JUICERO WIFI antenna data report

SAA

2016-02-25

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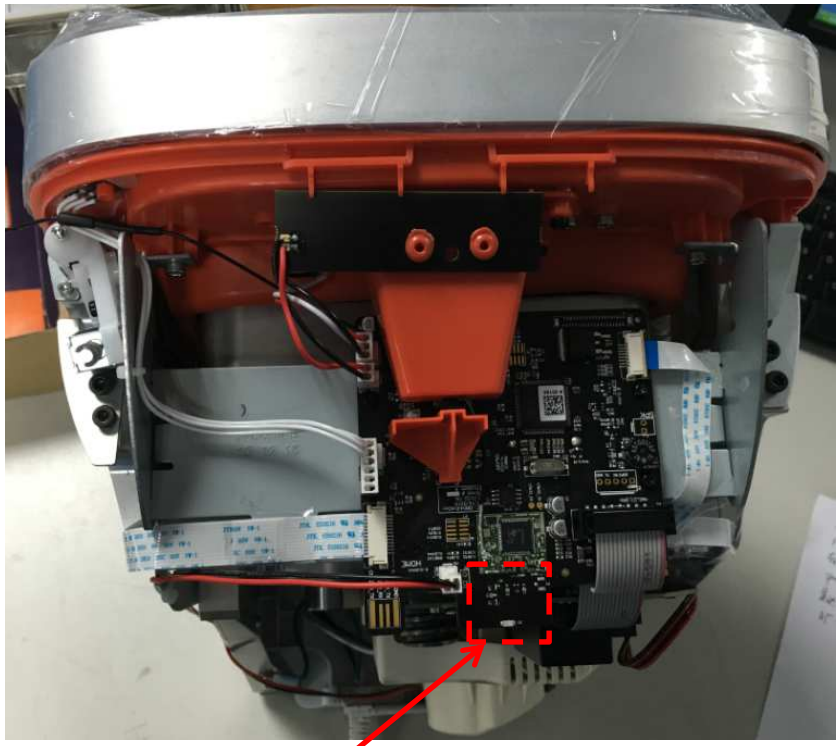
Antenna in the device



Original antenna in the device

SAA sample in the device

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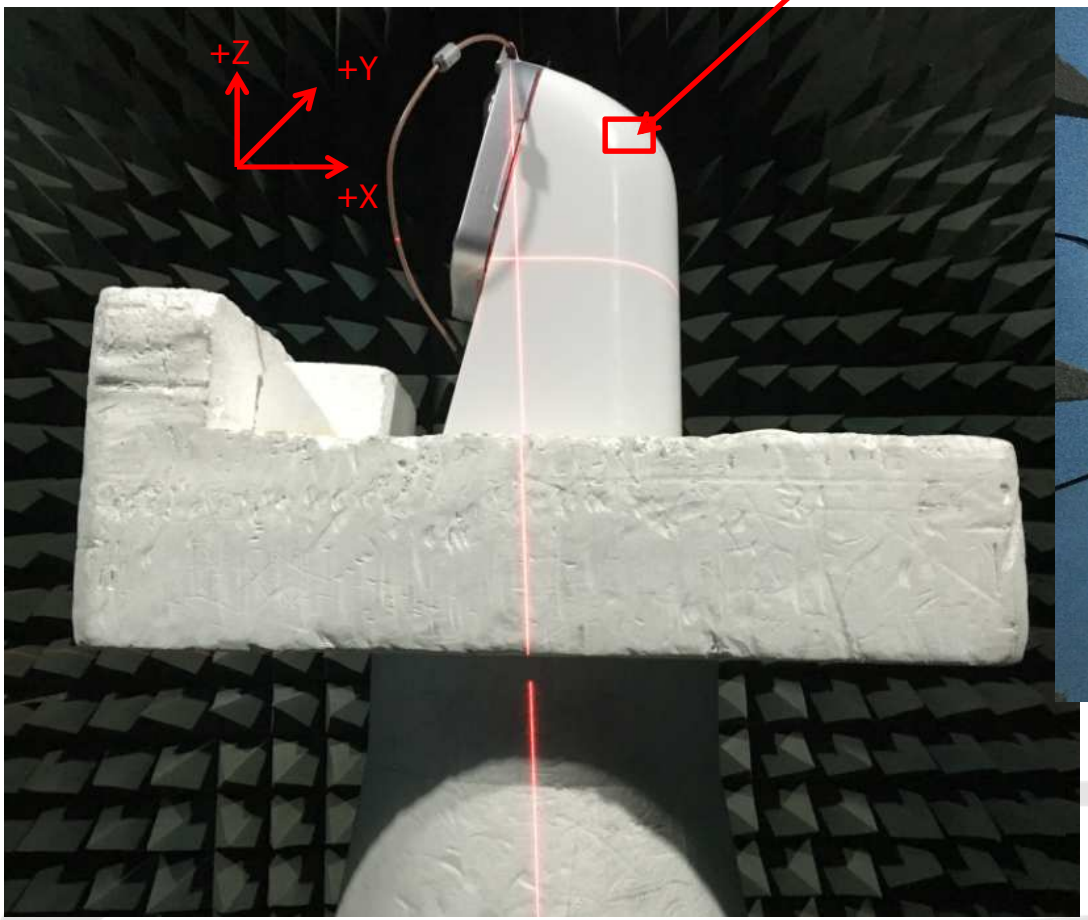
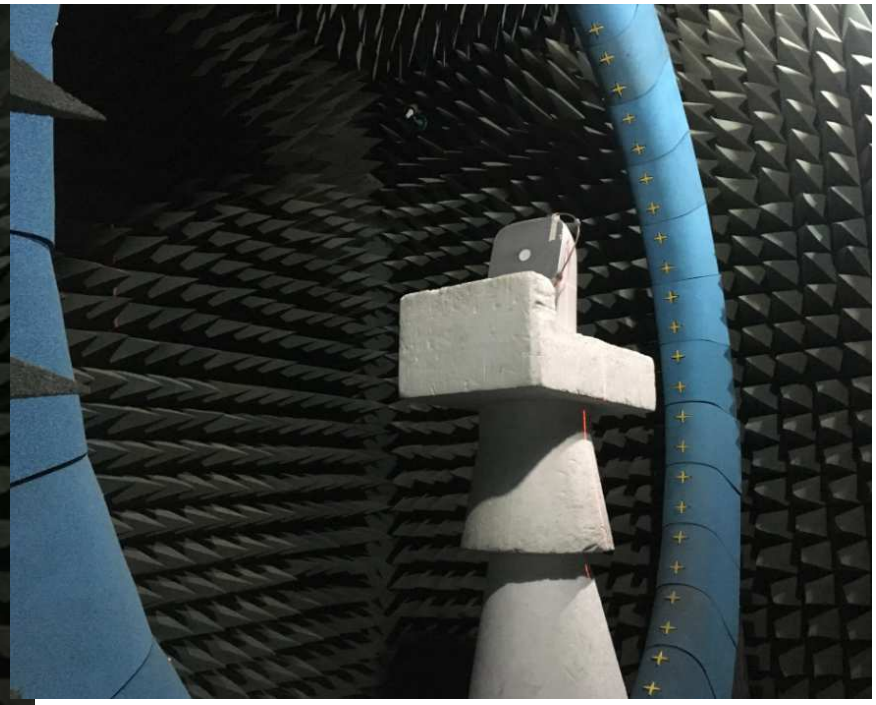
Test pictures

The antenna is facing +X direction.





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Performance of Original antenna

