GE-726, High Performance, GPS PCI Express Half-Mini Card w/ I-PEX MHF RF Connector

RoHS Compliant



Overview

GE-726 is equipped with the **u-blox 7** high-sensitivity engine, RF connector, and optional backup battery. The Mini PCI Express standard design allows it to be easily applied in devices with PC architecture. The half-length design allows it to be used in dimension demanding environment. In addition to standard USB interface, it also supports optional UART/TTL interface.

The backup battery allows faster position fix and it is optional in case extended temperature range is required.

Our experienced design provides not only excellent GPS performance but also quality and delivery assurance.

Applications

- Industrial PC
- Mobile DVR
- Notebook PC / Tablet PC / Netbook PC
- School Bus / Transit / Police / Fleet

Features

- PCI Express Mini Card standard compliant
- GNSS support: GPS, QZSS (default) or GLONASS
- Built-in RF connector, reduce RF tuning efforts
- The tiny I-PEX MHF RF connector allows flexibly placing GPS antenna at a suitable location.
- External active antenna **short circuit protection**
- Optional backup battery for faster position fix.
- Support USB or UART/TTL interface.
- High sensitivity+:-162dBm tracking/-148dBm acquisition
- Up to 10Hz update rate (default 1Hz)
- OMA SUPL compliant A-GPS support
- SBAS (WAAS, EGNOS, MSAS) 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)
Sensitivity, dBm	Acquisition: -148 (GPS), -140 (GLONASS)

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(Autonomous)	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	3.3 ± 0.3 V
Power Consumption	35 mA / average tracking 13.5uA / backup power (card disabled)
USB I/O (V)	V_{IH}: 2 ~ 3.3, V_{IL}: 0 ~ 0.8 V_{OH}: >= 2.8, V_{OL}<= 0.3

Environmental Data

Operating temperature	-40 ~ 85℃ w/o battery -20~60℃ w/ battery
Storage temperature	-40 ~ 85℃ w/o battery -40~60℃ w/ battery

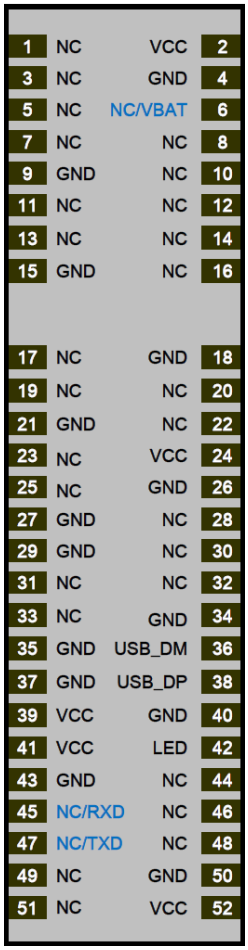
Mechanical Data – 30 x 26.8 x 2.8 (mm)



52-Pin definition

Name	PINs	Function	I/O
VCC	2,24,39,41,52	3.3V power supply, Min 3.0V, Max 3.6V	Input
GND	4,9,15,18,21,26,27,29,34,35,37,40,43,50	Ground	Input
USB_DM	36	USB data signal minus	I/O
USB_DP	38	USB data signal plus	I/O
LED	42	GPS fix indication	Output
NC/VBAT[!]	6	NC or 1.5V backup power input if backup battery is not equipped.	-/Input
NC/RXD[!]	45	NC or UART RX if additional TTL interface is needed.	-/Input
NC/TXD[!]	47	NC or UART TX if additional TTL interface is needed.	-/Output
NC	Remaining pins	No connection	-

[!] Proprietary; reserved pins of PCIe Mini Rev. 1.2 are used



Application

- Mount GE-726 on main board, connect I-PEX to GPS active antenna.

Ordering Information

GE-726X[&]

B	with backup battery on card, no UART (default)
A	without backup battery on card, no UART

[&] MOQ-based UART demand w/ specified baud is welcome.

*This document is subject to change without notice.

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