GALTRONICS

WHEN CONNECTIONS COUNT

Adtran Gemtek SKU #3
Antenna Performance

Galtronics Project: 7756

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Introduction

- Galtronics developed an antenna solution for Adtran Gemtek SKU #3
- Customer suggested cable length changes. New cable lengths are shown on slide 5 There are 9
- antennas: four Dual Band antennas (6DB1,6DB2,6DB3, and 6DB4),
  four 5 GHz antennas (5G1,5G2,5G3, and 5G4) and one Stamped Metal on Board DFS antenna. All antennas
- are DC-grounded antennas
- The operating frequency of the Dual band Antennas is 2.4 GHz-2.5 GHz and 5.925 GHz-7.125 GHz. The operating
- frequency of 5 GHz antenna is 5.15 GHz- 5.825 GHz.
- The operating frequency of DFS antenna is 5.15 GHz- 5.825 GHz.
- Measured return loss, isolation, peak gain, efficiency, composite gain and gain pattern of the antennas Note : the unit
- was measured after antenna tuning.

2.4GHz Antennas Peak Gain and Efficiency

	Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
6DB1	2400	3.698	5.318	68.86 %
	2450	3.990	6.023	62.62 %
	2500	4.323	6.382	62.24 %
	Average			64.57 %

	Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
6DB2	2400	3.193	5.317	61.32 %
	2450	2.964	5.090	61.28 %
	2500	4.339	6.270	64.10 %
	Average			62.23 %

	Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
6DB3	2400	3.875	5.983	61.54 %
	2450	3.680	5.589	64.43 %
	2500	3.358	5.448	61.80 %
	Average			62.59 %

	Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
6DB4	2400	2.812	4.944	61.21 %
	2450	3.471	5.425	63.77 %
	2500	3.707	5.567	65.15 %
	Average			63.38 %

5 GHz and DFS Antennas Peak Gain and Efficiency

5G1

Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
5150	2.894	4.738	65.40 %
5250	2.589	4.126	70.20 %
5350	2.729	4.289	69.82 %
5500	3.984	5.155	76.35 %
5725	3.437	4.747	73.95 %
5825	3.091	4.489	72.48 %
Average			71.37 %

5G2

Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
5150	2.919	5.010	61.79 %
5250	3.193	5.130	64.01 %
5350	3.314	4.981	68.13 %
5500	3.512	4.890	72.82 %
5725	3.358	4.958	69.18 %
5825	3.464	5.212	66.87 %
			67.13 %

5G3

Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
5150	2.683	4.668	63.32 %
5250	2.629	4.586	63.71 %
5350	3.289	4.862	69.63 %
5500	3.524	4.880	73.18 %
5725	4.634	5.914	74.47 %
5825	4.705	6.172	71.34 %
Average			69.28 %

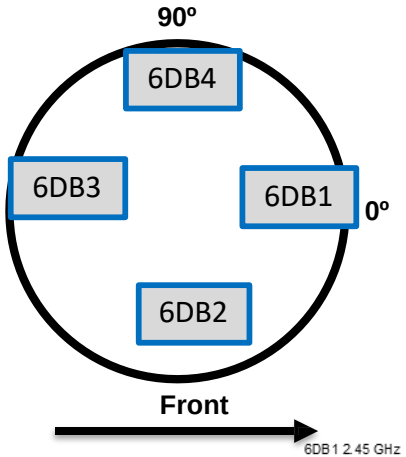
5G4

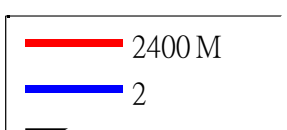
Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
5150	2.915	4.946	62.64 %
5250	3.121	5.045	64.20 %
5350	3.085	5.065	63.38 %
5500	3.305	5.163	65.19 %
5725	3.132	4.722	69.34 %
5825	3.224	5.091	65.06 %
Average			64.97 %

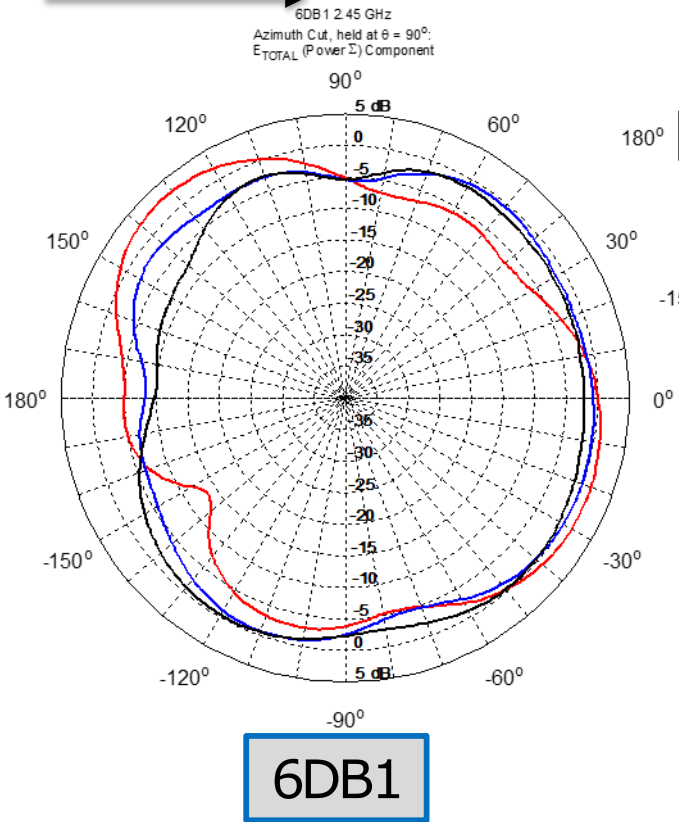
DFS

Freq (MHz)	Peak Gain (dBi)	Directivity (dBi)	Efficiency
5150	5.613	7.684	62.06 %
5250	4.783	6.900	61.42 %
5350	4.200	6.338	61.12 %
5500	4.386	5.708	73.76 %
5725	3.803	5.154	73.27 %
5825	3.952	5.493	70.13 %
Average			66.96 %

