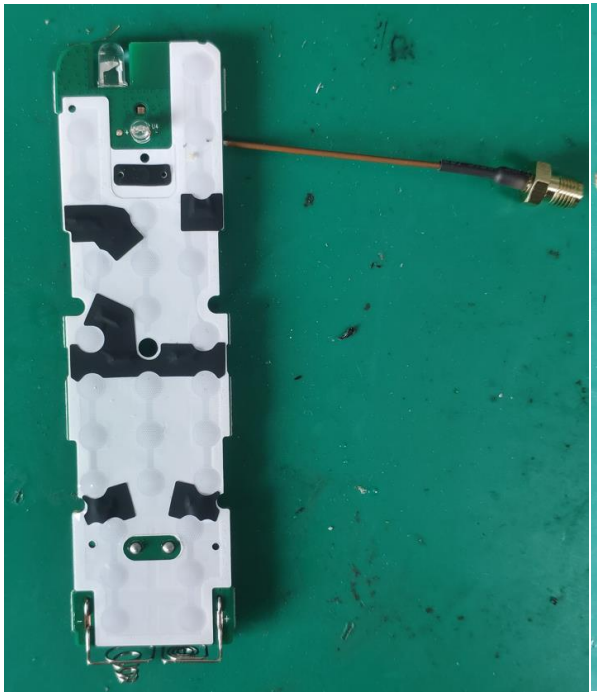
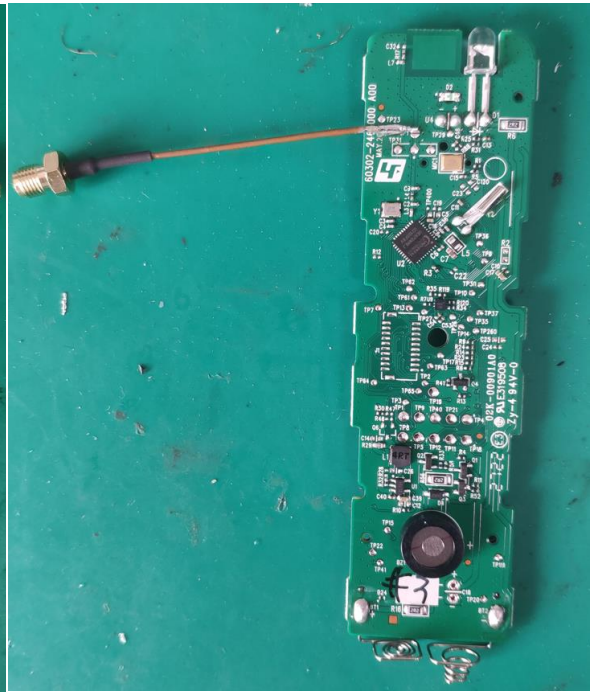
Sony FY23 Premium T1 Antenna Measurement_20220901

Universal Electronic Inc.

