



Global Accuracy Easier



Oscar

GNSS Receiver
with Calibration-Free Tilt Compensation












The Oscar GNSS Receiver is a new generation GNSS RTK system. 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 and Advanced versions. With an internal high-performance multi-constellation and multi-frequency GNSS board, the Oscar 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 anti-jamming 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 harsh environments.

Key Features



-  Supports multiple constellations & frequencies: GPS, GLONASS, BeiDou, Galileo, SBAS, QZSS
-  Supports 576 channels
-  410-470MHz UHF radio, 4G network, Wi-Fi, Bluetooth, NFC
-  Tilt compensation without calibration, immune to magnetic disturbances
-  Various working modes
-  16GB/8GB internal storage
-  Up to 16 hours working in 4G/3G/2G network and Rover radio mode
-  IP67-rated dust- & waterproof enclosure, for reliability in harsh environmental conditions
-  Free subscription of Tersus Caster Service (TCS): transmit the correction data from Oscar Base to Rover

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Performance

Signal tracking:	
GPS L1, L2, L5; GLONASS L1, L2; BeiDou B1, B2, B3;	
Galileo E1, E5a, E5b; QZSS L1, L2, L5;	
SBAS (EGNOS, WAAS, MSAS, GAGAN) L1C/A	
Channels:	576
High-Precision Static (RMS):	
– Horizontal:	3mm+0.1ppm
– Vertical:	3.5mm+0.4ppm
Static & Fast Static (RMS):	
– Horizontal:	3mm+0.5ppm
– Vertical:	5mm+0.5ppm
Post Processed Kinematic (RMS):	
– Horizontal:	8mm+1ppm
– Vertical:	15mm+1ppm
Real Time Kinematic (RMS):	
– Horizontal:	8mm+1ppm
– Vertical:	15mm+1ppm
Network Real Time Kinematic (RMS):	
– Horizontal:	8mm+0.5ppm
– Vertical:	15mm+0.5ppm
Initialization (typical):	<10s
Initialization Reliability:	>99.9%
Tilt Compensation Accuracy (within 30°)	≤2cm ⁽²⁾

System & Data

Operating system:	Linux
Storage:	built-in 16GB/8GB ⁽²⁾
Data format:	CMR, CMR+, RTCM 2.X/3.X
Data output:	RINEX, NMEA-0183, Tersus Binary

Software Support

Tersus Nuwa
MicroSurvey FieldGenius

Communication

Cellular:	4G LTE/TD-SCDMA/WCDMA/GPRS/GSM
Network protocols:	Ntrip Client, Ntrip Server, Tersus Caster Service (TCS)
Wi-Fi:	802.11b/g ⁽³⁾
Bluetooth:	4.1
USB OTG:	USB 2.0 x1
Serial ports	RS232 x1
Internal radio:	
– RF transmit power	0.5W/1W/2W
– Frequency	410MHz ~ 470MHz
Distance (Typical):	>5km
Radio protocols:	TrimTalk450, TrimMark 3, South, Transparent, Satel

Electrical

Input voltage:	9~28V DC
Power consumption (typical):	
Network or Radio receiving mode:	≈ 5W
Radio transmit mode (0.5W):	≈ 8W
Radio transmit mode (1W):	≈ 9W
Radio transmit mode (2W):	≈ 11W
Lithium battery:	7.4V 6400mAh x 2 ⁽¹⁾