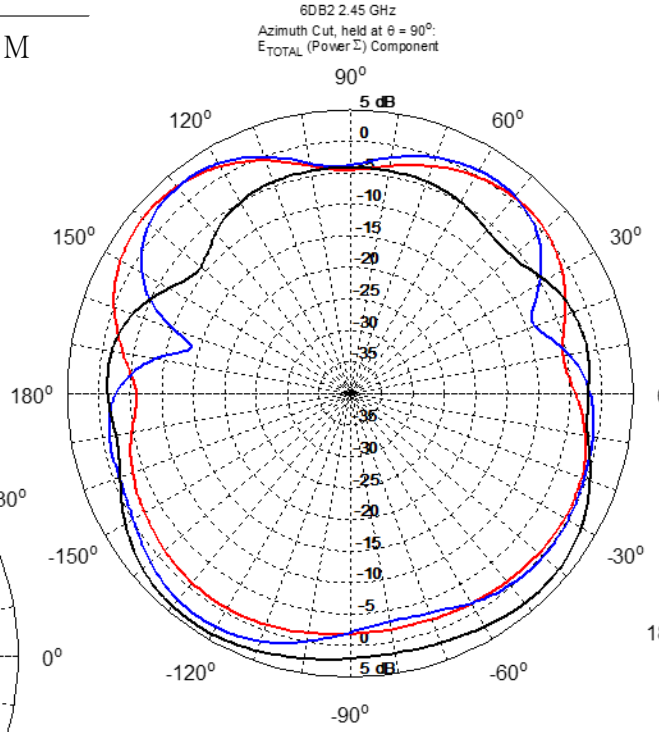
Azimuth Cut - Power Sum
2.45 GHz Antennas







6DB1



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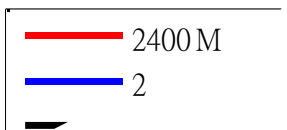

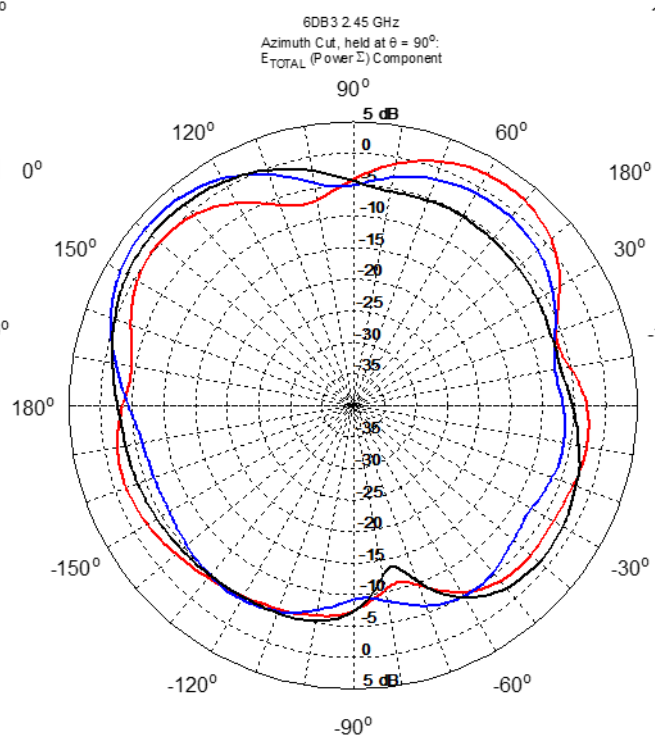

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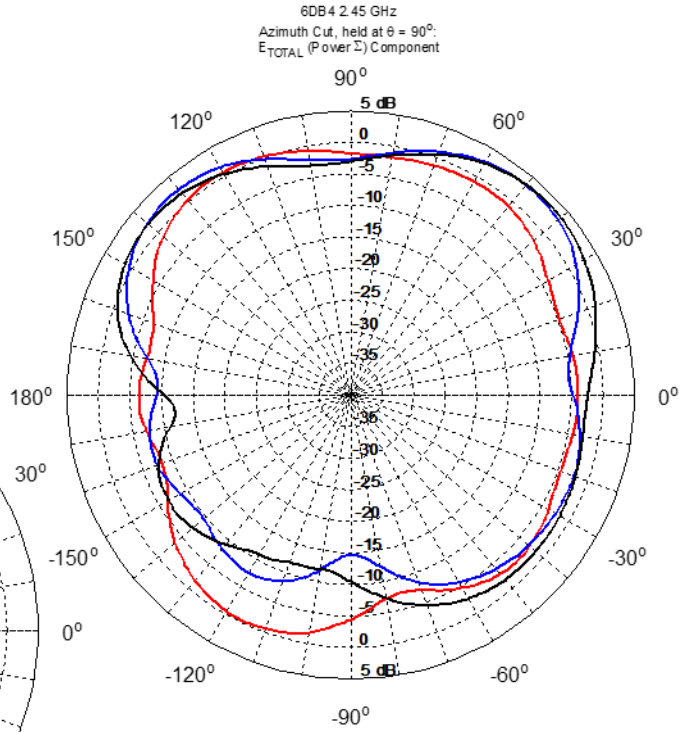
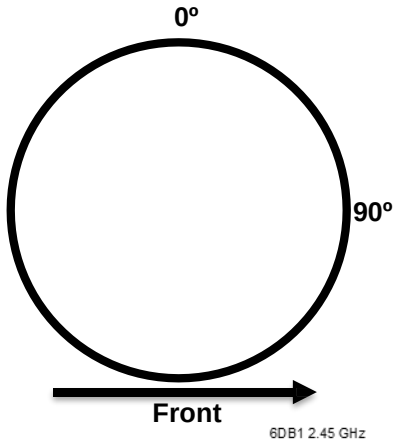


