



ADVANCED WIRELESS & ANTENNA INC

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In the world of communication technology

Mitrastar

NR5331 US

Antenna Passive Report



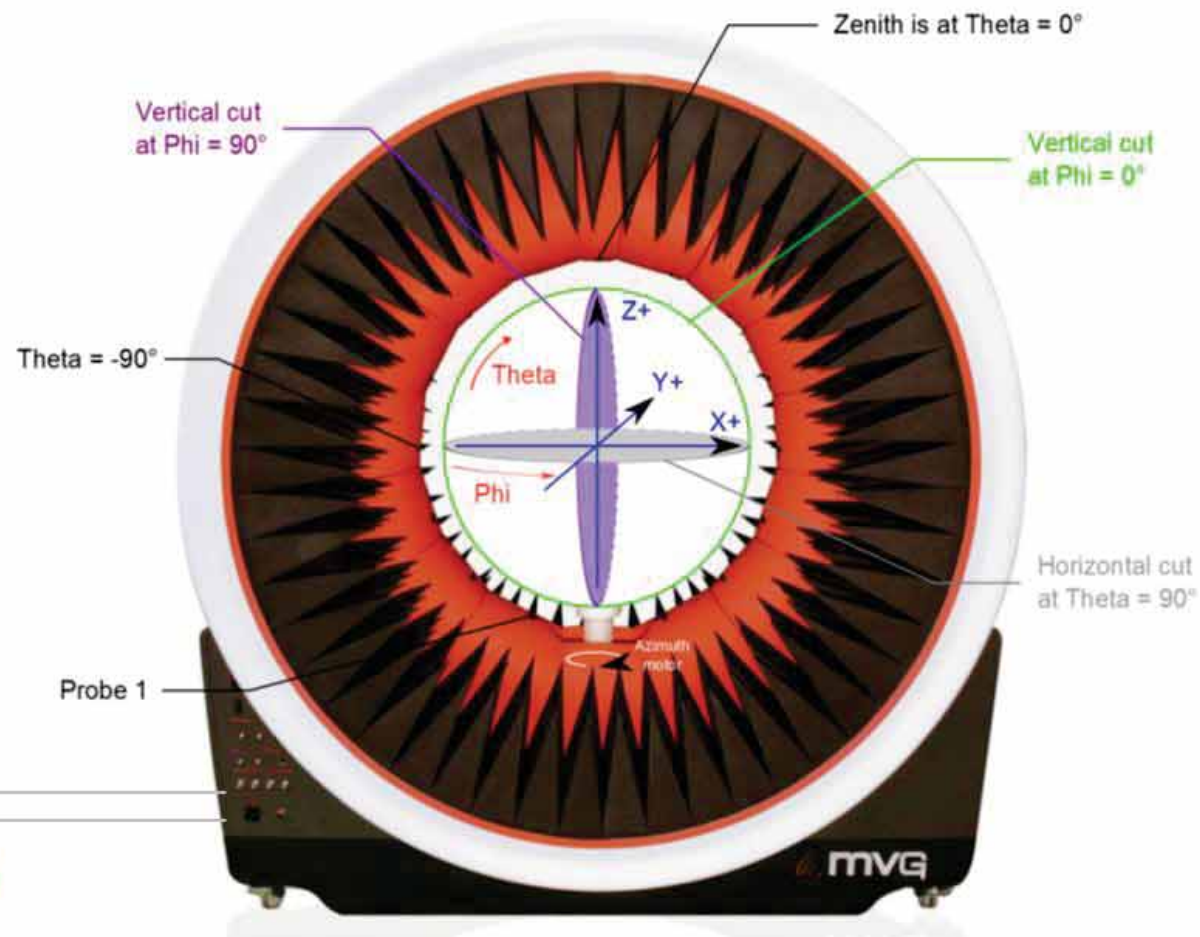
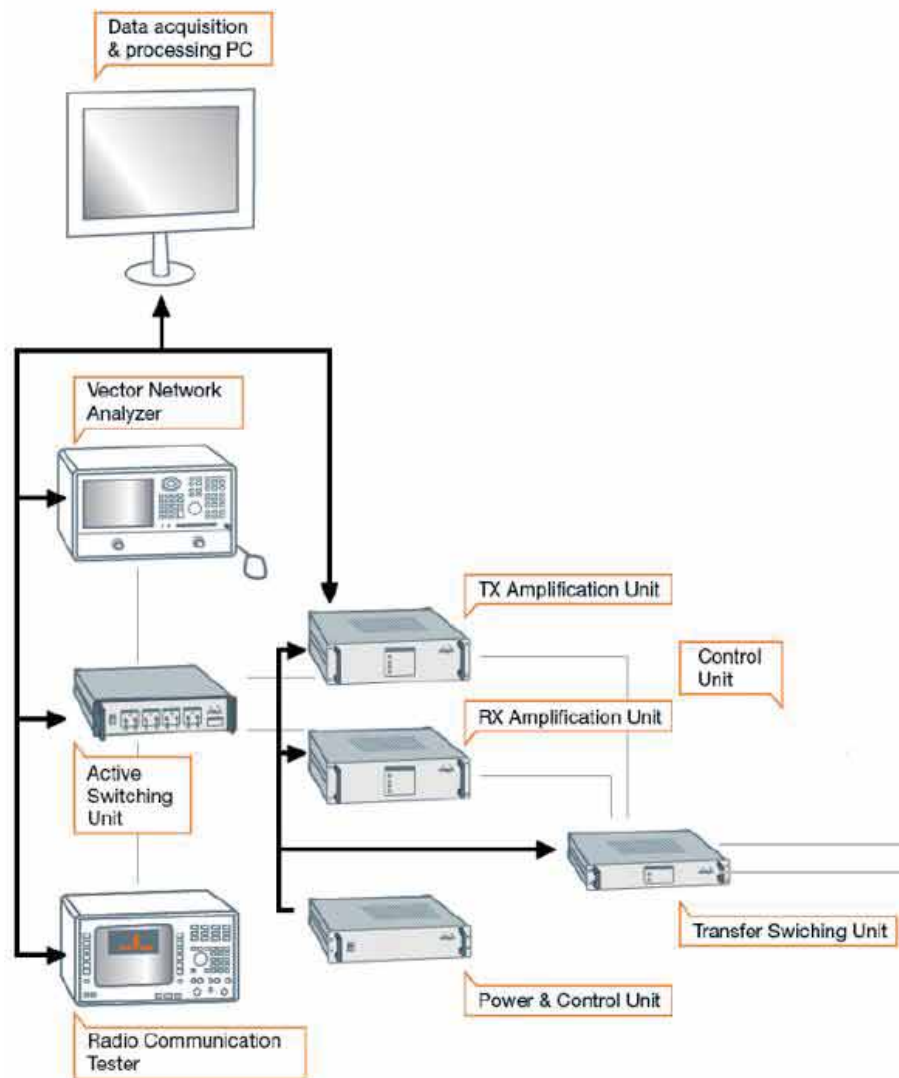
5F, No. 225, Sec. 3, Bei-Hsin Rd., Xindian Dist., New Taipei City, Taiwan (R.O.C.)
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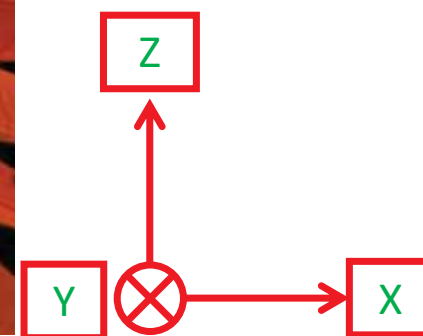
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Antenna Test System



Antenna Under Test

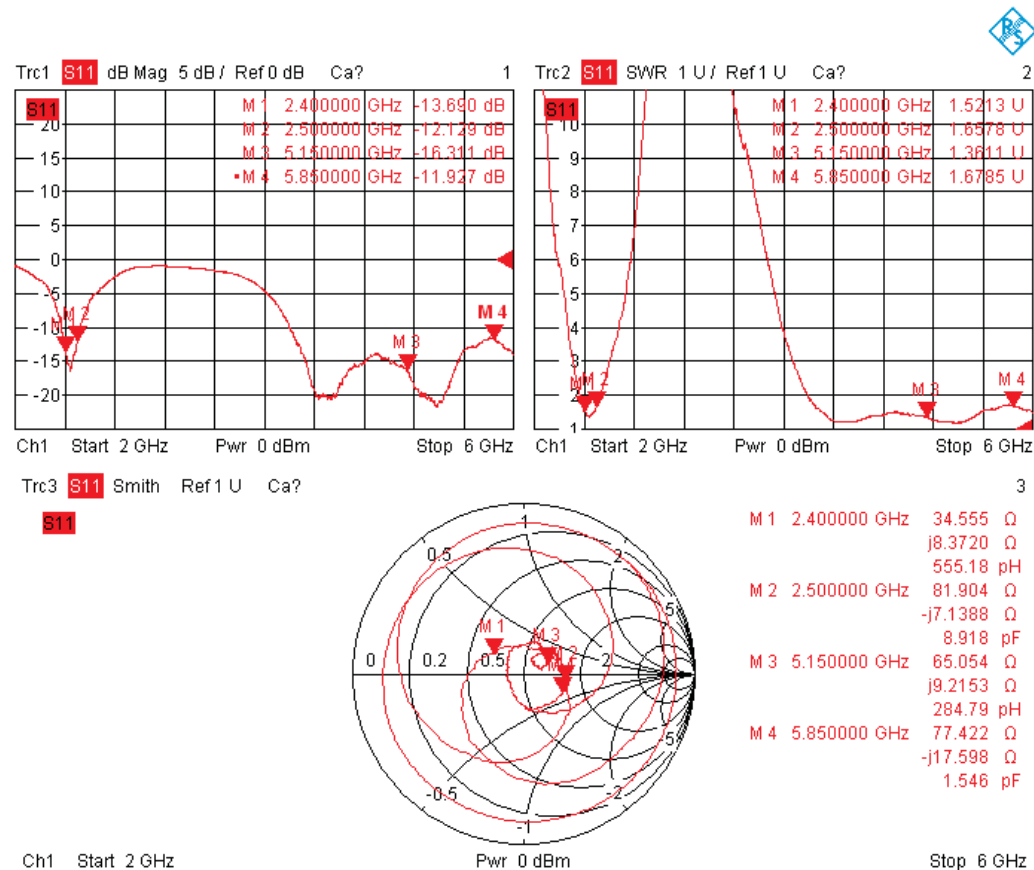


Antenna Placement

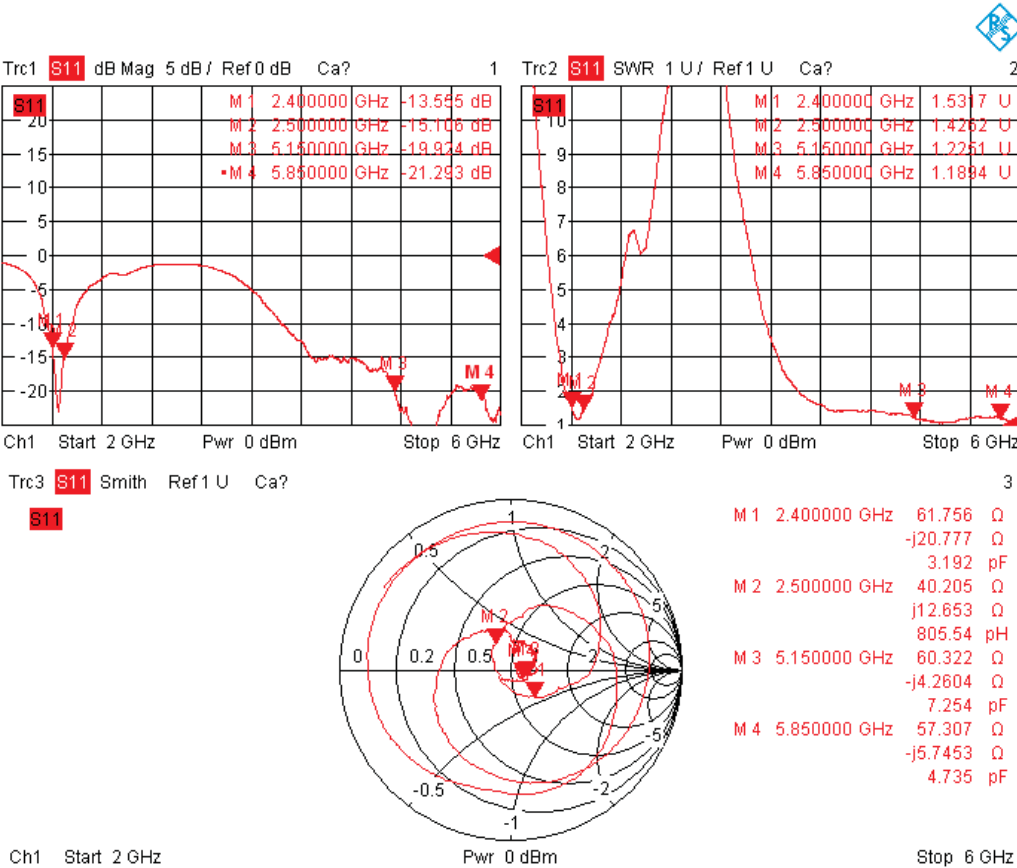


編號	天線	AWAN料號
W0	Antenna_1	A8P8P-100250
W1	Antenna_2	A8P8P-100251
W2	Antenna_3	A8P8P-100252
W3	Antenna_4	A8P8P-100253

