



Accurate
positioning

22°39'48.37"N 114°02'10.91"E



JS-168AP-H

PRODUCT SPECIFICATION

Data Sheet



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Change History of Revision

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1 Functional description

1.1 Overview

The JS-168AP-H uses dual mode solution, low power consumption, low cost, the JS-168AP-H are multi-GNSS (BDS, GPS, GLONASS, Galileo QZSS and SBAS) positioning module developed to meet the requirements of an extensive range of applications and end-products. SOC based on the high performance position engine , these receivers provide exceptional sensitivity and acquisition times and interference suppression measures enable reliable positioning even in difficult signal conditions.

1.2 Product Features

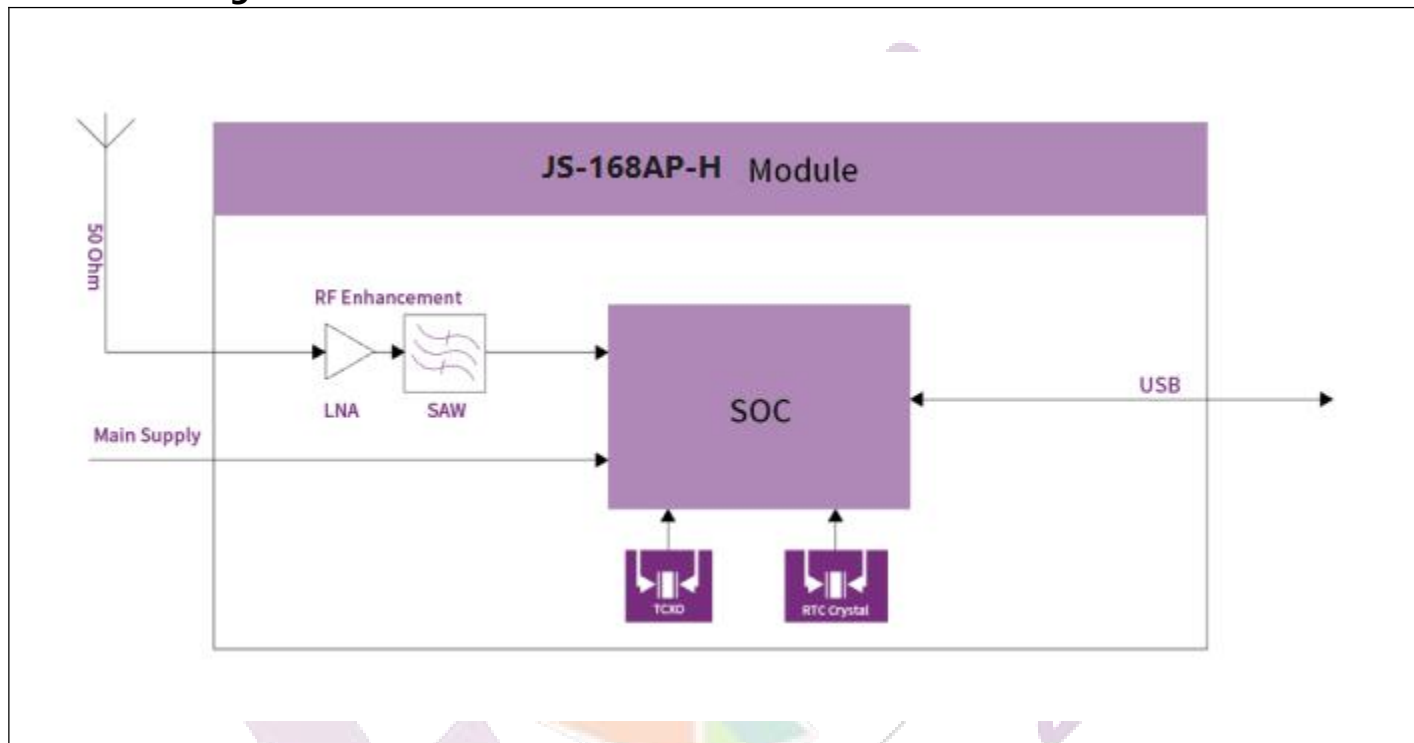
- Build on high performance GNSS SOC
- 88 acquisition-channel / 24 tracking
- Antenna short circuit protection and open circuit detection
- ARM Cortex-M4F processor with cache controller
- Intelligent interference detection and suppression
- Up to 5Hz navigation update rate
- Receive GPS+BDS/GLONASS+Galileo at the same time
- Supports A-GNSS
- Integrated TCXO, LNA, SAW, RTC
- Compact size (50.2mm x 39.2mm x 19.2mm±0.3mm) suitable for space-sensitive application
- Support standard NMEA 0183 V4.0/V4.1

