

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

### Overview

GP-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<sup>\*</sup>: -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<sup>\*</sup>

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	Autonomous (All at -130dBm)
Hot start	1sec
Warm start	27sec
Cold start	27sec
Sensitivity (Autonomous)	-147dBm (acquisition) -161 dBm (tracking & navigation)
Max. Update Rate	5Hz
Max. Altitude	50,000 m
Max. Velocity	500 m/s

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

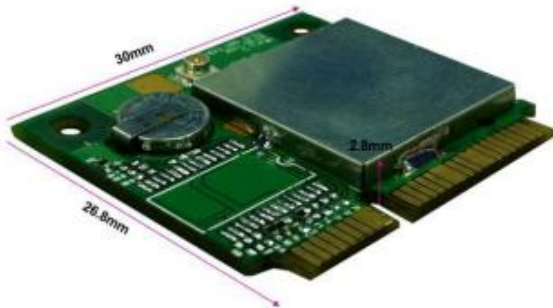
### Electrical Data

Power Supply	3.3 ± 0.3 V
Power Consumption	56 mA / average tracking
USB I/O (V)	V <sub>IH</sub> : 2 ~ 3.3, V <sub>IL</sub> : 0 ~ 0.8 V <sub>OH</sub> : >= 2.8, V <sub>OL</sub> : <= 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	Input
RXD <sup>1</sup>	45	TTL input into GPS	Input
TXD <sup>1</sup>	47	TTL output from GPS	Output
NC	Remaining pins	No connection	-

<sup>1</sup> TTL model only, NC for USB model

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
GP-626 USB			GP-626 TTL		
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 GP-626 on main board, connect I-PEX to GPS active antenna.

### Ordering Information

#### GP -626X<sup>&</sup>

S <sup>1</sup>	TTL 4800bps, N-8-1 GGA, GSA, GSV, RMC, VTG, TXT
T <sup>1</sup>	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

<sup>&</sup> Default with battery.

<sup>1</sup> Proprietary; reserved pins of PCIe Mini Rev. 1.2 are used

\*This document is subject to change without notice.