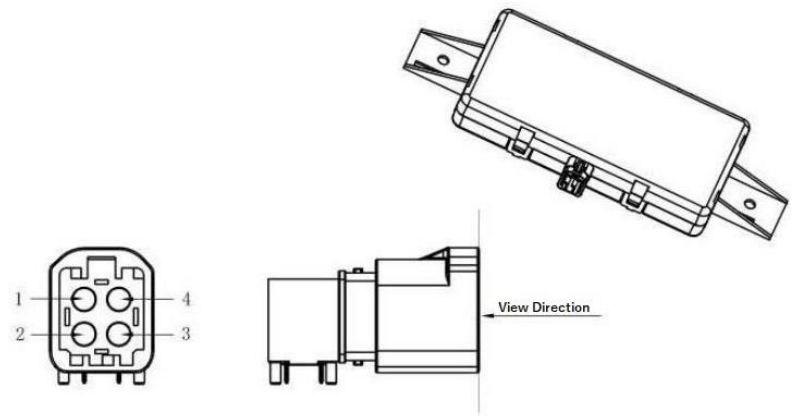
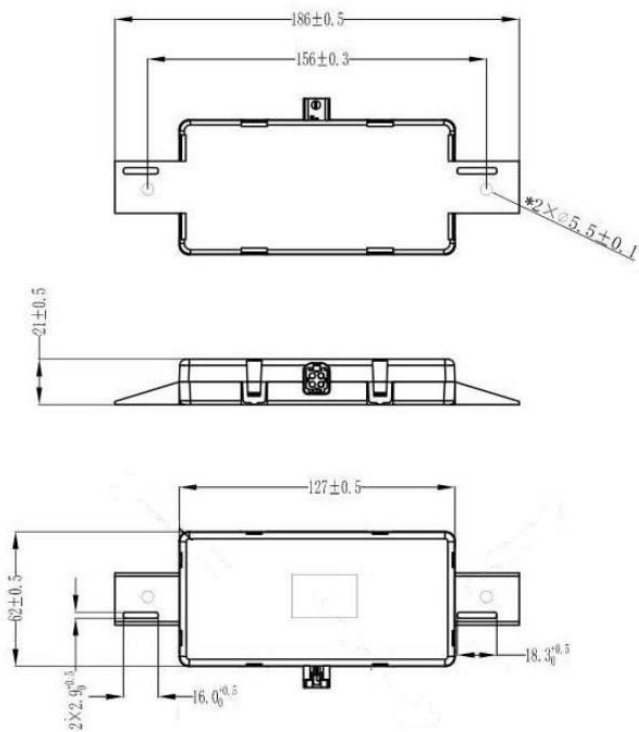


### ■ ELECTRICAL SPECIFICATION

PARAMETER		VALUE			UNIT
Frequency Range		698 ~ 960	1710 ~ 2690	3300 ~ 5000	MHz
Efficiency, min	@ -3dB	50			%
Isolation, min	@ Below 1GHz	-12			dB
	@ 1GHz~2GHz	-15			dB
	@ 3GHz~5GHz	-20			dB
	@ 5G-1&5G-3	-20			dB
	@ 5G-1&5G-4	-20			dB
	@ 5G-2&5G-3	-18			dB
	@ 5G-2&5G-4	-18			dB
	@ 5G-3&5G-4	-15			dB
Radiation Pattern		Omni-Directional			-
Impedance		50			Ω
Operating Temperature Range		-40 ~ +85			°C
Storage Temperature Range		-40 ~ +95			°C
Antenna		Steel			-
Size		127 x 62 x 21			mm
RF Cable		302-3			-
Connector		Mini Fakra			-

### ■ DIMENSIONS



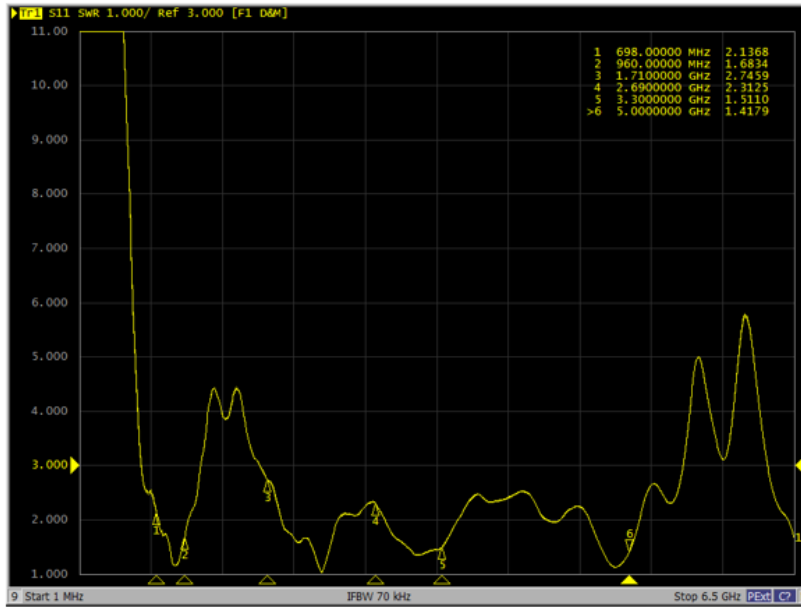
4	5G-Mimo4
3	5G-Main
2	5G-Div
1	5G-Mimo3
Port	Function

