

Chapter 1 Antenna Overview

1.1 Antenna Description

Antenna name: ECG Bluetooth antenna

Antenna model: RD542102LB93-1

1.2 Antenna Photo



Figure 1 ECG Bluetooth antenna

1.3 Manufacturer

Shenzhen Etheta Communication Technology Co., LTD.

Chapter 2 Antenna Specifications

2.1 Antenna Specifications

Table 1 ECG Bluetooth Antenna Performance Specifications

Frequency (MHz)	2400-2500
Bandwidth (MHz)	100
Standing wave ratio	<3.5
Return Loss (dB)	<-5
Efficiency (%)	≥ 15
Maximum Gain(dBi)	<4
Impedance (Ω)	50
Polarization	Linear polarization

2.2 Antenna circuit parameter test

2.2.1 ECG Bluetooth antenna return loss:



Figure 2 ECG Bluetooth Antenna Return Loss

2.2.2 ECG Bluetooth antenna standing wave ratio:

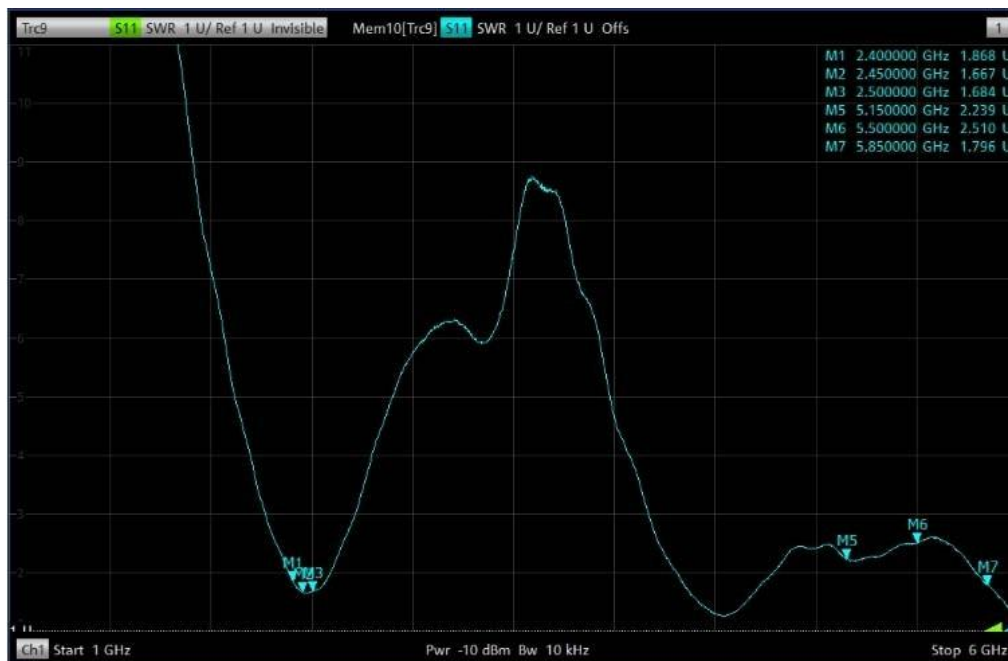


Figure 3 ECG Bluetooth Antenna Standing Wave Ratio

2.2.3 Smith round diagram of ECG bluetooth antenna:

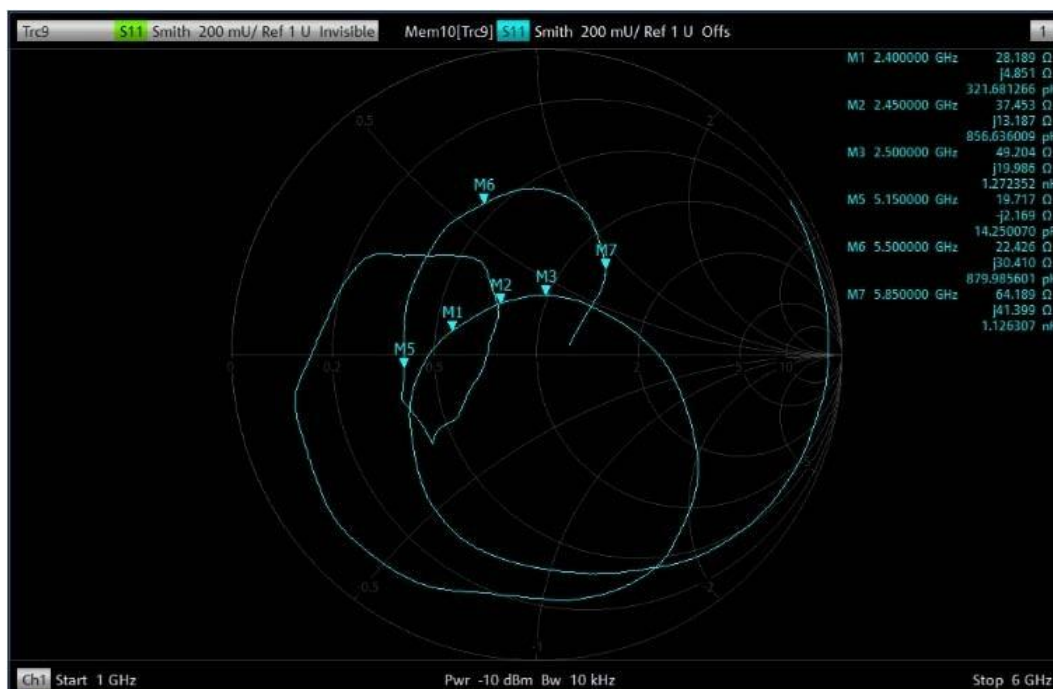


Figure 4 Smith circle diagram of ECG bluetooth antenna

2.3 Antenna radiation pattern test

2.3.1 3D Direction

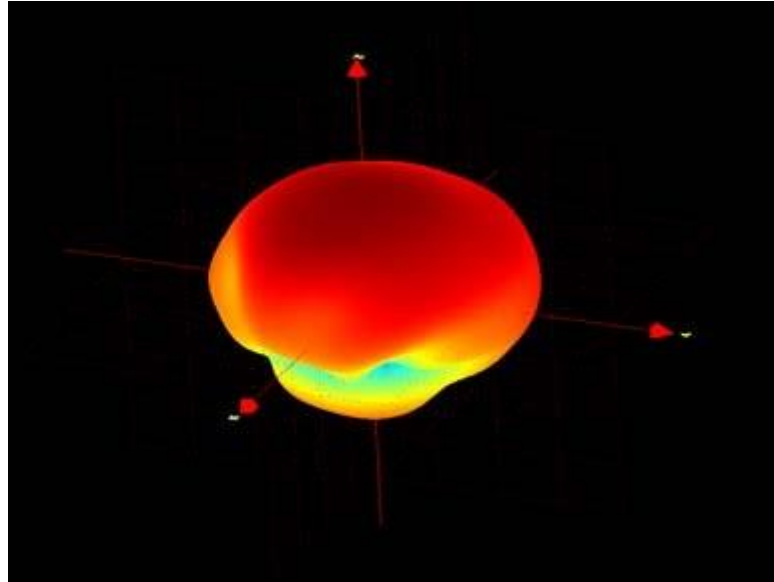


Figure 6 3D Direction of ECG Bluetooth Antenna

2.3.2 2D Direction

Theta=90°:

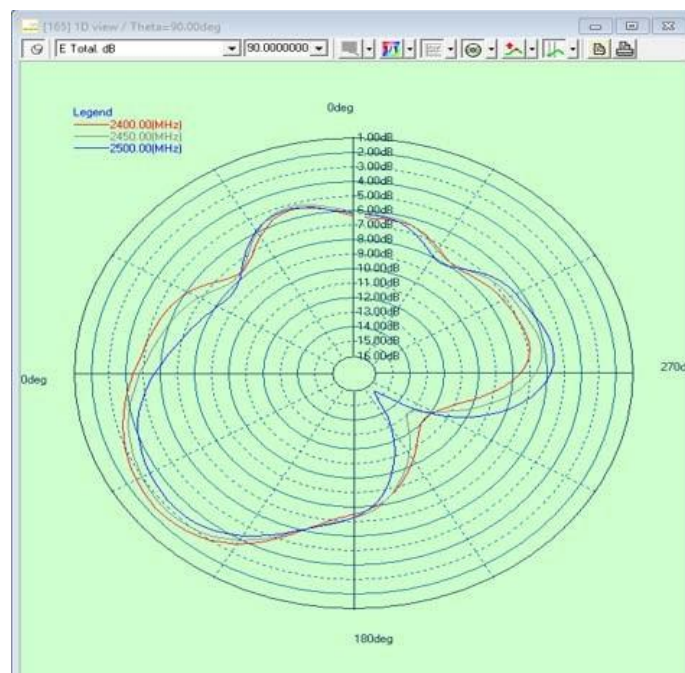


Figure 7 $\Theta=90^\circ$ Direction Chart of ECG Bluetooth Antenna
 $\Phi=90^\circ$

