

▶ strictly confidential

Attracting Tomorrow



TDK Antenna Simulation

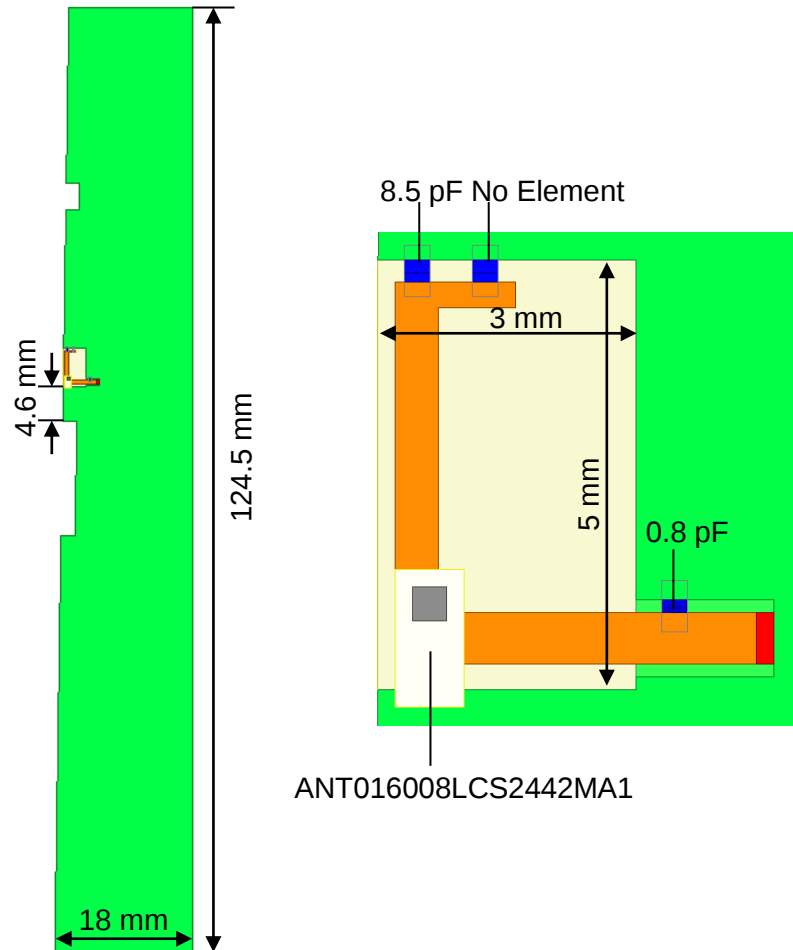
Address: Nihonbashi Takashimaya Mitsui Building, 2-5-1, Nihonbashi, Chuo-ku, Tokyo 103-6128, Japan

