



Axon Fleet 3 Installation Guide

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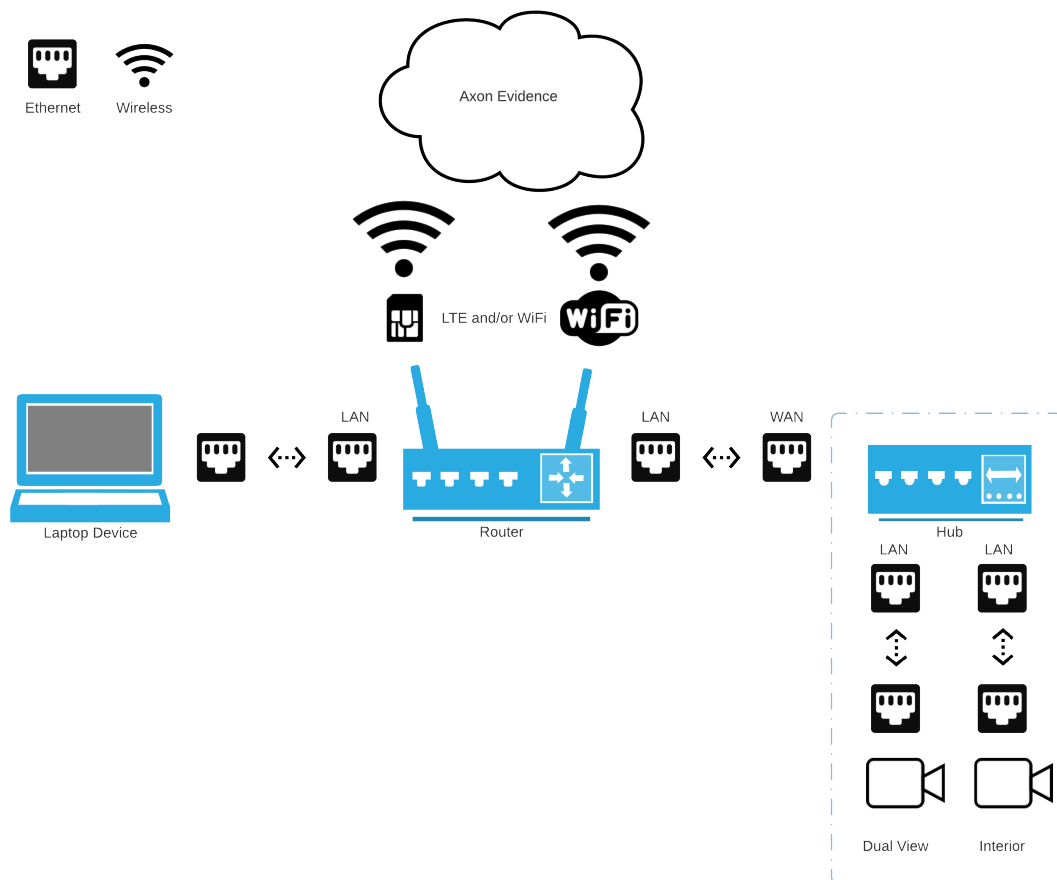
Introduction

The Axon Fleet 3 solution is a purpose-built in-vehicle recording system capable of capturing audio and video, supplemented by artificial intelligence designed for use in high-risk environments encountered by law enforcement, corrections, military, emergency medical services (EMS), and security activities. The Axon Fleet 3 system records events for secure storage, retrieval, and analysis leveraging Axon's Evidence services. The recorded events are transferred securely to Axon Evidence using LTE, Wi-Fi or manual operations.

Axon Fleet 3 Communication Overview Diagram

Axon Fleet 3 requires an Ethernet connection to an in-vehicle mobile router to facilitate communications between the Fleet 3 Hub and Axon Evidence leveraging LTE, Wi-Fi, or both.

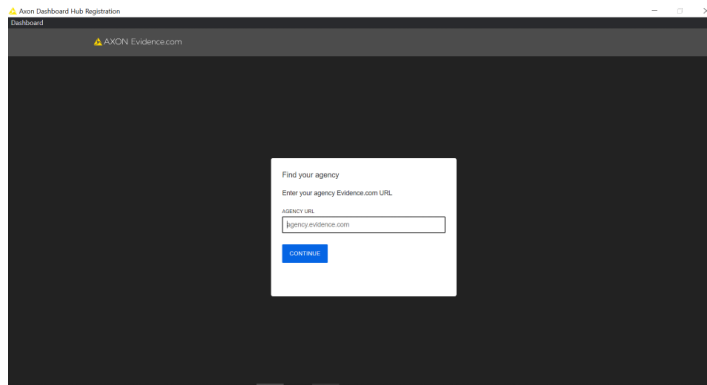
The following diagram provides an overview of the Axon Fleet 3 in-vehicle connections and communications.



Pre-Installation Information

This section provides information about available Axon Fleet 3 packages, along with requirements, wiring information, tools, and supplies needed for installation. It also includes information on upgrading to Axon Fleet 3 from Axon Fleet 1 and 2.

Prior to Fleet 3 equipment populating in Axon Evidence, the system must be locally powered on and registered to an active agency instance of Axon Evidence. In doing so, the Fleet Hub will become an assignable device in the Vehicle Creation process in Axon Evidence > Inventory > Vehicles > Guided Vehicle Creation.



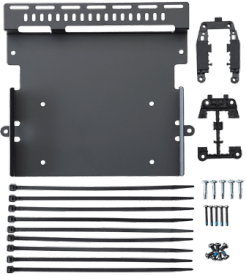
Packages and Parts

Information about the standard Axon Fleet 3 hardware kit is provided in this section.

Fleet 3 Hardware Package

The Fleet 3 components necessary to install one vehicle can be shipped in a single box. The following table lists the components for a standard two-camera vehicle installation.

Part	Count	SKU	Image
Hub	1	72010	
Dual-View Camera	1	72000	

Interior Camera	1	72037	
Interior 3-in-1 Antenna	1	72033	
Hub mount bracket	1	72011	
DVC windshield mount (includes Connector Support Clip)	1	72001	
IC interior mount (includes Connector Support Clip)	1	72002	
Power and Signal Harness	1	72013	

Power Over Ethernet cable CAT6	3	72030 72031 72032	
- 1x 6ft			
- 1x 15ft			
- 2x 20ft			

Fleet 3 Body-Worn Camera Signal Package

Customers who use Body-Worn cameras and are not reusing their Axon Signal Vehicle (ASV) units will require a new unit and cable assembly. Customers reusing their ASV units may need a new cable assembly. The ASV units and cable assemblies are boxed separately from other components.

Part	Count	SKU	Image
Axon Signal Vehicle (ASV) unit	1	70112	
Axon Signal Unit, Cable Assembly	1	70117	

Cradlepoint Package

Cradlepoint routers purchased through Axon are shipped directly from Cradlepoint. Note that SIM cards can be pre-inserted by request.

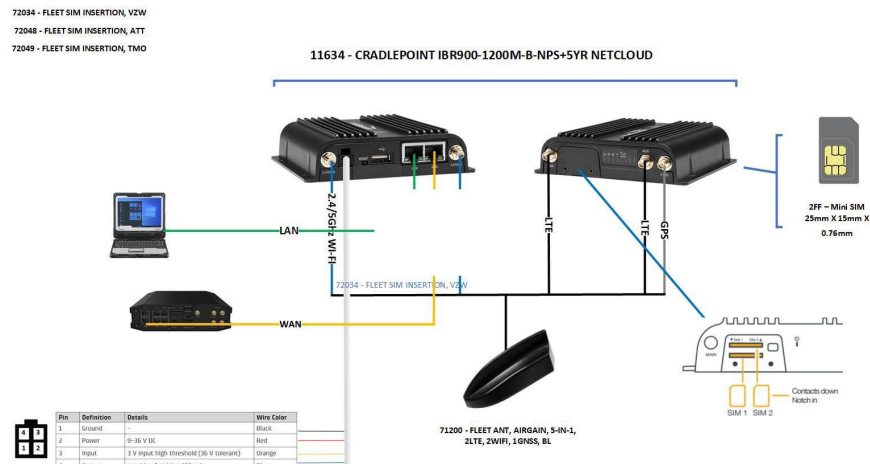
The following table lists the SKU for the Cradlepoint IBR900-1200M-NPS router, which is used in a standard installation. Customers desiring to use a different router should contact their Axon representative before installation to confirm router compatibility. Other routers can be used, each with a compatible externally mounted antenna, and the SKU will depend on the selected router.