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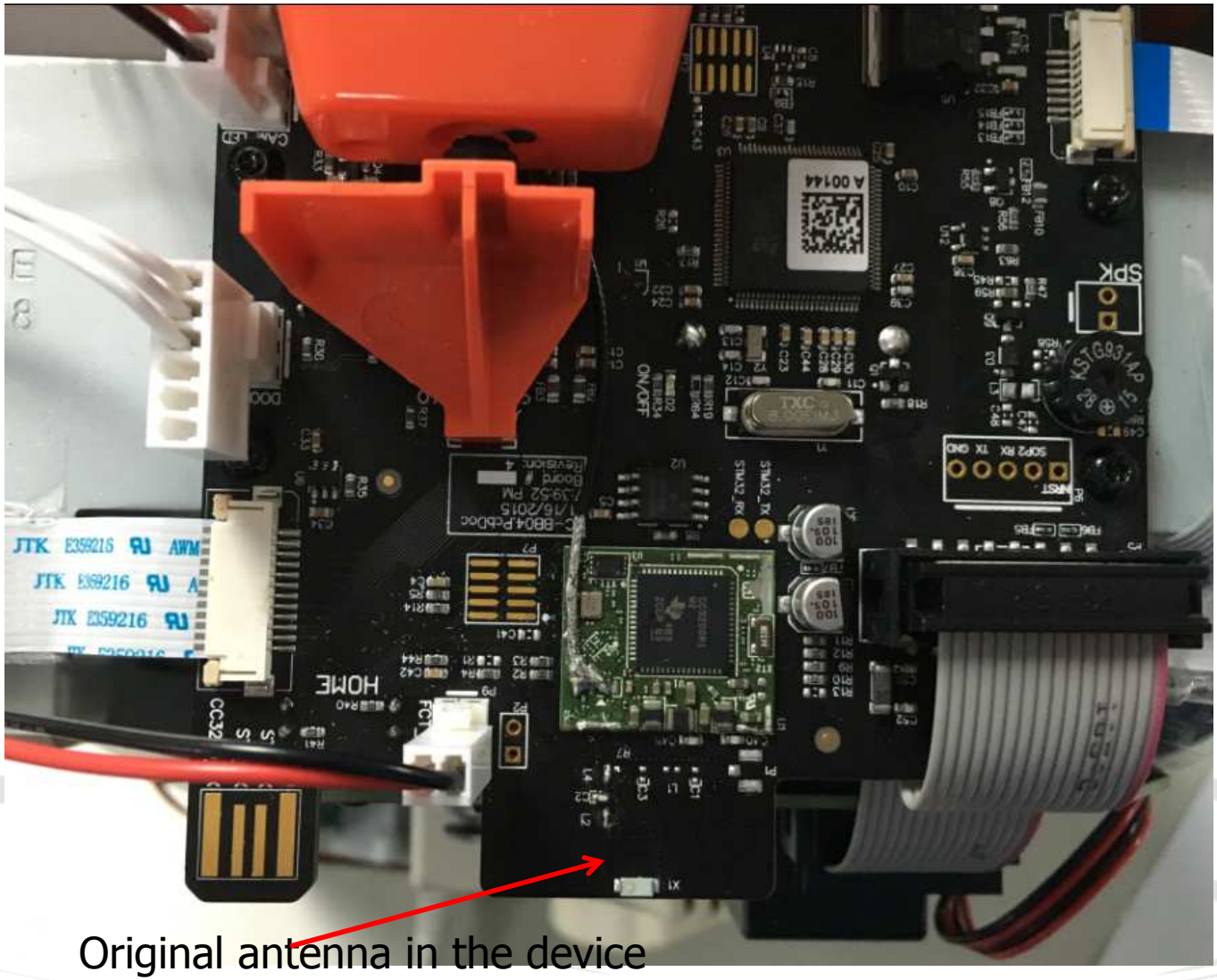
Original antenna



Original antenna in the device

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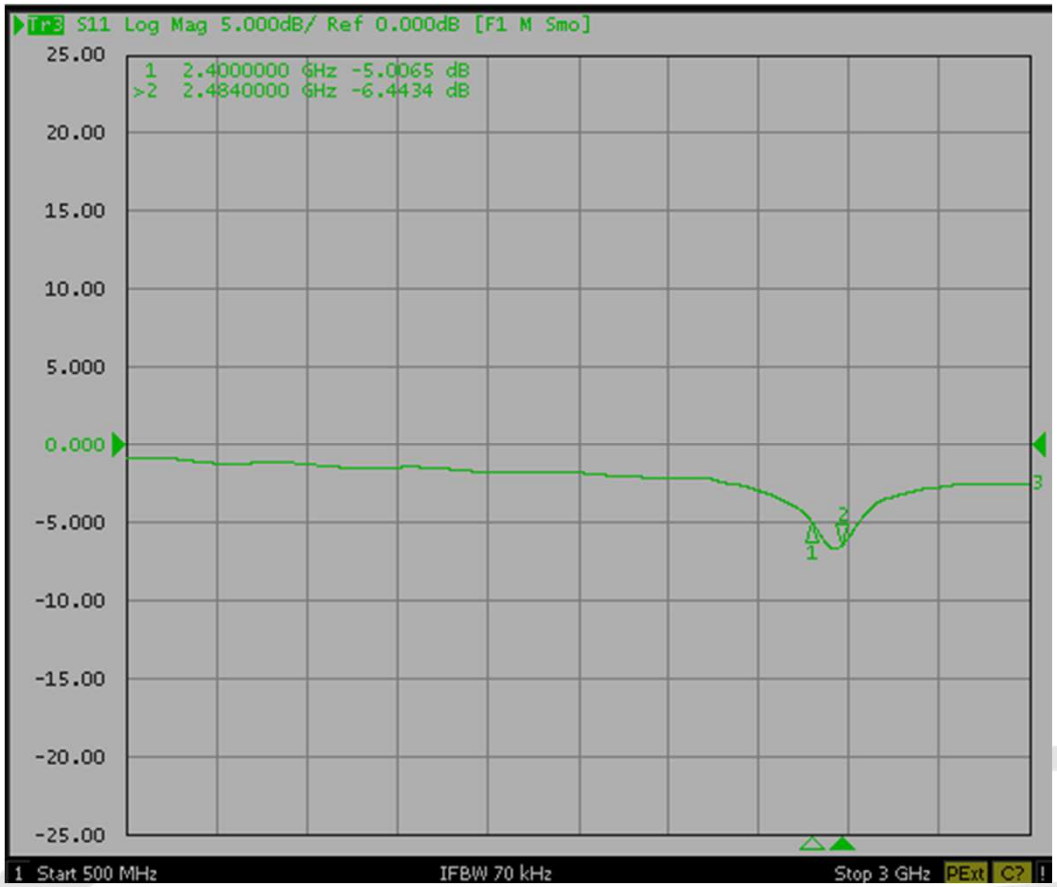
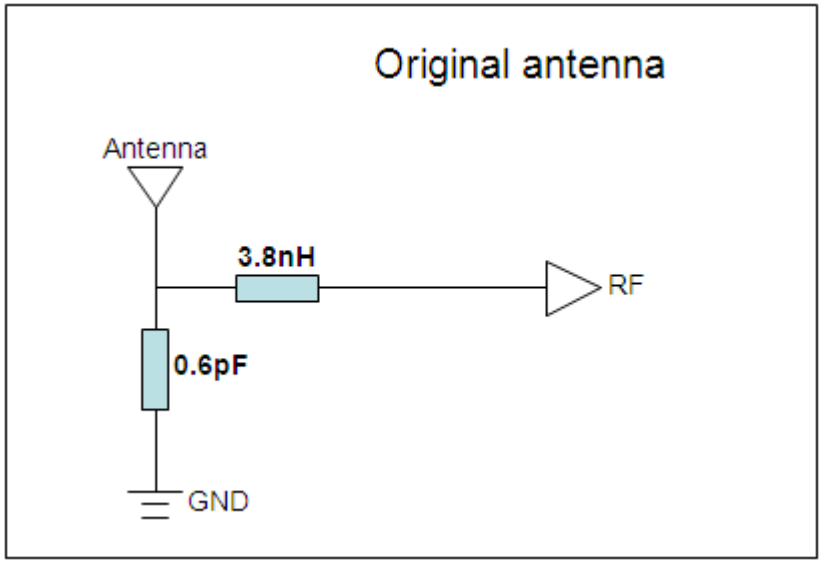
Return loss and matching circuit - Original antenna





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Efficiency and Peak gain

Frequency(MHz)	Effi(%)	Effi(dB)	Peak Gain(dB)
2400	19.4%	-7.1	-0.3
2410	20.4%	-6.9	-0.2
2420	22.4%	-6.5	0.3
2430	26.7%	-5.7	1.3
2440	26.3%	-5.8	1.1
2450	27.0%	-5.7	1.1
2460	25.9%	-5.9	1.1
2470	26.7%	-5.7	1.1
2480	26.6%	-5.8	1.0
2490	25.9%	-5.9	1.0
2500	22.7%	-6.4	0.3

Original antenna

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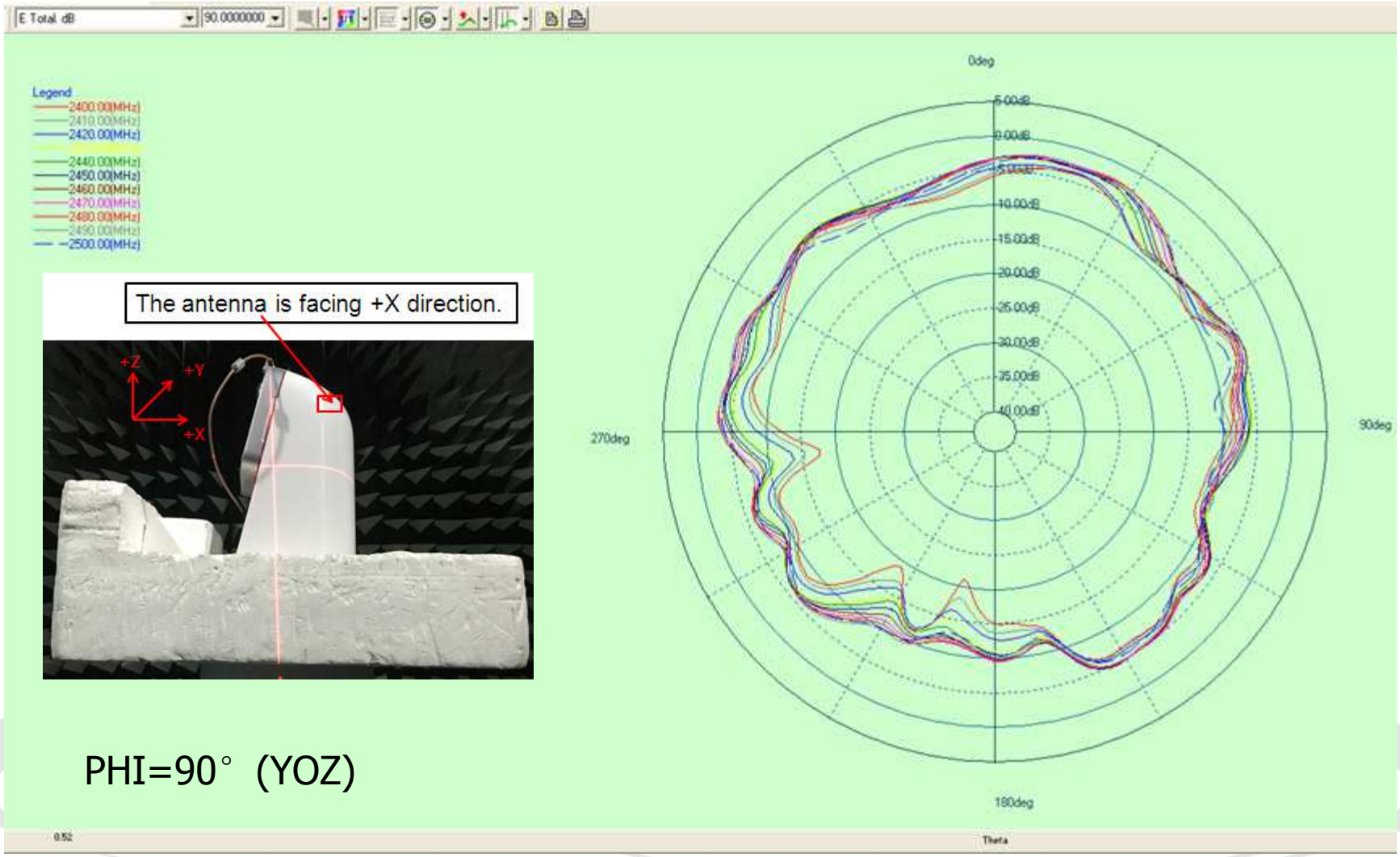
2D radiation pattern

