TRIUMPH-1

Based on the TRIUMPH Chip, TRIUMPH-1 is a fully integrated package ready for your demanding jobs, offering precise and automatic performance beyond anything that you have experienced so far.

An elegant, rugged, light, and hermetically sealed box accommodates all GNSS and Modem electronics, antennas, and up to 20 hours of rechargeable batteries and its sophisticated power management system. The close proximity of our batteries with the electronic section helps the batteries to absorb heat and function better in cold weathers. The batteries can be charged with any power supply from 10 volts to 30 volts, which includes car, ship and airplane batteries.

All GNSS, UHF, GSM, Bluetooth, and WiFi antennas are conveniently hidden and protected. An external antenna can also be connected to bypass the internal GNSS antenna. There are two SIM cards inside the box, one of them can be easily reached and changed via a small sealed door.
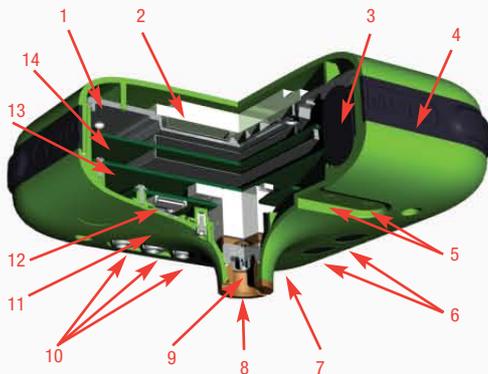
TRIUMPH-1

Standard Configuration

- TRIUMPH-1-G2T/G3T Receiver (0 MB)
- GPS L1/L2/L2C/L5
- GLONASS L1/L2 (G3T only)
- RAIM
- MinPad Interface
- RS232 Serial Port (460.8 kbps)
- Internal GNSS antenna
- Rechargeable Li-Ion Battery

Optional Feature

- Galileo E1/E5A
- Update Rate 1Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- RTK Rate 1 Hz, 5Hz, 10Hz, 20Hz, 50Hz & 100Hz
- Data Recording up to 2048MB
- Multi-Base Code Differential Rover
- Code Differential Base
- Advanced Multipath Reduction
- In-Band Interference Rejection
- Event Marker
- 1 PPS timing strobe
- Up to 2 high Speed (460.8 kbps) RS232 Serial Ports
- USB port
- Internal GSM/GPRS/EDGE Module
- Internal UHF Modem
- Ethernet
- Bluetooth® Interface
- Wi-Fi (IEEE 802.11b/g)
- KFK WAAS/EGNOS (SBAS)
- External GNSS Antenna TNC Female connector

1. Ground Plane
2. Internal GNSS Antenna
3. Rechargeable Li-Ion Battery Pack
4. Guard Bumper
5. 1PPS and Event Marker Connectors (optional)
6. On/Off and Control Buttons and LEDs
7. Bluetooth / WiFi Antenna
8. 5/8-11" Mounting Thread
9. UHF / GSM Antenna Connector
10. Communication and Power Ports
11. SIM Card Door
12. User Accessible SIM Card
13. GNSS Receiver and Power Board with on-board Memory
14. GNSS RF and Communication Board with on-board SIM Card

Description

Total 216 channels: all-in-view (GPS L1/L2/L2C/L5, Galileo E1/E5A, GLONASS L1/L2, SBAS) integrated receiver, rugged plastic and magnesium housing complete with MinPad interface

Tracking Specification

Tracking Channels	
TRIUMPH-1-G2T	GPS L1/L2/L2C/L5
	Galileo E1/E5A
	SBAS
TRIUMPH-1-G3T	GPS L1/L2/L2C/L5
	Galileo E1/E5A
	GLONASS L1/L2
	SBAS
Signals Tracked	L1/L2 C/A and P Code & Carrier

Performance Specifications

Autonomous	<2 m
Static, Fast Static Accuracy	Horizontal: 0.3 cm + 0.5 ppm * base_line_length
	Vertical: 0.5 cm + 0.5 ppm * base_line_length
Kinematic Accuracy	Horizontal: 1 cm + 1 ppm * base_line_length
	Vertical: 1.5 cm + 1.5 ppm * base_line_length
RTK (OTF) Accuracy	Horizontal: 1 cm + 1 ppm * base_line_length
	Vertical: 1.5 cm + 1.5 ppm * base_line_length
DGPS Accuracy	< 0.25 m Post Processing
	< 0.5 m Real Time
Cold Start	<35 seconds
Warm Start	<5 seconds
Reacquisition	<1 second

Power Specification

Battery	Two internal Li-Ion batteries (7.4 V, 4.4 Ah each) with internal charger
Operation Time	Up to 15 hours
External Power Input	+10 to +30 volts

GNSS Antenna Specifications

GNSS Antenna	Integrated
Antenna Type	Microstrip (Zero Centered)
Ground Plane	Antenna on a flat ground plane

Radio Specifications

GSM/GPRS/EDGE Module	Internal GSM/GPRS/EDGE quad-band module, GPRS/EDGE Class 10
UHF Radio Modem	Internal 406-470MHz radio transceiver, up to 38.4kbps
Base Power Output	1 Watt

I/O

Communication Ports	2x serial (RS232) up to 460.8 kbps
	High speed USB 2.0 device port (480 Mbps)
	Full-duplex 10BASE-T/100BASE-TX Ethernet port
	Wi-Fi (IEEE 802.11b/g)
	Bluetooth V2.0+EDR Class 2 supporting SPP Slave and Master Profiles
Other I/O Signals	1 PPS synchronized
	Event Marker
Status Indicator	Six LEDs, two function keys (MinPad)

Memory & Recording

Internal Memory	Up to 2048MB of onboard non-removable memory for data storage
Raw Data Recording	Up to 100 times per second (100Hz)
Data Type	Code and Carrier from GPS L1/L2, Galileo E1/E5A, GLONASS L1/L2 (G3T only)

Data Output

Real time data outputs	RTCM SC104 versions 2.x and 3.x Input/Output
ASCII Output	NMEA 0183 versions 2.x and 3.0 Output
Output Rate	Code and Carrier

Environmental Specifications

Enclosure	Molded magnesium alloy and plastic, waterproof IP67
Operating Temperature	-30° C to +55° C
Storage Temperature	-20° C to +45° C
Dimensions	W:178 mm x H:96 mm x D:178 mm
Weight	1700 g

Specifications are subject to change without notice.