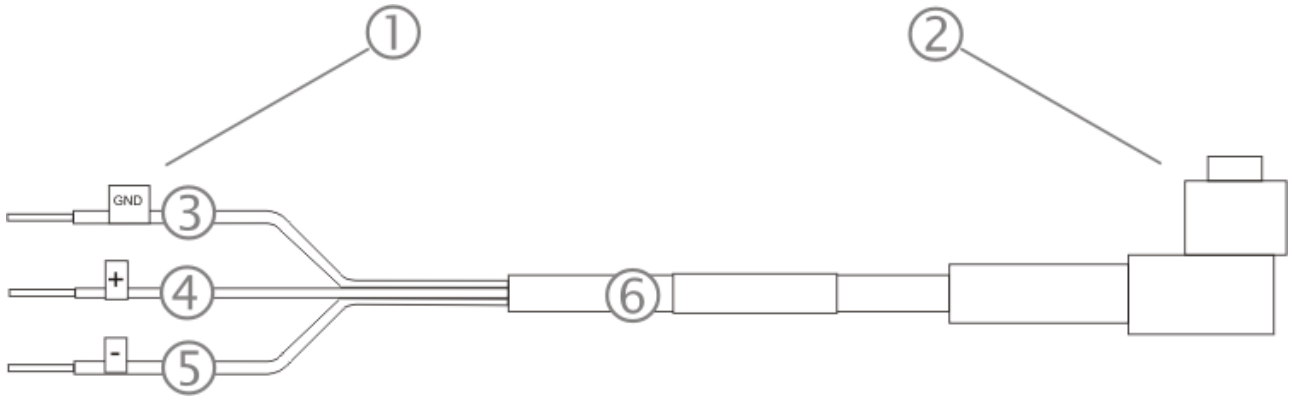
    Note: ATTENTION: For uninterrupted power, electrical supply connections should not be made at any point after the ignition switch of the vehicle.
14. Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method of termination. Please select electrical connectors sized for use with 18AWG (1mm2) conductors.
15. Provide mechanical support for the cable by securing it to the vehicle structure at approximately one foot intervals, taking care not to over tighten and pinch conductors or penetrate the outer cable jacket.

Vehicle 12V Bare Wire Adapter

Part Number: 9000A079CBL12ML3

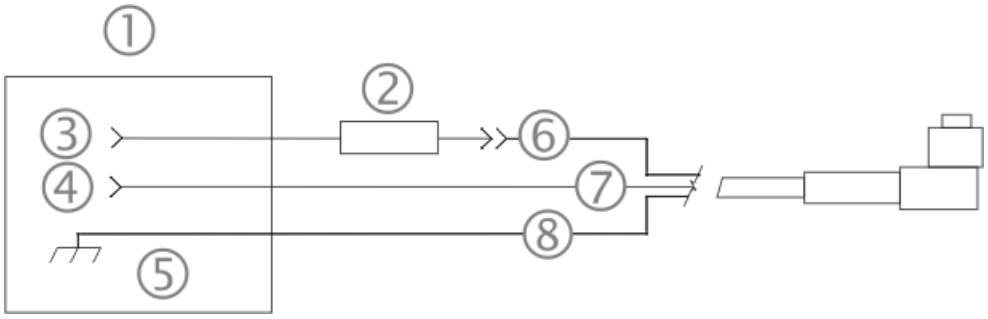
Caution: 	For proper and safe installation, the input power cable must be connected to a fused circuit on the vehicle. This fused circuit requires a ten Amp maximum time delay (slow blow) high interrupting rating fuse. If the supply connection is made directly to the battery, the fuse should be installed in the positive lead within 5 inches of the battery positive (+) terminal. Note: For North America, a UL Listed fuse is to be used.
Caution: 	For installation by trained service personnel only.

Vehicle Cable Connection Cable (Fuse Not Shown)



1. To Vehicle Battery
2. To Vehicle Mounted Device
3. Green (GND)
4. Brown (DC+)
5. Blue (DC-)
6. 12 VDC

Connecting the Power Cable to the Vehicle



1. Vehicle Electrical System
2. 10 Amp Slow Blow Fuse
3. DC +
4. DC -
5. Vehicle Chassis
6. Brown
7. Blue
8. Green

Note: Correct electrical polarity is required for safe and proper installation. The cradle will not power on or function if the cable is connected with the polarity reversed. See the following figure titled "Vehicle Connection Wiring Color Codes" for additional wire color-coding specifics.

How To: Connect Vehicle 12 VDC Connection

1. The power cable must be UNPLUGGED from the MX9 vehicle cradle.
2. While observing the fuse requirements specified above, connect the power cable as close as possible to the actual battery terminals of the vehicle. When available, always connect to unswitched terminals in the vehicle fuse panel, after providing proper fusing.

