



# GNSS Receiver

# **ItBase**

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.

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## Professional Base Station RTK

Main body magnesium alloy  
ABS/PC top cover

**1408 Channel**  
GPS GLONASS BDS GALILEO  
QZSS SBAS

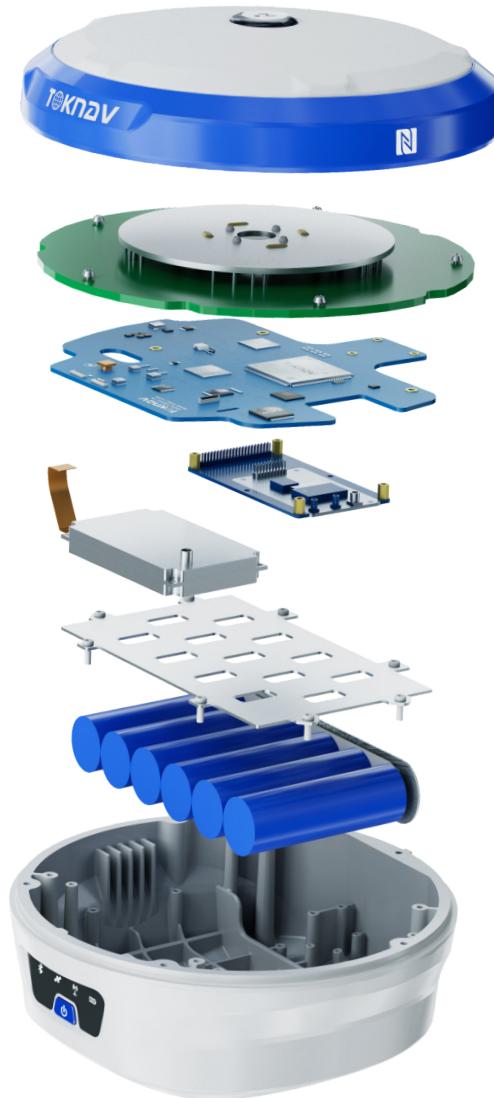
Long-range transmission with  
5W full-protocol radio

**7.2V, 13800mAh**  
Over 12 hours (Base)

**2.5mm static accuracy**  
High-precision positioning module



HEIGHT  
104.9 mm | DIAMETER  
174.9 mm | WEIGHT  
1500 g



### 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: $\pm$ (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
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	Φ174.9 * 104.9mm
Weight	1500g
ACCESSORIES	
tBase	1 Unit
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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