Overview
The Hughes9502’s Satellite Terminal Kit adds real-time IP communications to a remote station using the Inmarsat Broadband Global Area Network (BGAN). It includes the Hughes 9502 terminal, directional antenna, antenna cable, mounting hardware, and cables needed to connect the terminal to the power supply and Ethernet interface or datalogger.

Benefits and Features
- Everything you need to get started in one package
- Easy to setup and use
- Designed for BGAN M2M network services
- Provides reliable end-to-end IP connectivity
- All-weather operation
- Ideal for remote locations where cellular service is not available
- Multiple low power modes suitable for operation on battery operated stations

Inmarsat Broadband Global Area (BGAN) Satellite Network
The Inmarsat Broadband Global Area Network (BGAN) satellite network consists of three geostationary satellites: I-4 Asia Pacific, I-4 EMEA and I-4 Americas, which provide satellite data services around the world. A geostationary satellite does not change its position in the sky, allowing terminals to use much lower transmission power combined with a directional antenna, which makes low power satellite services feasible. Because it uses L-band frequencies (1518 to 1675 MHz), the BGAN service is largely unaffected by rain fade, which causes signal degradation in some satellite systems.

Stations using the Hughes 9502 must provide the flat, directional antenna with a good view of the southern (Northern Hemisphere) or northern (Southern Hemisphere) sky. Stations should be located between +75° and -75° latitude. Stations located at extreme latitudes will need a better view of the horizon at low angles and are more susceptible to line-of-sight issues introduced by nearby buildings or mountains.
Inmarsat M2M Requirements

Use of the Hughes 9502 requires a BGAN/M2M service agreement with an Inmarsat service provider. When choosing a provider, evaluate their service while comparing costs. Most plans have a monthly base service fee for each subscriber, as well as charges for the amount of airtime or data used. Contact Campbell Scientific for more information about communications or assistance in locating a provider.

Specifications

Terminal
- Nominal Input Voltage: +12 Vdc or +24 Vdc
- Sim Card Type: USIM

Frequency
- Satellite Transmit: 1626.5 to 1675 MHz
- Satellite Receive: 1518 to 1559 MHz
- GPS: 1574.42 to 1576.42 MHz

Environmental
- Water and Dust: IP-40 Compliant
- Operating Temperature Range: -40° to +75°C
- Storage Temperature Range: -55° to +75°C
- Humidity Tolerance: 95% RH at +40°C

Power Consumption
- Transmit: < 20 W peak
- Narrow beam without transmit: 4 W
- Idle (regional beam): < 1 W
- Sleep (wake on Ethernet packet): < 10 mW @ 12 Vdc
- Off, GPIO sleep pin control: < 3 mW @ 12 Vdc

Interfaces
- Power Input: Screw terminal, reverse polarity protected
- Antenna connector: TNC jack
- Ethernet: 10BaseT, RJ45 connector (used for datalogger or PC communications)
- USB connector: type B (used for PC communications)
- RS-232 connector: GNSS DB9 (used for GPIO sleep pin control)

Antenna
- Weight without mount: 1.85 kg (4.08 lb)
- Dimensions without mount: 38.5 cm x 38.5 cm x 3.3 cm (15.2 in x 15.2 in x 1.3 in)
- Wind Loading: Survival wind loading up to 100 mph
- Water and Dust: IP-65 Compliant
- Cable Length: 10 m (30 ft)
- Cable Connectors: type N male-to-type N male (type N-to-TNC adapter included for antenna-to-terminal connection)