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

3. 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.

   Use proper electrical and mechanical fastening means for terminating the cable. Properly sized "crimp" type electrical terminals are an accepted method of termination. Select electrical connectors sized for use with 18AWG (1mm2) conductors.

Wiring color codes for Honeywell supplied DC input power cabling:

Vehicle Supply		**Wire Color**
+12 VDC	DC +	Brown
Return	DC -	Blue
Vehicle Chassis	GND	Green

4. 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.
5. Refer to the following sections to complete the power connection to the MX9 vehicle cradle.

Connect Power Supply to Vehicle Cradle

The power cable connector is L-shaped.

The long end of the L (the cable) will be facing up towards the strain relief cable clamps.

Align the connector pins to the vehicle cradle Power connector; firmly pushing the connector into the Power port.

Tighten the nut of the plug clockwise until the power cable is securely fastened.

Secure the cable to the cradle with the strain relief cable clamp (see section titled Vehicle Cradle Strain Relief Cable Clamp).

The power LED on the MX9 illuminates when it is receiving external power and the MX9 is docked.

Attach a Serial or I/O Connector

The serial cable can originate with a tethered scanner, a desktop/laptop PC, a printer or another serial device.

Periodically test the connections for stability and re-tighten if necessary.

Serial Interface

Align the RS232 serial cable end (female) carefully to the **Serial Interface** port (male) at the back of the cradle. Firmly press the ends together and finger tighten the screws on either side of the connector. Test the connection for stability.

Secure the cable to the cradle with the installed strain relief cable clamp (see section titled Vehicle Cradle Strain Relief Cable Clamp) for instruction.

I/O Port

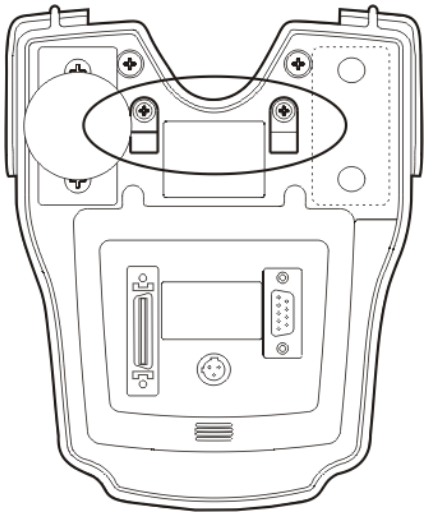
Squeeze the clips next to the connector attached to the I/O cable to open the catches in the connector assembly. Firmly press the cable end (female) into the **I/O Port** connector (male) at the back of the cradle. Release the clips in the connector cable. Test the connection for stability.

Secure the cable to the cradle with the installed strain relief cable clamp (see section titled Vehicle Cradle Strain Relief Cable Clamp) for instruction.

Vehicle Cradle Strain Relief Cable Clamp

Equipment Required: Phillips screwdriver (not supplied by Honeywell)

There are two strain relief cable clamps secured to the back of the vehicle cradle. They are located at the back of the cradle, below the trigger handle opening.



1. Remove the strain relief cable clamp from the back of the cradle by turning the screw counterclockwise. Put the screw aside in a safe location.
2. Slide the strain relief clamp over the cable.
3. Using a Phillips screwdriver and the screw that was removed, refasten the clamp holding the cable to the vehicle cradle. Do not stretch the cable. Leave enough slack in the cable to allow the cable to be connected and disconnected from the MX9 easily when needed.
4. Continue in this manner until all cables are secured to the back of the vehicle cradle.

Vehicle Cradle LED

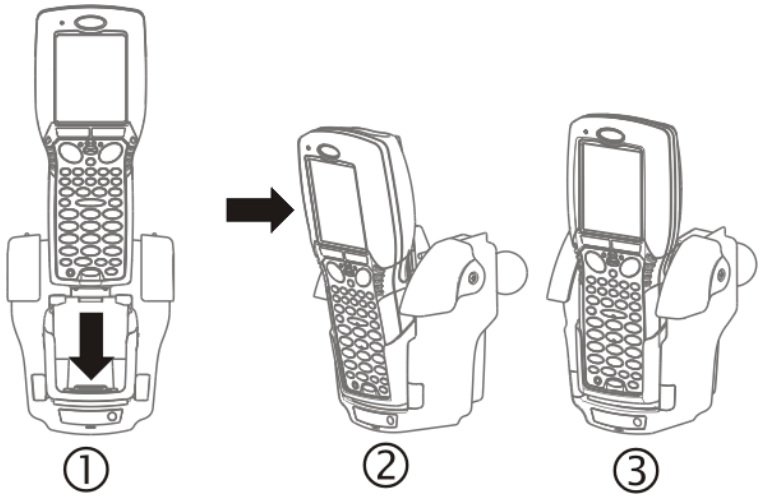
The cradle LED is located at the front center of the cradle.