Part	Count	SKU	Image
Cradlepoint IBR900	1	11634	
Ethernet cable, 25FT	1	74110	

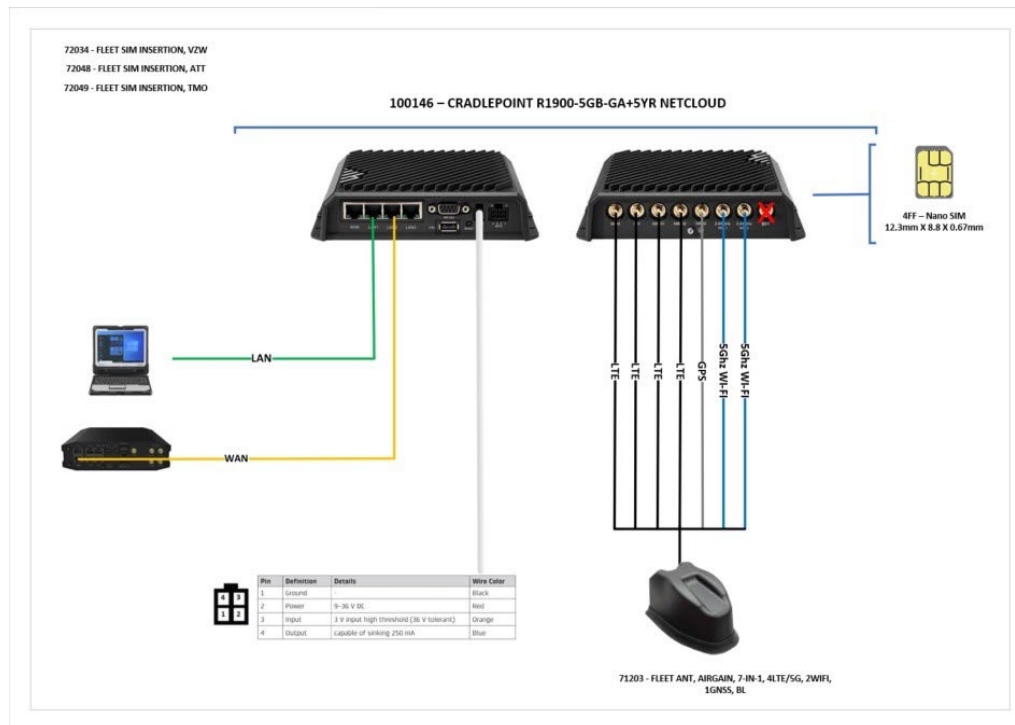
Airgain Antenna & Router Compatibility

Axon supplies an externally mounted Airgain antenna in conjunction with the purchase of a Cradlepoint router as part of the Axon Fleet 3 solution. Each router requires a certain antenna configuration. Please refer to the below chart for Router and Antenna compatibility. Axon supplies a selection of the below antennas in WHITE color. Please reach out to your Axon representative to order.

IBR900 Router and Antennas



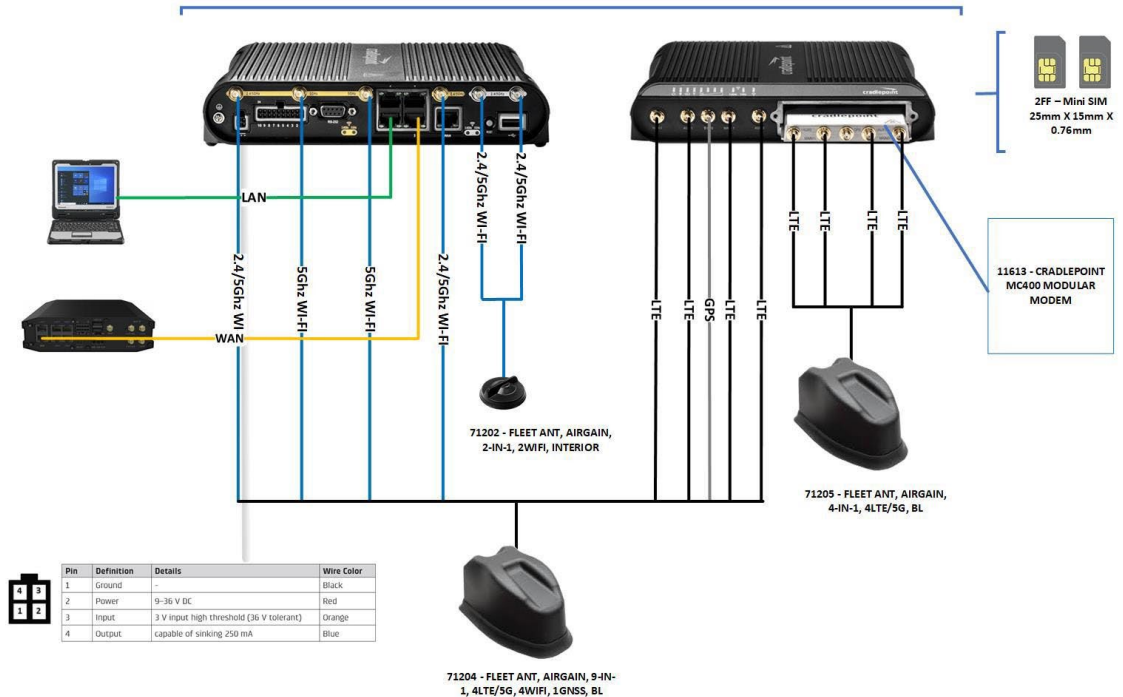
R1900 Router and Antennas



IBR1700 Router and Antennas

72034 - FLEET SIM INSERTION, VZW
 72048 - FLEET SIM INSERTION, ATT
 72049 - FLEET SIM INSERTION, TMO

11635 - CRADLEPOINT IBR1700-1200M-B-NPS+5YR NETCLOUD



Axon Professional Services Package

Axon Fleet Professional Services is Included as part of the Axon Fleet 3 Standard 2 Camera Kit (SKU 72036) package and includes the following:

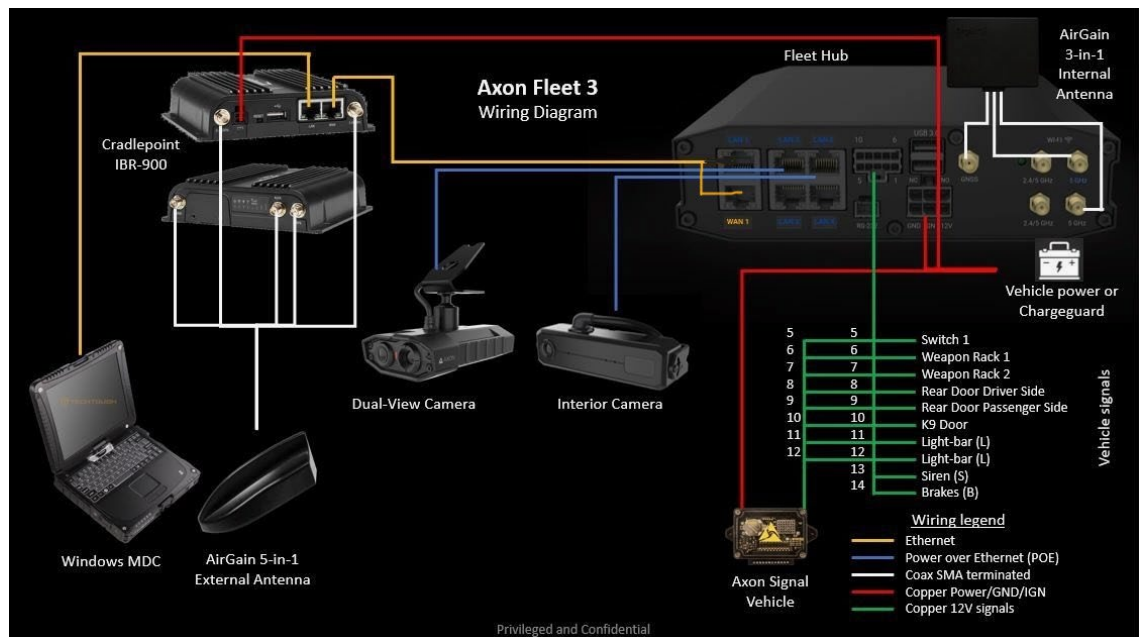
- Assistance configuring network policy and laptop software
- Assistance configuring Fleet 3, ALPR, and Respond Settings
- Installation of Fleet 3 hardware and, when purchased through Axon, Router, and External Antenna
- Train the trainer - when third-party installation is required, Axon will own training and quality control
- TAP Upgrades require services to be attached

Additionally, Axon offers a refresh/re-installation service.

Wiring Information

This section provides an overview of the vehicle wiring layout for Axon Fleet 3. The information should be used with the image on the following page.

