

JS-168BAP-H

PRODUCT SPECIFICATION

Data Sheet



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Change History of Revision

Revision	Date	Contents of Revision Change	Remark
V1.0	2020-11-25	First release	Chen Kang

1 Functional description

1.1 Overview

The JS-168BAP-H uses dual mode solution, low power consumption, low cost, the JS-168BAP-H are multi GNSS (GPS, BDS, Galileo and GLONASS) positioning module developed to meet the requirements of an extensive range of applications and end-products. Based on the high performance SOC series 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 series
- 88 acquisition-channel / 24 tracking
- Low power consumption
- ARM Cortex-M4F processor with cache controller
- Intelligent interference detection and suppression
- Up to 10Hz navigation update rate
- Support simultaneous reception of GPS+BDS/GLONASS+Galileo any three constellation combinations
- Supports AGPS
- Integrated TCXO, LNA, SAW, RTC
- Compact size (45.6mm x 38.2mm x 15.0mm±0.3mm) suitable for space-sensitive application
- Support standard NMEA 0183 V4.0/V4.1

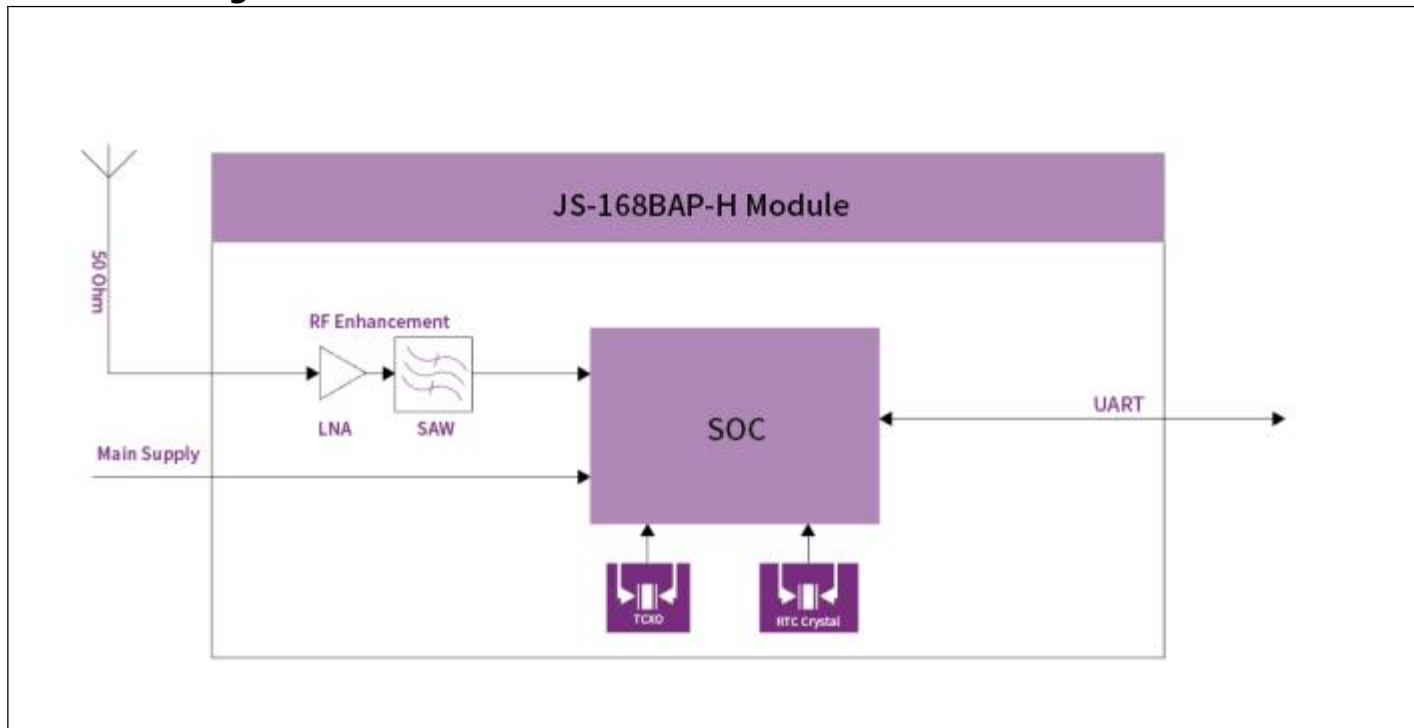
1.3 Performance

Parameter	Specification	
Receiver type	■GPS/QZSS L1C/A ■Galileo E1 ■GLONASS G1 ■BDS B1I B1C ■SBAS WAAS,EGNOS,MSAS,GAGAN,SDCM	
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
Velocity accuracy 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	4800-460800 bps (Default 9600 bps)	
Max navigation update rate	10 Hz (Default 1Hz)	

¹ All satellites at $\geq -130\text{dBm}$

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

1.4 Block Diagram



1.5 Protocols

Protocol	Type
NMEA 0183 V4.0/V4.1	Input/output, ASCII

1.6 Antenna

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

Parameter	Specification
Passive Antenna Type	25*25*4mm

1.7 Product Application

- UAV
- AVL and Location-Based services
- Marine navigation, fleet management
- Personnel protective
- Car navigation and tracking
- Automotive application
- Marine navigation, fleet management
- Intelligent logistics scheduling
- Vehicle navigation
- Intelligent robot

2 Pin definitions

2.1 Definition of Pin Assignment



PIN	Name	I/O	Description	Remarks
1	VCC	I	Power	+3.3V / +5V
2	TXD	O	Data Output from GPS	LVTTTL
3	GND	G	Ground	GND