Unit: m

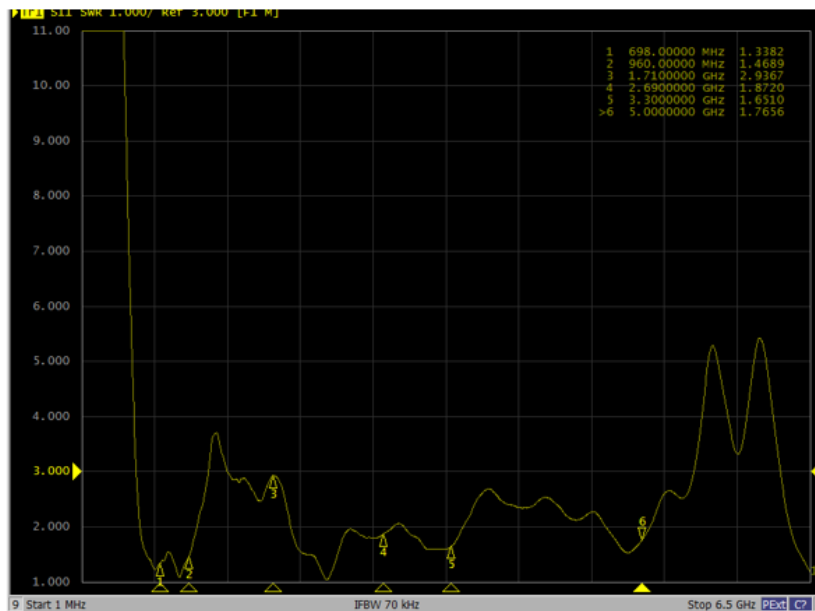
### FREQUENCY CHARACTERISTICS

5Gx4 Box Antenna

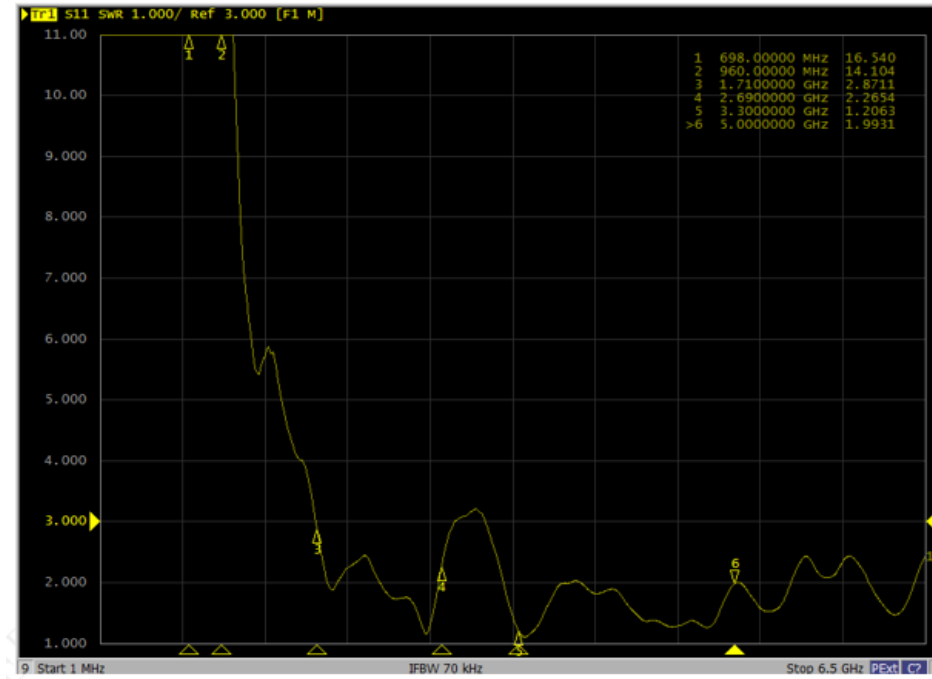
VSWR



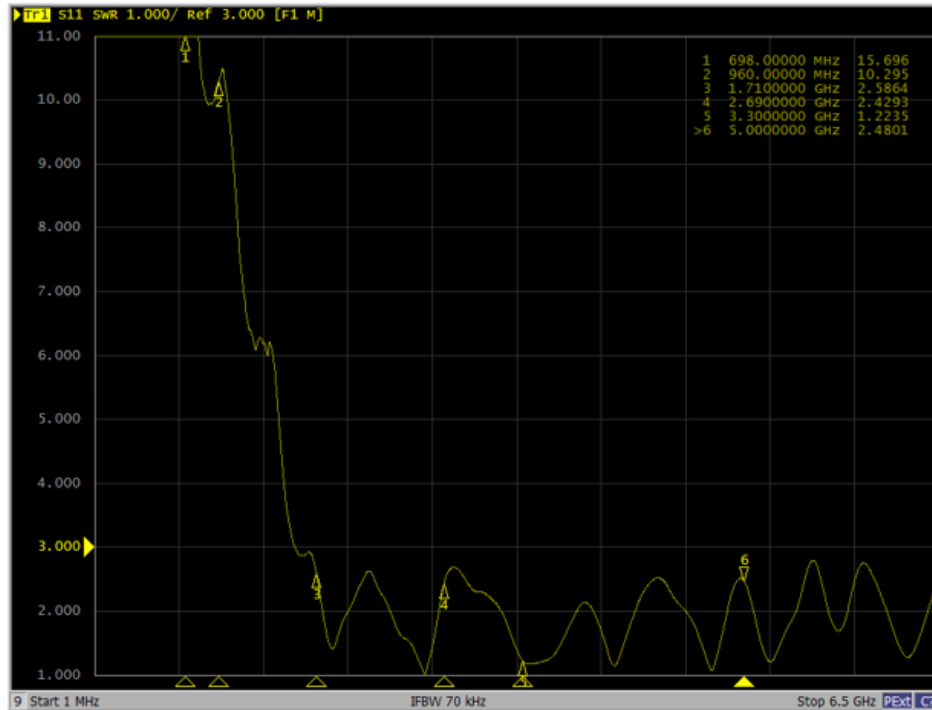
5G-1



5G-2

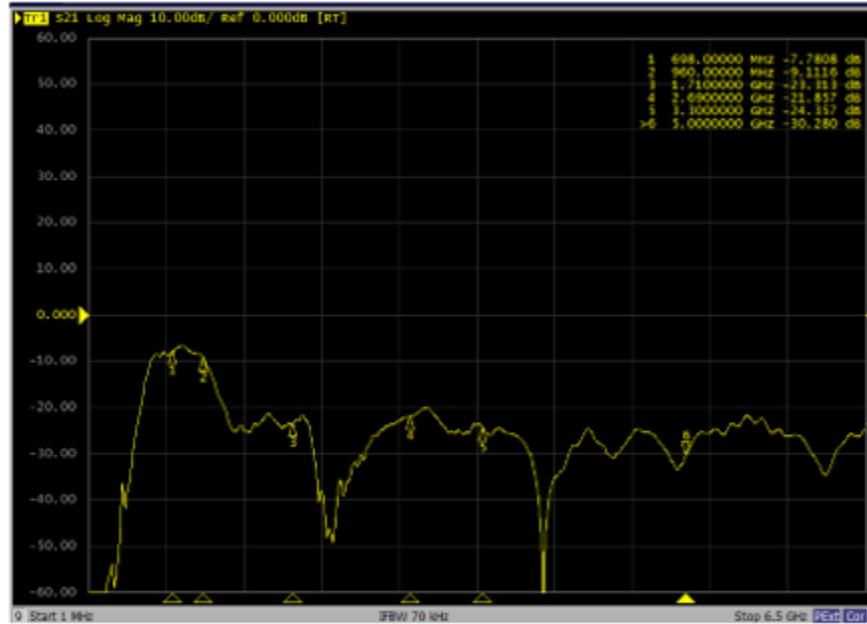


