



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

Appendix A

Theta (112.5°)	-2.24/-5.54	-3.66/-7.19	-5.29/-9.94	-7.86/-4.2	-8.39/-7.12	-6.86/-7.64	-9.61/6.23	-4.13/-11.89	-6.25/-3.38	-3.52/-3.25	-5.25/-3.73	-0.99/0.03	-1.32/-0.15	0.66/0.63	-2.19/0.13	-6.41/3.86	-3.44/-0.73	-6.29/-3.33	-18.03/-5.28	-1.71/-15.9	-2.71/-6.13	-4.61/2.15	0.41/-0.42	-4.29/-1.39																								
Theta (120°)	-10.48/-12.43	-12.51/-17.83	-16.81/-17.83	-18.27/-16.69	-10.32/-11.6	-13.61/-13.33	-16.55/-11.25	-10.07/-8.79	-19.18/-19.05	-10.37/-7.31	-10.76/-12.78	-8.33/-7.76	-5.89/-10.62	-7.61/-5.1	-5.31/-9.01	-6.76/-6.58	-5.37/-4.63	-5.59/-7.51	-11.31/-9.99	-4.58/-16.44	-1.88/-4.07	-6.68/-13.71	-9.53/-10.48	-6.89/-8.64																								
Theta (127.5°)	-5.38/-4.1	-7.51/-7.87	-10.42/-6.65	-10.14/-18.83	-9.62/-9.36	-18.29/-18.72	-10.97/-15.49	-10.77/-13.18	-9.58/-7.83	-9.46/-17.69	-10.84/-9.4	-13.29/-11.41	-16.29/-11.16	-17.87/-14.38	-10.19/-11.81	-14.65/-17.98	-11.19/-4.43	-10.04/-8.06	-16.23/-17.49	-11.68/-11.2	-11.68/-7.69	-6.25/-6.24	-6.63/-7.07	-6.56/-11.9																								
Theta (135°)	-12.56/-18.05	-17.57/-12.38	-5.22/-4.65	-3.27/-13.14	-8.37/-5.91	-9.28/-7.56	-9.67/-8.78	-7.97/-18.99	-16.58/-12.65	-5.59/-8.3	-8.58/-13.07	-8.86/-5.8	-6.89/-8.52	-7.66/-10.58	-17.36/-12.46	-19.61/-13.85	-10.39/-17.65	-15.02/-18.53	-18.6/-10.41	-6.73/-5.75	-17.97/-11.53	-4.64/-7.25	-5.27/-6.84	-10.25/-17.66																								
Theta (142.5°)	-18.15/-18.9	-9.17/-3.88	-4.5/-5.21	-10.32/-19.18	-9.18/-4.32	-6.76/-8.88	-7.91/-10.1	-2.81/-11.61	-13.69/-7.7	-6.16/-6.79	-4.91/-7.04	-7.43/-7.05	-8.48/-6.56	-5.23/-3.98	-2.53/-8.01	-18.32/-9.01	-7.93/-4.24	-8.87/-12.3	-8.4/-10.37	-6.68/-2.39	-7.99/-10.48	-9.99/-18.83	-15.23/-9.29	-11.49/-12.47																								
Theta (150°)	-12.43/-11.26	-9/-9.4	-18.52/-13.19	-14.49/-8.91	-8.87/-8.26	-7.21/-4.57	-5.63/-5.44	-5.31/-6.62	-6.58/-6	-4.97/-4.38	-0.75/-2.04	-0.95/-0.13	-0.44/-0.66	-1.39/-1.77	-2.65/-3.05	-4.44/-4.9	-6.69/-3.98	-5.29/-12.67	-6.49/-3.8	-4.63/-9.85	-5.82/-7.6	-10.91/-16.56	-10.91/-16.56	-10.91/-16.56																								
Theta (157.5°)	-11.59/-9.59	-13.22/-10.6	-7.18/-5.39	-5.71/3.68	-2.92/4.76	-8.64/9.82	-7.37/3.69	-2.82/5.36	-8.75/8.87	-4.87/2.27	-2.46/2.96	-5.14/9.17	-10.33/-8.9	-7.39/3.83	-2.34/-1.79	-2.18/-0.98	-2.47/8.65	-18.62/5.8	-3.27/3.33	-7.66/-16.31	-6.08/5.28	-8.31/-13.83	-15.66/-18.44	-18.55/-15.16																								
Theta (165°)	-9.18/-9.56	-9.45/-9.03	-9.69/-10.45	-7.39/-5.78	-5.85/-6.2	-7.73/-8.2	-9.39/-8.26	-5.49/-7.77	-5.16/-5.42	-5.83/-6.92	-8.02/-7.54	-7.79/-6.14	-4.57/-3.98	-3.5/-3.4	-3.47/-3.82	-4.56/-7.35	-9.59/-9.34	-14.94/-11.7	-5.49/-3.99	-4.55/-7.35	-8.89/-7.6	-9.71/-6.62	-7.71/-7.15																									