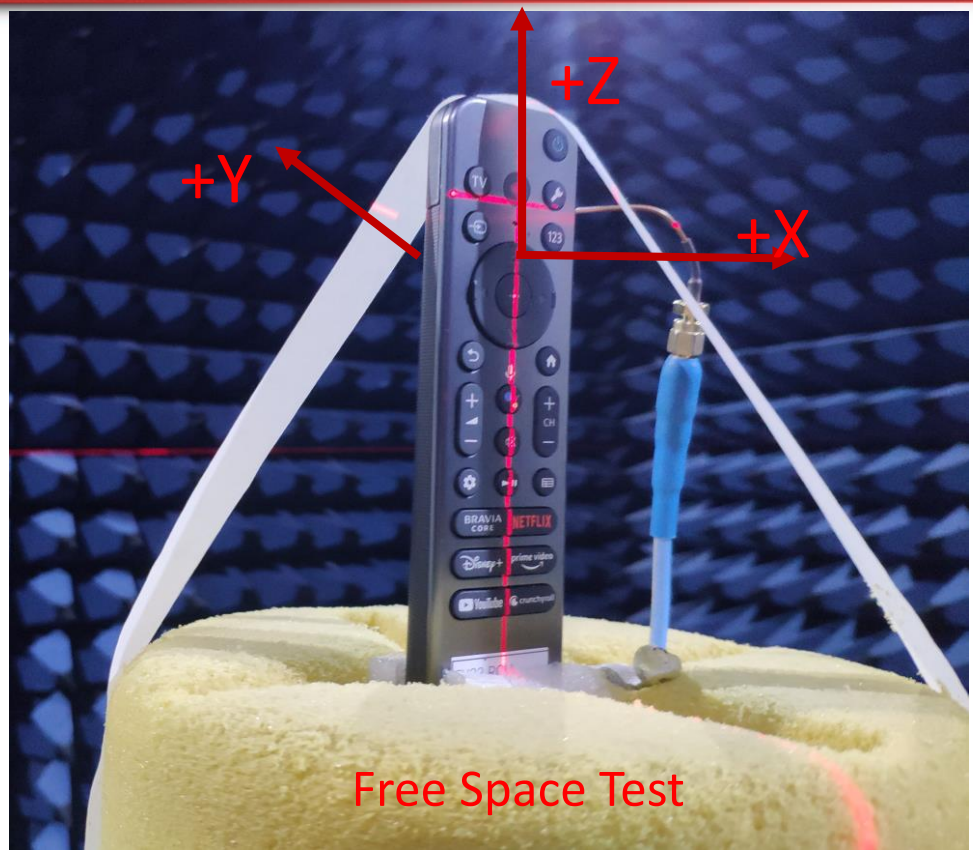
REDEFINING CONTROL

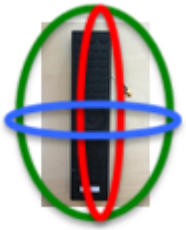
Photos – Antenna and PCB

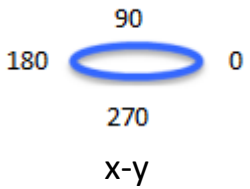


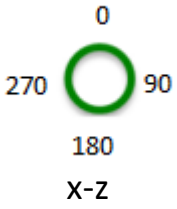


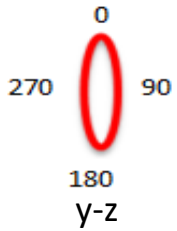
Photos – Radiation Test





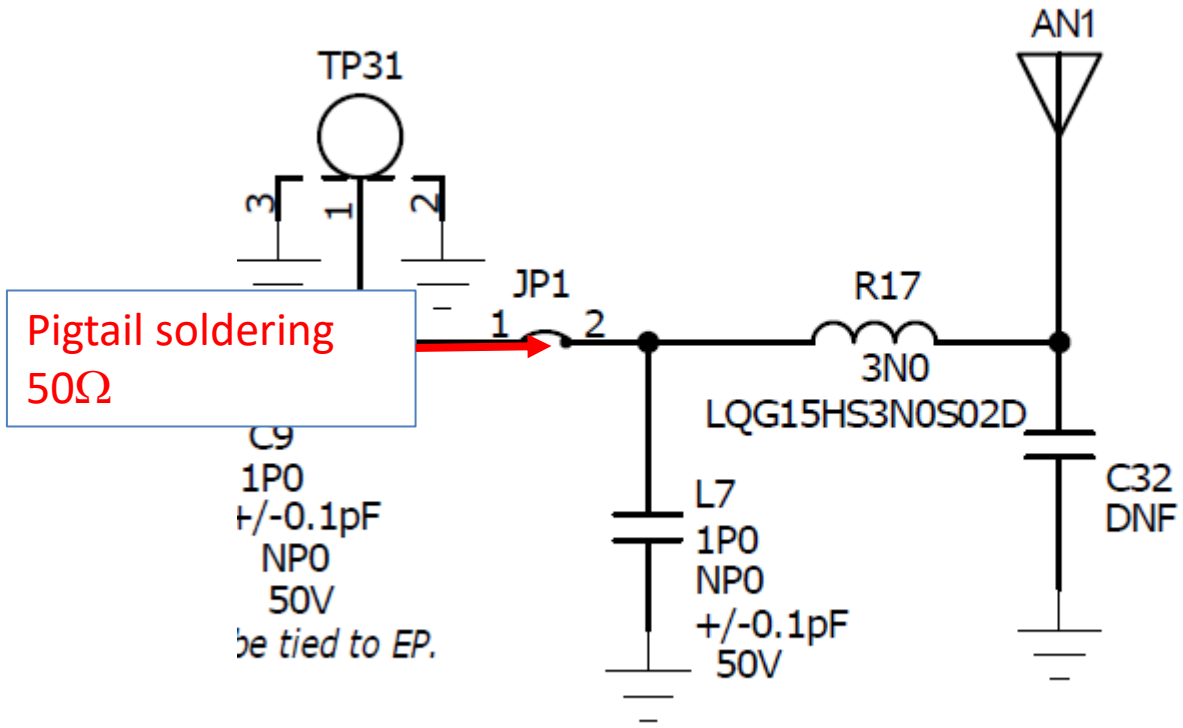






Facing host side:
x-y is from 0 to 90 to 180
x-z is from 270 to 0 to 90
y-z is from 270 to 0 to 90