5G-3

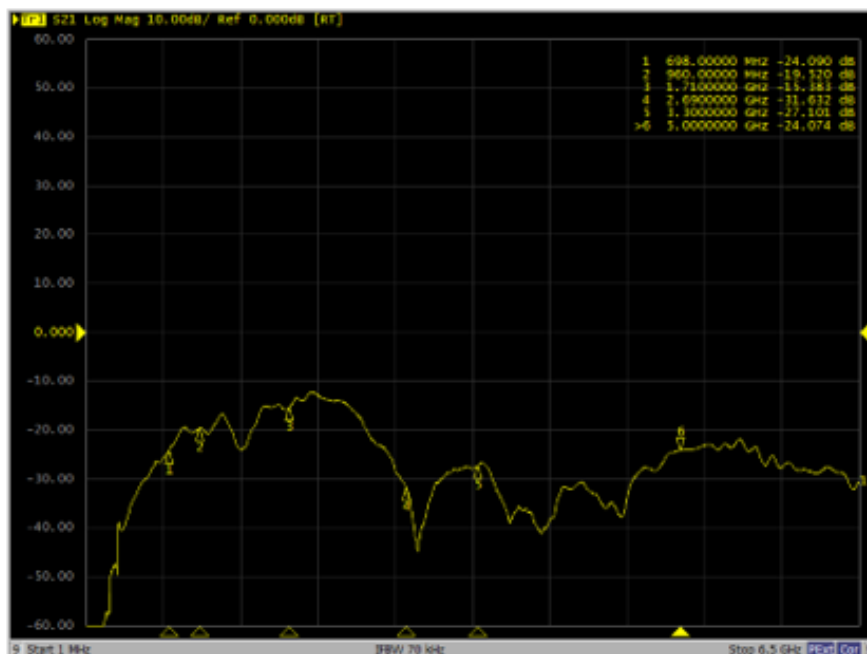


5G-4

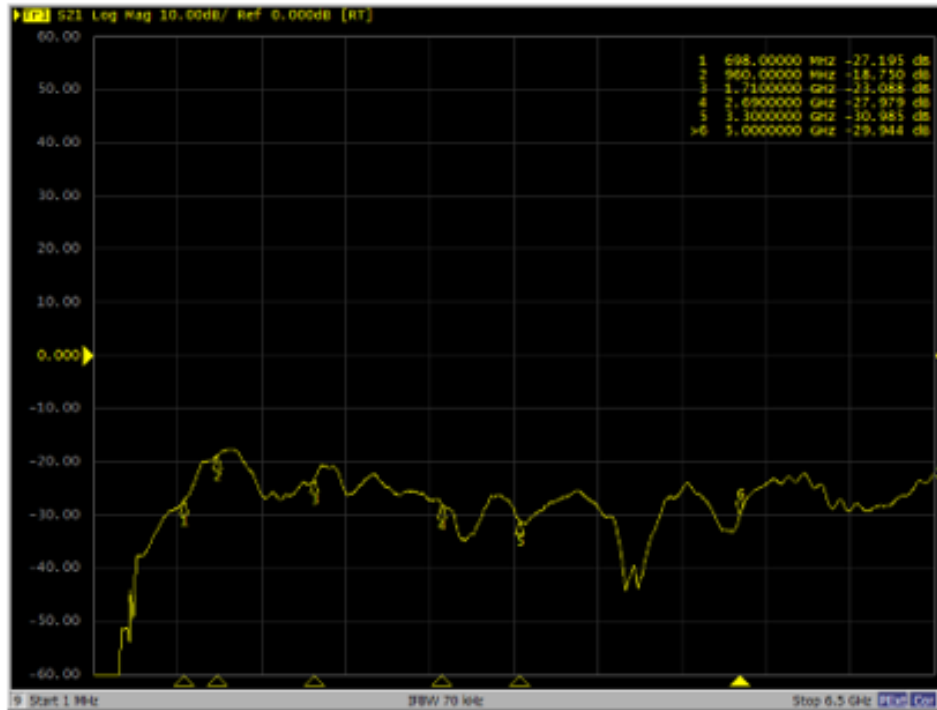
### Isolation



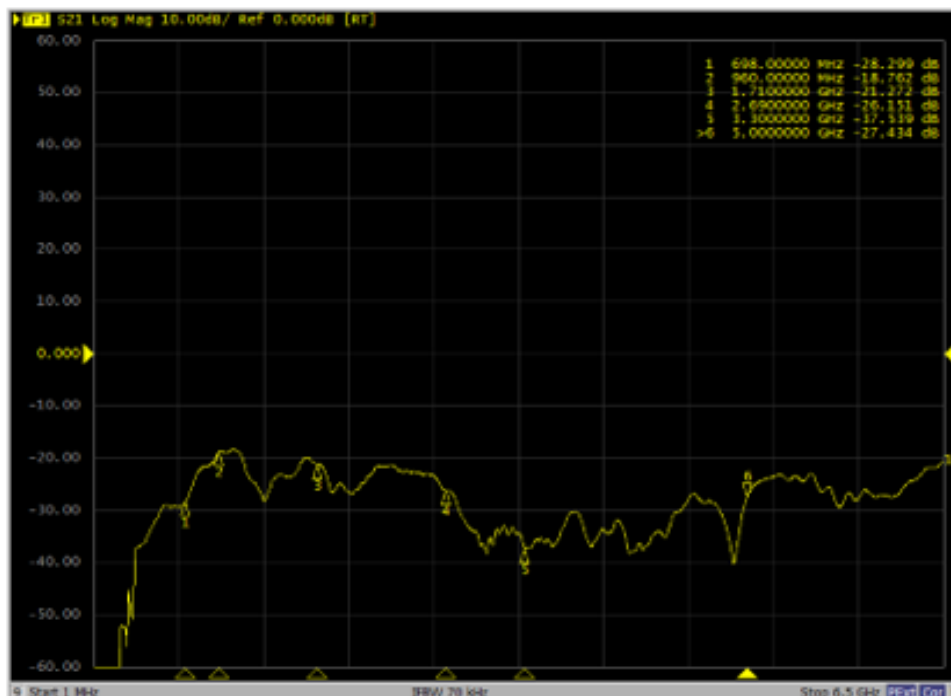
5G-1&5G-2



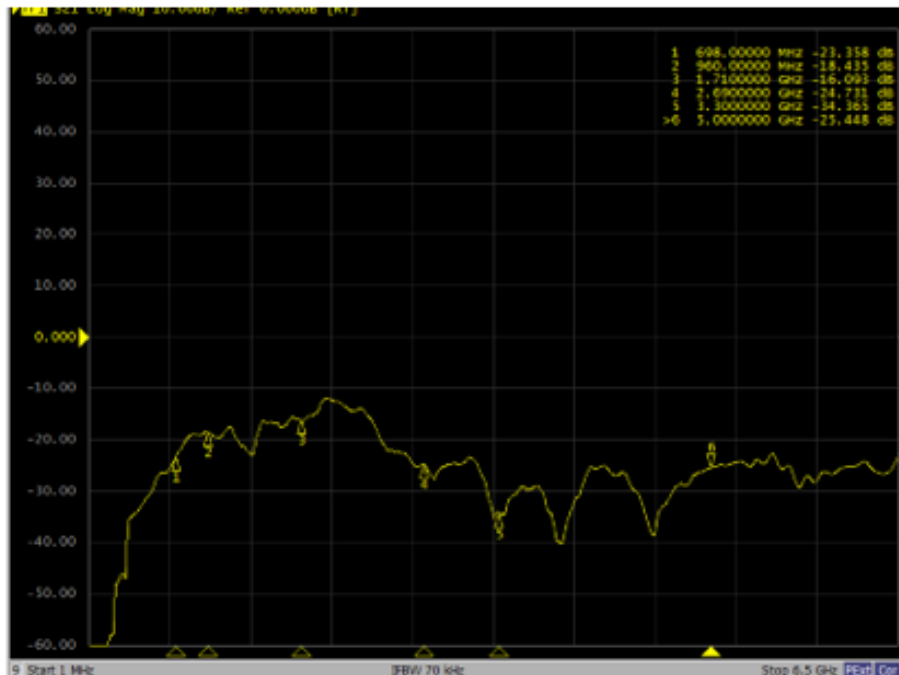