Theta (172.5°)	-16.81/-18.6	-17.91/-13.84	-14.49/-13.02	-12.31/-10.95	-10.8/8.55	-8.14/-8.11	-9.32/-11.29	-14.71/-15.86	-15.56/-9.33	-6.93/-5.52	-4.49/-4.71	-5.21/-5.83	-7.57/-9.57	-10.85/-11.9	-11.31/9.32	-7.57/-8.44	-11.74/-14.29	-7.44/-4.5	-3.95/-5.28	-5.82/-7.6	-9.32/-11.76	-17.59/-14.77	-9.53/-8.96	-11.74/-13.64																								
Theta (180°)	-8.73/-8.88	-9.82/-9.26	-8.72/-8.34	-9.09/-9.92	-9.16/-9.65	-11.09/-12.27	-12.41/-13.38	-13.91/-15.05	-15/17.63	-15.63/-12.96	-10.77/-9.47	-8.37/-8.54	-8.37/-8.62	-6.28/-4.71	-4.01/-4.26	-6.02/-10.17	-15.68/-13.15	-11.79/-12.74	-17.63/-17.69	-16.28/-10.92	-7.56/-6.44	-8.91/-8.87	-13.62/-10.84	-9.38/-7.92																								
Gain	Phi(0°)	Phi(7.5°)	Phi(15°)	Phi(22.5°)	Phi(30°)	Phi(37.5°)	Phi(45°)	Phi(52.5°)	Phi(60°)	Phi(67.5°)	Phi(75°)	Phi(82.5°)	Phi(90°)	Phi(97.5°)	Phi(105°)	Phi(112.5°)	Phi(120°)	Phi(127.5°)	Phi(135°)	Phi(142.5°)	Phi(150°)	Phi(157.5°)	Phi(165°)	Phi(172.5°)	Phi(180°)	Phi(187.5°)	Phi(195°)	Phi(202.5°)	Phi(210°)	Phi(217.5°)	Phi(225°)	Phi(232.5°)	Phi(240°)	Phi(247.5°)	Phi(255°)	Phi(262.5°)	Phi(270°)	Phi(277.5°)	Phi(285°)	Phi(292.5°)	Phi(300°)	Phi(307.5°)	Phi(315°)	Phi(322.5°)	Phi(330°)	Phi(337.5°)	Phi(345°)	Phi(352.5°)
Gain (0°)	-13.08/-12.49	-13.49/-14.98	-15.78/-15.78	-15.75/-15.96	-16.27/-17.25	-18.06/-17.84	-17.75/-17.59	-18.52/-18.8	-18.94/-17.82	-16.41/-15.22	-14.52/-16.01	-16.97/-14.77	-13.47/-13.6	-15.63/-19.59	-18.42/-17.54	-17.77/-16.41	-16.22/-16.85	-18.41/-18.98	-17.74/-18.56	-19.15/-17.12	-17.01/-19.04	-18.38/-15.8	-13.83/-14.36	-15.44/-15.47																								
Gain (7.5°)	-16.14/-15.49	-16.86/-18.6	-18.52/-18.42	-18.15/-18.05	-18.09/-17.79	-19.35/-18.74	-19.05/-18.74	-18.18/-18.14	-17.67/-15.07	-13.08/-13.32	-15.02/-14.17	-11.93/-11.27	-12.37/-14.64	-16.14/-15.83	-14.96/-14.6	-15.29/-16.88	-18.61/-18.03	-19.16/-19.47	-18.23/-16	-15.44/-17.35	-18.44/-17.2	-16.05/-16.62	-15.27/-15.37	-16.96/-18.47																								
Gain (15°)	-17.46/-17.05	-19.27/-18.08	-18.51/-18.46	-18.49/-18.71	-18.91/-18.42	-18.63/-17.54	-18.21/-18.71	-17.94/-19.15	-18.21/-16.51	-13.99/-14	-15.21/-14.57	-11.93/-10.42	-10.81/-12.51	-13.77/-14.02	-13.83/-14.33	-15.91/-16	-17.94/-17.2	-19.08/-17.93	-16.91/-16.09	-15.91/-17.17	-18.44/-17.2	-16.05/-16.62	-18.12/-19.59																									
Gain (22.5°)	-17.69/-18.9	-17.21/-17.77	-18.21/-18.83	-19.22/-18.53	-18.81/-19.09	-16.07/-14.96	-15.73/-16.97	-17.63/-18.25	-18.32/-17.51	-18.71/-18.85	-18.71/-18.12	-18.79/-18.1	-15.08/-11.97	-11.57/-13.26	-14.35/-14.47	-14.69/-15.69	-17.71/-19.45	-18.61/-18.73	-18.17/-18.37	-18.71/-18.66	-18.79/-19.33	-18.15/-18.89	-18.73/-18	-18.15/-18.19																								