Original antenna



PHI=90° (YOZ)

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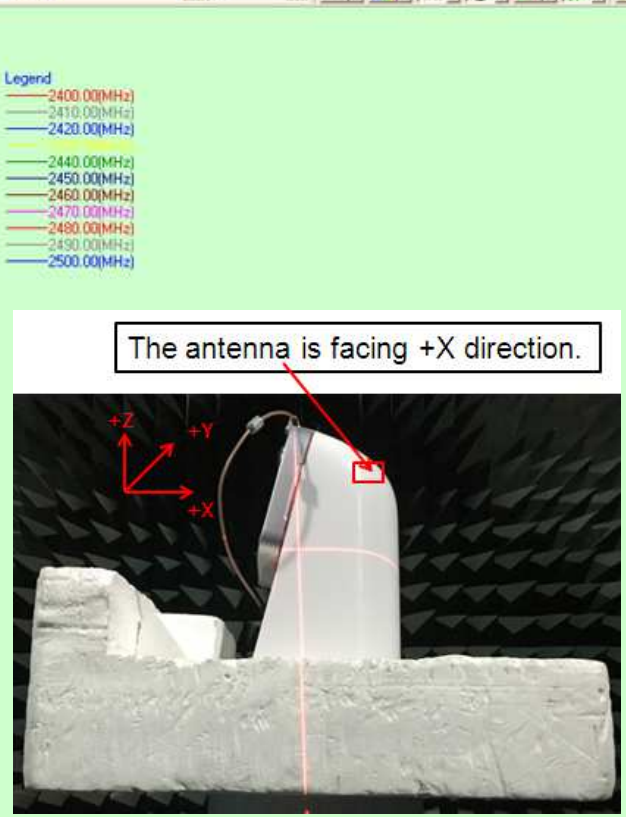
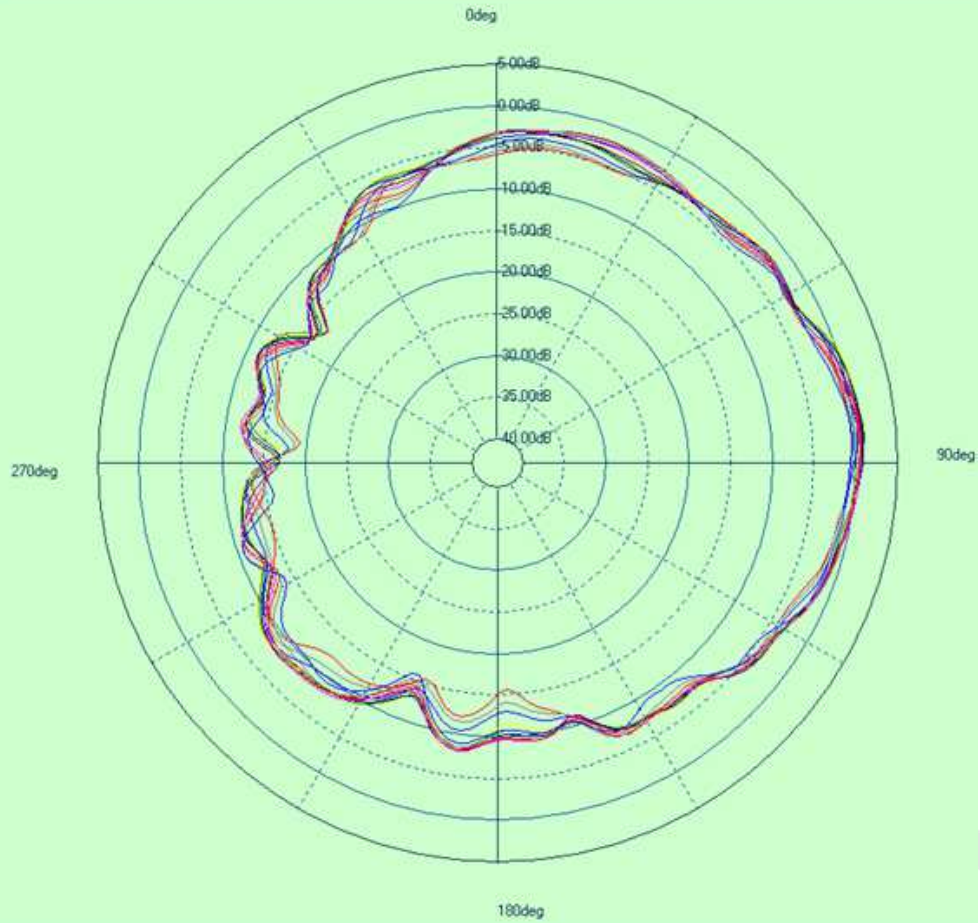
2D radiation pattern

Original antenna





PHI=0° (XOZ)

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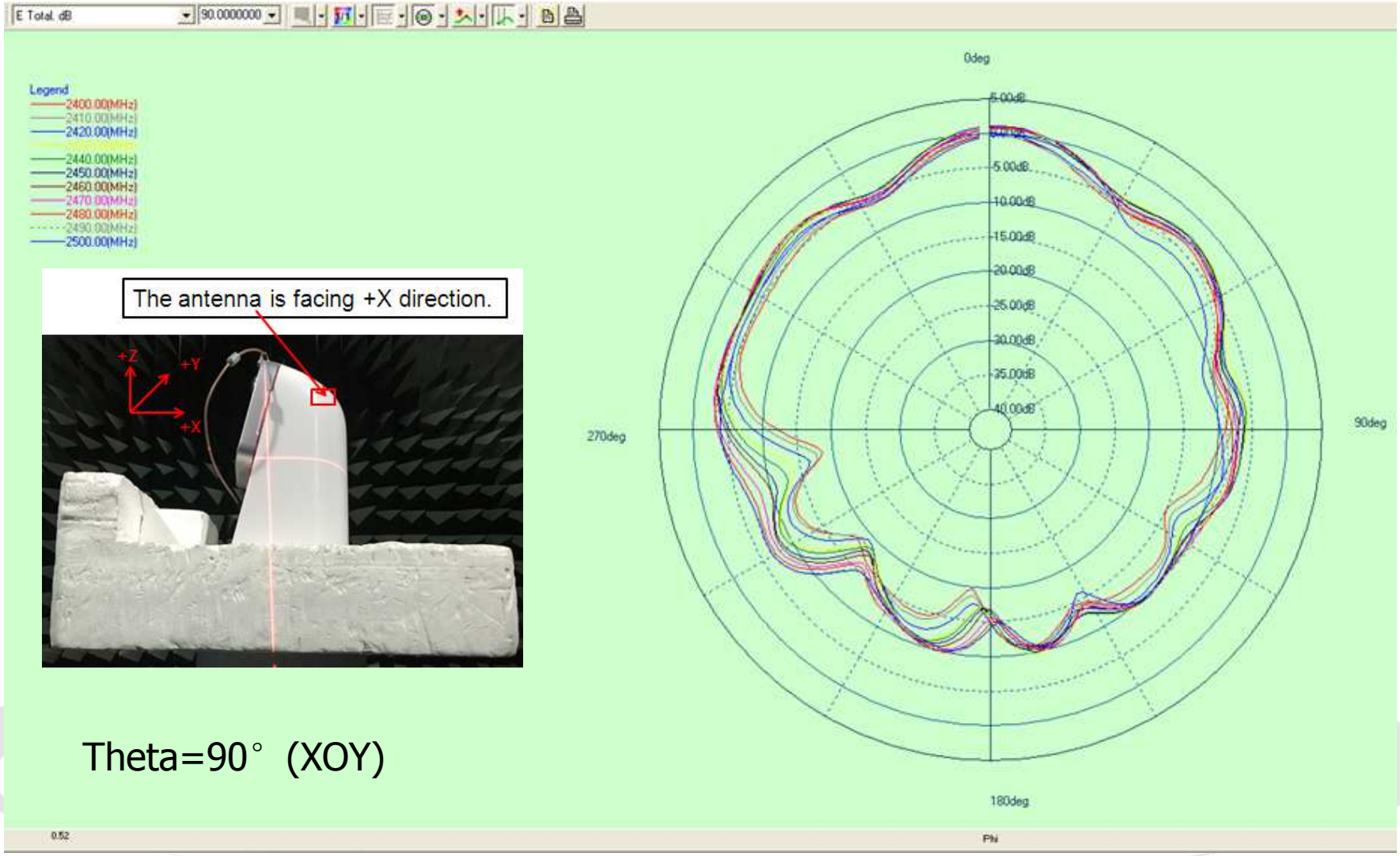
2D radiation pattern

