

THOR III GNSS RTK Compact Receiver



Boosted Performance

Full Constellation Tracking Ensures Reliable Performance

- 1288 channels, improving fixed rate
- Triple L1+L2+L5 frequency, locking more satellites and increasing stability
- GPS, GLONASS, COMPASS (BDS), GALILEO, QZSS, IRNSS& SBAS constellations
- Supporting RTK, PPK and SBAS Positioning
- Internal UHF transmits up to 15KM with 2W power consumption
- IMU-based tilt surveying, up to 60° tilt survey
- Powerful android-based data collection software
- Smaller size, lighter weight

Superior Value and Flexibility Industrial Grade Integrated RTK receiver

- Powerful functions, point survey, point stake, CAD stake, road stake, feature survey, earthwork calc, etc
- Embedded self-configuring operative system with free lifetime updates and support
- 1 Function buttons for Power, 2 LEDs for satellites tracking and RTK corrections data
- Works as rover or base transmitting and receiving by UHF antenna
- IP67 Water and Shockproof enclosure
- Internal battery cells at 5000mAh
- Made with industrial components, for decades of use and repairable even after heavy damage
- The best Cost/Benefit ratio of the market

1288 Channels Triple Frequency

MILLIMETRIC ACCURACY

THOR III GNSS RTK Compact Receiver

GPS, GLONASS, COMPASS, GALILEO, QZSS, IRNSS & SBAS

SmaRTK GNSS RTK Integrated Receiver

RTK System Overview

- Triple-frequency GNSS RTK Receiver with 1288 channels and integrated antenna.
- Internal Transceiving 2W UHF Radio modem, the maximum distance is 15KM
- Works as UHF Rover with its internal radio modem
- Works as Base, internal radio modem, power consumption 0.5W to 2W
- Baud rates up to 921600 bps UHF modem
- Tx/Rx with full frequency range from 410-470 MHz
- NFC fast connection
- Integrated Bluetooth, V4.0 protocol, compatible with Windows and Android OS
- IP67 Rugged and water-resistant design

C50 Data Collector Overview

- MT6762 8-Core Processor, 2.0 GHZ
- 3GB+32GB Memory
- 5.5" Touch Display with 720*1440 Resolution
- IP67 Waterproof and Dustproof
- 7700mAh Li-Polymer Battery
- Support 4G, Ultra-Distance Bluetooth®, Wi-Fi, NFC

Performance Specifications

Receiver

- 1288 Channels, high fixed rate
- Anti-interference algorithm technology, for maximum error filtering
- Multiple radio samplers gives the most accurate band tuning available
- Available as GNSS L1+L2+L5 Single receiver
- High precision multicorrelating GNSS pseudorange measurement and DP Filter
- GNSS carrier phase with low noise with <1 mm precision in a 1 Hz bandwidth
- Signal-to-Noise ratios reported in dB-Hz
- Full Constellation tracking, ensures reliable performance
- Satellite signals tracked:

GPS: L1C/A,L2P,L1C,L2C,L5

GLONASS: G1C,G1P,G2C,G2P,G3

COMPASS: B1I,B2I,B3I,B1C,B2a,B2b,B2b-ppp

Gallileo: E1,E5b,E5a,E5AltBoc,E6c

IRNSS (NAVIC): L6

QZSS: L1C/A,L2C,L5,L1C,L1s,L5s,L6

SBAS: WAAS, EGNOS, MSAS, GAGAN,SDCM

Position data output rates: 1Hz, 5Hz, 10Hz on RTK, up to 20Hz

Code differential positioning (DGPS).

<0.4 m RMS

Postprocessed static (PPS) fast static and kinematic (PPK) surveying (stop&go)

Horizontal ± 2.5 mm + 0.5 ppm RMS

Vertical ± 5 mm + 0.5 ppm RMS

Real Time Kinematic (RTK) surveying. UHF or Network, Single Baseline <30km(L2)

Horizontal ± 8 mm + 1 ppm RMS

Vertical ± 15 mm + 1 ppm RMS

Initialization time: <10 seconds

Initialization reliability: >99 9%

Signal re-acquisition: <1.5 s

Communication Protocols and NTRIP compliance

Correction data: RTCM 2.X, 3.X, CMR (GPS only), CMR+ (GPS only)

ASCII: NMEA-0183 GSV, RMC, HDT, VHD, GGA, GSA, ZDA, VTG, GST; PTNL, etc.

Data Link UHF Radiomodem

Internal Transmitting Power: 0.5-2W adjustable

Tx/Rx with full frequency range: from 410-470 MHz.

Power consumption: 1.4 W

Antenna: external, SMA

Link Rate/Modulation: up to 921600 bps

Link Protocols: Lora

Unlimited UHF Channels: channel 1 to 9, support customize

Frequency Control: Synthesized 250 kHz Resolution

Work Range: 15 KM

Optional Modes: Transmitting and Receiving

Powerful Android software

User friendly Wizard: Help you get familiar with the software step-by-step

Functions: Radio/PDA CORS modes, all kinds of survey/stake out/CAD sketch and etc.

Import & Export: supporting many kinds of TXT, CSV, SHP, AutoCAD DXF and etc.

Broad Applicability: Featuring 10 more languages and various projections & datums

Cooperation: support mock location function

PDA CORS with Controller Network

Direct connect to CORS with Controller network

Protocols: Transparent / NTRIP/TCP

Network CORS support compatible with VRS, FKP, MAC, iMAX

User Interphase

• 1 Function buttons for Power

• 2 LEDs (indicating Satellites Tracking, RTK Corrections Data)

• Calibration-free IMU integrated for tilt survey up to 60°tilt

• Bluetooth : V 4.0 protocol, compatible with Windows OS and Android OS

Energy

Typical power consumption: 1.4 W

Battery: 5000mAh,7.4V

Input voltage: 6-28 VDC

Integrated internal Battery Charger with charge indicator.

Communications

Charger and Download: 1 Type-C

UHF Radio modem transmitter / receiver: switchable power at 0.5W to 2W, 1 SMA

IMU: up to 60°tilt with 2.5 cm accuracy

NFC: support, fast connection

HARDWARE

Physical

Dimensions: 13*13*10cm

Weight: 790g (include battery)

Working Temperature: -40 °C to +65 °C

Storage Temperature: -40 °C to +85°C

Humidity: 100% no condensing

Waterproof and dustproof: IP67, protected from temporary immersion to depth of 1 m

Shock and vibration tested:

Shock Non-operating: Designed to survive a 2 m drop onto concrete

Memory: 8GB

STANDARD ROVER SET INCLUDES:

- 1 Receiver
- 1 Controller with holding Bracket
- 1 GNSS Connector
- 1 Battery Charger
- 1 USB Data Cable
- 1 Transport Case
- 1 Whip Antenna (UHF)

STANDARD BASE AND ROVER SET INCLUDES:

- 2 Receivers
- 1 Controller with holding Bracket
- 2 GNSS Connectors
- 2 Battery Chargers
- 2 USB Data Cable
- 2 Transport Cases
- 2 Whip Antennas (UHF)
- 1 Tribrach (Optional)
- 1 2m-Range Pole with Bagd (Optional)
- 1 Aluminum Disc ×1 (Optional), 15cm Extension Bar ×1 (Optional)

Notes:

- Accuracy, TTFF and reliability specifications may be affected by multipath, satellite geometry and atmospheric conditions. Specifications assume at least 5 satellites locked and follow up of the recommended practices.

- Working distance of internal UHF varies in different environments, the maximum distance is 15km in ideal situation.

- 8GB is the default internal memory and optional 16GB, 32GB is available to order. Please clarify when placing the order.