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Software and firmware updates

WatchGuard is committed to the continual testing and improvement of our software and
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Contact information

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Customer Service web portal: https://support.watchguardvideo.com/hc/en-us

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Tell us about your experience and how you are using WatchGuard products. We will do our best
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Welcome to the WatchGuard 4RE Vehicle Installation Instructions. This guide is designed to provide basic information and instructions for installing the WatchGuard 4RE DVR and the VISTA or V300 body camera, with their related components, in a vehicle.

About this document

The 4RE Vehicle Installation Instructions covers the following topics:

- Preparing for a vehicle installation, including:
  - Pre-install checklist
  - Example installation parts lists and recommended tools
  - Installation best practices
- Installing WatchGuard equipment in a vehicle, including:
  - Recommended installation workflow
  - Cameras
  - 4RE DVR
  - VISTA and VISTA WiFi Base or V300 and V300 WiFi Base
  - Wireless radio
  - Microphones
  - Related components and cables
- Testing the installation

This document also includes appendices that list basic equipment that can be added to a 4RE vehicle installation to provide additional functionality:

- Appendix A: Cellular LTE Upload
- Appendix B: WatchGuard Mobile LPR

The images in this document are representative of what you could experience while installing. They are meant to serve as a guide.

This guide contains general recommended instructions for installing a WatchGuard system in a vehicle. This document is not an exclusive or comprehensive blueprint for any particular vehicle installation. If you have a question about installing the system in a particular vehicle, contact WatchGuard Customer Service.

**Important!** This document assumes knowledge of standard 12-volt vehicle installation best practices. It is meant to guide a technician through the specifics of installing WatchGuard equipment.
Introduction

Related documents and information

For further information related to installing WatchGuard equipment in a vehicle that is not covered by the 4RE Vehicle Installation Instructions, see the following documents:

- 4RE Installation Poster
- WatchGuard Bracket Guides
- 4RE In-Car DVR User Guide
- VISTA HD Wearable Camera User Guide
- V300 Quick Start Guide
- Evidence Library Online Help
- HiFi Microphone User Guide

Installation training

WatchGuard offers factory training courses several times per year for installers to become certified in WatchGuard equipment installation. For more information and to register, go to http://watchguardvideo.com/training.
Preparing for the Installation

In this section...

- Pre-installation checklist (page 9)
- Standard installation parts list examples (page 10)
- Recommended tools list (page 13)
- Installation required practices (page 14)
Preparing for the Installation

Overview

This section includes information to help you prepare for the in-vehicle installation of the WatchGuard 4RE DVR and the VISTA or V300 body camera and their related components. The section includes:

- **Pre-installation checklist**: Complete the items on this checklist before starting the installation (page 9)
- **Standard installation parts lists**: Contains examples of parts lists for standard 4RE/VISTA or 4RE/V300 vehicle installations (page 10)
- **Recommended tools list**: Shows a list of tools, including some specialized items, you should have at hand before beginning the installation (page 13)
- **Installation required practices**: Lists a number of best practices that WatchGuard requires you to follow as you perform the vehicle installation (page 14)
Before Installing the System in a Vehicle

Use the following list to help you prepare for a successful 4RE/VISTA or 4RE/V300 system installation in a vehicle:

- Prepare to document the installation for a first-time vehicle (year and/or model), as applicable
- Gather all necessary tools for the installation (page 13)
- Remove any old video equipment, as applicable
- Verify that you have received all the components for the 4RE/VISTA or 4RE/V300 system that you are installing (page 10)

**Note:** If you have any missing or damaged parts, contact WatchGuard Customer Service.

- Make sure the mounting brackets are the correct type for the specific vehicle

**Note:** When installing brackets, follow the instructions included with the bracket. If you need a copy of the bracket instructions, contact WatchGuard Customer Service.

- Determine the installation locations (installation plan) for all components (including brackets and cables)
  - Determine the wire connection points, for example, vehicle battery location, emergency light input, brake input, auxiliary input
- Roughly lay out the main components in their installation locations to test positioning
- Read through the Installation Required Practices (page 14) and add them to your installation plan

**Tip:** Use the 4RE installation overview poster as a reference for the installation. You can download a copy of the installation poster from the WatchGuard Video website: https://support.watchguardvideo.com/hc/en-us
Preparing for the Installation

Standard Parts Lists

The parts lists in this section are included as examples. Your installation equipment order includes the actual parts list for your installation.

If you need additional parts, contact WatchGuard Customer Service.

4RE standard parts list

The following table lists the standard parts included for a 4RE system installation (with wireless upload) in a vehicle.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WGA00428-101</td>
<td>MikroTik Configured Wireless Kit, 4RE In-Car 802.11n (Radio, Antenna, PoE, 2-10’ Ethernet Cables)</td>
</tr>
<tr>
<td>1</td>
<td>WGP01394-001</td>
<td>Cable, WiFi Vehicle Antenna Mount, NMO, Drill 3/4” Hole, 17’ long</td>
</tr>
<tr>
<td>1</td>
<td>WGA00480-101</td>
<td>4RE, HD DVR, Gen 2, 200GB HDD</td>
</tr>
<tr>
<td>1</td>
<td>WGA00370-200</td>
<td>4RE, Remote Display Control Panel, Gen 3</td>
</tr>
<tr>
<td>1</td>
<td>WGA00496</td>
<td>Front Camera, 4RE, HD Zero Sightline (ZSL)</td>
</tr>
<tr>
<td></td>
<td>WGA00543</td>
<td>Front Camera, 4RE, HD Panoramic</td>
</tr>
<tr>
<td>Or 1</td>
<td>WGA00500</td>
<td>Front Camera, 4RE, HD Mini Zoom</td>
</tr>
<tr>
<td>1</td>
<td>WGP01760-200</td>
<td>Camera, Infrared Analog, WMv.2, 114 Degree, 2-Pin Connector</td>
</tr>
<tr>
<td>1</td>
<td>WGP01903-001</td>
<td>Cable, 4RE, HDMI, (HD Mini Zoom, Panoramic, ZSL) Straight, 15’</td>
</tr>
<tr>
<td>1</td>
<td>WGP01832</td>
<td>Cable, 4RE, HDMI, Port 2 IR Camera, 2-Pin Connect, Straight, 16’ (5000mm)</td>
</tr>
<tr>
<td>1</td>
<td>WGP02055-KIT</td>
<td>R/A Adapter KIT, HDMI Cables, Dual Mount Bracket, 4RE DVR</td>
</tr>
<tr>
<td>1</td>
<td>WGA00382-100</td>
<td>Cable, 4RE, HDMI/Mini, Display ONLY, Straight, 15’</td>
</tr>
<tr>
<td>1</td>
<td>WGA00420</td>
<td>Bracket Kit, 4RE, Display, w/ Diamond 1” Ball Mounts &amp; 2” RAM</td>
</tr>
<tr>
<td>1</td>
<td>WGP01459-008-KIT</td>
<td>Bracket Kit, 4RE, Display, Universal Visor Post (Ford PI SUV &amp; Sedan)</td>
</tr>
<tr>
<td>1</td>
<td>WGP01443-001-KIT</td>
<td>Bracket Kit, 4RE, DVR, Universal</td>
</tr>
<tr>
<td>Qty</td>
<td>Part Number</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>WGP01487-KIT</td>
<td>Bracket Kit, 4RE, DVR, Console Faceplate, 2&quot;</td>
</tr>
<tr>
<td>1</td>
<td>WGP362</td>
<td>GPS Antenna, Magnetic Mount</td>
</tr>
<tr>
<td>1</td>
<td>WGP02073-300-KIT</td>
<td>Cable Assembly, DV-1C/4RE, Power/Input, R/A 24'</td>
</tr>
<tr>
<td>1</td>
<td>WGA00475-KIT1-V2</td>
<td>Hi-Fi Microphone Kit 1v.2 (Transmitter, Cradle, Belt clip, Pivot clip, 3' + 12' antenna)</td>
</tr>
<tr>
<td>1</td>
<td>WGP01475</td>
<td>Bracket, Hi-Fi Microphone, Universal</td>
</tr>
<tr>
<td>1</td>
<td>WGA00510-005</td>
<td>Cable Assembly, DVR to Hi-Fi MIC, 180&quot;</td>
</tr>
<tr>
<td>1</td>
<td>WGP412</td>
<td>Cabin Microphone - 7&quot;</td>
</tr>
<tr>
<td>1</td>
<td>WGP412-300</td>
<td>Cabin Microphone Extension Cable - 12&quot;</td>
</tr>
<tr>
<td>1</td>
<td>WGD00085-KIT</td>
<td>Kit, 4RE DVR Installation Kit</td>
</tr>
<tr>
<td>1</td>
<td>WGD00089-KIT</td>
<td>Kit, 4RE In-Car Video System User Guide</td>
</tr>
<tr>
<td>1</td>
<td>WGD00122</td>
<td>Document, Groove Setup Instructions</td>
</tr>
</tbody>
</table>