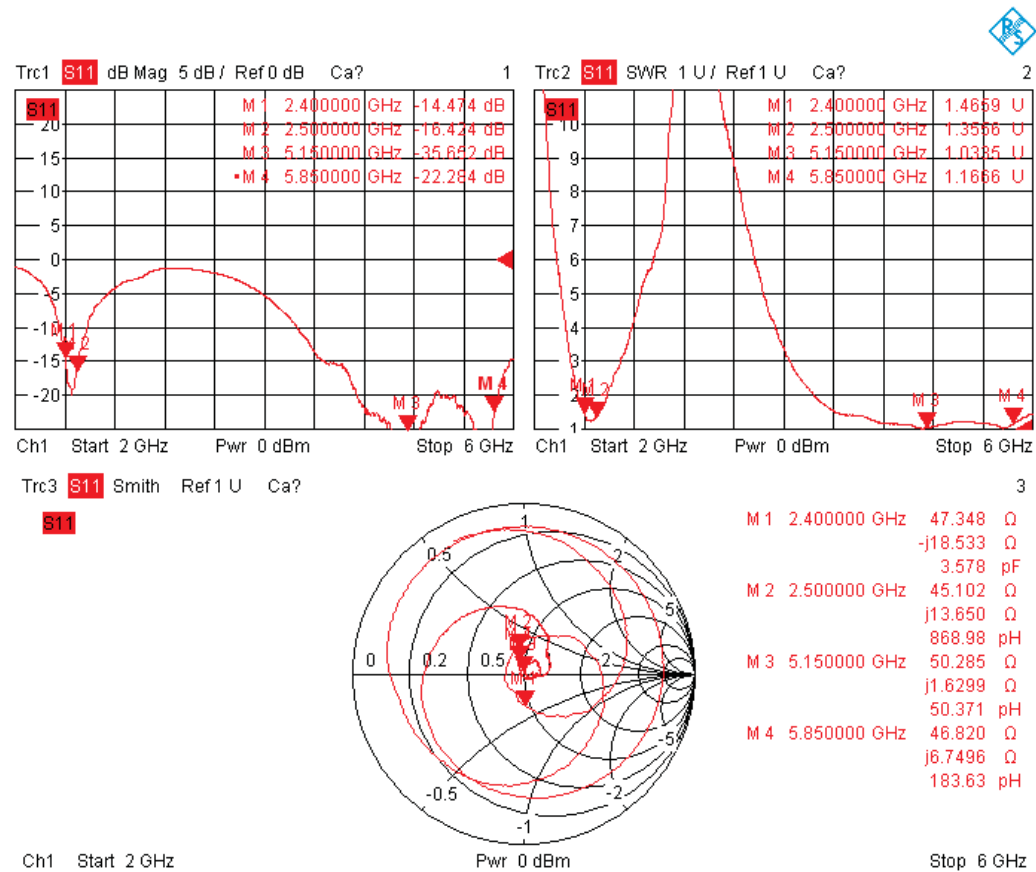
S-Parameter_W0



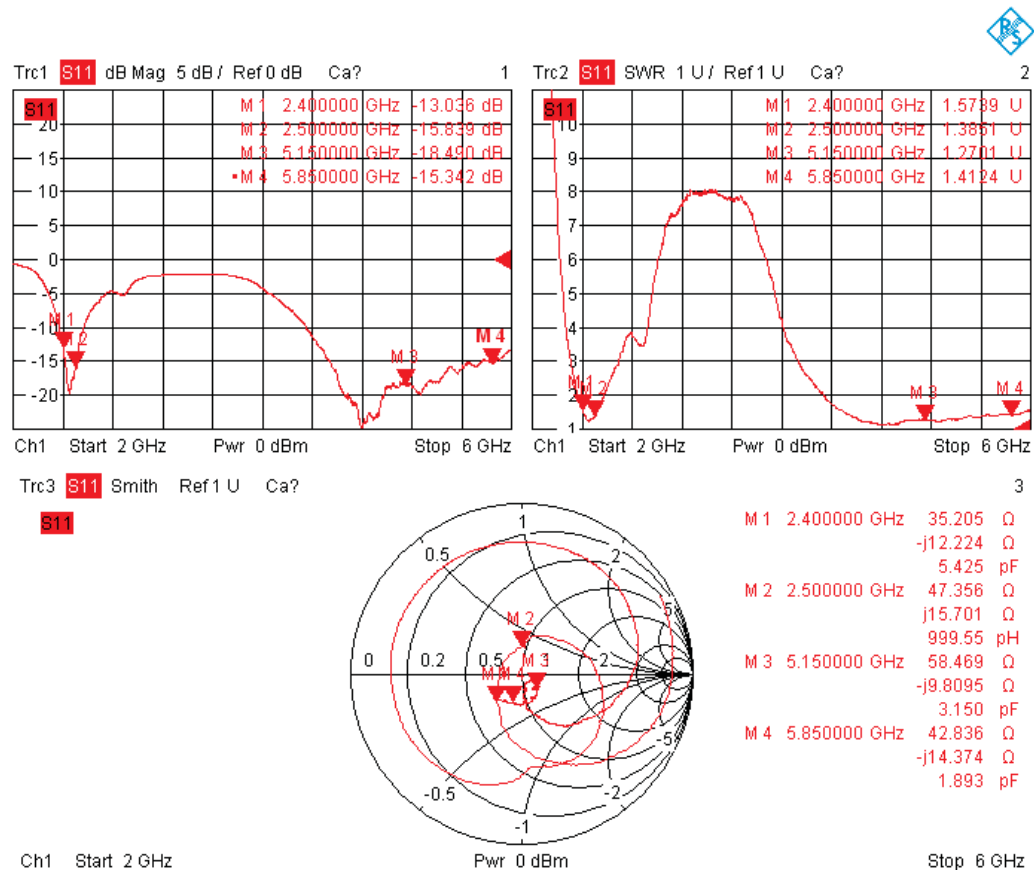
S-Parameter_W1



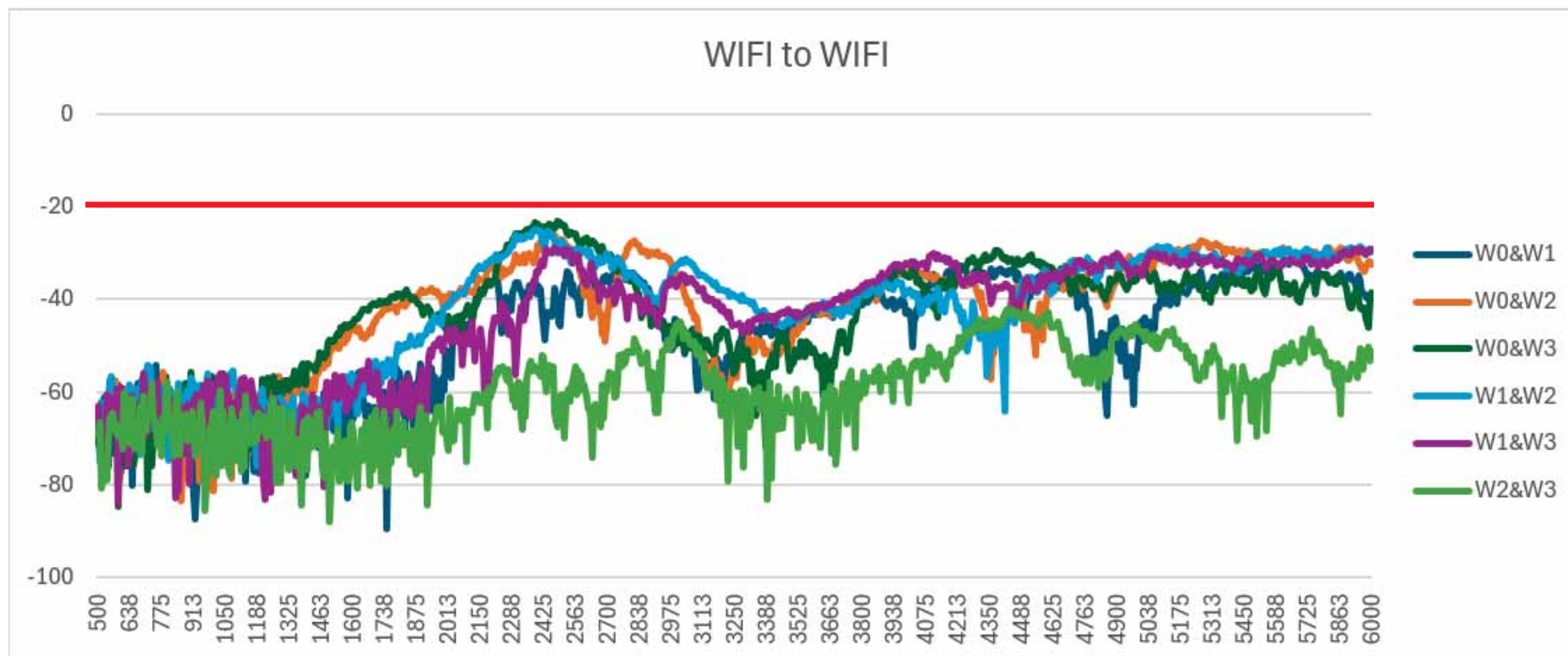
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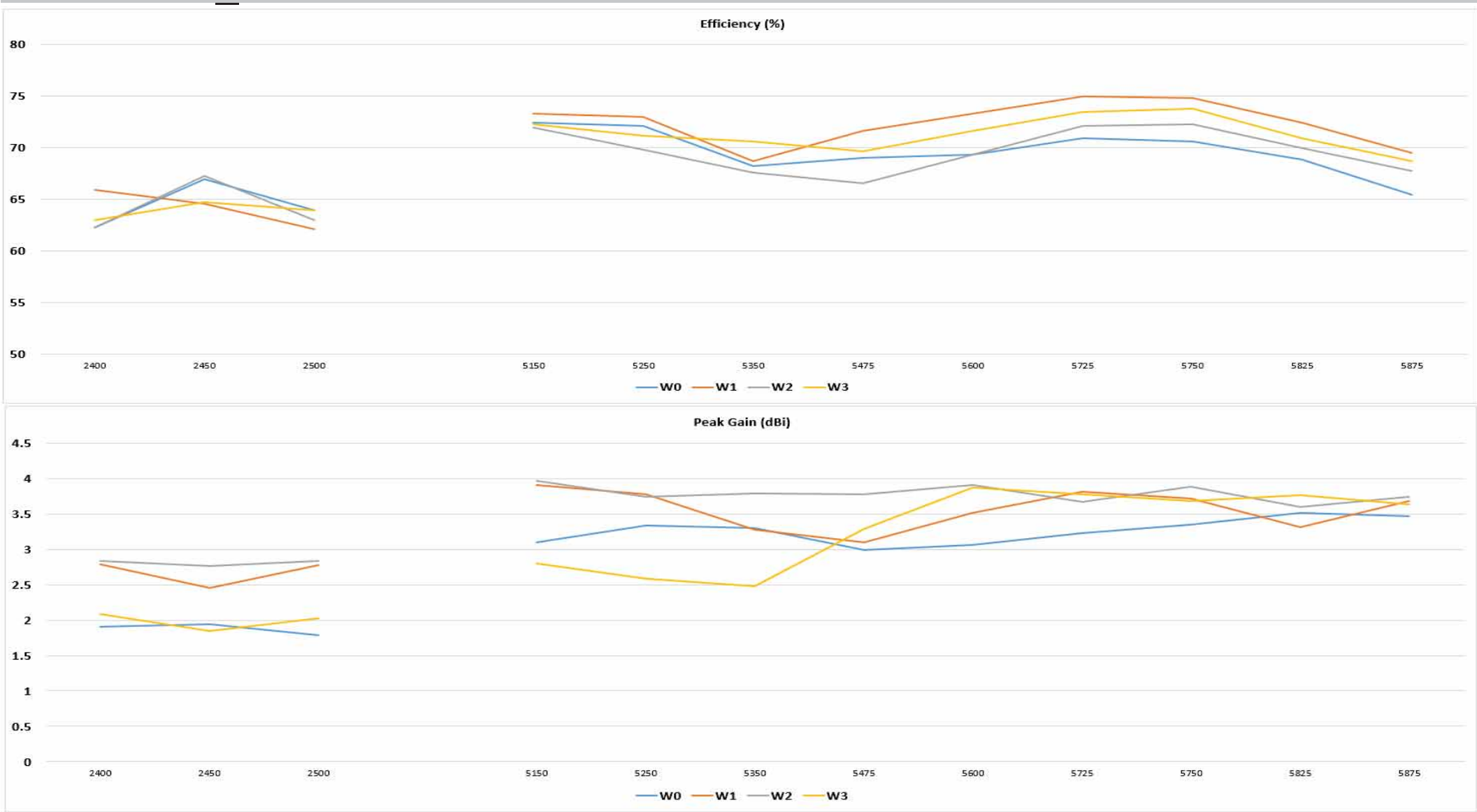
S-Parameter_W3



Isolation (WiFi to WiFi)



Gain Table_WiFi



Gain Table_WiFi

Antenna Type		connectot	Frequency (MHz)	2400-2500	5150-5250	5250-5350	5470-5725 (Low)	5470-5725 (High)
W0	Dipole	MHF-1	Efficiency (%)	64.40	72.28	70.17	69.02	70.96
			Avg. Gain (dB)	-1.91	-1.41	-1.54	-1.61	-1.49
			Peak Gain (dBi)	1.88	3.22	3.32	2.99	3.23
Antenna Type		connectot	Frequency (MHz)	2400-2500	5150-5250	5250-5350	5470-5725 (Low)	5470-5725 (High)
W1	Dipole	MHF-1	Efficiency (%)	64.19	73.11	70.83	71.61	74.99
			Avg. Gain (dB)	-1.93	-1.36	-1.50	-1.45	-1.25
			Peak Gain (dBi)	2.67	3.84	3.52	3.09	3.81
Antenna Type		connectot	Frequency (MHz)	2400-2500	5150-5250	5250-5350	5470-5725 (Low)	5470-5725 (High)
W2	Dipole	MHF-1	Efficiency (%)	64.16	70.88	68.72	66.53	72.11
			Avg. Gain (dB)	-1.93	-1.50	-1.63	-1.77	-1.42
			Peak Gain (dBi)	2.81	3.86	3.77	3.78	3.67
Antenna Type		connectot	Frequency (MHz)	2400-2500	5150-5250	5250-5350	5470-5725 (Low)	5470-5725 (High)
W3	Dipole	MHF-1	Efficiency (%)	63.88	71.70	70.88	69.66	73.45
			Avg. Gain (dB)	-1.95	-1.45	-1.50	-1.57	-1.34
			Peak Gain (dBi)	1.98	2.69	2.53	3.29	3.77
Frequency (MHz)				2400-2500	5150-5250	5250-5350	5470-5725 (Low)	5470-5725 (High)
Directional Gain (dBi)				4.24	5.46	5.00	5.03	5.39

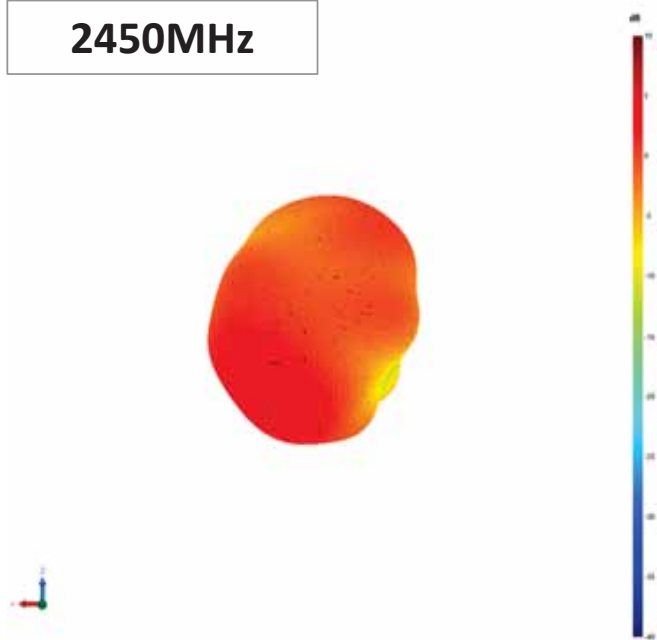
Directional Gain is calculated for each angle, and each angle has a value, it forms a sphere. Then the maximum value is found from each angle

- Unequal antenna gain, equal transmit powers [New guidance]
 For antenna gains = $G_1, G_2, \dots, G_N$ dBi
 • If transmit signals are correlated, then
 - Directional gain = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N]$ dBi
 Note "20" in exponents!

