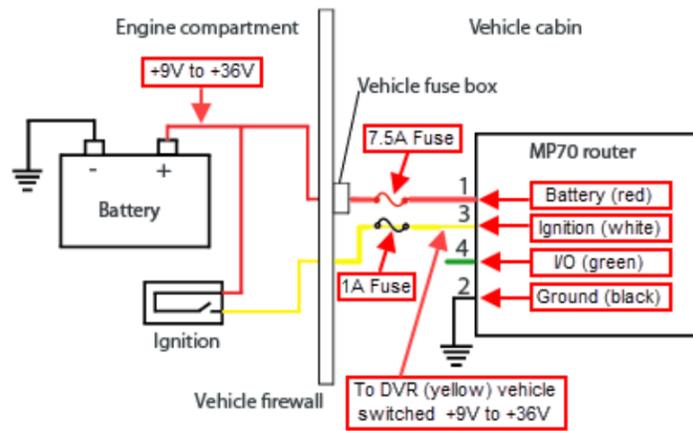


Step 4: Connect Power

NOTE: The MP70 is configured with an internal timer to handle power synching, and does not require a separate control signal from the DVR.



1. Connect the red wire (pin 1) from the MP70 power harness to the 7.5A fuse holder.
 - i. Insert the fuse, and connect the fuse holder to battery positive.
2. Connect the white wire (pin 3) to the 1A fuse holder.
3. Connect the black wire (pin 2) to battery negative.
4. Connect the power harness to the MP70.

NOTE: Connect to one of the recorder Ethernet ports from the MP70's Ethernet port 1, based on the recorder type, as shown in the table on the right.

Service & Support

If your Smart-Reach All-in-one is to be returned for service, please contact the Safe Fleet technical support team, provide the part and/or serial # of your unit, and ask for a **Return Merchandise Authorization (RMA)** number. An **RMA #** allows the support team to better track your product when it comes in for service. Please show the RMA # on the **outside** of the package.

ANY PRODUCT SENT WITHOUT AN RMA # MAY BE REFUSED!

Documentation and Warranty

Information is subject to change without notice. For the latest product details, please visit the Safe Fleet Community. Additional copies of this guide along with other documentation and product warranty can also be found on the Safe Fleet Community.

Safe Fleet Community Web site: <https://community.safefleet.net>

Technical Support

Phone: 1.844.899.7366 Email: PTsupport@safefleet.net

Step 5: Connect Device Cables

1. Connect the Ethernet patch cable (085-0060) from the MP70's Ethernet port 1 to an Ethernet port* on the DVR.

* see "Recorders - Rear Ethernet Ports", below.
2. Plug the male DB9 connector end of the Serial Adapter Harness (060-1101) into the MP70's RS-232 serial port.
 - i. Use the GPS extension cable (GPS4-CBL) to connect the 2x2 Microfit on the Serial Adapter Harness to the GPS port on the DVR.

Step 6: Power on and Test

When power is supplied, the MP70 powers up automatically, as indicated by flashing LEDs (for more information, see "LED Status Indicators", below). If it does not turn on, ensure that the power connector is plugged in and supplying voltage greater than 9V.

The MP70 is provisioned and pre-configured by the Operations and Network Engineering teams. Specific network testing and troubleshooting are beyond the scope of this document - contact Technical Support if you need more information.

Recorders - Rear Ethernet Ports

Recorders	Rear Ethernet Ports
NH16, NH16K, TH8, TH6	MODEM
DH4, DH4C, TH4C	POE-LAN
TH4	WIFI
HX/NX	MODEM
DXHD	LAN2 or LAN3

The Smart-Reach All-in-one Router (a.k.a. MP70) kit provides Wi-Fi, cellular, and GPS data to the Safe Fleet® Cloud Applications Suite.

NOTE: Device Provisioning and Setup

Once the router is installed, you need to provision the device to enable its features:

- To provision the router for AVL (GPS) tracking and video streaming, follow the procedures in the Smart-Reach All-in-one installation tutorial available at: <https://community.safefleet.net/installer/>
- If you will use this device with a video recorder for AVL GPS tracking, the **Integrated VML Advanced Network** setting must be enabled on the recorder (for details, refer to the recorder's installation and configuration documentation or contact the Safe Fleet technical support team).
- If you will use this device with a video recorder for Wi-Fi download, please contact the Safe Fleet technical support team for further provisioning instructions.

