UM621A

Automotive Grade Multi-GNSS Dual-frequency Integrated Positioning Module

16.0 x 12.2 x 2.4 mm

Automotive Grade

Product Characteristics

- Automotive grade dual-frequency GNSS+MEMS integrated navigation and positioning module
- Supports GPS L1 C/A, L5; BDS B1I, B1C*, B2a; GLONASS G1; Galileo E1, E5a; NavIC L5*; QZSS and SBAS
- Supports multi-system dual-frequency positioning, multi-system single-frequency positioning or single-system standalone positioning
- Built-in MEMS to output integrated positioning results with a single module
- Supports odometer pulse input
- Supports the output of integrated positioning results and GNSS-only positioning results through one serial port
- 100% continuous navigation even in tunnels or underground parking lots
- GNSS chip qualified according to AEC-Q100; production process conforms to IATF16949

Applications

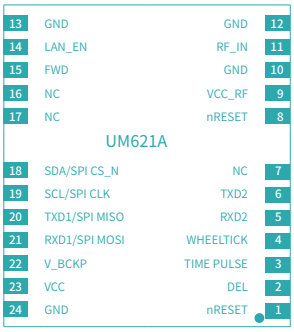
- Vehicle Navigation
- T-BOX
- Intelligent Cockpit

Ordering Information

Supply at multiples of 500 pieces

Brief Introduction

UM621A is a GNSS dual-frequency + MEMS integrated navigation module developed by Unicore Communi -cations 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.



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 mW

Interfaces

2 × UART (LVTTL)
1 × I²C*
1 × SPI*
1 × SPEED
1 × FWD
1 × 1PPS (LVTTL)

Functional Characteristics

Passive Antenna, Active Antenna,
AGNSS *

NOTE: * Supported by specific firmware.
1 Open sky
2 68% at 30 m/s for dynamic operation, 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, L5a	
	NavIC L5*	
	QZSS L1, L5	
	SBAS L1C/A	
Positioning Mode	Single-System Standalone Positioning	
	Multi-System Joint Positioning	
Time to First Fix (TTFF)[1]	Cold Start: < 26 s	
	Hot Start: < 2 s	
	Reacquisition: < 2 s	
Positioning Accuracy(CEP)[1]	Horizontal: 1.5 m (Dual-frequency quad-system, open sky)	
Positioning Error of INS only	< 2 % of the distance traveled without GNSS signals	
Velocity Accuracy(RMS)[2]	0.05 m/s	
1PPS	20 ns	
Sensitivity	GNSS	
	Tracking	-162 dBm
	Cold Start	-148 dBm
	Hot Start	-158 dBm
	Reacquisition	-160 dBm
GNSS Data Update Rate	1 Hz / 5 Hz* / 10 Hz*	
INS Data Update Rate	50 Hz / 100 Hz	
Data Format	NMEA 0183, Unicore	