



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.87	3.7	3.88	4	2.78
Ant. 2 Max Gain (dBi)	3.24	2.67	2.84	2.05	2.18
Ant. 3 Max Gain (dBi)	2.93	2.76	3.15	2.08	2.38
Ant. 4 Max Gain (dBi)	4.12	3.53	3.97	4.25	4.33
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/97.5/255	Theta/135/225	Theta/135/232.5	Theta/127.5/232.5	Theta/112.5/232.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/37.5/172.5	Phi/105/262.5	Phi/105/262.5	Phi/30/210	Phi/30/202.5
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/45/75	Phi/52.5/277.5	Phi/45/277.5	Phi/45/270	Phi/82.5/270
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/112.5/337.5	Theta/97.5/307.5	Theta/120/307.5	Theta/120/307.5	Theta/120/330
Max Gain (dBi)	4.12	3.7	3.97	4.25	4.33
DG [1SS] (dBi)	4.86	3.85	4.11	4.39	4.64
DG [2SS] (dBi)	4.12	3.7	3.97	4.25	4.33
DG [4SS] (dBi)	4.12	3.7	3.97	4.25	4.33



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Appendix A

φ(80°)	2.99±2.61	-2.66±4.41	-5.84±6.04	-2.89±2.61	-1.33±2.64	-4.78±1.81	0.220±1.7	-1.48±2.08	-2.41±4.04	-3.73±1.9	-3.83±2.53	-0.82±1.42	-2.89±3.38	-1.770±1.7	0±1.04	-4.70±7	-0.49±3.55	-1.20±0.2	0.465±29	-0.98±0.17	-0.78±1.88	-1.13±1.52	-4.28±3.74	-2.84±4.38
φ(87.5°)	-1.67±3.2	-2.36±3.32	-3.69±2.35	-1.39±2.5	-2.07±1.89	-2.74±1.82	0.39±0.93	-3.06±2.61	-2.17±3.34	6.11±4.49	-2.46±1.97	-2.16±2.39	-2.61±0.85	0.230±91	0.48±0.87	0.09±0.27	-0.73±1.61	-0.63±0.58	0.586±59	-0.470±38	-0.91±1.73	-2.11±3.24	-2.93±3.17	-3.35±3.38
φ(90°)	0.32±1.74	-3±3.43	-3.53±1.89	-0.61±1.34	-2.48±0.38	-0.46±1.04	-0.94±1.15	-2.69±2.14	-6.98±7.75	-6.29±6.32	-0.4±0.51	-2.91±5.63	-6.55±3.66	-3.99±0.31	1.950±73	-1.57±0.64	-0.69±1.8	-1.44±0.78	0.661±06	-0.19±1.17	-0.7±2.36	-1.92±2.32	-2.76±1.97	-0.64±0.22
φ(82.5°)	0.53±0.94	-2.64±1.34	-2.29±1.35	-1.31±2.22	-2.21±0.36	-2.34±2.28	-0.75±1.94	-2.19±0.54	-1.83±7	8.67±2.27	1.220±52	-0.81±1.33	0.91±1.91	-2.67±4.94	-1.85±37	-0.77±2.22	0.19±1.25	-0.29±1.59	1.11±1.65	-0.56±0.78	-1.59±1.5	-1.88±0.8	-1.12±1.94	-1.46±0.12
φ(80°)	0.31±0.99	-1.28±1.75	-2.17±3.55	-2.48±2.45	-1.3±0.16	-1.66±4.15	-3.64±5.1	-4.23±2.64	-2.44±6.09	8.87±2.27	1.030±9	-3.38±3.4	-2.92±0.7	-1±3.33	-4.66±0.41	0.84±0.17	1.01±0.36	-1.090±39	0.10±37	-0.96±0.61	-1.11±1.32	-1.44±0.91	0.38±1.46	-1.65±1.65
φ(87.5°)	0.69±0.25	-0.99±2.08	-3.50±3.07	-3.96±3.36	-2.98±1.04	-3.35±1.81	-1.36±1.82	-1.79±0.83	-2.22±4.93	-7.13±4.5	-2.02±3.86	-2.96±0.43	-0.45±1.12	-2.39±3.08	-3.760±57	2.55±42	0.85±28	-0.36±1.02	0.70±06	0.01±0.11	-1.96±2.01	-0.41±1.37	-1.19±2.02	-3.06±1.97
φ(105°)	-1.88±2.77	-3.07±3.25	-1.1±3.4	-2.9±3.44	-1.61±4.6	-5.64±3.35	-2.01±3.54	-1.88±1.52	0.04±1.71	6.42±5.9	-1.12±5.46	-5.43±0.53	0.66±0.42	-0.88±0.93	-2.98±1.76	1.460±06	0.48±0.52	0.550±48	1.90±06	0.44±0.6	-0.12±3.27	-1.07±0.58	-1.56±2.89	-3.48±2.24
φ(112.5°)	-1.91±2.08	-2.1±2.23	-2.15±3.3	-3.14±2.22	-1.57±4.33	-5.21±5.9	-2.92±2.96	-1.78±2.53	-2.58±2.87	6.25±6.69	-3.66±7.84	-7.910±24	1.35±0.33	-2.25±2.23	-3.57±0.97	0.730±71	-0.69±0.02	-1.22±1.72	-0.120±51	0.46±0.3	0.56±1.43	-5.16±2.29	-1.88±2.82	-8.37±4.66
φ(120°)	-7.28±4.67	-3.48±2.29	-2.44±1.56	-3.67±3.52	-6.96±2.22	-2.91±4.01	-3.3±3.77	-3.23±2.76	-3.26±5.31	-3.59±6.96	-3.75±5.99	-5.36±5.8	-1.30±86	-2.77±6.71	-1.88±2.84	-1.18±0.9	-3.32±4.16	-2.28±0.6	-0.61±0.01	-1.48±3.03	-2.94±2.33	-4.63±3	-2.01±4.47	-7.18±6.77
φ(127.5°)	4.95±5.37	-3.99±2.98	-4.44±4.28	-2.66±1.71	-4.63±2.09	0.72±2.34	-4.84±3.81	-1.65±2.73	-3.74±3.33	-6.03±4.02	-3.69±3.92	-8.16±4.45	-3.37±4.25	-6.64±4.25	-4.63±79	-4.22±1.67	-3.62±5.25	-2.72±2.86	-3.39±2.09	-5.26±7.07	-4.38±1.71	-0.69±2	-4.99±2.87	-4.68±1.96
φ(135°)	3.03±5.46	-5.67±6.32	-4.63±2.92	-1.8±1.07	-4.76±4.27	-2.42±0.15	0.56±2.34	-4.63±4.16	-4.36±3.52	-3.17±7.42	-5.65±1.52	-5.01±5.72	-2.33±3.1	-4.14±85	-1.78±2.14	-1.91±1.88	-4.57±3.8	-4.57±2.48	-5.17±4.78	-5.65±4.71	-3.1±2.32	-2.91±1.86	-4.66±4.65	-7.22±3.05
φ(142.5°)	-6.69±5	-3.19±2.36	-6.03±4.85	-4.73±2.57	0.07±1.65	0.36±1.13	2.01±3.36	-3.36±4.39	-3.68±2.21	0.02±3.62	-5.36±0.33	-2.07±2.1	-2.52±4.52	-7.14±6.49	-8.92±1.91	-0.72±3	-4.63±3.3	-3.68±2.89	-1.86±2.06	-1.99±4.1	-6.91±2.19	-1.99±2.25	-1.26±3.3	-4.26±3.3
φ(150°)	3.88±3.28	-3.09±2.41	-2.09±4	-4.12±4.74	-3.53±3.56	-4.48±15	-1.99±2.96	-3.38±3.8	-3.63±3.57	-5.26±7.5	-8.18±7.84	-5.16±2.25	0.21±0.51	-4.47±22	-6.96±3.28	-5.21±9.56	-6.41±2.85	-2.59±2.8	1.57±0.92	-1.98±4.66	-8.63±7.85	-6.22±2.1	-1.72±1.44	-0.97±3.36
φ(157.5°)	3.65±3.48	-3.71±4.2	-4.18±5.81	-6.39±4.31	-3.07±1.6	0.37±37	-0.51±157	-2.86±5.03	-4.24±0.67	-5.97±7.05	-6.7±61	-3.13±0.76	-0.88±1.83	-2.63±3.51	-4.68±0.05	-5.57±5.11	-4.26±3.97	-6.26±7.38	-7.33±7.17	-6.94±7.13	-6.63±7.93	-7.81±6.17	-4.67±6.17	-6.96±0.09
φ(165°)	6.53±6.62	-6.86±7.04	-4.77±3.46	-2.72±1.72	0.86±1.04	-1.8±305	-4.74±6.04	-6.11±7.91	-8.47±6.77	-5.25±6.78	-6.57±7.26	-8.13±4.69	-6.57±4.45	-3.81±3.23	-3.26±3.97	-3.79±42	-5.34±22	-7.03±5.85	-4.33±3.58	-3.84±7.77	-4.8±4.71	-4.91±5.52	-5.01±5.85	-6.57±7.85
φ(172.5°)	4.78±5.91	-5.27±3.07	-2.63±2.96	-3.27±3.41	-4.16±4.66	-5.26±5.83	-5.74±5.52	-6.69±5.21	-4.88±41	-4.26±4.53	-3.87±4.33	-4.21±3.23	-2.97±2.23	-1.38±0.72	-0.19±0.09	-0.49±1.06	-1.96±2.06	-2.01±1.73	-1.31±12	-1.96±2.55	-2.32±1.67	-1.77±2.19	-2.28±2.74	-3.36±3.72
φ(180°)	-2.92±1.98	-2.06±2.04	-3.13±3.88	-6.09±7.16	-7.416±08	-6.22±4.53	-3.28±2.14	-2.22±2.58	-1.97±1.7	-2.31±2.91	-3.05±3.12	-3.78±3.64	-3.48±3.72	-3.65±3.16	-2.6±2.21	-1.27±1.04	-0.52±0.2	0.010±27	-0.16±0.92	-1.17±0.69	-1.26±2.28	-2.37±2.65	-3.21±2.37	-1.68±3.35
Freq(Hz)	5.7855GHz	Thetas	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±	±
Q(sdB)	φ(0°)/φ(0.5°)	φ(15°)/φ(22.5°)	φ(30°)/φ(37.5°)	φ(45°)/φ(52.5°)	φ(60°)/φ(67.5°)	φ(75°)/φ(82.5°)	φ(90°)/φ(97.5°)	φ(105°)/φ(112.5°)	φ(120°)/φ(127.5°)	φ(135°)/φ(142.5°)	φ(150°)/φ(157.5°)	φ(165°)/φ(172.5°)	φ(180°)/φ(187.5°)	φ(195°)/φ(202.5°)	φ(210°)/φ(217.5°)	φ(225°)/φ(232.5°)	φ(240°)/φ(247.5°)	φ(255°)/φ(262.5°)	φ(270°)/φ(277.5°)	φ(285°)/φ(292.5°)	φ(300°)/φ(307.5°)	φ(315°)/φ(322.5°)	φ(330°)/φ(337.5°)	φ(345°)/φ(352.5°)
φ(0°)	0.47±0.24	0.69±1.14	-1.48±2.14	-2.79±3.62	-4.67±5.35	-6.26±6.02	-4.57±3.55	-2.38±1.99	-1.59±0.94	-0.540±31	-0.080±11	0.590±44	0.21±0.29	-0.69±1.27	-1.52±2.06	-2.99±3.77	-4.49±5.21	-5.06±4.24	-3.45±2.71	-1.71±0.83	-0.72±0.14	0.240±72	0.126±16	0.520±58
φ(17.5°)	0.230±52	0.32±0.58	-1.35±0.86	-1.52±2.05	-2.44±3.46	-4.64±4.44	-3.43±2.68	-1.56±1.47	0.74±0.18	0.216±78	0.540±55	0.750±22	0.18±0.35	-1.01±1.63	-2.04±2.64	-3.56±4.51	-4.91±5.79	-6.28±5.6	-4.19±3.31	-2.64±2.33	-1.71±0.89	-0.360±38	0.630±29	0.240±39
φ(35°)	0.92±0.66	-0.81±0.68	-0.62±0.85	-1.43±2.1	-2.49±2.82	-2.74±3.01	-2.96±3.3	-3.14±2.7	3.04±2.77	2.11±1.44	-0.99±0.21	-0.16±0.41	-0.96±1.89	-2.74±3.62	-4.42±4.16	-3.86±3.52	-3.51±3.94	-4.06±4.57	-3.82±3.28	-2.83±2.15	-1.72±0.84	-0.010±4	-0.17±0.87	-0.53±1.61
φ(52.5°)	0.97±0.09	-0.345±23	-0.060±05	-0.46±1.21	-1.63±1.52	-0.91±104	-1.27±1.45	-2.1±2.25	-1.45±0.62	-0.166±58	1.270±77	0.11±1.07	-1.96±3.11	-3.92±3.95	-4±24	-3.96±4.45	-4.81±3.94	-2.52±2.73	-2.16±1.82	-2.32±2.24	-1.060±76	0.990±76	0.39±0.51	-1.08±1.28
φ(70°)	1.07±1.85	1.25±73	0.74±0.07	-1.36±2.33	-1.72±1.09	0.98±0.66	-1.96±2.94	-1.61±0.51	6.92±1.27	2.1±0.89	-0.070±07	0.21±0.06	6.11±51	-3.26±3.82	-3.64±3.48	-3.76±2.97	-1.43±1.01	-1.57±2.6	4.1±2.79	-0.710±42	-0.110±2	0.2±0.29	0.83±1.17	
φ(87.5°)	0.82±1.5	1.87±54	0.3±0.28	-1.5±2.98	-1.31±0.87	-3.01±2.53	-4.84±4.93	-2.66±1.79	-1.89±2.73	3.2±2.77	-6.94±0.22	-1.16±2.49	-1.79±0.85	-1.62±2.49	-2.89±2.59	-3.44±2.71	-1.41±2.76	-2.89±1.16	-6.74±1.99	-3.11±4.26	-1.46±1.21	-1.14±0.75	-0.346±81	1.77±28
φ(105°)	2.94±1.62	1.76±25	-1.35±1.43	-0.9±1.66	-0.03±1.06	-2.4±2.15	-4.84±3.77	-9±5.16	-10±82	0.26±0.83	-1.26±0.87	-0.610±06	1.66±2.15	0.54±1.59	-3.37±4.18	-2.18±1.73	-0.99±0.66	-1.39±0.94	-1.03±0.68	-1.32±1.19	-0.29±0.49	-0.771±94	2.12±1.68	
φ(122.5°)	1.146±99	1.39±19	0.73±0.47	-6.65±1.77	1.83±1.83	-2.02±1.93	-4.23±3.71	-2.36±0.88	-2.24±0.05	-0.25±1.58	0.616±35	0.611±32	1.11±2.06	0.75±0.94	0.446±38	-2.61±1.94	-0.93±1.27	-6.66±3.94	-5.51±0.03	-1.07±1.35	1.44±0.44	0.110±3	0.27±0.32	-1.29±0.99
φ(140°)	2.731±71	0.78±4.24	-0.17±0.27	-1.2±1.35	1.21±0.95	-2.96±3.76	-3.71±0.82	-10±15	0.020±91	0.592±35	-2.96±2.77	1.6±0.36	0.34±0.28	-0.051±39	0.71±2.24	0.46±0.4	1.230±52	0.391±28	0.610±39	-0.731±01	1.570±47	0.761±33	1.38±1.76	
φ(157.5°)	1.762±37	2.22±6	-0.96±1.05	1.42±1.22	1.77±1.24	-2.86±1.29	-0.07±3.02	-2.76±1.15	-1.03±1.21	0.120±24	1.862±27	2.38±1.95	0.34±0.28	0.751±11	0.280±21	0.88±0.94	0.07±0.01	0.961±61	0.491±19	0.640±63	-0.21±0.01	1.230±42	0.072±15	2.81±26
φ(175°)	2.45±14	1.61±63	1.110±31	2.43±1.76	0.95±2.99	-3.05±11	-1.96±3.88	-3.66±3.49	-2.61±86	-3.53±3.83	0.96±06	1.42±1.56	-0.86±0.7	0.50±86	-0.35±0.26	1.69±1.27	0.160±83	0.662±01	0.51±53	2.08±24	1.9±76	1.961±96	0.250±31	1.761±85
φ(192.5°)	3.373±12	1.22±02	2.032±23	1.350±47	-0.78±1.82	-1.07±1.47	-3.41±3.43	-2.71±4.69	-2.83±3.32	-4.3±3.65	0.59±0.06	-0.130±29	2.15±1.19	-0.42±1.44	-1.131±68	1.490±82	-0.380±26	1.352±04	2.433±63	3.363±02	2.883±27	3.423±74	3.423±74	1.412±86
φ(210°)	4.64±95	0.640±71	0.86±1	0.99±0.48	-3.31±51	-0.21±39	-2.99±2.28	-1.55±2.65	-3.99±2.63	-0.63±0.96	0.050±16	-0.041±19	3.132±01	0.05±0.03	0.022±64	1.110±41	-0.510±14	1.3±0.65	1.852±5	2.372±59	3.172±53	3.533±54	3.052±33	2.211±69
φ(227.5°)	2.233±03	0.03±1.39	0.070±29	0.94±0.64	-4.27±0.21	-1.39±0.48	-1.20±02	-1.74±2.51	-4.83±7.38	-2.91±54	-0.50±2.93	-0.362±96	3.772±99	2.170±02	0.551±46	2.310±28	1.612±64	1.841±78	0.240±1	1.21±32	1.790±39	2.071±55	2.210±62	-0.63±1.35
φ(245°)	-1.240±48	-1.09±0.01	-2.07±0.02	-1.46±0.71	-1.82±0.02	-1.73±21	-2.86±0.86	-3.29±3.96	-5.77±6.63	-2.97±1.55	-2.19±1.89	-3.45±13	3.63±16	0.59±1.25	0.653±61	2.753±26	2.465±67	3.612±1	1.632±48	1.360±06	1.740±53	-0.89±0.83	-0.68±1.58	-0.220±19
φ(262.5°)	2.01±38	-0.47±0.53	0.64±11	1.17±0.73	0.810±29	0.67±0.57	-1.36±2.75	-5.89±4.38	-5.53±5	-0.94±1.94	-1.23±3.16	-5.320±45	2.24±0.82	0.43±0.11	-0.12±23	1.172±82	2.141±02	1.172±1.7	3.092±19	1.591±09	1.450±27	-0.162±38	0.52±0.82	1.261±81
φ(280°)	0.341±56	1.61±0.13	0.43±0.23	-1.07±1.26	-0.23±0.12	-2.96±1.51	-1.49±0.87	-6.32±3.11	-6.31±5.67	-2.2±0.03	-1.62±0.82	-5.110±39	1.48±0.5	1±1.78	-0.83±57	1.621±83	-0.260±1	0.552±25	2.422±52	1.21±27	2.290±49	0.860±78	3.48±0.39	0.261±56
φ(297.5°)	1.55±0.59	0.96±0																						



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Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H252)	-18.80-18.85	-16.30-18.95	-10.00-15.42	-18.29-12.95	-15.35-17.3	-17.51-10.12	-14.64-11.41	-14.09-17.34	-17.70-17.32	-12.61-11.33	-10.20-11.22	-10.39-9.17	9.90-10.86	-10.07-10.38	-9.51-9.39	-9.29-9.89	-8.80-8.48	-8.60-8.58	8.50-9.23	-10.64-13.55	-15.14-18.29	-17.57-18.4	-14.25-13.28	-16.81-17.99
(H257)	-17.30-18.27	-16.30-19.51	-10.21-11.56	-13.41-16.18	-18.34-17.88	-16.54-18.78	-18.90-16.32	-18.01-18.36	-17.50-14.79	9.49-9.79	9.95-13.85	-14.70-18.17	-18.70-19.33	-18.59-18.18	-14.93-12.54	-9.91-9.26	8.74-7.39	-10.09-8.82	7.84-11.04	-13.49-14.26	-18.42-15.35	-18.02-11.23	-14.97-18.16	-17.34-17.38
(H302)	-10.02-15.46	-16.69-18.92	-13.77-14.97	-15.09-16.28	-18.25-18.74	-17.70-18.81	-18.90-18.14	-18.02-17.67	-12.99-10.77	-11.62-16.73	-17.61-15.05	-13.33-10.32	-11.17-10.54	-11.34-12.15	-16.75-19.26	-17.10-13.43	-10.37-9.76	-14.79-10.84	8.65-15.83	-13.41-12.04	-14.10-10.47	8.78-9.12	-12.17-15.53	-19.01-17.97
(H307)	-13.90-18.54	-13.70-11.83	-12.18-17.09	-17.63-17.15	-15.23-13.03	-17.41-19.02	-17.10-17.92	-12.90-13.87	9.79-8.57	-11.60-13.25	-10.83-8.5	-13.17-17.97	-12.39-10.72	-11.08-11.61	-13.03-12.41	-18.51-17.88	-15.80-11.47	-12.31-13.42	8.87-13.1	-16.44-14.1	-11.41-9.26	-12.36-16.03	-17.02-17	-12.42-11.08
(H325)	-10.09-17.47	-15.23-11.93	9.71-11.31	-15.14-18.01	5.68-6.9	-17.61-18.13	-13.22-11.03	-12.91-10.61	-10.42-11.38	-11.40-10.55	7.61-8.34	-5.99-6.21	8.21-8.84	-17.77-8.3	-8.94-10.29	-19.26-18.6	-19.15-17.71	-14.9-16.91	-10.86-15.35	-19.2-18.84	-15.80-13.26	-13.73-16.91	-8.48-8.87	-16.97-13.93
(H357)	-17.89-10.48	-16.50-14.33	-14.71-18.01	-14.44-19.24	-11.88-9.64	-8.80-17.01	-15.92-7.14	8.51-12.41	-13.23-13.65	-17.59-8.22	-6.91-6.88	-10.30-13.26	-12.33-13.26	-12.74-12.02	-9.83-9.16	-12.15-14.84	-15.92-12.76	-14.90-12.81	-12.42-17.99	-18.99-17.99	-18.70-19.09	-18.04-12.79	-10.39-15.16	-16.97-8.42
(H375)	9.43-8.24	-12.63-18.44	-19.19-18.97	-14.12-17.77	-19.25-9.15	-7.33-12.17	-14.21-21.72	8.31-15.29	-11.26-18.98	-15.25-9.66	-11.40-16.84	-13.53-12.1	-19.35-18.77	-13.36-13.09	-10.80-9.86	-18.32-13.06	-12.74-11.19	-13.54-15.99	9.59-18.66	-17.57-19.08	-16.30-12.19	-10.94-9.53	-18.74-16.95	-13.52-12.63
(H375)	5.89-9.25	-17.51-52.1	8.91-8.58	-14.21-17.79	-17.14-8.65	6.60-17.91	-12.07-5.83	5.40-18.11	-8.07-11.86	-14.65-12.06	-14.30-14.34	-9.39-8.77	8.89-9.25	-10.43-16.74	-15.81-9.85	-7.37-12.72	-12.73-10.06	-12.62-17.31	8.74-15.51	-15.22-19	-18.63-19.33	-18.71-14.51	-16.80-18	-11.52-61.63
(H325)	4.27-15.1	-17.58-18.5	-18.18-1	6.67-8.64	-13.59-13.27	6.60-17.91	-11.87-6.77	-12.57-15.47	8.84-18.07	-10.21-12.68	-13.50-5.81	8.87-7.67	7.31-14.06	-8.58-10.5	-11.99-11.18	-7.86-7.19	-18.78-9.53	-11.29-18.09	8.22-18.19	-15.99-15.24	-18.92-12.14	8.79-8.98	-17.81-8.9	6.18-4.48
(H375)	2.38-2.46	-7.58-18.67	-13.01-16.76	-16.83-18.85	-16.79-12.37	-8.87-12.26	-16.95-9.84	11.08-15.05	-14.07-17.75	-12.97-11.55	-15.54-12.02	4.83-6.58	7.11-7.38	8.87-11	-7.53-12.06	-15.4-14	-11.49	8.88-15.21	-10.31-13.88	-18.97-15.87	-15.89-12.7	-9.2-53	-7.52-12.32	8.23-2.59
(H375)	2.07-2.74	3.03-7.71	-11.65-16.86	-11.01-13.84	-13.59-16.82	8.46-18.47	-12.42-8.42	-12.72-12.13	-17.77-18.1	-12.94-10.47	6.03-6.79	6.91-7.03	5.69-6.48	-7.22-6.42	-10.61-9.26	7.42-9.1	5.20-11.34	-16.72-11.58	-15.16-14.34	-14.32-13.36	5.16-7.35	8.70-7.24	5.58-7.26	
(H307)	8.00-8.41	2.72-6.52	-11.59-18.14	7.90-13.73	-18.18-16.57	-12.78-18.03	-13.91-10.75	12.02-14.13	12.82-19.92	12.75-8.1	-18.61-12.49	5.34-11.67	6.29-6.64	8.12-8.47	8.71-14.74	4.76-15.28	12.23-10.35	-15.76-13.63	-18.90-17.75	-18.71-15.97	-11.07-10.35	8.01-11.87	-13.23-11.91	
(H1275)	8.88-15.47	-18.39-15.95	-17.80-17.59	-18.91-12.84	-18.27-11.01	-14.59-13.13	9.21-6.08	-10.47-12.3	-18.17-17.5	8.17-10.22	-16.14-10.98	5.33-6.55	7.29-8.43	4.13-5.64	-4.46-5.11	7.39-7.26	7.89-15.48	-14.74-12.88	-11.84-13.63	-13.92-12.26	-17.80-13.31	8.60-10.99	-11.77-8.14	-10.78-17.14
(H375)	8.28-17.87	-17.77-16.62	-5.98-7.05	-18.47-14.54	-18.87-12.57	-12.90-13.13	8.91-7.25	-17.89-15.73	-18.67-17.85	-17.18-17.88	-12.54-16.75	7.92-8.02	-11.87-11.75	-16.34-16.5	-4.95-5.1	-4.88-16.55	-16.86-16.55	-10.80-13.97	-13.01-13.96	-17.79-15.98	-10.71-12.43	-10.40-7.78	-14.71-15.91	-8.52-10.45
(H1275)	8.21-15.85	-18.20-17.43	-15.27-13.43	-19.24-17.17	8.02-17.97	-14.51-10.68	8.23-13.82	-12.81-12.83	-18.21-14.85	-11.37-15.93	4.69-10.24	-12.79-19.16	4.9-7.96	7.37-8.36	-6.58-11.92	9.3-9.24	-12.82-12.85	-17.81-12.68	-12.74-16.42	-13.54-14.28	-7.73-12.41	-18.02-8.21	7.35-18.8	-18.23-10.3
(H375)	8.81-9.75	-8.98-17.72	-18.83-18.23	-15.90-7.89	7.62-18.35	-14.41-12.5	-12.48-17.19	-15.83-13.39	-13.58-17.55	-8.75-8.77	-7.21-11.16	-11.79-8.35	8.17-8.04	5.23-5.36	-10.26-10.88	-16.41-10.33	-16.32-14.82	-8.01-8.04	-14.02-13.87	-13.98-15.55	-10.41-10.92	-12.58-11.97	-12.76-10.65	
(H1425)	9.54-13.42	-13.40-5.81	-7.20-15.67	-17.19-17.54	-16.09-13.04	8.93-11.41	-12.59-10.91	-10.5-8.5	-16.89-12.74	4.04-6.06	-4.23-9.74	-7.53-11.98	-9.94-8.63	5.26-6.13	4.08-7.02	-11.43-17.33	-18.59-11.51	-16.71-18.3	-10.68-5.31	-4.97-17.54	-15.90-13.47	-17.47-13.14	-11.03-11.28	-18.74-14.83
(H375)	-16.86-15.17	-11.30-18.48	-10.01-17.81	-18.14-18.17	-15.91-12.53	-16.09-11.66	-14.19-14.11	-14.88-18.66	-14.19-14.11	-8.59-10.24	4.30-5.96	-1.89-2.84	1.62-5.11	-1.48-4.87	-7.56-8.23	-14.34-17.86	-12.07-11.35	-19.14-12.62	-12.10-10.58	-12.29-17.65	-18.45-17.79	-18.00-11.57	7.67-17.7	-12.44-14.87
(H1575)	-16.19-12.34	-13.26-11.58	-10.71-18.31	-15.02-16.95	-19.29-17.87	-17.84-18.75	-14.27-18.42	-11.80-13.53	-12.46-10.18	4.35-5.45	-2.57-4.46	-2.97-2.34	-3.27-4.56	6.72-8.43	-14.84-17.82	-17.35-14.18	-15.44-10.78	-10.3-13.3	-12.71-8.48	-10.57-13.93	-16.85-13.55	-12.63-11.92	-12.04-14.81	-11.07-18.17
(H1675)	-16.34-10.26	-12.42-14.56	-18.06-19	-17.44-13.15	-11.95-17.33	-17.37-18.48	-14.27-16.42	-13.68-11.49	-12.52-15.87	-13.15-13.69	4.56-6.4	-5.69-7.72	-6.16-6.55	6.59-7.72	-7.46-9.16	-12.34-11.21	-10.86-9.78	-9.41-10.3	-10.80-11.44	-11.74-12.33	-15.80-18.46	-18.05-19.14	-17.79-17.69	-15.53-11.26
(H1725)	-12.77-9.16	-8.07-8.83	-10.51-11.19	-10.57-14.86	-16.49-18.15	-19.08-17.78	-17.47-14.88	-18.07-15.05	-13.81-14.19	-10.57-18.17	-11.07-11.63	-18.16-18.4	-17.15-18.33	-18.33-15.25	-8.44-8.93	-11.54-12.71	-13.40-13.89	-13.78-14.15	-12.02-12.02	-12.92-13.22	-14.31-15.33	-12.46-11.12	-10.50-12.99	
(H1725)	-10.21-10.17	-8.07-10.17	-11.74-13.92	-14.63-18.76	-13.83-18.51	-17.49-18.11	-17.48-13.31	-18.18-17.9	-17.12-11.88	-8.79-8.68	-8.27-17.63	-6.59-6.68	5.95-5.94	4.06-5.62	6.1-17.58	-7.73-9.84	-12.36-14.1	-11.97-14.66	-13.31-13.26	-14.40-17.38	-18.13-15.86	-18.92-13.37	-13.44-13.63	
FreeQid	5.350Psi	Thetaki1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1	-1
Gain	Φ07(Φ067.5)	Φ15(Φ022.5)	Φ30(Φ19037.5)	Φ45(Φ2652.5)	Φ60(Φ1467.5)	Φ75(Φ082.5)	Φ90(Φ987.5)	Φ105(Φ112.5)	Φ120(Φ127.5)	Φ135(Φ142.5)	Φ150(Φ157.5)	Φ165(Φ172.5)	Φ180(Φ187.5)	Φ195(Φ202.5)	Φ210(Φ217.5)	Φ225(Φ232.5)	Φ240(Φ247.5)	Φ255(Φ262.5)	Φ270(Φ277.5)	Φ285(Φ282.5)	Φ300(Φ307.5)	Φ315(Φ322.5)	Φ330(Φ337.5)	Φ345(Φ352.5)
(H17)	9.32-8.27	-7.47-8.17	-7.54-8.87	7.88-7.39	-7.77-8.49	-16.68-11.3	-10.12-12.86	-15.04-18.45	-16.52-18.81	-19.01-18.28	-14.90-12.9	-12.66-10.36	-16.99-10.33	8.82-8.48	8.18-8.27	8.91-8.6	11.11-12.14	-12.47-14.05	-15.25-15.86	-17.38-17.86	-17.03-13.37	-12.86-11.83	-17.05-19.98	8.29-8.14
(H17)	-10.19-12.45	-11.01-12.35	-12.07-18.89	-9.80-11.15	-16.89-11.08	-11.61-9.28	-16.90-12.03	-18.01-19.23	-16.41-14.43	-14.26-12.77	-11.10-10.27	-11.15-11.27	8.62-8.47	8.40-8.1	8.46-8.27	7.91-10.06	5.26-10.93	-16.99-8.37	-15.87-10.23	-17.99-19.14	-17.60-17.74	-13.63-14.07	-13.69-11.91	
(H175)	9.15-9.24	8.19-8.94	7.52-8.78	8.51-8.98	10.57-11.58	14.11-15.14	15.35-16.27	-18.07-17.07	18.36-15.5	-17.19-18.11	-16.18-15.27	14.11-14.83	9.53-9.42	8.98-9.88	8.89-12.2	-16.91-18.88	-16.98-18.11	-15.17-14.1	-11.82-12.04	-11.13-11.86	8.18-7.34	7.22-7.74	7.13-7.3	8.24-9
(H225)	4.01-4.71	5.89-6.07	-8.00-9.84	8.57-9.75	8.60-7.74	9.94-12.42	-13.53-13.77	-14.90-17.33	-15.91-15.31	-15.14-16.48	-18.70-18.99	-17.73-19.59	-12.22-10.31	9.3-9.27	5.99-6.85	-10.16-10.16	-13.48-13.76	-17.82-18.14	-13.63-10.71	-7.54-8.11	-4.22-4.22	4.74-4.69	5.84-6.3	5.26-5.04
(H375)	5.24-4.98	4.23-24.25	-5.68-8.73	10.27-12.82	-10.80-17.91	11.91-12.41	-13.39-12.76	-18.98-18.84	11.46-17.37	15.17-19.32	-10.41-14.78	-17.99-18.46	-18.30-18.95	-13.37-17.88	-16.30-18.67	-10.41-12.32	-7.42-9.27	-11.25-14.04	-12.81-10.67	-2.95-11.93	-3.95-4.23	3.95-4.31	8.51-8.07	6.67-6.33
(H375)	5.94-5.43	5.16-17.12	-7.37-7.58	8.45-15.15	-14.21-12.92	9.95-13.41	-11.91-10.41	-18.3-9.65	5.01-5.41	6.05-16.07	-14.35-15.67	-14.70-17.86	-16.96-10.37	5.47-6.95	-14.93-10.02	-12.52-11.88	-12.44-13.72	-12.70-12.28	-10.46-18.67	-8.80-8.05	-15-13.26	8.76-8.74	-18.67-8.7	
(H375)	7.26-7.77	5.43-6.45	-8.01-8.92	-14.11-18.14	-15.08-13.44	-15.08-13.44	-10.79-10.43	-12.16-7.85	4.54-5.42	-1.97-9.15	-5.79-12.12	-10.12-12.56	-13.07-15.42	-13.93-17.79	-13.91-17.39	-14.81-19.98	9.24-6.46	6.39-16.45	-11.22-6.26	-16.88-18.86	-12.62-7.96	-17.23-7.11	-18.74-16.8	
(H325)	8.42-8.04	-14.59-13.74	-8.01-10.18	-10.02-14.34	-14.63-7.88	-11.16-13.32	-12.10-9.8	9.24-12.12	4.84-7.14	4.13-4.75	3.58-4.4	5.21-6.97	-6.91-6.3	8.17-10.14	-10.00-11.41	-17.71-13.65	5.18-14.84	-13.37-10.28	-11.51-10.81	-13.26-11.53	-15.62-15.72	-17.48-18.08	-17.79-17.95	
(H1025)	-10.03-17.1	-8.98-10.02	-18.73-19.02	-13.80-13.21	-10.24-15	-7.18-6.77	-7.79-9.39	-6.73-8.53	-14.61-12.61	5.14-5.17	-16.16-17.6	-2.33-3.65	-2.78-1.81	2.08-1.36	-10.06-10.41	-17.71-13.65	-2.45-8.44	8.89-11.3	-7.47-13.13	-12.29-8.88	-11.57-19	-18.86-14.16	-12.17	-5.89-7.24
(H375)	8.50-10.11</																							



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H17)	2.29833	-13.46119	-18.48116	-10.68186	-14.42774	-9.98107	-9.99632	-14.481121	-10.031653	-18.481154	-8.82817	-10.99183	-10.091334	4.12163	4.30948	-11.75044	4.09111	-10.991239	-18.19166	-18.250185	-17.791484	-15.701123	-18.1701737	-18.19111
(H25)	4.991747	-12.531381	-17.421841	9.591144	-15.74168	-18.321331	6.441108	-18.741010	-10.331674	-18.191448	-4.991702	-12.891135	-11.421111	8.49116	4.11447	-9.191726	4.231111	8.761423	-18.531994	-17.821216	-19.191107	-15.24169	7.3211675	-12.09139
(H26)	2.741305	-5.86138	-12.531691	-18.491346	-13.461404	-10.931898	-12.741248	-13.261102	-4.231459	-10.441033	4.271706	-17.021891	8.831492	-7.731471	6.861433	-14.211616	-14.641205	-17.191102	-10.661908	4.35111	-2.911765	-11.461683		
(H27)	5.551269	-9.14103	-10.3316	-13.061189	-18.81196	-16.111516	-10.911735	-13.131116	-18.211865	-5.961585	-8.91594	-5.161935	-10.241122	-13.131862	-17.191829	-8.43185	-14.631101	-15.141132	-12.1113021	-12.111302	3.931423	2.85157	-11.761108	
(H28)	3.881937	-14.441783	-8.861189	-8.861189	-12.781154	-17.291154	-11.581151	-6.6611729	-10.831139	-15.241172	-10.421138	-8.241676	-7.651367	-3.891355	-5.631159	7.251172	-18.011759	-14.911725	-18.011548	-10.841165	-13.911407	-8.831424	-6.671178	-7.731611
(H125)	4.051586	-15.041401	-10.331709	-14.431164	-8.821411	-13.771101	-10.031139	-13.261129	-18.431119	-14.591137	6.88144	8.49149	2.641125	-3.16147	-10.03179	7.341427	-14.011636	-15.331194	-14.941125	-18.411164	8.44148	8.951455	-6.411198	-18.711419
(H126)	-19.181183	-5.27117	-18.711149	-18.711149	-12.81143	-13.281145	-11.911132	-18.111123	-12.981128	-15.631107	-10.671101	-10.671101	-7.551496	-17.191172	-14.971155	-10.34144	-15.331194	-18.811921	-11.711135	-18.931101	9.391135	8.231165	-7.361115	-10.481173
(H127)	6.711748	8.53154	-10.671141	-13.771977	-12.651185	-17.881109	-18.521127	-12.9911767	-15.91189	-15.231197	-12.491162	-10.07142	-17.31123	8.031174	5.99114	-14.281149	-19.061176	-14.99119	-17.961132	8.73198	5.64135	8.011194	-12.21159	
(H128)	4.911844	-11.371175	-18.151192	-12.531723	-10.921167	-18.821135	-12.921142	-16.731174	-14.191132	-10.121163	-8.601116	9.19179	4.67174	-12.411238	-14.821188	3.961498	-10.691184	-17.8311051	-16.8711057	-15.211132	-14.231155	9.751127	-10.35179	-14.081152
(H1425)	-17.111731	-11.52163	8.941136	-18.931135	-18.931135	-15.661123	-10.161410	-12.131171	-7.891408	6.481166	-17.771169	-12.511036	8.471175	-16.071122	-13.921159	-8.521886	-18.841189	-15.691187	-18.481189	-15.161143	-17.8211171	-13.121039	8.781197	-13.411167
(H1507)	12.621191	-18.941172	-17.021179	16.291199	-16.621167	-17.341169	-16.951199	-14.891199	8.411455	8.321137	8.2712	6.09194	10.051119	-12.531142	-15.821179	-10.15127	-18.941181	-16.7411821	-15.161133	-15.931133	-15.9911125	8.991152	2.62117	-11.471147
(H15125)	17.481125	14.941159	-15.071175	-17.071149	-18.691142	-10.971178	-10.381199	-10.831191	-11.44144	6.531741	-12.391135	-13.511145	-12.991126	-12.291134	-11.91193	-13.121186	-14.891173	-17.691189	-18.641193	-17.751141	18.941135	-19.861177	-16.711142	
(H15126)	9.221102	-12.791178	-17.891186	-17.791134	-16.7312	2.98181	-11.51171	-9.11136	-18.91177	-10.331116	-13.991197	-18.111172	-16.481175	-13.641122	-14.221146	-18.93112	-17.891176	-17.641144	-17.17121	-17.981162	-16.941136	-14.821187	-18.21116	-14.171159
(H1725)	9.331477	2.29142	-10.861159	-18.6111916	-18.511537	-14.141147	-11.85129	8.99149	9.26148	5.33145	9.57149	8.95149	10.93146	-18.31158	-18.91145	-14.991138	-17.791129	-16.791136	-13.941115	-11.81151	-13.441113	-15.59113		
(H180)	5.721614	8.981458	-11.931129	-11.681155	-18.341182	-17.891158	-13.811182	6.79143	8.55175	7.71147	7.44175	8.09144	6.29142	8.971101	-11.681173	-12.321153	-13.8911273	-13.1316	-18.981148	-19.331155	-17.231183	-14.041138	-12.63147	-5.63141
FreeRx0	5.765Rx0	Thxat01	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Gen	607°(967.5)	615°(9622.5)	630°(9637.5)	645°(9652.5)	660°(9667.5)	675°(9682.5)	690°(9697.5)	705°(9712.5)	720°(9727.5)	735°(9742.5)	750°(9757.5)	765°(9772.5)	780°(9787.5)	795°(9802.5)	810°(9817.5)	825°(9832.5)	840°(9847.5)	855°(9862.5)	870°(9877.5)	885°(9892.5)	900°(9907.5)	915°(9922.5)	930°(9937.5)	945°(9952.5)
(H1)	-17.111738	-13.501171	-17.971193	-18.561177	-17.161164	-15.021135	-12.531182	-11.191162	-10.571109	-11.491152	-12.211126	-10.891184	-12.131115	-14.151118	-16.191119	-18.7611749	-15.261151	-13.11169	-12.7311715	-15.361159	-11.51152	-11.11116	-11.271133	-10.991107
(H10)	8.7511017	-16.291159	-13.86114375	-17.0711432	-13.3111432	-15.121134	-11.511138	-11.221167	-11.541179	-12.121167	-10.391190	-9.981182	-11.831127	-14.011175	-16.871143	11.831127	-10.691119	-13.291151	-15.081127	-12.461118	-11.11116	4.551165	-10.891188	
(H15)	4.340194	-11.411148	-11.681141	-13.861167	-15.491148	-12.631112	-11.451177	-13.591144	-13.041191	-10.861174	-14.071175	-12.921146	-13.811145	-12.991126	-12.291134	-11.91193	-13.121186	-14.891173	-17.691189	-18.641193	-17.751141	18.941135	-19.861177	-16.711142
(H16)	17.671112	5.961179	13.16199	7.691175	6.77152	-13.271129	-10.961113	-17.71141	-13.33196	-12.94184	-9.961198	-13.841151	-18.711191	-18.021179	-15.971146	-15.161123	-17.041174	-12.611129	-10.941151	-13.921116	-13.091125	5.421175	5.841162	-11.471147
(H17)	2.731125	-2.981171	2.231127	-10.391150	5.741162	-13.331142	-18.8611914	6.14162	4.371141	-15.151128	-16.711158	-12.991132	-11.021119	-10.221159	-13.871122	-13.291114	-13.211177	-13.3811183	-14.041173	-14.921134	-3.361144	-3.581147	-5.141178	
(H18)	7.141548	4.41138	-3.531126	-10.261181	7.87184	-12.91143	-18.11101	5.271135	5.311104	-10.131142	6.02142	8.311125	-13.541132	-12.921118	-10.951124	-13.101163	-10.371162	-18.271122	4.591102	-17.121132	8.461176	4.71181	-10.22117	-5.261178
(H19)	4.571846	-5.881788	-6.881121	8.771175	4.94178	-15.121142	-16.74145	3.97125	4.65145	-3.481172	4.901141	3.311133	1.41148	4.941138	6.291168	-1.741139	-18.41151	-17.161128	-10.49127	-13.911152	-13.891177	-11.271173	-12.491168	-3.85124
(H20)	8.0511319	-14.43174	6.391811	-14.0911916	-11.01164	-11.531166	-10.54161	3.721183	4.541234	-4.231274	-1.441114	0.911149	2.971176	4.31147	-3.371188	-16.15182	-13.961155	4.0211709	-10.74	-12.411186	-14.911404	8.87192	-15.1512	-18.461110
(H21)	6.131497	-14.431764	-13.871175	-16.881166	-6.25164	-11.871161	-11.411131	4.541132	4.67136	3.1712	6.07119	4.031101	-2.93145	3.93167	4.501142	3.59182	9.43115	9.303	4.21168	-14.71164	7.171154	-11.891137	-10.261187	
(H22)	-17.881778	-11.511161	-10.101153	-15.541121	4.63115	4.65145	-1.39155	4.59148	2.841143	9.13166	-0.71157	3.04113	3.771629	3.151141	4.111419	-1.341179	-3.81173	-3.81173	3.981229	7.471221	2.77135	6.331165	4.51122	-13.64171
(H23)	9.131167	-16.891145	-12.15116	9.35165	6.391144	8.79167	4.861111	6.26149	3.12029	2.771284	8.8114	4.751191	-1.39137	2.94148	6.291168	-1.14139	-1.84151	-1.98127	2.251105	7.11014	-2.461118	-1.391167	4.9417	6.83138
(H24)	3.231151	-15.041117	4.99147	-11.081161	5.67184	6.99142	8.19123	5.261121	2.71118	4.79132	2.33126	2.031192	2.291138	2.22137	3.891151	0.49116	-1.09116	0.28108	1.44123	2.83121	0.41164	0.421	2.261133	-13.65125
(H25)	0.641008	4.6211021	-10.26147	4.24167	-12.771199	-6.59149	-14.091102	6.64152	4.05149	6.49128	2.971168	-1.130191	2.761126	0.311681	-1.06017	0.41141	-1.50019	0.741191	1.21169	0.71121	1.24167	-1.14147	-4.91147	-8.91147
(H26)	3.33145	-7.151186	-10.461125	4.71117	18.35147	-7.39162	-12.651191	-7.16157	3.69158	5.19113	2.581156	-1.49165	0.95137	1.76112	1.07145	0.04212	0.511143	1.47117	0.65017	1.64105	0.521155	0.161121	0.641175	-14.18113
(H27)	10.071107	-17.991106	-14.951173	-18.671182	7.87152	-11.731172	-10.391173	-12.16183	-17.771143	-4.991179	-3.771182	-1.261128	0.99127	1.98114	1.62146	-1.871139	-1.86142	-1.421108	-0.43196	-1.061169	3.241153	3.781195	-5.891176	-3.63142
(H1125)	0.25117	-7.82139	-6.19167	4.251143	5.11117	-10.381136	9.511131	-12.491128	-14.611258	-5.351495	-4.82167	-5.101166	2.381105	0.32102	0.132179	0.57157	3.811131	0.91124	-0.21151	0.561157	-1.171183	6.231154	-1.461105	-7.98113
(H1126)	2.91107	-3.981143	-11.661197	-11.881162	-7.44151	-10.51137	8.511136	-10.911725	-12.29125	3.271149	-4.531166	-5.991168	2.261104	0.89157	1.581143	0.591157	4.411191	1.28019	0.5139	3.991162	2.91123	2.91123	2.91123	-2.91123
(H1127)	4.24115	8.151185	-18.521182	-12.51156	-13.871169	-17.81121	-6.491149	-18.861198	8.891572	4.961103	4.91192	-1.961183	-3.161127	3.571131	2.141342	0.16211	0.76126	4.89132	1.45013	-1.061112	-8.491131	-1.591123	4.55148	-2.93144
(H1128)	5.84135	-16.74181	9.591165	-14.23187	8.421125	-13.291121	-13.041161	-10.961184	7.83157	5.22157	4.931491	-5.811162	-10.97137	3.13167	8.21152	1.43192	3.64126	1.191322	1.711179	-1.981141	-1.021149	-4.641159	-6.821157	-17.71191
(H1129)	7.591124	-14.491108	8.391103	-16.17117	-14.491123	-11.51128	-11.981131	-13.371187	-18.84169	9.8118	-7.49154	-2.18125	5.19173	3.11195	5.161249	-3.491188	-6.651165	4.79175	6.41123	-4.73144	7.851147	7.19125	8.95139	4.54148
(H1130)	13.52161	7.831191	-13.241125	-18.291186	-15.791174	-18.71158	-13.481187	-10.321184	-10.521199	8.791163	-10.821183	7.941158	4.391111	2.23196	2.64117	2.931139								