5G-1&5G-3



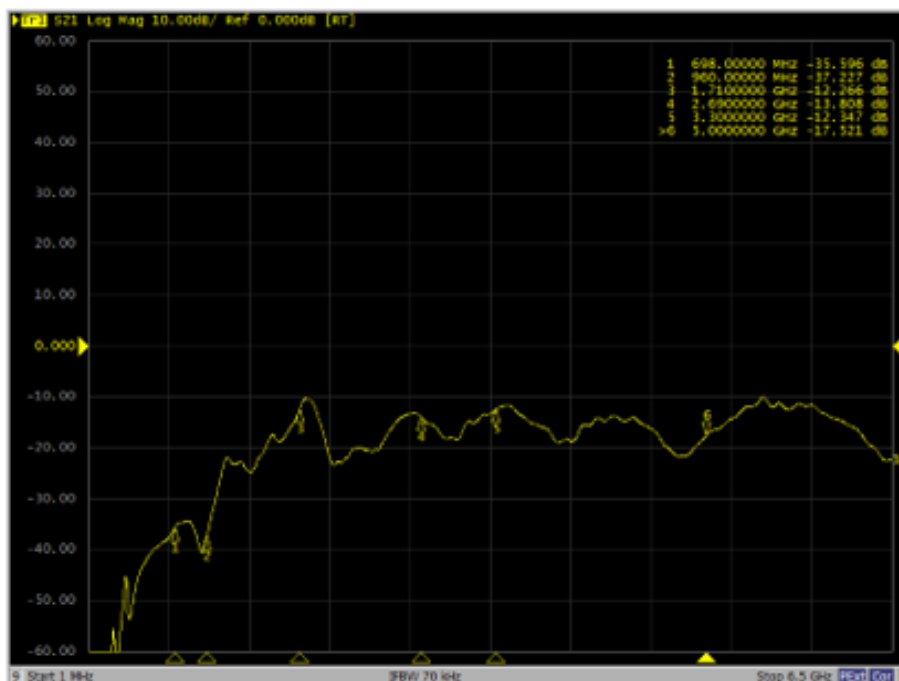
5G-1&5G-4



5G-2&5G-3



5G-2&5G-4



5G-3&5G-4



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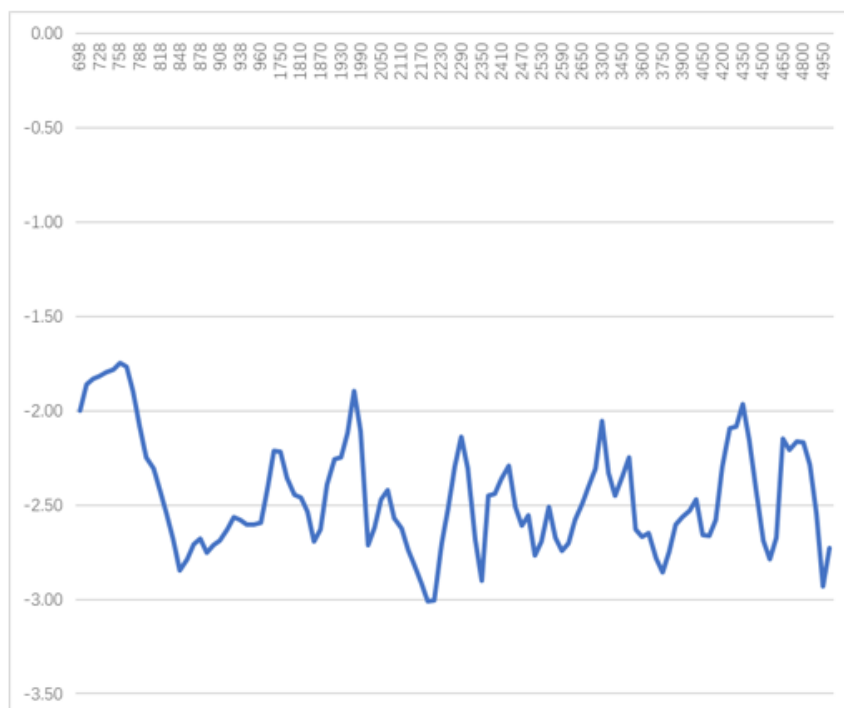
# 5G/4G BOX ANTENNA