1.3 Performance

Parameter	Specification		
Receiver type	■GPS/QZSS L1C/A	■Galileo E1	■GLONASS G1
	■BDS B1I B1C	■SBAS L1	
Sensitivity	Tracking & Navigation	-163dBm	
	Reacquisition	-158dBm	
	Hot Start	-156dBm	
	Cold Start	-148dBm	
Time-To-First-Fix ¹	Cold Start	28 s	
	Hot Start	1 s	
Horizontal Position accuracy ²	GNSS	1.5 m CEP	
	SBAS	< 1.0 m CEP	
	D-GNSS	1.0m CEP	
Accuracy of time pulse signal	1PPS	20 ns	
Speed measuring precision ³	GNSS	0.1 m/s CEP	
	SBAS	0.1 m/s	
	D-GNSS	0.1 m/s	
Operational limits ⁴	Altitude	18000 m	
	Velocity	515 m/s	
Frequency of time pulse signal	1Hz		
Baud Rate	1200-460800 bps (Default 9600 bps)		
Max navigation update rate	5 Hz (Default 1Hz)		

- 1 All satellites at $\geq -130\text{dBm}$
- 2 Open sky, 24 hours static, $\geq -130\text{dBm}$, > 6SVs, CEP 50%
- 3 50% @ 30m/s dynamic operation
- 4 Assuming Airborne < 4 g platform

1.4 Block Diagram



1.5 Protocols

Protocol	Type
NMEA 0183 Protocol Ver. 4.00/4.10	Input/output, ASCII

1.6 Antenna

The JS-168AP-H module was designed for use with passive antennas.

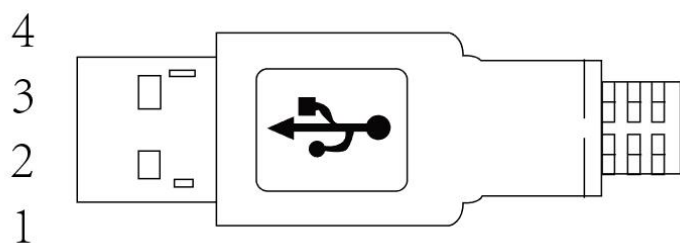
Parameter	Specification
Passive Antenna Type	25*25*4mm

1.7 Product Application

- UAV
- Automotive application
- Marine navigation, fleet management
- Intelligent logistics scheduling
- Personnel protective
- Car navigation and tracking
- Intelligent robot

2 Pin definitions

2.1 Definition of Pin Assignment



PIN	Name	I/O	Description
1	VCC	P	Main supply
2	DM-	I/O	Data Minus
3	DP+	I/O	Data Positive
4	GND	G	Ground

