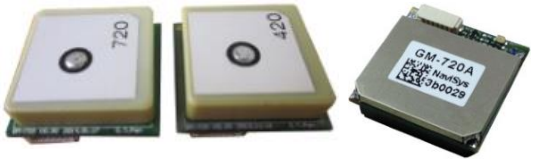
GM-720, Compact,

High Performance

GNSS Smart Antenna Module

RoHS Compliant



Overview

GM-720 is a thin module equipped with the latest **u-blox 7** low-power, high-sensitivity engine, GNSS antenna, and wire-to-board connector. The all-in-one design allows quick plug and play.

GM-720 supports either GPS/QZSS or GLONASS. It default works with GPS and QZSS.

Based on our experienced design, GM-720 provides not only excellent GPS performance but also quality and delivery assurance.

Applications

- Driving Recorder
- Automatic vehicle location
- Vehicle navigation device
- School Bus / Transit / Police / Fleet / POS

Features

- Compact, small, all-in-one module
  - 20 x 20 x 6.5 (mm) only, including default patch antenna (18.2x18.2x4) and connector
  - Connect to main board via a 6-pin connector
- Backup power for faster position fix.
- GNSS support: either GPS/QZSS (default) or GLONASS
- SBAS (WAAS, EGNOS, MSAS) support
- TTL or USB support
- High sensitivity+:-162dBm tracking/-148dBm acquisition (GPS)
- Up to 10Hz update rate (default 1Hz)
- RTCM 2.3 support
- OMA SUPL compliant A-GPS support
- Windows **location sensor** 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

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Max. Velocity	500 m/s
Protocol Support	UART: N,8,1; bauds 1200, 2400, 4800, 9600 (default), 19200, 38400, 57600, 115200 bps; USB: baud rate selectable NMEA 0183 v2.3 (compatible to 3.0) GGA, GLL, GSA, GSV, RMC, VTG, TXT
RTCM 2.3	Messages 1, 2, 3, 9
Dynamics	< 4g

+ Note. According to IC Spec

Electrical Data

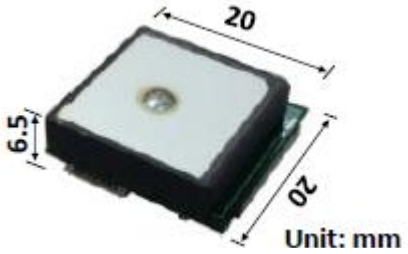
Power Supply	3.1 ~ 5.5 V (TTL); 4.75~5.25V (USB)
Backup power	1.5 ~ 3.5V
Power Consumption	40 mA / average tracking 13.5uA / backup power (module disabled)
USB I/O (V)	V_{IH}: 2 ~ VCC, V_{IL}: 0 ~ 0.8 V_{OH}: >= 2.8, V_{OL}<= 0.3
Digital I/O (V)	V_{IH}: 0.7*VCC ~ VCC+0.5 V_{IL}: 0 ~ 0.2*VCC V_{OH}: >= VCC-0.4, V_{OL}<= 0.4

Environmental Data

Operating temperature	-40 ~ 85℃
Storage temperature	-40 ~ 85℃

Mechanical Data – 20 x 20 x 6.5 (mm)

20 x 20 x 6.76 (mm) when optional antenna is used.

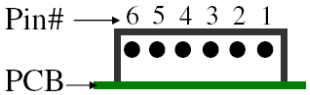


Tolerance : ± 0.25 mm

Application

There is an additional pad at the right of the 6-pin header. This pad is reserved for reducing potential electromagnetic noise. For that case, a shielded ground cable would be suggested to connect to motherboard depending on the noise condition.

6-pin Interface, pitch 0.8mm



GM-720A/U

Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply	Input
3	TXD/D+	TTL level serial data output (from GPS) / USB positive	Output / I/O
4	RXD/D-	TTL level serial data input (to GPS) / USB negative	Input / I/O
5	V_BAT	Backup power	Input
6	1PPS	Time Pulse Per Second	Output

GM-720B/V

Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply	Input
3	TXD/D+	TTL level serial data output (from GPS) / USB positive	Output / I/O
4	RXD/D-	TTL level serial data input (to GPS) / USB negative	Input / I/O
5	V_BAT	Backup power	Input
6	PWR_CTL	Power control; floating or high: ON Low : OFF	Input

Ordering Information

GM-720X (X=A,B etc.)

Feature \ Model	A	B	U	V
TTL	Y	Y	-	-
USB	-	-	Y	Y
PPS	Y	-	Y	-
Power Control	-	Y	-	Y

*This document is subject to change without notice.

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