

UM620

Industrial-grade Multi-GNSS
Dual-frequency Positioning
Module




Industrial Grade

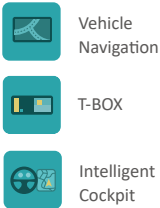
12.2 × 16.0 × 2.4 mm



Product Characteristics

- » Industrial-grade dual-frequency 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
- » Anti-jamming design to ensure the module working stably in complex electromagnetic environments
- » Algorithm adaptable to low-dynamic application scenarios

Applications



Vehicle
Navigation

T-BOX

Intelligent
Cockpit

Ordering Information

Supply at multiples of 500 pieces

Brief Introduction

UM620 is an industrial-grade GNSS dual-frequency navigation module developed by Unicore Communications. Based on the proprietary multi-system dual-frequency high-performance SoC-UC6580I, the module supports multi-system dual-frequency positioning, multi-system single-frequency positioning, or single-system standalone positioning, ensuring high positioning accuracy even in complex environments such as multi-path surroundings.

13	GND	GND	12
14	LAN_EN	RF_IN	11
15	FWD	GND	10
16	GEOF_STAT	VCC_RF	9
17	EINT	nRESET	8
UM620			
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 × 16.0 × 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	150 mW

Interfaces

2 × UART (LVTTL)
1 × I²C*
1 × SPI*
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 UFirebird II
Frequency	GPS L1C/A, L5 BDS B1I, B1C*, B2a GLONASS G1 Galileo E1, E5a 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) ²	Horizontal: 1.5 m (Dual-frequency quad-system)
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
Data Update Rate	1 Hz / 5 Hz* / 10 Hz*
Data Format	NMEA 0183, Unicore