IMPORTANT: Professional Installation

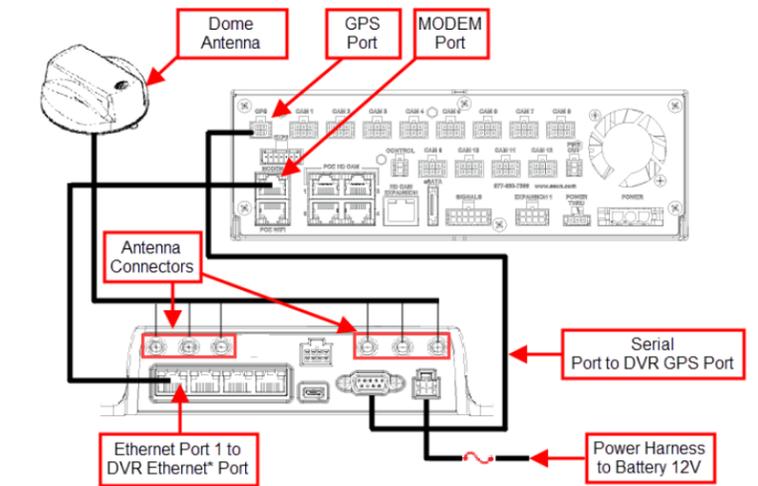
The procedures in this Guide must be performed by a professional installer, with approval from the Safe Fleet technical support team.

Kit Contents*

- Sierra Wireless® AirLink® MP70 (032-1058, 032-1028, or 032-1031)
 - Includes mounting screws, 12-ft. power harness (4-wire), 7.5A fuse/holder, and butt splice connector
- 6-in-1 Dome Antenna (part # dependent on kit)
 - Includes required cell/GPS/Wi-Fi antenna cables
- Ethernet (CAT5) patch cable - 20-ft length (085-0060)
- Serial adapter harness (060-1101)
- GPS Extension cable - 20-ft length (GPS4-CBL)

* Actual contents may vary, depending on the kit type purchased.

General Installation Diagram



* see "DVRs - Rear Ethernet Ports" on the last page

Installation Requirements

Router

Location Avoid exposure to water drips and installation locations with heat, moisture or excessive dust. Choose a secure location to prevent tampering with the device or connections.

Harnesses Route wiring and cables away from sharp edges that might damage insulation. Avoid sharp bends in cables.

Clearance Provide sufficient clearance for easy access to connectors. Ensure status lights are visible, and allow for adequate airflow.

Antenna

Location Install on top of the bus, in a location that has the best visibility to the access point antenna - typically in the middle of the roof or front of the bus.

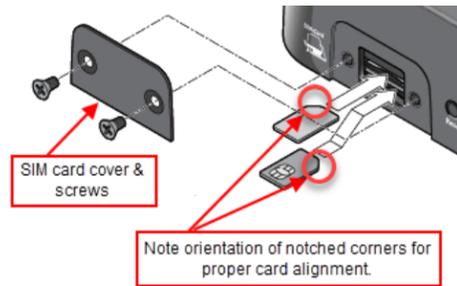
Harness Avoid bending antenna cables. Excess cable should be coiled and tied off. NEVER "dogbone" antenna cable, as this can damage the cable and inhibit RF transmission.



2002/96/EC (WEEE directive): This product cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return the product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points, for more information, see www.recyclethis.info.
2006/66/EC (battery directive): This product does not contain batteries.

Step 1: Insert the SIM Card

1. Use a #1 Phillips screwdriver to remove the SIM card cover.
2. Orient the card(s) as shown. If using only one SIM card, insert it in the upper SIM slot.
3. Gently slide the SIM cards into the slots until they click into place.
4. Replace the SIM card cover.

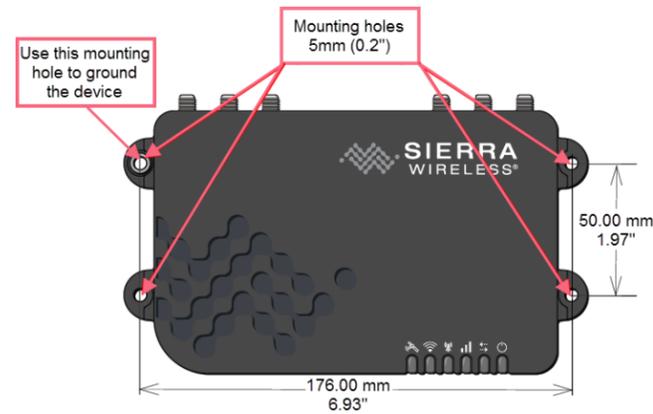


Step 2: Mount the MP70 Chassis

Find a mounting location and choose an orientation for the router.

The MP70 has 4 mounting holes, as shown in the following diagram. Use the mounting screws from the Installation Kit to secure it in place.

If possible, select a metal mounting surface that is chassis-grounded. If the router is not mounted to a grounded metallic surface, connect one end of a short 18AWG to the unpainted mounting hole, and connect the other end to the vehicle chassis.



