

▶ strictly confidential

Attracting Tomorrow

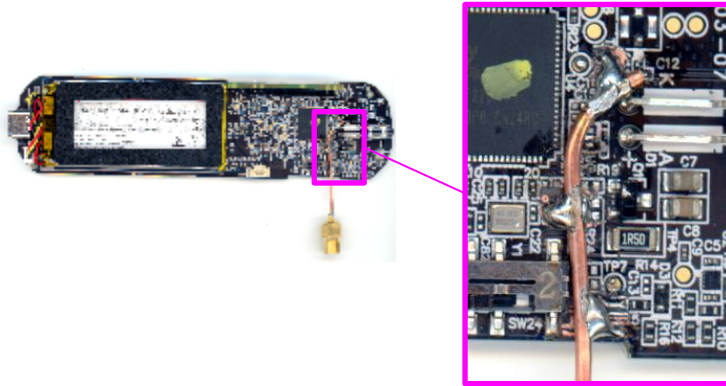


TDK Antenna Measurement

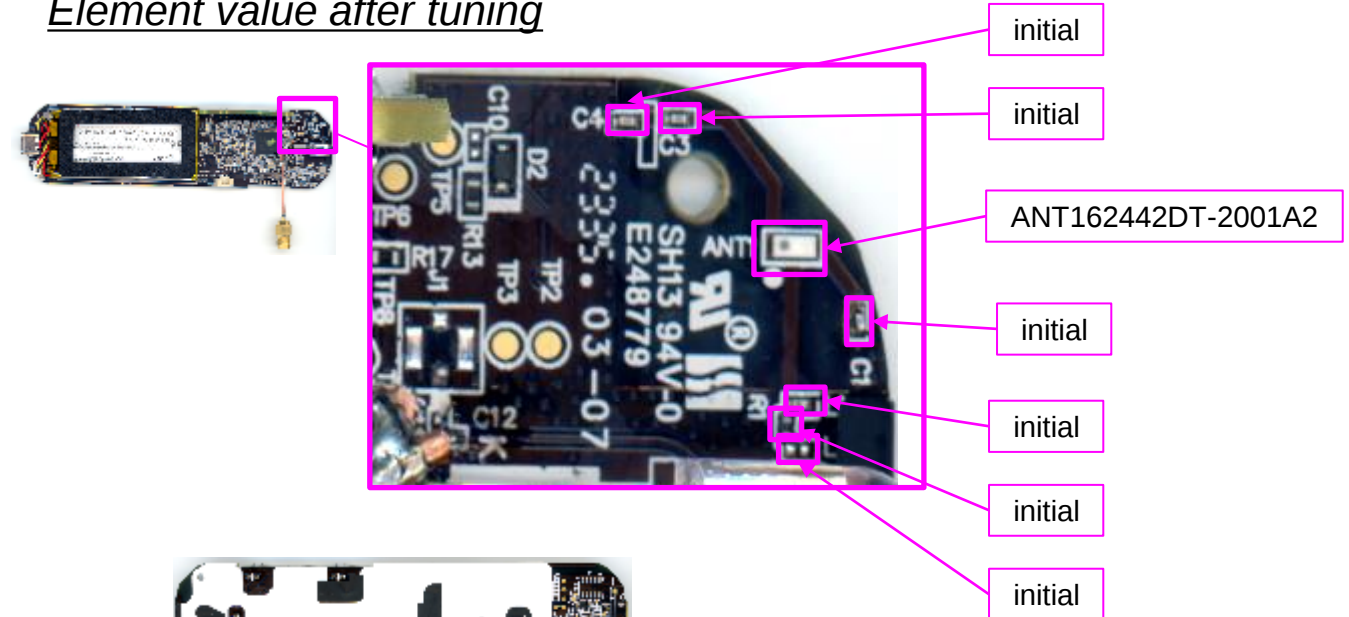
Measurement Setup

