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 TOKNAV



GNSS Receiver **T50basic** Palm-Sized AR IMU RTK

T50basic GNSS Receiver

T50basic 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 to achieve tilt measurement, tilt measurement and AR real-Time Stakeout, making the measurement work more convenient and efficient.

CHARACTERISTIC

Linux Intelligent 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.

4C 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.

Long Endurance

Industrial design, solid magnesium alloy shell, in line with IP68 design requirements, safe and reliable.

T50basic GNSS Receiver

Palm-Sized AR IMU RTK

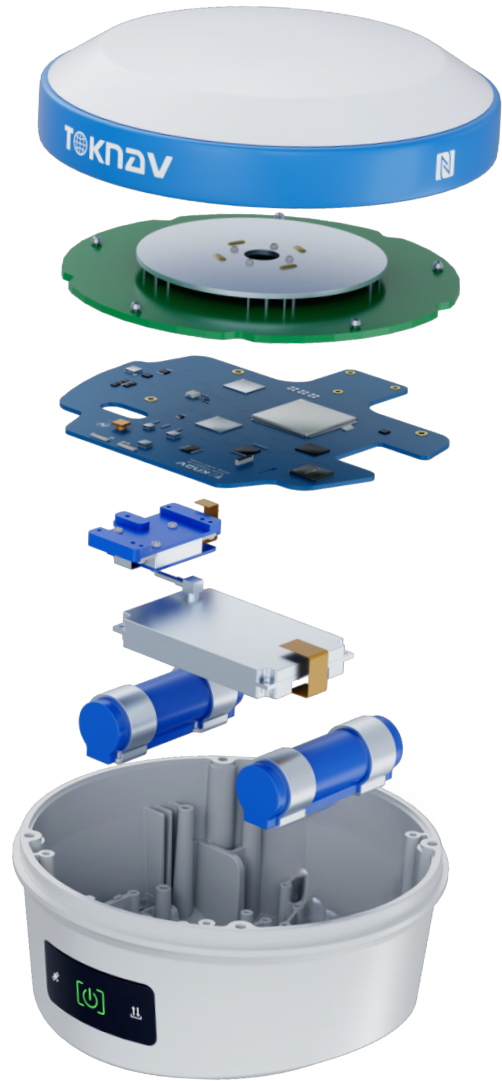
Main body magnesium alloy
ABS/PC top cover

1408 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS

Portable and smart
Weight 770g

7.4V, 6500mAh
Over 16 hours (Rover)

2.5mm static accuracy
High-precision positioning module



Palm-Sized AR IMU



HEIGHT	DIAMETER	WEIGHT
83 mm	132 mm	770

AR Real-Time Stakeout
Long Endurance, over 16 hours
13cm palm-sized, weighing only 770g.

SPECIFICATION

SYSTEM

HARDWARE SYSTEM	ARM Cortex-A7 1.8GHz
OS	Linux

GNSS

GPS	L1 C/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(IRNSS support in future)
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)
Timing Precision (RMS)	20ns
Static Mode Precision (RMS)	Horizontal: \pm (2.5mm+1ppm) Vertical: \pm (5mm+1ppm)
Velocity Estimation (RMS)	0.03m/s
Tilt Correction (Within 60°)	<2cm
AR Stakeout	Horizontal: \pm (8mm+1ppm) Vertical: \pm (15mm+1ppm)

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
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Radio	Integrated transceiver radio Frequency Range: 410~470MHz Power: 0.5W/1.5W Protocols: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT, SATEL, LORA Air Baud Rate: 4800, 9600, 19200
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AR Camera	Supports AR real scene stakeout Sensor size: 1/2.8 inch Aperture: f/2.5 Resolution: 1920*1080 Field of view: 69.3° \pm 3° Distortion: <0.38%
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BATTERY / CHARGE

Capacity	7.4V, 6500mAh
Endurance	Over 16 hours (Typical, Rover, GSM)
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	Φ 132 * 83mm
Weight	770g

ACCESSORIES

T50basic	1 Unit
Type-C power adapter	1 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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