

# ANNA-F GNSS PCIe Mini Card

## Features

- Built-in u-blox M8 GNSS module (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
- Support Dead Reckoning Features: UDR or ADR
- Optionally Support Automotive Dead Reckoning (CAN-to-ADR) Technology (The card needs to be connected to the vehicle CAN bus)
- Optional SKU with Sensors Integrated: 3D Gyroscope, 3D Accelerometer.



## Introduction

ANTZER TECH's ANNA Mini-PCIe card integrates high performing u-blox M8 module that have concurrent reception of up to 3 GNSS (GPS/Galileo together with GLONASS or BeiDou). ANNA series has optional configurations which support Dead Reckoning Technology: UDR (Untethered Dead Reckoning), ADR (Automotive Dead Reckoning) or Antzer Tech patented CAN-to-ADR solution. ANNA Mini-PCIe card provides outstanding positioning accuracy which is the ideal solution for industrial and automotive applications.

## Specifications

Interface	Form Factor	Full Sized PCI Express Mini Card
	Host Interface	USB 2.0 via PCI Express Mini Card Socket <i>* Optional SKU with sensors via I<sup>2</sup>C or USB 2.0 on PCI Express Mini Card Socket</i>
GNSS	GNSS Module	u-blox, NEO-M8U, NEO-M8L
	Receiver Type	72-channel u-blox M8 engine Concurrent reception of up to 3 GNSS (GPS, Galileo, GLONASS, BeiDou)
	Position Accuracy	2.0m CEP
	Dead Reckoning	UDR / ADR / CAN-to-ADR
	Quick Hot Start	Support (Li-Coin Battery is Required)
	GNSS Antenna	External, IPEX connector onboard (Default Support Active Antenna) <i>* Optional SKU Support Passive Antenna</i>
	Input Connector	Wheel-tick and Direction Inputs for the ADR SKU
CAN/Sensor	Sensor (Optional SKU)	3D Gyroscope 3D Accelerometer
	CAN (Only for CAN-to-ADR SKU)	Support ISO15765-4 On-Board Diagnostic or J1939 Protocol to Get Speed from Vehicle CAN Bus for CAN-to-ADR Application.
Environment	Operating Temp	-40°C ~ 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

## Pin Assignment

Pin	Function	Pin	Function
1	NC	2	+V3.3
3	NC	4	GND
5	NC	6	NC
7	NC	8	NC
9	GND	10	NC
11	NC	12	NC
13	NC	14	NC
15	GND	16	NC
Mechanical Key			
17	NC	18	GND
19	NC	20	NC
21	GND	22	NC
23	NC	24	+V3.3
25	NC	26	GND
27	GND	28	NC
29	GND	30	NC
31	NC	32	NC
33	NC	34	GND
35	GND	36	USB_DM
37	GND	38	USB_DP
39	+V3.3	40	GND
41	+V3.3	42	NC
43	GND	44	NC
45	NC	46	NC
47	NC	48	NC
49	NC	50	GND
51	NC	52	+V3.3

## Functional Switch

Pin	Function
SW #1	Reserved (Default: OFF)
SW #2	Back-up Battery ON/OFF (Default: ON)
SW #3	CAN bus Tx ON/OFF (Default: ON)
SW #4	CAN bus Terminal Resistor (Default: OFF)

## Ordering Information

Form Factor	Sensors <sup>[1]</sup>	GNSS Feature		
		UDR	ADR	CAN-to-ADR
Full-sized mPCIe	●	ANNA-F00U0	ANNA-F00L1	ANNA-FG0L1 <sup>[2]</sup>
		ANNA-F00U1		

[1] The interface of the sensors on the list is I<sup>2</sup>C on the mPCIe socket. Please contact our sales representative if you need the SKU with USB 2.0 interface for the sensors.

[2] For the SKU with CAN-to-ADR function, the default interface of the sensors would be USB 2.0 on the mPCIe socket.