Gain (30°)	-18.36/-18.5	-17.95/-18.69	-18.26/-18.63	-18.51/-18.66	-18.54/-17.75	-16.67/-14.81	-15.11/-15.94	-16.44/-16.98	-17.37/-17.2	-17.39/-35	-19.02/-17.2	-18.23/-19.09	-18.88/-17.48	-15.52/-15.25	-15.59/-16.89	-18.48/-17.64	-18.96/-18.1	-18.59/-17.23	-17.19/-18.8	-17.55/-17.64	-18.04/-18.45	-18.3/-19.19	-17.73/-17.78	-17.49/-18.44																								
Gain (37.5°)	-18.83/-18.24	-18.48/-15.17	-15.05/-13.37	-18.74/-17.91	-18.51/-18.66	-19.11/-17.6	-17.51/-17.56	-16.58/-14.31	-13.61/-16.16	-15.83/-18.71	-18.63/-18.1	-16.74/-16.21	-16.85/-16.03	-15.76/-16.89	-18.62/-18.34	-19.24/-16.74	-15.91/-17.45	-18.61/-18.74	-19.24/-16.74	-18.71/-18.62	-19.24/-16.74	-18.19/-19	-17.92/-18.8	-16.66/-17.13																								
Gain (45°)	-16.53/-17.45	-18.38/-13.25	-12.67/-15.84	-17.39/-18.84	-18.74/-18.52	-19.24/-16.1	-17.07/-18.12	-18.56/-17.95	-18.06/-15.97	-13.46/-13.36	-16.87/-18.62	-18.5/-18.07	-15.61/-16.65	-16.33/-13.64	-14.04/-18.23	-18.57/-16.94	-15.98/-19.29	-18.83/-18.47	-15.19/-15.82	-19.42/-18.8	-16.71/-13.57	-12.97/-14.43	-18.55/-18.93	-17.73/-15.43																								
Gain (52.5°)	-15.37/-18.45	-18.36/-13.9	-12.55/-14.57	-17.78/-18.61	-19.25/-17.86	-14.48/-12.41	-13.39/-13.52	-14.33/-18.83	-18.24/-15.09	-13.64/-13.24	-14.61/-18.14	-17.59/-15.33	-13.24/-16.92	-16.86/-12.51	-13.85/-18.09	-16.58/-12.24	-12.51/-16.12	-19.25/-19.32	-15.58/-17.32	-17.71/-17.96	-12.87/-10.2	-9.19/-10	-13.38/-17.67	-18.01/-16.1																								
Gain (60°)	-16.74/-17.74	-17.27/-18.32	-14.58/-15.11	-18.41/-14.62	-16.07/-18.36	-11.03/-11.32	-10.69/-9.62	-10.55/-14.77	-14.16/-12.66	-13.11/-13.99	-14.61/-15.94	-19.4/-19.18	-15.32/-16.52	-18.01/-13.64	-14.74/-18.23	-16.25/-12.41	-13.21/-15.86	-17.92/-16.92	-15.53/-19.12	-18.55/-17.26	-13.78/-10.01	-7.57/-15.9	-9.28/-15.25	-18.56/-17.44																								
Gain (67.5°)	-14.72/-18.35	-19/-18.84	-14.76/-14.8	-18.02/-15.87	-16.41/-15.55	-11.67/-11.91	-10.85/-9.16	-10.95/-13.04	-11.09/-11.26	-13.93/-16.59	-16.36/-15.08	-17.92/-18.43	-17.85/-17.67	-17.67/-19.14	-18.87/-19.4	-16.69/-16.39	-19.04/-18.86	-14.43/-13.14	-14.74/-14.01	-13.85/-14.2	-14.63/-12.99	-9.57/-7.78	-8.42/-11.78	-15.04/-14.02																								
Gain (75°)	-12.93/-18.59	-18.14/-17.82	-13.49/-12.76	-18.02/-18.48	-16.42/-13.09	-11.04/-11.91	-11.17/-10.39	-12.77/-12.7	-10.58/-10.11	-15.81/-18.02	-14.33/-18.8	-18.09/-17.45	-18.13/-18.96	-18.33/-18.76	-18.27/-18.75	-11.55/-12.62	-14.14/-12.1	-12.35/-13.39	-14.25/-15.89	-14.68/-11.89	-10.96/-12.75	-13.99/-12.08																										
Gain (82.5°)	-16.35/-19.12	-19.12/-17.46	-12.26/-15.02	-16.49/-19.29	-13.99/-11.7	-10.94/-11.4	-11.09/-11.98	-13.66/-14.27	-10.42/-11.79	-17.54/-16.52	-13.68/-12.04	-12.43/-16.05	-17.79/-18.61	-18.91/-18.27	-17.93/-16.86	-18.62/-18.71	-18.97/-17.61	-13.34/-15.17	-15.86/-11.94	-12.54/-13.82	-16.41/-18.54	-19.65/-17.99	-18.54/-15.82																									
