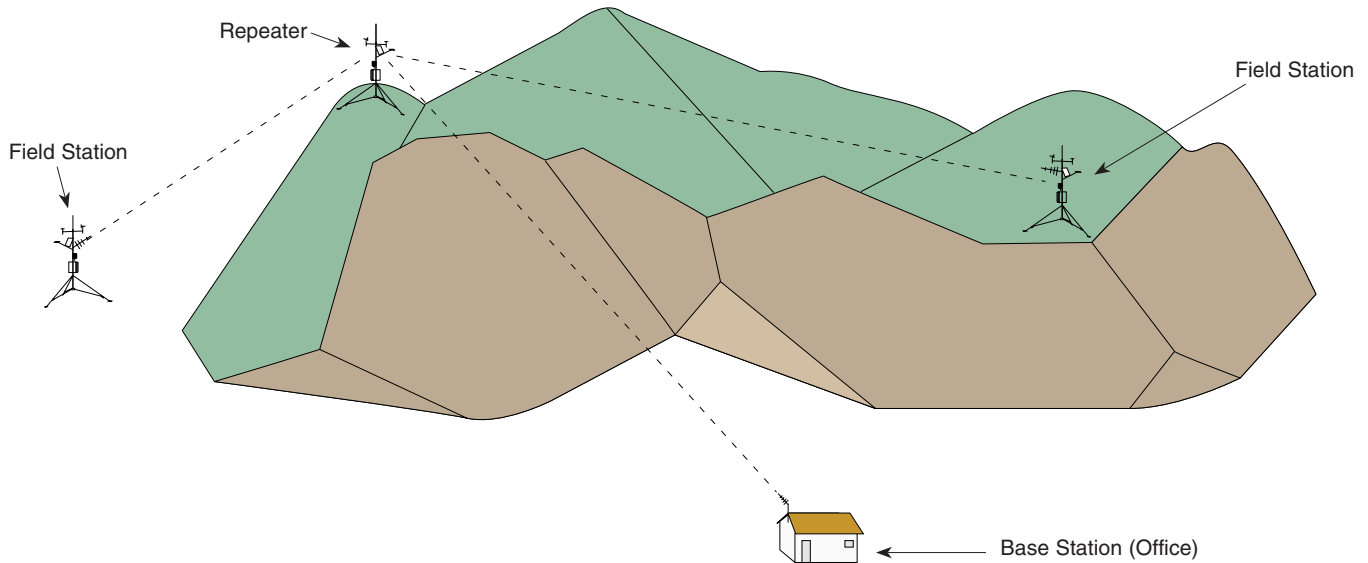


Narrow-band Radiotelemetry Networks

Campbell Scientific's radiotelemetry (RF) system supports data retrieval from a CR800, CR850, CR1000, CR3000, or CR7 datalogger. The datalogger can be located in a moving vehicle or a remote area where communication via cables is impractical.



Data from field stations are retrieved at a computer base station. The base station can communicate with up to 254 remote stations over a single frequency. A phone modem can also access an RF network.



A remote meteorological station can transmit data via radio telemetry to a base station.

Field stations and repeater stations can be located to allow communication over long distances and rough terrain. The maximum distance between any two communicating stations is approximately 25 miles and must be line-of-sight (unobstructed by mountains, large buildings, etc.). Longer distances and rough terrain may require intermediate repeater station(s).

RF data transmission hardware includes radios, antennas, and radio modems. Power at the field and repeater stations is provided by sealed rechargeable batteries trickle-charged by solar or ac power.

