

Right to the Point

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TERSUS

OSCAR-TAP

**GNSS RTK Receiver
with Global Satellite-Based PPP Service**



Oscar-TAP GNSS Receiver ExtremeRTK™

Speed Up Your Work

The Oscar-TAP GNSS Receiver adopts satellite-based precise point positioning service (TAP) developed by Tersus GNSS, which allows users to achieve centimeter-level high-precision positioning worldwide. With TAP, the GNSS rover receiver will not need to work with the local RTK base station or CORS but directly receive corrections broadcast by the satellites, such as ephemeris errors, satellite clock errors, etc, ensuring the high-precision operation of a single receiver.

It supports calibration-free tilt compensation function which is immune to magnetic disturbances, leveling pole is not required. Easy configuration with 1.54-inch interactive screen on Ultimate versions. With an internal high-performance multi-constellation and multi-frequency GNSS board, the Oscar-TAP GNSS Receiver can provide high accuracy and stable signal detection. The high-performance antenna can speed up the time to first fix (TTFF) and improve antijamming performance. The built-in large capacity battery is detachable, two batteries support up to 16 hours of field work in 4G/3G/2G network and Rover radio mode. The built-in UHF radio module supports long-distance communication. The rugged housing protects the equipment from challenging environments.

Oscar-TAP meets the demand for centimeter-level high-precision positioning in areas without or with poor network coverage, such as oceans, deserts, mountains, high altitudes, etc.



Oscar-TAP
GNSS Receiver

Unprecedented
Flexibility and efficiency



Danger Zone



Hidden Point



Underground
Utilities



Forest



City Canyon

Features



Supports multiple constellations & frequencies: GPS, GLONASS, BeiDou, Galileo, QZSS, SBAS, IRNSS, L-Band

1792 Supports 1792 channels



Tilt compensation without calibration, immune to magnetic disturbances



Up to 16 hours working in 4G/3G/2G network and Rover radio mode



IP68-rated dust- & waterproof enclosure, for reliability in harsh environmental conditions



410-470MHz UHF radio, 4G network, Wi-Fi, Bluetooth, NFC, 32GB/8GB internal storage



Free subscription of Tersus Caster Service (TCS): transmit the correction data from Oscar-TAP Base to Rover



Global satellite-based PPP service

Tersus TAP (PPP) Service

TAP is a satellite-based precise point positioning service developed by Tersus GNSS, which allows users to achieve centimeter-level high-precision positioning worldwide.



High-performance global solution

Enjoy 15mm horizontal and 30mm vertical accuracy in just 3 minutes worldwide.

High-availability & Redundancy

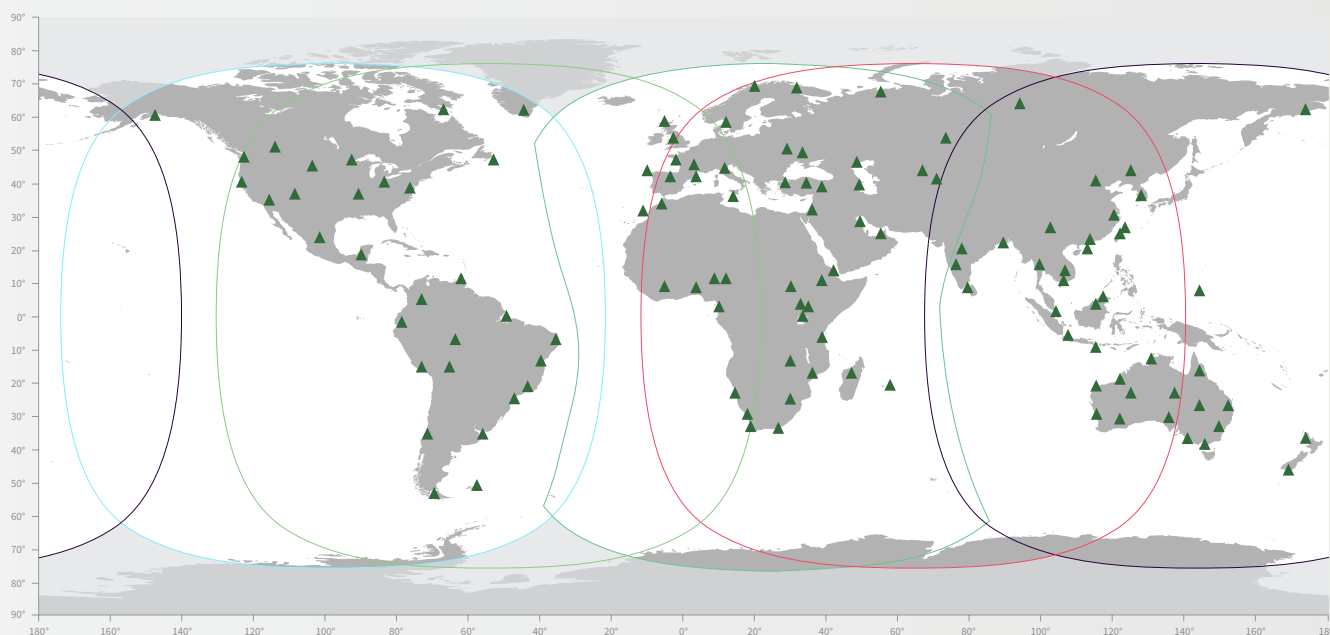
With redundant backups for all hardware and broadcast paths, ensure over 99.99% service availability.