Step 3: Install the Antenna*

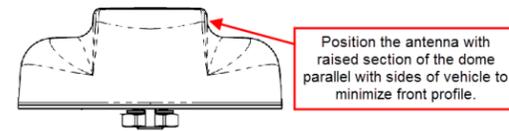
* These instructions may vary, based on the antenna used.

Choose a flat mounting location on the vehicle roof, with a maximum panel thickness of 7mm (0.3").

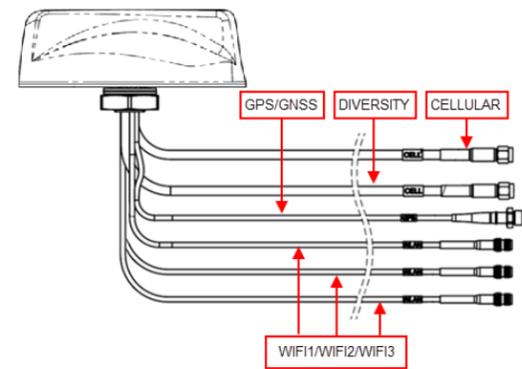
1. Drill a pilot hole, then increase the hole diameter to 19mm (3/4").
2. Clean the area around the hole, removing any burrs.
3. Remove the protective backing from the underside of the antenna and feed the cables through the panel.

Step 3: Install the Antenna (continued)

4. Position the antenna over the hole, as shown:



5. Stick the antenna to the panel by applying firm downward pressure.
6. Assemble the nut and washer from the underside, and tighten.
7. If any area around the antenna base is not fully compressed against the roof, seal completely with silicone.
8. Connect each labeled lead from the antenna pigtail to the corresponding extension cable, as shown:



IMPORTANT: We recommend heat-shrinking connections between the pigtail and extension cables.

9. Run the extension cables to the MP70 router and attach to the corresponding antenna connectors.

WARNING: Do not "dogbone" antenna cables

LED Status Indicators

MP70 Router - Ethernet Connector

The Ethernet connectors have two LEDs indicating speed and activity.

When looking into the connector:

- **The right LED indicates link status:**
Solid – Link
Blinking Amber – Activity
Off – No link
- **The left LED indicates the Ethernet connection speed:**
Solid Orange – 1000 Mbps (Gigabit)
Off – 10/100 Mbps

LED Status Indicators (continued)

MP70 Router - Front Panel

LED	State	Description
Power	Off	No power or input voltage ≥ 36 VDC or ≤ 7 VDC.
	Solid Green	Power is present.
	Solid Red	Standby mode.
	Flashing Green	When you press the reset button for less than 5 seconds, flashing green indicates when to release the reset button to reboot the router.
	Flashing Red	When you press the reset button for 5–20 seconds, flashing red indicates when to release the reset button to reset the router to the factory default settings.
Signal	Flashing Amber	When you press the reset button for more than 20 seconds, flashing amber indicates when to release the reset button to enter Recovery mode (for more information, contact Technical Support).
	Solid Green	Good Signal (equivalent to 3–5 bars).
	Solid Amber	Fair Signal (equivalent to 2 bars).
	Flashing Amber	Poor Signal (equivalent to 1 bar). If possible, move the router to a location with a better signal.
	Flashing Red	Inadequate Signal (equivalent to 0 bars). Move the router to a location with a better signal.
Network	Flashing Red	Inadequate Signal (equivalent to 0 bars). Move the router to a location with a better signal.
	Solid Green	Connected to an LTE network.
	Solid Amber	Connected to a 3G or 2G network.
	Flashing Green	Connecting to a network.
	Flashing Red	No network available.
Activity	Flashing Red/Amber	Network Operator Switching is enabled, but the router is unable to locate the required firmware. For more information, contact Technical Support.
	Flashing Green	Traffic is being transmitted or received over the WAN interface.
	Flashing Red	Traffic is being transmitted or received over the serial port. This behavior only appears if the MP70 is configured to display it. For more information, contact Technical Support.
	Flashing Amber	Traffic is being transmitted or received over both the WAN interface and the serial port. This behavior only appears if the MP70 is configured to display it. For more information, contact Technical Support.
	Flashing Green	Traffic is being transmitted or received over the WAN interface.
GNSS	Green	The router has a GNSS fix.
	Flashing	No GNSS fix.
	Off	GNSS is disabled. Contact Technical Support for more information.
Wi-Fi	Off	Wi-Fi is disabled. Contact Technical Support for more information.
	Solid Green	Wi-Fi is enabled.
	Solid Amber	Wi-Fi is enabled, and the router is connected to an Access Point (i.e. Wi-Fi is being used as the WAN connection).
	Flashing (Green or Amber)	Wi-Fi traffic is being sent or received.
ALL	Green LED chase	Radio module reconfiguration/firmware update or Network Operator Switching is in progress. Contact Technical Support for more information.
	Amber LED chase	Software update is in progress. Contact Technical Support for more information.

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