***The interface type can be customized**

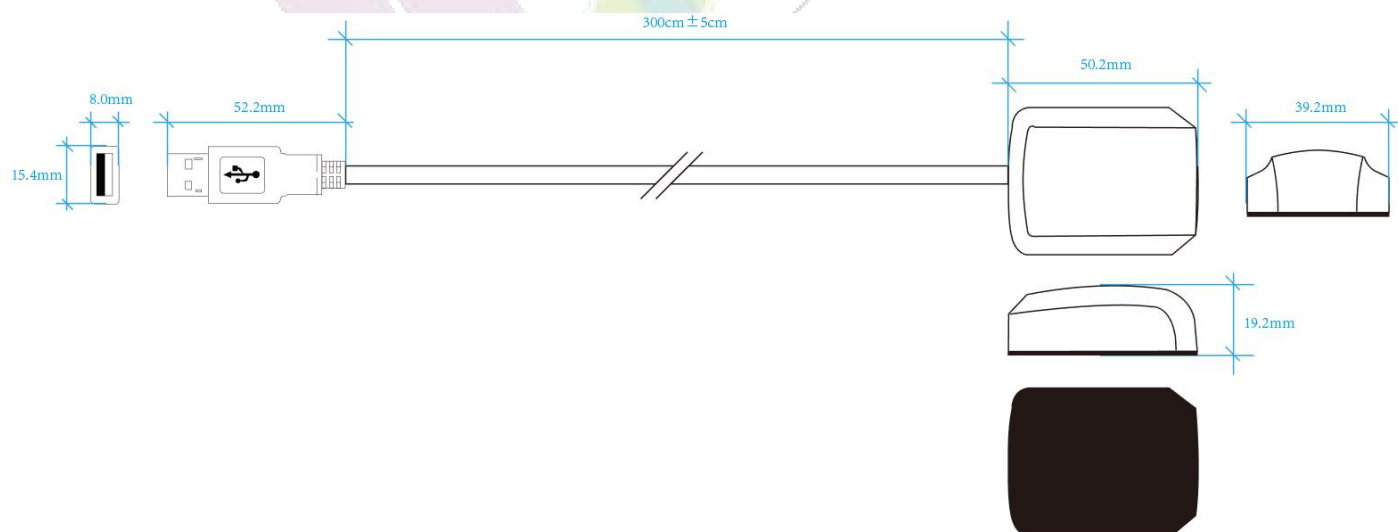
3 Electrical Specifications

Parameter	Symbol	Min	Type	Max	Units
Power supply voltage	VCC	3.3	5.0	5.5	V
Average supply current	Acquisition	17@5.0V	22@5.0V	27@5.0V	mA
	Tracking	12@5.0V	19@5.0V	24@5.0V	mA
Backup battery			0.07		F
Backup battery current	I_BCKP		15@3.3V		uA
Digital IO voltage	Div	3.0	3.3	3.3	V
Storage temperature	Tstg	-45		85	°C
Operating temperature ¹	Topr	-40		85	°C
Farah capacitance ²	Tstg	-25		60	°C
Humidity				95	%

¹ The temperature range is the operating temperature range without the Farad capacitor

² Hot start cannot be carried out when the temperature is below -20°C or above 60°C

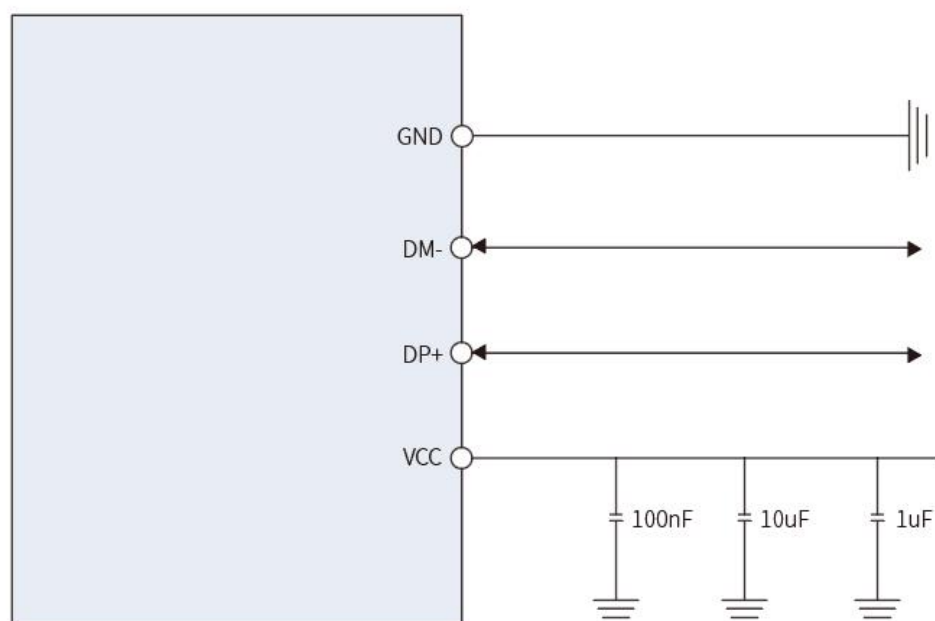
4 Mechanical Specifications



units: mm dimension error ±0.3mm

The interface type and cable length can be customized

5 Application Circuit



6 Driver Obtaining Guide

To use this product, you need to install the PL2303 Driver, which can be downloaded from the website or obtained from our official website (Windows Driver)

7 ROHS

This product is RoHS compliance