TDK Corporation
Communication Devices Business Group
Feb. 4th, 2022

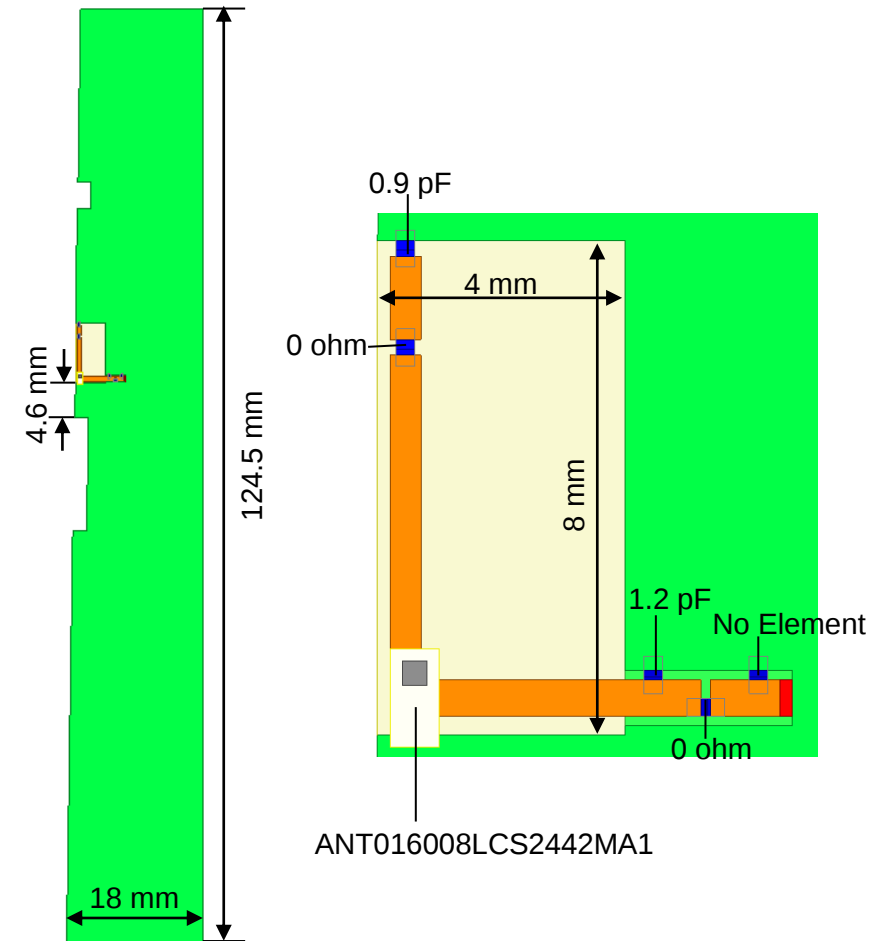
Simulation Models

► PROPOSED ANTENNA LAYOUT MODELS

Model1-1

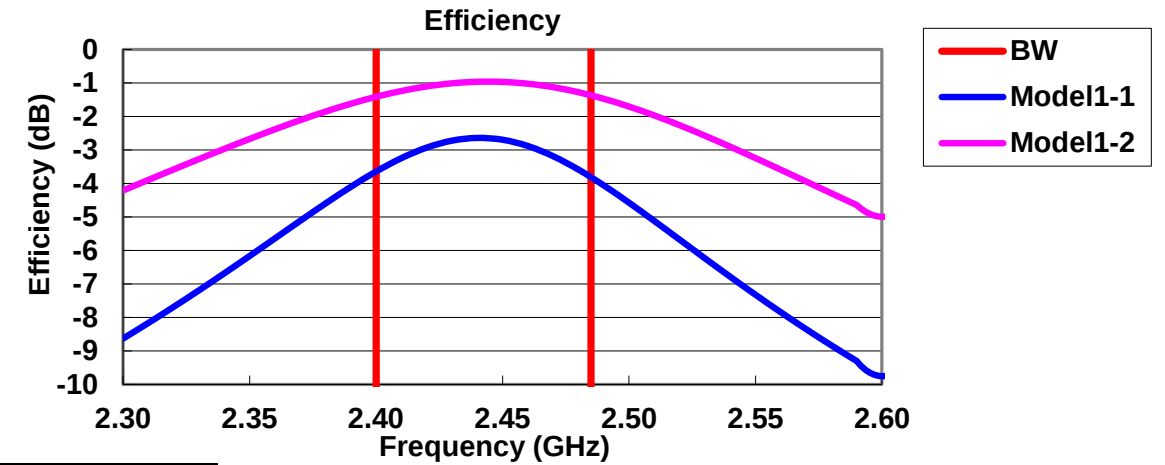
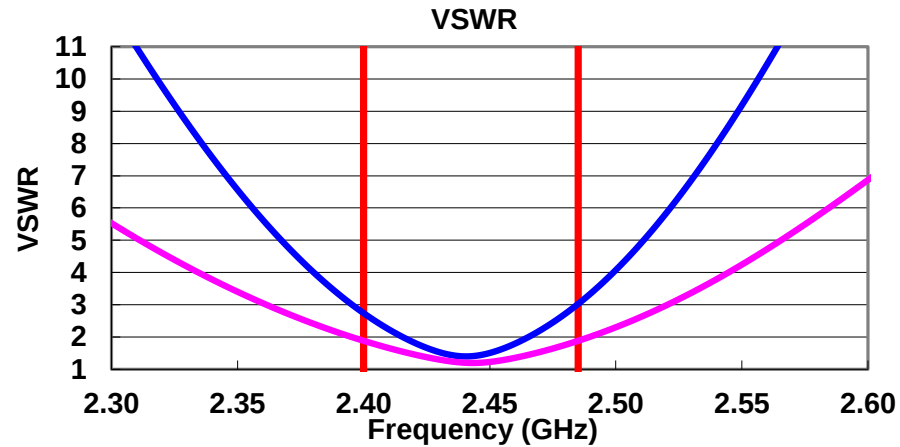


