
TX2501-AJS-4CH-DPA
Dual frequency dual anti-function terminal

Product specification



Proposed title/Date: _____

Review / Date: _____

Ratification/Date: _____

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■ Product presentation

The TX2501-AJS-4CH-DPA miniaturized dual-antenna integrated device is a compact satellite navigation system designed for civilian drones and industry users. It supports dual-frequency signal reception of BDS B1i and GPS L1, has anti-broadband interference capability with a maximum interference count of 3, and offers anti-spoofing capabilities. The device integrates an antenna array, anti-jamming components, and a satellite navigation receiver, featuring miniaturization, lightweight design and low cost.

■ Product function

1. RNSS signal reception

1) It has the function of receiving RNSS signals from Beidou-2 and Beidou-3 navigation satellites

2) Civil code: B1i, L1

2. Anti-jamming function

It has anti-jamming function with L1 and B1 frequency points, which can suppress narrowband interference, broadband interference, pulse interference, sweep frequency interference, Gaussian interference and other suppressive interference

3. Anti-spoofing function

It has anti-spoofing function with L1 and B1 frequency points, and can suppress asynchronous spoofing, synchronous spoofing and forwarding spoofing, so as to output pure signal to the back-end receiver and output

4. Software upgrade

It has the function of software upgrade, which can be upgraded through the serial port against interference module and receiver module

5. System self-test

It has self-inspection and status inspection functions

6. Interference detection

It has interference detection function and interference power detection function

7. Fire resistance function

The anti-continuous wave power is not less than 10W

8. Security

Overvoltage protection is available

■ Behaviour of electricity

1. Working frequency

L1: 1575.42MHz

B1: 1561.098MHz

2. Interference resistance

Unidirectional interference: $\geq 105\text{dB}$, Three-direction interference: $\geq 95\text{dB}$

3. Anti-spoofing performance

Output residual spoofing signal CN0: less than or equal to 20dB

4. Positioning accuracy

Level 1.5 m (95%), elevation 1.5 m (95%)

5. Rate accuracy

$\leq 0.2 \text{ m/s}$ (95%)

6. Timing accuracy

$\leq 100\text{ns}$ (95%)

7. Working voltage

Input voltage 5~17V

8. Power consumption

$\leq 13\text{W}$

■ Interface definition

1. Power/data interface

The J30J-9ZK core connector is selected, and the pin definition is as follows:

No.	name	direction	electrical level	remarks
1	Positive pole	import	5~17V	Recommended 12V
2	Positive pole	import	5~17V	Recommended 12V
3	Negative pole	import		
4	Negative pole	import		
5	RXD0	import	TTL	Upgrade to serial port
6	TXD0	output	TTL	
7	RXD1	output	TTL	Anti-jamming serial port
8	TXD1	import	TTL	
9	GND	import	TTL	

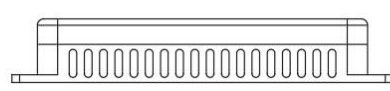
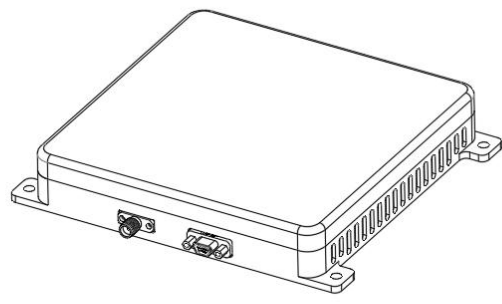
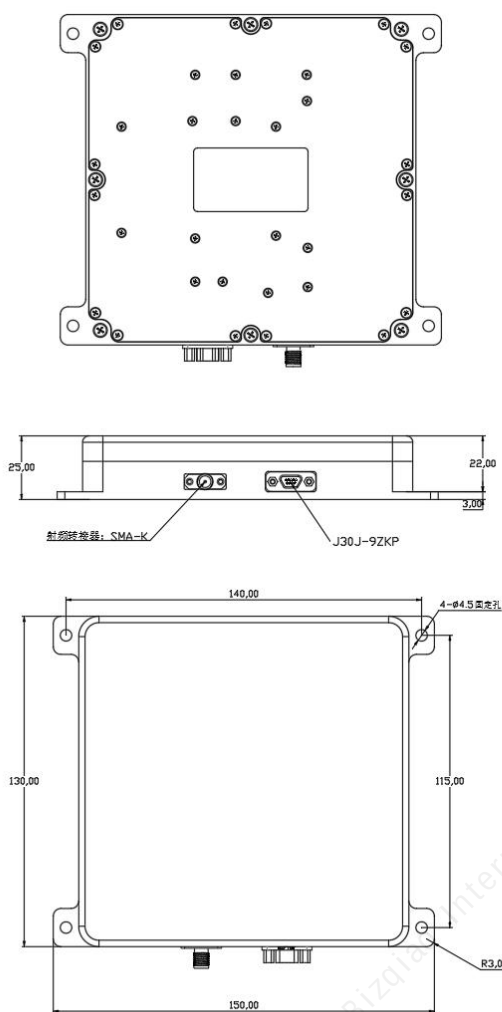
2.RF interface