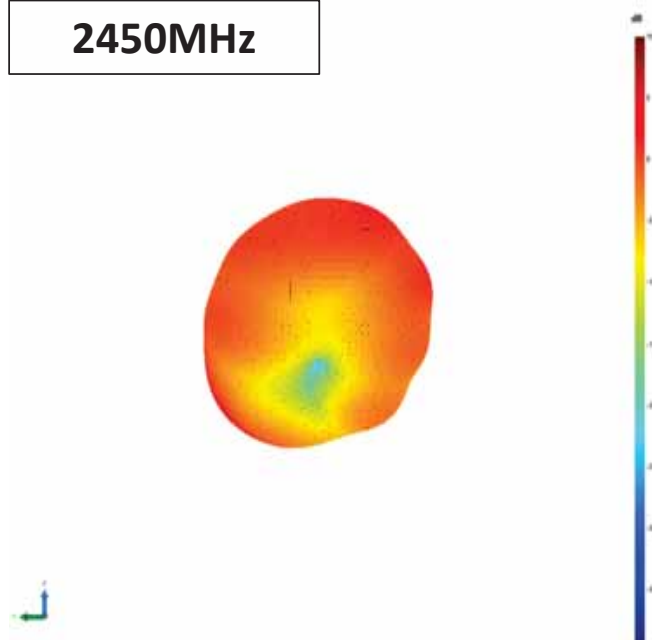
• If all transmit signals are completely uncorrelated, then
 - Directional gain = $10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10}) / N]$ dBi

3D Radiation Pattern @ W0 2400~2500 MHz

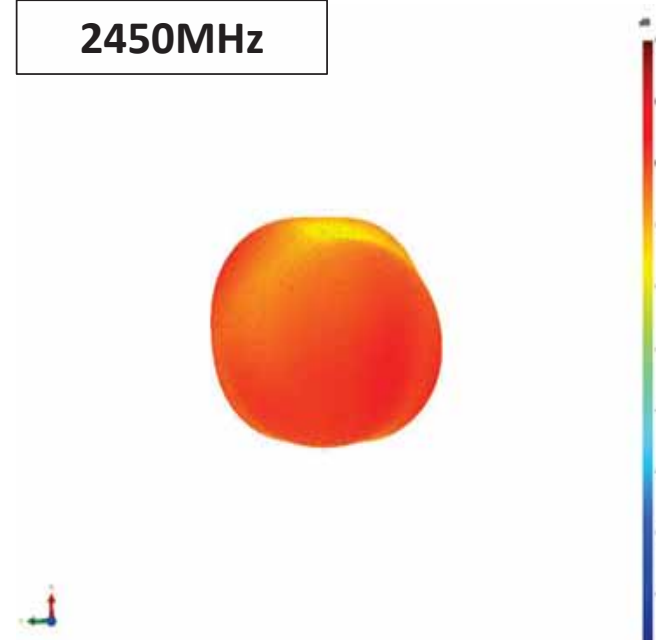
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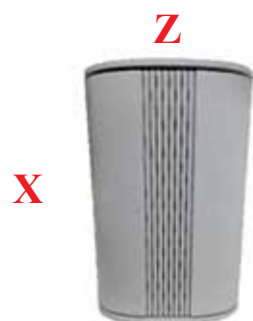
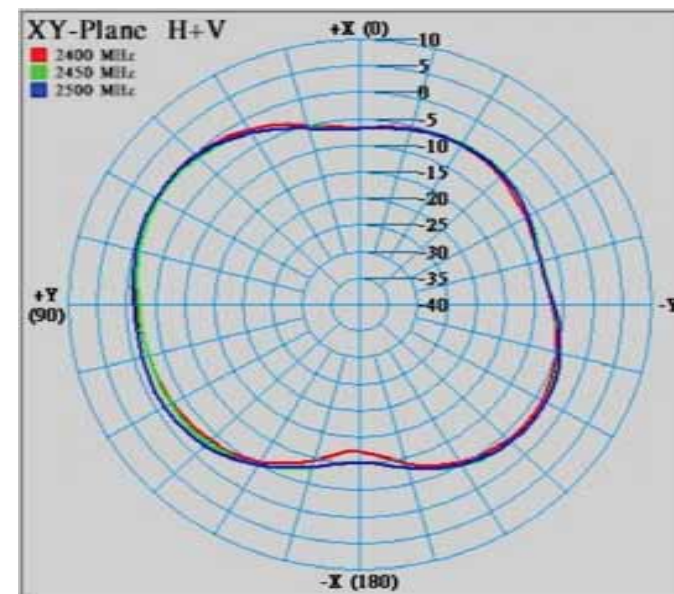
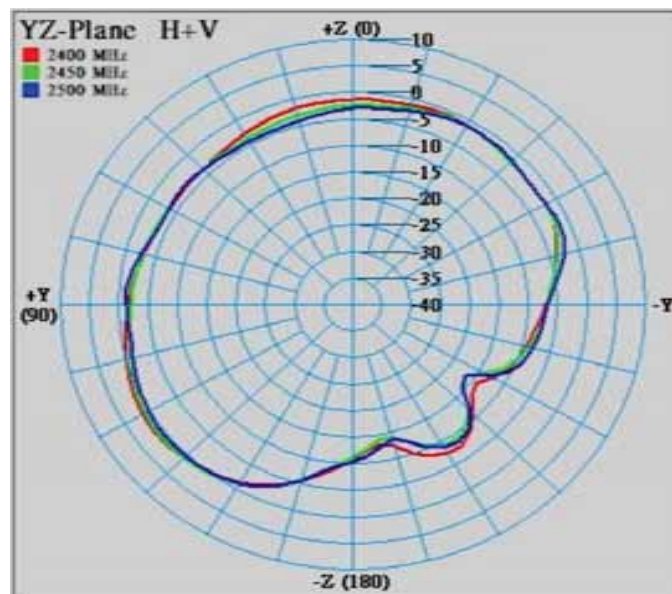
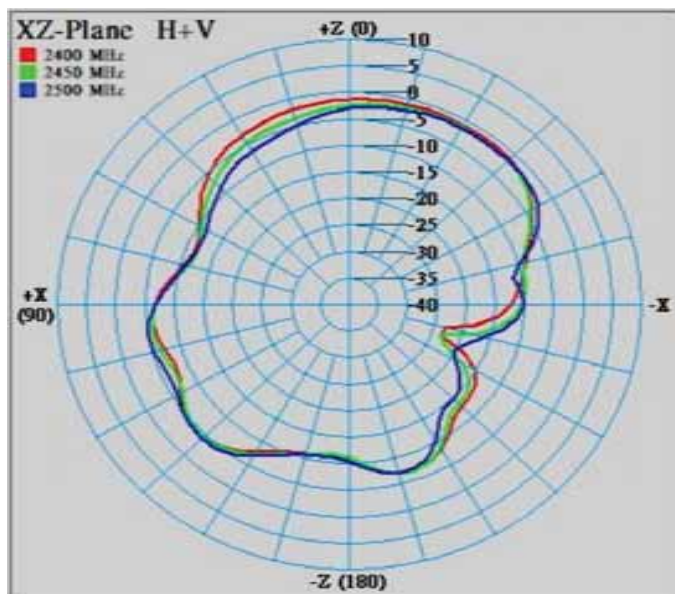
2450MHz



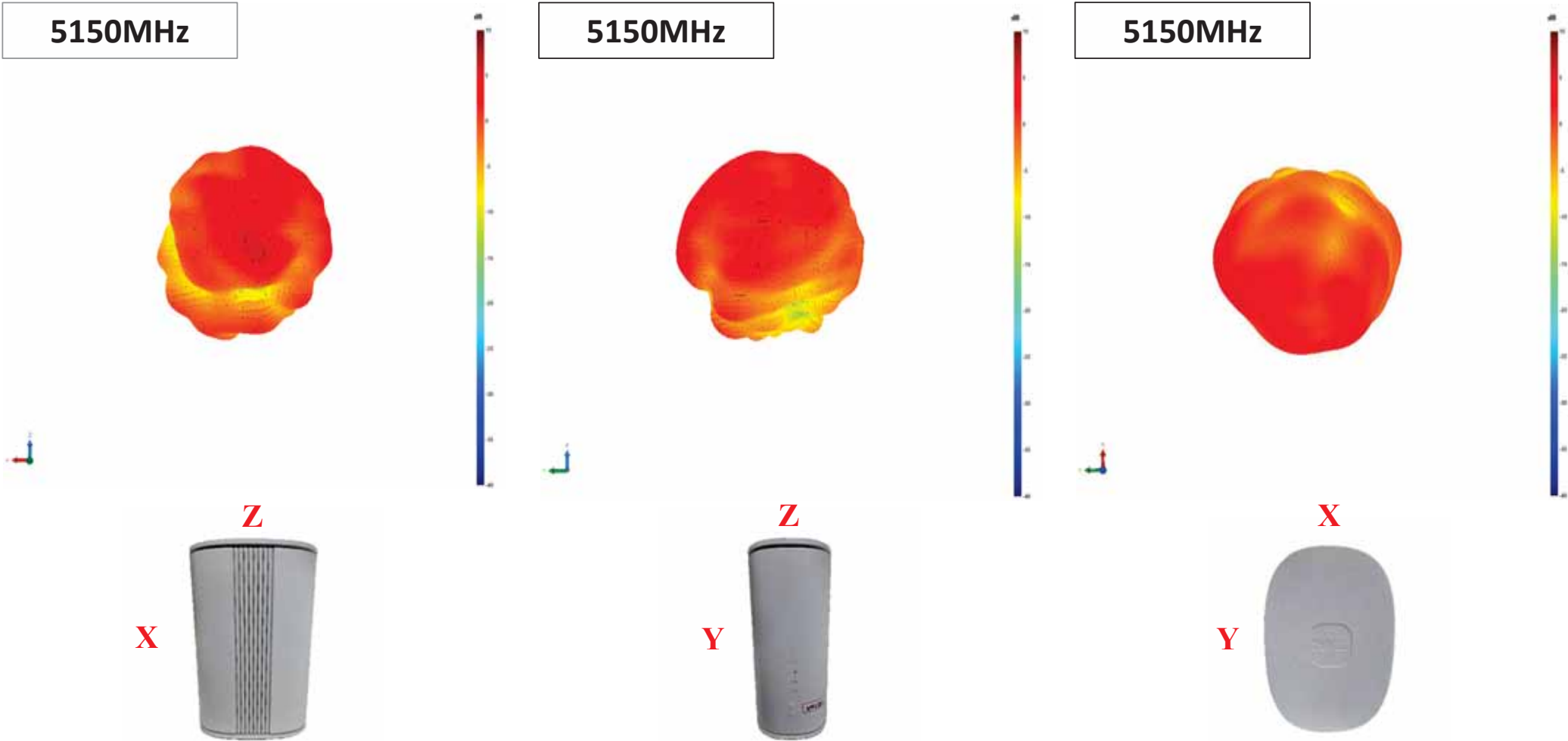
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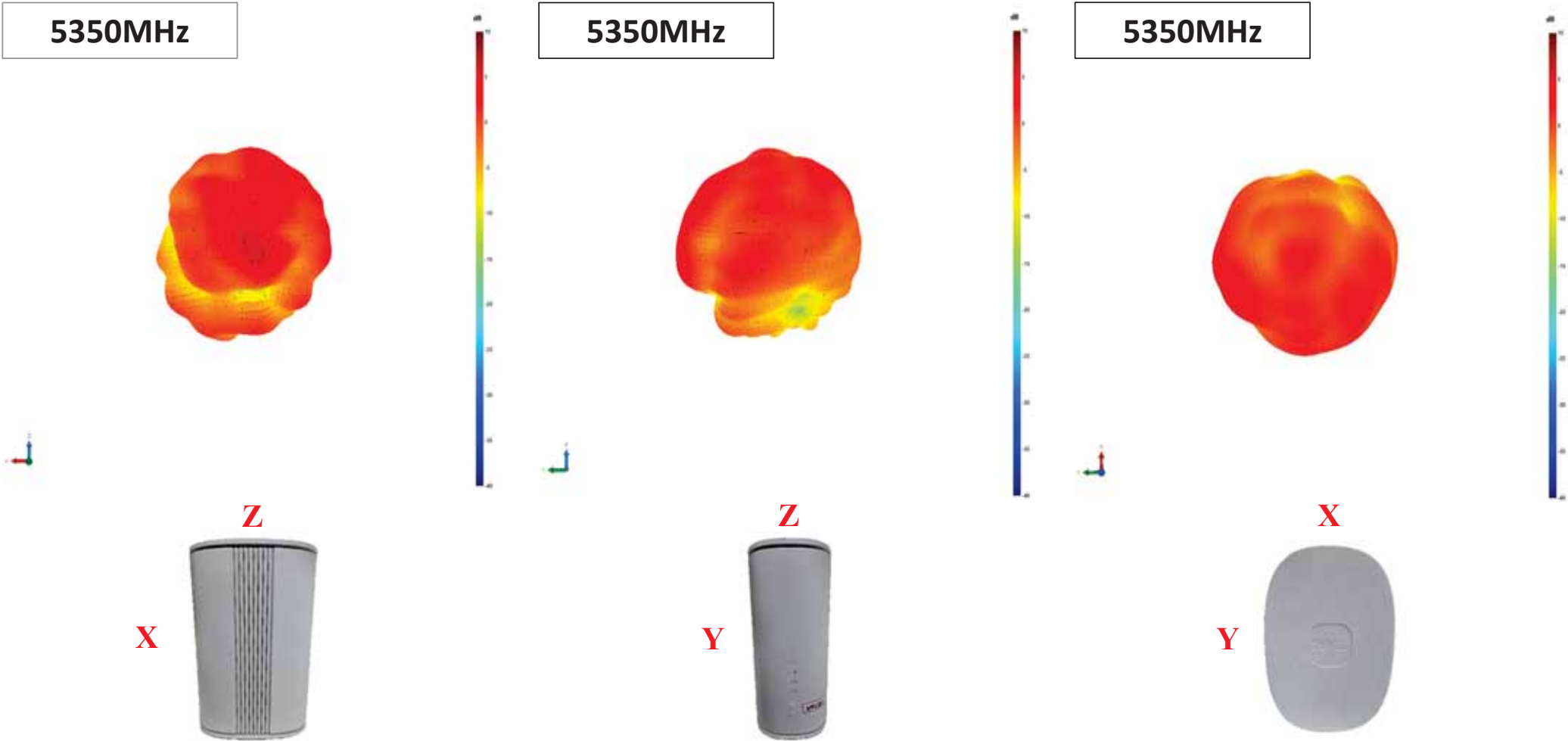
2D Radiation Pattern @ W0 2400~2500 MHz



3D Radiation Pattern @ W0 5150~5875 MHz

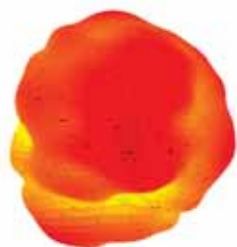


3D Radiation Pattern @ W0 5150~5875 MHz

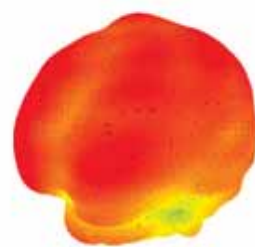


3D Radiation Pattern @ W0 5150~5875 MHz

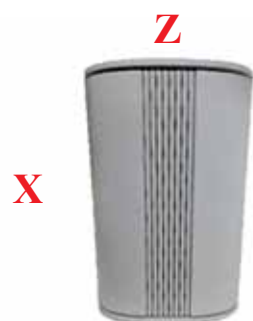
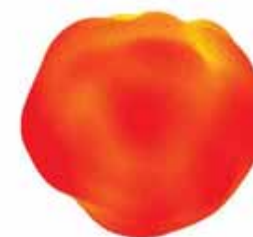
5475MHz