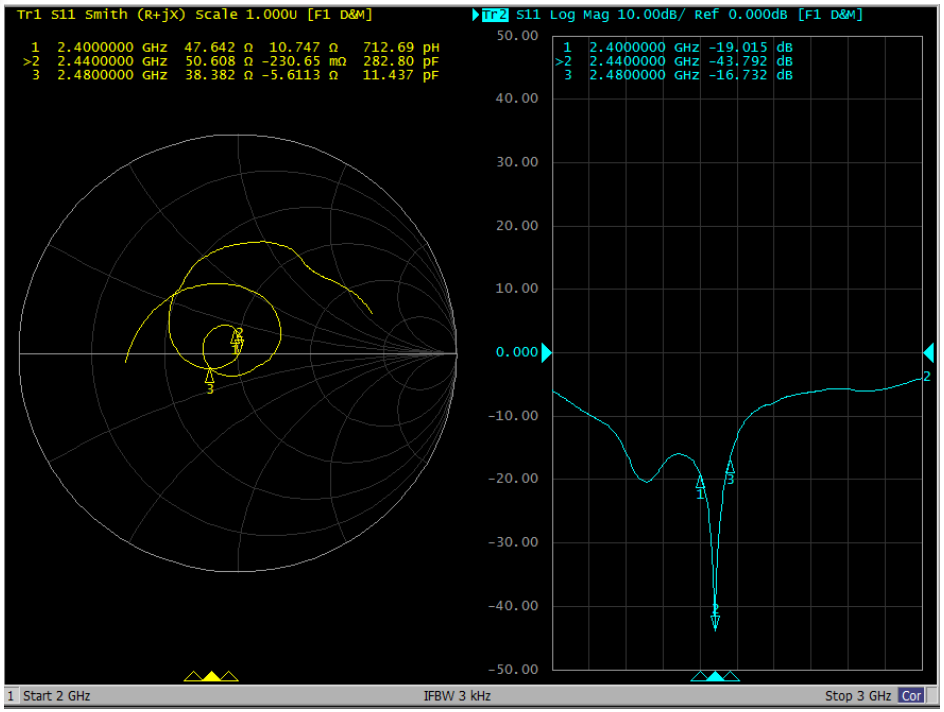
Antenna Tuning Value



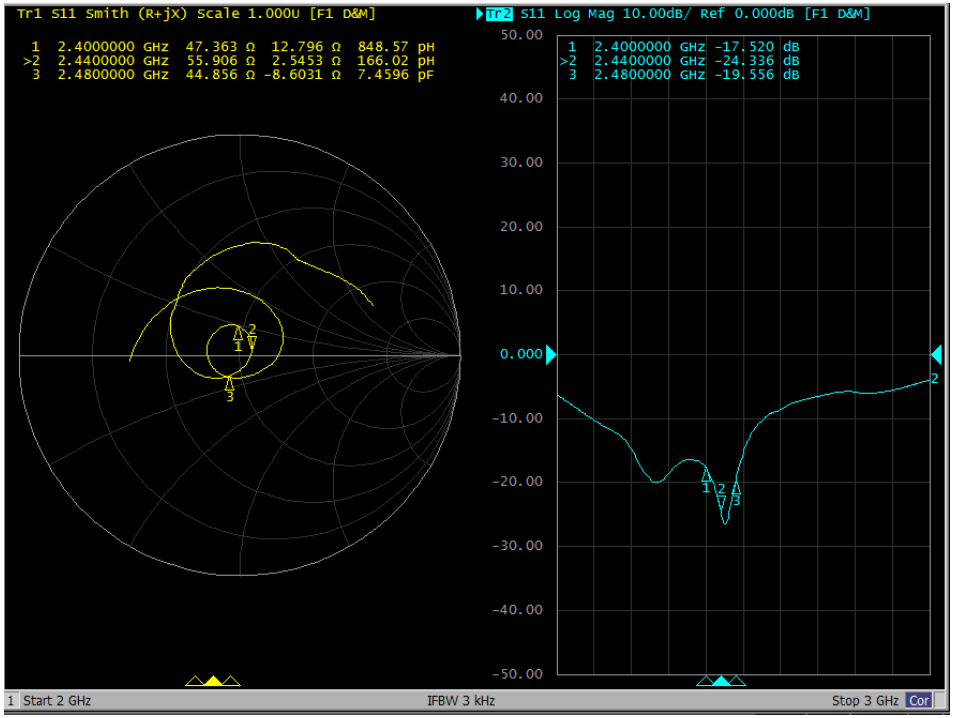
Part number:
R17 = 3.0nH±0.1nH
Murata LQG15HS3N0S02D
L7 = 1.0pF ± 0.1pF
Walsin 0402N1R0B500

Return Loss and Smith Chart

#1_L7=1.0pF, R17=3.0nH, C32=DNF



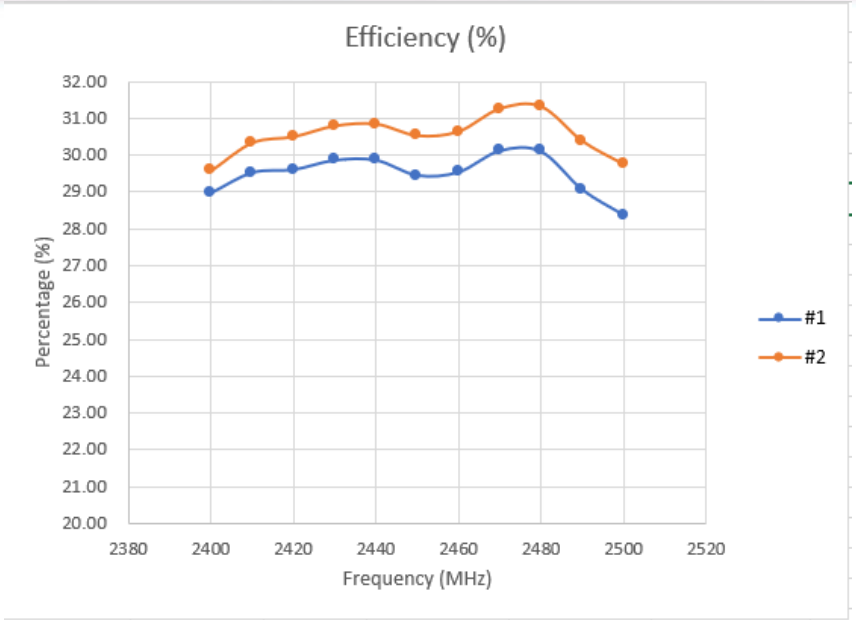
2_L7=1.0pF, R17=3.0nH, C32=DNF



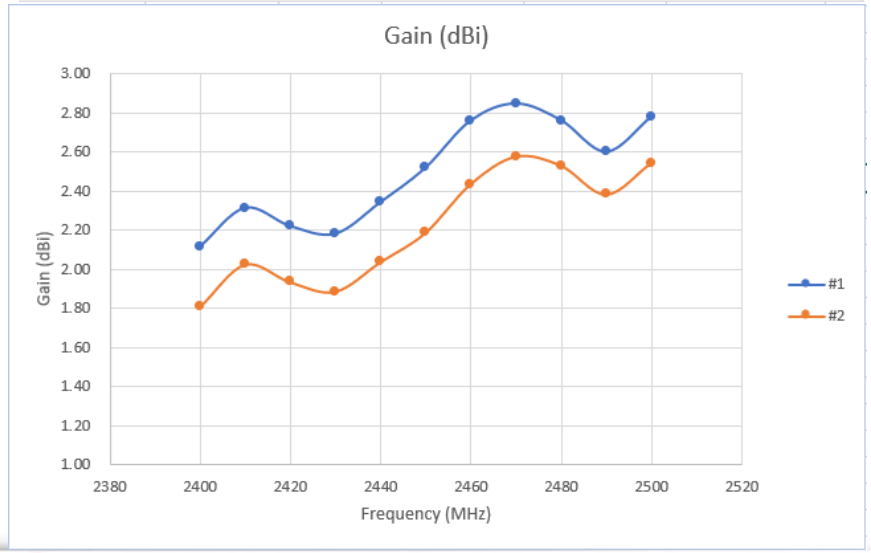
Frequency (MHz)	S11 (dB)		
	2400	2440	2480
# 1	-19.015	-43.792	-16.732