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**RWL-MBL2-18662-FK-P-001**

## EFFICINECY & GAIN

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
698	-2.00	63.07	1.79	1710	-2.42	57.33	0.66	2270	-2.30	58.95	4.15	3600	-2.67	54.09	2.61
708	-1.86	65.15	1.98	1730	-2.21	60.09	0.92	2290	-2.14	61.12	4.42	3650	-2.65	54.37	2.69
718	-1.83	65.58	1.95	1750	-2.22	60.00	0.72	2310	-2.31	58.78	4.28	3700	-2.78	52.71	3.37
728	-1.82	65.79	1.84	1770	-2.36	58.14	0.24	2330	-2.68	53.90	3.85	3750	-2.86	51.82	3.76
738	-1.80	66.11	1.93	1790	-2.44	56.97	0.50	2350	-2.90	51.28	3.47	3800	-2.74	53.15	4.06
748	-1.78	66.37	2.07	1810	-2.46	56.77	0.45	2370	-2.45	56.87	2.83	3850	-2.61	54.88	4.15
758	-1.74	66.91	2.28	1830	-2.53	55.81	0.06	2390	-2.44	57.04	2.59	3900	-2.57	55.38	4.21
768	-1.77	66.56	2.51	1850	-2.69	53.80	0.24	2410	-2.36	58.05	2.54	3950	-2.53	55.83	4.03
778	-1.90	64.54	2.60	1870	-2.63	54.57	0.20	2430	-2.29	59.00	2.48	4000	-2.47	56.63	3.88
788	-2.08	61.88	2.52	1890	-2.39	57.69	0.03	2450	-2.51	56.14	2.79	4050	-2.66	54.24	3.28
798	-2.25	59.60	2.33	1910	-2.26	59.45	0.55	2470	-2.61	54.86	3.04	4100	-2.66	54.16	3.26
808	-2.31	58.80	1.92	1930	-2.25	59.59	0.71	2490	-2.56	55.51	3.12	4150	-2.58	55.22	3.46
818	-2.42	57.22	1.58	1950	-2.12	61.43	0.68	2510	-2.76	52.91	2.81	4200	-2.30	58.92	3.53
828	-2.55	55.62	1.39	1970	-1.89	64.65	0.74	2530	-2.69	53.80	2.36	4250	-2.10	61.72	3.93
838	-2.68	53.94	1.38	1990	-2.11	61.57	0.95	2550	-2.51	56.12	1.86	4300	-2.08	61.90	4.18
848	-2.85	51.92	1.49	2010	-2.71	53.54	1.28	2570	-2.67	54.02	1.57	4350	-1.97	63.58	4.26
858	-2.79	52.65	1.68	2030	-2.62	54.72	1.52	2590	-2.74	53.18	1.43	4400	-2.16	60.86	3.92
868	-2.71	53.62	1.87	2050	-2.47	56.65	1.71	2610	-2.70	53.67	1.26	4450	-2.41	57.39	3.37
878	-2.68	53.98	1.94	2070	-2.42	57.29	1.71	2630	-2.58	55.23	1.25	4500	-2.69	53.89	2.53
888	-2.75	53.05	2.07	2090	-2.57	55.34	1.77	2650	-2.49	56.36	1.13	4550	-2.79	52.64	2.27
898	-2.71	53.52	2.16	2110	-2.62	54.69	1.88	2670	-2.39	57.63	1.18	4600	-2.67	54.03	2.41
908	-2.69	53.86	2.09	2130	-2.74	53.25	2.06	2690	-2.30	58.82	1.26	4650	-2.15	61.00	2.86
918	-2.63	54.62	1.82	2150	-2.82	52.19	1.83	3300	-2.05	62.35	3.44	4700	-2.21	60.17	2.75
928	-2.57	55.39	1.36	2170	-2.91	51.19	1.51	3350	-2.33	58.48	3.37	4750	-2.16	60.79	2.85
938	-2.58	55.24	1.02	2190	-3.01	50.03	1.25	3400	-2.45	56.90	3.61	4800	-2.17	60.69	2.90
948	-2.60	54.92	0.91	2210	-3.00	50.08	1.19	3450	-2.35	58.24	3.45	4850	-2.29	59.08	2.66
958	-2.60	54.91	0.83	2230	-2.70	53.67	2.65	3500	-2.24	59.64	3.24	4900	-2.55	55.65	2.54
960	-2.59	55.06	0.88	2250	-2.51	56.07	3.61	3550	-2.63	54.61	2.67	4950	-2.93	50.92	2.06
												5000	-2.73	53.39	1.36