Physical

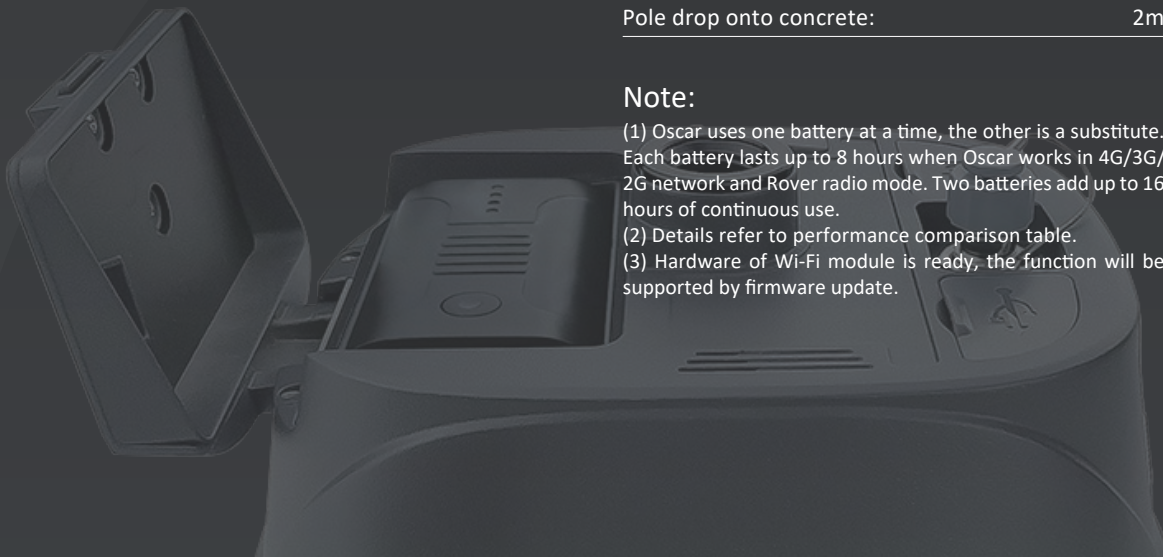
Display:	1.54" OLED ⁽²⁾
Dimension:	157x157x103mm
Weight:	≈ 1.2kg (without battery) ≈ 1.4kg (with a battery)
Operating temperature:	-40°C ~ +75°C
Storage temperature:	-55°C ~ +85°C
Relative humidity :	100% not condensed
Dust- & Waterproof:	IP67
Pole drop onto concrete:	2m

Note:

(1) Oscar uses one battery at a time, the other is a substitute. Each battery lasts up to 8 hours when Oscar works in 4G/3G/2G network and Rover radio mode. Two batteries add up to 16 hours of continuous use.




(2) Details refer to performance comparison table.

(3) Hardware of Wi-Fi module is ready, the function will be supported by firmware update.



Version Comparison

The Oscar GNSS Receiver has three versions: **Ultimate**, **Advanced**, and **Basic**. It provides selectivity for the requirement from different users.

Version	Display	LED Indicators	IMU (Tilt Compensation)	Memory	Warranty Period	Common Specifications
	1.54" OLED	Satellite, Tilt, Correction Data, Power	✓	16GB	TWO Years	<ul style="list-style-type: none"> • 576 Channels • GPS L1, L2, L5; GLONASS L1, L2; BeiDou B1, B2, B3; Galileo E1, E5a, E5b; QZSS L1, L2, L5; SBAS (EGNOS, WAAS, MSAS, GAGAN) L1C/A • Integrated GNSS Antenna • FN, ON/OFF buttons • Bluetooth; NFC; UHF Radio; 4G • Electronic Bubble • USB OTG • 2x 6400mAh Battery Capacity; Smart Battery with power display
	1.54" OLED	Satellite, Static, Correction Data, Power	—	16GB	TWO Years	
	—	Satellite, Static, Correction Data, Power, Bluetooth, Solution Status	—	8GB	ONE Year	

Tersus GNSS Inc.

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Tersus is a leading GNSS RTK solution provider. Our engineers have been pioneers in the design of GNSS products to support high-precision positioning applications.

Our products include GNSS RTK & PPK OEM boards and receivers, as well as integrated solutions such as the David GNSS Receiver, Oscar Receiver, MatrixRTK, and GNSS-aided Inertial Navigation System.

Designed for easy and rapid integration, our GNSS solutions offer centimeter-level positioning accuracy and flexible interfaces for a variety of applications including: unmanned aerial vehicle (UAVs), surveying, mapping, construction engineering, and precision agriculture.

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