Model1-2



Simulation Results

► VSWR & Efficiency

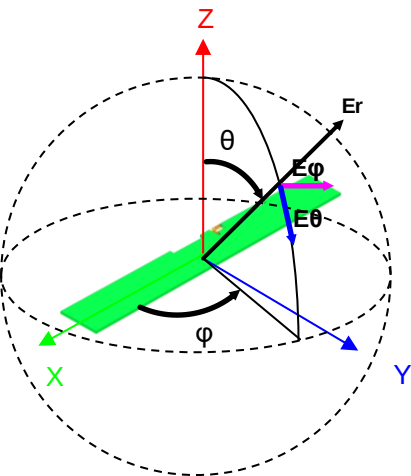


	Model1-1			Model1-2		
Frequency[GHz]	2.4	2.442	2.485	2.4	2.442	2.485
VSWR	2.73	1.39	3.02	1.88	1.20	1.88
Efficiency[dB]	-3.64	-2.64	-3.58	-1.41	-0.96	-1.28

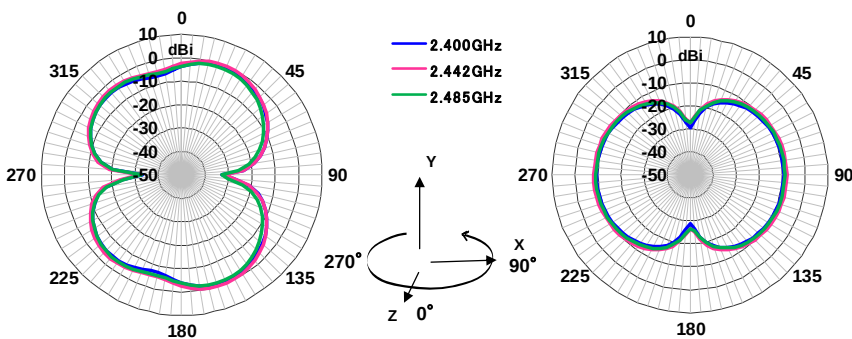
Radiation Pattern

Radiation Pattern (2.4GHz Band)

PRODUCT ORIENTATIONS



X-Z PLANE

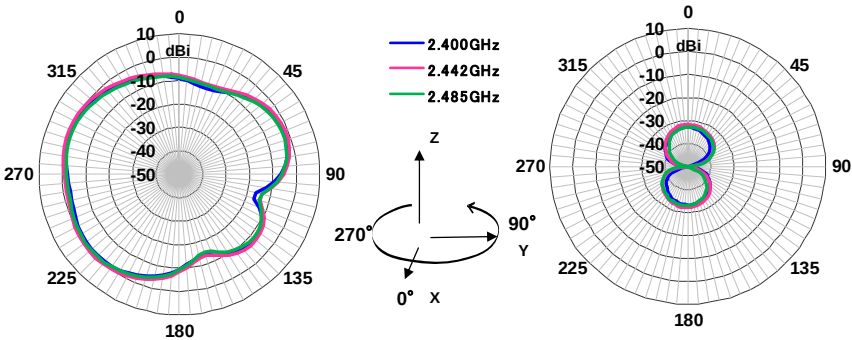


Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.9	-3.9	-5.2
Maximum[dBi]	-0.6	0.2	-1.2
Minimum[dBi]	-33.2	-32.0	-33.1

Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-11.89	-10.54	-11.39
Maximum[dBi]	-9.15	-7.82	-8.68
Minimum[dBi]	-29.55	-27.36	-27.33

Model1-1

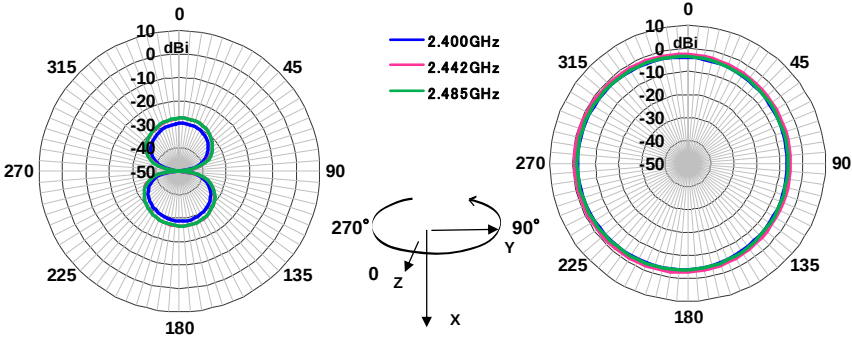
X-Y PLANE



Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.1	-3.1	-4.2
Maximum[dBi]	0.0	0.7	-0.4
Minimum[dBi]	-16.6	-14.0	-15.1

Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-36.3	-35.1	-36.1
Maximum[dBi]	-32.9	-31.8	-32.7
Minimum[dBi]	-57.5	-61.3	-65.1

Y-Z PLANE

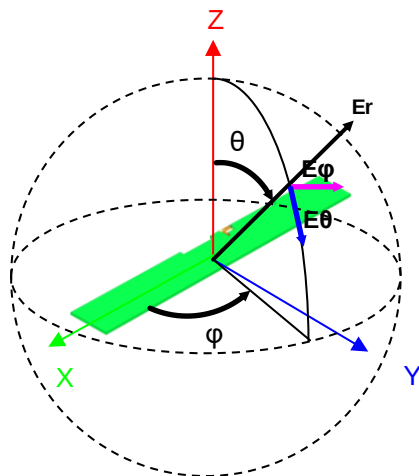


Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-32.3	-30.1	-30.1
Maximum[dBi]	-28.7	-26.6	-26.6
Minimum[dBi]	-56.3	-61.3	-52.2

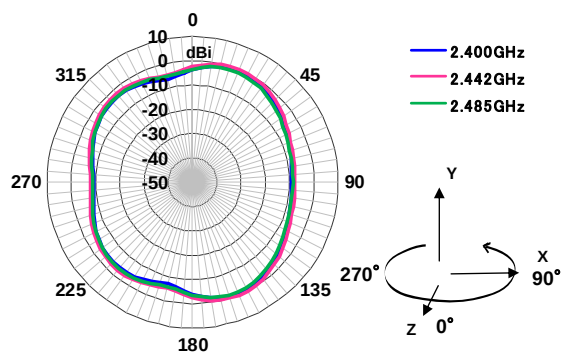
Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-3.8	-2.6	-3.6
Maximum[dBi]	-2.0	-0.8	-1.8
Minimum[dBi]	-6.5	-5.3	-6.3

Total Power (2.4GHz Band)

PRODUCT ORIENTATIONS



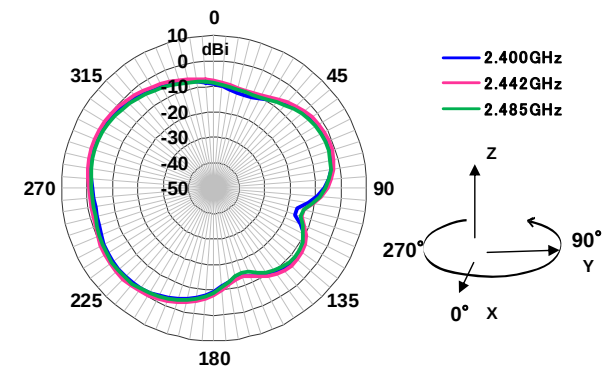
X-Z PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.1	-3.1	-4.3
Maximum[dBi]	-0.4	0.3	-1.1
Minimum[dBi]	-9.4	-8.1	-9.0

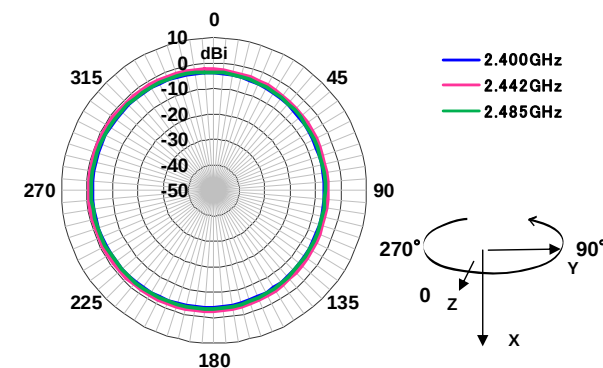
Model1-1

X-Y PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.1	-3.1	-4.2
Maximum[dBi]	0.0	0.7	-0.4
Minimum[dBi]	-16.6	-14.0	-15.1