Original antenna



Theta=90° (XOY)

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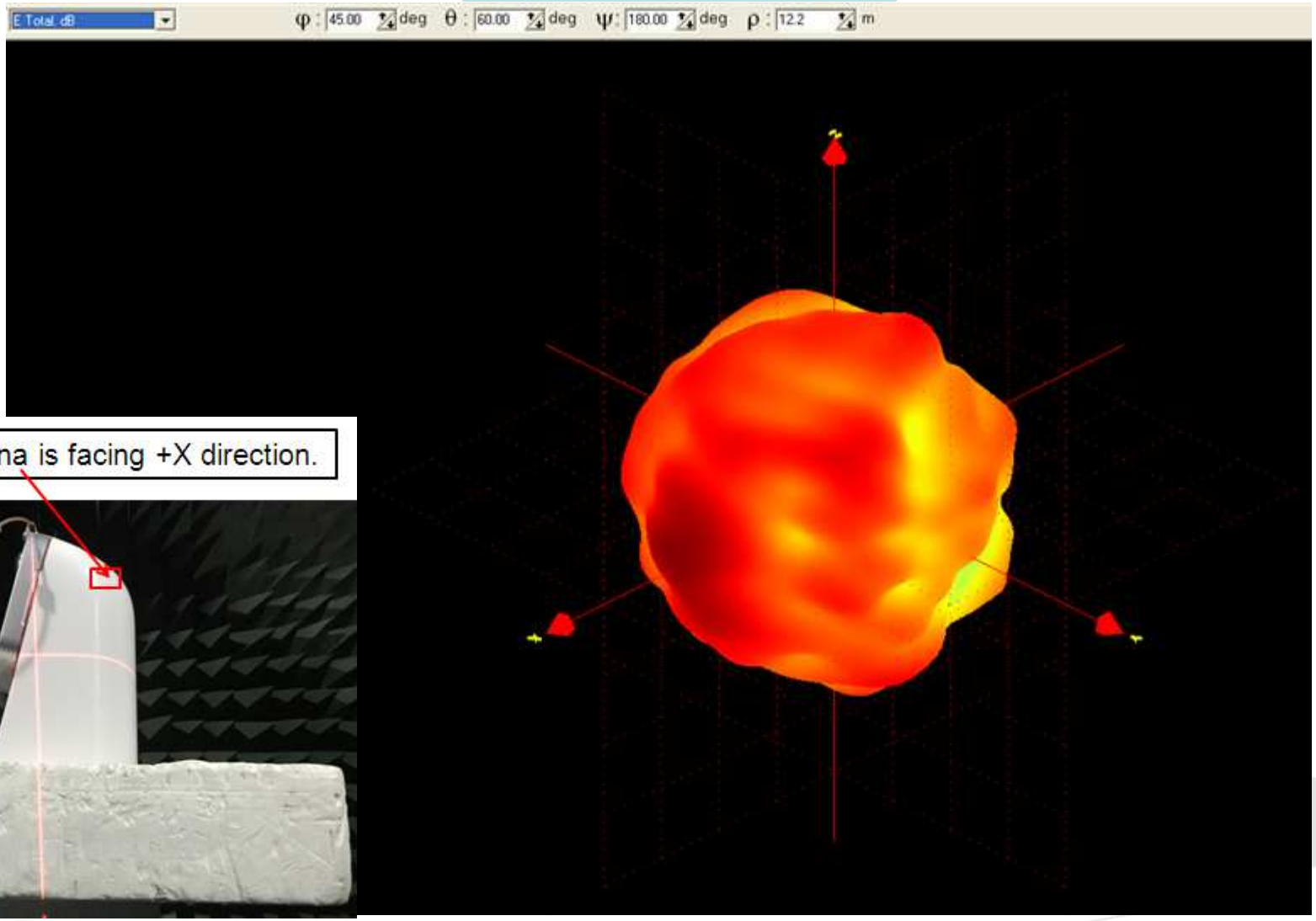
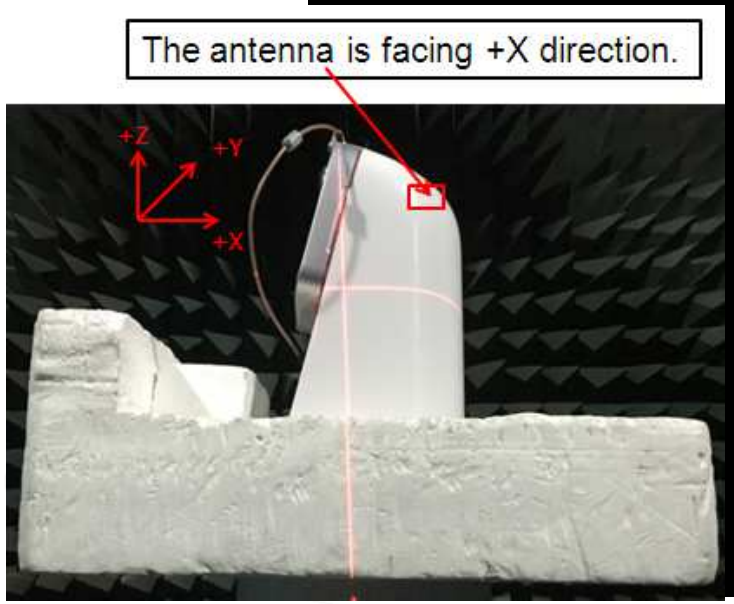
3D radiation pattern

Original antenna





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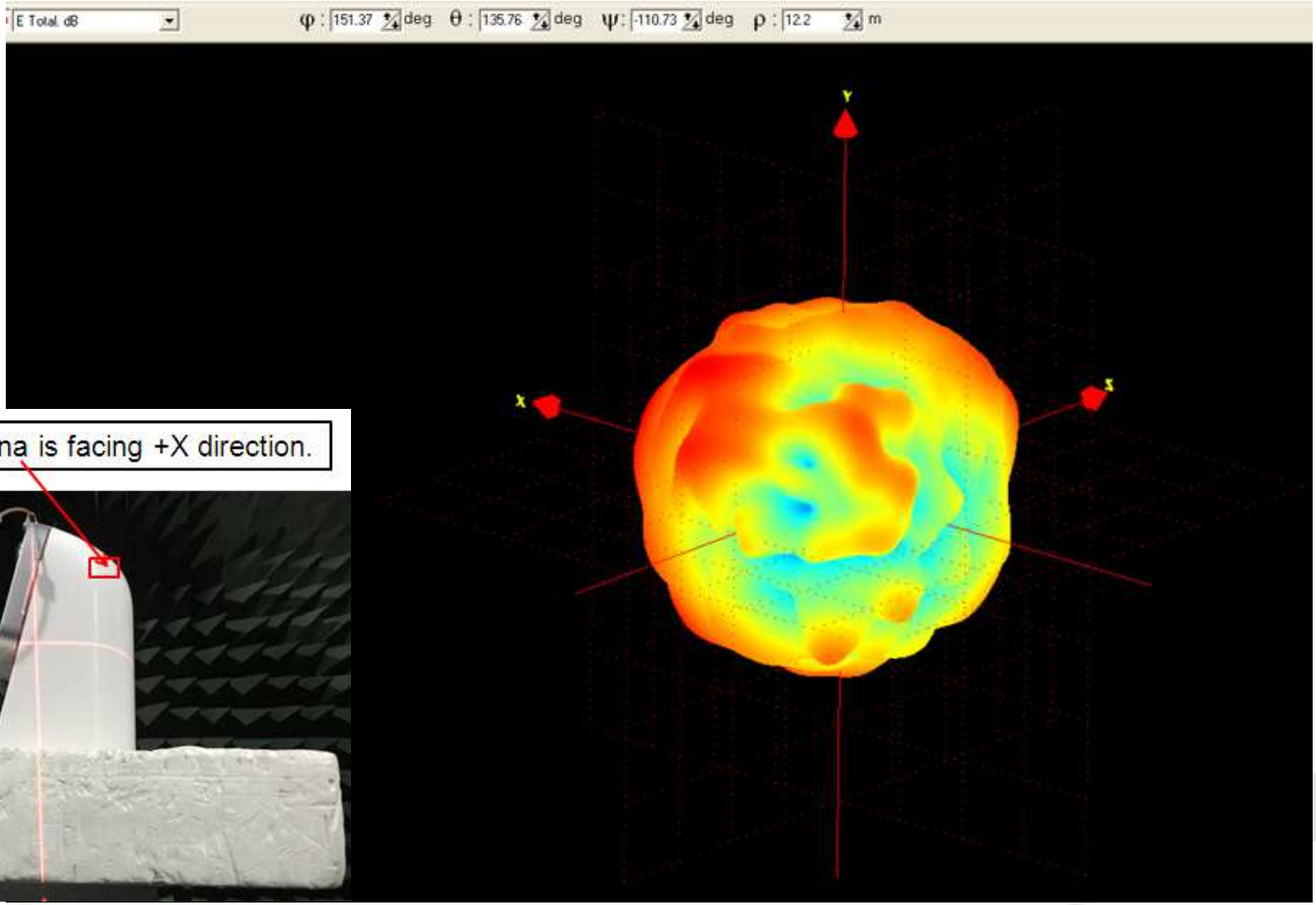
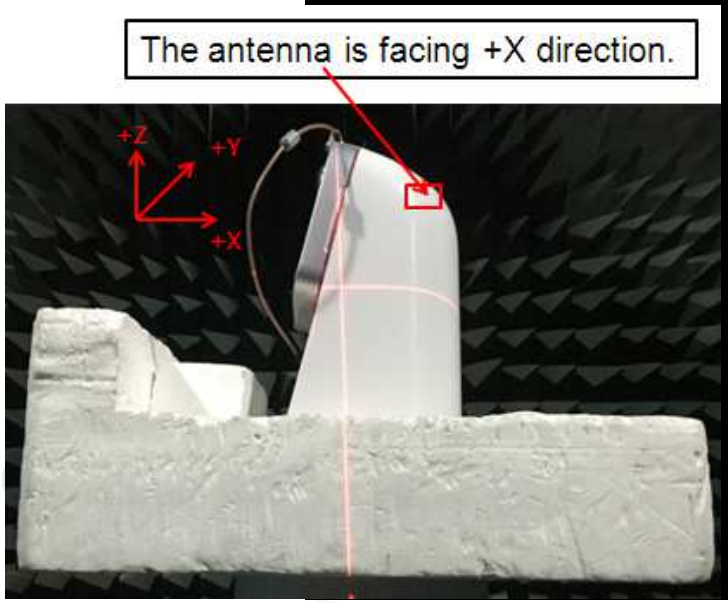
3D radiation pattern

