

Starwin 0.74M On the move flat  
panel passive phased array  
antenna Technical Information  
(Hand-held device version)



**Antenna cover**



**Antenna panel**



3 types of controller optional



### **Antenna General Description**

China Starwin 0.74m ON-THE-MOVE Rx only antenna systems has been developed by China Starwin for emergency mobile wide band satellite communication, it is high performance and low height on the move satellite communication antenna, the low-height antenna characteristics can meet with the strictly request of antenna installation height .The antenna system adopts fiber optic gyro inertial navigation tracking and satellite beacon tracking, and has the advantages of high precision and very short reacquisition time, this ensures high speed rate communication in motion. Any case, when signal lost, the re-acquisition time is less than one second.

### **Key Feature**

- Automatic initial satellite acquisition can be finished whether in motion or stationary.
- Satellite initial acquisition time is less than 90 sec
- Lose signal , reacquisition time recovery immediately
- Tracking speed is equal or greater than 60°/sec
- Altitude range is 0~3000 M

## 1 Technical Parameter

parameter	values
Angle of elevation	15 ~ 90°
Antenna Dimension	Φ740mm ×h270mm
Antenna Weight	≤ 15 Kg ( sample )
Azimuth Range	0° ~ 360°continuous
Pitch Range	15° ~ 90°continuous
Antenna Type	polarization adaptive planar waveguide array
Panel measures	680x170x34mm
Working Frequency	10.5 ~ 12.75GHz
Antenna Gain	32±0.3dB
Means of polarization	Liner
VSWR	1.3dB
Medium Frequency Interface	L Band ( 950MHz ~ 1450 MHz ) , resistant50Ω
Time of aiming the satellite	≤ 1.5min
Maintain time when being hidden	≥10 min
Recovery Time after being hidden ( ≥3min )	Recovery immediately
Tracking Speed	≥60°/s
Tracking Velocity	≥200°/s <sup>2</sup>
RMS	0.3°RMS
Working Temperature	-25℃ ~ +55℃ ( -20℃ ~ +55℃ )
Temperature	-40℃ ~ +70℃
Working Relative Humidity	30% ~ 90%
Storage Humidity	10% ~ 90%
Wind Speed	28m/s, the car could work normally, while when the speed is at 20m/s, it could work normally.
Altitude	0 ~ 3000m
Waterproof Grade	IPX6

## 1 Features and Installation

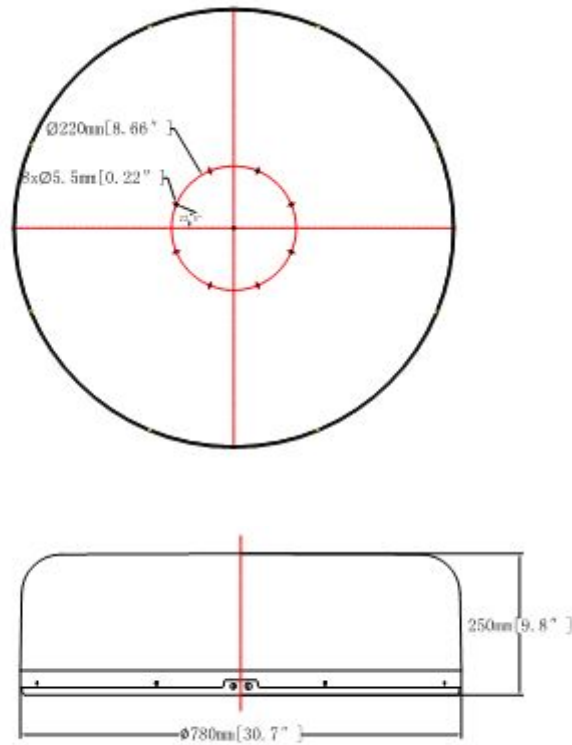
The antenna product appearance and the bottom mounting holes is shown in the figure below.

