

China Starwin 1.8m Vehicle-Mounted Antenna Datasheet



1.8m Vehicle mounted antenna's product overview



Photo: 1.8m Vehicle mounted antenna

1.General Description

China Starwin 1.8m vehicle-mounted antenna is a fly-away antenna equipped on large command vehicle, the whole system is designed by China Starwin Science&Technology Co., Ltd. especially for the emergency command communication market. The system is quit suitable for the large emergency missions with the function of large capacity of information and high quality communication. The main features of the system include high strength structure, perfect transmission accuracy,1.8m antenna and operating in whole day.

The system have three main functions: transmission with large capacity of information、operating in whole day with strength structure、automatic control for a long time without disconnection.

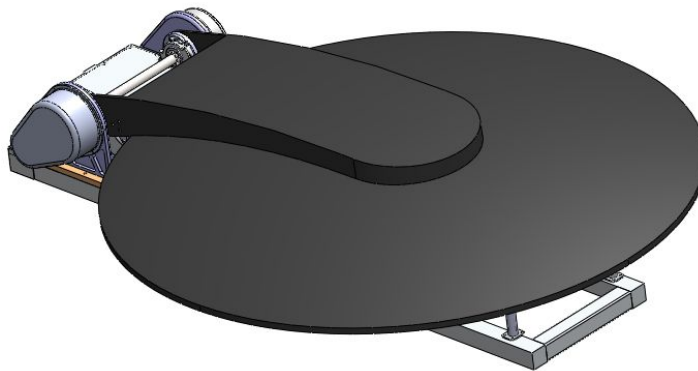


Diagram 1.The stow state of the STARWIN1800

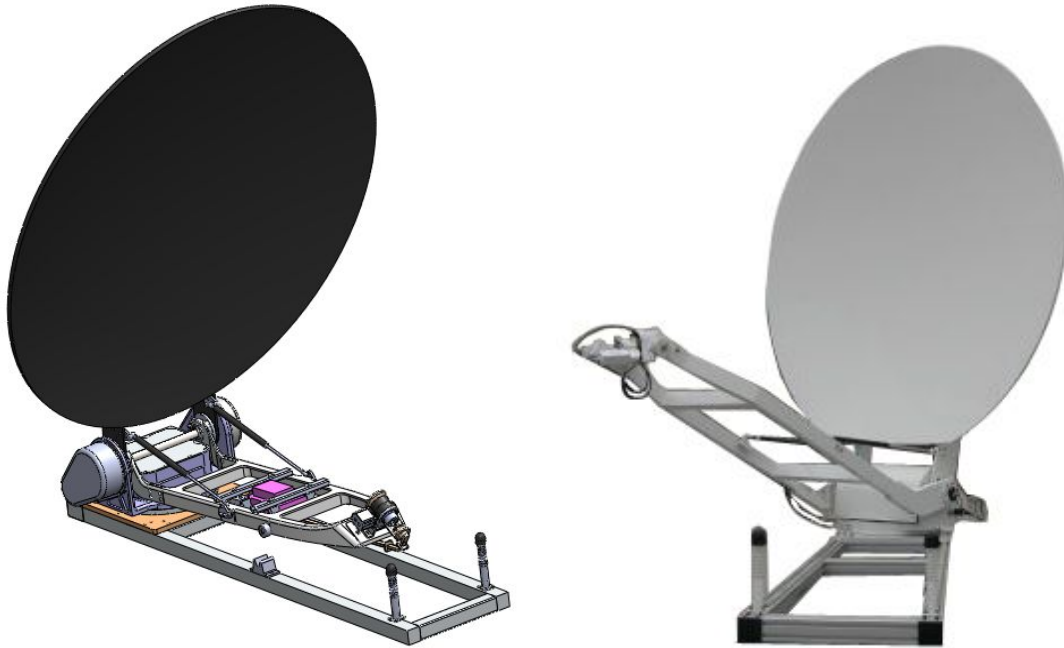


Diagram 2. The operating state of the STARWIN 1800

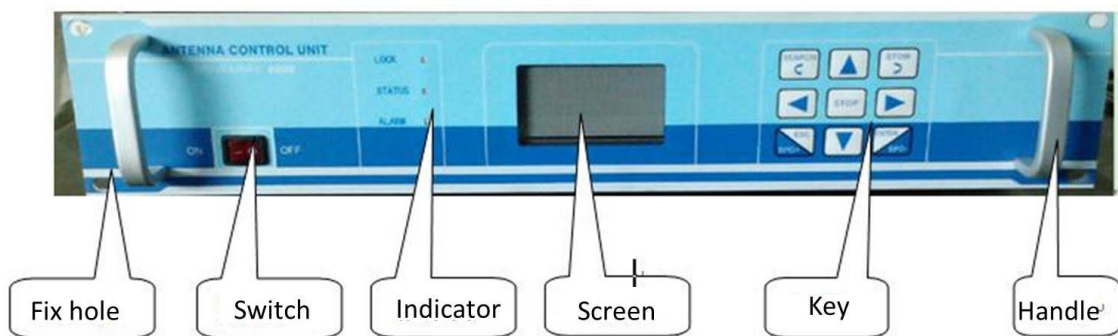


Diagram 3. The front panel of the controller of the STARWIN 1800



Diagram 4. The rear panel of the controller of the STARWIN1800

2.The functions and features of the system

- Easy operating: No need for professional operators, the system can be pointed at the satellite within 3mins by using the one-key pointing function.
