



TRIUMPH-VS

TRIUMPH-VS is a revolutionary new GNSS receiver that combines high performance 216-channel GNSS receiver, all-frequency GNSS antenna, and a modern featured handheld. All-in-one TRIUMPH-VS is a new word in survey.

The breathtaking “Lift & Tilt” feature allows surveying in the automatic mode: suffice it to lift TRIUMPH-VS near vertical on the survey mark, and survey will start, sensors continuously compensate for leveling offsets, audio tones keep you informed of the survey progress. When you are happy with survey result, just tilt the TRIUMPH-VS and walk to the next point. The file will be closed automatically. On the next point repeat these steps again.

Compact, lightweight, reliable TRIUMPH-VS changes your idea about surveying, and opens new horizons in this industry.

TRIUMPH-VS

Integrated GNSS Antenna

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

GNSS Receiver

Total 216 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
Internal Memory	Up to 2048MB of onboard non-removable memory for data storage
Raw Data Recording	Up to 100 times per second (100Hz)
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

Standard Configuration

- GPS L1/L2/L2C/L5
- GLONASS L1/L2
- Update rate 5 Hz
- RTK/DGPS rate 5 Hz
- 256 MB Internal Data Storage
- 4 GB MicroSD Card
- Two USB ports
- RAIM
- UHF or GSM/GPRS/EDGE modem
- Internal Triple Frequency GPS/GLONASS/Galileo Geodetic Antenna
- Integrated Controller and Software
- Compass and Inclinometers
- Lift & Tilt
- Advanced Multipath Reduction
- WAAS/EGNOS
- Ethernet
- WiFi 802.11b
- Bluetooth
- External Power Supply/Charger
- Soft Carrying Case
- Shoulder Strap
- Graduated Monopod
- Power and USB Cables
- Tripod Adaptors
- Support Legs

Optional Features

- Galileo E1/E5A
- Galileo E5B
- GLONASS L3
- QZSS
- Beidou B1
- Beidou B2
- Update rate 10Hz, 20Hz, 50Hz, 100Hz
- RTK/DGPS rate 10Hz, 20Hz, 50Hz, 100Hz
- Data recording up to 2 GB
- External GNSS Antenna Connection
- Event Marker
- 1-PPS
- In-Band Interference Rejection
- Scientific option
- Cellular Module/ Internal Radio
- 2 Cameras and Visual Stakeout
- GLONASS .2mm Dynamic Calibration
- External Frequency Input/Output
- Spectrum
- Spectrum Data Output

Environmental



Lift&Tilt

Enclosure	Molded magnesium alloy and plastic, IP55
Color	Black
Operating Temperature*	-35° C to +55° C
Storage Temperature**	-40° C to +85° C
Humidity	100% condensing
Dimensions	W:178 mm x H:109 mm x D:110 mm
Weight	1820 g

* The operating temperature of Li-Ion batteries is -30 ° C to 55° C
** The storage temperature range of Li-Ion batteries is -20 ° C to +45° C

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Radio

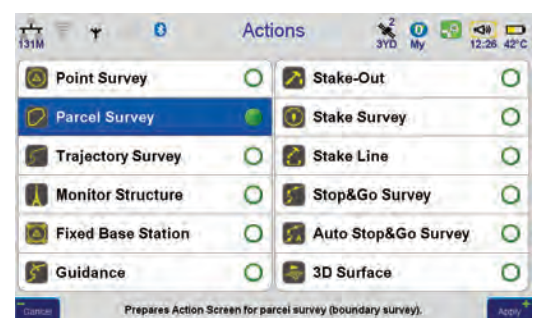
3.5G UMTS/HSPA Module	Global (850/1900/2100) /North America (850/1900/1700-2100AWS) / Europe (900/2100)
GSM/GPRS/EDGE Module	Internal GSM/GPRS/EDGE quad-band module, GPRS/EDGE Class 10
SIM card slots	Two SIM cards can be used; user accessible, fully sealed
UHF Radio Modem	Internal 406-470MHz radio transceiver, up to 38.4kbps
Base Power Output	1 Watt

I/O

Communication Ports	Wi-Fi (IEEE 802.11b/g) Bluetooth V2.0+EDR Class 2 supporting SPP Slave and Master Profiles Full-duplex 10BASE-T/100BASE-TX Ethernet port Full Speed USB 2.0 On-The-Go port Full speed USB 2.0 device port with internal USB to UART bridge. Up to 1.5Mbps UART speed
Other I/O Signals	1 PPS synchronized Event Marker External GNSS Antenna

Controller

Processor	OMAP3530 600MHz; 512 MB RAM and 512MB NAND Flash
Operating System	Microsoft Windows CE 6.0
Memory	512 MB
SD card slot	High Capacity microSD Card (microSDHC) up to 32GB can be used; user accessible, fully sealed
Display	Active viewing area: 4.3" diagonal (109 mm) High visibility TFT active matrix ; WVGA, 800 x 480 pixels
Touchscreen	Sealed resistive touchscreen, Fingerprint-resistant oleophobic coating
Buttons	Four-way directional Navigation button Standard key functions include: Home - main screen FN -action button -/+ - Cancel (Zoom -)/Accept (Zoom +) Enter (Ok) button - activates enter function Five user programmable buttons On/Off button
Enunciators	Three LEDs: battery charging status, battery status, sleep mode
Voice recording	integrated
Audio Output	integrated
Photo Camera	Two integrated cameras 3 Mpixels
IMU	integrated
Compass	integrated



Power Management

Battery	Intelligent, rechargeable, lightweight Li-Ion battery pack, 63.0 Wh (nom.). Battery easily changed in field without tools Charging via power adapter
Operation Time	Operates no less than 9 hours on one charge
External Power Input	10 to 30 V power input connector for charging or direct power input
Charging	Power management notifies user when battery needs charging and protects battery from overcharging Charges in 3 to 5 hours

TRIUMPH-VS



800 x 480 pixels high resolution "action" screen

Tap the appropriate icon on the screen to start the application.

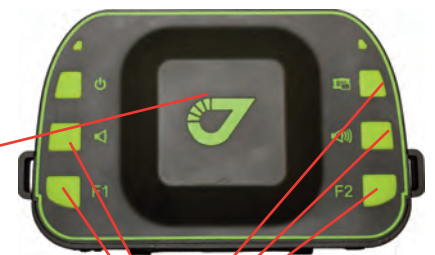
Quick access buttons and LEDs

The buttons allows the quick access to Home screen, choosing and opening the applications. LEDs show the battery level, charging status and sleep mode.

Microphone and Headset jack

Legs

In office you can use legs for putting on the table and best viewing



High precision all-frequencies GNSS antenna

Five quick access program buttons

User programmable buttons for quick receiver setup



3 mega pixels camera

For recording images along with GNSS data

High capacity removable rechargeable battery pack

Connectors

External power, two USB, Ethernet

Mounting

Three connectors for mounting TRIUMPH-VS on tripods, monopods, poles and machines



3 mega pixels camera on the bottom

Specifications are subject to change without notice



JAVAD GNSS
www.javad.com

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