Gain (90°)	-19.14/-14.99	-14.66/-17.63	-11.55/-8.75	-14.65/-14.3	-10.81/-11.66	-11.91/-11.33	-11.21/-13.4	-15.54/-13.59	-13.93/-18.62	-18.68/-17.12	-12.05/-10.46	-12.05/-13.76	-16.88/-19.26	-18.32/-18.57	-15.54/-16.53	-18.09/-18.19	-18.38/-18.18	-14.02/-18.08	-16.93/-11.72	-12.42/-16.61	-17.75/-18.31	-17.74/-13.97	-13.15/-18.11	-19.11/-18.06																								
Gain (97.5°)	-13.86/-12.63	-11.92/-17.9	-9.82/-9.67	-13.31/-9.1	-9.17/-11.44	-12.55/-11.98	-11.96/-12.28	-13.56/-13.72	-15.39/-19	-18.48/-17.58	-12.91/-11.4	-13.28/-14.44	-18.17/8.4	-13.07/-16.88	-14.03/-14.31	-17.81/-19.16	-17.58/-16.72	-13.39/-13.99	-18.02/-12	-11.85/-16.56	-18.86/-18.48	-18.52/-13.18	-11.37/-15.51	-18.32/-18.4																								
Gain (105°)	-18.25/-13.77	-12.49/-18.69	-7.23/6.67	-8.98/-18.77	-12.22/-14.32	-12.31/-11.02	-11.89/-11.64	-12.23/-12.33	-12.11/-14.47	-18.18/-18.09	-11.36/-11.58	-11.31/-14.28	-13.01/-11.25	-15.07/-11.81	-12.59/-12.87	-17.48/-14.39	-17.38/-16.32	-16.14/-18.85	-17.82/-12.54	-11.83/-16.48	-17.84/-18.53	-17.92/-14.99	-11.81/-14.93	-18.79/-19.21																								
Gain (112.5°)	-15.99/-10.65	-11.07/-17.42	-14.19/-8.65	-10.67/-17.36	-14.63/-19.24	-16.5/-12.1	-10.91/-10.57	-12.21/-12.35	-11.49/-13.93	-19.33/-19.53	-13.71/-10.28	-10.91/-16.75	-18.41/-12.83	-15.16/-16.76	-12.56/-14.09	-16.99/-13.6	-18.77/-18.89	-14.72/-17.45	-17.48/-14.83	-14.05/-18.7	-18.02/-19.07	-18.37/-13.15	-11.99/-16.16	-18.04/-18.07																								
Gain (120°)	-14.43/-12.16	-12.86/-19.3	-17.52/-12.46	-15.37/-16.65	-17.58/-17.93	-19.41/-16.97	-12.58/-11.48	-13.88/-14.23	-11.97/-12.59	-13.34/-11.73	-9.21/-8.73	-9.21/-15.09	-18.97/-16.92	-15.54/-11.53	-10.49/-13.61	-17.28/-14.13	-18.27/-18.28	-18.52/-19.12	-19.22/-18.99	-18.05/-19.1	-17.56/-18.1	-18.94/-17.23	-15.83/-18.08	-19.53/-14.28																								
Gain (127.5°)	-16.23/-14.31	-14.67/-19.57	-19.13/-15.16	-15.17/-16.79	-17.93/-18.99	-19.28/-15.33	-12.81/-13.13	-17.27/-17.42	-13.78/-13.51	-12.93/-11.26	-9.81/-3.33	-15.02/-18.16	-16.57/-15.05	-11.77/-13.02	-17.97/-15.15	-15.03/-17.41	-17.63/-17.56	-17.51/-19.06	-17.17/-18.72	-17.58/-17.99	-17.21/-17.56	-19.48/-18.65	-18.76/-16.58																									
Gain (135°)	-11.56/-10.93	-11.93/-13.93	-16.02/-17.77	-18.68/-18.61	-16.89/-14.91	-11.91/-9.96	-9.55/-11.13	-15.94/-17.63	-17.95/-17.94	-16.12/-14.71	-15.31/-17.66	-19.04/-17.66	-17.04/-14.3	-9.35/-7.31	-8.23/-12.26	-17.78/-18.75	-15.03/-13.8	-16.68/-18.99	-17.87/-18.28	-18.41/-17.26	-15.42/-15.41	-17.25/-17.41	-15.85/-16.97	-17.32/-13.68																								