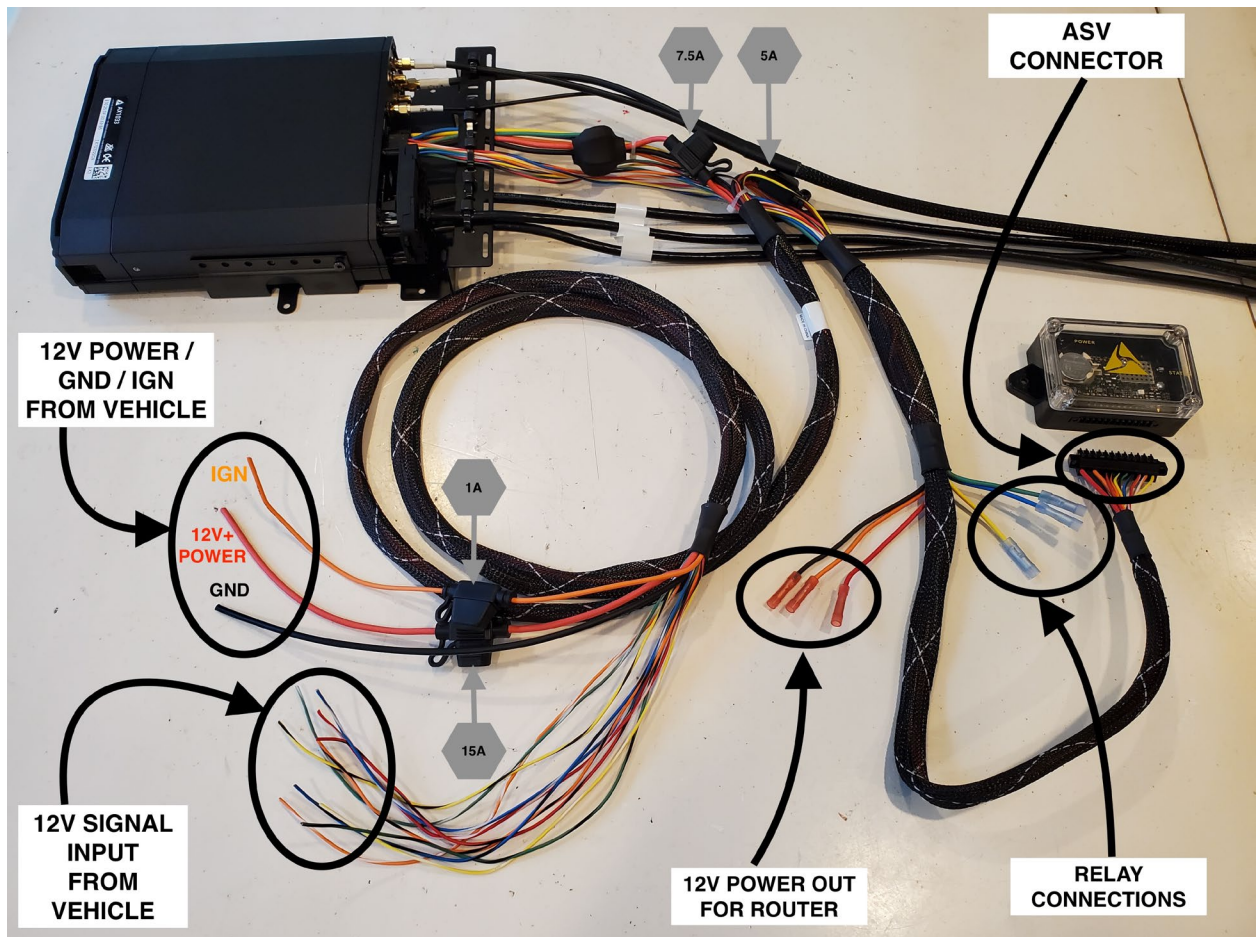
- The Vehicle MDC connects to the Cradlepoint router with an Ethernet cable (yellow line).
- The Fleet 3 Hub connects to the Cradlepoint router using an Ethernet cable (yellow line).
- Axon Fleet 3 Cameras connect to Hub using Ethernet cables (blue line). The cameras also receive power from the Hub through the cables.
- The Interior Antenna connects to Hub for Wi-Fi/Bluetooth to support GPS and Body-Worn Camera connectivity (white line).
- The Power and Signal Harness provides power (red line), ignition (red line), and signal inputs (green line) for Hub, Cradlepoint router.
- The Axon Signal Vehicle Fleet 3 cable assembly is connected to the Power and Signal harness to extend the same inputs to the ASV.



Power and Signal Harness and Axon Signal Vehicle Fleet 3 Harness

The following image shows the combined Axon Fleet 3 Power and Signal harness **plus** the ASV Fleet 3 Harness

SKU 72013 – FLEET 3 HUB, CABLE ASSEMBLY, POWER



NOTE: There is no current product firmware support for the relay connections. The relay connections are present in the Fleet 3 wiring harness to support potential future configurations and feature implementation.

Electrical Requirements

Axon Fleet 3 power, ground, ignition, and signal wiring specifications and requirements are listed below:

Battery Power

Voltage:

- Recommended range is the normal automotive 12V vehicle power, commonly 11.6V to 14.8V.
- Operational limits are less than 1,250 milliseconds below 10.8V or above 19.5V.
- Voltage protection up to +40V or -40V.

Note: *The system will not be damaged by reverse voltage, or voltages between +40V or -40V, it simply will not operate.*

Fuse Information:

Axon recommends you use the included Fleet 3 Power and Signal Harness, which has the following fuses:

- One 15A for the entire hardware system (Hub, Axon Signal Vehicle, router)
- One 5A for the Axon Signal Vehicle unit and router
- One 7.5A for the Hub

If multiple power lines are used to provide power to each separate device, the system must include the following fuses for each device:

- Axon Signal Vehicle unit - 1A
- Router - 2A
- Hub – 7.5A

When wiring a single power line to provide power to all Fleet devices (Hub, router, and Axon Signal Vehicle), use a 15A fuse.

Power Source:

- The Fleet 3 Power and Signal Harness includes #12 AWG wires for power and ground, and #16 AWG for the ignition signal. The red Power line is equipped with a 7.5A fuse to the Hub, and a 3A fuse for the #16AWG power branch for the router.
- **Axon recommends** a source of constant power is provided to the system directly from vehicle battery with in-line fuse.
- **Minimum Power/Power Shutoff Timer:** The shutoff timer time must be set so that it is equal to or longer than the **Power Off Delay** setting configured on the Axon Evidence – Admin – Fleet 3 Settings page.
- *If installing a Cradlepoint dual-modem router with RX-30 Managed Accessory, or other third-party router, Axon recommends bypassing the Fleet 3 power harness and wiring the*

third-party manufacturer-provided power cable directly to vehicle power, with adherence to fusing recommendation for that product.

Electrical Ground

Impedance to Static Chassis Ground must be 0Ω - 0.25Ω

- **Warning:** Do not use a floating ground.
- **Warning:** Do not use a ground path that may be compromised by vehicle shock and vibration.
- **Axon Recommends** that you use dedicated ground buss bars or connect directly to the chassis. If the installation connects ground onto a metal partition or divider (for example, a partition between front and rear seats), be sure that the partition is connected securely to the chassis ground via a braided cable. The connection from the metal partition to chassis ground may seem fine (resistance of 0Ω) while the vehicle is parked. But that ground connection may be of a much higher resistance or even briefly go away as the vehicle passes over bumps while driving. A braided grounding strap helps to maintain a solid ground path during such events.

Distance from Fleet 3 System Ground to High Current Load Ground should be greater than 12 inches.

- **Warning:** Do not use ground paths that are shared with high current loads.

Devices with high current loads (those with 30W or more, can create interference and disrupt the operation of Fleet 3 systems. Fleet 3 devices and wiring should be distanced from any devices, AMPs, antennas, and power lines carry high current load. Axon developed the following standards by testing 30W and 50W UHF/VHF radios:

- Fleet 3 devices should be maximally distanced from devices, wires, and antennas that carry a high load.
 - Optimal Distance: 12 or more inches
 - Hub Minimum Distance: 3 inches
 - Camera Minimum Distance: 6 inches
- Fleet 3 power, ignition, and ground cables should be distanced from any high current load devices, AMPS, antennas, and power lines carrying a high current load (particularly UHF/VHF radios). Use the following recommendations:
 - Minimum Parallel Distance: 18 inches

- Optimal Crossing Angle: 90 degrees
- Minimum Crossing Angle: 45 degrees
- Fleet 3 Ethernet cables should be distanced from any devices, AMPS, antennas, and power lines carrying a high current load. Use the following recommendations:
 - Minimum Parallel Distance: 6 inches

Ignition Sensing Source

The Fleet Hub and some routers can sense ignition to determine when to power on and off. Locate a source of ignition power.

Note: Voltage between -40V and 40V will not damage the system.

- **Key ON Voltage:** 4V - 19.5V

The Hub draws 0.10mA (0.0001A) or less when powered off. Wire is 12AWG for standardization.

Note: Voltage below 4V may cause the Host to come on, as the threshold varies slightly from one unit to the next. Occasionally, an ignition signal as low as 3.3V can cause the Hub to boot up.

- **Key OFF Voltage:** 0V - 2V

Hub Signal Input Wiring

The Hub Signal 12V input wires are used for triggering camera activation or Video Overlays (e.g., Lightbar, Door trigger, etc.).

