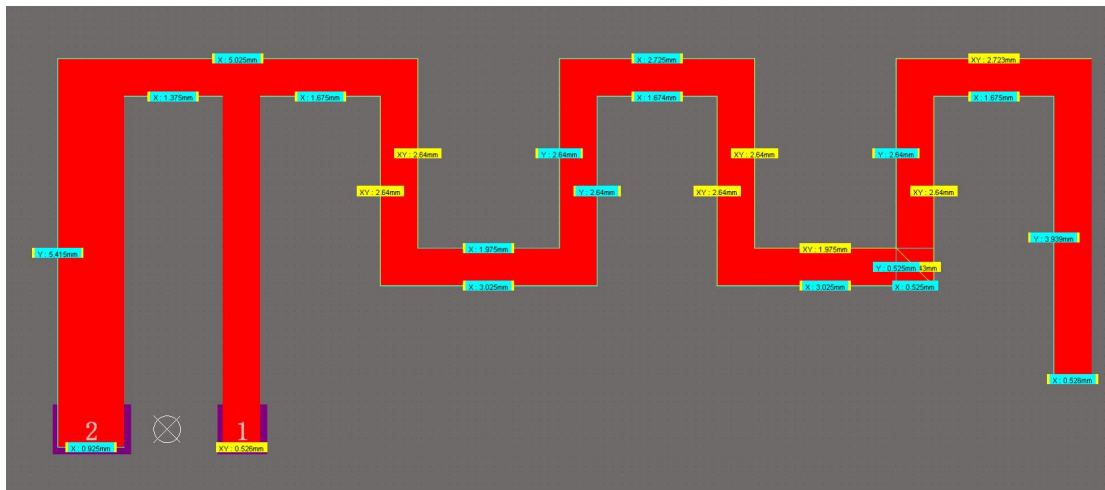


## On-board PCB antenna in the 2.4G-2.48G frequency band

### 1. Electrical Performance:

Electrical performance index	
Frequency Range (MHz)	2400-2480
Frequency BW (MHz)	100
Peak Gain (dBi)	2.499
Average Gain (dBi)	>-4
VSWR	<3.2
Impedance ( $\Omega$ )	50
Antenna type	PCB board
Polarization mode	Linear polarization
Working temperature ( $^{\circ}\text{C}$ )	-20-60
Storage temperature ( $^{\circ}\text{C}$ )	-20-60

### 2. Physical dimensions (mm)



Copper thickness: 1 ounce

Manufacturer: Shandong ICreate Education Technology Co., Ltd.  
Manufacturer add.: 3201, Building 2, Third District, Weidong Xindu, Shizhong District, Jinan City, Shandong Province, China

### 3. Passive S parameters of the antenna:

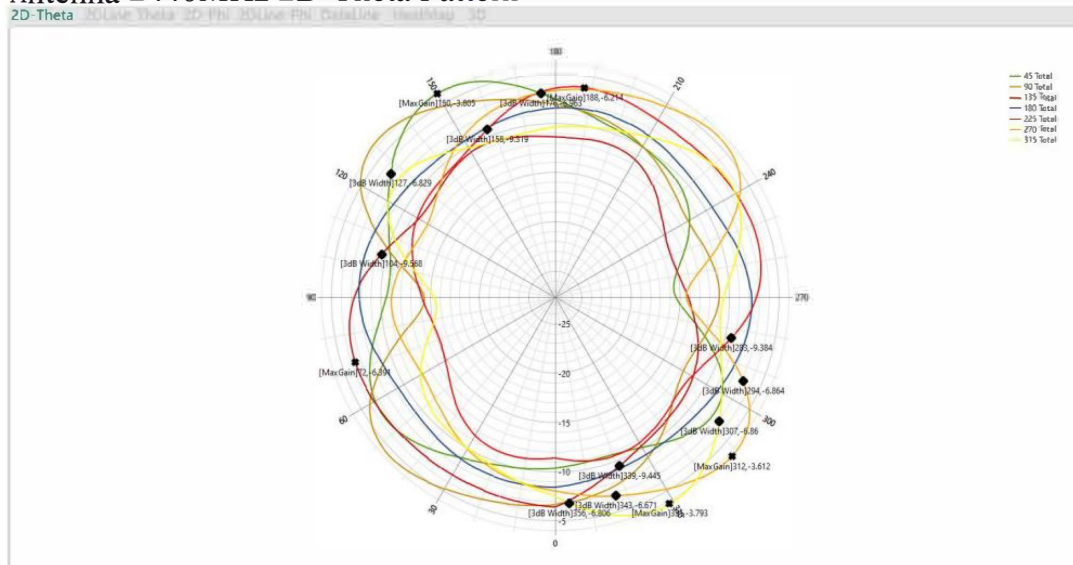
Standing wave ratio, return loss and Smith's circle diagram



