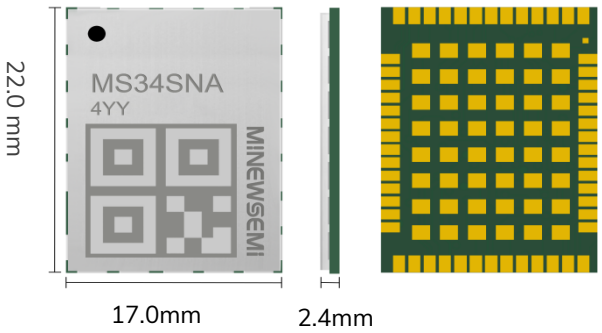
MS34SNA with IMU

Support RTK

GNSS Module



MS34SNA with IMU is a high dynamic, supporting simultaneous multi-constellation positioning and L1+L5, GNSS module with integrated RTK positioning engine. Built-in 12nm advanced process GNSS Soc chip, integrated dual-core Cortex A7 1.2GHz high-performance computing processor, the module supports GPS, BDS, GLONASS, GALILEO and QZSS multi-satellite systems, and integrates 6-axis sensors (3-axis gyroscope) + 3-axis accelerometer) and GNSS RTK tightly combined algorithm engine, MS34SNA can achieve centimeter-level positioning accuracy, greatly improve the positioning accuracy of the device, and support a maximum 20Hz fusion positioning refresh rate.

The MS34SNA provides highly reliable and uninterrupted accurate positioning data despite severe satellite signal blockage, providing a real-time and reliable navigation and positioning solution for difficult scenarios such as urban canyons, tunnels, and underground garages. The multi-satellite system combination greatly increases the number of visible satellites when driving in dense urban canyon environments, reducing the time to first position and improving positioning accuracy, reaching decimeter or even centimeter level positioning accuracy on open roadways.

The module's superior positioning performance makes it ideal for industrial and consumer applications in automotive (e.g. T-Box, car navigation, V2X), transportation (e.g. industrial vehicles, operational vehicle supervision), trackers, shared electric bikes, smart agriculture, inspection, etc.

Advantages

- Mainstream package dimension: 17.0 mm × 22.0 mm × 2.5 mm
- Multi-satellite system support: GPS, BDS, GLONASS, GALILEO, QZSS and NAVIC*
- Support DGPS and SBAS (WAAS/EGNOS/MSAS/GAGAN)
- Simultaneous multi-constellation positioning
- Support IMU navigation function and combined with RTK algorithm
- Long baseline RTK solving technology (40km+)
- Support RTCM3.x ground-based enhancement data
- RTK fast initialization as fast as 5 seconds
- Support output RTCM data for CORS stations
- Supports up to 20Hz Combined Navigation

Combined navigation | Low-power | Multi-constellation Multi-band | Centimeter Precision position | Industrial-grade temperature | RTK engine

	Parameter	Specification		
1	Constellation	GPS:	L1C/A, L5	NAVIC is optional
		BDS:	B1I, B2a	
		GLONASS:	L1	
		GLILEO:	E1, E5a	
		QZSS:	L1C/A, L5	
		SBAS:	WAAS, EGNOS, MSAS, GAGAN, SDCM	
		NAVIC:	L5	
2	Operating frequency	GPS/QZSS L1:	1575.42MHz±1.023MHz	
		GPS/QZSS L5:	1176.45MHz±10.23MHz	
		BDS:B1I:	1561.098MHz±2.046MHz	
		BDS:B2a:	1176.45MHz±20.46MHz	
		GLONASS G1:	1601.71875MHz±3.91175MHz	
		GALILEO E1:	1575.42MHz±1.023MHz	
		GALILEO E5a:	1176.45MHz±10.23MHz	
		NAVIC:	1176.45MHz±10.23MHz	
3	Sensitivity	Cold Start:	-148dBm	
		Re-capturing:	-160dBm	
		Tracking:	-165dBm	
4	Acquisition Time	Cold Start:	≤24s;	
		Hot Start:	1s；	
5	Position Accuracy	Single point location:	1m CEP (Open sky)	
		RTK:	8mm+1ppm (95% level)	
		Signal Interruption UDR:	<1% mileage (Vehicle-mounted)	
6	Speed Precision	<0.05m/s		
7	Time Precision	20 ns		
8	Carrier Phase Measurement	< 0.01 cycle		
	Baseline Length	40KM+ fixed solution		
	Inherent Convergence & Deconvergence Time	5s		
	Altitude	Horizontal Kappa, Omega: 0.02°（1σ）； Phi: 0.2°（1σ）		
	Gyroscope	Measuring Range: ±1000°/s ; Zero bias stability: ±4.5°/h ; Speed random walk: 0.75°/√h		
	Accelerometer	Measuring range: ±16g; Zero bias stability: ±0.25mg/h; Speed random walk: 0.3m/s/ √ h		
	Operation Temperature	Working: - 40℃~+85℃		
	Refresh Rate	GNSS RTK: max. 10Hz; Attitude max. 10Hz; Sensor: max. 50Hz configurable.		
	Power Consumption	0.5w		
	Pin Package	17*22mm, LGA 54pin, UART*2		

 Web：www.minewsemi.com TEL：0755-2801 0353 Email：minewsemi@minew.com