



Product Datasheet



GNSS+INS, Stay Precise when you lose your signal

For superior positioning and navigation performance, the ViQtor is equipped with a dual-antenna GNSS engine that can both track GPS, BDS, GLONASS, Galileo & QZSS. The INS ViQtor is delivering precise position, attitude, speed data in challenging environments, even when GNSS signal outages.

Except for the web UI accessed via Ethernet/WiFi for professional users. It is the ideal product for The Maritime Industry (Offshore, Hydrography, Dredging), Machine Control and Autonomous Vehicles in the Ag market. The iQ ViQtor provides GNSS navigation data, optional UHF Radio with a professional Web UI.

Accurate position when you lose your GNSS Signal.

When you are working in an Environment with a high reflection you will lose your GNSS signal. The INS ViQtor tightly couples full-constellation GNSS and a six-axis IMU (INS) to overcome signal obstructions, achieving reliable performance in challenging environments.

It shows high flexibility in data transmission. Users get a fast RTK fixed solution via 4G (NTRIP) or by an external Satel UHF Radiomodule according to the local conditions, and then output the navigation data to their vehicle systems via RS232 serial port, 4G or USB.

iQ GNSS -ViQtor provides multi-band GNSS to in a compact form factor. It is a multi-band GNSS module with multi-band RTK technology for centimeter-level accuracy.

The IP67-rated aluminum-alloy housing, combined with a MIL-STD-810 anti-vibration design, ensures that the SV100 INS-D operates reliably in harsh environments and under demanding conditions.

iq GNSS®

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Nautikaris.com



Nautikaris bv
Margadantstraat 36
1976 DN IJmuiden
The Netherlands
P +31 255 820 009
E info@satelbv.nl

Technical Specifications:

Satellites Tracking:	
Channels	1408
GPS	L1C/A, L1C, L2C, L2P(Y), L5
GLONASS	G1, G2, G3
Galileo	E1, E5a, E5b, E6
BDS	B1I, B2I, B3I, B1C, B2a, B2b
QZSS	L1C/A, L1C, L2C, L5
NAVIC	L5

Performance:	
Cold start	<30s
RTK Initialization Time	<5s(typical)
RTK initialization reliability	>99.9%
Re-acquisition	<1s

Accuracy:	
Standalone	1.5m Horizontally 2.5m Vertically
DGPS	0.4m Horizontally 0.8m Vertically
RTK	8mm+1ppm Horizontally 15mm+1ppm Vertically
PPP	5 cm Horizontally 10 cm Vertically
SBAS	< 1.0m 3D RMS
Velocity Accuracy	0.03m/s
Time Accuracy	20ns

Data Format:	
Data output format	NMEA-0183 Binary format *.xyz
Data update rate	1~200Hz selectable
Correction data format	RTCM v3.3/3.2/3.1/3.0
Network protocol	TCP, MQTT2, Ntrip Server, Ntrip Caster

Communication:	
4G modem (all territories)	FDD-LTE B1/B3/B5/B7/B8 TDD-LTE B38/B39/B40/B41 TDSCDMA B34/B39 WCDMA B1/B2/B5/B8 GSM B2/B3/B5/B8 CDMA1x/CDMA2000 BC0/BC1
UHF Radio	Optional
Bluetooth	BT4.0 dual mode
WiFi	802.11 a/b/g/n/ac
FTP	Support FTP download
NAT-DDNS	Support

Connectors	
Interface	- 1 10-pin connector, including 1 RS232, - 1 PPS output, 1 USB and power supply - 1 RJ45 for Ethernet - 1 TNC connector for primary GNSS antenna - 1 TNC connector for secondary GNSS antenna - 1 TNC connector for UHF antenna - 1 SMA connector for 4G antenna - 1 SIM card slot

INS Performance	
IMU Type	MEMS
Gyroscope	- Bias Repeatability: 0.4°/h - Range: ±350°/s - Bias Instability: 1.6°/h (XY), 1.3°/h (Z) - Angle Random Walk: 0.08°/√h (XY), 0.08°/√h (Z)
Accelerometer	- Range: ±8g - Bias Repeatability: 15 mg - Bias Instability: 16 µg - Velocity Random Walk: 35 mm/s/√h
IMU data update rate	100Hz

User Interface:	
LED Indicators	4 LEDs indicating battery, satellite tracking, RTK status and network
WebUI	Accessible via Wi-Fi, Ethernet Support configuration, status checking, data transfer, data storage and system upgrade
Power Switch	Power switch on 10-pin cable

Electrical:	
Power consumption	3.5W
Input voltage	9 – 28VDC
Internal Battery	9 - 22V 6600 mAh, support up to 13 hours working time.
MTBF	> 20000 hours

Physical:	
Size	162×142×65 mm, including connectors
Weight	1005 Gr
Storage	8 GB (expandable to 32GB)storage Support loop recording
Storage Format	RINEX 3.02/3.04, Binary format *.xyz
Housing material	Aluminum alloy

Environmental:	
Working temperature	-40 °C to + 75 °C
Storage temperature	-55 °C to + 85 °C
Humidity	95% non-condensing
IP Rating	IP67
Drop	Designed to survive a 1m drop onto concrete
Vibration	MIL-STD-810

GNSS Outages (sec)	Position mode	Position Accuracy(m)		RMS Velocity Accuracy(m/s)RMS			Attitude Accuracy (") RMS		
		Horizontal	Vertical	Horizontal	Vertical	Roll	Pitch	Yaw	
0	RTK	0,008	0,015	0,015	0,01	0,01	0,01	0,01	0,02
10	DR	0,55	0,3	0,06	0,04	0,025	0,03	0,06	
60	DR	2,1	0,8	0,11	0,05	0,055	0,065	0,12	