

Antenna Passive Test Report

Product Name: Mesh12X Antenna

Product Stage: Engineering Machine

Test information

product	Mesh12X ANT		product No.	
test category	Antenna passive test	test the venue	S Parameters (laboratory) radiation parameters	
test date	2020.12.1	Testers	Xiao Pengcheng	
environment	temperature: 24°C-28°C	Relative humidity: 56%-58%	Atmospheric pressure: 100kPa-101kPa	
test project	Room temperature electrical properties: ✓ Return loss ✓ Gain ✓ pattern ✓ port isolation			
Test foundation	Test report, see test attached			
Test overview	The normal temperature electrical performance of the antenna was tested, and the S-parameter and radiation parameters of the antenna were mainly tested.			
test in conclusion	Antenna performance meets requirements			

Room temperature electrical performance test results

2. 4G ANT1						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	2412-2483	2412-2483		OK
2	Gain	dBi	3	2412	3.78	OK
				2450	3.80	OK
				2483	3.78	OK
3	return loss	dB	≤ -10	2412	-16	OK
				2450	-15	OK
				2483	-14	OK
4	Antenna efficiency		$\geq 60\%$	2412	75%	OK
				2450	76%	OK
				2483	77%	OK

2. 4G ANT2						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	2412-2483	2412-2483		OK
2	Gain	dBi	3	2412	3.72	OK
				2450	3.77	OK
				2483	3.75	OK
3	return loss	dB	≤ -10	2412	-18	OK
				2450	-18	OK
				2483	-16	OK
4	Antenna efficiency		$\geq 60\%$	2412	77%	OK
				2450	78%	OK
				2483	79%	OK

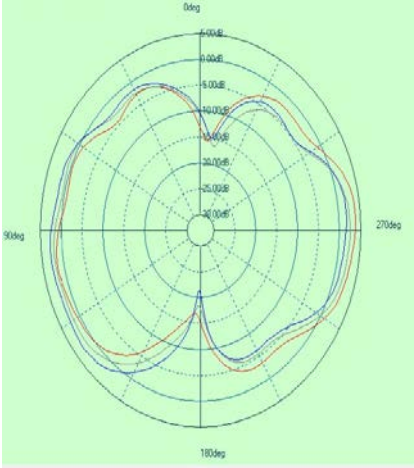
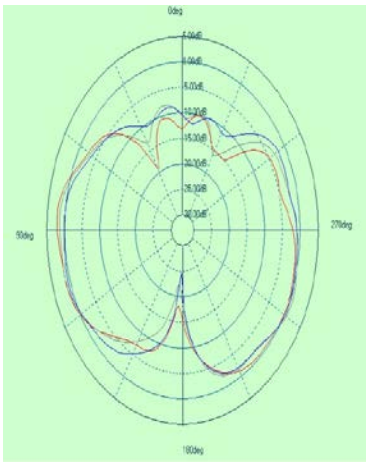
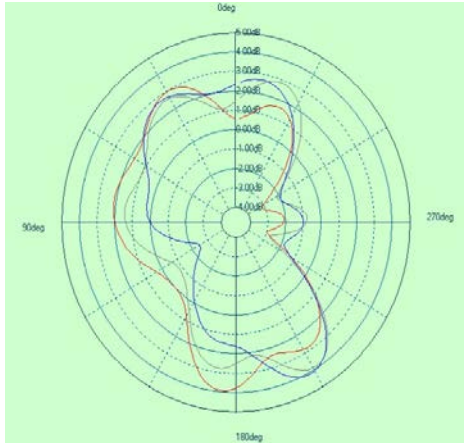
5G-Low band ANT1						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	5150-5350	5150-5350		OK
2	Gain	dBi	4.5	5150	4.12	OK
				5250	4.5	OK
				5350	4.21	OK
3	return loss	dB	≤ -10	5150	-14	OK
				5250	-15	OK
				5350	-13	OK
4	Antenna efficiency		$\geq 60\%$	5150	69%	OK
				5250	71%	OK
				5350	72%	OK

5G-Low band ANT2						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	5150-5350	5150-5350		OK
2	Gain	dBi	4.5	5150	4.05	OK
				5250	4.5	OK
				5350	4.41	OK
3	return loss	dB	≤ -10	5150	-15	OK
				5250	-15	OK
				5350	-13	OK
4	Antenna efficiency		$\geq 60\%$	5150	74%	OK
				5250	72%	OK
				5350	71%	OK

5G-high band ANT1						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	5700-5850	5700-5850		OK
2	Gain	dBi	4.5	5700	4.5	OK
				5750	4.5	OK
				5850	4.31	OK
3	return loss	dB	≤ -10	5700	-18	OK
				5750	-30	OK
				5850	-25	OK
4	Antenna efficiency		$\geq 60\%$	5700	65%	OK
				5750	67%	OK
				5850	69%	OK

5G-high band ANT2						
No.	Test items	unit	performance requirements	test result		Judgment
1	Frequency Range	MHz	5700-5850	5700-5850		OK
2	Gain	dBi	3	5700	4.5	OK
				5750	4.5	OK
				5850	4.41	OK
3	return loss	dB	≤ -10	5700	-24	OK
				5750	-19	OK
				5850	-16	OK
4	Antenna efficiency		$\geq 60\%$	5700	66%	OK
				5750	69%	OK
				5850	72%	OK

