# Tersus

# David30 GNSS Receiver

### **Full-Constellation High Precision GNSS Receiver**

## **Overview**

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

### **Key Features**

- ✓ Supports multi-constellation including BeiDou, GPS, GLONASS, Galileo, and QZSS
- ✓ 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  $5 \sim 28 \text{V DC}^{(1)}$
- ✓ In-built 8GB storage benefits data collection
- ✓ IP67-rated dust- & waterproof enclosure, for reliability in harsh environmental conditions
- ✓ Supports Nuwa surveying software





#### Datasheet

### **Technical Specifications**

Signal tracking:         GPS L1C/A, L2C, L2P,L5; GLONASS L1 C/A,         L2 C/A; BDS B1, B2, B3, support BDS-3;         Galileo E1, E5a, E5b; QZSS L1 C/A, L2C, L5         GNSS channels:       576         Single Point Positioning Accuracy (RMS):         - Horizontal:       1.5m         Neal Time Kinematic/RTK (RMS):         - Horizontal:       8mm+1ppm         - Vertical:       15m+1ppm         DGPS (RMS):       0.25m         - Horizontal:       0.25m         Portical:       0.5m         - Horizontal:       0.5m         - Horizontal:       0.5m         - Vertical:       0.5m         - Horizontal:       2.5m+0.1ppm         DGPS (RMS):       0.5m         - Horizontal:       2.5m+0.1ppm         - Vertical:       3.5m+0.4ppm         Observation Accuracy (zenith direction):       -         - C/A code:       10cm         - P code:       10cm         - P code:       10cm         - Surger phase:       1mm         Time To First Fix (TTFF):       -         - Cold start:       <30s         - Warm start:       <30s         Reacquisition:       <2s	Performance	
L2 C/A; BDS B1, B2, B3,support BDS-3; Galileo E1, E5a, E5b; QZSS L1 C/A, L2C, L5 GNSS channels: 576 Single Point Positioning Accuracy (RMS): - Horizontal: 1.5m - Vertical: 3.0m Real Time Kinematic/RTK (RMS): - Horizontal: 8mm+1ppm - Vertical: 15mm+1ppm DGPS (RMS): - Horizontal: 0.25m High-Precision Static (RMS): - Horizontal: 2.5mm+0.1ppm - Vertical: 3.5mm+0.4ppm Observation Accuracy (zenith direction): - C/A code: 10cm - P code: 10cm - P code: 10cm - Carrier phase: 1mm Time To First Fix (TTFF): - Cold start: <50s - Warm start: <30s Reacquisition: <2s Timing accuracy (RMS): 0.03m/s Initialization (typical): <10s Initialization reliability: >99.99% Correction: RTCM 2.x/3.x, CMR/CMR+	Signal tracking:	
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GNSS channels:       576         Single Point Positioning Accuracy (RMS):       1.5m         - Horizontal:       1.5m         - Vertical:       3.0m         Real Time Kinematic/RTK (RMS):       1         - Horizontal:       8mm+1ppm         - Vertical:       15mm+1ppm         DGPS (RMS):       0.25m         - Horizontal:       0.25m         - Horizontal:       0.5m         - Vertical:       0.5m         - Vertical:       3.5mm+0.1ppm         DServation Accuracy (zenith direction):       0         - Vertical:       3.5mm+0.4ppm         Observation Accuracy (zenith direction):       10cm         - P code:       10cm         - P code:       10cm         - P code:       10cm         - Carrier phase:       1mm         Time To First Fix (TTFF):          - Cold start:       <30s	L2 C/A; BDS B1, B2, B3,support BDS-3;	
Single Point Positioning Accuracy (RMS):         - Horizontal:       1.5m         - Vertical:       3.0m         Real Time Kinematic/RTK (RMS):       8mm+1ppm         - Horizontal:       8mm+1ppm         OGPS (RMS):       0.25m         - Horizontal:       0.25m         - Vertical:       0.5m         - Horizontal:       2.5mm+0.1ppm         Observation Accuracy (zenith direction):       10cm         - Vertical:       10cm         - P code:       10cm         - P code:       10cm         - Carrier phase:       1mm         Time To First Fix (TTFF):       <00s	Galileo E1, E5a, E5b; QZS	SS L1 C/A, L2C, L5