**VISTA WiFi or VISTA XLT standard parts list**

The following table lists the standard parts included when adding integrated VISTA WiFi or VISTA XLT body camera to the 4RE system installation in a vehicle.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WGA00600</td>
<td>VISTA HD, WiFi Extended Wearable Camera</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>VIS-XLT-WIF-001</td>
<td>VISTA XLT Wi-Fi System Body-Mounted Camera Kit</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>VIS-XLT-WIF-002</td>
<td>VISTA XLT Wi-Fi System Head-Mounted Camera Kit</td>
</tr>
<tr>
<td>1</td>
<td>WGA00586-KIT</td>
<td>VISTA HD, WiFi Charging Radio Base Kit, incl. Power and Cables</td>
</tr>
<tr>
<td>1</td>
<td>WGA00574</td>
<td>4RE, VISTA HD WiFi, Smart PoE Switch</td>
</tr>
<tr>
<td>1</td>
<td>WGP02225-203-KIT</td>
<td>Bracket, VISTA WiFi base Universal, All-In-One, with Screws</td>
</tr>
<tr>
<td>1</td>
<td>WGP02225-202-KIT</td>
<td>Bracket Kit, Wi-Fi Base, Universal w/ screws</td>
</tr>
</tbody>
</table>
Preparing for the Installation

**V300 standard parts list**

The following table lists the standard parts included when adding the V300 body camera to the 4RE system installation in a vehicle.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>WGA00625</td>
<td>V300 Wearable Camera</td>
</tr>
<tr>
<td>1</td>
<td>WGA00635-KIT</td>
<td>V300 WiFi Dock, D330, In-Vehicle Charge/Upload Kit, incl. Cables and Brackets</td>
</tr>
<tr>
<td>1</td>
<td>WGA00635</td>
<td>V300 Base Assembly, WiFi Dock</td>
</tr>
<tr>
<td>1</td>
<td>WGP02494</td>
<td>Cable Assembly, Bullet to Antenna, Smart POE Switch</td>
</tr>
<tr>
<td>1</td>
<td>WGP02495</td>
<td>Cable Assembly, Power, Smart POE Switch</td>
</tr>
<tr>
<td>1</td>
<td>WGP02791</td>
<td>Cable Assembly, RJ50 10P10C, Straight, 25FT, G2 Wear, WiFi Base</td>
</tr>
<tr>
<td>1</td>
<td>WGP01090-001</td>
<td>Cable Assembly, Straight Ethernet, CAT5E, 5FT</td>
</tr>
<tr>
<td>1</td>
<td>WGP584-102</td>
<td>Cable Assembly, Fused, +12V, 7.5 AMP</td>
</tr>
<tr>
<td>1</td>
<td>WGP587-103</td>
<td>Cable Assembly, Battery Ground 16 AWG, 16IN</td>
</tr>
<tr>
<td>1</td>
<td>WGP582-002</td>
<td>Fuse, ATO/ATC, 7.5 AMP</td>
</tr>
<tr>
<td>1</td>
<td>WGP02504</td>
<td>Antenna, Windshield Mount, 2.4 GHz, 3FT, VISTA WiFi Base</td>
</tr>
<tr>
<td>1</td>
<td>WGP01573-400</td>
<td>Extension Cable, PFP195, 12FT, PCTEL WiFi Antenna to VISTA WiFi Base</td>
</tr>
<tr>
<td>1</td>
<td>WGP02225-202-KIT</td>
<td>Bracket Kit, WiFi Base, Universal, w/ Screws</td>
</tr>
<tr>
<td>1</td>
<td>WGP02225-203-KIT</td>
<td>Bracket Kit, WiFi Base, Offset, w/ Screws</td>
</tr>
</tbody>
</table>
Recommended Tools

The following tools are recommended for installing the 4RE DVR and VISTA or V300 body camera and their related components in a vehicle.

- Drill and bits, including 3/4-inch bit for antenna mounting
- Coarse sandpaper, 60 or 80 grain
- 10-30 feet of 16-20 gauge primary wire for extending input cable connections if necessary
- Wire strippers
- Wire crimpers
- Various wrenches and sockets, including 24mm or 15/16-inch open-ended wrench
- Pliers
- Utility knife
- Torx® screwdrivers or bits, sizes T20, T15, and T10
- 1/16-inch hex screwdriver or Allen® wrench
- Electrical tape and/or heat-shrink tubing
- Zip ties
- Hand-held butane torch or lighter (Optional)
- Loctite® 312 adhesive and primer
- 3M™ Scotch® Super 33+™ tape
Preparring for the Installation

Installation Required Practices

**Important!** These practices are required by WatchGuard. Using them helps you have a more successful installation experience.

Cables

*HDMI cables*

**Important!** The HDMI cables included with the WatchGuard installation kits are customized to be as rugged as possible; however, HDMI cables are very susceptible to damage. They do not work if kinked or pinched.

Keep the following required practices in mind when working with the system HDMI cables:

- Be careful of cable bends—use no more than a soft S-bend
- Leave the plastic caps on the cable ends until you are ready to connect them to a component
- Use the 10 VELCRO® strips included with each system when you install the HDMI cables
- If you use zip ties on HDMI cables, make the loops loose enough to allow the cable or cable bundle to barely spin in the loop
  
  Zip ties that are pulled too tight damage HDMI cables. Be careful not to damage the HDMI cables if you use a zip tie gun.

**Tip:** If you are mounting the 4RE DVR in the console, you may need to use the HDMI right-angle adapter kit to avoid making sharp bends in the HDMI cables where they connect to the 4RE DVR. For more information and to order the kit, contact WatchGuard Customer Service.

Pulling cables

Pulling cables in the vehicle can be difficult and can damage the cables. Order and install new cables if you move a system from one vehicle to another.
Cameras

If you plan to mount the front camera on a puck, install the puck on the windshield first to allow the glue to dry.

*Tip:* You can use a hand-held butane torch or lighter to heat the puck. This can help speed up the installation process (page 23).

Connections

- Always butt-slice and crimp wire connections

*Important!* Do not use 3M™ ScotchLok™ or similar types of connectors.

- Use 3M Scotch® Super 33+™ tape to cover any soldered electrical connections

HiFi Microphone antenna

Always position and install the HiFi Microphone (HiFi Mic) antenna horizontally. The antenna inside the HiFi Mic transmitter is horizontal. For good performance, you should mount the HiFi Mic antenna horizontally to match.

*Warning!* Do not follow the manufacturer's online specifications for installing the antenna vertically. If you mount the antenna vertically, the HiFi Mic loses 90 percent of its operational range.