Frequency (MHz)	S11 (dB)		
	2400	2440	2480
# 2	-17.520	-24.336	-19.556

Efficiency and Gain table

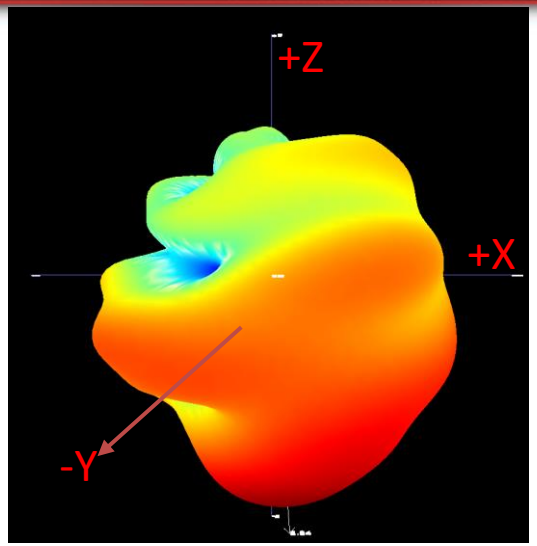


	#1	#2
Ferquecy	Efficiency	Efficiency
2400MHz	28.97%	29.59%
2410MHz	29.53%	30.34%
2420MHz	29.61%	30.50%
2430MHz	29.87%	30.79%
2440MHz	29.87%	30.84%
2450MHz	29.45%	30.53%
2460MHz	29.54%	30.64%
2470MHz	30.13%	31.25%
2480MHz	30.11%	31.31%
2490MHz	29.06%	30.39%
2500MHz	28.36%	29.77%

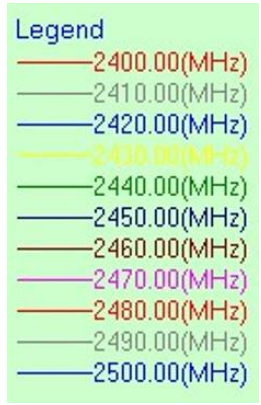


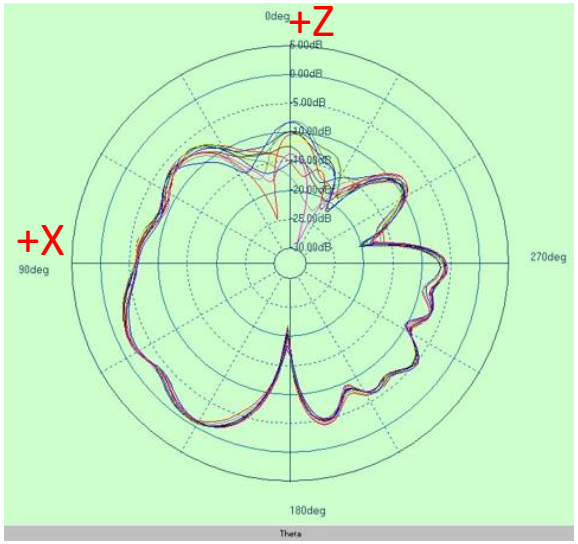
	#1	#2
Ferquecy	Gain	Gain
2400MHz	2.11	1.81
2410MHz	2.31	2.02
2420MHz	2.22	1.93
2430MHz	2.18	1.89
2440MHz	2.34	2.04
2450MHz	2.52	2.19
2460MHz	2.76	2.43
2470MHz	2.85	2.57
2480MHz	2.76	2.53
2490MHz	2.60	2.38
2500MHz	2.78	2.54

