



Accurate
positioning

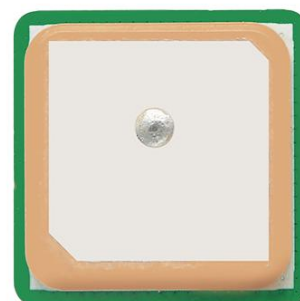
22°39'48.37"N 114°02'10.91"E



JS-ATP28-2

PRODUCT SPECIFICATION

Data Sheet



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Revision History

Revision	Date	Change Description	Comments
V1.0	2022-05-11	First Release	Wang Wei
V1.1	2022-05-18	Power Supply Voltage Range Change	Wang Wei
V1.2	2022-05-30	Partial Parameter Revision	Wang Wei
V1.3	2022-11-11	Remove Connector Socket	Wang Wei

1 Functional Description

1.1 Overview

JS-A T P 28 - 2 adopts a multi-mode solution, low power consumption, and low cost. It is a multi-mode single-frequency (GPS, BDS, GLONASS, Galileo, QZSS, and SBAS) positioning module , developed to meet the requirements of a wide range of applications and end products. Based on a high-performance SOC positioning engine, this receiver offers excellent sensitivity and acquisition time, with interference suppression measures, even in difficult signal conditions, it can achieve reliable positioning.

1.2 Product Features

- Based on high-performance GNSS SOC series
- 47channelsnumber
- Cold start acquisition sensitivity of -148dBm, tracking sensitivity of -165dBm
- Up to10Hz navigation update rate
- Supports GPS, BDS, GLONASS, Galileo, QZSS, and SBAS
- Supports AGPS
- Indoor and outdoor multipath detection and compensation
- Integrated with 12 multi-tone active interference cancellers
- Integrated TCXO, LNA, SAW, and RTC
- Compact size (28.0mm x 28 .0mm x 7.0mm±0.3mm), suitable for space-sensitive applications
- Supports standard NMEA 0183 V3.01/V4.10
- Supports 1PPS output

1.3 Performance

Parameters	Specifications	
Constellation Frequency	■GPS/QZSS L1C L1C/A ■GLONASS L1 ■BDS B1I B1C ■Galileo E1 ■SBAS WAAS/EGNOS/MSAS/GAGAN	
Sensitivity	Tracking and Navigation	-165dBm
	Cold Start	-148dBm
First Fix Time ¹	Cold Start	24s
	Hot Start	1s
GNSS Positioning Accuracy ²	Horizontal	2m
	Vertical	3.75m
Time Pulse Signal Accuracy	1PPS	10ns
Speed Accuracy ³	GNSS	0.1m/s
	SBAS	0.05m/s
Operational Limits ⁴	Acceleration	4g
	Altitude Limit	10000m
	Speed Limit	100m/s
Time Pulse Signal Frequency	1Hz	
Baud Rate	4800-921600 bps (default 115200 bps) ⁵	
Maximum Navigation Update Rate	10Hz (default is 1Hz)	

- 1 All satellites at -130dBm
- 2 Open sky, 24-hour stationary, -130dBm, >6SVs, CEP 50%
- 3 50%@30m/s dynamic operation
- 4 Assuming airborne ≤4g platform
- 5 Opening debuglog requires support for higher baud rates above 230400bps

1.4 Protocol

Protocol	Type
NMEA 0183 V3.01/V4.10	Input/Output, ASCII

1.5Antenna

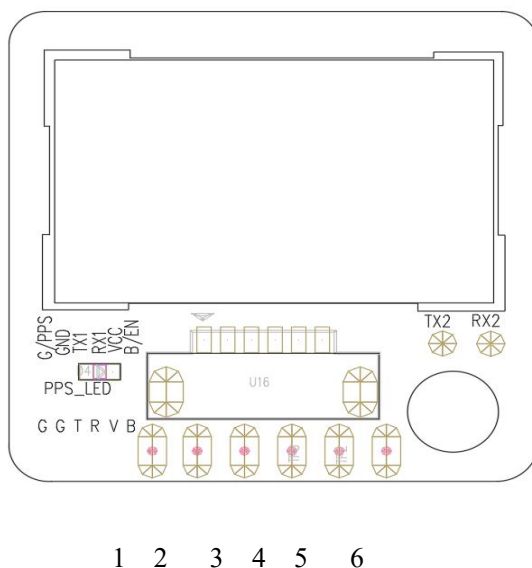
Parameters	Specifications
Passive antenna type	25.0*25.0*4.0mm

