# Tersus GNSS

## David30-TAP GNSS Receiver

## Overview

The Tersus David30-TAP is a multi-constellation high precision GNSS receiver which offers centimeter-accurate positioning. It is designed for intelligent transportation, construction, machine control, precision agriculture, and navigation applications.

The David30-TAP GNSS receiver is built for outdoor environments with IP67-rated enclosure. The compact palm size makes it easy to integrate with various application systems.

The David30-TAP GNSS receiver includes "TAP", the satellite-based precise point positioning service developed by Tersus GNSS. With TAP, the GNSS rover receiver will not need to work with the local RTK base station or CORS, but directly receives corrections broadcast by the satellites, such as ephemeris error, satellite clock error, etc.

## Key Features

- ✓ Supports multi-constellation including BeiDou, GPS, GLONASS, Galileo, QZSS, SBAS and L-band
- ✓ Supports 576 channels
- ✓ Supports RTCM2.x/3.x, CMR/CMR+ corrections
- ✓ Flexible for integration in different applications
- ✓ Data update rate up to 20Hz
- ✓ Input power range is 5~28V DC(1)
- ✓ Built-in 8GB storage benefits data collection
- ✓ IP67-rated dust- & waterproof enclosure, for reliability in harsh environmental conditions
- ✓ Supports Nuwa surveying software

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## Technical Specifications

### Performance

| | |
|---|---|
| Signal Tracking: | |
| GPS L1 C/A, L2C, L2P, L5; GLONAS L1 C/A, L2 C/A; BDS B1, B2, B3, support BDS-3; Galileo E1, E5a, E5b; QZSS L1 C/A, L2C, L5; SBAS supports WAAS, EGNOS, GAGAN, SDCM, MSAS; L-band | |
| Channels: | 576 |
| Single Point Positioning Accuracy (RMS): | |
| - Horizontal: | 1.5m |
| - Vertical : | 3.0m |
| DGPS Positioning Accuracy (RMS): | |
| - Horizontal: | 0.25m |
| - Vertical: | 0.5m |
| High-Precision Static (RMS): | |
| - Horizontal: | 2.5mm+0.1ppm |
| - Vertical: | 3.5mm+0.4ppm |
| Post Processed Kinematic (RMS): | |
| - Horizontal: | 8mm+1ppm |
| - Vertical: | 15mm+1ppm |
| Real Time Kinematic (RMS): | |
| - Horizontal: | 8mm+1ppm |
| - Vertical: | 15mm+1ppm |
| Initialization (Typical): | 4s(2) |
| Initialization Reliability: | >99.99% |
| Observation Accuracy (zenith direction): | |
| - C/A Code: | 10cm |
| - P Code: | 10cm |
| - Carrier Phase: | 1mm |
| Time To First Fix (TTFF): | |
| - ColdStart: | <50s |
| - WarmStart: | <30s |
| Re-acquisition: | <2s |
| Timing Accuracy (RMS): | 20ns |
| Velocity Accuracy (RMS): | 0.03m/s |
| TAP positioning accuracy (RMS): | < 5cm |
| TAP convergence time: | 15 minutes |
| TAP coverage: | Global |
| TAP signal stability: | 99.99% |
| Initialization Reliability: | >99.99% |
| Correction: | RTCM 2.x/3.x, CMR/CMR+ |
| Data Output: | NMEA-0183, Tersus Binary |
| Max. Update Rate: | 20Hz |
| Storage: | Built-in 8GB |

### Software Support

| | |
|---|---|
| Tersus Nuwa | |
| Other third party software support NMEA-0183 | |

### Communication

| | |
|---|---|
| Serial ports: | RS-232 x2 |
| COM baud rate: | Up to 921600bps |
| USB ports: | USB 2.0 OTG x1 |
| CAN ports: | CANx1 |
| PPS ports: | LVTTL x1 |
| Event mark: | LVTTL x2 |
| Antenna Connector: | TNC female x1 |

### Electrical and Physical

| | |
|---|---|
| Input voltage: | 5V~28V DC(1) |
| Power consumption (typical): | 3.6W |
| Dimension: | 124x79.5x37mm |
| Weight: | ≈ 360g |

### Environmental

| | |
|---|---|
| Operating Temperature: | -40℃ ~ +70℃ |
| Storage Temperature: | -40℃ ~ +85℃ |
| Humidity: | 95% non-condensing |
| Dust- & waterproof: | IP67 |

Note:
(1) Input of 28~36V DC can be customized.
(2) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.

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