Radiation Pattern - Unit 1

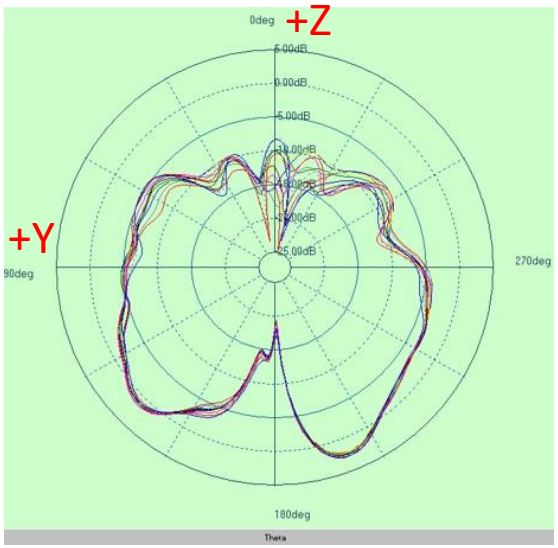


Unit 1_2.440 GHz

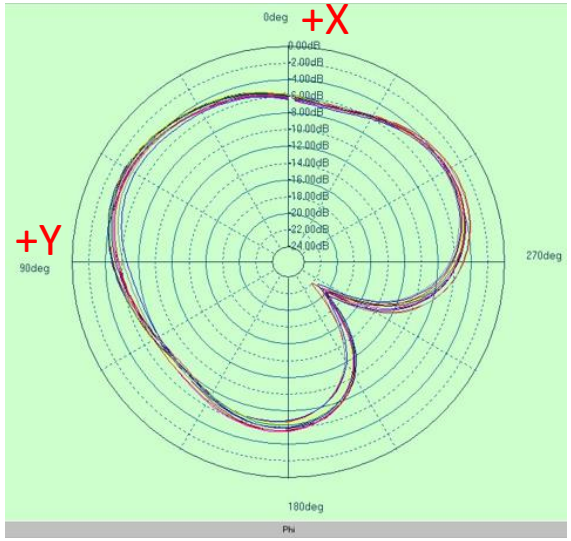




Phi=0°



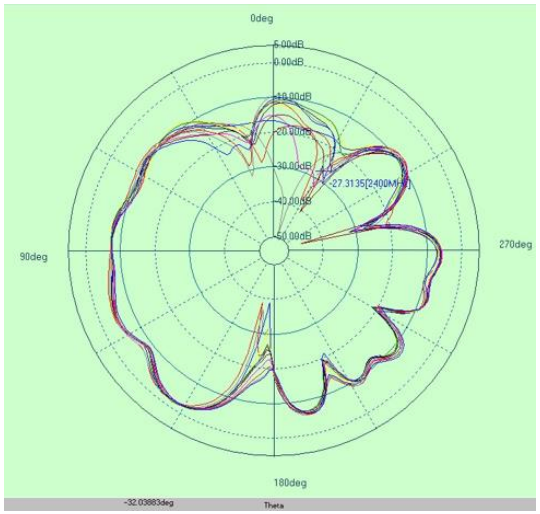
Phi=90 °



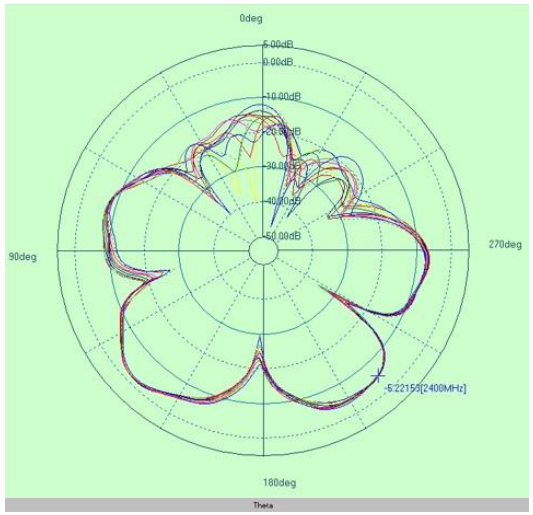
Theta=90 °

Radiation Pattern - Unit 1

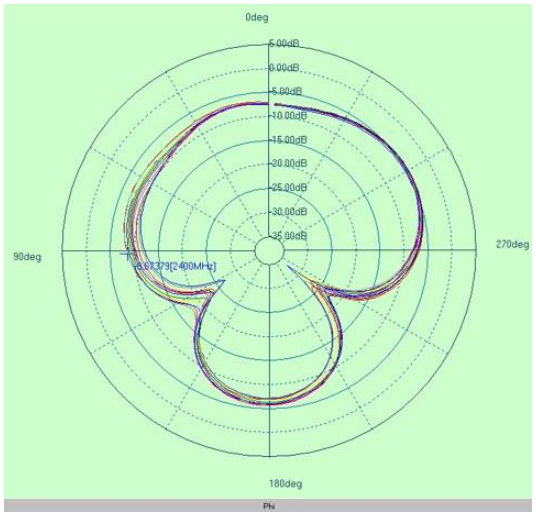
Phi=0° - H



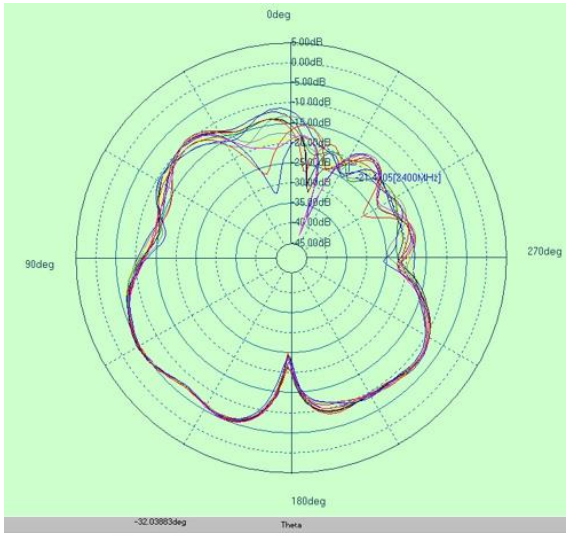
Phi=90° - H



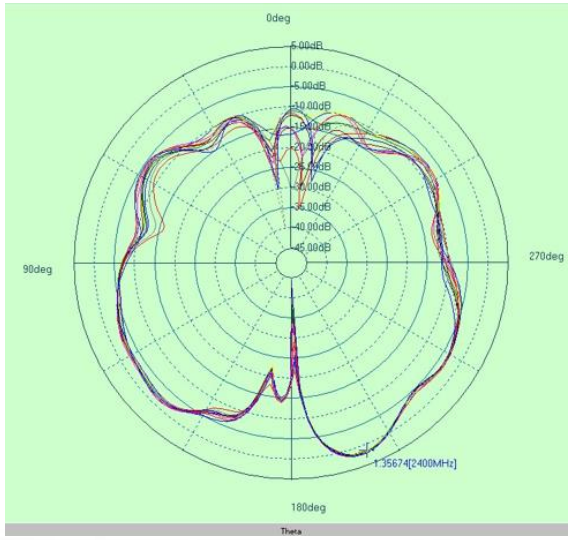
Theta=90° - H