- Horizontal:       1.5m         - Vertical:       3.0m         Real Time Kinematic/RTK (RMS):       8mm+1ppm         - Horizontal:       8mm+1ppm         - Vertical:       15mm+1ppm         DGPS (RMS):       0.25m         - Horizontal:       0.25m         - Vertical:       0.5m         High-Precision Static (RMS):       0.5m         - Horizontal:       2.5mm+0.1ppm         Observation Accuracy (zenith direction):       0.5m         - Vertical:       3.5mm+0.4ppm         Observation Accuracy (zenith direction):       10cm         - C/A code:       10cm         - P code:       10cm         - Cold start:       <50s	GNSS channels:	576
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- Horizontal:       0.25m         - Vertical:       0.5m         High-Precision Static (RMS):       .         - Horizontal:       2.5mm+0.1ppm         - Vertical:       3.5mm+0.4ppm         Observation Accuracy (zenith direction):       .         - C/A code:       10cm         - P code:       10cm         - P code:       10cm         - Carrier phase:       1mm         Time To First Fix (TTFF):       .         - Cold start:       <50s	- Vertical:	15mm+1ppm
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<ul> <li>- C/A code:</li> <li>10cm</li> <li>- P code:</li> <li>10cm</li> <li>- Carrier phase:</li> <li>1mm</li> <li>Time To First Fix (TTFF):</li> <li>- Cold start:</li> <li>&lt; Cold start:</li> <li>&lt; Soos</li> <li>- Warm start:</li> <li>&lt; Soos</li> <li>- Warm start:</li> <li>&lt; Soos</li> <li>Reacquisition:</li> <li>&lt; 2s</li> <li>Timing accuracy (RMS):</li> <li>20ns</li> <li>Velocity accuracy (RMS):</li> <li>0.03m/s</li> <li>Initialization (typical):</li> <li>&lt; 10s</li> <li>Initialization reliability:</li> <li>&gt; 99.99%</li> <li>Correction:</li> <li>RTCM 2.x/3.x, CMR/CMR+</li> <li>Data format:</li> <li>NMEA-0183, Tersus binary</li> <li>Max. data update rate:</li> <li>20Hz</li> </ul>	- Vertical:	3.5mm+0.4ppm
<ul> <li>P code: 10cm</li> <li>Carrier phase: 1mm</li> <li>Time To First Fix (TTFF): </li> <li>Cold start: </li> <li>Cold start: </li> <li>Sold start: <td colspan="2">Observation Accuracy (zenith direction):</td></li></ul>	Observation Accuracy (zenith direction):	
<ul> <li>Carrier phase: 1mm</li> <li>Time To First Fix (TTFF):</li> <li>Cold start: </li> <li>Varm start: </li> <li>Sanset (RMS): </li> <li>Velocity accuracy (RMS): </li> <li>Velocity accuracy (RMS): </li> <li>No3m/s</li> <li>Initialization (typical): </li> <li>Sonset (RMS): </li> <li>Sonset (</li></ul>	- C/A code:	10cm
Time To First Fix (TTFF):- Cold start:<50s	- P code:	10cm
<ul> <li>Cold start:</li> <li>Warm start:</li> <li>S00</li> <li>Warm start:</li> <li>S00</li> <li>Reacquisition:</li> <li>S20</li> <li>Timing accuracy (RMS):</li> <li>20ns</li> <li>Velocity accuracy (RMS):</li> <li>0.03m/s</li> <li>Initialization (typical):</li> <li>S00,3m/s</li> <li>Initialization (typical):</li> <li>S00,3m/s</li> <li>Initialization reliability:</li> <li>S99,99%</li> <li>Correction:</li> <li>RTCM 2.x/3.x, CMR/CMR+</li> <li>Data format:</li> <li>NMEA-0183, Tersus binary</li> <li>Max. data update rate:</li> <li>20Hz</li> </ul>	- Carrier phase:	1mm
- Warm start: <a>30s</a> Reacquisition: <2s Timing accuracy (RMS): 20ns   Velocity accuracy (RMS): 0.03m/s   Initialization (typical): <10s	Time To First Fix (TTFF):	
Reacquisition:<2sTiming accuracy (RMS):20nsVelocity accuracy (RMS):0.03m/sInitialization (typical):<10s	- Cold start:	<50s
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Max. data update rate: 20Hz	Correction: RTCM 2	x/3.x, CMR/CMR+
	Data format: NMEA-01	83, Tersus binary
Storage: In-built 8GB	Max. data update rate:	20Hz
	Storage:	In-built 8GB

#### Communication

Serial ports:	RS232 x2
Serial baud rate:	Up to 921600bps
USB ports:	USB 2.0 OTG x1
CAN ports:	CAN x1
PPS ports:	LVTTL x1
Event ports:	LVTTL x2
Antenna connector:	TNC female x1

#### Software Support

Tersus Nuwa

Other third party software support NMEA-0183

Electrical	
Input voltage:	5V~28V DC <sup>(1)</sup>
Power consumption (at 25°C ):	3.6W

Physical	
Dimension:	124x79.5x37mm
Weight:	pprox 360g

Environmental	
Operating temperature:	-40°C ~ +70°C
Storage temperature:	-40°C ∼ +85°C
Humidity:	95% non-condensing
Dust- & waterproof:	IP67

Note:

(1) Input of 28~36V DC can be customized.

#### Website | <u>www.tersus-gnss.com</u> Sales Inquiry | <u>sales@tersus-gnss.com</u> Technical Support | <u>support@tersus-gnss.com</u>