5475MHz



5475MHz

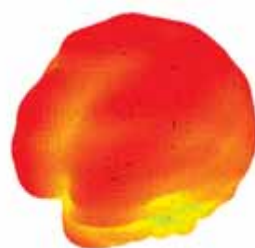


3D Radiation Pattern @ W0 5150~5875 MHz

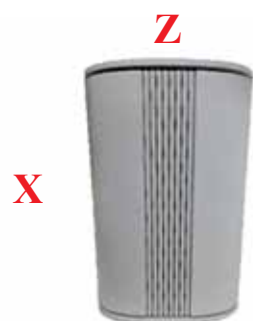
5725MHz



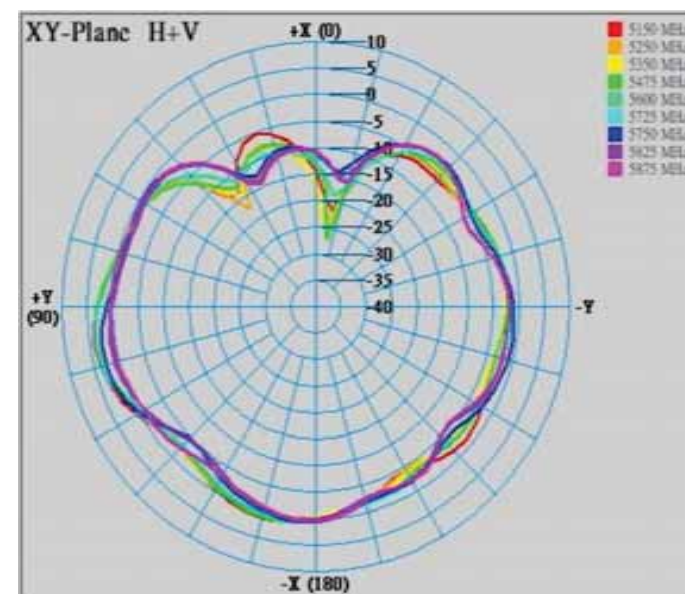
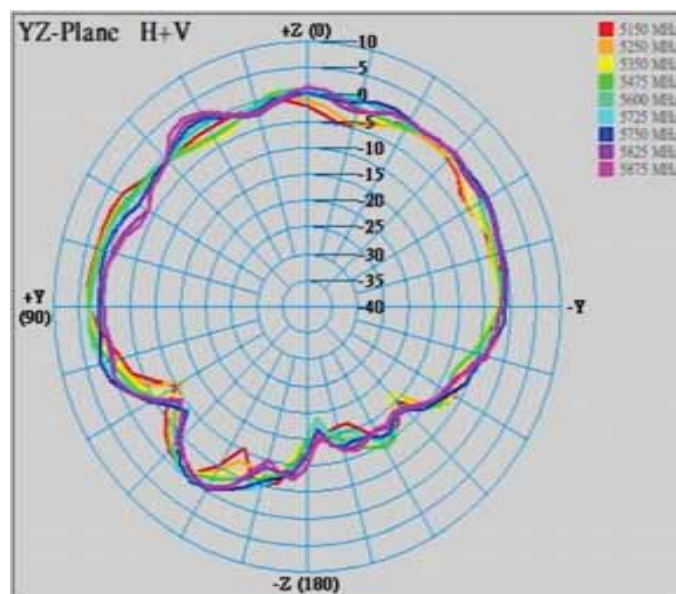
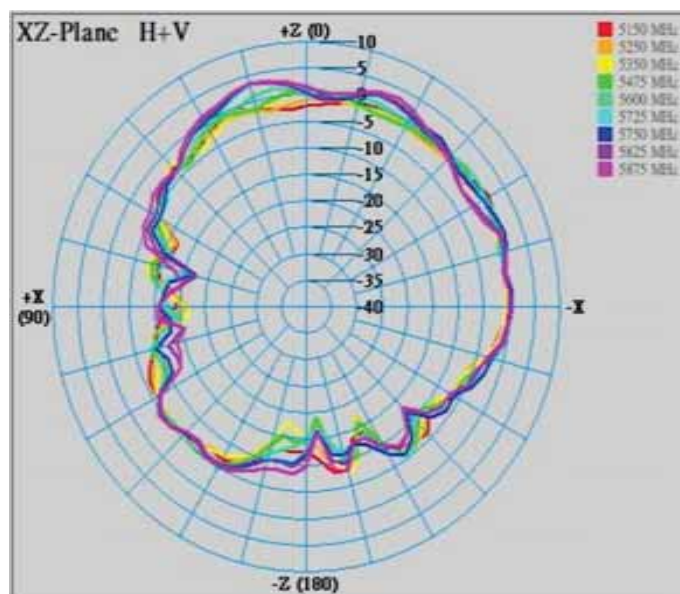
5725MHz



5725MHz

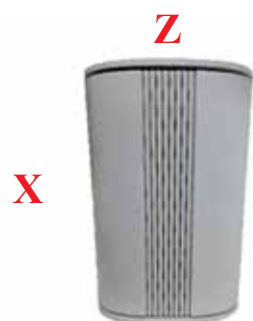
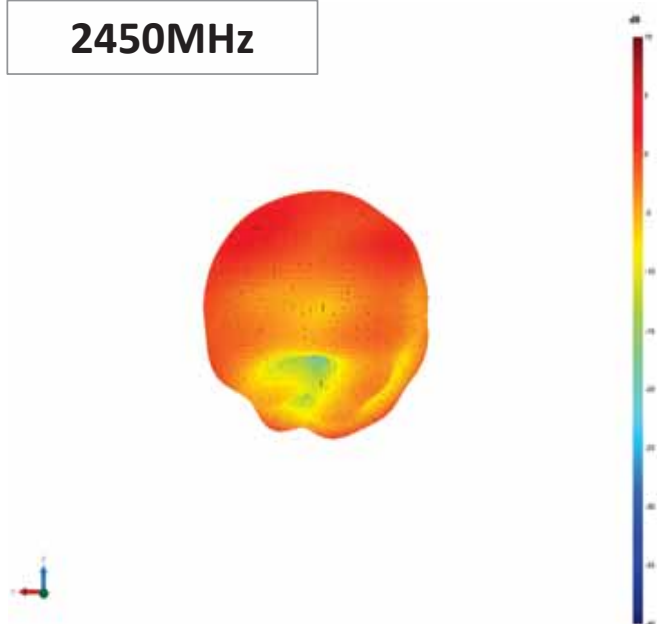


2D Radiation Pattern @ W0 5150~5875 MHz

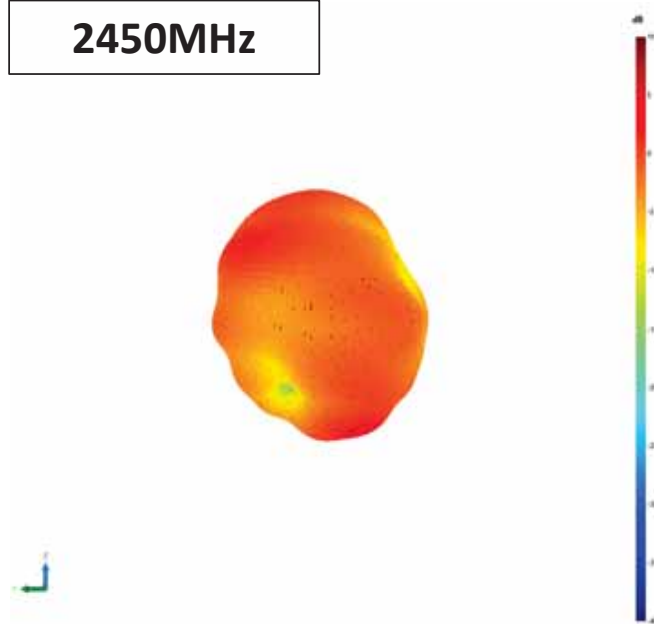


3D Radiation Pattern @ W1 2400~2500 MHz

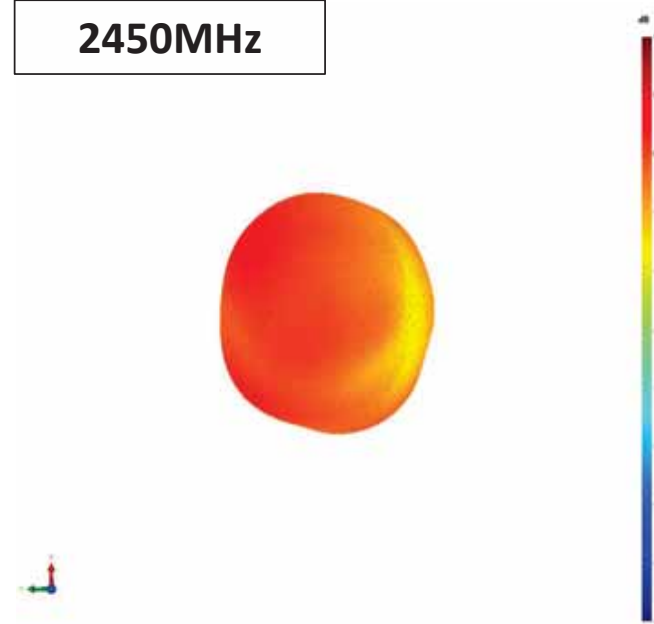
2450MHz



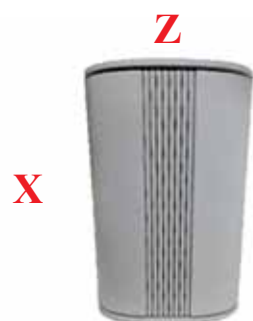
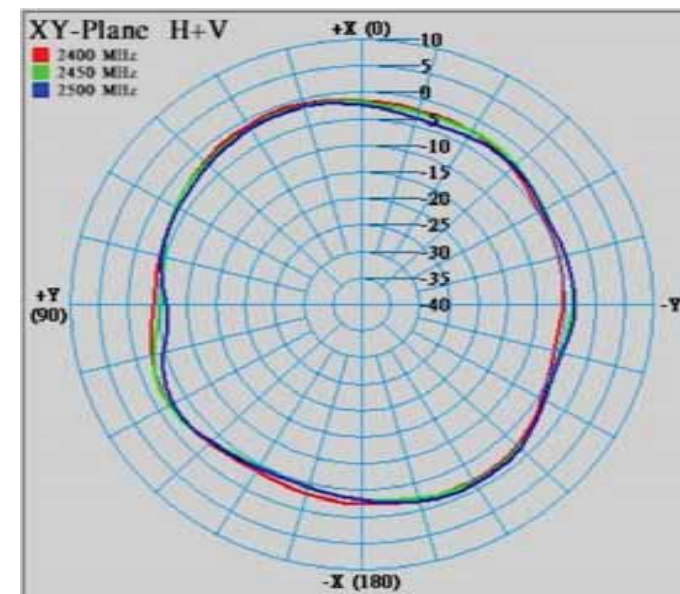
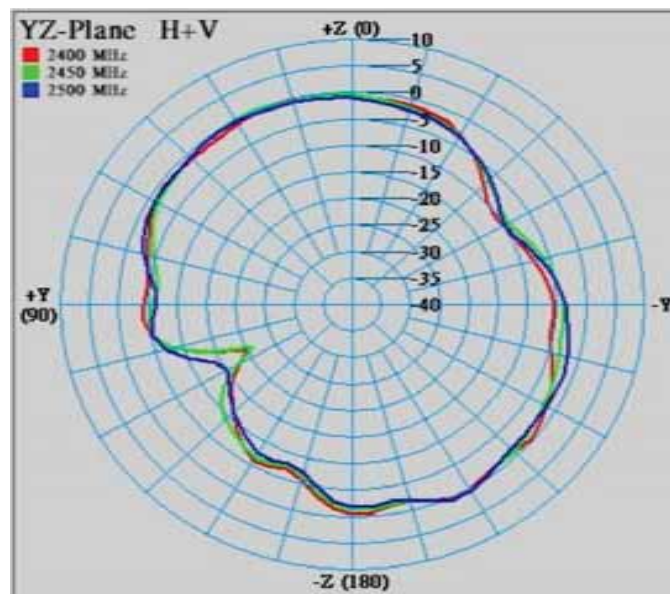
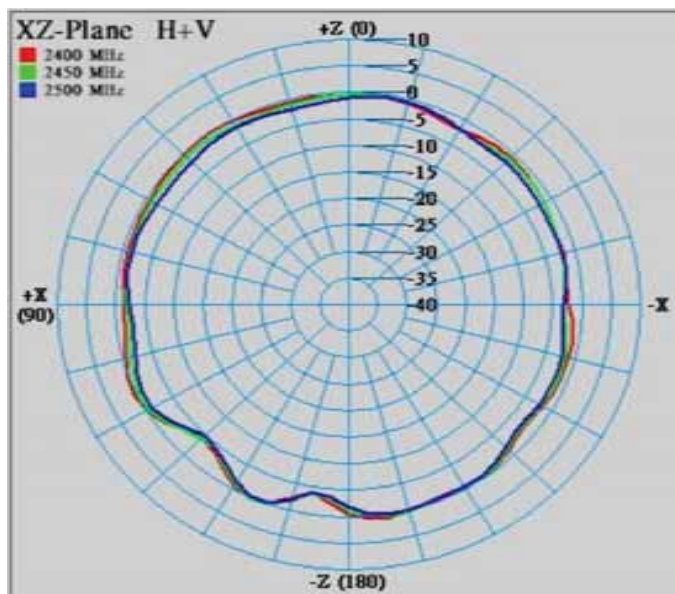
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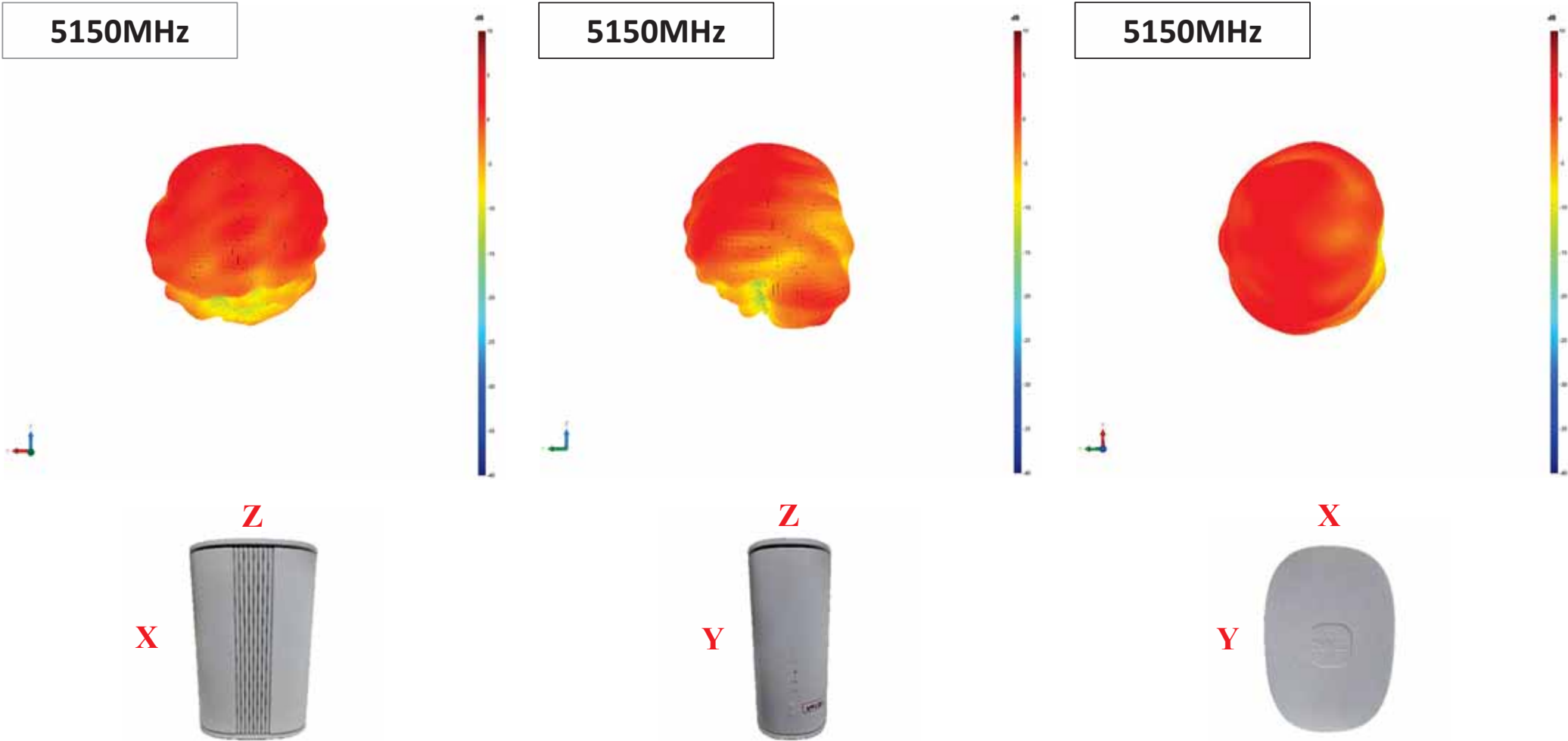
2450MHz