6DB4

Elevation (Front to Back) Cut - Power Sum
6DB 2.45 GHz Antennas



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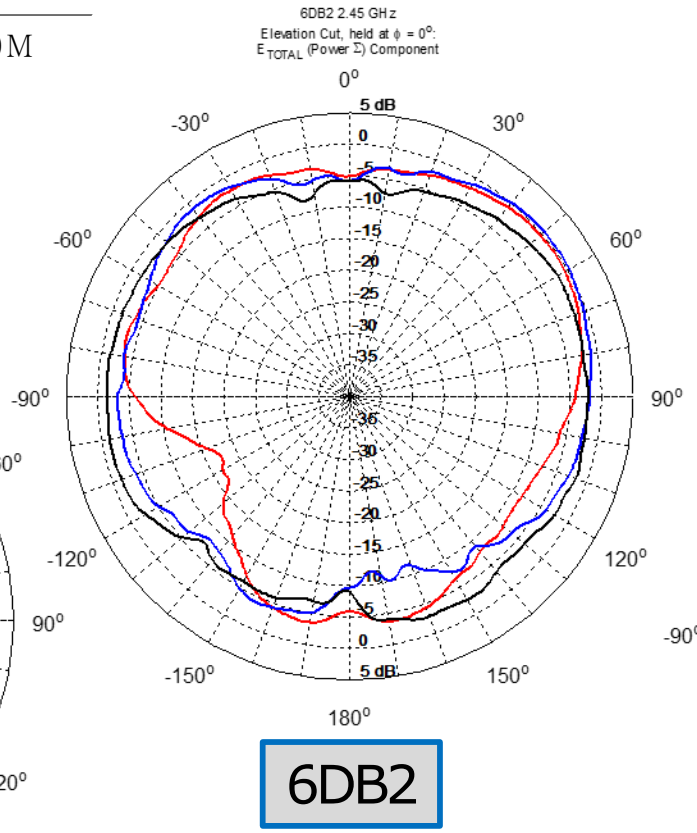

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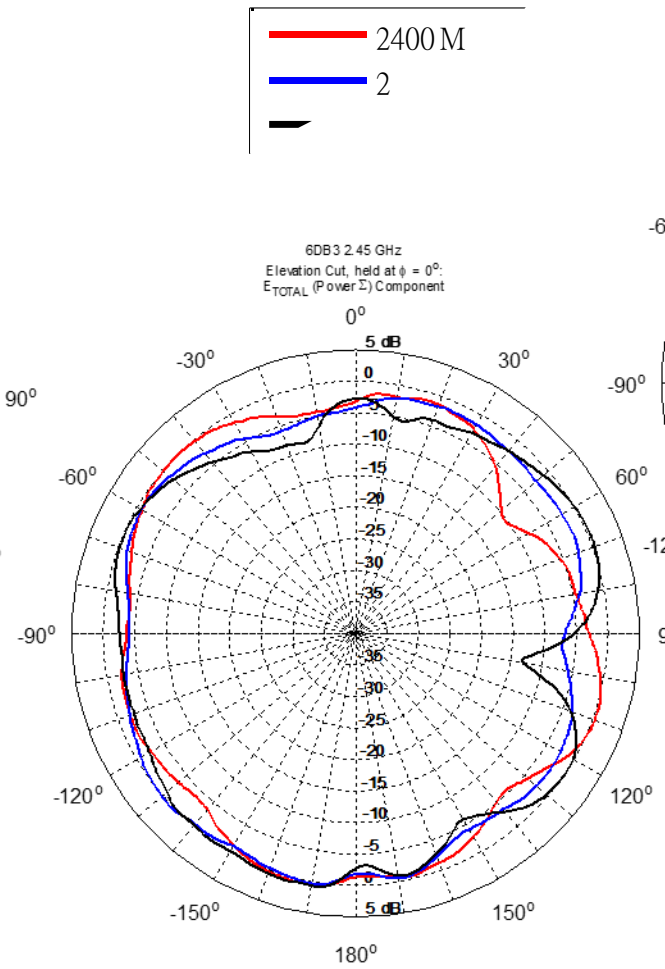

