

DRAFT
SPIDER-4 USER'S MANUAL

Revised 28 Apr 2000

INTRODUCTION

About the Spider 4

The Spider 4 is a 4-watt modem with optional Global Positioning Satellite (GPS) capabilities. You can remotely access mission critical files and applications on your network, designed for devices operating Windows 95, 98, NT or 2000. It provides wide area network connectivity over wireless IP services (CDPD). The Spider 4 is illustrated in Figure 1 (Front View) and Figure 2 (Back View).

Figure 1. Front View

Figure 2. Back View

About This Manual

This manual describes how to install and use the Spider 4. To take full advantage of your Spider 4, please read all the instructions in this manual.

Contents of This Package

Your Spider 4 package from Nextcell includes one of the following items:

- Spider 4
- Mounting screws (4)
- One 20-foot power harness
- One 22-foot serial cable
- One user's manual
- One Spider Installation Guide (CD-ROM)

GPS Option CDP-0114-04-002

- GPS receiver embedded in Spider
- One 22-foot serial cable
- One of the GPS antenna option

Available Options

The following optional antennas are available for purchase through your authorized Nextcell agent:

- Part #ANT-9701-05-001
Cellular roof/trunk mount antenna with thru-hole mounting kit and installation instructions
- Part #ANT-9704-05-001
GPS Antenna with thru-hole mounting kit and installation instructions
- Part #ANT-9705-05-001
GPS Antenna magnetic mounting kit with installation instructions

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System Requirements

- Serial port – One serial port is required for Spider-4. A second serial port is required for GPS option.
- Spider Modem Manager
- Refer to installation menu for Spider Installation Guide.

Upgrade Information

If your current system does not meet these requirements, please contact

Nextcell
661 E. 18th Street
Plano, Texas 75074 USA

Or, contact us at our Website: <http://www.nextcell.com>

INSTALLATION

Installing the Spider 4

To install the Spider 4 into a vehicle, follow these steps:

1. Choose a convenient location in the vehicle, either in the interior or the trunk.
2. Place the Spider 4 in position and mark the location of the mounting holes.
3. Using your marks as a guide, drill the holes using a 1/16-inch drill bit.
4. Align the Spider 4 with the holes that you drilled and secure it using the mounting screws provided.

Installing Cables

Install cables in the following manner:

1. Turn off the computer, Spider 4 and vehicle when installing the Spider 4, antennas or cables.
2. Do not create tight loops, sharp bends or crimps in the cables.
3. Use proper termination on all power cables.
4. All cables should be attached to the vehicle and equipment in such a way as to reduce stress or wear caused by vibrations generated by moving vehicles.

Terminating Power Cables

All cables should be attached to the vehicle and equipment in such a way as to reduce stress or wear caused by vibrations generated by moving vehicles.

Connecting the Power Supply

CAUTION

Connect to an auxiliary power circuit that becomes active **ONLY** when the ignition switch is turned on.

It is extremely important that you connect to an auxiliary power circuit that becomes active **ONLY** when the ignition switch is turned ON (e.g., the car radio). There are numerous after-

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market products available that provide automatic on/off switching, low voltage disconnects, reverse polarity protection and high voltage protection for your Spider 4. Consult your automobile manufacturer, automotive parts or consumer electronic stores for more information on these products.

Using the Power Harness provided, connect the Spider 4 to your vehicle's power supply exactly as follows:

- Connect the black wire to chassis ground.
- Connect the white wire to auxiliary power.
- Connect the red wire directly to the 12 volt supply of the battery. The connection must be capable of supplying up to 4 amps at 12 volts.
- Connect the Power Harness to the Spider 4 connector labeled Power.

If you have installed the Spider 4 properly, the LED on the front of the Spider 4 illuminates only when you turn the ignition ON.

Installing the Serial Modem Cable

Attach one end of the Serial cable to the computer's COM port and the other to the Spider 4's Serial Modem plug. The Serial Modem plug on the Spider 4 is illustrated in Figure 3.

Figure 3. Serial Modem plug

ANTENNA INSTALLATION

Your Spider 4 package may not include an antenna. You have the flexibility to purchase an antenna from Nextcell or choose an antenna that has the same specifications and construction as the antenna provided by Nextcell.

Select an antenna with the following features:

- The antenna is specified to operate in the cellular band (824 – 894 MHz) with 3 dBd gain.
- The antenna has a 50 ohm cable terminated with a TNC style connector.

Locate and install the antenna on the vehicle according to the manufacturer's instructions.

CAUTION

In order to comply with FCC RF Maximum Permissible Exposure Limits (MPEL), the following configuration must be followed.

1. The antenna must be installed a minimum of 0.5 meters (20 inches) from car occupants and pedestrians.
2. The rf cable between the Spider 4 and the antenna must have at least 1 dB of insertion loss.
3. If an antenna other than the one provided by Nextcell is used, the antenna used must have the same electrical specifications and physical construction as the antenna provided by Nextcell.

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Compliance with FCC RF exposure limits was evaluated with the above configuration. Other configurations that have not been tested may not comply with FCC RF exposure limits and should be avoided.