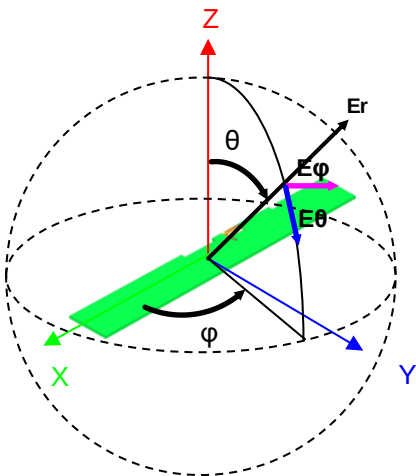
Y-Z PLANE



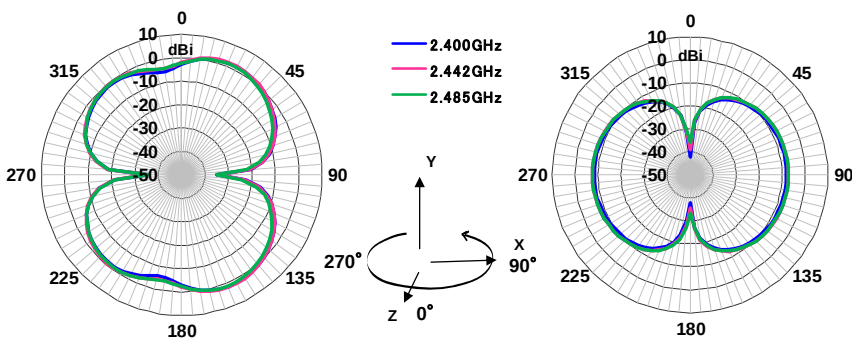
Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-3.8	-2.6	-3.5
Maximum[dBi]	-2.0	-0.8	-1.8
Minimum[dBi]	-6.5	-5.3	-6.3

Radiation Pattern (2.4GHz Band)

PRODUCT ORIENTATIONS



X-Z PLANE

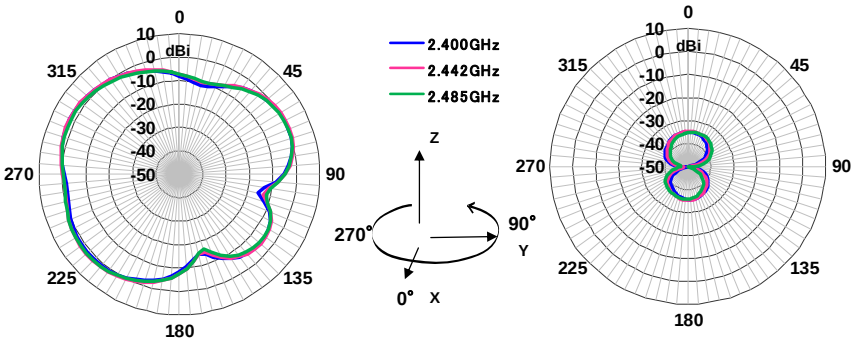


Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.4	-2.0	-2.4
Maximum[dBi]	1.8	2.0	1.4
Minimum[dBi]	-35.5	-35.2	-35.8

Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-10.74	-9.89	-9.92
Maximum[dBi]	-7.93	-7.09	-7.11
Minimum[dBi]	-42.39	-38.85	-35.88

Model1-2

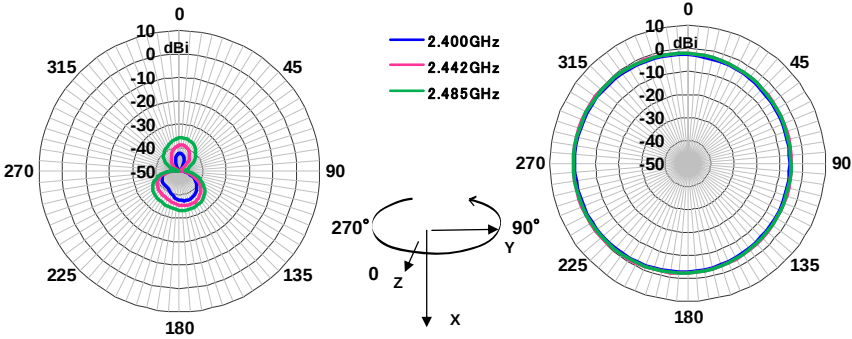
X-Y PLANE



Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-1.8	-1.3	-1.8
Maximum[dBi]	2.4	2.6	2.1
Minimum[dBi]	-15.4	-14.9	-16.5

Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-38.0	-37.7	-38.1
Maximum[dBi]	-35.1	-34.6	-34.8
Minimum[dBi]	-51.0	-51.7	-52.6

Y-Z PLANE

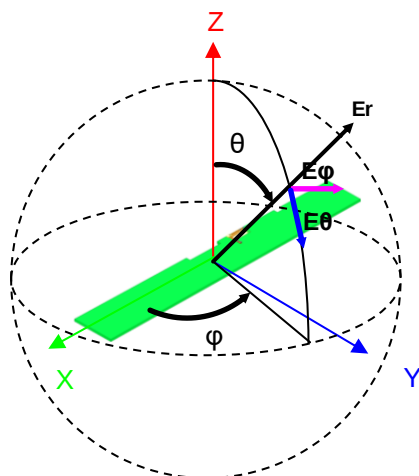


Horizontal Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-42.5	-39.8	-37.2
Maximum[dBi]	-37.2	-35.0	-33.1
Minimum[dBi]	-63.6	-70.4	-53.1

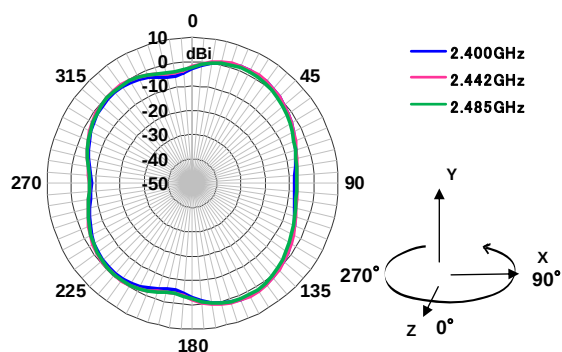
Vertical Polarization			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.7	-2.0	-2.2
Maximum[dBi]	-0.8	-0.2	-0.4
Minimum[dBi]	-5.5	-4.9	-5.0

Total Power (2.4GHz Band)

PRODUCT ORIENTATIONS



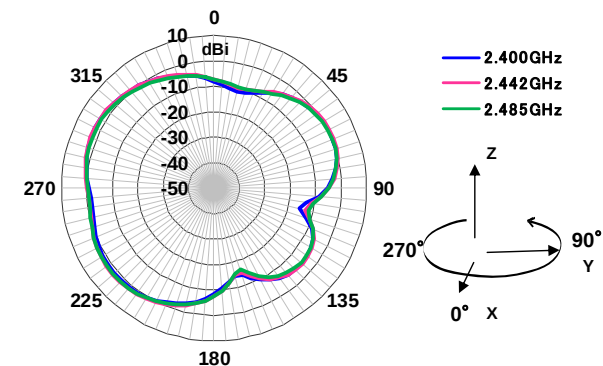
X-Z PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-1.8	-1.3	-1.7
Maximum[dBi]	2.0	2.2	1.5
Minimum[dBi]	-8.3	-7.4	-7.5

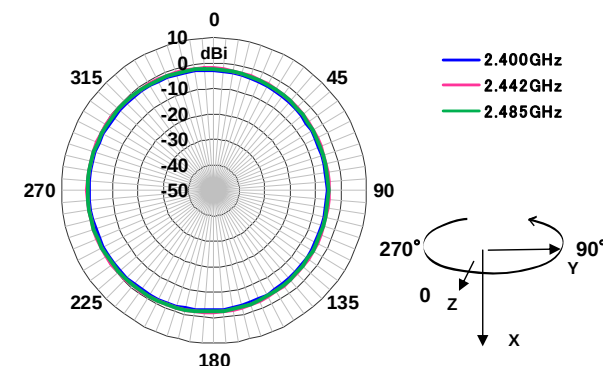
Model1-2

X-Y PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-1.8	-1.3	-1.8
Maximum[dBi]	2.4	2.6	2.1
Minimum[dBi]	-15.4	-14.8	-16.4

Y-Z PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.7	-2.0	-2.2
Maximum[dBi]	-0.8	-0.2	-0.4
Minimum[dBi]	-5.5	-4.9	-5.0

