

KEY FEATURES

The SweGeo GS-M20 board offers seamless, real-time, and high-precision positioning even in challenging and signal-disrupted environments. With its integrated design, superior performance, low power consumption, and compact form factor, the GS-M20 stands out as an ideal solution for various applications including autonomous driving, advanced driver assistance systems, lane-level navigation, drones, intelligent robots, precision agriculture, surveying, and mapping. This module ensures exceptional performance and reliability, making it a perfect fit for your projects that demand high accuracy and integration.



BASED ON ALICE, THE 22 NM PROCESS GNSS SOC

The GS-M20 board is powered by the Alice GNSS System-on-Chip, which is manufactured using an advanced 22 nm process technology. This enables high performance with lower power consumption and a compact design, ensuring efficient and reliable operation.

FULL-CONSTELLATION AND FULL-FREQUENCY (1507 CHANNELS)

The board supports all major global navigation satellite systems (GNSS), including GPS, GLONASS, Galileo, and BeiDou, across all available frequency bands. With 1507 channels, it provides comprehensive coverage and enhanced accuracy in positioning.

L-BAND AND CLAS SUPPORTED

The GS-M20 supports L-Band signals and the Centimeter Level Augmentation Service (CLAS), which are crucial for high-precision positioning applications. This makes it suitable for industries that require precise location data, such as autonomous driving and precision agriculture.

NRTK/PPP/PPP-RTK SUPPORTED

The board is compatible with Network Real-Time Kinematic (NRTK), Precise Point Positioning (PPP), and PPP-Real-Time Kinematic (PPP-RTK) technologies. These advanced positioning techniques improve accuracy and reliability, even in challenging environments.

ANTI-JAMMING AND ANTI-SPOOFING

The GS-M20 features robust anti-jamming and anti-spoofing capabilities, ensuring the integrity and reliability of the positioning data. This is especially important in environments with potential signal interference or malicious attacks.

VARIOUS INTERFACES

The board offers multiple interfaces for easy integration with different systems and devices. This flexibility allows it to be used in a wide range of applications, from autonomous vehicles to drones and intelligent robotics.

GENERAL	
Channels	1507 channels
Signal Supported	L-Band
	3 channels, 1525~1559 MHz
	BDS-2 B1I, B2I, B3I
	BDS-3 B1I, B1C, B2a, B2b (PPP), B3I
	GPS L1 C/A, L1C, L2, L5
	GLO G1, G2
	GAL E1, E5a, E5b, E6*
	QZSS L1 C/A, L1C, L2, L5, L6*
	NavIC (IRNSS)
	L5 SBAS*
	L1 C/A
Accuracy	Horizontal Positioning Accuracy
	Single Point 1.5 m (RMS)
	RTK 1 cm + 1 ppm (RMS)
	Vertical Positioning Accuracy
	Single Point 2.5 m (RMS)
	RTK 1.5 cm + 1 ppm (RMS)
	Timing Accuracy 20 ns (RMS)
	Velocity Accuracy 0.03m/s (RMS)
Data Update Rate	GNSS Observation 10 Hz
	GNSS Position Results 10 Hz
Initialization /	Cold start ≤ 30 s
Time to first fix	Hot start ≤ 5 s
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
Anti-jamming	Single-frequency,
	Multitone,
	Sweeping, Pulse,
	Narrowband
	Interference-Signal Ratio 65 dBc

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	
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +105°C
Humidity	95% Non-condensing
Vibration	JESD22-B103
Shock	JESD22-B110