Power

Wire power to the battery. The battery is the cleanest source of power in the vehicle.

Wireless radio

Always mount the wireless radio in a position where you can easily see its LEDs. Access to the LEDs is needed for diagnostic purposes.

*Important!* Do not mount the wireless radio in a location that is difficult to access, for example, in the console.
Preparing for the Installation

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Installing the System

In this section...

- Recommended installation workflow (page 19)
- Installation information and procedures for:
  - Front and secondary cameras (page 23)
  - 4RE DVR (page 29) and its display (page 28)
  - PoE (power over Ethernet) adapter (page 31) and switch (page 33)
  - Smart Power Switch (page 41)
  - Wireless radio and its antenna (page 35)
  - Wireless and cabin microphones (page 45)
  - VISTA or V300 WiFi Base (page 44)
  - GPS antenna (page 47)
  - Connecting the system to external inputs (page 48)
  - Connecting power to the 4RE (page 50)
  - Connecting power to the Smart Power Switch (page 42)
- Testing the 4RE/VISTA or 4RE/V300 installation (page 52)
Installing the System

Overview

This section includes a full system installation workflow (page 19). WatchGuard recommends that you follow this workflow for best results.

It also includes individual sections for installing the following components:

- Front and secondary cameras (page 23)
- 4RE DVR (page 29) and its display (page 28)
- PoE (power over Ethernet) adapter (page 31) and switch (page 33)
- Smart Power Switch (page 41)
- Wireless radio and its antenna (page 35)
- Wireless and cabin microphones (page 45)
- VISTA or V300 WiFi Base (page 44)
- GPS antenna (page 47)
- Connecting the system to external inputs (page 48)
- Connecting power to the 4RE (page 50)
- Connecting power to the Smart Power Switch (page 42)

The final section provides instructions for testing the 4RE installation (page 52).
Recommended Installation Workflow

The following steps make up a recommended workflow for installing the 4RE DVR and the VISTA or V300 body camera with their related components:

---

**Warning!** Only connect cables when this workflow instructs you to. Connecting cables out of sequence can damage components.

---

1. Complete all items in the *Before Installing the 4RE System in a Vehicle* list (page 9).
2. Remove vehicle panels, as needed.
3. Remove cables from their packaging, and roughly lay them throughout the vehicle to verify routing and length.

---

**Note:** If a cable is too short, contact WatchGuard customer service for a longer cable.

---

4. Install the **front camera** (page 23):
   a. If you are using a puck (rearview mirror button), glue the puck to the windshield. (page 23)
      
      **If you are using a front camera bracket,** install the bracket then attach the camera to it.
   b. Connect the HDMI cable to the front camera then run it to the location where you will install the 4RE DVR, but DO NOT connect the cable to the 4RE.

5. Install the **4RE Display** (page 28):
   a. Position and install the display bracket.
   b. Install the bracket-side RAM® ball on the display bracket.
   c. On the back of the display, connect the HDMI cable.
   d. Install the display-side RAM bracket and ball on the back of the display.
   e. Attach the display to the display bracket using the RAM ball mount.
   f. Run the HDMI cable to the DVR location, but DO NOT connect it to the 4RE DVR.

6. Install the **4RE DVR** (page 29):
   a. Install the DVR bracket.
   b. Position and loosely install the DVR, but DO NOT connect cables to it.
Installing the System

7. Perform one of the following options, depending on the equipment you have:

   **If you have a wireless radio kit**, position and install (but DO NOT connect cables):
   - PoE (power over Ethernet) adapter (page 31) or PoE switch (page 33)

     *Note: If you have a switch in your set of components to be installed, you should install the switch, not the adapter.*

   - Wireless radio (page 35)

   **If you have a wireless radio kit AND a VISTA WiFi or V300 kit**, position and install (but DO NOT connect cables):
     - Smart Power Switch (page 41)
     - Wireless radio (page 35)

   **If you have a VISTA WiFi or V300 kit but NO wireless radio kit**, position and install (but DO NOT connect cables):
     - Smart Power Switch (page 41)

   **If you have a mobile data computer (MDC) kit, and/or a modem, AND a VISTA WiFi or V300 kit**, position and install (but DO NOT connect cables):
     - Smart Power Switch (page 41)

   **If you have an MDC kit, and/or a modem, but NO VISTA WiFi or V300 kit**, position and install (but DO NOT connect cables):
     - PoE switch (page 33)

8. **If you have a wireless radio kit**, install the wireless radio antenna and the radio-to-4RE Ethernet cables:
   a. Mount (drilled, magnetic, or trunk mount) the wireless radio antenna cable then run it to the wireless radio. (page 36)
   b. Connect the antenna cable to the wireless radio.
   c. Connect an Ethernet cable from the wireless radio to the **Radio** connector port on the PoE adapter/switch or the Smart Power Switch.
   d. Connect an Ethernet cable from the **DVR** connector port on the PoE adapter/switch or the Smart Power Switch to the **Ethernet** port on the 4RE DVR.

9. **If you have a VISTA WiFi or V300 kit but NO wireless radio kit**, connect an Ethernet cable from the **DVR** connector port on the Smart Power Switch to the **Ethernet** port on the 4RE DVR.

10. **If you have an MDC kit**, connect an Ethernet cable from one of the following switch connector ports to the MDC/laptop:
    - **PoE switch**: One of the numbered connector ports (for example, Port 1)
    - **Smart Power Switch**: Ethernet connector port

11. **If you have a modem**, connect an Ethernet cable from one of the following switch connector ports to the modem:
    - **PoE switch**: One of the numbered connector ports (for example, Port 2)
    - **Smart Power Switch**: Base 2 or Ethernet connector port (whichever is available)
12. **If you have a HiFi Microphone kit**, install the HiFi Mic and its related components (page 45):
   a. Position and install the HiFi Mic antenna on the windshield.

   ![Note: You may need to install two HiFi Mics in some vehicles. For information on antenna placement in this case, see the HiFi Microphone User Guide.]

   b. Install the HiFi Mic bracket and attach the HiFi Mic base to it.
   c. Connect the HiFi Mic antenna cable to the HiFi Mic base.
   d. Connect the HiFi Mic cable to the HiFi Mic base then run it to the 4RE DVR location (but DO NOT connect the cable).

13. **If you have a VISTA WiFi or V300 kit**, install the VISTA or V300 WiFi Base and its related components (page 44):
   a. Position and install the WiFi Base antenna on the windshield.
   b. Install the WiFi Base bracket and attach the WiFi Base to it.
   c. Connect the WiFi Base antenna cable to the WiFi Base.
   d. Connect the WiFi Base cable to the WiFi Base, run it to the Smart Power Switch, then connect it to the **Base 1** connector port on the switch.

14. Install the **cabin microphone** and run its cable to the 4RE DVR location (but DO NOT connect the cable). (page 46)

15. Install the **GPS antenna** and run its cable to the 4RE DVR location (but DO NOT connect the cable). (page 47)

16. Install the **cabin camera** and any other **secondary cameras**, then run their cables to the 4RE DVR location (but DO NOT connect the cables). (page 26)

17. Position the **external inputs cable** part of the power and external inputs harness (page 48):
   a. Run the DVR connector end of the power and external inputs harness to the 4RE DVR location, but DO NOT connect the harness to the 4RE.
   b. Run the external inputs cable to the best location for the vehicle, according to your installation plan.
   c. **If you installed a PoE adapter (page 31) or a PoE switch (page 33)**, connect the orange and brown wires from the external inputs cable to the appropriate component.
   d. Connect each remaining sense wire in the external inputs cable to the corresponding external device input wire, as needed. (page 49)

18. Install the **system power cable** part of the power and external inputs harness (but DO NOT insert the 7.5 amp fuse in the fuse holder) (page 50):
   a. Run the power cable to the vehicle battery location.
   b. Connect the red and black wire extensions to the red and black (and drain) wires in the power cable.
   c. Connect the red and black ring terminals to the appropriate vehicle battery posts, but DO NOT insert the 7.5 amp fuse in the fuse holder.
Installing the System

19. **If you installed a Smart Power Switch**, install the Smart Power Switch power cable (but DO NOT insert the 7.5 amp fuse in the fuse holder) *(page 42).*
   a. Position the Smart Power Switch end of the power cable near the Smart Power Switch location, but DO NOT connect it to the switch.
   b. Run the power cable to the vehicle battery location.
   c. Connect the red and black wire extensions to the red and black wires in the power cable, as needed.
   d. Connect the red and black ring terminals to the appropriate vehicle battery posts, but DO NOT insert the 7.5 amp fuse in the fuse holder.

