

### S11 Test Methodology

Testing Equipment:

Network Analyzer (E5071C)

Measurement Procedure:

A 50-ohm coaxial cable is extended from the instrument's test port. After performing calibration using a calibration kit, the sample is connected to record the Return Loss and Voltage Standing Wave Ratio (VSWR) at the designated frequency points.

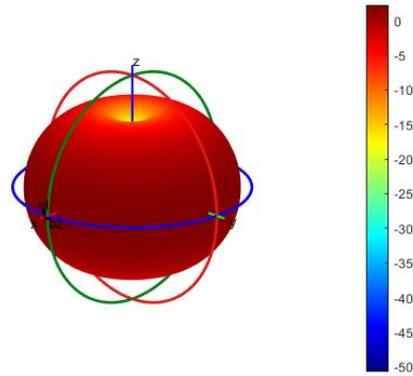
频率 (MHz)	420	433	450
VSWR	1.53	1.53	1.45
Return Loss	-13.5	-13.5	-14.5

# ( antenna passive data)

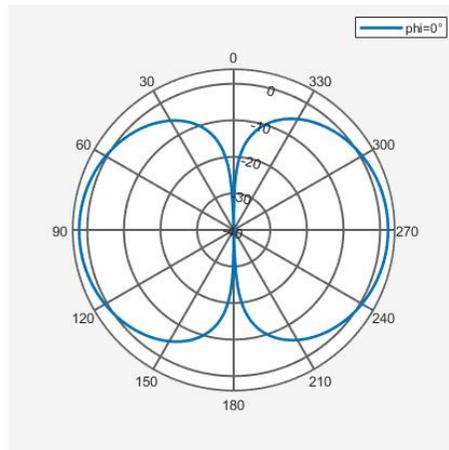
频率 (MHz)	增益 (dBi)	效率 (%)
420	2.2740	66.59
421	2.2743	68.40
422	2.3745	68.74
423	2.3747	67.82
424	2.3749	69.59
425	2.4752	74.37
426	2.4754	77.17
427	2.5757	76.68
428	2.5760	74.44
429	2.6762	74.47
430	2.7765	76.96
431	2.7768	75.64
432	2.7771	73.90
433	2.7774	73.72
434	2.7777	72.12
435	2.7780	72.76
436	2.7784	71.43
437	2.7787	71.53
438	2.7790	70.87
439	2.7794	69.37
440	2.6798	68.48
441	2.6801	70.11
442	2.5805	72.20
443	2.5809	69.57
444	2.4813	67.44
445	2.4817	67.62
446	2.3821	71.35
447	2.3825	71.49
448	2.3829	72.02
449	2.2833	72.50
450	2.2838	72.99

# (2D and 3D directional) diagrams)

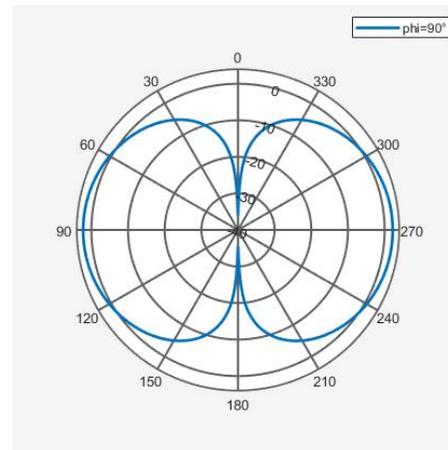
420MHz Total



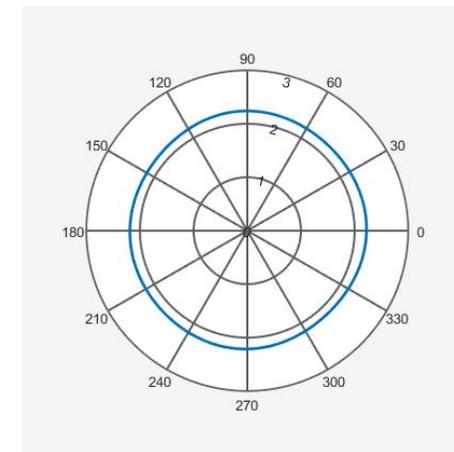
Total( $\phi=0^\circ$ )



Total( $\phi=90^\circ$ )

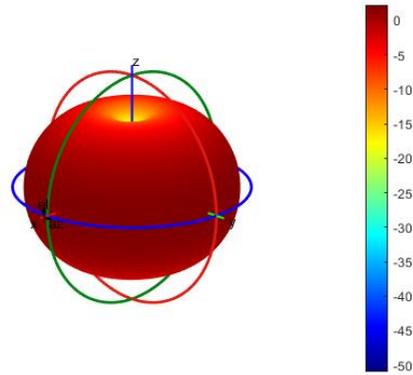


Total( $\theta=90^\circ$ )

