



Antenna Report – TG-1682GCT

WLAN Internal Antenna
(802.11 a/b/g/n)

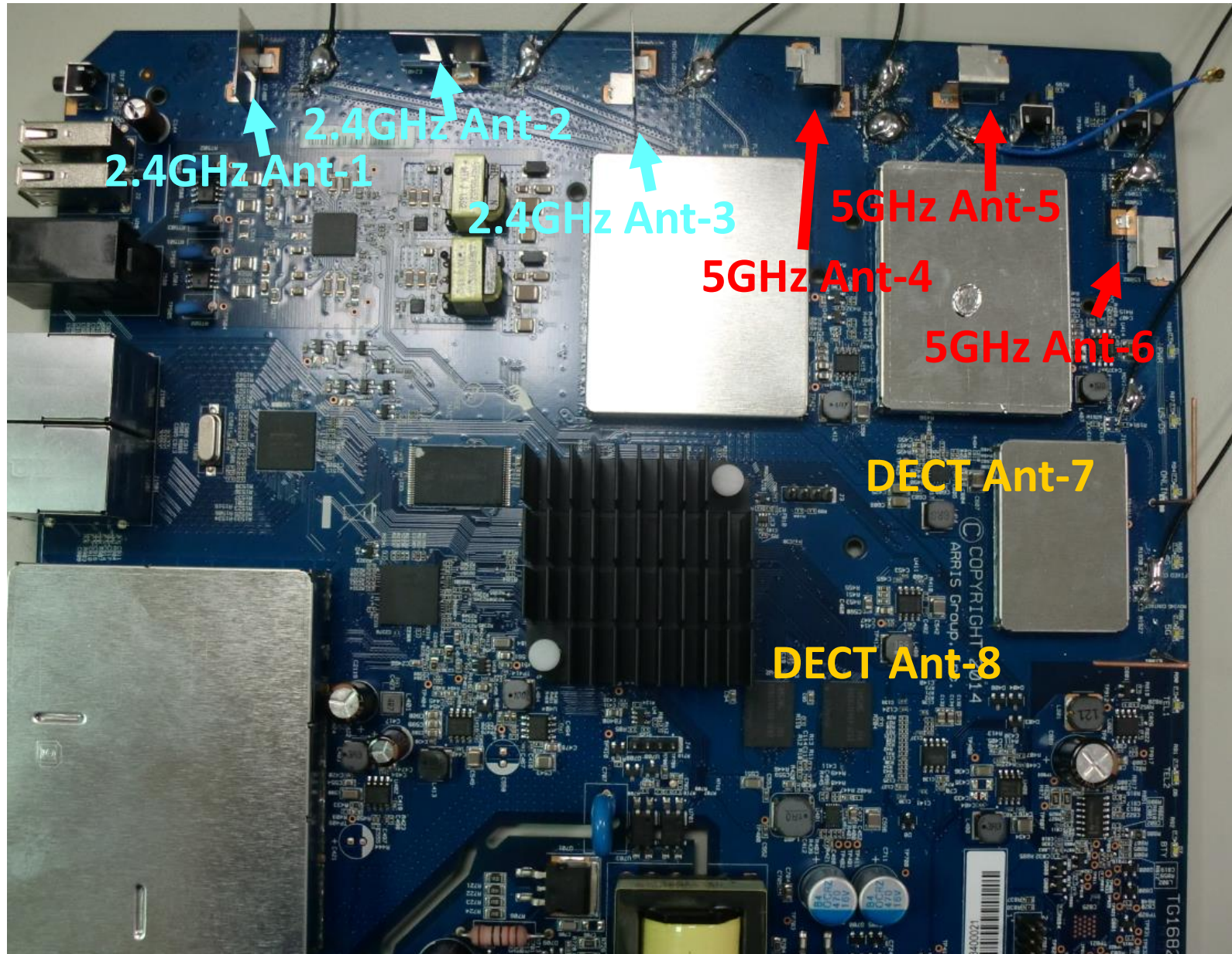
Outline

- Antenna Design Specification
- Antenna Structure and Placement
- Antenna Measured Return Loss
- Antenna Measured Isolation
- Antenna Radiation Pattern
- Antenna Peak Gain & Antenna Efficiency

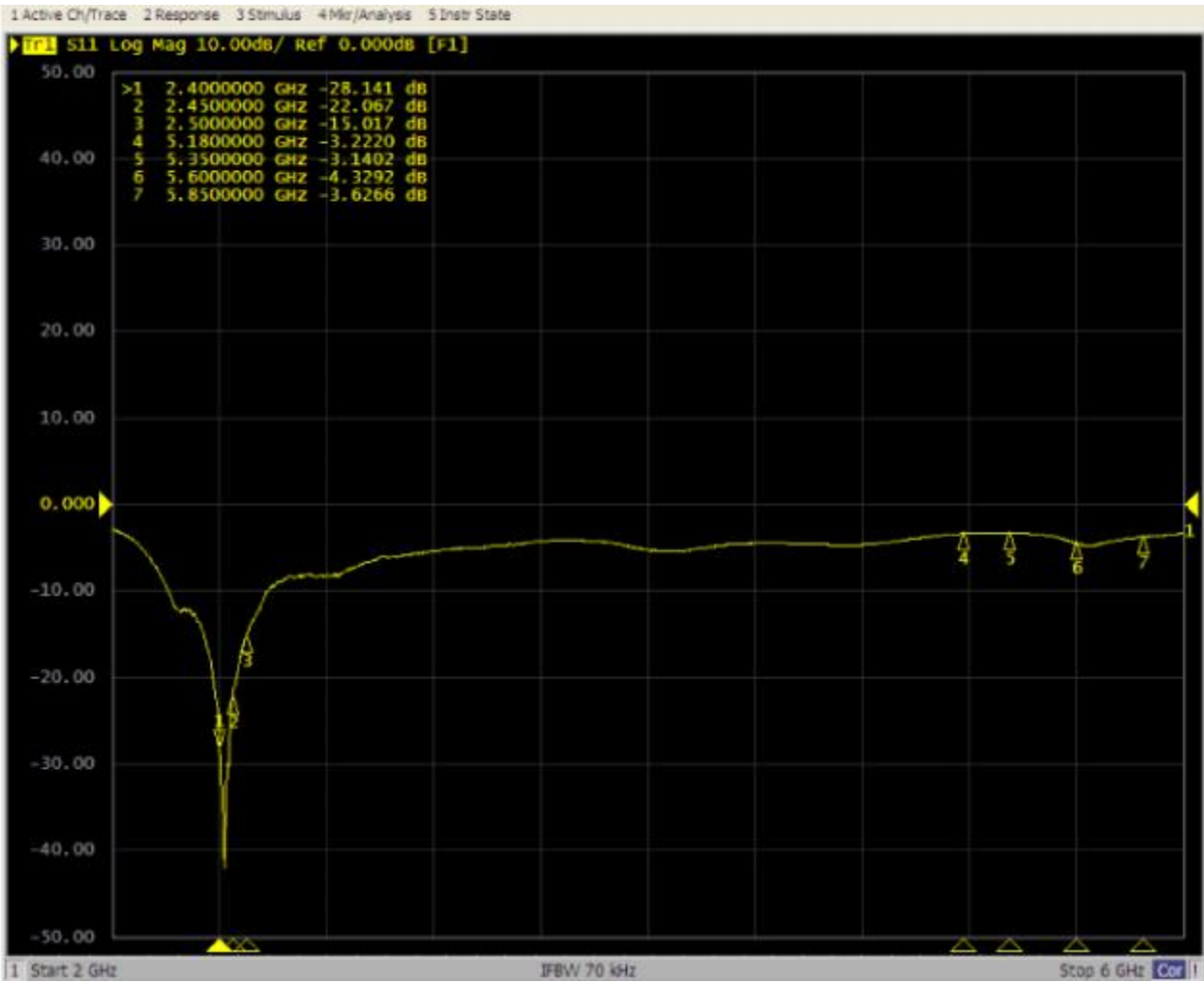
Antenna Design Specification

Item	Specification	Design Goal
Frequency Range	WLAN 2400~2500MHz *3 WLAN 5150~5850MHz *3 DECT 1880~1920MHz *2	
Antenna Type	2.4GHz Metal PIFA*3 (antenna 1,2,3) 5GHz Metal PIFA*3 (antenna 4,5,6) DECT Metal Stick*2 (antenna 7,8)	
Dimension (mm ³)	antenna 1,2,3 : 16 x 15 x 8.4 antenna 4,5,6 :13.3 x 11.8 x 10.8 antenna 7,8 :27.5 x 20 x1 (Diameter)	
Return Loss (dB)	2400~2500MHz > 10dB 5150~5850MHz > 10dB 1880~1920MHz >10dB	>10dB
Peak Gain (dBi)	antenna 1 > 3.2dBi,antenna 2 > 3dBi antenna 3 > 3.2dBi,antenna 4 > 3.1dBi antenna 5 >4.5dBi,antenna 6 > 3.6dBi antenna 7> 3.3dBi,antenna 8 > 3.5dBi	
Efficiency (%)	antenna 1 > 63%,antenna 2 > 61% antenna 3 > 61%,antenna 4 > 61% antenna 5 > 64%,antenna 6 > 64% antenna 7 > 63%,antenna 8 > 68%	
Impedance (Ω)	50 ohm	50 ohm
Polarization	Linear	
Cable	Φ1.13mm	
Connector	I-pex	

Antenna Structure and Placement

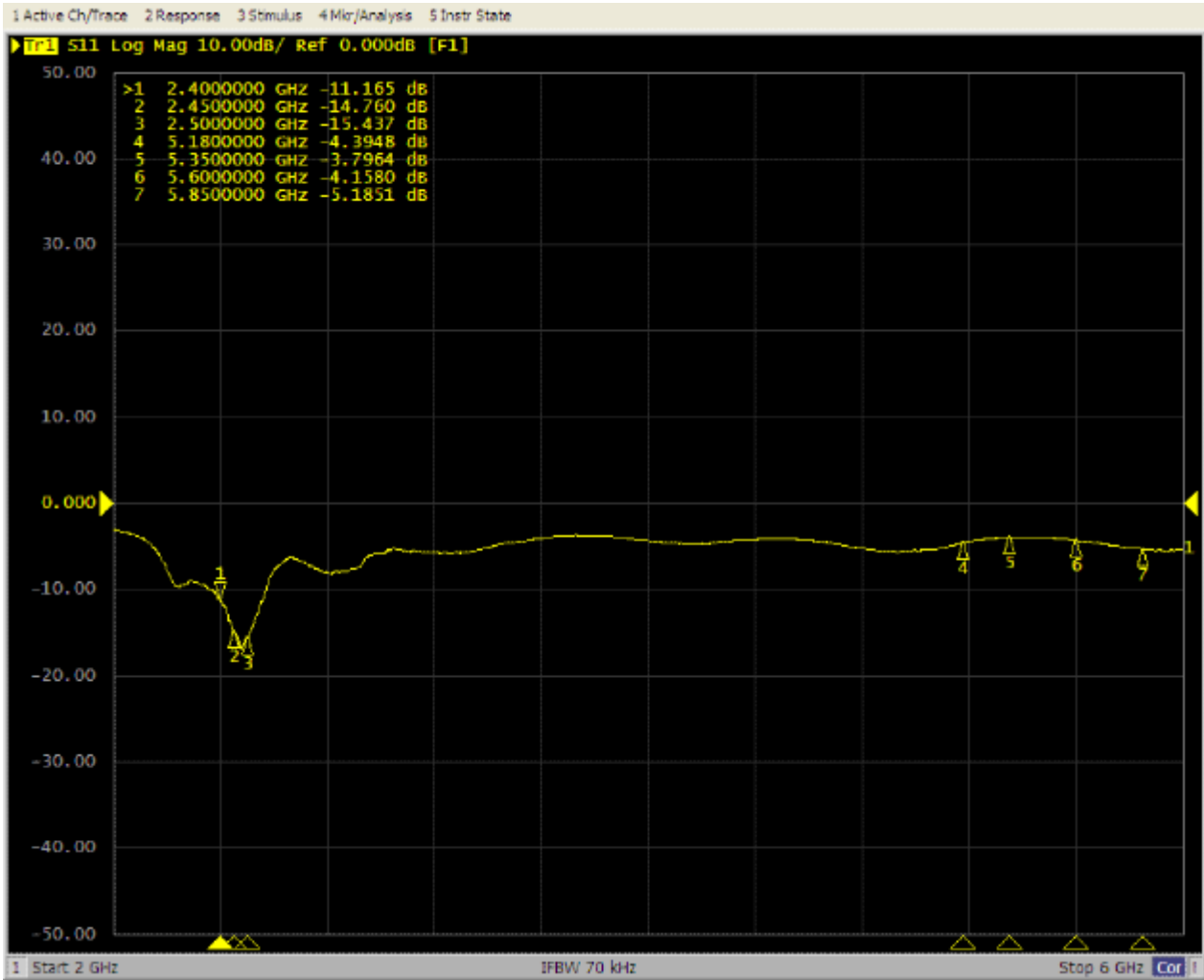


Return Loss-2.4GHz Antenna1



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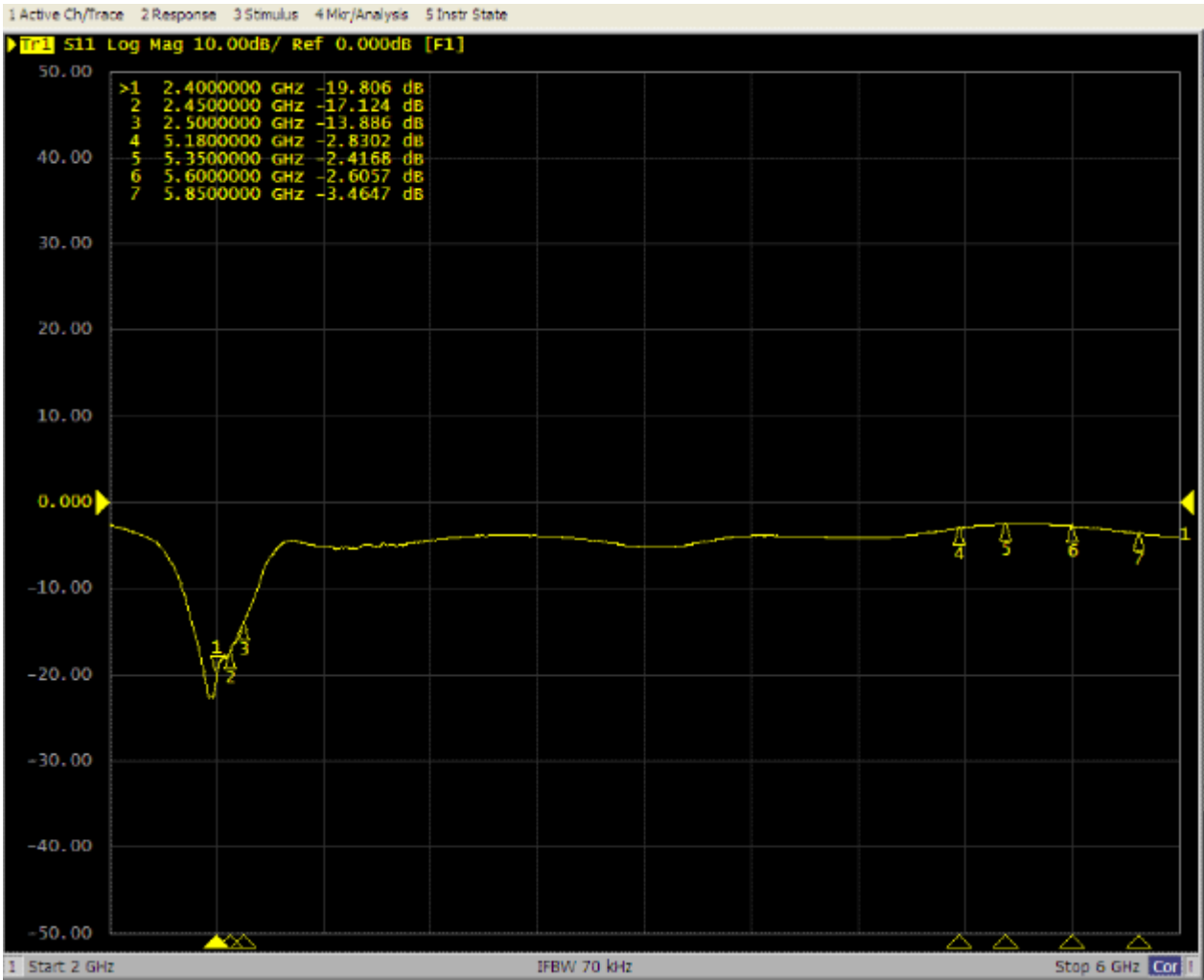
Return Loss-2.4GHz Antenna2