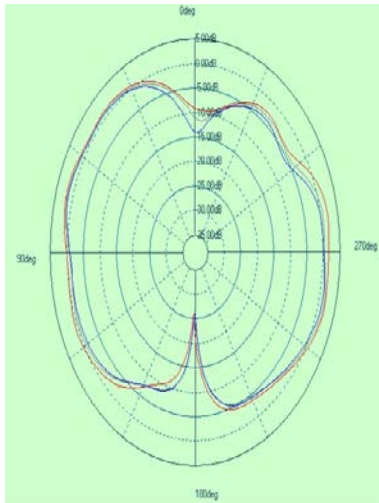
Radiation parameter testing

2. 4G ANT1		
2D Radiation pattern		
Phi=0	Phi=90	Theta=90
 <p>A polar plot showing the radiation pattern for Phi=0. The plot is circular with concentric dashed lines representing gain levels from 0.00dB to 6.00dB. The horizontal axis is labeled 0deg, 90deg, 180deg, and 270deg. The vertical axis is labeled 0deg, 30deg, 60deg, 90deg, 120deg, 150deg, 180deg, 210deg, 240deg, 270deg, and 300deg. The radiation pattern shows a main lobe centered at 0deg with a peak gain of approximately 5.5dB, and a smaller lobe at 180deg.</p>	 <p>A polar plot showing the radiation pattern for Phi=90. The plot is circular with concentric dashed lines representing gain levels from 0.00dB to 6.00dB. The horizontal axis is labeled 0deg, 90deg, 180deg, and 270deg. The vertical axis is labeled 0deg, 30deg, 60deg, 90deg, 120deg, 150deg, 180deg, 210deg, 240deg, 270deg, and 300deg. The radiation pattern shows a main lobe centered at 90deg with a peak gain of approximately 5.5dB, and a smaller lobe at 270deg.</p>	 <p>A polar plot showing the radiation pattern for Theta=90. The plot is circular with concentric dashed lines representing gain levels from 0.00dB to 6.00dB. The horizontal axis is labeled 0deg, 90deg, 180deg, and 270deg. The vertical axis is labeled 0deg, 30deg, 60deg, 90deg, 120deg, 150deg, 180deg, 210deg, 240deg, 270deg, and 300deg. The radiation pattern shows a main lobe centered at 0deg with a peak gain of approximately 5.5dB, and a smaller lobe at 180deg.</p>