- Signal wires are #22 AWG.
- Hub timing for trigger inputs 5 through 10, 13, and 14:
 - Low to High Transition: 200 ms
 - High to Low Transition: 200 ms
- Hub timing for trigger inputs 11 and 12:

These inputs are intended to reduce the likelihood of nuisance videos from extraneous triggers caused by some progressive slide switch control modules (common in light bars). These controllers can cause the input voltage of Axon Signal Vehicle to drop below 3.6 VDC when transitioning between switch positions.

- Low to High Transition: 200 ms

- High to Low Transition: 2.5 s
- **Do not wire the Fleet 3 Hub to any pulsing/bouncing/intermittent 12V signal inputs (ex. Lightbar). Ensure that the Fleet 3 Hub receives steady and constant 12V+ when the input is active/high.**

Determining a Mount and Wiring Plan

Use the following guidelines to locate the Dual-View Camera, Interior Camera, Hub, Axon Signal Vehicle unit, router, MDC, and Interior Antenna mounting locations.

- The Dual-View Camera is commonly mounted facing out the front windshield.
- The Interior Camera is commonly mounted on the prisoner partition, facing the prisoner compartment.
- The Hub and Axon Signal Vehicle (ASV) unit are best mounted near each other. The ideal location is near the siren/light controller unit since this is typically where most activation sources originate. There should also be a good source of battery power near this location.

Hub Mounting: The Hub is equipped with narrow air vents on the top and bottom of the front cover. **Do not block the air vents.**

- Locate electrical inputs
 - Axon recommends you use the included Power and Signal Harness.
 - Locate 12V power source for the Hub, router, and ASV.
 - Locate an electrical ground.
 - Locate ignition sensing source for the Hub and router.
 - Locate any Signal 12V input wires used for triggering camera activation or Video Overlays (lightbar, door trigger, etc.)
 - (Optional) If installing brake sensing, also locate a 12V brake power source.
- Determine the mounting location of the Interior Antenna. It must be mounted with an unobstructed view of the sky. Common locations include:
 - Rear deck, behind the rear seat headrests in a sedan.
 - On the third row (fixed) window in an SUV.

- On the dashboard or upper corner of the windshield.
- Determine how all inputs will connect into Power and Signal Harness and how the Power and Signal Harness will connect to the Hub, ASV, and router
- Determine how all Ethernet cables will route through the vehicle to connect the devices:
 - Hub to router
 - Hub to Dual-View Camera
 - Hub to Interior Camera
 - MDC to Router
- (Optional) Determine where the power shutoff timer or PSU will be installed and connect into Fleet 3. If using a power shutoff timer or PSU, Fleet 3 ignition sensing should still be connected to vehicle ignition.

Tools and Supplies

The following tables list the devices, tools, and supplies needed to install Axon fleet 3.

Devices

Device	Purpose
Windows computer	Device registration and configuration
Android device w/Bluetooth enabled	Update Axon Signal Vehicle (ASV) firmware. This may be needed if reusing ASV units in the installation. The ASV must have firmware version v4.3.1 or later.

Tools

Tool	Purpose
Multimeter	Testing for power, ground, true ignition, etc.
#1 Phillips screwdriver	Interior camera mount installation
#2 Phillips screwdriver	Hub installation to Hub bracket
Mini screwdriver set or multi-bit mini set with mini ratcheting screwdriver	General installation
Power drill/impact driver set	General installation
Mini ratchet/socket	General installation

Tool	Purpose
8mm ratcheting box wrench (McMaster-Carr 5163A24 ratcheting combination wrench recommended)	Dual-View Camera and SMA connector installation
Wire cutters and crimper	General installation
Wire strippers	General installation
Allen wrench set (metric and standard)	1.5 mm Allen wrench is needed for adjusting the Dual-View Camera set screws.
Multi-end crimp set	General installation
Hole Saws and arbors - Ensure a 7/8" hole saw (22 mm)	For Exterior Antenna installation
Drill bit set	General installation

General Supplies

Item	Purpose
Paper Towels	General installation
Cable ties	General installation
Wiring harness cloth tape (Maxwell VERSAF51217 High Temperature harness cloth tape or TESA High Heat Harness Tape 51036)	Securing cable connectors
3M Electrical tape	General installation
Metal or nylon fishing tape	Running wires through channels
3M 5962 VHB Double-sided tape	Backup for mounting IC or Interior Antenna
3M Adhesive promoter wipes	Backup for mounting DVC or IC or Interior Antenna
Spare 15A & 7.5A fuses (fast blow mini blade)	Backup for Power and Signal Harness fuses
Spare 2 amp to 15-amp fuses for vehicle	Backup for vehicle fuses
Spare wire (12 AWG for power connection, 22 AWG for signal connection)	Backup for wire installation

Additional Reading

This manual explains how to install the Axon Fleet 3 hardware. Other manuals cover additional aspects of the Axon Fleet 3 system. These documents are available from the Product Guide section of my.axon.com.

- The *Axon Fleet 3 – Axon Evidence Setup Guide* provides information on setting up Axon Fleet 3 vehicles, cameras, and Signal settings in Axon Evidence.
- The *Axon Evidence User and Administrator Reference Guide* provides instructions on managing users, vehicles, cameras, and other agency settings.

For installation of the router and the antenna, refer to the appropriate manufacturer's instructions for installation.

- [Cradlepoint installation](https://customer.cradlepoint.com/s/article/Vehicle-Installation-Guide-for-COR-Series-Mobile-Routers) (<https://customer.cradlepoint.com/s/article/Vehicle-Installation-Guide-for-COR-Series-Mobile-Routers>)
- [Airgain Antenna Installation](https://airgain.com/installation-and-removal-guides/) (<https://airgain.com/installation-and-removal-guides/>)

Upgrading from Fleet 1 and 2

If your agency had Axon Fleet 1 or 2, this section provides an overview of the items that are kept, changed, and discarded when upgrading.

For additional information see the *Axon Fleet 1 and 2 Removal Guide*.

Differences between Fleet 3 and Fleet 1 and 2

- Workflow
 - If configured to leverage LTE, Hub will begin evidence upload to Axon Evidence immediately upon recording termination
 - Evidence also remains on the Hub after upload for an agency configured period.
- MDC
 - Fleet 3 uses a new application called the Fleet Dashboard. The Dashboard app is effectively a browser that loads webpages from the Hub.
 - The MDC is not required for recording and upload of evidence
- System
 - The system uses a hub and spoke model with a central brain, the Fleet Hub, and wired cameras.
 - The Hub is connected to cameras using Ethernet cables that provide power and communication.

- Power
 - The Hub senses ignition on/off and can delay shutdown for an agency configured period.
 - Power, ignition, and Signal inputs are forked from the Power and Signal Harness to the Hub, Axon Signal Vehicle device, and router.
- Signal
 - The Hub activates the Ethernet connected Fleet 3 cameras.
 - The Axon Signal Vehicle device only activates Axon Body-Worn Cameras that are in Bluetooth range.

When Upgrading from Fleet 1 or Fleet 2 to Fleet 3

The following items do not normally change and can be reused:

- Cradlepoint router
- Airgain 5-in-1 antenna
- MDC to router Ethernet cable
- Axon Signal Vehicle device

What items are new or change:

- The deploy script to Cradlepoint NetCloud for Internet QoS.
- A new Cradlepoint NetCloud Manager (NCM) Group is used.
- The router's NCM Configuration.
- Updates for the router's modem firmware and NCOS.
- Windows configuration
- Firewall, VPN, and Proxy configuration
- Automated License Plate Reader (ALPR) enablement (optional).
- Axon Respond enablement (optional).

The following items are removed and will not be reused:

- Axon Fleet Power Units

- Axon Fleet 1 and 2 cameras
- Axon Fleet camera mounts
- Axon Fleet 2 wiring harness
- USB dongle

Installation Information

This section provides information on installing the Axon Fleet 3 components. The listed order of information and procedures is the recommended order used for installation.

Note that setting up Axon Fleet 3 vehicles, cameras, and Signal configuration in Axon Evidence should be done before or in parallel with the hardware installation. See the *Axon Fleet 3 – Axon Evidence Setup Guide* for more information.

Unboxing and Preparing Hardware

Before starting the installing, unbox and prepare the Axon Fleet 3 hardware.

The Fleet 3 components necessary to install one vehicle can be shipped in a single box. The following image shows the shipping box for the standard two-camera installation for a single vehicle.



1. Remove the Dual-View camera and camera mount from the box.
2. Attach camera head to the mount using an 8mm wrench or nut driver to fasten the hex screw supplied in the front camera packet.



If using a driver, the nut can be reached through the center hole in the mount.

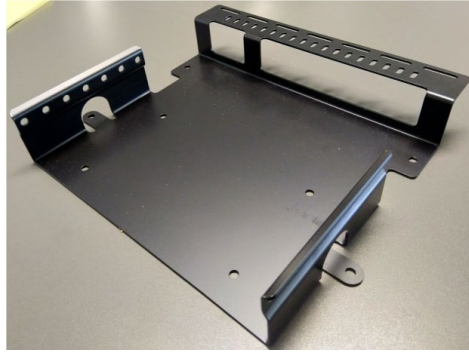


3. Slide the camera to the forward-most position of the mount and ensure the centerline of the camera is in line with the centerline of the bracket before tightening.



