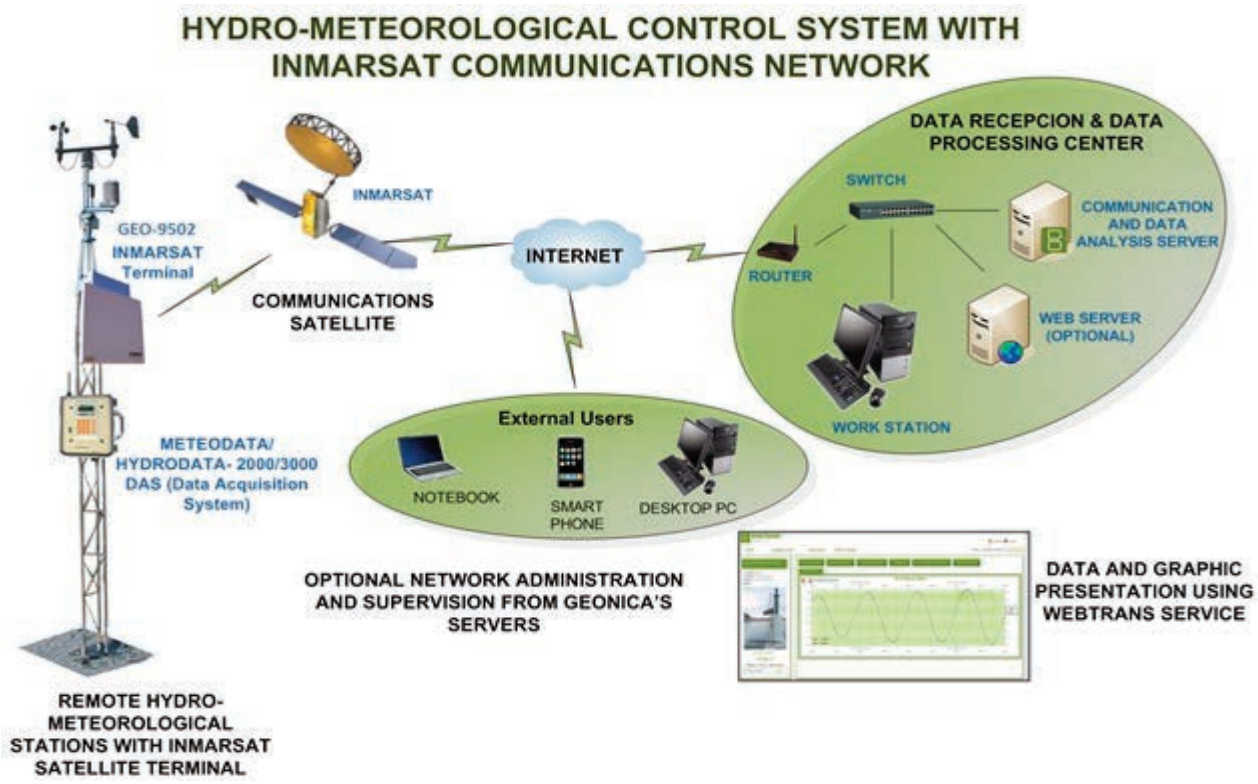
ENVIRONMENTAL MONITORING SYSTEM WITH WORLD-WIDE COVERAGE AND BIDIRECTIONAL COMMUNICATION VIA INMARSAT SATELLITE NETWORK

THE WORLD'S MOST COST-EFFECTIVE, ALL-IP BGAN MACHINE-TO-MACHINE SATELLITE TERMINAL WITH EXCEPTIONALLY LOW POWER CONSUMPTION

GEONICA has over 30 years of experience in remote control systems. Design and engineering are constantly evolving, providing maximum satisfaction to clients. Our equipment is installed in remote and isolated areas; therefore, reliability, minimum maintenance and low power consumption are the strengths of GEONICA's designs.

Actually, GEONICA provides full compatibility to a wide variety of communication networks in order to entirely adapt to each system's requirements.



