

Starwin 1.0m Ku Band

Intelligent Assistance Flyaway Antenna Datasheet

1. Product Overview

Starwin 1.0m Ku band intelligent assistance antenna is a new generation of backpack satellite communication system. This system has the characteristics of light weight, easy and reliable operation, complete VSAT application, integration and so on. It is mainly designed for users of simple Internet applications such as scientific research exploration, network media, emergency communication, etc.

This antenna system is equipped with a Ku-band single offset carbon fiber parabolic antenna, which equivalent aperture is 1.0m, and it adopts the design of short focal length is adopted. At the same time, the system is equipped with three-axis angle sensor, GPS automatic positioning, beacon level display, automatic polarization rotation and locking indication, acoustooptic prompt and so on. With the help of digital indication and acoustooptic prompt and so on, it can realize more fast and accurate manual satellite searching. Its operation is simple, convenient, efficient and reliable, and the speed of satellite searching is much faster than that of automatic satellite searching products.



Figure 1. The working status of the antenna system



Figure 1. The packing status and the packing status of the antenna system

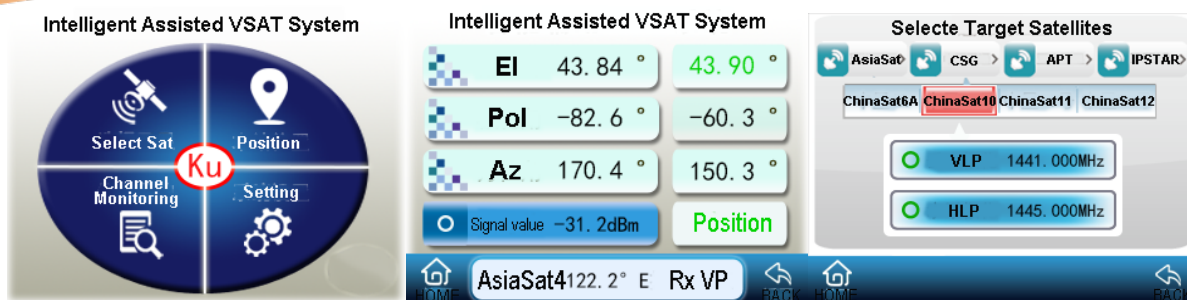


Figure 2. The control status of the antenna system

2. Solutions for System Transportation

SW80K series products adopt a special backpack carrying scheme, and can be selected and equipped with finished air boxes for transportation and storage, so as to facilitate long-distance transportation and long-term storage.

A. Single Backpack

Each subsystem of the antenna is loaded into a backpack. Antenna panel, feed and RF components, control, pedestal, cable and other components are loaded into a special custom backpack. The backpack is customized according to military standards and meets the requirements of individual combat. It has the ability of rainproof. The built-in lining can effectively protect the safety of equipment. The dimension of the backpack is 600×470×350 mm.

B. Single Box

Each subsystem of the antenna is loaded into a transport box. Antenna panel, feed and RF components, control, pedestal, cable and other components are loaded into a transport box. Transport box is made of military finished products, and the material is high performance resin, with rollers and pull rods, it can be pulled and lifted, and has built-in shaped protective lining, which can effectively protect the antenna. The dimension of the box is 625×500×366 mm



Backpack



Transport Storage Box

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3. System Features

1. **Super Portability:** The system adopts single-box storage, and the total weight is less than 14kg (Exclude the BUC and LNB) in working state, the carrying weight is less than 18kg (Exclude the BUC and LNB). The backpack is compact, safe and reliable, and can support long-distance carrying.
2. **Super Simplicity:** With the help of intelligent assistant systems such as triaxial angle sensor, auto polarization rotation, and OLED touch screen, fast and accurate satellite searching is realized, compared with fully automatic and manual stations, this system greatly shortens the time of satellite searching and improves the correctness and accuracy of satellite searching.
3. **Excellent Wind - Resistant Performance:** Adopts the subversive reflector connection forms, with a very low working height and an optimized center of gravity, and reduced windward area, which ensures that the antenna system has superior structural wind- resistant stability performance.
4. **Active Heat Dissipation:** In order to meet the working temperature requirement of the terminal board and reduce the internal temperature of the cabinet, the cabinet adopts the forced heat dissipation design, which forms the air flow passage inside, and adopts the anti-raining design at the inlet and outlet.
5. **VSAT Application:** The system reserved a separate space for installing business terminals such as Modem, Linkstar or iPstar terminal boards can be built-in, thus providing the possibility of realizing highly integrated stand-alone VSAT system,
6. **Strong Wading Ability:** The system supports 10 cm wading capacity and can effectively respond to the complex environment of emergency site.
7. **Local touch screen:** The system is equipped with the local OLED touch screen, which can monitor the working status of antenna, BUC and IDU in real time locally without any other terminal intervention (Spectrum analyzer and Satellite finder), thus greatly optimizing the working efficiency of the human-machine interface.