5

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## 2 Operation Instruction

### 2.1 Components Illustration

#### 2.1.1 Front Panel



Fig.1 front panel



As the figure is shown above, the front panel is consist of the LCD screen, direction lights and pressing buttons.

(1) LCD screen

The **screen** is used for showing the message so that realize the communication between machine and human's .

(2) LED

**Power Supply LED**: the LED light is on when you switch on the machine.

**OK/ERR Supply LED**: the LED light is on when the action is OK or ERROR

(3) Button

**ON/OFF Button**: press the on/off button on the control panel

**DEV/STOW Button**: invalid

**STOP Button**: The system stops searching for the selected satellite and shuts down as soon as you press the "STOP" button.

**UP/DOWN/LEFT/RIGHT Button**: to move the cursor and alter the value. Generally, press LEFT/RIGHT button to move the cursor, and press UP/DOWN button to select the value.

**OK button**: the confirm button, to get into the next menu or send the command to antenna.

**Number(0,1,2,3,4,5,6,7,8,9) Button**: when you want to alter the figure, press the number button and input the value.

**\* button**: return and back the former menu

**+/- button**: invalid

## 2.2 Software construction

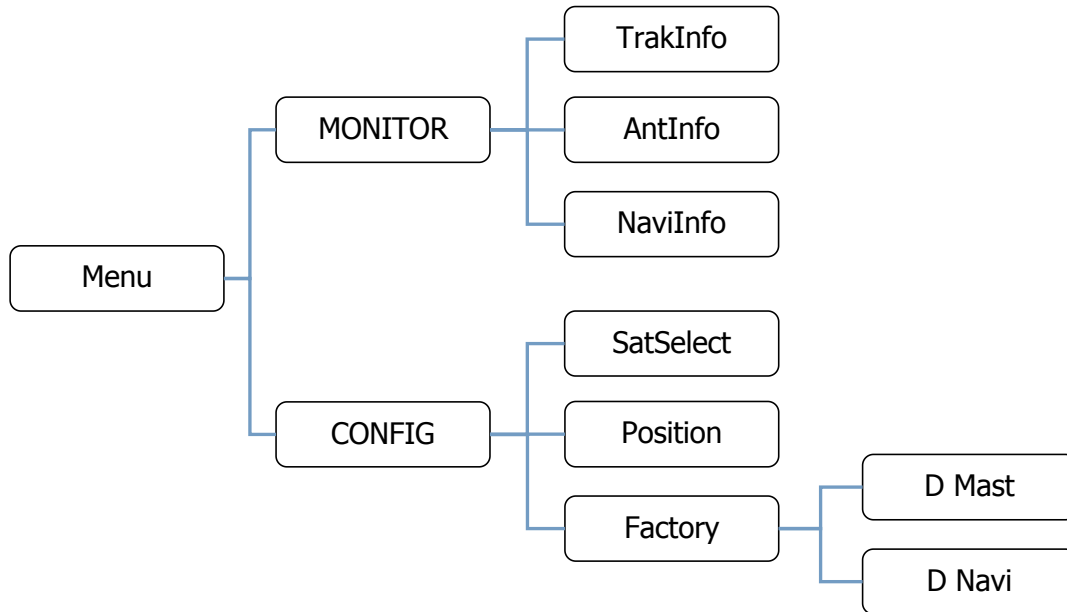


Fig.2 frame of the menu

### 2.2.1 Main page

Getting into the main menu in 10 sec after powering on.



Main menu includes MONITOR and CONFIG.

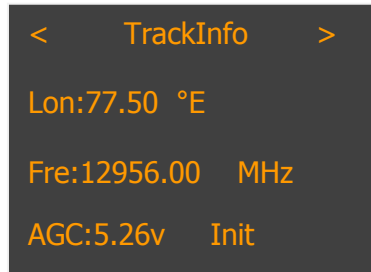


### 2.3 MONITOR menu



MONITOR is for supervisory control, consist of "TrackInfo", "AntInfo" and "NavInfo". Press the LEFT/RIGHT button to switch. Press "\*" to return to the main menu.

