

# UM761

Industrial-Grade Multi-GNSS  
Single-Frequency Integrated  
Positioning Module



12.2 x 16.0 x 2.4 mm

Industrial Grade



## Features

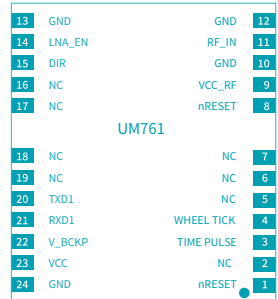
- » Supports BDS B1I, B1C; GPS L1 C/A; GLONASS G1; Galileo E1B/C; QZSS and SBAS
- » Built-in 6-axis IMU, with 50Hz/100Hz IMU raw data output
- » Supports odometer pulse input/vehicle speed input
- » 100% continuous navigation even in tunnels or underground parking lots
- » Supports the output of GNSS+IMU integrated positioning results and GNSS-only positioning results through one serial port
- » Production process conforms to IATF16949

## Applications



Industrial Applications

UM761 series modules are GNSS + IMU integrated positioning and navigation modules independently developed by Unicore Communications. Based on the multi-constellation, single-frequency and high-performance GNSS SoC – UFirebird IV (UC7510I), and with the built-in six-axis inertial measurement unit, the modules support multi-constellation single-frequency joint positioning, and can directly output GNSS + IMU integrated positioning results, which ensures continuous positioning even in tunnels and underground garages. This module can be used with terminal devices to achieve Android Auto and CarPlay certification.



## Ordering Information

Supply at multiples of 500 pieces

## Physical Specifications

Dimensions	12.2 x 16.0 x 2.4 mm
Package	24 pin, LCC
Operating Temperature	-40 °C ~ +85 °C
Storage Temperature	-45 °C ~ +90 °C

## Electrical Specifications

Voltage	2.7 V ~ 3.6 V DC
LNA	2.7 V ~ 3.3 V, < 100 mA

## Interfaces

- 1 x UART (LVTTTL)
- 1 x FWD
- 1 x SPEED
- 1 x 1PPS (LVTTTL)

## Functional Characteristics

Passive Antenna, Active Antenna, AGNSS

**Note:** \* Supported by specific firmware.  
1.95% at 30 m/s for dynamic operation, open sky

## Performance Specifications

Channel	64 channels, based on UFirebird IV
	GPS L1C/A
	BDS B1I, B1C*
Frequency	GLONASS G1
	Galileo E1B/C
	QZSS L1C/A, L1C/B*, L1S
	SBAS L1C/A*
Modes	Single-constellation standalone positioning
	Multi-constellation joint positioning
Time to First Fix (TTFF)	Cold Start: < 26 s
	Hot Start: < 1 s
	Reacquisition: < 1 s
	A-GNSS: < 3 s
Positioning Accuracy (CEP95)	Horizontal: 1.5 m* (with SBAS)
	Horizontal: 2.0 m (without SBAS)
INS Positioning Error without GNSS	ADR < 2% of distance traveled (without GNSS for 120 s)
	UDR < 5% of distance traveled (without GNSS for 120 s)
Data Update Rate	GNSS only or GNSS + INS 1 Hz / 5 Hz / 10 Hz
	IMU raw data output 50 Hz / 100 Hz
Velocity Accuracy <sup>1</sup>	0.05 m/s (open sky)
1PPS	20 ns
	GNSS
	Tracking -165 dBm
Sensitivity	Cold Start -148 dBm
	Hot Start -156 dBm
	Reacquisition -160 dBm
Data Format	NMEA 0183, Unicore