20. Connect the following cables to the **4RE DVR**, as applicable:
   a. Cabin microphone cable to the **Cab Mic** connector port
   b. Display HDMI cable to the **Display** connector port
   c. All camera cables to their appropriate connector ports
   d. HiFi Microphone cable to the **Wireless Mic** connector port
   e. GPS cable to the **GPS** connector port

   **Note:** *If you are mounting the 4RE DVR in the console, you may need to use the HDMI right-angle adapter kit to avoid making sharp bends in the HDMI cables where they connect to the 4RE DVR. For more information and to order the kit, contact WatchGuard Customer Service.*

21. **If you installed a Smart Power Switch**, connect the Smart Power Switch power cable to the **+12 VDC** connector port on the switch.

22. Connect the **system power and external inputs harness** to the **External Inputs/Power** connector port on the 4RE DVR.

23. **If you installed a Smart Power Switch**, insert the 7.5 amp fuse into the Smart Power Switch power cable fuse holder.

24. Insert the **7.5 amp fuse** into the system power cable fuse holder.

25. Test the installation *(page 52).*
Installing Cameras in the 4RE System

The 4RE Standard system can have up to three cameras in an installation, one front camera and two secondary cameras. The 4RE Elite system can have up to six cameras in an installation, one front camera and five secondary cameras.

WatchGuard offers three types of front camera:

- ZSL (Zero Sightline) (page 25)
- Panoramic X2 HD (page 25)
  
  The Panoramic X2 HD counts as two cameras in the installation, one front camera and one secondary camera.
- Mini-Zoom (page 26)

Each type is mounted either with a puck (rearview mirror button) adhered to the windshield (below) or to a bracket.

A vehicle installation typically includes one secondary camera facing the back seat (cabin camera), but it can include up to five secondary cameras. (page 26)

Installing the front camera using the puck

If you are using a puck (rearview mirror button) to install the front camera, attach the puck to the windshield using Loctite® 312 adhesive.

**Tip:** You can use a hand-held butane torch or lighter to heat the puck. This can help speed up the installation process.

1. Clean the windshield surface using a microfiber cloth (or something similar), and alcohol or window cleaner.
2. Clean any residue from the puck, using alcohol or window cleaner.

**Important!** DO NOT score the surface of the puck. Scoring the puck can keep it from properly adhering to the windshield.

3. Place the puck in the front camera mount.

**Tip:** Do not over-tighten the mount to the puck. Over-tightening causes a slight curve in the puck that keeps it from adhering properly to the windshield.
Installing the System

4. Determine where exactly on the windshield you want to mount the front camera.

   **Note:** Place the puck as high as possible on the windshield for a better viewing angle.

5. (Optional) Heat the puck for 10 to 15 seconds, using a lighter or a hand-held butane torch, until it is warm to the touch.

   **Note:** Wipe off any black residue left from the lighter flame.

   The color of the puck changes slightly when it is heated.

6. Carefully spray Loctite® primer on the puck AND the windshield (1 or 2 sprays to cover the area where you are mounting the puck).

7. Let the primer dry.

8. Apply a drop (5/16-inch or pea size) of the Loctite adhesive to the puck.

   **Tip:** Apply enough adhesive that it spreads to every corner of the puck when you press the puck to the glass.

9. Quickly press the puck with the camera attached to the windshield and hold it there for 60 seconds.

10. Leave the camera in place for at least 10 minutes to allow the adhesive to dry completely.

   **Note:** If the puck does not successfully adhere to the windshield, replace the used puck with a new one and try again.

11. Connect the HDMI cable to the front camera then run the cable to the 4RE DVR location (but DO NOT connect the cable to the 4RE).

12. When instructed to do so in the full installation workflow on page 22, connect the front camera HDMI cable to the **Front** connector port on the 4RE DVR.

   **Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.
**Panoramic X2 HD**

The Panoramic X2 HD contains two cameras: a rotatable HD (high definition) camera that functions as the front camera in the vehicle, and a fixed panoramic camera that has a very wide field of view and functions as a secondary camera.

You can mount the Panoramic X2 HD camera using one of two options:

- Puck mounted to the windshield just behind the rearview mirror *(page 23)*
- Bracket mounted to the passenger visor post

**Zero Sightline**

The Zero Sightline (ZSL) is an HD (high definition) camera that functions as the front camera in the vehicle. It typically mounts in front of the rearview mirror so it does not obstruct the officer's line of sight.

You can mount the ZSL camera using one of two options:

- Puck mounted to the windshield just behind the rearview mirror *(page 23)*
- Bracket mounted to the passenger visor post
Installing the System

**HD Mini Zoom**

The HD Mini Zoom camera is an HD (high definition) camera that functions as the front camera in the vehicle. It features a 12X optical zoom.

You can mount the HD Mini Zoom camera using one of two options:

- Puck mounted to the windshield about one inch to the right of the rearview mirror (page 23)
- Bracket mounted to the passenger visor post

![Image of HD Mini Zoom camera mounted to windshield]

**Installing the cabin and other secondary cameras**

Typically, a vehicle installation includes one secondary camera facing the back seat (cabin camera), but an installation can have up to five secondary cameras.

![Image of cabin camera]

To install the cabin and other secondary cameras:

1. Mount each secondary camera according to your installation plan.
2. Connect each camera's cable to the camera then run it to the 4RE DVR location but DO NOT connect the cables to the 4RE.
3. When instructed to do so in the full installation workflow on page 22, connect the secondary camera cables to the appropriate connector ports on the 4RE DVR.
Notes for secondary camera installation

Where you connect the secondary cameras to the 4RE DVR depends on which cameras and which version of the 4RE are part of the installation. For two examples of 4RE DVR connections, see Installing the 4RE DVR on page 29.

Keep the following items in mind when you install secondary cameras:

- If you installed a Panoramic X2 HD camera as your front camera OR you have an Auxiliary Cameras connector port (mezzanine card) on the 4RE DVR, you can only connect one camera to port 2 (you cannot use a splitter on camera port 2)
- If you installed a Panoramic X2 HD camera as your front camera AND you have an Auxiliary Cameras connector port (mezzanine card) on the 4RE DVR, you cannot use camera port 2

If you need more information about connecting secondary cameras to the 4RE, contact WatchGuard customer service.
Installing the 4RE DVR Display

Typically you mount the 4RE Display on a bracket using a RAM® ball mount. The mount has two main parts: a ball that attaches to the display bracket and a ball that attaches to the back of the display. A joint connects the two parts of the mount together.

**Tip:** Where you mount the 4RE DVR Display varies from vehicle to vehicle. For more information, see the mounting instructions included with the brackets.

To install the 4RE DVR Display:

1. Position and install the display bracket.

   **Note:** You may have already installed the display bracket when you installed the front camera bracket.

2. Attach the bracket-side part of the display mount to the display bracket.
3. Remove the back panel from the display and connect the display HDMI cable.
4. Replace the back panel on the display.