### 2.3.1 TrackInfo



The interface displays the satellite tracking information. Press the LEFT/RIGHT button to switch. Press "\*" to return to the main menu.

parameter	specification
Lon	Longitude of the tracking satellite. E equals to East Longitude. W equals to West Longitude.
Fre	Currently tracking satellite beacon frequency.(Unit: MHz)
AGC	Receiver machine's AGC output electric potential.(Unit: V, stands for the signal strength)
Init	The current working status of antenna system, including Init, Search, Manual, Lock, Stop, Unlock and Other.

### 2.3.2 AntInfo



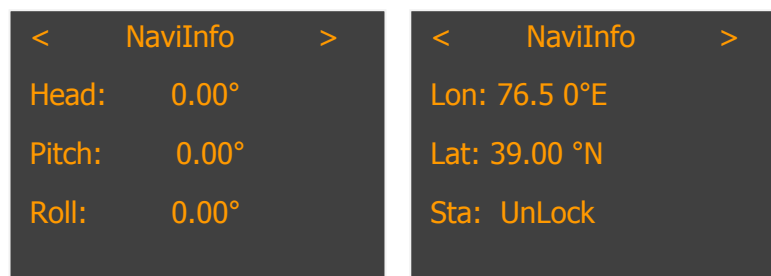
The interface displays the angle information of the satellite. Press the LEFT/RIGHT button to switch. Press "\*" to return to the main menu.

parameter	specification
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AZ	Stands for azimuth, preset/current
EN	Stands for pitch, preset/current

The antenna presetting angle means the one when antenna feeder of current location aims the satellite. And the antenna current angle means the one which antenna feeder is actually aiming to. The value should be similar when the antenna locking the satellite(D-value less than 2).

### 2.3.3 NaviInfo



The interface displays the inertial navigation system(INS)'s tracking information. Using the left/right button to switch the interface between TrackInfo and AntInfo. Press the **LEFT/RIGHT** button to switch. Press "\*" to return to the main menu.

parameter	specification
Head	Heading angle. (Unit: degree, range 0 ~ 359.99)
Pitch	Pitch angle. (Unit: degree, range -90 ~ +90)
Roll	Rolling angle. (Unit: degree, range -90 ~ +90)
Lon	Longitude of current location. (Unit: degree, E stands for East, W stands for West.)
Lat	Latitude of current location. (Unit: degree, N stands for North, S stands for South.)
Sta	Working status, including lock and unlock.

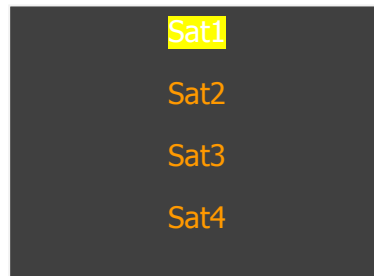
**Notice:**The location of the INS means where the antenna is.

## 2.4 CONFIG menu

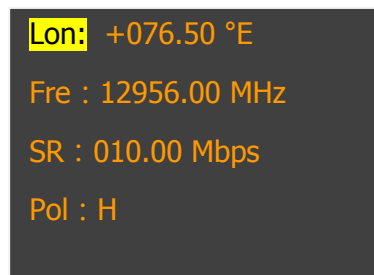
CONFIG menus has the SatSelect, Position, and Factory function. Pressing UP/DOWN button to select the function. Press CONFIRM button to get into the next menu. Press "\*" to return to the main menu.



### 2.4.1 SatSelect



Selecting the satellite via using UP/DOWN button, pressing OK button to get into the parameters setting interface.

