TC56/TC57
Vehicle Cradle

Installation Guide
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For the complete Zebra hardware product warranty statement, go to: zebra.com/warranty.

Service Information
Before you use the unit, it must be configured to operate in your facility’s network and run your applications.

If you have a problem using your equipment, contact your facility’s Technical or Systems Support. If there is a problem with the equipment, they will contact the Zebra Global Customer Support at zebra.com/support.

For the latest version of this guide go to: zebra.com/support.

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Introduction
This guide describes how to install and use a CRD-TC56-CVCD2-02 vehicle cradle with a TC56/TC57 touch computer.

Install the cradle into a vehicle. Once installed, the cradle:

• holds the TC56/TC57 securely in place
• provides power for operating the TC56/TC57 and re-charges the battery in the TC56/TC57 when connected to the USB cable (CBL-TC5X-USBC2A-01) and a cigarette lighter adapter (CHG-AUTO-USB1-01)
• provides communication when connected to the USB cable (CBL-TC5X-USBC2A-01) and a laptop or desktop.

The cradle is powered by the vehicle’s 12V or 24V electrical system. The voltage input range is 12V to 24V (3.5A). The voltage output is 5V (+/- 5%) (2.5A).
Requirements
For mounting onto a twist-lock suction cup RAM Mount® (RAM-B-166U):

- RAM Mount (sold separately)
- Two M5 screws (included with RAM Mount).

Parts

Figure 1  Front View

Figure 2  Rear View
Figure 3  Inside View

CAUTION: ROAD SAFETY - Do not operate the TC56/TC57 while the vehicle is in motion. Park the vehicle first. Always ensure the TC56/TC57 is fully inserted into the cradle. Do not place it on the seat or where it can break loose in a collision or sudden stop. Lack of proper insertion may result in property damage or personal injury. Zebra is not responsible for any loss resulting from the use of the products while driving. Remember: Safety comes first.

Mounting the Vehicle Cradle to a RAM Mount

To mount the vehicle cradle to a RAM Mount:

CAUTION: Only mount the vehicle cradle in a vertical position. Never mount the vehicle cradle on the side or upside down or on a wall that can be subject to impact or collision of greater than 10Gs, in accordance with SAE J1455 Section 4.10.3.5.

1. Follow the instructions that are provided with the RAM Mount for RAM Mount mounting instructions.
2. Align the back of the vehicle cradle with the RAM Mount diamond plate.
3. Attach and secure the vehicle cradle to the diamond plate using two M5 screws.

Figure 4  Attach and Secure Vehicle Cradle to the RAM Mount

4. Secure the RAM Mount to the vehicle depending upon the type of RAM Mount. See instructions provided with the RAM Mount.

5. Adjust the RAM Mount according to the RAM Mount instructions.
Mounting to a Windshield

**CAUTION:** Do not install a vehicle cradle on or near an air bag cover plate or within an aerobic zone. Also, do not install it in a location that affects vehicle safety or drivability.

1. Fix the RAM Mount to the selected area.

![Mounting to a Windshield](image)

2. Twist the lever on the RAM Mount suction cup base to create a vacuum between the suction cup and the windshield.

**CAUTION:** To prevent suction cups from falling off the windshield due to bleeding air over time and with extreme heat:

1) Ensure the glass and the suction cup are completely clean and free of oils and debris before installing.
2) Periodically remove, clean, and re-seat the suction cup on the glass (more frequently in the summer and hot, sunny climates).

3. Adjust the vehicle cradle in a vertical position and ensure that the suction bond is strong enough before installing the device.

4. To connect power, see Connecting Power on page 9.

5. To insert the device, see Inserting and Removing the TC56/TC57 on page 13.
Mounting to a Dashboard

**CAUTION:** Do not install a vehicle cradle on or near an air bag cover plate or within an aerobic zone. Also, do not install it in a location that affects vehicle safety or drivability.

1. Fix the RAM Mount to the selected area.
   
   **NOTE:** Ensure that the installed vehicle cradle does not rest on the dashboard or other structure that can transmit the vehicle vibrations that would normally be reduced by the suction cup.

*Figure 6  Mounting to a Dashboard*

2. Twist the lever on the RAM Mount suction cup base to create a vacuum between the suction cup and the dashboard.

3. Adjust the vehicle cradle in a vertical position and ensure that the suction bond is strong enough before installing the device.

4. To connect power, see Connecting Power on page 9.

5. To insert the device, see Inserting and Removing the TC56/TC57 on page 13.
Connecting Power
To connect power with a CLA or a laptop:

1. Connect the USB Type C connector of the USB charge cable (CBL-TC5X-USBC2A-01) to the USB power port of the vehicle cradle.

