

Dalang

AK330





**Dalang Communication
Technology Co., Ltd
Product Specification**

Product Name:	GNSS Receiver
Product Model:	AK330
Version Number:	V 1.0
Revision Date:	2025.12.30

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1 Product Application Scenarios

The AK330 professional grade high-precision GNSS receiver supports multi system full frequency signal reception such as Beidou, GPS, GLONASS, etc. The multi constellation collaborative working mode greatly improves the stability and accuracy of positioning in complex environments; Equipped with a 9-36V wide voltage supply, it is compatible with various power supply scenarios such as in car and outdoor, and has strong adaptability; Combining 485 \pm industrial grade wiring and Bluetooth module, the former achieves stable data transmission over long distances and anti-interference, while the latter meets the flexible needs of temporary debugging and short-range data interaction, perfectly balancing the reliability and operational convenience of professional operations. It is an ideal choice for obtaining precise positioning data in fields such as surveying and mapping, precision agriculture, drone operations, and disaster monitoring. Refer to Figure 1 for details.



Figure 1 Product Application Scenarios

2 Features

In this chapter, we will delve into and comprehensively elaborate on the functionalities and operating principles of the AK330, detailing how it plays a pivotal role in various applications as follows:

- 1. Built in advanced full system full frequency GNSS module.**
- 2. Supports BDS, GPS, GLONASS, Galileo, and QZSS.**
- 3. Can be used as a rover station.**
- 4. Supports Bluetooth 2.0 transparent transmission function.**
- 5. Adopt on-board standard 9-36V wide voltage input.**
- 6. Supports RS485 output and long-distance anti-interference transmission.**

3 Structural Characteristic

In this section, we will conduct an in-depth analysis of the product's design details, presenting its aesthetic features and precise interface specifications through detailed structural diagrams. This perspective aims to provide a comprehensive framework, thereby enhancing the understanding and perception of the product's architecture. Refer to Figure 2, Table 1.

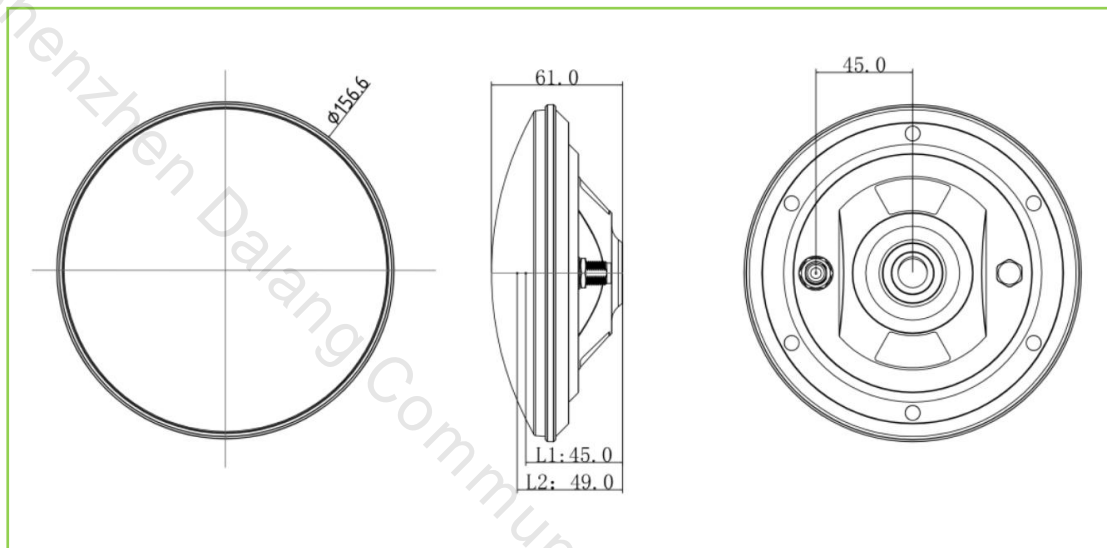


Figure 2 Product Structure Diagram (unit: mm)



Table 1 Interface Definition

5 line markings	Feature Introduction	4-core aviation connector connection end
DC+(9-36V)	positive power terminal	Aviation connector power supply+terminal
485-	RS485 signal negative terminal	Aviation connector 485- end
485+	RS485 signal positive terminal	Aviation connector 485+end
DC-(GND)	Negative pole of power supply/signal ground	Aviation connector power supply - terminal
Shield ground	Anti interference grounding	-(handled separately)

4 Specifications

In this section, we will provide a detailed list and explanation of the product's chip features, sensitivity, accuracy, operating principles, and other technical details, as detailed in Table2.

