tBase GNSS Receiver

The 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.

HEIGHT 104.9mm | DIAMETER 174.9mm | WEIGHT 1500g

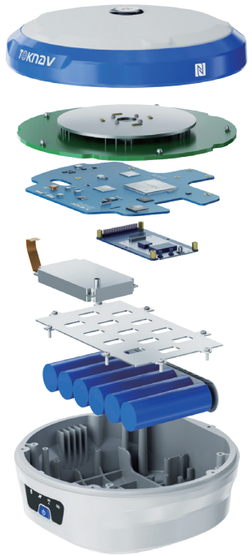
CHARACTERISTIC

Linux Smart 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.

TECHNICAL PARAMETERS

ITEM		SPECIFICATION	REMARKS
HARDWARE SYSTEM		ARM Cortex-A7 1.8GHz	
OS		Linux	
GNSS	GPS	L1 C/A, L1C, L2P(Y), L2C, L5	PPP-B2b, PPP-E6, SBAS supported
	GLONASS	L1, L2, L3	
	BDS	B1I, B2I, B3I, B1C, B2a, B2b	
	GALILEO	E1, E5a, E5b, E6	
	QZSS	L1, L2, L5	
	SBAS	L1	
	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)	
	Timing Precision（RMS）	20ns	
	Static Mode Precision（RMS）	Horizontal: ±(2.5mm+1ppm) Vertical: ±(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	
	Radio	Integrated high-power transceiver Frequency Range: 410~470MHz Power: 1W/2W/5W Protocols: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT Air Baud Rate: 9600, 19200bps	
	Storage	32GB storage	
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)	TBD
	Charging	Supports USB PD 15V/2A and 5V/3A	With adaptive dynamic current adjustment.
ENVIRONMENT	Operating Temperature	-20℃~+60℃	
	Storage Temperature	-40℃~+85℃	
	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	

Equipped with electronic fence system, Toknav's product have area code restrictions.
Any issue please contact Toknav or local dealers to verify the specific details.

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