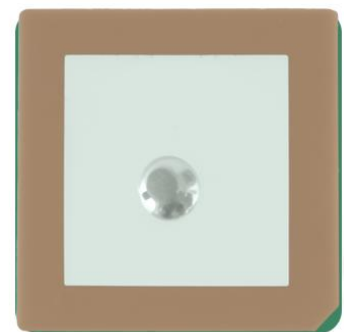


JS-ARP18-1

Single-frequency standard precision antenna module integrated Datasheet



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1 Product descriptions

1.1 Overview

JS-ARP18-1 is an L1 single-band GNSS solution, designed specifically for high performance, cost effective application, it features optimized multi-mode signal tracking. Meanwhile, JS-ARP18-1 built-in advanced anti-multipath and anti-interference RF front-end significantly improves actual positioning and TTFF performance. JS-ARP18-1 is compact and lightweight, designed specifically for space-sensitive applications such as dashcams, IoT devices, outdoor handheld positioning devices and shared electric vehicles/bicycles.

1.2 Product Features

- Based on high-performance GNSS SOC Chip
- 120 tracking channels and dedicated search engine
- Support GPS、BDS、GLONASS、Galileo、QZSS and SBAS
- Support A-GPS
- Integrated TCXO、LNA、SAW
- Compact size(18.0mm x 18.0mm x 7.0mm±0.3mm), lightweight (7.5g)
- Support NMEA 0183
- ROHS compliant

1.3 Performance

Parameter	Specifications		
Constellations & frequency band	■GPS L1	■BDS B1I B1C	■Galileo E1
	■GLONASS G1	■QZSS L1	■ SBAS L1
Sensitivity	Tracking & Navigation		-165 dBm
	Re-acquisition		-159 dBm
	Hot start		-159 dBm
	Cold start		-148 dBm
Time to first fix ¹	Cold start		28 s
	AGPS		1.5 s
	Hot start		1 s
GNSS Positioning accuracy ²	Single point positioning		horizontal: 1.5 m CEP
Time accuracy	PPS		< 20ns RMS
Velocity accuracy ³	0.1 m/s CEP		
Operational limits ⁴	Dynamics		≤ 4 g
	Altitude		20000 m
	Velocity		500 m/s
Baud rate	9600~921600bps (Default 115200 bps)		
Max navigation update rate	20Hz (Default 1Hz)		

¹ All satellites at -130dBm

² Open sky, stationary for 24 hours, -130dBm, >6SVs, CEP 50%

³ 50%@30m/s dynamic operation

⁴ Assuming airborne≤4g platform

1.4 Protocols

Protocols	type
NMEA 0183	Input/output, ASCII
Binary	Proprietary protocol binary
Differential data RTCM 3.X	MSM4 or MSM7(configuration optional)

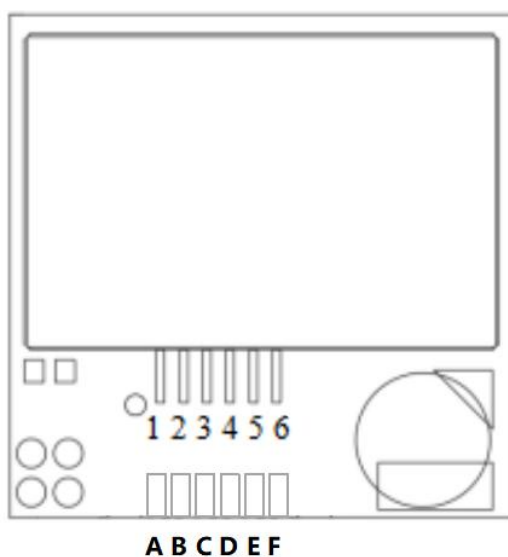
1.5 Antenna

Parameter	Specifications
Passive antenna	18.0*18.0*4.0mm(L1)

1.6 Product application

- Dashcam
- Intelligent robot
- Intelligent logistics scheduling
- Personal travel and wilderness adventure
- Personnel protection
- Automotive applications
- Wearable devices
- Car navigation & tracking
- AVL and location base services
- Handheld receiver applications

2 Pin definitions



No.	Name	I/O	Description
1、 A	PPS	O	Time pulse
2、 B	RXD	I	TTL input
3、 C	TXD	O	TTL output

