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TOKNAV



GNSS Receiver

T50Pro

Palm-Sized Photogrammetry RTK

T50Pro GNSS Receiver

T50Pro 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 Photogrammetry to achieve tilt measurement, Photogrammetry 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.

Photogrammetry

Equipped with a 1/2.6-inch large base high-definition wide-angle camera, it integrates high-precision inertial navigation algorithms and works with high-performance Android handheld devices for high-precision Photogrammetry.

AR Real-Time Stakeout

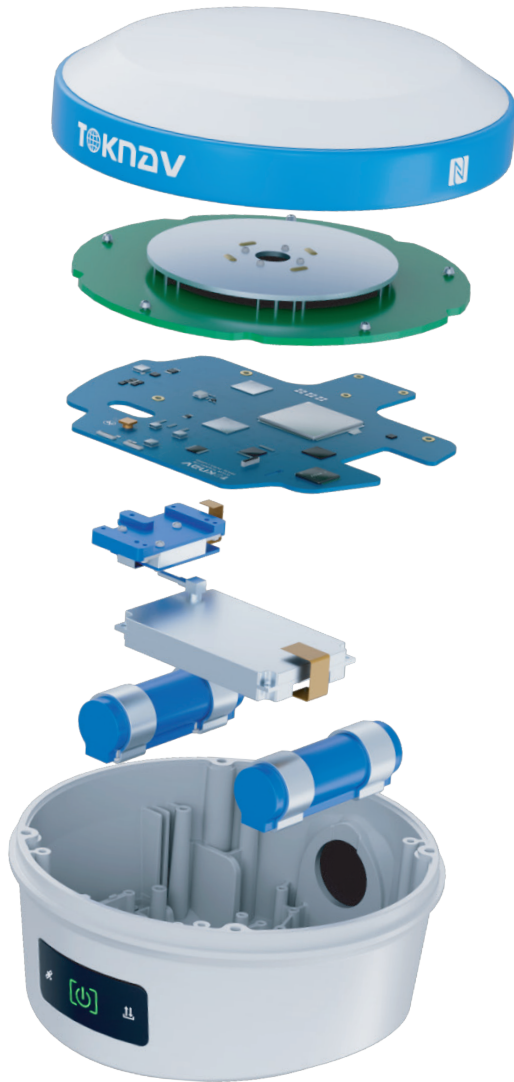
Utilizes a professional ultra-wide-angle camera to provide high-definition real-time plotting functionality, making stakeout tasks more accurate and convenient.

IP68 Design

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

T50Pro GNSS Receiver

Palm-Sized Photogrammetry RTK



Main body Magnesium alloy
ABS/PC top cover

Photogrammetric
Results in 1 second

Offers HD real-world stake out with AR technology.

7.2V, 6500mAh
Over 16 Hours(Rover)

Portable and smart
Weight 770g

Palm-Sized Photogrammetry



HEIGHT	DIAMETER	WEIGHT
83 mm	132 mm	770 g

Error of 2-4 cm within 2-15 meters.
13cm palm-sized, weighing only 770g.
AR Stakeout Supported

SPECIFICATION

SYSTEM

HARDWARE SYSTEM ARM Cortex-A7

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)

OZSS 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 Correction (Within 60°) <2cm

AR Stakeout Accuracy Horizontal: $\pm$ (8mm+1ppm)
Vertical: $\pm$ (15mm+1ppm)

Photogrammetry Accuracy Error of 2-4 cm within 2-15 meters.

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

Data Radio

Integrated receiver/transmitter
Frequency Range: 410~470MHz
Power: 0.5W/1.5W
Protocols: TRIMTALK, TRIMMK3,
SOUTH, TRANSEOT, SATEL, LORA
Air Baud Rate: 4800,9600, 19200

IS Camera

Supports Photogrammetry
Sensor size: 1/2.6 inch
Focal length: 3.27mm
Aperture: f/2.8
Resolution: 1920*1080
Field of view: 83x72x51°
Distortion: < 0.5%

AR Camera

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

BATTERY

Battery 7.4V, 6500mAh

Work time Over 16 hours (when applying controller network mode)

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

ENVIRONMENT

Work 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 main body,
ABS/PC top cover

Dimensions Φ 132mm*83mm

Weight 770g

ACCESSORIES

T50Pro 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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