

Winmate Inc.

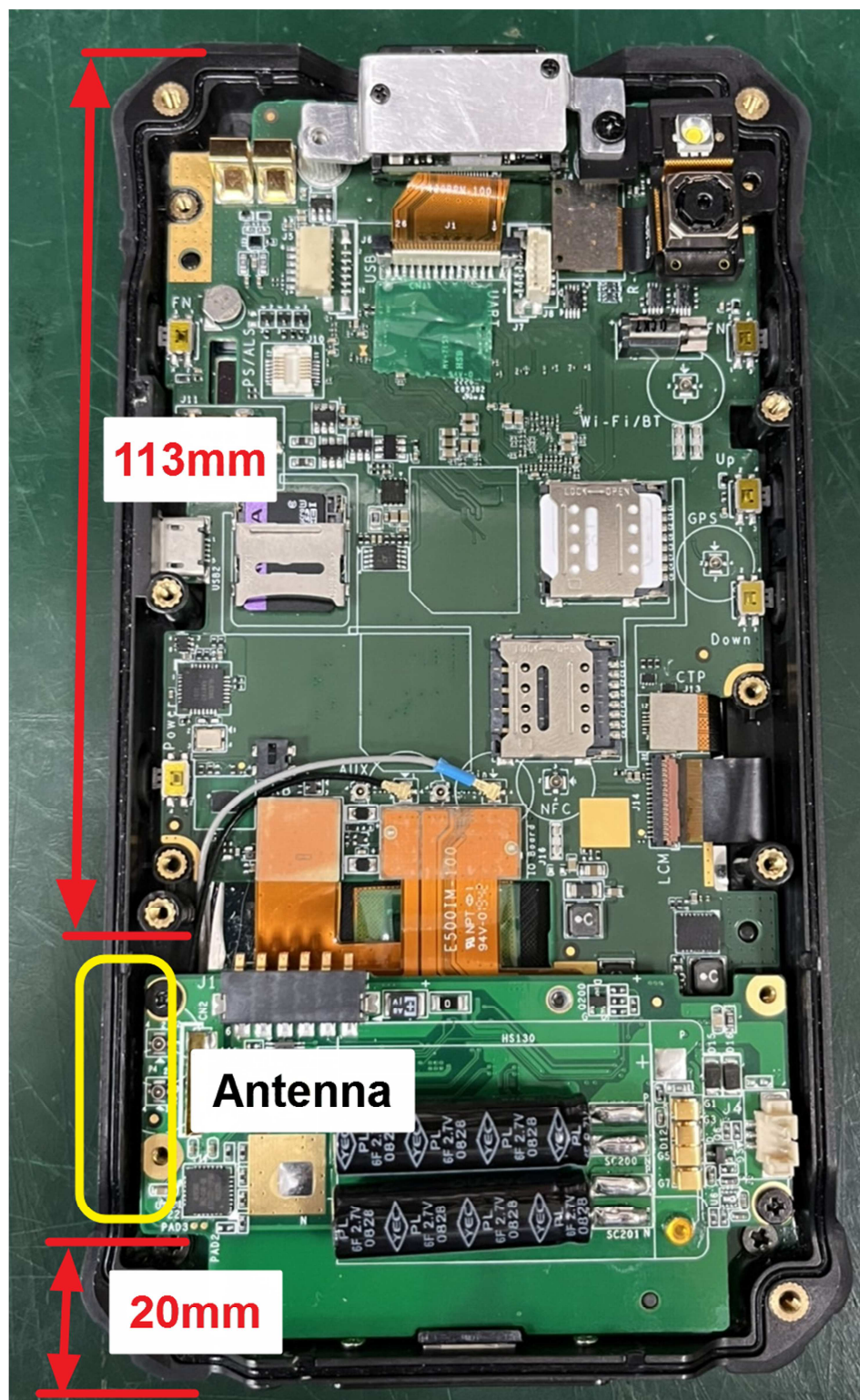
AntennaSpecification

Project :E500RM9
Version :20230105
Issue Date : 2023/01/05

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1. Antenna Placement



2. Wi-Fi Main Antenna Specification

Winmate Part Number: 90RF0500001X

2.1. Electrical Characteristics

Frequency(MHz): 2400-2500 / 5150-6000

SWR: $\leq 1.39@2400-2500\text{MHz}$

$\leq 2.77@5150-6000\text{MHz}$

Peak Gain: 1.04dBi@2400-2500MHz

2.86dBi@5150-6000MHz

Impedance: 50ohm

Polarization: Linear

2.2. Mechanical Characteristics

Cable: 50Ω φ 0.81 RF cable

