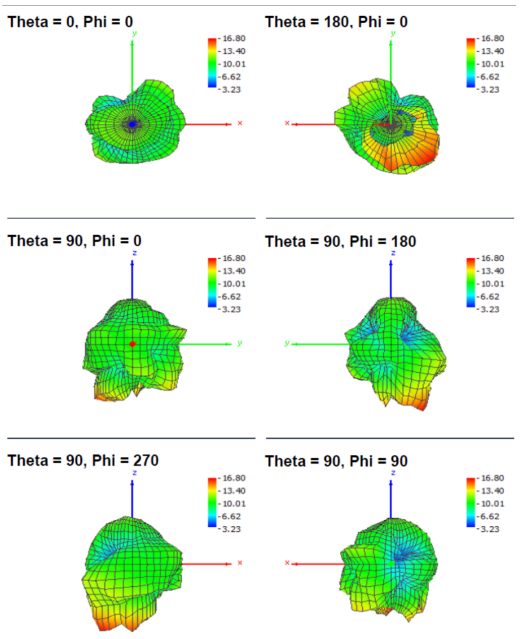
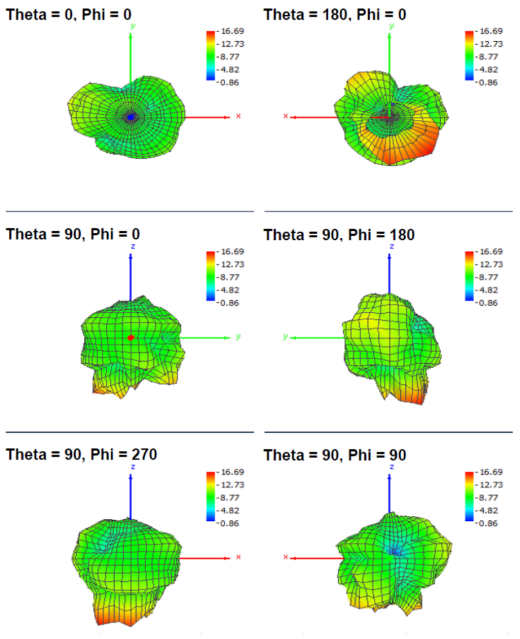
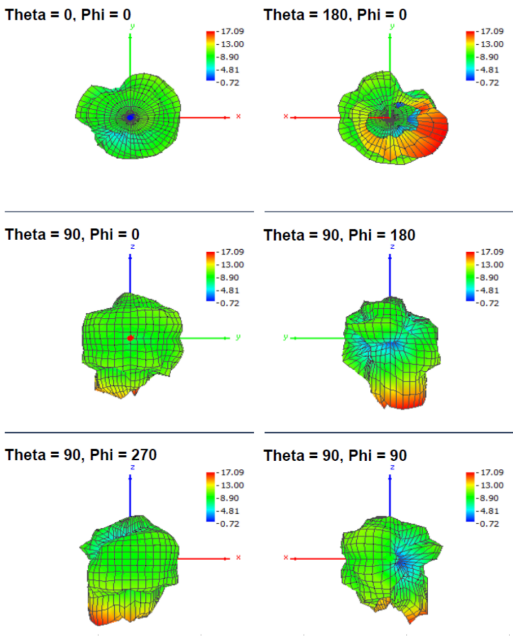
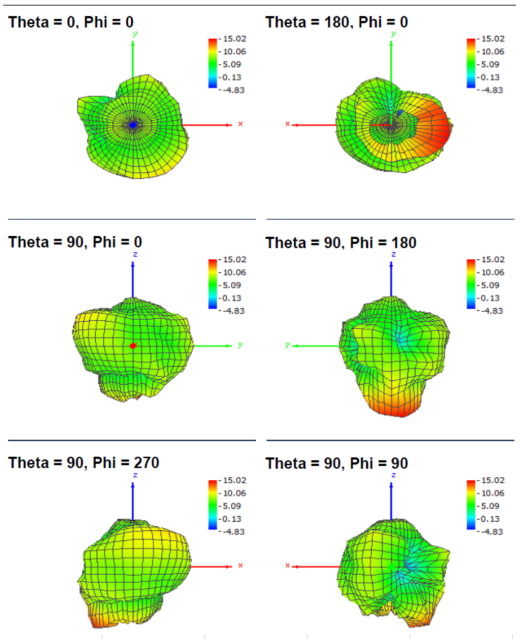
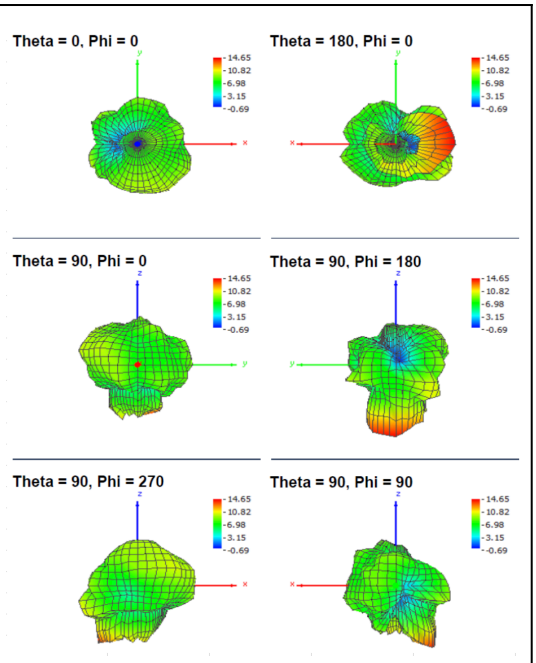
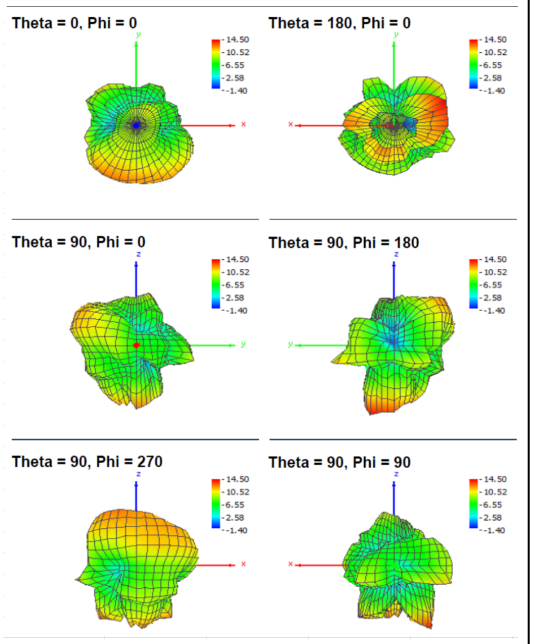
ANT 3	5820 MHz	
ANT 3	5887 MHz	

