CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

Telemetry Peripherals

Wireless, remote, hard-wired, or two-way communication

Rugged, Reliable, and Ready for any Application

RELIABLE SINCE 1974 MONITORING

Campbell Scientific offers a full line of telemetry peripherals that support remote communications between dataloggers and PCs. These peripherals have wide operating temperature ranges allowing their use in extreme, remote environments. They facilitate the accessibility, analysis, sharing, and reporting of data.

MAJOR SPECIFICATIONS

	Transmission Distance or Area	*Current Drain @ 12 Vdc*	*Service Requirements*
NL121 | Ethernet Interface Connects CR1000 or CR3000 to LAN or Internet 	Worldwide	58 mA typical, 3 mA Ethernet off	Ethernet access
NL116 | Ethernet Interface and CompactFlash Module Connects CR1000 or CR3000 to LAN or Internet and stores data on a CompactFlash card 	Worldwide	58 mA typical, 3 mA Ethernet off	Ethernet access
NL201 | Ethernet Interface Connects dataloggers to LAN or Internet via Ethernet 	Worldwide	50 mA active 2 mA forced standby	Ethernet access
NL240 | Wi-Fi Network Link Wireless Network Link 	Worldwide	79.2 mA maximum 1.3 mA sleep	Wi-Fi hotspot (access to standard 802.11b/g/n networks)
RavenXTV | CDMA Cellular Modem for Verizon Networks 	Dependent on antenna used and CDMA coverage	50 mA dormant 120 mA receive/transmit	CDMA coverage at the datalogger site and account at Verizon
RV50 | Sierra Wireless 4G LTE Cellular Gateway 	Dependent on antenna used and LTE, CDMA/EV-DO, and GSM/GPRS/EDGE/WCDMA coverage	1 mA typical enable/ignition sense low 65 to 95 mA typical idle 250 to 300 mA typical active	Network coverage at the datalogger site and account at Verizon, AT&T, T-Mobile USA, Rogers, Bell, or Telus
COM220 | Phone Modem Ideal for sites with telephone access 	Worldwide	12 µA quiescent 30 mA active	If not available at the site, phone lines must be installed.
COM320 | Voice Phone Modem Make your datalogger speech capable 	Worldwide	100 µA quiescent 35 mA active	If not available at the site, phone lines must be installed.
MD485 | RS-485 Multidrop Interface Connect many dataloggers with a single cable 	1219 m (4000 ft); Can increase distance by using more MD485s or combining with spread spectrum radios, Ethernet, or phone	1.2 mA standby 2 to 7 mA communicating	CABLE2TP two-twisted pair cable must be installed between networked dataloggers and base.

MAJOR SPECIFICATIONS

	Transmission Distance or Area	Current Drain @ 12 Vdc	Service Requirements
SRM-5A | Short Haul Modem 	Up to 12.2 km (7.6 miles) depending on data rate and wire gage	2.2 mA quiescent; 10 to 15 mA active	Dedicated two-twisted pair cable connects one field station with base.
RF320 Series with RF500M | Narrowband VHF/UHF Radios with Radio Modem Long-distance option for communication 	Up to 40.2 km (25 miles) between stations (line-of-sight and interference affects transmission length). Repeaters can be used to increase line-of-sight.	RF320-series radio: 25 mA receive standby <900 mA (transmit 2 W RF power) <1200 mA (transmit 5 W RF power) RF500M radio modem: < 15 mA (active)	FCC-assigned frequency and license. Requires line-of-sight
RF401A and RF411A | Spread Spectrum Radios 	Up to 16 km (10 miles) with Yagi antennas at ideal conditions; up to one mile with inexpensive omnidirectional antennas (line-of-sight obstructions and interference affects transmission length)	<0.5 mA stand-by 15 mA receiving < 80 mA transmitting	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight
RF407 and RF412 | Spread Spectrum Radios 	Up to 16 km (10 miles) with Yagi antennas at ideal conditions; up to one mile with inexpensive omnidirectional antennas (line-of-sight obstructions and interference affects transmission length)	Transmit: < 80 mA (250 mW TX Power) Receive: 15 mA Stand-by: < 0.5 mA (depending on power saving mode)	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight
RF422 | SRD860 Radio 	Up to 5 km, depending on antenna (line-of-sight obstructions and interference affects transmission length)	Transmit: < 25 mA (25 mW TX Power) Receive: 15 mA Stand-by: < 0.5 mA (depending on power saving mode)	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight
RF451 | Spread Spectrum Radio 1 W power supports longer distances 	20 to 25 miles with Yagi antenna at ideal conditions; up to one mile with inexpensive omnidirectional antenna (line-of-sight obstructions and interference affect transmission length)	6 mA sleep mode 15 mA idle 40 mA receiving 650 mA transmitting	Shares frequency with other devices. Must not cause harmful interference to licensed radios. Requires line-of-sight
ST-21 | Argos Satellite Transmitter 	Worldwide	1.1 mA quiescent 375 mA transmitting	Must receive formal permission from Service Argos and pay a fee. Must use data for environmental purposes.
IRIDIUM9522B | Satellite Modem and Interface Kit 	Worldwide (including poles, oceans and airways)	Operating: 333 mA Standby: 125 mA	Needs a SIM card. Must pick a service provider and pay a fee.
HUGHES9502 | Inmarsat BGAN Satellite IP Terminal 	Worldwide between +70° and -70° latitude	Transmit: < 1.7 A peak Narrowbeam w/o transmit: 333 mA Idle (regional beam): < 84 mA Sleep (wake on Ethernet packet): < 0.8 mA Off, GPIO sleep pin control: < 0.3 mA	Needs a SIM card. Must pick a service provider and pay a fee.
TX321 | GOES or Meteosat Transceiver 	GOES: North America Meteosat: Europe	<5 mA, idle <100 mA, during GPS fix <2.6, transmit	Need formal permission (see http://noaasis.noaa.gov/DCS/ for GOES applications or www.eumetsat.int for Meteosat). GOES applications need to be a U. S. government agency or sponsored by such an agency.