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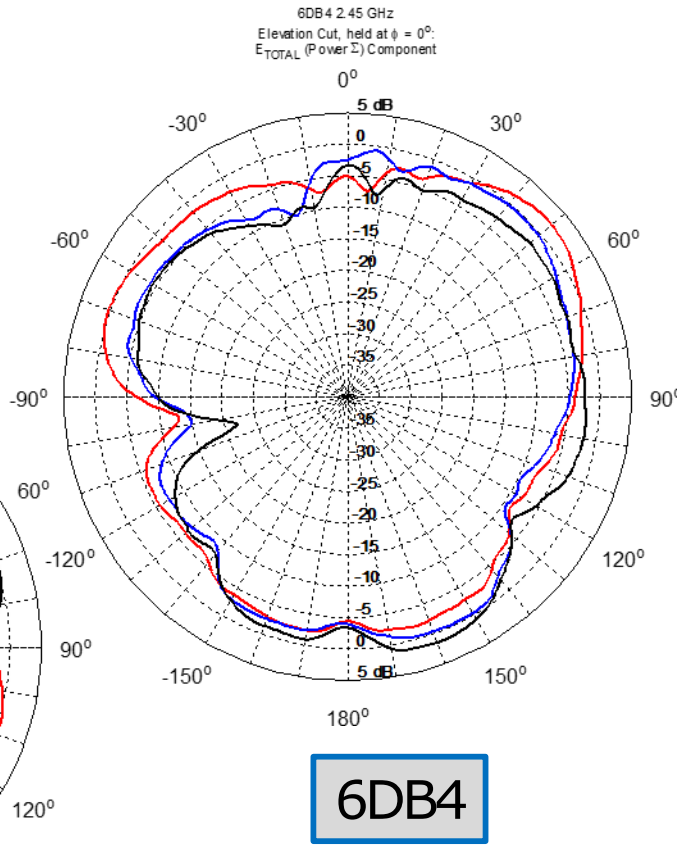
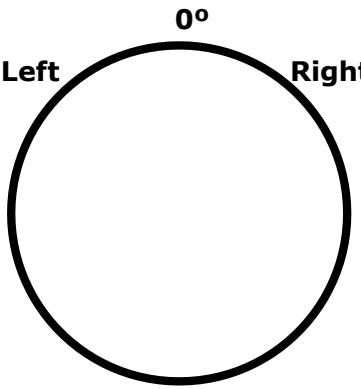
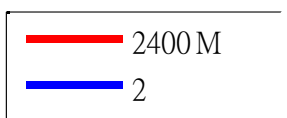
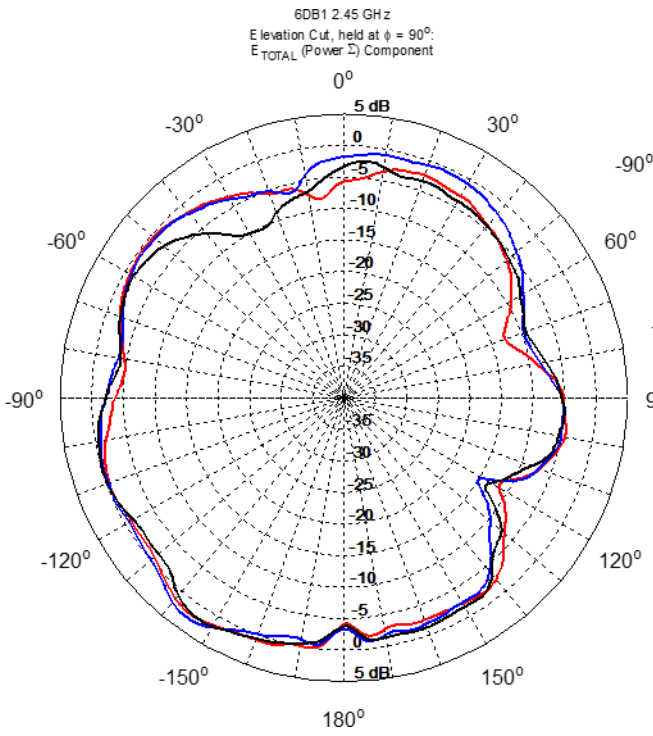


6DB4

Elevation (Side to Side) Cut - Power Sum
6DB 2.45 GHz Antennas







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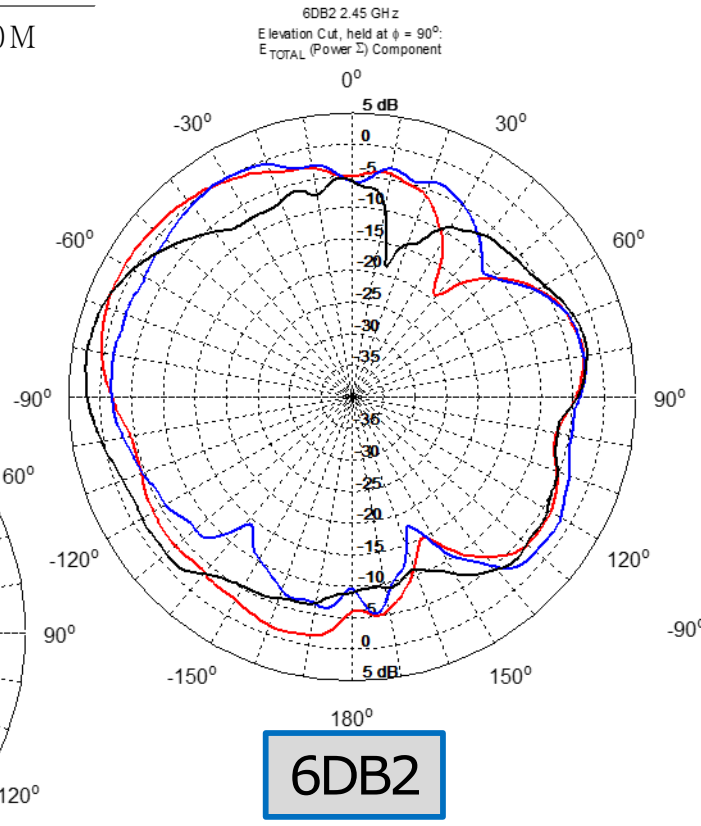

