proNivo

PN|R21
RTK GNSS

Engineered in Germany

FAST IN FACT

Receiver

GNSS Features	GPS: L1, L2, L5
	GLONASS: L1, L2
	BEIDOU: B1, B2, B3
	GALILEO: E1, E5a, E5b
	QZSS: L1, L2, L5
	SBAS: L1
Channels	800 +
Positioning output rate	1Hz-5Hz
Signal Reacquisition	< 1s
RTK Signal Initialization	<5s (typical)
Initialization Reliability	>99.9%
Cold Start/Hot Start	< 40s / < 10s
Tilt Sensor	Built in 6 axis IMU module
Internal Memory	32 GB Onboard, automatic cycle storage (files will be removed automatically while the memory is not enough)

Positioning Precision[1]

Single point (RMS)	H:1.5m V:2.5m
DGPS (RMS)	H: 0.4m V: 0.8m
RTK (RMS)[2]	H:8mm+1ppmV:15mm+1ppm
Static (RMS)	H:2.5mm+1ppm V: 5mm+1ppm
Time accuracy (RMS)	20ns
Speed accuracy (RMS)	0.03m/s
Observation update rate	20 Hz
Location update rate	20 Hz
Tilt compensation accuracy	<2cm (<30°) (optional)
SBAS Positioning Accuracy[4]	0.60 m RMS

Communications

I/O protocol	RTCM 2.X, RTCM3.X
Bluetooth	V2.1+EDR / V4.0 Dual module,
Wi-Fi	802.11 a/b/g/n/ac standard
Web UI	To upgrade the software, manage the status and settings, data download, etc.via smartphone, tablet or other electronic device with Wi-Fi capability
I/O Connectors	7 pin lemo, to connect external power supply and external Radio. Type C, for receiver power supply and data transfer. UHF antenna interface. SIM card slot

Data format:

Static data format	dev, dat, Rinex2.x, Rinex3.02, Rinex 3.04
Differential data format	RTCM2.1, RTCM2.3, RTCM3.0, RTCM3.1, RTCM3.2
Network model support	VRS, FKP, MAC, fully support NTRIP protocol
GPS Data output	NMEA 0183, event, txt, coordinate, binary code

Physical Specification

Dimensions	133mm-73mm
Weight	≤0.75kg
Shockproof	Withstand drop from 1.5m to concrete
Waterproof/Dustproof	IP67
Material	Magnesium alloy shell + ABS / PC plastic top cover
Operating temperature	-20℃~+60℃
Storage temperature	-40℃~+85℃
Vibration	Vibration resistant

Internal Modem

Band	Full netcom LTE FDD, LTE/4G: B1/B3/B5/B8 LTE TDD, LTE/4G: B38/B39/B40/B41 TD-SCDMA: B34/B39 CDMA: BC0 WCDMA/3G: B1/B8 GSM: 900/1800MHz

Power supply

Battery	3.2V, 9600mAh
Working time	Up to 9 hours(standard)
Voltage[3]	Support MTK PE+ 1.1/2.0 9V/1.6A Support USB PD 12V/1.25A 5V/2A,
Charging time	4hours for a full charge

Internal UHF (optional)

Type	Tx - Rx
Frequency Range	410-470MHz
Air Baud rate	96000/19200
Communication Range	Up to 10 KM with optimal conditions
Communication protocol	TRIMTALK, TRIMMK3, TRANSEOR

Sensors

Electronic bubble	For real time pole leveling status check, electronic bubble can be displayed in controller software.
IMU	6 axis IMU module, immune to magnetic interference and calibration free.
Thermometer	Built in thermometer sensor for monitoring and adjusting the receiver temperature and adopting intelligent temperature control technology.

Integrated GNSS antenna

High accuracy four constellation antenna, zero phase center, with internal multipath suppressive board

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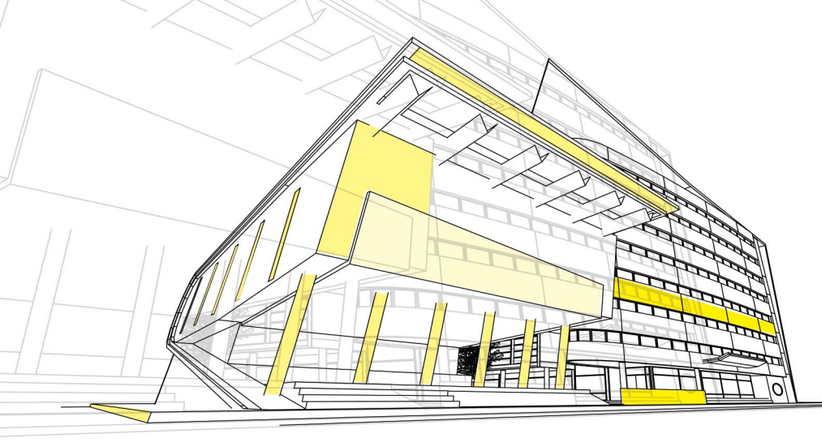
1-Atmospheric conditions, multipath, and satellite geometry (DOPs) are most important parameters to determine accuracy and reliability.
In static mode, occupation time should also be considered: the longer is the baseline, the longer must be the occupation time.
2-Network RTK precision depends on the network performance and are referenced to the closest physical base station.
3-Supports fast charging adapter, self-adaptive dynamic adjustment of charging current.
4-Depends on SBAS system performance.