Original antenna





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Performance of SAA antenna

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SAA antenna

SAA antenna in the device

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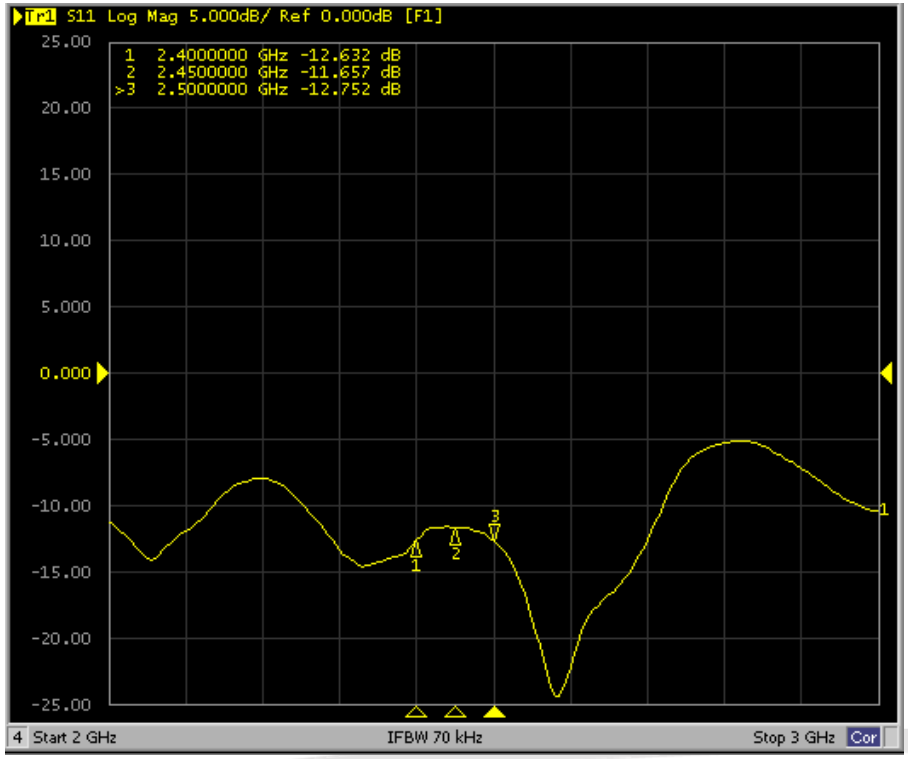
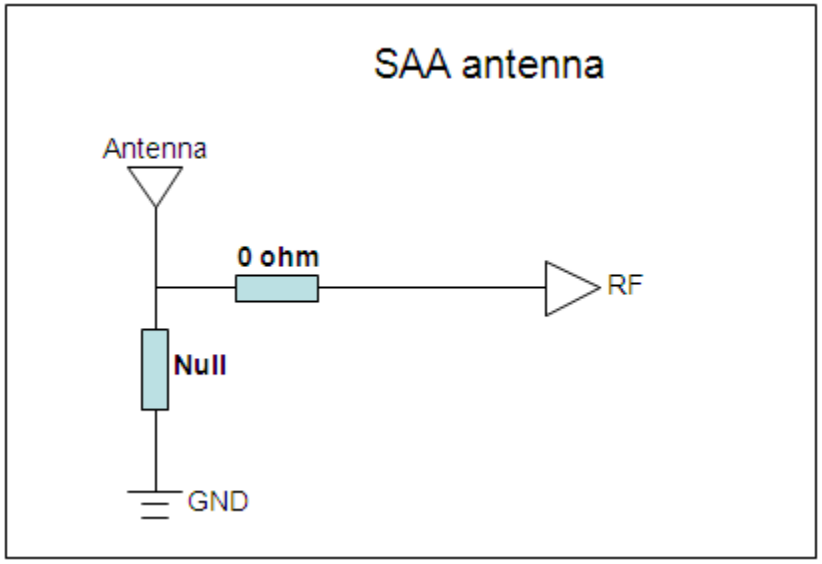
Return loss and matching circuit - SAA antenna





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Efficiency and Peak gain

Frequency(MHz)	Effi(%)	Effi(dB)	Peak Gain(dB)
2400	41.6%	-3.81	2.79
2410	40.7%	-3.90	2.88
2420	41.0%	-3.87	3.29
2430	40.6%	-3.92	3.54
2440	40.5%	-3.93	3.60
2450	40.2%	-3.95	3.80
2460	40.4%	-3.93	3.95
2470	40.4%	-3.94	3.69
2480	40.2%	-3.96	3.49
2490	39.7%	-4.01	3.39
2500	39.5%	-4.03	3.08

SAA antenna real test data

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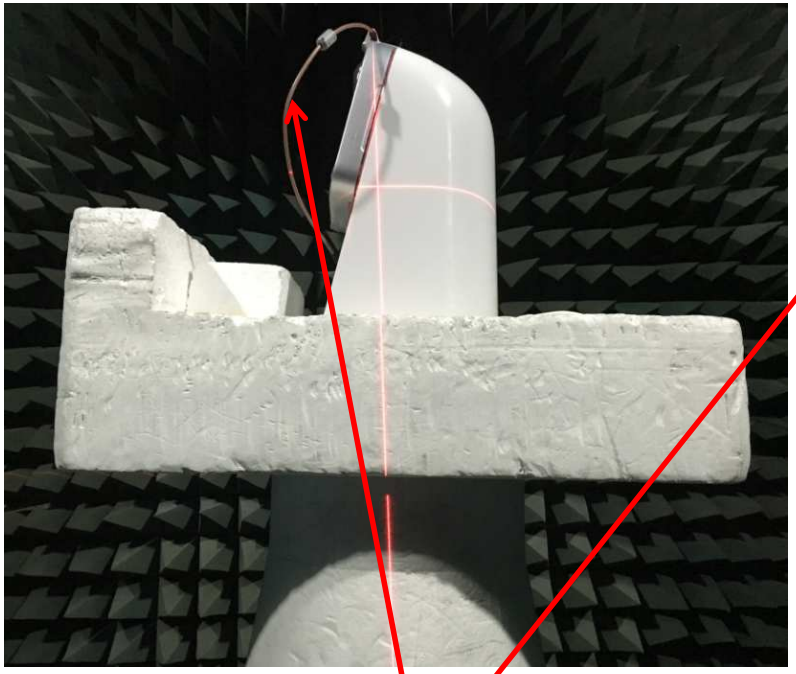

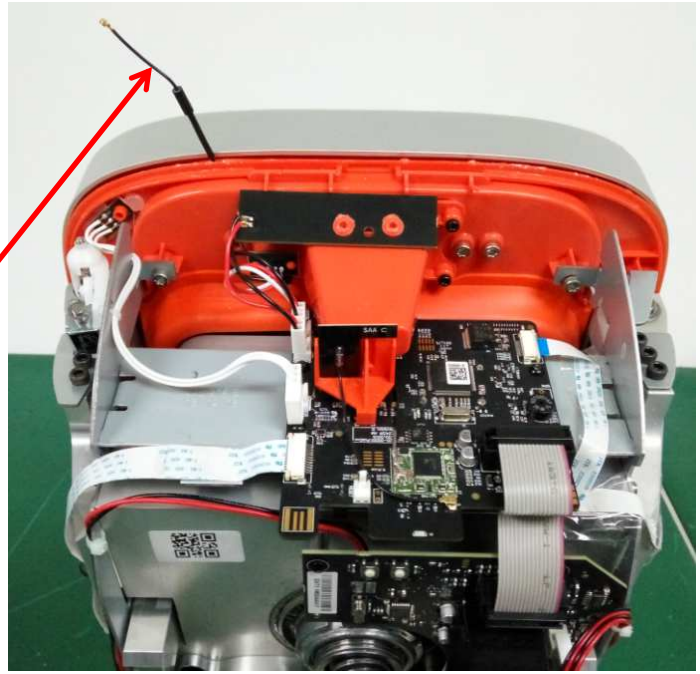

We test the extra cable loss, the extra cable loss is about 1.3dB.

