

industrial grade | anti-interference | wide-temperature ranging

## Mini PCI Express GNSS Card

### ► Feature

- Excellent anti-interference & anti-jamming performance even under 3G/4G LTE Area
- NMEA-0813 support USB or UART interface
- Built-in rechargeable battery for fast TTFF fix position
- u-blox UDR concurrent GNSS-Dead Reckoning (Optional)
- 3D gyroscope + 3D accelerometer sensor (Optional)

### ► Introduction

- Featuring WAN technology, Apacer's industrial grade GNSS card, which is ruggedized in the Full Mini PCIe card, can greatly reduce the interference jamming effect and has excellent performance on supporting navigation system included GPS, GLONASS, BeiDou, QZSS, Galileo and SBAS. Able to operate in temperatures ranging from -40°C to 85°C.
- GNSS card is the ideal solution for asset tracking. Its wide applications across fleet management, unmanned vehicles, robotic guidance systems, public transportation monitoring, emergency fleet solution, law enforcement, in-vehicle PC, digital signage, vehicle data collection, vehicle tracking, telematics system, and IoT/IoV application.

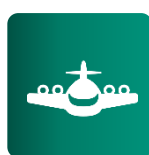
### ► Wide application



Vehicle



Vessel



Aviation



Railway



Surveying



Agriculture



### ► Ordering Information

Part Number	Description
APEFG-G00	Full Mini PCIe card u-blox M8N concurrent GNSS
APEFG-R00	Full Mini PCIe card u-blox M8U UDR concurrent GNSS-Dead Reckoning integrated 3D Gyroscope & Accelerometer sensor
APEFG-L00 (by project)	Full Mini PCIe card u-blox M8L ADR concurrent GNSS-Dead Reckoning with Line* integrated 3D Gyroscope & Accelerometer sensor
41.07712.1500C**	RF CABLE ipex to SMA Female, Length 100mm, Thickness 1.37mm for GNSS
41.08073.1500C**	Active Antenna for GPS+Glonass, length 3M, SMA Male

\* : physical line input pin, getting vehicle configuration from wheel-tick/speed input, and providing high-precision data than APEFG-R00.  
\*\* : recommend optional accessory

	APEFG-G00	APEFG-R00	APEFG-L00*	APTMG-G00*	APTMG-R00*	APTMG-L00*
mPCIe Form Factor	Y	Y	Y	-	-	-
M.2 Form Factor	-	-	-	Y	Y	Y
GPS	Y	Y	Y	Y	Y	Y
Glonass	Y	Y	Y	Y	Y	Y
Galileo	Y	Y	Y	Y	Y	Y
BeiDou	Y	Y	Y	Y	Y	Y
Dead Reckoning	-	Y (u-blox UDR)	Y (u-blox ADR)	-	Y (u-blox UDR)	Y (u-blox ADR)
Gyro Scope	-	Y	Y	-	Y	Y
G-sensor	-	Y	Y	-	Y	Y
USB Interface	Y	Y	Y	Y	Y	Y
UART Interface	Y	Y	Y	Y	Y	Y
Build-in Battery	Y	Y	Y	Y	Y	Y
Industrial Grade	Y	Y	Y	Y	Y	Y

\*: by project

## ► Specifications

Form Factor	Full Height Mini PCI Express Card
Host Interface	USB 2.0 or UART via PCI Express Mini Card Socket
Sensor	<ul style="list-style-type: none"> <li>optional 3D sensor (gyroscope + accelerometer)</li> </ul>
Antenna Connection	R.FL or ipex, active antenna support only
Driver Support	Microsoft Windows 7 / 8.1 / 10 Linux Kernel 2.6 / 3.13/4.X
GNSS Support	<ul style="list-style-type: none"> <li>72-channel u-blox M8 engine</li> <li>GPS/QZSS, Galileo, GLONASS, BeiDou, SBAS(WAAS, EGNOS and MSAS)</li> <li>NMEA-0183 standard</li> </ul>
Operating/Storage Temp.	-40°C to 85°C
Vibration/ Shock Test	Vibration, Non-Op 4.02Grms/MIL-STD-810G Shock, Non-Op 1500(G) /MIL-STD-883K
ESD Protection	8kV Contact, 15kV air
Regulatory	CE FCC ROHS compliance
Optional Accessories	<ul style="list-style-type: none"> <li>R.FL to SMA female transition cable, length 10cm</li> <li>Active antenna with SMA Connector, length 3m</li> </ul>
Dimension (LxWxH)	<p>Full Height Mini PCI Express Card: 50.90 x 30.00 x 6.56mm</p> <p>The top view shows a rectangular card with a width of 24.2 mm and a length of 48.05 mm. The bottom view shows a width of 29.85±0.15 mm and a length of 50.8±0.15 mm. Pin 1 is located at the bottom right corner, and Pin 32 is at the bottom left corner.</p>