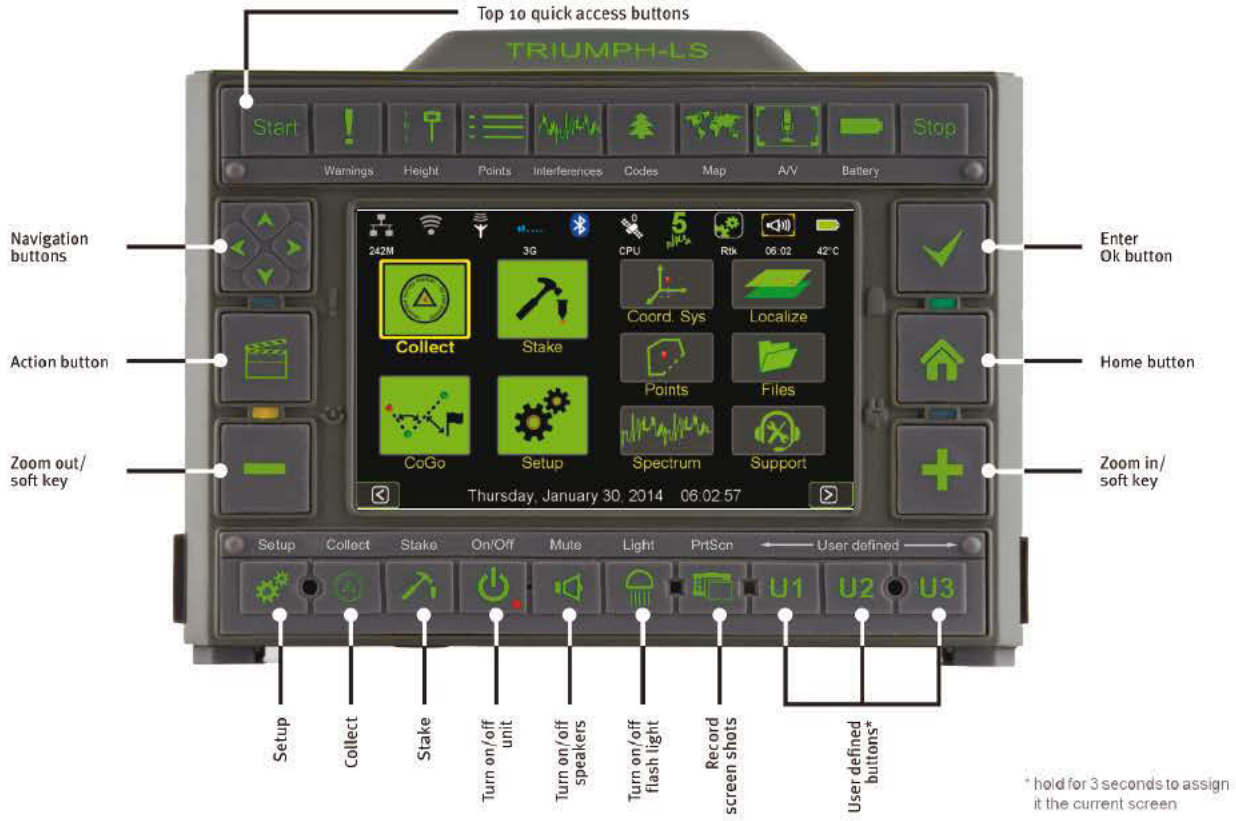


TRIUMPH-LS

Introducing GUIDE data collection in the TRIUMPH-LS. Visual Stake-out, navigation, six parallel RTK engines, over 3,000 coordinate conversions, advanced CoGo features, rich attribute tagging on a high resolution, large, bright display.

TRIUMPH-LS is a revolutionary new GNSS receiver that combines high performance 864-channel GNSS receiver, all-frequency GNSS antenna, and a modern featured handheld. Versatile attribute tagging, feature coding and automatic photo and voice documentation.

The TRIUMPH-LS automatically updates all firmware when connected to a Wi-Fi internet connection.

TRIUMPH-LS

Internal GNSS Antenna

Versatile High Performance Geodetic Antenna

Antenna Type	Microstrip (Zero Centered)
Ground Plane	Antenna on a flat ground plane
LNA Gain	32±2 dB

GNSS Receiver

Total 864 channels: all-in-view (GPS L1/L2/L5, Galileo E1/E5A/E5B, GLONASS L1/L2/L3, QZSS L1/L2/L5, Beidou B1/B2, SBAS L1/L5) integrated receiver, rugged magnesium housing

Signals Tracked	GPS C/A, P1, P2, L2C (L+M), L5 (I+Q) Galileo E1 (B+C), E5A (I+Q), E5B (I+Q), AltBoc GLONASS C/A, L2C, P1, P2, L3 (I+Q) QZSS C/A, L1C(I+Q), L2C (L+M), L5 (I+Q), SAIF Beidou B1, B2 SBAS L1, L5
Autonomous Accuracy	<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