Connector: MHF4

PCB: FR4 /Thickness 0.2mm

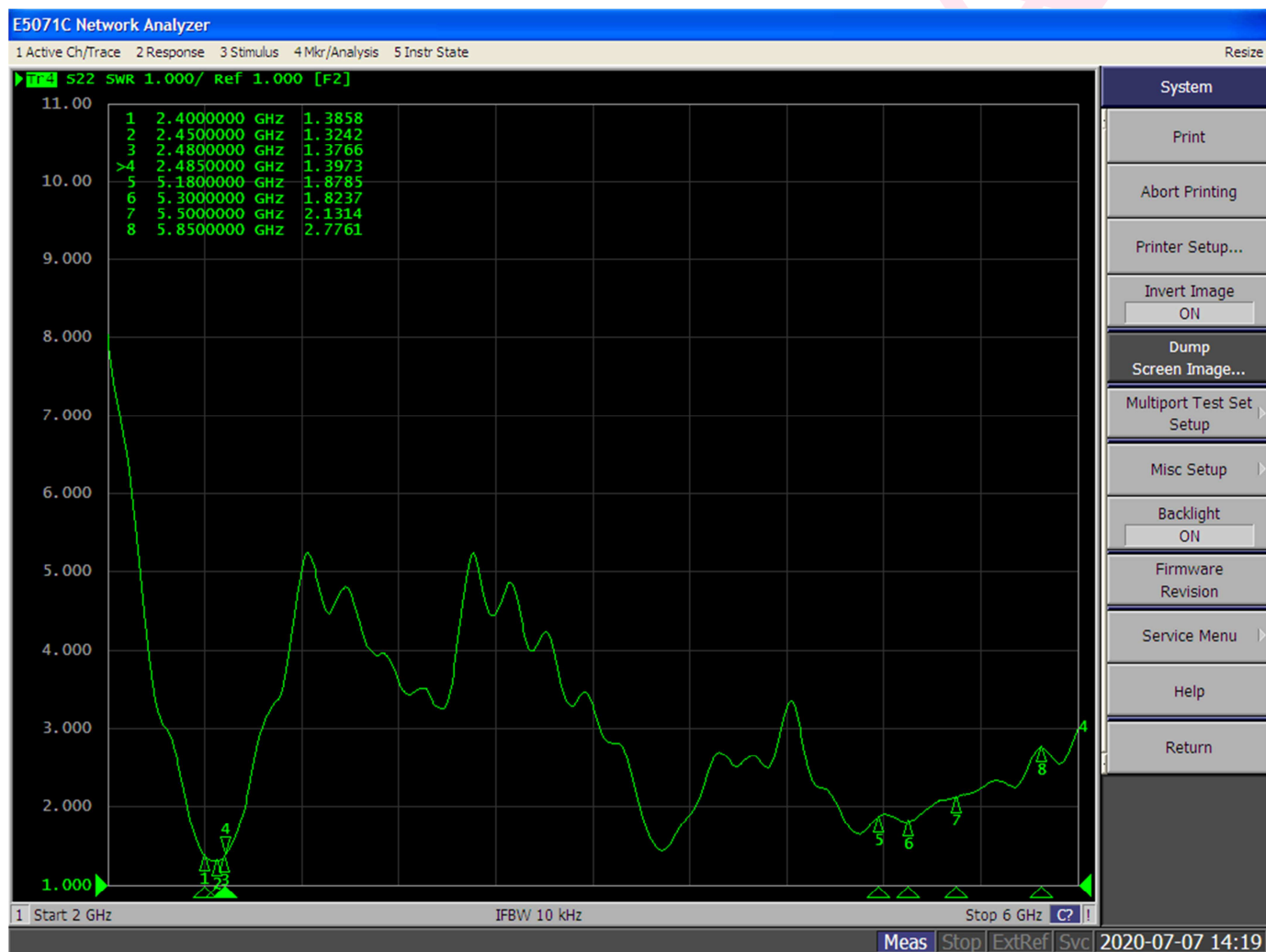
Type: Monopole

2.3. Environmental Characteristics

Operating Temperature: -30°C to 80°C

2.4. RF Performance Characteristics

2.4.1. SWR



2.4.2. Gain / Efficiency

Frequency	2412	2422	2432	2442	2452	2462	2472	5180	5200	5220
Directivity (dBi)	4.52	4.65	4.58	4.61	4.55	4.35	4.29	5.17	5.08	4.85
Efficiency (dB)	-3.49	-3.62	-3.66	-3.69	-3.76	-3.83	-3.88	-4.46	-4.50	-4.54
Efficiency (%)	44.77	43.48	43.04	42.78	42.10	41.41	40.93	35.84	35.45	35.15
Peak Gain (dBi)	1.03	1.04	0.92	0.92	0.79	0.52	0.41	0.72	0.58	0.31