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H120)	3.31474	-8.22-10.58	-12.2-14.43	6.53-4.42	7.38-6.82	3.85-4.09	-10.09-11.52	-4.27-3.82	4.85-13.68	-10.80-19.08	-3.35-5.28	-16.18-19.32	-1.08-3.38	6.19-6.71	8.87-11.41	8.1-6.01	-3.59-0.8	0.17-0.58	0.01-0.52	2.7-6.27	-8.46-10.48	-11.96-14.09	-14.74-14.78	6.42-4.5
(H127)	2.711-85	2.28-6.56	-11.41-14.51	-14.39-8.28	5.58-7.68	-8.86-10.71	-12.93-14.24	-14.24-9.15	8.1-8.78	7.07-6.17	-16.42-8.22	-13.64-0.4	0.78-2.74	-13.85-12.41	8.24-6.18	-5.6-10.34	-12.11-19.28	8.94-3.78	-1.99-6.48	-12.59-6.48	-5.52-6.63	-7.11-17.27	-11.91-13.08	-13.42-4.53
(H130)	4.571-67	6.84-7.27	-10.36-9.84	7.36-6.99	4.84-6.59	3.54-3.01	-3.2-5.4	-7.13-8.24	-10.52-6.83	-2.97-6.98	-7.15-5	-10.26-10.42	6.58-14.48	-14.23-6.97	3.61-6.44	-13.4-22	-3.17-14.14	4.3-14.07	4.58-3.24	6.52-3.86	6.38-18.02	-11.39-12.57	-14.05-6.61	
(H142)	4.521-57	5.51-5.12	6.71-11.41	8.99-4.89	2.22-1.15	2.69-4.49	-7.69-8.44	8.51-16.16	7.73-7.87	-18.95-7.88	-12.25-11.24	8.56-3.41	3.78-5.53	6.68-5.22	3.03-6.26	-4.33-7.2	6.12-18.3	1.48-4.75	6.33-6.77	8.33-63	4.55-12.96	-11.34-10.82	-18.88-18.45	-12.6-6.35
(H150)	8.571-67	6.98-5.25	-5.86-6.16	6.21-4.5	-1.74-1.57	-17.17-13.55	6.68-3.84	3.41-2.73	1.95-2.84	5.12-5.83	7.4-9.43	-8.88-15.08	6.91-8.04	0.95-0.74	4.57-1.15	6.13-12.2	2.98-0.79	-1.93-5.11	6.61-5.51	6.05-6.83	5.06-4.91	-7.33-12.35	-8.36-10.14	-10.71-0.14
(H157)	1.58-0.58	0.58-1.72	3.43-5.24	6.77-8.07	4.15-2.78	2.34-2.47	2.47-2.14	2.38-5.26	-1.88-15.86	-13.44-13.33	-14.64-18.8	-11.06-3.84	-1.34-1.3	2.14-3.37	6.01-6.5	-6.77-15.49	-6.59-8.81	-12.71-15.49	-11.84-8.48	-14.82-10.42	-14.82-13.1	-11.25-10.79	-8.89-5.71	4.02-3.02
(H160)	3.98-9.46	-11.02-9.99	-11.02-12.35	-11.67-10.69	-10.02-9.89	6.97-7.36	9.14-9.19	-10.27-10.52	-14.75-12.85	-16.45-19.62	-13.47-18.5	-14.23-17.48	-4.39-3.31	-1.37-1.41	-6.39-7.1	-6.05-7.9	6.52-6.43	4.85-4.59	4.78-4.7	-4.84-5.13	6.59-6.23	-5.25-4.73	-6.08-5.67	7.01-6
(H172)	-1.83-11.48	8.97-13.8	5.96-7.43	3.61-2.94	2.38-2.45	3.11-0.42	5.63-7.87	-11.26-14.38	-11.47-13.12	-11.25-9.91	8.47-10.3	8.49-8.22	8.83-8.2	5.57-6.75	4.14-3.51	2.88-2.51	2.27-2.08	2.20-2	2.16-2.3	2.42-2.94	3.99-4.72	5.12-4.88	-6.72-9.19	-11.93-13.84
(H185)	4.571-48	4.41-4.59	5.29-6.61	7.82-9.46	-12.88-18.72	-17.9-16.97	-11.63-8.84	6.96-6.46	4.79-4.19	3.27-2.51	2.11-0.99	2.19-2.24	2.39-2.76	6.22-5.28	-7.59-5.35	-10.68-10.89	9.96-7.84	5.6-5.85	2.51-5.88	-1.56-1.27	2.52-2.84	3.31-4.12	5.22-4.17	
FileNo	5.52Psi	FileNo	2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gen	(H07'90'57)	(H15'92'22.5)	(H07'90'37.5)	(H07'90'52.5)	(H07'90'67.5)	(H07'90'82.5)	(H07'90'112.5)	(H12'90'127.5)	(H13'90'142.5)	(H15'90'157.5)	(H16'90'172.5)	(H18'90'202.5)	(H19'90'217.5)	(H22'90'232.5)	(H23'90'247.5)	(H25'90'262.5)	(H27'90'277.5)	(H28'90'292.5)	(H30'90'307.5)	(H31'90'322.5)	(H32'90'337.5)	(H34'90'352.5)		
(H7)	5.98-7.68	-10.21-13.42	-17.25-18.88	-15.03-11.7	5.11-6.92	5.58-9.98	2.84-1.59	5.15-5.23	6.84-6.85	1.341-6.9	-13.02-7.2	4.43-2.49	8.71-11.61	3.96-7.17	5.75-4.02	3.17-2.58	2.021-5.96	-1.48-1.27	-1.21-1.73	2.47-3.04	3.49-3.73	2.13-3.03		
(H15)	-10.52-13.7	-15.84-16.58	-11.59-9.25	-7.53-6.89	6.12-5.66	3.57-6.45	-3.89-2.87	-2.19-2.06	2.443-3.27	-3.42-3.26	-3.73-3.28	4.39-5.26	6.18-7.11	8.54-10.84	-13.17-18.79	-19.44-11.68	8.39-5.63	3.85-2.17	-1.15-0.36	-0.03-0.12	-0.41-1.2	-1.89-2.26	2.38-3.38	4.02-7.6
(H18)	-14.24-16.58	-18.17-19.04	-12.42-9.71	-7.74-7.9	5.22-5.74	2.85-2.04	-2.07-2.8	-3.89-4.1	4.39-4.98	5.27-6.21	-7.64-7.02	-5.76-6.44	5.09-5.64	4.71-5.63	8.2-7.31	-10.84-18.41	-13.89-9.32	6.05-3.44	-1.47-0.07	0.25-0.3	-1.1-2.06	-2.16-1.52	-1.81-4.13	8.22-12.5
(H22)	4.74-8.87	-14.42-17.77	-14.44-15.93	6.80-4.3	3.33-3.25	2.46-2.35	2.01-1.71	-1.80-2.24	2.09-2.51	2.00-2.38	3.64-4.4	5.09-5.46	6.39-5.68	7.59-8.6	-10.71-7.3	6.29-10.8	-10.6-8.33	5.52-2.98	1.65-1.1	-1.38-1.95	-2.92-2.02	2.54-2.03	2.38-3.02	5.93-6.09
(H28)	6.28-10.03	-18.44-16.15	-11.18-7.66	5.56-5.37	2.21-1.5	-1.49-1.85	-2.32-2.7	-3.08-3.23	2.84-2.52	3.09-3.28	3.75-4.13	5.38-4.63	3.39-3.62	3.02-3.62	-10.86-11.38	8.57-8.3	9.42-8.09	4.35-2.36	2.65-3.7	4.24-3.28	-2.12-1.77	2.33-2.05	2.21-2.32	3.53-6.7
(H37)	5.86-10.81	-13.16-14.11	-14.08-14.84	-11.31-8.14	5.13-3.66	3.28-3.93	4.87-5.33	6.42-7.58	6.91-5.7	4.63-7.4	-4.33-5.58	5.24-4.35	4.33-5.59	6.87-6.06	-10.49-18.24	8.79-6.17	-7.57-12.12	8.77-4.93	3.12-2.83	-3.39-3.83	2.97-2.71	2.22-2.1	2.48-4.34	-7.53-6.27
(H40)	8.78-10.35	-10.68-6.53	8.68-8.56	-10.86-16	-17.72-12.12	4.1-10.76	3.70-12.06	0.86-6.02	7.81-8.36	3.71-6.77	-5.36-5.24	3.96-3.19	3.53-4.4	5.22-5.35	-7.88-11.75	-18.03-10.33	7.97-8.68	8.81-6.14	-1.57-3.86	3.6-3.13	3.06-3.97	5.26-7.26	6.17-7.82	
(H52)	4.96-4.29	3.92-3.87	-3.06-3.45	3.92-5.86	8.97-11.46	6.29-6.73	-12.13-10.36	8.57-7.13	4.84-4.1	3.81-3.23	-4.79-6.38	5.4-5.01	6.14-7.5	7.82-8.11	7.81-5.74	-12.11-18.2	8.96-8.47	-12.49-10.55	5.39-4.14	-5.65-4.77	4.14-5.3	6.51-7.46	8.85-10.56	1.59-1.88
(H57)	7.4-6.68	4.97-3.63	3.19-3.8	5.33-7.33	8.61-9.58	-10.62-11.55	-14.02-17.71	-14.59-10.48	8.92-4.5	7.14-3.62	-3.26-7.19	4.02-4.9	5.71-6.55	6.19-6.58	-11.86-9.27	-10.68-9.16	7.10-8.16	4.48-5.6	-7.13-7.04	8.79-9.73	6.83-6.83	5.96-5.98	-12-12.78	
(H67)	8.78-9.58	6.53-6.45	4.12-4.27	5.57-11.47	6.15-5.36	4.94-4.94	5.96-8.89	8.34-14.13	-13.87-8.94	8.81-6.61	-11.88-10.35	8.6-7.51	5.89-5.31	5.77-7.44	-13.92-12.65	8.32-9.63	8.42-6.64	8.65-8.94	8.15-10.42	8.56-10.06	5.99-7.89	-10.22-11.16	-13.75-14.42	-13.91-10.12
(H72)	7.38-7.89	4.73-4.73	4.5-5.38	-10.86-18.67	5.65-3.07	2.99-3.31	5.21-6.48	-11.16-18.69	-12.46-17.03	-5.93-6.05	-12.21-12.9	-10.49-10.47	7.06-7.78	1.27-1.73	-13.51-12.55	-10.81-8.86	-14.8-15.55	-12.85-11.99	8.37-11.03	-13.88-13.59	8.78-12.13	3.96-1.17	-11.04-15.35	-13.55-8.41
(H82)	5.73-15.34	-12.84-16.65	-11.42-11.09	-16.43-16.67	7.53-7.48	8.79-7.24	8.57-13.32	-11.81-12.32	8.89-5.75	6.02-6.36	-16.50-14.1	-13.75-19.1	-11.30-8.61	-11.23-14.52	-16.49-18.38	7.71-6.62	-11.03-9.63	7.45-7.56	6.99-12.7	-13.14	8.99-9.14	-10.78-12.55	-12.32-14.51	-11.24-7.07
(H95)	7.25-18.34	-17.98-18.55	-16.33-18.02	4.69-7.84	-10.51-6.89	7.63-6.86	6.93-12.49	8.84-9.15	-13.48-8.81	8.72-16.85	-10.61-11.46	-13.68-19.28	-14.31-16.52	-18.98-19.34	-12.4-15	-11.62-14.47	8.49-8.59	7.19-6.84	8.2-8.58	-11.21-14.61	-8.79-12.67	-11.08-15.43	-17.87-17.88	
(H97)	-19.01-18.82	-18.58-18.52	-15.63-9.15	7.22-5.42	5.75-7.9	6.43-9.8	-13.19-16	5.91-14.2	-11.95-12.1	4.89-8.48	8.4-13.72	-16.18-12.23	-17.65-17.77	-18.21-18.55	-17.51-12.85	-10.87-18.9	7.88-7.24	8.47-10.14	-10.80-7.85	5.82-9.36	-13.23-13.85	8.96-10.35	-13.12-18.84	-18.84-18.81
(H107)	17.45-18.69	-16.49-17.48	-15.22-6.83	6.49-6.99	4.58-5.9	5.62-4.2	6.55-10.55	-18.41-17.12	-12.23-7.17	5.52-4.41	6.47-16.41	-18.21-18.11	-18.46-17.73	-11.65-16.22	-19.24-17.97	-18.99-18.76	-11.55-10.11	5.94-5.95	-10.84-6.89	-10.77-10.75	-15.77-16.14	-10.90-17.79	-12.36-19.39	
(H110)	16.58-19.24	8.44-18.5	6.24-6.5	6.39-7.34	3.33-13.3	8.42-4.1	4.19-13.3	6.23-6.37	8.2-8.3	3.87-8.1	7.38-14.9	16.58-16.16	1.71-12.81	5.96-16.58	-18.07-17.29	8.71-11.89	9.55-8.97	11.86-13.31	-13.71-13.68	6.28-12.04	14.42-13.49	-13.39-15.44	-17.91-18.02	
(H116)	16.15-15.2	5.29-5.64	4.52-7.29	8.87-8.63	7.26-9.1	-10.14-7.13	5.96-6.45	4.32-6.73	13.69-16.11	-17.76-14.95	-11.95-13.59	-12.71-12.92	-10.16-18.49	9.31-14.21	-12.45-10.58	8.43-10.83	-14.73-19.76	4.17-7.65	7.88-8.42	9.22-9.13	-12.33-10.57	-10.2-14.03	9.23-15.95	-15.59-14.82
(H127)	5.88-5.33	4.1-1.4	4.08-4.45	4.49-8.06	8.04-2.48	6.17-7.98	7.06-7.78	4.43-4.47	11.25-4.58	-11.70-10.52	-12.89-12.52	-18.89-12.02	6.58-17.38	-14.63-15.12	-12.48-15.2	5.61-9.23	-17.82-16.09	-10.82-13.68	-18.69-6.89	12.23-11.04	-15.84-17.45	6.64-5.14	-11.13-12.47	-10.63-8.45
(H137)	11.07-8.41	5.68-5.93	4.8-4.41	3.93-3.91	4.51-4.36	5.21-4.28	7.43-7.96	11.71-15.53	5.36-3.33	-11.27-14.3	-12.46-8.43	-11.87-7.5	8.14-17.11	9.26-10.21	7.33-35	2.21-4.25	-10.32-18.16	14.24-3.43	3.34-8.82	-10.66-11.1	-12.32-0.84	5.68-11.22	9.54-14.32	9.96-10.78
(H142)	-11.23-8.84	4.38-3.59	-3.32-2.7	-2.41-3.4	3.68-6	1.62-1.98	-12.98-19.42	-14.56-14.68	-11.55-14.94	-12.53-9.02	-12.07-17.21	-14.68-15.15	-13.88-17.2	5.32-10.21	-12.84-15.14	-13.49-10.57	-11.05-10.84	6.32-4.41	2.15-16.46	-11.46-15.87	6.93-12.27	-6.11-12.47	-8.17-1.28	7.41-1.87
(H150)	-12.75-10.85	-12.85-8.64	5.15-5.28	6.47-9.04	-12.61-11.61	-7.73-8.38	4.59-6.71	8.48-8.36	-10.39-16.78	-17.14-17.38	-16.27-10.89	-16.19-21.31	3.71-5.38	6.28-10.97	-12.81-19.19	8.49-5.02	4.39-10.77	-11.57-6.78	-1.94-0.25	-12.26-14.1	-11.69-8.82	6.52-10.83	6.67-11.07	-10.36-9.11
(H157)	-10.05-18.84	-19.59-14.79	-13.16-13.41	-11.14-13.46	-16.89-16.53	-16.82-16.78	-15.4-12.86	-16.06-18.19	-17.14-15.93	-18.41-17.22	-16.50-17.69	-13.69-16.89	6.26-3.64	4.25-7.24	-1.98-12	-1.67-10.73	5.64-6.06	3.40-2.32	-1.04-0.23	-2.36-3.27	5.91-6.46	-11.93-16.69	-17.17-18.23	-17.36-11.61
(H160)	6.28-6.02	-7.38-7.83	7.3-8.4	6.04-6.45	5.62-6.25	7.01-7.22	-12.03-16.55	-12.03-16.55	-15.54-16.24	-15.54-16.24	6.11-11.26	-14.8-16.38	-15.21-15.9	-10.72-10.06	8.8-7.2	4.58-4.27	4.34-4.63	5.42-6.89	7.27-7.96	11.68-18.34	-16.02-14.14	6.11-11.43		
(H172)	3.23-3.2	3.94-3.84	4.17-5.62	4.1-16.78	6.82-10.49	-10.39-9.59	6.78-6.75	7.31-7.63	7.89-12.13	-17.77-18.79	7.89-7.34	4.88-4.89	5.21-6.03	8.27-12.49	-17.85-17.14	14.73-9.48	6.34-4.27	4.37-5.19	7.21-10.14	-13.74-18.06	-18.37-18.15	-15.22-14.4	4.1-	



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(172.5)	-10.21~19.25	-18.93~10.91	-7.86~-5.43	-3.97~-4.37	-3.38~-4.3	-6.08~2.68	-15.63~18.07	-18.34~-14.82	-12.71~12.19	-11.84~13.65	-15.62~12.88	-9.04~-6.08	-4.35~2.97	-1.84~1.32	-0.92~0.89	-1.04~1.11	-1.32~1.44	-1.41~1.63	2.65~3.63	4.5~5.05	-5.5~4.98	-3.83~3.14	-3.78~5.55	-6.91~7.85
Freq	5.65GHz	Theatle 2																						
Gain	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	0.97~1.97 (5)	
E(17)	-12.88~14.87	-18.21~17.47	-12.36~11.07	-6.21~7.46	-3.66~3.77	-4.86~3.85	-3.28~3.46	-3.61~3.99	-3.98~4.16	-8.86~10.73	-12.32~13	-12.55~11.19	-9.31~13	-7.18~5.6	-4.02~4.36	-3.48~3.32	-3.16~3.03	-2.91~3.22	-3.24~3.44	-3.37~4.05	-4.19~4.88	-4.94~5.7	-7.53~10.22	
E(17.5)	-12.81~12.67	-12.41~10.35	-9.18~9.67	6.87~5.74	5.11~4.42	3.93~3.71	3.82~3.89	3.41~3.42	4.04~4.94	4.82~4.85	5.64~5.19	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	-13.87~17.87	
E(17.5)	-14.09~13.02	-10.64~4.96	-4.47~3.36	2.85~2	-1.31~1.09	-1.19~1.78	2.53~4.29	4.54~4.46	4.24~5.65	5.64~5.19	5.14~5.65	-7.54~9.11	-10.81~13.17	-16.3~14.83	-9.83~5.57	4.4~3.98	-3.68~3.22	2.8~2.48	2.53~3.78	4.54~5.19	5.74~6.46	-9.12~10.3	-9.12~10.3	
E(22.5)	-10.65~10.74	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77~1.15	1.57~1.29	-0.33~0.18	-1.44~2.07	4.81~4.24	4.84~7.23	7.07~6.33	6.27~6.23	6.46~5.99	6.1~7.01	6.29~10.55	-12.41~10.88	-18.8~16.25	9.61~7.42	2.55~2.16	2.38~4	4.82~4.94	5.54~6.18	-7.56~8.69	8.8~8.88	
E(22.5)	-10.67~10.75	7.36~6.13	5.58~4.16	-1.77																				



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H15°)	0.470-0.7	0.820-3.4	-0.63-1.84	-2.43-3.2	4.14-5.58	-7.92-11.79	-19.4-17.88	-14.19-9.93	6.47-43.3	2.84-1.86	-1.13-0.74	-0.19-0.78	1.69-2.22	2.25-1.85	1.08-0.1	-1.36-2.87	-4.51-6.16	8.17-11.24	-16.71-19.22	-15.9-10.24	-8.84-4.45	-2.92-2.14	-1.3-1.79	-1.32-0.35
(H22.5°)	-0.37-0.41	0.60-0.7	-1.02-0.25	-2.96-3.54	-4.33-5.8	-8.32-10.59	-18.33-18.1	-12.3-9.07	4.87-5.1	3.6-2.41	-1.83-1.25	-0.79-0.14	1.11-1.82	2.08-1	1.24-0.7	-1.33-0.36	-4.84-5.33	8.46-11.12	-15.7-18.1	-15.21-9.87	-6.67-3.43	-2.66-1.74	-1.41-1.13	-1.61-1.16
(H30°)	-1.53-0.66	-0.16-0.41	-1.31-1.23	-3.09-3.66	-4.48-6.06	-8.79-13.36	-19.49-16.28	-12.40-10.57	8.94-7.11	5.26-4.33	-1.97-1.19	-0.83-0.34	0.3-1	1.57-1.58	1.12-0.7	-1.29-3.1	-5.13-7.02	-8.8-10.99	-14.8-19.84	-14.86-9.97	-7.03-4.98	-3.35-2.51	-1.97-1.87	-2.01-0.27
(H37.5°)	-2.22-1.67	-1.01-0.79	-1.14-1.95	-2.95-3.7	-5.22-7.18	-10.23-14.33	-16.99-19.27	-14.51-13.8	-10.56-7.35	-9.2-9.9	-1.33-0.48	-0.26-0.14	0.09-0.47	0.79-0.7	0.3-0.57	-1.89-3.84	-5.83-7.94	-8.61-11.57	-15.65-19.19	-14.77-18.5	-7.29-6.68	-4.59-3.87	-3.3-2.85	-2.48-2.4
(H45°)	-2.33-1.7	-1.48-0.86	-0.93-1.83	-3.14-4.84	-6.47-10.6	-12.04-14.28	-15.91-17.76	-17.9-14.24	8.24-5.07	-4.47-7.76	-2.04-1.46	-1.07-0.72	-0.51-0.37	-0.22-0.24	-0.63-1.41	-2.82-4.32	-6.86-9.27	-11.21-12.8	-17.1-17.8	-15.68-10.22	-7.79-6.5	-5.74-5.16	-4.53-3.7	-2.86-2.43
(H52.5°)	-2.74-2.87	-2.22-1.51	-1.57-2.55	-3.89-5.48	-7.97-12	-15.11-15.27	-17.25-19.38	-18.55-10.56	6.19-3.87	-3.19-1.63	-4.16-4.08	-3.45-2.63	-2.11-1.8	-1.59-1.33	-1.85-2.46	-4.01-6.86	-6.53-11.52	-13.51-14.96	-19.2-18.23	-13.82-8.63	-7.79-6.87	-6.16-5.72	-5.24-3.7	-3.29-2.68
(H60°)	-4.9-5.23	-4.22-3.11	-2.96-3.65	-5.13-7.26	-11.17-15.88	-14.94-13.13	-16.72-19	-14.84-8.42	6.19-4.56	-4.16-3.14	-4.89-3.61	-3.83-4.29	-4.19-3.5	-3.12-3.44	-4.59-6.65	-9.65-13.65	-15.69-15.61	-18.11-19.07	-13.87-10.31	-9.94-8.07	-7.6-5.5	-6.15-5.22	-4.35-2.4	-3.45-2.24
(H67.5°)	-8.22-10.72	-5.59-4.48	-4.91-6.53	-8.02-10.5	-15.22-15.55	-11.52-11.92	-18.94-10.82	-11.28-9.71	5.82-4.89	-5.95-6.65	-8.98-9.87	-3.83-2.66	-2.83-2.2	-2.69-3.8	-5.53-6.95	-9.67-15.08	-17.08-14.84	-17.41-18.37	-18.18-14.17	-13.25-11.75	-9.96-8.22	-7.13-6.31	-6.23-2.28	-4.92-2.98
(H75°)	-10.2-8.81	-7.52-6.12	-6.99-9.09	-8.9-9.1	-17.22-17.27	-12.46-10.73	-10.7-10.25	-8.47-7.64	8.59-7.26	-8.93-9.79	-4.57-3.32	-3.53-3.62	-4.46-5.48	-6.6-6.6	-6.34-8.65	-8.93-13.68	-16.71-13.91	-17.25-18.41	-18.4-17.65	-15.95-13.75	-11.04-9.21	-8.4-6.84	-6.82-9.96	-5.02-9.96
(H82.5°)	-13.15-12.03	-11.56-10.26	-9.7-9.9	-8.61-12.02	-16.28-14.34	-10.11-11.16	-18.74-18.67	-12.25-12.25	-12.98-11.3	-12.69-13.01	-8.4-8.53	-4.82-5.15	-5.51-5.78	-6.19-6.57	-6.88-7.05	-7.42-8.37	-10.88-10.27	-14.49-11.16	-12.13-17.84	-18.22-17.73	-17.94-15.07	-12.89-11.94	-11.46-10.18	-12.54-10.37
(H90°)	-13.97-13.22	-12.86-12.69	-12.11-12.1	-12.96-16.51	-18.51-13.72	-10.87-12.7	-18.27-13.78	-12.89-14	-12.94-13.2	-12.42-13.98	-10.79-9.25	-7.67-7.33	-6.91-6.7	-7.64-7.99	-11.03-9.99	-8.2-8.38	-11.19-10.18	-11.07-14.21	-16.39-17	-16.39-14.74	-13.51-12.13	-11.46-12.98	-13.82-10.49	-12.82-10.49
(H97.5°)	-16.29-16.94	-17.97-19.09	-16.99-14.57	-15.19-19.77	-18.32-15.58	-13.64-16.04	-18.44-17.77	-15.13-18.97	-18.58-13.5	-12.13-14.94	-16.69-13.94	-12.14-11.65	-10.66-9.65	-10.71-14.16	-16.99-18.34	-15.19-18.34	-11.52-9.17	-11.91-14.22	-14.85-17.73	-18.69-13.74	-13.62-14.02	-17.21-19.88	-18.15-19.98	-18.15-19.98
(H105°)	-18.68-18.46	-19.15-19.31	-18.93-17.28	-19.04-17.82	-18.34-14.63	-14.29-16.03	-18.44-15.44	-14.83-17.57	-18.75-11.82	-10.48-13.99	-17.39-15.27	-16.03-17.96	-12.11-13.7	-11.91-13.5	-10.74-13.7	-9.11-10.36	-12.09-17.18	-13.10-10.2	-13.34-17.69	-17.34-16.98	-17.03-19.97	-17.7-19.18	-18.17-19.77	-19.13-19.12
(H112.5°)	-14.72-19.19	-18.4-19.01	-18.4-17.34	-18.82-17.06	-17.79-17.87	-17.59-17.73	-14.37-10.13	-14.37-10.13	-17.54-12.22	-12.17-18.7	-18.47-10.47	-18.21-18.63	-16.94-14.02	-14.01-18.65	-18.17-12.52	-9.88-12.62	-12.03-18.43	-13.09-12.04	-12.24-17.77	-18.68-15.94	-16.95-17.47	-16.31-19.91	-19.02-16.45	-18.14-16.46
(H120°)	-16.87-17.84	-14.13-13.93	-16.71-18.5	-17.93-18.97	-18.62-18.39	-17.21-18.06	-17.28-14.21	-14.36-17.35	-17.37-12.87	-12.68-15.54	-14.19-16.76	-19.4-19.13	-18.53-18.18	-17.33-18.23	-14.75-19.18	-8.27-8.51	-11.72-19.69	-11.73-8.47	-10.24-15.98	-18.62-17.79	-19.13-18.94	-18.89-18.18	-18.82-18.19	-18.36-17.77
(H127.5°)	-6.91-10.33	-11.98-13.88	-15.39-16.86	-17.96-19.17	-18.83-17.27	-17.79-18.13	-18.03-14.84	-14.43-15.02	-13.92-18	-13.51-8.14	-9.53-10.49	-14.01-18.7	-18.42-17.86	-18.12-14.61	-11.55-9.67	-8.79-9.36	-12.02-14.2	-10.78-8.65	-10.2-15.24	-17.99-18.8	-19.16-16.83	-18.34-18.63	-18.63-18.13	-13.41-10.11
(H135°)	-10.24-11.87	-10.81-9.37	-8.84-12.18	-15.37-16.48	-14.88-14.54	-16.95-16.68	-19.23-18.87	-14.54-13.47	-13.02-14.4	-11.74-14.26	-10.41-8.6	-8.29-8.58	-9.18-10.2	-11.17-12.21	-12.59-12.68	-12.92-13.73	-13.97-12.32	-10.63-14.02	-12.37-17.65	-17.99-16.85	-18.26-17.87	-17.59-15.84	-17.91-15.77	-17.59-15.84
(H142.5°)	-10.52-11.48	-6.89-7.28	-10.24-14.18	-13.65-11.29	-10.42-11.01	-11.27-11.72	-19.23-18.1	-18.22-15.85	-10.55-17.7	-18.97-15.66	-14.13-15.45	-8.49-7.93	-8.26-10.06	-12.39-14.19	-14.55-15.33	-13.17-15.98	-16.71-13.5	-14.04-12.49	-15.11-17.85	-18.98-16.02	-16.02-14.37	-11.64-9.59	-14.84-10.81	-13.41-10.15
(H150°)	-8.71-14.58	-6.91-10.16	-8.99-6.96	-6-4-17	7.15-8.84	-11.29-14.67	-19.18-18.29	-18.39-13.97	-18.53-18.28	-15.26-13.61	-14.75-16.35	-15.11-14.07	-15.18-18.1	-17.45-18.14	-18.19-17.01	-15.12-13.33	-12.99-14.14	-12.39-18.08	-19.06-16.71	-14.22-12.39	-10.96-9.77	-6.42-8.51	-6.4-8.17	-6.4-8.17
(H157.5°)	-7.77-13.74	-6.16-48.1	-3.87-3.75	-4.46-5.95	-7.91-10.21	-12.82-10.72	-18.91-10.33	-19.39-17.88	-17.79-17.82	-12.21-12.13	-13.13-14.6	-15.82-17.42	-16.78-16.72	-15.26-18.63	-17.77-19.9	-18.47-12.54	-12.24-13.44	-16.89-18.6	-16.77-19.91	-15.96-18.83	-14.65-13.44	-10.92-10.46	-8.77-10.46	-8.77-10.46
(H165°)	-6.2-5.2	-4.18-3.78	-4.05-4.97	-6.47-6.48	-13.31-11.92	-13.18-14.48	-16.22-16.18	-19.27-18.72	-18.89-15.28	-13.31-12.48	-11.79-11.7	-12.06-12.34	-12.67-13.54	-15.32-17.93	-18.06-18.21	-16.24-17.14	-14.36-15.22	-16.88-17.86	-19.19-18.29	-13.42-13.13	-11.29-10.56	-8.29-7.83	-8.88-8.57	-8.88-8.57
(H172.5°)	-6.23-5.38	-5.16-5.77	-6.76-7.88	-8.99-8.98	-10.64-11.5	-12.85-14.07	-18.98-18.18	-17.82-18.92	-17.88-16.17	-14.09-13.68	-14.74-16.88	-18.81-18.66	-16.37-17.71	-19.16-17.91	-15.16-15.79	-15.64-15.94	-16.71-18.43	-18.97-10.12	-19.13-15.59	-10.51-10.06	-8.44-8.75	-7.97-12.1	-7.97-12.1	-7.97-12.1
(H180°)	-10.03-9.67	-10.01-10.82	-11.47-11.44	-11.16-11.05	-11.36-13.25	-13.93-15.56	-18.22-18.65	-17.88-17.96	-18.21-18.73	-18.03-18.38	-17.96-17.87	-18.87-18.71	-15.21-13.11	-11.68-11	-10.86-11.1	-11.5-12.2	-13.15-14.5	-16.31-18.52	-18.48-17.78	-18.06-17.58	-17.36-18.13	-15.36-14.77	-11.89-12.32	-11.46-10.69
Frequency	5.25GHz	Phased_3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)	(H15°/H67.5°)
(H17°)	-17.42-13.7	-12.42-9.49	-7.26-5.78	-4.95-3.84	-2.93-2.07	-1.77-1.22	-0.43-0.69	-1.11-1.54	-2.25-3.36	-4.69-6.06	-8.16-10.47	-12.02-14.68	-12.81-15.97	-13.02-14.06	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97	-12.81-15.97
(H19°)	-13.67-13.95	-10.81-11.72	-8.99-9.22	-4.95-6.07	-4.11-5.34	-2.78-3.65	-1.58-1.84	-2.35-1.89	-1.42-1.72	-2.06-2.21	-3.83-3.75	-4.89-4.24	-5.19-5.68	-5.67-5.94	-5.97-5.98	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94	-5.67-5.94
(H21°)	-10.02-11.41	-5.9-5.6	-5.18-4.72	-3.19-3.18	-2.4-2.25	-2.42-2.15	-2.91-2.73	-2.78-2.84	-3.05-3.26	-3.78-3.62	-3.34-3.57	-10.93-14.38	-12.54-13.97	-11.03-11.4	-6.94-5.41	-2.91-1.25	-0.41-0.15	0.07-0.48	0.01-0.16	0.01-0.16	0.01-0.16	0.01-0.16	0.01-0.16	0.01-0.16
(H23°)	-7.59-7.34	-6.29-6.29	-5.93-5.78	-4.57-4.82	-3.98-3.21	-2.34-2.44	-2.88-3.34	-2.96-3.74	-3.23-3.6	-3.23-3.6	-3.23-3.6	-10.17-12.06	-11.77-11.77	-14.67-17.05	-15.06-17.05	-7.96-6.4	-4.75-2.73	-1.59-0.67	0.00-0.07	0.00-0.07	0.00-0.07	0.00-0.07	0.00-0.07	0.00-0.07
(H25°)	-16.90-10.42	-10.74-7	-5.89-5.44	-6.89-6.91	-4.13-3.95	-2.51-0.64	-6.79-6.49	-8.73-11.44	-12.19-9.62	-7.98-7.64	-5.84-6.09	-7.06-6.41	-6.36-7.19	-5.37-6.48	-4.97-6.46	-4.33-3.2	-1.96-1.19	-8.62-9.7	-9.24-9.71	-14.01-18.1	-2.93-3.48	-5.83-10.34	-17.1-18.47	-17.1-18.47
(H27°)	-10.21-14.43	-12.82-10.65	-7.63-6.96	-6.21-6.36	-4.21-4.36	-3.36-3.64	-2.28-1.74	-1.17-0.46	-5.10-4.13	-8.07-6.74	-6.94-7.2	-3.27-2.19	-8.10-12.02	-14.37-10.38	-11.17-12.95	-8.53-8.78	-2.53-2.4	-2.26-2.01	-2.26-2.01	-2.26-2.01	-2.26-2.01	-2.26-2.01	-2.26-2.01	-2.26-2.01
(H29°)	-7.94-9.97	-4.33-13.08	-10.54-7.36	-6.41-6.91	-2.88-1.45	-2.96-2.74	-3.19-4.56	-3.98-3.36	-3.93-4.02	-3.54-3.45	-7.51-6.08	-11.47-10.73	-16.54-10.87	-16.07-11.82	-15.63-13.1	-2.41-1.12	-1.16-0.67	-0.11-0.36	1.75-2.73	2.37-1.41	0.76-0.83	-1.88-2.56	-6.67-6.06	-6.49-7.19
(H31°)	-16.57-11.81	-16.33-16.32	-9.53-4.69	-3.62-6.2	-2.98-0.07	0.94-1.25	-1.61-2.16	-1.62-1.62	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47	-1.39-1.47
(H33°)	-12.67-14.71	-14.17-13.7	-8.71-14.74	-6.17-13.16	-4.79-6.76	0.65-0.27	-1.3-0.83	-2.89-1.17	-10.19-12.1	-3.55-4.62	-6.76-6.49	-11.73-18.29	-15.11-14.77	-16.88-17.4	-16.88									