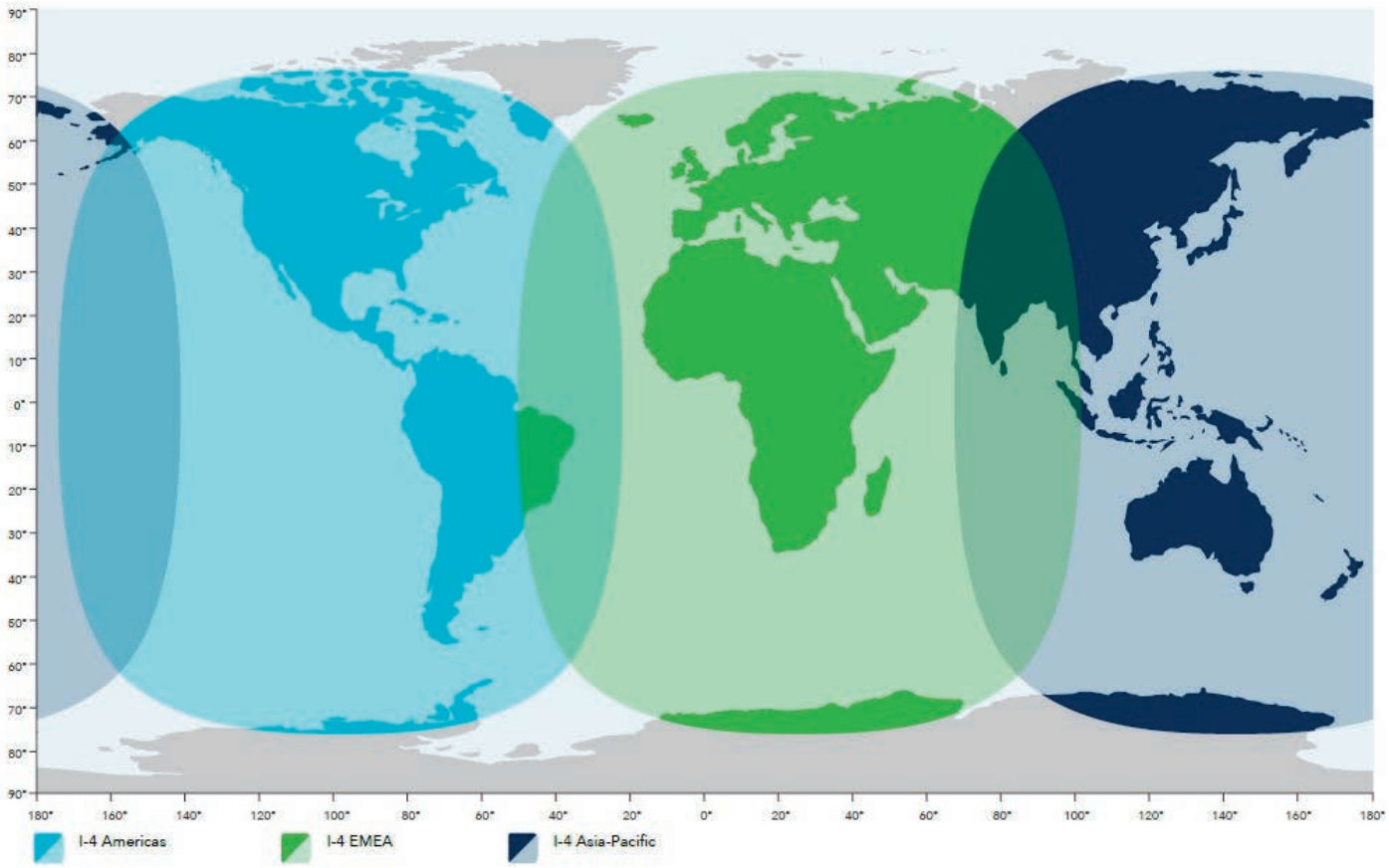
BGAN M2M is an INMARSAT service that allows users to connect to remote devices and applications at low data rates. It is entirely based on the current BGAN network and infrastructure and there are no changes to the INMARSAT provisioning process. This means that BGAN M2M will benefit from proven, reliable technology.

BGAN M2M has the following **technical advantages**:

- Ubiquitous coverage with high levels of availability and performance in unmanned environments.
- Cost-effective alternative to terrestrial cellular networks: no coverage or saturated
- Power efficiency enabling operation in power-deficient areas.