   **Important!** Make sure that you do not pinch the HDMI cable when you replace the back panel on the display.

5. Attach the display-side RAM bracket and ball to the back of the display.
6. Attach the display to the display bracket using the mount knuckle joint to connect the two mount parts together.
7. Run the display HDMI cable to the 4RE DVR location, but DO NOT connect it to the DVR.
8. When instructed to do so in the full installation workflow on page 22, connect the display HDMI cable to the 4RE DVR.

   **Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.
Installing the 4RE DVR

How and where you mount the 4RE DVR depends on agency preference as well as the vehicle where you are installing the system. The most common locations for mounting the 4RE DVR include:

- Behind the front seat (photo below)
- In the console
- On an equipment tray in the trunk

To install the 4RE DVR:

1. Install the 4RE DVR bracket.

   **Note:** For information about installing the DVR bracket for a particular vehicle, see the mounting instructions included with the bracket.

2. Position and loosely install the 4RE DVR, but DO NOT connect cables to it.

   **Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.
3. When instructed to do so in the full installation workflow on page 22, connect cables to the back of the 4RE DVR.

**Tip:** If you are mounting the 4RE DVR in the console, you may need to use the HDMI right-angle adapter kit to avoid making sharp bends in the HDMI cables where they connect to the 4RE DVR. For more information and to order the kit, contact WatchGuard Customer Service.

**Note:** The 4RE DVR you are installing is one of multiple possible versions. Two of the most common variations are pictured above.
Installing a PoE adapter

**Important!** If the system you are installing includes the integrated VISTA or V300 body camera and 4RE DVR components, you must install the Smart Power Switch instead of the PoE adapter. For more information and instructions, see Installing the 4RE/VISTA or 4RE/V300 System on page 40.

If you are installing a wireless radio in the system, you need to install and connect the PoE (power over Ethernet) adapter. The PoE adapter allows the 4RE DVR to provide power and the data connection for the wireless radio.

Typically you mount the adapter within a few feet of the wireless radio, for example, behind the seat.

*The last digit of the part number changes depending on the length of the Ethernet cable.*

**Note:** If you need to include an MDC (mobile data computer) or modem in the system, you need to install a PoE switch instead of the adapter. For instructions how to install the PoE switch, see Installing a PoE Switch on page 33.
Installing the System

To connect the PoE adapter into the system and to the radio:

1. Mount the adapter according to your installation plan, but DO NOT connect any cables.

   **Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

2. Locate the two Ethernet cables included in the DVR installation kit.

3. Connect the following cables ONLY when instructed to do so in the full installation workflow on page 20:
   a. Connect one Ethernet cable from the **Radio** connector port on the PoE adapter to the wireless radio.

      **Warning!** DO NOT plug in the wireless radio's PoE connector (Ethernet connection) and power up the radio WITHOUT an antenna connected. Powering up the radio without an antenna can damage the radio.

   b. Connect the other Ethernet cable from the **DVR** connector port on the PoE adapter to the 4RE DVR.

      **Warning!** Make sure you connect the Ethernet cables to the correct ports on the PoE adapter. Plugging the cables in backwards will damage the Ethernet port on the 4RE DVR.

4. After running the external inputs cable (and when instructed to do so in the full installation workflow on page 21), insert the orange (positive 12 volt power) and brown (ground) wires from the external inputs cable into the appropriate labeled holes on the adapter, then tighten down the screws.

   **Note:** For more information on connecting the wires from the external inputs cable, see Connecting the External Inputs Cable on page 48.
Installing a PoE Switch

**Important!** If the system you are installing includes the integrated VISTA WiFi and 4RE DVR components, you must install the Smart Power Switch instead of the PoE switch. For more information and instructions, see Installing the 4RE/VISTA or 4RE/V300 System on page 40.

If you need to include an MDC (mobile data computer), laptop, or modem (for example, Sierra Wireless®) in the system as well as a wireless radio, you need to install and connect the PoE (power over Ethernet) switch. The PoE switch allows the 4RE DVR to provide power and a data connection for the wireless radio as well as an additional data connection for the MDC/laptop or modem.

Typically you mount the PoE switch within a few feet of the wireless radio, for example, behind the seat.

* Note: If you do not need to include an MDC (mobile data computer) or modem in the system, you only need to install a PoE adapter instead of the switch. For instructions how to install the adapter, see Installing a PoE adapter on page 31.
Installing the System

To connect the PoE switch into the system:

1. Mount the switch according to your installation plan, but DO NOT connect any cables.

   **Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

2. Locate the two Ethernet cables included in the DVR installation kit and the additional Ethernet cables included with the MDC package and/or modem.

3. Connect the following cables ONLY when instructed to do so in the full installation workflow on page 19:
   a. Connect one Ethernet cable from the **Wireless Radio** connector port on the PoE switch to the wireless radio.

      **Warning!** DO NOT connect the wireless radio’s Ethernet connection or power up the radio WITHOUT an antenna connected. Powering up the radio without an antenna can damage the radio.

   b. Connect one Ethernet cable from the **DVR** connector port on the PoE switch to the 4RE DVR.

      **Warning!** Make sure you connect the Ethernet cables to the correct ports on the PoE switch. Plugging the cables into the wrong ports will damage the Ethernet port on the 4RE DVR.

   c. As needed, connect one Ethernet cable from any of the numbered ports on the PoE switch to the MDC/laptop (or laptop docking station).

      **Warning!** Make sure you only connect the MDC/laptop to one of the numbered ports on the PoE switch. Plugging the MDC cable into the wrong port on the switch will damage the MDC/laptop.

   d. As needed, connect one Ethernet cable from any of the numbered ports on the PoE switch to the modem.

4. After running the external inputs cable (and when instructed to do so in the full installation workflow on page 21), insert the orange (positive 12 volt power) and brown (ground) wires from the external inputs cable into the appropriate labeled holes on the switch, then tighten down the screws.

   **Note:** For more information on connecting the wires from the external inputs cable, see Connecting the External Inputs Cable on page 48.
Installing the Wireless Radio

**Important!** WatchGuard recommends that wireless radios be configured before you mount them in the vehicle. Typically, radios purchased from WatchGuard are configured before they leave the factory. If you have chosen to configure your own wireless radios, before starting the configuration process, contact WatchGuard Customer Service for instructions.

WatchGuard provides the following type of wireless radio:

- MikroTik Groove (page 39)

**Note:** If you are reinstalling older equipment, you may have a Ubiquiti® Bullet™ radio. If you need information or instructions specific to the Bullet radio, contact WatchGuard Customer Service.

Typically you mount the wireless radio near the switch and/or 4RE DVR, for example, behind the front seat, using zip ties.

**Note:** No mounting hardware is included with the wireless radio.
Installing the System

To install the wireless radio:

1. Mount the wireless radio according to your installation plan, but DO NOT connect any cables.

   **Important!** Make sure you mount the wireless radio in a position where you can easily see its LEDs. The LEDs are needed for diagnostic purposes.

2. Mount the wireless radio antenna. (below)

3. Run the antenna cable to the wireless radio then connect it.

   **Warning!** DO NOT plug in the wireless radio’s PoE connector (Ethernet connection) and power up the radio WITHOUT an antenna connected. Powering up the radio without an antenna can damage the radio.

4. When instructed to do so in the full installation workflow on page 20, connect an Ethernet cable from the radio connector port on the switch or the PoE adapter to the wireless radio.

   **Warning!** Make sure you connect the Ethernet cable to the correct port on the switch or adapter. Plugging the cables into the wrong ports will damage the Ethernet port on the 4RE DVR.

Mounting the wireless radio antenna

Typically, you mount the radio antenna on the roof or trunk of the vehicle.

**Important!** WatchGuard recommends that you keep 9 inches between the wireless radio antenna and other antennas. You must keep a minimum of 6 inches between antennas.

