

# Antenna Product Manual

HYN503

## Product Features

Electrical Properties: It is a general antenna for UHF RFID applications with high gain and low VSWR.

Mechanical Properties: The compact and artistic antenna is suitable for all kinds of severe environment for its dual waterproof design with Gasket and silicone and strengthening rib of shell.

## Performance Specifications

- Frequency Range: 860MHz~960MHz
- Maximum VSWR:  $\leq 1.3:1$
- Gain:  $> 9$  dBi
- H side HPBW:  $70^\circ$
- E side HPBW:  $70^\circ$
- Polarization: Circular Polarization
- Relative humidity: 5%~95%
- Input Impedance:  $50 \Omega$
- Antenna Connection: N-50KFD (Type N Female)

## Physical specifications

- Size: 258mm×258mm×56mm
- Weight: 0.91kg(without bracket)
- Material: Engineering Plastic ASA、Aluminums
- Color: Ivory-white
- Enclosure Rating: IP67
- Operational Temperature:  $-40^\circ\text{C} \sim +85^\circ\text{C}$
- Storage Temperature:  $-40^\circ\text{C} \sim +85^\circ\text{C}$



Figure 1. The photograph of the antenna

## Installation guide

HYN503 antenna can be installed on steal framed structure or bracket by own antenna bracket, and connect with reader with coaxial line. The antenna can be installed horizontally or vertically, it is decided by installation location, the angle can be adjusted after installation according to the real environment.

Antenna bracket is an optional accessory, you can choose according to your special requirement.

### 1. Installation Dimension

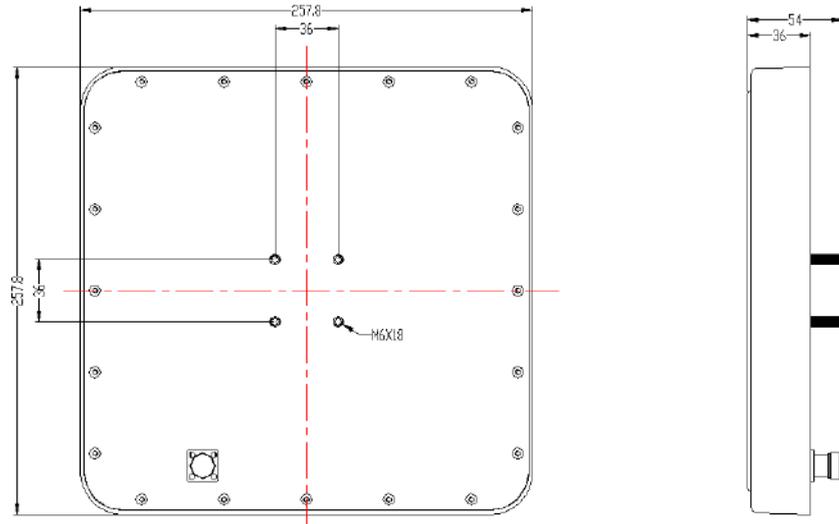
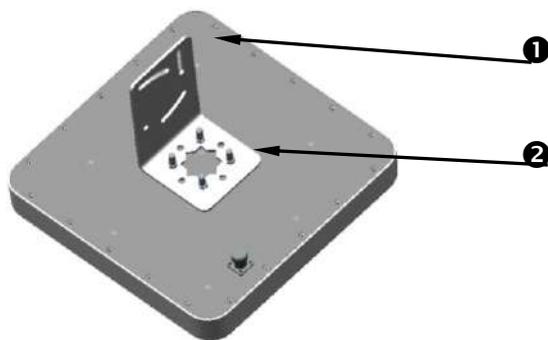


Figure 2 Dimension of the antenna

### 2. Installation Steps

#### 2.1 Horizontal Installation

Step 1: Use M6 screw, elastic washer and plain washer, to fix the L board on the antenna, please see Figure 3.



1	L board (Bracket)
2	M6 screw, elastic washer and plain washer

Figure 3 The structure for the Step 1 in the first case

Step 2: Please use M6 screw, elastic washer and plain washer and “Dog tooth” to fix it on the horizontal and vertical bracket, please see Figure 4.