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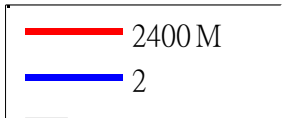
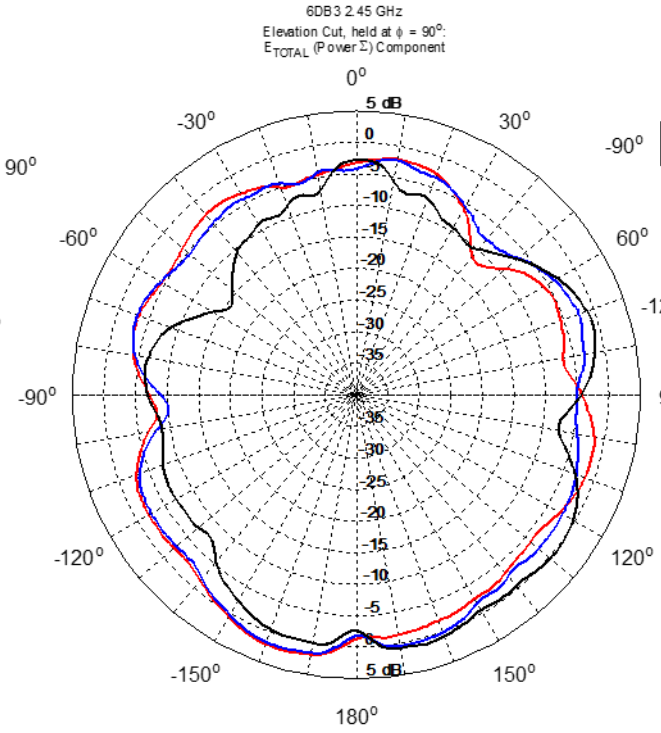
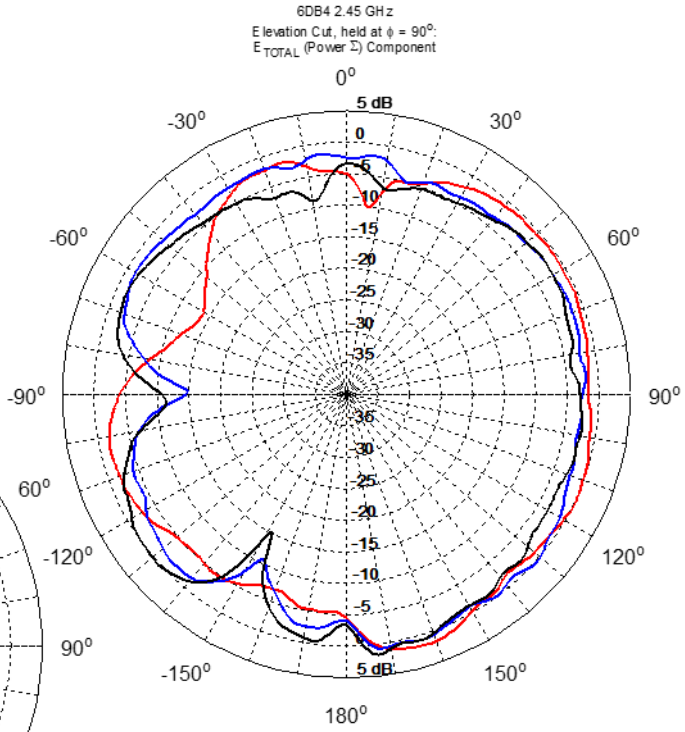