Features

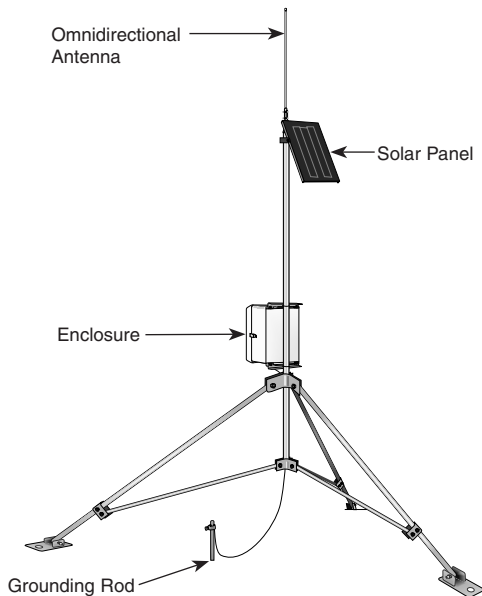
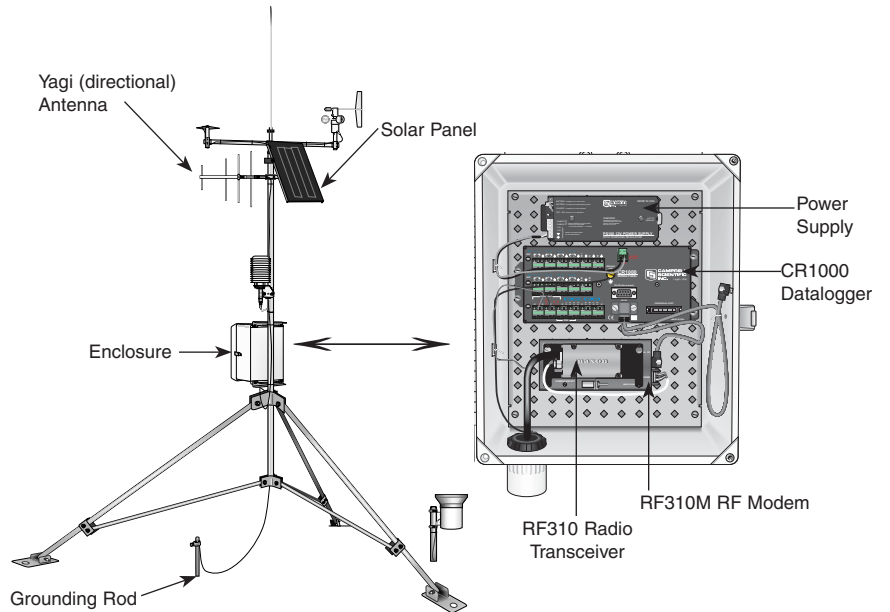
- Measurement sites can be located in areas without phone lines or cellular coverage
- Eliminates cables and cable costs
- Supports local and remote data retrieval
- Allows remote control of datalogger functions

Field Stations

Field stations are located at the measurement site. A field station can also act as a repeater to extend the range of the network.

Field Stations contain:

- Datalogger
- Power Supply (5 Ahr minimum)
- RF Modem such as the RF310M
- Radio Transceiver such as the RF310, RF312, or RF313
- Antenna/Cable
- Enclosure/Mounts/Tripod
- Sensors



Repeater Stations

Repeater stations act as communication relays between stations that cannot communicate directly due to distance or obstacles.

Repeater Stations contain:

- RF Modem such as the RF310M
- Radio Transceiver such as the RF310, RF312, or RF313
- Rechargeable Power Supply with Charging Regulator and Null Modem Ports such as an A100 adapter connected to a CH100 Charger/Regulator and a user-supplied rechargeable battery
- Omnidirectional Antenna/Cable
- Enclosure/Mounts/Tripod

Computer Base Stations

Base stations support attended and unattended retrieval of the field station's data and provides communication error checking and data processing. AC power is required.

Base Stations contain:

- Base Station Package such as the RF310B
- Radio Transceiver such as the RF310M
- PC running LoggerNet or PC400 software
- Antenna/Cable



RF310B Base Station Package

FCC Licensing

A Federal Communication Commission license is required before ordering radios and antennas. To file for an FCC license on-line, go to <http://wireless.fcc.gov/uls> and register then log in and apply for the license. Canadian DOC approval is available for radios in the 138-174 MHz and 403-470 MHz frequency bands only.

