



GNSS Receiver

tBase

Professional Base Station RTK

tBase GNSS Receiver

tBase is designed and developed specifically for professional base station applications. It features a high-precision positioning module, supporting full-system, multi-frequency satellite signal tracking. Equipped with 4G, Bluetooth, WiFi, a 5W radio, and a large-capacity battery, it meets the demands for concurrent data links at base stations and alleviates the endurance concerns typical of built-in radio work modes, making measurements more convenient and efficient.

CHARACTERISTIC

Linux Intelligent System

ARM Cortex-A7+Linux, the intelligent system platform, brings efficient computing and unlimited expansion of product functions to users.

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(PPP), GPS L1/L2/L5, GLONASS L1/L2/L3, Galileo E1/E5a/E5b/E6(PPP) and QZSS L1/L2/L5.

Extended Range and Battery Life

Features a built-in radio capable of 5W transmission and a 13800mAh battery, ensuring operational distances over 16km and continuous operation up to 12 hours.

Concurrent Data links

The integrated 4G and 5W radio enables simultaneous network and radio differential transmission, streamlining operations by eliminating the need to choose between radio and network.

Remote VPN Management

With an integrated VPN, the device allows remote configuration of various functions without the need to return to the base station setup point, facilitating flexible adjustment of work requirements in complex environments.

IP68 Design

Industrial-grade design, robust magnesium alloy casing, meeting IP68 standards for durability and reliability.

tBase GNSS Receiver

Professional Base Station RTK

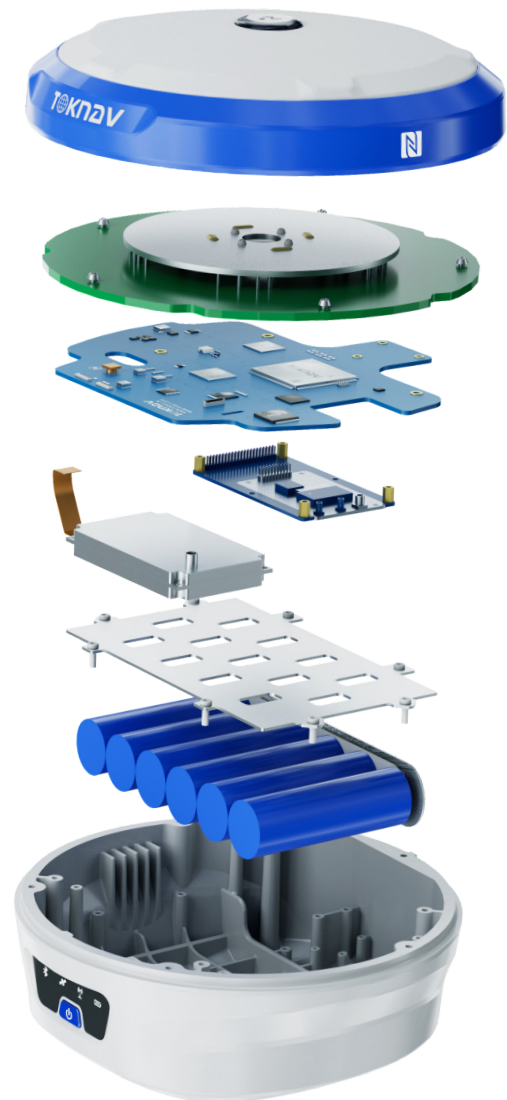
Main body magnesium alloy
ABS/PC top cover

1408 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS

Long-range transmission with
5W full-protocol radio

7.2V, 13800mAh
Over 12 hours (Base)

2.5mm static accuracy
High-precision positioning module



HEIGHT	DIAMETER	WEIGHT
104.9mm	174.9mm	1500g

Remote VPN

the device allows remote configuration of various functions
Built-in **5W** Radio, ensuring transmission distances over **16km**

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: $\pm (8\text{mm}+1\text{ppm})$
Vertical: $\pm (15\text{mm}+1\text{ppm})$

Timing Precision (RMS) 20ns

Static Mode Precision (RMS) Horizontal: $\pm (2.5\text{mm}+1\text{ppm})$
Vertical: $\pm (5\text{mm}+1\text{ppm})$

Velocity Estimation (RMS) 0.03m/s

Tilt Correction (Within 60°) <2cm

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: 1W/2W/5W
Protocols: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT
Air Baud Rate: 9600, 19200bps

INDICATOR

Power Indicator Indicates power and charging status

Differential Signal Indicator Indicates differential signal transmission status

Satellite Indicator Indicates satellite reception status

Bluetooth Indicator Indicates Bluetooth connection status

BATTERY / CHARGE

Capacity 7.2V, 13800mAh

Endurance Over 12 hours(5W Radio, Base)

Charging Supports USB PD 15V/2A and 5V/3A(With adaptive dynamic current adjustment)

ENVIRONMENT

Operating Temperature -20°C~+60°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 $\Phi 174.9 \times 104.9\text{mm}$

Weight 1500g

ACCESSORIES

tBase 1 Unit

Power adapter 1 PCS

Type-C To Type-C 1 PCS

Radio Antenna 1 PCS

www.toknavgnss.com info@toknavgnss.com

Manufacturers may update parameters at any time, please refer to the latest product information.



Europe, North & South America
Asia, Africa & Oceania
Tel & WhatsApp: +86 139 2607 5986 (Jeffrey)

Guangzhou Toksurvey Information Technology Co., Ltd
No. 9 Caipin Road, Building B, Room 801-6,
Huangpu District, Guangzhou, China