   **Note:** Ensure that the USB cable is not pinched between the vehicle cradle and any other structure where it can be damaged or wear through.

Figure 7   Connect USB Charge Cable to USB Power Port
2. Secure the USB cable on the cable retainer. Ensure that the USB cable is not too taut, in order to prevent kinks or bends in the cable.

Figure 8  Secure the USB Cable on the Cable Retainer
3. Connect the other end of the USB charge cable (USB Type A connector) to the cigarette lighter adapter (CLA) for charging or to a laptop for communication.

   - To connect to a CLA for charging:
     a. Connect the USB Type A connector of the charge cable to the CLA.
     b. Plug the CLA into a power outlet (cigarette lighter receptacle).

Figure 9  Connect the USB Charge Cable to a CLA
• To connect to a laptop for communication:
  a. Connect the USB Type A connector of the charge cable to the laptop’s USB port.

  **NOTE:** The USB charge cable only supports standard charging when used with a laptop.

**Figure 10** Connect the USB Charge Cable to a Laptop

4. If the device was previously inserted in the vehicle cradle, the LED flashes amber indicating the device is charging.

5. Route the USB charge cable so that it does not interfere with driving.
Inserting and Removing the TC56/TC57

**NOTE:** The vehicle cradle only supports the insertion and charging of a TC56/TC57 with a standard Zebra Technologies battery in the device’s protective boot (SG-TC5X-EXO1-01).

**CAUTION:** Do not leave the device in the cradle in direct sunlight for a long period of time as it may cause the device to exceed proper operating temperature, overheat, or UV rays may lessen the life of the touch panel.

To insert the TC56/TC57 in the vehicle cradle:

1. Insert the TC56/TC57 in the vehicle cradle in a vertical position, and push down until the Release Latches click and the device is secured in place.

To ensure the TC56/TC57 is inserted correctly, listen for the audible click that signifies that the TC56/TC57 button release locking mechanism is enabled and the TC56/TC57 is locked into place.
NOTE: Ensure that the TC56/TC57 is fully inserted into the cradle. Lack of proper insertion may result in property damage or personal injury. Zebra Technologies Corporation is not responsible for any loss resulting from the use of the products while driving.

To remove the TC56/TC57 from the vehicle cradle:

1. Push both the left and right Release Latch on each side of the vehicle cradle simultaneously, until the TC56/TC57 is unlocked in place.
2. Lift the TC56/TC57 upright out of the vehicle cradle.

Figure 12  Remove the TC56/TC57 from the Vehicle Cradle
TC56/TC57 Battery Charging

1. Ensure the cradle is connected to a power source. See Connecting Power on page 9.
2. Insert the TC56/TC57 into the vehicle cradle. See Inserting and Removing the TC56/TC57 on page 13.

The TC56/TC57 starts to charge through the vehicle cradle as soon as it is inserted. This does not deplete the vehicle battery significantly. The battery charges in approximately three hours. See LED Indicators on page 15 for all charging indications.

The vehicle cradle operating temperature is -20°C to +50°C. When in the cradle, the TC56/TC57 will only charge when its temperature is between 0°C to +40°C. The TC56/TC57 always performs battery charging in a safe and intelligent manner. At excessive high or low temperatures, the TC56/TC57 may for small periods of time alternately enable and disable battery charging to keep the battery at acceptable temperatures. The TC56/TC57 indicates when charging is disabled due to abnormal temperatures via its LED and a notification appears on the display.

LED Indicators

<table>
<thead>
<tr>
<th>LED</th>
<th>Indication</th>
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</thead>
<tbody>
<tr>
<td>TC56/TC57 Battery Charging (LED is on TC56/TC57)</td>
<td></td>
</tr>
<tr>
<td>Off</td>
<td>TC56/TC57 is not charging. TC56/TC57 is not inserted correctly in the vehicle cradle or connected to a power source. Charger/cradle is not powered.</td>
</tr>
<tr>
<td>Slow Blinking Amber (1 blink every 4 seconds)</td>
<td>TC56/TC57 is charging.</td>
</tr>
<tr>
<td>Slow Blinking Red (1 blink every 4 seconds)</td>
<td>TC56/TC57 is charging but the battery is at end of useful life.</td>
</tr>
<tr>
<td>Solid Green</td>
<td>Charging complete.</td>
</tr>
<tr>
<td>Solid Red</td>
<td>Charging complete but the battery is at end of useful life.</td>
</tr>
</tbody>
</table>
Care and Cleaning
Avoid getting oils, grease or gasoline on the vehicle cradle, and do not let debris gather in the bottom of the vehicle cradle slot. When necessary, clean the vehicle cradle with a mild cleaner. Ensure any cleaner used is approved before using by contacting Zebra for advice.