2D Radiation Pattern @ W1 2400~2500 MHz

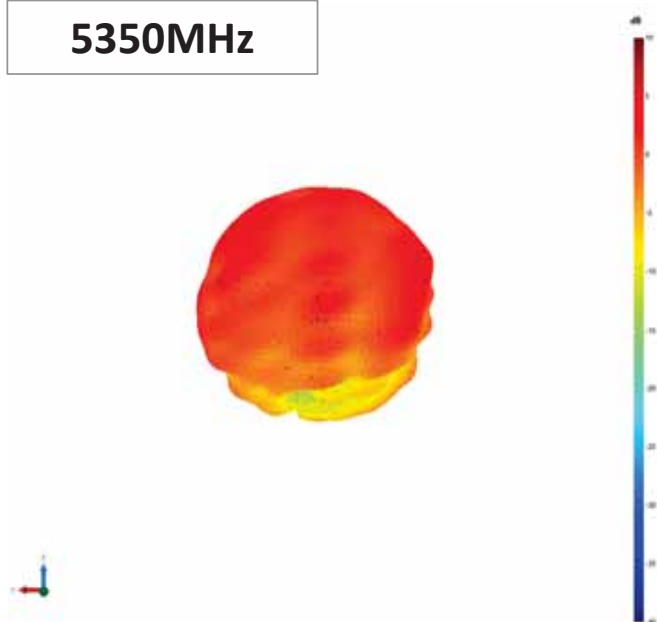


3D Radiation Pattern @ W1 5150~5875 MHz

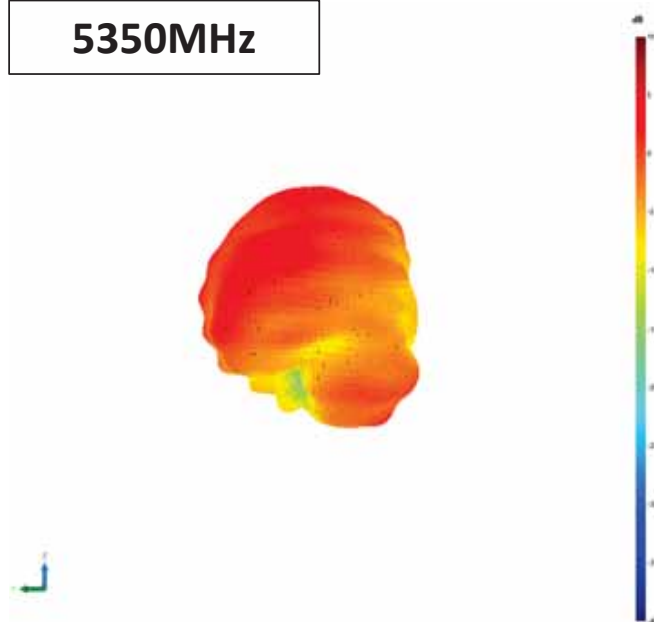


3D Radiation Pattern @ W1 5150~5875 MHz

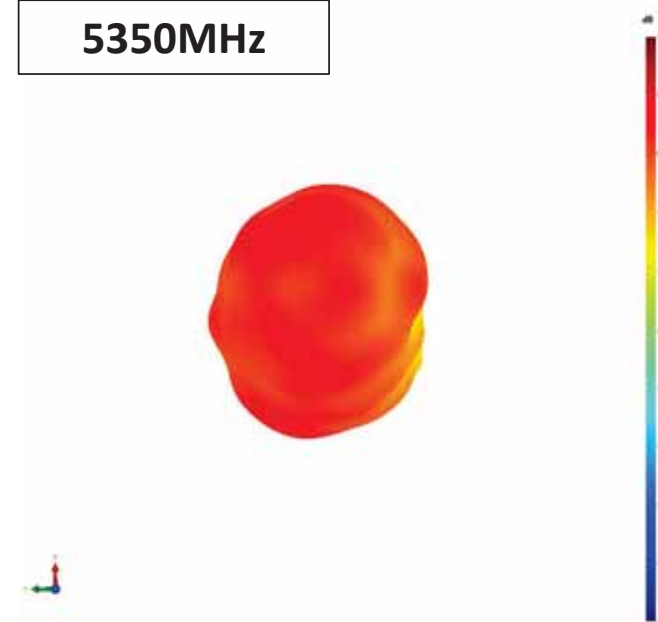
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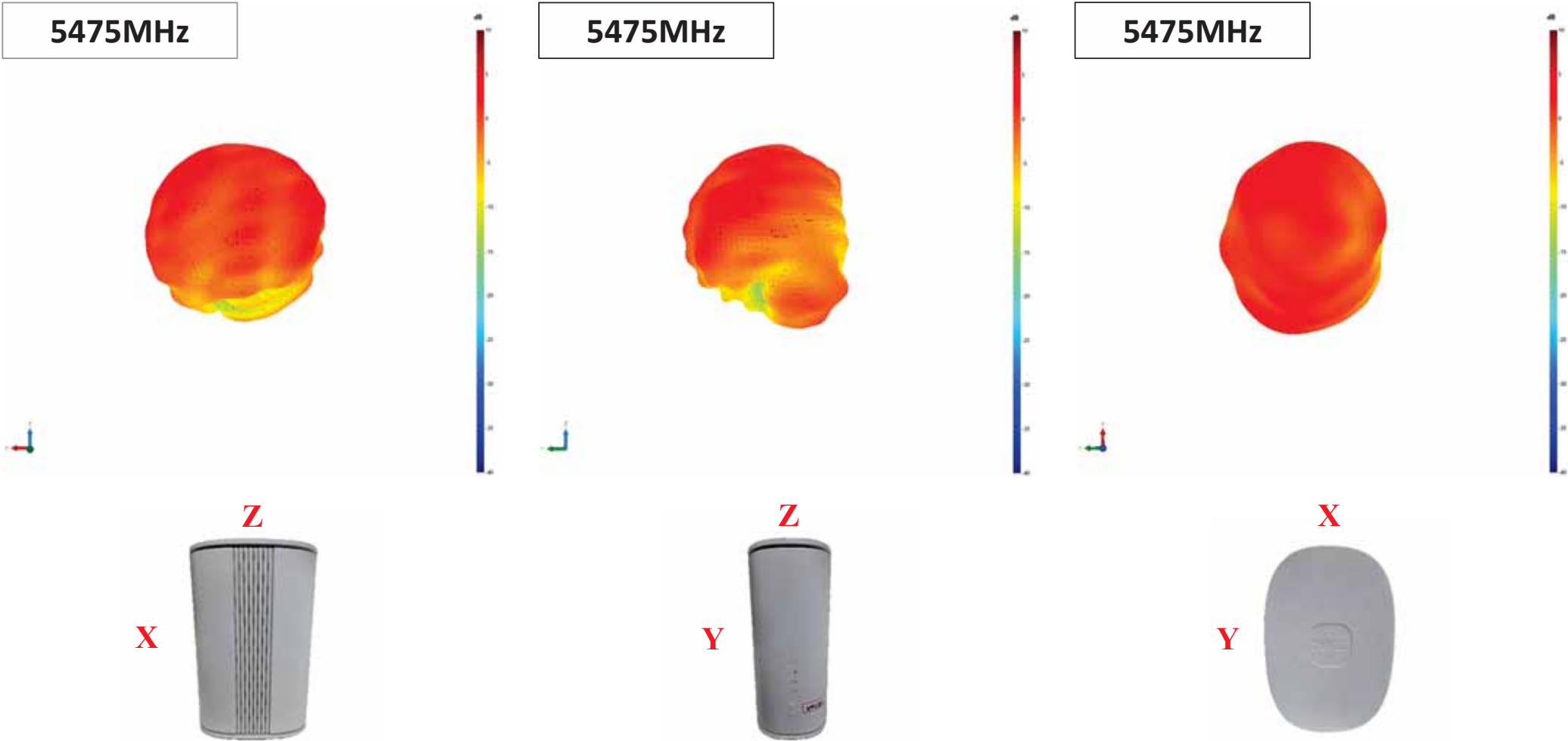
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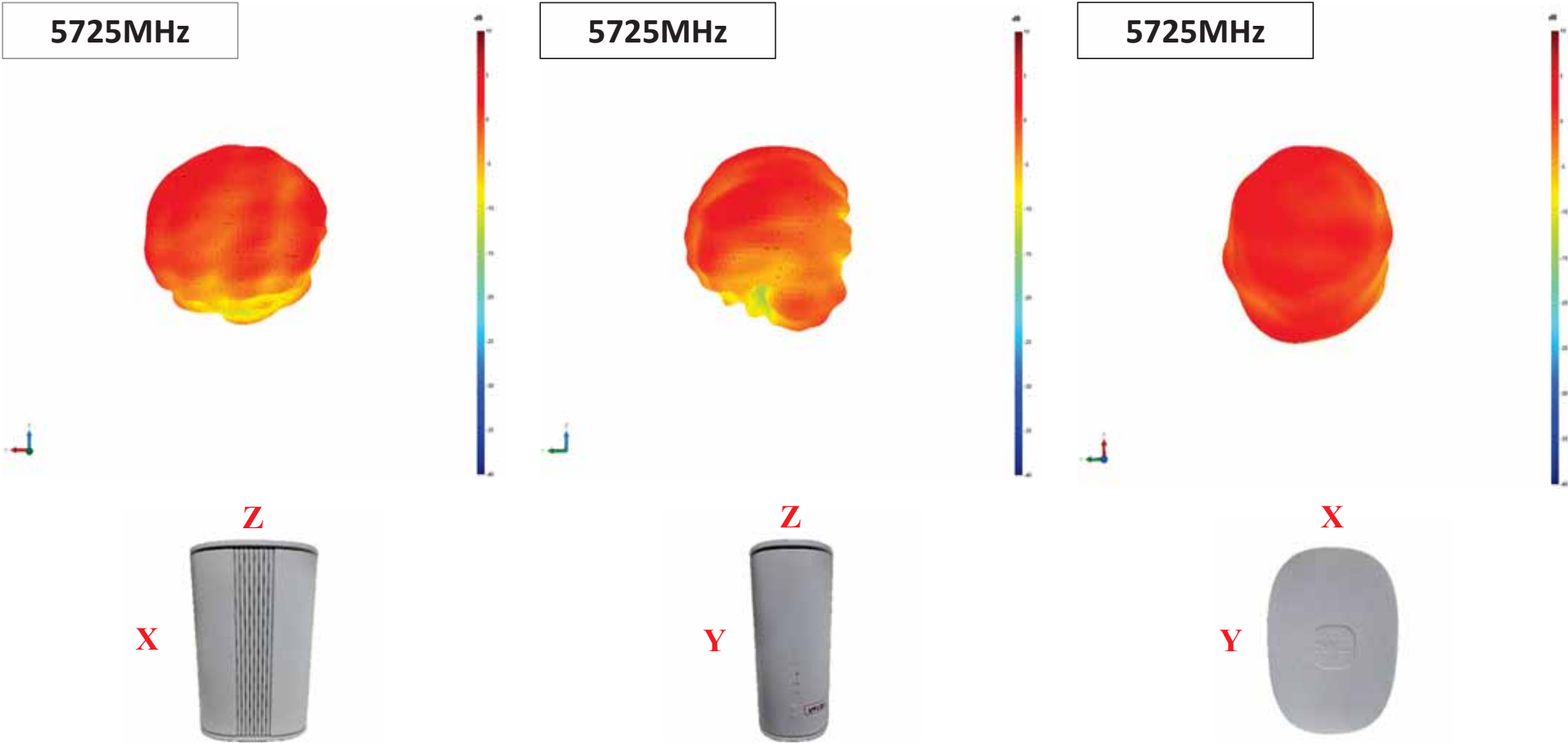
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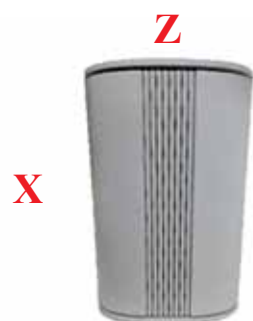
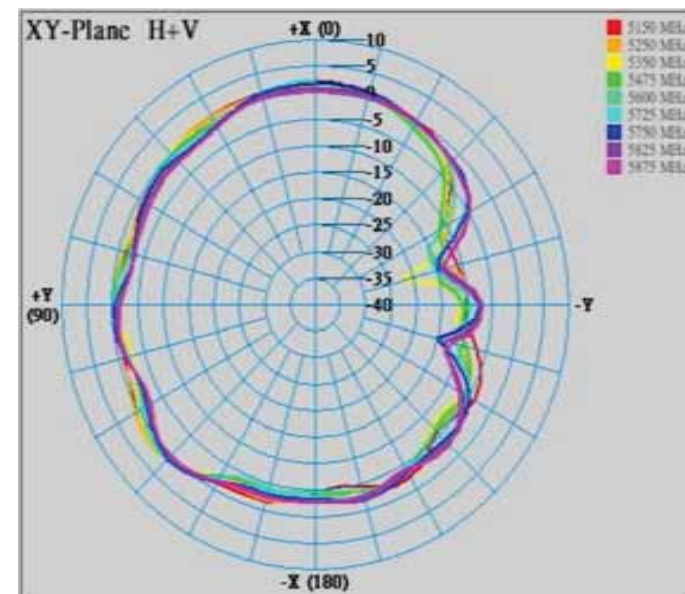
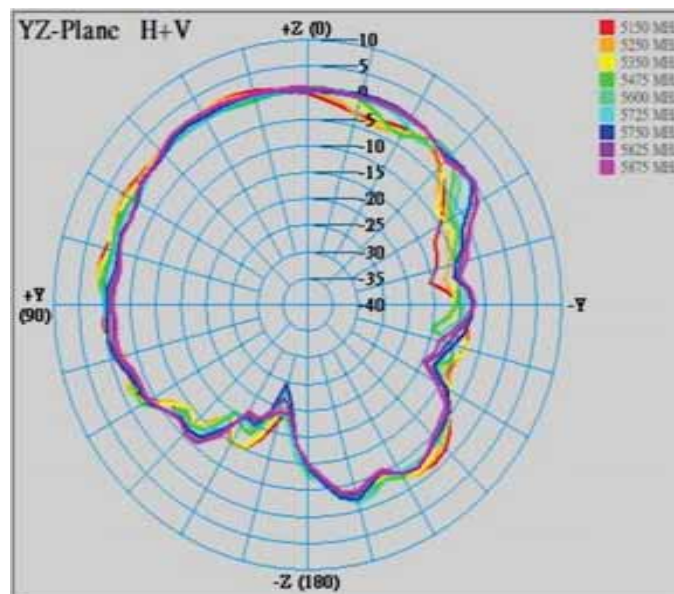
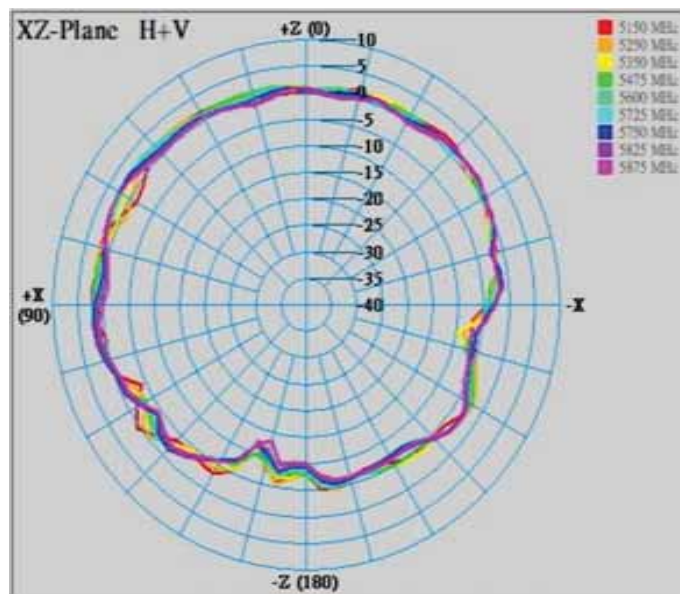
3D Radiation Pattern @ W1 5150~5875 MHz