► MEASUREMENT SETUP

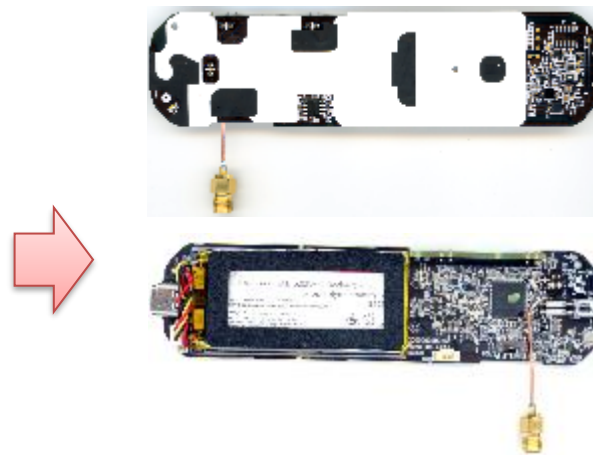
Cable setup



Element value after tuning

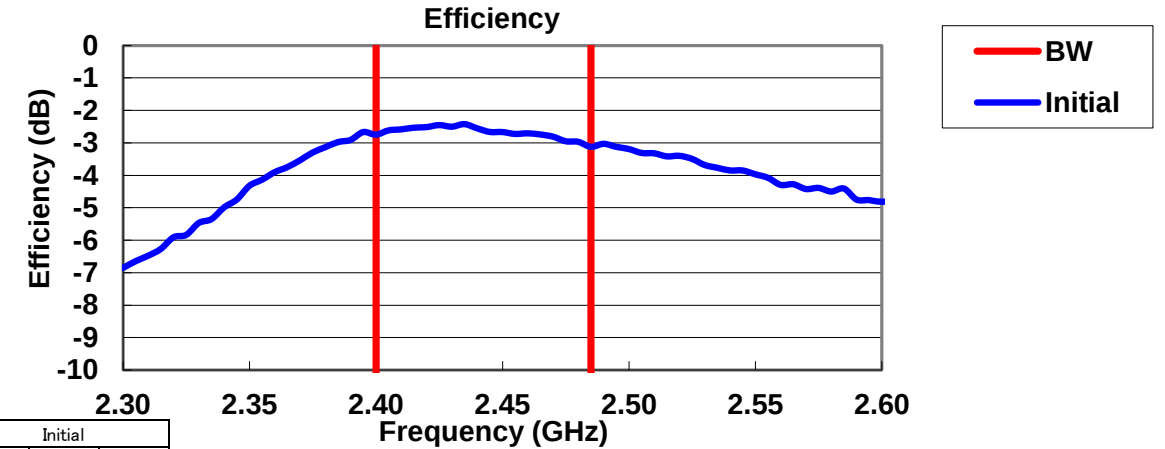
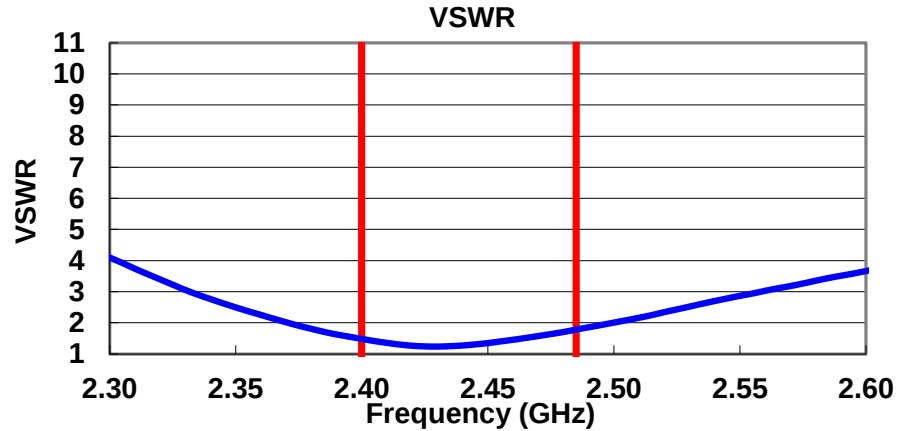


