SWEGEO

SWEGEO GS-MX5

SINGLE ANTENNA GNSS RECEIVER BOARD

KEY FEATURES

The Swegeo GS-MX5 board offers exceptional GNSS positioning capabilities, designed for mass market applications including robotics and autonomous systems. It features a multi-constellation receiver that supports tracking of all Global Navigation Satellite System (GNSS) constellations and is compatible with both current and future signal formats. The board is equipped with advanced interference mitigation technology, providing robust performance even in challenging environments. With a low-power design and a wide array of interfaces, the Swegeo GS-MX5 ensures high reliability and precision, setting a new benchmark for GNSS positioning solutions.

- **SMALL IN SIZE, BIG IN PERFORMANCE**
  The board is compact in size but delivers high performance, combining a small form factor with powerful capabilities to fit various applications without compromising on functionality.
- **ALL-IN-VIEW SATELLITE TRACKING**
  Multi-constellation, multi-frequency: The board can track satellites from all available GNSS constellations (GPS, GLONASS, Galileo, BDS, QZSS) and operate across multiple frequencies, ensuring comprehensive and precise positioning data regardless of satellite availability or signal type.
- **FUTURE PROOF: SUPPORTING CURRENT AND FUTURE SATELLITE SIGNALS**
  Designed to be forward-compatible, the board supports not only existing satellite signals but also upcoming signals, ensuring long-term usability and adaptability as new technologies emerge.
- **BEST-IN-CLASS RELIABLE AND SCALABLE POSITION ACCURACY**
  The board offers top-tier positioning accuracy that is both reliable and scalable, making it suitable for a wide range of applications from everyday use to high-precision requirements.
- **AIM+ UNIQUE INTERFERENCE MITIGATION AND MONITORING SYSTEM AS PART OF THE ADVANCED GNSS+ ALGORITHMS**
  Features AIM+ technology, which provides advanced interference mitigation and monitoring. This system uses sophisticated algorithms to reduce the impact of signal interference, ensuring accurate performance even in challenging environments.
- **UPDATE RATE OF 100 HZ**
  The board has a high update rate of 100 Hz, meaning it can refresh positioning data 100 times per second, providing real-time, precise tracking and responsiveness.
- **INDUSTRY-LEADING ULTRA-LOW POWER CONSUMPTION**
  Designed with energy efficiency in mind, the board consumes very little power while maintaining high performance, making it ideal for battery-operated and energy-sensitive applications.
- **EASY-TO-INTEGRATE, OPTIMIZED FOR AUTOMATED ASSEMBLY**
  The board is designed for easy integration into various systems and is optimized for automated assembly processes, streamlining production and reducing integration time.

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GENERAL	
Channels	448 channels
Signal Supported	GPS: L1C/A, L1PY, L2C, L2P, L5
	GLONASS: L1CA, L2CA, L2P, L3 CDMA
	Beidou: B1I, B1C, B2a, B2b, B2I, B3
	Galileo: E1, E5a, E5b, E5 AltBoc, E6
	QZSS: L1C/A, L1 C/B, L2C, L5
	Navic: L5
	SBAS: Egnos, WAAS, GAGAN, MSAS,
	SDCM (L1, L5)
	On module L-band
Accuracy	Horizontal accuracy 0.6 cm + 0.5 ppm
	Vertical accuracy 1 cm + 1 ppm
	Other positioning modes accuracy 3,4
	Horizontal Vertical
	Standalone 1.2 m 1.9 m
	SBAS 0.6 m 0.8 m
	DGNSS 0.4 m 0.7 m
	Velocity accuracy 3,4 3 cm/s
	Latency 6 <10 ms
	Time precision
	xPPS out 7 5 ns
	Event accuracy < 20 ns
Data Update Rate	Max. Rate Position 100 Hz
	Measurements only 100 Hz
Initialization / Time to first fix	Initialisation time 7 s
	Cold start8 < 45 s
	Warm start9 < 20 s
	Re-acquisition 1 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-acqusition 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 to 85° C -67 to 185° F
Working Temperature	-40 to 85° C -40 to 185° F
Humidity	95% (non-condensing)
Vibration / Shock	MIL-STD-810G

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