1.6Product Applications

- Automotive applications
- Intelligent logistics scheduling
- Intelligent robots
- Personal travel and wilderness exploration
- Maritime navigation, fleet management
- Ground vehicle tracking and urban intelligent traffic management
- Formation drones
- Emergency Rescue

2 Pin Definitions

2.1 PinFunction Description



No.	Name	I/O	Description
1	GND/PPS	G/O	Ground/Time Pulse Signal Output
2	GND	G	Ground
3	TXD	O	TTL Output
4	RXD	I	TTL Input
5	VCC	P	Power Supply
6	VBAT/EN	I	Backup Power/Module Power Control Switch

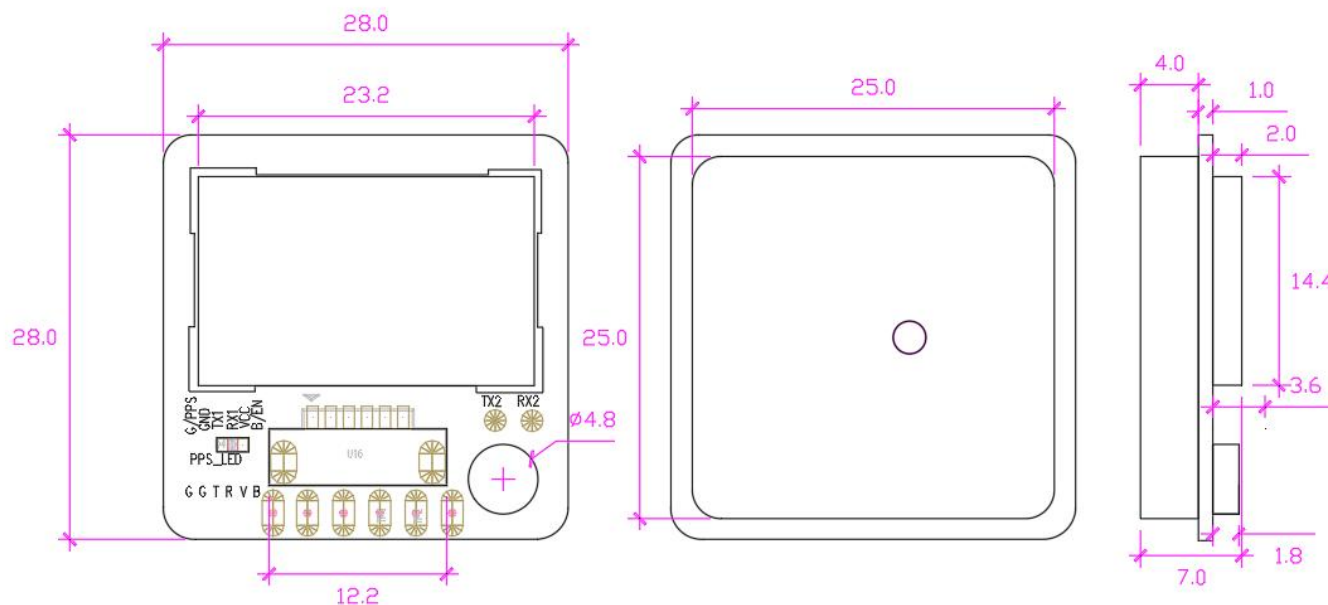
3 Electrical Specifications

Parameters	Symbol	Minimum	Typical	Maximum	Unit
Power Supply Voltage	VCC	2.8	5.0	5.5	V
Average Power Supply	Acquisition	31@5.0V	34@5.0V	38@5.0V	mA
Current	Tracking	30@5.0V	32@5.0V	35@5.0V	mA
Backup Battery			0.07		F
Backup Battery Current	I_BCKP		11@3.3V		uA
Digital Input Output	Div	2.8	3.3	3.3	V
Voltage					
Storage Temperature	Tstg	-40		85	°C
Operating 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 a farad capacitor