3D Radiation Pattern @ W1 5150~5875 MHz

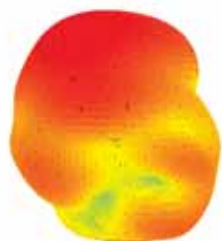


2D Radiation Pattern @ W1 5150~5875 MHz

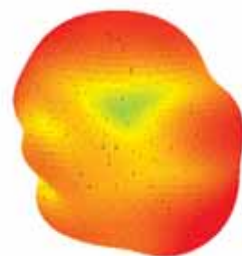


3D Radiation Pattern @ W2 2400~2500 MHz

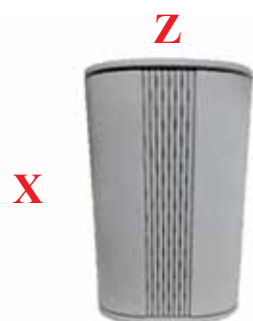
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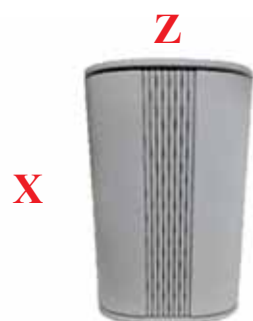
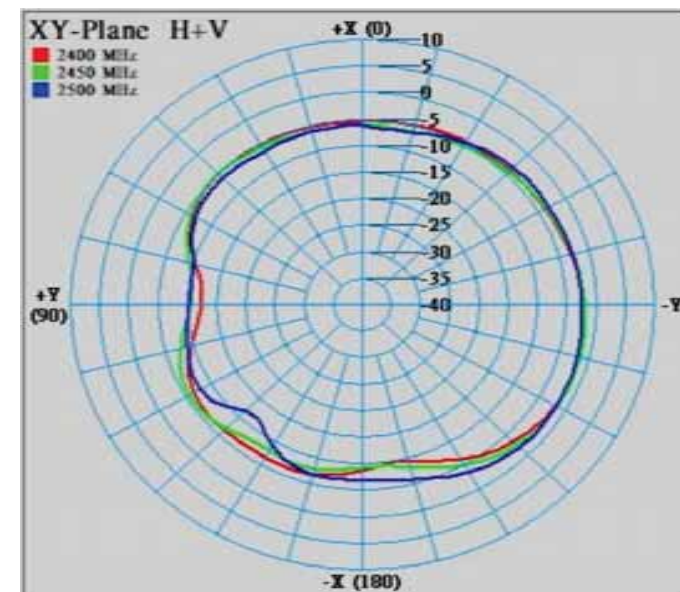
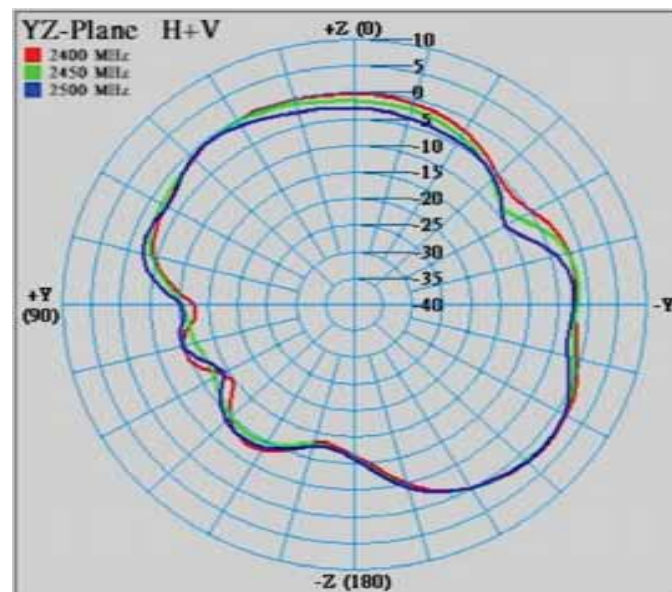
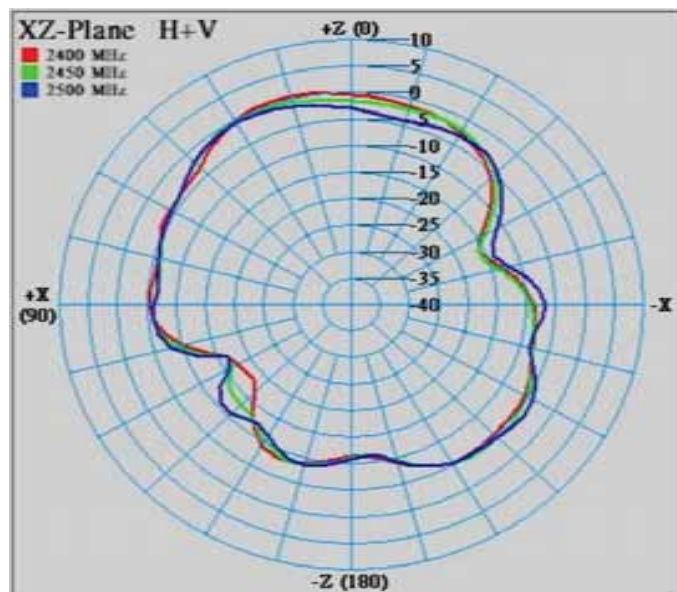
2450MHz