Note: If for some reason the mount is not correctly installed to the windshield, the standard process is to replace the whole mount instead of trying to replace the VHB tape.

4. The Fleet Hub can be installed in many locations. The included bracket is designed to be mounted on any flat surface. Common locations are:
 - Behind the passenger seat on the forward-side of the prisoner partition
 - On a rear trunk tray



5. To use the Trunk Mount, attach hub to mounting plate using at least 4 of the socket head screws supplied in the Hub screw kit.

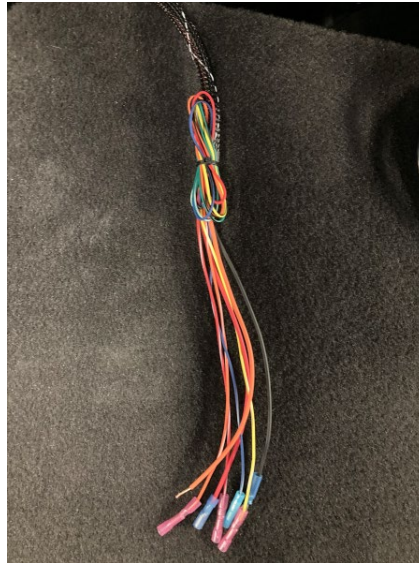
Leave enough space for the cable strain relief as well as the locking plate for the Ethernet cables.



6. Label the Ethernet cables as appropriate for front camera, rear camera, and WAN source. There is usually a cable to make the connection between the MDC and router too.



7. Prepare source end of the Power and Signal Harness for connection to vehicle power/activation sources. Any inputs not being used should be taped back with Tesa tape or similar.



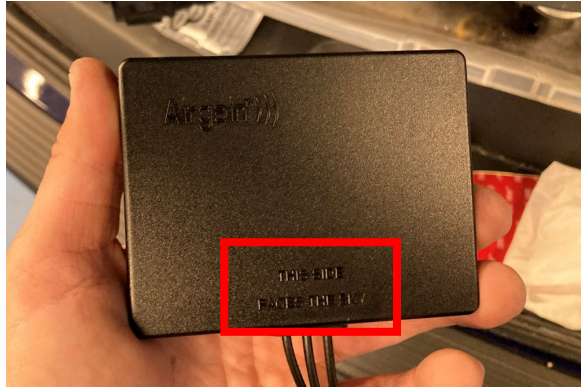
Installing the Router and Exterior Antenna

For installation of the router and the antenna, refer to the appropriate manufacturer's instructions for installation.

- [Cradlepoint installation](https://customer.cradlepoint.com/s/article/Vehicle-Installation-Guide-for-COR-Series-Mobile-Routers) (<https://customer.cradlepoint.com/s/article/Vehicle-Installation-Guide-for-COR-Series-Mobile-Routers>)
 - [Airgain Antenna Installation](https://airgain.com/installation-and-removal-guides/) (<https://airgain.com/installation-and-removal-guides/>)
1. Install router and exterior antenna.
 2. Route an Ethernet cable from the router to the MDC mounting location.
 3. Route an Ethernet cable from the router to the Hub mounting location.
 4. Route the router power, ground, and ignition cables to the planned Power and Signal Harness location.

Installing the Interior Antenna

The Interior Antenna requires an unobstructed view of the sky for GPS reception and the cabling must reach the Hub. The antenna side that must face towards the sky is indicated by raised text on the antenna, as shown in the following image.

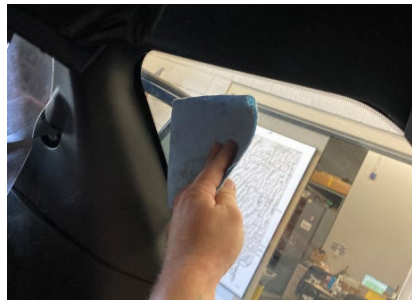


Suitable locations for Interior Antenna installation include:

- Rear deck, behind the rear seat headrests in a sedan.
- On the third row (fixed) window in an SUV.
- On the dashboard or upper corner of the windshield.
- On a side window.

Interior Antenna Installation

1. If mounting to a glass surface, clean and dry surface using an alcohol wipe and paper towel.



2. Place the adhesive pad on the appropriate antenna side so that the marked side faces outwards.



3. Peel the top protective layer from the adhesive pad and affix the antenna to the surface. Hold the antenna in place for 10 seconds to ensure adhesion.

Optionally, the adhesive may first be applied to the glass surface, with the antenna then affixed to the adhesive. This removes many of the air pockets in the adhesive that may otherwise be visible from outside the vehicle.



4. Route the antenna wiring to Hub.

Installing the Power and Signal Harness and Ethernet Cables

The Power and Signal Harness simplifies connection of constant power, ignition sensing, and Signal 12V Input sources into Fleet 3, Axon Signal Vehicle (ASV) device, and the router. The harness also includes integrated fuses: 5 Amp fuse for the router and ASV, and a 7.5 Amp fuse for the Hub.

- Place harness so that it can accept vehicle inputs and connect to the Hub, router, and ASV (optional).
- When routing wires, ensure they do not interfere with airbag operation.

Connecting to Power

1. Connect the Power and Signal Harness black wire to appropriate vehicle chassis ground source. See the [Electrical Ground](#) section of the guide for additional information.
2. Axon Fleet 3 includes ignition sensing capability. Connect the Power and Signal Harness orange wire to an ignition run/start source.
3. Connect the Power and Signal Harness red wire to either constant battery positive or delayed-off source.

Signal Connections

Axon Signal technology automatically activates cameras during critical events. Within the vehicle any 12V outputs, including those from a Lightbar controller, are connected to the Power and Signal Harness and the harness connects to the Hub and Axon Signal Vehicle device to activate cameras. The Hub activates the Fleet 3 cameras through an Ethernet connection. The Axon Signal Vehicle device activates nearby Axon Body-Worn cameras using Bluetooth.

12V inputs are color and number coded for easy identification so the connections can be coordinated with the Axon Evidence configurations. Axon Evidence administrators will configure the inputs in Axon Evidence and provide the configuration information to installers (the Fleet 3 Signal worksheet is recommended way to provide the information).

1. Connect each Signal 12V Trigger to the Power and Signal Harness observing the following guidelines:
 - Power and Signal Harness wires are color and number coded with Axon Evidence configuration.
 - Connect the designated loose wires of the Power and Signal Harness to the appropriate vehicle 12V trigger.
 - Wiring must be consistent across all vehicles and match the Axon Evidence Signal configuration settings.

Warning: Axon Evidence Signal configuration settings are for all vehicles at your agency. Inconsistent wiring will mismatch triggers to camera settings.

- Any unused Signal wires on the Power and Signal Harness should be taped back and secured.

- Door Triggers are applied one trigger per door. Axon SKU 71210 (US) or 71211 (UK) includes the trigger with wiring, screw, and magnet.
2. If a brake Signal input will be used, wire brake power to the Power and Signal Harness cable using the following guidelines:
 - Note that brake Signal inputs are only supported on Hub input numbers 13 and 14.
 - If available, connect the brake sense output from vehicle upfitter harness to the Hub input harness.
 - If an upfitter harness is not available in vehicle, connect to an alternate +12V brake source, such as the brake light.

Use a poke and wrap connection only so there is no interference with the integrity of the original circuit. Using butt splices or T-taps may introduce a failure point.

Axon Signal Vehicle Device Connections

If an Axon Signal Vehicle (ASV) will be used to activate Axon Body-Worn Cameras, use the ASV Fleet 3 cable assembly (Axon SKU 70117) to connect the Fleet 3 Power and Signal Harness.

Note: In previous Axon Fleet versions, the Fleet Power Units and the Axon Signal Vehicle device may have been mounted in separate areas. Since all 12V inputs will run to both Hub and Axon Signal Vehicle device, it may be necessary to extend the wires to Hub mounting location.

1. Route the male end connector of the ASV Fleet 3 cable assembly to the mounting location of ASV device.
2. Remove the screw terminal interface on the ASV device, which will reveal the female connector.
3. Plug the male connector end of the ASV Fleet 3 cable assembly into the female connector on the ASV device.

Camera Ethernet Cables

Use provided Power Over Ethernet cables (SKU 72032) for camera connection. The cables are 20 feet long (6 meters) CAT6 rated with a custom over-mold to enhance connection integrity.

1. Route a Power Over Ethernet (POE) cable from each of the camera mounting locations to the Hub mounting location using the following guidelines:

Note: If replacing an Axon Fleet 1 or 2 system old camera wiring may be taped to the new wiring and pulled through certain spots, such as behind panels, under floormats, etc. to aid in the installation of the new cables.