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Efficiency and Peak gain

Frequency(MHz)	Effi(%)	Effi(dB)	Peak Gain(dB)
2400	56.1%	-2.51	4.09
2410	54.9%	-2.60	4.18
2420	55.4%	-2.57	4.59
2430	54.7%	-2.62	4.84
2440	54.6%	-2.63	4.90
2450	54.3%	-2.65	5.10
2460	54.6%	-2.63	5.25
2470	54.5%	-2.64	4.99
2480	54.2%	-2.66	4.79
2490	53.6%	-2.71	4.69
2500	53.3%	-2.73	4.38

If we consider influence of the extra cable loss, the SAA antenna performance show as above.

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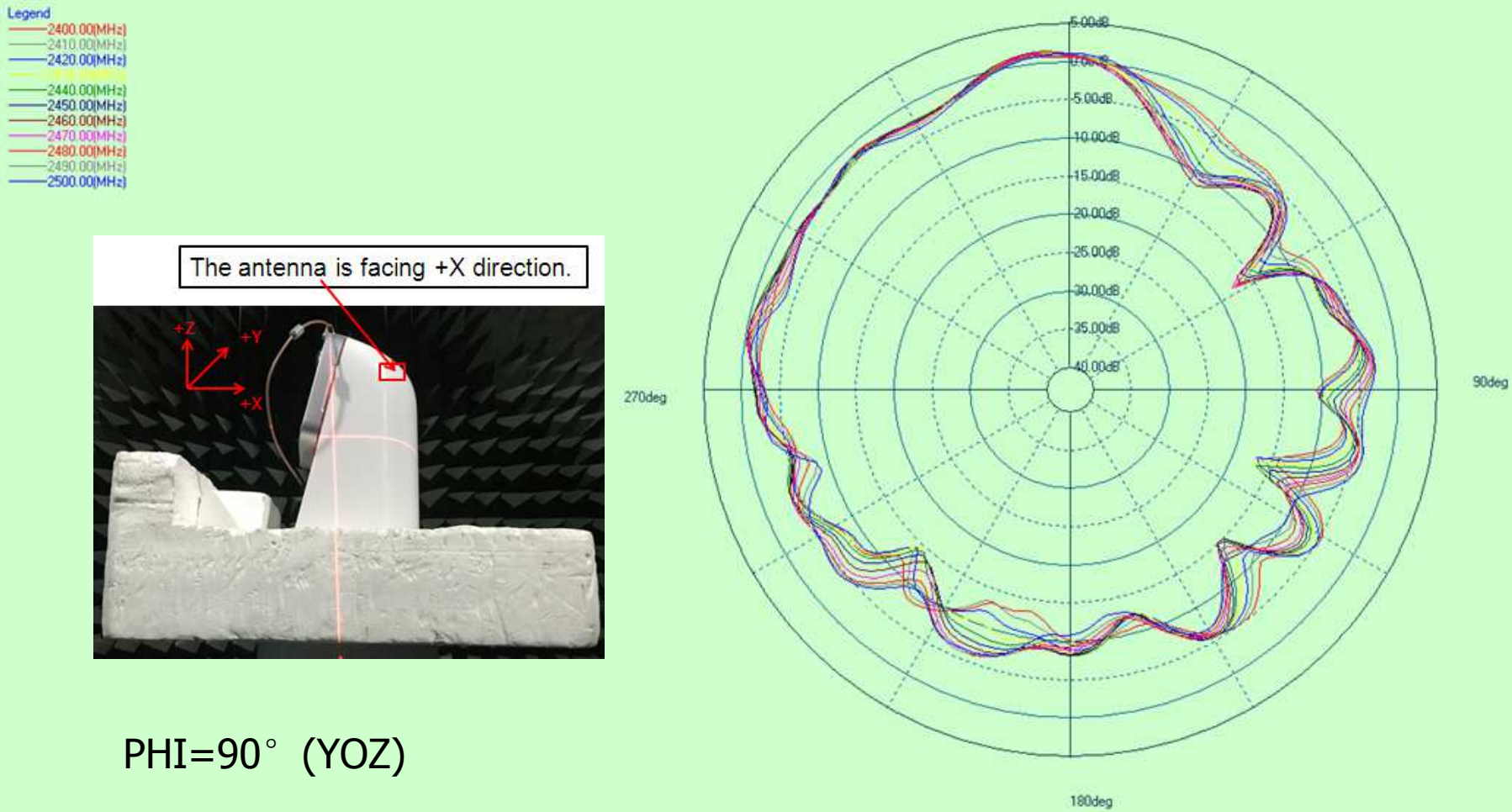
2D radiation pattern

SAA antenna



PHI=90° (YOZ)

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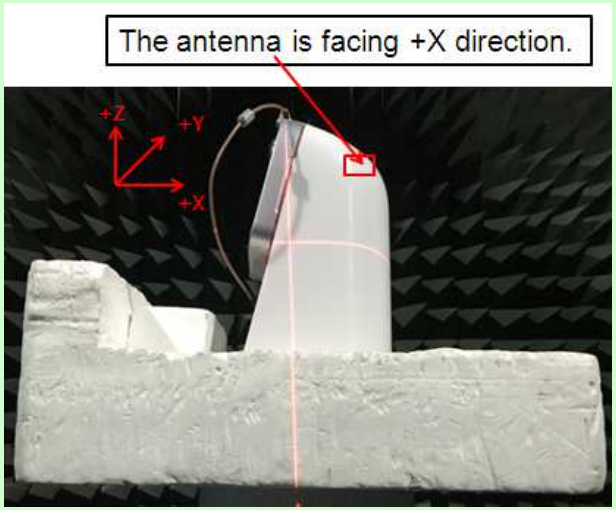
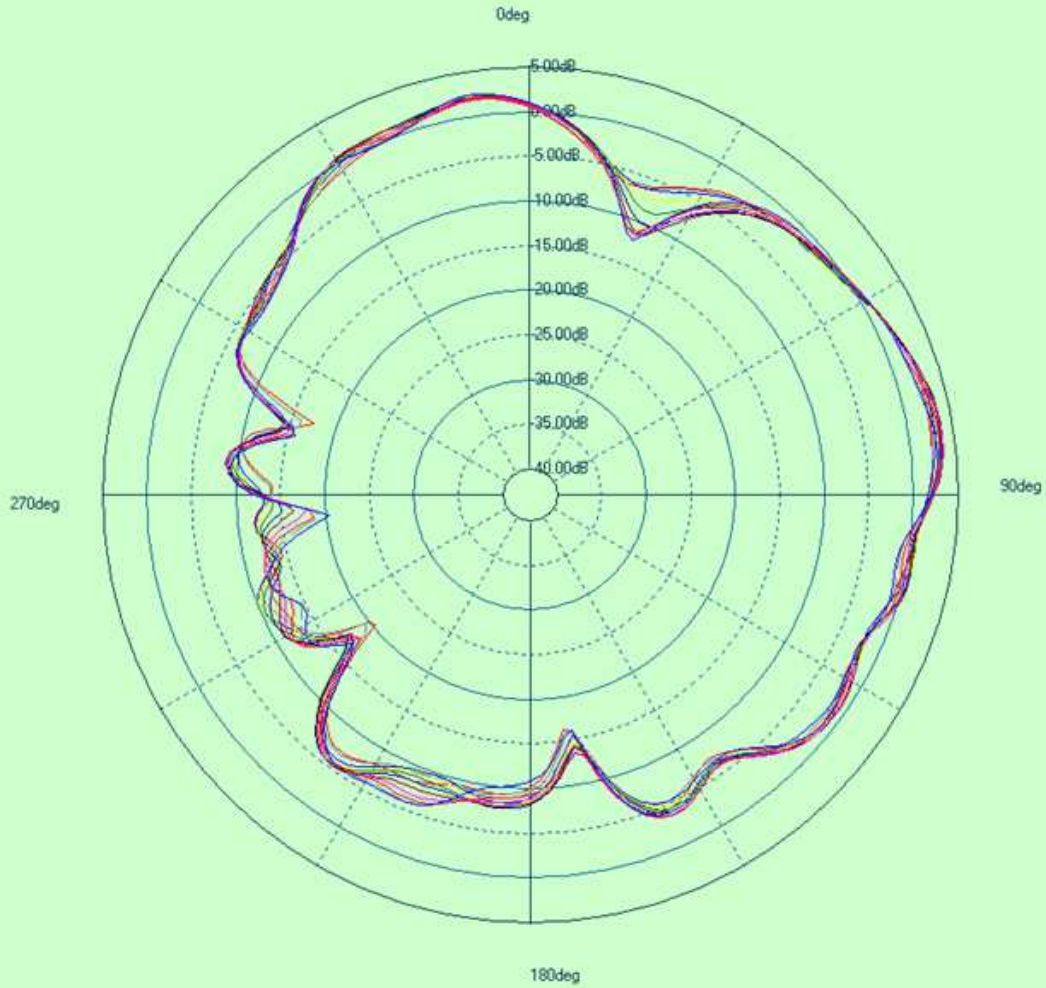
2D radiation pattern