When Cradle LED is …	It means ….
 Off	MX9 is docked. Cradle does not have power. MX9 is not docked. Cradle may have power. Check the power connection at the back of the cradle. No power applied to the cradle.
 Green	MX9 is docked and external power is connected.

Dock MX9 in Cradle

Note: Do not put the MX9 into the vehicle cradle until the cradle is securely fastened to the vehicle.

The MX9 is docked in the vehicle cradle by sliding the base of the MX9 down into the cradle pocket until the connector at the base of the MX9 clicks into place with the charging/communication connector at the bottom of the docking well. If the cradle is connected to a power source, the Docked LED illuminates.

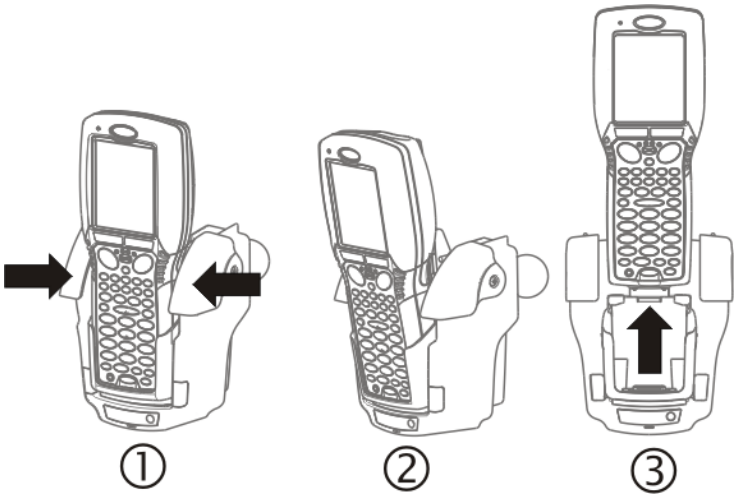


Firmly press the MX9 backwards until the MX9 mates with the pins and the release mechanisms snap forward, securing the MX9 in the vehicle cradle.

Do not slam the MX9 into the cradle pocket. Damage to the cradle and MX9 components may occur. If the vehicle cradle or MX9 is damaged, it must be removed from service and repaired before placing it into service again.

Remove MX9 from the Vehicle Cradle

The MX9 can be removed from the vehicle cradle by placing one hand on the MX9 and pressing one of the release latches (located on either side of the cradle docking bay).



When the release latch is pressed, the MX9 disconnects from the cradle pins and springs forward.

Grasp the MX9 and pull it up and out of the vehicle cradle, disconnecting the MX9 from the charge/communication port at the base of the docking bay.

Maintenance - Vehicle Mounted Devices

There are no serviceable parts in the vehicle cradles. Do not attempt to open the units.

If the vehicle mounting hardware and cradle connections become broken, loose or cracked, the assembly must be taken out of service and replaced.

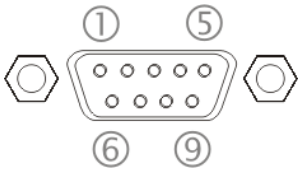
Cleaning

Do not use paper towels or harsh-chemical-based cleaning fluids since they may result in damage to the surfaces and/or battery connectors.

Use a clean soft cloth to wipe any dirt, moisture or grease from the MX9, charging contacts or the vehicle mounted cradle. Do not use any liquid to clean the cradle, battery pack, MX9, or charging terminals (pins). Spray or dampen the cleaning cloth with a cleaning liquid. If possible, clean only those areas which are soiled. Lint/particulates can be removed from the connectors and charging pockets with clean, filtered canned air.

Vehicle Cradle Port Pinout

MX9 Desktop and Vehicle Cradle Serial Port



The connector is industry-standard RS232 and is a PC/AT standard 9-pin D male connector.

Note: Tethered scanners must be connected to powered cradles.

Pin	Signal	Description
1	DCD	Data Carrier Detect
2	RXD	Received Data – Input
3	TXD	Transmitted Data – Output
4	DTR	Data Terminal Ready
5	GND	Signal/Power Ground
6	DSR	Data Set Ready
7	RTS	Request to Send
8	CTS	Clear To Send
9	RI or Power	+5 VDC sourced by the Cradle

Note: Pin 9 of this port is connected to +5 VDC and only approved Honeywell cables are to be used for communication between the cradle and external devices.