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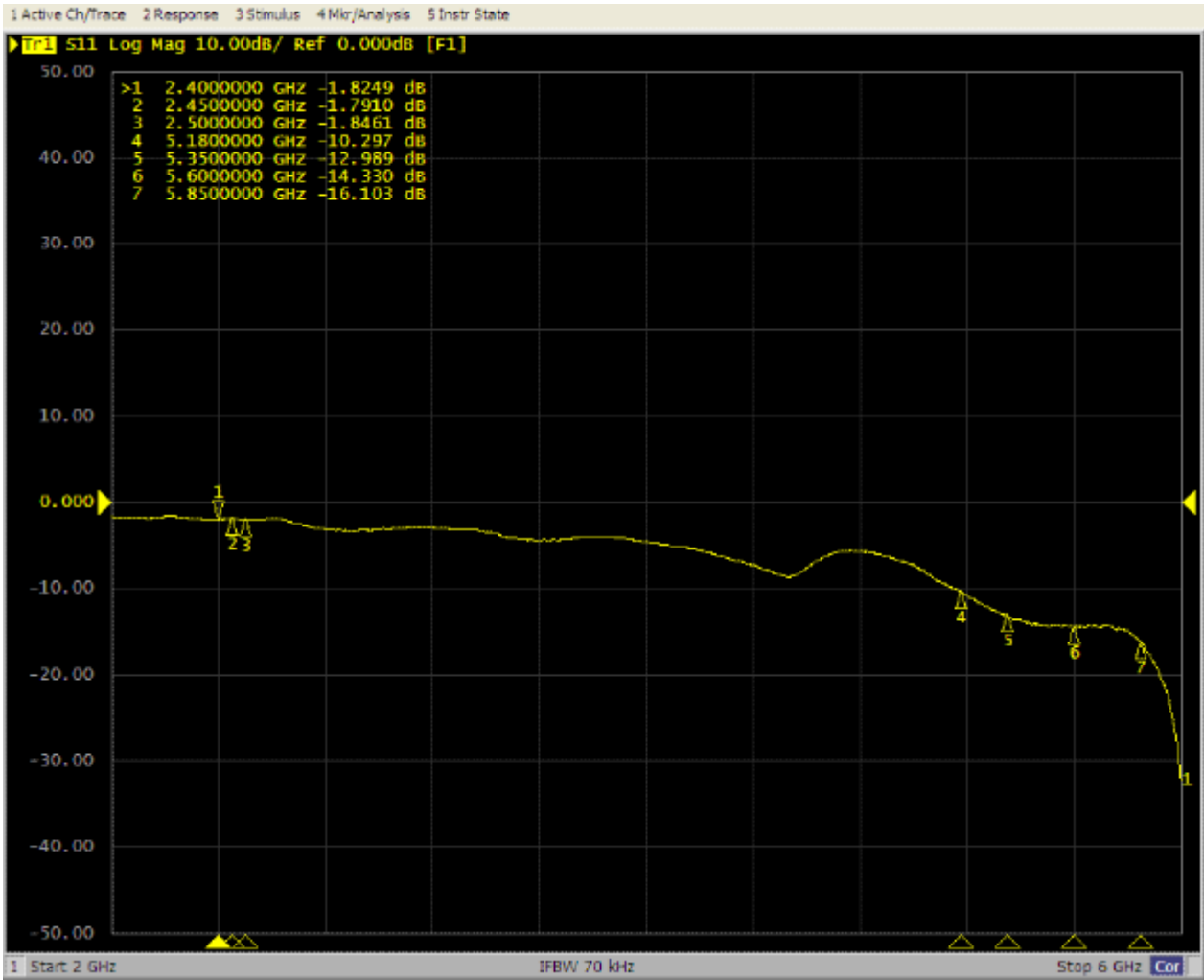
Return Loss-2.4GHz Antenna3

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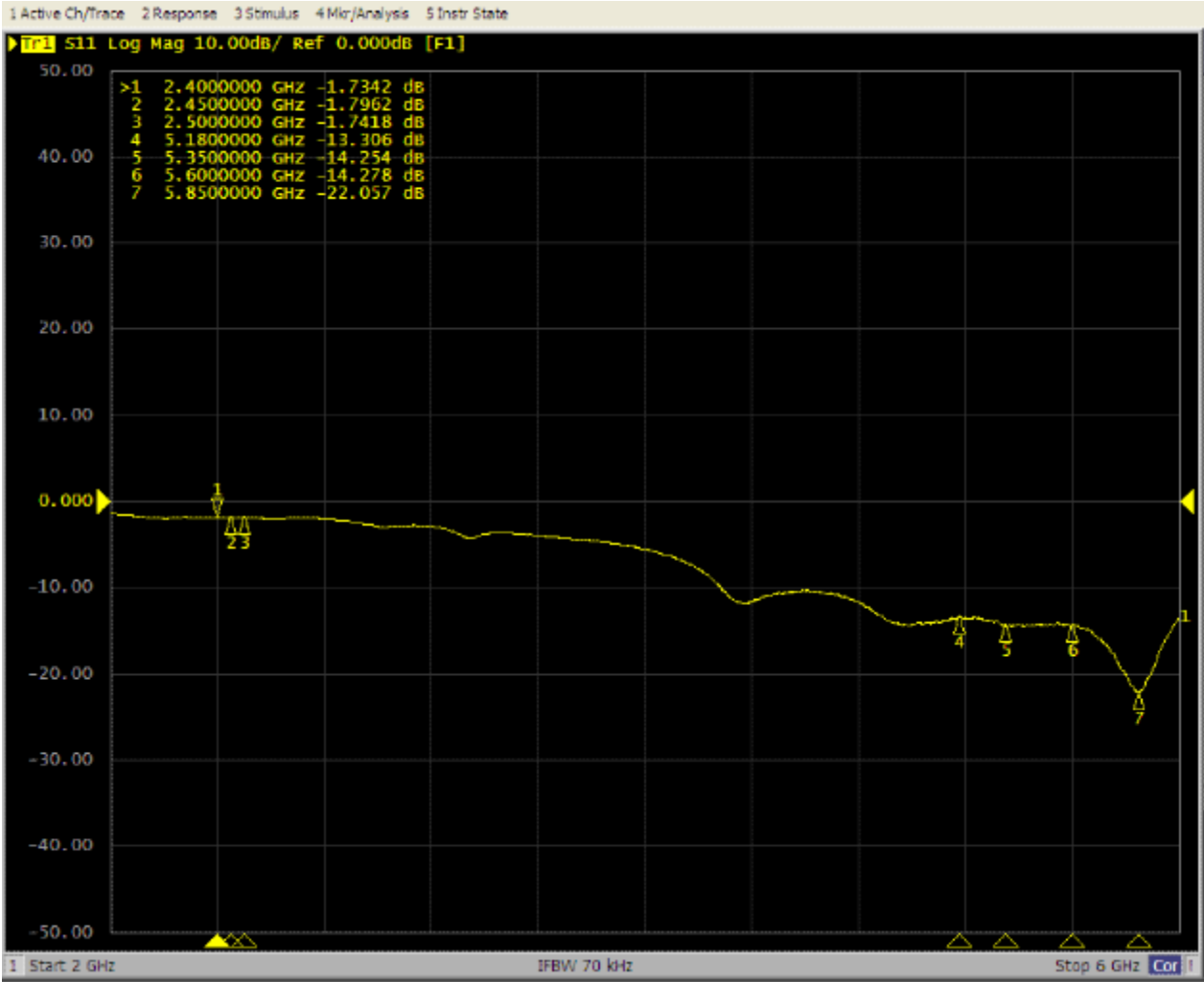
Return Loss-5GHz Antenna4

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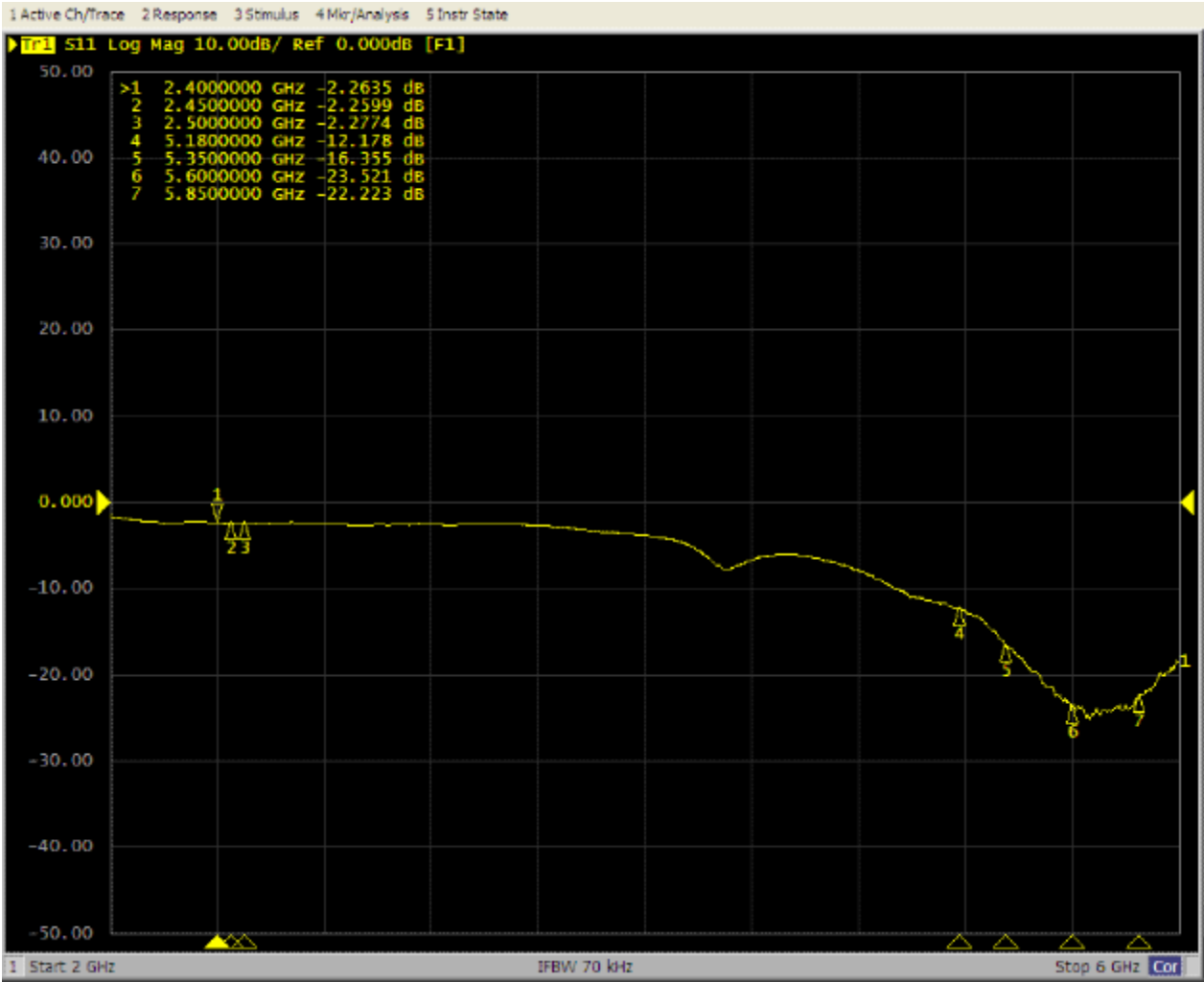
Return Loss-5GHz Antenna5

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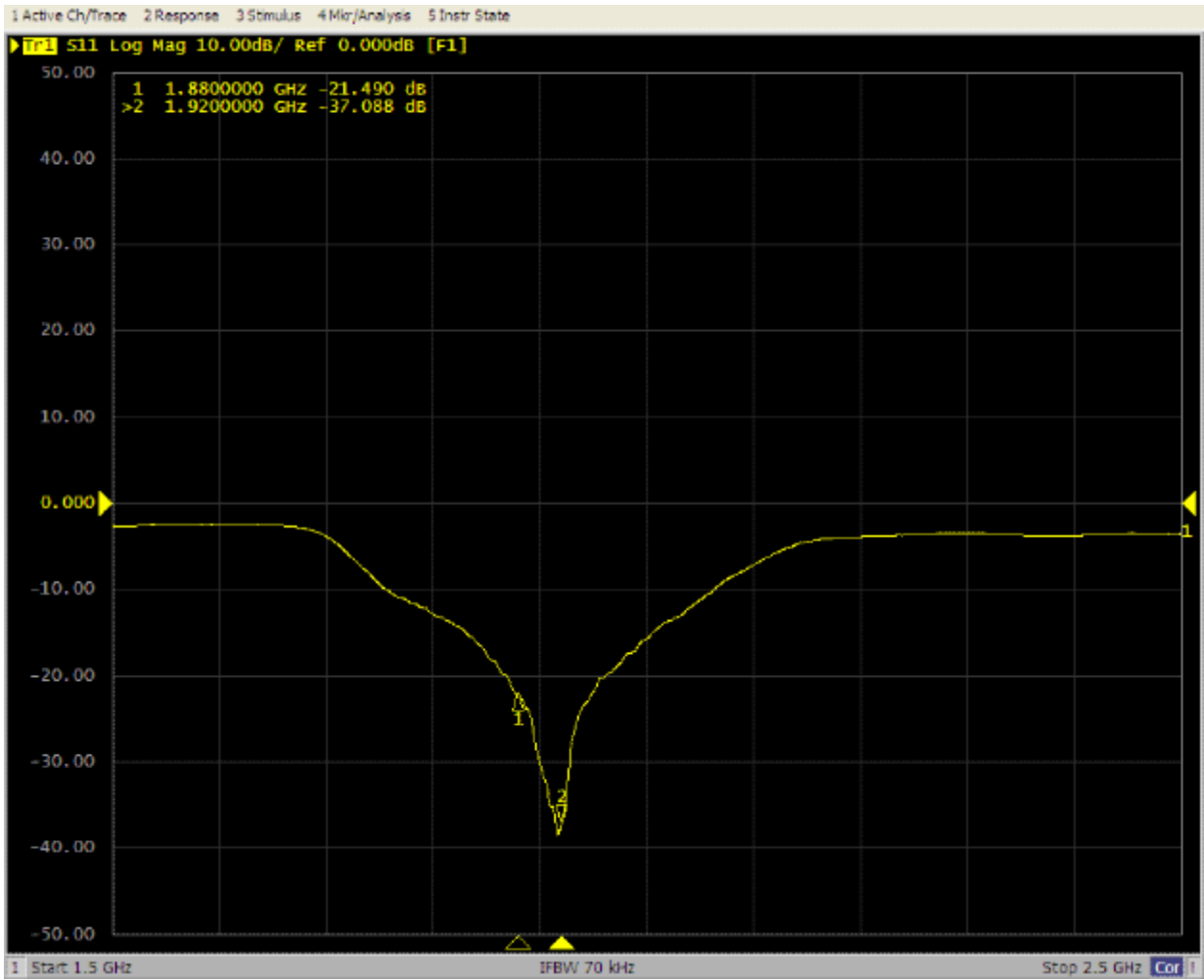
Return Loss-5GHz Antenna6

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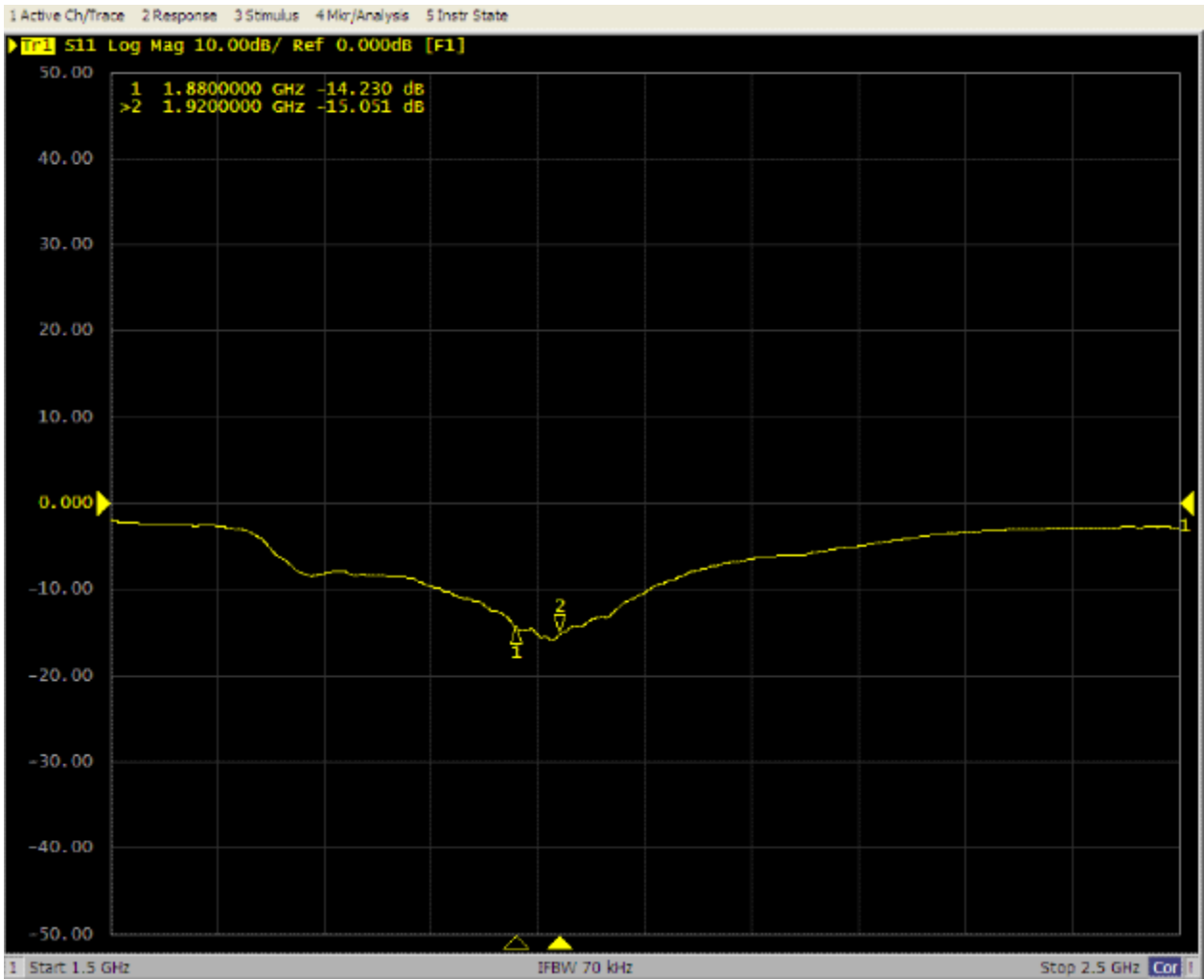
Return Loss-DECT Antenna7