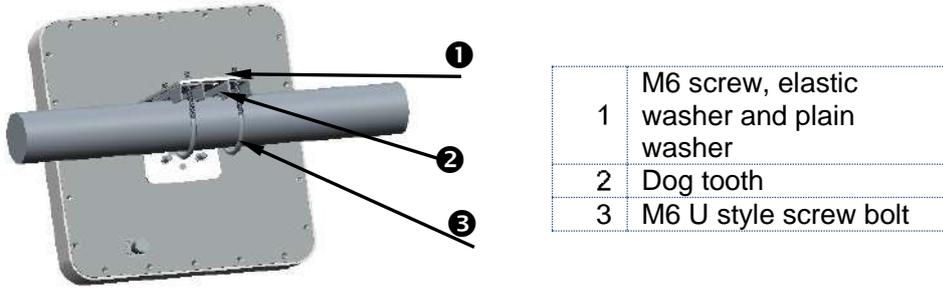


Figure 4. The structure for the Step 2 in the first case

**2.2 Vertical Installation**

Step 1: Use M6 screw, elastic washer and plain washer, to fix the L board on the antenna, as shown in Figure 5.

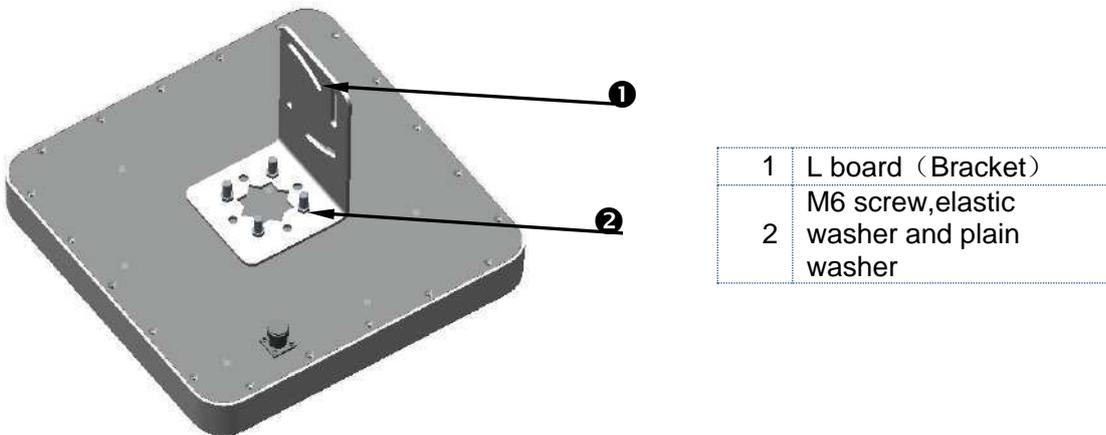


Figure 5 The structure for the Step 1 in the second case

Step 2: Please use M6 screw, elastic washer and plain washer and “Dog tooth” to fix it on the horizontal and vertical bracket, as shown in Figure 6.