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

φ(θ)Σ	5.24±2.7	4.6±3.4	-5.86±3.78	-5.65±3.62	9.13±10.96	-8.82±17.59	-19.13±10.51	-13.49±9.95	-10.09±11.89	4.03±6.35	-3.11±0.75	-0.01±2.2	-3.73±4.18	4.26±3.8	-5.48±4.2	4.2±4.95	-9.97±8.3	8.73±6.16	-10.34±8.38	-11.49±16.92	-11.22±7.79	-7.53±3.09	2.78±2.97	-2.93±4.67
φ(θ)Σ	5.96±7.2	-7.16±7.2	-7.71±9.4	-7.99±8.2	-12.67±17.2	-11.16±18.88	-16.59±12	-11.93±11.89	-14.64±7.58	4.36±9.38	-4.97±4.96	-4.06±4.1	-4.07±2.7	5.81±5.84	-6.48±11.78	-7.37±5.46	8.89±12.89	4.9±8.08	-10.49±8.88	-10.96±14.4	-12.76±9.4	8.87±7.21	4.21±3.7	-3.9±4.8
φ(θ)Σ	-1.13±10.02	-8.17±5.1	-8.95±17.81	-10.32±10.2	-18.39±9.86	-13.27±7.55	-10.86±4.4	-10.41±11.46	-10.43±10.66	-12.09±7.96	-4.86±5.52	-3.93±1.24	-6.0±2.78	-5.27±0.89	9.02±14.52	-10.51±12.03	-10.03±12.99	-7.53±9.72	-11.19±7.72	-13.02±15.96	-13.01±15.3	-16.58±11.58	-11.42±11.9	-8.71±9.28
φ(θ)Σ	7.22±8.07	-9.85±12.8	-14.49±14.81	-17.28±16.76	-15.09±9.91	-14.19±3.1	-7.82±8.28	-19.56±14.34	9.39±12.58	-14.47±5.55	-3.73±5.56	-4.16±9.04	0.34±1.39	5.1±7.86	-8.72±11.49	-16.22±13.14	-10.45±14.39	8.88±12.35	8.92±7.68	-11.38±9.11	-17.12±8.5	-18.24±16.96	-12.22±15.98	-13.91±9.28
φ(θ)Σ	-11.61±10.23	-12.82±16.18	-18.46±13.37	-14.13±13.54	8.27±8.27	-13.66±11.31	8.28±9.52	-11.48±17.88	-12.01±12.58	-10.37±8.67	7.85±14.52	-11.58±9.49	-1.84±2.54	-7.38±15.68	-11.31±13	-19.01±18.13	-12.3±16.95	-8.85±15.29	8.22±7.19	-8.94±7.66	-18.14±14.37	-15.63±12.94	-15.21±18.01	-16.67±10.57
φ(θ)Σ	-12.81±15	-17.75±16.58	-10.88±8.28	-11.91±8.85	5.74±9.63	-7.91±18.3	-7.91±12.5	-14.3±13.92	-10.71±10.37	-10.84±14.65	-10.59±8.62	-15.23±10.18	-1.46±5.07	8.17±11.31	-10.24±12.91	-18.21±17.36	-18.32±18.49	8.52±10.06	8.96±10.98	-8.62±9.9	9.71±8.81	-11.85±7.91	8.62±18.71	-14.53±12.83
φ(θ)Σ	-15.23±16.78	-17.49±6.92	8.22±9.77	8.55±9.64	6.29±9.77	6.38±13.5	8.89±13.68	-10.11±12.66	-15.45±14.57	-18.82±14.14	-12.57±15.14	-14.65±15.43	-15.96±14.75	-17.91±17.87	-15.18±16.07	-10.39±15.34	-1.21±10.1	9.19±9.89	8.61±10.13	-7.26±10.13	-15.31±13.24	-7.26±10.13	-15.31±13.24	
φ(θ)Σ	-18.91±12.28	-11.33±3.91	9.36±11	8.76±5.43	5.57±13.28	6.49±10.16	6.72±11.58	-18.93±18.11	-11.27±12.25	-8.07±8.49	-15.36±16.23	-17.31±18.01	-17.33±18.35	-14.59±12.26	-12.34±12.36	-11.71±16.43	-18.02±17.07	-14.51±10.05	-12.9±14.9	-15.49±14.7	-16.17±16.8	5.24±9.83	-14.71±12.33	-10.88±11.76
φ(θ)Σ	-16.91±11.2	-10.33±6.1	4.86±12.54	-15.01±11.42	-11.21±10.31	-10.88±9.52	4.64±17.83	-15.51±17.48	-18.14±14.12	-18.71±14.12	-10.20±14.67	-12.62±8.68	-10.25±11.85	-11.24±14.46	-18.05±17.1	-14.58±15.1	-18.3±19.38	-12.14±12.31	-16.41±10.2	-15.46±10.7	-16.17±16.8	5.24±9.83	-14.71±12.33	-10.88±11.76
φ(θ)Σ	4.68±6.44	8.53±7.94	-7.86±9.54	8.96±11.81	-14.28±10.08	-10.09±10.44	-8.98±9.78	-12.93±15.13	-11.31±9.57	-15.69±17.35	-11.71±17.6	-14.28±16.8	-10.50±14.78	-12.26±7.25	-11.3±14.8	-18.99±14.8	-16.47±15.94	-13.08±17.05	-15.89±10.97	-12.15±16.84	8.22±14.54	6.52±7.83	8.43±14.34	-11.84±7.98
φ(θ)Σ	7.98±7.94	-11.16±12.08	-11.16±12.08	-17.23±10.95	-18.99±10.65	-16.24±12.45	-14.67±17.18	-16.95±15.24	-5.36±17.51	-17.56±14.97	-18.42±18.79	-11.02±12.19	-10.74±15.53	-4.67±7.32	-4.59±10.2	4.68±7.39	-11.33±9	5.99±11.17	-11.37±12.9	-11.86±16.5	-17.46±14.23	-16.59±9.57	4.26±14.8	-5.29±7.27
φ(θ)Σ	3.79±7.29	-4.73±7.27	-13.21±15.96	9.82±9.83	-10.92±16.22	-14.39±13.08	-12.92±10.3	-10.76±15.5	-3.91±17.21	-12.34±14.96	-16.98±16.96	6.46±5.26	4.86±9.81	-4.69±16.6	7.91±12.1	-11.76±16	-18.11±17.07	-12.97±14.8	-17.17±17.07	-12.97±14.8	-12.97±14.8	-12.97±14.8	-12.97±14.8	-12.97±14.8
φ(θ)Σ	15.14±10.81	4.81±9.57	9.12±15.34	-16.22±10.13	9.26±13.96	-15.21±14.69	-17.81±16.97	-18.03±19.52	-19.95±14.98	-14.11±19.1	-11.44±13.1	-14.64±14.4	3.64±1	5.11±10.5	5.79±14.11	-19.37±17.14	-12.33±15.1	8.62±12.97	-14.47±17.17	-18.49±16.53	-15.57±15.92	17.38±13.45	8.84±10.3	8.22±10.33
φ(θ)Σ	-12.98±12.51	-11.95±10.02	7.96±12.92	3.99±15.61	-17.92±12.16	9.36±14.8	9.36±14.8	-8.46±11.1	-19.44±19.7	-15.33±12.93	9.32±10.48	-4.87±17.2	6.38±12.6	5.78±16.49	-6.47±19.78	-11.54±18.1	-16.59±16.59	-16.59±11.05	-7.26±7.47	2.83±10.38	-2.84±10.38	-2.84±10.38	-2.84±10.38	-2.84±10.38
φ(θ)Σ	6.01±10.68	-0.26±10.85	4.75±10.69	9.88±14.62	-15.76±13.85	-11.86±10.87	-11.22±12.92	-12.93±19.19	11.49±18.4	-5.59±4.51	3.77±3.1	3.31±3.6	-3.28±3.91	4.41±4.2	-8.52±7.3	-6.24±2	-6.24±2	6.88±11.47	-12.36±13.87	-12.34±13.87	-8.27±14.3	5.98±9.35	5.36±10.31	-1.08±28
φ(θ)Σ	3.41±14.08	4.33±7.44	7.39±7.77	4.89±5.48	5.67±7.17	-10.09±13.7	-18.44±18.96	-18.14±18.08	-14.77±12.15	-9.75±7.79	4.65±4.99	3.51±3.45	2.58±2.69	2.26±1.98	-3.48±3.43	4.4±5.2	-6.26±7.54	8.68±11.47	-12.15±12.91	-10.91±7.1	4.54±4.25	-2.93±2.98	-1.45±3.85	-0.82±1.98
φ(θ)Σ	5.65±9.64	Phuket 3																						
Gen	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ	φ(θ)φ(θ)Σ
φ(θ)Σ	-1.81±0.5	9.15±8.85	-6.48±8.8	3.66±3.36	3.41±3.11	2.15±1.31	-1.55±1.88	2.13±2.23	2.94±3.44	4.99±9.59	-10.02±10.44	-8.73±10.94	9.77±7.68	8.91±3.71	2.41±4.7	-1.19±0.87	-0.43±0.13	0.02±0.1	0.16±0.74	-1.14±1.38	-1.51±1.99	-3.37±3.62	4.87±4.67	-7.96±3.63
φ(θ)Σ	-1.53±0.98	4.35±0.8	-3.9±0.82	-1.50±2.13	-1.88±1.25	0.66±0.64	0.56±0.36	0.2±0.57	-1.26±2.27	-3.37±3.81	-5.16±7.87	-0.37±10.93	-12.71±13.77	-11.57±15.89	-10.26±13.47	-3.79±2.85	-2.14±1.43	4.99±8.8	-10.22±13.17	-10.77±12.61	-10.77±12.61	-10.77±12.61	-10.77±12.61	-10.77±12.61
φ(θ)Σ	-1.26±1.68	6.13±4.76	-3.59±3.21	3.51±4.43	3.46±2.04	-1.67±1.59	-1.35±1.19	-1.24±1.42	2.03±2.77	4.41±5.02	6.81±7.7	8.91±11.43	-13.12±14.63	-14.63±12.77	-11.34±10.9	6.69±5.22	-3.67±1.18	0.46±0.24	0.19±1.44	-0.96±1.34	-1.75±2.4	3.74±5.27	8.41±11.1	-10.99±15.2
φ(θ)Σ	-1.72±1.183	-8.26±0.9	6.02±0.49	-4.41±0.54	-3.37±2.71	-2.28±1.71	-2.28±1.71	-4.19±5.66	5.69±13.4	-1.46±10.32	-5.19±5.92	8.96±13.34	-14.71±15.68	-14.62±12.63	-8.53±8.69	3.62±1.26	-1.16±0.13	0.62±0.23	0.72±1.42	-0.89±1.08	-0.89±1.08	-0.89±1.08	-0.89±1.08	-0.89±1.08
φ(θ)Σ	-1.63±0.81	-4.9±15	-6.49±6.77	-4.8±3.9	2.84±2.3	-2.76±2.81	-3.79±4.29	-5.97±10.6	5.48±5.89	-7.37±7.29	-7.84±8.29	8.86±10.13	-13.15±15.85	-19.22±13.34	-9.64±7.3	7.73±5.46	-4.36±3.81	3.71±1.62	-1.26±1.82	-1.82±1.83	-2.74±3.63	-4.77±7.71	8.87±12.13	-18.51±18.81
φ(θ)Σ	-1.539±1.72	-3.71±0.82	-6.94±6.17	5.24±3.73	3.85±4.22	-3.19±2.24	-7.57±7.71	-10.04±10.95	9.74±10.27	-9.59±19.19	-10.22±10.2	9.9±19.26	-11.37±15.81	-7.36±7.19	-7.84±7.8	-7.36±7.19	-4.43±3.85	2.87±1.37	-0.86±1.59	-1.83±1.67	-5.91±4.66	3.29±5.86	4.88±10.1	-13.78±15.88
φ(θ)Σ	-15.18±12.98	-15.91±14.91	-12.34±11.67	-7.13±4.34	3.13±3.15	3.68±2.61	2.76±4.18	-3.47±3.31	4.87±5.26	-11.75±14.17	-16.42±12.52	-10.9±4.67	-17.11±15.62	-14.06±13.1	-7.83±4.36	2.12±4.2	-1.91±1.95	0.88±0.45	2.85±0.89	5.16±1.64	-4.07±4.05	6.07±0.88	9.99±14.92	-16.69±18
φ(θ)Σ	-16.29±16	-16.16±18.84	-17.59±9.54	6.73±43	4.84±1.98	4.66±0.45	-3.30±4.9	-4.64±9.51	4.54±7.81	7.8±8.6	-16.54±12.75	-8.35±4.67	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47	-17.87±10.47
φ(θ)Σ	-11.48±10.46	-15.61±17.9	-16.49±19.2	6.79±3.49	4.02±3.45	4.76±1.52	4.24±10.38	6.27±5.63	6.07±5.48	4.34±5.58	-9.69±10.2	8.49±19.3	8.08±11.69	8.57±19.1	5.46±18.4	-1.52±16.67	-1.52±16.67	0.51±10.9	0.91±15	-1.08±14.6	4.83±2.4	3.78±5.54	-15.63±18.99	-16.65±17.99
φ(θ)Σ	-11.48±10.46	-15.61±17.9	-16.49±19.2	6.79±3.49	4.02±3.45	4.76±1.52	4.24±10.38	6.27±5.63	6.07±5.48	4.34±5.58	-9.69±10.2	8.49±19.3	8.08±11.69	8.57±19.1	5.46±18.4	-1.52±16.67	-1.52±16.67	0.51±10.9	0.91±15	-1.08±14.6	4.83±2.4	3.78±5.54	-15.63±18.99	-16.65±17.99
φ(θ)Σ	-16.96±10.78	-14.31±14.12	-11.76±15.1	8.69±9.59	1.29±12.34	2.64±7.08	4.24±10.38	-10.71±12.49	4.89±7.35	7.24±10.52	5.76±17.2	-12.32±12.66	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45	-16.98±15.45
φ(θ)Σ	-14.99±18.19	-19.08±10.43	9.77±12.91	-7.04±8.51	3.1±8	3.89±2.94	5.01±8.91	6.35±14.44	4.57±5.41	3.67±3.45	-4.59±5.6	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8	-10.96±9.8
φ(θ)Σ	-15.97±17.98	-15.97±17.98	-13.36±11.45	8.35±10.43	4.89±4.07	-4.92±1	4.03±7.88	6.96±1.98	-1.25±2.26	0.33±10.33	-3.65±4.68	-11.06±7.37	-12.49±8.96	8.72±16.28	-7.69±10.25	-10.23±10.3	-0.46±0.17	-1.51±0.68	-1.09±1.09	-0.95±1.06	-3.24±4.09	-4.68±7.75	5.65±7.72	7.57±13.7
φ(θ)Σ	-14.97±15.05	-15.81±7.61	8.18±11.34	4.53±1.81	4.26±4.51	3.51±0.88	4.09±8.67	4.36±12.41	4.21±4.65	-7.76±4.32	-10.59±15.33	-10.74±3.83	-8.89±8.88	7.13±4.54	6.91±12.9	1.35±12.49	1.03±15.15	0.84±0.38	7.44±0.7	-0.28±2.03	4.47±5.6	3.41±1	6.97±6.38	-7.32±11.41
φ(θ)Σ	-14.91±16.35	-14.11±13	9.14±7.83	9.32±2.99	-6.52±4.62	2.38±4.69	-2.69±5.45	-3.61±2	3.17±1.2	-12.6±6	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62	-13.26±12.62
φ(θ)Σ	-14.34±18.65	-14.76±11.41	-15.64±8.65	6.25±5.42	-2.61±6.8	3.19±13.4	-3.49±7.1	-4.02±4.68	4.36±17.55	-13.89±15.15	-12.26±11.1	-16.16±7.2	-11.64±16.2	-11.53±16.2	-14.74±13.5	-1.53±1.18	-0.52±0.53	-0.79±0.25	-1.16±1.85	-1.11±1.85	-4.01±2.99	-5.02±2.6	7.55±12.44	-15.94±10.84
φ(θ)Σ	-12.64±16.45	-11.71±10.4	9.71±8.7	5.14±13																				



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H1121)	-18.64-18.07	-19.13-17.94	-10.93-7.56	6.45-9.79	9.02-6.85	-15.71-8.47	-8.01-8.33	-11.47-15.05	-14.46-11.87	8.02-15.19	-11.26-14.25	-12.61-8.35	6.03-16.57	-17.18-11.09	-7.42-14.15	-8.72-9.86	4.09-9.6	-15.15-7.03	-10.77-10.51	-7.19-16.11	-11.91-13.83	-18.06-13.93	-18.84-15.04	-17.56-17.51
(H1201)	-12.64-16.97	-19.11-11.17	8.21-7.93	9.19-10.97	-10.04-12.1	-18.36-17.28	-10.66-17.2	-17.31-15.27	-18.84-9.76	-11.31-14.18	9.74-12.89	-16.19-16.22	8.66-17.72	-17.21-14.3	-16.96-19.27	-11.61-8.66	8.63-7.98	17.92-7.11	-18.87-8.93	-18.47-13.82	-14.01-16.29	8.24-11.44	6.44-12.14	-12.01-8.31
(H1202)	-17.41-15.11	-12.64-14.35	-7.77-6.07	4.19-13.4	-10.91-10.11	-18.60-19.29	-18.41-13.2	-14.69-17.73	-18.75-17.23	-18.45-6.66	-7.33-23.2	-17.46-5.37	6.22-11.26	-14.35-16.99	-7.34-7.27	-17.72-9.91	-17.29-9.9	-19.21-14.29	-17.83-16.15	-18.33-9.09	8.26-7.44	6.94-6.45	-15.47-19.06	
(H1301)	9.52-17.74	-7.81-7.96	-7.67-6.73	-14.99-17.18	-18.18-19.05	-15.71-4.87	-18.29-10.92	-10.31-17.52	-10.08-13.96	-17.88-12.54	-18.04-16.99	-17.46-5.34	7.36-13.23	8.99-6.16	9.52-17.73	-7.4-6.92	-14.27-12.29	-19.14-9.2	-13.22-12.14	-17.85-14.63	-12.94-7.43	6.98-8.82	-11.37-16.74	-12.27-10.13
(H1421)	7.82-17.01	6.81-6.06	-10.61-11.84	-17.76-13.33	-13.81-13.07	-18.68-16.09	-18.48-12.33	8.38-11.39	-18.71-19.38	-12.63-13.85	-18.23-16.75	6.43-4.87	5.84-6.51	-17.06-13.1	-11.09-8.3	-13.63-9.51	-14.78-14.93	-19.1-13.1	8.32-12.24	-17.85-16.27	-18.17-7.3	-7.53-6.57	-14.81-17.94	
(H1501)	3.33-14.93	8.71-12.9	-11.12-15.14	-10.51-12.64	-13.52-15.04	-14.34-12.78	-16.18-16.48	-12.4-6.37	5.03-7.5	-11.94-7.51	-11.62-17.87	7.6-7.76	-7.49-6.34	-7.83-9.65	4.28-24.4	-8.32-7.89	-7.21-6.68	-7.62-6.06	-7.91-7.07	-11.55-11.09	-14.53-13.42	-14.54-8.17	-1.14-13.36	8.21-6.5
(H1571)	7.69-4.34	-3.74-4.4	-7.66-14.17	-18.42-16.75	-13.2-13.05	-14.51-17.26	-17.52-17.81	-12.7-12.02	-17.62-11.02	-11.56-11.43	-11.11-14.3	-13.44-10.41	-1.11-1.43	-1.87-17.52	-6.07-11.01	-8.47-11.5	-1.31-10.58	-11.52-14.69	-18.27-17.17	-18.17-13.47	-11.91-6.72	-1.61-2.87	-6.08-6.67	
(H1601)	-1.83-17.84	-1.83-17.77	-10.65-10.71	5.58-9.53	-7.95-10.93	-15.12-16.42	-13.91-11.6	-11.49-13.15	-14.92-18.45	-10.02-9.15	5.59-4.4	5.13-4.63	4.69-5.77	5.91-7.57	-11.32-10.58	8.09-8.41	-10.11-8.1	-12.39-11.27	-11.46-12.72	-17.14-17.89	-19.41-11.73	-7.99-7.29	5.13-4.07	4.15-6.35
(H1721)	4.37-2.84	2.56-2.22	4.54-7.7	9.52-11.71	-11.03-10.92	-12.57-14.19	-14.16-13.05	-11.58-19.56	8.23-7.8	5.71-18	2.56-1.83	-1.39-1.29	1.63-1.8	2.39-4	6.38-7.88	8.46-8.22	8.79-10.71	-11.96-14.86	-18.58-16.67	-17.52-16.54	-17.15-15.17	-15.22-12.05	8.46-15.49	8.19-5.17
(H1801)	9.11-15	-1.69-3.12	-3.81-24.44	4.35-3.56	3.79-5.14	-7.04-9.02	-10.85-10.77	8.67-6.58	9.19-7.81	-7.48-7.86	-5.72-4.07	-3.56-2.89	2.13-2.11	-3.05-3.48	3.68-4	4.32-4.54	4.87-5.82	-7.19-6.06	-7.89-7.87	-7.22-6.15	4.4-2.81	-1.88-6.87	5.21-44	2.08-1.32
Gain	2.65-2.94	Phuket 4	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
(H1907-1907.5)	(H1912-1912.5)	(H1916-1917.5)	(H1919-1920.5)	(H1922-1923.5)	(H1925-1926.5)	(H1928-1929.5)	(H1930-1931.5)	(H1932-1933.5)	(H1934-1935.5)	(H1936-1937.5)	(H1938-1939.5)	(H1940-1941.5)	(H1942-1943.5)	(H1944-1945.5)	(H1946-1947.5)	(H1948-1949.5)	(H1950-1951.5)	(H1952-1953.5)	(H1954-1955.5)	(H1956-1957.5)	(H1958-1959.5)	(H1960-1961.5)	(H1962-1963.5)	(H1964-1965.5)
(H1966-1967.5)	(H1968-1969.5)	(H1970-1971.5)	(H1972-1973.5)	(H1974-1975.5)	(H1976-1977.5)	(H1978-1979.5)	(H1980-1981.5)	(H1982-1983.5)	(H1984-1985.5)	(H1986-1987.5)	(H1988-1989.5)	(H1990-1991.5)	(H1992-1993.5)	(H1994-1995.5)	(H1996-1997.5)	(H1998-1999.5)	(H2000-2001.5)	(H2002-2003.5)	(H2004-2005.5)	(H2006-2007.5)	(H2008-2009.5)	(H2010-2011.5)	(H2012-2013.5)	(H2014-2015.5)
(H2016-2017.5)	(H2018-2019.5)	(H2020-2021.5)	(H2022-2023.5)	(H2024-2025.5)	(H2026-2027.5)	(H2028-2029.5)	(H2030-2031.5)	(H2032-2033.5)	(H2034-2035.5)	(H2036-2037.5)	(H2038-2039.5)	(H2040-2041.5)	(H2042-2043.5)	(H2044-2045.5)	(H2046-2047.5)	(H2048-2049.5)	(H2050-2051.5)	(H2052-2053.5)	(H2054-2055.5)	(H2056-2057.5)	(H2058-2059.5)	(H2060-2061.5)	(H2062-2063.5)	(H2064-2065.5)
(H2066-2067.5)	(H2068-2069.5)	(H2070-2071.5)	(H2072-2073.5)	(H2074-2075.5)	(H2076-2077.5)	(H2078-2079.5)	(H2080-2081.5)	(H2082-2083.5)	(H2084-2085.5)	(H2086-2087.5)	(H2088-2089.5)	(H2090-2091.5)	(H2092-2093.5)	(H2094-2095.5)	(H2096-2097.5)	(H2098-2099.5)	(H2100-2101.5)	(H2102-2103.5)	(H2104-2105.5)	(H2106-2107.5)	(H2108-2109.5)	(H2110-2111.5)	(H2112-2113.5)	(H2114-2115.5)
(H2116-2117.5)	(H2118-2119.5)	(H2120-2121.5)	(H2122-2123.5)	(H2124-2125.5)	(H2126-2127.5)	(H2128-2129.5)	(H2130-2131.5)	(H2132-2133.5)	(H2134-2135.5)	(H2136-2137.5)	(H2138-2139.5)	(H2140-2141.5)	(H2142-2143.5)	(H2144-2145.5)	(H2146-2147.5)	(H2148-2149.5)	(H2150-2151.5)	(H2152-2153.5)	(H2154-2155.5)	(H2156-2157.5)	(H2158-2159.5)	(H2160-2161.5)	(H2162-2163.5)	(H2164-2165.5)
(H2166-2167.5)	(H2168-2169.5)	(H2170-2171.5)	(H2172-2173.5)	(H2174-2175.5)	(H2176-2177.5)	(H2178-2179.5)	(H2180-2181.5)	(H2182-2183.5)	(H2184-2185.5)	(H2186-2187.5)	(H2188-2189.5)	(H2190-2191.5)	(H2192-2193.5)	(H2194-2195.5)	(H2196-2197.5)	(H2198-2199.5)	(H2200-2201.5)	(H2202-2203.5)	(H2204-2205.5)	(H2206-2207.5)	(H2208-2209.5)	(H2210-2211.5)	(H2212-2213.5)	(H2214-2215.5)
(H2216-2217.5)	(H2218-2219.5)	(H2220-2221.5)	(H2222-2223.5)	(H2224-2225.5)	(H2226-2227.5)	(H2228-2229.5)	(H2230-2231.5)	(H2232-2233.5)	(H2234-2235.5)	(H2236-2237.5)	(H2238-2239.5)	(H2240-2241.5)	(H2242-2243.5)	(H2244-2245.5)	(H2246-2247.5)	(H2248-2249.5)	(H2250-2251.5)	(H2252-2253.5)	(H2254-2255.5)	(H2256-2257.5)	(H2258-2259.5)	(H2260-2261.5)	(H2262-2263.5)	(H2264-2265.5)
(H2266-2267.5)	(H2268-2269.5)	(H2270-2271.5)	(H2272-2273.5)	(H2274-2275.5)	(H2276-2277.5)	(H2278-2279.5)	(H2280-2281.5)	(H2282-2283.5)	(H2284-2285.5)	(H2286-2287.5)	(H2288-2289.5)	(H2290-2291.5)	(H2292-2293.5)	(H2294-2295.5)	(H2296-2297.5)	(H2298-2299.5)	(H2300-2301.5)	(H2302-2303.5)	(H2304-2305.5)	(H2306-2307.5)	(H2308-2309.5)	(H2310-2311.5)	(H2312-2313.5)	(H2314-2315.5)
(H2316-2317.5)	(H2318-2319.5)	(H2320-2321.5)	(H2322-2323.5)	(H2324-2325.5)	(H2326-2327.5)	(H2328-2329.5)	(H2330-2331.5)	(H2332-2333.5)	(H2334-2335.5)	(H2336-2337.5)	(H2338-2339.5)	(H2340-2341.5)	(H2342-2343.5)	(H2344-2345.5)	(H2346-2347.5)	(H2348-2349.5)	(H2350-2351.5)	(H2352-2353.5)	(H2354-2355.5)	(H2356-2357.5)	(H2358-2359.5)	(H2360-2361.5)	(H2362-2363.5)	(H2364-2365.5)
(H2366-2367.5)	(H2368-2369.5)	(H2370-2371.5)	(H2372-2373.5)	(H2374-2375.5)	(H2376-2377.5)	(H2378-2379.5)	(H2380-2381.5)	(H2382-2383.5)	(H2384-2385.5)	(H2386-2387.5)	(H2388-2389.5)	(H2390-2391.5)	(H2392-2393.5)	(H2394-2395.5)	(H2396-2397.5)	(H2398-2399.5)	(H2400-2401.5)	(H2402-2403.5)	(H2404-2405.5)	(H2406-2407.5)	(H2408-2409.5)	(H2410-2411.5)	(H2412-2413.5)	(H2414-2415.5)
(H2416-2417.5)	(H2418-2419.5)	(H2420-2421.5)	(H2422-2423.5)	(H2424-2425.5)	(H2426-2427.5)	(H2428-2429.5)	(H2430-2431.5)	(H2432-2433.5)	(H2434-2435.5)	(H2436-2437.5)	(H2438-2439.5)	(H2440-2441.5)	(H2442-2443.5)	(H2444-2445.5)	(H2446-2447.5)	(H2448-2449.5)	(H2450-2451.5)	(H2452-2453.5)	(H2454-2455.5)	(H2456-2457.5)	(H2458-2459.5)	(H2460-2461.5)	(H2462-2463.5)	(H2464-2465.5)
(H2466-2467.5)	(H2468-2469.5)	(H2470-2471.5)	(H2472-2473.5)	(H2474-2475.5)	(H2476-2477.5)	(H2478-2479.5)	(H2480-2481.5)	(H2482-2483.5)	(H2484-2485.5)	(H2486-2487.5)	(H2488-2489.5)	(H2490-2491.5)	(H2492-2493.5)	(H2494-2495.5)	(H2496-2497.5)	(H2498-2499.5)	(H2500-2501.5)	(H2502-2503.5)	(H2504-2505.5)	(H2506-2507.5)	(H2508-2509.5)	(H2510-2511.5)	(H2512-2513.5)	(H2514-2515.5)
(H2516-2517.5)	(H2518-2519.5)	(H2520-2521.5)	(H2522-2523.5)	(H2524-2525.5)	(H2526-2527.5)	(H2528-2529.5)	(H2530-2531.5)	(H2532-2533.5)	(H2534-2535.5)	(H2536-2537.5)	(H2538-2539.5)	(H2540-2541.5)	(H2542-2543.5)	(H2544-2545.5)	(H2546-2547.5)	(H2548-2549.5)	(H2550-2551.5)	(H2552-2553.5)	(H2554-2555.5)	(H2556-2557.5)	(H2558-2559.5)	(H2560-2561.5)	(H2562-2563.5)	(H2564-2565.5)
(H2566-2567.5)	(H2568-2569.5)	(H2570-2571.5)	(H2572-2573.5)	(H2574-2575.5)	(H2576-2577.5)	(H2578-2579.5)	(H2580-2581.5)	(H2582-2583.5)	(H2584-2585.5)	(H2586-2587.5)	(H2588-2589.5)	(H2590-2591.5)	(H2592-2593.5)	(H2594-2595.5)	(H2596-2597.5)	(H2598-2599.5)	(H2600-2601.5)	(H2602-2603.5)	(H2604-2605.5)	(H2606-2607.5)	(H2608-2609.5)	(H2610-2611.5)	(H2612-2613.5)	(H2614-2615.5)
(H2616-2617.5)	(H2618-2619.5)	(H2620-2621.5)	(H2622-2623.5)	(H2624-2625.5)	(H2626-2627.5)	(H2628-2629.5)	(H2630-2631.5)	(H2632-2633.5)	(H2634-2635.5)	(H2636-2637.5)	(H2638-2639.5)	(H2640-2641.5)	(H2642-2643.5)	(H2644-2645.5)	(H2646-2647.5)	(H2648-2649.5)	(H2650-2651.5)	(H2652-2653.5)	(H2654-2655.5)	(H2656-2657.5)	(H2658-2659.5)	(H2660-2661.5)	(H2662-2663.5)	(H2664-2665.5)
(H2666-2667.5)	(H2668-2669.5)	(H2670-2671.5)	(H2672-2673.5)	(H2674-2675.5)	(H2676-2677.5)	(H2678-2679.5)	(H2680-2681.5)	(H2682-2683.5)	(H2684-2685.5)	(H2686-2687.5)	(H2688-2689.5)	(H2690-2691.5)	(H2692-2693.5)	(H2694-2695.5)	(H2696-2697.5)	(H2698-2699.5)	(H2700-2701.5)	(H2702-2703.5)	(H2704-2705.5)	(H2706-2707.5)	(H2708-2709.5)	(H2710-2711.5)	(H2712-2713.5)	(H2714-2715.5)
(H2716-2717.5)	(H2718-2719.5)	(H2720-2721.5)	(H2722-2723.5)	(H2724-2725.5)	(H2726-2727.5)	(H2728-2729.5)	(H2730-2731.5)	(H2732-2733.5)	(H2734-2735.5)	(H2736-2737.5)	(H2738-2739.5)	(H2740-2741.5)	(H2742-2743.5)	(H2744-2745.5)	(H2746-2747.5)	(H2748-2749.5)	(H2750-2751.5)	(H2752-2753.5)	(H2754-2755.5)	(H2756-2757.5)	(H2758-2759.5)	(H2760-2761.5)	(H2762-2763.5)	(H2764-2765.5)
(H2766-2767.5)	(H2768-2769.5)	(H2770-2771.5)	(H2772-2773.5)	(H2774-2775.5)	(H2776-2777.5)	(H2778-2779.5)	(H2780-2781.5)	(H2782-2783.5)	(H2784-2785.5)	(H2786-2787.5)	(H2788-2789.5)	(H2790-2791.5)	(H2792-2793.5)	(H2794-2795.5)	(H2796-2797.5)	(H2798-2799.5)	(H2800-2801.5)	(H2802-2803.5)	(H2804-2805.5)	(H2806-2807.5)	(H2808-2809.5)	(H2810-2811.5)	(H2812-2813.5)	(H2814-2815.5)
(H2816-2817.5)	(H2818-2819.5)	(H2820-2821.5)	(H2822-2823.5)	(H2824-2825.5)	(H2826-2827.5)	(H2828-2829.5)	(H2830-2831.5)	(H2832-2833.5)	(H2834-2835.5)	(H2836-2837.5)	(H2838-2839.5)	(H2840-2841.5)	(H2842-2843.5)	(H2844-2845.5)	(H2846-2847.5)	(H2848-2849.5)	(H2850-2851.5)	(H2852-2853.5)	(H2854-2855.5)	(H2856-2857.5)	(H2858-2859.5)	(H2860-2861.5)	(H2862-2863.5)	(H2864-2865.5)
(H2866-2867.5)	(H2868-2869.5)	(H2870-2871.5)	(H2872-2873.5)	(H2874-2875.5)	(H2876-2877.5)	(H2878-2879.5)	(H2880-2881.5)	(H2882-2883.5)	(H2884-2885.5)	(H2886-2887.5)	(H2888-2889.5)	(H2890-2891.5)	(H2892-2893.5)											



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

(H162)	-1.411-10.08	-8.947-8.5	-7.19-9.43	-10.56-15.56	-15.25-16.08	-8.45-6.08	-8.73-12.04	-10.59-17.48	-17.21-17.08	-13.54-13.88	-13.86-11.32	-10.71-13.29	-14.01-18.84	-18.83-19.04	-14.79-8.63	-7.34-7.17	-8.54-8.42	-6.55-4.86	-5.17-1.34	-9.85-10.88	-10.22-9.57	-10.17-12.38	-14.55-13.14	-13.14-12.75
(H172)	7.25-7.82	-8.09-8.83	-11.49-13.45	-14.13-12.85	-10.02-8.7	-8.9-11	-10.26-11.29	-11.49-9.45	-8.79-15	-11.63-13.38	-17.36-18.2	-18.09-19.14	-17.71-19.33	-18.19-18.25	-17.26-14.25	-11.34-9.22	-7.89-6.43	-4.73-3.28	2.99-3.77	-4.56-6.85	-6-10.8	-8.72-8.79	-7.89-8.83	-6.39-6.46
(H180)	-17.51-18.23	-19.13-18.87	-13.69-11.28	-10.35-8.84	-7.97-9.5	-8.87-9.79	-10.43-9.45	-6.69-6.23	-6.37-6.53	-6.23-5.52	-12.61-11.4	-16.16-16.09	-16.14-18.23	-15.89-16.45	-15.16-12.26	-10.45-9.33	-7.16-6.71	-5.87-4.69	-4.18-4.73	-4.50-5.67	-6.09-7.34	-7.84-8.39	-8.96-10.17	-11.17-14.56
FreeGain	5.359Pol	Phuket 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gen	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	
Ch1	-13.2-12.16	-11.83-6.5	-8.37-1.62	-8.62-1.75	-7.33-7.76	-8.31-13.33	-12.69-14.06	-13.14-14.06	-12.82-17.72	-17.2-18.24	-18.67-19.39	-15.68-14.8	-12.81-11.42	-10.87-11.42	-8.51-8.22	-7.81-7.63	-7.24-8.42	-6.99-10.42	-11.02-12.18	-14.98-17.77	-16.26-19.17	-16.46-14.71	-14.54-13.74	
(H17)	-16.10-14.2	-14.02-13.12	-12.22-11.57	-10.95-9.7	-7.55-8.7	-7.68-7.4	-7.59-8.65	-11.89-14.2	-12.82-16.08	-18.09-19.68	-19.94-17.2	-19.77-11.41	-16.2-15.5	-15.19-14.2	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9	-14.8-13.9
(H18)	-18.1-14.95	-15.95-12.94	-10.21-12.26	-12.29-12.29	7.72-8.76	4.45-3.4	4.015-2.54	6.14-7.2	7.92-10.57	-14.58-17.31	-18.05-19.14	-19.27-17.32	-14.44-14.31	-10.9-13.9	-13.2-9	-12.10-12.5	-12.50-14.57	-17.65-14.72	-18.14-14.45	-16.29-15.71	-17.96-15.77	-15.99-12.42	-11.66-14.41	
(H22)	17.85-11.35	-12.26-13.35	-10.21-12.26	-12.29-12.29	7.72-8.76	4.45-3.4	4.015-2.54	6.14-7.2	7.92-10.57	-14.58-17.31	-18.05-19.14	-19.27-17.32	-14.44-14.31	-10.9-13.9	-13.2-9	-12.10-12.5	-12.50-14.57	-17.65-14.72	-18.14-14.45	-16.29-15.71	-17.96-15.77	-15.99-12.42	-11.66-14.41	
(H25)	16.85-19.83	-8.57-10.56	-11.21-10.17	12.79-10.15	3.44-0.92	5.4-3.3	7.91-9.08	8.93-6.7	7.92-10.57	-14.58-17.31	-18.05-19.14	-19.27-17.32	-14.44-14.31	-10.9-13.9	-13.2-9	-12.10-12.5	-12.50-14.57	-17.65-14.72	-18.14-14.45	-16.29-15.71	-17.96-15.77	-15.99-12.42	-11.66-14.41	
(H27)	-13.89-13.72	-11.47-13.87	-13.44-13.12	-13.01-12.87	-10.43-12.79	-18.66-11.46	-7.3-5.85	-5.95-7.35	-8.85-10.47	-12.02-16.41	-18.36-17.48	-16.89-17.66	-14.68-17.66	-11.81-10.14	-15.53-17.73	-19.84-17.37	-18.67-18.91	-18.63-16.48	-19.24-17.59	-15.69-11.25	-11.51-9.8	-2.29-12.7	-11.51-9.8	
(H45)	8.24-8.72	-7.74-8.3	-9.8-10.36	-16.31-10.11	-8.42-13.94	-18.81-9.1	-10.69-8.62	-10.16-11.57	-12.87-12.43	-9.76-10.13	-12.04-9.64	-8.21-11.24	-12.71-13.35	-16.39-13.36	-15.47-11.7	-18.01-18.12	-17.57-18.39	-18.42-18.41	-18.36-18.86	-18.63-15.98	-16.40-10.96	-14.57-13.34	-10.51-10.5	
(H52)	-13.24-15.45	-10.78-8.24	-8.63-8.82	-11.96-10	8.41-8.94	-12.13-13.32	-17.78-11.42	-8.63-14.13	-15.15-15.25	-7.58-7.01	-8.07-8.01	-11.10-14.89	-18.67-18.2	-17.65-17.17	-18.19-17.76	-19.02-18.23	-17.60-12.99	-12.26-18.85	-17.56-18.75	-17.47-14.1	-15.84-14.5	-12.72-12.51	-11.81-15	-14.84-18.12
(H60)	-18.24-17.51	-14.07-18.31	-10.86-10.22	-10.18-10.86	-7.1-11.4	-12.67-8.61	-11.7-11.47	-18.74-18.95	-15.64-13.83	-8.11-10.35	-7.86-7.28	-12.28-19	-17.22-16.66	-18.12-19.09	-18.36-15.67	-11.89-15.67	-18.19-19.25	-18.19-19.25	-18.19-19.25	-18.19-19.25	-18.19-19.25	-18.19-19.25	-18.19-19.25	-18.19-19.25
(H75)	-16.89-17.63	-11.95-10.67	-9.76-15.56	-16.56-10.37	-12.02-12.09	-8.48-8.84	-12.28-18.83	-16.71-14.63	-15.18-13.56	-13.53-10.44	-14.51-12.09	-12.0-18.41	-18.73-15.1	-18.61-13.73	-7.86-8.66	-7.44-8.07	-13.43-12.5	-14.81-18	-19.05-17.48	-18.88-19.18	-18.10-18.27	-18.67-17.1	-17.17-17.48	-18.88-18.35
(H87)	-15.68-15.61	-19.03-19.36	-18.55-18.04	-16.56-19.14	-11.81-14.91	-15.21-11.33	-11.26-11.66	-16.17-12.83	-16.33-17.6	-17.78-12.63	-8.78-19.18	-12.19-11.44	-10.86-15.22	-18.85-10.69	-8.37-8.68	-8.62-11.76	-19.04-19.25	-17.83-16.03	-18.56-15.32	-18.24-14.42	-11.74-9.38	-8.92-11.82	-12.26-12.16	-11.87-10.81
(H82)	-17.10-9.68	-12.42-11.71	-17.85-18.95	-17.09-15.73	-18.88-16.85	-19.02-15.97	-13.96-10.66	-13.26-12.43	-14.80-19.28	-16.80-18.77	-18.05-18.41	-16.52-14.83	-11.19-12.13	-12.32-11.67	-11.87-10.5	-15.92-15.21	-18.02-16.81	-17.32-15	-10.82-10.14	-13.24-11.3	-12.41-12.22	-10.29-9.67	-7.47-10.21	-13.17-10.78
(H90)	-8.76-12.12	-14.18-11.92	-14.86-18.51	-18.09-19.3	-17.64-17.86	-10.62-10.3	-18.46-19.23	-18.25-13.2	-12.85-17.61	-15.37-18.69	-15.37-18.69	-16.17-17.88	-16.12-12.9	-15.88-17.76	-17.40-13.81	-16.65-19.17	-18.02-15.42	-17.42-12.86	-11.91-17.54	-12.49-13.9	-10.93-11.76	-12.38-6.65	-6.37-13.7	-7.41-11
(H97)	-6.5-8.63	-14.18-18.36	-18.10-14.57	-12.36-14.64	-17.58-15.12	-15.14-14.9	-17.13-12.55	-13.81-17.48	-17.55-13.86	-18.31-18.49	-12.09-13.92	-14.99-11.68	-13.26-18.65	-17.53-15.62	-6.91-10.32	-13.75-14.64	-18.19-19.38	-13.64-13.76	-11.42-12.53	-12.93-10.35	-17.53-14.71	-11.19-43	-16.60-8.61	-6.95-9.29
(H105)	-15.71-10.48	-12.16-18.36	-18.58-17.95	-18.53-17.91	-18.41-17.91	-14.78-17.15	-18.18-17.71	-18.77-18.45	-18.21-14.68	-18.71-12.39	-15.53-14.3	-16.78-8.41	-8.4-14.52	-16.47-14.85	-18.51-15.77	-14.07-15.68	-12.12-16.17	-11.29-15.47	-15.12-14.1	-17.18-15.81	-18.12-10.23	-7.85-8.71	-6.97-10.15	
(H112)	-13.59-9.42	-8.26-18.58	-15.85-13.83	-10.11-14.15	-11.19-18.9	-10.54-10.95	-14.84-18.29	-14.86-19.55	-17.68-19.34	-17.78-14.67	-17.42-13.15	-13.98-16.81	-10.86-12.33	-17.34-15.64	-6.91-10.42	-8.42-13.68	-18.37-15.1	-11.28-15.53	-16.61-18.38	-17.62-18.91	-17.42-12.67	-11.52-15.15	-11.78-10.27	-13.32-8.82
(H122)	-15.72-13.9	-5.97-14.2	-19.01-12.64	-13.12-8.67	-13.81-12.63	-14.91-12.28	-6.09-13.45	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12	-18.60-19.12
(H127)	7.82-9.39	-16.47-10.7	-7.61-12.62	-16.20-17.86	-14.46-10.7	-7.23-6.5	-15.24-12.4	-12.41-9.88	-10.80-18.51	-16.78-12.52	-14.53-13.83	-17.71-19.36	-5.27-14.6	-11.05-8.65	-4.31-5.69	-12.12-12.72	-12.75-18.18	-11.78-19.17	-16.39-14.74	-17.91-17.27	-12.06-12.15	-14.56-14.97	-14.09-19	-11.57-10.81
(H132)	-12.68-9.37	-13.28-16.8	-12.77-10.9	-14.01-9.89	-19.18-14.19	-7.23-6.5	-4.65-12.37	-18.32-12.6	-11.76-8.57	-17.36-10.67	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97	-12.74-17.97
(H142)	6.79-6.33	-3.30-3.47	-7.03-13.84	-13.38-12.58	-17.21-10.07	-7.73-7.39	-8.82-11.23	-8.98-8.96	-13.16-14.98	-18.69-18.83	-14.9-15.51	-16.01-12.24	-12.12-10.3	-8.77-8.64	-10.32-15.16	-14.49-18	-6.72-14.32	-17.36-18.44	-15.19-13.99	-13.53-14.99	-16.49-16.81	-15.11-12.27	-13.67-12.92	
(H152)	10.87-8.19	-7.4-5.33	-4.98-10.88	-4.07-10.38	-14.27-10.67	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62	-18.62-18.62
(H157)	4.43-7.92	-4.76-7.97	-10.10-10.88	-11.64-7.77	-5.88-6.2	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38	-10.71-10.91	-10.69-12.97	-8.83-13.38
(H160)	-11.68-12.1	-12.82-13.15	-7.02-5.44	-4.91-4.83	5.16-6.37	9.41-12.53	-13.06-10.56	-17.33-17.76	-16.25-17.67	-15.18-12.17	-12.59-12.33	-10.63-19.09	-10.68-47	-7.62-6.65	-5.59-6.97	-7.73-12.56	-14.10-12.39	-14.50-19.37	-17.22-16.23	-17.59-19	-19.37-19.63	-16.99-14.88	-15.77-18.16	-15.77-19.63
(H172)	11.09-9.41	-8.46-7.42	-6.48-5.93	-6.00-6.57	-11.67-13.89	-18.68-18.37	-19.04-19.46	-19.13-19.46	-19.27-17.81	-15.37-16.41	-18.47-18.35	-19.43-17.13	-11.94-11.21	-8.91-18.28	-7.56-7.47	-7.38-7.46	-8.43-11.38	-14.62-18.63	-18.62-17.87	-18.16-18.69	-17.47-19.18	-16.08-18.96	-15.71-12.81	
FreeGain	2.773-3.2	5.55-8.2	-7.84-10.85	-16.02-14.57	-13.57-12.89	-12.62-13.34	-16.13-18.49	-18.18-18.37	-18.71-14.29	-15.21-16.76	-11.17-15.48	-9.41-7.81	-7.04-6.47	8.13-6.19	5.9-5.07	4.96-6.46	-5.53-5.54	-6.17-8.4	-9.43-11.79	-13.35-13.7	-15.96-14.56	-14.16-14.98	-12.38-10.5	-11.51-10.18
Gen	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	0107(907.5)	
Ch1	-15.25-10.59	-16.38-13.17	-10.86-15.91	-17.75-18.15	-18.41-18.61	-13.31-12.79	-12.88-9.27	7.83-8.99	-9.38-7.87	-7.67-9.94	-8.49-9.34	-8.17-11.05	-15.84-11.6	-12.77-14.16	-17.86-18.93	-18.19-19.7	-17.73-15.24	-11.82-13.68	-10.97-8.7	-11.91-9.3	-8.83-8.95	-10.44-7.3	-7.23-8.65	
(H17)	-10.69-18.9	-10.22-8.82	-12.29-13.14	-12.29-13.14	-11.22-8.43	-17.71-17.28	-14.95-12.37	-16.38-12.67	-17.87-17.46	-15.91-17.81	-7.99-8.4	-8.49-9.34	-10.73-10.68	-11.02-10.57	-13.58-16.24	-18.21-18.62	-18.21-17.37	-17.51-14.24	-12.45-11.69	-16.53-16.82	-12.91-9.8	-10.45-10.43	-8.96-10.13	-11.52-8.49
(H18)	-18.84-18.41	-14.27-13.6	-11.62-12.12	-12.56-13.39	-12.69-12.65	-13.31-13.11	-12.29-16.48	-11.22-12.63																