- For correct orientation, the cable for both the Dual View and Interior cameras will extend from the top facing side of the camera.
- Cables are routed through A-pillar or B-pillar and kick-panels.
- For the placement of cables belonging to Fleet 3 system vs. cables from VHF Antenna wires use a minimum parallel distance of 6 inches.
- When placing POE cables belonging to Fleet 3 system vs. cables belonging to High Current Loads (particularly UHF/VHF radios), the distance is maximized using the following recommendations:
 - Minimum Parallel Distance: 18 inches
 - Optimal Crossing Angle: 90 degrees
 - Minimum Crossing Angle: 45 degrees

MDC Ethernet Cable

Use provided Ethernet cable included with your router for camera connection.

- Route the Ethernet cable from the Hub mounting location to the router mounting location.

Installing Cameras

Use the following instruction to affix the Dual-View and Interior cameras.

Dual-View Camera

Choose an appropriate mount location using the following guidelines:

- Ensure that camera placement does not interfere with rear view mirror or other vehicle equipment.
- From driver's seat, an officer should be able to reach the buttons, see the LEDs, and not have any blocked by the rear-view mirror.

- Note that many windshields have a curve near the top edge that is hard to perceive with the eye. This curve can reduce the adhesive surface area that bonds with the windshield. Axon recommends that the mount be placed at least 1-2" below the top edge of the windshield to ensure adhesion.

If using the adhesive mount for the Dual View Camera, follow the instructions printed on the supplied wipe to prepare the chosen windshield mounting location.

1. Clean and dry windshield using included alcohol wipe as well as a paper towel to prepare for mounting the front camera.
2. Use 3M Silane Glass Treatment AP 115 for maximum adhesion. Wipe off excess Silane glass treatment with a paper towel before it is allowed to dry.



3. Remove lens covers and adhesive backing.



4. Place camera in desired mounting location, ensuring that the camera is straight. The Dual-View camera has X-axis adjustment of 22.5 degrees. The mount must be aimed

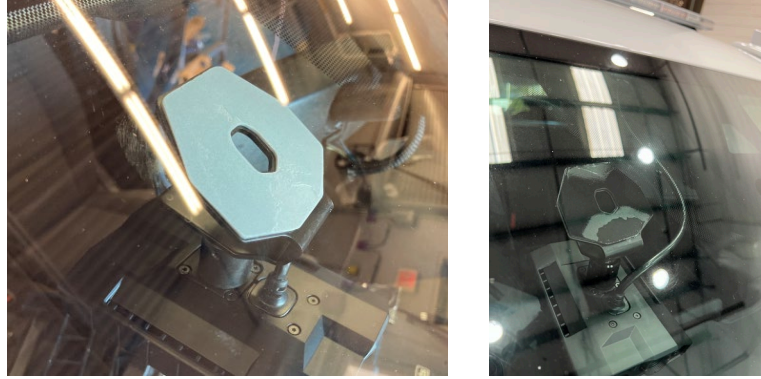
correctly before fastening to the windshield. Choose a location so that the buttons and LEDs will be reachable and visible from the driver seat position.



5. Press and hold firmly, with 30-50lbs of force, for 30 seconds to allow adhesive to set. Do not press on the camera.

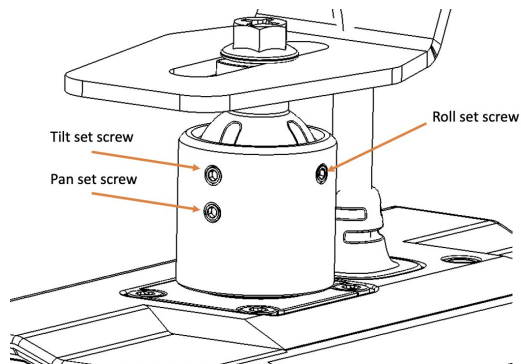


6. Look through the front windshield at the mounting location. If any areas appear to have insufficient adhesion try applying local pressure in that area. A slight pocket may exist near the bottom of the mount as shown. 75% or more of the adhesive should be firmly attached to the windshield and without air bubbles.
 - a. **Note:** VHB has specific “adhesion temperatures” for outside ambient temperature. It is prudent to warm the glass, not the adhesive or mount, prior to adhering the mount to windshield, in colder weather. Minimum application ambient temperature for the mount is 10°C (50°F)

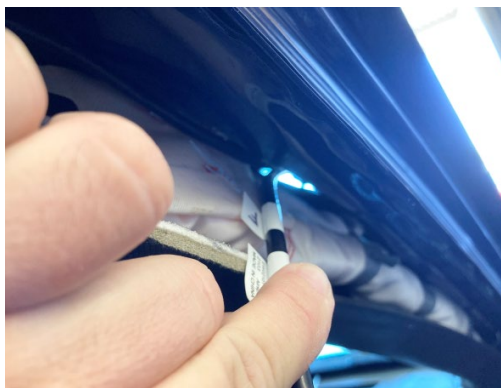


Note: If for some reason the mount is not correctly installed to the windshield, the standard process is to replace the entire mount instead of trying to replace the VHB tape.

7. (Optional) Loosen the three small set screws in the dual view camera mount to adjust the camera angle (roll, tilt, pan). Once the camera is correctly positioned tighten down the set screws as needed. Leave the Pan set screw loose so that the camera can be swiveled, unless the agency prefers to prevent this.

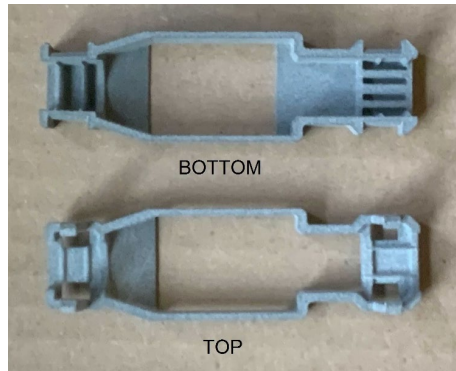


8. Route front camera cable over air bag (between air bag and vehicle roof) to ensure that it will not interfere with airbag deployment.

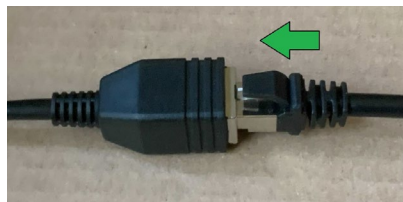


Installing the Pigtail Support Brackets

Use the following instructions to secure the camera connectors. Get the top and bottom pigtail support brackets, as shown in the following image, and wiring harness cloth tape.



1. Plug in the male cable connector to the pigtail connector, making sure it is pushed in as much as possible.



2. Locate the single tab on the bottom of the cable connector. This will interface with the wall on the pigtail support bottom bracket.



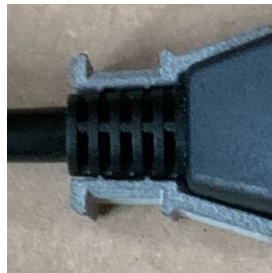
Angle the tab of the connector into the bottom housing and with applying some light pressure, push the main pigtail over mold and strain relief into the opposite end.



3. Press down on the main body and both strain reliefs to make sure they are seated.



The alignment ribs of the bottom housing should line up with the open areas of the strain reliefs.



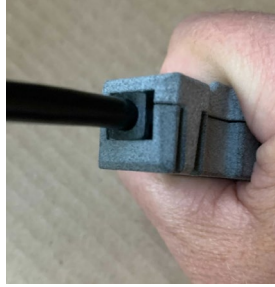
4. Gently align the top bracket over the pigtail support/cable assembly and press down on the cable connector end using even pressure to engage the first two snaps. Then on the pigtail over mold end to engage the final two snaps.



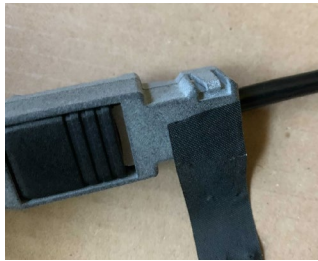
Continue applying pressure across the entire top bracket to engage the four snaps.



Make sure the strain reliefs are seated within the opening and that all four snaps have locked.



5. Use the wiring harness cloth tape to secure the bracket. Start at the bottom side and wrap the tape around both the top and bottom brackets, making sure the snaps stay engaged. Make sure you wrap the tape around the bracket 1-1/2 to 2 times for support. Make sure to apply pressure to the tape as you are wrapping it around.



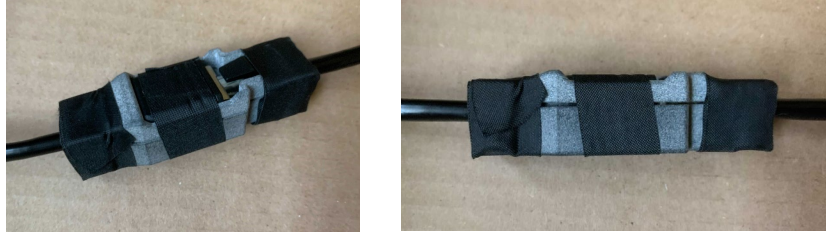
Finish by pressing the end of the tape down to secure it.



