



Hughes 9250 Land Mobile Satellite Terminal *Quick Install Guide*

The Hughes 9250 Terminal provides mobile communications from a vehicle over the Inmarsat BGAN satellite network.

This guide is intended for users experienced with the Hughes 9201 terminal who do not need complete instructions to install a terminal. Others should use the user guides referenced below, available on CD-ROM in the terminal kit.

Procedure summary

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Related documentation

- Hughes 9250 Land Mobile Satellite Modem User Guide 3500153-0001
- Hughes 9201 Land Mobile Satellite Modem User Guide 3500152-0001

Tools required for installation

- 8mm or 5/16" socket or open wrench
- 3/16" allen wrench
- Dykes or cutters

Safety considerations

Safety alerts

CAUTION

The cables supplied with the antenna kit are made to specific lengths. Do not cut cables to a shorter length or add length to the cable run.

Use only the supplied cables, not third-party cables. Use of third party cables will invalidate the warranty of the antenna and may cause system malfunctions.

CAUTION

If the magnetic mounts do not make full contact with the vehicle's roof, the antenna may break loose.

CAUTION



This device emits radio frequency energy when in transmit mode. To avoid injury, keep at least 2 meters away from the antenna when the system is operational.

Product warning label

This safety alert label is affixed to the antenna radome:



Step A: Unpacking the installation kit

Unpack the Hughes 9250 Kit (3500129-0010) and make sure you have the three sub kits and the following parts:

- Parts included in the Tracking Antenna Kit (3500128-0001)
 - BGAN Land Mobile Tracking Antenna
 - Auxiliary Control Unit (ACU)
 - Four-foot RF cable for the connection between terminal and ACU (RG223 with SMA connectors)
 - Eighteen-foot RF cable for the connection between ACU and antenna (RG223 with TNC connectors)
 - Three magnetic feet with washers and nuts

- Hughes 9250 Installation Kit (3500059-0010)
 - Hughes 9250 terminal (3500058-0010)
 - DC/DC power supply (9501495-0001)
 - Serial data cable (3500125-0001)
 - Two Ethernet/ISDN cables for user terminal connections (9501246-0002)
 - Battery (3500065-0001)
 - CD-ROM with LaunchPad MMI software (3500066-0001)
 - DC power extension cable with filter (3500151-0001)
- Vehicular Install Kit (3500158-0001)
 - Vehicular install bracket (3500156-0001)
 - Accessory mounting plate (3500155-0001)
 - Mounting hardware

Step B: Installing the magnetic mount feet

Assemble the three magnetic feet and secure them to the antenna using an 8 mm nut and wrench as shown here.



Step C: Positioning and mounting the antenna

Mount the antenna on the roof of the vehicle and away from other installed devices that may obstruct the line of sight between the antenna and the satellite. The rubber pads of the magnetic mounts must make full contact with the vehicle's metal roof.

Orient the antenna connectors in the direction of the cable run to the terminal.



Step D: Positioning and mounting the terminal

Position the terminal inside the passenger compartment or storage area of the vehicle. Ensure the terminal and ACU are within reach of a 12 Vdc outlet.

Use the vehicle installation bracket as shown here to attach the terminal to the vehicle.



Step E: Connecting the cables



Note: Do not connect power to the terminal until Step H.

The cables connecting components of the terminal can be connected in any order. Follow the steps below and the two reference figures to connect the components.





- 1. Connect the 4-foot RF cable between the Hughes 9250 and the ACU. Securely fasten the cable to the 9250 with the vehicle mounting kit. The connection to the ACU is labeled **TERMINAL RF**.
- 2. Connect the 18-foot RF cable between the ACU and the Tracking Antenna. Ensure any slack in the cable is within the vehicle. The connection to the ACU is marked **ANTENNA**.
- 3. Connect the serial control cable between the 9250 serial port and the ACU labeled COM RS232.
- 4. Connect the Ethernet cable between the 9250 Ethernet port and the Terminal Equipment (such as a laptop computer).
- 5. Insert the power supply plug to the ACU.
- 6. Insert the 9250 power supply from the ACU.



Note: The Hughes 9250 serial port uses a USB Type A connector but it is **not** a USB port.

Step F: Installing the terminal's SIM card and battery

- 1. Position the terminal so the battery door is facing you.
- 2. Open the battery door.
- 3. If you have already installed the battery, release and remove it.



4. Push the button on the left side of the USIM/SIM card holder to release the holder from its slot.





G-29096 C



6. With the card in place, orient the holder with the card's gold contacts facing down. Insert the holder back into the slot in the terminal.



7. Insert the battery into its slot in the terminal and lock it in place. Close and lock the battery door.



Step G: Mounting parts on the accessory mounting plate

Use the parts in the vehicular install kit (stand off, screws, lock washers, and tie wraps) to mount the parts to the accessory mounting plate.



Accessory plate

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Step H: Connecting power

Insert the power supply plug into the vehicle 12 Vdc accessory outlet. This can be done with or without initial power to the 12 Vdc outlet supply



Note: You can operate the terminal without a battery, but Hughes recommends operation with a battery installed for a graceful power down if power is disconnected.

The terminal cannot operate solely on battery power. The antenna requires power from the vehicular power source.

The terminal can be operated while the battery is charging.

Your vehicle's battery may be drained if the terminal is used without running the engine.

Step I: Connecting to the Internet

After power is applied, the Hughes 9250 terminal and antenna begin their startup sequence. The tracking antenna begins its search for the BGAN satellite. The antenna motors may be heard during this time.



Note: The antenna must have line of sight to the BGAN satellite to lock onto the satellite signal.

Refer to the *Hughes 9250 Terminal User Guide* included on the CD to learn more about how to use the Hughes 9250 Land Mobile Satellite Terminal.

Refer to the *Hughes 9201 Terminal User Guide* for instructions on how to connect a PC or Mac to the terminal. However, note the following differences/limitations between the 9201 and 9250 for internet connection and performance:

- The antenna pointing procedure is bypassed. The Hughes 9250 terminal automatically registers with the network after the tracking antenna acquires the satellite signal.
- The 9250 operates as a class-2 modem, that is, streaming class connection is limited to a maximum 128 kbps data rate.
- Only "best effort" performance can be expected under moving conditions due to the higher probability of obstruction of satellite signal and limitations of the current BGAN system.
- "Best effort" performance can also be expected with look angles lower than 20 degrees.
- Signal outages of more than 3 seconds cause circuit switched calls to drop and packet switched sessions to pause. User intervention may be required to reactivate connections for longer outage durations.
- Beam-to-beam handover is not supported by the network until BGAN-X is completed.
- The 9250 is fully BGAN-X Class 11 compatible with a software upgrade.

Customer support

Contact Hughes at (858) 452-4658

Coverage Map

The Hughes 9250 performs best in areas where the antenna elevation angle is 20 degrees or higher. Lower elevation angles increase the probability of signal outages caused by trees, buildings and hilly terrain and may severely impact the usability on the move. See the figure below for a rough estimate of elevation in your location.



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