Radiated Composite Gain of 2.4GHz and 5GHz UNII 1~3

Appendix A

	φ(75°)	φ(80°)	φ(85°)	φ(90°)	φ(95°)	φ(100°)	φ(105°)	φ(110°)	φ(115°)	φ(120°)	φ(125°)	φ(130°)	φ(135°)	φ(140°)	φ(145°)	φ(150°)	φ(155°)	φ(160°)	φ(165°)	φ(170°)	φ(175°)	φ(180°)		
Gain	-18.80±18.56	-18.07±18.14	-12.27±14.19	-17.58±11.09	9.12±6.78	-7.98±1.47	-7.16±1.41	-7.72±9.49	6.67±8.31	-10.30±10.47	-18.16±16.82	-18.13±18.47	-18.29±16.96	-13.60±15.71	-13.81±11.58	-12.26±12.01	-12.79±12.74	-12.35±12.34	-13.79±12.78	-10.10±11.3	-12.41±11.16	-10.11±11.1	-10.24±14.39	-18.07±12.77
φ(15°)	-10.77±10.37	-13.93±10.89	-14.31±12.76	-17.27±19.05	-13.46±10.35	6.54±1.82	-7.16±4.76	6.71±1.11	8.41±10.54	-12.71±12.29	-14.91±15.77	-16.29±17.96	-18.41±18.93	-18.67±17.71	-14.51±12.5	-12.79±12.93	-12.01±12.32	-13.88±14.82	-16.78±16.46	-16.16±16.22	-14.13±13.17	-13.62±10.48	-12.31±10.94	-10.84±13.86
φ(22.5°)	-14.53±11.21	-13.24±13.62	-13.64±12.52	-13.76±12.9	-10.27±9.74	4.49±9.41	6.29±6.33	-8.37±6.96	-9.39±13.58	-17.58±16.64	-18.42±17.86	-18.53±18.81	-17.62±17.43	-19.11±18.91	-17.15±15.02	-15.93±13.82	-13.48±14.54	-16.43±17.41	-19.74±17.92	-19.92±18.14	-18.17±16.75	-18.68±15.54	-19.72±19.05	-16.18±17.52
φ(30°)	-17.98±16.4	-19.54±18.11	-18.48±17.68	-17.19±16.38	-14.11±12.6	-13.26±10.87	-9.69±9.39	8.19±6.2	7.97±11.6	-11.86±15.24	-16.95±17.33	-18.73±18.82	-14.53±15.85	-15.36±14.59	-12.36±12.13	-13.79±14.58	-15.02±18.99	-18.77±18.4	-17.47±18.49	-19.06±18.64	-15.07±17.28	-18.48±18.7	-18.51±18.66	-16.38±18.73
φ(37.5°)	-16.39±15.73	-12.41±14.78	-17.45±18.6	-17.38±13.17	-14.58±13.22	-12.33±14.09	-11.08±10.03	-9.89±8.02	8.41±9.28	-11.77±17.39	-11.14±9.19	-12.21±19.23	-15.85±18.93	-18.96±16.5	-17.83±18.22	-18.92±18.05	-17.13±19.43	-18.99±19.02	-19.21±19.01	-18.35±18.39	-18.06±18.93	-14.79±12.8	-12.89±13.96	-12.83±13.07
φ(45°)	-15.47±15.69	-15.38±17.36	-17.64±18.47	-17.61±12.32	-10.71±10.45	-13.06±14.96	-18.84±15.46	-8.61±6.16	7.12±7.48	8.77±10.24	-9.75±9.52	-16.09±17.93	8.86±11.95	-15.36±15.29	-18.14±18.43	-13.72±18.4	-18.76±19.79	-17.61±17.51	-18.17±18.34	-17.76±18.49	-19.07±18.04	-15.79±13.41	-14.17±14.64	-12.27±12.85
φ(52.5°)	-16.29±16.44	-18.91±18.82	-19.28±14.94	-12.65±12.49	-12.0±8.8	-9.54±14.67	-18.35±11.24	-10.75±9.19	-10.18±11.93	-17.85±11.1	-13.93±15.08	-17.31±18.49	-17.97±17.61	-17.93±19.03	-15.44±13.36	-12.69±15.92	-14.91±15.08	-15.03±17.43	-16.29±18.21	-15.61±12.15	-12.44±9.68	-12.01±15.39	-14.49±17.59	-16.34±18.1
φ(60°)	-17.76±17.95	-18.71±17.7	-15.74±18.57	-16.42±15.03	-18.32±12.17	-10.78±11.88	-11.48±15.4	-19.29±15.55	-18.03±19.16	-11.39±8.83	-8.49±8.88	-9.76±15.62	-18.75±18.99	-14.44±9.87	-12.89±18.88	-14.49±11.98	-12.34±16.19	-19.21±12.77	-18.65±18.68	-17.86±16.48	-19.21±9.1	-18.11±11.5	-13.75±17.27	-15.88±17.76
φ(67.5°)	-18.86±18.37	-18.35±18.56	-18.68±17.89	-18.96±18.54	-17.79±17.45	-15.16±14.75	-15.48±10.85	-15.71±18.11	-12.31±11.79	-10.9±9.24	-12.27±15.39	-17.47±18.18	-19.35±9.96	8.34±10.17	8.83±5.52	8.71±10.74	-14.79±14.62	-18.79±17.88	-18.54±18.87	-15.21±14.25	-13.11±11.82	-18.99±13.05	-13.35±14.37	-16.10±18.94
φ(75°)	-13.93±13.82	-14.42±14.52	-19.36±18.09	-18.25±18.83	-10.77±17.77	-18.19±19.13	-13.34±13.84	-12.95±17.51	-18.97±16.82	-11.28±14.16	-8.93±8.33	-10.83±14.97	-16.74±10.01	8.91±8.66	8.03±7.96	8.43±12.26	-17.48±18.98	-16.11±17.29	-16.36±13.86	-13.19±16.15	-10.44±14.28	-11.55±12.29	-12.14±10.89	8.12±7.63
φ(82.5°)	-8.53±8.3	-12.16±12.79	-17.03±18.84	-16.36±18.17	-14.85±19.07	-18.49±18.91	-12.32±10.89	-13.75±9.36	-10.53±15.01	-12.89±19.98	-12.87±18.23	-14.03±11.94	-13.57±16.06	-13.02±11.32	-12.81±12.72	-18.99±17.74	-18.10±19.38	-16.71±9.68	-14.14±16.32	-16.79±16.05	-11.59±15.22	-7.95±9.88	-7.37±10.23	-11.47±7.86
φ(90°)	-11.99±14.6	-15.59±15.98	-18.08±18.85	-18.07±18.99	-18.27±19.25	-10.31±10.75	-19.48±19.13	-19.31±18.72	-18.21±7.85	-16.74±18.13	-18.95±18.27	-17.68±14.43	-15.66±14.05	-13.81±18.79	-18.96±16.16	-16.44±16.3	-15.97±14.93	-15.55±16.32	-17.98±16.63	-19.33±15.73	-12.76±16.55	-8.4±5.5	-7.9±9	
φ(97.5°)	-13.16±11.07	-10.42±12.34	-17.08±15.51	-14.22±17.95	-17.11±14.94	-18.42±18.1	-18.29±19.19	-18.18±18.22	-12.26±15.45	-19.17±17.26	-16.97±10.76	-12.98±15.12	-18.74±10.4	-14.19±16.71	-12.39±8.62	-17.92±12.61	-16.37±18.41	-12.96±10.88	-15.41±18.79	-16.37±19.2	-18.54±19.15	-18.74±18.86	-18.93±14.22	-13.74±12.98
φ(105°)	-9.95±9.59	9.34±10.07	8.19±14.63	-15.71±12.1	-15.53±18.87	-17.54±18.04	-19.18±16.1	-14.19±10.83	-17.77±19.2	-11.57±12.82	8.23±11.45	-14.09±8.61	8.47±12.6	9.24±17.53	-15.26±11.37	-11.08±16.8	-14.49±17.13	-13.59±16.38	-18.14±17.77	-17.87±18.57	-19.15±14.38	-17.24±18.63	-18.61±17.41	-12.67±10.53
φ(112.5°)	-19.84±10.83	-9.54±7.79	-10.31±12.21	-18.82±16.59	-12.19±18	-15.48±13.99	-11.23±13.44	-12.26±18.11	-17.71±18.87	-18.12±18.16	-18.15±18.05	-37.11±44	-11.26±17.7	-17.77±17.84	-18.31±15.36	-17.26±17.79	-15.78±17.33	-18.76±97	-17.46±19.87	-18.96±15.91	-12.99±13.96	-15.44±13.4	-10.75±17.88	-18.39±13.61
φ(120°)	-16.46±13.79	-8.87±8.16	-8.52±9.41	-12.41±16.17	-19.08±16.82	-18.36±12.77	-11.57±11.59	-13.02±9.62	6.47±10.85	-11.36±17.27	-19.03±10.51	9.92±9.3	-11.97±10.84	-14.14±12.14	-16.18±13.03	8.29±10.32	-17.39±17.72	-18.35±18.87	-18.91±17.86	-18.61±15.32	-8.14±16.49	-18.63±7.17	-4.83±8.86	-10.07±10.57
φ(127.5°)	-13.24±15.65	-14.22±8.86	-10.56±11.49	-10.79±13.91	-17.93±19.43	-15.79±13.69	-13.12±13.59	-17.49±19.48	-18.04±16.5	-10.63±9.79	-14.26±17.97	-18.84±12.18	-11.87±9.27	8.91±3.77	-14.89±6.43	-11.99±13.86	-18.16±18.29	-18.82±16.15	-18.92±18.67	-18.86±16.22	-10.52±8.96	-10.95±18.48	-9.85±18.72	-7.12±12
φ(135°)	-14.91±15.09	-13.36±18.84	-14.94±16.75	-8.44±17.1	-13.38±18.24	-13.81±7.9	-4.45±6.58	-8.67±8.39	-8.69±11.84	8.99±12.4	-17.13±14	8.03±13.18	-16.37±8.31	-4.2±12.2	-9.61±18.3	-18.21±19.06	-19.12±13.05	-14.71±12.22	-18.51±16.62	-17.84±18.15	-15.82±14.22	-14.74±14.02	-16.54±18.92	-18.62±12.29
φ(142.5°)	-13.66±18.34	-15.15±15.04	-18.63±10.36	6.54±7.15	8.53±7.66	-9.08±11.07	-11.06±13.62	-10.24±9.44	-13.65±10	-7.75±10.25	-10.91±17.49	-19.32±17.43	-13.4±9.45	-15.81±12.86	-14.46±17.38	-16.16±10.04	-10.54±14.57	-13.41±18.14	-14.22±14.98	-17.84±18.15	-18.82±10.59	8.82±6.53	8.74±8.1	-8.62±11.4
φ(150°)	6.73±6.08	9.65±14.44	9.75±6.96	8.61±13.54	-12.93±9.98	6.35±10.65	6.21±6.95	6.69±9.37	-11.59±9.35	-10.78±15.73	-17.85±16.61	-15.89±12.53	8.06±7.26	8.08±11.74	-17.87±17.26	-18.29±11.75	-10.42±11.68	-17.28±17.1	-18.19±15.1	-15.89±14.18	-15.02±14.22	-14.25±7.73	4.46±6.15	-4.89±9.34
φ(157.5°)	8.43±11.26	9.86±11.63	-13.51±18.43	-19.07±13.01	-10.49±6.89	4.34±5	6.72±9.91	-14.39±17.17	-15.17±13.85	-16.58±14.25	-11.51±10.25	-8.33±7.41	6.87±4.22	-7.54±10.02	-11.26±14.64	-14.15±11.19	-10.31±13.47	-18.58±19.23	-17.61±18.37	-17.81±17.9	-16.49±17.99	-18.44±17.9	-15.07±10.07	-7.61±6.26
φ(165°)	-15.76±16.65	-13.38±13.92	-17.71±17.11	-16.92±15.33	-11.24±8.54	8.21±10.11	-14.14±17.09	-18.91±18.51	-19.61±17.77	-13.79±15.94	-17.81±16.48	-17.91±13.7	-13.89±13.42	-12.16±11.53	8.26±7.68	-7.91±8.63	-10.82±14.62	-16.74±18.67	-19.05±13.83	-12.11±14.76	-14.07±12.73	-14.71±13.77	-13.47±18.9	-18.13±18
φ(172.5°)	-17.61±16.99	-18.35±18.6	-18.05±18.31	-18.81±17.42	-15.91±13.77	-12.92±14.27	-18.73±18.11	-18.60±17.49	-19.21±17.57	-18.27±17.52	-14.96±17.25	-17.53±14.35	-14.69±13.42	-12.12±12.8	-11.08±12.1	-11.06±11.4	-13.49±17.76	-18.67±19.53	-16.27±12.64	-10.16±10.09	-10.58±9.89	8.01±10.98	-11.89±13.82	-15.63±15.06
φ(180°)	-18.93±19.13	-17.06±15.02	-15.72±17.04	-18.65±16.48	-16.92±18.66	-18.08±17.35	-16.69±16.05	-18.29±16.96	-13.92±14.77	-15.47±13.63	-12.15±11.56	-12.16±10.46	-10.48±12.67	-13.26±14.74	-17.67±19.07	-18.57±18.31	-18.13±16.5	-14.34±12.59	-11.43±11.78	-11.57±10.48	-10.49±11.72	-11.41±11.64	-11.47±12.79	-14.21±16.25
Freq(Hz)	5.785GHz	Theta/Unit	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
Gain	φ(75°/φ(22.5°)	φ(80°/φ(37.5°)	φ(85°/φ(52.5°)	φ(90°/φ(67.5°)	φ(95°/φ(82.5°)	φ(100°/φ(97.5°)	φ(105°/φ(112.5°)	φ(110°/φ(127.5°)	φ(115°/φ(142.5°)	φ(120°/φ(157.5°)	φ(125°/φ(172.5°)	φ(130°/φ(180°)	φ(135°/φ(180°)	φ(140°/φ(180°)	φ(145°/φ(180°)	φ(150°/φ(180°)	φ(155°/φ(180°)	φ(160°/φ(180°)	φ(165°/φ(180°)	φ(170°/φ(180°)	φ(175°/φ(180°)	φ(180°/φ(180°)	φ(180°/φ(180°)	φ(180°/φ(180°)
φ(75°)	7.28±1.61	8.58±4.41	8.58±4.82	-10.79±14.27	-17.51±16.84	-17.91±16.94	-16.48±16.71	-17.86±19.23	-16.95±18.74	-17.62±15.4	-13.45±12.03	-10.71±9.96	-10.27±9.64	9.52±9.51	9.79±9.96	-10.89±12.33	-12.98±13.12	-15.01±17.82	-18.86±18.03	-18.31±17.95	-18.43±15.19	-13.25±19.88	-10.82±8.84	8.56±7.56
φ(82.5°)	-10.44±9.74	-9.84±10.37	-10.71±9.14	-10.88±14.49	-15.09±13.88	-15.84±16.53	-18.59±17.56	-17.39±19.24	-13.11±10.86	-10.92±9.48	-2.28±5.57	-7.46±10.7	-7.64±8.65	-9.39±9.98	-11.51±11.28	-11.95±12.98	-13.09±13.57	-15.15±16.04	-17.31±19.23	-19.53±19.82	-17.36±16	-16.95±14.87	-15.19±13.77	-13.22±11.03
φ(90°)	-16.44±16.71	-18.49±18.07	-16.79±16.09	-17.31±15.53	-18.21±16.38	-18.22±17.72	-15.25±14.07	-14.35±12.22	-11.45±10.81	-10.43±10.12	-9.54±10.36	-11.23±12.04	-11.68±11.15	-10.65±9.23	9.26±9.4	9.04±10.11	-11.49±11.72	8.92±11.02	-11.31±11.24	-11.73±10.93	-11.01±12.24	-12.07±11.13	-12.42±12.86	-10.66±12.65
φ(97.5°)	-12.24±10.88	-14.23±10.87	-13.16±18.7	-15.99±17.85	-18.61±18.56	-11.88±10.11	7.48±4.77	8.48±10.96	-12.34±8.05	-10.06±10.36	-10.51±10.95	-10.78±10.36	-10.18±8.58	8.45±1.91	9.29±9.1	9.04±10.59	-13.92±10.97	6.22±8.65	-7.78±12.1	-9.99±10.3	8.51±7.84	-11.41±8.66	8.56±11.87	-10.66±12.28
φ(105°)	-10.28±12.1	-11.89±9.27	-8.37±12.81	-15.14±14.29	-10.85±8.58	-5.91±8.28	-8.78±7.87	8.24±8.8	-12.25±12.08	-12.43±12.09	-11.59±11.21	-8.13±6.59	5.41±3.36	-7.41±12.8	-15.73±13.3	-12.23±12.45	9.49±7.07	8.85±11.91	-9.11±11.1	-6.71±7.93	-9.92±8.43	-4.84±6.78	6.58±7.53	
φ(112.5°)	4.16±3.61	-3.91±5.99	-6.28±4.74	-3.71±7.35	-1.49±4.43	-11.41±7.53	-7.95±8.81	-6.98±6.45	-7.17±0.5	-11.21±8.23	-10.91±41	-11												



Radiated Composite Gain of 6GHz

Appendix B

Freq(Hz)	6.175G	6.475G	6.695G	6.995G
Ant. 1 Max Gain (dBi)	3.78	3.12	3.87	3.87
Ant. 2 Max Gain (dBi)	2.13	2.61	4.1	4.3
Ant. 3 Max Gain (dBi)	2	2.27	2.94	4.77
Ant. 4 Max Gain (dBi)	3.1	2.54	3.75	3.85
Ant. 1 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/75/180	Phi/82.5/187.5	Phi/82.5/187.5	Phi/75/187.5
Ant. 2 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/105/292.5	Phi/97.5/277.5	Phi/105/277.5	Phi/112.5/285
Ant. 3 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Phi/90/75	Phi/82.5/90	Phi/97.5/90	Phi/90/82.5
Ant. 4 Polarization/ $\Theta(^{\circ})/\Phi(^{\circ})$	Theta/90/345	Theta/112.5/322.5	Theta/112.5/300	Theta/97.5/337.5
Max Gain (dBi)	3.78	3.12	4.1	4.77
DG [1SS] (dBi)	4.6	4.1	5.71	5.16
DG [2SS] (dBi)	3.78	3.12	4.1	4.77
DG [4SS] (dBi)	3.78	3.12	4.1	4.77

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[illegible]



Radiated Composite Gain of 6GHz

Appendix B

(H(25))	0.650-74	1.761-75	0.34-0-49	-1.51-2-55	3.93-2-63	-9-3-13-48	-15-41-18-5	-10-17-4-32	5.75-5-92	4.3-2-57	-1-6-0-41	0.090-64	1.211-53	1.170-99	0.460-37	-0-17-0-78	-1-83-5-27	-7-68-8-17	6.12-11-14	-10-14-9-88	-10-94-11-98	-8-31-5-88	-4-48-23-33	-1-85-0-88
(H(26))	0.811-17	0.251-34	-0.96-1-11	-1.42-1-83	2.44-1-5	6-21-10-84	-16-21-11-32	6-33-0-77	7.42-8-89	4.51-2-82	-11-11-0-86	2.71-3-52	2.881-16	0.871-16	0.776-9	0.920-78	0-14-10-88	-4.92-7-85	-11-82-11-24	-15-10-13-86	-7.01-3-88	0.62-0-18	6.370-46	
(H(27))	-1.36-2	-0.201-44	-1.75-2-72	-1.68-0-11	-3.03-6	-7.87-18-43	-16-50-17-25	6-51-11-07	-10.38-6-15	-15-12-22-26	-7.08-53-33	5.84-6-43	-7.71-5-83	-3.93-9-19	-2.82-0-16	-1.35-2	-2.46-1-83	-3.81-7-13	-15.06-17-34	-17.53-07-179	-4.91-2-22	-1.03-07-57	-1.31-0-87	
(H(28))	2.71-21-28	3-53-03	-4-9-2-8	6.63-7-71	-11.82-7-82	-10.09-18-31	-19-19-12-36	-12-35-67-52	6.3-51-91	9.18-61-01	-9.91-0-99	8.36-3-65	5.53-14-32	2.48-2-42	2.561-1-59	-2.23-0-27	0.88-2-57	2.17-67-72	6.41-11-31	-8.62-11-34	-17.89-5-77	5.571-3-64	4.35-62-82	5.93-4-27
(H(29))	5.881-7-08	0.66-5-23	5-2-6-16	9.87-8-68	7.57-11-03	8.86-17-79	11-99-10-88	9.98-9-88	6.78-11-03	6.96-5-15	2.36-1-12	-1.17-2-31	2.53-7-37	3.33-2-28	2.84-3-85	-4.19-1-58	-1.44-2-24	-10.08-5-15	-13.96-8-88	-18.01-9-12	-17.21-8-81	0.88-9-28	5.42-15-56	
(H(30))	6.22-9-27	9.17-6-74	9.66-5-54	-1.75-3-38	0.69-9-32	4.94-7-61	6.83-13-77	-17.94-0-08	-10.28-5-55	-3.34-13-43	6-51-32	0.150-46	0.150-38	0.41-1-5	2.74-2-8	-1.91-1-27	-3.88-2-35	3.271-3-5	9.39-7-85	4.66-9-74	-15.45-11-57	8.28-13-21	-13.97-11-89	
(H(31))	5.89-3-72	5.77-5-31	13.29-0-04	8.26-7-48	7.63-7-65	9.12-10-29	8.22-16-19	5.66-4-48	5.74-2-41	-0.96-2-35	-4.01-3-88	-1.22-20-28	1.240-8-4	0.91-2-5	-1.65-1-66	-3.28-2-17	2.71-1-65	4.33-4-89	-5.36-8-77	7.54-16-61	-17.43-18-28	-13.46-18-29	-15.44-18-05	
(H(32))	-11.81-7-5	4.37-6-61	4.37-6-61	9.88-5-32	4.83-56	5.97-0-02	-7.13-11-68	-13-18-15	6.88-8-83	3.01-1-85	0.24-0-2	0.78-27	2.87-27	2.42-23-3	0.121-0-4	0.53-2-19	-2.79-3-47	3.89-5-41	5.29-4-9	-17.06-13-31	-19-19-32	-18.81-13-37	-11.79-11-67	
(H(33))	-8.86-18-08	-11-13-58	-15.85-9-5	2.571-4-11	5.02-2-32	8.14-4-71	5.63-13-34	9.63-7-54	4.71-87	3.57-15-5	0.23-63	2.14-27	1.881-37	2.711-96	0.416-13	0.76-2-68	3.24-4-48	5.46-1-36	5.88-1-4	7.78-11-23	-13.94-6-88	-12.77-15-56	6.32-16-13	
(H(34))	6.91-26-14	-11.59-8-21	-10.98-8-42	7.93-67-41	3.04-13-38	5.68-18-18	-6.48-18-63	-11.16-8-13	-3.83-21-20	-2.52-17-38	-2.48-1-35	-0.32-71	2.89-7-25	2.818-79	0.270-05	-3.71-3-12	4.44-22-34	4.21-0-14	2.26-18-36	-7.54-8-88	-10.64-8-84	6.89-7-26	-2.84-71-1	
(H(35))	5.99-14-81	6.21-5-51	15.98-10-32	8.91-5-08	3.95-3-87	2.58-4-44	0.8-2	12.35-5-68	5.48-2-46	1.44-15	0.471-24	0.88-2-72	0.781-95	2.341-95	0.232-3-25	4.71-7-27	8.71-3-89	3.94-1-84	1.63-1-5	7.071-10-3	14.58-12-87	2.70-5-85	4.21-2-74	
(H(36))	9.32-9-15-4	8.05-10-32	10.68-12-41	6.12-11-54	9.21-11-54	10.15-11-54	9.89-17-78	6.91-8-83	4.41-3-68	4.78-15	2.271-3-25	3.24-6-85	1.70-15-26	6.84-1-61	7.23-13-38	10.56-9-13	4.29-6-83	1.48-1-31	-2.78-19-32	12.47-13-13	8.86-4-22	1.771-18-45	1.96-18-37	
(H(37))	12.36-18-51	-19.17-8-93	8.68-17-44	-16.01-8-70	12.19-12-36	11.19-12-36	12.37-10-88	12.21-10-81	8.46-3-57	2.31-3-64	-1.49-9-19	0.69-7-68	3.191-3-38	1.171-3-34	3.61-4-78	1.408-11-73	8.95-11-88	3.54-1-59	5.85-6-15	-13.5-16-1	12.38-12-37	8.511-37-27	8.21-16-15	
(H(38))	6.85-2-48	4.78-16-85	-17.58-16-37	-13.27-5-94	7.21-6-45	9.12-16	-11.86-18-81	-11.36-11-78	9.89-7-45	6.10-25-6	5.3-80-13	-10.1-10-41	-10.53-10-42	5.04-4-55	6.19-19-38	9.13-10-89	8.5-10-51	-11.12-6-13	-15.16-10-35	-10.52-10-43	-18.19-13-32	-15.18-14-28	10.53-6-15	
(H(39))	-13.28-8-02	-11.68-16-78	-16.40-11-11	-10.64-5-17	8.211-8-167	9.25-7-45	-14.89-18-55	-13.12-14-05	8.07-42-1	6.25-42	-3.56-5-61	5.89-43-1	17.711-14-71	-10.05-13-14	-17.8-12-24	-11.89-8-44	-4.81-6-85	7.74-14-73	9.37-12-27	-18.46-9-68	-13.02-13-94	-13.9-8-62	5.76-8-45	
(H(40))	-18.25-18-47	-7.81-10-26	-15.87-6-42	-4.34-6-86	-10.44-14-68	6.07-8-71	-7.11-14-04	-18.49-13-42	-10.56-16-87	0.86-6-87	7.15-04	5.38-21-7	2.69-3	4.73-10-42	-19.24-8-83	-6.38-6-73	7.16-6-73	-10.03-13-43	-16.19-39-38	6.42-8-1	-11.31-6-49	6.35-6-65	-12.51-0-27	
(H(41))	-11.26-8-83	-8.43-13-37	-15.22-13-4	-19.13-6-02	0.56-0-69	8.48-17-15	-1.8-4-32	-13.65-16-69	-14.04-6-87	-7.52-14-75	-7.81-4-78	-8.03-7-25	6.48-6-25	6.82-4-17	-7.39-7-55	-10.86-9-13	-16.06-13-38	-10.31-13-82	-14.14-10-36	-8.46-0-34	-7.39-7-4	-14.32-31-44	-4.31-01-01	
(H(42))	-9.27-9-83	-1.84-16-88	-1.56-13-24	-1.88-13-15	-13.12-14-68	-1.541-15-55	-16.20-23-3	-4.73-7-48	4.33-37-87	4.00-1-81	2.07-3-15	0.281-33	1.371-3-76	7.48-6-44	-10.62-6-51	-11.13-13-38	-15.58-15-92	6.84-0-47	-3.25-42-42	9.35-12-3	-3.76-44	0.85-6-48		
(H(43))	-0.77-18-81	-18.40-11-92	-10.47-10-87	-13.59-11-77	7.17-63-4	5.47-6-99	-12.29-17-57	6.07-6-47	6.83-7-82	4.31-1	-3.96-1-08	-1.26-7-2	2.47-027	0.011-3-36	4.771-7-53	9.48-9-91	-7.55-7-86	-10.78-18-77	-13.71-7-74	4.51-2-9	-2.91-5-18	-13.78-4-43	4.11-11-13	
(H(44))	-11.09-15-18	-10.41-10-14	-13.55-18-47	-12.85-10-36	9.26-10-5	-11.66-14-29	-14.71-10-55	6.45-11-41	3.414-44	-1.51-16-22	1.741-6-65	0.221-0-15	-1.44-3-25	-14.98-16-42	4.83-6-44	-11.09-12-54	-12.72-8-08	6.071-4-48	6.87-6-14	4.93-11-04	-1.321-10-48	-2.21-6-4		
(H(45))	7.706-9-81	6.82-5-75	6.4-6-48	4.77-6-75	16.79-12-77	-14.88-17-94	-7.61-15-15	-2.88-13-34	1.93-0-47	-1.21-25	-2.79-3-71	-1.41-3-46	-3.38-2-65	-2.01-2-46	4.19-6-61	7.311-7-84	8.82-12-43	-11.671-17-32	-18.16-11-24	-18.15-15-24	-12.90-7-93	8.80-5-88		
(H(46))	-1.150-9-33	7.061-8-4	0.720-8-61	2.041-1-81	3.41-5-14	-4.87-6-18	-7.07-17-32	4.571-3-33	0.79-0-72	0.110-81	1.38-23	2.763-0-38	3.363-51	3.625-63	3.223-07	2.471-56	2.191-21-3	4.25-27-17	-11.75-13-81	-12.97-22-18	1.721-15-51	6.4-09	0.26-2-48	
Freq(Hz)	6.9592GHz	Thetazet.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gain	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	(H(907.5))	
(H(7))	4.48-5-15	4.671-7-84	6.54-11-3	-10.88-9-39	7.58-51-39	4.8-41	-2.96-2-16	-1.37-0-72	0.34-52-32	6.710-111	-1.62-2-35	-3.89-4-38	5.58-61-91	-16.78-13-18	-17.42-13-23	9.88-3-87	5.84-3-87	3.07-2-25	6.84-0-05	4.2-2-21	50-32	0.05-5-58	6.88-17-77	2.46-3-31
(H(8))	4.96-13-67	-17.49-17-22	-13.71-12-42	-0.071-5-64	4.28-9-33	2.58-0-13	-1.88-11-44	-0.68-0-39	2.28-0-08	4.170-25	1.32-0-14	3.29-3-35	4.45-0-39	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	6.46-0-75	
(H(9))	2.413-9-33	-11.51-26-38	-11.02-26-38	6.89-3-31	1.46-0-45	3.271-31	0.03-4	0.371-67	1.13-7-25	4.24-0-63	1.78-51-53	6.731-10-32	1.37-16-18	0.58-8-41	1.35-0-28	0.26-0-16	0.44-0-37	2.39-1-16	-0.32-0-44	0.88-0-17	0.74-1-15	1.26-1-97	3.79-6-63	
(H(10))	-19.01-19-14	-12.09-7-55	-7.08-5-19	4.45-27-67	1.51-0-48	0.311-22	0.870-27	0.72-12-48	2.92-21	1.58-21-61	-4.98-6-44	6.571-13-27	-12.29-4-42	4.79-5-63	2.23-0-29	1.01-121	1.78-79	0.02-0-4	0.85-0-13	0.47-1-38	-1.79-02-32	3.29-6-13	11.81-6-47	
(H(11))	-10.02-19-11	-10.04-7-83	-17.00-5-06	3.33-9-31	2.861-4-16	-0.751-63	2.11-38	6.28-1-48	4.89-6-83	6.78-16-45	0.197-13-25	12.55-13-08	1.247-2-44	1.58-6-78	1.94-27-77	-1.26-10	1.48-21	0.45-0-43	0.95-0-35	3.88-1-85	2.12-34	2.57-37	5.37-8-68	
(H(12))	8.971-14-94	-13.54-11-71	-14.77-15-25	-2.73-7-37	4.24-21	2.25-11-5	0.810-36	-1.02-0-22	4.27-6-43	-7.76-7-37	8.59-6-71	1.776-10-31	-13.45-17-12	9.4-4-28	4.3-3-86	6.5-0-03	-1.79-16-66	-0.33-0-07	2.34-2-25	2.45-16-14	1.96-13-54	5.711-3-38		
(H(13))	-15.38-14-93	-10.41-11-27	-10.36-9-02	6.24-7-41	6.814-42	-2.2-12	-0.72-0-6	-0.32-1-77	4.29-21-37	-6.53-4-63	5.82-6-46	5.84-6-46	9.89-11-31	-13.20-16-38	-14.12-16-37	-10.27-7-77	6.50-5	3.74-22-9	1.35-6-17	-1.22-21	2.39-1-51	1.61-3-39	4.91-6-76	
(H(14))	8.44-9-75	-13.99-13-54	-16.74-17-97	-17.94-19-44	-1.35-91-97	-7.64-51	2.46-11-22	2.28-3-36	6.28-2-79	6.18-7-44	-8.97-01	-7.86-7-13	8.91-13-4	-16.87-16-85	-15.39-16-75	-15.73-16-6	5.51-3-09	2.16-4	-2.23-2-72	6.12-4-4	6.31-6-88	3.94-6-47	8.81-7-8	
(H(15))	-4.88-13-93	-13.73-12-14	-10.71-13-38	-18.93-12-1	-10.72-16-89	9.97-2	3.71-0	0.26-3-37	2.78-33	-1.69-10-45	5.91-0-41	-14.2-9-76	-11.09-15-1	-17.19-16-42	-14.48-16-04	-17.87-16-89	-14.89-7-79	7.771-18-39	6.86-16-56	-7.47-6-46	9.9-16-25	1.70-6-74	3.87-7-4	
(H(16))	-14.56-18-54	-14.56-18-54	-14.16-11-73	-11.48-18-31	-15.81-16-1	-14.21-18-68	-5.29-3-68	-3.9-51-11	7.8-8-43	-11.73-10-14	-11.81-13-38	-10.59-17-18	-16.02-19-12	-17.98-17-73	-16.85-11-47	-13.77-17-37	-11.85-10-13	-11.45-10-39	-13.41-0-82	-14.86-13-32	-15.99-0-08	-11.18-12-54	7.67-0-04	
(H(17))	-5.86-12-13	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	-13.84-13-14	
(H(18))	-1.54-16-16	-17.93-15-36	-11.71-8-83	8.74-14-38	-16.05-19-33	-17.98-13-15	6.04-7-08	6.50-9-66	-12.56-3-35	6.66-6-56	7.72-12-26	-7.02-0-15	-17.57-10-42	-16.71-14-05	-13.15-9-19	-10.27-16-11	-16.45-0-11	-12.02-17-31	6.38-14	-10.89-19-59	-11.48-15-12	1.618-6-59</		



Radiated Composite Gain of 6GHz

Appendix B

(H757)	-17.51-13.14	-7.47-4.14	-2.31-0.44	0.59-0.1	-1.53-1.3	0.691-37	-0.44-0.5	0.84-1.81	-4.93-4.24	-3.12-0.57	-6.11-11.64	-15.79-12.98	-8.12-6.58	6.27-4.78	-4.43-4.45	-3.89-0.44	0.34-2.85	-3.48-0.32	0.12-1.5	-1.13-1.09	-0.64-1.13	-2.41-1.23	-1.77-0.95	-10.47-18.95
(H758)	-1.54-0.68	-7.79-3.97	-2.66-1.12	-1.59-0.71	-3.53-0.84	0.90-37	-1.53-1.8	-0.86-4.3	-5.71-3.31	-3.45-4.57	-6.9-9.43	-10.84-14.7	-18.60-13.8	-12.4-17	-6.36-4.82	-4.39-1.84	-0.12-1.55	-2.12-2.36	0.11-0.32	-0.76-1.34	-2.96-1.58	-1.67-1.39	-3.51-4.7	-9.37-18.84
(H825)	-8.72-6.49	-7.44-4.63	-2.06-0.75	-1.46-0.48	-5.71-0.38	0.2-37	-0.10-0.8	-2.4-10.28	-16.26-6.4	-2.15-7.31	-10.23-15.19	-18.07-15.22	-10.58-14.24	-6.27-10.9	-4.41-3.34	-3.06-1.99	-8.2-2.01	-1.02-0.21	-1.53-1.04	-0.64-0.84	-1.71-0.64	-2.94-1.58	-2.94-1.58	-11.67-22.02
(H874)	-7.44-6.32	-4.46-4.46	-4.27-2.73	-3.57-0.63	-8.73-3.98	-1.07-1.32	-1.34-1.57	-2.11-7.18	-12.52-6.25	-5.06-1.82	-10.69-13.64	-11.11-16.38	-14.44-12.92	-10.1-12.8	-16.22-14.74	-6.37-1.2	-1.61-0.28	-1.61-0.25	11.51	0.66-0.9	8.89-1.41	-4.4-1.5	-7.39-12.19	-18.32-12.7
(H875)	-4.48-4.49	-4.26-3.74	-2.96-3.06	-6.71-1.18	-7.55-1.42	-4.95-0.47	-4.49-8.34	-7.22-7.81	-8.22-5.56	-6.78-12.21	-12.26-8.86	-9.16-6.06	-7.72-9.72	-4.41-3.34	-3.06-1.99	-8.2-2.01	-1.02-0.21	-1.53-1.04	-0.64-0.84	-1.71-0.64	-2.94-1.58	-2.94-1.58	-11.67-22.02	
(H105)	-10.62-5.57	-6.18-7.01	-11.26-6.53	-12.15-13.28	-6.59-5.82	-6.13-4.56	-3.52-8.1	-6.02-11.7	-16.99-11.4	-10.78-17.88	-10.56-8.82	-7.12-9.92	-7.53-4.41	-3.87-8.42	-5.7-6.1	-8.03-3.82	-0.47-0.57	-4.05-1.24	-2.80-0.7	1.16-2.13	1.07-0.06	-2.53-1.67	-4.69-3.13	-11.37-17.84
(H1125)	-11.85-10.57	-6.66-5.54	-15.13-15.97	-15.15-15.6	-11.18-9.7	-5.02-6.18	-6.69-6.28	-9.96-12.58	-13.33-11.5	-10.78-12.29	-9.98-9.84	-6.32-7.24	-11.38-7.84	-8.83-5.79	-6.75-6.61	-5.61-6.49	-4.53-3.08	-0.05-3.07	-2.0-3	-0.05-1.47	0.17-1.24	-4.81-6.61	-6.11-9.28	-11.67-10.87
(H120)	-11.47-12.43	-10.16-9.44	-15.76-12.9	-11.13-10.45	-8.69-12.84	-8.05-6	-7.62-6.83	-18.17-17.68	-14.26-9.98	-12.47-16.58	-10.76-16.5	-6.65-10.4	-11.78-9.16	-3.44-6.65	-7.3-3.49	-5.24-11.48	-5.71-0.41	-4.37-2.94	-0.83-0.44	-2.68-1.54	-0.91-0.63	-11.44-11.08	-15.44-11.72	-2.72-0.97
(H1275)	-12.56-13.76	-10.52-15.76	-15.75-16.15	-12.43-9.4	-7.86-10.71	-12.84-8.31	-16.61-11.34	-14.26-11.17	-19.05-14.02	-17.31-13.13	-14.21-7.95	-8.62-13.44	-14.59-7.99	-4.59-6.88	-6.18-7.87	-8.45-9.21	-8.82-12.65	-5.57-1.25	-2.78-1.85	-5.65-4.43	-4.51-7.79	-8.99-15.25	-14.19-13.98	-12.78-10.97
(H128)	-7.53-6.52	-16.94-16.82	-14.78-15.82	-10.11-11.31	-10.91-9.18	-8.9-8.65	-10.23-11.9	-10.78-8.88	-12.34-14.88	-12.89-10.98	-13.94-9.57	-7.5-8.83	-10.24-15.6	-3.62-4.43	-8.83-5.29	-16.18-6.1	-8.41-6.82	-4.91-13.97	-3.88-6.87	-16.96-11.93	-5.22-6.05	-8.71-5.84	-5.29-10.7	-17.35-12.52
(H1425)	-7.66-15.03	-16.94-19.37	-17.78-17.26	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4	-12.32-12.62	-10.2-6.4
(H157)	-12.96-6.42	-7.49-4.77	-13.43-16.98	-18.49-17.37	-3.18-14.97	-18.22-16.38	-18.24-19.33	-12.43-11.17	-17.37-15.57	-12.52-11.59	-16.49-13.1	-17.89-13.98	-8.94-7.59	-9.7-7.8	-5.98-8.62	-8.4-7.37	-6.79-13.37	-2.26-1.78	-3.29-6.42	-6.38-11.36	-17.24-12.72	-7.02-12.47	-3.78-12.1	-8-12.63
(H158)	-15.70-18.81	-15.93-15.83	-12.59-11.15	-11.49-12.47	-15.58-15.68	-15.65-16.06	-16.31-17.86	-16.18-18.09	-16.32-18.01	-15.19-15.13	-14.14-16.08	-15.86-18.54	-17.01-17.31	-11.74-10.1	-12.33-12.82	-8.5-8.47	-7.52-6.83	-7.86-7.73	-12.33-6.47	-7.26-6.18	-5.76-4.58	-5.76-4.58	-5.76-4.58	-12.33-6.47
(H1725)	-9.86-17.47	-6.82-11.2	-13.18-12.15	-11.47-12.61	-12.71-11.15	-3.97-4.9	-6.36-5.53	-6.4-9.7	-6.02-7.78	-6.55-6.08	-11.34-12.52	-18.59-17.74	-14.46-10.88	-8.86-8.57	-6.91-6.55	-8.87-8.42	-7.89-6.99	-6.87-7.74	-6.84-7.1	-5.48-4.53	-3.59-2.49	-7.4-7.21	-3.87-4.1	-15.51-13.3
(H187)	-7.87-17.17	-14.18-18.49	-8.73-9.49	-7.67-8.67	-9.64-5.55	-7.53-6.8	-4.96-4.49	-4.34-4.31	-3.82-3.92	-4.89-4.88	-6.53-7.11	-8.74-11.25	-10.97-10.62	-16.65-18.13	-16.81-17.53	-8.47-13.4	-4.26-6.73	-2.74-1.74	-1.24-0.71	-0.42-0.43	-0.52-1.05	-2.28-2.31	-3.66-3.48	-15.51-13.3
Freq(Hz)	6.1750(GHz)	Thetazeta_2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gain	0.07(907.5)	0.07(902.25)	0.03(903.75)	0.04(906.25)	0.00(906.57)	0.07(906.57)	0.07(908.25)	0.00(909.57)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	0.10(910.125)	
(H757)	-0.79-0.31	-0.14-0.6	-1.06-1.67	-2.63-2.39	-4.41-5.85	-7.67-10.58	-13.96-16.18	-18.41-12.77	-8.25-8.59	-4.08-4.79	-1.86-2.99	-0.32-0.16	0.55-0.67	0.45-0.06	-0.77-1.82	-2.56-1.32	-2.49-6.11	0.18-13.98	-16.02-17.89	-16.25-17.12	-8.72-16.18	-4.35-7.28	-1.79-1.51	-0.87-0.8
(H758)	-0.44-0.66	-0.41-0.12	-0.11-10.99	-2.56-3.16	-4.71-6.15	-8.57-12.31	-15.68-19.98	-15.68-12.29	-6.35-7.28	-1.86-9.49	-3.76-12.7	-1.74-15.3	-1.61-1.53	-1.61-1.53	-3.58-4.05	-5.14-6.86	-8.02-11.53	-16.51-12.25	-8.62-5.53	-3.32-1.89	-1.08-0.25	-1.08-0.25	-1.08-0.25	
(H825)	-0.94-0.79	-1.07-1.34	-2.03-2.88	-4.46-6.26	-7.72-9.18	-12.05-17.55	-18.54-19.4	-17.86-15.81	-12.56-10.49	-8.72-9.11	-6.7-11	-5.99-6.61	-4.71-10.4	-3.88-3.83	-1.49-1.78	-1.5-1.5	-5.84-6.91	-8.71-14.3	-18.58-18.14	-17.33-11.53	-8.71-5.92	-4.34-3.26	-2.03-1.12	-1.13-1.06
(H105)	-1.68-1.71	-1.38-2.09	-1.38-2.45	-3.37-4.51	-6.74-9.66	-13.88-18.89	-18.54-19.06	-17.58-14.71	-13.59-15.99	-11.47-12.74	-4.82-5.15	-1.56-1.57	-1.56-1.57	-2.41-3.67	-4.59-4.49	-5.23-6.64	-6.45-7.17	-8.11-13.68	-17.67-17.93	-14.84-10.74	-7.67-6.19	-6.34-3.84	-1.06-1.29	-1.13-1.06
(H1125)	-3.21-2.84	-1.94-1.31	-1.16-1.72	-2.17-2.88	-4.36-5.25	-16.16-17.77	-18.36-18.94	-15.53-17.7	-3.96-1.25	0.21-1.39	1.87-1.43	0.58-0.28	0.13-0.5	-1.14-1.08	-2.96-1.51	-6.83-7.33	-7.79-8.96	-13.51-17.78	-16.42-15.17	-10.9-6.69	-2.4-0.6	-0.01-1.27	-2.84-3.27	-11.67-10.87
(H120)	-0.11-1	-0.11-1.88	-3.75-4.7	-3.72-4.24	-5.72-6.61	-8.29-8.66	-12.58-19.75	-19.12-17.21	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43	-11.28-9.43
(H1275)	0.85-0.7	-1.34-0.24	-3.5-4.6	-7.27-11.7	-6.71-8.14	-11.09-11.84	-14.24-17.13	-14.69-13.06	-7.84-16.4	-3.51-5.24	-2.01-1.3	0.27-0.16	0.06-1.0	-0.43-1.83	-3.25-2.66	-1.88-2.9	-4.19-6.85	-10.39-9.28	-10.46-16.48	-18.19-16.06	-5.74-6.41	-5.52-5.34	-3.41-2.41	-1.02-0.37
(H128)	0.10-1.62	-0.36-0.49	-3.71-6.69	-8.68-10.38	-6.71-8.16	-12.52-12.91	-14.27-15.4	-13.99-11.64	-8.93-17	-3.89-4.25	-2.24-3.3	-0.26-0.17	0.26-0.17	0.69-0.58	-2.24-3.3	-3.72-2.9	-3.99-6.84	-8.32-9.68	-11.63-16.38	-17.71-16.8	-5.1-5.48	-4.64-4.44	-3.69-1.7	
(H129)	2.32-0.23	-0.27-0.76	-4.9-6.91	-7.48-11.05	-11.66-8.62	-10.26-10.68	-18.19-19.87	-18.19-19.87	-7.23-9.37	-5.58-6.42	-1.61-1.67	-1.29-1.11	-1.71-1.65	-1.49-1.27	-3.25-3.16	-4.69-19.39	-6.89-10.57	-11.89-12.97	-10.24-12.37	-7.59-9.18	-6.99-10.57	-7.62-9.52	-4.77-5.42	
(H137)	0.03-0.17	-2.82-1.47	-4.26-5.46	-6.98-14.3	-6.51-7.92	-6.11-14.06	-17.59-13.93	-12.0-9.71	1.94-11.95	1.46-4.9	-5.84-6.3	-6.55-6.17	-5.44-3.35	-3.71-2.77	-3.67-1.5	-4.25-4.13	-5.66-1.98	-11.03-9.64	-8.29-10.56	-13.5-9.4	-8.41-11.39	-7.16-9.48	-4.47-6.28	
(H1425)	-1.49-1.07	-5.4-5.9	-7.69-8.95	-14.52-19.09	-13.93-10.44	-9.52-11.81	-19.19-19.96	-16.27-15.65	-7.27-15.52	-16.59-15.91	-10.98-6.43	-6.98-11.3	-8.94-10.29	-9.27-7.77	-7.64-7.84	-8.36-5.76	-7.07-15.7	-12.33-11.09	-9.97-11.3	-13.89-10.73	-12.74-12.69	-12.71-15.63	-10.41-10.39	-10.99-10.74
(H157)	-12.52-16.4	-15.15-16.4	-8.76-16.55	-16.36-12.92	-8.65-8.26	-8.12-14.51	-18.25-19.44	-16.57-16.5	-16.39-13.2	-13.05-11.43	-15.16-18.93	-14.19-16.1	-7.81-9.42	-10.93-11.03	-9.49-9.88	-9.44-9.87	-11.11-12.13	-12.76-13.32	-10.59-13.94	-12.17-15.5	-18.73-14.5	-11.55-12.72	-9.68-10.96	-14.23-15.35
(H158)	-17.12-12.82	-16.60-17.53	-10.47-10.83	-8.67-8.1	-6.71-7.47	-9.86-7.79	-17.47-17.13	-14.88-11.36	-14.13-16.29	-16.60-16.81	-15.26-16.05	-7.02-7.17	7.18-8.8	-15.51-17.05	-17.05-17.37	-8.37-10.25	-10.58-14.78	-14.24-13.78	-10.39-10.36	-9.89-10.48	-9.84-10.48	-10.41-10.23	-10.74-8.81	
(H1725)	-5.49-13.38	-6.88-12.2	-4.52-3.15	-6.59-7.99	-7.89-8.74	-16.24-14.65	-10.37-10.77	-11.88-17.57	-15.35-16.21	-17.85-18.27	-15.21-18.81	-8.21-9.47	-7.53-6.81	-7.25-9.1	-11.37-10.5	-11.11-10.25	-14.35-14.39	-13.12-12.77	-10.96-10.94	-10.36-10.38	-8.99-9.44	-8.89-9.44	-7.2-8.87	-11.71-9.91
(H187)	-1.54-11.35	-6.98-12.24	-5.26-7.25	-6.48-10.38	-8.23-14.1	-14.82-11.1	-10.99-13.67	-11.71-11.21	-10.44-10.17	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81	-10.42-10.81
(H1125)	-3.56-12.97	-16.45-17.2	-7.07-8.66	-14.54-18.13	-17.07-18.67	-14.55-16.36	-9.03-11.65	-12.37-15.6	-16.84-15.2	-16.19-16.37	-15.41-15.99	-8.76-10.94	-14.77-12.02	-10.64-13.51	-11.79-10.7	-12.14-14.86	-13.19-14.86	-16.67-13.11	-11.41-8.42	-14.72-10.15	-5.39-7.65	-15.37-9.16	-8.95-10.82	-10.07-10.77
(H120)	-5.21-4.16	-11.65-17.18	-14.23-15.14	-15.56-19.03	-10.26-10.67	-12.51-6.88	-10.46-14.8	-10.06-17.92	-8.11-12.73	-8.49-12.98	-11.7-11.72	-10.49-12.33	-8.23-11.38	-15.88-15.18	-14.72-17.2	-18.46-17.33	-19.47-16.87	-16.67-14.11	-11.56-14.03	-16.11-15.25	-8.66-12.48	-12.68-12.45	-8.84-14.67	-19.36-13.43
(H1275)	-5.24-19.14	-17.73-17.83	-15.83-14.12	-17.31-14.68	-10.21-13.08	-15.14-17.98	-18.11-18.68	-12.15-13.63	-18.41-14.8															



