



Installation Guide



Fleet View Field Hub™

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FCC Statement:

This device complies with Part 15 of FCC rules. Operation of this device is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment generates, uses and may radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Fleet View Field Hub™ Kit Contents:



Quad Band Cellular &
GPS Patch Antenna
(P/N 063-0173-361)



Field Hub
(P/N 063-0173-xxx)*



Antenna Mounting
Plate
(P/N 063-0172-971)

* Part numbers based on region or wireless service provider. Contact a local Slingshot dealer for more information.

Overview

This document is designed to help you install the Field Hub and connect compatible devices.

The Field Hub is designed to provide the GPS location of itself via cellular or wireless service providers.

Note: A cellular or wireless service provider and a Slingshot™ subscription are required to utilize Fleet View through the Field Hub.

Devices with web or internet capability may connect to the internet via the ethernet connection on the Field Hub.

Note: A user account will be necessary to access the Slingshot web site. Contact the Raven Applied Technology Division Product Support Group to set up a user account.

<http://www.ravenslingshot.com>

Updates

Any updates for the Raven Field Hub will be automatically transferred via an active wireless connection.

Installation

Best Installation Practices

- The Field Hub is not weatherproof. Mount the Field Hub inside of the vehicle's cab.
- Mount the Field Hub in a location where it will not be kicked or jarred during normal equipment operation and ensure the status LEDs are viewable.
- Do not route cables through potential crimp points such as vehicle doors or windows.
- Verify cable length before mounting or placing any hardware.
- Mount the magnetic cellular/GPS patch antenna as high as possible on the vehicle.
- An antenna mounting plate is supplied and may be used if a suitable magnetic mounting location is not available. Be sure to thoroughly clean and dry the mounting location before applying the adhesive backing.
- The cellular/GPS patch antenna should be mounted a minimum of 2 feet away from other antennas and objects that could block the antenna's view of the sky.
- Do not connect the Field Hub power leads directly to the vehicle battery.

Note: Refer to the **System Diagrams** on page 6 for a Field Hub connection diagram.

To install the Field Hub:

1. Mount the Field Hub inside of the vehicle cab using screws or similar hardware.
2. Mount the cellular/GPS antenna on a suitable magnetic surface. If a suitable magnetic location is not available on the vehicle or implement, use the supplied mounting plate to mount the antenna.



3. Connect the cable labeled GPS to the GPS port on the back of the Field Hub, and connect the cable labeled RF to the Antenna port. Do not connect anything to the Diversity port.
4. Connect the lead wires on the supplied Field Hub power cable:

Warning: To prevent damage to the Field Hub, do not connect the 4-pin power connector to the Field Hub until the power and ground leads are installed per the following instructions.

Do not connect the red lead wire directly to the machine battery.

- Connect the black lead to a clean ground (i.e. vehicle junction box).
- Connect the red lead to a clean, constant +12 V DC power source (i.e. unswitched at a junction box).
- Connect the white lead to the vehicle ignition switch.
- Cut or cover the green lead wire. This lead is not used.

Note: If the power cable is installed as described above, the vehicle ignition switch will control the Field Hub power-up and shutdown. When the ignition switch is turned off, the Field Hub will perform a shutdown sequence before powering off completely.

5. Route the 4-pin connector on the supplied power cable into the vehicle cab and connect to the 'Power' plug on the back of the Field Hub.

Warning: Do not route through possible crimp points such as vehicle windows or doors.

6. Connect an ethernet cable to the 'Ethernet' port on the back of the Field Hub and route to a web compatible device.

Warning: Do not connect anything to the RS-232 serial port. Data overages may occur.

Installation Checklist

Once the installation of the Field Hub is complete, verify that the Field Hub is working properly by checking the following items:

Note: The Field Hub may take up to 3 minutes to start up. Allow the Field Hub sufficient time to power up before checking these items.

- Signal LED is on (solid light) or flashing.

- WAN LED is on (solid light) or flashing.
- GPS LED is on (solid light).
- Field Hub powers on/off with the ignition.

Note: The Field Hub goes through a power down sequence when the ignition key is switched off. It is normal for the Power LED to remain on for approximately 10 seconds after the ignition switch is turned off.

Operation

LED Status Indicators



- **Power** - The power indicator is lit when the Field Hub is powered on.

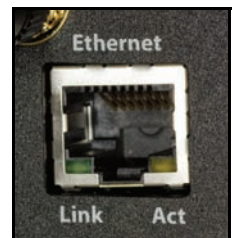
Note: The Field Hub goes through a power down sequence when the ignition key is switched off. It is normal for the Power LED to remain on for approximately 10 seconds after the ignition switch is turned off.

