

GE-626, High Performance, GPS PCI Express Half-Mini Card w/ I-PEX RF Connector

Overview

GE-626 is equipped with the **u-blox 6** 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

- Industry PC
- Notebook PC / Netbook PC / Tablet PC
- School Bus / Transit / Police / Fleet

Features

- PCI Express Mini Card standard compliant
- Built-in RF connector, reduce RF tuning efforts
- The tiny I-PEX 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.
- In addition to default u-blox USB driver, optional Prolific USB driver is also available by request.
- High sensitivity⁺: -161dBm tracking/-147dBm

RoHS
Compliant



acquisition

- Up to 5Hz update rate (default 1Hz)
- OMA SUPL compliant A-GPS support
- SBAS (WAAS, EGNOS, MSAS, GAGAN) support
- Windows **location sensor** support
- Excellent EMI protection

Technical Specifications

Receiver Performance Data⁺

Receiver Type	50-channel, L1 frequency, C/A code
Horizontal Position Accuracy	< 2.5m (Autonomous) < 2.0m (WAAS) (CEP, 50%, 24-hour static, -130dBm, SEP < 3.5m)
Velocity Accuracy	<0.1 m/s (speed) <0.5° (heading) (50% @ 30 m/s)
Time Pulse Signal Accuracy	30ns (RMS) <60ns (99%)
Time To First Fix Hot start Warm start Cold start	Autonomous (All at -130dBm) 1sec 27sec 27sec
Sensitivity (Autonomous)	-147dBm (acquisition) -161 dBm (tracking & navigation)
Max. Update Rate	5Hz
Max. Altitude	50,000 m
Max. Velocity	500 m/s

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Protocol Support	NMEA 0183 v2.3(compatible to 3.0) UART: 4800, 9600, 38400 bps N,8,1; GGA, GLL, GSA, GSV, RMC, VTG, TXT
SBAS Support	WAAS, EGNOS, MSAS, GAGAN
Dynamics	< 4g

* Note. According to IC Spec

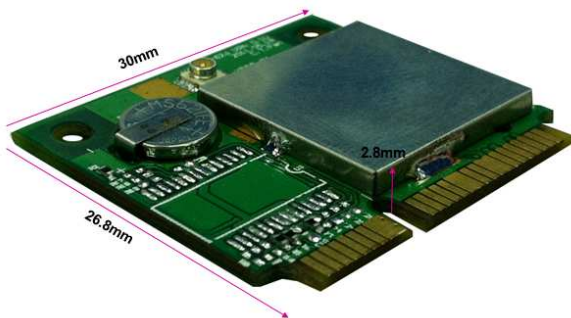
Electrical Data

Power Supply	3.3 ± 0.3 V
Power Consumption	56 mA / average tracking
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°C w/o battery -20~60°C w/ battery
Storage temperature	-40 ~ 85°C w/o battery -40~60°C 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
nRESET	5	RESET pin, left open if it is not used.	Input
RXD [!]	45	TTL input into GPS	Input
TXD [!]	47	TTL output from GPS	Output
NC	Remaining pins	No connection	-

[!] TTL model only, NC for USB model

GE-626 USB				GE-626 TTL			
1	NC	VCC	2	1	NC	VCC	2
3	NC	GND	4	3	NC	GND	4
5	nRESET	NC	6	5	nRESET	NC	6
7	NC	NC	8	7	NC	NC	8
9	GND	NC	10	9	GND	NC	10
11	NC	NC	12	11	NC	NC	12
13	NC	NC	14	13	NC	NC	14
15	GND	NC	16	15	GND	NC	16
17	NC	GND	18	17	NC	GND	18
19	NC	NC	20	19	NC	NC	20
21	GND	NC	22	21	GND	NC	22
23	NC	VCC	24	23	NC	VCC	24
25	NC	GND	26	25	NC	GND	26
27	GND	NC	28	27	GND	NC	28
29	GND	NC	30	29	GND	NC	30
31	NC	NC	32	31	NC	NC	32
33	NC	GND	34	33	NC	GND	34
35	GND	USB_DM	36	35	GND	NC	36
37	GND	USB_DP	38	37	GND	NC	38
39	VCC	GND	40	39	VCC	GND	40
41	VCC	LED	42	41	VCC	LED	42
43	GND	NC	44	43	GND	NC	44
45	NC	NC	46	45	RXD	NC	46
47	NC	NC	48	47	TXD	NC	48
49	NC	GND	50	49	NC	GND	50
51	NC	VCC	52	51	NC	VCC	52

Application

- Mount GE-626 on main board, connect I-PEX to GPS active antenna.

Ordering Information

GE-626X[&]

S [!]	TTL 4800bps, N-8-1 GGA, GSA, GSV, RMC, VTG, TXT
T [!]	TTL 9600bps, N-8-1 GGA, GLL, GSA, GSV, RMC, VTG, TXT
U	u-blox USB GGA, GLL, GSA, GSV, RMC, VTG, TXT
V	Prolific USB, 9600bps, N-8-1 GGA, GLL, GSA, GSV, RMC, VTG, TXT

[&]Default with battery.

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

*This document is subject to change without notice.