Radiated Composite Gain of 6GHz

Appendix B

(h120)	4.44E+15	-11.84E-8	-14.52E+36	-14.32E+10.9	-12.61E-31	-4.96E+24	-9.41E+78	-12.91E+29	-11.98E+4.9	-8.85E+18.2	-8.75E+98	-10.95E+10.8	-6.47E+22	-3.51E+47	-8.84E+109	-11.21E+43	-6.84E+3.1	-7.42E+7.88	-2.61E+74	-3.24E+35	-2.32E+4.3	-5.92E+9.58	-4.16E+18.7	-12.25E+87
(h127)	8.1E+17.73	-18.83E+12.43	-14.81E+36	5.9E+167	-18.8E+7.8	-3.22E+15	-8.46E+6.3	-10.84E+42	-13.88E+7.95	-6.24E+7.84	-6.89E+13	-15.35E+35	-8.69E+147	-6.9E+196	-18.74E+10.3	-8.71E+7.1	-3.27E+5.1	-8.47E+7.3	-2.16E+04	-4.05E+18	-1.98E+35	-11.61E+15.4	-18.61E+37	-6.39E+48
(h130)	-15.12E+78	-14.61E+7.87	-14.85E+7.8	-8.69E+15.3	-8.12E+6.3	-12.34E+19	-6.59E+15.1	-9.43E+14.0	-11.72E+11	-8.55E+15.9	-16.08E+11.3	-9.16E+5.07	-4.48E+4.81	-16.54E+21.5	-5.79E+14.3	-4.79E+11.46	-7.59E+4.3	-2.89E+6.2	-3.51E+5.69	-7.13E+25	-6.51E+10.42	-17.01E+13.62	-14.14E+17.5	
(h142)	-7.2E+12.84	-18.05E+18.1	-18.66E+12.1	-11.87E+11.8	-18.32E+15	-6.97E+84	-6.02E+6.86	-9.95E+10.5	8.71E+10.41	-14.71E+14.32	-18.79E+13.89	-11.32E+15.1	-11.05E+32	-8.07E+18.4	-17.91E+11.06	-2.36E+18.7	-6.58E+4.88	-5.94E+5.71	-0.44E+49	-0.39E+7.8	-6.26E+5.06	-12.54E+11.85	-7.73E+13	-8.99E+7.8
(h150)	-18.95E+18.4	-13.84E+12.39	-13.96E+18.32	-8.74E+7.1	-8.32E+12.23	-16.41E+13.3	-17.81E+12.14	-15.22E+9.54	-5.83E+6	-14.08E+15.4	-7.72E+10.3	-14.19E+15.94	-18.79E+11.56	-8.8E+11	-15.53E+12	-6.47E+5.08	-7.71E+10.48	-18.33E+14.38	-6.38E+2.85	-4.92E+10.24	-18.98E+13.77	-16.51E+17.87	-18.79E+19.84	-14.14E+17.5
(h157)	-7.81E+10.98	-11.41E+11.16	-14.71E+18.7	-18.62E+15.69	-11.83E+14.9	-16.47E+7.91	-17.62E+17.99	-18.83E+11.91	-13.83E+18.19	-15.14E+12.28	-8.53E+42	-8.54E+12.1	-10.32E+10.27	-7.48E+5.27	-5.02E+15	-8.26E+15.46	-17.96E+17.53	-12.17E+7.02	-6.07E+5.2	-6.62E+16	-12.23E+18.4	-14.87E+1.17	-8.63E+12.42	-5.71E+11
(h162)	-14.44E+11.71	-18.51E+10.98	-17.26E+13.64	-12.75E+14.94	-11.58E+14.6	-14.16E+12.47	-11.73E+15.1	-13.8E+17	-17.59E+13.44	-11.52E+13.96	-18.67E+17.68	-11.67E+5.1	-8.73E+44	-8.13E+4.68	-6.9E+6.41	-5.91E+7.6	-6.19E+6.8	-6.94E+6.2	-5.64E+8.99	-4.52E+3.12	-3.35E+3.85	-4.07E+7.45	-5.99E+2.1	-14.14E+17.5
(h172)	-12.19E+10.24	-8.86E+15	-7.16E+7.6	-6.68E+7.23	-7.53E+8.01	-10.84E+13.36	-18.14E+17.51	-17.93E+18.09	-18.83E+17.2	-14.88E+14.72	-12.65E+13.22	-12.34E+13.9	-14.91E+4.59	-13.95E+10.6	-8.11E+44	-6.58	-5.88E+4.87	-2.44E+4.35	-3.74E+2.97	-2.51E+6	-1.26E+1.38	-1.44E+2.29	-3.41E+5.8	-8.9E+4.27
(h180)	-16.3E+18.51	-5.29E+13.72	-10.6E+7.9	-6.29E+4.16	-1.31E+2.71	-2.64E+2.65	-3.73E+4.72	-5.9E+5.42	-5.48E+7.1	-6.84E+7.72	-6.90E+6.92	-10.71E+11.5	-11.07E+11.29	-11.11E+11.1	-8.6E+89	-5.92E+5.26	-3.83E+2.88	-2.29E+1.36	-1.88E+2.7	-1.58E+7.16	-1.84E+1.69	-2.51E+4.2	-7.18E+10.27	-10.83E+11.8
Free(h)	6.85E9Pb1	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)	Free(h)
Gain	0.907E+9.57	0.915E+9.22.51	0.920E+9.37.51	0.915E+9.62.51	0.907E+9.67.51	0.915E+9.67.51	0.909E+9.67.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51	0.910E+9.12.51	0.915E+9.12.51
(h1)	3.86E+3.76	-2.01E+19	-4.44E+5.04	-7.2E+4.7	-7.45E+0.8	-11.15E+10.34	-19.02E+17.98	-19.02E+17.98	-7.87E+4.7	-2.41E+12	-3.22E+4.2	-1.91E+1.39	-6.68E+8.71	-1.52E+2.21	-2.86E+3.77	-4.73E+55	-6.05E+7.54	-10.3E+12.74	-15.34E+15	-14.88E+12.95	-12.31E+11.81	-8.64E+7.5	-5.03E+3.75	-3.29E+3.8
(h7)	0.820E+8.7	-0.73E+12.4	-2.52E+3.6	-4.55E+5.65	-6.68E+7.02	-3.84E+13.1	-17.18E+10.65	-17.82E+18.63	-13.04E+11	-5.28E+2.77	-6.01E+5.1	-5.00E+2.4	-3.73E+2.7	-4.21E+6.1	-4.88E+0.4	-6.19E+8.4	-7.26E+1.7	-12.57E+16.18	-18.73E+12.7	-15.81E+12.1	-7.79E+29	-3.98E+3.25	-1.85E+16	-1.21E+05
(h13)	-0.00E+3.8	-1.35E+2.48	-2.84E+4.1	-5.37E+4.9	-5.22E+1.2	-7.67E+8.7	-10.59E+19.19	-17.93E+18.39	-11.74E+11.58	-7.78E+6.23	-3.14E+1.81	-0.98E+0.58	-4.68E+1.82	-1.03E+1.37	-1.94E+3.06	-4.88E+5.82	-7.28E+8.68	-10.75E+12.61	-12.04E+7.51	-5.01E+4.27	-2.04E+1.94	-1.18E+1.18	-0.41E+03	-0.10E+03
(h22)	2.74E+2.57	-2.82E+3.06	-3.08E+3.17	-3.36E+3.66	-7.59E+3.98	-9.88E+11.1	-13.16E+15.45	-18.65E+15.9	-11.84E+7.45	-4.23E+5.1	-1.38E+0.86	-1.07E+1.3	-0.03E+39	-6.68E+1.22	-1.61E+1.98	-2.89E+4.46	-14.6E+10.8	-10.67E+17.82	-19.21E+14.1	-10.26E+8.4	-5.04E+3.59	-2.44E+2.05	-2.65E+2.71	-2.12E+59
(h30)	-2.54E+1.7	-0.42E+2.05	0.41E+0.7	-0.99E+2.73	-3.98E+1.7	-8.26E+4.7	-6.21E+0.9	-11.44E+16.47	-12.09E+4.69	-6.31E+1.83	-1.62E+1.82	-1.27E+0.49	0.07E+0.06	-0.06E+1.38	-1.62E+4.48	-3.69E+4.86	-5.83E+4.16	-14.26E+18.87	-18.45E+4.68	-6.93E+9.94	-5.12E+5.48	-4.4E+6.03	-7.81E+1.78	-4.52E+7.32
(h37)	5.95E+3.55	-2.55E+7.4	0.09E+0.8	-0.12E+17	-4.51E+4.8	-4.81E+4.6	-7.99E+3.9	-10.65E+14.81	-8.14E+2.7	-3.33E+15	-2.58E+2.1	-0.32E+3.2	0.38E+5.2	0.830E+9	0.83E+44	-2.85E+11	-8.63E+13.4	-16.22E+18.57	-18.21E+11.9	-8.61E+6	-10.02E+9.65	-6.43E+3.88	-2.44E+3.84	-6.03E+7.6
(h40)	-1.03E+4.56	-0.28E+1.4	-1.87E+1.07	-0.64E+1.79	-4.29E+5.8	-4.87E+4.21	-9.29E+7.5	-15.85E+15.9	-7.57E+5.71	-0.03E+4.56	-0.68E+0.23	-0.67E+0.68	-1.14E+0.3	-0.87E+4.1	-0.51E+8.7	-2.72E+4.45	-1.85E+12.71	-14.84E+16.65	-17.67E+7.78	-4.67E+8.64	-8.26E+2.43	-5.27E+4.78	-14.13E+2.04	-6.59E+1.96
(h52)	0.49E+23	0.85E+75	-0.66E+1.63	-0.43E+7.5	-4.03E+7.85	-6.68E+9	-13.51E+18.85	-18.15E+11.76	6.54E+16	-4.36E+5.4	-1.78E+0.52	-0.33E+7.1	-2.42E+7.2	-3.03E+2.88	-2.14E+1.41	-6.19E+11.46	-17.55E+18.9	-16.57E+8.92	-7.43E+1.41	-4.27E+4.54	-3.27E+1.66	-1.69E+1.18	-0.22E+05	-0.10E+03
(h62)	7.71E+18	-0.05E+0.03	-2.81E+32	-6.87E+12.52	-17.75E+14.9	-14.12E+10.56	-13.72E+14.9	-11.43E+11.56	6.81E+16.9	-4.67E+5.57	-3.86E+2.07	-3.01E+5.7	-6.84E+8.65	-18.95E+17.01	-10.13E+12.07	-9.31E+3.96	-4.83E+7.43	-2.34E+1.36	-3.74E+1.27	-2.78E+1.44	-0.33E+03	-2.84E+3.45	-4.63E+3.2	-0.10E+03
(h67)	2.23E+4.63	-0.34E+0.7	-1.36E+2.94	-5.15E+7.81	-6.88E+14.7	-10.08E+13.5	-15.92E+16.6	-9.66E+11.67	-10.4E+3.91	-4.09E+7.4	-2.74E+7.3	-6.02E+9.6	-8.52E+3.8	-10.58E+11.33	-4.24E+2.1	-3.42E+7.39	-8.78E+9.84	-18.31E+16.46	-10.27E+29	-8.90E+6.07	-5.56E+3.8	-2.84E+3.45	-4.63E+3.2	-0.10E+03
(h72)	-7.74E+4.85	-5.49E+3.05	-3.49E+5.64	-7.99E+10.3	-11.76E+11.2	-10.44E+12.7	-11.92E+9.91	-13.11E+16.42	-17.10E+10.58	-4.49E+7.2	-4.68E+1.6	-4.00E+9.6	-8.31E+11.1	-11.11E+15.1	-11.79E+9.62	-10.03E+18.43	-18.12E+12.02	-13.75E+12.88	-7.23E+2.1	-6.70E+10.35	-12.72E+4.63	-5.01E+10.8	-8.9E+4.27	-0.10E+03
(h82)	-7.39E+4.9	-6.95E+9.39	-10.37E+15.1	-12.18E+8.7	-11.12E+8.67	-6.11E+8.68	-8.66E+15.45	-15.71E+13.9	-14.87E+11.98	-12.08E+3.47	-6.46E+15.25	-17.74E+10.72	-1.6E+4.5	-3.21E+15.08	-19.50E+14.76	-9.63E+6.07	-6.3E+10.2	-18.4E+8.4	-11.75E+3.7	-6.13E+6.2	-12.32E+12.61	-11.04E+10.7	-9.98E+12.01	-8.94E+4.27
(h90)	-6.59E+3.58	-7.12E+10.18	-14.71E+13.37	-17.26E+10.9	-7.4E+7.4	-8.81E+17.3	-15.27E+10.3	-14.37E+11.04	-9.1E+8.9	-1.61E+15.3	-8.64E+18.9	-12.91E+9.58	-6.4E+7.3	-5.55E+8.3	-10.95E+13.62	-6.75E+10.39	-9.18E+5.97	-10.97E+11.88	-6.47E+7.7	-6.52E+7.77	-13.05E+14.7	-9.24E+15.9	-14.78E+17.8	-7.56E+4.9
(h97)	-6.07E+5.27	-5.62E+8.8	-11.38E+7.8	-6.55E+7.1	-4.41E+6.9	-7.97E+16.85	-14.98E+6.4	-11.6E+10.21	-7.93E+2	-10.72E+8.7	-8.47E+12.24	-12.86E+6.24	-4.1E+13.8	-5.17E+12.3	-18.84E+13.95	-8.41E+62	-8.63E+4.68	-9E+4.9	-5.67E+4.3	-6.33E+8.67	-10.27E+5.53	-8.55E+13.3	-8.71E+9	-7.49E+4.8
(h107)	-5.69E+4.71	-4.37E+7.4	-9.87E+6.1	-4.95E+5.4	-4.21E+6.0	-6.89E+25.3	-18.62E+4.52	-11.27E+8.4	-8.44E+13.98	-14.79E+17.78	-5.42E+3.88	-8.64E+12.28	-7.69E+3.62	-4.94E+4.2	-10.84E+10.67	-11.10E+10.7	-8.19E+7.34	-4.59E+5.92	-8.36E+14	-7.35E+10.47	-6.72E+9.34	-8.89E+6.65	-16.1E+13.93	-8.92E+2.7
(h110)	-5.01E+18	-5.22E+6.1	-6.23E+4.7	-8.79E+7.15	-7.32E+10.38	-12.50E+7.72	-18.73E+3.3	-8.36E+6.1	-8.4E+7.4	-13.39E+14.43	-15.94E+7.5	-8.3E+10.8	-7.13E+9.6	-16.14E+18.28	-15.14E+12.37	-12.91E+8.7	-8.11E+10.37	-13.55E+13.3	-7.64E+14.3	-11.28E+3.7	-6.48E+12.57	-16.95E+18.4	-18.99E+15.1	-0.10E+03
(h120)	-3.20E+13.31	-9.07E+18.2	-11.01E+13.52	-11.07E+6.51	-13.12E+14.64	-12.19E+11.6	-7.12E+7	-10.30E+10.35	-4.95E+7.9	-13.75E+19.27	-12.99E+10.4	-16.35E+12.9	-11.4E+15.82	-17.59E+18.99	-10.99E+18.42	-18.24E+11.9	-8.83E+7.3	-12.89E+18.1	-14.42E+18.34	-17.97E+15.1	-4.53E+5.27	-10.6E+7.9	-11.67E+12.59	-18.43E+15.7
(h127)	-1.96E+8	-1.66E+10.51	-9.54E+11.76	-17.02E+7.3	-10.19E+10.3	-12.72E+11.21	-6.64E+7.9	-8.97E+9.9	-16.06E+18.4	-10.91E+18.4	-13.20E+11.46	-16.35E+11.9	-13.32E+11.9	-13.22E+10.9	-14.31E+17.94	-19.06E+16.42	-11.31E+4.2	-11.67E+17.8	-11.58E+15.16	-10.74E+12.92	-16.74E+10.28	-10.93E+10.27	-15.47E+15.5	-0.10E+03
(h130)	-0.98E+10.37	-10.17E+18.92	-11.81E+10.3	-18.39E+11.78	-6.53E+7.6	-9.68E+2.98	-13.6E+6	-7.93E+9.1	-11.54E+10.5	-5.35E+15.3	-12.21E+19.28	-19.6E+86	-4.59E+4.4	-8.15E+11.8	-10.28E+13.2	-13.86E+14.74	-11.07E+8.99	-16.19E+162	-15.44E+13.37	-17.77E+14.56	-17.61E+5.81	-17.54E+12.35	-11.34E+17.98	-0.10E+03
(h142)	-5.36E+3.38	-6.27E+4.3	-11.72E+3.24	-5.57E+11.7	-14.82E+8.48	-9.78E+10.87	-11.49E+10.37	-14.06E+17.97	-14.26E+7.33	-5.29E+15.2	-13.99E+14.6	-11.71E+10.73	-8.97E+6.4	-15.95E+18.28	-16.11E+18.2	-10.03E+7.5	-13.68E+10.27	-11.25E+13.97	-17.86E+10.5	-14.93E+12.68	-10.97E+12.26	-14.17E+12.37	-11.65E+182	-0.10E+03
(h150)	2.22E+16	-1.45E+1	-4.91E+5.6	-1.07E+17.85	-11.73E+12.79	-11.53E+8.01	-7.83E+12.61	-18.12E+10.39	-8.67E+4.3	-0.03E+9.35	-10.26E+2.4	-3.81E+4.7	-6.13E+25	-11.88E+15.3	-15.74E+18.67	-19.94E+10.27	-16.78E+17.94	-19.13E+17.91	-16.93E+16.63	-18.18E+8.3	-8.1E+16	-14.02E+9.91	-3.68E+4.5	-0.10E+03
(h157)	-0.01E+3.96	-1.49E+3.6	-9.63E+4.6	-9.81E+13.3	-6.24E+16.35	-17.95E+7.25	-18.48E+15.57	-10.90E+17.47	-18.52E+16.42	-12.29E+10.33	-7.12E+4.67	-2.77E+5.24	-2.72E+1.27	-7.29E+5.0	-10.23E+9.84	-6.26E+18.62	-18.97E+13.68	-18.49E+17.93	-11.6E+10.38	-17.16E+12	-13.6E+15.27	-6.83E+15.77	-3.96E+4.5	



Radiated Composite Gain of 6GHz

Appendix B

01602)	8.471-10.08	-12.201-11.18	-8.8-8.23	9.481-11.47	-15.651-16.58	-11.411-10.33	-13.251-18.82	-18.401-15.27	-14.331-13.95	-15.851-16.53	-17.211-16.74	-14.881-11.92	-10.211-11.2	-15.131-14.09	-10.251-6.45	-8.811-5.79	6.301-4.44	8.831-7.87	6.421-6.91	6.581-6.39	-5.571-4.98	-5.031-5.85	-5.491-4.48	-5.861-4.78
011702)	5.531-7.05	-7.714-8.51	-8.291-8.3	-10.091-11.45	-13.681-10.66	-17.091-12.26	-10.331-6.46	-7.281-7.65	-7.371-8.55	-10.51-7.76	-16.11-12.38	-11.021-11.38	-16.791-12.42	-14.161-13.7	-15.551-15.07	-14.841-13.38	-12.081-11.95	-14.121-10.02	-8.321-8.02	-6.441-5.85	-7.531-7.24	-4.701-4.68	-3.911-3.21	-2.611-2.32
018614)	-10.861-14.85	-14.561-14.29	-14.381-15.17	-17.411-16.97	-18.161-16.6	-17.971-17.95	-14.071-13.5	-11.021-11.38	-16.791-12.42	-14.161-13.7	-15.551-15.07	-14.841-13.38	-12.081-11.95	-14.121-10.02	-8.321-8.02	-6.441-5.85	-7.531-7.24	-4.701-4.68	-3.911-3.21	-2.611-2.32	-2.611-2.32	-2.611-2.32	-2.611-2.32	
FreqHz	6.17550Pz	ThetaRef. 3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
Gain	01671907.57)	01517022.57)	0130719037.57)	0145719052.57)	016719067.57)	01757022.57)	0189719087.57)	01105719112.57)	01137190127.57)	01137190142.57)	011507190157.57)	011657190172.57)	011657190187.57)	011957190202.57)	012107190217.57)	012257190232.57)	012407190247.57)	012557190262.57)	012707190277.57)	012857190292.57)	013007190307.57)	013157190322.57)	013307190337.57)	013457190352.57)
017)	2.931-3.31	3.541-3.54	3.831-4.3	5.171-5.68	6.551-7.88	-10.211-11.8	-13.31-15.41	-17.751-15.48	-13.131-9.76	-7.481-6.99	-5.941-5.03	-3.691-5.8	-3.351-3.59	-3.851-4.22	-4.481-4.88	-5.651-6.62	-6.191-10.28	-12.451-13.88	-15.241-15.79	-15.61-14.21	-12.031-10.77	-7.851-7.6	-4.421-3.89	
0175)	2.641-2.71	3.221-4.19	-3.781-4.13	6.411-5.98	6.771-6.52	-10.831-12.5	-13.931-15.29	-18.711-13.51	-10.861-9.68	-6.291-5.28	-5.841-4.47	-3.421-2.72	-2.441-2.55	-3.011-4.21	-3.621-4.58	-5.021-5.43	-6.781-6.94	-10.781-12.51	-13.021-15.43	-16.461-15.16	-13.791-10.55	-8.261-6.88	-4.851-4.43	
01752)	1.671-2.02	-1.881-1.45	-1.641-2.59	3.691-4.73	5.591-6.3	-10.711-12.23	-12.761-14.45	-17.951-16.67	7.551-5.53	4.741-5.4	2.261-3	1.011-1.57	0.701-0.51	0.511-0.22	0.241-0.31	0.411-0.6	0.611-0.72	1.011-1.022	1.731-1.93	1.571-1.52	1.671-1.68	1.621-1.56	3.801-2.5	
017522)	1.131-1.27	2.381-2.08	1.631-1.65	2.561-1.4	7.961-1.06	-12.561-14.01	-15.191-16.32	-18.491-16.94	8.221-6.78	4.531-4.44	3.071-1.48	1.691-1.3	1.751-1.25	1.921-1.51	2.111-2.26	3.361-2.77	4.891-1.13	-12.891-15.34	-17.841-14.71	-16.461-15.25	-13.791-10.55	-8.261-6.88	-4.851-4.43	
017523)	1.871-2.09	3.511-2.64	5.641-4.09	6.441-5.36	7.151-6.13	-10.121-13.7	-13.071-16.36	-15.241-12.3	8.981-9.18	1.511-10.71	1.091-1.68	-12.571-8.55	7.471-6.01	3.371-2.91	2.971-2.53	3.271-3.45	4.141-7	-12.941-15.94	-15.171-14.78	-13.931-12.3	9.471-6.49	4.401-3.38	2.121-1.99	
017524)	2.311-3.64	3.021-4.2	4.381-5.07	4.991-6.85	5.331-6.83	-8.551-10.51	-11.571-16.98	-8.801-17.47	8.091-7.96	7.511-7.87	5.21-3	0.121-0.51	5.441-7.5	7.371-7.37	5.541-5.28	2.161-3.1	5.711-6.03	4.261-7.04	-15.051-19.49	-18.321-16.02	-15.091-12.4	-7.511-5.38	2.921-2.29	
017525)	0.0101-0.84	0.021-0.93	0.211-4.74	4.171-4.34	3.721-5.4	-7.761-11.16	-11.441-22.2	-8.951-15.79	5.421-6.59	8.191-11.16	4.591-4.29	3.291-3.14	3.481-2.26	7.941-6.06	4.211-4.81	5.471-6.08	-10.191-10.82	-18.301-17.97	-17.831-13.7	-10.631-9.44	-7.021-6.48	4.241-3.52	0.251-0.77	
01522)	0.281-0.36	-1.781-5.6	-13.791-17.16	8.951-4.87	6.491-6.38	-7.521-6.87	-10.791-12.3	-5.51-4.14	4.911-3.77	-15.151-8.87	-6.831-5.44	2.721-4.1	-2.31-0.8	0.821-2.68	-4.691-10.2	8.711-4.55	6.851-10.48	-11.291-13.43	-17.841-16.08	-18.841-15.16	-13.311-8.81	6.551-3.88	1.711-0.31	
01801)	1.111-1.28	-3.581-4.76	-11.551-14.4	-11.791-13.5	-6.691-9.62	8.711-10.7	-8.571-12.6	-3.861-5.23	-7.531-11.75	-14.811-13.3	-10.671-13.1	-4.631-3.01	-2.121-2.39	4.411-4.62	-4.851-6.6	-12.911-12.3	-10.741-10.78	-17.341-13.44	-18.191-16.32	-18.191-16.32	-18.191-16.32	-18.191-16.32	1.871-0.8	
01871)	5.111-5.11	-4.641-8.72	-8.271-11.3	-15.421-7.93	-8.21-17	-8.881-13.68	-10.991-6.85	8.131-12.04	-1.471-10.58	7.711-4	-4.591-2.63	-1.141-1	-3.551-8.83	8.661-6.3	7.371-13.3	8.241-15.89	-18.521-17.76	-18.471-15.87	-18.641-12.05	-7.721-6.26	-6.971-12.2	-3.561-1.8	1.811-0.6	
01791)	2.181-3.04	3.561-7.89	-7.071-8.95	-16.711-4.87	-12.191-15.3	-10.711-18.4	-16.691-13.51	-10.051-16	-14.781-9.08	-11.541-11.21	-11.481-11.19	-8.451-6.65	-3.671-3.31	-3.551-8.68	8.911-13.7	-10.641-12.48	-16.661-18.82	-13.981-11.62	-12.811-8.62	-8.011-11.77	-18.271-17.1	4.541-2.43	2.711-0.26	
01821)	3.591-4.49	-5.761-8.84	-5.71-8.84	-18.771-11.67	-17.441-12.9	-15.311-14.8	-16.141-16.86	8.291-10.99	-18.131-13.1	-16.651-18.53	-16.11-19.35	-10.81-12.4	-7.771-9.83	7.891-8.2	-10.511-14.24	-11.551-15.41	-17.481-15.89	-19.291-17.81	-15.141-16.55	-16.261-15.45	-13.241-18.81	-16.981-16.87	6.871-4.88	
01801)	6.861-7.46	-4.461-5.9	-3.551-9.34	-13.881-13.84	-1.281-7.88	-16.881-10.71	-12.191-12.51	-10.191-18.15	-11.811-14.42	-16.311-13.5	-14.461-19.15	-14.711-12.69	8.071-10.41	-16.081-10.21	-12.321-12.26	-11.211-11.84	-18.991-18.68	-16.651-17.43	9.051-12.35	-15.131-13.09	-16.181-17.92	-14.231-11.73	7.711-10.26	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-13.171-17.12	-13.261-13.8	-11.661-18.39	-13.611-12.9	-12.811-13.65	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	-16.311-19.55	
01871)	-1.451-1.47	-5.361-7.8	-8.861-17.37	-11.221-11.87	-12.261-13.8	-																		



Radiated Composite Gain of 6GHz

Appendix B

(H15)	-4.53/-3.3	2.83/2.88	-3.26/-3.22	-2.64/-3.67	4.25/-4.68	-5.53/-6.83	6/-6.13	-6.23/-6.98	8.39/-6.85	-5.68/-6.54	-5.36/-4.34	-2.61/-3.34	-2.92/-1.69	-1.14/-1.33	2.63/-2.5	-0.01/-1.5	-6.58/-4.06	0.05/-10.23	-11.03/-11.3	8.9/-8.96	-8.82/-9.11	-8.63/-7.42	6.91/-10.78	6.99/-9.84
(H22)	2.65/-2.41	-3.83/-3.44	-2.47/-3.09	-3.94/-4.4	7.46/-7.3	6.64/-6.22	-6.27/-7.08	-7.91/-8.2	8.71/-7.1	7.69/-6.27	-7.27/-6.38	-4.06/-2.67	-1.48/-2.5	-1.06/-1.69	2.77/-3.84	4/-4.04	-4.96/-7.41	-11.04/-14.9	-12.82/-8.3	-7.94/-9.84	-10.29/-10.55	-9.71/-8	-5.46/-7.43	-4.81/-9.27
(H30)	3.83/-3.24	-2.68/-3.21	-3.71/-4.65	-4.19/-6.57	6.24/-6.14	6.51/-6.36	-6.09/-6.81	-8.45/-9.19	-4.17/-6.84	-6.31/-5.54	-5.51/-6.61	-5.21/-6.06	-4.44/-2.65	-1.52/-1.08	-3.39/-2.22	-3.48/-6.04	-11.68/-16.54	-16.65/-9.78	-7.07/-8.27	-10.27/-10.4	-4.62/-9.89	6.15/-9.61	-5.34/-6.96	
(H37)	3.54/-4.7	-5.66/-6.68	-4.64/-3.88	-5.79/-5.4	7.13/-7.64	-4.95/-3.27	-5.59/-4.25	-4.36/-7.3	8.69/-7.9	9.15/-8.13	-9.79/-11.2	-10.31/-12.8	-10.88/-8.81	6.75/-4.78	-3.57/-4.4	-1.01/-1.68	-3.34/-9.59	-12.07/-15.6	-10.24/-6.3	-9.52/-12.42	-8.44/-9.53	-5.27/-4.15	-3.81/-1.38	-3.55/-3.89
(H45)	-8.98/-5.34	-5.96/-5.19	-6.16/-6.26	-12.46/-14.22	-10.07/-16.3	6.47/-6.98	-6.61/-4.31	-5.99/-7.19	-5.46/-5.73	6.42/-6.17	-7.25/-6	-6.34/-4	-3.97/-6.3	2.27/-6.32	4.14/-3.21	-4.16/-4.87	-5.81/-6.32	-8.14/-12.15	-10.62/-8.3	-9.67/-8.34	-5.89/-4.95	-4.84/-5.34	-3.26/-3.37	-3.89/-3.6
(H52)	6.8/-11.83	-14.07/-12.24	9.96/-8.26	-7.61/-3.7	7.22/-7.61	8.67/-9.36	8.17/-6.25	-7.21/-7.4	5.89/-4.62	7.19/-6.37	-4.76/-4.17	-3.56/-3.68	-1.97/-1.69	2.59/-5.2	9.38/-3.73	-4.55/-6.84	-8.95/-8.64	-11.37/-18.45	-12.67/-7.23	-10.1/-7.29	-4.66/-2.99	-3.49/-5.74	-8.88/-7.15	6.37/-6.9
(H58)	2.81/-5.16	-7.55/-10.76	-14.53/-10.99	-9.65/-6.55	6.58/-6.79	-8.17/-6.78	-6.97/-7.5	-9.79/-6.85	5.11/-4.33	-5.96/-6.98	-4.44/-3.28	-2.41/-4.65	-3.81/-3.71	4.14/-3.33	-5.14/-10.33	-7.49/-6.85	-9.45/-9.42	-11.33/-10.35	-11.87/-11.51	-5.89/-4.29	-5.55/-7.19	-4.53/-2.95	-1.02/-1.17	
(H67)	3.64/-6.5	8.73/-3.89	-15.47/-12.83	-12.54/-7.49	-6.52/-11.49	-10.75/-11.46	-11.12/-10.4	-13.88/-8.23	6.06/-7.3	-14.15/-13.7	-10.82/-11.39	-10.73/-6.79	7.08/-7.09	6.55/-6.59	6.34/-10.52	-8.49/-11.69	-18.08/-14.59	-13.92/-10.55	-17.89/-14.6	-15.3/-13.37	-8.99/-6.27	-7.86/-7.16	-3.36/-2.13	-1.71/-2.29
(H75)	8.12/-9.31	5.44/-2.4	-12.37/-16.14	-11.07/-1.45	-4.77/-12.32	-13.33/-14.2	-12.71/-15.39	-16.48/-17.38	-18.5/-18.64	-11.08/-10.65	-6.23/-6.4	-9.98/-11.26	-11.01/-14.25	-18.76/-16.15	-11.24/-18.08	8.62/-7.44	-17.82/-16.2	-18.15/-16.6	-7.41/-6.62	-6.68/-7.8	-4.13/-2.37	-4.13/-2.37	-4.13/-2.37	-4.13/-2.37
(H82)	9.89/-6.85	-4.71/-4.65	8.98/-8.85	-18.72/-6.85	-13.35/-13.58	-19.34/-16.42	-17.59/-15.25	-18.71/-18.41	-14.31/-9.87	-13.79/-16.59	-13.16/-16.89	-12.58/-13.31	-10.89/-14.92	-10.89/-14.92	-13.45/-13.73	-18.91/-18.17	-15.24/-17.64	-15.29/-13.68	-15.59/-10.22	-13.48/-9.32	-8.51/-10.36	-8.98/-10.81	-4.69/-3.4	-4.19/-6.85
(H90)	11.02/-5.24	3.82/-6.26	-12.57/-11.86	-15.99/-11.27	-15.15/-11.76	-13.25/-12.79	-16.85/-15.49	-14.54/-14.16	-15.99/-17.86	-14.53/-18.16	-12.35/-16.89	-11.06/-16.33	-10.69/-13.36	-10.59/-14.4	-12.51/-14.35	-10.84/-17.7	-18.71/-19.83	-12.46/-13.29	-10.87/-11.67	-12.23/-16.8	-13.21/-10.18	-1.55/-2.36	-11.31/-3.22	
(H97)	7.48/-9.1	-4.23/-7.4	-15.12/-10.35	-10.54/-9.63	8.86/-13.1	-12.64/-10.33	-10.54/-16.85	-16.15/-14.5	18.4/-18.67	-10.97/-17.21	-12.92/-12.91	-12.96/-14.4	12.91/-6.84	-2.91/-6.82	-7.36/-14.86	-6.96/-17.3	-10.82/-18.55	-15.37/-17.84	-14.35/-17.42	-12.55/-15.37	-8.89/-8.1	-11.46/-14.57	-16.16/-13.3	
(H105)	8.57/-8.66	-10.56/-15.76	-18.81/-16.59	8.89/-13.88	9.15/-16.68	-14.83/-8.67	9.02/-12.5	-14.18/-17.2	7.88/-11.14	-13.52/-14.66	-17.89/-19.27	-8.57/-8.84	11.32/-12.55	-14.45/-8.74	-8.88/-10.74	8.25/-14.37	-9.76/-8.44	-10.3/-13	-15.71/-16.18	-15.32/-8.8	-5.23/-5.33	8.99/-7.88	-11.49/-16.78	-18.94/-14.9
(H112)	-16.19/-15.31	-18.67/-18.05	-13.76/-11.31	-17.84/-8.87	-4.18/-14.24	-12.17/-85	9.37/-14.66	-8.99/-11.48	-19.69/-9.18	-11.42/-6.85	8.37/-13.2	9.28/-9.31	5.36/-11.49	-18.11/-10.28	-8.54/-16.42	4.3/-14	-8.79/-8.65	-12.27/-9.86	-18.91/-19.6	-9.78/-9.44	9.02/-11.46	-2.71/-6.98	-2.71/-6.98	-2.71/-6.98
(H120)	8.88/-16.58	-13.79/-18.32	-14.18/-17.39	-14.84/-6.14	-7.73/-16.05	-7.36/-7.53	-6.44/-6.46	6.35/-10.24	-13.86/-16.79	-18.81/-9.18	-11.81/-17.74	-18.43/-15.97	-10.34/-10.91	-17.86/-17.69	-18.14/-17.9	-10.91/-8.78	-6.52/-5.63	6.01/-7.42	8.75/-6.9	-8.33/-9.43	-7.28/-5.66	-5.16/-6.68	-3.75/-3.75	-6.42/-10.43
(H127)	-14.68/-11.7	-12.61/-8.6	-10.44/-9.59	-6.89/-6.52	-11.19/-12.1	-8.63/-7.21	-10.13/-8.74	-13.89/-12.49	-17.37/-13.85	-8.03/-14.77	-18.53/-12.65	-18.24/-18.51	-19.09/-13.34	-18.76/-14.14	-18.57/-15.31	-4.22/-7.03	-5.48/-3.79	6.13/-11.87	8.19/-7.3	-7.12/-6.34	-7.69/-6.46	-6.11/-6.8	-8.66/-6.01	-6.82/-9.13
(H135)	-16.62/-14.58	-10.15/-9.69	-17.56/-11.66	-8.4/-14.48	-4.43/-9.81	-13.67/-6.69	-4.68/-4	6.54/-10.32	-13.72/-11.86	-14.19/-14.48	-7.3/-10.4	-12.37/-8.63	-11.53/-16.4	-18.81/-13.48	-18.47/-6.43	-6.23/-10.61	-7.38/-2.07	-2.11/-6.88	-4.75/-12.03	-5.66/-6.05	5.14/-5.2	-2.8/-4.8	-6.82/-6.69	-14.68/-12.79
(H142)	-5.65/-17.78	-12.29/-10.1	-11.76/-7.39	-4.6/-14.66	-6.72/-14.88	-14.57/-8.69	-7.25/-5.55	-6.98/-12.46	-14.31/-17.82	-14.84/-8.02	-4.16/-18.36	-11.71/-17.1	-3.33/-6.78	-15.74/-15	-16.95/-12.48	-19.14/-6.5	-7.78/-23	-8.27/-17.48	-5.36/-4.69	-15.58/-16.58	-9.57/-19.2	-4.12/-7.27	-5.59/-7.9	-7.22/-6.04
(H150)	-11.52/-10.69	-10.49/-13.07	-13.14/-16.69	-12.6/-6.34	-7.11/-16.11	-10.91/-6.66	-7.25/-4.67	-7.76/-12.25	-13.12/-11.15	-16.17/-17.38	-12.44/-16.72	-8.96/-2.7	-2.47/-5.73	-12.17/-12.57	-16.75/-16.83	-19.26/-12.33	-5.19/-2.57	-9.74/-12.62	-5.99/-3.49	-5.36/-7.49	-17.72/-12.51	-11.34/-8.68	-6.32/-8.68	-6.07/-10.3
(H157)	-7.71/-12.16	-10.91/-10.71	-16.85/-18.73	-18.96/-18.66	-11.06/-11.77	-8.24/-6.81	-7.64/-5.83	-4.25/-6.42	-3.88/-13	-13.85/-14.12	-12.67/-13.38	-10.79/-9.61	-6.96/-12.2	-13.17/-13.17	-13.88/-13.9	8.19/-8	7.86/-10.51	-10.74/-10.24	-13.61/-13.83	-13.71/-13.06	-10.81/-10.62	-2.99/-3.38	-8.31/-5.75	
(H165)	2.79/-1.57	6.54/-7.42	8.22/-12.36	-11.55/-14.8	-13.74/-12.52	-17.21/-18.86	-16.48/-16.68	-11.52/-19.17	-15.19/-19	-8.32/-6.68	-6.61/-6.17	-7.06/-6.64	-4.57/-10.7	-3.57/-3.77	4.07/-6.6	-9.82/-12.46	-15.39/-15.19	-18.82/-17.97	-10.69/-4.5	-5.54/-6.03	-6.66/-6.68	-8.86/-6.45	-5.73/-5.45	-5.71/-7.24
(H172)	5.99/-2.89	-5.77/-10.85	-18.27/-18.02	-18.29/-19.37	-17.94/-12.58	-10.38/-10.07	-11.76/-15.79	-18.26/-18.69	-14.64/-16.78	-17.13/-14.6	-4.89/-2.51	-3.36/-3.4	-3.63/-4.68	-3.06/-4.1	9.84/-6.37	-11.33/-11.29	-11.36/-11.36	9.84/-6.37	-8.72/-8.29	-13.47/-11.21	-11.70/-12.12	-8.52/-6.12	-3.51/-6.2	
(H180)	-17.71/-13.87	-10.4/-10.13	-11.87/-13.31	-13.73/-12.09	-11.4/-10.78	-10.12/-14.7	-11.5/-10.61	9.93/-11.01	-10.86/-11.42	-13.67/-13.93	-11.93/-11.9	-14.96/-14.41	-11.55/-12.25	-12.83/-13.48	-18.04/-19.24	-18.39/-18.39	-17.84/-15.92	-13.87/-12.32	-12.43/-13.11	9.02/-7.14	-5.39/-3.82	-3.123/-8.4	-4.53/-3.96	-5.46/-6.85
Freq(Hz)	6.995GHz	Pin(dBm)	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Gain	(H15)(H22)	(H30)(H37)	(H45)(H52)	(H58)(H67)	(H75)(H82)	(H90)(H97)	(H105)(H112)	(H120)(H127)	(H135)(H142)	(H150)(H157)	(H165)(H172)	(H180)(H187)	(H195)(H202)	(H210)(H217)	(H225)(H232)	(H240)(H247)	(H255)(H262)	(H270)(H277)	(H285)(H292)	(H300)(H307)	(H315)(H322)	(H330)(H337)	(H345)(H352)	
(H15)	4.76/-5.96	5.69/-5.27	6.36/-6.72	5.78/-6.91	4.96/-4.76	4.74/-5.33	2.48/-1.7	1.42/-1.69	7.19/-5.97	1.13/-26	-2.52/-3.7	3.18/-4.9	-3.60/-2.1	-7.45/-6.8	4.21/-4.2	4.02/-4.77	3.69/-5.75	2.01/-1.92	-1.26/-1.34	-1.23/-1.49	-1.47/-1.33	-1.51/-1.52	-3.57/-4.4	
(H22)	4.95/-7.74	8.49/-6.99	11.11/-8.07	7.67/-6.61	5.32/-4.47	3.92/-3.65	2.07/-4.1	1.86/-1.53	1.87/-1.24	1.59/-1.59	2.29/-2.91	3.23/-3.8	4.29/-4.83	3.29/-4.97	4.41/-5.72	6.88/-6.88	4.88/-6.36	3.29/-2.71	2.27/-1.87	1.81/-1.56	1.48/-1.32	2.43/-3.04	5.71/-6.86	
(H30)	5.85/-15.19	-19.27/-18.1	-14.34/-6.42	-2.71/-5.77	5.69/-4.44	3.49/-2.72	3.05/-4.42	3.87/-3.84	3.81/-4.09	3.72/-4.01	5.62/-6.83	4.05/-7.81	12.52/-10.55	-14.03/-10.86	-7.59/-5.26	4.42/-4.2	-4.28/-4.09	3.35/-2.59	1.73/-1.08	-1.76/-4.79	-1.06/-1.41	-2.01/-2.72	3.94/-5.11	-7.96/-11.3
(H37)	8.32/-6.45	7.99/-6.63	4.85/-4.63	4.38/-4.27	3.75/-3.32	3.40/-3.81	3.98/-4.68	5.51/-5.02	2.74/-2.65	2.74/-2.65	2.89/-2.86	3.98/-4.68	3.3/-7.7	6.71/-6.82	-16.38/-3.98	6.03/-6.46	3.3/-7.7	5.44/-5.65	3.923/-6.46	3.24/-6.47	4.77/-4.47	4.77/-4.47	4.77/-4.47	4.77/-4.47
(H45)	5.95/-6.82	5.38/-4.93	5.23/-4.36	3.29/-3.47	1.96/-1.58	2.44/-4	4.25/-5.84	4.54/-4.74	6.87/-6.74	2.03/-2.68	2.64/-3.52	5.46/-4.7	6.44/-6.29	8.56/-10.27	-17.94/-13.67	4.262/-6.33	2.05/-1.26	2.78/-3.46	3.19/-2.44	2.88/-4.16	4.13/-3.92	-5.86/-4.69	8.36/-6.48	16.16/-7.8
(H52)	3.33/-3.01	-1.77/-1.95	-1.57/-2.09	-3.94/-1.61	5.94/-3.6	3.38/-4.2	3.874/-6.05	4.82/-2.28	1.66/-2.75	3.62/-8.1	3.88/-4.38	3.38/-4.46	4.59/-3.25	4.38/-3.62	8.971/-6.34	3.13/-3.94	2.27/-1.64	3.4/-6.02	-4.59/-4.35	4.21/-3.48	-4.43/-3.74	-7.74/-6.92	-1.147/-4.61	1.045/-3.13
(H58)	4.58/-3.95	3.64/-2.53	3.36/-2.32	2.39/-2.77	9.25/-4.1	2.13/-4.6	-16.91/-15.61	-10.46/-6.33	6.74/-9.81	4.79/-3	-5.97/-6.02	3.98/-3.34	2.17/-1.44	-1.28/-1.42	1.81/-3.6	1.57/-10.66	-3.56/-6.87	-1.15/-3.73	-4.58/-4.69	-6.99/-7.27	-8.57/-7.47	6.23/-6.17	6.88/-6.82	
(H67)	-11.05/-7.16	-4.03/-6.46	-4.36/-3.09	-2.70/-5.62	2.70/-5.62	4.89/-10.69	-10.87/-10.64	-7.6/-6.66	-10.45/-9.72	4.42/-5.65	-5.86/-6.65	6.41/-7.48	-4.16/-9.23	-1.19/-1.48	-1.57/-6.75	-5.52/-4.48	-8.89/-11.36	1.36/-1.27	-2.77/-6.09	-3.992/-4.14	-3.576/-7.2	-10.47/-10.47	4.061/-6.36	-10.36/-10.36
(H75)	6.43/-5.18	2.64/-6.7	4.24/-3.67	4.31/-5.1	4.82/-6.04	4.02/-6.84	4.45/-6.56	6.4/-6.31	7.33/-7.37	5.19/-5.68	6.85/-4.74	6.52/-13.34	12.55/-11.63	6.713/-8.8	2.04/-1.67	3.18/-6.36	1.53/-6.83	2.08/-2.32	-5.57/-1.87	4.21/-3.25	6.53/-7.06	6.95/-11.4	-12.91/-6.12	
(H82)	5.56/-4.34	-4.88/-4.65	-3.98/-2.08	-1.49/-2.78	1.27/-6.36	1.130/-2.6	-1.16/-1.33	-3.22/-5.68	4.44/-5.59	6.59/-4.31	-5.04/-5.04	3.52/-6.69	-12.97/-14.17	6.06/-6.62	8.17/-3.1	4.44/-4.97	5.82/-6.45	1.73/-9.58	3.05/-4.21	6.44/-4.23	4.31/-3.75	6.41/-2.68	7.17/-18.46	-13.91/-10.24
(H90)	4.16/-6.2	2.67/-3.67	3.71/-3.13	2.02/-2																				