CAUTION

Do not attempt to operate the Spider 4 without an antenna connected. Severe damage to the Spider 4 and/or computer may result.

Installing the Antenna

Manufacturer's instructions for installing the Spider 4 Antenna are included with the antenna kit (Part #ANT-9701-05-001). Follow those directions very carefully in order to avoid damaging the Spider 4 and/or computer.

The antenna location area, based on the RF separation distance, is illustrated in Figure 4.

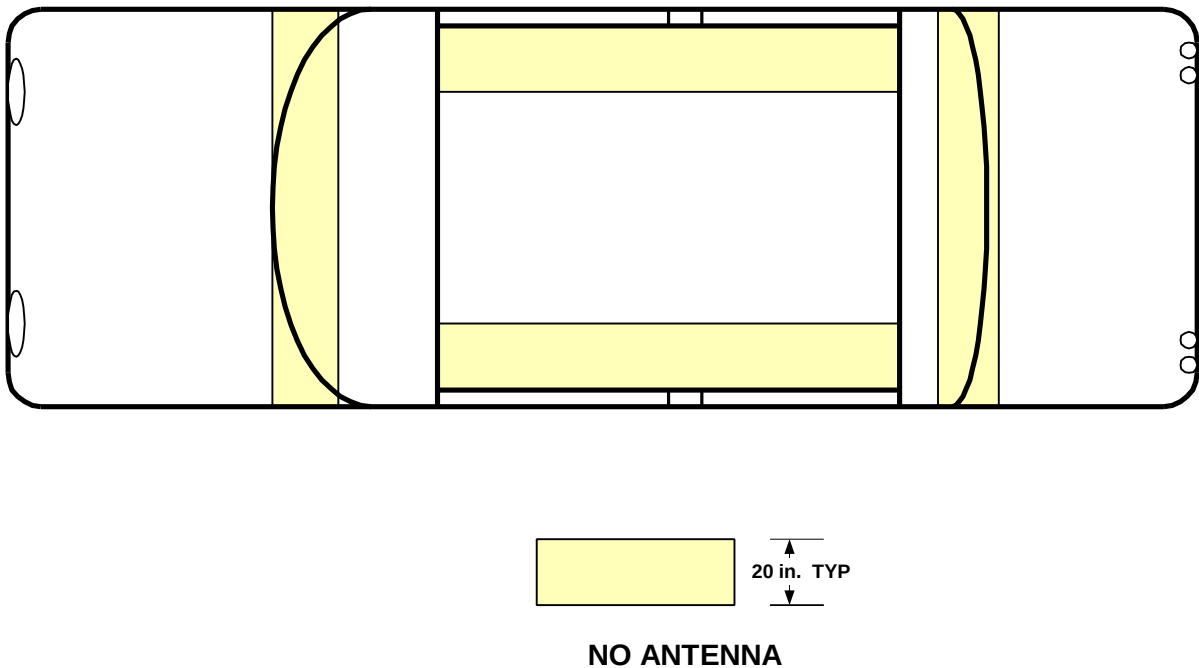


Figure 4. Typical automobile (vehicle) antenna mounting areas.

The Antenna terminal on the Spider 4 is illustrated in Figure 5 below.

Figure 5. Antenna Terminal on the Spider 4

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GETTING STARTED

Spider Modem Manager Main Window

Attach the TNC connector to the Spider 4 terminal labeled Antenna.

Refer to Spider Installation Guide and Spider Users Manual

Optional GPS Antenna and Receiver

SiRF binary format. The factory-default for the Spider 4 is the NMEA format. NMEA Format

To use this GPS Receiver in the NMEA format, purchase and install mapping software that adheres to the industry-standard NMEA format on your computer.

SiRF Format

To use this GPS Receiver in the SiRF binary format, download and install Axion Navigation, Inc.'s software, Conductor software, from their Website at <http://www.axiomnav.com>.

About the GPS Receiver

The Receiver powers the preamplifier in the GPS Antenna (Active-style) by applying a 5 volt DC bias to the center conductor of the RF input to the GPS Receiver. We strongly suggest you install the Antenna supplied by Nextcell, Inc.

If you must use a Passive-style GPS Antenna, please verify that it has a DC block installed in order to prevent shorting to the Ground.

Installing the GPS Antenna and Receiver

This Spider 4 comes with two GPS-specific cables:

- 5-meter coax cable — connects the GPS Antenna to the Spider 4
- Serial cable — connects the computer to the Spider 4

Turn OFF both the computer and the vehicle. There should be no power provided to the Spider 4 or the computer while you are installing the GPS Antenna.

Attach the SMA connector at the end of the GPS Antenna coax cable to the SMA connector located on the back of the Spider 4.

The GPS Antenna terminal on the Spider 4 is illustrated in Figure 6.

Figure 6. Spider 4 GPS Antenna

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Attach one end of the Serial cable to the computer's COM port and the other to the Spider 4's Serial GPS plug. The Serial GPS plug on the Spider 4 is illustrated in Figure 7.

Figure 7. Serial GPS plug

Apply power to the computer and the Spider 4

Activate the GPS Mapping software

Activate the GPS mapping software on your computer according to the software manufacturer's instructions.