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 TOKNAV



*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

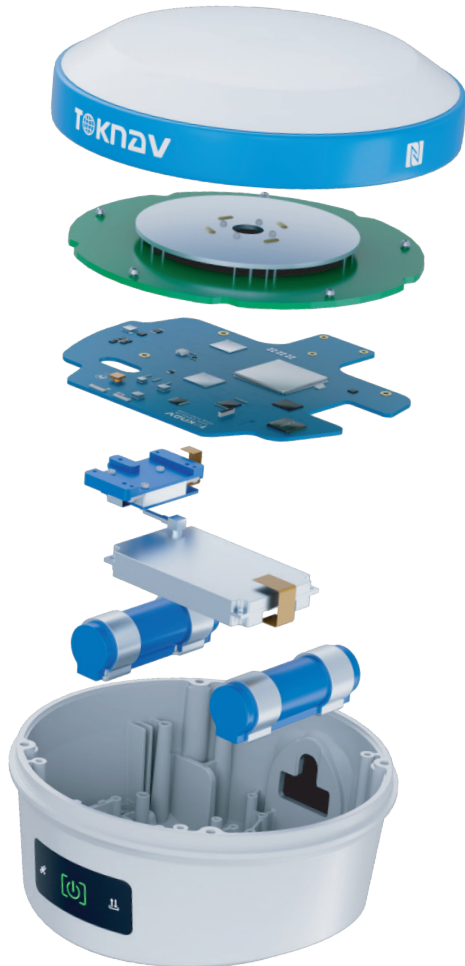
The 4G NetCom solution based on the Linux platform fully supports 2/3/4G networks, offering better compatibility, stronger signals, and more stable connections.

### 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: ± (8mm+1ppm)  
Vertical: ± (15mm+1ppm)

Time Accuracy(RMS) 20ns

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

Speed Accuracy(RMS) 0.03m/s

Tilt Compensation (<= 60°) <2cm

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

Laser Measurement <= 2.5cm 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: ±5mm±100\*10-6\*D,  
(D: Measurement Distance)  
Wavelength: 520±20nm  
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° ± 3°  
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 Φ132 \* 83mm

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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