Repeat for the opposite side.



Repeat for the center of the bracket.



6. The assembly can now be tucked up between the headliner and the roof.

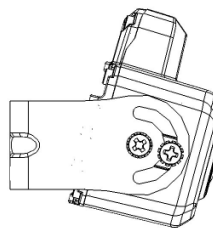


Interior Camera

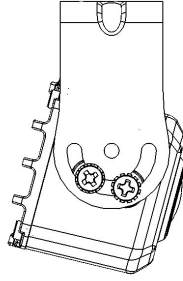
1. Using the supplied mounting bracket and self-tapping screws, install the rear camera mount in the desired location. This is commonly the top center of the prisoner partition.



2. Secure camera to mount using #1 Phillips screwdriver and screws supplied in interior camera hardware bag.



3. If mounting the camera to a horizontal surface, both camera mounting screws can be installed in the outer track of the mount.



4. Adjust camera angle as needed. The cable must extend from the top facing side of the camera.



5. Route the wiring to secure side of the divider.



6. Follow the steps in the [Installing the Pigtail Support Brackets procedure](#) to install the support bracket for the Interior Camera connector.

Installing Axon Signal Vehicle Device

For a new Axon Signal Vehicle (ASV) device,

1. Affix ASV to the mounting location.
2. Connect the ASV to the Fleet 3 Power and Signal Harness using the procedure described in [Axon Signal Vehicle Device Connections](#).

A previously installed Axon Signal Vehicle (ASV) device can be left in place and reused with Axon Fleet 3. Use the following steps to reuse the ASV device.

1. Replace the CR2032 coin cell battery.
 - Unscrew the 4 screws on the top of the ASV and remove the transparent cover.
 - Gently remove the existing battery and replace with the new one.
2. Verify the ASV device is using firmware version V4.3.1 or newer using one of the following methods:
 - Use the Axon Device Manager for Android app to pair with the ASV device and checking firmware version.

Note: The ASV device must be powered on for this check.

If Axon Device Manager for Android shows a firmware version less than V4.3.1, it must be updated.

- Check the ASV device serial number. If the serial number is newer than X87004DNA, then it doesn't need to be upgraded. Otherwise, it must be updated.

This number increments from 0-9, then A-Z. So, the number before X87004DNA is X87004DN9 and the number after is X87004DNB.

- Check the label of ASV bulk packaging for the manufactured (MFG) date. If the date is 4/5/2021 or later, then the ASV device is already updated. Otherwise, it must be updated.

If the ASV device needs to be updated, see the [Updating Axon Signal Vehicle Firmware](#) help article on My Axon for more information on updating firmware.

3. Connect the ASV to the Fleet 3 Power and Signal Harness using the procedure described in [Axon Signal Vehicle Device Connections](#).

Installing the Fleet Hub

The Fleet 3 Hub can be installed in many locations. The standard Hub mount bracket included in the Axon Fleet 3 hardware Package is designed to be mounted on any flat surface, such as the trunk floor, back of a seat, or in the prisoner partition.

When placing the mount bracket, do not block the air vents on the top and bottom of the Hub's front face.

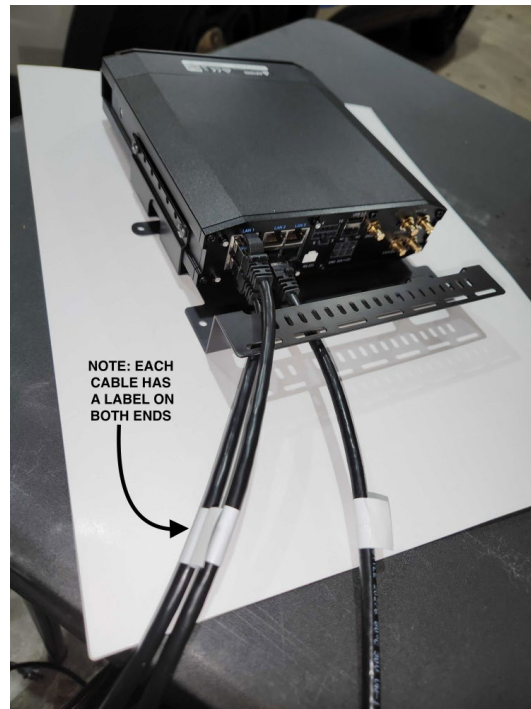
For safety, disconnect the power and ignition sources and confirm no power is reaching the wires.

Note: Do not insert a voltage probe into the power cable. Doing so may cause reliability issues. You can check for power by probing the fuse holder or one of the loose power connectors for the ASV or router.

1. Slide the Hub into the Hub bracket and affix the Phillips head screws on either side of the bracket.



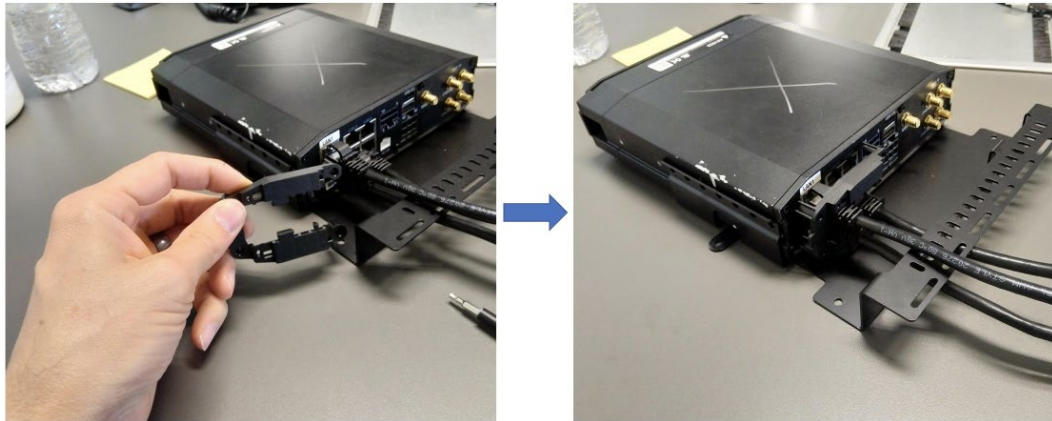
2. Connect the Ethernet cables to the Hub.
 - a. **Cameras:** Axon recommends using the LAN1 port for the Dual-View camera and the LAN2 port for the Interior camera.
 - i. If desired, the camera Ethernet cables can be plugged into any LAN port.
 - b. **Router:** Connect the router Ethernet cable to the WAN port.



3. Locate the two-piece cable strain relief supplied in the hub screw kit and attach to hub.



- a. Slide the U-shaped retainer over the cables.



- b. Install H-shaped retainer



Slide the retainer in over the top of the mounting bracket in this orientation

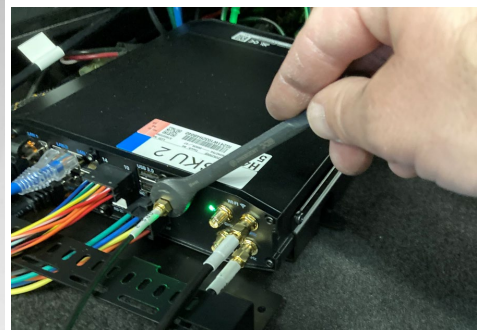
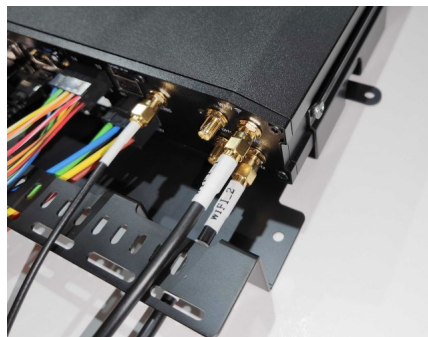