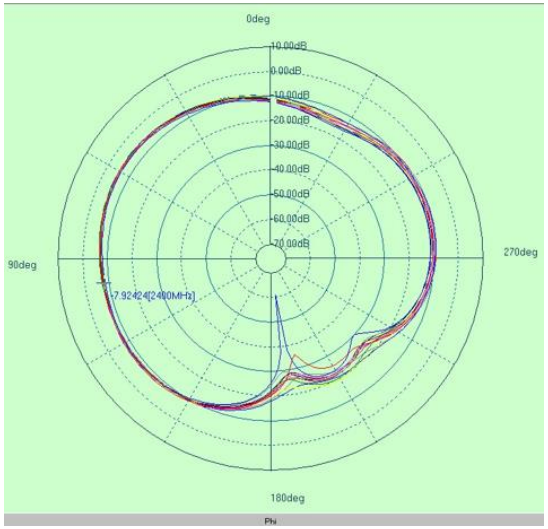
Phi=0° - V



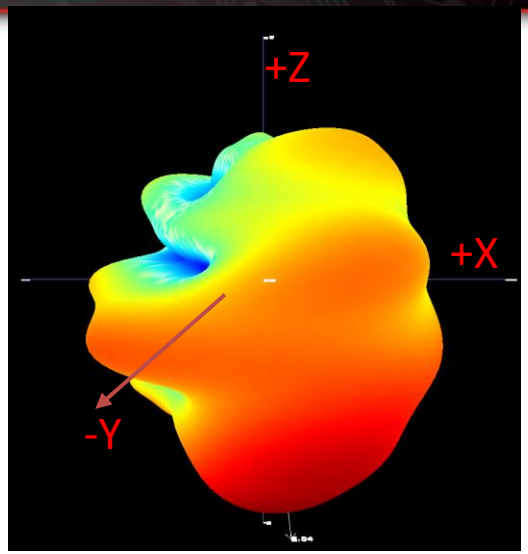
Phi=90° - V



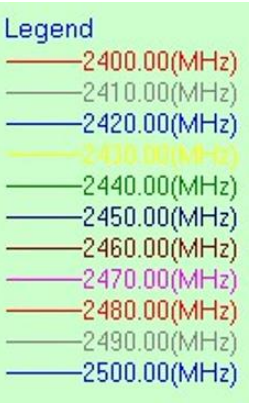
Theta=90° - V

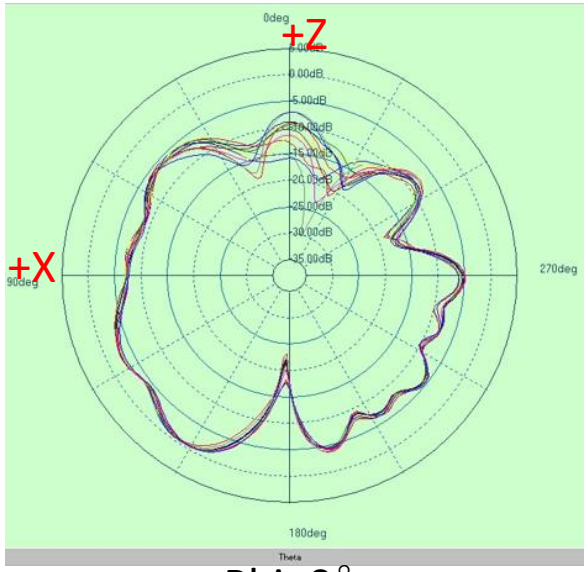


Radiation Pattern - Unit 2

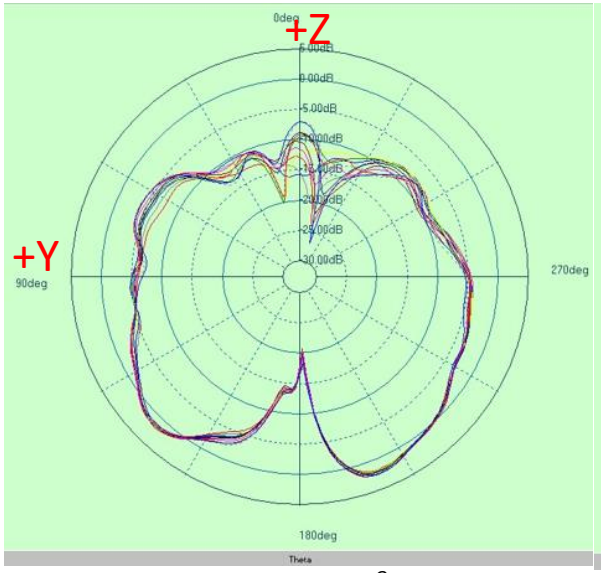


Unit 2_2.440 GHz

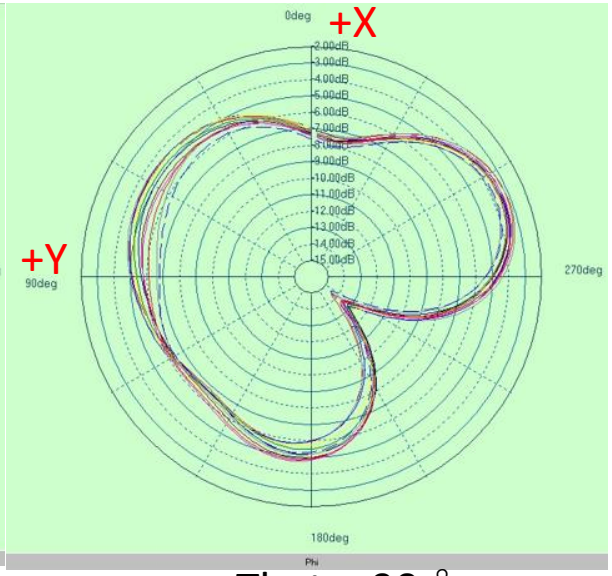




Phi=0°



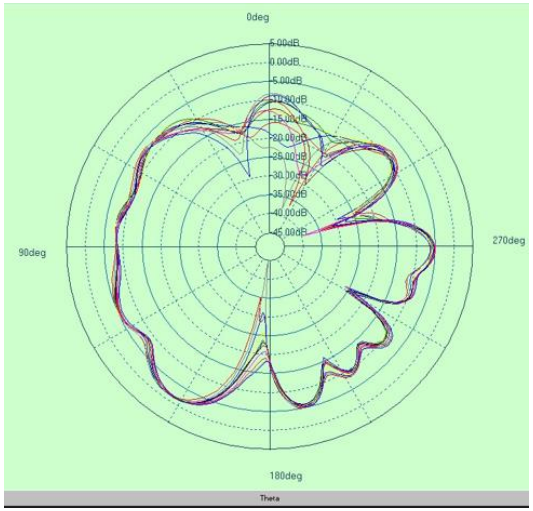
Phi=90 °



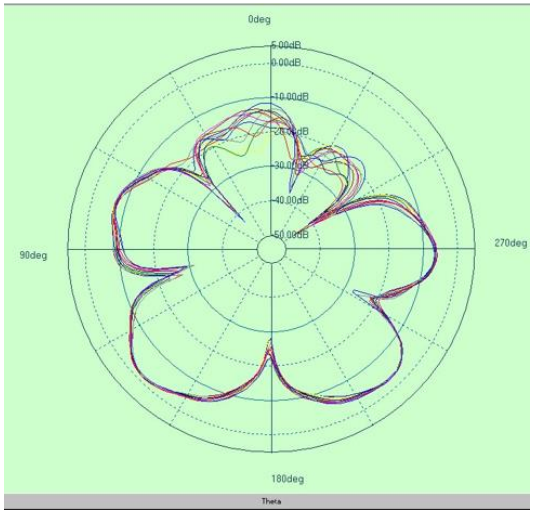
Theta=90 °

Radiation Pattern - Unit 2