INMARSAT UNIQUE FEATURES	
Bidirectional Communication	YES
IP Network	YES
Remote programming /configuration of field stations	YES
Average power consumption (typical)	Very Low
Always-ON Communication	YES
Alarm Reception	YES unlimited
Need for an expensive Satellite Earth Station required for data reception at Data Receiving Center	NO
Connection and services with NOAA network	NO
Communication Cost (typical)	20-40 €/month
Remote diagnostic, support, and configuration. Firmware download / update	YES
Bandwidth (typical)	464Kbps downstream 448Kbps upstream
Capacity to transmit images from remote stations	YES
Real-Time Monitoring from Data Receiving Center	YES
Global Satellite Coverage	YES
Need for development of an application to process received data	NO

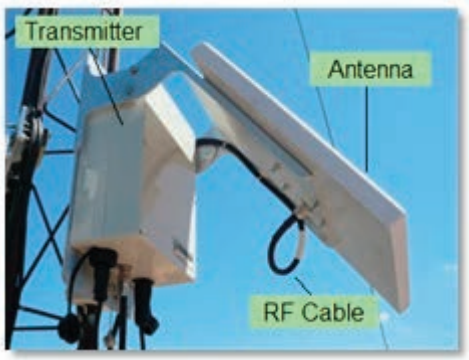
INMARSAT BGAN GLOBAL COVERAGE



DESCRIPTION MODEL GEO-9502 BGAN SATELLITE TERMINAL

The INMARSAT satellite terminal model 9502 provides reliable connectivity over the Inmarsat Broadband Global Area Network (BGAN) for IP SCADA and machine-to-machine (M2M) applications. This terminal delivers affordable, global, end-to-end IP data connectivity enabling applications in industry sectors such as environmental monitoring, SmartGrid, pipeline monitoring, compressor monitoring, well site automation, video surveillance, and out-of-band management to primary site communications.

The exceptional low power consumption (<1 W idle) of the satellite terminal model 9502 makes it possible to provide end-to-end IP connectivity to sites that are off the grid. This breakthrough provides end-to-end IP connectivity to power-challenged locations that rely upon solar battery arrays involving sensitive power budgets.



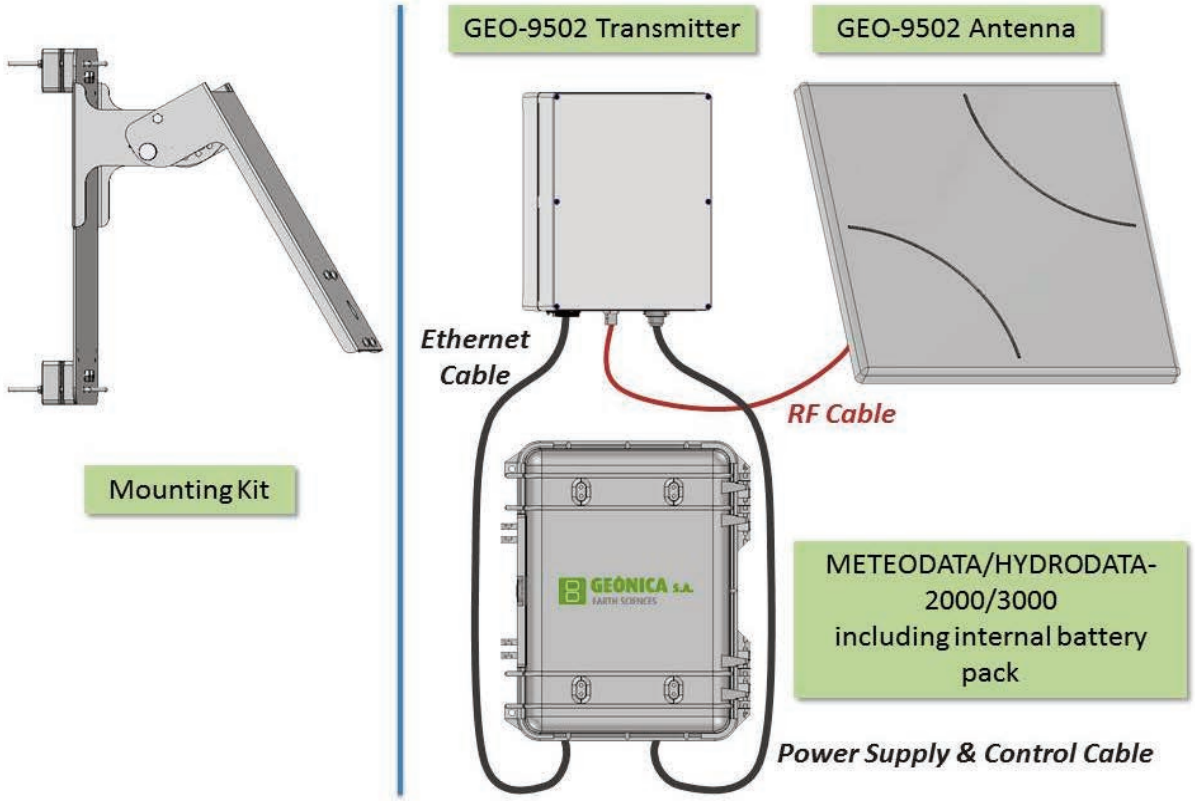
The Model 9502 includes 10 meters of RF cabling, granting the user freedom to position the antenna remotely and away from the transceiver in complex installations while securing the SIM card inside a premise or enclosure to better protect against unauthorized use, theft, and vandalism.