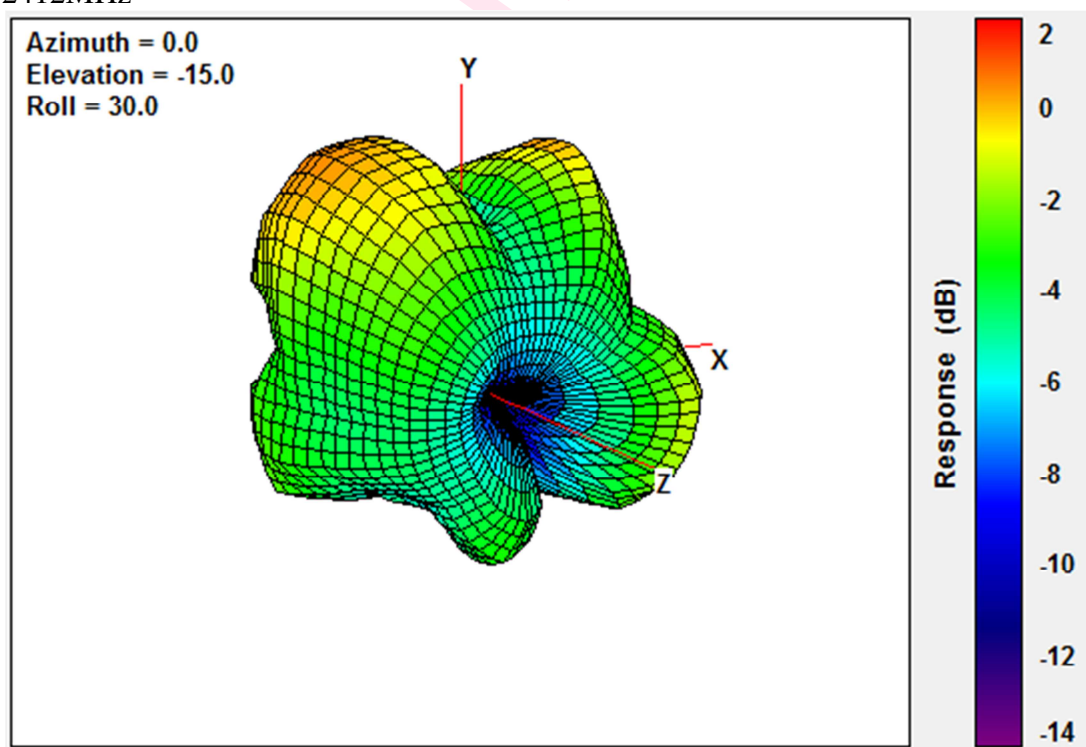
Frequency	5240	5260	5280	5320	5500	5520	5540	5560	5580	5600
Directivity (dBi)	4.94	5.13	5.39	5.56	6.18	6.21	6.42	6.52	6.74	6.87
Efficiency (dB)	-4.46	-4.28	-4.23	-4.40	-3.99	-3.98	-4.01	-4.06	-4.04	-4.01
Efficiency (%)	35.82	37.30	37.78	36.31	39.86	40.04	39.71	39.26	39.46	39.71
Peak Gain (dBi)	0.48	0.84	1.17	1.16	2.19	2.23	2.41	2.46	2.70	2.86

Frequency	5700	5805								
Directivity (dBi)	7.17	7.18								
Efficiency (dB)	-3.78	-3.86								
Efficiency (%)	41.92	41.16								
Peak Gain (dBi)	2.40	2.32								

