GE-708, High Performance, Ultra Tiny USB GPS Engine w/ Digital & RF Connectors

RoHS Compliant



Overview

GE-708 is equipped with the **u-blox 7** low-power, high-sensitivity engine, digital & RF connectors. The tiny design (height: 2.7mm, width: 8mm, length: 20mm) allows it to be easily applied in size-demanding devices.

Digital & RF connectors allows it to be flexibly placed at a suitable location in the host housing.

GE-708 supports either GPS/QZSS or GLONASS. It default works with GPS and QZSS.

Based on our experienced design, GE-708 provides not only excellent GPS performance but also quality and delivery assurance.

Applications

- MID / UMPC / POS / Driving Recorder
- Tablet PC / Netbook PC / Notebook PC
- School Bus / Transit / Police / Fleet

Features

- Tiny & low profile – ideal for size demanding device
  - 8 (width) x 20 (length) x 2.7 (height) (mm)
- Built-in RF connector, reduce RF tuning efforts
  - Flexible antenna installation
- Built-in digital connector, flexible module installation
- Screw hole for fixing & performance enhancement
- External active antenna **short circuit protection**
- Backup power for faster position fix.
- GNSS support: GPS, QZSS (default) and GLONASS
- SBAS (WAAS, EGNOS, MSAS) support
- High sensitivity+:-162dBm tracking/-148dBm acquisition
- Up to 10Hz update rate (default 1Hz)
- 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)	Autonomous (All at -130dBm)
Hot start	1sec (GPS), 1sec (GLONASS)
Warm start	28sec (GPS), 25sec (GLONASS)
Cold start	29sec (GPS), 30 sec (GLONASS)

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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	500 m/s
Protocol Support	NMEA 0183 v2.3(compatible to 3.0) GGA, GLL, GSA, GSV, RMC, VTG, TXT
Dynamics	< 4g

+ Note. According to IC Spec

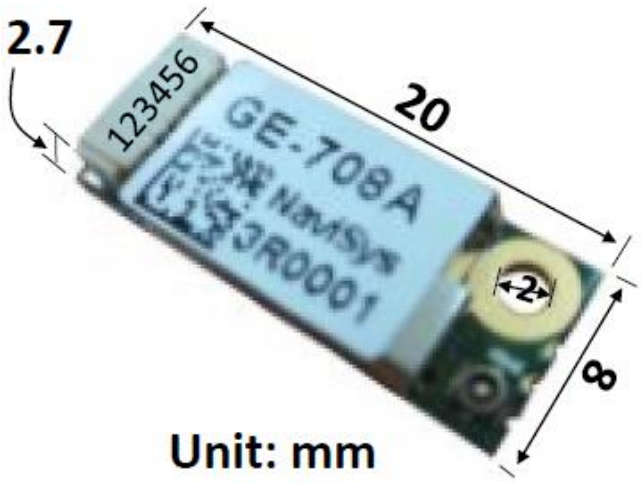
Electrical Data

Power Supply (VCC)	*3.1 ~ 5.5 V*
Backup power (V_BAT)	1.5~3.5V
Power Consumption	35 mA / average tracking (9 SVs) 13.5uA / backup power (module disabled)
USB 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
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℃

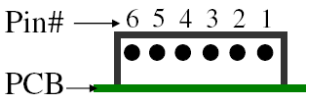
Mechanical Data – 8 x 20 x 2.7 (mm)



Application

The screw hole could be used for fixing or reducing potential ground noise if it is connected to main board via a shielded ground cable.

6-pin Interface (USB), pitch 0.8mm



Pin	Name	Function	I/O
1	GND	Ground	Input
2	VCC	Power supply,	Input
3	DP	USB positive	I/O
4	DM	USB negative	I/O
5	V_BAT	Backup power (1.5 ~ 3.5V)	Input
6	PWR_CTRL	Module power control High or disconnected: power ON Low: power OFF	Input

RF Interface, I-PEX MHF4 connector

Ordering Information

GE-708X,

X=A	9600bps, GPS/QZSS support

*This document is subject to change without notice.

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