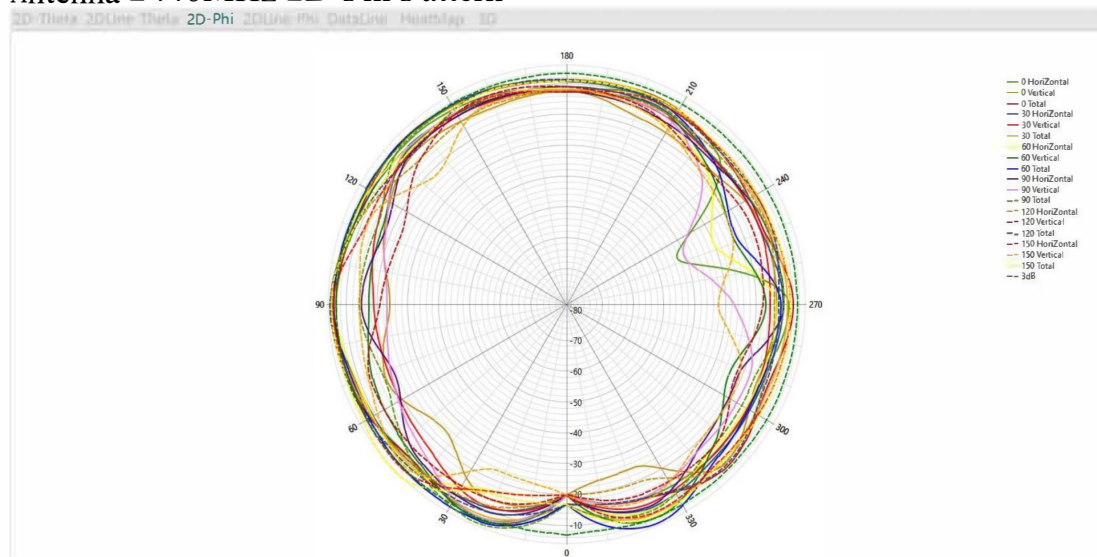
### Antenna efficiency and gain

Frequency (MHz)	Gain (dBi)	Efficiency (%)	Average Gain (dBi)	Efficiency (%)
2400	1.433	59.329%	-2.717	-2.267
2410	0.927	51.861%	-3.416	-2.852
2420	0.829	52.112%	-3.166	-2.831
2430	0.881	49.299%	-3.258	-3.072
2440	1.192	50.672%	-3.144	-2.952
2450	1.688	53.067%	-2.735	-2.752
2460	2.194	59.423%	-2.276	-2.260
2470	2.118	56.690%	-2.438	-2.466
2480	2.499	61.737	-2.112	-2.095
<b>Average value</b>	<b>1.529</b>	<b>54.908%</b>	<b>-2.806</b>	<b>-2.616</b>
<b>Peak value</b>	<b>2.499</b>	<b>61.727%</b>	<b>-2.112</b>	<b>-2.095</b>