Main Features*

- 864 channels
- RTK rate up to 100Hz
- 6-parallel RTK Engines
- RAIM
- Advanced Multipath Reduction
- In-Band Interference Rejection
- GLONASS .2mm Dynamic Calibration
- Integrated Controller and FieldCAD Software
- Interference Viewing
- Visual Stakeout
- Offset Survey with Photogrammetry
- Lift & Tilt
- Data Recording up to 16 GB
- Real-time Data Input/Output JPS, RTCM SC104 v. 2.x and 3.x, CMR
- Real-time Data Output NMEA 0183 v. 2.x and 3.0, BINEX
- WiFi, Bluetooth, Ethernet
- Internal 4G LTE Mini Card
- Internal Radio Modem
- Lifetime Firmware & Software Updates
- 3-Year Unlimited Warranty

Environmental

Enclosure	Molded magnesium alloy and plastic, IP67
Color	Gray
Operating Temperature**	-30° C to +55° C
Storage Temperature**	-20° C to +45° C
Humidity	100% condensing
Dimensions	7.20 x 4.88 x 4.17 inches (183 x 124 x 106 mm)
Weight	4.63 lbs (2.1 kg)

* For the full list of standard and optional features see www.javad.com

**Li-Ion batteries are the temperature limiting factor

TRIUMPH-LS

Radio

4G LTE Mini Card	LTE, HSPA+, HSDPA, HSUPA, WCDMA, GSM, GPRS, EDGE (up to 100 Mbps) LTE, EV-DO, 1xRTT CDMA (up to 100 Mbps)
MicroSIM card slots	Two; user accessible, fully sealed
Radio Modem	Internal 406-470MHz UHF radio Internal 902-928/ 868-870 MHz ISM radio (optional)
Base Power Output	1 Watt

I/O

Communication Ports	Wi-Fi (IEEE 802.11b, g, n, d, e compliant) Bluetooth V2.1+EDR power Class 2 Full-duplex 10BASE-T/100BASE-TX Ethernet High Speed USB 2.0 Host High speed USB 2.0 Device RS232 (optional) up to 460800 bps
Other I/O Signals	1 PPS, Event Marker External GNSS Antenna External Radio Antenna

Controller

ARM MPU	DM3730 Up to 1-GHz ARM® Cortex™-A8 Core; 1GB RAM
Operating System	Microsoft Windows Embedded Compact 7
SD card slot	High Capacity microSD Card (microSDHC) up to 32GB Class 10; user accessible,fully sealed
Display	Active matrix color TFT LCD Module Diagonal 4.3"; 800 x 480 pixels
Touchscreen	Low reflective resistive touch panel
Buttons	Navigation button Home - main screen Action button Zoom -/Zoom + Enter (Ok) button - activates enter function Three user programmable buttons On/Off button Ten quick access button
LED Indication	Battery charging status, battery status, sleep mode, warning status
Voice recording	integrated
Audio Output	integrated
Photo Camera	Two integrated cameras 3 Mpixels
Inclinometers	integrated
Compass	integrated

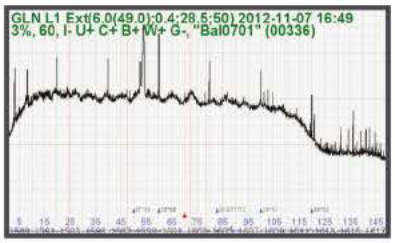
Power Management

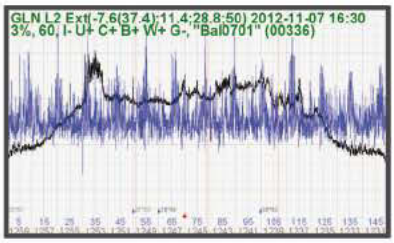
Battery	Rechargeable, lightweight Li-Ion battery 85 Wh (nom.)
Operation Time	25 hours on one charge
External Power Input	10-30 V DC
Charging	Power management notifies user when battery needs charging and protects battery from overcharging

TRIUMPH-LS

Interference Monitoring and Reporting

The Triumph-LS has the best available interference protection. It is the only receiver that monitors and reports interference graphically and numerically. Over 100 channels are dedicated to continuous interference monitoring.



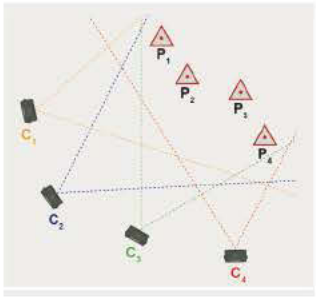


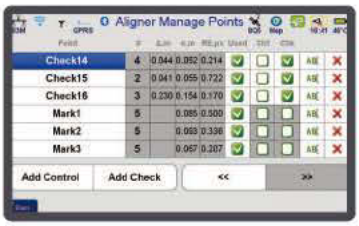
Visual Stakeout

With Visual Stakeout (VSO) the virtual location of the point to be staked can be seen by a "flag" shown on the Triumph-VS camera image. This visual aid helps to navigate quickly to the point and makes stakeout jobs fast and fun. Use VSO as an easy and convenient way to get close to the target point, and then switch to the regular stakeout mode to perform precise measurement.

Offset Survey with Photogrammetry

Offsets can be calculated using the internal camera of the TRIUMPH-LS or with an external camera!





Specifications are subject to change without notice

JAVAD GNSS

www.javad.com

Grafinta
Avda. Filipinas, 46
28003 Madrid
Tfo. 91 5537207
Fax 91 5336282
E-mail grafinta@grafinta.com

Rev. 1.2 August 14, 2014