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TOKNAV

GNSS Receiver

NET660i-1U

Unmanned vehicles positioning receiver

NET660i-1U GNSS Receiver

NET660i-1U is a high-performance, compact GNSS receiver designed for unmanned vehicles. It features the latest high-performance automotive-grade positioning chip, an integrated MEMS inertial measurement unit, and a functional safety processor. The receiver supports high-performance RTK positioning and deeply coupled navigation algorithms, effectively addressing challenges such as satellite signal interference, blockage, and multipath effects. It provides continuous, real-time, and reliable high-precision position and posture information, suitable for applications in intelligent driving, precision agriculture, and intelligent robotics.

CHARACTERISTIC

Linux Intelligent System

ARM Cortex-A7 + Linux, the intelligent system platform, brings efficient computing and unlimited expansion of product functions to users.

All-system Dual-frequency GNSS Receiver

Integrated high-precision positioning module with fully independent intellectual property rights, supporting: BDS B1I, B2I, B3I, B1C*, B2a, B2b*(PPP), GPS L1C/A, L1C*, L2, L5, GLONASS L1, L2, Galileo E1, E5a, E5b, E6*, SBAS L1C/A, QZSS L1C/A, L2, L5, L6(CLAS*) .

Compatibility with Multiple Protocols

NET660i-1U supports Ntrip Client/Server/Caster, TCP Client/Server connections, FTP file transfer, HTTP/HTTPS, and MQTT transmission.

Built-in Deeply Coupled Navigation Algorithm

Integrated MEMS inertial measurement unit enables dead reckoning, providing continuous high-precision position and speed information even during short-term obstructions. The deeply coupled navigation algorithm improves GNSS signal quality, enhancing positioning accuracy in urban canyons by 2-5 times compared to loosely coupled algorithms.

Cloud Service Functionality

The device can regularly report the device status such as device location, network status, signal strength, satellite reception status, etc., and support cloud platform to restart, reset, and upgrade the remote device.

IP68 Design

Industrial design, solid magnesium alloy shell, in line with IP68 design requirements, safe and reliable.

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NET660i-1U GNSS Receiver

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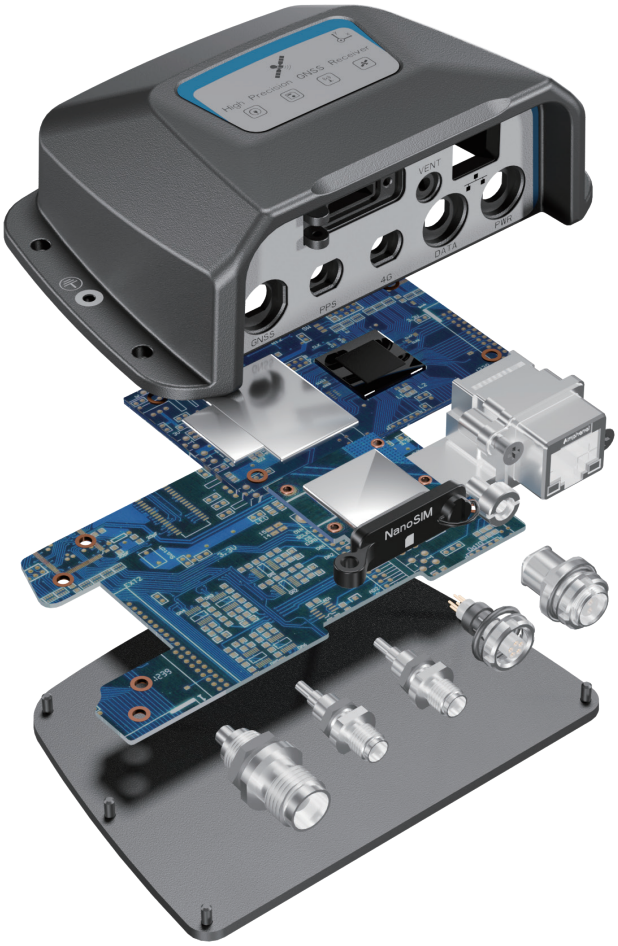
IP68 Design
Magnesium alloy main body

1407 Channel
GPS GLONASS BDS GALILEO
QZSS SBAS IRNSS

Abundant Hardware Interface
PWE DATA PPS SIM Ethernet
4G GNSS*1

Safe encrypted data and cloud management

Built-in Deeply Coupled Navigation Algorithm



WIDTH	HEIGHT	LENGTH	WEIGHT
105mm	50.3mm	148.8mm	490g

Support deeply coupled navigation algorithms
PPP-B2b,PPP-E6, SBAS supported
Compatibility with Multiple Protocols

SPECIFICATION

SYSTEM	
HARDWARE SYSTEM	ARM Cortex-A7 1.8GHz
OS	Linux

GNSS	
GPS	L1 C/A, L1C*, L2, L5
GLONASS	L1, L2
BDS	B1I, B2I, B3I, B1C*, B2a, B2b*(PPP)
GALILEO	E1, E5a, E5b, E6*(PPP)
QZSS	L1C/A, L2, L5, L6(CLAS*)
SBAS*	L1C/A
NavIC(IRNSS)*	L5*
Marked * indicates firmware support is required	
Channel	1507
Pseudirange Observation Accuracy	⩽10.0cm
Carrier Phase Observation Accuracy	⩽1.0cm
Single Accuracy(RMS)	Horizontal: 1.5m / Vertical: 2.5m
RTK Accuracy(RMS)	Horizontal: ± (10mm+1ppm) Vertical: ± (15mm+1ppm)
Static Accuracy (RMS)	Horizontal: ± (2.5mm+1ppm) Vertical: ± (5mm+1ppm)
Time Accuracy (RMS)	⩽20ns(It does not include delays caused by RF cables or antennas)
Position Data	NMEA-0183
Differential Data	RTCM 3.X
Data Format	RINEX, Custom
Data update frequency	2Hz, 5Hz(Turn off integrated Navigation) IMU: 50/100Hz

IMU	
IMU parameters	Gyroscope Range: ±300°/s Full temperature zero deviation: 0.3°/s Scale error: 4‰ Three-axis orthogonal coupling error: 1.7‰ (0.1°)
Accelerometer	Measuring range: ±16g Full temperature zero deviation: 5mg Scale error: 2‰ Three-axis orthogonal coupling error: 0.9‰ (0.05°)

SYSTEM	
Serial Port	Standard RS232 interface, Baud rate supports 1200, 2400, 4800, 9600, 19200, 38400, 115200, 230400bps
USB	Integrated on the 7-pin interface, support access to the computer to copy data directly
Network port	Standard RJ45 interface, 10/100Mbps network adaptive
Network Communication	LTE FDD: B1/2/3/4/5/7/8/12/13/ 18/19/20/25/26/28 LTE TDD: B38/39/40/41 WCDMA: B1/2/4/5/6/8/19 GSM: B2/3/5/8
Interface	PWE*1: Power supply port DATA*1 PPS*1 SIM*1: Nano SIM card Ethernet*1 GNSS*1: Main antenna 4G*1: 4G antenna port
Storage	32GB, circular storage support multi-channel storage

ELECTRICAL CHARACTERISTIC	
Voltage Input	9-24V DC(12V typical)
Power Dissipation	1.8W

ENVIRONMENT	
Operating Temperature	-40°C~+85°C
Storage Temperature	-40°C~+85°C
Protection Class	IP68

PHYSICAL	
Material	Magnesium alloy main body
Dimension	148.8mm*105mm*50.3mm
Weight	490g

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Manufacturers may update parameters at any time, please refer to the latest product information.

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