Gain (142.5°)	-9.49/-9.82	-12.07/-15.1	-17.53/-19.77	-18.79/-17.84	-17.53/-13.52	-9.99/-14.4	-7.93/-9.44	-12.78/-16.82	-19.04/-17.64	-16.15/-15.71	-15.38/-14.56	-15.12/-18.58	-18.05/-12.58	-8.85/-4.78	-8.07/-10.62	-15.11/-15.7	-13.62/-13.94	-16.79/-10.95	-18.78/-18.46	-17.07/-15.23	-15.27/-18.4	-19.1/-19.01	-19.03/-17.86	-14.15/-11.08																								
Gain (150°)	-11.73/-12.3	-14.88/-18.26	-17.72/-19.12	-17.64/-18	-17.89/-14.35	-11.41/-9.41																																										



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

Appendix A

Theta	Phi	Gain	Phi(0°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)			
Theta(165°)	-9.33/-7.61	-8.24/-7.7	-6.36/-5.58	-5.82/-7.67	-12.26/-17.4	-12.78/-9.72	-9.99/-10.32	-12.56/-10.75	-11.11/-11.64	-12.35/-11.76	-11.81/-10.66	-7.97/-7.98	-6.68/-9.96	-13.24/-12.54	-8.31/-7.82	-8.31/-8.42	-9.68/-10.95	-10.59/-8.99	-8.41/-8.82	-5.91/-8.21	-12.53/-16.07	-14.22/-11.34	-9.29/-8.53	-8.03/-9.67					
Theta(172.5°)	-13.62/-14.7	-13.89/-12.41	-10.51/-10.36	-10.86/-11.84	-14.31/-16.58	-18.27/-17.52	-15.69/-13.86	-13.18/-12.56	-9.63/-8.41	-7.23/-6.35	-6.45/-6.81	-8.24/-9.12	-9.44/-10.66	-6.17/-5.3	-11.41/-16.15	-12.77/-11.06	-12.45/-13.75	-14.14/-14.86	-11.97/-14.54	-18.59/-18.83	-18.93/-11.7	-10.22/-10.23	-11.02/-12.7	-13.87/-13.04					
Theta(180°)	-17.51/-19.09	-18.33/-19.13	-17.86/-17.32	-18.78/-18.66	-18.92/-18.46	-17.05/-19.07	-18.51/-18.55	-18.62/-18.59	-18.68/-18.33	-19.37/-17.9	-18.61/-18.33	-19.24/-17.5	-18.66/-11.5	-13.12/-12.85	-17.51/-18.27	-18.87/-14.73	-14.42/-15.37	-18.93/-18.99	-18.87/-14.73	-14.42/-15.37	-17.79/-16.45	-12.88/-12.03	-12.79/-14.92	-17.96/-19.18	-18.44/-18.8				
Theta(187.5°)	-18.27/-18.75	-18.92/-17.94	-18.97/-15.06	-14.38/-16.41	-15.74/-18.42	-17.91/-17.97	-19.36/-17.46	-16.04/-13.41	-15.01/-18.89	-17.71/-11.93	-17.03/-18.73	-18.44/-18.84	-17.33/-18.52	-17.66/-15.57	-12.02/-13.96	-19.27/-18.47	-17.42/-18.44	-16.95/-16.91	-18.19/-18.74	-16.79/-17.36	-11.86/-12.46	-15.29/-17.42	-18.03/-19.41	-17.25/-17.99					
Theta(195°)	-17.28/-18.22	-17.46/-18.07	-18.29/-17.92	-18.51/-18.39	-18.48/-18.59	-17.59/-17.31	-18.47/-18.01	-17.94/-16.71	-16.18/-18.18	-17.96/-16.56	-13.71/-18.77	-15.65/-17.44	-18.56/-18.87	-18.74/-18.57	-19.14/-17.82	-17.88/-15.14	-12.66/-19	-18.83/-18.63	-18.41/-13.5	-13.97/-16.39	-18.93/-18.03	-18.25/-18.74	-17.15/-18.91	-18.07/-14.62					
Theta(202.5°)	-13.26/-15.39	-16.67/-15.06	-12.57/-12.06	-12.93/-14.9	-16.06/-18.23	-15.63/-16.62	-13.81/-17	-11.66/-13.07	-12.93/-15.53	-15.71/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77
Theta(210°)	-17.63/-13.18	-15.55/-14.31	-11.33/-9.41	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	