2450MHz

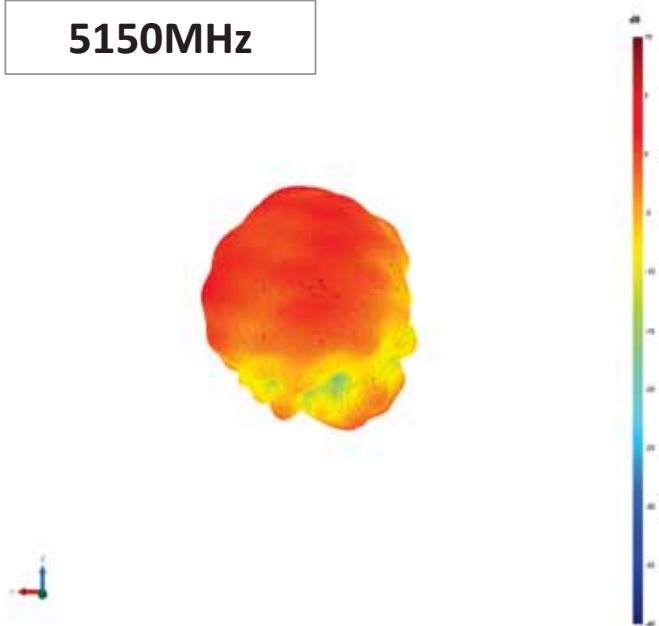


2D Radiation Pattern @ W2 2400~2500 MHz

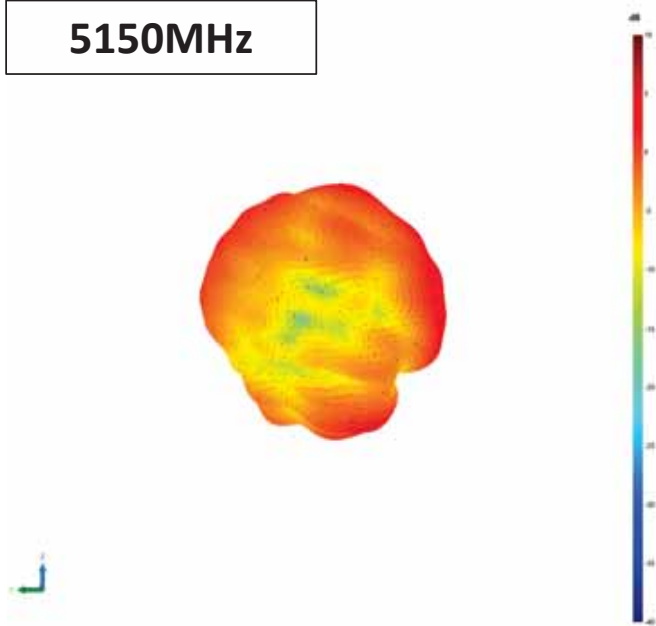


3D Radiation Pattern @ W2 5150~5875 MHz

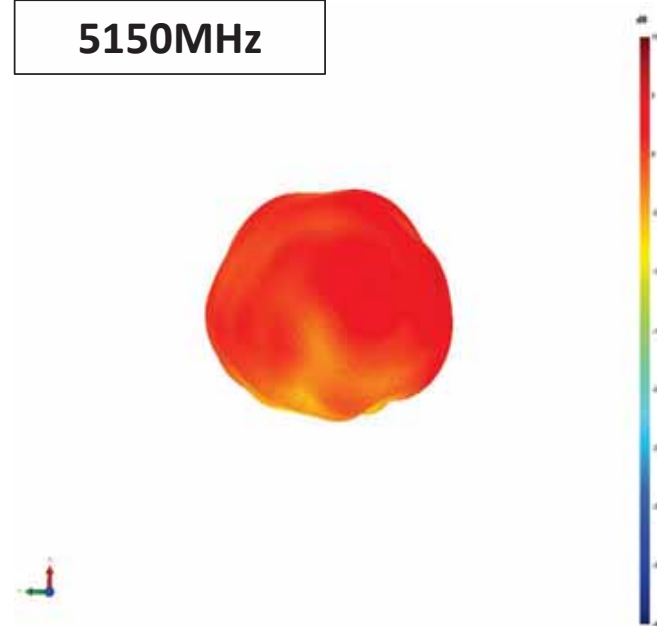
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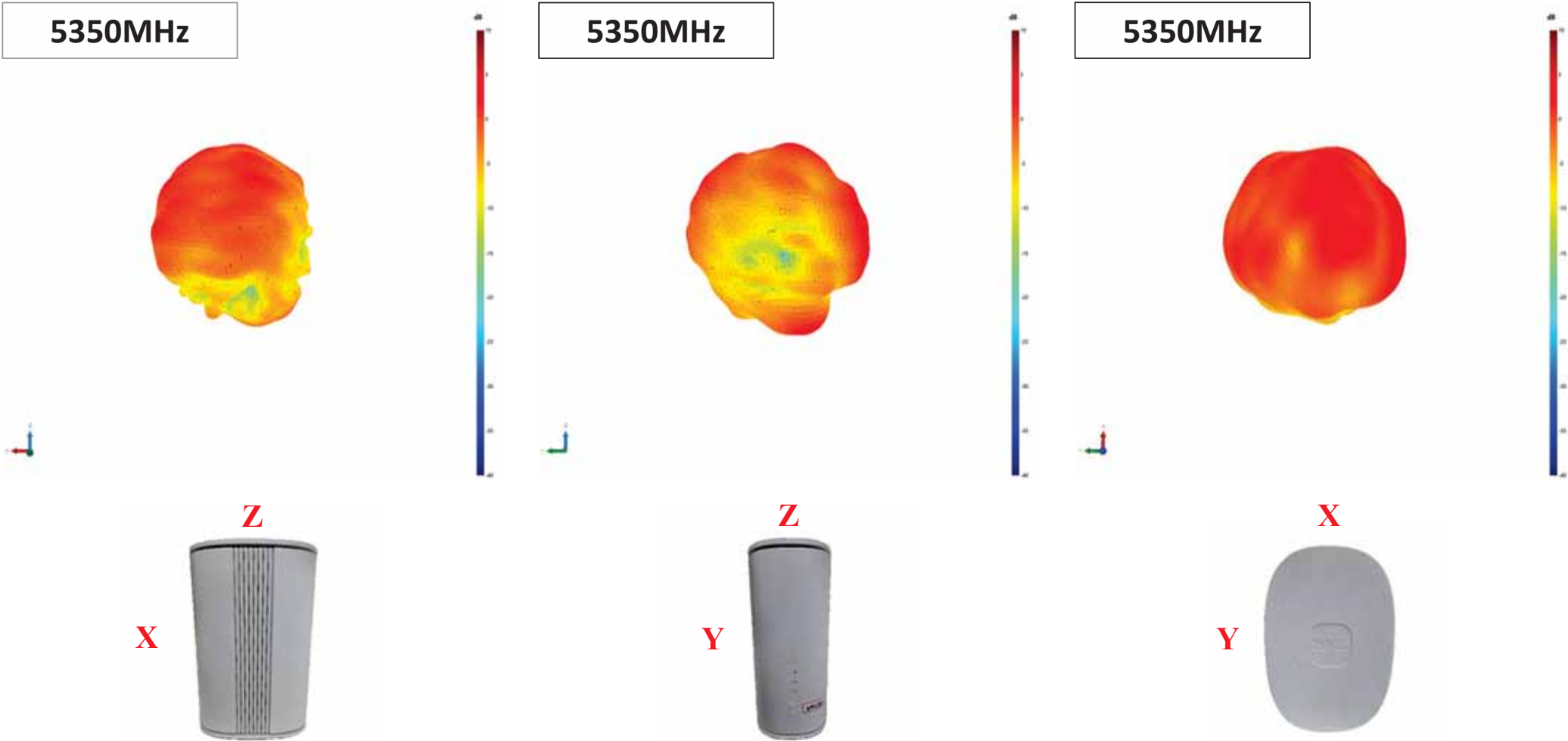
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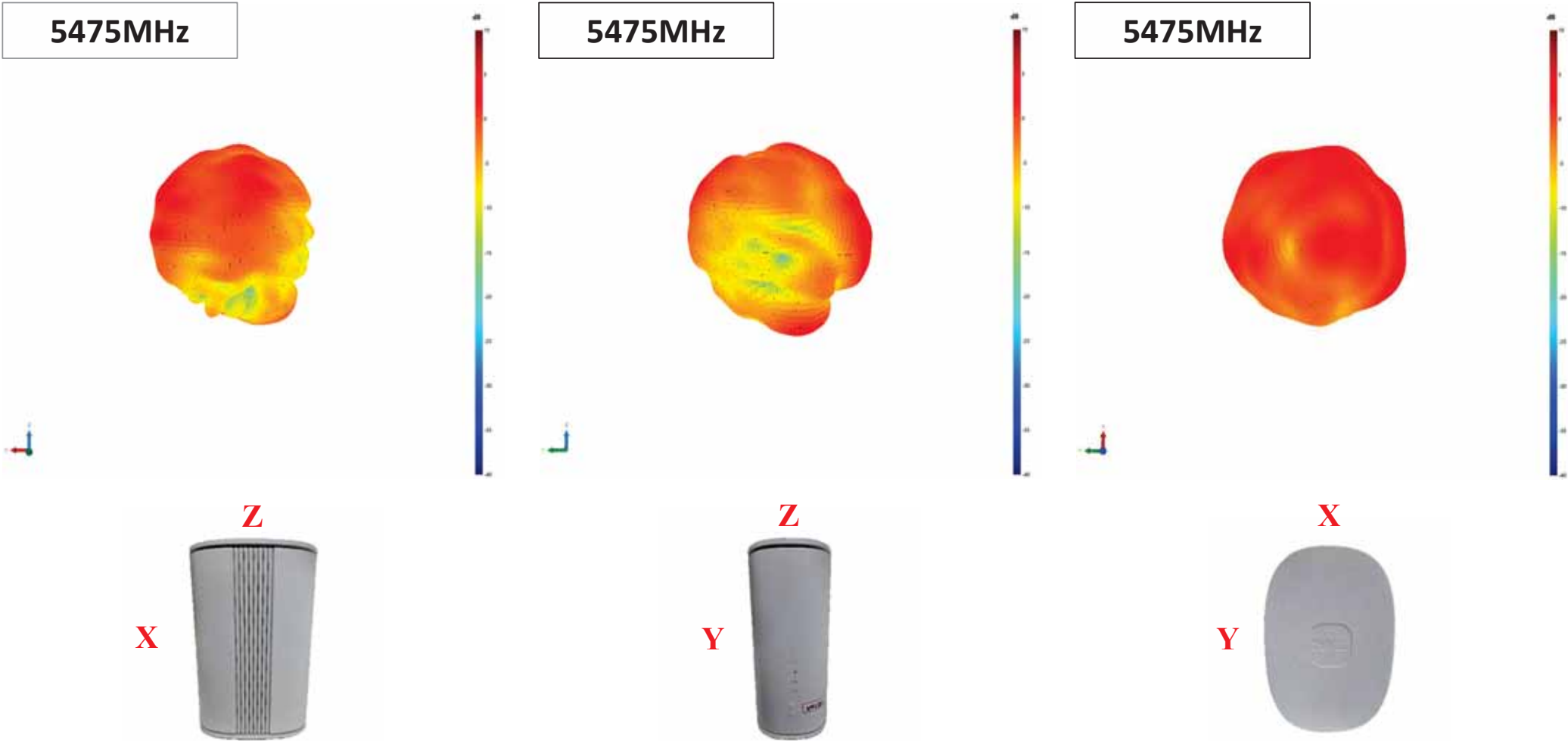
5150MHz



3D Radiation Pattern @ W2 5150~5875 MHz

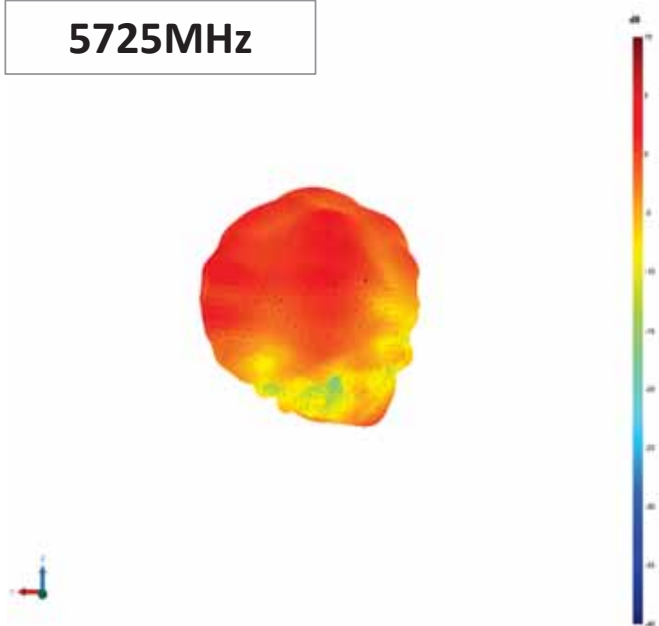


3D Radiation Pattern @ W2 5150~5875 MHz

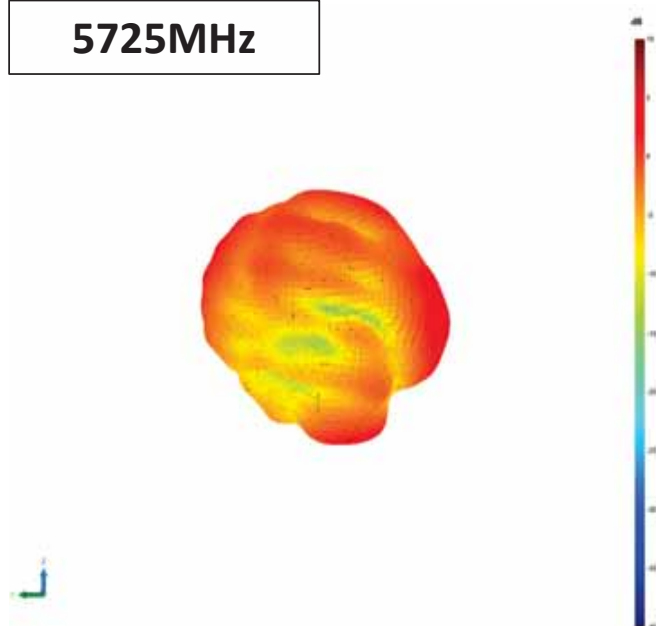


3D Radiation Pattern @ W2 5150~5875 MHz

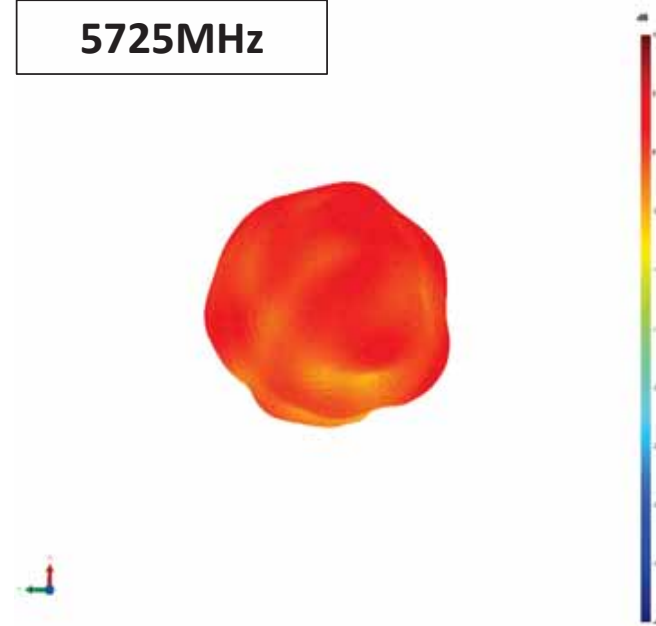
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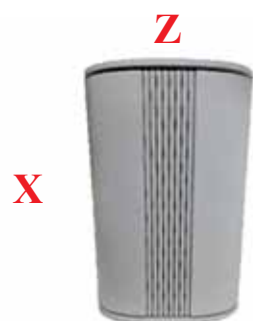
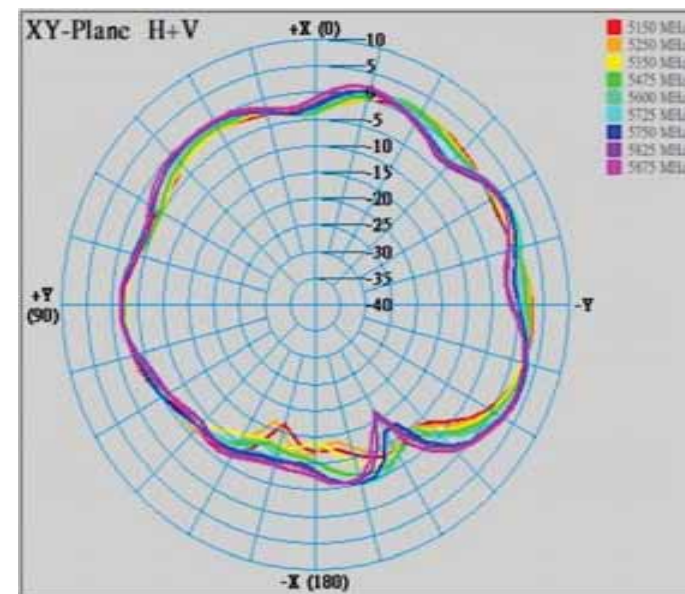
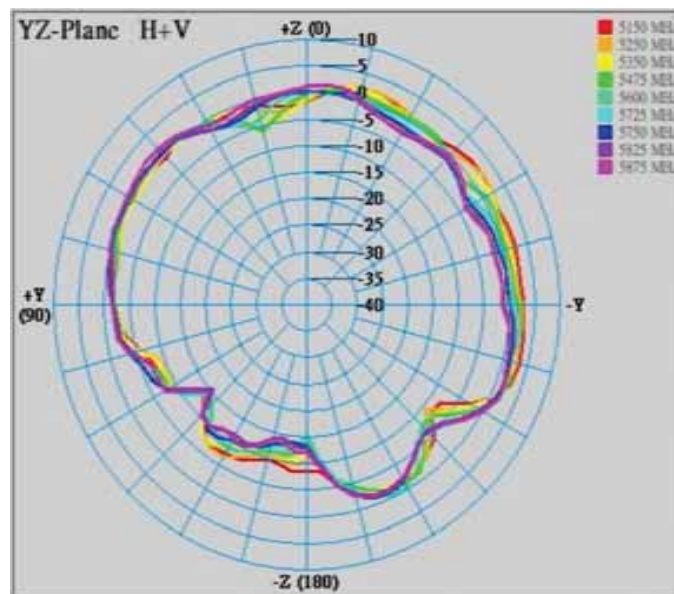
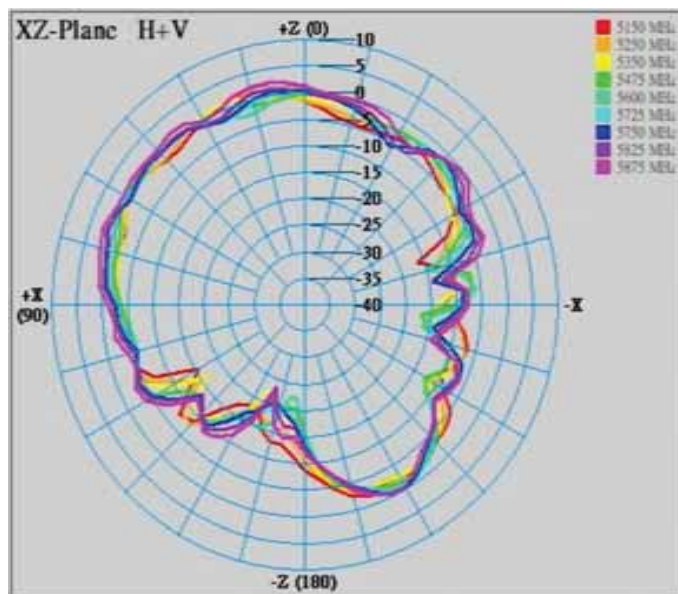
5725MHz