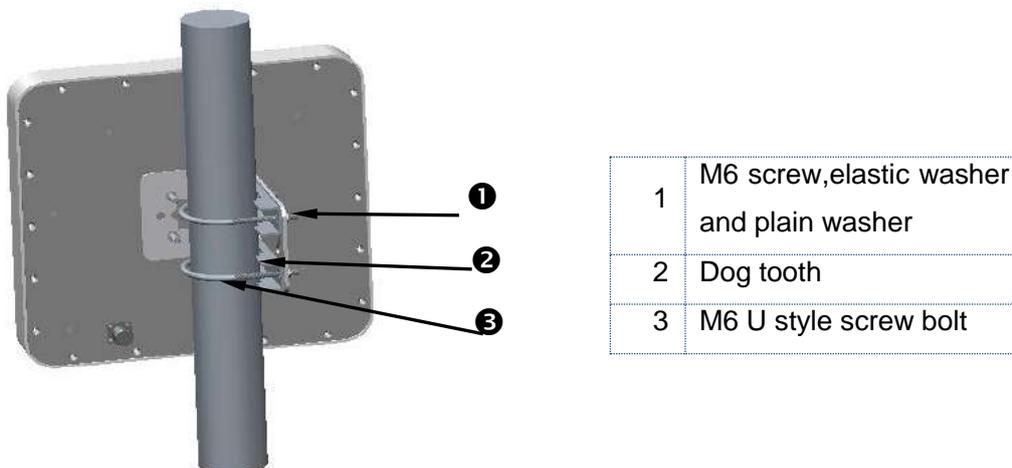


Figure 6 The structure for the Step 2 in the second case

## Antenna Radiation Pattern

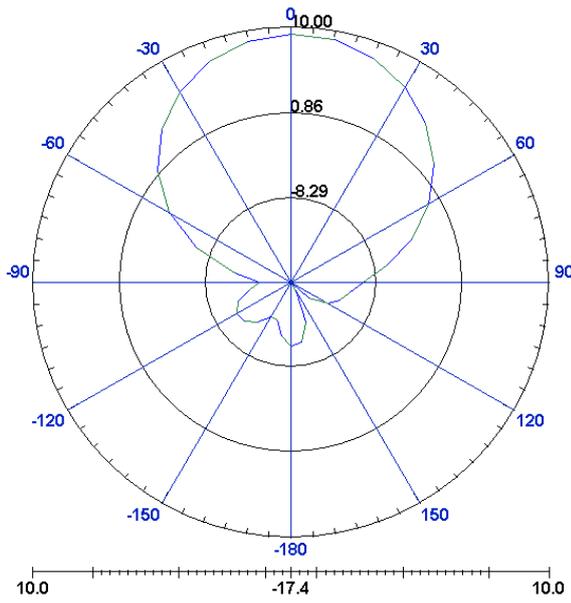


Figure 7. The radiation pattern(E side)

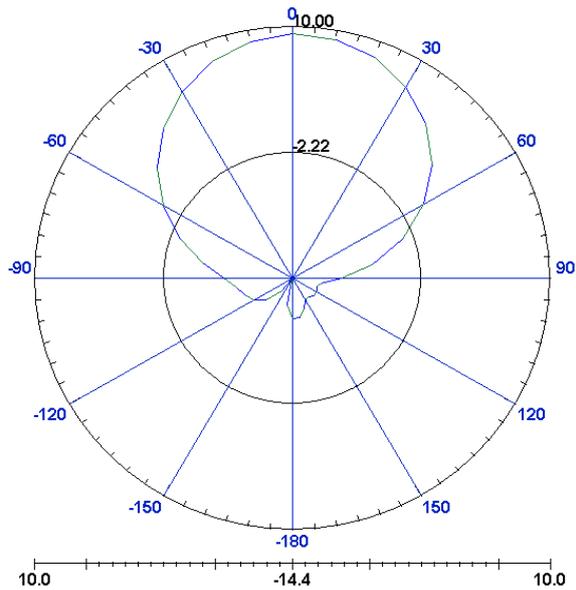


Figure 8. The radiation pattern(H side)