Theta(217.5°)	-18.73/-14.23	-18.41/-17.81	-18.49/-13.33	-10.99/-15.75	-17.56/-13.42	-17.13/-18.66	-17.73/-18.15	-12.12/-15.15	-13.99/-14.27	-18.29/-18.26	-18.78/-16.37	-18.89/-18.05	-18.88/-17.67	-18.44/-17.87	-18.26/-15.48	-18.51/-18.79	-18.34/-17.87	-12.31/-18.84	-17.57/-17.98	-18.46/-17.61	-18.83/-12.3	-13.29/-16.86	-13.44/-14.07	-17.98/-17.95					
Theta(225°)	-18.03/-14.33	-12.97/-14.73	-15.38/-15.88	-18.06/-18.43	-18.45/-17.73	-10.38/-13.35	-16.75/-14.34	-17.45/-18.57	-12.89/-12.58	-14.51/-19.11	-17.44/-18.16	-17.68/-18.15	-15.58/-14.09	-11.02/-13.97	-18.33/-18.12	-12.12/-16.15	-15.31/-17.62	-16.11/-16.04	-18.98/-13.55	-13.43/-15.78	-18.12/-14.19	-15.94/-17.07	-15.48/-17.52	-18.65/-18.11					
Theta(232.5°)	-18.27/-18.75	-18.92/-17.94	-18.97/-15.06	-14.38/-16.41	-15.74/-18.42	-17.91/-17.97	-19.36/-17.46	-16.04/-13.41	-15.01/-18.89	-17.71/-11.93	-17.03/-18.73	-18.44/-18.84	-17.33/-18.52	-17.66/-15.57	-12.02/-13.96	-19.27/-18.47	-17.42/-18.44	-16.95/-16.91	-18.19/-18.74	-16.79/-17.36	-11.86/-12.46	-15.29/-17.42	-18.03/-19.41	-17.25/-17.99					
Theta(240°)	-17.28/-18.22	-17.46/-18.07	-18.29/-17.92	-18.51/-18.39	-18.48/-18.59	-17.59/-17.31	-18.47/-18.01	-17.94/-16.71	-16.18/-18.18	-17.96/-16.56	-13.71/-18.77	-15.65/-17.44	-18.56/-18.87	-18.74/-18.57	-19.14/-17.82	-17.88/-15.14	-12.66/-19	-18.83/-18.63	-18.41/-13.5	-13.97/-16.39	-18.93/-18.03	-18.25/-18.74	-17.15/-18.91	-18.07/-14.62					
Theta(247.5°)	-13.26/-15.39	-16.67/-15.06	-12.57/-12.06	-12.93/-14.9	-16.06/-18.23	-15.63/-16.62	-13.81/-17	-11.66/-13.07	-12.93/-15.53	-15.71/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77	-18.11/-17.77
Theta(255°)	-17.63/-13.18	-15.55/-14.31	-11.33/-9.41	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06	-11.05/-13.06
Theta(262.5°)	-18.73/-14.23	-18.41/-17.81	-18.49/-13.33	-10.99/-15.75	-17.56/-13.42	-17.13/-18.66	-17.73/-18.15	-12.12/-15.15	-13.99/-14.27	-18.29/-18.26	-18.78/-16.37	-18.89/-18.05	-18.88/-17.67	-18.44/-17.87	-18.26/-15.48	-18.51/-18.79	-18.34/-17.87	-12.31/-18.84	-17.57/-17.98	-18.46/-17.61	-18.83/-12.3	-13.29/-16.86	-13.44/-14.07	-17.98/-17.95					
Theta(270°)	-18.03/-14.33	-12.97/-14.73	-15.38/-15.88	-18.06/-18.43	-18.45/-17.73	-10.38/-13.35	-16.75/-14.34	-17.45/-18.57	-12.89/-12.58	-14.51/-19.11	-17.44/-18.16	-17.68/-18.15	-15.58/-14.09	-11.02/-13.97	-18.33/-18.12	-12.12/-16.15	-15.31/-17.62	-16.11/-16.04	-18.98/-13.55	-13.43/-15.78	-18.12/-14.19	-15.94/-17.07	-15.48/-17.52	-18.65/-18.11					
Theta(277.5°)	-18.78/-17.29	-18.11/-18.53	-11.79/-10.05	-16.63/-16.86	-17.54/-18.41	-17.98/-11.47	-12.71/-17.4	-11.71/-15.91	-14.12/-13.98	-15.97/-18.04	-17.91/-18.06	-17.57/-17.92	-16.78/-15.98	-15.87/-14.83	-15.87/-15.79	-12.09/-13.78	-16.41/-18.86	-18.92/-14.16	-14.14/-11.02	-19.25/-14.68	-17.59/-16.78	-19.27/-17.15	-15.23/-17.21	-18.61/-18.44					