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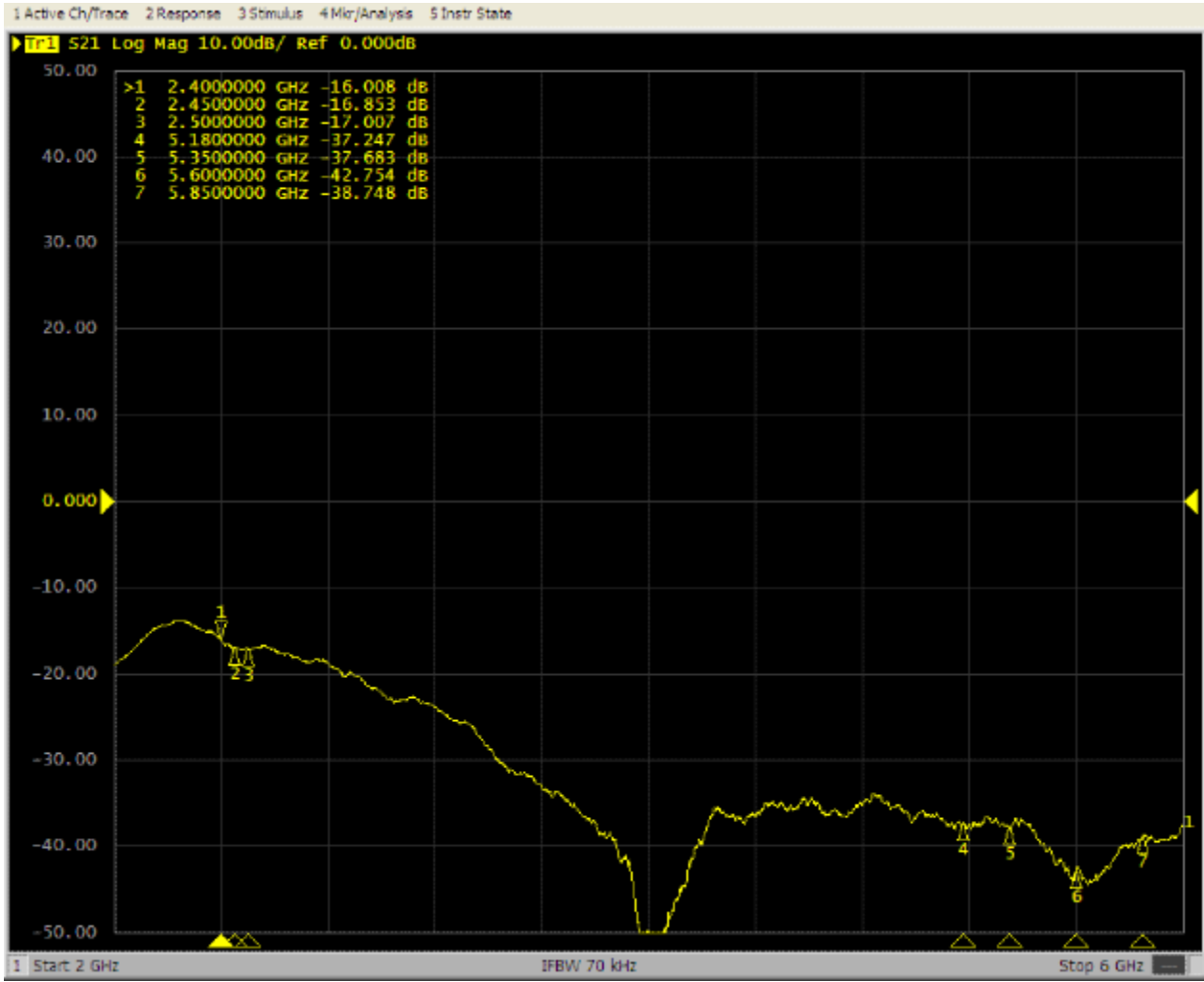


Return Loss-DECT Antenna8

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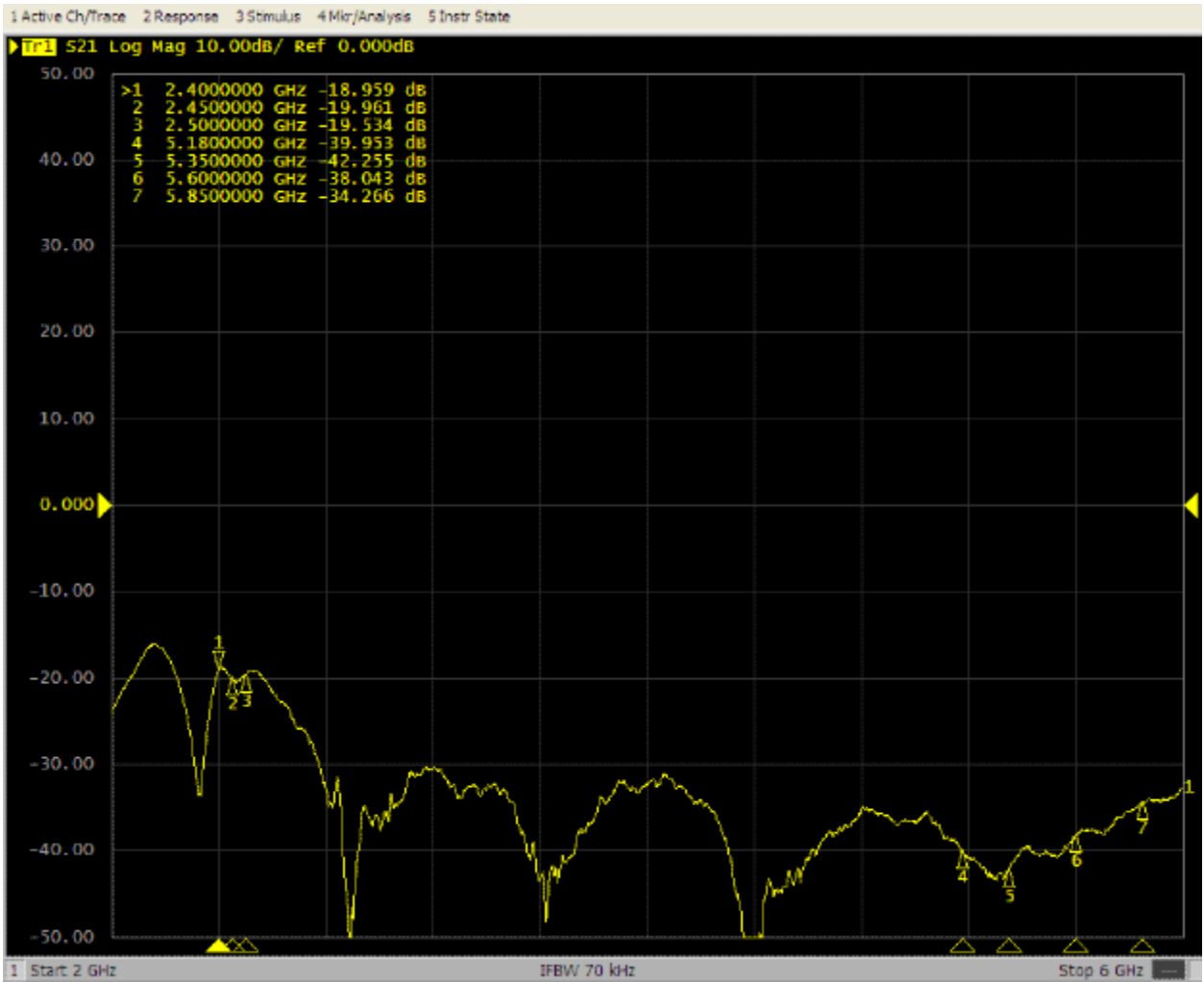


Isolation-2.4GHz Antenna1 & Antenna2



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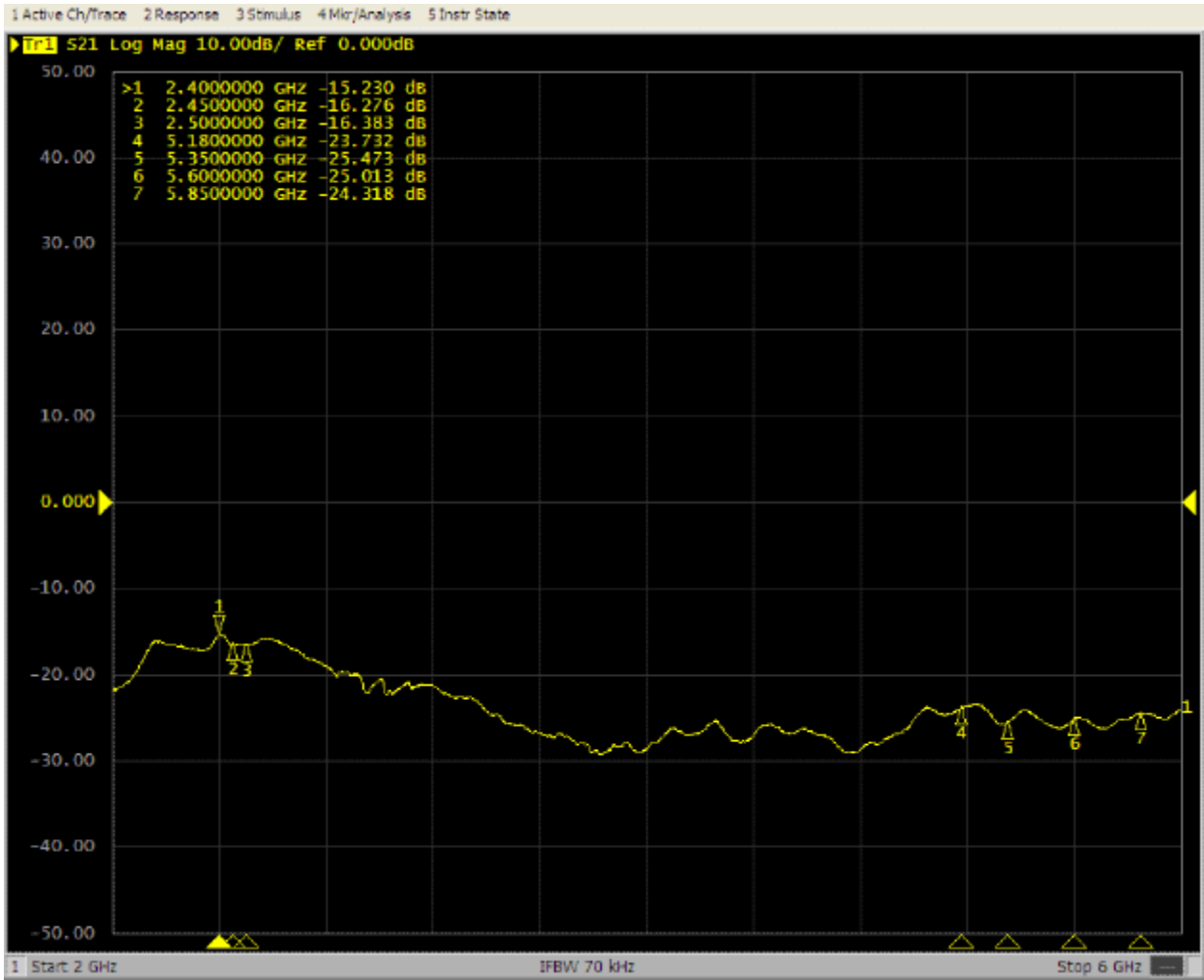
Isolation-2.4GHz Antenna1 & Antenna3



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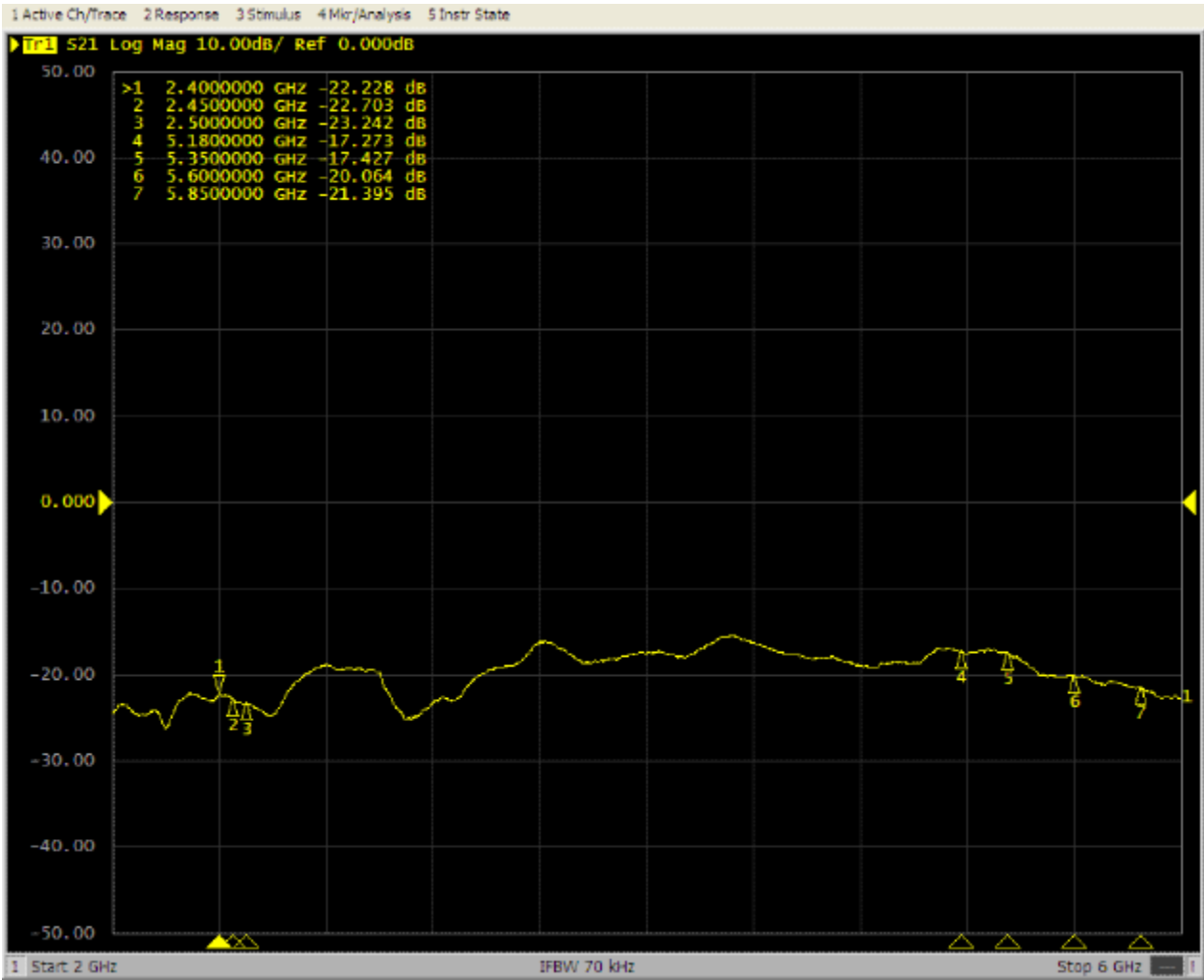
Isolation-2.4GHz Antenna2 & Antenna3

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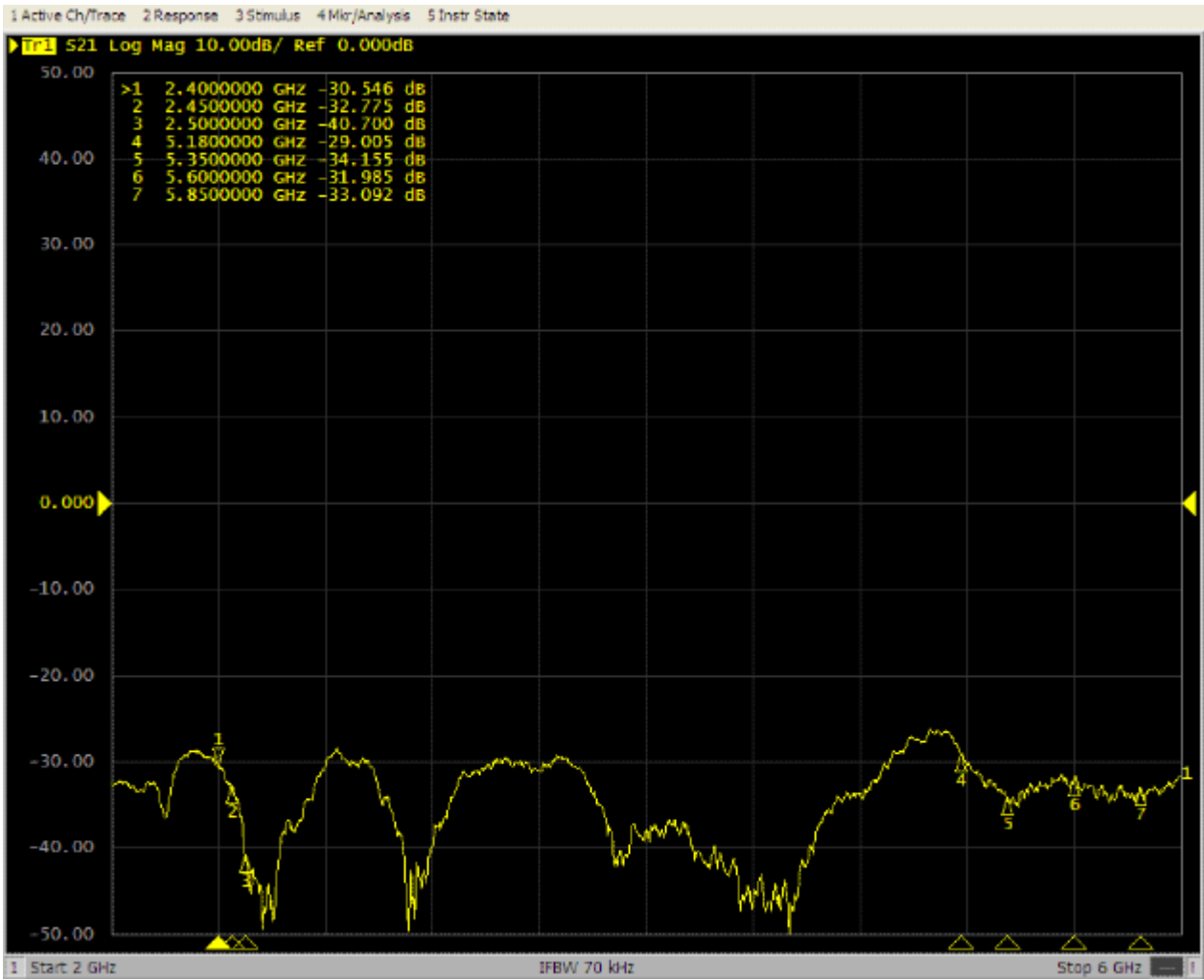
Isolation-5GHz Antenna4 & Antenna5