- The system can be operated in whole day with large torque and high accuracy transmission. The structure of the system is designed with high strength by using the military motor and reductor imported from Germany.
- Three operating mode: auto、electric、 manual.
- Military quality: Using the environment resistant materials which meet the MIL-STD-810F requestment. The system pass the environment test for the harsh communication conditions.
- Perfect performance: high feed RF efficiency, high gain, low sidelobe, excellent cross polarization.
- Highly integrated: the system was put into a 2U standard box in which including a three axis positioner、 a GPS receiver and a electronic compass, the system has the function of auto pointing satellite.
- Have monitor port.

3.The size of the STARWIN1.8m Vehicle mounted antenna

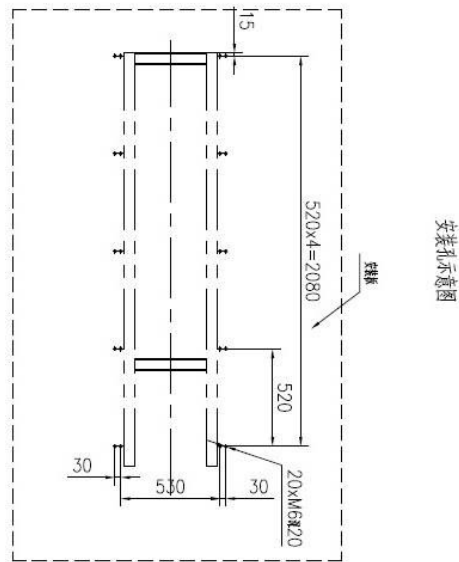
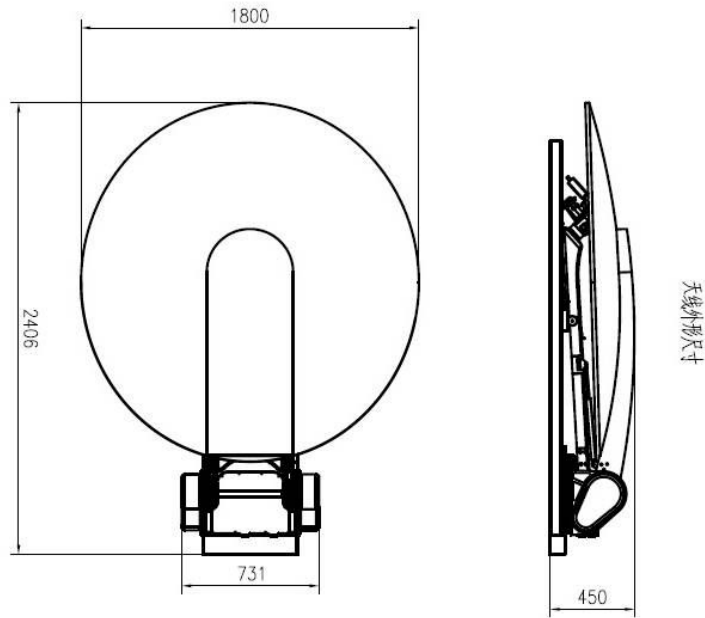


Diagram 5.The size of the STARWIN1800

4.The system composition of the STARWIN1.8m Vehicle mounted antenna

China Starwin 1.8m vehicle-mounted antenna system is mainly consist of the 1.8m feed system、the three axis drive system、the automatic control system、the power drive system、the satellite attitude acquisition system、 the beacon receiver system, etc. The whole system is divided in to two parts, one is inside vehicle control system, another is outside vehicle antenna. The interconnection between two parts is simple and stable, which is shown below:

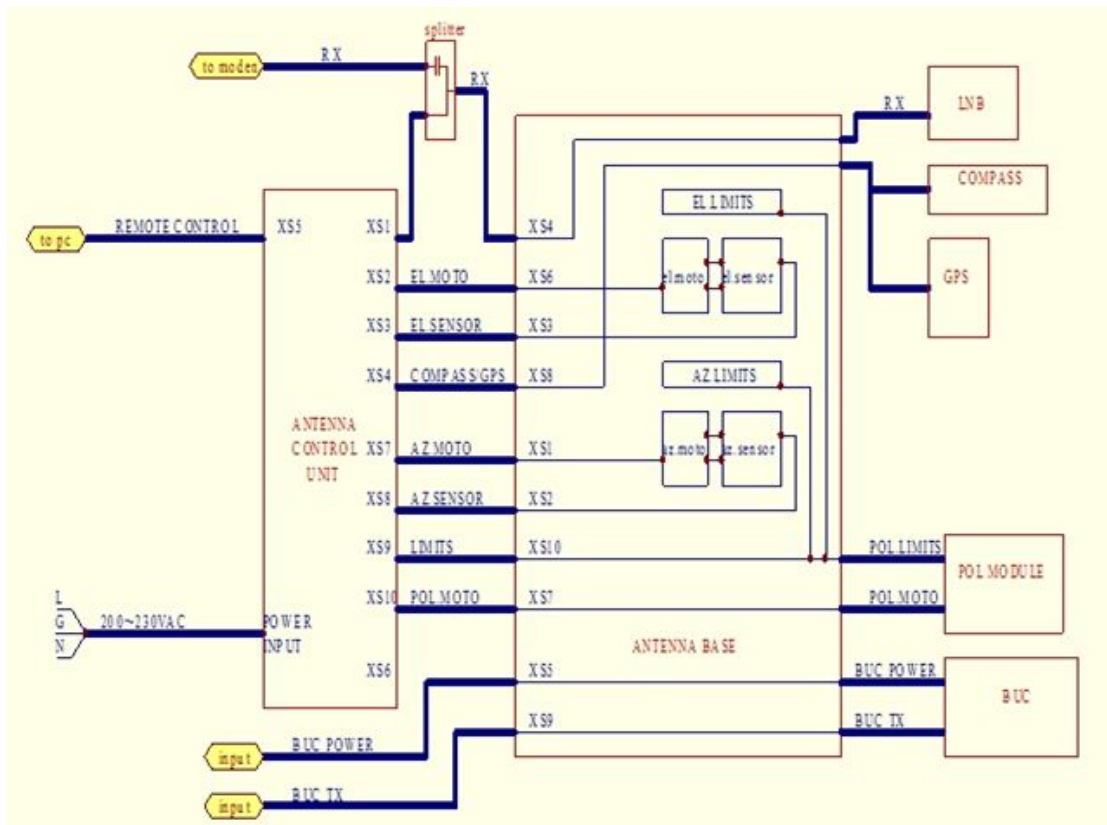


Diagram 6.The interconnection of the inside and outside system of STARWIN1.8m vehicle mounted antenna

5.The index of the control system

Name	Index
Tracking mode	Beacon step tracking,manual tracking
Pointing time	≤2 mins
Tracking accuracy	Better than 1/8 bandwidth
Storage volume of satellites	10 (3 of those could user-defined)
Input beacon frequent band	950 ~ 1750MHz
Input beacon level band	-55 ~ -105dBm
Frequency step	10 KHz
Output level band	0~10VDC
Capture time range	The auto PLL<100ms (scan range ±120KHz)
Detection band	2.5KHz、4KHz、250KHz
Scan band	±250KHz
RF port	N type female plug、monitor port RJ45
Operating temperature	- 20℃ ~+55℃
Power requestment	AC 220V±10%, 50~60 Hz, 600W
Size	standard19"2U
Weight	4.6kg

The main technical indexes of the 1.8m Vehicle Mounted Ku band antenna system

Equivalent diameter	1.8m	
Type of the antenna	Single offset carbon fiber antenna	
name	Rx	Tx
Operating Freq band GHz	10.95~12.75 GHz;	13.75~14.50 GHz;
Gain	45.5dBi @12.50GHz	46.9dBi @14.25GHz
Polarization mode	Single linear polarization	
Polarization isolation	Linear polarization isolation: >35 dB(off-axis 1dB>32dB) ;	

SWR	1.3: 1 (Max)	1.25: 1 (Max)
Feed Insertion loss	<0.4dB;	: <0.3dB ;
Port isolation	85 dB (include filter)	
Antenna efficiency	Freq band: >67% ;	
Port mode	WR75flat flange for Tx、 WR75 flat flange for Rx;	
The first sidelobe	≤-14dB	
Sidelobe envelope	29-25logθ (1.5°≤θ≤20°) -3.5dBi (20°<θ≤26.3°) 32-25logθ (26.3°<θ≤48°) -10dBi (θ>48°)	
power	>500W	
Rotation range	azimuth: ±220°、 elevation: 0°~90°、 polarization: ±95°	
Size	L2406×W 1800×H450mm	
Drive speed	0.01° /s ~ 4°/s adjustable	
weight	90Kg	
Operating wind speed	20m/s gust27m/s	
Survival wind speed	35m/s	
Operating temperature	-40℃ ~ +55℃	
Storage temperature	-50℃ ~ +70℃	
Protection grade	IP65	

Item	Parameters	
Equivalent diameter	1.8m	
Type of the antenna	Single offset carbon fibre antenna	
Operation Frequency range	TX	5.85—6.425GHz
	RX	3.625—4.2GHz
Gain	TX	39.2dBi
	RX	35.5dBi
polarization	Linear or Circular	
Cross-Pol.Isolation	≥35dB(on axis); ≥33dB(1dB	

	offset)
VSWR	1.3:1
3dB Bandwidth	<2° @5.85GHz
Efficiency	≥60%
Power Capacity	≥500W
Rotation range	azimuth: ±220°、elevation: 0°~90°、polarization: ±95°
Size	L2406×W 1800×H450mm
Drive speed	0.01° /s ~ 4°/s adjustable
weight	90Kg
Operating wind speed	20m/s gust27m/s
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