Chapter 4: Technical Assistance

If you need assistance installing or troubleshooting your device, please contact us by using one of the methods below:

Knowledge Base: www.hsmknowledgebase.com

Our Knowledge Base provides thousands of immediate solutions. If the Knowledge Base cannot help, our Technical Support Portal (see below) provides an easy way to report your problem or ask your question.

Technical Support Portal: www.hsmsupportportal.com

The Technical Support Portal not only allows you to report your problem, but it also provides immediate solutions to your technical issues by searching our Knowledge Base. With the Portal, you can submit and track your questions online and send and receive attachments.

Web form: www.hsmcontactsupport.com

You can contact our technical support team directly by filling out our online support form. Enter your contact details and the description of the question/problem.

Telephone: www.honeywellaidc.com/locations

For our latest contact information, please check our website at the link above.

Product Service and Repair

Honeywell International Inc. provides service for all of its products through service centers throughout the world. To obtain warranty or non-warranty service, please visit www.honeywellaidc.com and select **Support > Contact Service and Repair** to see your region's instructions on how to obtain a Return Material Authorization number (RMA #). You should do this prior to returning the product.

Limited Warranty

Honeywell International Inc. ("HII") warrants its products to be free from defects in materials and workmanship and to conform to HII's published specifications applicable to the products purchased at the time of shipment. This warranty does not cover any HII product which is (i) improperly installed or used; (ii) damaged by accident or negligence, including failure to follow the proper maintenance, service, and cleaning schedule; or (iii) damaged as a result of (A) modification or alteration by the purchaser or other party, (B) excessive voltage or current supplied to or drawn from the interface connections, (C) static electricity or electro-static discharge, (D) operation under conditions beyond the specified operating parameters, or (E) repair or service of the product by anyone other than HII or its authorized representatives.

This warranty shall extend from the time of shipment for the duration published by HII for the product at the time of purchase ("Warranty Period"). Any defective product must be returned (at purchaser's expense) during the Warranty Period to HII factory or authorized service center for inspection. No product will be accepted by HII without a Return Materials Authorization, which may be obtained by contacting HII. In the event that the product is returned to HII or its authorized service center within the Warranty Period and HII determines to its satisfaction that the product is defective due to defects in materials or workmanship, HII, at its sole option, will either repair or replace the product without charge, except for return shipping to HII.

EXCEPT AS MAY BE OTHERWISE PROVIDED BY APPLICABLE LAW, THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER COVENANTS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, ORAL OR WRITTEN, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT.

HII'S RESPONSIBILITY AND PURCHASER'S EXCLUSIVE REMEDY UNDER THIS WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF THE DEFECTIVE PRODUCT WITH NEW OR REFURBISHED PARTS. IN NO EVENT

SHALL HII BE LIABLE FOR INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, AND, IN NO EVENT, SHALL ANY LIABILITY OF HII ARISING IN CONNECTION WITH ANY PRODUCT SOLD HEREUNDER (WHETHER SUCH LIABILITY ARISES FROM A CLAIM BASED ON CONTRACT, WARRANTY, TORT, OR OTHERWISE) EXCEED THE ACTUAL AMOUNT PAID TO HII FOR THE PRODUCT. THESE LIMITATIONS ON LIABILITY SHALL REMAIN IN FULL FORCE AND EFFECT EVEN WHEN HII MAY HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH INJURIES, LOSSES, OR DAMAGES. SOME STATES, PROVINCES, OR COUNTRIES DO NOT ALLOW THE EXCLUSION OR LIMITATIONS OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

All provisions of this Limited Warranty are separate and severable, which means that if any provision is held invalid and unenforceable, such determination shall not affect the validity of enforceability of the other provisions hereof. Use of any peripherals not provided by the manufacturer may result in damage not covered by this warranty. This includes but is not limited to: cables, power supplies, cradles, and docking stations. HII extends these warranties only to the first end-users of the products. These warranties are non-transferable.

The duration of the limited warranty for the MX9 is 1 year.

The duration of the limited warranty for the MX9 Desktop Cradle is 1 year.

The duration of the limited warranty for the MX9 Vehicle Cradle is 1 year.

The duration of the limited warranty for the MX9 Battery Charger is 1 year.

The duration of the limited warranty for the MX9 2400mAh Li-Ion and 2100mAh Li-Ion Battery is 6 months.

The duration of the limited warranty for the MX9 AC power supply and cables is 1 year.

The duration of the limited warranty for the MX9 DC-DC Converter and cable is 1 year.

The duration of the limited warranty for the MX9 cables (USB, Serial, Communication, Power) is 1 year.

The duration of the limited warranty for the MX9 fabric accessories (e.g., belt, case, holster) is 90 days.

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E-EQ-MX9OGWW
Rev E
10/12