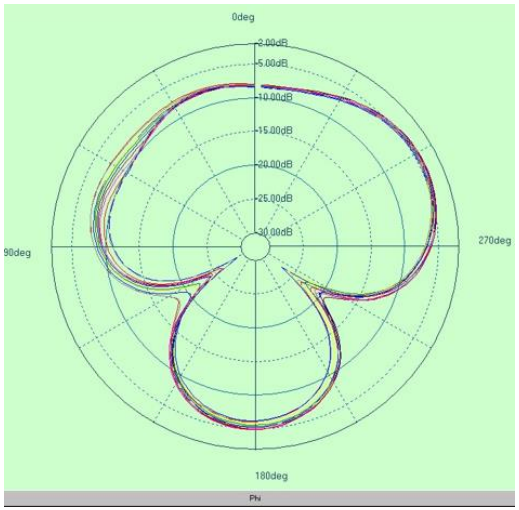
Phi=0° - H



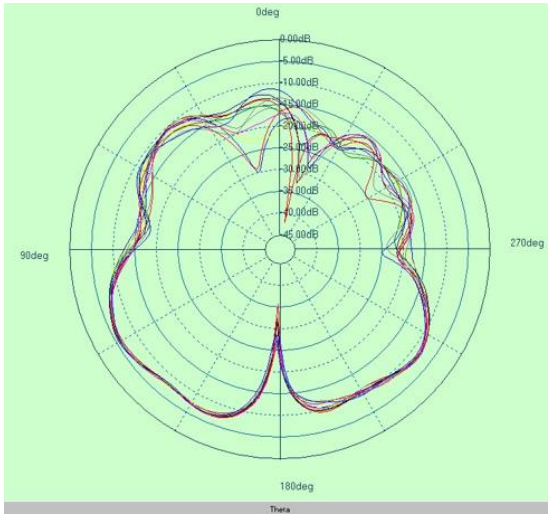
Phi=90° - H



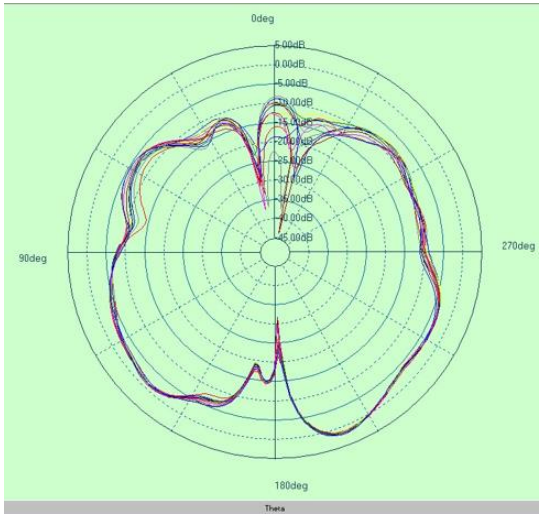
Theta=90° - H



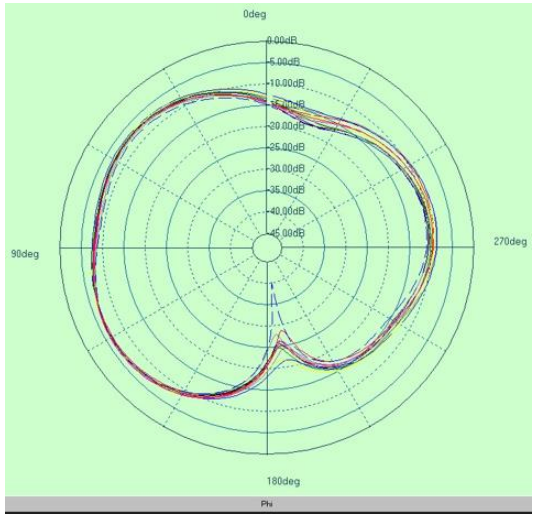
Phi=0° - V



Phi=90° - V



Theta=90° - V



Measured Gain Table

SONY FY23 Premium			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote 1	XY	XZ	-15.4	-11.6	-24.8	-27.4
	YZ	YZ	-10.3	-14.4	-24.7	-31.5
	ZX	XY	-13.3	-7.7	-23.0	-24.7