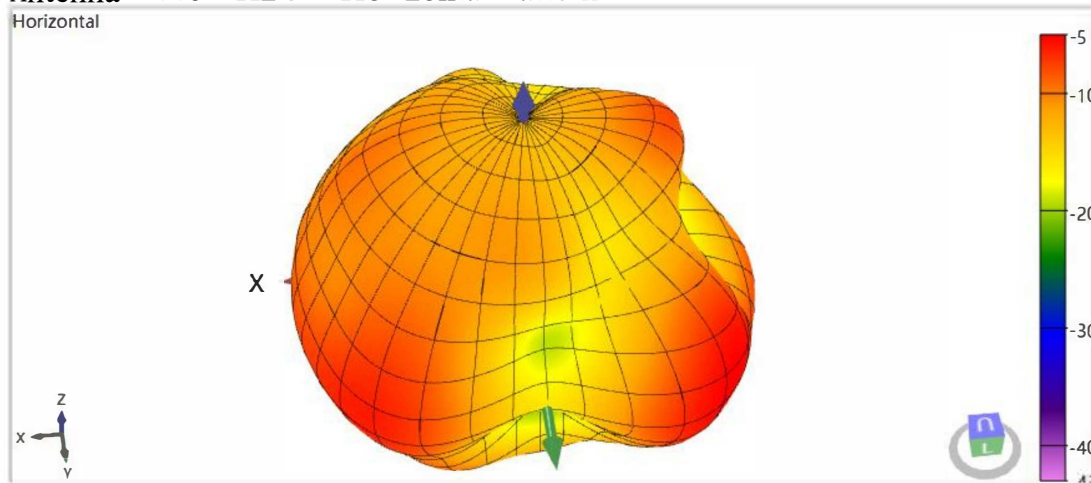
## Antenna 2440MHz 2D-Theta Pattern



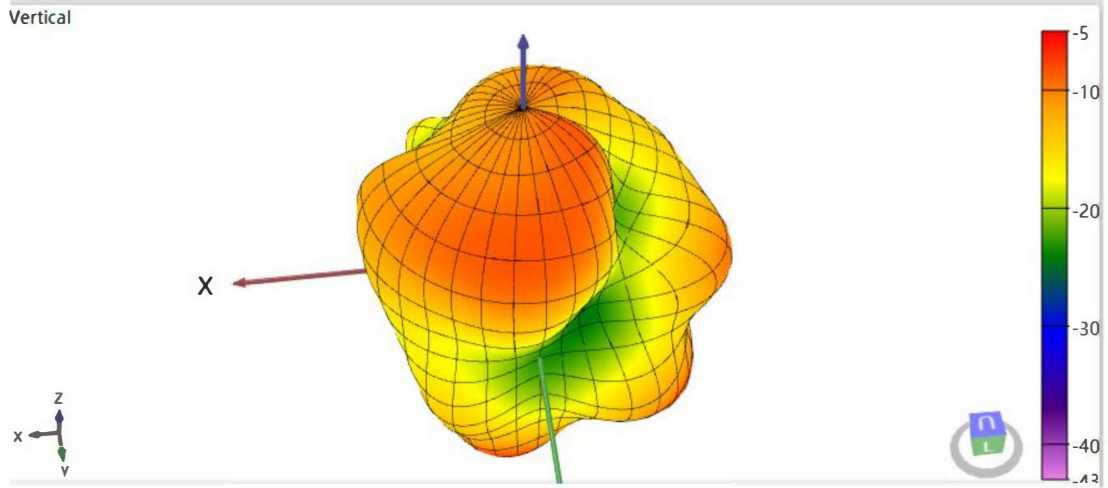
## Antenna 2440MHz 2D-Phi Pattern



## Antenna 2440MHz 3D-Horizontal Pattern



### Antenna 2440MHz 3D-Vertical Pattern



### Antenna 2440MHz 3D-Total Pattern