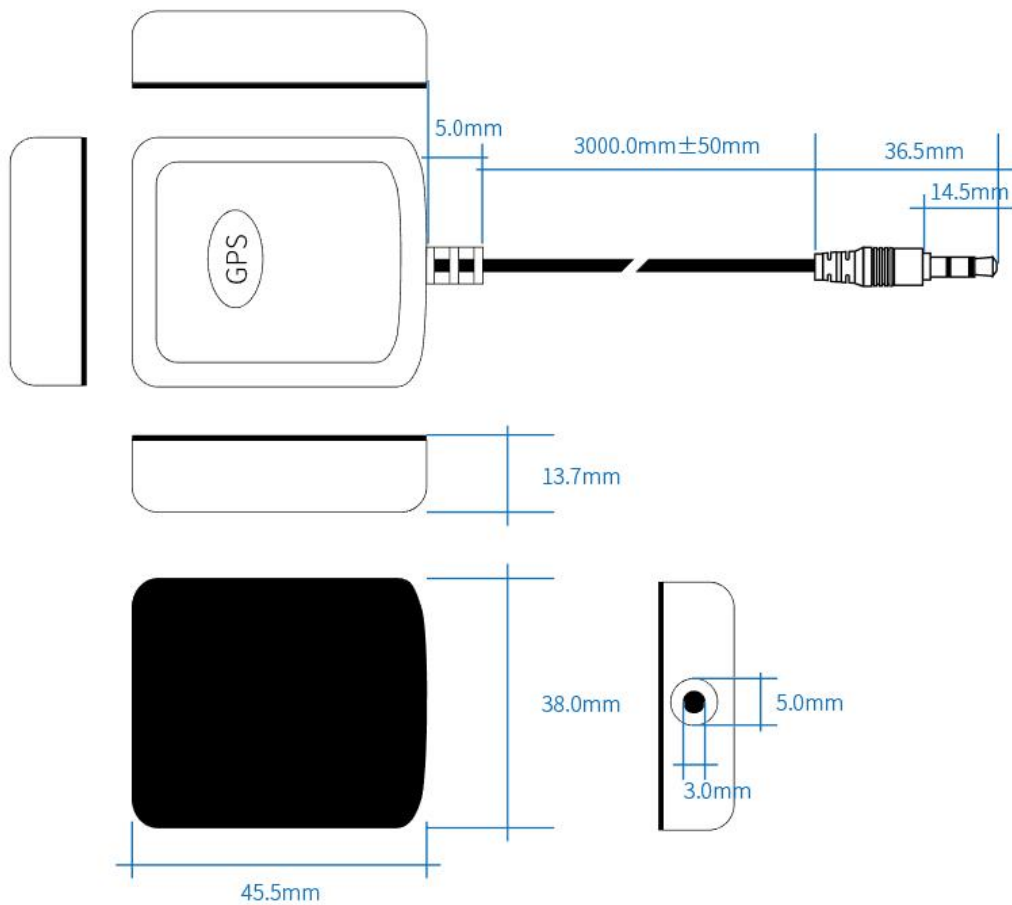
3 Electrical Specifications

Parameter	Symbol	Min	Typ	Max	Units
Power supply voltage	VCC	3.0	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	V
Storage temperature	Tstg	-40		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