5G-1





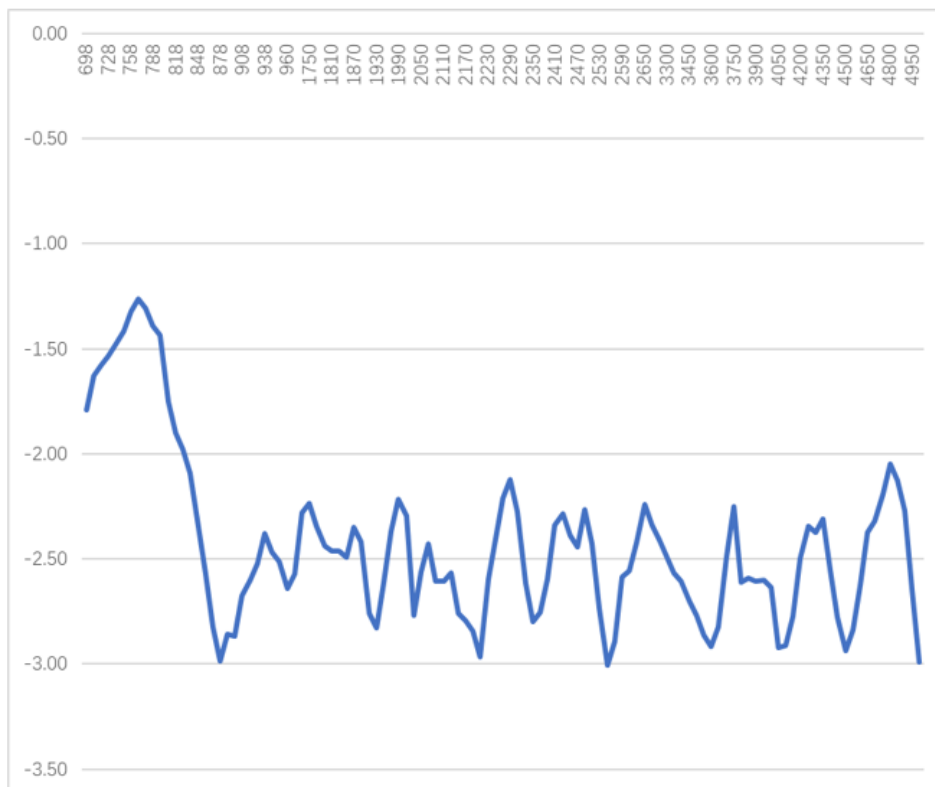
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# 5G/4G BOX ANTENNA

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Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
698	-1.79	66.24	1.48	1710	-2.57	55.34	0.85	2270	-2.21	60.08	4.18	3600	-2.92	51.10	2.02
708	-1.63	68.75	1.70	1730	-2.28	59.16	1.12	2290	-2.12	61.35	4.53	3650	-2.82	52.21	2.21
718	-1.58	69.53	1.69	1750	-2.23	59.77	1.14	2310	-2.27	59.22	4.53	3700	-2.49	56.40	2.41
728	-1.53	70.25	1.62	1770	-2.35	58.26	1.12	2330	-2.62	54.73	4.23	3750	-2.25	59.57	2.63
738	-1.48	71.15	1.60	1790	-2.44	57.05	0.95	2350	-2.80	52.53	3.91	3800	-2.61	54.81	2.83
748	-1.42	72.19	1.69	1810	-2.46	56.72	0.76	2370	-2.75	53.04	3.48	3850	-2.59	55.08	2.62
758	-1.32	73.80	1.90	1830	-2.46	56.71	0.23	2390	-2.60	55.00	3.32	3900	-2.61	54.86	2.60
768	-1.26	74.79	1.95	1850	-2.49	56.33	0.37	2410	-2.34	58.38	3.12	3950	-2.60	54.95	2.54
778	-1.31	74.00	2.01	1870	-2.35	58.24	0.34	2430	-2.28	59.10	2.94	4000	-2.64	54.51	2.23
788	-1.39	72.61	1.94	1890	-2.42	57.30	0.16	2450	-2.39	57.68	2.97	4050	-2.92	51.02	2.09
798	-1.44	71.84	1.91	1910	-2.76	53.00	0.68	2470	-2.44	56.99	3.19	4100	-2.91	51.17	2.06
808	-1.75	66.86	1.63	1930	-2.83	52.15	0.85	2490	-2.27	59.35	3.43	4150	-2.77	52.82	2.29
818	-1.90	64.56	1.58	1950	-2.61	54.82	0.97	2510	-2.43	57.20	3.30	4200	-2.50	56.27	2.53
828	-1.98	63.44	1.58	1970	-2.37	57.99	1.19	2530	-2.73	53.30	2.96	4250	-2.35	58.27	2.55
838	-2.09	61.79	1.48	1990	-2.22	60.04	1.54	2550	-3.01	50.04	2.50	4300	-2.37	57.89	2.19
848	-2.32	58.67	1.27	2010	-2.30	58.93	1.80	2570	-2.89	51.38	2.14	4350	-2.31	58.73	2.09
858	-2.57	55.35	1.09	2030	-2.77	52.85	1.67	2590	-2.58	55.17	1.91	4400	-2.55	55.60	2.17
868	-2.82	52.21	0.86	2050	-2.56	55.43	1.97	2610	-2.55	55.53	1.56	4450	-2.78	52.75	2.22
878	-2.99	50.26	0.85	2070	-2.43	57.16	2.26	2630	-2.42	57.25	1.53	4500	-2.93	50.88	2.38
888	-2.86	51.81	0.94	2090	-2.61	54.87	2.21	2650	-2.24	59.68	1.95	4550	-2.84	52.05	2.13
898	-2.87	51.68	0.77	2110	-2.60	54.90	2.18	2670	-2.34	58.38	2.34	4600	-2.62	54.65	2.15
908	-2.68	54.00	0.39	2130	-2.57	55.36	2.30	2690	-2.41	57.43	2.49	4650	-2.38	57.88	2.45
918	-2.60	54.95	0.13	2150	-2.76	53.01	2.13	3300	-2.49	56.42	2.28	4700	-2.32	58.66	2.30
928	-2.52	55.96	0.68	2170	-2.80	52.54	1.96	3350	-2.57	55.38	1.92	4750	-2.19	60.39	2.90
938	-2.38	57.84	1.04	2190	-2.84	51.95	1.67	3400	-2.61	54.88	2.41	4800	-2.05	62.39	2.97
948	-2.47	56.63	1.30	2210	-2.97	50.51	1.55	3450	-2.70	53.74	2.42	4850	-2.13	61.30	2.53
958	-2.51	56.06	1.27	2230	-2.59	55.03	2.91	3500	-2.77	52.87	2.22	4900	-2.27	59.28	2.38
960	-2.64	54.44	1.25	2250	-2.40	57.53	3.67	3550	-2.86	51.73	1.93	4950	-2.65	54.38	2.22
												5000	-2.99	50.21	1.51