Measurement setup

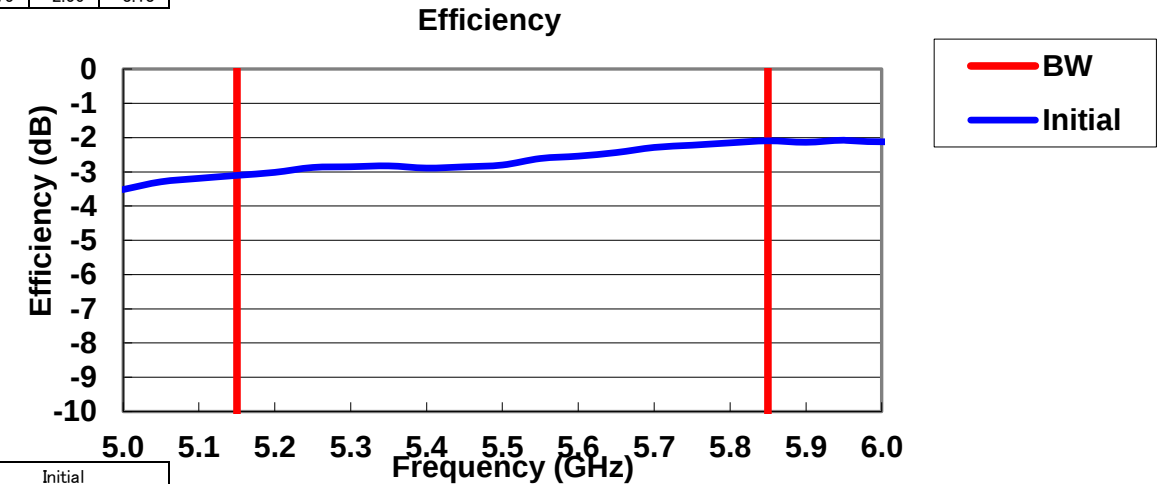
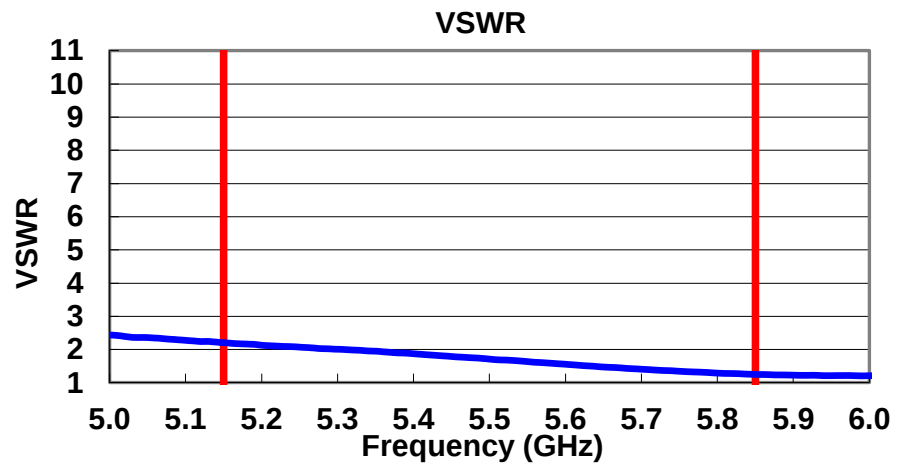


Measurement Results

► VSWR & Efficiency



	Initial		
Frequency[GHz]	2.4	2.442	2.485
VSWR	1.48	1.27	1.78
Efficiency[dB]	-2.75	-2.56	-3.13



	Initial		
Frequency[GHz]	5.15	5.5	5.85
VSWR	2.21	1.71	1.25
Efficiency[dB]	-3.10	-2.80	-2.09

Comments

- ◆ We measured the antenna.
- ◆ We tried to tune the performance, but the initial condition was already optimal.
- ◆ Please see page2 of this report to know the measurement setting.

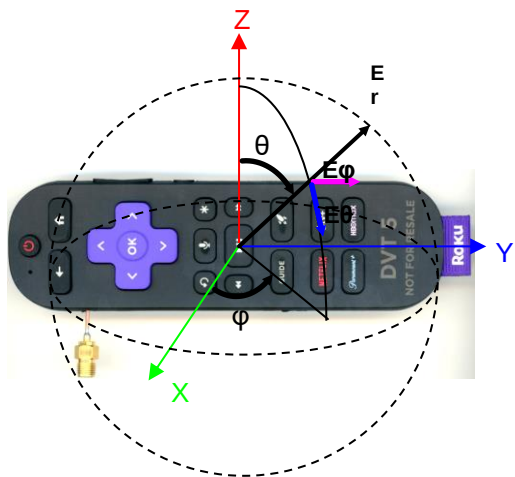
Now “antenna simulation tool” is published on TDK Web site. Please give it a try.