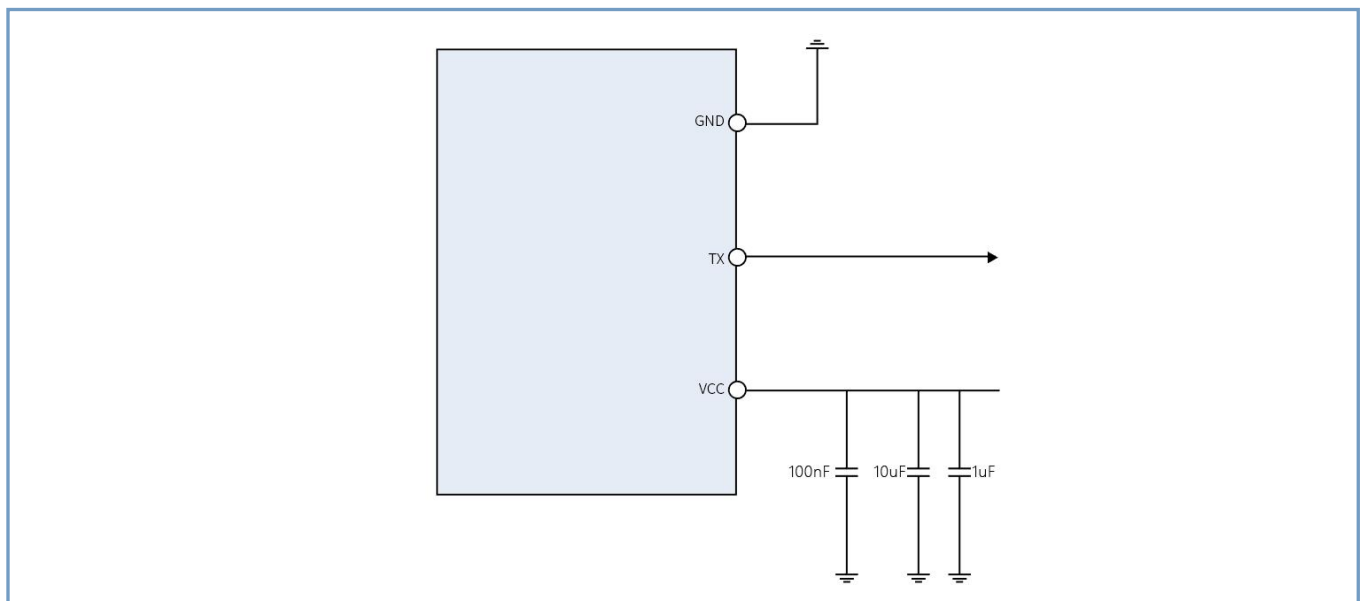
² Hot start cannot be carried out when the temperature is below -20°C or above 60°C

4 Mechanical Specifications



Error: ±0.3mm

5 Application Circuit



6 RoHS

This product is RoHS compliance