You route the antenna cable into the vehicle to the location where you plan to mount the wireless radio. You can choose from two different types of radio antenna mounts:

- Through-hole antenna (NMO mount) which requires that you drill a 3/4-inch hole through the vehicle roof
  - The example installation in this section shows an NMO mount antenna.
- Magnetic mount which does not require that you drill a hole

**Important!** WatchGuard Video recommends that you use the NMO mount antenna because it provides better signal strength.
Mounting the wireless radio antenna

To install an NMO mount radio antenna:

1. Access the roof of the vehicle in your preplanned location (for example, through the rear seat dome light or by removing the headliner).
2. Drill a 3/4-inch hole for the antenna cable.
3. Sand the paint off the metal around the interior hole to ensure a good ground.

4. Remove the NMO nut from the radio antenna cable.
5. Starting with the radio-connector end, feed the antenna cable through the exterior hole in the vehicle until only the antenna mount (NMO-connector) end of the cable remains outside the vehicle.

6. Tilt the antenna mount end to guide it through the exterior hole, then center the flange in the hole.

7. Make sure that the antenna mount ridges are in contact with the bare metal (from your sanding) inside the vehicle.
Installing the System

8. On the antenna mount outside the vehicle, reattach the NMO nut, with the O-ring facing down to create a seal.

9. Tighten the nut with a 24mm or 15/16-inch open-end wrench, making sure that the mount stays centered in the hole and does not turn and kink the cable.

**Tip:** To keep the cable from turning and kinking, use needle-nose pliers in the holes on the antenna mount to anchor the mount while you tighten the NMO nut.

**Warning!** DO NOT tighten the NMO nut using channel-lock pliers. Tightening the NMO nut using a channel-lock pliers can damage the nut and cause an unreliable wireless signal.

10. Inside the vehicle, route the radio-connector end of the antenna cable to the location where you plan to mount the radio, making sure that you leave enough slack to avoid kinks.

11. Attach the antenna connector to the radio.

**Warning!** DO NOT plug in the wireless radio’s PoE connector (Ethernet connection) and power up the radio WITHOUT an antenna connected. Powering up the radio without an antenna can damage the radio.
MikroTik Groove

Warning! Do not connect the wireless radio’s Ethernet connection or power up the radio without an antenna connected. Powering up the radio without an antenna can damage the radio.

To verify that the MikroTik Groove wireless radio is working properly, check the LEDs on the side of the device:

- **Power/Connectivity LED**: When lit, shows that the radio has power and is connected to the 4RE DVR system

  Tip: To see whether the Groove radio is communicating successfully with the 4RE DVR, after the 4RE is configured, navigate to the Wireless screen on the 4RE (press Menu on the Control Panel, then touch Settings > Diagnose > Wireless on the Screen) and look for the Access Connected value. If the value is Yes, the Groove radio can see the 4RE to communicate with it.

- **Signal strength LEDs**: When lit, shows that the radio is associated with the agency’s access point

  All of the LEDs on the Groove radio are green when lit. The signal between the radio and the access point is strongest when all five signal-strength LEDs are lit.
Installing the System

Installing the 4RE/VISTA or 4RE/V300 System

If your vehicle installation includes the VISTA or V300 body camera with the 4RE, you need to install:

- Smart Power Switch (page 41)
- VISTA or V300 WiFi Base (page 44)

The Smart Power Switch is typically mounted near the 4RE DVR. The WiFi Base is typically mounted on or near the passenger visor post.

**Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.
Installing the Smart Power Switch

If the system you are installing includes the VISTA or V300 body camera and 4RE DVR components, you must install the Smart Power Switch instead of the PoE (power over Ethernet) switch (page 33) or adapter (page 31).

The Smart Power Switch is required for the integrated body camera and 4RE to form a recording group. As part of the local recording group network, the Smart Power Switch:

- Functions as the central connection point
- Intelligently manages power
- Functions as the local network DHCP server

Typically you mount the Smart Power Switch within a few feet of the wireless radio, for example, in the console or behind the seat.

**Note:** For a cabling diagram showing the 4RE/VISTA or 4RE/V300 system, see Installing the 4RE/VISTA or 4RE/V300 System on page 40.

To connect the Smart Power Switch into the system:

1. Mount the switch according to your installation plan, but DO NOT connect any cables.

**Important!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

2. Locate the two Ethernet cables included in the DVR installation kit and the additional Ethernet cables (as needed) for the MDC package or modem (for example, Sierra Wireless®).

3. Connect the following cables only when instructed to do so in the full installation workflow on page 20:
   a. Connect one Ethernet cable from the Radio connector port on the Smart Power Switch to the wireless radio.

**Warning!** Do not connect the wireless radio’s Ethernet connection or power up the radio without an antenna connected. Powering up the radio without an antenna can damage the radio.
Installing the System

b. Connect one Ethernet cable from the **DVR** connector port on the Smart Power Switch to the 4RE DVR.

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**Warning!** Make sure you connect the Ethernet cables to the correct ports on the Smart Power Switch. Plugging the cables into the wrong ports will damage the Ethernet port on the 4RE DVR.

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c. As needed, connect one Ethernet cable from the **Ethernet** connector port on the Smart Power Switch to the MDC/laptop.

---

**Note:** If you are installing a laptop docking station, connect the cable from the switch to the Ethernet port on the docking station. For more information, see the manufacturer's documentation for the docking station.

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**Warning!** Make sure you only connect the MDC/laptop to the **Ethernet** connector port on the Smart Power Switch. Plugging the MDC cable into the wrong port on the switch will damage the MDC/laptop.

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d. As needed, connect one Ethernet cable from either the **Ethernet** or the **Base 2** connector port (whichever is available) on the Smart Power Switch to the modem.

4. After running the WiFi Base cable (and when instructed to do so in the full installation workflow on page 21), connect the base cable to the **Base 1** connector port on the Smart Power Switch.

5. When instructed to do so in the full installation workflow on page 22, install the Smart Power Switch power cable (below).

### Installing the Smart Power Switch power cable

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**Warning!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

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When you install the Smart Power Switch power cable, connect it directly to the vehicle battery. To install the Smart Power Switch power cable:

1. Route the power cable to the vehicle battery.

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**Important!** Use the firewall holes and grommets provided by the vehicle manufacturer to route the cable to the battery. Consult your vehicle manufacturer's documentation for specific information.

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2. Pull the power cable, including any excess cable, toward the battery, leaving some slack for a drip loop.
3. Wind up and tie off or cut the excess power cable.
4. Strip back the sheath on the power cable and its red (positive) and black (ground) wires.

5. Crimp the black (ground) wire to the provided black (ground) wire extension with the attached ring terminal.

*Tip: Use butt splices when you connect the wires to ensure good connection.*

6. Crimp the red (positive) wire to the provided red (positive) 7.5 amp fuse holder with the attached ring terminal but DO NOT insert the 7.5 amp fuse in the fuse holder.
7. Connect the red (positive) and black (ground) ring terminals to their vehicle battery posts.
8. When instructed to do so in the full installation workflow on page 22, connect the Smart Power Switch power cable to the +12 VDC connector port on the Smart Power Switch.
9. When instructed to do so in the full installation workflow on page 22, insert the 7.5 amp fuse in the fuse holder.

*Warning! DO NOT insert the 7.5 amp fuse until you have finished installing and connecting all the system equipment. Inserting the fuse before you finish the full installation can damage the system.*
Installing the System

Installing the VISTA or V300 WiFi Base

If the system you are installing includes the VISTA WiFi or V300 kit, you must install the VISTA or V300 WiFi Base.

The WiFi Base is required for the integrated body camera and 4RE DVR to form a recording group. As part of the local recording group network, the WiFi Base:

- Pairs with the VISTA WiFi or V300 body camera so the camera can associate with the local recording group
- Acts as a Wi-Fi access point (hotspot) for the VISTA WiFi or V300 camera

Typically, you mount the WiFi Base on or near the passenger visor post, but the universal bracket can be mounted in almost any location in the vehicle. If you are also installing the HiFi Microphone (HiFi Mic), you can install both bases next to each other on a bracket designed for two bases.