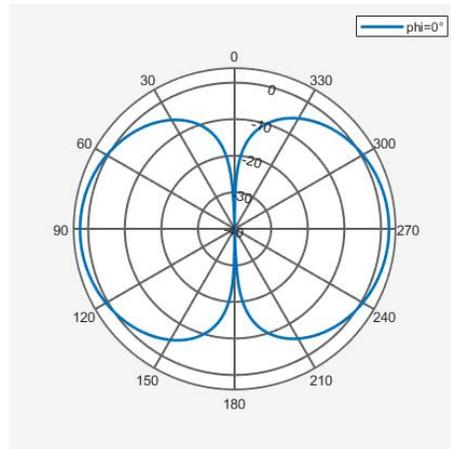


# (2D and 3D directional) diagrams)

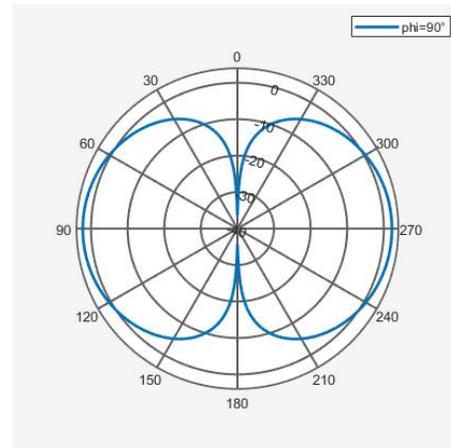
433MHz Total



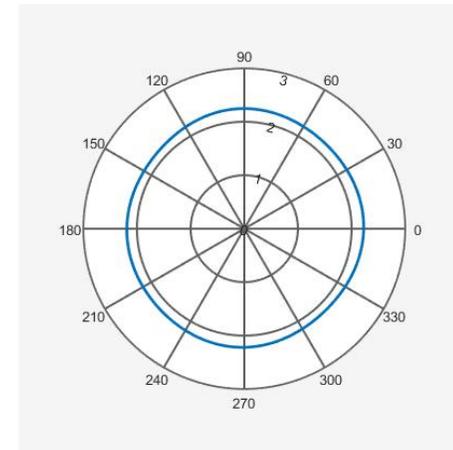
Total( $\phi=0^\circ$ )



Total( $\phi=90^\circ$ )

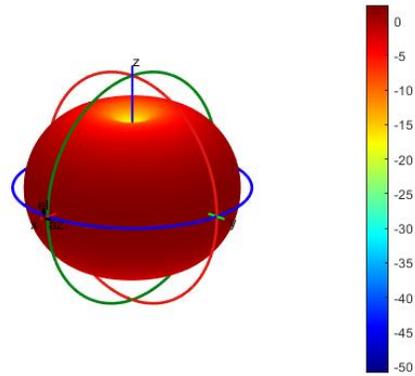


Total( $\theta=90^\circ$ )

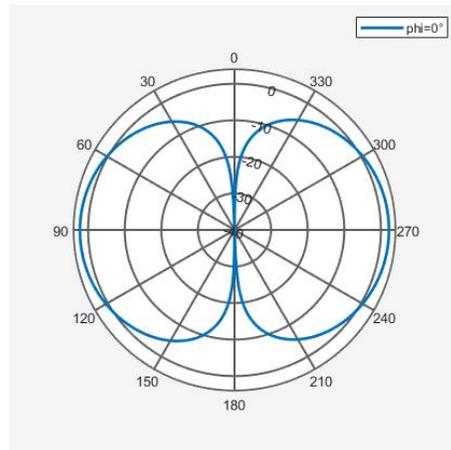


# (2D and 3D directional) diagrams)

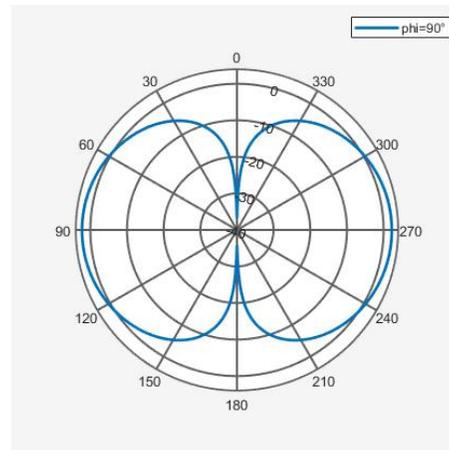
450MHz Total



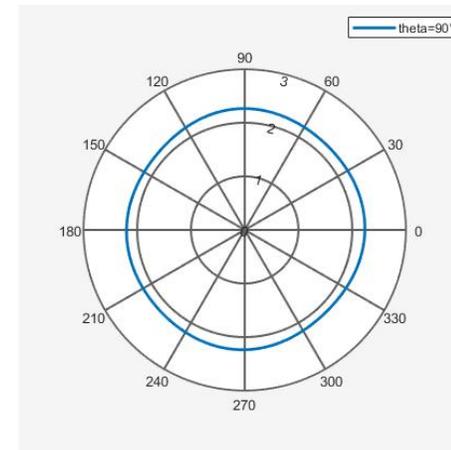
Total( $\phi=0^\circ$ )



Total( $\phi=90^\circ$ )



Total( $\theta=90^\circ$ )



(Antenna photo)