ANT3	6175 MHz	
ANT 3	6475 MHz	

ANT 3	6700 MHz	
ANT 3	7000 MHz	

8. Antenna Composite Gain Test Method

The great-circle-cut method, whereby the measuring antenna remains in fixed position while the EUT is rotated about two axes in sequential order. The radiated RF performance of the EUT is measured by sampling the radiated transmit power of the mobile at various locations surrounding the device. A three-dimensional characterization of the transmit performance of the EUT is pieced together by analyzing the data from the spatially distributed measurements.

Data points are taken at every 15 degrees in the theta (θ) and phi (φ) axes to fully characterize the EUT's Far-Field radiation pattern and total radiated power. All of the measured power values are then integrated

The correlated gain and uncorrelated gain are calculated of each degree in the specific spatial domain of the sphere generated by each antenna, and the highest among them is extracted to be the correlation gain of the represented one.

Gain formulas of the correlated gain and uncorrelated gain are based on KDB 662911 D01, (F)(2)(d)(i)&(ii), and listed in the following:

> d) *Unequal antenna gains, with equal transmit powers.* For antenna gains given by G_1, G_2, …, G_N dBi
>
> (i) If transmit signals are *correlated*, then
> Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2$ /N_{ANT}] dBi [Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]
>
> (ii) If all transmit signals are *completely uncorrelated*, then
> Directional gain = 10 log[$(10^{G1/10} + 10^{G2/10} + \ldots + 10^{GN/10})$/$N_{ANT}$] dBi

Frequency (MHz)	Band	Directional Gain - Correlated			
		Ant 3	Ant4	Theta, Phi	Directional Gain(dBi)
5150 - 5250	UNII-1	-3.77	-3.01	150, 225	-0.37
5925 - 6425	UNII-5	1.73	-7.11	150, 225	1.4
6425 - 6525	UNII-6	-0.46	-11.95	150, 195	-1.42
6525 - 6875	UNII-7	0.44	-17.76	150, 180	-1.56
6875 - 7125	UNII-8	-3.26	-7.74	150, 150	-2.2

Frequency (MHz)	Band	Directional Gain - Uncorrelated			
		Ant 3	Ant 4	theta, Phi	Directional Gain(dBi)
5150 - 5250	UNII-1	-3.77	-3.01	150, 225	-3.37
5925 - 6425	UNII-5	1.73	-7.11	150, 225	-0.75
6425 - 6525	UNII-6	-0.46	-11.95	150, 195	-3.17
6525 - 6875	UNII-7	0.44	-17.76	150, 180	-2.51
6875 - 7125	UNII-8	-2.58	-9.86	150, 180	-4.85