- Selection Guide <https://product.tdk.com/info/en/products/rf/rf/antenna/technote/selection-guide.html>
- Instant Simulator <https://product.tdk.com/en/search/rf/rf/antenna/simulation>
- Design Guide <https://product.tdk.com/info/en/products/rf/rf/antenna/technote/designnote.html>
- HFSS model https://product.tdk.com/info/en/technicalsupport/tvcl/ansys_hfss/antenna/index.html

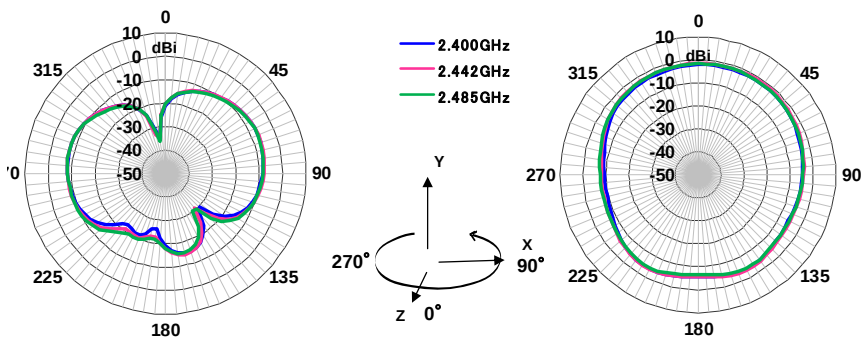
Radiation Pattern

Radiation Pattern (2.4GHz Band)

PRODUCT ORIENTATIONS



X-Z PLANE

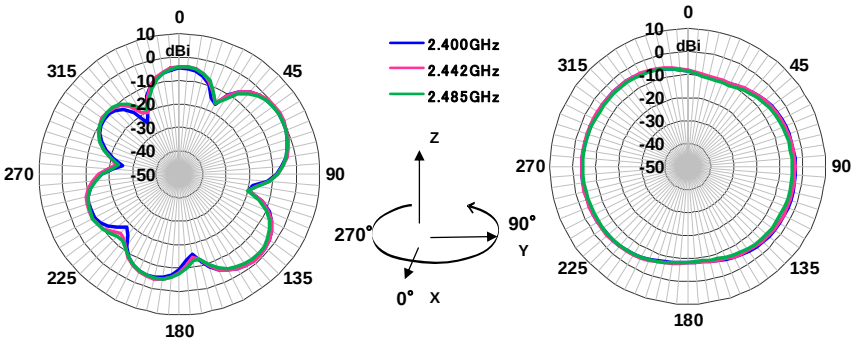


	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-11.5	-11.2	-11.4
Maximum[dBi]	-7.2	-7.0	-7.4
Minimum[dBi]	-34.5	-34.5	-35.9

	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.15	-3.53	-3.87
Maximum[dBi]	-1.65	-1.10	-1.44
Minimum[dBi]	-9.54	-8.10	-7.72

Initial

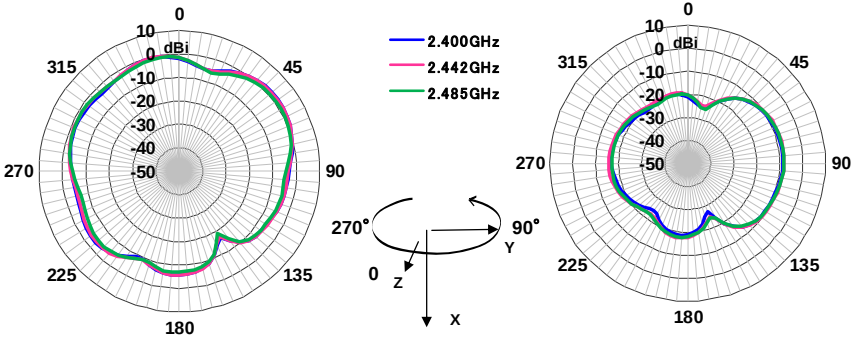
X-Y PLANE



	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-6.2	-5.8	-6.3
Maximum[dBi]	-0.2	0.1	-0.4
Minimum[dBi]	-25.5	-22.9	-23.6

	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-4.9	-4.9	-5.6
Maximum[dBi]	-2.8	-3.1	-4.2
Minimum[dBi]	-10.1	-9.8	-10.7