Theta(285°)	-16.58/-11.9	-12.98/-12.15	-18.12/-11.49	-9.21/-17.59	-19.37/-18.36	-18.51/-17.24	-18.72/-18.62	-18.04/-15.73	-14.58/-13.64	-16.93/-18.01	-17.95/-17.47	-17.26/-18.58	-17.03/-19.01	-17.54/-17.64	-17.68/-18.29	-14.81/-18.53	-18.63/-18.68	-13.31/-19.13	-18.58/-12.18	-18.61/-18.96	-15.61/-18.19	-18.62/-18.53	-18.81/-17.06	-18.26/-18.07					
Theta(292.5°)	-19.46/-9.7	-16.15/-18.66	-16.66/-11.6	-18.37/-19.16	-18.08/-18.7	-14.19/-12.95	-17.87/-18.66	-15.57/-13.61	-18.03/-18.57	-17.61/-17.83	-18.76/-18.96	-17.92/-19.3	-19.08/-18.55	-13.27/-9.51	-12.98/-14.38	-14.14/-15.25	-18.57/-16.4	-18.28/-15.96	-19.34/-17.76	-15.51/-16.22	-18.78/-17.03	-16.93/-19.06	-18.39/-18.51	-18.49/-18.48					
Theta(300°)	-18.64/-17.75	-14.72/-18.83	-12.53/-12.46	-14.76/-15.5	-16.79/-16.4	-19.25/-11.47	-18.28/-10.67	-16.71/-16.85	-15.77/-16.12	-17.85/-17.54	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71	-15.51/-18.71
Theta(307.5°)	-17.82/-18.79	-19.41/-9	-18.79/-17.09	-18.17/-18.53	-18.42/-17.56	-17.89/-15.53	-18.32/-19.67	-16.09/-14.24	-16.47/-19.25	-17.89/-18.95	-15.17/-18.71	-15.42/-16.31	-19.37/-17.91	-18.35/-13.22	-19.95/-18.15	-18.32/-9.47	-11.65/-18.99	-17.61/-17.92	-18.29/-18.4	-9.38/-15.21	-17.88/-17.89	-14.68/-18.69	-15.72/-17.37	-16.26/-17.65					
Theta(315°)	-18.45/-18.34	-19.03/-18.15	-17.95/-14.85	-15.31/-11.93	-14.77/-18.77	-17.23/-14.48	-15.11/-18.34	-16.83/-18.7	-19.08/-18.13	-17.91/-18.1	-17.73/-18.75	-18.25/-19.04	-18.74/-18.35	-18.88/-14.83	-18.46/-8.91	-15.15/-11.18	-18.54/-18.9	-16.18/-15.14	-18.65/-15.24	-18.27/-17.97	-17.97/-16.76	-15.85/-15.36	-17.84/-17.37	-18.26/-15.14					
Theta(322.5°)	-10.97/-18.56	-16.73/-18.57	-15.52/-14.81	-10.42/-8.23	-17.99/-15.73	-16.97/-11.44	-16.37/-18.33	-18.88/-18.66	-18.59/-14.94	-18.27/-12.63	-13.25/-17.95	-18.37/-17.95	-19.31/-18.16	-18.41/-19.37	-15.31/-8.07	-12.91/-11.43	-11.94/-18.11	-14.25/-15.06	-13.41/-13.42	-18.47/-18.72	-18.12/-18.3	-17.85/-14.08	-16.24/-14.17	-17.82/-11.74					
Theta(330°)	-18.71/-14.57	-11.87/-18	-14.74/-8.57	-7.82/-9.05	-16.88/-18.29	-19.31/-8.16	-12.72/-14.08	-17.84/-12.13	-17.84/-17.8	-17.26/-14.11	-16.12/-12	-16.99/-17.26	-19.21/-19.17	-11.84/-7.63	-17.61/-17.96	-15.81/-19.41	-13.99/-13.72	-14.55/-16.42	-13.02/-17.78	-17.12/-18.06	-14.32/-17.65	-16.48/-16.96	-18.92/-18.38						
Theta(337.5°)	-17.78/-19.29	-14.44/-8.24	-9.77/-10.6	-12.69/-4.97	-10.27/-12.83	-9.15/-11.95	-17.91/-16.1	-17.73/-13.19	-17.78/-19.11	-18.91/-17.43	-16.37/-18.05	-17.77/-17.2	-13.22/-9.52	-10.95/-11.3	-18.86/-15.79	-16.93/-12.72	-12.15/-16.63	-11.69/-10.13	-18.18/-13.89	-15.06/-17.57	-12.28/-11.68	-9.97/-9.18	-10.04/-16.03	-18.47/-19.97					
