



FJD Trion[™] V10L

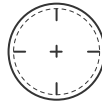
RTK SYSTEM WITH LASER

PINPOINT ACCURACY AT THE SPEED OF LASER

Building on the reliable V10 series, the V10L takes your surveying to the next level with superior accuracy, vibrant clarity, and unmatched safety, day or night. Powered by a visible green laser and a 2MP night vision camera, it provides clear previews even in darkness, ensuring eye safety while providing easy aiming for non-contact laser measurement and stakeout. With the EasyFix feature, the V10L automatically aligns, zooms, and adjusts the camera, helping you lock on targets quickly and get your project done faster and with confidence.



**Non-Contact
Measurement & Stakeout**



EasyFix Feature



Visible Laser



**Automatic Gain
Control Within 80m Range**



**2nd
Generation IMU**



**15m Range
± 4cm Precision**

LASER SURVEYING

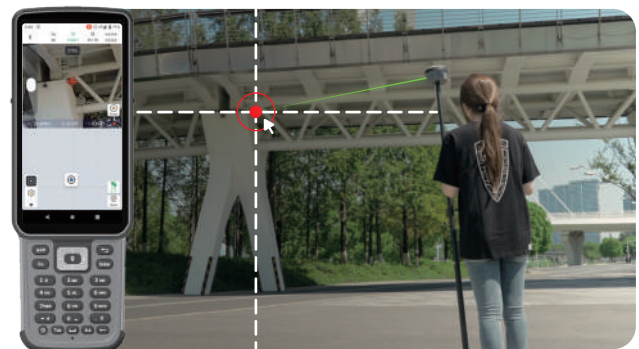
Non-Contact Measurement

Measure instantly without touching the target, even under direct sunlight. With a 15 m range and ± 4 cm precision, the V10L ensures fast, reliable results. Its Automatic Gain Control adapts to light and surface changes for accurate measurements up to 80 m.



EasyFix Feature

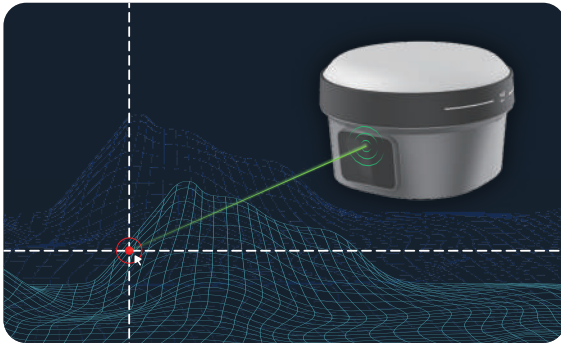
Lock onto targets quickly and steadily using the live camera view. Powered by auto-alignment and auto-zoom algorithms, the system makes it much easier to select targets precisely, even from far away. This gives you greater efficiency and more reliable results in your surveying work.



Visible Green Laser Under Darkness

Offer a stable green laser that works well even in bright sunlight, not only under darkness. This laser is safe for your eyes and makes it easier to aim at targets. The V10L also has a 2MP night vision camera, which can aid your outdoors projects for precise measurements and stakeout in low light, just like working in daylight.





Non-Contact Stakeout

Support real-scene AR stakeout with dual 2 MP cameras. It automatically switches between front and bottom views, showing you accurate directions and distances. When combined with AR laser stakeout, you get a one-click laser guide that makes staking out effortless and precise, boosting your efficiency by 70%.



2nd Generation IMU

Get started instantly with calibration-free initialization. The system is ready to use right out of the box, making it 60% more efficient at startup. Compared to the first model, the second-generation IMU has a faster initialization speed, is more accurate and reliable for all your surveying jobs.



Multi-Communication Channels

Provide many ways to connect wirelessly, including Wi-Fi, Bluetooth, and one-tap NFC pairing. It supports both internal and external radios to keep strong signals even in bad weather. Integrated with a 4G modem, the V10L works with major network types like TDD-LTE, FDD-LTE, WCDMA, GPRS, and GSM/EDGE.

Flexible Options

Choose flexibly from two options: the V10La or V10Li. The V10La is the standard version, while V10Li has all the same features plus a visual measurement function. You can choose the version that best suits your needs and budget.



APPLICATION SCENARIOS



SPECIFICATIONS

GNSS

Channels	1408 channels
GPS	L1A, L1C, L2C, L2P, L5
GLONASS	L1, L2, L3
Beidou	B1I, B2I, B3I, B1C, B2a, B2b
Galileo	E1, E5a, E5b, E6
QZSS	L1, L2C, L5, L6*
IRNSS	L5*
SBAS	L1C/A
HAS-PPP	E6

*Support by a firmware upgrade.