Radiated Composite Gain of 6GHz

Appendix B

φ(97.5°)	3.282.55	2.960.25	-0.371.35	-2.024.25	-7.259.15.04	-7.818.05	-10.9412.64	-17.9813.93	8.820.14.47	-18.7811.34	-10.2916.78	-10.784.08	4.971.15.51	-14.0515.73	-5.4913.72	-5.574.18	-5.502.46	0.241.15	2.361.19	-0.701.11	1.881.57	2.443.26	1.833.06	2.733.5	
φ(105°)	2.361.72	1.490.32	-2.380.53	-3.491.37	6.420.58	-13.3610.02	-8.9219.15	-16.5119.14	-12.1811.47	-1819.19	-11.8614.73	-14.5310.76	4.471.33	9.241.95	6.6516	-5.652.18	-5.021.19	-2.371.32	-3.741.56	-1.371.71	2.351.47	2.5712	0.762.47	2.912.33	
φ(112.5°)	1.820.44	1.614.73	-0.741.04	-3.212.69	-7.171.63	-8.0617.14	-15.1914.6	-11.371.78	-16.5111.71	-9.312.77	-10.971.68	-5.591.61	2.261.55	6.8514.33	-1114.26	-6.742.05	-13.5910.7	-0.7810.14	-1.141.25	-2.380.5	3.751.23	1.883.11	0.232.35	2.072	
φ(120°)	0.550.41	-0.631.24	-2.551.36	-3.791.44	-7.771.84	-9.621.57	-9.671.82	-14.291.87	-18.9810.29	-12.331.842	-11.921.97	-9.121.73	4.351.79	9.0915.08	13.61.5	-5.991.66	-13.891.8	0.981.18	-2.081.45	-4.581.93	2.532.1	1.621.48	-0.041.02	1.760.29	
φ(127.5°)	-1.991.91	0.191.24	2.681.25	-2.891.54	-6.491.56	-8.521.98	-9.671.65	-15.5310.68	-18.121.32	-17.691.72	-16.4118.26	-17.811.82	-10.6312.07	-17.3419.12	-18.521.9	-3.381.48	-11.841.751	-2.512.8	-1.921.56	-10.221.12	1.140.36	-3.160.43	1.621.49	-0.770.15	
φ(135°)	-0.181.24	0.141.07	-1.741.3	-3.212.96	-5.331.65	-8.581.47	-8.9513.63	-18.0119.01	-18.671.828	-14.9511.75	-15.6314.54	-19.061.72	-18.4411.57	8.5911.28	-14.781.65	-6.501.39	-14.7911.36	4.331.39	-2.221.57	-18.5113.44	1.491.17	-2.521.495	1.760.15	-2.110.38	
φ(142.5°)	0.071.179	-3.331.83	-1.591.09	-5.121.55	-6.791.61	-4.021.17	-12.3114.83	-18.9719.32	-12.891.78	-15.691.84	-26.015.37	-17.0118.24	-14.9916.78	-18.142.17	-13.0412.03	-10.311.91	-16.6316.89	8.231.79	-5.971.07	-19.881.02	-0.410.37	-0.881.42	-1.731.44	-6.471.028	
φ(150°)	3.051.01	-1.451.15	-5.131.38	-3.511.45	-6.931.32	9.231.37	-12.1913.81	-18.3517.42	-17.591.87	-19.1619.53	-18.8911.38	-13.014.66	-10.7012.02	-15.3618.05	-14.7411.38	9.5713.33	-17.381.943	-12.3810.48	-11.111.75	-7.191.65	-5.941.36	4.291.43	0.590.19	-0.391.46	
φ(157.5°)	1.151.37	-6.891.29	2.261.41	-6.41.21	9.391.32	-12.371.99	-18.361.58	-17.2311.17	-18.711.54	-17.911.437	-15.881.91	-8.891.27	-17.791.49	-10.41.78	-12.761.89	-11.411.9	9.831.975	-3.231.68	-5.941.54	8.118.1	5.613.76	-1.021.05	0.681.78		
φ(165°)	5.3261.33	6.511.07	4.821.746	-12.3613.83	-13.7115.82	-16.711.26	-14.2816.72	-15.4814.73	-17.2112.88	-10.41.28	-5.811.85	-5.571.33	6.541.05	8.091.67	6.3115.06	-5.951.79	-11.5314.57	-16.7219.07	-14.8812.73	-10.9813.94	-12.861.98	-7.761.7	-17.011.26	-7.121.81	
φ(172.5°)	5.6561.39	7.231.26	8.231.76	-7.0111	-18.2118.01	-14.521.49	-15.191.36	-16.3611.4	7.971.22	6.941.84	-7.731.21	7.361.7	7.691.75	8.591.97	-11.2219.34	-8.5911.58	-10.9819.79	-18.7513.91	-10.451.91	6.41.61	-6.871.49	6.791.57	8.971.82		
φ(180°)	4.421.42	-4.961.42	-6.381.47	-13.5617.85	-14.611.454	-17.4218.32	-18.8814.96	-16.381.4	6.671.97	6.491.88	-3.913.54	3.431.49	-4.021.45	9.011.64	-6.691.42	9.8913.68	-18.2719.89	-17.971.538	-11.4519.32	-7.261.41	4.814.45	3.371.34	3.941.93	-4.191.87	
Frequency	6.9592GHz	PinWd1.4	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	
Gain	φ(97.5°)	φ(105°/φ22.5°)	φ(130°/φ37.5°)	φ(145°/φ52.5°)	φ(160°/φ67.5°)	φ(175°/φ82.5°)	φ(190°/φ97.5°)	φ(195°/φ102.5°)	φ(195°/φ107.5°)	φ(195°/φ112.5°)	φ(195°/φ117.5°)	φ(195°/φ122.5°)	φ(195°/φ127.5°)	φ(195°/φ132.5°)	φ(195°/φ137.5°)	φ(195°/φ142.5°)	φ(195°/φ147.5°)	φ(195°/φ152.5°)	φ(195°/φ157.5°)	φ(195°/φ162.5°)	φ(195°/φ167.5°)	φ(195°/φ172.5°)	φ(195°/φ177.5°)	φ(195°/φ182.5°)	φ(195°/φ187.5°)
φ(97.5°)	-19.2514.91	-17.6414.97	-14.6515.28	-14.9112.66	-11.421.131	-15.331.36	-15.7513.18	-17.1819.35	-17.241.65	-18.251.76	-18.931.911	-17.271.906	-18.1619.34	-16.4317.03	-16.8416.67	-16.561.82	-18.3619.25	-18.091.555	-18.061.16	-16.1416.33	-17.8116.82	-18.531.979	-15.551.678	-15.6211.72	
φ(105°)	-15.1916.09	-14.3115.75	-18.2615.34	-18.811.18	-18.081.874	-17.471.72	-17.3611.53	-11.1613.06	-14.6111.41	-14.271.1411	-14.941.51	-15.5215.68	-14.8315.72	-15.231.52	-14.6515.58	-14.9615.48	-15.0216.74	-15.381.728	-19.1115.08	-15.4615.57	-15.1916.08	-19.091.81	-18.851.928	-15.2713.54	
φ(112.5°)	-15.6215.15	-16.881.57	-13.6416.11	-10.211.69	-17.951.77	-17.0118.04	-17.871.775	-13.1813.13	-11.5911.97	-12.441.1411	-15.5317.96	-18.681.98	-19.021.79	-19.311.785	-18.871.971	-18.871.951	-15.7115.88	-16.321.683	-17.3411.81	-13.8615.73	-19.111.779	-17.9611.02	-17.781.589	-16.811.82	
φ(120°)	-14.9111.58	-13.8116.52	-17.711.82	-12.021.483	-18.711.506	-14.121.128	-14.2516.05	-12.981.95	-13.881.16	-18.471.85	-18.4219.49	-18.9619.08	-18.091.184	-18.021.91	-16.641.09	-19.331.15	-11.4311.33	-13.641.607	-17.781.98	-18.061.71	-18.371.93	-17.731.773	-17.441.97	-17.8411.97	
φ(127.5°)	-17.381.18	-18.8215.64	-19.081.14	-13.561.18	-18.51.31	-12.5315.75	-18.071.46	-18.081.943	-18.411.787	-17.861.828	-15.021.1827	-17.861.98	-17.861.98	-17.691.18	-15.711.74	-15.031.051	-12.781.16	-12.91.66	-13.871.514	-17.971.724	-16.821.181	-18.891.174	-17.481.37	-14.811.585	
φ(135°)	-18.811.78	-18.151.6	-18.771.38	-19.111.884	-17.611.822	-18.132	-11.981.1419	-16.541.936	-18.511.87	-18.431.776	-18.311.85	-18.021.98	-18.021.98	-18.021.98	-16.711.979	-13.911.865	-14.5811.26	-14.211.674	-13.811.874	-12.9611.48	-16.911.847	-18.211.872	-17.331.458	-16.281.878	
φ(142.5°)	-18.4519.15	-17.1710.38	-8.351.10	-12.2510.24	-11.811.1238	-14.521.129	-12.7114.89	-13.571.14	-12.531.36	-18.491.1849	-17.111.157	-18.121.92	-18.981.925	-18.541.157	-12.981.155	9.561.1255	-17.621.1463	-19.041.134	-18.311.385	-11.711.828	-18.611.163	-15.531.184	-19.111.884	-17.821.878	
φ(150°)	-12.931.76	-10.291.829	-12.691.39	-7.451.114	-6.381.1335	-7.091.43	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	-15.131.553	-16.241.123	
φ(157.5°)	-17.691.16	-14.8614.06	-11.421.145	8.9510.97	-13.7910.62	9.471.96	-7.811.147	-11.951.121	-12.581.131	-10.571.183	-18.951.856	-17.571.98	-18.441.171	-11.421.125	-17.881.761	-18.021.147	-11.931.147	-19.341.796	-16.191.143	-17.361.141	-15.741.88	-14.371.1195	-13.811.1247	-12.311.578	
φ(165°)	-18.951.449	-18.371.17	-16.071.51	-14.391.534	-14.891.887	-11.981.9	-8.8915.45	-12.0215.92	-18.451.95	-10.721.95	-17.9115.14	-13.701.867	-14.351.178	-10.5914.93	-13.961.87	9.861.925	-19.291.555	-16.781.105	-12.81.74	-19.491.6	-12.041.165	-10.821.1371	-9.131.1203		
φ(172.5°)	-18.7913.1	-17.991.82	-15.841.329	-13.1210.58	-12.9110.88	9.821.97	-13.121.34	-13.861.447	-11.941.1258	-14.861.1472	-14.941.1614	-18.131.534	-11.971.61	9.561.171	-18.2110.91	-17.1112.74	-18.391.788	-14.941.321	-13.171.163	-17.711.54	-18.721.76	-19.081.168	-12.871.184	-12.331.126	
φ(180°)	-16.1210.95	-13.6419.13	-19.151.95	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	-11.981.113	
φ(187.5°)	-12.291.92	-14.191.68	-18.981.938	-11.911.125	-12.881.13	-18.191.1079	-14.421.68	-11.691.1079	-11.911.125	-12.881.13	-18.191.1079	-14.421.68	-11.691.1079	-11.911.125	-12.881.13	-18.191.1079	-14.421.68	-11.691.1079	-11.911.125	-12.881.13	-18.191.1079	-14.421.68	-11.691.1079	-11.911.125	
φ(195°)	8.641.9639	-17.371.85	-11.981.859	-15.491.87	-11.411.439	-15.591.83	-17.411.74	-18.391.8432	14.541.689	-14.941.839	-18.831.738	-14.571.116	-17.261.981	-11.971.47	-18.191.89	-17.7114.18	8.641.932	-15.441.885	-18.361.738	-16.861.96	-18.071.96	-17.361.823	-8.581.159		
φ(195°)	8.411.1414	-14.091.87	-16.961.952	-16.881.947	-16.311.1088	-17.351.958	-11.261.774	-14.131.139	-14.981.139	-14.241.168	-10.591.133	-13.721.792	-16.911.628	-18.361.168	8.391.19	-16.341.46	-12.921.26	-10.221.1478	-19.081.773	-12.971.98	-16.411.914	-14.021.137	-17.831.163	-17.471.124	
φ(195°)	-13.1611.98	-18.5119.08	-18.771.121	-18.171.772	-18.081.156	-16.321.97	-14.431.16	-17.511.901	-17.751.126	-18.681.91	-16.911.14	-12.371.173	-17.331.154	-19.041.174	-19.541.19	-10.721.974	-15.751.852	-15.161.127	-12.891.169	-15.491.37	-12.931.156	-13.411.298	-17.991.181	-14.221.1393	
φ(195°)	-13.911.957	-16.521.862	-17.811.93	-17.121.05	-17.641.137	-10.361.82	-19.271.84	-17.781.16	-14.021.1251	-18.711.922	-16.461.92	-18.911.544	-13.521.173	-11.081.1031	-16.131.927	-15.891.127	-13.361.881	-11.891.94	-18.841.16	9.411.19	-11.011.106	-11.261.1196	-17.211.857	-12.161.936	
φ(195°)	-15.181.1321	-17.311.906	-15.6113.14	-19.261.131	-17.141.1271	-18.791.1313	-16.261.858	-11.581.1797	-18.011.174	-15.051.1758	-13.311.1313	-18.821.1304	6.581.148	-18.471.94	-16.021.1338	9.981.1375	-14.591.938	7.311.45	-17.271.158	-12.511.011	9.461.1192	-11.131.1837	-11.321.156	-18.571.1251	
φ(195°)	-15.131.933	-13.721.738	-18.491.116	-13.181.9129	-10.321.146	-11.221.1763	-15.711.815	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	-15.071.134	-16.981.1673	
φ(195°)	-14.941.887	-16.931.44	-14.811.814	6.311.408	-19.221.79	-7.851.1263	-18.711.1244	8.991.107	-16.981.187	-16.411.776	-18.481.84	-16.141.13	-13.981.927	6.311.927	-13.741.68	-3.361.921	-10.891.67	7.631.94	6.921.114	-13.741.68	-14.811.814	-16.931.44	-14.811.814	-16.931.44	
φ(195°)	-15.441.122	-11.021.1291	-14.811.912																						





Antenna Pattern of 2.4GHz and 5GHz UNII 1~3

Appendix C

θ(°)	1.330-2.1	-1.460-3.01	-1.460-2.0	1.250-0.0	3.60-2.34	-4.97-5.65	-3.79-2.41	-0.69-0.30	1.70-7.37	-12.46-6.28	-2.05-0.42	0.21-1.37	-2.65-2.14	0.96-1.22	-2.29-2.79	-5.07-4.32	-4.18-4.86	-3.18-1.58	0.71-0.49	-1.96-2.49	-1.76-4.32	-7.49-5.55	2.45-0.40	0.32-0.58
φ(°)	0.44-0.62	0.06-0.31	-0.07-1.3	1.40-0.07	0.65-1.12	-3.87-5.22	-5.40-5.97	-1.29-0.91	5.09-0.83	-12.23-8.75	-1.84-0.41	0.58-1.51	-1.99-1.79	2.67-2.27	-2.51-2.03	-3.39-5.44	-4.67-5.38	5.09-2.52	3.45-0.22	-6.02-4.13	-3.02-4.98	-8.43-5.49	0.98-1.50	1.53-0.96
φ(82°)	0.61-0.42	0.37-0.62	0.60-0.75	0.37-1.57	-1.75-0.84	-2.08-4.87	-6.73-4.91	-2.18-2.53	-3.67-5.66	-8.81-6.40	-0.64-0.41	-0.65-1.27	-1.09-2.39	-2.99-4.77	-5.61-2.21	-2.68-3.77	-4.62-3.57	3.14-2.15	-0.13-1.52	-3.28-3.07	-2.33-5.45	-5.78-3.96	0.34-1.14	1.90-0.92
φ(80°)	2.38-1.49	-3.60-2.21	-0.97-0.90	0.99-2.43	-1.86-1.69	-3.28-3.08	-7.02-8.77	-5.33-2.38	2.25-1.37	-5.88-5.09	-0.96-1.77	-3.56-3.42	-3.67-6.24	-3.80-0.57	-6.45-2.92	-3.89-3.81	-3.28-3.82	2.29-1.01	2.71-3.78	-1.74-0.49	-0.75-0.87	-6.22-2.71	0.74-0.30	0.33-1.70
φ(85°)	-4.54-1.58	-2.14-1.70	2.43-4.84	-1.94-3.91	-2.57-3.27	6.11-6.45	6.16-5.58	-4.37-2.15	-3.97-7.19	6.78-9.53	-3.50-7.81	8.23-1.98	-1.39-2.43	-6.65-10.66	4.80-4.07	-4.61-1.86	-4.51-1.79	0.72-0.03	2.12-2.70	-1.05-0.15	-1.44-0.47	-6.09-2.09	-2.72-2.51	-2.47-3.32
φ(87°)	-3.72-2.45	-0.95-2.60	-4.26-7.68	-0.60-7.36	-2.74-5.51	-3.33-9.37	5.64-7.06	8.82-2.30	-1.88-1.02	-2.78-4.77	-2.03-6.11	8.31-3.56	-1.65-1.81	-2.87-0.43	-7.88-0.80	-3.60-3.14	-3.33-0.76	2.80-1.28	0.88-0.05	0.85-1.43	-0.52-0.60	-8.41-5.45	-2.81-0.64	-5.64-0.30
φ(112°)	-1.19-0.58	-0.50-0.40	8.63-6.16	-4.89-1.45	-2.22-2.70	-2.84-3.66	-3.71-4.46	6.88-10.19	-1.79-1.30	-5.94-3.75	-5.32-10.18	-12.39-3.46	-1.67-1.56	-1.87-0.88	-15.31-11.84	-7.07-5.85	-3.86-1.65	1.77-1.59	-0.92-0.61	0.88-2.24	-4.84-4.54	-8.06-8.13	-6.53-7.15	-5.91-4.40
φ(120°)	7.99-3.03	-1.67-3.51	5.14-6.08	5.52-2.42	-5.16-5.54	9.28-5.44	4.91-3.24	-4.81-3.14	-10.19-14.47	6.43-14.35	-3.63-7.59	-7.74-0.49	-4.15-3.15	-4.71-1.79	6.82-10.07	9.68-5.34	5.58-2.35	0.14-0.78	-1.17-1.17	0.21-2.36	-4.29-4.31	-5.60-0.94	-0.88-1.41	-8.74-2.50
φ(127°)	4.62-3.40	2.39-3.31	4.19-3.38	-1.39-2.65	-3.88-2.65	4.55-6.45	-12.86-6.44	-3.89-1.54	8.27-5.77	6.51-7.56	-12.57-7.08	-4.86-11.23	4.16-7.85	8.12-6.95	1.62-9.36	4.78-2.36	-4.89-4.24	-1.35-3.66	-4.12-2.81	5.58-5.06	5.13-2.46	-1.11-4.50	-4.62-6.62	-8.93-6.82
φ(135°)	5.79-7.67	5.41-3.76	4.29-2.45	-3.02-1.38	-6.26-1.91	2.31-1.58	-2.93-8.11	-13.77-5.39	5.63-3.73	8.83-1.13	-4.72-3.39	6.81-11.33	-10.89-6.58	-15.70-7.17	-4.29-3.85	-2.10-6.83	-7.18-3.31	-3.29-7.11	-7.88-6.96	6.77-3.97	-4.30-2.43	-6.02-4.68	-7.08-4.54	-2.80-4.02
φ(142°)	6.83-6.94	7.39-6.65	8.11-5.34	4.40-2.25	5.55-1.99	0.86-1.21	3.07-6.11	-7.91-6.37	2.90-2.56	5.26-1.30	6.81-6.13	-1.86-2.23	5.53-3.78	-10.89-9.75	5.51-6.02	-1.27-6.11	3.04-0.77	5.59-2.28	4.88-8.83	6.23-4.24	7.25-4.75	-15.19-9.78	-7.82-6.07	-7.82-6.07
φ(150°)	6.32-5.38	6.32-5.38	6.83-1.18	10.65-10.38	4.98-1.60	5.61-1.60	-1.29-2.42	2.64-3.08	4.98-5.36	5.44-7.27	6.89-1.17	-11.83-1.35	6.89-1.01	-12.90-1.26	-4.43-5.28	-3.24-0.12	8.63-1.75	7.18-1.95	1.81-1.80	3.72-2.30	-3.58-1.13	11.43-10.58	7.70-6.65	-7.39-5.96
φ(157°)	5.15-5.95	5.59-3.13	3.18-2.77	3.80-4.30	3.48-1.42	-1.64-1.32	2.15-2.27	4.18-4.62	6.00-5.23	-1.61-1.28	-12.34-13.40	-8.89-9.43	-1.14-1.29	3.83-4.68	-4.96-5.44	4.54-2.27	2.73-3.28	4.49-6.98	5.71-5.52	3.59-6.05	7.37-10.36	15.11-11.86	9.98-10.18	-14.79-9.37
φ(165°)	5.76-6.40	4.95-6.48	5.10-4.71	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90	4.13-2.90
φ(172°)	1.84-2.08	2.31-2.50	2.74-2.33	-1.62-1.73	3.18-2.86	-3.97-5.63	-7.94-9.88	-1.78-12.30	-1.75-11.18	-10.44-8.68	-6.91-4.44	-2.70-1.76	-1.31-1.12	0.96-0.92	-0.59-0.16	0.04-0.03	-0.16-0.43	0.47-0.53	0.91-1.41	-1.67-1.58	-1.71-1.83	-1.98-1.91	3.23-3.31	-4.80-4.28
φ(180°)	4.64-5.62	-5.98-6.78	6.20-6.91	-10.01-11.56	-11.59-9.43	-7.25-6.49	4.19-3.47	-1.20-1.45	-4.38-5.20	-3.86-5.42	-3.96-5.37	-3.18-2.97	-2.80-2.39	-1.87-1.70	-1.91-2.13	-2.88-2.39	-1.87-1.70	-1.91-2.13	-2.88-2.39	-1.87-1.70	-1.91-2.13	-2.88-2.39	-1.87-1.70	-1.91-2.13
FreeHD	5.7650PdB	Total: 2	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)
Gain	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)	φ(°)
φ(°)	-7.02-6.89	-7.03-6.49	-6.46-6.70	-7.14-10.42	4.31-6.50	-7.27-7.52	6.26-5.28	-5.26-6.57	6.36-5.37	-5.00-4.55	-4.70-4.88	-4.83-4.64	-4.38-4.45	4.21-3.90	-3.89-3.94	-4.02-4.85	-4.60-4.62	4.38-4.79	5.23-5.61	-5.64-5.47	-5.43-5.25	-5.94-6.78	7.46-6.15	-7.35-7.22
φ(7°)	-3.66-2.49	-2.86-3.17	-3.36-3.31	-3.58-2.68	-3.12-3.60	-4.55-5.09	-4.91-4.97	-4.83-5.01	-7.07-7.06	-6.68-6.45	-7.64-6.94	-7.36-7.61	-7.47-7.09	-6.89-6.42	-6.34-6.34	-6.06-4.16	-6.28-6.41	-5.85-5.59	-6.71-6.34	-3.71-4.64	-3.41-3.63	-4.73-4.85	1.39-1.48	-1.39-1.48
φ(15°)	0.69-0.76	0.60-0.31	0.03-0.61	0.21-0.20	-0.13-0.89	-1.51-1.29	-2.71-2.37	-4.20-4.73	6.54-5.69	-3.36-5.57	-5.33-5.49	-5.34-5.49	-4.90-4.72	-4.52-4.65	-4.50-4.16	-3.39-3.89	-3.88-4.13	4.50-4.50	-4.15-4.05	-4.22-4.01	-3.30-3.28	-1.86-1.76	-1.85-1.58	-0.65-0.19
φ(22°)	0.31-0.09	0.73-0.82	0.80-0.61	0.93-0.87	0.74-0.37	-0.13-1.00	2.17-1.16	-4.23-4.50	4.43-4.56	0.00-0.01	-0.57-0.76	-1.10-1.18	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50	-1.38-1.50
φ(30°)	0.59-0.76	0.90-0.06	0.41-0.68	-1.12-1.04	-1.54-1.35	-0.34-0.11	-1.19-1.25	-2.63-2.31	2.48-3.35	-3.22-2.48	-0.69-0.06	0.24-0.15	0.02-0.12	1.81-2.24	1.60-2.16	0.98-0.85	-1.21-0.45	0.79-0.88	-0.29-0.20	-0.28-0.12	0.07-0.16	0.00-0.02	0.57-0.57	0.51-0.71
φ(37°)	2.30-1.91	2.32-2.38	3.50-3.34	3.38-3.55	4.12-3.68	-2.37-1.07	-3.63-5.71	-5.80-5.61	3.58-4.22	-3.92-4.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63	-3.16-3.38	-3.20-3.63
φ(45°)	1.75-1.35	4.64-6.29	8.80-7.35	-7.14-7.49	4.20-4.77	2.38-1.55	2.32-2.68	-3.23-4.31	2.01-2.51	0.24-0.61	-0.65-0.42	-1.85-1.40	-0.95-1.65	-2.08-1.56	0.88-1.51	0.98-1.15	0.50-1.17	0.50-1.17	0.50-1.17	0.50-1.17	0.50-1.17	0.50-1.17	0.50-1.17	0.50-1.17
φ(52°)	-3.58-3.34	5.50-7.81	7.79-6.88	6.31-5.94	-5.51-7.38	-7.71-7.25	4.93-5.71	-1.51-1.13	8.88-1.44	-5.85-6.52	-4.47-4.30	-2.76-3.05	-1.20-1.39	0.24-0.44	0.68-1.34	1.00-1.78	-1.25-0.77	-0.52-0.34	0.86-0.48	0.62-1.24	-4.31-3.19	-4.31-3.19	-4.31-3.19	-4.31-3.19
φ(60°)	2.28-0.32	0.82-0.63	2.63-1.74	2.95-1.32	3.96-1.02	7.75-4.72	3.26-1.48	-0.66-1.28	2.68-4.33	5.32-5.95	-3.77-1.08	6.01-0.42	2.01-1.98	0.24-0.44	0.68-1.34	1.00-1.78	-1.25-0.77	-0.52-0.34	0.86-0.48	0.62-1.24	-4.31-3.19	-4.31-3.19	-4.31-3.19	-4.31-3.19
φ(67°)	1.18-0.49	0.54-0.33	0.06-0.60	0.77-0.68	3.38-1.51	-6.77-4.42	2.25-1.63	3.68-1.54	1.78-1.38	5.78-1.56	0.95-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98	0.98-0.98
φ(75°)	0.71-1.36	2.55-0.27	0.61-0.05	0.78-0.73	3.70-3.02	3.48-3.42	3.08-2.49	-1.50-0.61	6.51-1.67	-1.60-1.78	-1.84-1.71	-0.89-2.38	-4.56-2.52	4.24-2.34	0.69-1.85	4.51-3.87	-4.81-7.00	5.02-4.88	2.91-1.30	-1.59-1.47	-1.09-0.72	-4.13-3.70	-1.50-0.28	-0.89-0.28
φ(82°)	5.28-0.24	0.07-0.80	0.04-0.25	0.77-1.20	1.00-1.49	-1.59-3.20	2.55-2.49	-1.17-0.23	4.17-1.10	-10.91-5.54	-0.30-0.69	0.21-0.85	4.61-3.34	5.30-5.97	3.13-0.22	3.13-0.19	-7.28-6.87	4.56-5.59	3.68-1.64	-1.38-2.08	-2.89-2.83	-7.83-6.84	-2.89-0.66	-2.90-0.69
φ(90°)	6.96-1.66	3.36-1.93	1.58-1.17	-1.28-1.06	2.29-0.62	2.59-0.64	3.51-4.03	-3.80-3.03	4.44-7.98	0.61-0.22	3.23-0.62	-3.23-0.62	-2.43-0.80	-4.84-0.41	-1.80-1.06	-3.37-0.81	7.52-7.57	4.91-4.44	-5.04-3.06	3.74-2.27	5.73-6.24	1.73-1.72	-1.39-1.72	-1.39-1.72
φ(97°)	1.72-1.87	-2.10-1.63	2.78-2.09	-1.57-0.58	-7.30-3.71	-4.87-4.26	-2.40-2.42	-2.14-2.81	6.15-9.48	-5.88-5.50	-3.87-5.64	-5.64-3.54	-3.56-4.73	-4.87-7.84	-5.57-2.23	0.19-1.13	-3.23-3.46	6.01-4.66	2.75-2.77	-2.80-2.36	-1.78-1.31	-4.13-3.97	-3.38-2.89	-3.38-2.89
φ(105°)	-4.80-3.23	-2.28-1.72	2.35-2.27	-3.58-4.46	-4.61-3.69	-4.93-4.69	6.15-6.12	-4.44-1.68	-6.05-3.71	2.03-3.74	-8.06-5.68	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13	-2.70-2.13
φ(112°)	3.73-3.47	-1.53-2.62	-4.61-4.44	-4.60-4.32	4.41-5.11	-3.21-2.49	-4.00-6.61	-5.70-4.26	-6.30-2.47	-4.23-4.74	-3.68-1.72	-10.30-0.75	-3.67-0.88	-8.83-8.19	-10.26-8.54	-2.71-3.74	-4.65-2.77	0.76-1.30	2.02-1.09	1.97-0.49	-1.69-0.53	-10.44-8.52	-8.15-6.88	-6.17-4.94
φ(120°)	0.64-0.39	-1.55-0.22	4.61-4.44	5.42-5.34	-3.23-6.65	6.06-5.16	-3.24-3.12	-3.20-1.01	6.51-4.85	-1.44-1.17	-2.70-1.02	-5.86-4.16	-1.44-1.17	-2.70-1.02	-5.86-4.16	-1.44-1.17	-2.70-1.02	-5.86-4.16	-1.44-1.17	-2.70-1.02	-5.86-4.16	-1.44-1.17	-2.70-1.02	-5.86-4.16
φ(127°)	0.61-0.70	2.89-3.82	4.19-3.82	-1.80-2.42	-4.88-2.05	0.87-4.68	-6.49-2.65	-2.74-2.33	-4.81-3.75	-7.74-7.45	-5.25-5.40	-0.90-0.61	-4.17-11.07	-7.69-5.05	-6.									