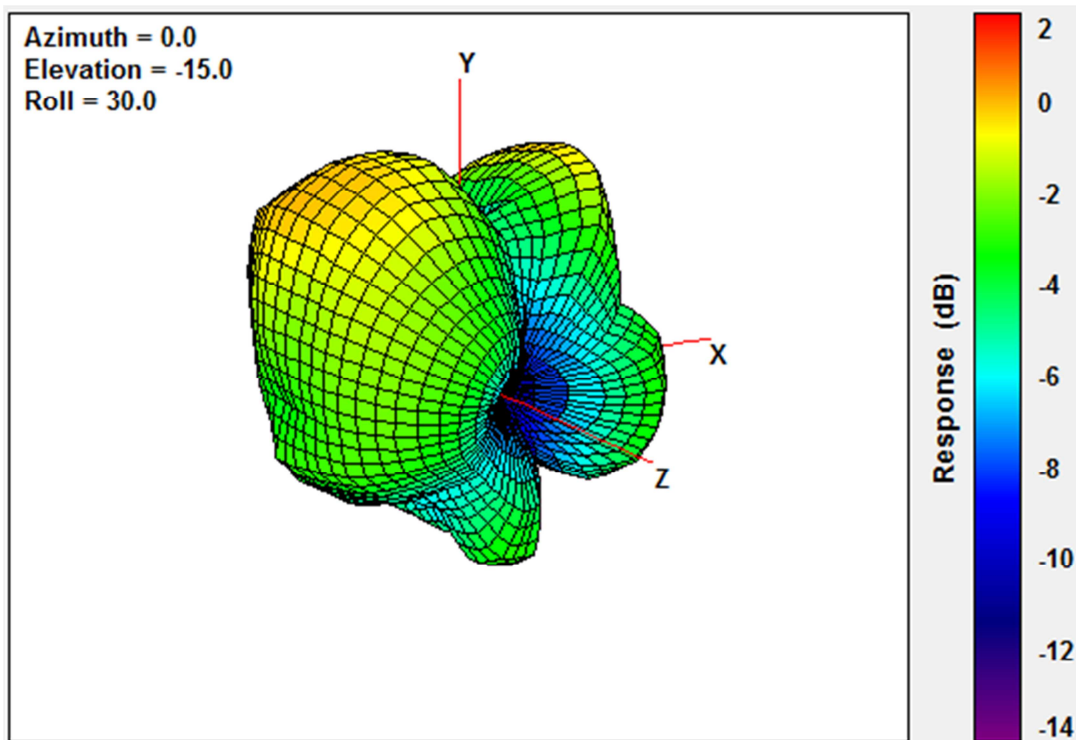
2.4.3. Radiation Pattern



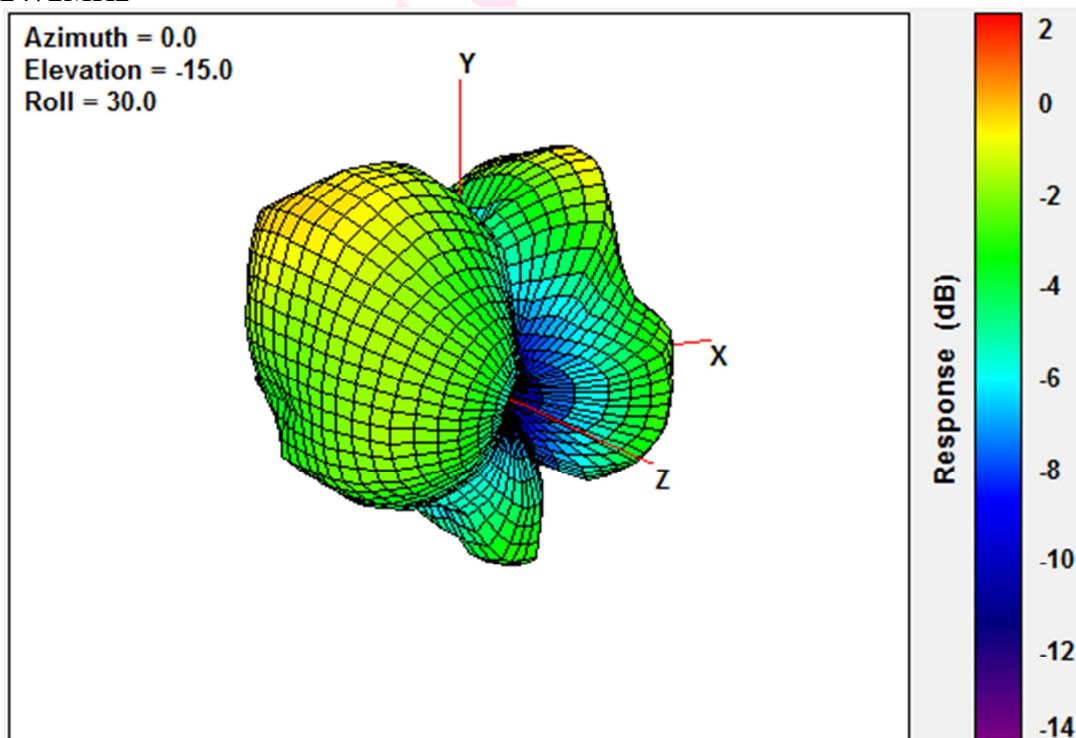
2412MHz