5G-2



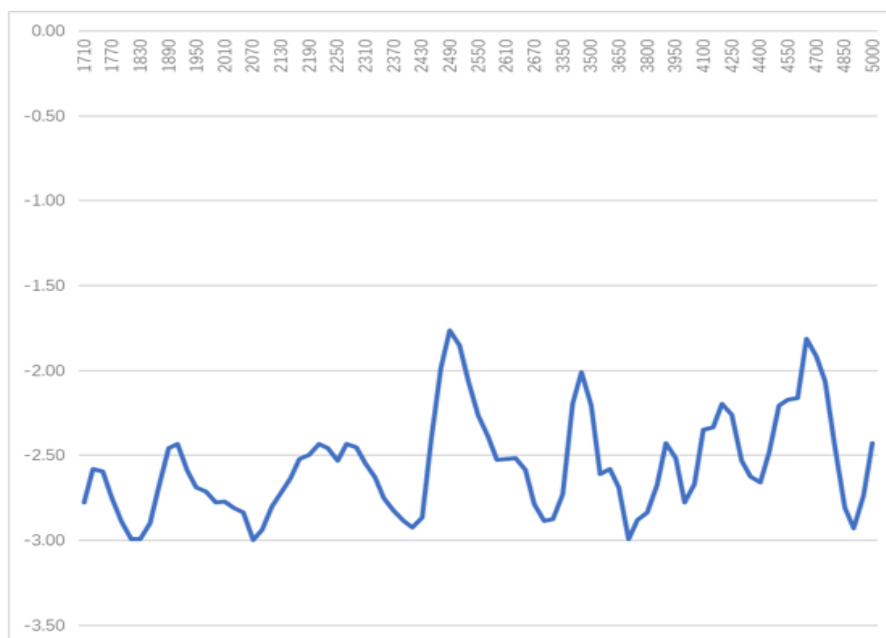
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# 5G/4G BOX ANTENNA

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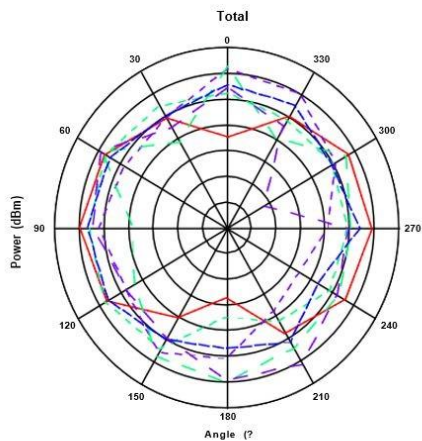
**RWL-MBL2-18662-FK-P-001**

Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)	Frequency (MHz)	Efficiency (dB)	Efficiency (%)	Gain (dBi)
1710	-2.78	52.76	0.21	2270	-2.43	57.09	2.19	3600	-2.58	55.23	2.90
1730	-2.58	55.23	0.61	2290	-2.45	56.87	1.98	3650	-2.69	53.88	3.11
1750	-2.60	55.00	1.11	2310	-2.55	55.63	1.80	3700	-2.99	50.19	3.29
1770	-2.74	53.15	1.41	2330	-2.63	54.57	1.35	3750	-2.88	51.50	2.32
1790	-2.89	51.39	1.99	2350	-2.75	53.04	1.71	3800	-2.83	52.08	1.45
1810	-2.99	50.21	2.57	2370	-2.83	52.17	1.68	3850	-2.67	54.06	1.94
1830	-3.00	50.17	2.78	2390	-2.88	51.49	1.92	3900	-2.43	57.16	2.38
1850	-2.90	51.30	2.74	2410	-2.93	50.98	2.11	3950	-2.51	56.04	2.54
1870	-2.68	53.91	2.15	2430	-2.87	51.68	2.27	4000	-2.78	52.75	2.51
1890	-2.46	56.79	1.68	2450	-2.41	57.39	2.52	4050	-2.67	54.09	2.07
1910	-2.43	57.11	1.40	2470	-1.98	63.34	2.68	4100	-2.35	58.24	1.95
1930	-2.59	55.07	1.19	2490	-1.76	66.61	2.83	4150	-2.33	58.43	1.78
1950	-2.69	53.84	1.10	2510	-1.85	65.25	2.80	4200	-2.20	60.29	1.60
1970	-2.71	53.58	0.84	2530	-2.06	62.20	2.57	4250	-2.26	59.43	1.46
1990	-2.78	52.75	0.47	2550	-2.26	59.37	2.29	4300	-2.53	55.81	1.70
2010	-2.77	52.85	0.09	2570	-2.39	57.71	2.09	4350	-2.62	54.64	2.11
2030	-2.81	52.37	0.53	2590	-2.53	55.89	2.01	4400	-2.66	54.20	2.50
2050	-2.84	52.03	1.04	2610	-2.52	55.97	1.94	4450	-2.48	56.47	2.95
2070	-3.00	50.17	1.19	2630	-2.51	56.05	1.88	4500	-2.21	60.18	3.31
2090	-2.94	50.85	1.22	2650	-2.58	55.16	1.59	4550	-2.17	60.63	3.11
2110	-2.80	52.49	0.85	2670	-2.79	52.64	1.22	4600	-2.16	60.77	2.69
2130	-2.72	53.45	0.54	2690	-2.88	51.47	0.95	4650	-1.81	65.91	2.11
2150	-2.64	54.50	0.38	3300	-2.87	51.59	1.67	4700	-1.92	64.34	2.13
2170	-2.52	56.00	0.18	3350	-2.73	53.34	1.82	4750	-2.06	62.21	1.98
2190	-2.49	56.31	0.06	3400	-2.20	60.29	2.36	4800	-2.45	56.84	2.16
2210	-2.43	57.14	0.23	3450	-2.01	62.94	2.57	4850	-2.81	52.38	2.24
2230	-2.46	56.80	1.53	3500	-2.20	60.20	2.56	4900	-2.93	50.94	2.25
2250	-2.53	55.81	1.93	3550	-2.61	54.85	2.50	4950	-2.74	53.26	1.95
								5000	-2.43	57.20	1.56



