ANNA-F9 High Precision GNSS PCIe Mini Card

Features

- Built-in u-blox F9 GNSS module which provides centimeter level accuracy
- Multi-band RTK with fast convergence and reliable performance
- Concurrent reception of GPS, GLONASS, Galileo and BeiDou
- Optionally support Dead Reckoning Features: UDR, ADR, CAN-to-ADR
- Sensors Integrated: 3D Gyroscope, 3D Accelerometer, 3D Magnetometer

Introduction

ANTZER TECH's ANNA-F9 High Precision GNSS Mini-PCIe card integrates u-blox F9 receiver platform providing multi-band GNSS and RTK positioning. ANNA-F9 series offer support for RTCM formatted corrections and centimeter-level positioning from local base stations or from virtual reference stations (VRS) in a Network RTK setup. Moreover, the GNSS module is available to upgrade for future SSR-type correction service which is suitable for mass market production. ANNA-F9 series has optional configuration including 3D inertial measurement unit (IMU) which support Dead Reckoning technology: UDR (Untethered Dead Reckoning), ADR (Automotive Dead Reckoning) or Antzer Tech patented CAN-to-ADR solution. ANNA-F9 mini-PCIe card provides optimal positioning accuracy which is the ideal solution for agricultural machinery, heavy trucks and modern autonomous vehicles.

Specifications

Interface	Form Factor	Full-sized PCI Express Mini Card
	Host Interface	USB 2.0 via PCI Express Mini Card Socket
GNSS	GNSS Module	u-blox ZED-F9P, ZED-F9R
	Receiver Type	184-channel u-blox F9 engine GPS: L1C/A L2C / Glonass: L1OF L2OF / Galileo: E1B/C E5b Beidou: B1l B2l / QZSS L1C/A L1S / SBAS [1] L1C/A
	Position Accuracy (RTK)	ANNA-F9xPx: <0.01m + 1 ppm CEP ANNA-F9xRx: <0.2m + 1 ppm CEP
	Convergence time (RTK)	<10 sec
	GNSS Antenna	External, IPEX connector onboard (Support active antenna)
	Dead Reckoning	Only supported on ANNA-F9xRx: UDR, ADR, CAN-to-ADR
	Input Connector	Wheel-tick and direction inputs for ANNA-F9xRx
CAN/Sensor	Sensor [2]	3D Gyroscope, 3D Accelerometer, 3D Magnetometer
	CAN [3]	Support ISO15765-4 on-board diagnostic or J1939 protocol to get speed from vehicle CAN Bus for CAN-to-ADR application.
Environment	Operating Temp	-40cC ~ 85°C (without Li-Coin Battery) -20°C ~ 60°C (with Li-Coin Battery)
	Vibration Test	Pass 7.69G@ 20~2000Hz, compliant with MIL-STD-810G category 24
	ESD Protection	8kV Contact, 15kV air
	Certification	CE, FCC Class B
Dimension	L x W x H	50.9 x 30 x 6.45mm

[1] SBAS is only supported on ANNA-F9xPx
[2] Sensor on ANNA-F9xPx default with Host PC through SMBus on mPCIe Socket, whereas the USB interface
is designed for ANNA-F9xRx.
[3] Only supported on ANNA-F9xRx for CAN-to-ADR application

Ordering Information

Model Name	Description
ANNA-F90P0	ZED-F9P, Full-Sized Mini-PCIe Card, Gyroscope, Accelerometer, Magnetometer
ANNA-F90R0	ZED-F9R, Full-Sized Mini-PCIe Card, Gyroscope, Accelerometer, Magnetometer with DR function