- **Signal** - The Signal LED displays the current cellular signal strength. This indicator will be off for weak or no signal (less than -100 dBm), flashes faster as signal strength increases, and is on (solid) for excellent signal.
- **WAN** - The WAN LED displays the status of wireless communications. This LED will be on (solid) when a link is established but no current data activity. A flashing light indicates data is being transmitted/received over the wireless network.
- **232** - This indicator displays activity with a serial device. To avoid data overages, devices should not be connected to this port.
- **GPS** - The GPS LED indicates the status of the GPS coming into the Field Hub via the 'GPS' connection on the back of the Field Hub (not your GPS receiver). This indicator is on (solid) when a position fix is available, off when no fix is available.
- **Reset - Do not** press the Reset button unless instructed by Raven support personnel.

Ethernet LED Status

The LED's next to the Ethernet plug on the back of the Field Hub will display as follows:

- **Link** - The Link LED is illuminated when a link is established with an ethernet device.
- **Activity (Act)** - The Activity LED flashes when data is being transmitted/received by the ethernet device.



Operating Conditions

Store and operate the Field Hub according to the following conditions:

- Operating Temperatures: -40° to 185° [-40° to +85° C]
- Humidity: 95% (non-condensing)
- Shock: MIL-STD-810F
- Vibration: MIL-STD-810F
- Automotive: SAE J1455

If conditions are expected to exceed these specifications, remove the Field Hub from the vehicle and store in a dry, temperature controlled environment.

Troubleshooting

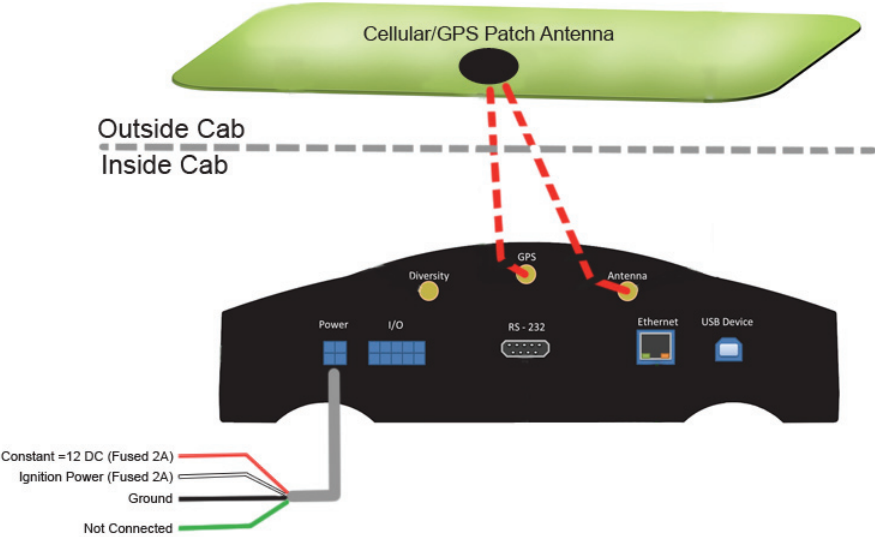
The following information addresses some potential issues you may encounter with the Field Hub:

Issue	Possible Cause	Solution
Field Hub does not power up (power indicator not lit)	<ul style="list-style-type: none">• Power cable not connected• Power cable is damaged or broken• Fuse(s) broken	<ul style="list-style-type: none">• Verify 4-pin power cable is connected to Field Hub.• Check cable for crimping, fraying or breakage.• Check fuses. Replace as needed.
No signal or GPS indicator status or no data transferring	<ul style="list-style-type: none">• Cellular/GPS antenna cable not connected• Antenna cable damaged or broken• Wrong antenna band (i.e. radio) connected to Field Hub• No cellular signal at current location	<ul style="list-style-type: none">• Verify the cellular/GPS antenna cable is connected correctly to the 'Antenna' and 'GPS' ports on the back of the Field Hub.• Check antenna cables for crimping, fraying or breakage.• Remove the antenna currently connected to the Field Hub and replace with the supplied antenna.• Check with your service provider for area coverage. Coverage may vary depending upon usage and peak hours.

System Diagrams

Additional diagrams are available on the Raven Precision Solutions website
<http://www.ravenprecision.com>

FIGURE 1. Field Hub™ Connections Example



R A V E N

RAVEN INDUSTRIES

Limited Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service.

How Long is the Coverage Period?

Raven Applied Technology Division products are covered by this warranty for 36 months after the date of purchase. This warranty coverage applies only to the original owner and is nontransferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If your dealer agrees with the warranty claim, the dealer will send the part and proof of purchase to their distributor or to Raven Industries for final approval.

What Will Raven Industries Do?

Upon confirmation of the warranty claim, Raven Industries will, at our discretion, repair or replace the defective part and pay for return freight.

What is not Covered by this Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit or other special damages. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.

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(P/N 016-0171-502 Rev B 05/11 E17604)



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