



Cellular Digital Modem for Verizon

3G Cellular for Verizon Networks

sierra wireless AirLink Raven XT

USB • 🚓

POWERED BY ADEOS

Overview

The RavenXTV is a 3G cellular gateway for Verizon Wireless. It has an RS-232 serial interface for configuration and deployment with Campbell Scientific dataloggers and peripherals.

Reset

The RavenXTV is powered by Sierra Wireless's ALEOS® embedded operating system, which allows the RavenXTV to provide highly reliable connectivity and remote device management independent of the device to which it is connected. Embedded services include IP serial server and client, local PPP host, dynamic DNS client, performance monitoring, IPsec VPN, and GRE tunneling.

The RavenXTV provides Internet connectivity to any of our dataloggers located within range of a compatible cellular network. With Internet connectivity, a datalogger can transmit data to, and be remotely administered by, Campbell Scientific software. The RavenXTV can also enable many dataloggers to communicate using other Internet protocols, such as email and web (HTTP).

Benefits and Features

- > Internet connectivity using high-speed 3G cellular networking
- > Low power consumption without sacrificing device intelligence
- Compatible with all Campbell Scientific dataloggers
- Rugged design with wide operating temperature and Class I Division 2 compliance

Establishing Cellular Service

Campbell Scientific offers low-cost, Verizon Wireless M2M data service plans for 25 MB or 250 MB of data with one-month (credit card only), 12-month, or 24-month billing cycles. A RavenXTV ordered with the service plan will be shipped with a standard Campbell Scientific configuration and a public static IP address that allows connection to your data acquisition system using any PC, smart phone, or tablet.

^aEnd-of-Life Product: Campbell Scientific is retiring the RAVENXTV because Sierra Wireless is ending the production of this modem. They are also discontinuing their 3G network service on 31 December 2019. As a replacement modem, Campbell Scientific recommends the <u>RV50 4G LTE Cellular Gateway</u>. Refer to the RAVENXTV Discontinuation Notice (<u>https://s.campbellsci.com/documents/us/miscellaneous/RAVENXTV-discontinuation-notice.pdf</u>) for details.



Configuring the Modem

The RavenXTV is configured using Campbell Scientific's Device Configuration Utility. Device Configuration Utility simplifies configuration of the modem parameters.

Alternatively, a RavenXTV that has been successfully connected to the Internet can be configured using a web browser. Using your web browser, navigate to <u>http://your.devices.address:9191</u>.

System Components

Datalogger Connection

Dataloggers can be connected in a variety of ways to suit the needs of the application.

Datalogger	Modem-to-Datalogger Cable/Interface
CR300	• 18663 RS-232 null modem
CR310	• 18663 RS-232 null modem
CR6	• 31055 CPI/RS-232 cable • 17855 C-port- to-RS-232 cable • SC105 CS I/O-to-RS-232 adapter
CR800, CR850	 18663 RS-232 null modem 17855 C-port- to-RS-232 cable SC105 CS I/O-to-RS-232 adapter
CR1000, CR3000	 18663 RS-232 null modem 17855 C-port- to-RS-232 cable SC105 CS I/O-to-RS-232 adapter

Power Considerations

A power cable included with the modem connects to the datalogger's 12 V or switched 12 V terminal. Connection to the switched 12 V terminal allows the datalogger to switch power to the modem during scheduled transmission intervals, thereby

Specifications

- Technology: 3G EV-DO Rev. A with fallback to CDMA 1x Rev. 0, CDMA 1xRTT, CDMA IS-95
- Dual Band: 800 MHz Cellular, 1900 MHz PCS
- Transmit Frequency: 1850 to 1910 MHz and 824 to 849 MHz
- Transmit Power: 1.0 W for 1900 MHz; 0.8 W for 850 MHz
- Receiver Frequency: 1930 to 1990 MHz and 869 to 894 MHz
- CDMA Throughput: up to 80 kbps
- RS-232 Data Rates: 1200 bps to 115.2 kbps
- Serial Interface: RS-232, DB9-F
- > Serial Protocols: AT Commands, PPP, SLIP, UDP/IP, TCP/IP
-) RF Antenna Connector: 50 Ω SMA
- Input Current Range: 40 to 250 mA

Antennas

Campbell Scientific offers the following antennas. The non-whip antennas can be mounted to a tripod or tower using the CM230 or CM230XL adjustable angle mounting kit.

Antenna	Description	Connection
32256	4G/3G/2G, 0 dBd, dipole whip	 RavenXTV antenna connector (no cable required)
32262	4G/3G, 2 dBd omnidirectional	 21847 12 ft Cable COAXSMS-L Cable with user-specified length 31317 Surge Protector/COAXNTN-L cable
20679	800 MHz/0 dBd and 1.9 GHz/ 3 dBd omnidirectional	 21847 12 ft Cable COAXSMS-L Cable with user-specified length 31317 Surge Protector/COAXNTN-L cable
31128	8 dBd Yagi	 21847 12 ft Cable COAXSMS-L Cable with user-specified length 31317 Surge Protector/COAXNTN-L cable

conserving power. Alternatively, the modem can be powered directly from a battery or one of our charging regulators. For help with analyzing your system's power requirements, refer to our "Power Supply Overview" or "Power Supplies" application note.

- Input Voltage Range: 6 to 28 Vdc
- Status LEDs: Power, Network, Signal, Activity
- > Operating Temperature Range: -30° to +65°C
- > Operating Humidity Range: 5% to 95% RH, noncondensing
- Width: 7.6 cm (3 in)
- > Depth: 2.5 cm (1 in)
- **)** Length: 10 cm (4 in)
- **)** Weight: < 0.5 kg (< 1 lb)

Typical Current Drain at 12 Vdc

- Dormant (idle for 10 to 20 s): 50 mA
- > Transmit/Receive: 120 mA



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