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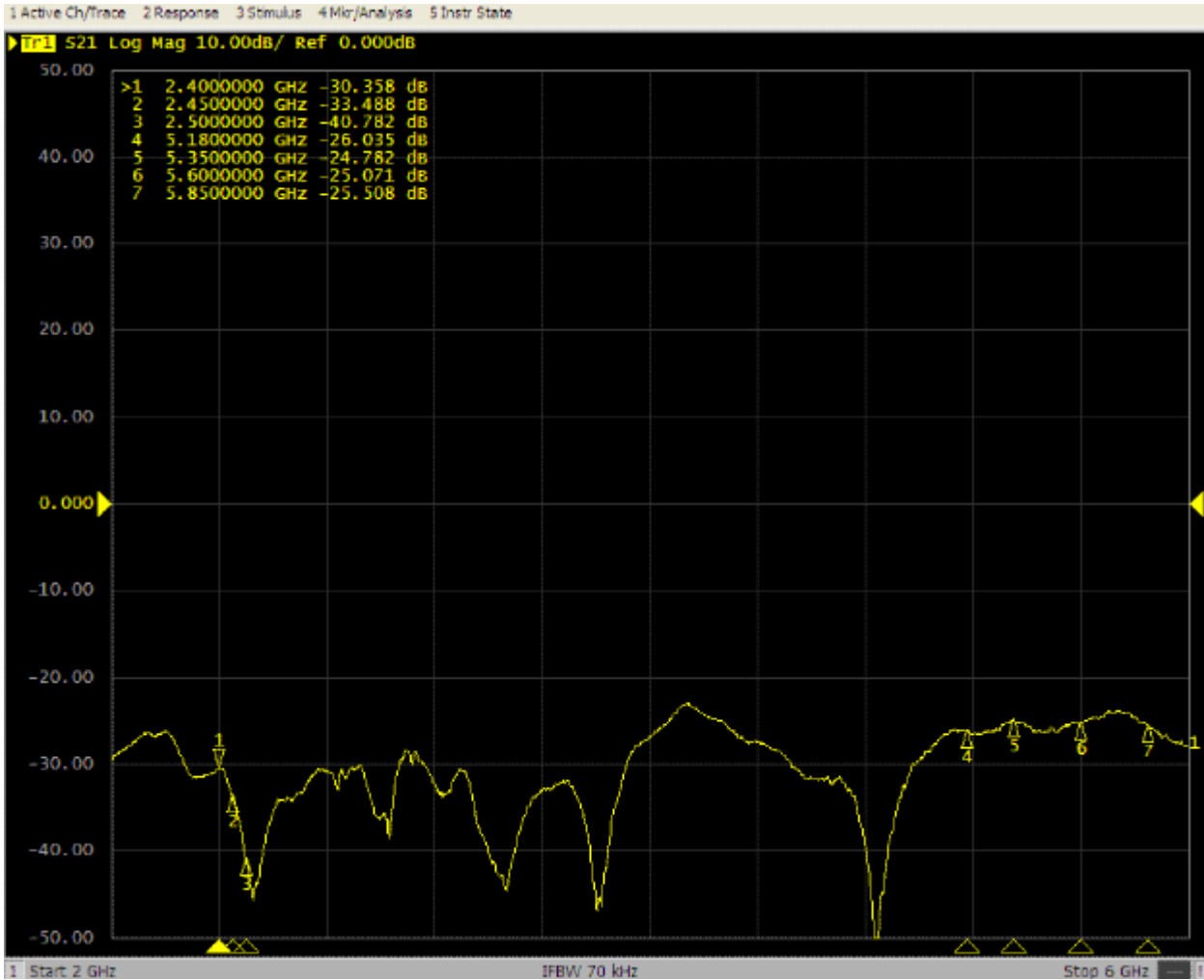
Isolation-5GHz Antenna4 & Antenna6

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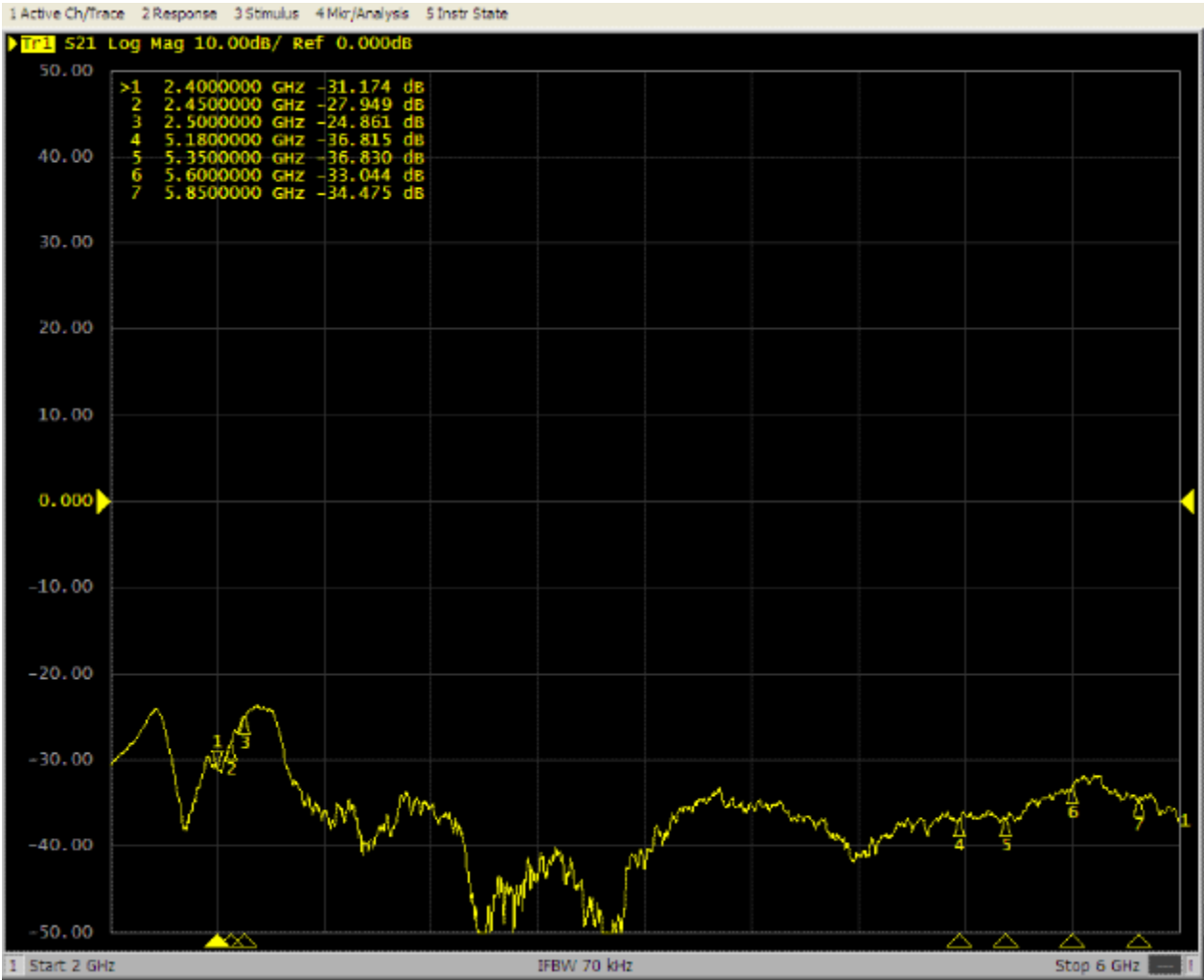
Isolation-5GHz Antenna5 & Antenna6

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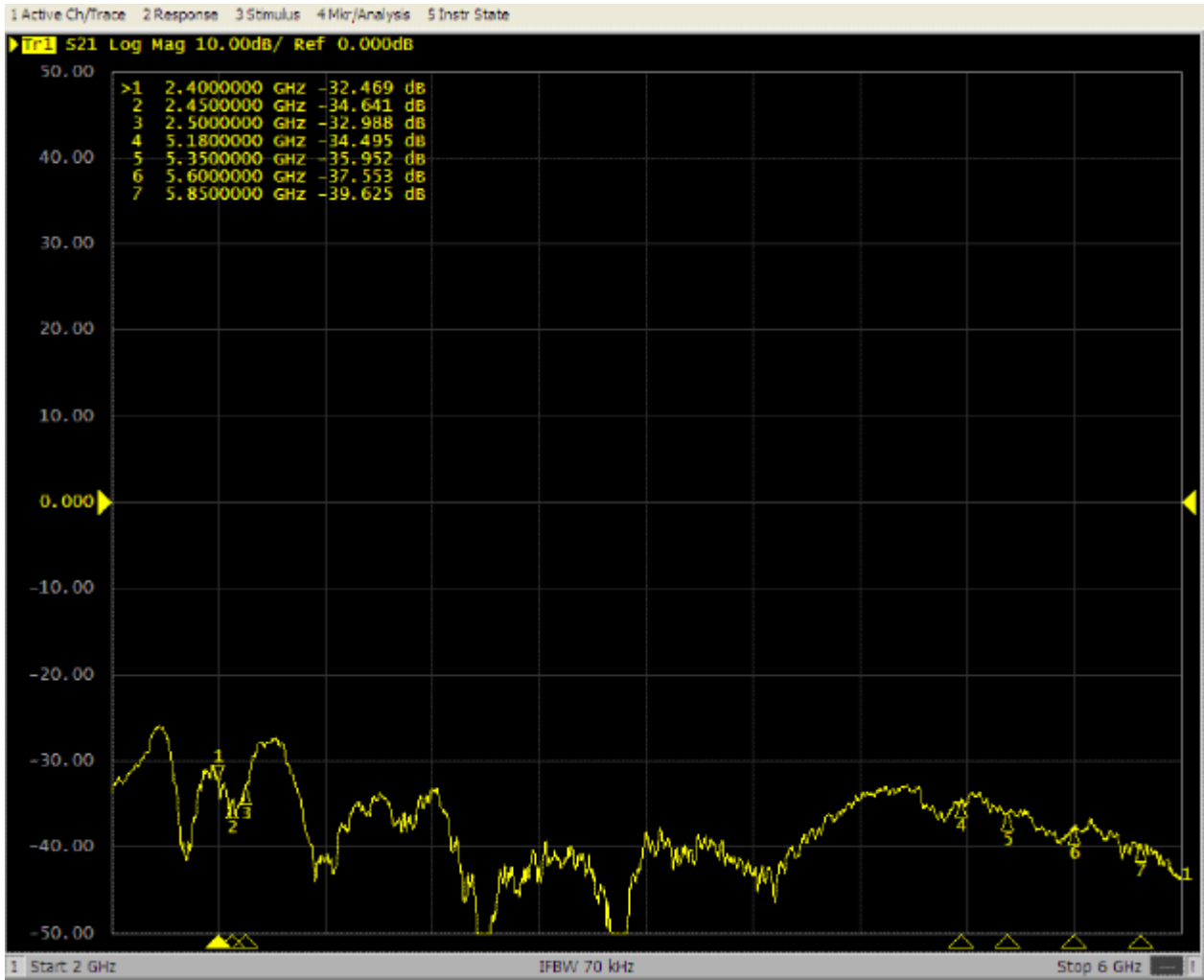
Isolation-2.4GHz Antenna1 & 5GHz Antenna4

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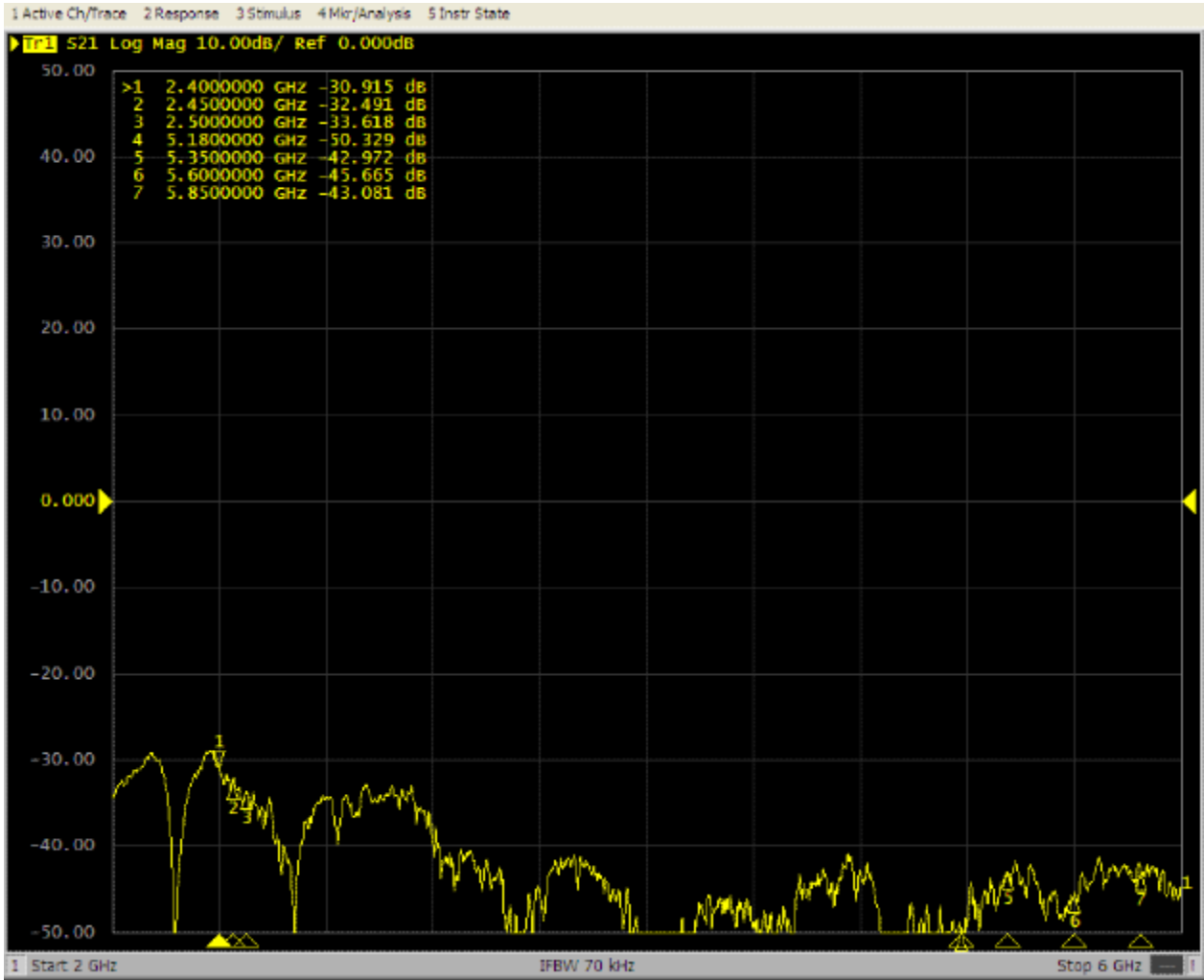
Isolation-2.4GHz Antenna1 & 5GHz Antenna5