Positioning

RTK performance ¹	H: 8 mm + 1 ppm RMS; V: 15 mm + 1 ppm RMS Initialization time: <5s; Initialization reliability: >99.9%
Post-processing static	H: 2.5 mm + 0.5 ppm RMS V: 5 mm + 0.5 ppm RMS
High-precision static	H: 2.5 mm + 0.1 ppm RMS V: 3.5 mm + 0.4 ppm RMS
PPK accuracy	H: 3 mm + 1ppm RMS; V: 5 mm + 1ppm RMS
PPP accuracy	RMS Horizontal: ±20 cm, RMS Vertical: ±40 cm, RMS
Code differential	H: 0.4 m RMS V: 0.8 m RMS
Autonomous	H: 1.5 m RMS V: 2.5 m RMS
SBAS	60 cm
Positioning rate	1 Hz, 2 Hz, 5 Hz and 10 Hz
Visual survey accuracy ⁵	Typically 3 cm, range 2-15 m
Tilt angle	0-60°
RTK accuracy with tilt-compensation	RMS: 8 mm + 0.6 mm/° tilt
Time to first fix	Cold start ² : <20s; Warm start ³ : <5s Signal re-acquisition: <1s
Laser measurement accuracy	≤2cm within 5m ≤3cm within 10m; ≤4cm within 15m

Camera

Sensor resolution	Dual 2 MP
Field of view	88°
Image group capture ⁵	Method: video photogrammetry Max. capture time: 30s with an image group size of appr. 30MB
Illumination ⁵	Starlight-grade camera with global shutter Large Format Sensor (3μm*3μm): Maintain full color at illumination levels
Visual Layout	Vertical Field of View (VFOV): 63° Horizontal Field of View (HFOV): 76°

¹ Open sky conditions

⁴ Ideal environment

² No information available (no almanac, no approx position)

⁵ V10Li Supported

³ Ephemeris and approx. position known

Communications and Data Storage

SIM card type	Nano-SIM card
Network modem	Integrated 4G modem: TDD-LTE, FDD-LTE, WCDMA, EDGE, GPRS, GSM
Wi-Fi	2.4&5 GHz, 802.11a/b/g/n/ac
Wireless connection	NFC for device
Bluetooth	2.1 EDR/3.0 HS/4.2 LE/5.0 LE
Ports	7-pin LEMO port UHF antenna port USB Type-C port
Built-in UHF radio	Rx/Tx: (410-470)MHz / (902-928)MHz Transmit Power: 2W Protocol: TRIMTALK, TRIMMARK III, TT450S, TRANSEOT, Satel 3AS 4FSK, LoRa; Link rate: 9,600 bps to 19,200 bps Range: typical 6-12 km, up to 16km with optimal conditions ⁴
Data formats	Input&Output: NMEA-1083, RTCM3.X Input: RTCM2.X, CMR
Data storage	32 GB internal memory

Hardware

Temperature	Operating: -35°C - 65°C; Storage: -40°C - 70°C 95% non-condensation
Humidity	IP68, dustproof, protected from continuous immersion to depth of 1 m
Ingress protection	Designed to survive a 2-meter pole-drop
Battery	Built-in battery
Li-ion battery capacity	7000 mAh, 7.4 V; 30 W PD Fast Charge
Laser	Laser Type: Class 2M GREEN; Laser Wavelength: 520nm±20nm Measuring Range: 0-80m; Ranging Accuracy: ±(5 + 100×10 ⁻⁶ ×D) mm D = Measuring distance (unit: mm)
Operating time on internal battery	Rover 15 h, Base 10 h Static: >25 h
External power input	9-28 V DC
Dimensions	φ130×83 mm
Weight	Approximately 980g
True color OLED screen	1.41 inches (320*360, 274ppi)
Front panel	4 LED, 2 physical buttons
Power consumption	UHF/4G RTK Rover w/o camera: Typical 3W Visual stakeout/Visual survey: Typical 4.5W
Waterproof and breathable membrane	Prevent water vapor from entering under harsh environments
Tilt sensor	Immune to magnetic disturbances E-bubble leveling

Note: The battery life is subject to the operation environment, working temperature, and working mode. It has a standard lifespan in normal operating conditions.

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