

T45basic 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 Smart 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

Equipped with a high-capacity lithium battery, ensuring work time for more than 16 hours.

### IP68 Design

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



Europe, North & South America  
Tel & WhatsApp: +1 (323) 847-7713 (Ian)  
Asia, Africa & Oceania  
Tel & WhatsApp: +86 139 2607 5986 (Jeffrey)

| ITEM            |                              | SPECIFICATION                                                                                                                                                                     | REMARKS                         |
|-----------------|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| HARDWARE SYSTEM |                              | ARM Cortex-A7                                                                                                                                                                     |                                 |
| OS              |                              | Linux                                                                                                                                                                             |                                 |
| GNSS            | GPS                          | L1C/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      | RTCM3.X                                                                                                                                                                           |                                 |
|                 | Frequency                    | ≤20Hz                                                                                                                                                                             |                                 |
|                 | Reacquisition Time           | <1s                                                                                                                                                                               |                                 |
|                 | Cold Start Time              | <40s                                                                                                                                                                              |                                 |
|                 | RTK Initialization Time      | <10s                                                                                                                                                                              |                                 |
|                 | Internal noise level         | ≤1mm                                                                                                                                                                              |                                 |
|                 | Phase Center Offset          | ≤2.5mm                                                                                                                                                                            |                                 |
| 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                                                                                                                                                                              |                                 |
|                 | AR Stakeout                  | Horizontal: ±(8mm+1ppm) ; Vertical: ±(15mm+1ppm)                                                                                                                                  |                                 |
| SYSTEM          | Bluetooth                    | BR+EDR+BLE                                                                                                                                                                        |                                 |
|                 | NFC                          | Support                                                                                                                                                                           |                                 |
|                 | WIFI                         | 802.11 b/g/n/ac                                                                                                                                                                   |                                 |
|                 | Network                      | LTE FDD: B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28<br>LTE TDD: B38/39/40/41<br>WCDMA: B1/2/4/5/6/8/19<br>GSM: B2/3/5/8                                                               |                                 |
|                 | Radio                        | Integrated transceiver radio<br>Frequency Range: 410~470MHz<br>Power: 0.5W/1.5W<br>Protocols: TRIMTALK, TRIMMK3, SOUTH, TRANSEOT, SATEL, LORA<br>Air Baud Rate: 4800, 9600, 19200 |                                 |
|                 | Storage                      | 8GB                                                                                                                                                                               |                                 |
|                 | Voice                        | Support                                                                                                                                                                           |                                 |
|                 | AR Camera                    | Supports AR real scene stakeout<br>Sensor size: 1/2.8 inch<br>Aperture: f/2.5                                                                                                     |                                 |



|                      |                       |                                                                        |      |
|----------------------|-----------------------|------------------------------------------------------------------------|------|
|                      |                       | Resolution: 1920*1080<br>Field of view: 69.3°±3°<br>Distortion: <0.38% |      |
| <b>BATTERY</b>       | Battery               | 7.4V, 6500mAh                                                          | 2P2S |
|                      | Work time             | More than 16 hours (Typical, Rover, GSM)                               | TBD  |
|                      | Charge                | USB PD 15V/2A 5V/3A                                                    |      |
| <b>ENVIRONMENTAL</b> | 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                                                                   |      |
| <b>PHYSICAL</b>      | Materials             | Magnesium alloy casing with ABS/PC plastic top cover                   |      |
|                      | Dimensions            | Φ134mm*86mm                                                            |      |
|                      | Weight                | ≤0.75Kg                                                                |      |
| <b>ACCESSORIES</b>   | T45basic              | 1 Unit                                                                 |      |
|                      | Type-C power adapter  | 1 PCS                                                                  |      |
|                      | Type-C To Type-C      | 1 PCS                                                                  |      |
|                      | Radio Antenna         | 1 PCS                                                                  |      |
|                      | Controller (Optional) | 1 Set                                                                  |      |

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

- 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.



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