Troubleshooting

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Possible Cause</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC56/TC57 charging LED does not light up.</td>
<td>Vehicle cradle is not receiving power.</td>
<td>Ensure the TC56/TC57 is inserted correctly in the vehicle cradle or connected to a power source.</td>
</tr>
<tr>
<td>Symptom</td>
<td>Possible Cause</td>
<td>Action</td>
</tr>
<tr>
<td>----------------------------------------------</td>
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<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TC56/TC57 battery is not charging.</td>
<td>TC56/TC57 was removed from the vehicle cradle too soon.</td>
<td>Replace the TC56/TC57 in the vehicle cradle; you may have removed it</td>
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<td></td>
<td></td>
<td>before it was recharged. If a TC56/TC57 battery is fully depleted, it</td>
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<td>can take three hours to fully recharge the battery.</td>
</tr>
<tr>
<td>Battery is faulty.</td>
<td></td>
<td>Replace the battery.</td>
</tr>
<tr>
<td>TC56/TC57 was not placed correctly in the</td>
<td>Remove the TC56/TC57 from the cradle, and re-insert correctly.</td>
<td>TC56/TC57 battery charging LED slowly blinks amber when the TC56/TC57 is</td>
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<tr>
<td>vehicle cradle.</td>
<td></td>
<td>correctly inserted and charging.</td>
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<tr>
<td>Ambient temperature is too high or too low.</td>
<td>Ambient temperature within the vehicle may be too high or too low.</td>
<td>TC56/TC57 charging temperature range (0 °C to 40 °C).</td>
</tr>
</tbody>
</table>
Regulatory Information
This device is approved under Zebra Technologies Corporation.

This guide applies to Model Number CRD-TC56-CVCD2-02.

All Zebra devices are designed to be compliant with the rules and regulations in the locations they are sold and will be labeled as required.

Local language translations are available at the following website: zebra.com/support.

Any changes or modifications to Zebra equipment, not expressly approved by Zebra, could void the user’s authority to operate the equipment.

Declared maximum operating temperature: 50°C.

For use only with Zebra approved and UL Listed mobile computers, Zebra approved, and UL Listed/Recognized battery packs.

Health and Safety Recommendations

Ergonomic Recommendations

CAUTION: In order to avoid or minimize the potential risk of ergonomic injury follow the recommendations below. Consult with your local Health & Safety Manager to ensure that you are adhering to your company’s safety programs to prevent employee injury.

• Reduce or eliminate repetitive motion
• Maintain a natural position
• Reduce or eliminate excessive force
• Keep objects that are used frequently within easy reach
• Perform tasks at correct heights
• Reduce or eliminate vibration
• Reduce or eliminate direct pressure
• Provide adjustable workstations
• Provide adequate clearance
• Provide a suitable working environment
• Improve work procedures.
Potentially Hazardous Atmospheres – Vehicles Use
You are reminded of the need to observe restrictions on the use of radio devices in fuel depots, chemical plants etc. and areas where the air contains chemicals or particles (such as grain, dust, or metal powders) and any other area where you would normally be advised to turn off your vehicle engine.

Radio Frequency Interference Requirements-FCC
Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

• Reorient or relocate the receiving antenna
• Increase the separation between the equipment and receiver
• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
• Consult the dealer or an experienced radio/TV technician for help.

Radio Frequency Interference Requirements - Canada
Innovation, Science and Economic Development Canada ICES - 003 Compliance Label: CAN ICES-3 (B)/NMB-3(B)

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

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

Marking and European Economic Area (EEA)

Statement of Compliance
Zebra hereby declares that this device is in compliance with all applicable directives, 2014/30/EU, 2014/35/EU and 2011/65/EU.

The full text of the EU Declaration of Conformity is available at the following internet address: zebra.com/doc.

Japan (VCCI) - Voluntary Control Council for Interference

Class B ITE
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Korea Warning Statement for Class B ITE

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<td>B 급 기기 (가정용방송통신기자재)</td>
<td>이 기기는 가정용(B 급) 전자파 적합 기기로서, 주로 가정에서 사용하는 것을 목적으로 하며, 모든 지역에서 사용할 수 있습니다.</td>
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zebra.com/support

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เครื่องโทรคมนาคมและอุปกรณ์นี้มีความปลอดภัยตามข้อกำหนดของไทย.

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Turkish WEEE Statement of Compliance
EEE Yönetmeliğine Uygundur.

Brazil
The following signifies approval in Brazil.

[ANATEL logo]
### CMM Disclosure

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<th>镉 (Cd)</th>
<th>六价铬 (Cr(VI))</th>
<th>多溴联苯 (PB)</th>
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0: 表示该有害物质在该部件所有均质材料中的含量均在 GB/T 26572 规定的限量要求以下。

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