

# UM620N

Automotive Grade Dual-frequency  
Multi-GNSS Positioning Module



 Automotive Grade

16.0 x 12.2 x 2.4 mm

## Product Characteristics

- » Automotive grade dual-frequency navigation and positioning module
- » Supports GPS L1/L5, BDS B1I/B1C\*/B2a, GLONASS G1, Galileo E1/E5a, NavIC (IRNSS L5\*), QZSS, SBAS
- » Conforms to AEC-Q100 standard and IATF16949 standard
- » Anti-interference design, working stably in complex electromagnetic environments

## Applications



In-Dash Vehicle Navigation



T-BOX



Vehicle Navigation

## Brief Introduction

UM620N is a GNSS dual-frequency navigation module developed by Unicore Communications for the automotive market. Based on the proprietary multi-system dual-frequency high-performance SoC - UC6580A, the module supports multi-system dual-frequency joint positioning or single-system standalone positioning, ensuring high positioning accuracy even in complex environments such as multi-path surroundings.

## Ordering Information

Supply at multiples of 500 pieces

UM620N			
13	GND	GND	12
14	LNA_EN	RF_IN	11
15	NC	GND	10
16	NC	VCC_RF	9
17	NC	nRESET	8
18	SDA/SPI CS_N	NC	7
19	SCL/SPI CLK	TXD2	6
20	TXD1/SPI MISO	RXD2	5
21	RXD1/SPI MOSI	NC	4
22	V_BCKP	TIME PULSE	3
23	VCC	DEL	2
24	GND	nRESET	1

## Physical Specifications

Dimensions	12.2 x 16.0 x 2.4 mm
Package	24 pin, SMD
Temperature	Operating -40 °C ~ +85 °C Storage -40 °C ~ +85 °C

## Electrical Specifications

Voltage	2.7V ~ 3.6 V DC
LNA	2.7V ~ 3.3 V, <100 mA
Power Consumption <sup>3</sup>	300 mV

## Functional Ports

2 × UART	
1 × I2C	
1 × SPI*	
1 × 1PPS	
Data Format	NMEA 0183 Unicore

## Functional Characteristics

Passive Antenna, Active Antenna,  
AGNSS\*

**NOTE:** \* Supported by specific firmware.

- 1 Open sky
- 2 Typical value, < 30 m/s open sky
- 3 Open sky, continuous tracking

## Performance Specifications

Channel	96 channels, based on UFirebirdIII
Frequency	GPS L1C/A/L5 BDS B1I/B1C*/B2a GLONASS G1 Galileo E1/E5a NavIC L5* QZSS L1/L5 SBAS
Modes	Single-System Positioning Multi-System Positioning
Time to First Fix (TTFF) <sup>1</sup>	Cold Start : < 30 s Hot Start : < 2 s Re-acquisition : < 2 s
Update Rate	1 Hz / 10 Hz
Positioning Accuracy <sup>2</sup>	1.5 m CEP(Dual-frequency four-system horizontal)
Velocity Accuracy(RMS)	0.1 m/s (GNSS)
1PPS	20 ns
Sensitivity	GNSS
Tracking	-165 dBm
Acquisition	-148 dBm
Hot Start	-158 dBm
Reacquisition	-160 dBm