Antenna Pattern of 2.4GHz and 5GHz UNII 1~3

Appendix C

(H122.2)	-11.50/-14.28	-13.50/-6.75	-4.77/-5.36	-3.30/-0.81	-3.17/-0.23	0.04/-1.76	-4.27/-6.34	-4.19/-9.49	-4.81/-11.42	-8.03/-10.07	-7.36/-10.81	-15.64/-9.13	-8.07/-8.28	-10.73/-6.28	-5.21/-4.23	-2.96/-3.52	0.10/-0.76	0.23/-0.50	1.94/-2.35	0.88/-1.73	-1.97/-3.28	-5.79/-5.60	-5.78/-9.10	-12.24/-12.17
(H120)	-10.40/-10.55	-8.80/-43	-4.88/-3.19	-3.71/-1.32	-3.90/-1.68	-1.82/-2.15	-4.71/-5.05	-6.69/-7.4	-9.31/-7.20	-6.79/-7.4	-10.43/-12.11	-11.80/-13.58	-10.76/-8.28	-11.14/-10.16	-7.33/-4.83	-11.33/-5.58	-4.97/-3.26	-5.88/-2.4	0.80/-0.55	0.37/-1.21	-5.09/-4.28	-4.26/-4.57	-5.76/-8.02	-7.42/-8.02
(H118)	-8.94/-10.45	-7.16/-16.15	-4.71/-22.23	-2.14/-4.84	-2.48/-0.03	-1.68/-3.89	-4.07/-4.63	-4.50/-8.81	-10.05/-12.63	-6.56/-6.76	-12.74/-12.45	-10.40/-5.24	-7.09/-10.02	-6.37/-7.00	-6.66/-4.83	-3.87/-7.12	-6.24/-3.09	-2.29/-2.49	-1.01/-1.51	-1.98/-2.24	-6.90/-6.90	-5.91/-4.54	-5.47/-5.22	
(H116)	-5.06/-6.15	-8.18/-4.47	-4.72/-25.35	-3.44/-3.32	-2.96/-3.45	-3.46/-4.55	-6.73/-4.28	-4.84/-4.75	-6.42/-5.29	-6.38/-7.79	-7.51/-10.86	-12.90/-7.39	-5.89/-8.08	-10.46/-7.7	-6.29/-3.27	-4.95/-5.94	-7.62/-6.65	-2.94/-4.80	-2.37/-3.95	-2.30/-4.45	-6.16/-6.09	-2.32/-1.20	-3.69/-3.76	-6.10/-6.31
(H114)	-5.67/-6.15	-7.41/-8.4	-3.53/-5.94	-6.94/-4.22	-2.20/-2.57	-5.61/-8.2	-6.17/-6.55	-7.70/-8.99	-7.88/-3.7	-12.74/-12.45	-12.89/-15.58	-10.24/-10.05	-5.23/-5.19	-4.19/-5.59	-2.95/-4.85	-1.88/-3.81	-5.86/-2.89	-6.61/-8.7	-8.08/-2.4	-1.19/-2.35	-6.64/-7.53	-3.96/-1.50	-5.80/-4.25	-6.29/-6.88
(H112)	-3.59/-2.11	-2.74/-6.15	-6.47/-5.20	-3.40/-3.75	-7.80/-11.40	-6.09/-6.46	-6.36/-6.83	-5.91/-7.32	-8.82/-8.91	-8.41/-9.30	-14.44/-9.42	-5.57/-3.95	-5.26/-5.63	-7.51/-7.3	-4.42/-8.23	-5.51/-5.54	-10.64/-13.56	-11.18/-5.12	-3.04/-3.39	-2.19/-3.06	-1.45/-2.89	-9.85/-6.25	-4.25/-4.68	-9.99/-9.37
(H110)	-1.52/-18.16	-10.80/-8.60	-5.89/-3.15	-2.44/-3.5	-5.10/-4.68	-12.02/-10.56	-8.80/-7.77	-8.84/-10.73	-11.74/-10.69	-7.96/-5.56	-5.54/-7.36	-8.49/-9.60	-8.82/-7.4	-4.16/-6.02	-6.27/-1.9	-7.65/-6.87	-5.76/-5.37	-5.80/-7.65	-7.70/-4.88	-3.34/-3.70	-4.19/-3.56	-2.97/-2.41	-1.37/-2.04	-4.33/-2.76
(H108)	-3.97/-6.16	-6.22/-145	-3.34/-5.08	-7.72/-10.33	-12.03/-11.73	-8.73/-7.66	-7.81/-6.64	-5.69/-5.35	-4.43/-3.15	-2.33/-2.41	-2.44/-2.24	-2.63/-3.16	-3.15/-3.77	-4.28/-4.18	-4.33/-4.45	-4.08/-3.32	-2.63/-2.54	-2.84/-2.82	-2.68/-2.50	-2.02/-1.66	-1.30/-1.40	-1.59/-1.69	-2.55/-1.83	-8.08/-6.4
(H106)	-2.74/-3.44	-5.18/-5.85	-6.89/-6.81	-5.29/-4.27	-4.44/-3.23	-6.37/-6.87	-9.35/-7.87	-5.23/-6.84	-3.08/-2.75	-2.32/-2.19	-2.26/-2.20	-1.76/-1.28	-1.72/-1.2	-1.88/-1.59	-1.84/-2.25	-2.42/-2.28	-2.24/-2.13	-1.62/-1.61	-1.86/-1.72	-1.14/-0.87	-1.17/-0.85	-6.12/-6.08	-6.26/-5.7	-6.01/-5.37
FreePda	5.62Pda	TablePda 3																						
Gain	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)	(H127/0.67.5)
(H125)	0.233/-0.34	-0.47/-0.39	-0.176/-1.3	-2.41/-1.05	-1.54/-1.72	-1.14/-0.51	-0.73/-4.39	-0.91/-0.47	-3.20/-3.73	-3.82/-0.02	-2.23/-0.16	0.07/-0.18	0.01/-0.18	1.19/-0.53	0.68/-0.34	0.95/-0.51	0.95/-0.92	0.85/-0.68	0.47/-0.06	-0.03/-0.74	0.55/-0.20	0.17/-0.32	0.17/-0.16	-0.25/-0.38
(H123)	0.373/-0.38	0.076/-0.36	0.086/-1.1	-0.03/-0.53	-0.61/-0.15	0.33/-0.26	0.19/-0.27	0.43/-0.17	-0.11/-0.49	-0.10/-0.93	-0.07/-1.08	-1.16/-1.27	-1.45/-1.69	-1.32/-0.91	-1.24/-0.91	-2.69/-0.44	-0.41/-0.58	-0.63/-0.15	-0.32/-0.71	-0.77/-0.40	-0.54/-0.48	-0.04/-0.39	-0.80/-0.28	
(H121)	0.696/-1.0	0.080/-0.9	0.060/-0.25	-1.02/-1.62	0.95/-0.17	-0.20/-0.50	-0.51/-0.48	-0.68/-0.80	-1.45/-1.88	-1.43/-1.28	-1.56/-1.51	-1.63/-1.74	-2.48/-3.29	-3.67/-3.65	-4.30/-4.39	-3.32/-3.51	-1.77/-0.65	0.17/-0.48	0.32/-0.03	-0.07/-0.43	0.14/-0.38	0.29/-0.15	0.05/-0.41	0.35/-0.81
(H119)	0.914/-1.4	-0.31/-1.5	-1.58/-3.09	-2.81/-1.80	-1.05/-0.70	-0.87/-0.91	-1.40/-2.80	-3.62/-0.43	-4.85/-4.57	-3.57/-4.17	-2.76/-3.17	-3.74/-4.00	-3.53/-2.96	-2.14/-1.59	-1.14/-1.23	-1.85/-1.58	-0.63/-0.26	0.38/-0.03	-0.00/-0.22	0.88/-0.26	0.56/-0.71	0.65/-0.66	0.60/-0.60	
(H117)	2.86/-1.51	-2.32/-2.41	-1.82/-2.16	-1.67/-2.20	-1.86/-1.28	-1.77/-2.05	-3.29/-4.12	-5.71/-6.75	-5.24/-5.67	-6.79/-6.92	-6.41/-4.41	-3.19/-4.38	-3.64/-2.75	-1.30/-1.00	-1.83/-2.51	-3.72/-3.09	-2.98/-3.15	-2.68/-1.41	-1.16/-1.55	-1.37/-1.37	-1.06/-0.79	-0.94/-0.70	-0.52/-0.58	-0.15/-1.05
(H115)	3.11/-1.18	-2.86/-3.15	-1.26/-1.53	-2.25/-3.09	-2.71/-2.83	-1.17/-1.91	-2.00/-4.21	-7.70/-6.78	-6.57/-10.06	-4.71/-5.38	-1.61/-4.31	-1.27/-0.23	-1.27/-0.23	-1.45/-1.65	-2.44/-3.36	-3.80/-2.36	-1.76/-2.67	-1.16/-1.52	-0.62/-1.37	-1.53/-3.36	-3.60/-1.71	-0.96/-0.57	-1.16/-1.52	-2.21/-2.33
(H113)	2.02/-1.54	-3.00/-4.22	-4.00/-7.04	-3.51/-2.00	-2.10/-2.76	-3.36/-2.50	-2.61/-4.04	-3.50/-3.00	-3.41/-4.91	-5.81/-6.20	-3.64/-4.13	-6.83/-6.61	-4.19/-2.54	-1.05/-0.17	0.66/-0.63	0.04/-0.29	-0.21/-0.88	-0.04/-0.78	2.10/-0.95	0.21/-1.19	-3.02/-1.84	-2.10/-1.28	-1.86/-0.50	-1.28/-2.94
(H111)	3.23/-1.64	-6.39/-1.1	-7.10/-9.41	-3.54/-3.21	-3.52/-1.56	-0.52/-0.38	-2.96/-3.1	-4.59/-1.45	-3.10/-3.00	-3.88/-1.68	-3.66/-1.86	-3.56/-1.59	-3.57/-2.59	-4.59/-0.96	1.60/-1.44	1.23/-1.60	1.08/-0.62	0.84/-0.23	1.78/-0.16	-1.19/-1.21	-1.48/-1.49	-3.02/-3.77	-1.61/-1.63	-1.28/-2.94
(H109)	7.35/-6.69	-6.56/-6.89	-6.91/-6.24	-2.80/-1.48	-3.24/-2.94	-0.68/-0.57	-0.09/-3.20	-4.66/-3.61	-4.29/-4.35	-1.76/-2.12	-1.19/-1.78	0.88/-0.72	0.78/-1.59	-1.35/-1.08	-0.15/-1.35	1.64/-0.40	-0.44/-0.21	0.21/-0.21	0.98/-0.35	-0.81/-0.25	-0.69/-1.80	-1.93/-2.23	-4.65/-4.19	-4.48/-4.91
(H107)	4.86/-4.29	-4.40/-4.69	-2.22/-2.92	-4.96/-1.47	-4.86/-1.47	-1.97/-1.43	-2.36/-5.55	-7.99/-6.77	-6.96/-7.71	-1.94/-1.17	-0.10/-1.66	-0.37/-0.33	-3.50/-2.85	-2.50/-2.85	-0.55/-1.26	-0.44/-0.53	-1.25/-0.06	0.74/-0.40	-1.38/-1.96	-1.29/-2.07	-1.47/-2.89	-3.59/-3.89	-5.51/-6.87	
(H105)	4.89/-6.31	-6.77/-5.99	-4.84/-4.22	-3.58/-4.89	-1.62/-2.19	-2.53/-6.06	-3.37/-2.75	-9.35/-7.27	-3.99/-3.07	-5.20/-5.65	-2.75/-2.52	-2.30/-4.00	-4.12/-4.06	-7.25/-1.16	-2.48/-1.24	-2.90/-2.61	-0.79/-0.35	0.28/-0.10	1.04/-1.31	-0.18/-1.31	-1.99/-2.64	-2.02/-1.31	-3.22/-4.01	-4.50/-5.32
(H103)	6.55/-6.23	-6.13/-7.22	-6.62/-5.74	-5.69/-4.59	-2.85/-1.70	-3.62/-3.17	-3.78/-7.29	-3.27/-3.33	-3.22/-4.53	-2.63/-2.41	-5.96/-5.64	-3.18/-3.20	-3.18/-3.20	-4.51/-3.61	-3.68/-1.01	0.10/-0.76	1.26/-0.76	1.26/-1.34	0.76/-2.24	-2.30/-2.83	-3.49/-2.96	-5.84/-6.48	-4.72/-1.11	
(H101)	-1.50/-11.12	-11.50/-9.60	-7.73/-8.82	-7.82/-3.31	-4.67/-3.29	-4.38/-0.96	-6.26/-4.25	-4.38/-1.84	-5.70/-7.12	-4.22/-5.82	-2.19/-3.36	-4.27/-2.56	-4.88/-6.38	-4.23/-6.94	1.15/-0.40	0.39/-0.63	0.23/-0.12	1.24/-0.33	0.28/-1.50	-2.94/-4.38	-4.21/-4.67	-5.23/-6.39	-6.02/-7.87	
(H99)	-10.71/-11.17	-16.34/-14.96	-6.40/-7.33	-4.42/-7.17	-3.93/-3.01	-3.72/-0.48	-4.70/-4.28	-3.50/-3.73	-2.60/-3.73	-2.60/-3.73	-7.27/-10.52	-8.89/-1.54	-0.55/-3.98	-5.59/-5.92	-3.82/-1.11	2.34/-0.58	1.27/-0.98	1.61/-0.60	1.79/-4.42	-4.71/-5.24	-2.98/-1.49	-6.70/-6.69	-4.69/-2.5	
(H97)	-5.69/-12.46	-12.74/-10.51	-7.96/-6.51	-3.84/-2.43	-3.84/-2.43	-1.78/-1.9	-1.38/-3.24	-3.90/-1.89	-2.29/-4.57	-8.52/-1.19	-12.55/-6.07	-2.51/-6.94	-5.03/-5.19	-3.07/-1.09	-3.07/-1.09	-3.07/-1.09	-3.07/-1.09	0.07/-0.58	0.28/-0.19	2.98/-3.39	3.83/-3.74	3.49/-4.19	-1.51/-14.94	
(H95)	-10.71/-12.46	-12.74/-10.51	-7.96/-6.51	-4.11/-3.70	-1.50/-4.42	-2.74/-1.70	-1.50/-4.42	-3.59/-4.45	-3.64/-6.63	-10.59/-15.21	-9.03/-10.43	-10.59/-12.7	-11.29/-7.00	-10.67/-4.30	-4.16/-3.01	-0.53/-1.37	-0.50/-0.67	0.33/-0.51	0.07/-0.73	-0.99/-1.59	-3.27/-4.76	-4.64/-5.38	-12.23/-15.94	
(H93)	-10.71/-12.74	-12.74/-10.51	-7.96/-6.48	-3.95/-4.40	-1.73/-0.94	-1.73/-0.94	-4.07/-4.77	-4.59/-5.84	-5.61/-5.32	-12.38/-6.48	-7.19/-9.96	-13.74/-14.83	-7.36/-6.65	-11.29/-6.82	-12.48/-7.77	-4.39/-6.63	-2.96/-1.80	2.19/-1.80	-1.19/-1.18	-3.25/-4.61	-3.90/-2.30	-7.68/-7.10	-17.72/-12.88	-11.88/-8.49
(H91)	-8.63/-10.17	-8.49/-5.15	-3.14/-3.02	-3.37/-5.76	-3.02/-1.01	0.28/-3.63	-7.29/-4.74	-2.74/-4.19	-8.42/-8.68	-10.44/-10.16	-5.36/-5.17	-11.67/-10.30	-14.80/-16.31	-14.80/-16.31	-5.83/-6.58	-6.01/-6.84	-5.69/-4.18	-5.07/-3.36	-2.61/-3.88	-6.40/-6.28	-8.40/-8.76	-6.53/-6.01	-3.25/-6.80	-11.02/-10.38
(H89)	-4.20/-3.21	-3.69/-3.92	-3.58/-3.30	-3.15/-3.88	-3.20/-1.69	-1.52/-3.61	-5.16/-5.87	-6.71/-6.77	-8.27/-8.67	-10.67/-10.59	-10.57/-10.25	-7.53/-6.42	-7.92/-8.41	-6.81/-6.45	-7.35/-6.43	-6.69/-5.95	-5.66/-5.86	-4.22/-4.29	-3.49/-3.55	-3.63/-4.62	-5.88/-5.69	-5.28/-5.62	-6.01/-6.32	
(H87)	-5.49/-6.08	-4.67/-3.86	-3.42/-3.46	-5.28/-4.39	-1.91/-1.79	-4.25/-2.30	-8.79/-5.98	-4.89/-3.22	-3.31/-4.69	-8.19/-12.12	-11.54/-12.89	-7.34/-6.94	-5.40/-5.35	-5.64/-6.17	-6.75/-6.34	-1.84/-4.44	-6.74/-6.29	-5.37/-4.57	-1.33/-1.43	-3.71/-4.54	-6.84/-6.54	-1.90/-6.54	-1.70/-6.51	-8.47/-8.70
(H85)	-3.26/-2.57	-3.17/-3.27	-3.07/-3.78	-4.53/-4.62	-4.69/-3.68	-11.40/-10.82	-4.20/-2.40	-4.69/-3.76	-4.83/-6.68	-10.95/-14.53	-12.11/-7.87	-5.80/-7.35	-7.22/-5.06	-6.50/-6.11	-5.60/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11	-5.80/-6.11
(H83)	-4.85/-3.27	-2.33/-3.96	-8.22/-15.35	-5.24/-6.07	-6.17/-5.11	-4.95/-6.68	-7.69/-6.80	-7.21/-6.07	-11.00/-11.78	-10.28/-9.76	-9.61/-11.36	-10.69/-5.36	-2.49/-2.57	-6.61/-6.54	-11.55/-11.38	-10.87/-9.46	-4.80/-4.34	-4.87/-3.36	-2.79/-2.71	-4.64/-6.85	-6.45/-6.55	-5.53/-2.67	-7.79/-7.78	-3.45/-4.42
(H81)	-12.59/-15.68	-11.43/-10.79	-5.71/-26.19	-1.74/-1.24	-3.54/-1.62	-9.24/-10.29	-7.69/-9.07	-9.57/-10.29	-17.75/-9.86	-7.69/-6.03	-3.95/-4.11	-5.21/-6.69	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74	-5.78/-5.74
(H79)	-6.27/-0.25	-6.02/-0.62	-2.62/-2.91	-4.87/-0.03	-11.37/-11.36	-6.45/-6.16	-7.06/-6.31	-5.98/-4.74	-3.38/-2.48	-1.53/-1.10	-0.56/-0.48	-0.45/-0.53	-1.12/-1.56	-1.65/-2.22	-3.12/-0.86	-3.77/-3.67	-3.69/-3.36	-3.50/-3.58	-3.15/-3.18	-2.96/-3.28	-2.91/-3.36	-4.72/-4.15	-4.42/-6.01	-3.18/-4.21
(H77)	-0.55/-0.26	-1.12/-1.23	-2.67/-3.42	-4.26/-4.37	-4.25/-4.39	-4.99/-6.39	-7.24/-6.94	-4.46/-3.34	-2.73/-3.13	-3.54/-4.26	-2.02/-2.13	-1.76/-1.37	-1.02/-1.17	-1.82/-1.62	-1.29/-0.91	-0.81/-0.84								



Antenna Pattern of 2.4GHz and 5GHz UNII 1~3

Appendix C

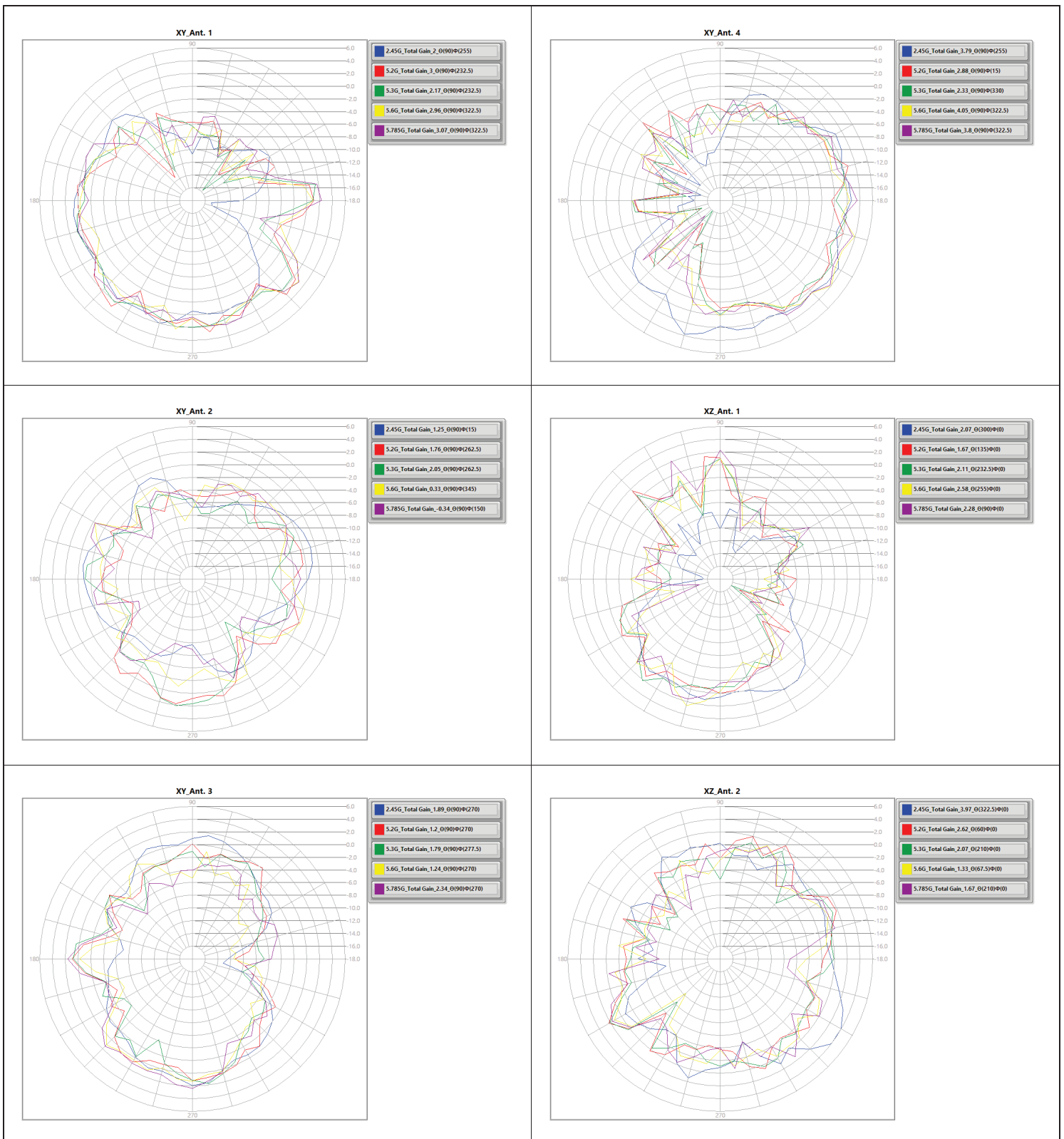
φ(165°)	-7.85(-6.59)	-5.40(-3.91)	-3.39(-3.18)	-3.51(-4.49)	-4.91(-4.91)	-5.37(-4.18)	-7.81(-10.83)	-13.91(-14.70)	-14.71(-11.31)	-8.60(-9.41)	-8.53(-7.97)	-7.30(-4.11)	-8.59(-7.54)	-6.49(-6.08)	-5.30(-4.37)	-4.11(-5.37)	-6.88(-7.28)	-6.08(-4.67)	-4.94(-6.94)	-9.26(-10.27)	-9.23(-8.21)	-7.76(-7.47)	-10.54(-8.61)	-8.21(-10.53)
φ(172.5°)	-4.63(-5.20)	-4.36(-3.87)	-4.10(-5.89)	-4.84(-7.02)	-7.16(-7.42)	-8.21(-8.54)	-9.70(-10.58)	-10.74(-8.45)	-7.48(-7.29)	-9.36(-11.62)	-12.15(-15.10)	-13.27(-13.48)	-13.48(-13.06)	-12.00(-11.33)	-10.79(-11.3)	-7.29(-5.96)	-4.91(-4.00)	-3.21(-2.58)	-2.82(-3.61)	-4.78(-4.16)	-8.04(-7.28)	-7.49(-7.42)	-6.34(-6.87)	-7.16(-6.20)
φ(180°)	-3.71(-5.67)	-4.77(-5.31)	-6.69(-6.66)	-7.21(-7.44)	-7.46(-7.58)	-8.43(-9.15)	-9.79(-9.89)	-6.49(-4.76)	-5.70(-7.66)	-6.86(-7.2)	-7.26(-5.72)	-6.09(-4.68)	-4.71(-4.23)	-4.13(-4.28)	-4.02(-3.87)	-3.79(-3.45)	-3.21(-3.47)	-3.52(-3.26)	-3.37(-3.13)	-4.26(-4.36)	-4.99(-5.16)	-5.32(-4.72)	-4.97(-4.74)	-4.47(-4.97)
Frequency	5.35GPa	TotalGain 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	φ(17°)(97.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)	φ(1°)(57.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)	φ(1°)(57.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)
φ(1°)	8.47(-8.32)	7.30(-8.87)	10.30(-8.61)	7.87(-8.46)	6.53(-8.80)	7.00(-7.26)	7.23(-8.38)	8.91(-8.34)	8.55(-8.35)	8.80(-7.44)	9.64(-8.35)	8.05(-8.89)	8.29(-8.87)	8.52(-8.55)	8.40(-8.38)	8.03(-8.87)	7.41(-7.34)	8.87(-7.70)	7.21(-7.27)	7.36(-7.76)	8.11(-8.72)	8.36(-8.56)	7.89(-8.94)	6.49(-7.48)
φ(15°)	8.84(-8.46)	8.78(-8.22)	8.99(-8.27)	8.72(-8.60)	8.77(-8.67)	7.27(-7.19)	7.16(-7.25)	8.89(-8.36)	8.69(-8.90)	8.83(-8.46)	7.49(-8.13)	8.22(-8.29)	8.21(-8.78)	7.25(-7.27)	7.48(-8.28)	8.64(-8.63)	8.45(-8.16)	7.99(-8.69)	8.14(-8.26)	8.25(-8.10)	8.46(-8.86)	8.62(-8.68)	8.60(-8.66)	-16.78(-8.84)
φ(30°)	16.44(-10.33)	11.59(-10.25)	7.59(-10.06)	7.28(-9.16)	8.41(-9.00)	5.69(-9.02)	5.69(-9.32)	5.61(-7.35)	5.00(-8.32)	8.29(-8.96)	8.69(-9.28)	8.80(-9.78)	8.24(-8.94)	7.30(-7.74)	7.39(-8.46)	7.92(-8.84)	10.05(-11.70)	11.58(-12.58)	11.29(-11.73)	14.51(-10.42)	14.99(-10.59)	15.10(-10.16)	15.16(-10.58)	15.14(-10.48)
φ(45°)	19.07(-9.52)	9.59(-10.77)	10.26(-11.24)	9.72(-9.44)	8.59(-9.26)	5.52(-9.76)	4.20(-9.42)	4.96(-9.21)	7.94(-10.08)	11.46(-9.76)	10.18(-10.36)	10.27(-10.08)	7.25(-9.72)	5.99(-9.46)	6.47(-9.37)	7.50(-9.47)	8.93(-11.48)	13.31(-14.27)	11.83(-13.23)	12.14(-14.94)	10.92(-10.38)	10.39(-10.16)	8.91(-9.37)	8.39(-10.16)
φ(60°)	8.91(-7.07)	4.59(-5.92)	7.38(-7.80)	9.70(-8.09)	7.99(-7.81)	8.98(-7.22)	6.29(-6.58)	6.02(-6.58)	6.47(-7.67)	8.59(-8.53)	7.78(-8.43)	8.70(-8.49)	8.69(-8.48)	8.99(-8.48)	4.56(-9.19)	8.31(-9.03)	10.09(-9.87)	8.93(-7.78)	7.75(-9.37)	4.29(-9.33)	6.07(-6.04)	4.84(-6.46)	5.19(-5.98)	5.29(-6.14)
φ(75°)	5.90(-3.51)	3.37(-4.08)	-4.08(-4.17)	-4.37(-6.84)	8.14(-8.24)	13.14(-8.62)	5.34(-3.35)	3.61(-5.72)	7.54(-8.29)	6.42(-6.30)	7.50(-9.54)	-11.40(-10.40)	7.94(-6.85)	6.42(-6.80)	-10.36(-7.00)	-7.49(-6.42)	-10.36(-7.00)	-7.99(-6.15)	-7.77(-6.28)	-7.62(-6.07)	5.36(-3.94)	3.02(-3.39)	3.39(-2.29)	-2.80(-2.33)
φ(90°)	-1.40(-0.68)	-7.93(-1.42)	-1.26(-1.32)	-2.71(-2.31)	3.28(-6.98)	-9.76(-7.68)	-7.26(-5.06)	-4.16(-5.81)	8.26(-11.10)	10.05(-9.36)	-10.36(-9.34)	-8.70(-8.50)	5.76(-9.16)	8.19(-10.43)	-10.76(-11.05)	-14.03(-12.22)	-9.25(-7.98)	5.81(-4.46)	8.30(-10.49)	-10.39(-7.96)	-6.80(-3.95)	-2.35(-3.45)	-4.42(-3.25)	-1.81(-1.75)
φ(105°)	-1.55(-1.60)	1.01(-0.88)	0.95(-0.47)	-8.83(-0.28)	-8.74(-3.36)	-4.70(-5.84)	4.91(-5.97)	-3.05(-5.65)	-11.05(-10.34)	-6.83(-5.05)	4.21(-6.07)	5.90(-4.29)	-4.85(-9.35)	-14.87(-15.24)	-15.18(-8.88)	9.00(-9.10)	-4.49(-3.74)	2.15(-3.82)	-4.47(-6.51)	-13.25(-8.48)	5.70(-4.18)	-2.70(-3.14)	4.43(-3.24)	-3.21(-3.94)
φ(120°)	-1.59(-1.28)	-0.92(-0.65)	0.91(-0.08)	0.99(-0.10)	1.05(-0.62)	-2.04(-2.41)	-3.98(-6.19)	-7.73(-5.88)	-5.61(-6.25)	-5.74(-6.26)	-11.71(-5.97)	-6.77(-10.23)	-10.05(-14.48)	-10.32(-5.51)	-4.77(-8.82)	-4.96(-5.83)	-3.12(-2.82)	-6.81(-7.18)	-0.48(-1.41)	-0.81(-1.32)	-0.24(-0.15)	-1.59(-2.31)	-1.35(-1.11)	-1.35(-1.11)
φ(135°)	-2.35(-1.02)	-1.68(-0.46)	-2.59(-0.06)	-3.50(-0.24)	0.66(-0.77)	-0.34(-1.17)	-3.19(-5.39)	-4.22(-4.27)	6.16(-12.35)	-8.82(-6.77)	-10.13(-9.81)	-16.16(-14.1)	-12.69(-9.48)	-7.37(-4.43)	-3.62(-3.41)	-4.30(-5.11)	-4.10(-2.18)	-1.50(-1.71)	0.71(-0.33)	-1.54(-0.22)	-1.59(-1.73)	-0.06(-1.3)	0.32(-1.15)	-0.26(-0.21)
φ(150°)	-0.34(-1.03)	0.16(-1.13)	2.16(-0.59)	-3.97(-0.80)	-1.04(-2.11)	-0.32(-0.99)	-1.44(-3.89)	-5.01(-6.11)	-12.16(-11.35)	-12.38(-11.79)	-8.22(-6.67)	-6.39(-3.00)	5.14(-11.25)	4.13(-3.94)	-2.76(-4.75)	-0.09(-6.30)	-3.58(-2.18)	-0.80(-1.74)	-1.96(-2.24)	-4.95(-2.28)	-1.35(-0.49)	-5.64(-0.80)	-0.50(-0.68)	0.28(-0.74)
φ(165°)	0.84(-1.68)	1.30(-1.22)	-0.42(-0.45)	-2.27(-1.95)	-1.93(-2.69)	-0.87(-3.21)	4.54(-4.03)	-7.49(-7.12)	5.99(-9.14)	5.46(-11.89)	-8.06(-10.25)	-8.62(-8.74)	5.00(-6.02)	5.54(-6.02)	4.50(-7.66)	-3.69(-7.89)	-4.57(-4.04)	5.05(-4.08)	-3.93(-3.27)	-3.48(-1.45)	-0.10(-1.13)	-1.07(-0.55)	0.22(-1.11)	0.87(-1.70)
φ(180°)	0.17(-1.74)	1.97(-1.38)	1.28(-0.44)	-0.21(-2.94)	0.53(-4.50)	-2.53(-2.82)	5.36(-2.64)	-4.86(-7.26)	-2.49(-7.79)	-1.86(-6.76)	-7.57(-12.64)	-1.15(-4.50)	-10.22(-14.85)	-11.06(-12.58)	-10.51(-14.48)	-10.61(-16.08)	-3.21(-10.88)	-4.40(-1.50)	-4.10(-1.45)	-1.46(-0.39)	1.52(-0.94)	0.26(-0.76)	2.33(-0.75)	1.37(-0.28)
φ(195°)	0.94(-1.49)	1.53(-1.06)	1.61(-0.45)	0.74(-1.62)	-0.07(-2.30)	-2.53(-1.72)	-0.42(-5.85)	5.99(-14.57)	-10.93(-7.01)	-6.46(-7.32)	-0.68(-6.78)	-7.57(-11.41)	-1.15(-4.99)	-7.39(-6.66)	-2.34(-3.04)	-10.13(-6.50)	-5.51(-6.41)	-0.68(-0.67)	1.40(-1.47)	-3.61(-1.70)	2.13(-1.77)	1.86(-2.74)	2.52(-1.36)	2.72(-1.14)
φ(210°)	-0.07(-1.76)	-0.47(-1.36)	-0.52(-1.70)	0.86(-1.16)	0.32(-3.50)	-3.28(-1.86)	-2.80(-8.12)	-15.14(-10.88)	-9.24(-5.87)	-10.42(-10.17)	-6.00(-10.03)	-3.60(-10.22)	-8.87(-10.78)	-2.45(-5.26)	-1.89(-1.55)	0.27(-1.11)	1.10(-2.36)	-4.07(-1.74)	1.24(-2.07)	1.67(-1.48)	0.79(-1.37)	0.23(-1.29)	0.23(-1.29)	0.23(-1.29)
φ(225°)	1.31(-0.78)	1.30(-1.37)	-1.52(-1.12)	-1.13(-1.74)	-3.80(-2.91)	-1.38(-1.09)	4.40(-5.49)	-5.63(-9.05)	8.79(-5.68)	-7.38(-6.07)	-10.59(-11.33)	-8.47(-9.32)	-12.87(-11.45)	-4.29(-11.92)	-1.84(-0.27)	-0.90(-4.72)	-6.48(-3.00)	2.19(-2.93)	-1.06(-2.62)	-3.74(-5.87)	1.86(-2.41)	0.27(-1.51)	3.38(-0.93)	-4.15(-2.22)
φ(240°)	1.83(-0.73)	0.94(-1.23)	-3.38(-4.26)	-1.98(-1.86)	-2.88(-2.60)	-4.12(-4.70)	-3.29(-7.62)	-8.81(-11.01)	-11.71(-13.4)	-5.74(-16.16)	-11.20(-9.34)	-6.13(-9.14)	-6.43(-5.26)	6.22(-10.45)	-13.90(-8.57)	-5.13(-4.68)	-9.78(-9.36)	2.00(-2.48)	-0.77(-3.30)	19.93(-9.92)	0.47(-1.53)	1.63(-1.71)	1.83(-1.77)	-1.92(-2.76)
φ(255°)	2.26(-1.3)	-1.38(-0.51)	0.49(-1.13)	-1.57(-1.70)	-4.07(-3.31)	-3.49(-1.2)	-7.71(-13.71)	-8.91(-9.31)	-10.42(-7.85)	-6.87(-8.96)	-6.07(-9.50)	9.79(-9.31)	3.45(-3.73)	5.18(-6.49)	-3.31(-9.41)	-3.68(-4.99)	-10.91(-7.15)	2.12(-3.56)	0.25(-2.59)	-5.70(-11.77)	1.27(-3.57)	3.04(-1.4)	0.82(-1.6)	0.29(-0.69)
φ(270°)	0.60(-0.34)	6.73(-2.04)	0.48(-0.46)	-1.35(-3.29)	-4.44(-2.36)	-3.83(-2.1)	2.45(-5.85)	-12.08(-10.08)	-7.65(-6.11)	5.82(-10.33)	-11.93(-10.13)	-11.18(-15.09)	8.97(-8.84)	-11.68(-11.11)	0.34(-3.75)	9.92(-8.68)	-11.69(-5.46)	8.93(-1.28)	-1.01(-3.74)	-3.87(-4.72)	0.51(-0.85)	2.28(-1.34)	0.98(-1.5)	0.90(-1.60)
φ(285°)	0.38(-0.58)	8.53(-5.20)	-1.95(-2.51)	-1.57(-3.30)	-6.42(-1.3)	-2.89(-2.65)	6.47(-7.14)	7.37(-7.83)	4.10(-10.45)	-14.48(-15.59)	-11.89(-11.85)	-12.98(-11.20)	6.35(-3.74)	-3.58(-3.59)	-5.44(-3.38)	8.71(-13.33)	8.81(-3.76)	2.79(-2.40)	-3.88(-4.98)	-5.36(-4.06)	-3.23(-3.78)	0.13(-5.64)	0.37(-0.60)	0.78(-0.61)
φ(300°)	2.48(-2.27)	5.27(-1.51)	-1.27(-1.27)	-4.90(-7.35)	8.79(-7.72)	8.29(-10.04)	-10.88(-10.52)	-4.99(-7.72)	9.37(-12.97)	-10.50(-9.73)	-11.80(-12.41)	-15.12(-12.99)	7.29(-4.33)	-9.19(-10.43)	8.46(-10.84)	8.98(-4.78)	3.13(-3.49)	5.86(-7.45)	7.38(-6.51)	5.37(-4.39)	5.37(-4.39)	4.01(-4.45)	5.96(-4.62)	5.27(-3.86)
φ(315°)	4.44(-4.25)	-4.19(-5.84)	5.65(-5.19)	4.37(-4.70)	3.31(-4.48)	8.22(-9.75)	8.46(-8.65)	4.53(-6.71)	11.56(-16.08)	15.34(-14.49)	15.21(-12.94)	8.02(-11.34)	8.19(-9.42)	8.19(-9.42)	8.19(-9.42)	5.17(-12.30)	8.12(-8.48)	8.07(-9.29)	9.43(-9.56)	7.98(-5.89)	5.93(-4.99)	4.40(-5.52)	4.69(-5.34)	4.69(-5.34)
φ(330°)	8.63(-9.30)	-7.53(-5.18)	3.37(-3.28)	3.76(-4.32)	4.87(-4.14)	3.84(-5.86)	10.71(-11.45)	12.20(-15.37)	-14.75(-11.01)	-16.50(-14.27)	-11.15(-10.56)	8.99(-10.33)	9.92(-9.31)	7.29(-5.35)	5.96(-7.46)	4.32(-4.33)	5.35(-6.31)	-0.52(-1.78)	8.66(-10.18)	-10.75(-9.46)	-8.89(-9.50)	-10.52(-10.88)	-11.82(-14.41)	-11.68(-10.99)
φ(345°)	5.52(-4.98)	5.98(-5.65)	5.43(-5.25)	5.36(-4.96)	7.86(-10.08)	10.37(-11.48)	10.77(-11.08)	10.77(-11.08)	8.81(-7.10)	7.89(-9.56)	-14.53(-14.69)	-14.53(-12.30)	-10.90(-10.58)	8.93(-9.76)	8.60(-9.35)	4.80(-4.21)	4.16(-1.47)	0.94(-0.06)	-8.00(-8.03)	-9.95(-9.42)	-7.78(-7.27)	-10.77(-10.62)	-14.53(-15.66)	-14.53(-15.66)
φ(360°)	8.60(-8.73)	8.67(-7.27)	8.62(-7.70)	8.47(-8.57)	8.81(-8.32)	-10.22(-12.3)	-10.89(-8.88)	-7.38(-6.95)	7.03(-6.98)	5.99(-5.96)	-7.33(-9.00)	-6.00(-5.76)	6.05(-6.47)	6.47(-6.68)	-5.43(-4.69)	4.42(-4.80)	-4.28(-3.80)	3.86(-4.10)	4.28(-4.13)	4.18(-6.53)	8.73(-8.36)	6.64(-6.59)	8.76(-6.57)	-7.34(-7.52)
Frequency	5.85GPa	TotalGain 4	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	φ(17°)(97.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)	φ(1°)(57.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)	φ(1°)(57.5°)	φ(15°)(92.5°)	φ(13°)(87.5°)	φ(11°)(82.5°)	φ(9°)(77.5°)	φ(7°)(72.5°)	φ(5°)(67.5°)	φ(3°)(62.5°)
φ(1°)	8.86(-8.63)	7.91(-7.96)	7.11(-7.60)	7.41(-7.61)	6.57(-1.47)	5.25(-4.30)	4.90(-4.49)	4.60(-4.47)	4.29(-6.28)	5.24(-8.49)	-0.50(-5.66)	6.74(-7.02)	6.86(-6.54)	6.24(-7.22)	-1.67(-5.05)	-7.00(-7.38)	6.70(-7.12)	8.14(-7.85)	8.62(-9.00)	-8.53(-9.04)	-11.10(-11.85)	-11.11(-10.12)	-12.55(-10.91)	-8.90(-8.61)
φ(15°)	8.81(-8.13)	-8.98(-9.32)	9.06(-12.42)	8.68(-7.04)	8.90(-6.28)	7.52(-5.42)	-4.50(-4.21)	-4.62(-5.36)	6.07(-6.03)	-5.24(-4.33)	-8.61(-8.49)	7.75(-7.62)	7.64(-8.14)	8.20(-7.80)	8.60(-9.39)	8.97(-9.83)	9.20(-9.43)	-10.74(-10.79)	8.96(-10.53)	8.66(-10.43)	8.97(-8.96)	-10.66(-11.87)	9.85(-9.40)	-10.66(-11.87)
φ(30°)	-12.79(-11.37)	-10.58(-9.94)	8.27(-9.54)	8.69(-8.58)	-7.85(-6.69)	-5.38(-5.23)	5.35(-5.22)	-5.67(-5.72)	6.43(-7.57)	4.06(-6.63)	8.90(-9.06)	9.76(-9.89)	8.78(-7.66)	-7.47(-9.34)	8.08(-9.16)	8.92(-8.82)	-10.48(-13.57)	-10.44(-12.65)	9.98(-10.08)	-10.45(-11.1)	9.84(-10.48)	-10.22(-8.74)	-11.36(-10.30)	-11.85(-12.16)
φ(45°)	8.14(-6.40)	-8.37(-8.33)	8.84(-10.11)	-10.88(-8.57)	-4.36(-7																			

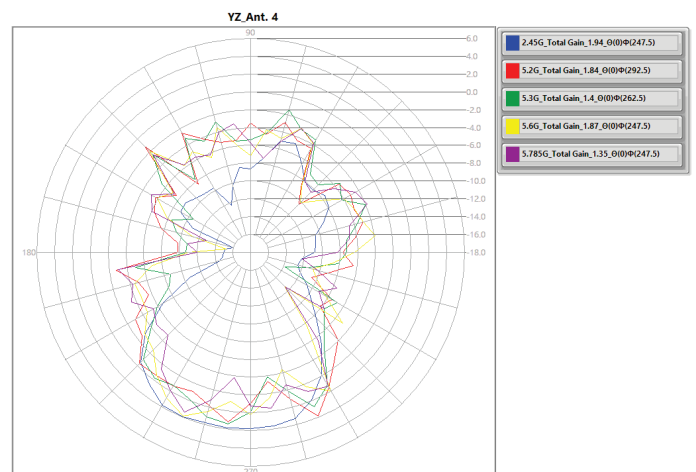
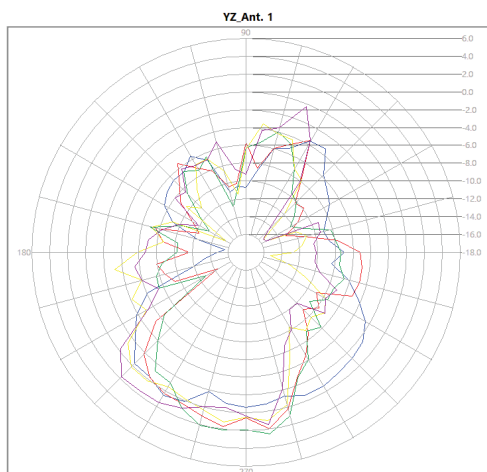
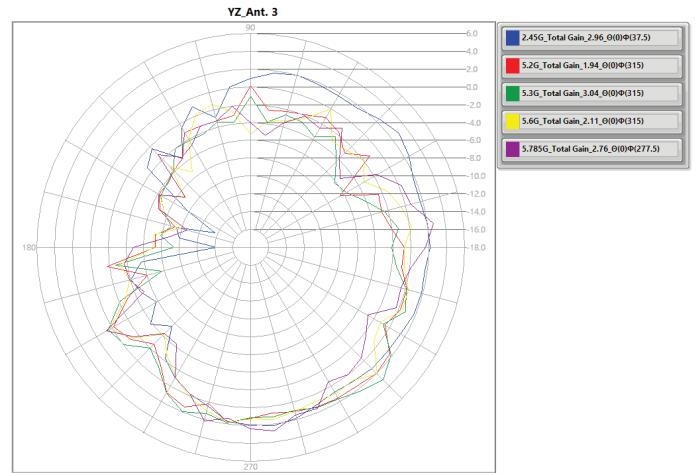
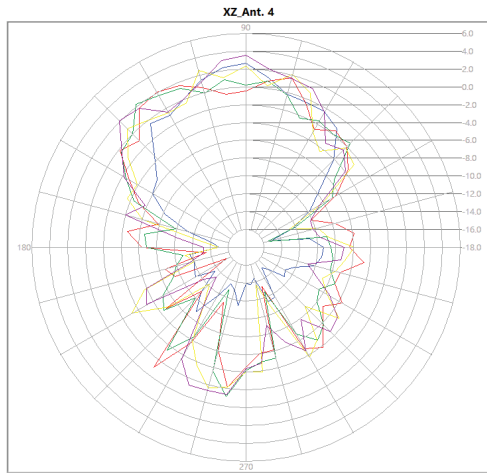
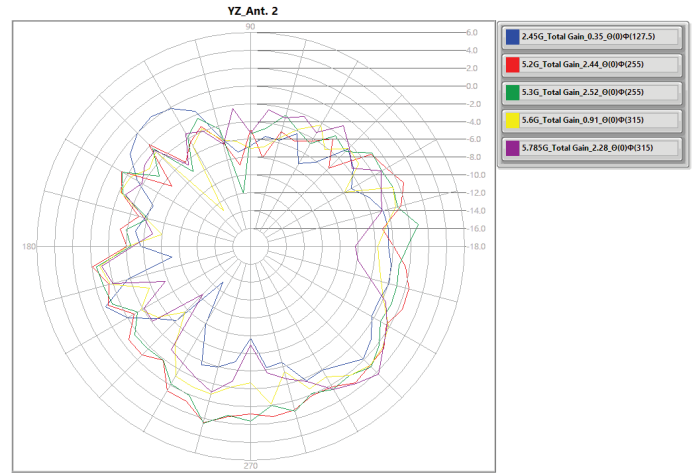
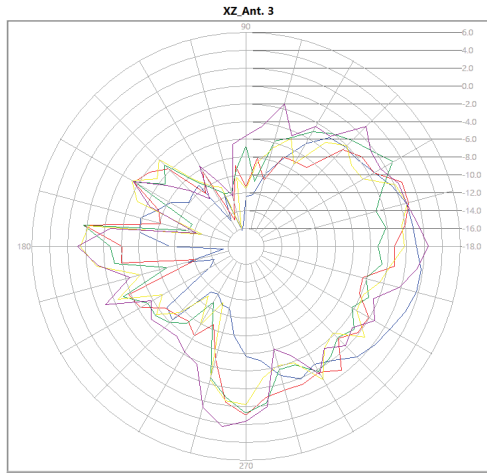


Antenna Pattern of 2.4GHz and 5GHz UNII 1~3

Appendix C

E1(XY plane) – $\Theta(90^\circ)\Phi(0-360^\circ)$
E2(XZ plane) – $\Theta(0-180^\circ)\Phi(0^\circ)$ and $\Theta(0-180^\circ)\Phi(180^\circ)$
E3(YZ plane) – $\Theta(0-180^\circ)\Phi(90^\circ)$ and $\Theta(0-180^\circ)\Phi(270^\circ)$