- 1) Anti-jamming signal output interface, using SMA connector, and in the form of a single line
- 2) The signal level of output L1/B1 is-70~-60dBm

■ Structural requirement

1.Outline dimension

150mm×130mm×22mm



2. Weight

≤520g

3. Color

French grey

■ Product identification

product name:
product model:
serial number:
date of manufacture:
manufacturer:

■ Environmental suitability

1. Working temperature

-40°C ~ +55°C

2. Storage temperature

-55°C ~ +70°C

3. Relative humidity

Temperature 40°C; humidity: 96%

4. Rain standard

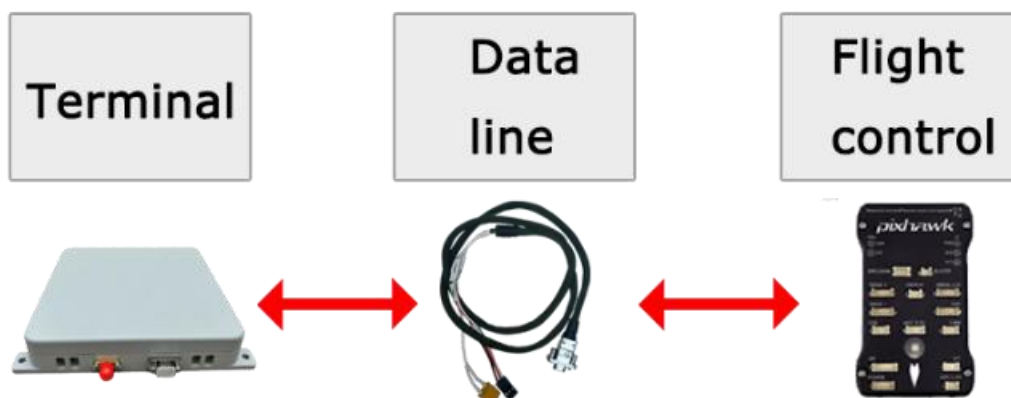
Meet the rain test requirements of GJB150A

■ Typical application scenarios

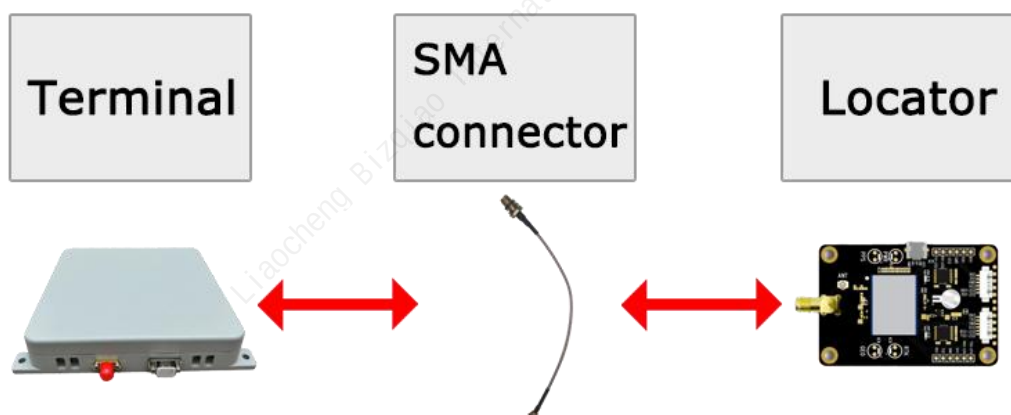
1. Time synchronization security in power, communication and finance
2. Navigation safety of unmanned aircraft, unmanned vehicles and unmanned ships
3. Fleet defense navigation safety
4. High-end logistics navigation safety

■ Description of the relationship

1. The telecommunication signal connection between the product and the platform carrier is connected by low frequency data method.
2. The product has a built-in locator that can replace the conventional positioning terminal and antenna. As shown in the following figure:



3. In the mode of RF signal access, this product replaces the conventional active antenna. When connecting to the RF interface of this product, please ensure that the interface of the access party does not provide more than 5V power supply to this product to avoid possible power conflict or damage. As shown in the following diagram.



4. When using the usb to TTL tool to connect with the computer, do not plug and unplug the usb while powered to avoid damaging the serial port.

■ Installation and use

1. Fixed

Install and fix with M3 screws.

2. Power supply

The XT30 is powered by a power supply voltage of 5-17V, with a maximum of 17V and a recommended 12V.

3. Position the data connection

1) Connect the DuPont line TTL serial port of this product to the GNSS serial port of the flight control.

Use the data cable provided with this product to connect to the GNSS serial port of the flight control. Connect the end of the data cable labeled TX to the RX interface of the flight control, the end labeled RX to the TX interface of the flight control, and the end labeled GND to the GND interface of the flight control.

2) Use the SMA connection line to connect the RF port of the product with the antenna port of the UAV locator.

Note: You can choose between serial port and RF port.

■ Connect with the flight control protocol

This product uses ublox M10 receiver and can output nmea string format protocol or ubx protocol.

■ Disclaimer

This product is designed to enhance the security of satellite navigation. Please comply with relevant laws and regulations during use. Any illegal activities carried out using this product are not related to this product.