UM670A

Automotive-Grade Multi-GNSS Dual-Frequency Positioning Module

17.0 x 22.0 x 2.6 mm

Automotive Grade

Features

- Supports concurrent operation of GPS, BDS, GLONASS and Galileo L1+L5 or L1+L2*
- Dual-frequency single point positioning, providing higher accuracy and reliability compared to single-frequency solution
- Supports A-GNSS to reduce the TTFF
- GNSS chip qualified according to AEC-Q100 and production process conforms to IATF16949
- Anti-jamming design to ensure the module working stably in complex electromagnetic environment
- Supports raw data output

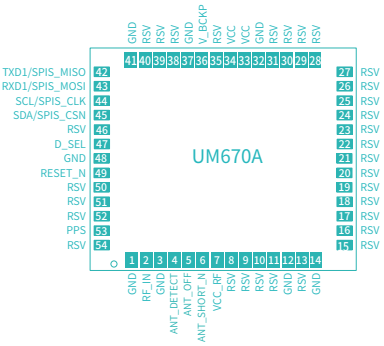
Applications

- Intelligent Driving
- P-BOX
- T-BOX

Ordering Information

Supply at multiples of 250 pieces

UM670A is a GNSS dual -frequency navigation module developed by Unicore for the intelligent driving market. Based on the proprietary multi -system dual-frequency high-performance SoC - UC6580A, the module supports concurrent operation of GPS, BDS, GLONASS*, Galileo, QZSS and NavIC*. Different sub-models use different frequencies (L1+L5 or L1+L2) to perform single point positioning and also provide raw data output.



Physical Specifications

Dimensions	17.0 x 22.0 x 2.6 mm
Package	54 pin, LGA
Operating Temperature	-40 °C ~ + 105 °C
Storage Temperature	-40 °C ~ + 105 °C

Electrical Specifications

Voltage	2.7 V ~ 3.6 V DC, typical: 3.3V
LNA	2.7 V ~ 3.3 V, < 100 mA
Power Consumption	150 mW

Environmental Specifications

Humidity	95% No condensation
Vibration	GB/T 28046.3； ISO 16750.3
Shock	GB/T 28046.3； ISO 16750.3

Interfaces

- 2 × UART (LVTTL)
- 1 × I²C*
- 1 × SPI*
- 1 × RESET_N
- 1 × 1PPS (LVTTL)

Functional Characteristics

- GNSS Antenna × 1

Note: * Supported by specific firmware.
1 68% at 30 m/s for dynamic operation,open sky

Performance Specifications

Channel	96 channels, based on UFirebird II	
Frequency	UM670A-03	UM670A-23
	BDS B1I/BIC*+ B2a	BDS B1I/BIC*
	GPS L1C/A + L5	GPS L1C/A + L2C
	GLONASS G1*	GLONASS G1*+ G2*
	Galileo E1 + E5a	Galileo E1 + E5b
	QZSS L1 + L5	QZSS L1 + L2
	NavIC L5*	-
	SBAS L1C/A	SBAS L1C/A
VSWR	≤ 2.5	
Input impedance	50 Ω	
Antenna Gain	15 dB ~ 30 dB	
Time to First Fix (TTFF)	Cold Start: < 26 s	
	Hot Start: < 2 s	
	Reacquisition: < 2 s	
Single Point Positioning (RMS)	Horizontal: 1.5 m (open sky)	
	Vertical: 2.5 m (open sky)	
Velocity Accuracy(RMS)[1]	0.05 m/s (open sky)	
1PPS	20 ns	
Sensitivity	GNSS	
	Tracking	-162 dBm
	Cold Start	-147 dBm
	Hot Start	-157 dBm
	Reacquisition	-158 dBm
Data Update Rate	1 Hz / 5 Hz / 10 Hz	
Data Format	NMEA 0183, Unicore, RTCM	