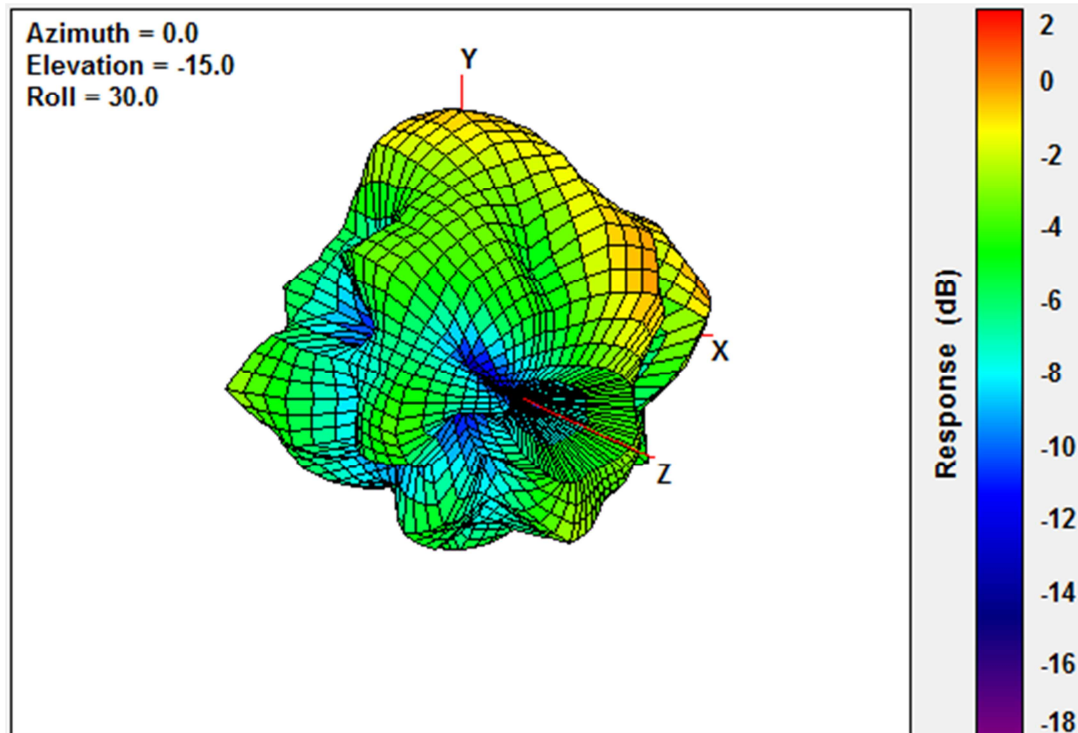
2452MHz



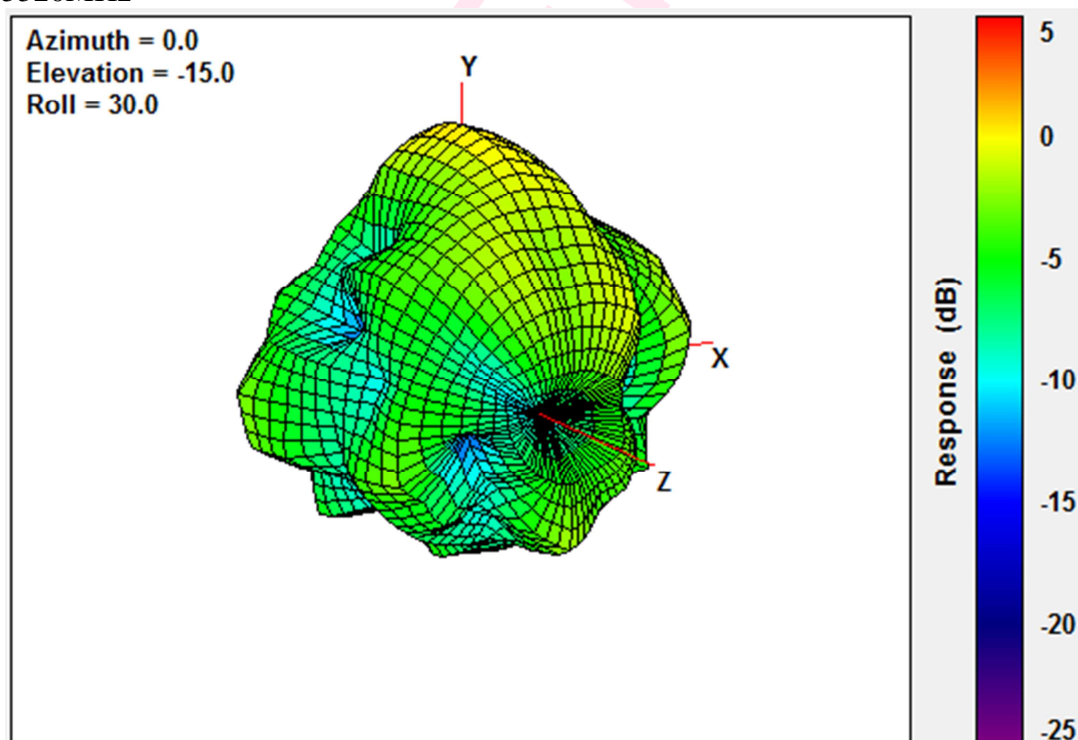
2472MHz