SAA antenna





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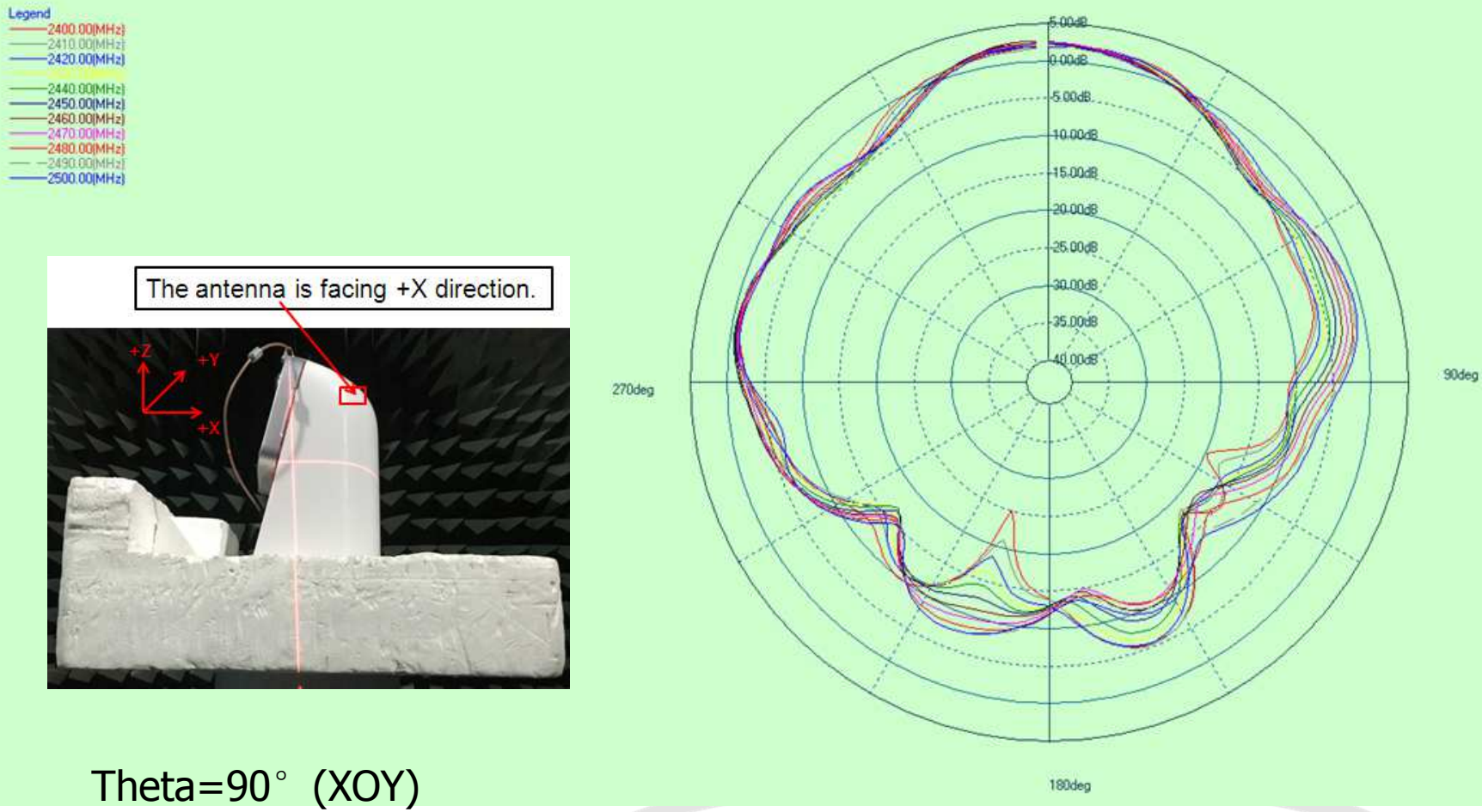
2D radiation pattern

SAA antenna



Theta=90° (XOY)

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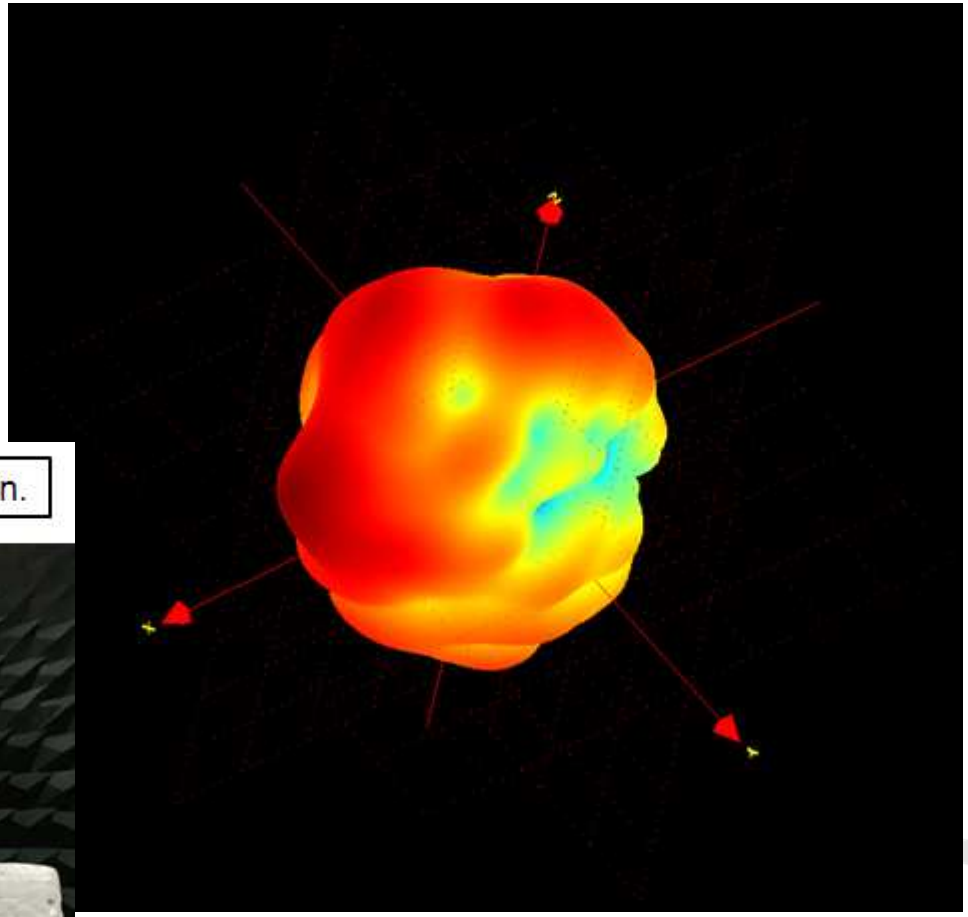
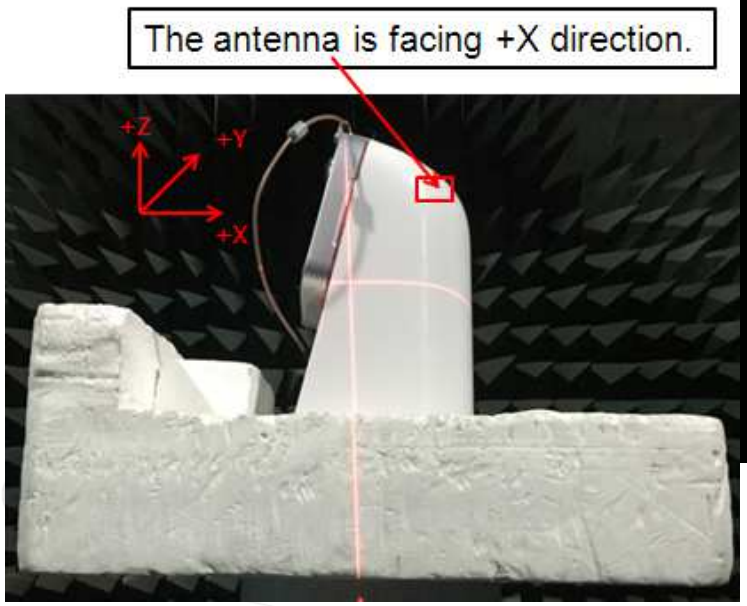
3D radiation pattern

