

# Digital Cellular Modem

## Raven II

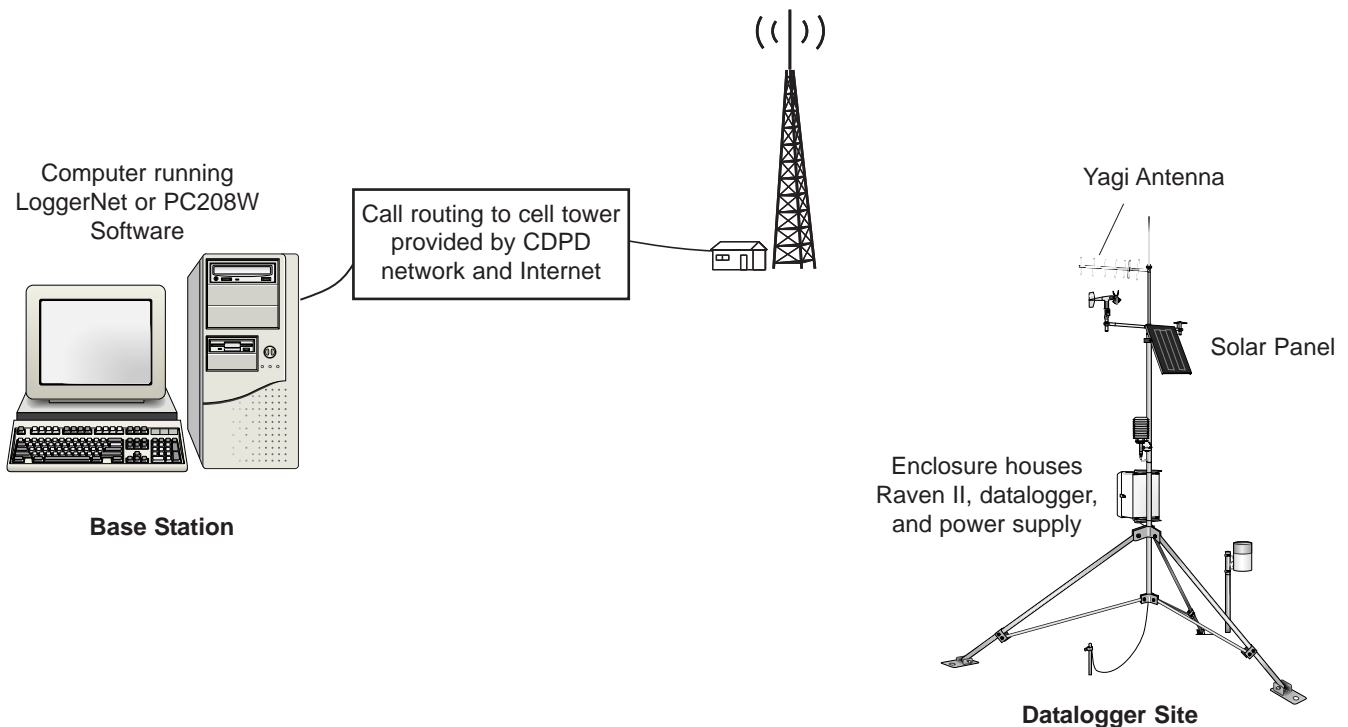
The Raven II is a full-duplex modem, manufactured by AirLink. It supports telecommunications via a cellular digital packet data (CDPD) network. CDPD modems are IP based, requiring an internet address assigned by your service provider.

### Features

- 19.2 kbps data transfer rate
- No dialing delays
- Long distance fees eliminated
- Pay for data throughput instead of air time
- Lower operating costs and initial equipment investment
- Built-in encryption that maintains security of data while transmitting
- Typical current drain of 60 mA while receiving and 280 mA during transmission
- -30° to +70°C operating temperature range



### Typical System



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## **Base Station Requirements**

- PC with Internet access that is running LoggerNet or PC208W software.
- Subscription to a CDPD network with coverage at the datalogger site. Prior to purchase ensure CDPD coverage is available for your site. The website [www.attwireless.com/business/data](http://www.attwireless.com/business/data) provides a coverage map. To avoid costly cellular bills, Campbell Scientific suggests working with your cellular provider to choose an unlimited byte account option until the number of transmitted bytes over a monthly period has been determined.

## **Datalogger Site Equipment**

- Raven II Modem—includes Wireless Ace Software and power cable; Wireless Ace Software is used to configure the Raven II. Available from [www.campbellsci.com.html](http://www.campbellsci.com.html) are Wireless Ace templates (ravenii\_cr10x, ravenii\_cr23x). The templates include most of the parameters required to configure the Raven II.
- Datalogger—CR510, CR10(X), CR23X, CR7, or CR5000
- SC932A Interface—connects the modem to the datalogger's CS I/O port. Alternatively when using a CR23X or CR5000, a 14392 Null Modem Cable can be used to connect the modem to the datalogger's RS-232 port instead of the CS I/O port.
- 14394 Raven II Mounting Kit—includes mounting hardware for securing the modem to an environmental enclosure and an SC12 cable.
- Antenna—the following antennas can be purchased from Campbell Scientific; sites near the edge of the CDPD coverage require the Yagi antenna. Contact an Applications Engineer for help in determining the best antenna for your application.
  - 14453      0 dBd ½ Wave Dipole Whip Cellular Antenna
  - 14454      8 dB Yagi Cellular Antenna with 10' Cable
- Power Supply (see power considerations)
- Environmental Enclosure—typically a 12" x 14" or 16" x 18" enclosure

## **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 conserving power. When using the switched 12 V terminal, the modem can be powered with a BP12 battery, CH12R charger/regulator, and MSX10 solar panel. For help on analyzing your system's power requirements, refer to our Power Supply product literature or application note.

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## ***Specifications***

Transmit Power:	600 mW
Transmit:	824 to 849 MHz
Receive:	869 to 894 MHz
Data Rate:	19.2 kbps via TCP/IP, 1,200 to 38,400 bps via serial interface
Input Voltage:	9 to 30 Vdc
Input Current:	30 to 450 mA
Typical Current Drain at 12 Vdc:	60 mA while receiving, 280 mA during transmission
Operating Temperature Range:	-30° to 70°C with transmissions limited to a 10% duty cycle above 60°C
Humidity:	5% to 95% non-condensing
RF Protocol:	CDPD 1.1
Serial Interface:	RS-232, DB-9F
RF Antenna Connector:	50 Ohm TNC female
Serial Protocols:	AT Commands, SLIP, PPP
Status LEDs:	Power, Channel Acquired, Link Status, Network Registration, RSSI, Transmit/Receive, Block Errors
Dimensions:	3"W x 1"D x 5.1"L (5.8" w/ connector), 7.6 x 2.5 x 13 cm (14.7 cm w/connector)
Weight:	<1 lb. (<0.5 kg)



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Printed August 2002