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Antenna Pattern of 6GHz

Appendix D

0 (°)	0.500.70	0.610.76	1.150.79	0.090.21	0.120.46	0.360.27	0.320.24	0.39-1.00	1.43-1.00	1.52-1.56	1.58-1.50	1.54-1.62	1.64-1.43	1.51-1.68	1.67-1.51	1.19-0.84	0.89-0.93	0.60-0.35	0.100.26	0.300.11	0.02-0.06	0.250.77	0.770.85	0.420.16		
0 (°)	0.850.70	0.52-0.30	0.40-0.54	1.41-1.67	1.83-1.40	1.46-1.48	1.41-1.48	1.50-1.24	2.45-2.88	3.34-3.85	4.14-4.25	4.40-4.68	4.40-3.91	3.59-3.64	3.84-3.30	3.04-1.91	1.31-0.68	0.38-0.50	0.03-0.34	0.02-0.36	0.41-0.45	0.41-0.33	0.48-0.38	0.73-0.83		
0 (22.5°)	1.80-1.93	1.870.92	0.320.25	0.160.05	0.54-0.45	0.69-0.57	0.76-0.74	1.20-1.94	2.76-3.36	3.42-0.03	2.49-1.74	1.34-1.36	1.39-1.47	1.21-0.18	1.38-0.70	3.40-2.73	1.58-0.36	0.15-0.15	0.87-0.58	0.60-1.69	1.21-1.77	0.380.90	1.07-1.33			
0 (45°)	2.17-1.56	0.65-0.11	0.82-0.87	0.96-0.64	0.31-0.38	0.33-0.19	0.44-0.41	1.00-0.65	0.73-0.76	0.20-0.54	1.17-1.81	2.00-1.48	0.64-0.52	0.67-0.11	1.14-1.07	0.27-1.00	1.54-1.21	0.66-0.07	0.28-0.06	0.23-0.85	1.20-0.68	0.03-0.41	0.38-1.01	2.34-1.34		
0 (67.5°)	0.04-0.48	0.83-0.23	0.27-0.73	0.34-0.68	0.18-0.05	0.69-0.57	0.76-0.74	1.07-0.82	0.42-0.04	0.20-0.08	0.68-1.65	1.20-1.54	0.80-1.93	0.39-0.53	0.87-0.95	3.05-2.38	1.16-0.51	0.64-1.86	1.00-0.36	0.17-0.32	0.05-0.15	1.59-1.95	0.43-0.06			
0 (90°)	1.13-0.83	1.80-1.51	0.80-0.20	1.13-1.14	0.47-0.57	1.78-1.32	0.90-0.21	0.02-0.85	1.41-1.08	0.58-0.42	0.70-0.74	0.11-0.26	0.00-0.03	0.33-0.39	0.45-0.11	1.08-0.76	0.88-0.28	1.32-0.28	0.80-0.39	1.55-0.75	0.45-0.20	0.42-0.42	1.77-0.82	0.25-1.17		
0 (52.5°)	0.09-0.30	0.00-0.67	0.70-0.36	0.40-0.61	0.12-1.35	1.51-0.68	0.22-0.37	0.40-0.63	0.47-0.33	1.01-2.31	1.62-0.46	0.21-0.52	0.92-1.28	0.98-0.28	0.05-0.70	1.31-1.83	1.46-0.46	0.09-0.19	1.05-0.07	0.28-0.74	0.52-0.22	0.14-0.50	0.35-0.17	2.46-0.79		
0 (87°)	2.18-1.99	1.38-0.18	0.06-0.70	0.59-0.73	1.02-0.32	1.40-1.50	0.09-0.21	0.68-0.91	0.02-1.72	0.20-0.12	2.47-0.29	1.37-1.59	0.22-0.82	0.88-0.50	0.03-0.86	0.98-1.14	0.86-0.20	2.85-1.04	0.51-1.64	1.34-0.08	0.03-0.35	0.22-0.52	1.59-2.60	3.31-0.32		
0 (87.5°)	4.79-2.75	1.40-0.21	0.20-0.35	0.99-0.06	1.34-0.43	1.50-1.46	0.36-0.03	1.03-1.16	3.15-3.42	2.78-2.58	3.35-0.19	5.22-4.76	3.89-2.31	1.83-0.65	1.02-1.29	1.18-1.11	0.79-2.53	0.88-0.49	0.88-0.49	0.70-0.74	0.26-0.57	0.66-1.45	0.43-0.65			
0 (94°)	0.74-0.54	3.16-1.44	1.35-0.87	1.37-1.29	0.15-0.39	1.28-0.42	1.86-1.51	0.74-0.85	3.41-2.32	3.22-0.94	4.58-0.89	7.03-0.84	6.29-0.61	1.98-0.43	3.34-0.13	2.93-0.36	0.98-1.39	1.80-2.34	0.02-0.81	0.58-0.87	0.28-1.48	1.38-1.34	0.70-0.14	0.36-0.80		
0 (95.5°)	7.72-0.31	3.12-1.92	1.22-0.67	1.31-0.94	0.23-1.59	1.21-0.04	0.03-0.02	1.77-0.55	7.71-0.55	7.71-0.55	4.78-0.19	7.48-0.25	6.27-0.39	3.71-0.39	7.35-0.22	3.58-0.18	1.68-0.46	1.78-2.22	0.60-0.71	0.03-1.03	1.84-1.03	2.38-0.48	0.45-0.22	0.72-0.36		
0 (96°)	0.96-0.64	0.78-0.13	1.90-0.45	0.98-0.68	0.33-0.29	0.56-1.23	1.23-1.47	0.98-0.74	0.72-0.59	0.89-1.02	0.71-0.82	0.30-0.69	0.30-0.69	0.30-0.69	1.16-0.73	0.76-0.35	0.76-0.35	0.02-1.82	1.22-0.3	1.09-0.28	0.08-0.01	0.31-0.27	0.55-0.89	0.80-1.32		
0 (97°)	0.59-0.42	3.16-2.41	0.01-0.09	0.80-0.48	0.30-0.32	0.44-0.51	0.34-0.46	0.59-0.77	0.45-0.53	0.43-0.73	1.14-0.67	0.71-0.70	0.40-0.43	0.31-0.48	0.75-0.94	0.41-1.38	1.14-0.18	1.61-0.76	0.68-0.93	1.41-0.52	1.74-0.76	0.95-0.41	0.56-0.43	0.53-0.69		
0 (97.5°)	1.10-0.45	4.29-0.56	4.29-0.56	4.44-0.58	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22	0.58-0.22		
0 (102°)	4.48-0.47	0.22-0.32	0.70-0.92	0.16-0.13	0.10-0.13	0.27-0.71	0.75-0.51	0.58-0.54	0.44-0.46	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84		
0 (105°)	4.85-0.81	0.55-0.85	1.18-0.10	1.04-0.13	0.42-0.13	0.27-0.71	0.75-0.51	0.58-0.54	0.44-0.46	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84	1.03-0.84		
0 (127°)	4.47-0.88	1.41-0.16	1.27-0.16	1.21-0.27	0.46-0.72	0.83-0.13	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85	0.12-0.85		
0 (130°)	4.52-0.14	1.13-0.13	0.02-0.24	0.33-0.10	0.78-0.64	1.78-0.64	0.80-0.38	0.58-0.77	1.06-0.34	0.80-0.32	0.71-0.56	0.70-0.74	0.68-0.71	1.12-0.45	0.24-0.05	0.89-0.56	0.82-1.02	0.37-0.76	0.01-0.88	0.40-0.50	0.78-0.55	0.68-0.67	1.47-0.44	0.11-0.58		
0 (142°)	0.70-0.47	1.75-0.89	0.25-0.79	0.33-0.45	0.12-0.14	0.31-0.42	0.44-0.42	1.35-0.48	0.78-1.27	0.19-1.04	0.87-0.38	0.90-0.79	0.52-0.46	0.12-0.34	0.26-0.77	0.43-0.41	0.48-0.28	0.58-0.57	0.42-0.30	0.25-0.43	0.88-0.56	0.92-0.81	0.34-1.18	1.17-0.36		
0 (94°)	0.43-1.82	2.73-0.85	0.88-1.21	0.78-0.78	1.18-0.78	1.08-0.59	1.05-0.70	1.33-0.72	0.87-0.68	0.31-0.75	0.71-0.62	0.71-0.62	0.71-0.62	0.53-0.16	0.11-0.37	0.28-0.43	0.28-0.43	0.17-0.71	0.37-0.89	0.60-1.02	0.75-0.18	0.23-0.58	0.47-0.13	0.11-0.58		
0 (157°)	0.87-0.38	0.84-0.12	0.10-0.77	0.47-1.18	1.02-1.23	1.05-0.58	1.52-0.16	1.15-0.49	0.12-0.31	0.88-0.30	1.01-0.73	0.74-0.75	0.50-0.15	0.67-0.64	0.39-0.89	0.42-1.12	1.58-0.15	1.13-0.73	0.69-0.81	0.74-0.74	0.66-0.26	1.80-0.21	1.80-0.21	0.99-0.11		
0 (120°)	0.12-0.13	0.75-0.33	0.18-0.64	0.09-1.02	1.02-1.14	1.40-0.13	1.31-0.12	1.03-0.14	1.31-0.12	1.52-0.15	1.42-0.16	0.58-0.49	0.34-0.48	1.16-0.20	1.16-0.20	0.42-0.13	0.34-0.48	0.07-0.10	0.67-0.16	0.49-0.40	0.73-0.20	0.22-0.32	0.58-0.77	0.11-0.58		
0 (172°)	0.17-0.31	0.78-0.78	0.38-0.85	0.47-0.73	0.79-0.69	0.68-0.24	0.58-0.42	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72	0.48-0.72		
0 (94°)	0.40-0.73	0.78-0.22	0.43-0.55	0.12-0.35	0.43-0.41	0.72-0.91	0.47-0.41	0.58-0.54	0.39-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43	0.59-0.43		
Frequency	6.475GHz	Table 1	0.500.70	0.610.76	1.150.79	0.090.21	0.120.46	0.360.27	0.320.24	0.39-1.00	1.43-1.00	1.52-1.56	1.58-1.50	1.54-1.62	1.64-1.43	1.51-1.68	1.67-1.51	1.19-0.84	0.89-0.93	0.60-0.35	0.100.26	0.300.11	0.02-0.06	0.250.77	0.770.85	0.420.16
Gain	0 (°)	0.500.70	0.610.76	1.150.79	0.090.21	0.120.46	0.360.27	0.320.24	0.39-1.00	1.43-1.00	1.52-1.56	1.58-1.50	1.54-1.62	1.64-1.43	1.51-1.68	1.67-1.51	1.19-0.84	0.89-0.93	0.60-0.35	0.100.26	0.300.11	0.02-0.06	0.250.77	0.770.85	0.420.16	
0 (°)	1.74-1.25	1.26-1.26	0.43-0.49	0.51-0.77	0.42-0.08	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06		
0 (22.5°)	1.67-1.58	1.67-1.58	0.43-0.49	0.51-0.77	0.42-0.08	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06	0.33-0.06		
0 (45°)	1.41-1.14	1.29-1.16	0.76-1.03	0.71-1.58	0.41-0.48	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38	0.21-0.38		
0 (67.5°)	1.26-1.19	0.86-0.67	0.55-0.64	0.02-0.31	0.49-0.68	1.10-1.04	0.50-0.69	1.32-0.42	0.27-0.51	1.42-0.18	2.29-1.49	0.07-0.27	0.43-0.67	1.21-0.17	1.69-0.34	0.39-0.41	0.26-1.19	1.08-1.99	0.20-0.16	1.54-0.36	0.39-0.48	0.39-0.48	0.39-0.48	0.39-0.48		
0 (90°)	3.14-0.38	2.52-0.46	1.89-0.86	0.34-0.37	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32	0.14-0.32		
0 (97°)	3.65-0.42	2.38-0.37	2.14-0.43	0.70-0.41	0.77-0.03	1.01-0.14	0.42-0.20	0.24-0.44	1.13-0.91	0.61-0.32	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22	0.24-0.22		
0 (97.5°)	1.09-0.12	0.98-0.76	0.90-0.69	0.78-0.24	0.94-0.03	0.77-0.03	0.13-0.14	0.05-0.25	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15	0.46-0.06	1.51-0.15		
0 (102°)	0.76-0.22	1.01-0.10	0.31-0.65	1.29-1.14	0.35-0.37	0.09-0.21	0.34-0.50	1.13-0.11	0.67-0.08	0.20-0.71	0.08-0.10	0.00-0.08	1.75-1.76	0.23-0.54	0.68-0.16	1.37-0.19	1.36-0.28	0.76-0.88	0.84-0.01	1.30-0.43	1.22-1.26	1.46-1.77	0.58-0.52	0.52-0.48		
0 (105°)	0.13-0.26	0.03-0.02	0.28-0.04	1.50-1.48	0.22-0.61	0.18-0.06	0.24-0.02	0.36-0.18	0.18-0.26	0.35-0.32	0.46-0.26	1.65-0.39	0.45-0.47	0.52-0.14	0.28-0.02	0.60-0.62	0.50-1.85	0.28-0.52	0.40-0.47	1.20-0.39	0.96-1.10	0.07-0.51	0.17-0.31	0.26-0.17		
0 (107°)	1.88-1.95	2.10-0																								



Antenna Pattern of 6GHz

Appendix D

(H25)	0.720-7.8	0.651-3.0	-3.19-3.74	2.46-1.27	-1.59-2.01	-0.79-0.3	0.89-0.26	-0.29-0.55	-1.63-3.56	6.30-6.69	-3.41-2.02	-1.97-2.20	-2.07-0.4	0.76-0.01	-0.84-3.43	-4.24-3.85	-3.82-4.91	-4.35-1.36	-1.43-1.35	-1.29-2.93	-1.98-0.05	0.06-0.15	0.19-0.35	0.88-0.97
(H26)	2.061-0.2	-0.36-0.4	2.09-2.56	-0.69-1.0	0.54-0.48	0.761-38	2.04-58	1.63-1.00	3.07-1.43	4.29-1.90	-1.23-2.34	2.37-1.94	-1.95-2.07	2.94-2.72	-1.55-2.35	-5.99-4.54	4.14-6.40	8.40-3.87	3.71-3.22	-3.38-4.80	-2.01-0.68	0.27-0.69	0.04-0.73	0.741-84
(H27)	-0.65-1.03	0.62-0.00	-1.86-1.69	-0.89-1.26	0.81-0.15	0.82-0.88	1.85-2.72	-0.55-0.59	0.52-1.75	-0.79-2.46	-0.60-0.61	0.37-0.09	0.94-1.21	-2.97-0.63	-4.05-3.30	-5.96-4.82	8.65-3.87	3.22-0.87	-1.74-1.43	-5.03-3.23	-2.64-1.99	-3.90-2.06	-1.42-0.68	-1.52-0.53
(H28)	1.18-1.08	0.80-0.64	-0.62-2.22	-1.85-2.31	-1.63-0.34	0.81-1.16	2.05-2.70	0.28-1.11	0.71-0.76	0.24-1.86	-3.59-1.47	-0.86-1.76	3.33-2.88	-1.83-2.75	-7.33-4.47	-6.90-9.80	6.14-11.64	-10.15-11.60	5.43-4.87	-2.90-2.87	-3.12-2.83	5.95-2.59	0.95-0.50	-1.96-1.39
(H29)	-2.98-1.84	-1.32-1.40	0.27-2.81	2.92-0.04	-0.89-1.26	0.80-0.88	0.94-1.12	1.48-0.86	0.88-2.23	-1.37-0.76	-3.17-1.85	-2.43-2.61	-6.59-6.50	-3.00-2.21	4.56-12.74	8.59-10.08	9.75-10.52	8.97-10.87	-1.74-1.43	-5.03-3.23	-2.70-2.90	-0.33-0.27	-1.52-0.39	
(H30)	4.30-5.33	2.64-1.14	0.70-2.45	3.21-0.35	-3.36-1.28	2.04-0.53	1.17-0.73	-0.70-3.35	0.32-0.26	0.20-2.41	-4.12-3.04	-7.21-11.53	-5.04-3.02	-4.14-4.57	-5.51-6.81	-10.29-8.67	8.71-5.16	4.96-1.25	0.86-1.46	4.75-3.50	3.12-2.66	-3.25-1.62	-0.40-3.45	-3.81-4.57
(H31)	-1.32-0.71	-4.74-6.69	-4.89-6.73	2.90-1.73	2.95-1.27	-0.36-0.42	-1.30-1.67	-2.24-0.42	0.24-1.57	-2.78-0.85	-3.84-0.42	9.20-8.98	2.08-2.55	-3.51-0.65	-5.18-6.52	-3.29-3.82	-1.87-2.77	0.77-0.92	-1.52-2.28	-0.90-2.61	-3.74-2.83	-1.13-1.77	-4.52-0.41	-0.80-1.47
(H32)	-1.14-13.85	-10.82-9.84	6.39-7.82	5.47-14.32	-2.68-0.66	-1.24-0.15	-1.29-2.10	-1.69-0.80	2.71-2.82	3.47-0.56	-3.37-0.72	14.79-7.48	2.74-2.94	-6.53-8.93	-8.89-7.25	-4.78-4.78	-2.08-0.45	0.78-0.92	0.10-0.36	-1.60-1.67	-1.17-0.47	3.47-1.44	0.36-0.73	-5.78-1.90
(H33)	5.38-6.49	-11.19-14.01	-13.78-8.81	4.84-4.52	2.16-2.51	2.13-1.23	-1.91-2.09	-2.89-3.40	5.20-4.59	4.74-0.56	-6.17-8.80	-15.59-6.42	4.05-5.87	-7.89-6.84	-7.50-7.46	-4.03-4.48	2.54-1.54	0.13-0.93	-2.47-1.68	-1.86-1.36	-1.59-2.00	4.85-0.81	3.61-3.30	-4.82-0.97
(H34)	5.01-6.38	-11.58-16.70	-14.23-9.87	6.94-6.47	4.00-1.95	-3.13-3.38	-2.99-3.36	-3.73-4.25	9.79-5.75	-5.26-8.25	-7.39-10.08	-12.64-8.68	-4.49-4.48	-7.89-7.71	-10.49-8.62	-2.89-5.88	6.22-0.34	6.53-1.94	-4.76-1.04	-2.23-2.25	-1.89-5.84	4.19-8.83	6.02-0.68	-8.25-1.27
(H35)	4.69-6.93	-13.86-11.36	-13.86-11.36	5.22-1.72	1.96-3.36	-5.99-4.45	8.10-7.65	8.00-6.37	7.57-7.28	-10.15-12.22	-10.69-8.80	9.45-6.46	5.12-8.81	-10.01-9.88	-7.39-8.91	-5.59-6.97	5.59-6.57	5.59-6.42	5.59-6.42	-1.23-1.45	5.64-0.03	10.77-7.46	7.90-7.03	-10.77-10.86
(H36)	7.73-8.70	-10.56-11.42	-10.56-11.42	4.89-1.59	0.77-1.15	-3.12-3.56	3.66-6.51	3.78-4.41	4.75-6.23	-14.12-12.55	-1.47-1.47	8.63-0.79	7.86-12.95	7.71-8.32	-4.89-5.19	-6.19-6.80	5.46-1.36	4.29-7.01	3.98-0.47	-2.27-0.43	6.73-7.93	6.86-6.94	8.77-10.84	-6.77-10.84
(H37)	10.14-10.28	9.23-10.58	-11.13-0.53	2.80-1.38	5.14-3.51	3.63-7.00	9.27-2.74	8.89-7.32	8.23-11.48	8.47-8.80	9.76-12.77	-12.74-8.49	2.74-6.99	11.98-9.10	7.49-11.44	-12.72-7.97	2.47-0.89	4.94-0.98	0.46-0.72	-5.39-0.15	6.19-6.44	7.79-11.89	8.39-10.89	-8.39-10.89
(H38)	-11.40-10.20	-8.91-7.46	8.91-7.46	4.38-6.93	5.91-7.10	-10.37-10.51	-10.10-10.75	-12.74-8.41	7.19-9.38	-13.98-9.51	9.38-10.36	-10.45-12.12	4.48-6.75	8.79-12.25	-10.58-9.15	-7.39-7.43	4.01-6.40	4.43-13.13	-3.14-0.78	-7.90-4.91	8.99-7.95	5.45-6.48	8.51-9.25	-1.52-0.39
(H39)	9.64-5.44	-5.76-9.57	-12.56-13.74	-15.38-13.54	-11.56-10.02	-11.37-10.00	-12.77-11.47	4.76-6.47	4.97-6.86	-12.81-10.32	-11.26-10.31	-11.82-11.87	10.79-11.77	1.94-0.98	-12.84-11.16	-8.67-7.89	-7.83-7.94	5.90-11.49	-11.88-8.70	9.02-10.50	-11.74-8.36	6.57-6.81	6.36-8.77	-6.07-12.03
(H40)	5.50-4.75	-3.78-3.70	-3.77-5.58	4.87-7.73	4.37-7.82	-6.84-7.03	8.92-13.08	-13.13-13.51	-12.79-12.10	-10.98-13.52	-12.66-11.88	6.28-6.47	3.76-4.16	-0.58-4.76	-1.98-4.68	4.97-0.26	-4.19-2.46	4.25-0.63	6.16-6.50	-5.86-5.55	4.32-0.26	2.59-2.69	2.59-2.67	-3.75-0.50
(H41)	5.01-1.03	2.91-4.43	-6.48-6.73	8.89-8.43	-8.67-8.47	-8.66-7.84	-8.34-7.77	-4.77-6.84	4.23-6.78	4.55-6.36	-4.79-4.45	-11.41-4.40	-4.26-5.33	4.31-6.83	-5.61-5.74	-6.68-8.22	-10.80-12.43	-14.59-13.68	-11.70-8.34	6.11-4.95	-3.86-3.31	-1.90-0.83	0.14-0.13	0.84-0.75
(H42)	-10.01-12.17	-10.01-8.95	-9.86-11.30	-10.80-15.94	-14.83-15.41	-15.23-15.59	-12.97-10.80	-10.25-10.62	-10.03-9.80	-8.77-9.88	-9.40-8.58	8.91-8.64	-10.43-10.30	-9.54-8.85	-8.36-7.44	-7.70-6.65	5.80-5.33	-5.27-4.45	-3.52-2.79	2.44-2.45	3.04-0.68	4.42-0.87		
FreeHq	6.475-0.94	Totalled 3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	0*(H7)(H67.5)	0*(H7)(H62.5)	0*(H7)(H57.5)	0*(H7)(H52.5)	0*(H7)(H47.5)	0*(H7)(H42.5)	0*(H7)(H37.5)	0*(H7)(H32.5)	0*(H7)(H27.5)	0*(H7)(H22.5)	0*(H7)(H17.5)	0*(H7)(H12.5)	0*(H7)(H7.5)	0*(H7)(H2.5)	0*(H7)(H-2.5)	0*(H7)(H-7.5)	0*(H7)(H-12.5)	0*(H7)(H-17.5)	0*(H7)(H-22.5)	0*(H7)(H-27.5)	0*(H7)(H-32.5)	0*(H7)(H-37.5)	0*(H7)(H-42.5)	0*(H7)(H-47.5)
(H43)	2.72-1.25	-1.65-1.91	-1.81-1.79	-1.83-1.56	-1.08-1.20	-1.21-1.30	-1.29-1.11	-1.43-1.37	1.12-1.40	-1.16-1.27	-1.88-1.53	-1.21-1.50	-1.84-2.03	2.16-1.89	-1.71-1.65	-1.60-1.79	2.17-1.16	2.00-1.71	-1.84-2.23	-2.43-2.26	2.39-2.22	2.07-2.24	2.48-2.48	
(H44)	2.06-1.80	-1.56-1.92	-1.56-1.92	2.15-2.21	-1.11-1.29	-1.56-1.88	-1.50-2.21	-2.44-2.57	2.26-2.26	-1.61-1.80	-2.36-2.42	-1.59-1.33	-1.80-2.17	-2.47-2.21	-2.13-1.95	-1.76-1.71	1.77-1.67	-1.42-1.01	-1.03-1.34	-1.44-1.23	-1.55-1.15	-1.76-0.91	-1.48-1.98	
(H45)	2.88-3.34	-3.61-4.43	-4.64-4.87	4.43-4.42	-3.26-3.18	-3.48-4.00	-4.06-4.38	-2.65-2.72	2.71-2.80	-1.78-1.96	-1.89-1.51	-1.97-1.92	-1.96-2.34	-2.07-2.26	-2.08-2.01	-1.79-1.32	-1.25-1.47	-1.63-1.80	-1.97-1.71	-1.54-1.49	-1.63-1.43	-1.56-1.19	-0.80-1.25	-1.21-0.41
(H46)	2.26-2.35	-2.03-2.59	-3.97-4.51	4.89-5.70	2.98-3.05	-3.16-3.12	-3.14-2.73	-2.00-2.23	2.20-2.28	-1.74-1.34	-1.86-1.64	-0.04-0.81	-1.06-1.04	-1.58-1.56	-2.06-2.12	-2.62-2.42	-2.46-2.64	-3.12-2.74	-2.62-2.64	-3.12-2.74	-2.62-2.64	-3.12-2.74	-2.62-2.64	
(H47)	2.86-2.83	-3.40-2.84	-3.59-2.83	3.16-3.52	-3.46-3.37	-3.97-4.37	-3.96-2.87	-2.51-2.95	3.52-3.78	-2.67-0.96	-0.61-1.37	-1.08-0.54	-0.78-1.23	-1.28-1.24	-1.51-0.81	-1.43-1.14	-1.08-0.65	0.76-0.81	-1.28-1.23	-1.51-0.81	-1.43-1.14	-1.71-2.25	2.67-3.37	4.00-4.10
(H48)	2.77-2.23	-2.69-2.48	-3.72-4.36	3.96-3.73	4.87-5.59	5.30-4.14	-2.61-2.36	3.21-4.15	4.30-3.71	-2.22-0.42	-3.26-2.36	2.34-1.98	1.62-1.01	-1.26-1.22	-1.77-1.60	-2.19-1.58	2.78-1.94	-0.88-1.28	-2.77-2.58	-2.69-2.36	2.78-1.94	3.62-3.78	3.79-3.43	
(H49)	2.68-2.64	-4.61-3.24	-5.70-4.79	5.31-5.07	4.27-5.64	4.43-5.51	3.89-5.31	5.24-6.47	5.68-2.50	2.17-0.13	-0.20-0.46	0.96-0.52	0.98-0.52	0.98-0.52	-1.19-0.74	-4.26-2.76	6.65-2.52	4.98-1.68	3.98-3.26	-3.14-2.75	-1.90-2.97	5.99-3.32	3.37-3.40	
(H50)	2.04-1.58	2.16-2.16	3.89-6.70	4.40-6.23	5.41-5.94	3.88-5.41	3.98-6.42	4.48-5.82	5.98-1.13	4.98-6.84	6.26-2.30	1.97-2.62	0.92-0.68	1.18-0.71	-1.86-2.71	3.88-6.33	5.43-0.11	1.77-0.57	1.80-1.32	-1.19-0.75	6.89-2.15	4.29-3.79	2.98-2.30	
(H51)	1.87-1.13	-2.38-0.46	0.20-0.49	6.29-6.20	1.91-2.22	2.57-1.23	-1.46-2.35	3.91-1.20	1.13-1.30	6.03-5.23	1.43-1.76	2.99-2.07	2.61-2.04	1.68-1.98	-1.49-2.57	4.32-0.86	3.97-2.67	2.14-1.65	2.29-2.36	2.51-2.36	1.94-2.33	4.74-3.70	3.11-2.15	1.11-0.95
(H52)	1.19-1.53	0.29-0.63	0.42-1.97	2.86-0.76	1.38-1.39	0.69-0.30	0.25-0.22	0.07-0.46	1.18-2.39	-1.93-0.38	-0.96-0.57	-0.89-1.41	-1.32-0.42	2.99-0.40	-4.18-4.74	8.78-8.83	9.49-6.81	5.94-2.47	4.39-3.81	2.99-2.91	2.59-0.42	4.29-2.97	2.15-1.12	-1.59-1.08
(H53)	2.61-1.37	-1.14-1.41	0.42-1.34	2.22-1.73	1.36-1.55	0.99-0.45	0.00-0.24	0.00-0.24	1.50-2.43	0.03-1.14	-0.36-0.69	0.89-0.82	0.46-0.47	1.63-0.65	-7.12-0.49	-10.54-9.64	7.80-0.25	7.97-0.44	3.53-0.88	-1.51-0.88	2.70-2.59	3.60-3.31	2.96-1.95	2.15-0.68
(H54)	4.33-1.14	-0.84-0.01	-1.17-0.74	3.30-1.85	1.66-1.37	2.20-2.41	2.33-1.81	2.52-2.16	-1.41-0.98	-1.01-0.72	-1.62-2.34	6.05-0.83	4.82-0.64	8.19-12.12	-10.88-7.15	7.68-11.43	-10.57-7.70	6.27-2.34	-1.23-0.43	3.14-1.78	3.07-1.65	2.62-2.24	4.05-0.47	
(H55)	5.72-2.74	-2.58-2.50	-2.50-2.50	4.38-1.41	0.26-0.40	1.16-0.66	0.40-0.36	1.55-1.84	1.58-2.54	-1.50-2.19	-3.09-2.36	-1.27-0.96	-1.00-0.78	4.60-2.66	7.22-12.42	7.44-10.12	-1.79-10.08	4.47-10.85	3.99-1.21	-2.22-0.68	2.60-2.60	-1.31-0.22	1.11-0.26	-1.71-0.12
(H56)	5.99-4.22	-3.83-4.41	-8.23-4.94	3.32-2.16	0.96-0.53	1.73-0.94	0.57-0.64	1.27-0.63	2.50-0.45	-2.46-0.47	-8.55-5.14	-7.25-0.96	-3.93-0.68	6.55-0.41	-8.98-6.39	-6.50-4.11	-6.84-7.89	4.19-5.58	-1.46-0.99	0.40-0.67	0.90-0.61	-1.50-1.68	3.41-6.60	8.14-7.22
(H57)	4.76-12.77	-10.50-14.74	-12.57-7.23	4.90-2.56	-1.97-0.53	0.78-1.67	-1.60-2.01	0.01-1.42	3.04-0.48	-7.75-7.30	-11.83-8.62	-1.29-1.94	-1.53-0.89	8.76-6.36	-5.79-5.13	3.11-4.29	2.14-3.25	0.36-0.79	1.60-0.43	-0.67-0.76	3.58-2.69	2.57-0.43	6.83-0.42	
(H58)	1.10-15.05	-13.01-13.31	9.28-12.27	4.30-1.27	-1.06-0.64	-1.32-0.65	-4.39-1.75	0.84-2.37	6.13-1.05	-4.50-1.46	0.71-12.07	-12.15-4.40	2.71-2.98	7.88-10.43	8.									



Antenna Pattern of 6GHz

Appendix D

(H)F 5)	1.0115	0.6907	-1.5802	2.40158	4.431057	2.110423	-7.26148	-4.79138	-13.521057	8.6610103	-9.491129	-8.601336	-4.591933	-11.431070	-5.931235	-3.361482	-2.541387	-2.91071	0.281029	-0.61061	0.281158	1.77173	2.07075	2.73102	
(H)150)	0.20115	0.04130	-0.00122	2.071273	3.711726	-3.061010	-8.591430	-6.421866	-12.471132	-10.331250	-13.461042	-10.841237	-7.731538	-5.891723	-7.891336	-6.111230	-4.781257	-1.04033	0.701089	-1.53035	-0.61164	1.33157	0.621133	1.87131	
(H)127.5)	1.730185	0.37051	0.020175	-1.721930	-4.031885	-8.60141	-7.241887	-8.511959	-6.111555	-6.901611	-8.111223	-8.021608	-1.781312	-5.141786	-5.021462	-4.761346	-4.461317	-1.591065	-1.86131	-3.671076	0.86221	0.78271	0.281937	2.59137	
(H)120)	0.43125	0.02029	-0.601100	2.451113	-3.681446	-5.521778	-7.431010	-13.781533	-7.991296	-10.901232	-10.941231	-10.071651	2.431575	8.3211425	-8.601800	-5.091664	-8.991389	-1.471142	-1.811265	-8.041247	1.23148	0.621190	1.620133	2.25132	
(H)127.5)	-0.001062	0.401084	-1.161204	0.281148	-4.011309	-6.461186	-10.351875	-7.3311371	-15.061478	-15.011585	-16.421576	-11.411932	-12.171851	-13.991327	-11.681394	2.391782	-13.911656	-3.391225	-1.211240	8.121230	1.81135	0.061145	1.858170	4.780190	
(H)150)	2.52103	0.03078	0.161155	-1.93128	-2.731000	4.261346	-7.5911052	-10.791862	-15.071199	-12.441451	-13.291279	-14.611338	-14.901741	6.6210246	4.471329	4.201614	-12.911705	-4.631122	-5.671289	-6.621321	1.67205	1.91171	0.13197	0.45019	
(H)142.5)	-1.330100	-2.111513	3.531184	0.781313	-2.831160	-5.621137	-8.991619	-12.671811	-12.101861	-14.811876	-14.001463	-15.301264	-7.191814	-14.551534	-5.47102	4.191684	-10.391652	-3.871201	-1.951449	-7.591147	0.08159	2.051098	-1.131023	-1.631743	
(H)150)	5.911373	2.281175	-1.541104	2.041516	-5.031009	6.291808	-7.801892	-11.771043	-12.431455	-13.701279	-15.101378	-15.341539	9.46127	6.271099	8.471483	4.751088	-15.36161	7.121800	-6.651754	-5.561581	-1.961021	0.821168	2.101153	4.67150	
(H)157.5)	-1.681376	3.161291	3.391384	6.171448	-5.551500	6.271396	-8.111860	-11.541236	-11.101157	-12.211032	-9.61173	-11.111947	-7.771140	-7.83129	8.521700	7.75111	6.60155	-7.29182	6.731619	-5.56153	0.601358	-5.641577	-1.801203	-1.90120	
(H)150)	5.071631	6.591746	4.691650	6.66147	-4.851309	8.201180	-12.491152	-7.211698	-10.941785	-6.941641	-4.171600	-5.511634	6.181791	-7.721700	-5.931347	-3.361319	-3.661382	4.171427	-3.91147	-4.311493	-5.581641	4.48151	6.261480	-6.251638	
(H)172.5)	7.991895	0.207131	4.701373	3.741504	8.661558	-15.081169	-6.781978	-8.111588	-4.961574	4.191817	-3.741414	3.571597	2.961255	1.881147	-1.581147	-1.361123	1.191154	2.001236	-2.841347	-4.561553	5.18151	5.691589	6.251638	4.251638	
(H)150)	2.871302	2.731255	0.891755	-11.361128	7.381159	-5.46161	-8.17157	-4.251324	2.341143	-1.681182	-1.681138	-1.611176	-1.751171	2.291158	-1.131193	-0.491188	0.811075	0.911096	-1.361156	-1.981192	-1.961129	2.761321	3.131303	-3.191127	
Freq(Hz)	6.475024	Total(dB)	4	-1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
Gain	(H)F 5)	(H)F 150)	(H)F 127.5)	(H)F 120)	(H)F 127.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)	(H)F 157.5)	(H)F 142.5)	(H)F 150)
(H)F 5)	8.131914	-7.451481	-8.391718	-7.291735	-7.861335	-8.051493	-7.591429	-6.591832	-6.341850	-6.601065	-6.691011	-10.061113	-11.331069	-10.451017	-10.571036	-8.311486	-8.231807	-7.981019	-8.20148	-8.321483	-8.321483	-8.191448	-8.251429	-8.251429	
(H)7.5)	-15.421614	-15.931549	-15.161216	8.261873	-37.01101	8.421485	-7.921485	-6.211733	8.401744	-8.761492	-10.311077	-6.701490	-6.341099	6.991095	6.251482	-8.181460	-8.621428	-8.081016	6.211490	-8.621887	-10.411337	-13.811387	-14.741468	-14.741468	
(H)10)	-10.661208	-11.461103	-13.831577	-13.931214	-15.021168	-13.421120	-9.111942	-8.661490	-12.011228	-10.431072	-8.961144	-8.061740	-8.061490	6.611044	-10.691105	-11.051030	-10.101800	-8.701891	8.391050	-11.361927	-11.331919	-12.081035	-10.961133	-11.651070	
(H)22.5)	-13.641154	-11.931143	-11.891431	-11.341618	-10.871054	-14.9711278	-10.761128	-8.701120	-8.751793	-7.871734	-6.971744	-7.631737	-7.441728	-7.881737	-6.761751	-6.131842	-6.741635	-6.691641	-6.061684	-6.321033	-7.621456	-11.501128	-14.831136	-14.831136	
(H)30)	-12.511328	-14.031351	-12.311100	-9.701103	-9.641148	-11.861158	-13.211106	-12.061156	-8.441459	-6.901466	-6.441459	-7.881779	-7.871786	-7.521783	-7.091460	-5.521588	-7.511731	-6.671746	-7.201486	-7.901999	-9.9011045	-12.291146	-11.4911202	-12.1911299	
(H)37.5)	-13.541105	-12.461490	-11.171800	-8.141879	-8.241878	-10.2112178	-10.311105	-14.411139	-11.871455	-10.321140	-9.96184	-8.661108	-8.921862	-8.711829	-7.491735	-6.871826	-8.081920	-8.301734	-8.251825	-10.611929	-8.6011025	-10.881136	-10.721150	-10.721150	
(H)45)	-7.911022	-6.59114	-6.24110	4.861716	-6.021167	-11.651162	-8.721187	-11.4611028	-11.001934	-11.82102	-10.71146	-8.801719	-8.811052	-10.761408	-7.511429	-7.341910	-6.591809	-7.681433	-5.991616	-6.261655	-5.871522	-7.081739	-7.871414	-7.871414	
(H)52.5)	-3.96149	-4.32145	-4.191484	-7.89174	-6.3211409	-10.281927	-7.76149	-12.771019	-12.321143	-11.911478	-12.741106	-10.831932	-10.901174	-6.711819	-10.581174	-11.061973	-8.671878	-8.991842	-7.931794	-7.471597	-6.151406	-4.041510	-3.781380	-3.96114	
(H)60)	-3.321289	-3.481218	-5.631714	-3.871350	-6.071538	-6.521499	-8.991786	-12.991689	-11.101181	-10.691145	-9.641762	-8.691148	-14.841148	-13.81109	-11.25132	-7.481470	8.361537	4.331515	-3.981408	-3.761255	-2.501227	2.771185	3.99163	3.99163	
(H)67.5)	-1.461170	-3.60167	-2.261097	-1.011545	-4.571538	-4.361561	-7.96174	-11.36179	-11.501911	-11.221157	-10.311178	-10.161106	-12.221876	-13.331159	-5.681541	-7.141713	-6.871425	-3.961329	-3.71178	-1.941242	-1.151706	-1.941707	-2.361143	-2.361143	
(H)75)	0.250101	6.031038	6.891038	6.991198	-3.701484	-4.201891	4.741775	-10.151932	-11.621198	-13.101135	-12.551145	-15.341148	-10.081931	-13.261145	-7.291480	-3.721576	4.911446	2.841113	-1.811193	-2.381149	-4.96122	3.00105	6.29187	1.00118	
(H)82.5)	0.06194	6.991035	6.071035	1.771243	-3.791468	-4.491516	5.331013	-10.4611109	-15.0311446	-15.3911446	-15.3911446	-15.3911446	-4.871598	8.0711249	-5.53157	-3.431471	7.191385	0.091101	0.02111	-1.891243	6.91012	6.591015	6.591015	6.591015	
(H)90)	4.03151	6.211548	6.091234	1.871289	-4.711162	-5.671586	7.091974	-12.011449	-15.311449	-12.361514	-10.891118	-10.841480	-3.461821	8.071144	-6.391235	3.331242	6.791327	3.93187	0.74184	-1.901247	2.961019	6.79118	3.93179	3.93179	
(H)97.5)	1.48105	6.021058	6.001375	2.011384	-3.921463	-4.191467	7.291738	-4.701743	6.311122	-6.001137	-11.991103	-10.97153	-4.951199	-14.46172	-7.591105	-4.991359	6.011140	-1.951446	-5.881316	-2.26137	-1.040015	6.110165	6.301110	1.22101	
(H)105)	1.401209	6.00143	6.231211	2.011383	-4.241458	-4.719435	6.291720	-4.371198	-12.021498	-12.361108	-10.881536	-6.591532	-4.441876	-6.311147	-6.061135	-3.461547	3.331885	2.441449	-3.961329	1.071033	0.481148	6.231113	1.071033	1.071033	
(H)112.5)	1.441130	1.07148	0.891114	-1.231246	-4.341143	-7.451724	8.011136	-6.311189	-12.0611407	-10.331876	-8.33173	-5.841755	-2.151446	6.117158	-10.65167	5.141378	-7.601131	4.721184	-2.901326	-3.161149	2.571113	1.311926	0.481148	1.46014	
(H)120)	0.131026	-1.311156	2.331120	2.721428	-3.251635	-3.77128	-6.891186	-12.211204	-11.1411075	-11.011529	-11.111074	-10.131533	-3.731475	-6.241968	-11.061437	-7.217183	-11.031720	-1.501249	-2.881239	-5.971033	0.551187	1.911610	1.911610	1.911610	
(H)127.5)	2.471258	-1.681499	-3.731336	2.861474	-7.171484	-6.621489	-14.0811201	-10.9911201	-14.001158	-15.391142	-15.231155	-11.41174	-10.031157	-11.601183	-14.591557	-4.471339	9.4811041	-1.571246	-2.271406	-7.571370	0.710102	-4.331147	1.071015	-2.131498	
(H)135)	0.621029	-2.021177	2.391443	5.421610	-1.161735	-6.061531	-7.301227	-13.311539	-13.021146	-14.001163	-14.191176	-13.621128	-16.69171	-7.021130	-6.901726	-3.591345	-10.931208	-2.991172	-1.631428	-8.84184	0.21190	-6.421457	0.501005	-2.731056	
(H)142.5)	-1.491178	-7.461409	-3.141384	6.211485	-6.881185	-6.461151	-13.311302	-14.1911542	-11.5011415	-15.2211025	-12.341500	-13.751168	-11.761819	6.3411374	-5.761145	-1.921714	-12.231436	-3.571193	-3.391678	-4.611468	-4.71042	-6.371433	-2.93197	-3.41144	
(H)150)	-5.361184	-1.461347	-6.681430	6.211331	-6.771108	-7.841834	-10.251139	-12.701128	-12.401157	-14.0911291	-12.3211033	-12.781134	-7.191596	4.271498	-6.661445	9.0611218	-15.6411127	-8.711173	-7.711712	-6.411544	-3.69127	-2.441336	-1.84164	-1.161420	
(H)157.5)	-3.391351	-2.001211	-3.391467	-6.711874	-7.031514	-5.521769	-8.9511490	-13.9911539	-11.671179	-11.761130	-8.061145	-8.691467	-7.781495	6.871119	-11.251109	-10.24150	6.601100	-6.691790	-5.621721	-6.69180	-6.031566	-6.491552	-5.111269	-1.68172	
(H)165)	9.361834	-6.511481	-7.49128	6.451748	-6.68173	-11.811528	-12.411136	-10.621134	-10.031108	-9.521193	-7.531812	-7.531812	8.451757	-6.851783	-5.081335	-4.171433	-5.961549	4.941543	6.271143	-3.431519	-6.161269	6.491472	6.921176	-7.83178	
(H)172.5)	8.131937	-12.761579	-10.62180	5.64172	-12.331108	-10.81187	-10.441149	-11.031791	-8.811527	-5.521727	-6.62144	-8.71730	-7.12												



Antenna Pattern of 6GHz

Appendix D

E1(XY plane) – $\Theta(90^\circ)\Phi(0-360^\circ)$
E2(XZ plane) – $\Theta(0-180^\circ)\Phi(0^\circ)$ and $\Theta(0-180^\circ)\Phi(180^\circ)$
E3(YZ plane) – $\Theta(0-180^\circ)\Phi(90^\circ)$ and $\Theta(0-180^\circ)\Phi(270^\circ)$