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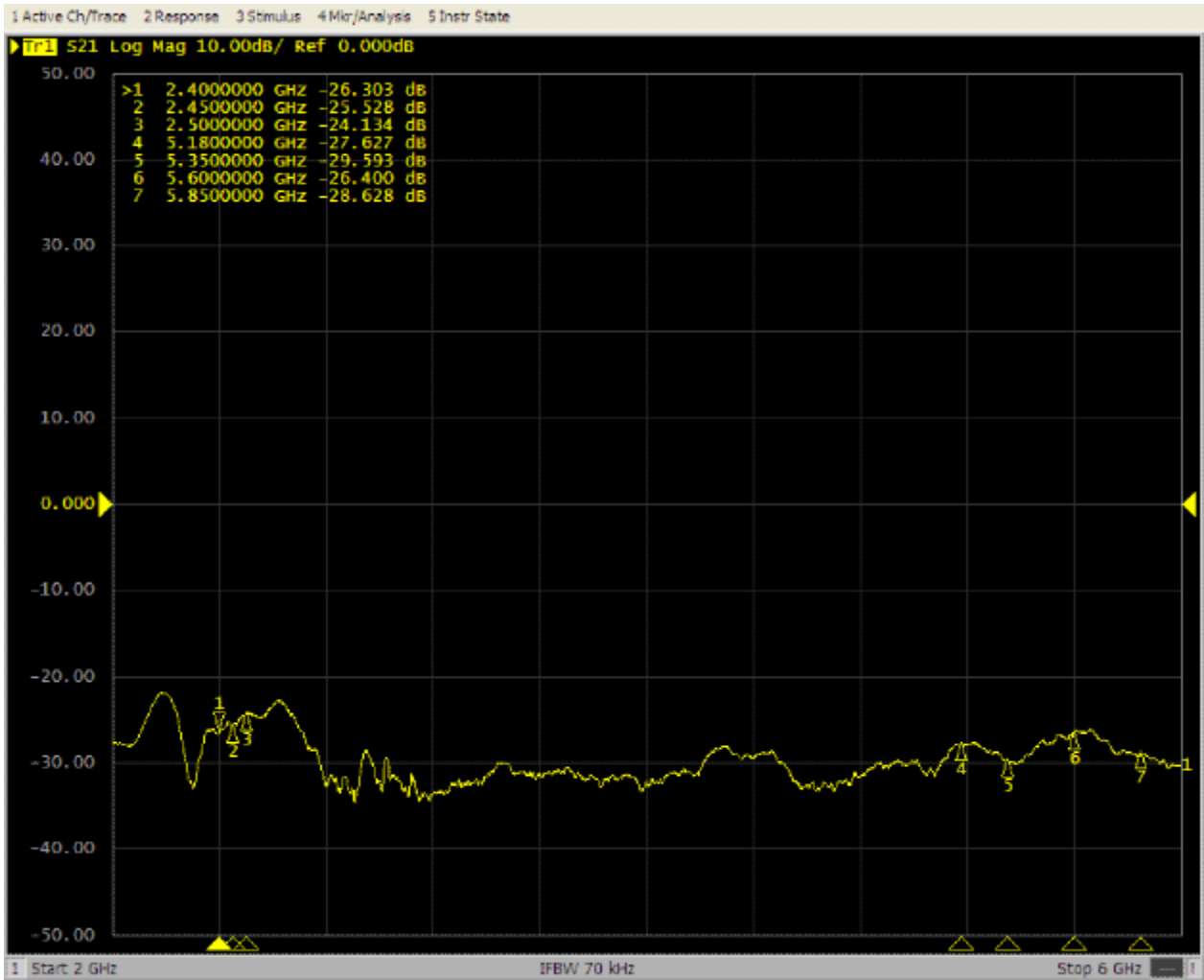
Isolation-2.4GHz Antenna1 & 5GHz Antenna6

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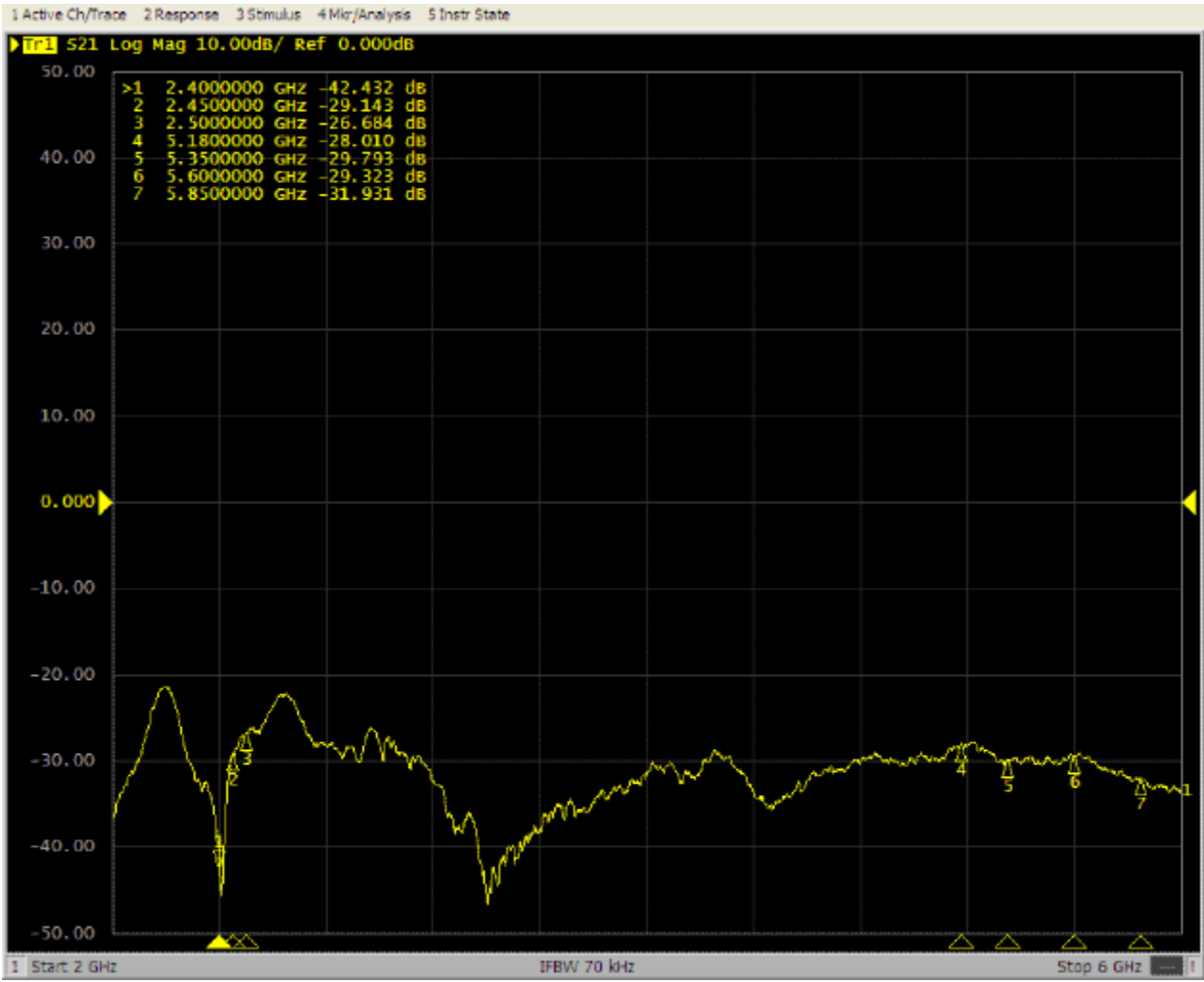
Isolation-2.4GHz Antenna2 & 5GHz Antenna4

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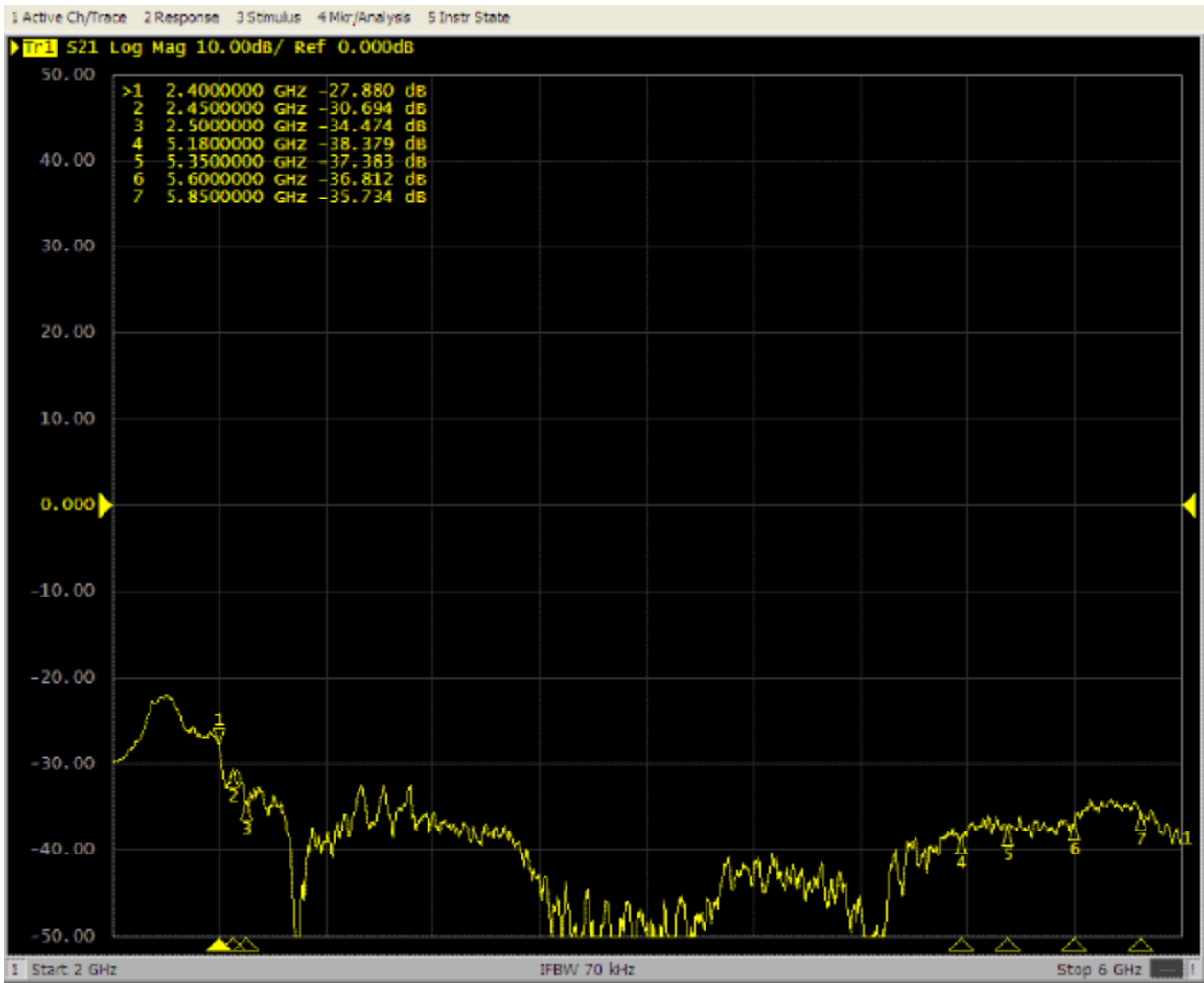
Isolation-2.4GHz Antenna2 & 5GHz Antenna5

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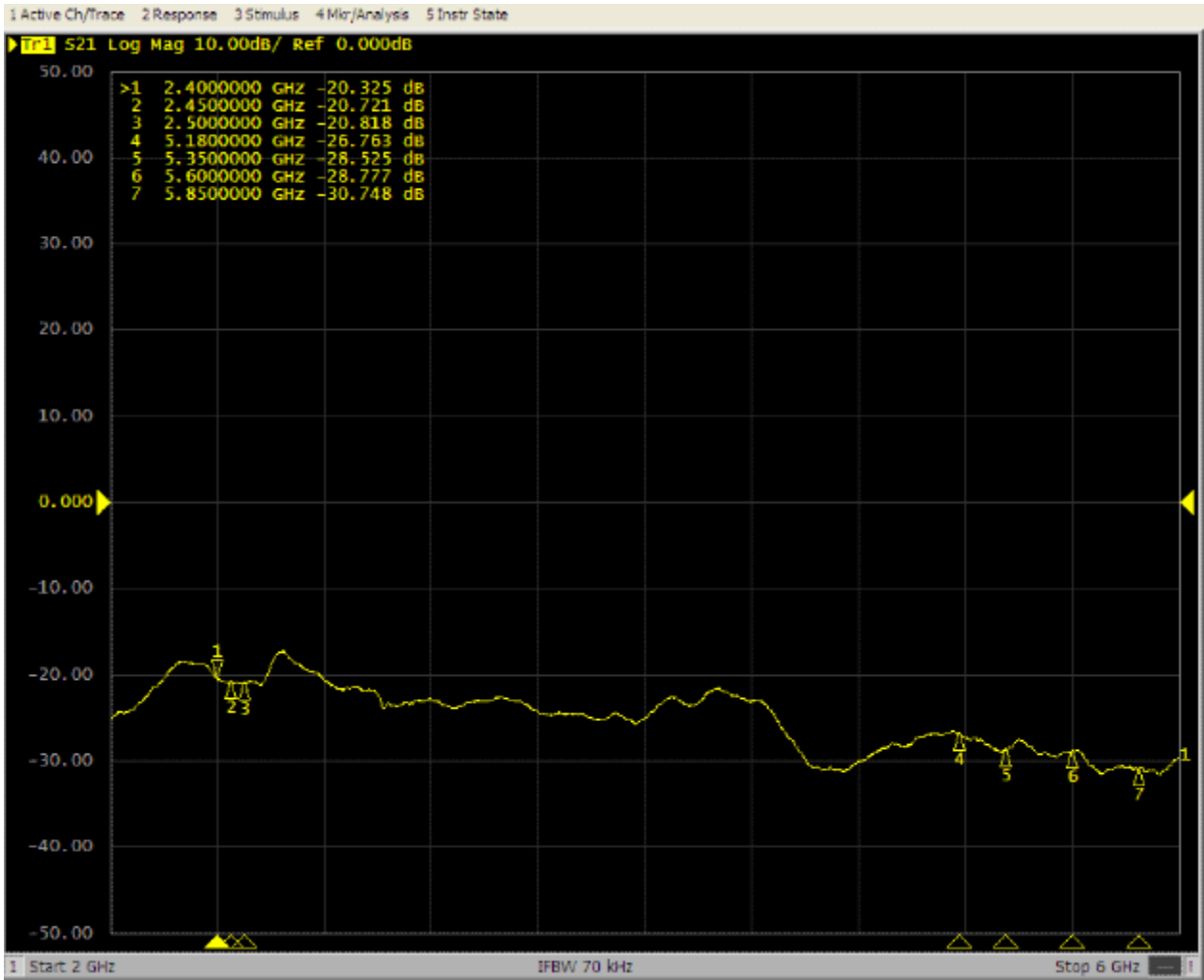
Isolation-2.4GHz Antenna2 & 5GHz Antenna6

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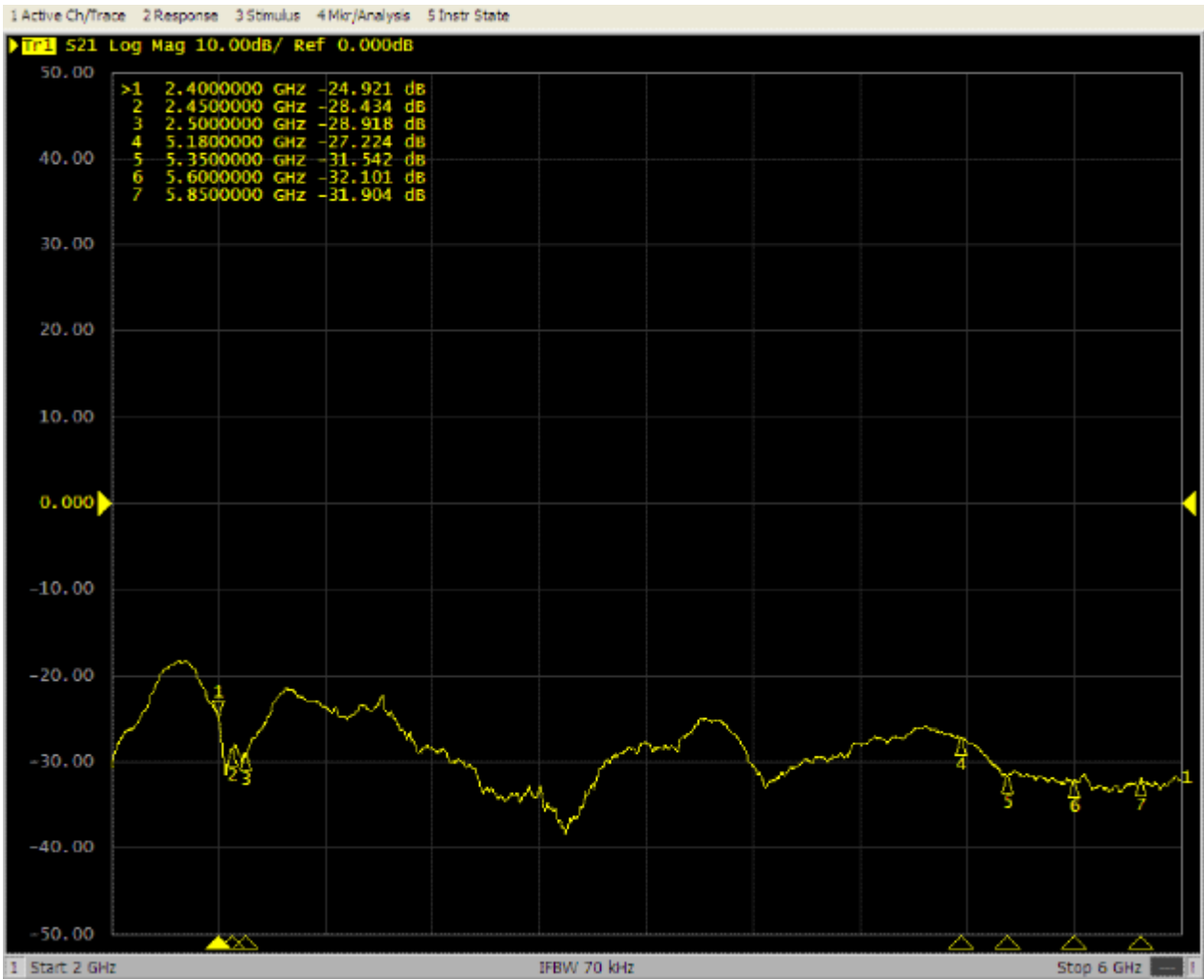
Isolation-2.4GHz Antenna3 & 5GHz Antenna4

