

KEY FEATURES

The **Swegeo GS-980** board offers advanced high-precision RTK positioning, supporting all major **GNSS** constellations including **GPS, BDS, GLONASS, Galileo, and QZSS**. Operating across multiple frequencies with a 50Hz RTK data update rate, it ensures comprehensive coverage and real-time accuracy. Additionally, it supports advanced techniques such as **Precise Point Positioning (PPP), E6 HAS, and BDS B2b**, making it ideal for applications in high-precision surveying, mapping, precision agriculture, and deformation monitoring.



BASED ON THE NEW GENERATION GNSS SOC - NEBULAS IV

The board utilizes the latest NebulasIV GNSS System-on-Chip, integrating RF (radio frequency), baseband processing, and high-precision algorithms into a single module for enhanced performance and efficiency.

ALL-CONSTELLATION MULTI-FREQUENCY RTK ENGINE AND ADVANCED RTK TECHNOLOGY

Supports all major GNSS constellations (GPS, GLONASS, Galileo, BDS, QZSS) across multiple frequencies, utilizing advanced RTK technology to deliver precise and reliable positioning.

INSTANT RTK INITIALIZATION TECHNOLOGY

Enables rapid initialization of RTK positioning, allowing the system to quickly start providing accurate positioning data.

60 DB NARROWBAND INTERFERENCE SUPPRESSION AND INTERFERENCE DETECTION

Features robust narrowband interference suppression up to 60 dB, along with interference detection capabilities to ensure accurate performance in environments with potential signal disturbances.

HEADING2 TECHNOLOGY TO PROVIDE ORIENTATION INFORMATION

Includes Heading2 technology for precise orientation and heading information, enhancing applications that require detailed directional data.

STANDALONE SINGLE-STATION HIGH-PRECISION POSITIONING TECHNOLOGY

Provides high-precision positioning capabilities as a standalone system without the need for external corrections, suitable for various high-accuracy applications.

SUPPORTS B2B-PPP AND E6-HAS

Compatible with B2b-PPP (Precise Point Positioning) and E6-HAS (High Accuracy Service), offering additional flexibility and accuracy for demanding positioning tasks.

GENERAL	
Channels	1408 channels
Signal Supported	GPS L1C/A, L1C, L2C, L2P(Y), L5
	BDS B1I, B2I, B3I, B1C, B2a, B2b
	GLONASS G1, G2, G3
	Galileo E1, E5a, E5b, E6
	QZSS L1C/A, L1C, L2C, L5
	NavIC L5
	SBAS L1C/A
Accuracy	Single Point Positioning(RMS)
	Horizontal: 1.5m
	Vertical: 2.5m
	DGPS (RMS)
	Horizontal: 0.4m
	Vertical: 0.8m
	RTK (RMS)
	Horizontal: 0.8cm+1ppm
	Vertical: 1.5cm+1ppm
	PPP (RMS)
	Horizontal: 5cm
	Vertical: 10cm
	Time Accuracy(RMS) 20 ns
	Velocity Accuracy (RMS) 0.03 m/s
Data Update Rate	50 Hz* (RTK+Raw Data)
Initialization / Time to first fix	Cold start < 12 s
	Initialization Time < 5 s (typical)
	Initialization Reliability > 99.9%
Sensitivity	Sensitivity Tracking & Nav. -167 dBm
	Cold starts -148 dBm
	Hot starts -157 dBm
	Reacquisition -160 dBm
RTK performance	RTK Initialization ≤ 5 s
	RTK Solution Delay ≤ 50 ms
	Re-acquisition Time ≤ 1s DR Accuracy

PHYSICAL AND ELECTRICAL	
Dimensions	71.1 x 45.7 x 1.62 mm
Weight	644 g
Input voltage	3.3V DC
Connectors	RS232 x 2, USB x 1
	Bluetooth(Long Range SPP)

ENVIROMENTAL	
Storage Temperature	-55°C to +95°C
Working Temperature	-40°C to +85°C
Humidity	95% Non-condensing
Vibration	GJB150.16A-2009, MIL-STD-810F
Shock	GJB150.18A-2009, MIL-STD-810F