5G-3

■ RADIATION PATTERN

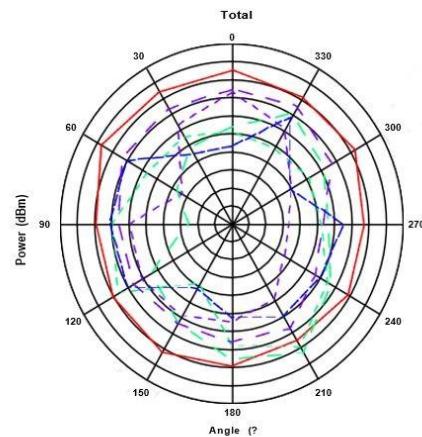


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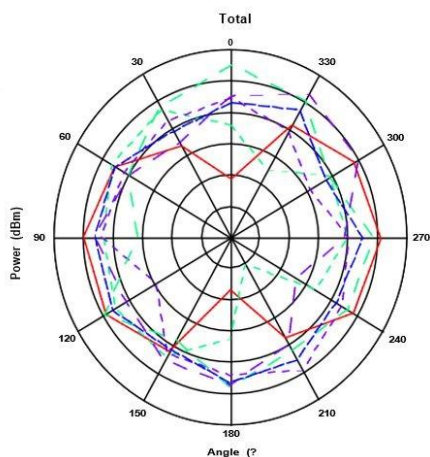
5G-1 Theta 90°



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Scale: 2/div

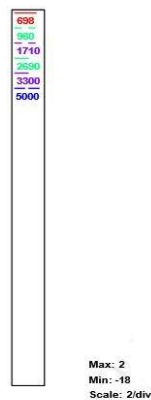


5G-1 phi 90°

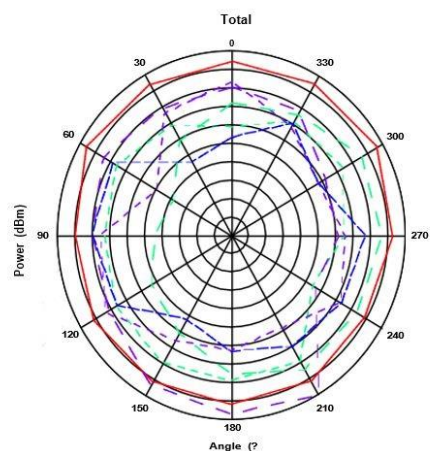


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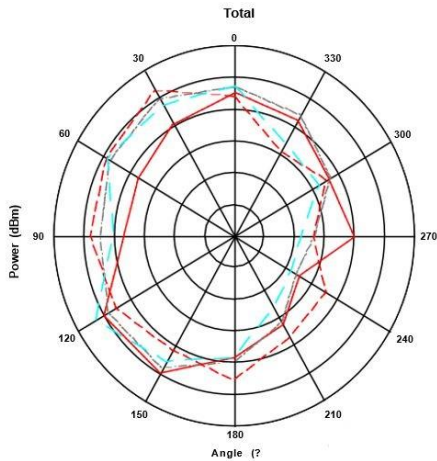
5G-2 Theta 90°



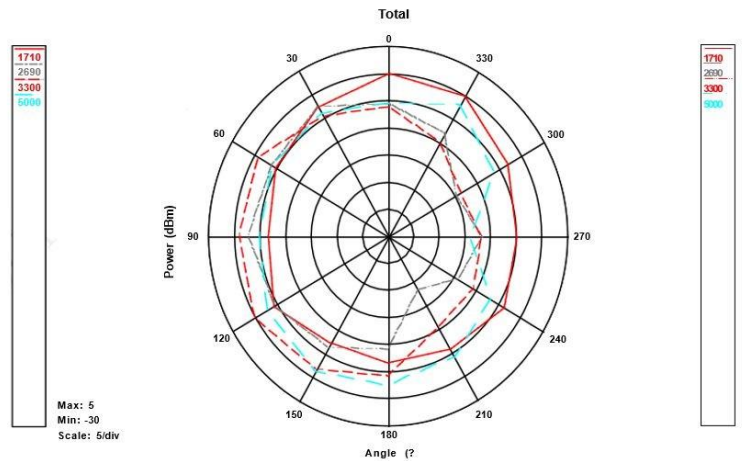
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Scale: 2/div



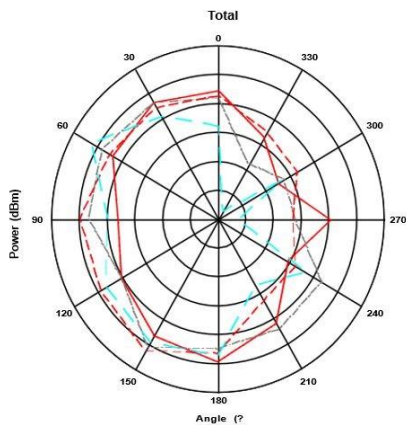
5G-2 phi 90°



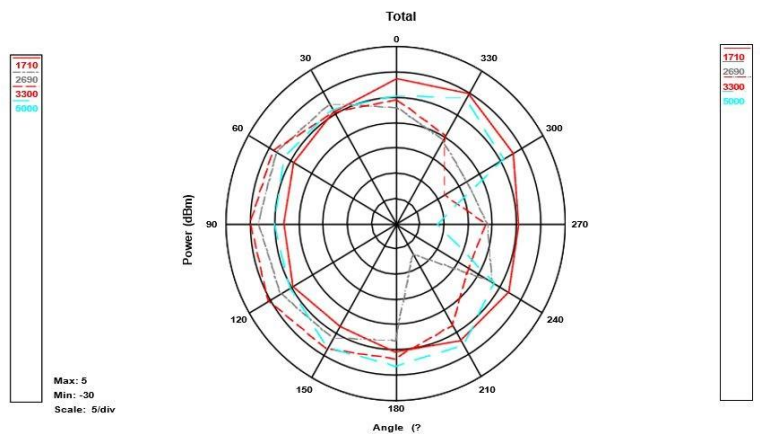
5G-3 Theta 90°



5G-3 phi 90°



5G-4 Theta 90°



5G-4 phi 90°

#### ■ ENVIRONMENTAL

PARAMETER	VALUE
RoHS	Compliant
REACH SVHC	Compliant
HALOGEN-FREE	Compliant



#### ■ APPROVAL

RALTRON	
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