8. **BUC Monitoring:** The interface of the antenna control system is equipped with BUC monitoring function area, which can conveniently check the real-time working state of BUC, such as output power, working temperature, 10MHz locking and other parameters, and it can control BUC.
9. **Wide-Range EIRP:** The system is equipped with Ku-band BUC of 2~40W, and EIRP can reach 44~57dBW, which can realize medium capacity communication under the small aperture antenna.
10. **Full-Band Operation:** The uplink frequency range is 10.95~12.75 GHz, and the downlink frequency range is 13.75~14.5 GHz, which has wide applicability.
11. **Full Voltage Operation:** The system uses 90 ~ 264 VAC power supply mode, which can be used globally, and can provide stable and reliable power supply for BUC, LNB, Modem and other equipment.

4. The Main Technical Specifications of The System

General Performance		
Open Time	≤5 Mins (From unpack to point satellite completely, the searching Time ≤2 Mins)	
Antenna Type	Prime Focus Single Offset Parabolic Antenna	
Equivalent Diameter	1.0m	
Reflector	Carbon fiber, 6 Linear segmentation panels	
Working Mode	Intelligent Assisted Manual Satellite Searching (Automatic Polarization Adjustment)	
Man-Machine Interface	Wide Temperature LCD Touch Display	
RF Performance		
Name	Tx	Rx
Operating Frequency	13.75~14.50 GHz	10.95~12.75 GHz
Gain	40.6+20log(f/14.25) dBi	39.4+20log(f/12.5) dBi
SWR	1.25: 1	1.25: 1
Feed Interface	WR-75	WR-75
Port Isolation	≥85dB (Include TRF)	
Polarization Isolation	≥35dB (On axis); ≥31dB (Offset 1dB)	
Polarization	Linear Polarization	
The First Side Lobe	≤-14dB	
Side Lobe Envelop	29-25logθ dBi (1°≤θ≤20°) -3.5 dBi (20°<θ≤26.3°)	
G/T	≥18.4dB/K (Clear sky, EI=20°, F=12.5GHz)	
Mechanical Performance		
Azimuth Range	±95°continuous adjustment	
Elevation Range	+15°~+85°continuous adjustment	
Polarization Range	±95°continuous adjustment	
Reflector Dimension	1000× 940 mm (Assembly completely)	
Size of the Host	Box: 625 × 500 × 366 mm Backpack: 600 × 470 × 350 mm	

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Antenna Net Weight	≤16 kg (Exclude the BUC, LNB and Backpack/Box)
Power Requirements	
Power Supply	90~260VAC, or 127~370VAC, 47~63Hz, 1~3A
Power Consumption	≤15W (peak), exclude BUC
External Interface	
Power Supply	3 core waterproof aviation plug×1
Tx/Rx	N-type female plug×2 (There is no this port with built-in Modem)
Applied Data	Waterproof aviation plug RJ45×1
Rx Monitoring	N-type female plug×1 (VSAT System Specific)
Switches and Indicators	
Power Switch	Self-locking ring type with lamp, the ring lamp indicates the power up state of system power, the lamps are red.
BUC Switch	Self-locking ring type with lamp, the ring lamp indicates the power up state of BUC, the lamps are blue.
Buzzer	Sound prompts for Satellite Searching
Environment Condition	
Operating Wind Speed	Steady wind≤50km/h (Need counterweight) Gust≤65km/h (Strengthen counterweight)
Operating Temperature	-30℃ ~ +55℃ (Forced heat dissipation in chassis) Standards: GJB.150.3A-2009, GJB.150.4A-2009
Storage Temperature	-40℃~ +85℃
Altitude	≤5000m
Vibration Test	Standard: GJB150.16A-2009 The vertical axis direction: 1.04G(GRMS) The cross axis direction: 0.20G(GRMS) The longitudinal axis direction: 0.74G(GRMS)
Impact Test	Standard: GJB150.16A-2009 Accelerated Speed:200m/s ² Pulse Width:11ms Times:3/ pro and con direction wave form: half-sine wave
Protection Grade	IP56 (Standard:GB4208-2008)
Relative Humidity	0% ~ 100%