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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.

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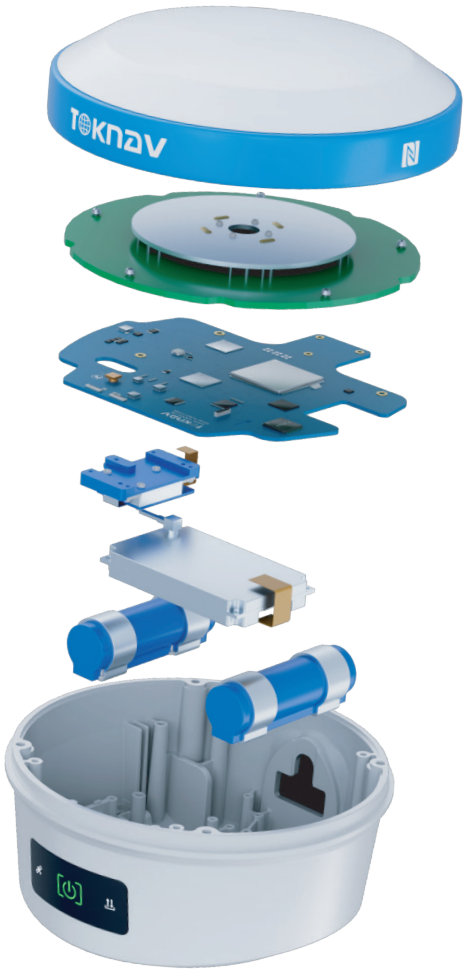

Main body magnesium alloy
ABS/PC top cover

1408 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS IRNSS

100m range laser
with camera assitance

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	8GB 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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