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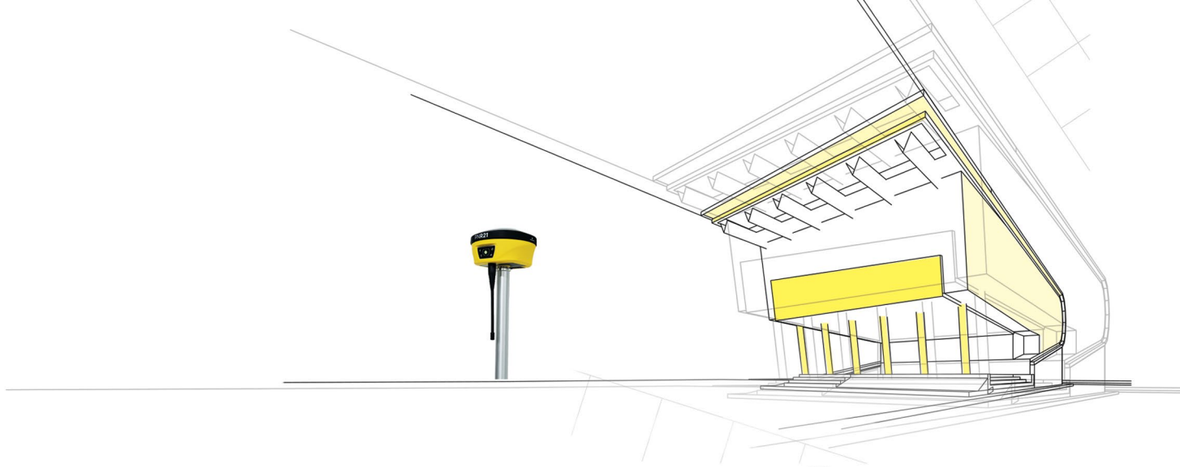


PNR21

RTK GNSS

"PNR21" is a high-precision GNSS receiver "Designed in Germany" based on latest GNSS technology which provides highly accurate data in Real-Time and Post-Processing working modes. The PNR21 with its features such as tilt-sensor or GPRS/UHF correction mode is capable of performing under most demanding conditions.

Multi-Constellation GNSS

New generation GNSS board used in PNR21 receiver, supports all Global Satellite Positioning Systems such as GPS, GLONASS, GALILEO, BEIDOU & SBAS. A special antenna equipped on PNR21 allows you collect high-precision spatial data in urban, canopy and challenging condition.

Physical

By purchasing this product you will own a small and light (0.75 Kg) but a powerful and high quality GNSS receiver which can easily survive under possible stroke and stress.

Working mode

Static, network RTK, UHF RTK and all surveying modes are available to meet any type of surveying application. A multiband GSM modem covers all type of mobile data network services available in the world, making sure that PNR21 can connect to any NTRIP Network. Moreover, the internal UHF modem is compatible to work with any standard radio protocol, ensuring that PNR21 will work with any available base or rover station.

UHF Radio (Optional)

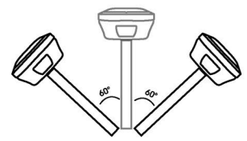
Powerful and advanced internal UHF radio , supporting multiple protocols is an optional tool which helps surveyors to work in Base/Rover mode in an area with no CORS or Internet coverage.

Battery

It's a very significant concern for any professional surveyor to be able to work continuously for long hours during a work day. Once The PNR21's 9600mA battery is fully charged, allows the operator work at least for 10 hours. Thanks to the new battery technology used in PNR21, you can recharge your battery within short time.

IMU Tilt sensor

With Latest 6-Axis tilt sensor technology (IMU) used in PNR21, it allows you to correct alignment deviation error up to 60 degrees, which can be used to collect or stake-out inaccessible points with best possible precision in the most limited areas. This unique feature makes data collection in urban areas easier than ever.



Direct Rinex

Raw data can be stored directly in RINEX format in addition to its original native format file, so there will be no need to convert files via middle software on pc or tablet. This option allows users easily download and process RINEX data files in any software by a simple click !

WEBUI & WiFi

Easy access to all settings and functions through advanced WebUI by connecting to the WiFi. PNR21 supports and serves as a WiFi hotspot to help users download static data and make changes to receiver without a need for any common communication cables.