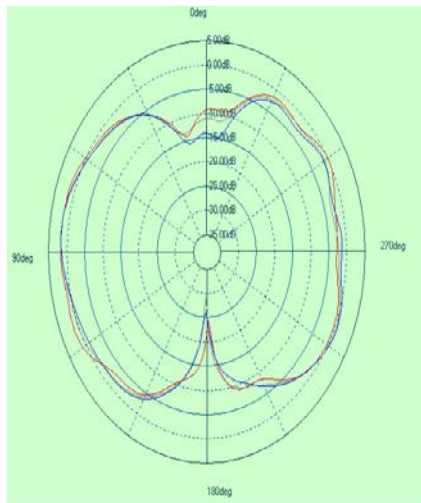
2. 4G ANT2

2D Radiation pattern

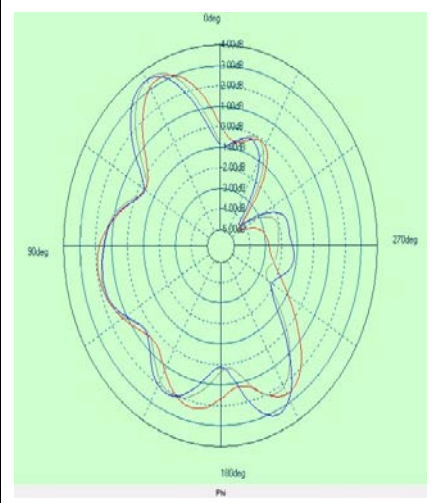
Phi=0



Phi=90



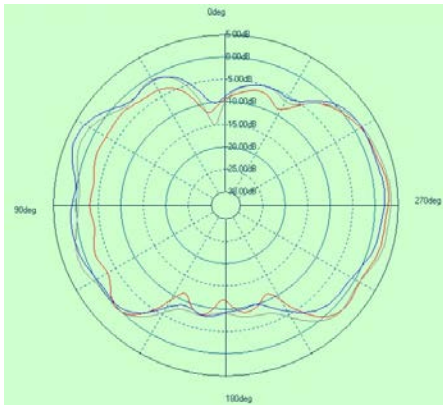
Theta=90



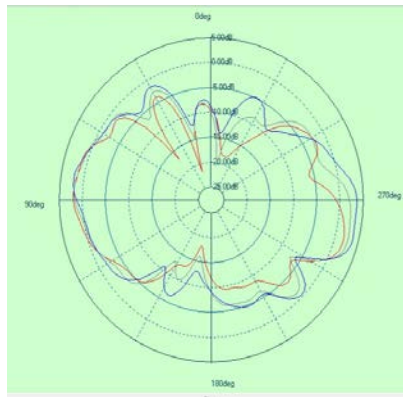
5G-Low band ANT1

2D Radiation pattern

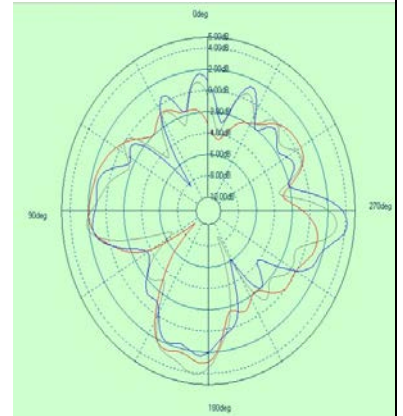
Phi=0



Phi=90



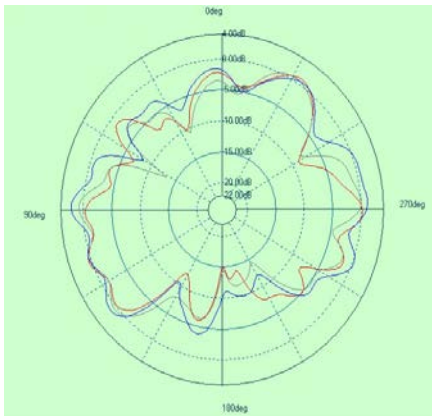
Theta=90



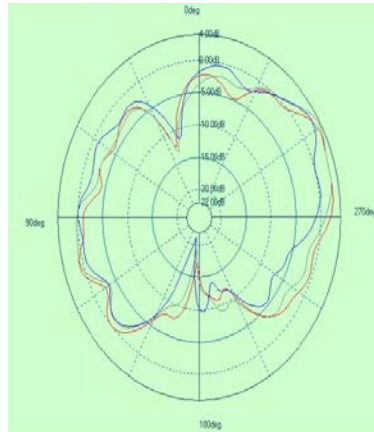
5G-Low band ANT2

2D Radiation pattern

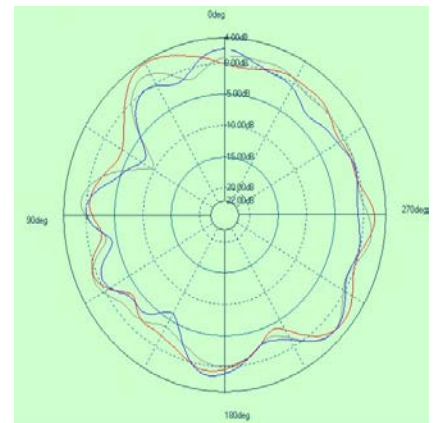
Phi=0



Phi=90



Theta=90



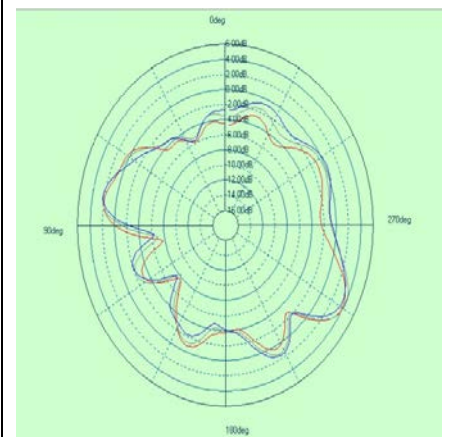
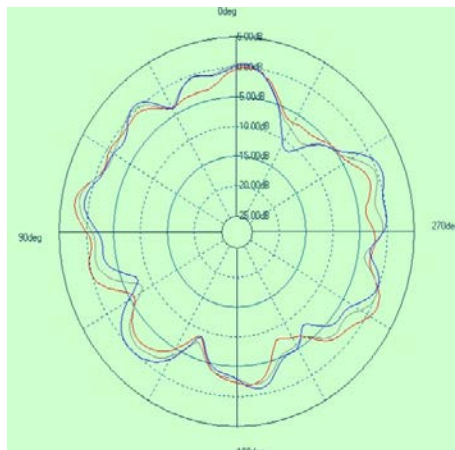
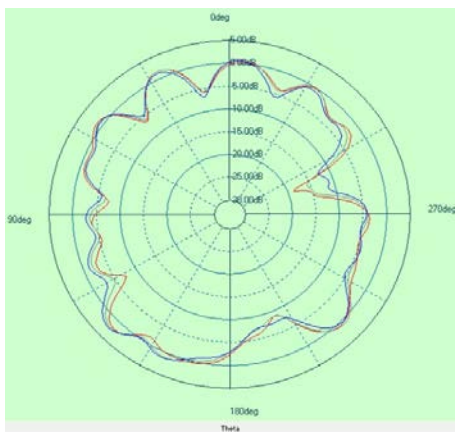
5G-high band ANT1

2D Radiation pattern

Phi=0

Phi=90

Theta=90



5G-high band ANT2

2D Radiation pattern

Phi=0

Phi=90

Theta=90

