

LUKA-TAPGNSS RECEIVER

LIGHTER, SMALLER AND SMARTER

LUKA-TAP GNSS RECEIVER

The LUKA-TAP GNSS Receiver adopts satellite-based precise point positioning service 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 receives corrections broadcast by the satellites, such as ephemeris error, satellite clock error, etc.

The LUKA-TAP is Lighter, Smaller and Smarter. It is an ultra-compact IMU-GNSS receiver, easy to carry and operate. Powered by 1792 channels, LUKA-TAP can track full-constellation and multi-frequency for enhanced performance. It provides centimetre-level positioning accuracy, and fix in seconds even in challenging conditions. LUKA-TAP supports a calibration-free tilt compensation function immune to magnetic disturbances; a leveling pole is unnecessary. Built-in high-capacity lithium battery provides 19 hours of field work, with a smart power display. It can be quickly charged in about 3 hours, and a power bank can be used during field surveying work. The rugged housing with IP68 protects the equipment from harsh environments.

The LUKA-TAP meets the demand for centimeter-level high-precision positioning in areas without or with poor network coverage. It can be widely used in marine surveying, precision agriculture, autonomous driving, and so on.



Application Scenario









Features



Global satellite-based PPP service

1792 1792 channels for enhanced performance.



Smart battery with extended working hours and power level display.



Compact and Exquisite Design



Fixed in Seconds

Flexible and fast charging methods: 15W fast charging; Support power bank charging during surveying.

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.





Real-time via L-band from satellite



Global coverage



Stable coordinate frame

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.







Nuwa is a survey application software based on Android OS (Operating System), designed by and all rights reserved to Tersus GNSS Inc. Nuwa is simple, easy to use and has a friendly user interface. It is designed to work with the LUKA-TAP GNSS receiver, Oscar GNSS Receiver, and other receivers that support NMEA-0183. Nuwa provides extensive pre-defined coordinate systems that are used worldwide, and various data formats import and export like TXT, CSV, DXF, SHP, RAW, KML/KMZ, LandXML, RW5, HTML, and so on.



Technical Specifications

LUKA-TAP

Performance

Signal Tracking: GPS L1/L2/L5; BeiDou B1/B21/B31/B1C/B2a; GLONASS L1/L2; Galileo E1/E5a/E5b; QZSS L1/L2/L5 SBAS supports WAAS, EGNOS, GAGA L-BAND	AN, SDCM, MSAS,
Channels:	1792
Single Point Positioning Accuracy (- Horizontal: - Vertica:	RMS): 1.5m 2.5m
DGPS Positioning Accuracy (RMS): - Horizontal: - Vertica:	0.25m 0.5m
High-Precision Static (RMS): - Horizontal: - Vertica:	2.5mm+0.1ppm 3.5mm+0.4ppm
Static & Fast Static (RMS): - Horizontal : - Vertica :	2.5mm+0.5ppm 5mm+0.5ppm
Post Processed Kinematic (RMS): - Horizontal: - Vertica:	2.5mm+1ppm 5mm+1ppm
Real Time Kinematic (RMS): - Horizontal: - Vertica:	8mm+1ppm 15mm+1ppm
Initialization (Typical):	4s ⁽¹⁾
Initialization Reliability:	>99.9%(2)
Network Real Time Kinematic (RMS - Horizontal: - Vertica:	5): 8mm+0.5ppm 15mm+0.5ppm
Observation Accuracy (zenith direc - C/A Code: - P Code: - Carrier Phase:	tion): 10cm 10cm 1mm
Time To First Fix (TTFF): - Cold Start: - Warm Start:	<30s <5s
Re-acquisition:	<1s

Performance – continued

Tilt compensation accuracy (No tilt angle limit):	
	\leq 2cm(within 60°) ⁽³⁾
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

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Operating System:	Linux		
Storage:	Built-in 8GB		
Differental Data Format:			
	CMR, CMR+, RTCM 2.x, RTCM 3.x		
Data Output:	RINEX, NMEA-0183, Tersus Binary		
Data Update Rate:	20Hz		
Communication			
Cellular:	4G LTE/WCDMA/GSM/EDG		
Cellular Bands:	LTE FDD B1,B3,B7,B8,B20, B28A LTE TDD B38,B40,B41 WCDMA B1,B8 GSM/EDGE B3,B8		
Network Protocols: Ntrip Client, Ntrip Server, TCP, Tersus Caster Service (TCS)			
Wi-Fi:	802.11b/g/n		
Bluetooth:	4.1		
Internal Radio ⁽³⁾			
RF Transmit Power	: 0.5W/1.0W		
Frequency Range:	410MHz ~ 470MHz		
Operating Mode:	Half-duplex		
Channel Spacing:	12.5KHz / 25KHz		
Air Baud Rate:	4800 / 9600 / 19200bps		
Modulation Type:	GMSK, 4FSK		
Radio Protocols:	Transparent, TrimTalk450,		

TrimMark3, South, Satel



Linkedin



Sales inquiry: sales@tersus-gnss.com





YouTube

Global Headquarter

Tersus GNSS Australia Level 2, 990 Whitehorse Rd, Box Hill, VIC 3128, Australia +61 3 9018 5598

Communication

Wired Communication	
USB:	Type-C, OTG
User Interface	
Button:	Power Button
LED Indicators: Satelli	te, Correction data, Static, Solution, Bluetooth
Voice:	Support in Nuwa App
Power Display:	Support
Electrical	
External Power Supply:	Support USB (5~20V)
Fast Charging:	Support, 15W max(5V 3A)
Battery:	Built-in, 7000mAh/7.4V
Charing Time:	3 hours (20%~90%)
Battery Charging Temper	ature: +10°C ~ +45°C
Working Time:	Up to 19 hours ⁽⁴⁾
Physical	
Dimension:	ф132x68mm
Weight:	$\leq 827g^{(5)}$
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: N	AIL-STD-810G, FIG 514.6C-1
Coftware Cupport	

Software Support

Tersus Nuwa

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) IMU and built-in radio are optional, details refer to performance comparison table.
- (4) The working time of the battery is related to the working environment, working temperature and battery life. Up to 19 hours working in 4G/3G/2G network and Rover radio mode.
- (5) The actual size/weight may vary depending on the manufacturing process and measurement method.

China Office

Tersus GNSS China No.666 Zhangheng Road, Pudong Shanghai 201203, PR China +86 21-5080 3061

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Tersus GNSS United States

US Office

809 San Antonio Rd, Suite 10, Palo Alto CA 94303-4634, United States +1 4158 0048 00