

# UM220-IV M0

Industrial Grade Multi-GNSS  
Navigation and Positioning Module



9.7 x 10.1 x 2.2 mm



Industrial Grade

## Product Characteristics

- » Super small packaging
- » Compact design, small size
- » Excellent performance, supporting single-system positioning and multi-system positioning
- » Anti-jamming technology, which enables the module to work stably in complex electromagnetic environments
- » Low power consumption
- » Suitable for large-scale applications that require high performance, small size and low cost

## Applications



Tracker



Vehicle  
Navigation

## Brief Introduction

UM220-IV M0 is a multi-system compact navigation module designed for the automotive market. As the fourth generation of GNSS navigation and positioning module, UM220-IV M0 is based on Unicore's proprietary GNSS SoC UC6226. It is highly integrated, with low power consumption, anti-interference design, compact size, and is suitable for applications requiring low cost.

## Ordering Information

Supply at multiples of 1000 pieces

UM220-IV M0		
10	GND	nRESET 9
11	RF_IN	VCC 6
12	GND	VCC_IO 7
13	ANTON	V_BCKP 6
14	VCC_RF	GPIO1 5
15	GPIO2	TIME PULSE 4
16	SDA	RXD 5
17	SCL	TXD 2
18	RSV	GND 1

## Physical Specifications

Dimensions	9.7 x 10.1 x 2.2 mm
Package	18 pin SMD
Temperature	Operating -40 °C ~ +85 °C Storage -45 °C ~ +90 °C

## Electrical Specifications

Voltage	3.0 V ~ 3.6 V DC
LNA	3.0 V ~ 3.3 V, <100 mA
Power Consumption <sup>4</sup>	90 mW

## Functional Ports

1 x UART	1 x 1PPS
Data Format: NMEA 0183	
Unicore	

## Functional Characteristics

Passive Antenna, Active Antenna,  
AGNSS \*

**NOTE:** Supported by specific firmware

<sup>1</sup> Simultaneously running three systems at most. Using command to switch between BDS and GLONASS.

<sup>2</sup> Open sky.

<sup>3</sup> Typical value < 30 m/s open sky.

<sup>4</sup> Open sky, continuous tracking.

## Performance Specifications

Channel	Based on 64-Channel SoC - UFirebird
Frequency <sup>1</sup>	GPS L1 GLONASS G1 BDS B1 Galileo E1 QZSS SBAS
Modes	Single-System Positioning Multi-System Positioning Cold Start: < 28 s
Time to First Fix (TTFF) <sup>2</sup>	AGNSS < 4 s Hot Start < 1 s Reacquisition: < 1 s
Update Rate	1 Hz
Positioning Accuracy <sup>3</sup>	2.0 m CEP(Dual-System Horizontal)
Velocity Accuracy <sup>3</sup> (RMS)	0.1 m/s (GNSS)
1PPS	Support
Sensitivity	GNSS
Tracking	-161 dBm
Acquisition	-146 dBm
Hot Start	-151 dBm
Reacquisition	-158 dBm