Y-Z PLANE

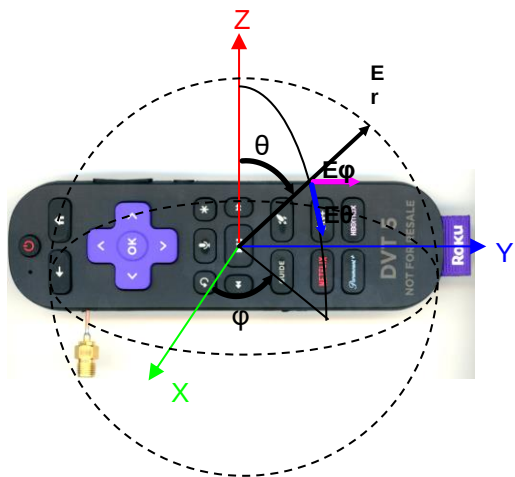


	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.8	-2.7	-3.4
Maximum[dBi]	2.0	1.8	1.0
Minimum[dBi]	-16.8	-17.2	-19.0

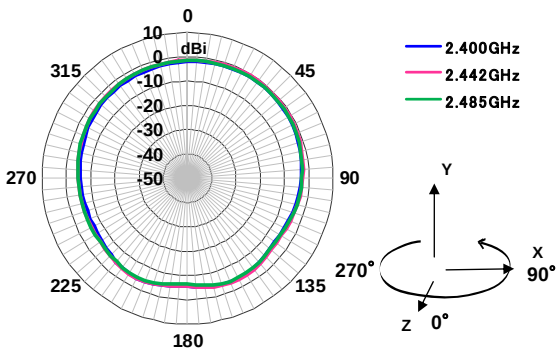
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-14.3	-13.6	-13.9
Maximum[dBi]	-8.5	-7.9	-8.1
Minimum[dBi]	-27.1	-25.0	-25.1

Total Power (2.4GHz Band)

PRODUCT ORIENTATIONS



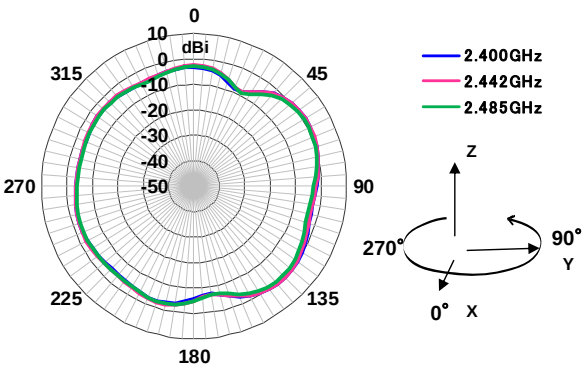
X-Z PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-3.4	-2.8	-3.2
Maximum[dBi]	-1.0	-0.5	-1.0
Minimum[dBi]	-6.7	-5.7	-6.5

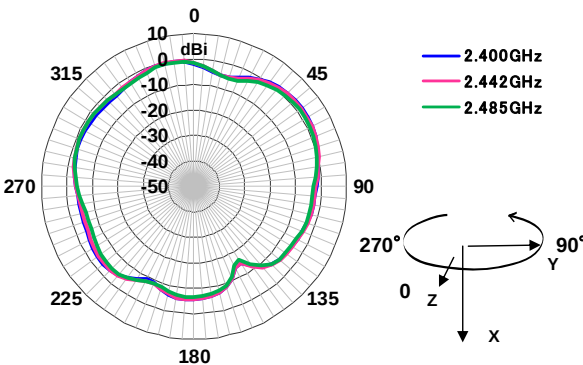
Initial

X-Y PLANE



Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.5	-2.3	-2.9
Maximum[dBi]	1.2	1.3	0.7
Minimum[dBi]	-8.5	-8.3	-9.2