Table2 Product Specifications

Specification parameters						
GNSS module	1	working frequency	BDS: B1I B2I B3I B1C B2a B2b GPS: L1 C/A L1C L2P (Y) L2C L5 GLONASS: L1 L2 Galileo: E1 E5a E5b E6 QZSS: L1 L2 L5 L6			
	2	Receiving channel	1408 channel			
	3	Single point positioning (RMS)	Plane: 1.5m Elevation: 2.5m			
	4	DGPS(RMS)	Plane: 0.4m+1ppm Elevation: 0.8m+1ppm			
	5	RTK(RMS)	Flat: 0.008m+1ppm Elevation: 0.015m+1ppm			
	6	Observation accuracy(RMS)	BDS	GPS	GLONASS	Galileo
	7	B1I/B1C/L1C/L1 C/A/E1/G1 pseudorange	10cm	10cm	10cm	10cm
	8	B1I/B1C/L1C/L1 C/A/E1/G1 Carrier Phase	1mm	1mm	1mm	1mm
	9	B3I/L2P(Y)/L2C/G2 pseudorange	10cm	10cm	10cm	10cm
	10	B3I/L2P(Y)/L2C/G2Carrier Phase	1mm	1mm	1mm	1mm
	11	B2I/B2a/ B2b/L5/E5a/E5b pseudorange	10cm	10cm	10cm	10cm
	12	B2I/B2a/ B2b/L5/E5a/E5b Carrier Phase	1mm	1mm	1mm	1mm
	13	Time accuracy (RMS)	10ns			
	14	Speed accuracy (RMS)	0.03m/s			
	15	cold boot	<10s			
	16	Initialization time	<5s (typical value)			
	17	Initialize reliability	>99.9%			
Bluetooth module	1	Bluetooth version	2.0			
	2	operating frequency band	2.4G			

	3	air speed	2Mbps
	4	reference distance	10m
Data format	1	Differential data	RTCM3.X
	2	output format	NMEA-0183, RTCM3.X
	3	Data update rate	1Hz-20Hz(default 1Hz)
Electrical performance	1	Power Supply	DC +9V ~ +36V
	2	power waste	<3W
Physical parameters	1	size	Φ 156.6*61mm
	2	weight	551g
	3	output interface	RS485
Environmental Specifications	1	working temperature	-25℃ ~ +75℃
	2	Storage temperature	-55℃ ~ +85℃
	3	humidity	100% fully sealed, anti condensation

5 Product Photos

In this chapter, we will showcase real-life images of the product, as shown in Figure 3. These images provide a detailed view of our product from various angles and perspectives. We believe that through authentic representation, we can better convey the value and concept of the product, thereby enhancing your trust and satisfaction.



Figure 3 Product Images

6 Common configuration instructions

NO.	Instruction content	Function Description	Notes
1	LOG VERSIONA	Versions Query	
3	SAVECONFIG	Save Configuration	After configuring the receiver, a save command needs to be sent, otherwise the receiver will return to its factory state after being powered on again
4	COM COM1 115200	Configure COM1 baud rate to 115200	
5	UNLOGALL	Cancel all serial port message outputs	
6	UNLOGALL COM1	Cancel COM1 serial port message output	This command can be sent on any serial port
8	log com1 gpgga ontime 1	Output GGA data on COM1 serial port	If COM1 is not inputted (such as log com1 gpgga ontime 1), it will be the current serial port. If you want to output other data, such as "GSV", simply change the "GGA" in the instruction to "GSV" (which can output information including GGA, GLL, GSA, GST, GSV, HDT, RMC, VTG, ZDA, etc.)
10	FRESE	Restore factory settings	This command is used to restore factory settings, clear all message outputs and parameter settings, and clear all saved settings
11	Interfacemode com1 auto auto on	Set differential serial port sending/receiving mode for mobile stations	The satellite ephemeris and almanac, as well as the approximate coordinates of the receiver.
12	Fix auto Log comX rtdcm1005b ontime 5 Log comX rtdcm1033b ontime 10 Log comX rtdcm1074b ontime 1 Log comX rtdcm1084b ontime 1 Log comX rtdcm1094b ontime 1 Log comX rtdcm1114b ontime 1 Log comX rtdcm1124b ontime 1 Saveconfig	Configure base station mode	COM1 needs to be set according to the actual differential serial number