SAA antenna





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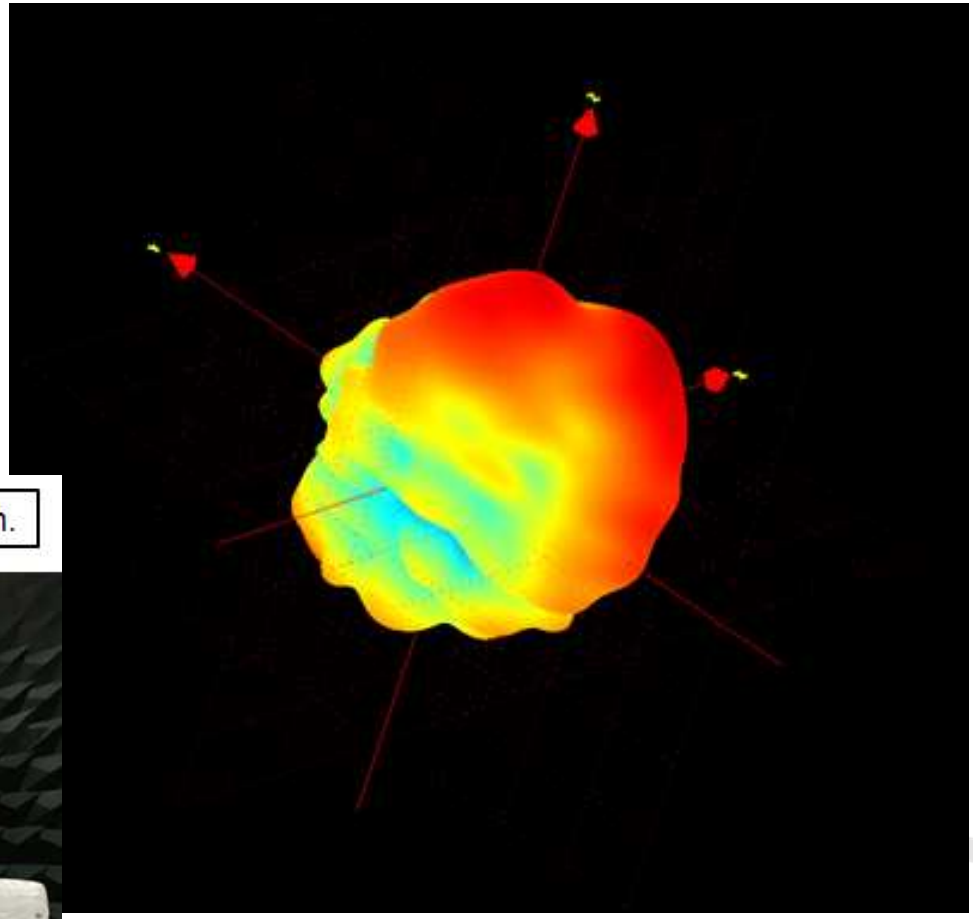
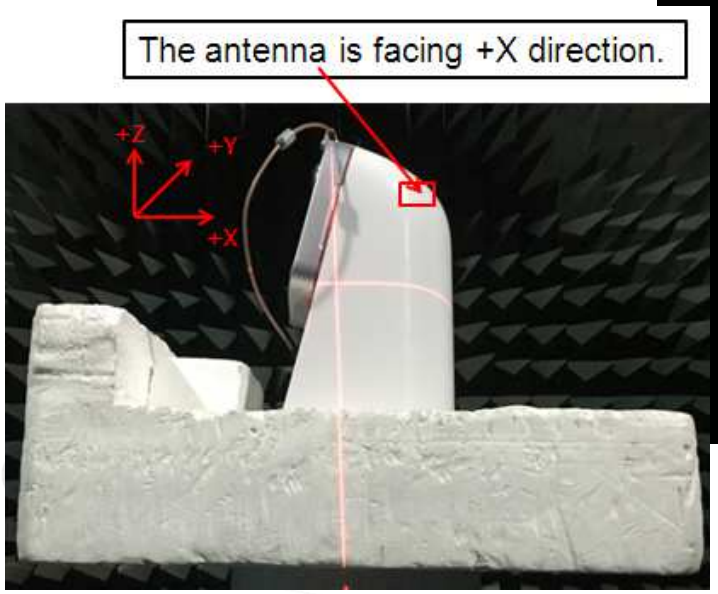
3D radiation pattern

SAA antenna





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Comparison

Frequency(MHz)	Effi(%)	Effi(dB)	Peak Gain(dB)
2400	19.4%	-7.1	-0.3
2410	20.4%	-6.9	-0.2
2420	22.4%	-6.5	0.3
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2480	26.6%	-5.8	1.0
2490	25.9%	-5.9	1.0
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Original antenna

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2410	40.7%	-3.90	2.88
2420	41.0%	-3.87	3.29
2430	40.6%	-3.92	3.54
2440	40.5%	-3.93	3.60
2450	40.2%	-3.95	3.80
2460	40.4%	-3.93	3.95
2470	40.4%	-3.94	3.69
2480	40.2%	-3.96	3.49
2490	39.7%	-4.01	3.39
2500	39.5%	-4.03	3.08

SAA antenna real test data

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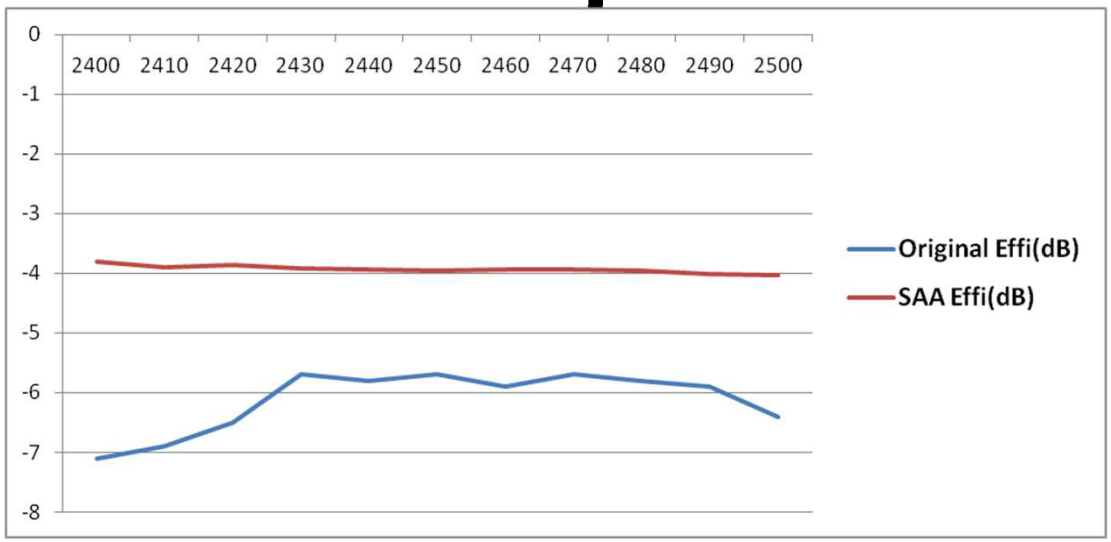
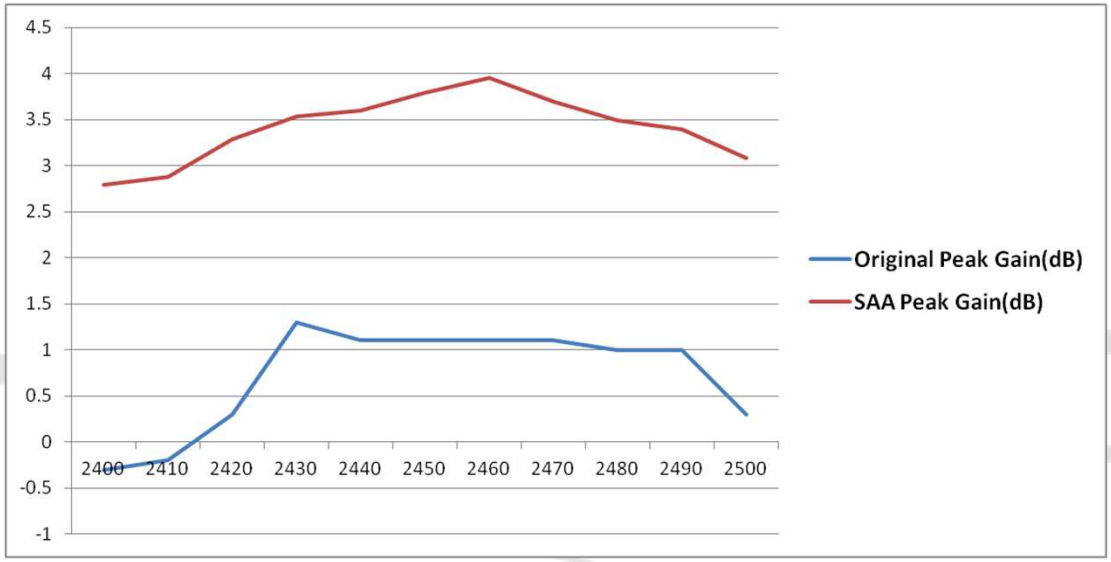
Comparison





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