

UM621N

Automotive Grade Dual-frequency
Multi-GNSS Integrated Positioning
Module



16.0 x 12.2 x 2.4 mm

Product Characteristics

- » Automotive grade dual-frequency GNSS+MEMS integrated 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 and IATF16949
- » Built-in MEMS, outputting integrated positioning results with a single module
- » Supports the input of odometer pulse/vehicle speed signals
- » 100% continuous positioning even in tunnels or underground parking lots

Applications



In-Dash Vehicle
Navigation



T-BOX



Vehicle
Navigation

Brief Introduction

UM621N is a GNSS dual-frequency + MEMS integrated navigation module developed by Unicore Communications for the automotive market. Based on the proprietary multi-system dual-frequency high-performance SoC - UC6580A, and equipped with a 6-axis MEMS device, the module supports multi-system dual-frequency joint positioning or single-system standalone positioning, and can directly output GNSS+MEMS integrated positioning results, which ensures the continuity of positioning even in tunnels or underground parking lots.

Ordering Information

Supply at multiples of 500 pieces

UM621N			
13	GND	GND	12
14	LAN_EN	RF_IN	11
15	FWD	GND	10
16	GEOF_STAT	VCC_RF	9
17	EINT	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	WHELTICK	4
22	V_BCKP	TIME PULSE	3
23	VCC	DEL	2
24	GND	nRESET	1

Physical Specifications

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

Electrical Specifications

Voltage	2.7 V ~ 3.6 V DC
LNA	2.7 V ~ 3.3 V, <100 mA
Power Consumption ³	330 mV

Functional Ports

2 × UART / 1 × I2C / 1 × SPI* / 1 × SPEED / 1 × FWD
1 × 1PPS

Data Format NMEA 0183

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 UFirebirdII
Frequency	GPS L1C/A/L5 BDS B1I/B1C*/B2a GLONASS G1 Galileo E1/E5a NavIC L5* QZSS L1/L5 SBAS
Positioning Mode	Single-System Standalone Positioning Multi-System Joint Positioning
Time to First Fix (TTFF) ¹	Cold Start : < 30 s Hot Start : < 2 s Re-acquisition : < 2 s
Positioning Accuracy ²	1.5 m CEP(Dual-frequency quad-system horizontal, open sky)
Positioning Error of INS only	3D gyro error + 3D accelerometer error + speed signal error 2% × driving distance
GNSS Data Update Rate	1 Hz / 10 Hz / 20 Hz
INS Data Update Rate	100 Hz
Data Format	NMEA 0183, Unicore Protocol
Velocity Accuracy(RMS) ¹	0.1 m/s (GNSS)
1PPS	20 ns
Sensitivity	GNSS
Tracking	-165 dBm
Acquisition	-148 dBm
Hot Start	-158 dBm
Reacquisition	-160 dBm