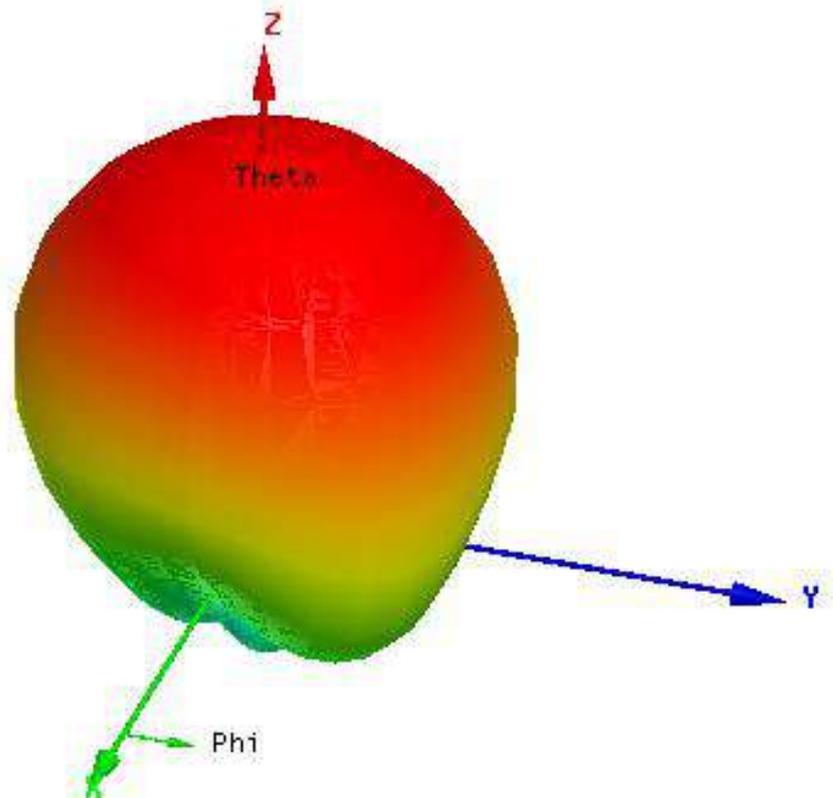
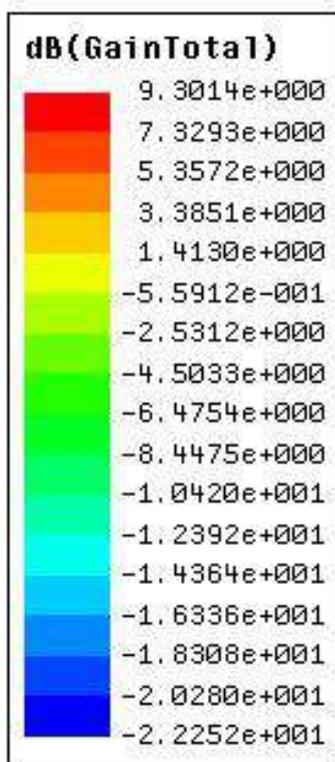
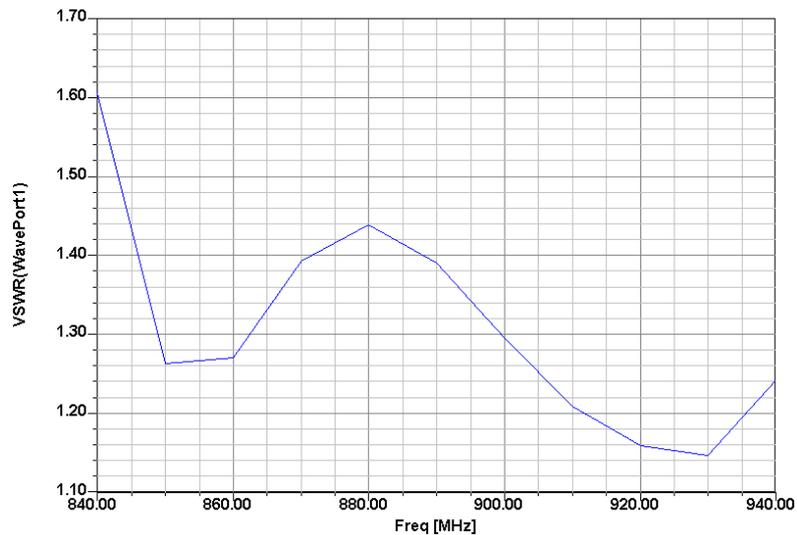
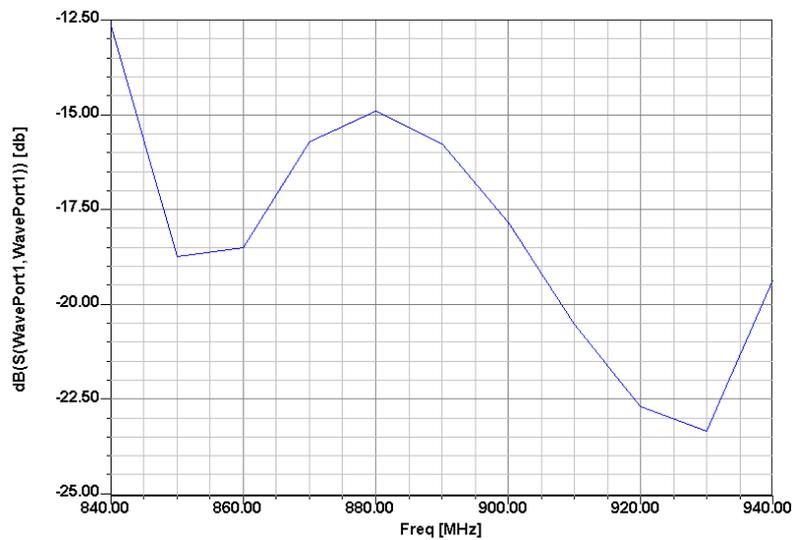


Figure 9. The radiation pattern(3D pattern, Gain > 9 dBi)



**Figure 10.** The VSWR of this antenna



**Figure 11.** The input port-1 Scattering-parameters of this antenna

**Common Problems and Attentions:**

1. HYN503 Antenna is a circular polarization antenna. Please kindly adjust the angle to get the best reading performance in practical applications.
2. HYN503 Antenna can be used at the outdoor environments, but it's not good to use it in an acid/alkali environment.