

UM220-INS NL

Industrial Grade Multi-GNSS Integrated Navigation and Positioning Module



16.0 x 12.2 x 2.6 mm



Product Characteristics

- » Miniaturized All-in-One design
- » Built-in MEMS to output integrated positioning results with a single module
- » 100% continuous navigation even in tunnels or underground parking lots
- » GNSS + INS integrated navigation algorithm, supporting odometer pulse input
- » Supports A-GNSS

Applications



Vehicle Navigation



T-BOX

Brief Introduction

UM220-INS NL is an industrial grade GNSS+MEMS module designed for vehicle navigation. Based on Unicore's proprietary low power consumption GNSS SoC - UC6226, and with the built-in 6-axis MEMS, UM220-INS NL can directly output GNSS+ MEMS integrated positioning results, which is most suitable for applications requiring high accuracy, high reliability, and high continuity.

UM220-INS NL			
13	GND	GND	12
14	RSV	RF_IN	11
15	FWD	GND	10
16	RSV	VCC_RF	9
17	RSV	RSV	8
UM220-INS NL			
18	RSV	RXD2	7
19	RSV	TXD2	6
20	TXD1	RSV	5
21	RXD1	WHEEL TICK	4
22	V_BCKP	TIME PULSE	3
23	VCC	RSV	2
24	GND	nRESET	1

Ordering Information

Supply at multiples of 500 pieces

Physical Specifications

Dimensions	16.0 x 12.2 x 2.6 mm
Package	24 pin SMD
Temperature	Operating -40 °C ~ +85 °C Storage -45 °C ~ +90 °C

Electrical Specifications

Voltage	3.0 V ~ 3.6 VDC
LNA Feed	3.0 V ~ 3.3 V
Power Consumption ³	90 mW

Interfaces

2 x UART(LVTTL)
1 x SPEED
1 x FWD
1 x 1PPS(LVTTL)

NOTE: 1 Simultaneously running three systems at most. Using command to switch between BDS and GLONASS.

2 Typical Value, < 3 0m/s open sky

3 Open sky, continuous tracking

Performance Specifications

Channel	64 channels, based on UFirebird		
Frequency ¹	GPS L1 BDS B1 Galileo E1 GLONASS G1 QZSS SBAS		
Modes	Single-System Standalone Positioning	Positioning Accuracy(CEP)	Horizontal: 2.0 m (Dual-System) < 3% of distance traveled without GNSS signals
Time to First Fix (TTFF)	Cold Start: < 28 s	Velocity	0.1 m/s
	Hot Start: < 1 s Reacquisition: < 1 s	Accuracy ² (RMS)	
Data Update Rate	1 Hz / 5 Hz / 10 Hz	1PPS	Support
Sensitivity	GNSS		
	Tracking	-161 dBm	
	Cold Start	-147 dBm	
	Hot Start	-154 dBm	
	Reacquisition	-157 dBm	
Data Format	NMEA 0183, Unicore		