



GNSS Receiver **T50**

Palm-Sized Laser RTK

T50 GNSS Receiver

T50 is a portable multi-functional GNSS. It has a built-in high-precision positioning module that supports tracking satellite signals from all systems and frequency bands. It is equipped with 4G full network access, bluetooth, WIFI and built-in data transmission radio. The high-precision IMU integrates AR and Laser to achieve tilt measurement, Laser measurement and AR real-Time Stakeout, making the measurement work more convenient and efficient.

CHARACTERISTIC

Linux Smart System

Linux+ARM Cortex-A7 intelligent system platform offers efficient computation and unlimited product functionality expansion.

Full System GNSS Reception

The receiver integrates a high-precision positioning module, utilizing 1408 channels to support a comprehensive range of signals including BDS (B1I/B2I/B3I/B1C/B2a/B2b), GPS (L1/L2/L5), GLONASS (L1/L2/L3), Galileo (E1/E5a/E5b/E6), QZSS (L1/L2/L5), SBAS and NavIC.

Tilt Measurement

Built-in intelligent high-precision inertial navigation module for real-time tilt compensation, eliminating "fly points" in RTK measurement.

AR Real-Time Stakeout

Utilizes a professional ultra-wide-angle camera to provide high-definition real-time plotting functionality, making stakeout tasks more accurate and convenient.

4G Full NetCom

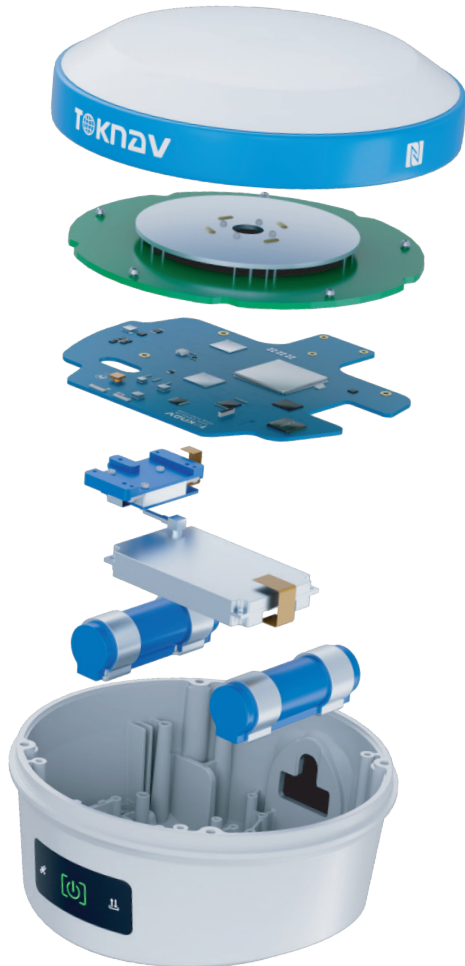
The 4G NetCom solution based on the Linux platform fully supports 2/3/4G networks, offering better compatibility, stronger signals, and more stable connections.

Laser Measurement

Equipped with a laser module with a range of 100 meters, combined with high-precision inertial navigation for accurate laser targeting in complex environments.

T50 GNSS Receiver

Palm-Sized Laser RTK



Main body magnesium alloy
ABS/PC top cover

1408 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS IRNSS

100m range laser
with camera assistance

7.2V, 6500mAh
Over 16 Hours

Portable and smart
Weight 770g

LASER MEASUREMENT



HEIGHT | DIAMETER | WEIGHT
83 mm | 132 mm | 770

≤ 2.5cm 3D error within 5m range
Enhanced with Green Laser.
AR Real-Time Stakeout

SPECIFICATION

SYSTEM

HARDWARE SYSTEM ARM Cortex-A7 1.8GHz

OS Linux

GNSS

GPS L1C/A, L1C, L2P(Y), L2C, L5

GLONASS L1, L2, L3

BDS B1I, B2I, B3I, B1C, B2a, B2b(PPP)

GALILEO E1, E5a, E5b, E6(PPP)

QZSS L1, L2, L5

SBAS L1(PPP)

NavIC (IRNSS) L5*(Requires firmware support)

Channel 1408

Standard Output NMEA-0183

Correction I/O Protocol RTCM 3.X

Frequency 20Hz max

Reacquisition Time <1s

Cold Start Time <40s

ACCURACY

SINGLE (RMS) Horizontal: 1.5m / Vertical: 2.5m

DGPS (RMS) Horizontal: 0.4m / Vertical: 0.8m

RTK (RMS) Horizontal: \pm (8mm+1ppm)
Vertical: \pm (15mm+1ppm)

Time Accuracy(RMS) 20ns

Static(RMS) Horizontal: \pm (2.5mm+1ppm)
Vertical: \pm (5mm+1ppm)

Speed Accuracy(RMS) 0.03m/s

Tilt Compensation ($\leq 60^\circ$) <2cm

AR Stake Out Accuracy Horizontal: \pm (8mm+1ppm)
Vertical: \pm (15mm+1ppm)

Laser Measurement ≤ 2.5 cm 3D error within
5m range

SYSTEM PLATFORM

Bluetooth BR+EDR+BLE

WIFI 802.11 b/g/n

Network LTE FDD: B1/2/3/4/5/7/8/12/13/
18/19/20/25/26/28
LTE TDD: B38/39/40/41
WCDMA: B1/2/4/5/6/8/19
GSM: B2/3/5/8

Storage 32GB storage

Radio Integrated high-power transceiver
Frequency Range: 410~470MHz
Power: 0.5W/1.5W

Radio Protocols: TRIMTALK, TRIMMK3,
SOUTH, TRANSEOT, SATEL, LORA
Air Baud Rate: 4800, 9600, 19200

Laser Module Type: Class 3R
Range: 100m
Precision: ± 5 mm $\pm 100^*10-6^*D$,
(D: Measurement Distance)
Wavelength: 520 ± 20 nm
Power: 3.8mW

Laser Assist Camera Sensor: 1/3.06 inch
Resolution: 4224x3200
FOV: D44°H35°V26.5°
Distortion: <1%

AR Camera AR Stakeout Supported
Sensor: 1/2.8 inch
Aperture: f/2.5
Resolution: 1920*1080
FOV: 69.3° $\pm 3^\circ$
Distortion: <0.38%

BATTERY / CHARGE

Capacity 7.4V, 6500mAh

Endurance Over 16 hours(when applying
controller network mode)

Charging USB PD 15V/2A 5V/3A

ENVIRONMENT

Operating Temperature -30°C~+65°C

Storage Temperature -40°C~+85°C

Shock Resistance Can withstand a 1.5m drop at
normal temperatures

Protection Rating IP68

PHYSICAL

Materials Magnesium alloy casing with
ABS/PC plastic top cover

Dimensions $\Phi 132 * 83$ mm

Weight 770g

ACCESSORIES

T50 1 Unit

Type-C power adapter 2 PCS

Type-C To Type-C 1 PCS

Radio Antenna 1 PCS

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Manufacturers may update parameters at any time, please refer to the latest product information.



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