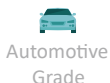


UM220-INS NF

High-end GNSS+MEMS Integrated Navigation and Positioning Module



16.0 x 12.2 x 2.6 mm

Product Characteristics

- » Miniaturized All-in-One design
- » Built-in MEMS device, output of integrated navigation and positioning results with one single module
- » 100% positioning continuity even in tunnels or underground parking lots
- » In-dash integrated navigation algorithm, supporting odometer pulse / vehicle speed input
- » Support A-GNSS
- » Compatible with UM220-INS N

Applications



In-Dash Vehicle Navigation



High-end Integrated Navigation

Brief Introduction

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

Ordering Information

Supply at multiples of 500 pieces

UM220-INS NF			
13	GND	GND	12
14	RSV	RF_IN	11
15	FWD	GND	10
16	RSV	VCC_RF	9
17	RSV	RSV	8
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

Functional Ports

2 x UART / 1 x SPEED / 1 x FWD1 / 1 x 1PPS
Data Ports:NMEA 0183 (Compatible with BDS);
Unicore

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	2.7 V ~ 3.3 V
Power Consumption ²	90 mW

NOTE: The parts marked with * are optional configurations.
1 Typical conditions, <30m/s open sky
2 Open sky, continuous tracking

Performance Specifications

Channel	64 channels, based on UFirebird			
Frequency	BDS B1			
	GPS L1 GLONASS L1*			
Modes	Single-System Positioning	Positioning Accuracy (RMS)	2.5m CEP (Dual-System Horizontal)	
	Multi -System Positioning		<5% x driving distance (inertial navigation, without GNSS signal)	
Time to First Fix (TTFF)	Cold Start: 30 s	Velocity Accuracy ¹ (RMS)	0.02m/s (GPS+GLONASS+Galileo)	
	Hot Start: 1 s		0.01m/s (GPS+BeiDou+Galileo)	
	Reacquisition: <1 s			
Update Rate	1 Hz/5Hz/10Hz	1PPS	Support	
Sensitivity	GPS+GLO+GA	GPS+BD+GA	BDS	GPS GLO
Tracking	-161dBm	-161dBm	-159dBm	-161dBm -158dBm
Acquisition	-147dBm	-147dBm	-144dBm	-147dBm -142dBm
Hot Start	-154dBm	-154dBm	-149dBm	-154dBm -148dBm
Reacquisition	-157dBm	-157dBm	-156dBm	-157dBm -153dBm