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WHEN MEASUREMENTS MATTER

RAVENXTG
Cellular Digital Modem for AT&T

Overview

The Airlink RavenXTG is a GPRS modem configured for AT&T digital cellular networks[a]. This full-duplex modem transmits data to the local cellular tower using a GPRS network. The data is sent from the tower to the base station computer via the Internet.

Communicating via the Internet provides faster communication rates and eliminates dialing delays and long distance fees. The RavenXTG can be used with any of our dataloggers.

Benefits and Features

> Configured for the AT&T cellular network
> Compatible with all Campbell Scientific dataloggers (including the CR200(X) series)
> Eliminates the dialing delays and long distance fees that land-line phone modems experience
> Allows simultaneous communications with multiple dataloggers in the network

> Housed in a rugged aluminum case
> Wide operating temperature range
> Low power consumption
> Class I Div 2 certified for use in hazardous conditions
> RoHS compliant

Establishing Cellular Service

Call AT&T at 1-800-331-0500 and ask for an unrestricted data account for a GPRS modem. Either a static IP account or a dynamic IP account needs to be established. After the account has been set up, mobile termination needs to be configured onto the account to make the modem accessible through the Internet. This is done by adding an I2gold APN[b] or custom APN[c] to the account. A data account with an I2gold APN will have a Static IP address.

After establishing service, AT&T will provide a SIMM card for each modem. In some cases, the SIMM card can be picked up at the local AT&T store.

Software Required to Configure the RavenXTG

The following software is available, at no charge from:
www.campbellsci.com/ravenxtg-support

> AceManager software—activates the modem and configures the generic parameters of the modem.

> Campbell Scientific's Raven GPRS Template—used with Airlink AceManager software to configure the modem. The template sets up the Raven serial interface, which is specific to Campbell Scientific systems.

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[a] *Before purchasing the RavenXTG, verify that your site has GPRS coverage. A coverage map is available at:* www.wireless.att.com/coverageviewer/

[b] *At one time, feature code G821 was used instead of the I2gold APN. Feature code G821 has been discontinued, and all RavenXTGs need either an I2gold APN or custom APN.*

[c] *A custom APN may offer more efficient routing and better security for large cellular phone networks. It will take four to six weeks for AT&T to develop a custom APN and cost about $250.00.*

Ordering Information

Digital Cellular Modem

RAVENXTG   AirLink GPRS Cellular Digital Modem

Modem-to-Datalogger Cable and Interfaces (choose one)

18663   Null Modem Cable 9-Pin Male to Male connects the modem directly to the datalogger's RS-232 port. Only choice available for the CR200(X)-series dataloggers.

SC932A   CS I/O to 9-Pin RS-232 DCE Interface. Includes SC12 cable for connecting modem to CS I/O port. Recommended for mixed-array dataloggers when the RS-232 port is unavailable.

SC105   CS I/O to 9-Pin RS-232 DCE Synchronous Interface. Includes SC12 cable for connecting modem to CS I/O port. Recommended for PakBus® dataloggers when the RS-232 port is unavailable.

Temperature Ranges for SC105

-ST   -25° to +50°C

-XT   -55° to +85°C

Antennas (choose one)

21831   800 MHz, 0 dBd 1/2 Wave Whip Dipole Cellular Antenna with SMA connector that attaches directly to the RAVENXTG. It can transmit short distances.

18285   1 dBd, Omnidirectional Antenna that covers both the 800 MHz and 1.9 GHz bands. It includes a mounting bracket. Connection to the modem requires an antenna cable (see right column).

20679   800 MHz/0 dBd and 1.9 GHz/3 dBd Omnidirectional Antenna. It includes a mounting bracket. Connection to the modem requires an antenna cable (see right column).

10530   800 MHz, 9 dBd, Yagi Antenna that is intended for sites near the edge of the cellular coverage. It includes a mounting bracket to attach it to a pole but some applications might require an adjustable mounting kit. Connection to the modem requires an antenna cable (see right column).

Cables/Surge Suppressors for 18285, 20679, or 10530 Antenna

21847   Type N Male-to-SMA Antenna Cable with 12 ft length. If surge suppression is required, use the COAXNTN-L cable and 19533 Surge Suppressor Kit instead of this cable.

COAXSMA-L   Type N Male-to-SMA Antenna Cable with user-specified length; enter length, in feet, after the -L. Length should not exceed 6 m (20 ft). If surge suppression is required, use the COAXNTN-L cable and 19533 Surge Suppressor Kit instead of this cable.

COAXNTN-L   Type N Male-to-Type N Male Antenna Cable with user-specified length; enter length, in feet, after the -L. Cable lengths longer than 6 m (20 ft) will weaken the signal strength. This cable is used with the 19533 surge suppressor (see below) and is recommended for environments susceptible to lightning or electrostatic buildup.

19533   Antenna Surge Protector Kit that includes one COAXSMA-L1.5 cable. A COAXNTN-L cable is required (see above). This surge suppressor is used with the COAXNTN cable (see above) and is recommended for environments susceptible to lightning or electrostatic buildup.

Adjustable Angle Mounting Kits

CM230   Adjustable Angle Mounting Kit allows the 10530 Yagi antenna to be aimed at the service provider's antenna. It attaches to a mast or pipe with a 1.3 to 2.1 in. OD.

CM230XL   Adjustable Angle Mounting Kit with Extended Length. Provides the same functionality as the CM230, but the CM230XL places the antenna further from the pole or crossarm.

Enclosure Mounting Bracket

14394   Mounting Kit includes hardware for securing the RAVENXTG to an enclosure backplate.

Specifications

› Technology: GPRS (MS-12), quad band

› Quad Bands: 850/1900 MHz; 900/1800 MHz

› Transmit Frequency
  850/1900 MHz: 1850 to 1910 MHz and 824 to 849 MHz
  900/1800 MHz: 890 to 915 MHz and1710 to 1785 MHz

› Transmit Power: 1.0 W for 1900 MHz; 0.8 W for 850 MHz

› Receiver Frequency
  850/1900 MHz: 869 to 894 MHz and 1930 to 1990 MHz
  900/1800 MHz: 935 to 960 MHz and 1805 to 1880 MHz

› GPRS Throughput: up to 70 kbps

› RS-232 Data Rates: 1200 bps to 115.2 kbps

› Serial Interface: RS-232, DB9-F

› Serial Protocols: AT Commands, PPP, SLIP, UDP, TCP

› RF Antenna Connector: 50 Ω SMA

› Input Current Range: 40 to 250 mA

› 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