GM-713, Compact,

High Performance

GNSS Smart Antenna Module

RoHS Compliant



Overview

GM-713 is a compact module equipped with the latest **u-blox 7** low-power, high-sensitivity engine, GNSS antenna, backup battery and optional MMCX RF connector. The all-in-one design allows quick plug and play.

GM-713 supports either GPS/QZSS or GLONASS. It default works with GPS and QZSS.

Based on our experienced design, GM-713 provides not only excellent GPS performance but also quality and delivery assurance.

Applications

- Driving Recorder
- Automatic vehicle location
- Vehicle navigation device
- Road lamp

Features

- Built-in antenna and optional MMCX RF connector
- Built-in backup battery for faster position fix.
- GNSS support: either GPS/QZSS (default) or GLONASS
- SBAS (WAAS, EGNOS, MSAS) support
- TTL support
- High sensitivity+:-162dBm tracking/-148dBm acquisition (GPS)
- Up to 10Hz update rate (default 1Hz)
- OMA SUPL compliant A-GPS support
- Excellent EMI protection

Technical Specifications

Receiver Performance Data+

Receiver Type	56-channel u-blox 7 engine GPS & QZSS:L1 C/A,1575.42MHz, GLONASS:L1OF,1598.0625~1605.375MHz SBAS: WAAS, EGNOS, MSAS
Horizontal Position Accuracy	Autonomous:2.5m (GPS), 4m (GLONASS) SBAS: 2.0m (GPS) (CEP, 50%, 24-hour static, -130dBm)
Velocity Accuracy	<0.1 m/s (speed) <0.5° (heading) (50% @ 30 m/s)
Time Pulse Signal Accuracy	RMS: 30ns (GPS), 50ns (GLONASS) 99%: 60ns (GPS), 100ns (GLONASS)
Time To First Fix (TTFF) Hot start Warm start Cold start	Autonomous (All at -130dBm) 1sec (GPS), 1sec (GLONASS) 28sec (GPS), 25sec (GLONASS) 29sec (GPS), 30 sec (GLONASS)
Sensitivity, dBm (Autonomous)	Acquisition: -148 (GPS), -140 (GLONASS) Tracking: -162 (GPS), -158 (GLONASS)
Navigation. Update Rate	Max. 10Hz Default 1Hz
Max. Altitude	50,000 m
Max. Velocity	515 m/s
Protocol	UART: N,8,1; bauds 1200, 2400, 4800,

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Support	9600 (default), 19200, 38400, 57600, 115200 bps; NMEA 0183 v2.3 (compatible to 3.0) GGA, GLL, GSA, GSV, RMC, VTG, TXT
Dynamics	< 4g

+ Note. According to IC Spec

Electrical Data

Power Supply	3.3 V
Power Consumption	40 mA / average tracking
Digital I/O (V)	V_{IH}: 0.7*VCC ~ VCC+0.5 V_{IL}: 0 ~ 0.2*VCC V_{OH}: >= VCC-0.4, V_{OL}<= 0.4

Environmental Data

Operating temperature	-40 ~ 85℃ except battery: -20~60℃
Storage temperature	-40 ~ 85℃ except battery: -20~60℃

Mechanical Data – 13.3 x 30.6 x 6.5 (mm)



Pin	Function	I/O
GND	Ground	Input
VCC	Power supply,	Input
RX	Serial data input, from host to GM-713	Input
TX	Serial data output, from GM-713 to host	Output

Ordering Information

GM-713X,

X=A	GPS/QZSS standard module No MMCX RF connector
X=B	No patch antenna
X=C	With patch antenna and MMCX RF connector
X=D	GPS/QZSS standard module No MMCX RF connector, no battery

*This document is subject to change without notice.

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