Future firmware releases would be uncommon, meanwhile any such modem update will qualify for no charge over-the-air (OTA) upgrades saving customers time and money.

GEO-9502 BGAN INMARSAT SATELLITE TERMINAL CONFIGURATION

The INMARSAT satellite terminal comprises:

- GEO-9502 Transmitter unit
- GEO-9502 Antenna
- Mounting kit
- Connection Cables:
  - RF cable: To connect transmitter to antenna
  - Ethernet cable: to connect the transmitter to GEONICA's METEODATA/HYDRODATA - 2000/3000 data acquisition unit in order to transmit/receive data and commands from remote stations to the Data Reception Centre (DRC).
  - Power Supply cable: to connect the transmitter to the METEODATA/HYDRODATA - 2000/3000 data acquisition unit for powering the 9502 terminal.



MODEL GEO-9502 BGAN TECHNICAL SPECIFICATIONS	
Power supply	The exceptional low power consumption (<1 W idle) of the INMARSAT satellite terminal provides end-to-end IP connectivity in sites that are off the grid.
Maintenance	Future firmware releases would be uncommon, meanwhile any such modem update will qualify for no-charge over-the-air (OTA) upgrades saving customers time and money.
Connection Charge	None With BGAN M2M.
CDRs	Minimum only 1K.
Auto power activation	Auto-on/auto-context activation automatically restores power and PDP connection to itself following power failure and/or IP connection loss.

Connectivity	Integrated IP Watchdog to ensure 'always-on' network connectivity. No manual intervention required to recover from an outage.
Remote Control	Remote control via SMS—remote management platform for command and control to the terminal using SMS, including configuration, debugging, and access to Web interface.
Security	Security enhancements with extended layers of embedded security option.
GPS	Built-in GPS receiver.
Interfaces	Ethernet connection (RJ45). RF connection. Power supply and control connection. Direct connection to **METEODATA/HYDRODATA** Remote stations.
Satellite TX Frequency	@ 1626.5 – 1675MHz
Satellite RX Frequency	@ 1518 – 1559 MHz
GPS Frequency	@ 1574.42 – 1576.42 MHz
Operating Temperature	-40°C to +75°C
Storage Temperature	-55°C to +75°C
Humidity	95% RH at +40°C
Transmitter Unit Water and Dust	IP-65 Compliant
External Antenna Water and Dust	IP-65 Compliant
Nominal Input Voltage	+12VDC (11 to 15VDC)
Other Features:	Single external BGAN Satellite and GPS antenna connection GPS module inside SIM/USIM Slot (behind SIM door) Cabinet and installation kit made of lightweight ABS and white anodized aluminum. Easy installation in tower and mast and easy satellite orientation.