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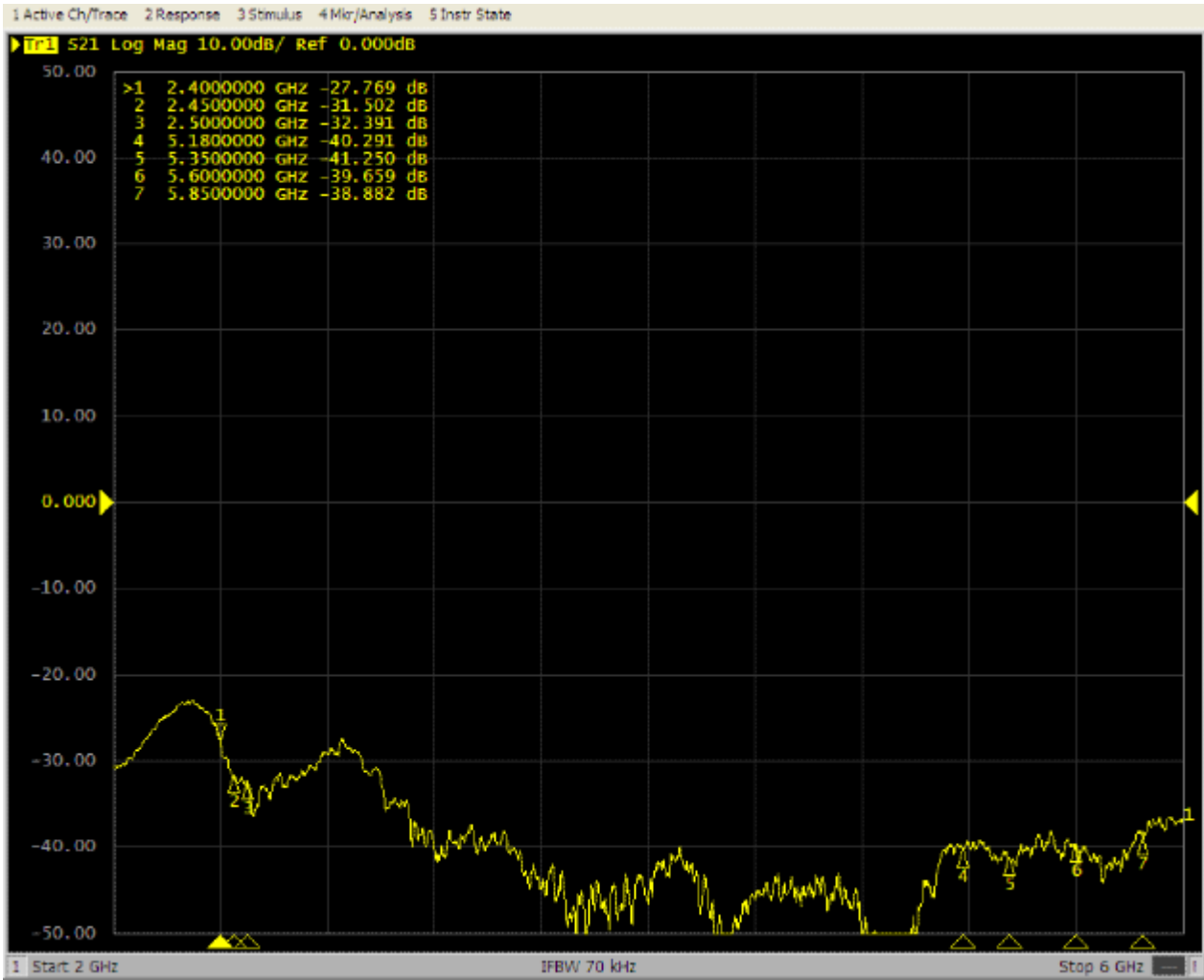


Isolation-2.4GHz Antenna3 & 5GHz Antenna5

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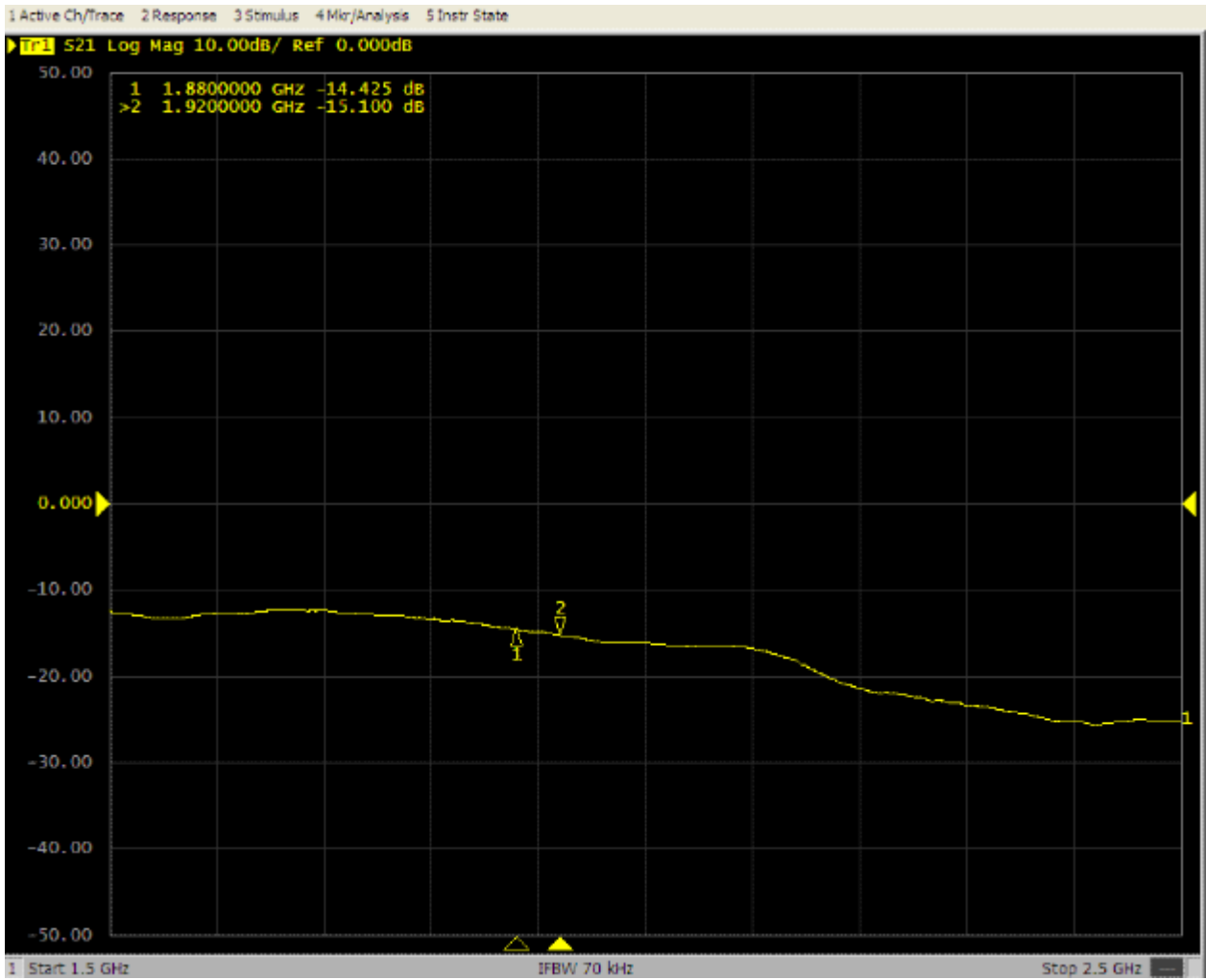
Isolation-2.4GHz Antenna3 & 5GHz Antenna6



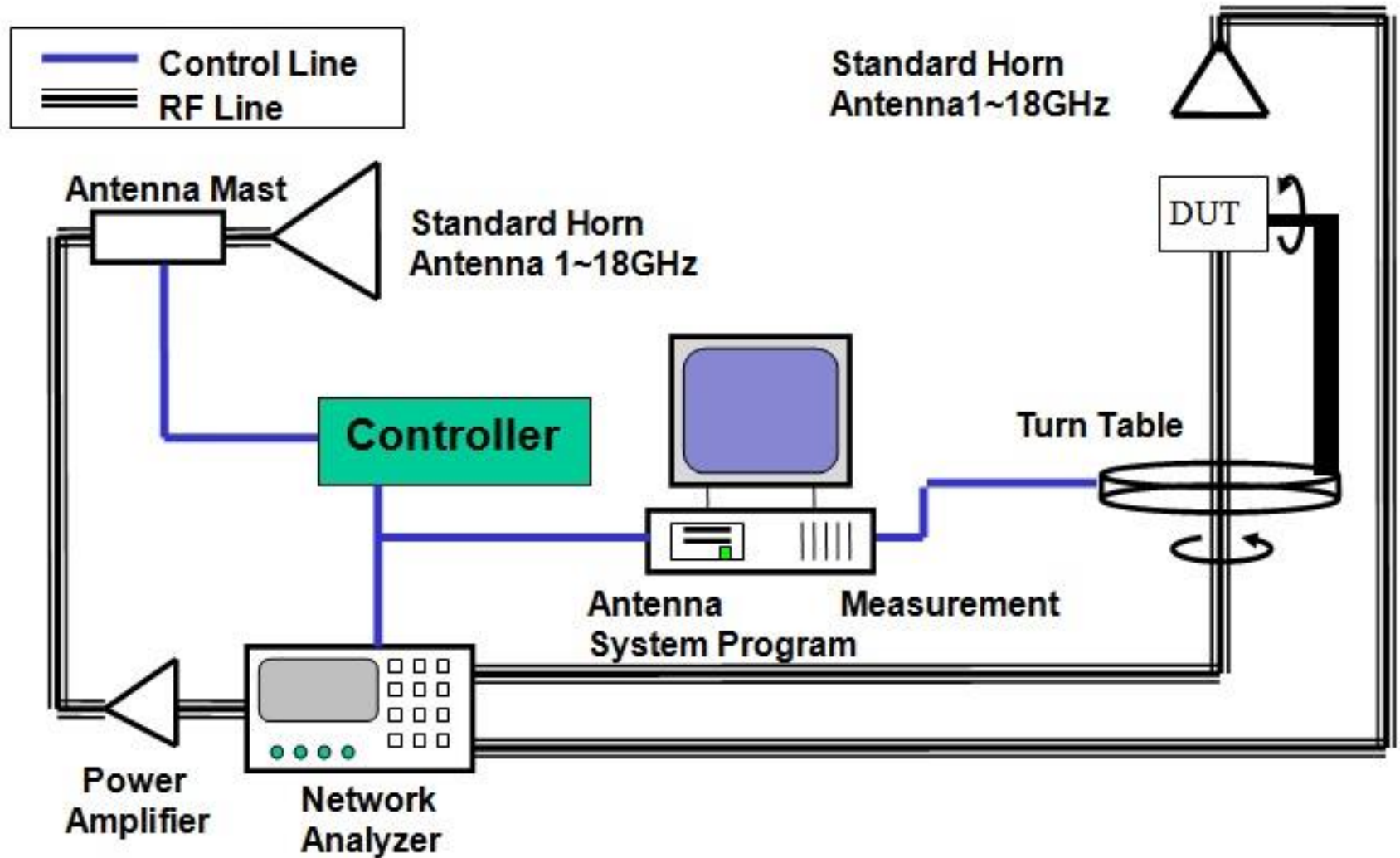
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Isolation-DECT Antenna7 & Antenna8

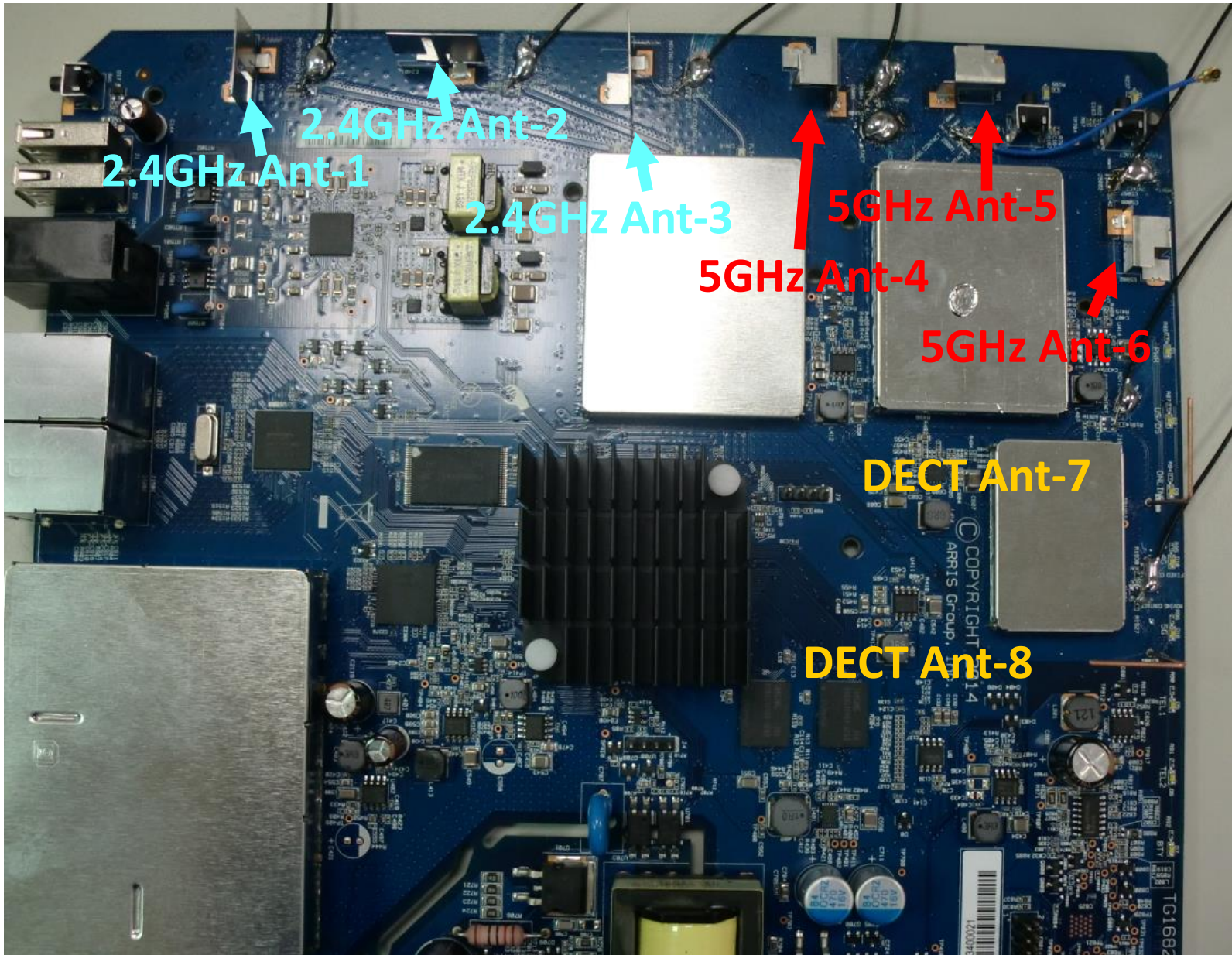
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Test Facility

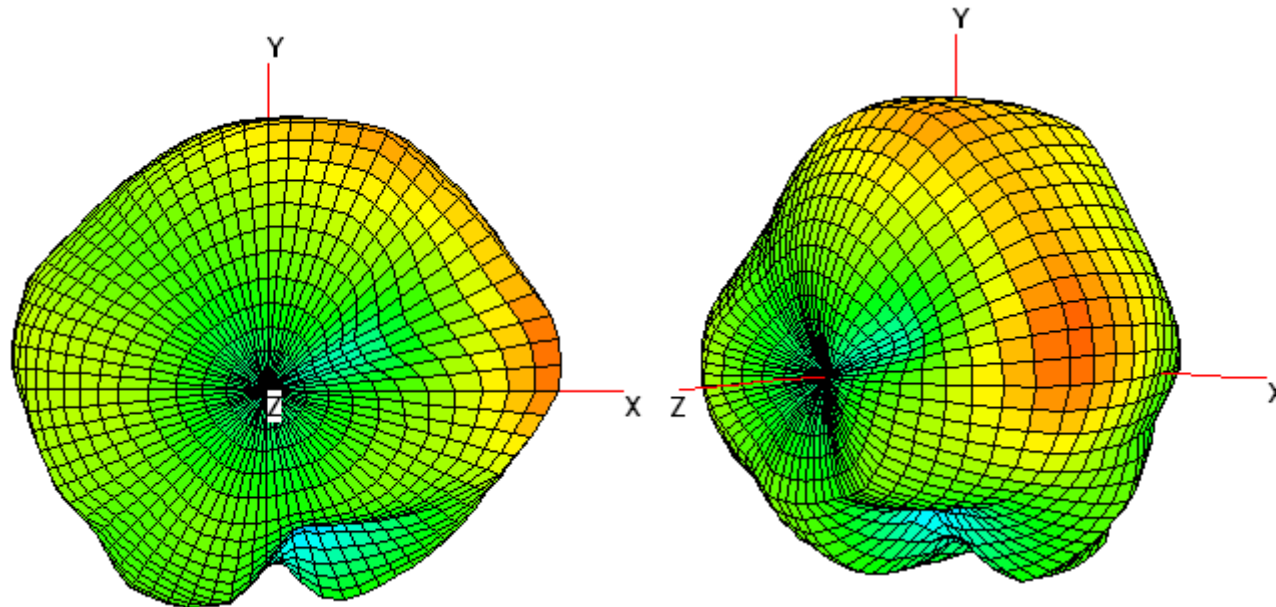
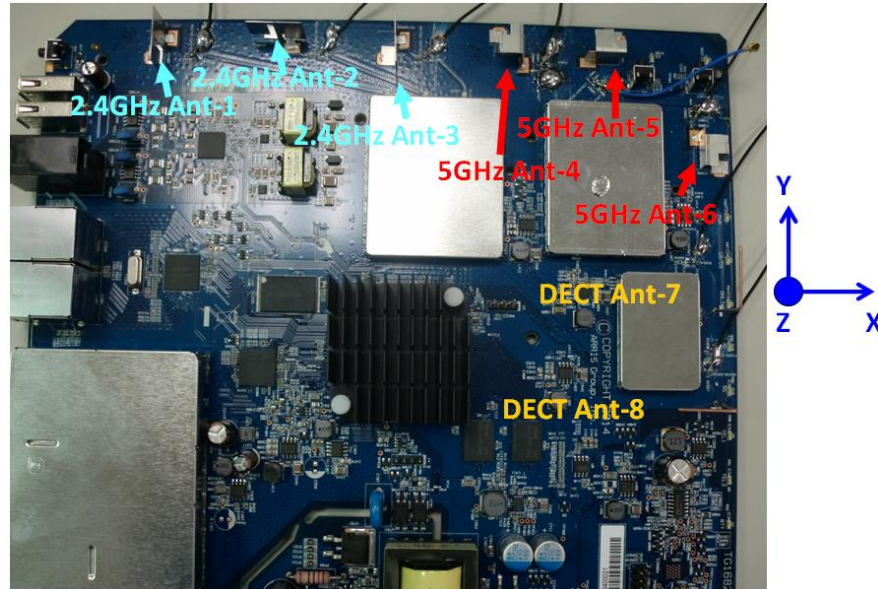