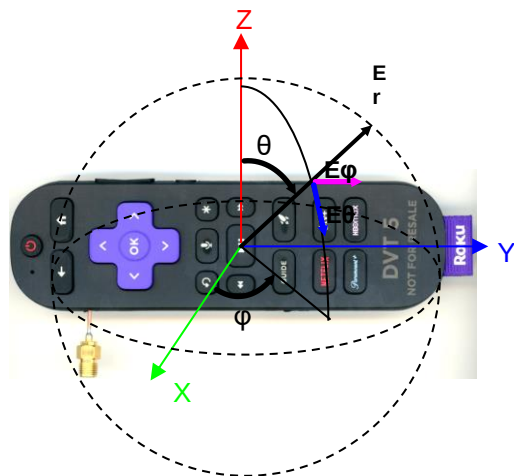
Y-Z PLANE



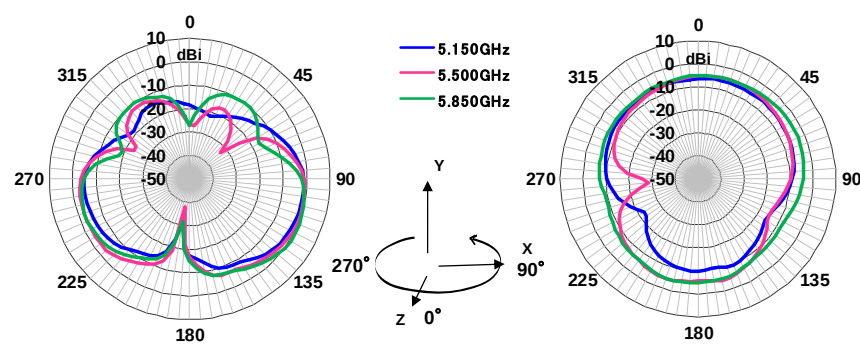
Total Power			
	2.400GHz	2.442GHz	2.485GHz
Average[dBi]	-2.5	-2.4	-3.0
Maximum[dBi]	2.3	2.1	1.3
Minimum[dBi]	-14.8	-14.9	-16.4

Radiation Pattern (5GHz Band)

PRODUCT ORIENTATIONS



X-Z PLANE

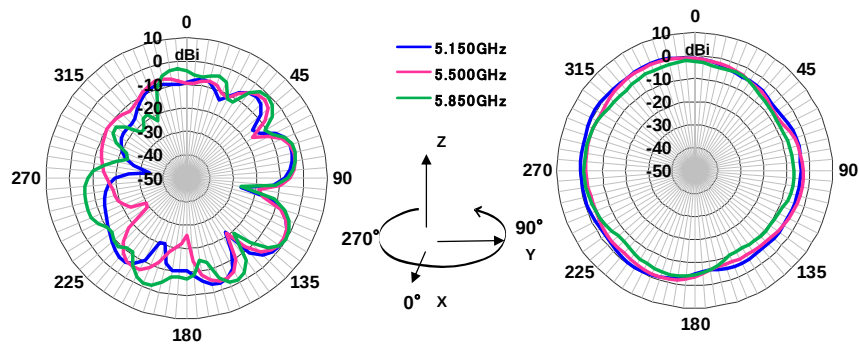


Horizontal Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-7.2	-6.0	-5.8
Maximum[dBi]	-1.0	-0.3	0.8
Minimum[dBi]	-31.6	-37.8	-31.7

Vertical Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-8.76	-7.28	-5.50
Maximum[dBi]	-5.96	-4.50	-2.86
Minimum[dBi]	-22.40	-28.50	-9.10

Initial

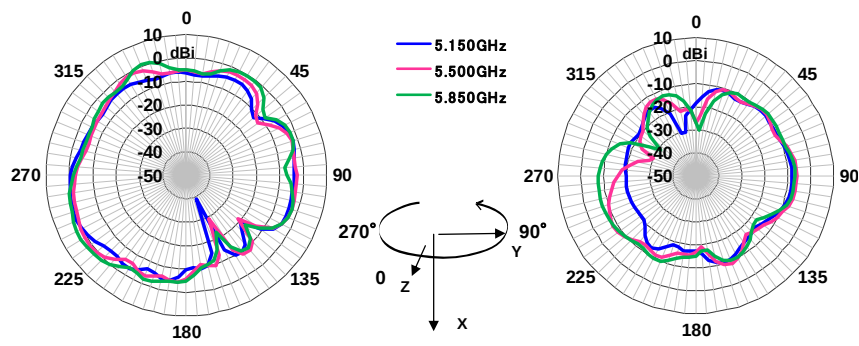
X-Y PLANE



Horizontal Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-7.6	-7.5	-5.8
Maximum[dBi]	-0.9	-1.2	-0.2
Minimum[dBi]	-34.2	-30.1	-26.6