Note: For a cabling diagram showing the 4RE/VISTA or 4RE/V300 system, see Installing the 4RE/VISTA or 4RE/V300 System on page 40.

To install the VISTA or V300 WiFi Base:

1. Position and install the WiFi Base antenna on the windshield inside the vehicle at least 2 to 3 inches away from any metal.

   Tip: For best performance, install the WiFi base antenna in the upper center area of the windshield, behind the rearview mirror.

2. Install the WiFi Base bracket (if not already installed) and attach the WiFi Base to it.
3. Run the WiFi Base antenna cable to the WiFi Base and connect it.
4. Connect the WiFi Base cable to the WiFi Base then run it to the Smart Power Switch location.
5. When instructed to do so in the full installation workflow on page 21, connect the WiFi Base cable to the Base 1 connector port on the Smart Power Switch.
Installing Microphones in the System

WatchGuard provides two types of microphones for the 4RE system:

- Wireless (HiFi Microphone) (below)
- Cabin (page 46)

The officer wears the HiFi Microphone (HiFi Mic) during his shift then docks it in the HiFi Mic base in the vehicle to charge. The HiFi Mic base mounts on a bracket installed in a location that the officer can easily reach.

The cabin microphone mounts in a location where it can pick up any audio inside the vehicle.

Installing the HiFi Microphone

Typically, you mount the HiFi Microphone (HiFi Mic) base on or near the passenger visor post, but the universal bracket can be mounted in almost any location in the vehicle, as needed.

To install the HiFi Mic:

1. Position and install the HiFi Mic antenna horizontally in the upper right corner of the windshield inside the vehicle.

   ![HiFi Microphone antenna](image)

   **Warning!** Do not mount the HiFi Mic antenna vertically. If you mount the antenna vertically, the HiFi Mic will have very poor signal strength.

   **Note:** If you need to install two HiFi Mics in a vehicle, for information on antenna placement, see the HiFi Microphone User Guide.

2. Install the HiFi Mic bracket and attach the HiFi Mic base to it.
3. Run the HiFi Mic antenna cable to the HiFi Mic base and connect it.
4. Connect the HiFi Mic cable to the HiFi Mic base then run it to the 4RE DVR location (but DO NOT connect the cable).
5. When instructed to do so in the full installation workflow on page 22, connect the HiFi Mic cable to the Wireless Mic connector port on the 4RE DVR.
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Installing the cabin microphone

You should mount the cabin microphone in a location where it can pick up any audio inside the vehicle.

**Important!** Do not mount the cabin microphone within 5 to 6 inches of the wireless microphone. Mounting the cabin microphone too close to the HiFi Mic can cause interference in the recorded audio.

To install the cabin microphone:

1. Mount the cabin microphone according to your installation plan.
2. Run the cabin microphone cable to the 4RE DVR location (but DO NOT connect the cable).
3. When instructed to do so in the full installation workflow on page 22, connect the cabin microphone cable to the **Cab Mic** connector port on the 4RE DVR.

**Warning!** Make sure you connect the cabin microphone cable to the 4RE DVR before you power the DVR ON. Connecting the cabin microphone cable after you power ON the DVR can damage the cabin microphone connector port and the 4RE DVR.
Installing the GPS Antenna

You should mount the GPS antenna with line-of-sight to the sky, for example, exterior roof, exterior trunk, or interior dashboard.

**Tip:** WatchGuard recommends that you mount the GPS antenna in the center of the dashboard no more than 3 inches from the windshield and not blocked by any window tint.

To install the GPS antenna:

1. Mount the GPS antenna according to your installation plan.
2. Run the GPS antenna cable to the 4RE DVR location (but DO NOT connect the cable).
3. When instructed to do so in the full installation workflow on page 22, connect the GPS antenna cable onto the GPS connector port on the 4RE DVR.

**Tip:** Due to different vehicle and windshield manufacturers, in some cases when the GPS antenna is mounted on the dashboard, the antenna does not consistently lock in on satellites. This can cause the 4RE to record incorrect speeds and possibly trigger an erroneous recorded event with the over-speed trigger.

In this case, remount the GPS antenna outside the vehicle on the roof or the trunk in line-of-sight to the sky.
Connecting the External Inputs Cable

**Warning!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

The power and external inputs harness connects the 4RE DVR to the vehicle battery and to external device inputs, for example, ignition, emergency lights, and siren.

The external inputs cable part of the harness connects the 4RE DVR sense wires with the vehicle external device inputs.

**Note:** For instructions how to connect the power cable to the vehicle battery, see Connecting the System Power Cable to the Vehicle Battery on page 50.

The sense wires in the external inputs cable monitor the external device inputs for voltage (8-12 volts) and no voltage (0 volts). When an external input wire senses voltage from an external device, the 4RE starts a recorded event, if configured to do so in the agency’s Evidence Library software. (0 volts signals to the 4RE that it should prompt the user to stop the event, if configured to do so.)

The presence of voltage on the sense wire also signals to the system to add the external device activation information to the metadata file.
Connect each sense wire in the external inputs cable to the corresponding external device input wire:

**Tip:** Where possible, use butt splices when you connect the wires to ensure good connection and consistent voltage.

- **Ignition (white):** The white wire senses whether the ignition is on or off
  Connect the white wire to a feed (switched ignition accessory wire) that provides positive 12 volts when the vehicle ignition is ON and 0 volts when the vehicle ignition is OFF. A fuse link with a 1-amp fuse is provided to connect the ignition feed with the ignition sense wire from the external inputs cable.

- **Emergency lights (blue with white stripe):** The blue wire with the white stripe senses whether the emergency lights have been activated
  Connect the blue wire with the white stripe to a positive 12-volt switched power source that provides voltage when the overhead lights are activated.

  **Note:** Some manufacturers of older-type light bars use negative 12 volt or ground triggers. In those cases, you may need to incorporate an additional relay into the wiring scheme to provide positive 12 volt power to the external input wire.

- **Siren (pink and green):** The pink and green wires sense whether the siren has been activated
  Connect the green wire to the siren speaker ground feed and the pink wire to the positive siren speaker feed. When the siren is activated, the siren input (pink and green wires together) senses the voltage.

- **Auxiliary (solid blue):** The solid blue wire senses whether an auxiliary device has been activated
  If an auxiliary device is to be used, connect the solid blue wire to a source that provides positive 12-volt switched power when the auxiliary device is activated, for example, when the electric release button is pressed on a shotgun mount or an electric K-9 kennel door is released.

- **Brake input (black with white stripe):** The black wire with the white stripe senses whether the brakes are being applied
  Connect the black wire with the white stripe to a positive 12-volt switched power source that is activated when the brake pedal is applied. (When the brakes are applied, the wire should get 12 volts.)

- **Power and ground (orange and brown):** The orange and brown wires provide power and ground (respectively) for the wireless radio using the PoE (power over Ethernet) adapter or PoE switch
  Connect the orange wire (positive 12 volt power) and the brown wire (ground) to the appropriate labeled connection points on either the PoE adapter (page 31) or the PoE switch (page 33).

  If you are installing the equipment associated with the integrated VISTA or V300 body camera and 4RE DVR system, the Smart Power Switch takes the place of the PoE adapter or PoE
Installing the System

You connect the Smart Power Switch to another power source (vehicle battery), NOT the orange and brown wires from the external inputs cable (page 42).

- **Radar interface (purple/black/gray) connector**: The purple-, black-, and gray-wired connector provides a two-way interface between the 4RE DVR and the radar unit

  Connect the purple-, black-, and gray-wired connector with the radar interface cable coming from the radar unit. For more information, see the installation instructions included with the radar interface cable.