Test Coordinate Definition

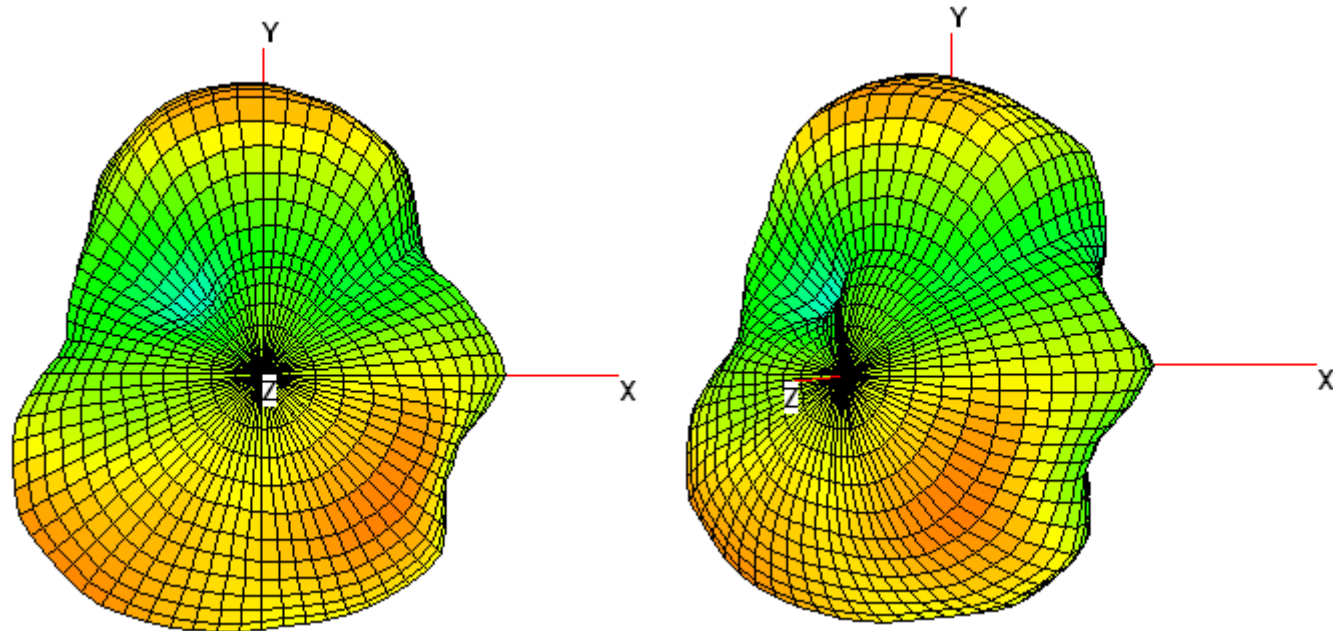
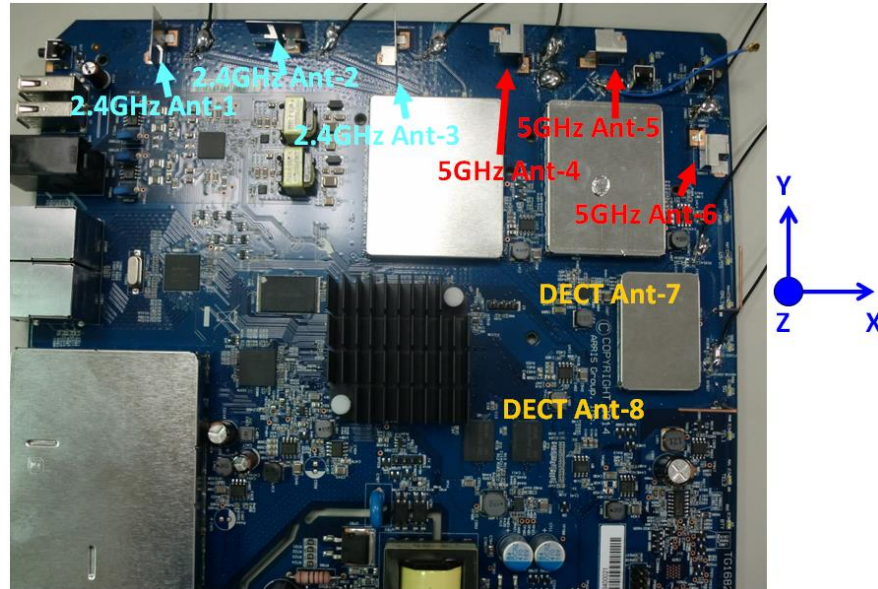


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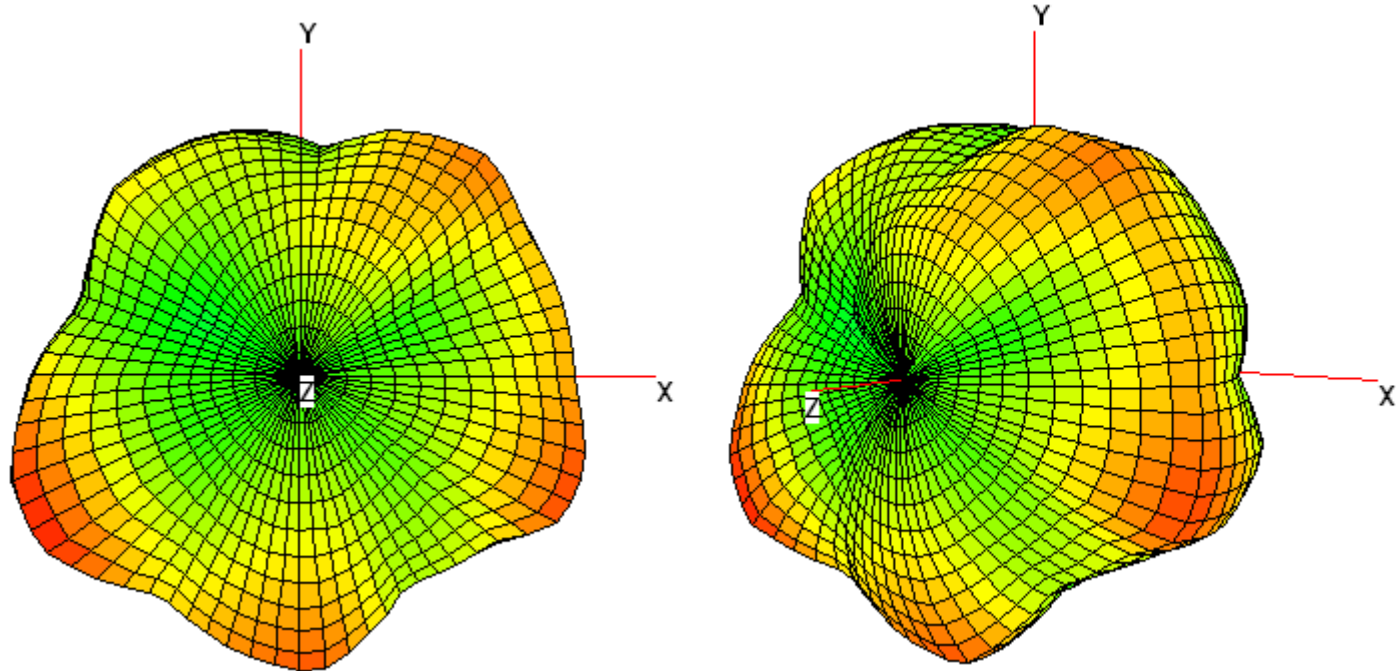
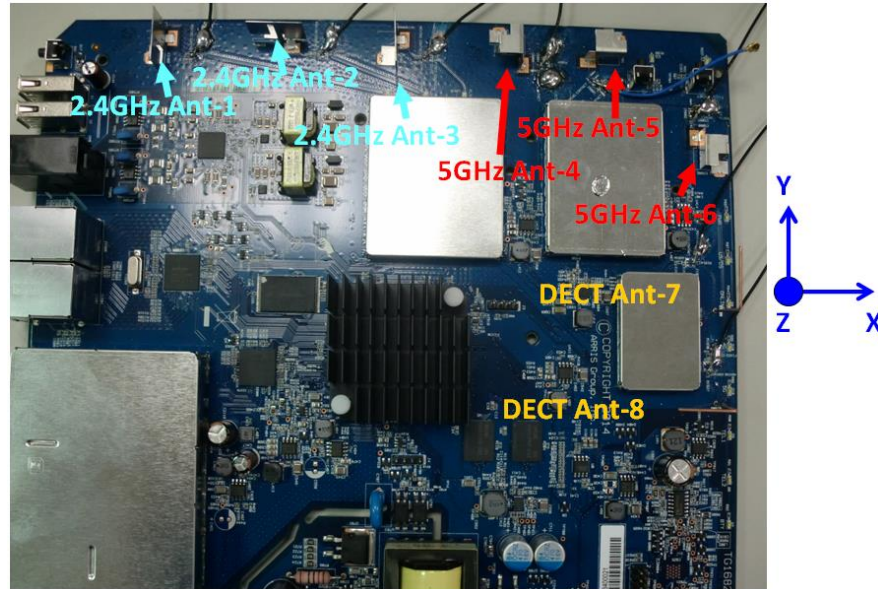
3D Pattern-2.4GHz Antenna1



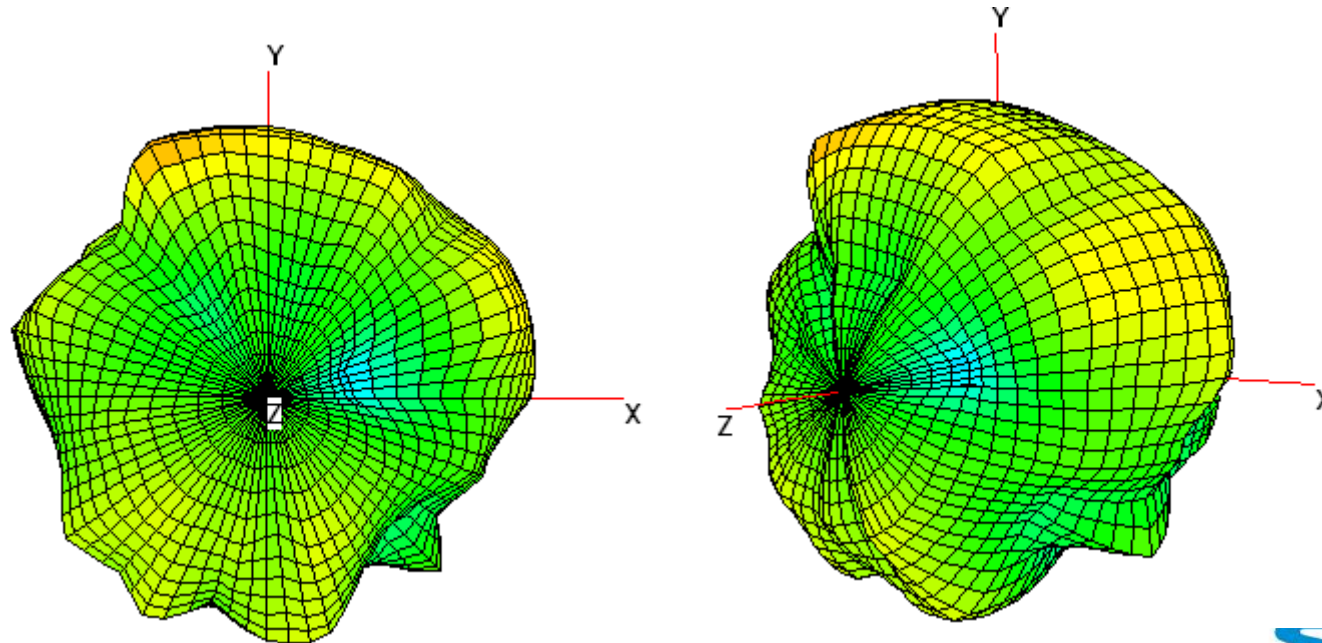
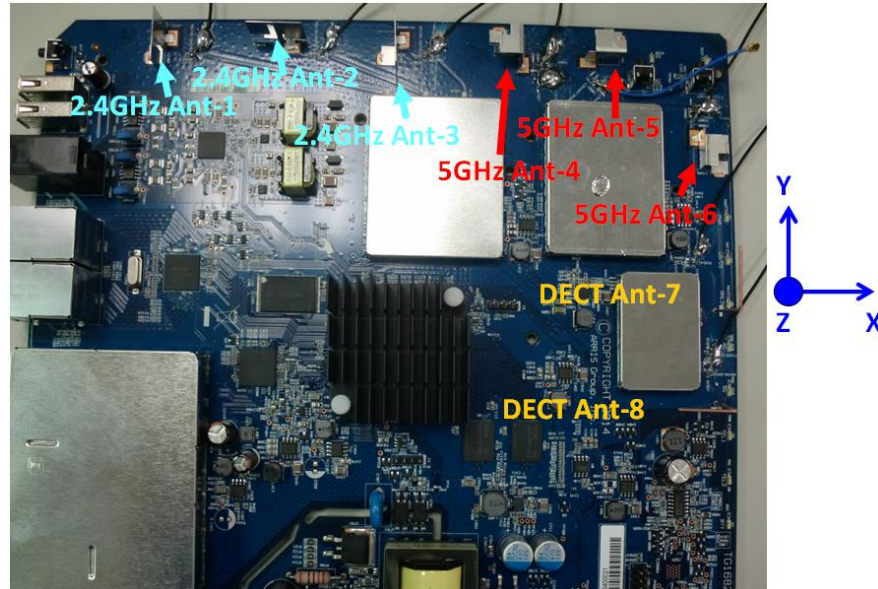
3D Pattern-2.4GHz Antenna2



3D Pattern-2.4GHz Antenna3

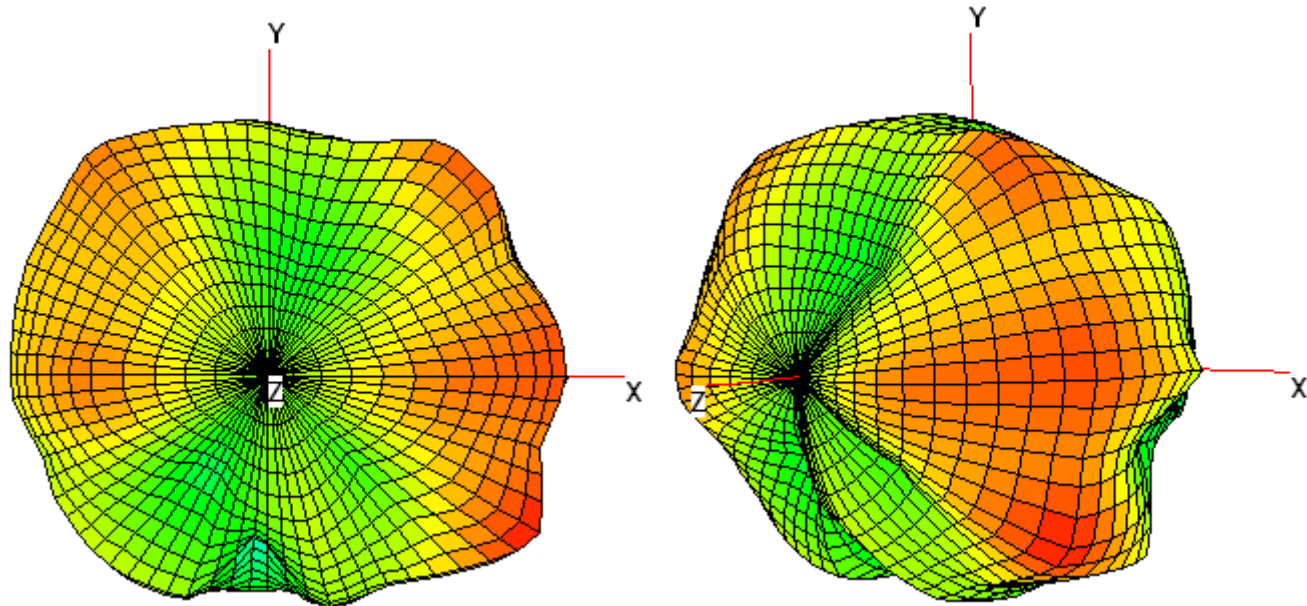
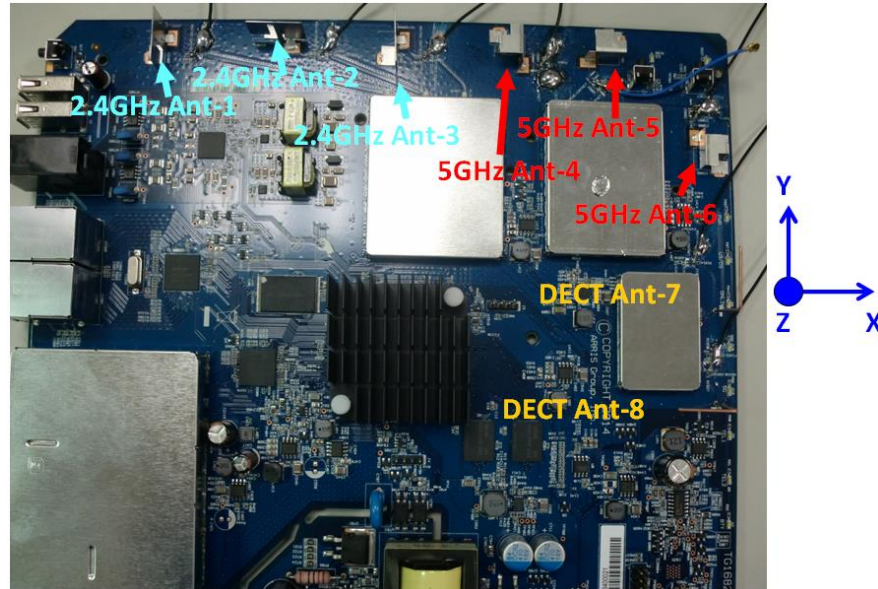