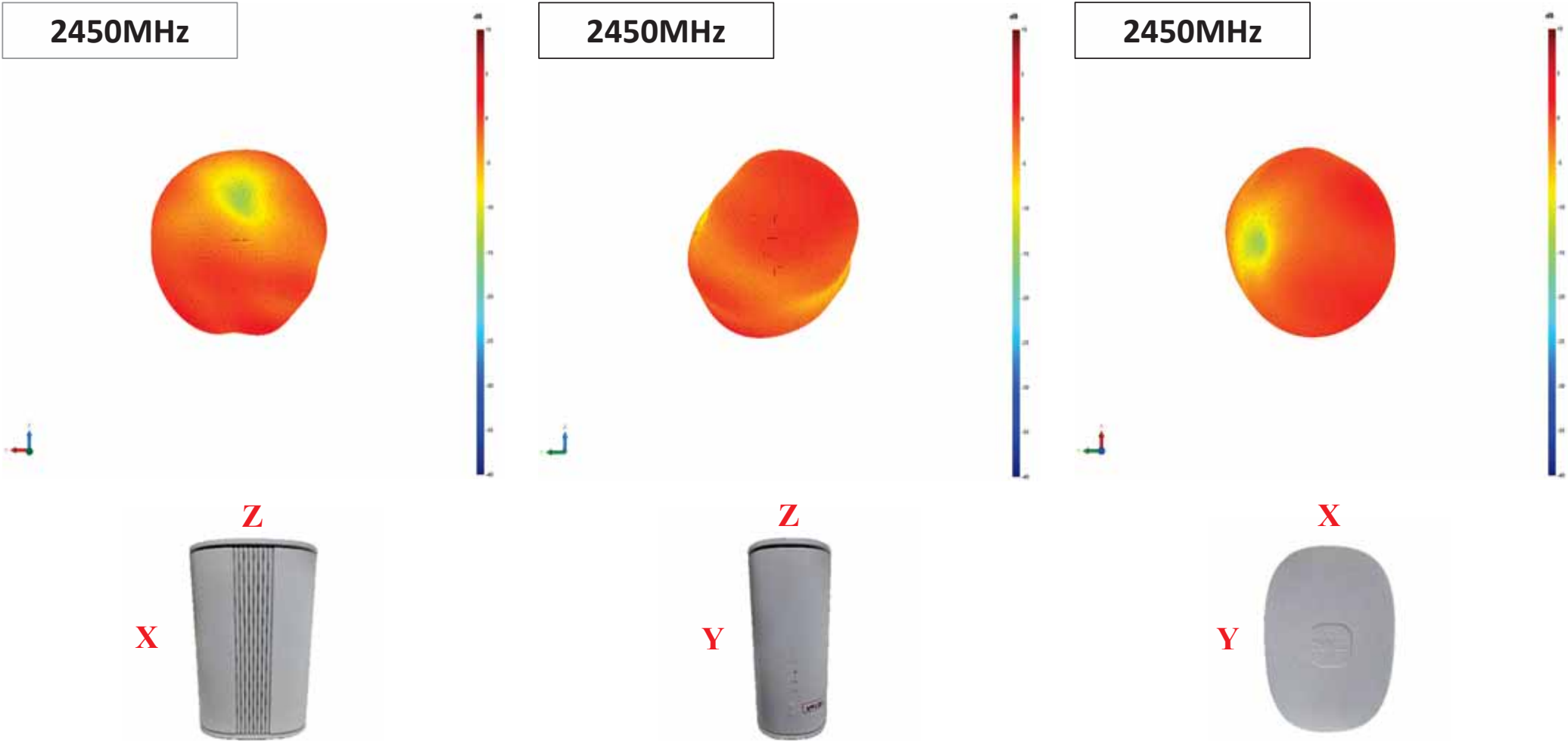
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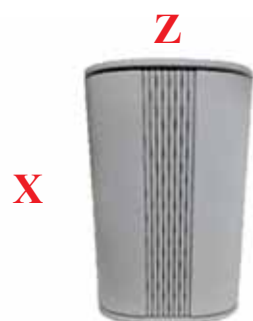
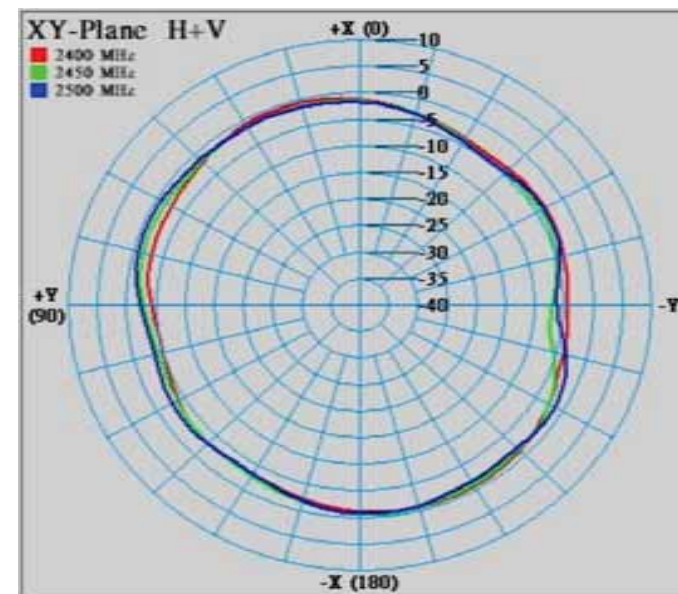
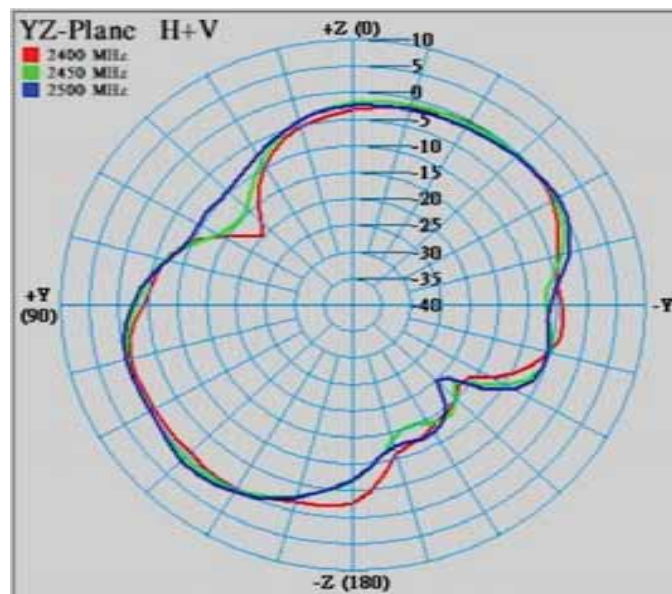
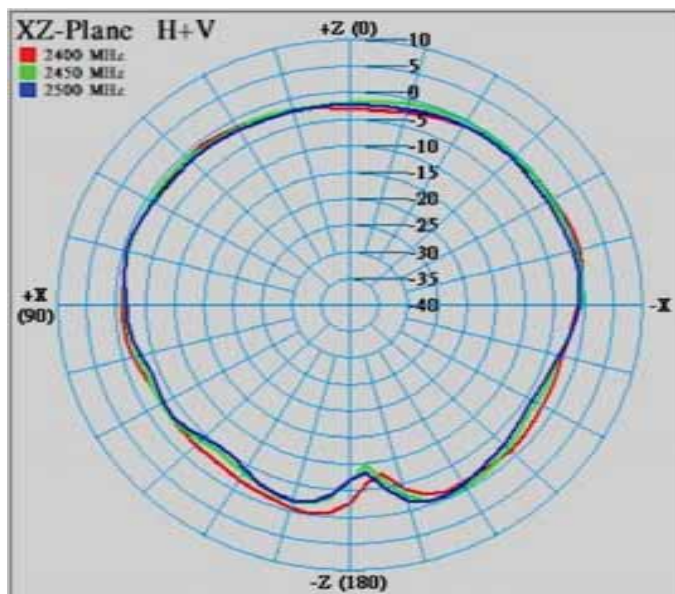
2D Radiation Pattern @ W2 5150~5875 MHz



3D Radiation Pattern @ W3 2400~2500 MHz

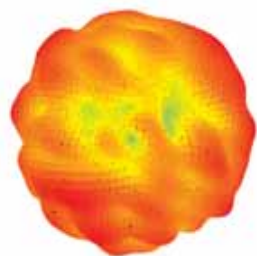


2D Radiation Pattern @ W3 2400~2500 MHz

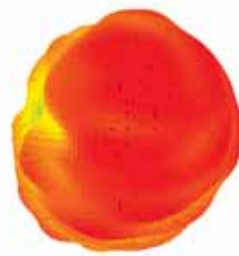


3D Radiation Pattern @ W3 5150~5875 MHz

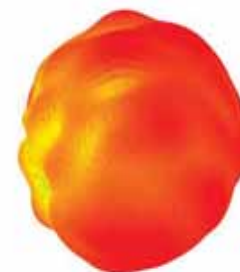
5150MHz



5150MHz

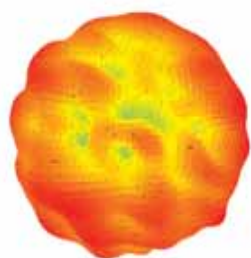


5150MHz

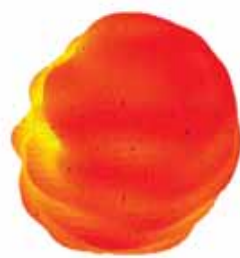


3D Radiation Pattern @ W3 5150~5875 MHz

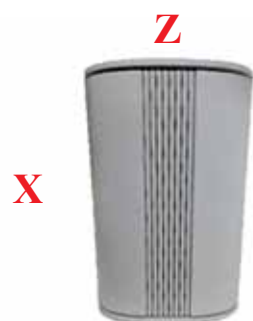
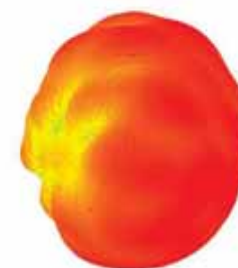
5350MHz



5350MHz

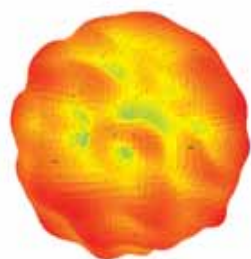


5350MHz

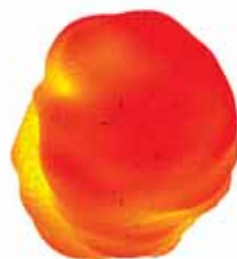


3D Radiation Pattern @ W3 5150~5875 MHz

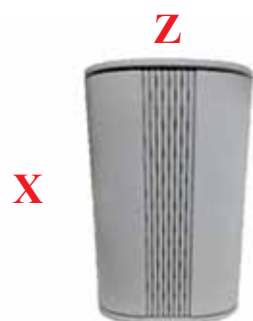
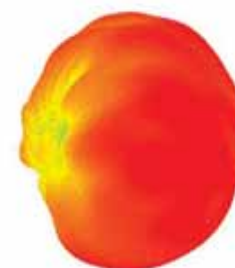
5475MHz



5475MHz

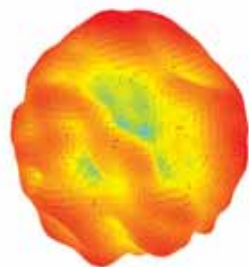


5475MHz

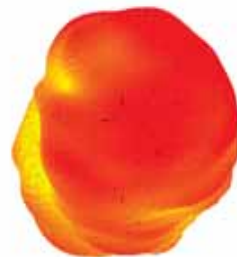


3D Radiation Pattern @ W3 5150~5875 MHz

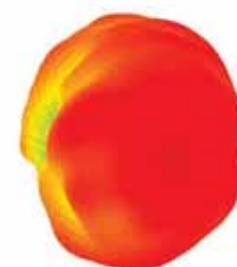
5725MHz



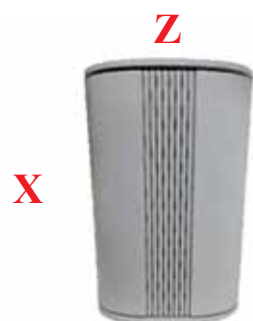
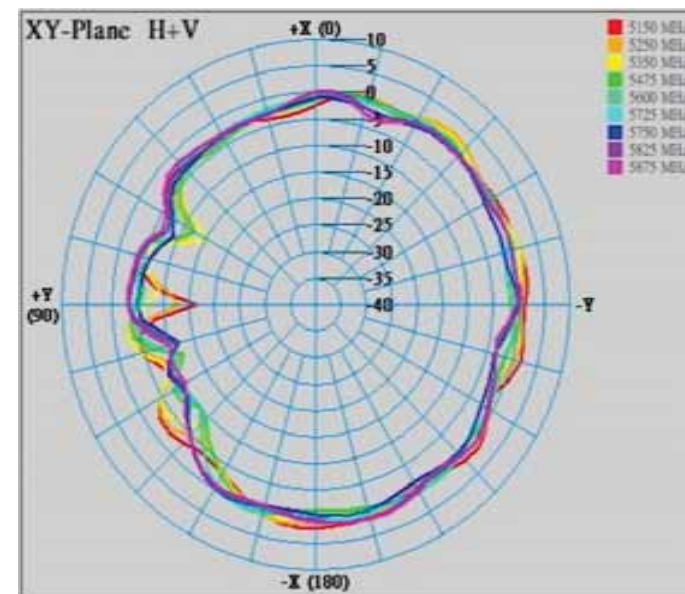
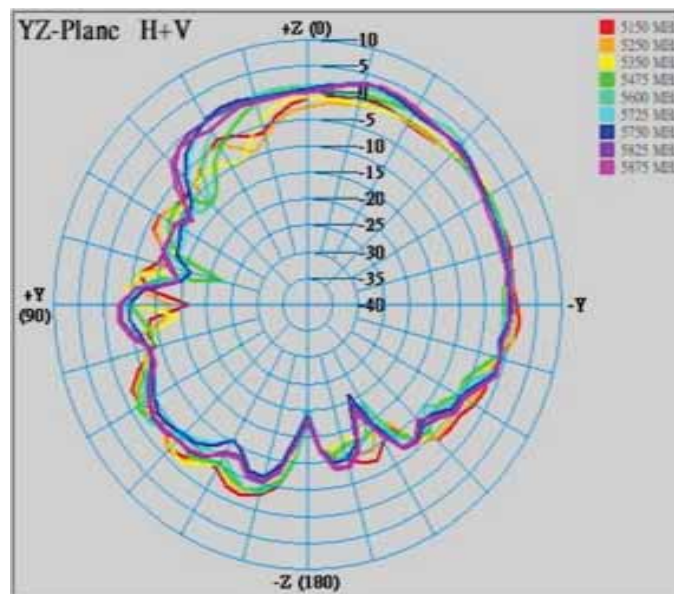
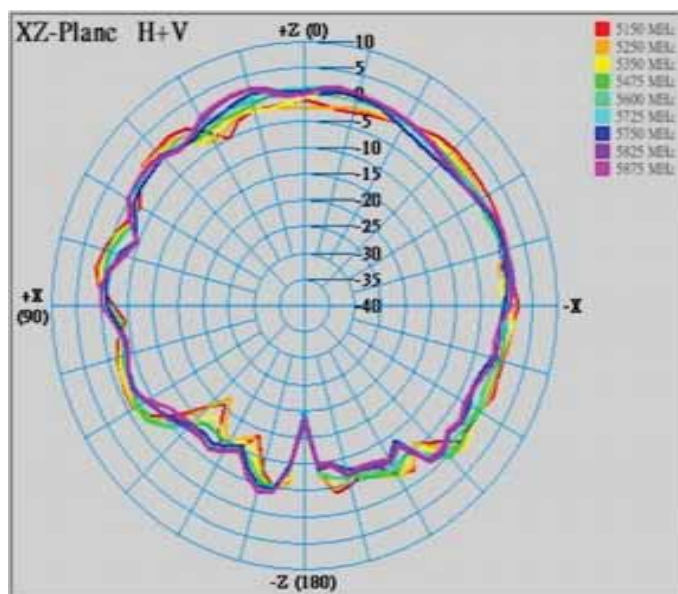
5725MHz



5725MHz



2D Radiation Pattern @ W3 5150~5875 MHz



Thanks You !!



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