Vertical Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-2.0	-2.8	-4.6
Maximum[dBi]	0.6	0.0	-1.8
Minimum[dBi]	-6.1	-7.3	-10.4

Y-Z PLANE

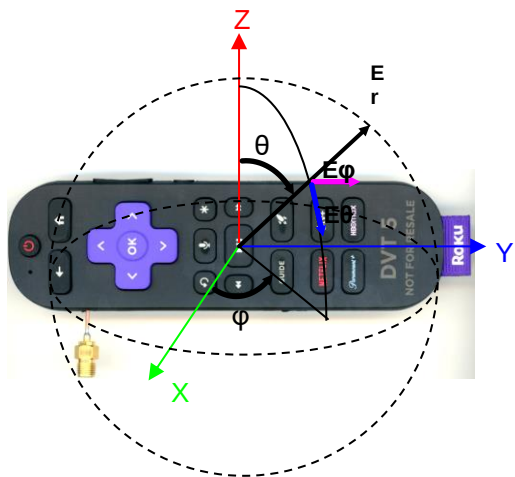


Horizontal Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-4.4	-3.7	-2.5
Maximum[dBi]	0.7	1.0	2.7
Minimum[dBi]	-39.1	-29.3	-22.5

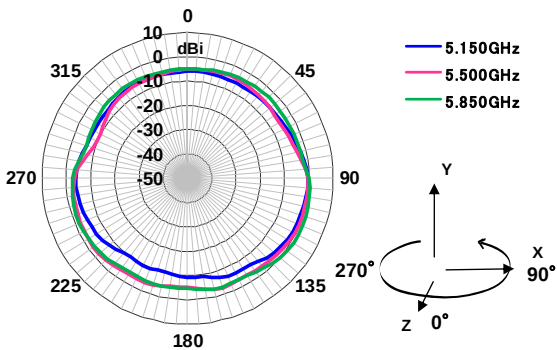
Vertical Polarization			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-13.1	-11.2	-10.6
Maximum[dBi]	-7.9	-6.0	-6.6
Minimum[dBi]	-30.8	-29.8	-31.1

Total Power (5GHz Band)

PRODUCT ORIENTATIONS



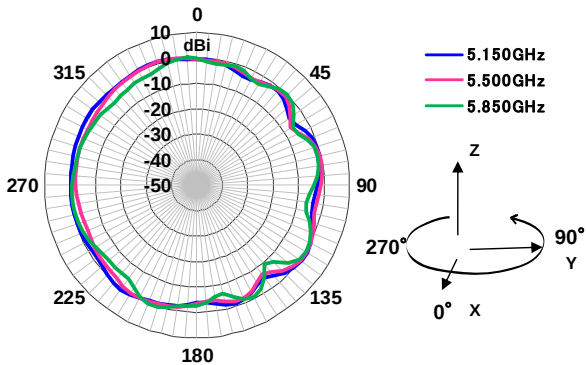
X-Z PLANE



Total Power			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-4.9	-3.6	-2.7
Maximum[dBi]	-0.5	-0.1	1.3
Minimum[dBi]	-10.4	-9.7	-6.2

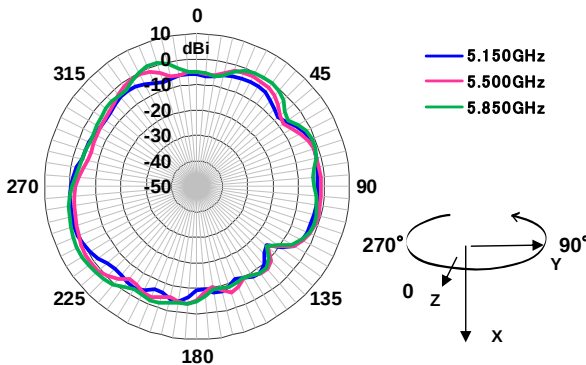
Initial

X-Y PLANE



Total Power			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-0.9	-1.5	-2.1
Maximum[dBi]	1.0	0.8	0.4
Minimum[dBi]	-5.2	-6.8	-9.2

Y-Z PLANE



Total Power			
	5.150GHz	5.500GHz	5.850GHz
Average[dBi]	-3.8	-3.0	-1.9
Maximum[dBi]	0.8	1.5	3.0
Minimum[dBi]	-14.2	-13.6	-14.1