3D Pattern-5GHz Antenna4

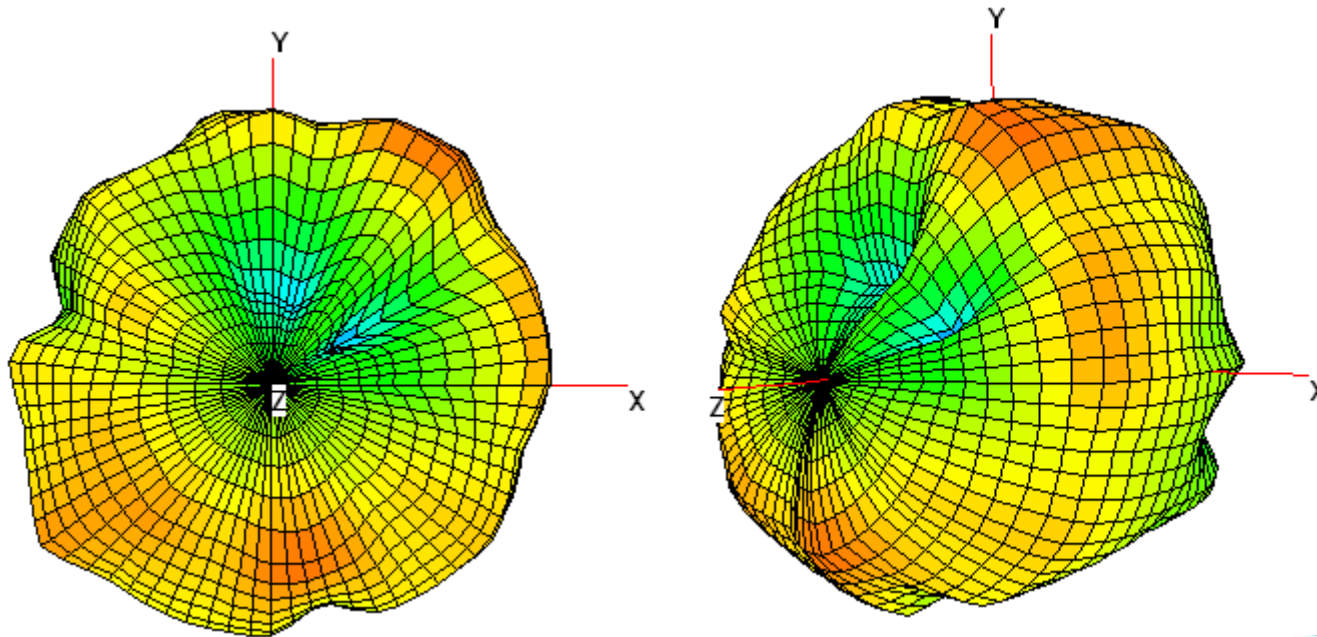
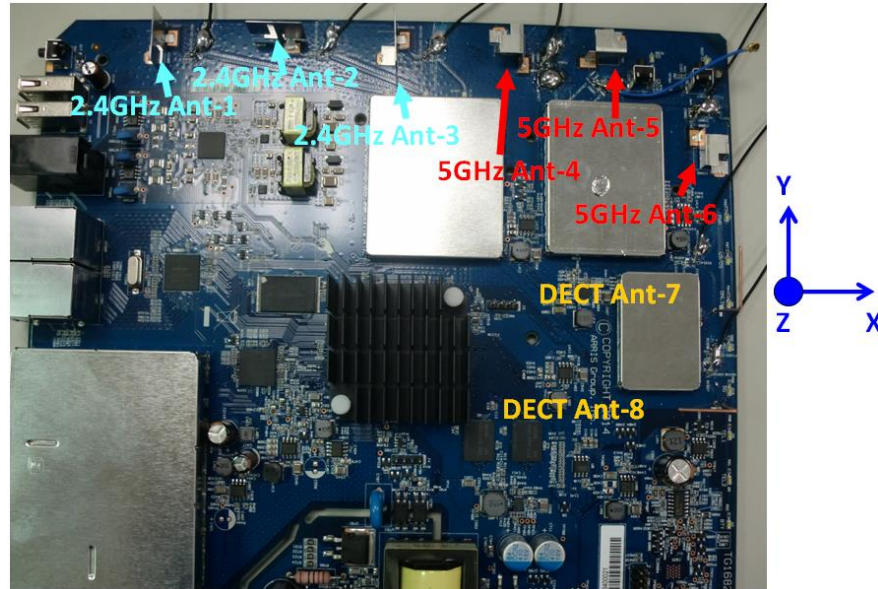


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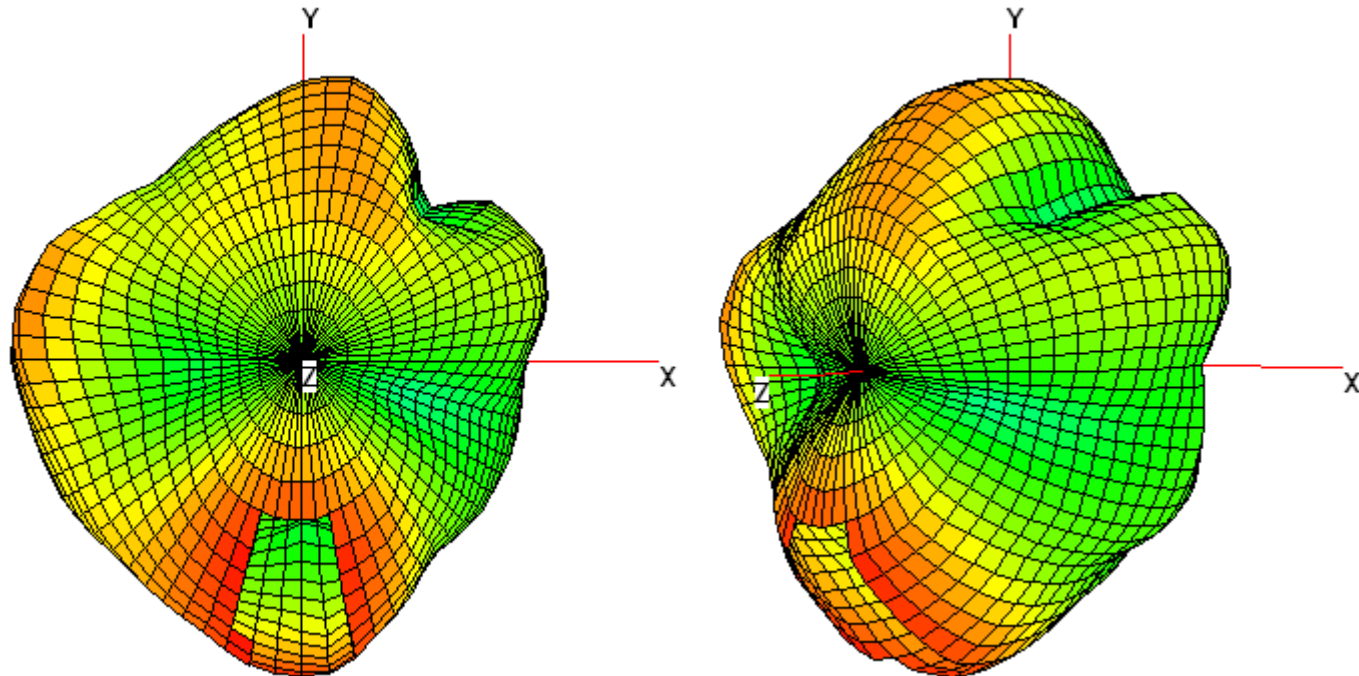
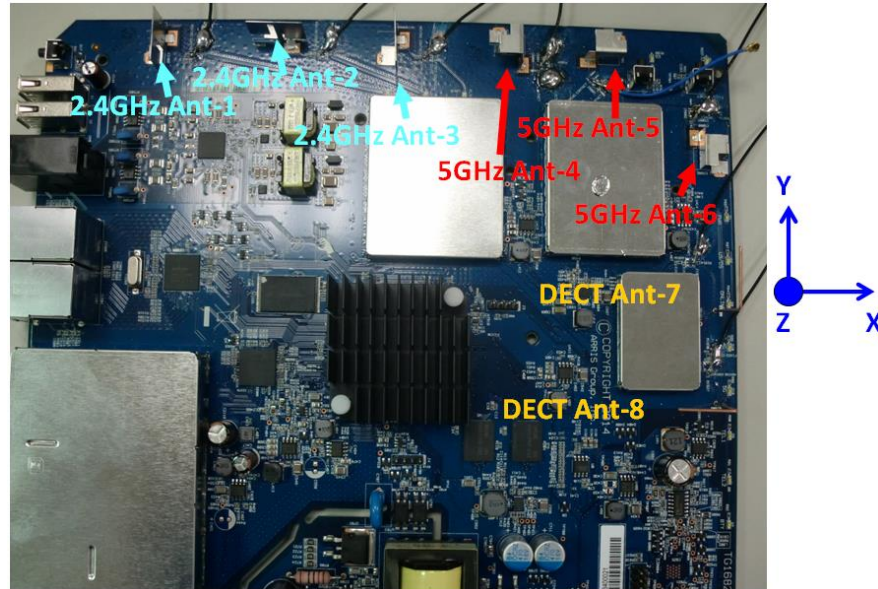
3D Pattern-5GHz Antenna5



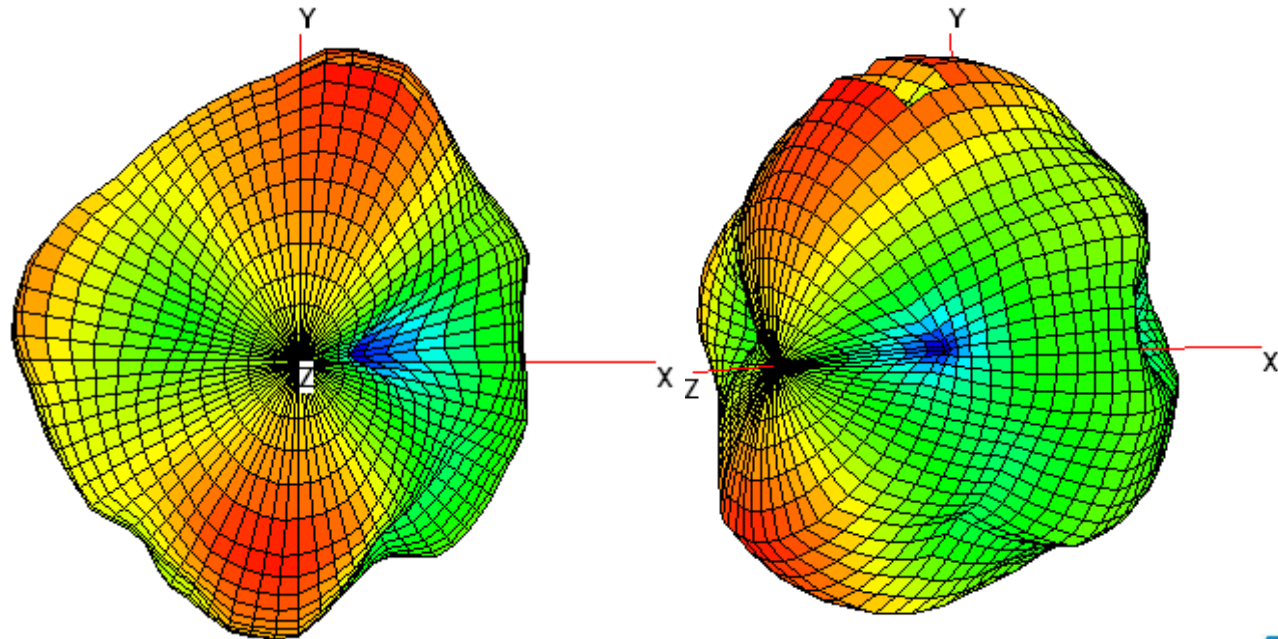
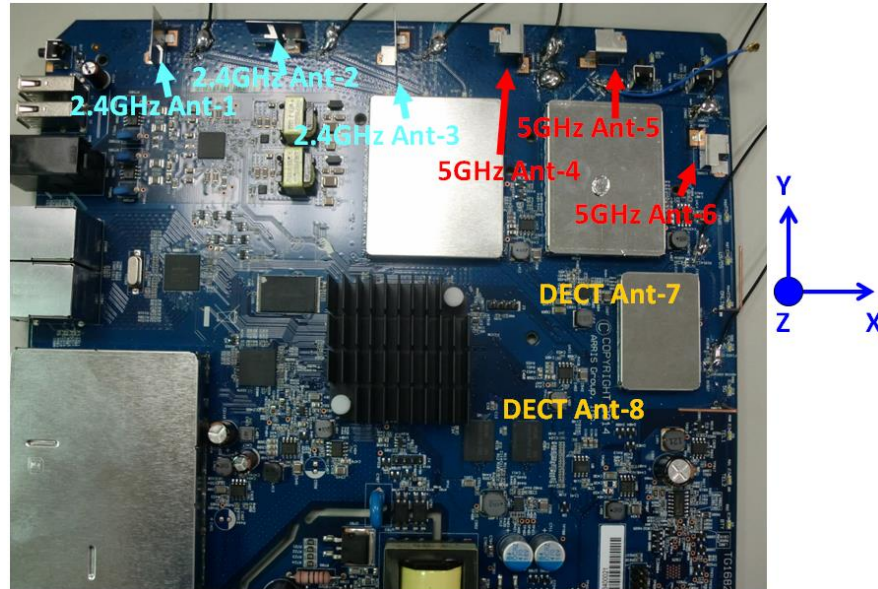
3D Pattern-5GHz Antenna6



3D Pattern-DECT Antenna7



3D Pattern-DECT Antenna8



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Gain_Efficiency_Antenna1

Antenna 1			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
2400 MHz	3.28	63.9	-1.94
2450 MHz	3.40	63.6	-1.97
2500 MHz	3.39	63.2	-1.99

Gain_Efficiency_Antenna2

Antenna 2			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
2400 MHz	3.11	63.3	-1.98
2450 MHz	3.26	65.2	-1.85
2500 MHz	3.01	61.1	-2.13

Gain_Efficiency_Antenna3

Antenna 3			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
2400 MHz	3.23	61.3	-2.12
2450 MHz	3.57	63.7	-1.95
2500 MHz	3.33	61.6	-2.10

Gain_Efficiency_Antenna4

Antenna 4			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
5150 MHz	4.59	61.1	-2.13
5350 MHz	3.56	64.2	-1.92
5725 MHz	3.14	66.8	-1.75
5850 MHz	3.43	66.5	-1.77

Gain_Efficiency_Antenna5

Antenna 5			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
5150 MHz	5.24	65.7	-1.82
5350 MHz	4.53	65.9	-1.81
5725 MHz	5.30	67.3	-1.71
5850 MHz	5.22	64.5	-1.90

Gain_Efficiency_Antenna6

Antenna 6			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
5150 MHz	3.85	64.3	-1.91
5350 MHz	3.60	68.1	-1.66
5725 MHz	4.80	65.9	-1.81
5850 MHz	4.96	64.9	-1.88

Gain_Efficiency_Antenna7

Antenna 7			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
1880 MHz	3.37	63.3	-1.98
1900 MHz	3.57	64.5	-1.90
1920 MHz	3.66	64.9	-1.87

Gain_Efficiency_Antenna8

Antenna 8			
Frequency (MHz)	Gain (dBi)	Efficiency (%)	3D Avg. Gain (dB)
1880 MHz	3.64	68.6	-1.63
1900 MHz	3.98	69.2	-1.59
1920 MHz	3.53	69.8	-1.56