

# ANNA-M GNSS M.2 Card

## Features

- M.2 Type-2242 B-Key (USB Interface)
- Built-in u-blox M8 GNSS module (GPS, GLONASS, BeiDou, Galileo, QZSS and SBAS)
- Support Dead Reckoning Features: UDR or ADR
- With Sensors Integrated: 3D Gyroscope, 3D Accelerometer. (Require I<sup>2</sup>C interface on the M.2 slot)
- Operating Temperature: -40 to +85 °C



## Introduction

ANTZER TECH's ANNA-M M.2 card is designed base on M.2 Type-2242 B-Key form factor, integrating with high performing u-blox M8 module that have concurrent reception of up to 3 GNSS (GPS/Galileo together with GLONASS or BeiDou). ANNA-M series has optional configurations which support Dead Reckoning Technology: UDR (Untethered Dead Reckoning) and ADR (Automotive Dead Reckoning). ANNA-M M.2 card provides outstanding positioning accuracy which is the ideal solution for industrial and automotive applications.

## Specifications

Interface	Form Factor	M.2 Type-2242 B-Key,
	Host Interface	USB 2.0 via M.2 Socket * Optional SKU with sensors via I <sup>2</sup> C on M.2 Socket
GNSS	GNSS Module	u-blox NEO-M8N, 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
	Quick Hot Start	Support (Li-Coin Battery is Required)
	GNSS Antenna	External, IPEX connector onboard (Default Support Active Antenna) * Optional SKU Support Passive Antenna
	Input Connector	Wheel-tick and Direction Inputs for the ADR SKU
Sensor	Sensor	3D Gyroscope 3D Accelerometer
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	42 x 22 x 5.8mm

## Pin Assignment

Pin	Function	Pin	Function
1	NC	2	+V3.3
3	GND	4	+V3.3
5	GND	6	NC
7	USB_DP	8	NC
9	USB_DM	10	NC
11	GND	12	Mechanical Key
13	Mechanical Key	14	
15		16	
17		18	
19		20	
21		GND	22
23	NC	24	NC
25	NC	26	NC
27	GND	28	NC
29	NC	30	NC
31	NC	32	NC
33	GND	34	NC
35	NC	36	NC
37	NC	38	NC
39	GND	40	SCL
41	NC	42	SDA
43	NC	44	NC
45	GND	46	NC
47	NC	48	NC
49	NC	50	NC
51	GND	52	NC
53	NC	54	NC
55	NC	56	NC
57	GND	58	NC
59	NC	60	NC
61	NC	62	NC
63	NC	64	NC
65	NC	66	NC
67	NC	68	NC
69	GND	70	+V3.3
71	GND	72	+V3.3
73	GND	74	+V3.3
75	GND		

## Ordering Information

GNSS Feature	Model Name	Description
UDR	ANNA-M01U1	NEO-M8U, M.2 Type-2242 B-Key, Gyroscope, Accelerometer with UDR function
ADR	ANNA-M01L1	NEO-M8L, M.2 Type-2242 B-Key, Gyroscope, Accelerometer with ADR function