Position the retainer upright and connect to the U-shaped retainer

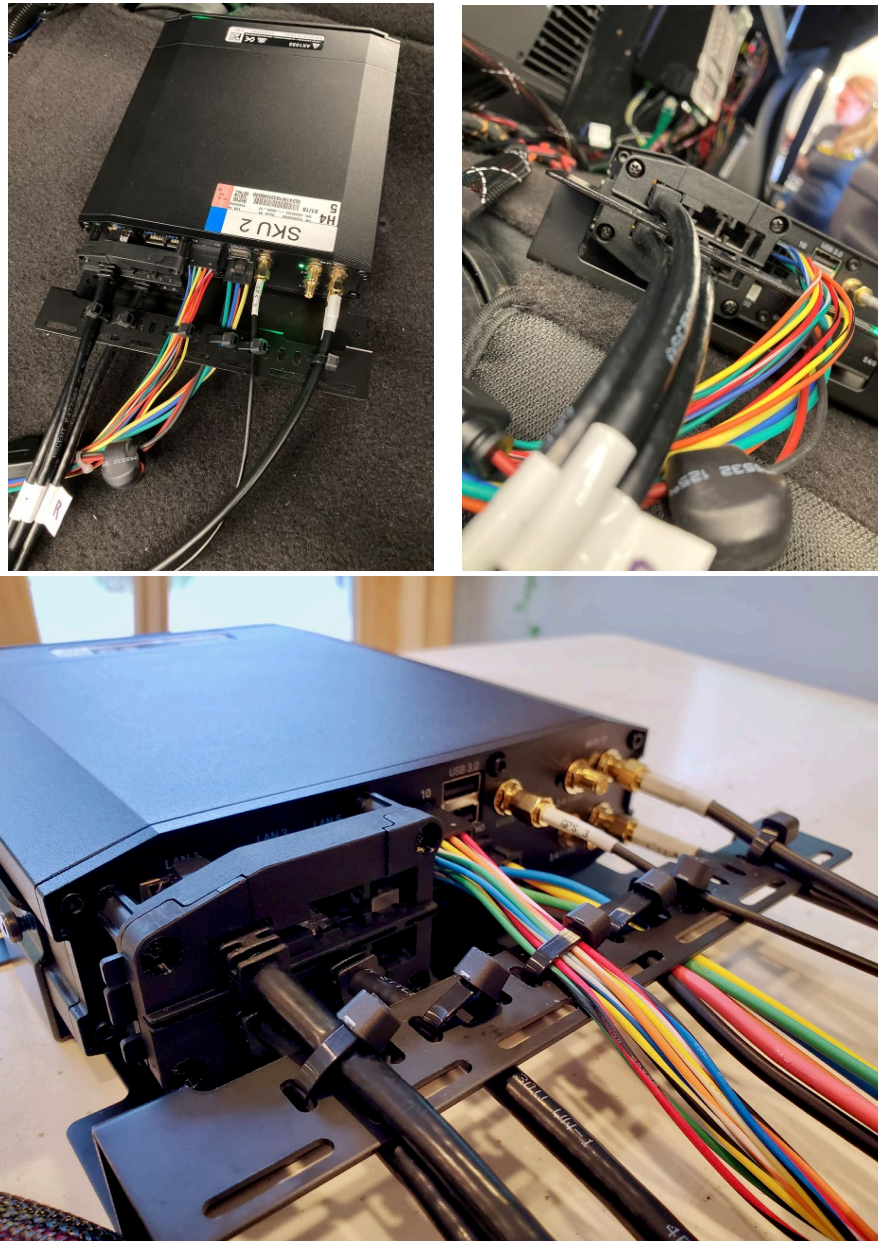


Secure the 4 screws that attach the retainer to the host

4. Connect the 10-pin Signal harness and the 6-pin Power harness to the rear of the Hub
5. Connect the Interior antenna leads to the Hub and tighten using an 8mm wrench
 - Connect both Wi-Fi connectors to the 5GHz ports on the right side of the Hub.
 - Connect GPS to the GNSS port.



6. Use cable ties to secure the cabling to Hub mount strain relief.



7. Return the Hub to its mounting location.

The Hub can be mounted flat, vertical or on a slope. There are small vents on the top and bottom of the front of the Hub. Ensure space for airflow.

8. Screw, or nut and bolt the mount in place using appropriate hardware.



9. Connect the 12V and ignition power back to their sources testing for continuity of power at the Hub. If necessary, start the vehicle and ensure the Fleet 3 system powers up.

Registration and Firmware Updates

Axon Fleet 3 devices are automatically registered to your Axon Evidence account on the first sign into Axon Evidence through the Fleet Dashboard.

1. Open the Fleet Dashboard, enter the Axon Evidence URL for your agency, and sign in using your Axon Evidence credentials.
2. Reboot the Hub using the restart button in the Dashboard Settings menu.

The Hub checks for firmware updates immediately after reboot.

An update can take up to 90 minutes to download. Once downloaded, a dialogue in Fleet Dashboard will show that an update is available. Accept the update. It will complete within 15 minutes.

Testing the System

Perform final check to ensure that all components are properly mounted and connected.

The test process is broken up into hardware and software test steps. The hardware tests are used by the installer to ensure the system is fully functional before handing off to the software installer. If it is the same person, the wired Signal input section can be skipped.

Hardware Testing

1. Ensure that system is receiving good power and activation/notification sources.
2. Turn on vehicle ignition. Confirm Hub and cameras power on successfully.
 - Hub LED is red during boot and then solid green.
 - Camera LEDs should be blinking green on boot and then solid green.
3. Start recording with the Dual-View camera by pressing the primary button. Confirm the primary LED transitions to blinking red. Stop recording. Confirm the primary LED transitions back to solid green.
4. Start recording with the Interior Camera by pressing the secondary button. Confirm the secondary LEDs transition to blinking red. Stop recording. Confirm the secondary LED transitions back to solid green.
5. One at a time, trigger each wired signal input.
 - Trigger each input for one second before disabling the trigger. Confirm cameras activate. Stop the recording and wait 30 seconds before testing the next input.
 - Confirm cameras activate. Stop recording before testing the next input.
6. Axon Signal Vehicle testing. If not completed earlier, See test steps in The Axon Signal Vehicle manual

Fleet Dashboard Installation, Registration and Updates

Axon Fleet 3 must be registered to download settings and complete software testing.

Connect MDC to the Router using the prepared Ethernet cable. Power on the MDC

Follow the MDC Configuration and Installing the Fleet Dashboard steps in Axon Fleet 3 Network, Router, and MDC Configuration Guide.

Software Testing

Perform final check to ensure that the system is fully operational.

1. Open Fleet Dashboard on the MDC and sign in to your Axon Evidence account.
2. Use the Dashboard to confirm the cameras are connected and online.
 - Navigate to the Devices page by tapping the camera icon.
 - There should be two panels representing each Dual-View camera's two sensors and one panel representing the Interior camera's sensor.
 - Each panel contains the camera view from the sensor. Confirm that these sensors are streaming video to their cards.
3. Check video recording and upload.
 - Remain on the Devices page.
 - One at a time, confirm the cameras are functional. For each panel, tap **Record** and after 5 seconds tap **Stop**. Stop recording on each camera before moving to the next.
 - Navigate to the Videos page by tapping the video media icon under the camera icon on the right-hand navigation bar.
 - Edit the ID, Title, & Category of the videos recorded in the previous test. Add the tag "InstallTest" and tap **Done**.
 - At the end of the testing, confirm the videos were uploaded from the Dashboard.
4. Confirm vehicle setup.
 - Navigate to the Settings page by tapping the Gear icon.
 - In the System General information section, confirm the system is registered to the correct agency URL and given the correct vehicle name. Confirm the Firmware and Dashboard versions are up to date.

Note, the Hub retrieves it's assigned vehicle from Axon Evidence on boot. If the vehicle name has not been retrieved, reboot the Hub.

 - In the Location section confirm the location system is reporting a latitude, longitude, and speed.
5. Test Body-Worn Camera (BWC) integration.

You will need an Axon BWC registered to the same agency as the Fleet 3 system.

- On the Settings page, tap **Add Body Camera** and follow the prompts to pair the BWC.
- Navigate to the Devices page by tapping the camera icon.
- Locate the BWC panel and tap the full screen icon in the right-hand corner of the panel. This initiates a live view of the BWC camera. Confirm the camera is streaming on the Dashboard. End the camera view.
- Tap **Record** in the BWC panel to initiate a recording. Tap **Stop** a few seconds later to end the recording.
- Navigate to the Videos page by tapping the video media icon. Confirm the BWC recording is present in one of the incidents.

Test the Priority Upload functionality for at least one vehicle in the installation group. Add metadata to the BWC recording and tap the Prioritize Upload toggle. The BWC must stay near the vehicle and the Fleet 3 system must not power down during the test. Confirm the evidence completes uploading to Axon Evidence.

6. Check Signal Configuration.

- Activate trigger inputs and check status. Trigger each configured input (lightbar, door, etc.). Check the camera LEDs or Dashboard to confirm the correct cameras activate. End the recording before moving to the next trigger. Note that you must wait 30 seconds between each trigger.

If an Axon Signal Vehicle (ASV) device is installed in the vehicle, verify nearby BWCs begin recording when the appropriate trigger is activated.

- If any inputs are configured to log status and not activate cameras, continue with a Log Status input check: start a recording, trip each status trigger and end the recording. Upload the recording to Axon Evidence. Sign into Axon Evidence and go the Hub device page for the current vehicle. Open the device audit trail. Confirm each configured trigger input has an entry with the structure: *{input label}, 12V input {input pin}, active*.

7. If enabled at the agency, check the Automated License Plate Reader (ALPR) functionality.

- On the Dashboard, go to the ALPR page by tapping the ALPR icon. Navigate to the All Reads section.
- Aim the Dual-View camera at a vehicle's license plate and observe that the license plate read displays in Fleet Dashboard.