



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

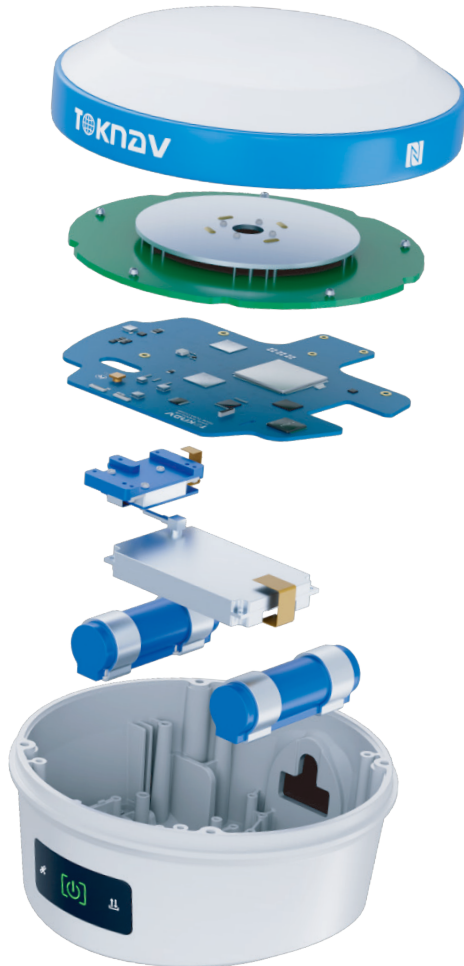
The 4G NetCom solution based on the Linux platform fully supports 2/3/4G networks, offering better compatibility, stronger signals, and more stable connections.

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

7.4V, 6500mAh
Over 16 Hours

Portable and smart
Weight 770g

LASER MEASUREMENT



HEIGHT	DIAMETER	WEIGHT
83 mm	132 mm	770

15km range by Lora radio.
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, CMR+, RTCM2.x, RTCM3.x, RTCM3.1, RTCM3.2

Frequency 20Hz max

Reacquisition Time <1s

Cold Start Time <40s

Initialization Time 5s

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
VRS, FKP, iMAX, MAX, NEAREST

Storage 32GB storage

Interface 5-pin LEMO connector (external
power interface + RS232)

Radio (Tx & Rx) Transmit & receive in one radio
Integrated high-power transceiver
Frequency Range: 410~470MHz
Power: 0.5W/15W
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 Lithium-ion Battery: 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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