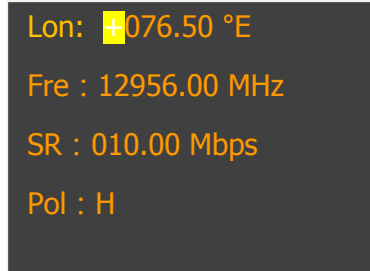


parameter	specification
Lon	Longitude of the satellite, E equals to East, W equals to West.
Fre	Satellite beacon frequency(Unit: MHz)
SR	Symbol Rate

Pol	Means of polarizing
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### Setting Instruction

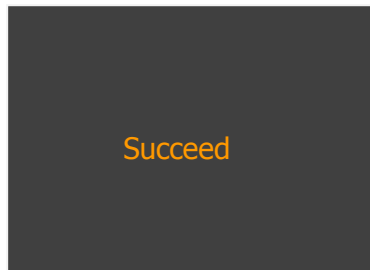
- 1) When the cursor displays on the “Lon”, “Fre”, “SR” or “Pol”, press UP/DOWN button to select the parameter and confirm with the OK button, as the follows:



- 2) Altering the values via pressing UP/DOWN button. When the cursor on the numbers, press the number button to alter values directly. Also, when the cursor on the parameters, pressing LEFT/RIGHT to move the cursor. Pressing “\*” to return to the “Lon”, “Fre”, “SR” and “Pol” menu.

**Notice:** If you want to change East or West, alter the “+” or “-”.

- 3) Confirm all the parameters before pressing the OK button, then the hand-held would send the parameters to antenna and save the values. The interface would be as the follows after being successfully set.



- 4) Press “\*” to return to the former menu in order to check the satellite tracking information in the monitor interface.

### 2.4.2 Position

Select “position” and press OK button to enter the position interface.

SatSelect

Position

Factory

Input the location manually on the position interface.

Position

Lon : +114.60 °E

Lat : +036.00 °N

Lon: Longitude, input East or West as required via alter “+”/ “-”.

Lat: Latitude, input South or North as required via alter “+”/ “-”.

### 2.4.3 Factory

SatSelect

Position

Factory

D Mast

D Navi

Select the parameter and enter into the setting interface.

(1) D Mast

AZ : +000.00 °

EN : +000.00°

TP : +000.00°

RP : +000.00°

parameter	specification
AZ	Azimuth
EN	Pitch angles
TP	Transport Program
RP	Receive polarizing

(2) D Navi

INS setting

Head : +000.00°  
Pitch: +000.00°  
Roll : +000.00°

Parameter	specification
Head	Heading angle
Pitch	Pitch angle
Roll	Rolling angle

## 2.5 General using instruction

Check the cables after setting up the system. Power on the system after confirming the cable and the machine.

### 2.5.1 Checking the monitor information

Checking the system information via getting into MONITOR menu, switch the information by pressing RIGHT/LEFT button.

### 2.5.2 Switch the satellite

When the system is powered on, if altering the satellite parameter is necessary, use CONFIG→SatSelect→Sat1 to enter the interface. Set the longitude, satellite beacon frequency, SR and the means of polarizing, after all, press OK button to send the parameters to satellite. Check the satellite tracking status through the system monitor interface.

### 2.5.3 Input the location

Manually inputting the location is permitted if the antenna GPS cannot positioning or the location is not so accurate. Use CONFIG to get into Position interface, input the longitude and latitude. Press OK button to send the parameter to the antenna. Check the satellite tracking status through the system monitor interface.

### 3 Notice

1) The satellite signal would be locked in 3 minutes after powering on, and the monitor interface displays LOCK. If the antenna cannot lock the satellite in a few minutes, please check the followings are correct or not:

A.the satellite parameters' setting

B.if the GPS is being locked

C.if satellite signals are being blocked

D.if the antenna device displays error

2) When the ACU monitor interface displays LOCK, the electric potential should be above 6.0V. If the value is lower than 6.0V, it means the signal receiving quality is not good. In this situation, please reset the antenna device. Contacting the sellers if the problem cannot be solved.

3) Please confirm that the vehicles is not being driven in the signal blocking area if the television is out of working. If the signal is working fine, check the antenna device.