  **Tip**: Each of the sense wires in the external inputs cable is labeled with the name of the external device input it should connect to. If you need to cut the cable (for example, because it is too long for the space you have), bind the cut labeled ends together and save them to serve as the key for the connections.

For more information about connecting the external inputs cable to the various external device input wires, see the WatchGuard installation poster.

Connecting the System Power Cable to the Vehicle Battery

**Warning!** Only connect cables when the full installation workflow on page 19 instructs you to. Connecting cables out of sequence can damage components.

The system power and external inputs harness connects the 4RE DVR to the vehicle battery and to external device inputs, for example, ignition, emergency lights, and siren.

The system power cable part of the harness connects the 4RE to the vehicle battery.

**Note**: For instructions how to connect the external inputs cable to the input device sense wires, see Connecting the External Inputs Cable on page 48.
Connecting the System Power Cable to the Vehicle Battery

To connect the system power cable to the vehicle battery:

1. Route the cable from the passenger compartment through the firewall into the engine bay.

   **Important!** Use the firewall holes and grommets provided by the vehicle manufacturer to route the cable into the engine bay. Consult your vehicle manufacturer’s documentation for specific information.

   **Note:** If the vehicle battery is not in the engine bay, route the power cable to the battery’s location (for example, the trunk) using the holes and grommets provided by the manufacturer throughout the vehicle.

2. In the engine bay, pull the power cable, including any excess cable, toward the battery, leaving some slack for a drip loop.
3. Wind up and tie off or cut the excess power cable.
4. Strip back the sheath on the power cable and its red (positive) and black (ground) wires.
5. Twist the black (ground) and non-insulated silver drain wires together, then crimp them to the provided black (ground) wire extension with the attached ring terminal.

   **Tip:** Where possible, use butt splices when you connect the wires to ensure good connection.

6. Crimp the red (positive) wire to the provided red (positive) 7.5 amp fuse holder with the attached ring terminal.
7. Connect the red (positive) and black (ground) ring terminals to their vehicle battery posts.
8. When instructed to do so in the full installation workflow on page 22, connect the system power and external inputs harness to the External Inputs/Power connector port on the 4RE DVR.
9. When instructed to do so in the full installation workflow on page 22, insert the 7.5 amp fuse in the fuse holder.

   **Warning!** DO NOT insert the 7.5 amp fuse until you have finished installing and connecting all the system equipment. Inserting the fuse before you have finished the full installation can damage the system.
Installing the System

Testing the System Installation

**Important!** Make sure that you have finished all the steps in the recommended installation workflow on page 19 before you test the installation.

To test that all components are properly installed and connected:

1. Power on the system.

   *Note: The system may power on when you insert the 7.5 amp fuse.

2. Verify that the 4RE Display Screen shows streams from all of the installed cameras.

3. Test the touch screen.
   a. Press **Menu** on the 4RE Display Control Panel.
   b. Touch any button on the Display Screen.
   c. Verify that the correct screen opens.

4. Test the HiFi Microphone (HiFi Mic) audio, as applicable:
   a. Power on the HiFi Mic.
   b. Dock the HiFi Mic so it synchronizes with the base.
   c. Undock the mic, and press the talk button.
   d. Verify that the wireless microphone icon appears on the Display Screen.
   e. Press the Volume control, touch **Advanced** on the Display Screen, then turn up the wireless microphone volume to verify the audio.

   *Tip: Turn the wireless microphone volume back to 0 after you have finished verifying the audio.*

f. Press **Stop** to end the recorded event.

5. Verify that the external inputs are correctly connected:
   a. Press **Menu** on the Display Control Panel, then touch **Status > Device** on the Display Screen.
   b. Activate each input you connected, for example, **Siren**.
   c. Verify that each input shows **On** when you activate it.
6. Verify the body camera system connection:
   a. Dock VISTA or V300 in its WiFi Base so it pairs with the base.
   b. Press Menu on the Display Control Panel, then touch Status > VISTA on the Display Screen.
   c. Verify that the camera appears in the VISTA list.

   **Note:** Both V300 and VISTA appear in the VISTA list.

7. Verify the wireless radio connection, as applicable:
   a. Check the LEDs on the wireless radio for power and connectivity.
      For information on the MikroTik Groove radio, see MikroTik Groove on page 39.
   b. Check the wireless signal icon on the Display Screen.
   c. Press Menu on the Display Control Panel, then touch Settings > Diagnose > Wireless on the Display Screen.
   d. Verify that the Access Connected value is Yes.

8. Create one or more test recorded events:
   a. Press Record on the Display Control Panel.
   b. Allow the event to continue for at least 15 seconds.
   c. Press Stop on the Display Control Panel to stop the event.

9. Test recorded event playback with audio:
   b. Select an event on the Display Screen, then touch Details > Play.
   c. Press Volume + on the Display Control Panel to hear the audio play back with the video.

10. If you have an Evidence Library configuration, load it on the 4RE DVR and verify the configuration items.
    For more information, see the agency's Evidence Library documentation.
Installing the System

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Appendix A: Cellular LTE Upload

WatchGuard supports uploading recorded events to Evidence Library 4 Web (EL4 Web) or Evidence Library (EL), from the vehicle, over a cellular connection using the following cellular routers:

- Sierra Wireless® AirLink® MG90 High Performance Multi-Network Vehicle Router
- Cradlepoint COR IBR900 LTE router

**Note:** See the manufacturer's instructions for installing the routers in the vehicle.

WatchGuard also supports upload over a cellular connection that does not require a stand-alone LTE router. Supported configurations include:

- LTE-capable MDC (mobile data computer) or laptop
- MDC/laptop with a USB dongle LTE modem attached
- MDC/laptop with an LTE MiFi device attached

For information about setting up a system for cellular upload, contact WatchGuard Customer Service.
WatchGuard Mobile LPR (license plate recognition) uses vehicle license plate detection to provide real-time information to in-vehicle officers. The LPR system uses a WatchGuard-branded version of Vigilant’s CarDetector software on the MDC (mobile data computer) in combination with WatchGuard and/or Vigilant cameras and an additional processor, depending on the version installed.

**Note:** For information about adding WatchGuard Mobile LPR to a 4RE in-car video system, contact WatchGuard Customer Service.

The system compares license plate scans to hotlists maintained by the agency, shared by other nationwide agencies, and subscribed to (for example, from the FBI National Crime Information Center (NCIC)). The officer receives visual and audible alerts when a hotlist match is made.

Depending on the installed version, the system scans license plates only when the vehicle is stopped (for example, during traffic stops) or also while the vehicle is moving (for example, while patrolling).

WatchGuard Mobile LPR is available in three versions:

**Officer Safety Basic**

The **Basic** version uses only the 4RE front camera (Panoramic X2, Zero Sightline, or Mini Zoom Camera) to scan one license plate at a time. The software scans the front camera HD video stream while vehicles are stopped to determine whether a license plate is of interest.

Internet access is required to upload data and download updates. The GPS antenna included with the 4RE system provides the location data saved with plate detections.

**Officer Safety Advanced**

The **Advanced** version adds two Vigilant LPR/ANPR (automatic number plate recognition) dual-lens LPR cameras and supporting equipment (PoE switch, cables) to enable active scanning of multiple license plates while vehicles are moving.

**Officer Safety Advanced +**

The **Advanced +** version adds capability for up to two more Vigilant LPR/ANPR cameras and a VLP (Vigilant Linux processor) unit (plus supporting equipment). (The processor is required to support the increased load from any added cameras and the state, make, and model image scanning that also comes with this version.)

The VLP unit includes an additional GPS antenna that provides the location data saved with plate detections.

**Note:** See the WatchGuard Mobile LPR product documentation for instructions to install and use each of the versions.
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