The security and simplicity

Quick and secure access, with one-way data transfer of corrections to your receiver.

Seamless subscriptions

Remote one-click activation, with flexible subscription durations to suit your application needs.



Technical Specifications

Oscar-TAP

Performance

Signal tracking	
GPS L1 C/A, L1C, L2C, L2P, L5C;	
GLONASS L1OF, L2OF, L3OC;	
BDS B1I, B2I, B3I, B1C, B2a, B2b;	
Galileo E1, E5a, E5b, E5AltBOC, E6;	
QZSS L1 C/A, L1C, L2C, L5C; SBAS L1 C/A, L5	
IRNSS L5; L-band	
Channels:	1792
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
Static & Fast Static (RMS):	
- Horizontal:	2.5mm+0.5ppm
- Vertical:	5mm+0.5ppm
Post Processed Kinematic(RMS):	
- Horizontal:	2.5mm+1ppm
- Vertical:	5mm+1ppm
Real Time Kinematic (RMS):	
- Horizontal:	8mm+1ppm
- Vertical:	15mm+1ppm
Initialization (typical):	4s ⁽¹⁾
Initialization Reliability:	>99.99% ⁽²⁾
Network Real Time Kinematic (RMS):	
- Horizontal:	8mm+0.5ppm
- Vertical:	15mm+0.5ppm
Observation Accuracy (zenith direction):	
- C/A Code:	10cm
- P Code:	10cm
- Carrier Phase:	1mm
Time To First Fix (TTFF):	
- Cold Start:	<35s
- Warm Start:	<10s
Reacquisition:	<1s

Performance – continued

Tilt compensation accuracy (No tilt angle limit):	≤2cm(within 60°)
Timing Accuracy (RMS):	20ns
Velocity Accuracy (RMS):	0.03m/s

PPP(TAP)

Positioning Accuracy (RMS):	
- Horizontal:	15mm
- Vertical:	30mm
Convergence Time:	3 minutes
Coverage:	Global
Signal Stability:	99.99%

System & Data

Operating system:	Linux
Storage:	Built-in 8GB(default) Built-in 32GB(optional)
Data Format:	CMR, CMR+ (GPS only), RTCM 2.x/3.x
Data output:	RINEX, NMEA-0183, Tersus Binary
Data update rate:	20Hz

Physical

Display:	1.54" OLED
Dimension:	157x157x103mm ⁽³⁾
Weight:	≈ 1.2kg (without battery) ≈ 1.4kg (with a battery) ⁽³⁾
Operating temperature:	-40°C ~ +70°C
Storage temperature:	-55°C ~ +85°C
Relative humidity:	100% not condensed
Dust- & Waterproof:	IP68
Pole drop onto concrete:	2m
Vibration:	MIL-STD-810G, FIG 514.6C-1

Software Support

Tersus Nuwa	
MicroSurvey FieldGenius	

Electrical

Input voltage:	9~28V DC
Power consumption (typical):	
Network or Radio receive mode:	≈ 5W
Radio transmit mode (0.5W):	≈ 8W
Radio transmit mode (1W):	≈ 9W
Radio transmit mode (2W):	≈ 11W
Lithium battery:	7.4V 6400mAh x2 ⁽⁴⁾
Battery Charging Temperature:	+10°C ~ +45°C
Battery Working Time:	up to 8 hours ⁽⁴⁾

Communication

Cellular	
Cellular:	4G LTE/WCDMA/GSM
Cellular Bands ⁽⁵⁾ :	FDD LTE 1,3,7,8,20,28A 2,4,5,12,13 TDD LTE 38,40,41 WCDMA 1,8 2,5 GSM3,8
Network protocols:	Ntrip Client, Ntrip Server, TCP, Tersus Caster Service (TCS)
Wi-Fi:	802.11b/g
Bluetooth	4.1
Internal Radio	
RF transmit power:	0.5W/1W/2W
Frequency range:	410MHz ~ 470MHz
Operating mode:	Half-duplex
Channel spacing:	12.5KHz / 25KHz
Modulation type:	GMSK, 4FSK
Air baud rate:	4800 / 9600 / 19200bps
Distance (Typical) ⁽⁶⁾ :	>5km
Radio protocols:	TrimTalk450, TrimMark 3, South, Transparent, Satel
Wired communication	
USB OTG:	USB 2.0 x1
Serial ports:	RS232 x1
COM baud rate:	up to 921600bps

Note:

- (1) The initialization time depends on various factors, including the number of satellites, observation time, atmospheric conditions, multi-path, obstructions, satellite geometry, etc.
- (2) The initialization reliability may be affected by atmospheric conditions, signal multipath, and satellite geometry.
- (3) The actual size/weight may vary depending on the manufacturing process and measurement method.
- (4) Oscar-TAP uses one battery at a time, the other is a substitute. Each battery lasts up to 8 hours when Oscar-TAP works in 4G/3G/2G network and Rover radio mode. Two batteries add up to 16 hours of continuous use. The working time of the battery is related to the working environment, working temperature and battery life.
- (5) Depending on version. In order Europe | American version.
- (6) The distance depends on the environment and antenna type. In an urban environment, a short rod antenna can reach up to 5 km, and a high-gain antenna can exceed 5km. In optimal conditions, the range can exceed 5 km. However, in challenging environments such as wooded and suburban areas, the range will be less than 5 km.

To learn more, please visit: www.tersus-gnss.com

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