4、D	GND	G	Ground
5、E	VCC	P	Main power supply
6、F	EN	O	LDO Control

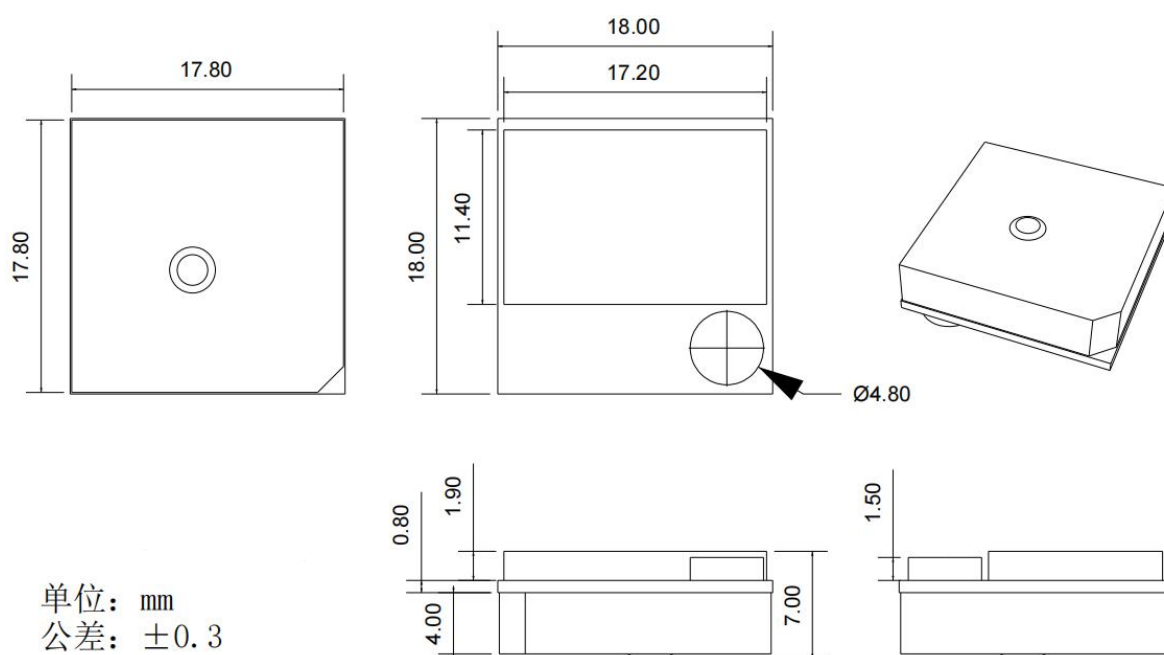
3 Electrical Characteristic

Parameter	symbol	Min	Type	Max	Unit
Power supply voltage	VCC	3.0	5.0	5.5	V
Average current	I	35@5V	37@5V	42@5V	mA
Backup battery voltage	V_BACK	1.8	3.3	3.6	V
Backup battery			0.03		F
Backup battery current	I_BCKP		14uA@3.3V		uA
Storage temperature	Tstg	-40		85	°C
Operation temperature ¹	Topr	-40		85	°C
Farad capacitor ²	Tstg	-25		60	°C
Humidity				95	%

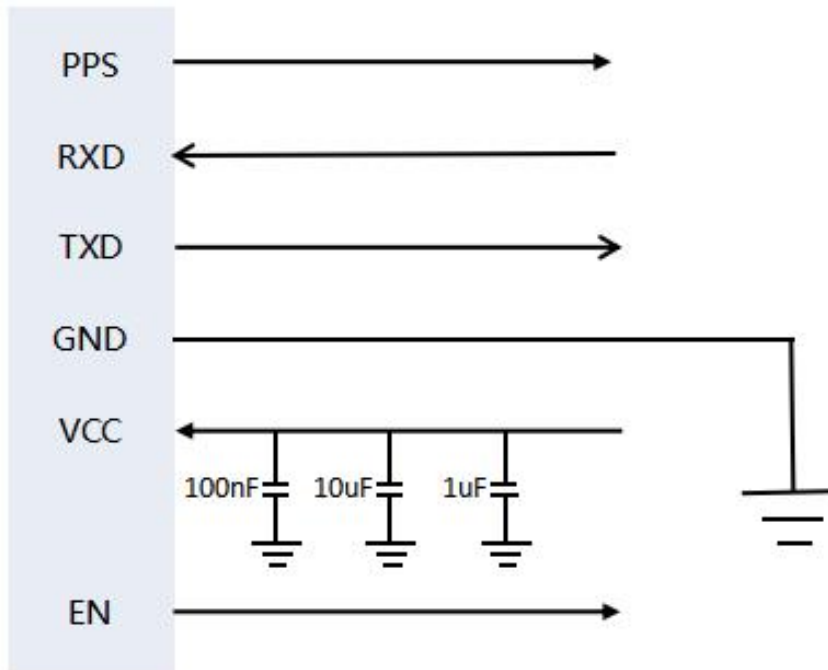
¹ This temperature range is the operating temperature range without farad capacitors.

² This module cannot perform a hot start when the temperature is below -25°C or above 60°C.

4 Mechanical specifications



5 Operation circuits



6 ROHS

RoHS compliant