² When the temperature is below -25°C or above 60°C, this module cannot perform a hot start

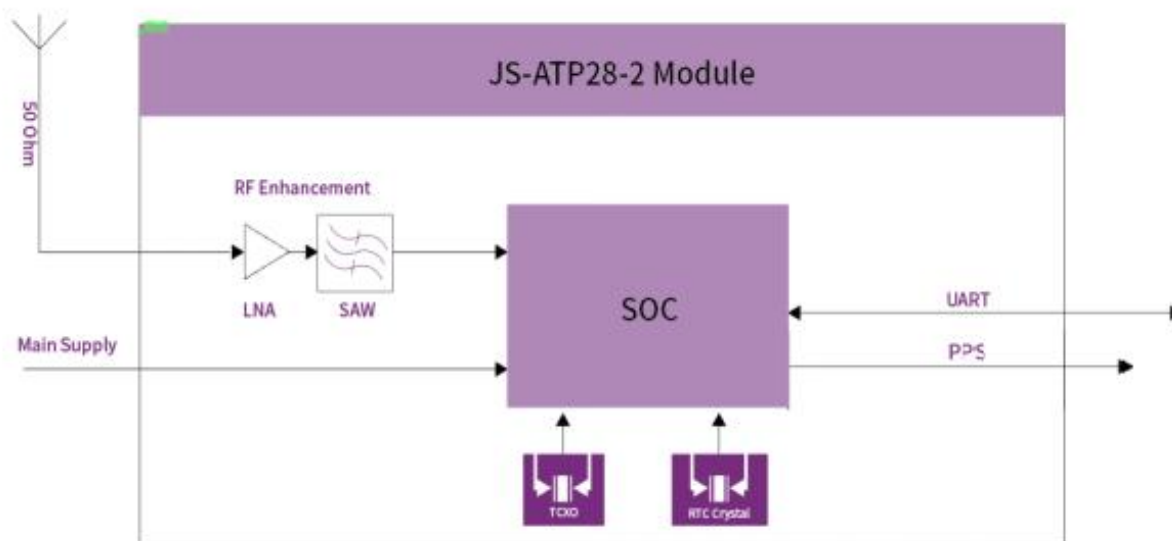
4 Mechanical Specifications



Unit: mm Dimensional Tolerance: $\pm 0.3\text{mm}$

5 Interface Configuration Options

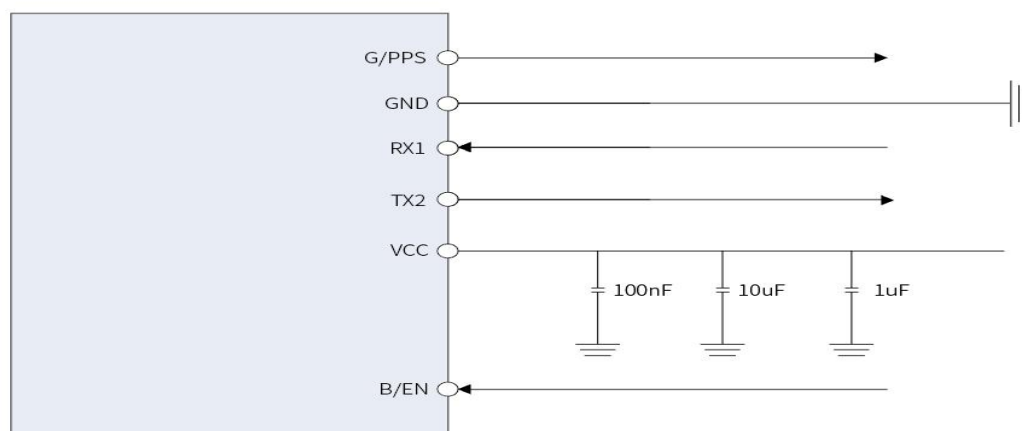
5.1



Interface Description

5.1.1 Block Diagram

5.1.2 Application Circuit



6 ROHS

This product complies with the RoHS standards