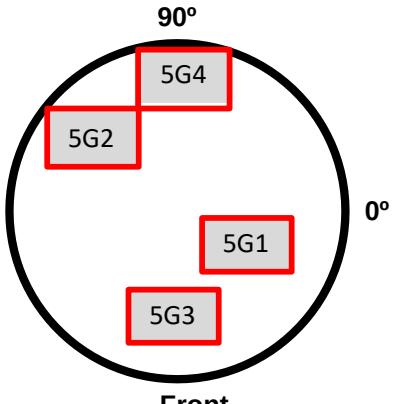


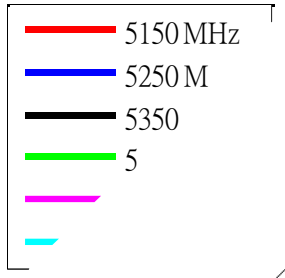
6DB3

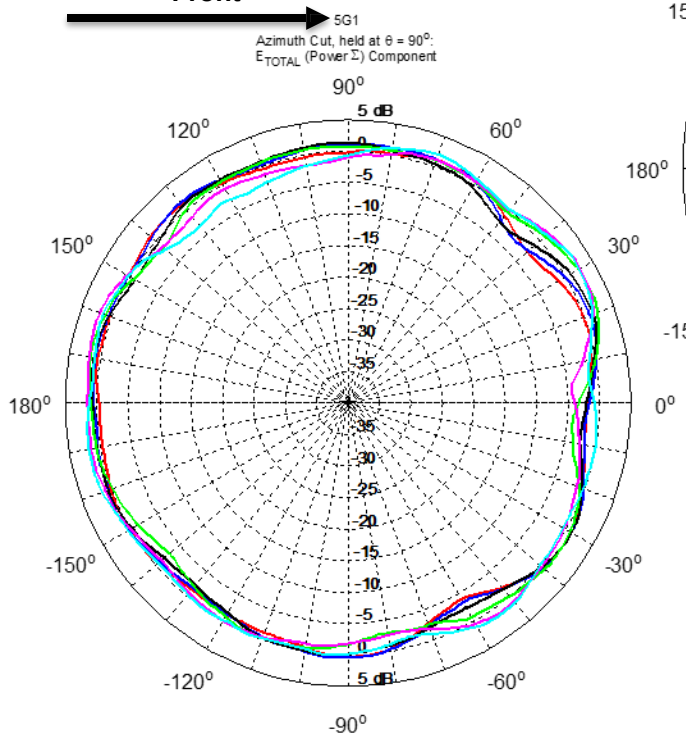


6DB4

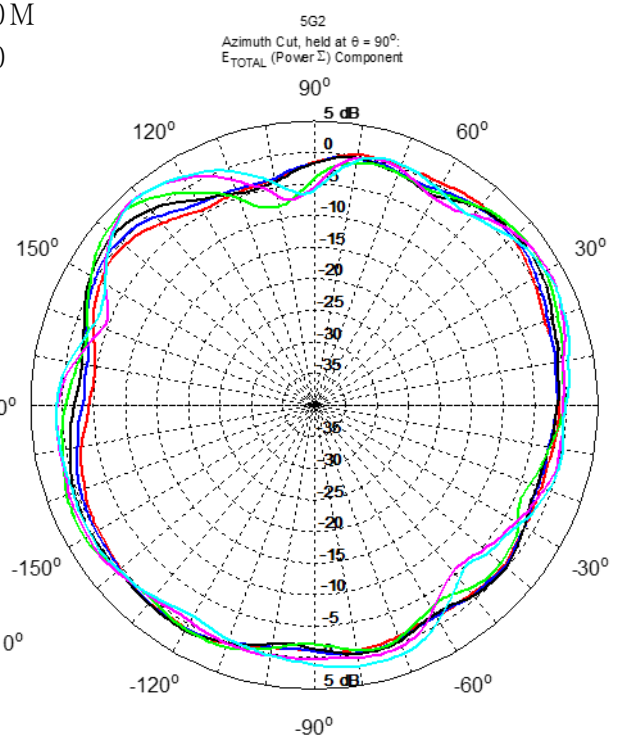
Azimuth Cut - Power Sum
5 GHz Antennas



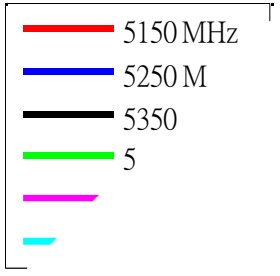