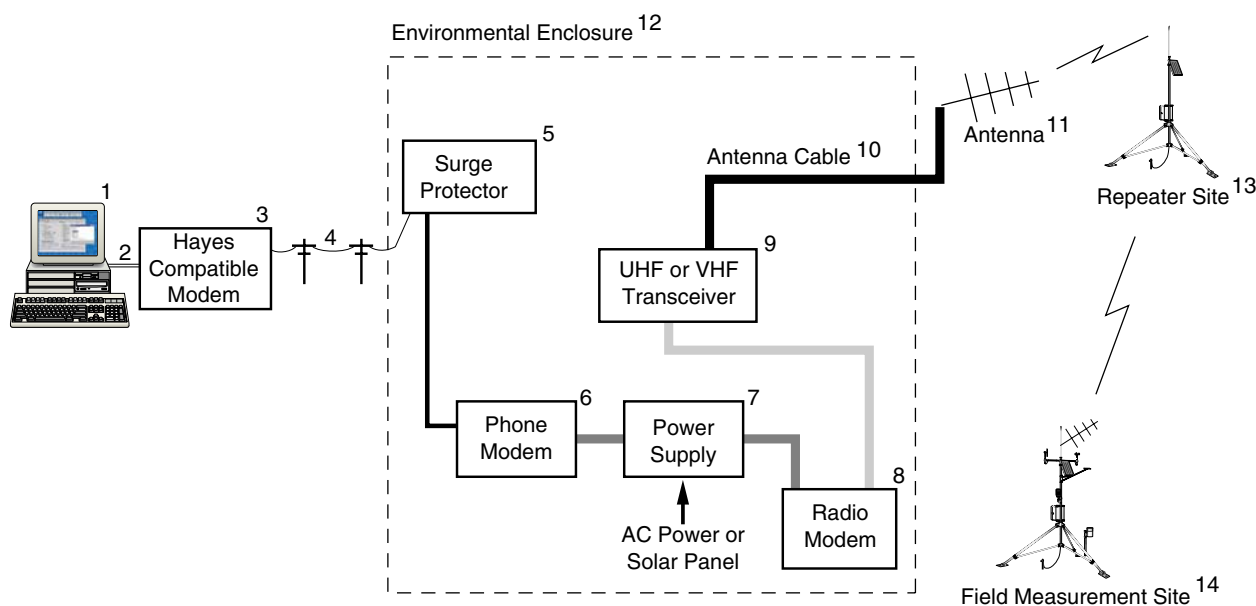
Power Considerations

The location of your site, number of calls, and length of calls affect the power requirements of your system. Information on analyzing your system's power requirements is provided in our Power Supply product literature and application note. You could also contact an applications engineer who will help you determine an appropriate power supply for your system.

Options

Phone-to-RF Base Station

A phone-to-RF base station provides phone access to a distant radiotelemetry network.



This system requires the following equipment:

1. PC running LoggerNet software (PC400 software does not support combined communications, and therefore cannot be used)
2. Serial cable (7026 for 9-pin serial ports, SC25PS for 25-pin serial ports, or equivalent)
3. Customer-supplied Hayes-compatible modem
4. Connection to a switched telephone network
5. Telephone Surge Protector if the telephone company has not installed a surge protector
6. COM220 Telephone Modem (includes SC12 cable)
7. Rechargeable Power Supply with Charging Regulator and Null Modem Ports
8. RF Modem such as the RF310M
9. Radio Transceiver such as the RF310, RF312, or RF313
10. Antenna Cable
11. Antenna
12. Enclosure/Mounts/Tripod
13. Repeater Site(s)
14. Field Measurement Site(s)

Portable Base Station

The portable base station can aid the set up of large radiotelemetry networks, or troubleshooting RF network communication problems. A portable base station enables any of the field or repeater stations to act as a base station.

Portable base stations require the following equipment:

- Laptop computer running LoggerNet or PC400 software
- SC532A modified to connect directly to a battery