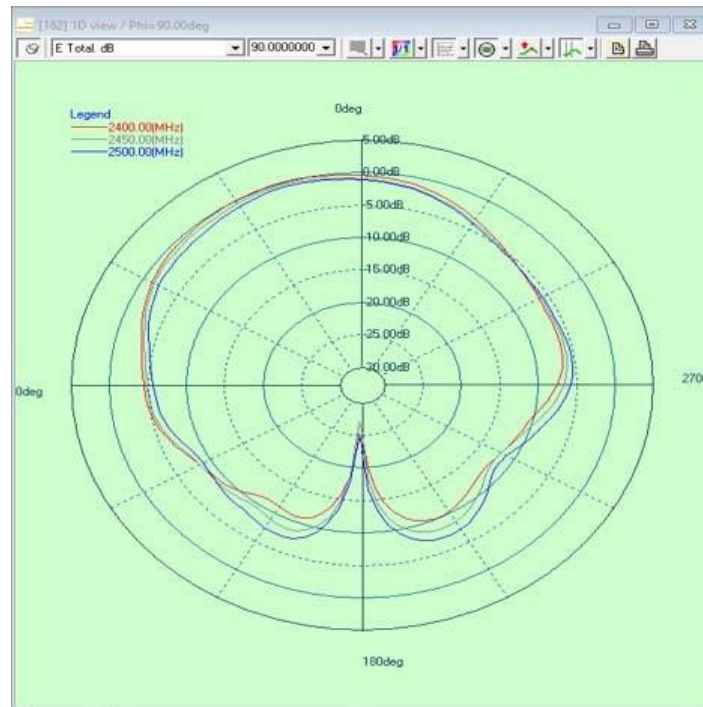


Figure 8 $\Phi=90^\circ$ direction diagram of ECG Bluetooth antenna

$\Phi=0^\circ$

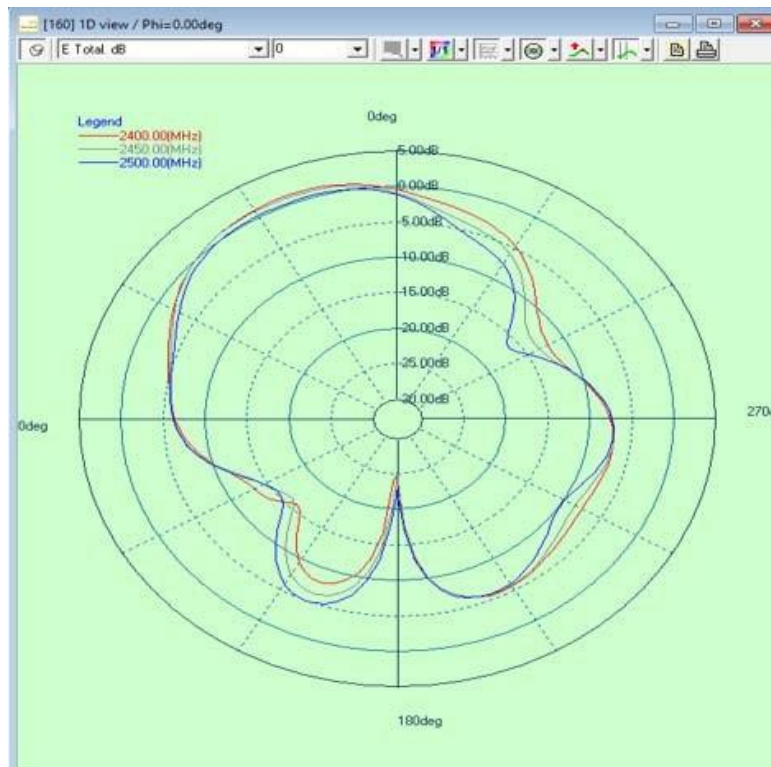


Figure 9 $\Phi=0^\circ$ direction of the Bluetooth antenna

2.4 Radiation Efficiency and Gain Test

Frequency	FS		Hand	
	Efficiency	Peak Gain	Efficiency	Peak Gain
2400	47%	1. 26	23%	0. 14
2410	49%	1. 40	24%	0. 25
2420	49%	1. 52	24%	0. 30
2430	49%	1. 58	24%	0. 38
2440	49%	1. 66	24%	0. 41
2450	49%	1. 72	25%	0. 52
2460	50%	1. 79	25%	0. 59
2470	50%	1. 82	25%	0. 66
2480	50%	1. 86	26%	0. 77
2490	50%	1. 92	26%	0. 83
2500	51%	1. 91	26%	0. 95