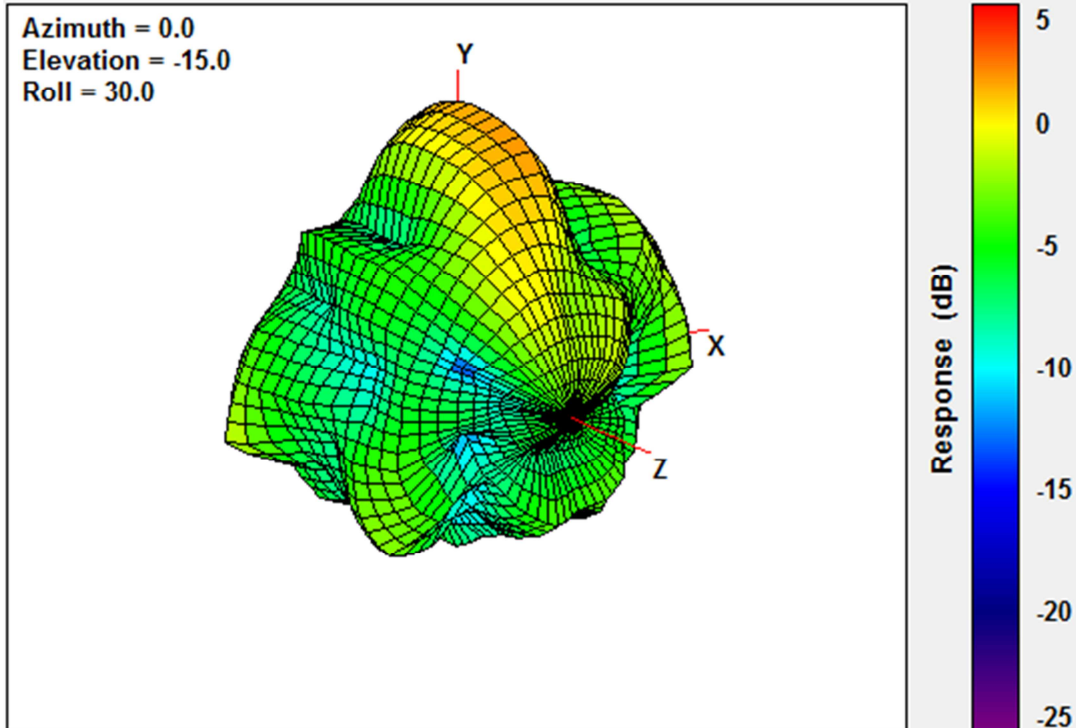
5180MHz



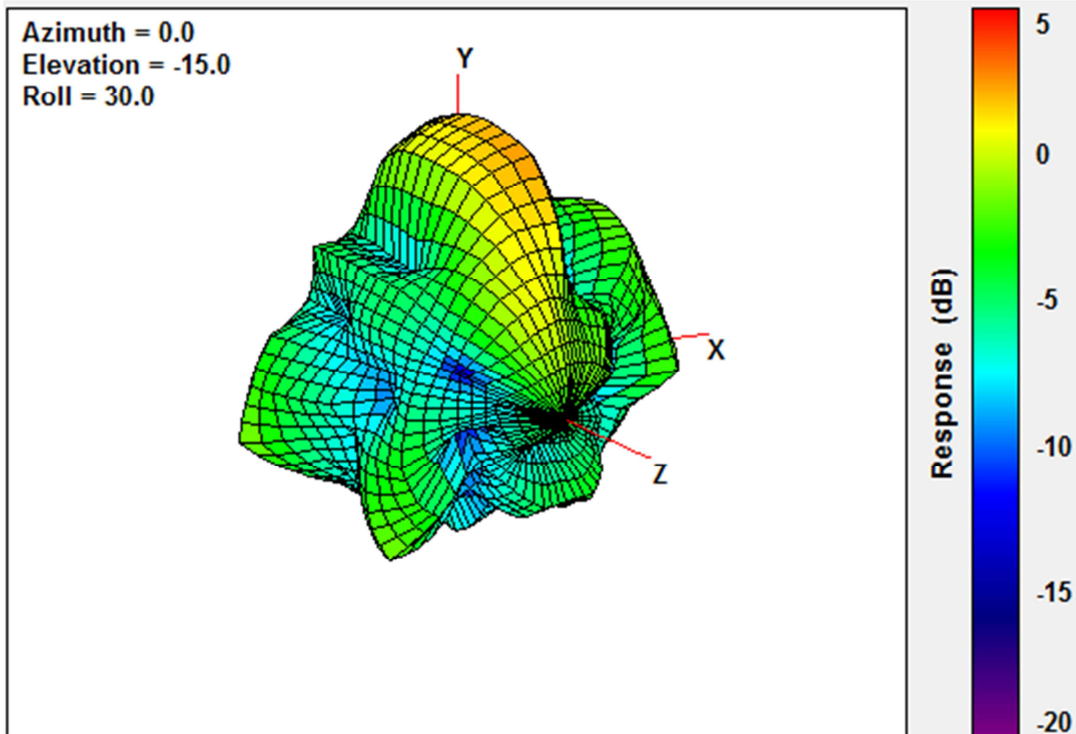
5320MHz



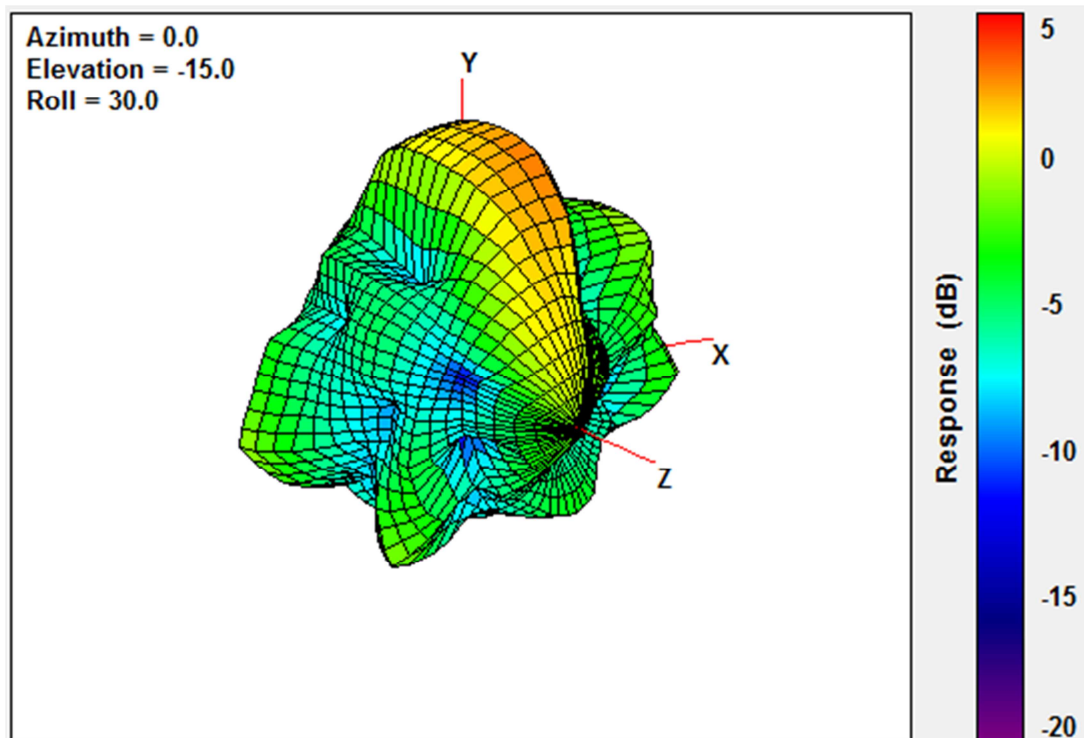