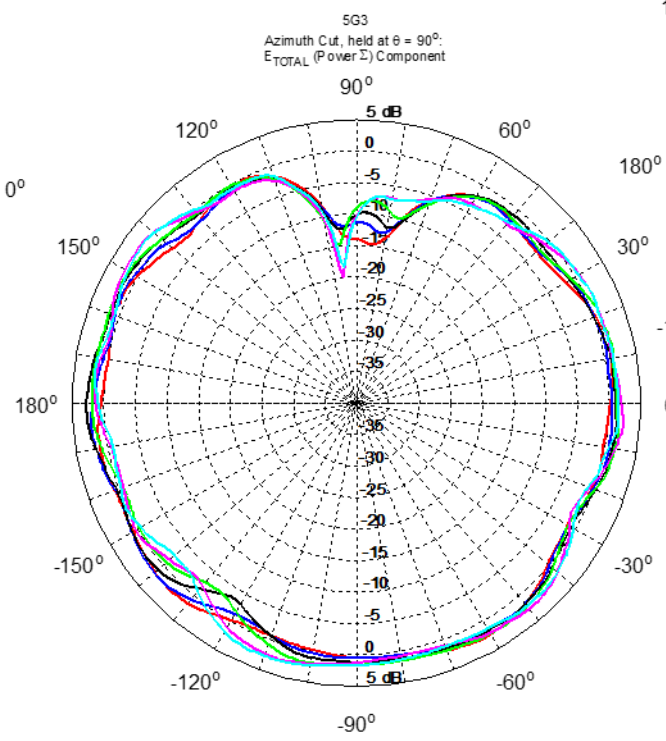


5G 1

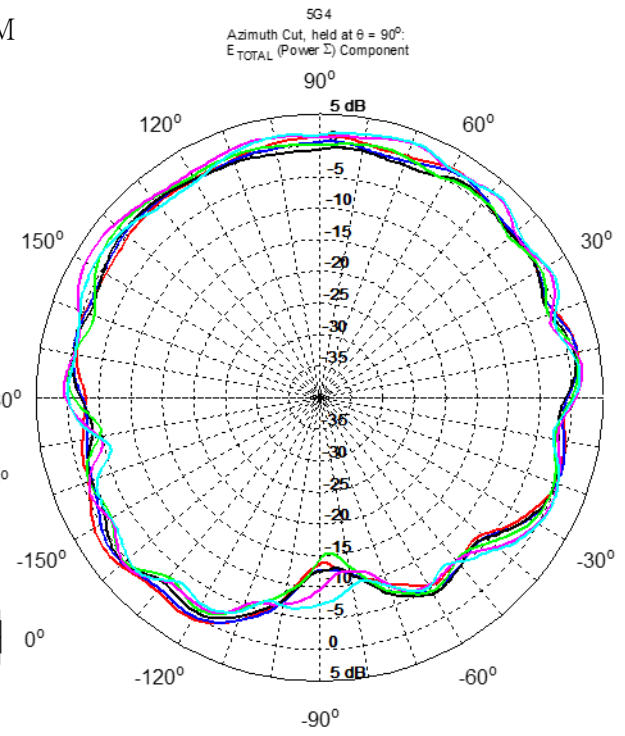


5G2





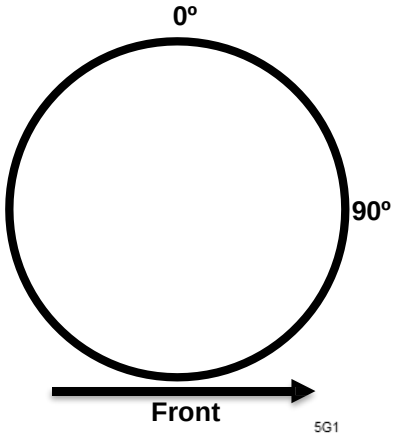
5G 3



5G4

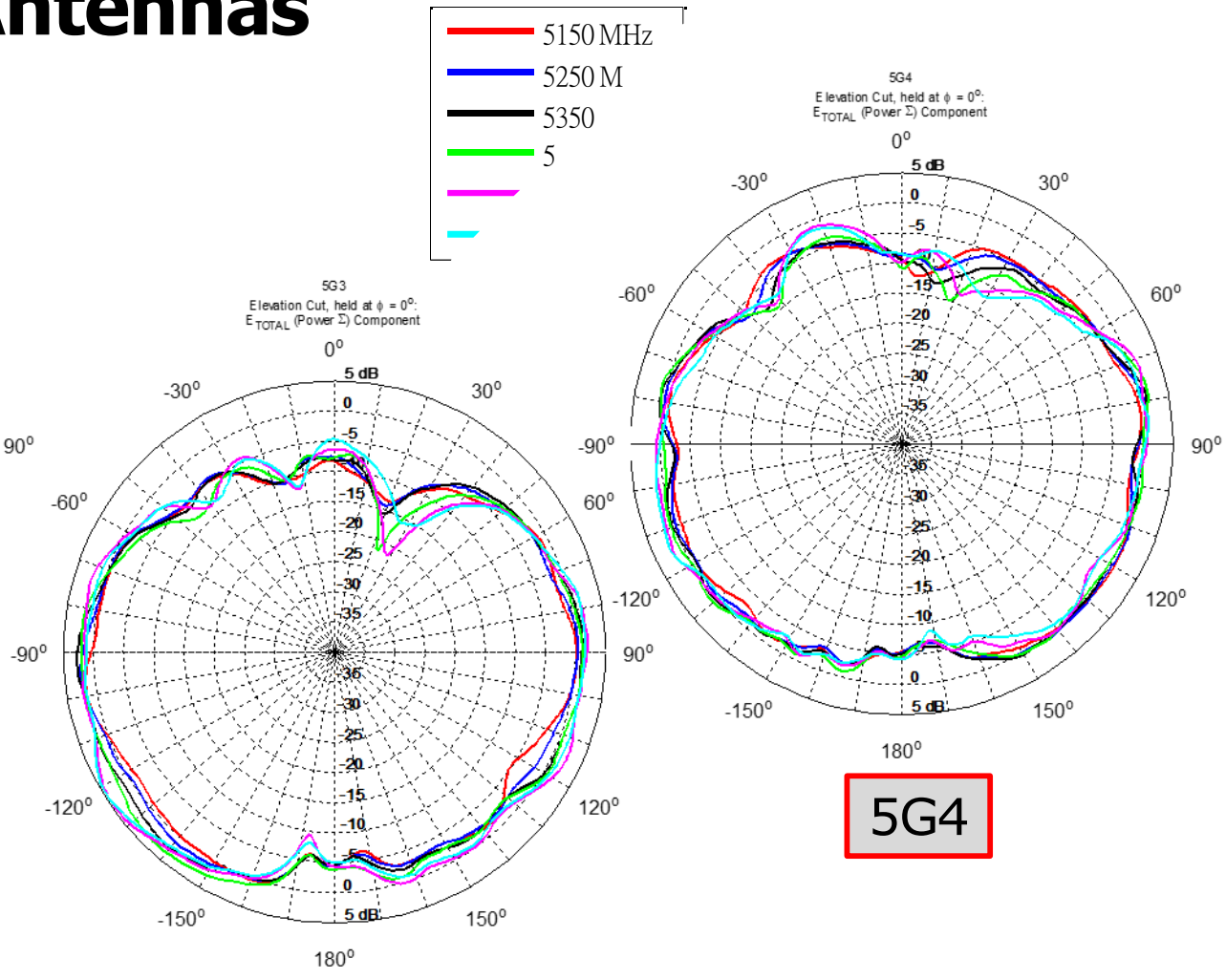
Elevation (Front to Back) Cut - Power Sum