SONY FY23 Premium			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote 2	XY	XZ	-15.8	-10.8	-26.9	-21.9
	YZ	YZ	-10.4	-13.3	-23.6	-26.8
	ZX	XY	-12.9	-7.3	-15.1	-21.7

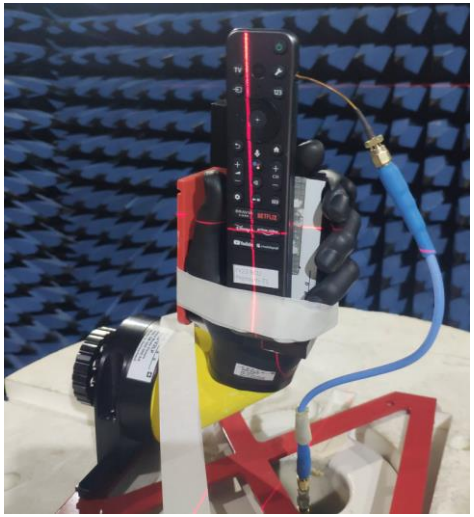
Measured Gain Table

SONY FY22 Premium			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote 4	XY	XZ	-19.6	-11.7	-27.1	-21.1
	YZ	YZ	-10.9	-11.2	-22.0	-30.2
	ZX	XY	-12.8	-6.6	-20.5	-17.3

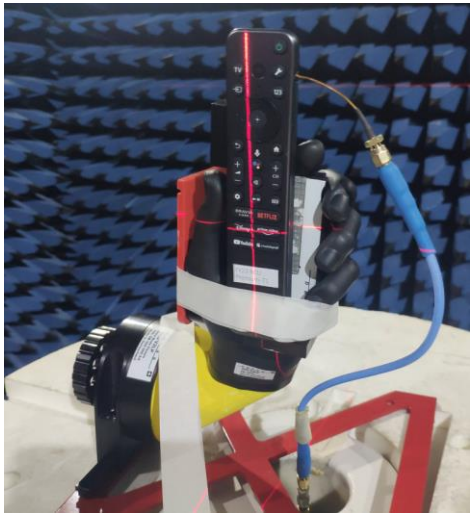
Hands Model

The white part and the red part belong to the hand bracket, which is used for fixing and holding, and cannot be removed. They use the same materials as the hands.

Measured Gain Table with Left Hand

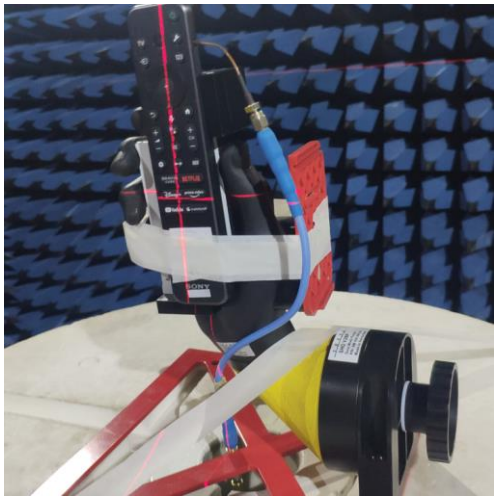


SONY FY23 Sony Premium with left hand			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote #1	XY	XZ	-16.3	-13.0	-21.4	-31.8
	YZ	YZ	-9.5	-13.2	-23.5	-24.5
	ZX	XY	-13.1	-8.2	-14.9	-24.1

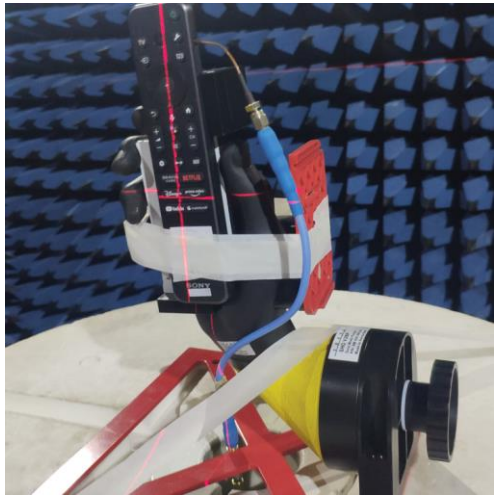


SONY FY23 Sony Premium with left hand			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote #2	XY	XZ	-16.6	-13.5	-22.6	-31.5
	YZ	YZ	-9.3	-14.3	-25.1	-26.3
	ZX	XY	-12.6	-8.7	-14.4	-21.7

Measured Gain Table with Right Hand



SONY FY23 Sony Premium with right hand			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote #1	XY	XZ	-16.5	-12.4	-23.9	-28.1
	YZ	YZ	-9.6	-13.8	-17.6	-27.4
	ZX	XY	-13.0	-7.7	-17.3	-19.2



SONY FY23 Sony Premium with right hand			Average Gain +/- 90 deg (Averaged for 3 frequencies)		Minimum gain +/- 45 deg (Averaged every 10 deg, min value picked among all the values and all 3 frequencies)	
Coordinate System	Sony	UEI	H (phi)	V (theta)	H (phi)	V (theta)
Remote #2	XY	XZ	-16.0	-12.2	-27.8	-28.2
	YZ	YZ	-9.5	-13.6	-19.7	-28.5
	ZX	XY	-13.4	-8.0	-17.4	-18.7