5540MHz



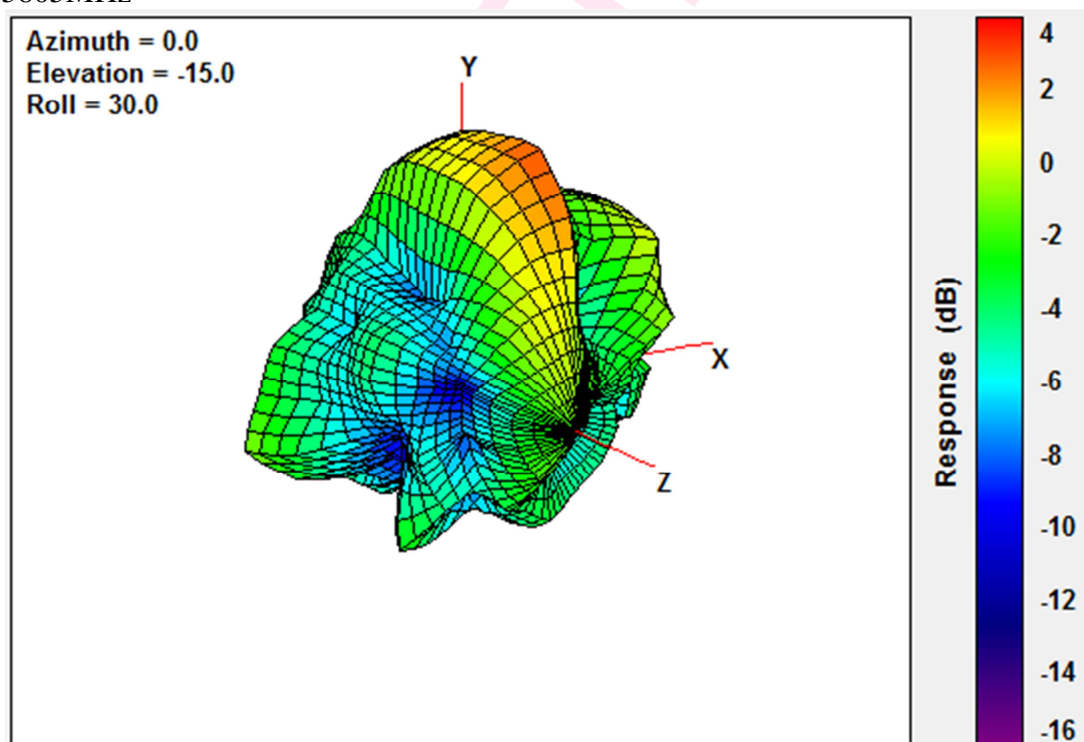
5600MHz



5700MHz



5805MHz

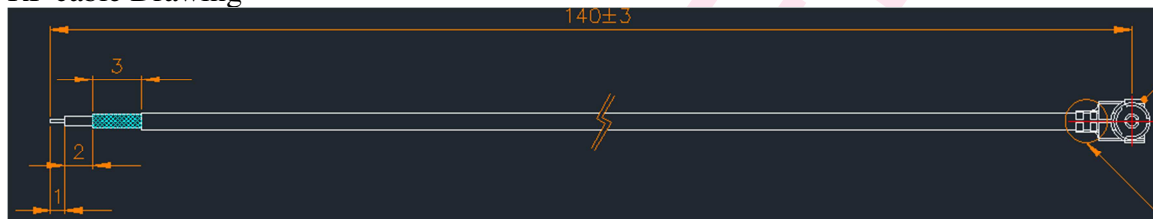


2.5. Drawing

Antenna Layout Drawing



RF cable Drawing



Antenna Assembly



Winmate Part Number: 90RF0500001X