5 GHz Antennas



5G 1

5G2

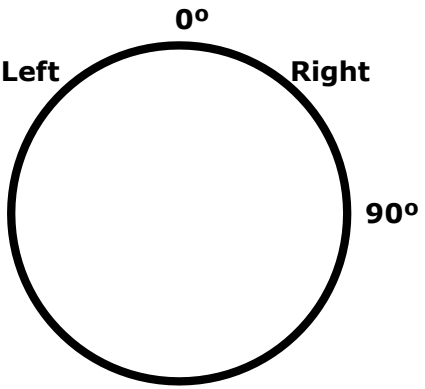


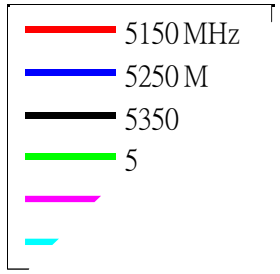
5G 3

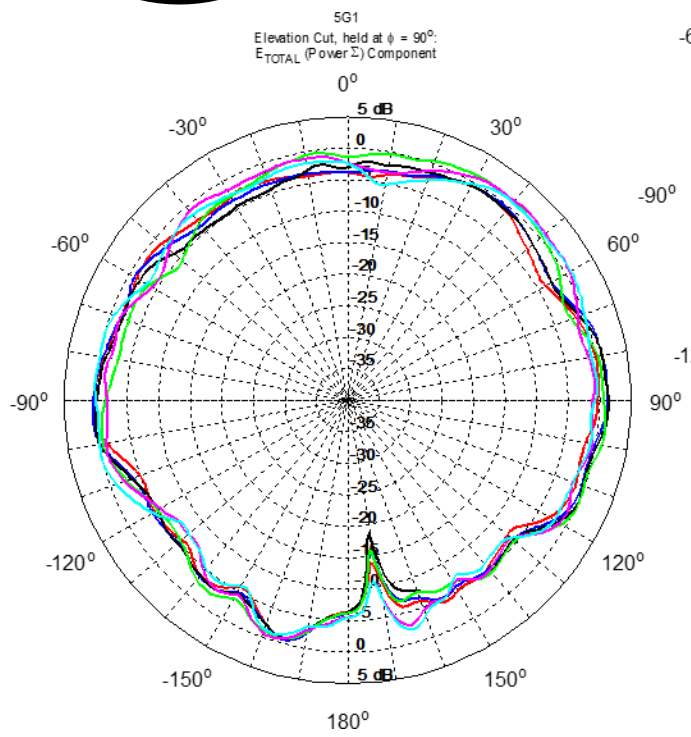
5G4

Elevation (Side to Side) Cut - Power Sum

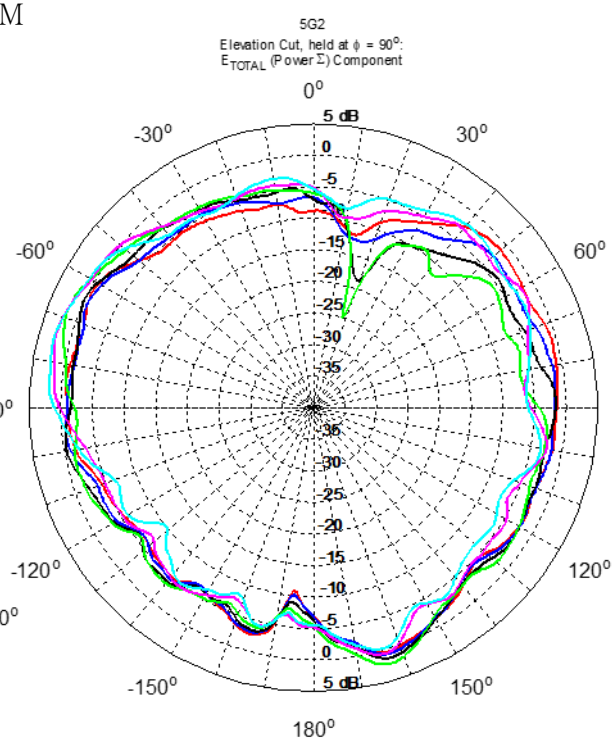
5 GHz Antennas



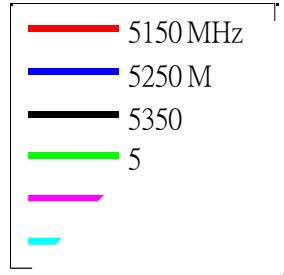


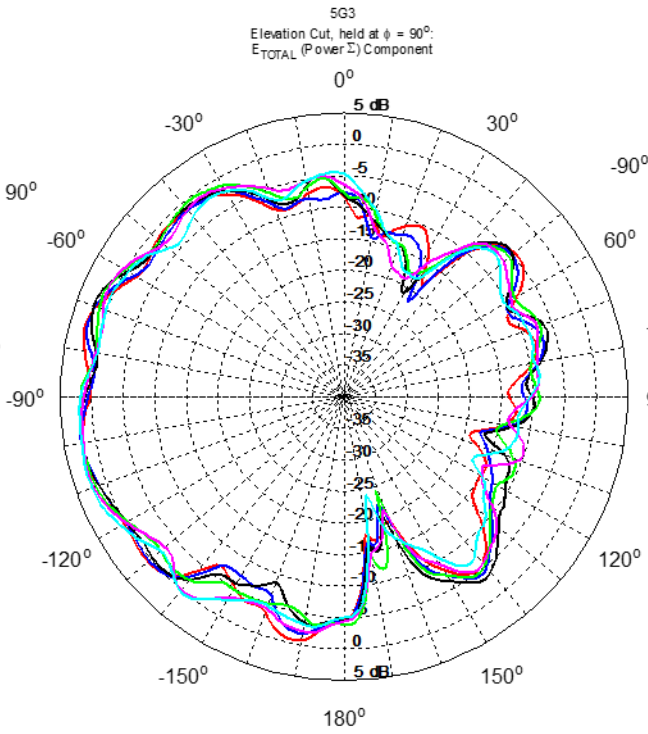


5G1

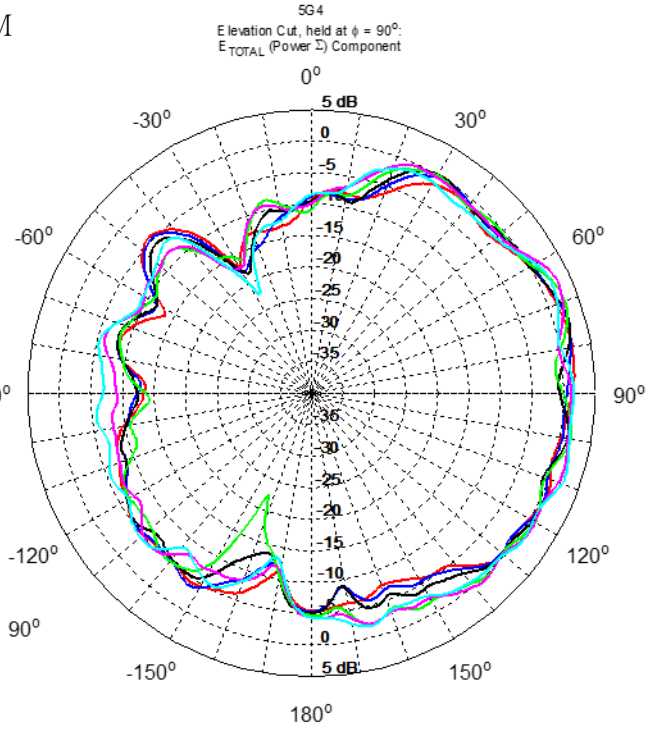


5G2





5G3



5G4

Thank You!

We Look Forward To Working Together