Theta(345°)	-18.51/-18.7	-13.81/-10.35	-17.93/-10.75	-11.37/-8.54	-15.64/-19.2	-17.95/-18.94	-17.71/-17.96	-18.54/-16.49	-18.41/-16.09	-17.63/-15.6	-12.68/-15.12	-12.65/-15.52	-10.21/-14.2	-15.44/-18.73	-13.15/-13.63	-14.13/-13.69	-18.87/-16.2	-16.37/-18.22	-12.15/-8.58	-12.56/-19.61	-17.63/-13.95	-12.25/-9.66	-8.92/-15.72	-17.91/-18.47					
Theta(352.5°)	-18.46/-17.27	-18.23/-17.75	-18.46/-13.22	-9.53/-12.2	-8.52/-10.69	-16.85/-17.17	-18.48/-17.8	-18.26/-17.56	-18.07/-18.65	-17.48/-17.75	-18.47/-17.5	-18.27/-12.97	-19.48/-18.74	-14.76/-12.04	-16.11/-14.26	-10.73/-9.94	-11.92/-12.85	-13.81/-13.22	-12.22/-16.14	-15.72/-12.86	-14.82/-18.5	-15.77/-17.85	-19.27/-17.86						
Theta(360°)	-18.18/-18.85	-17.58/-18.45	-18.94/-18.56	-15.16/-11.09	-9.41/-9.43																								



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

Appendix A

Theta (°)	-18.08/-18.49	-17.88/-18.57	-18.2/-18.18	-18.92/-17.43	-17.78/-17.51	-17.48/-15.09	-14.11/-15.37	-18.52/-18.84	-17.81/-17.46	-16.33/-19.02	-16.94/-16.33	-18.26/-17.85	-18.22/-18.22	-17.86/-18.5	-17.98/-18.66	-19.06/-18.5	-18.84/-18.05	-17.04/-18.87	-18.71/-15.24	-17.74/-18.22	-16.73/-18.12	-16.99/-19.14	-18.22/-18.49	-19.21/-18.67
Theta (15°)	-15.84/-16.68	-14.23/-18.65	-19.39/-18.12	-18/-17	-16.06/-19.47	-19.4/-18.54	-17.54/-14.95	-13.54/-14.41	-15.72/-16.47	-16.83/-16.35	-17.04/-18.11	-18.04/-17.96	-17.72/-18.08	-17.72/-19.27	-17.6/-18.66	-18.07/-17.56	-18.81/-18.63	-17.31/-17.39	-18.89/-16.67	-13.97/-15.72	-14.63/-15.59	-17.86/-18.59	-17.98/-19.27	-18.31/-18.1
Theta (22.5°)	-18.39/-15.71	-12.84/-13.44	-10.89/-12.06	-19.07/-19.32	-16.42/-15.36	-17.19/-18.26	-17.65/-19.19	-18.64/-18.16	-18.16/-17.9	-14.97/-14.05	-17.37/-19.19	-18.35/-19.06	-19.17/-15.22	-14.94/-18.25	-19.26/-18.62	-17.83/-17.12	-18.56/-18.63	-18.89/-19.12	-18.95/-19.11	-17.55/-14.79	-12.43/-12.53	-13.93/-13.89	-18.52/-18.79	-18.64/-18.68
Theta (30°)	-18.97/-15.23	-11.42/-11.96	-8.5/-9.84	-10.69/-11.74	-15.87/-16.7	-18.08/-17.82	-18.94/-18.2	-17.68/-17.79	-17.78/-17.17	-15.9/-13.38	-16.44/-15.55	-18.16/-19.08	-18.2/-18.96	-17.63/-17.59	-12.81/-11.46	-12.71/-11.92	-11.12/-12.22	-14.82/-18.37	-18.27/-18.18	-16.88/-12.89	-10.33/-11.69	-14.32/-16.62	-18.4/-16.01	-18.35/-18.21
Theta (37.5°)	-15.99/-18.18	-18.29/-18.11	-10.75/-12.13	-10.5/-11.26	-15.83/-18.54	-17.61/-18.8	-19.17/-18.53	-17.77/-19	-17.42/-18.61	-14.2/-11.79	-12.77/-12.55	-14.22/-17.31	-18.04/-17.92	-17.5/-18.37	-17.04/-11.32	-13.07/-18.05	-17.94/-18.85	-17.76/-18.62	-15.42/-11.32	-12.63/-14.03	-9.78/-10.91	-12.61/-11.23	-10.71/-11.49	-16.99/-15.8
Theta (45°)	-19.17/-18.86	-18.85/-16.68	-16.79/-15	-19.24/-16.56	-16.8/-18.51	-17.5/-17.95	-19.1/-18.1	-18.26/-17.94	-17.41/-18.5	-19.92/-16.26	-15.51/-12.1	-14.63/-15.75	-18.66/-19.06	-18.94/-19.09	-18.75/-15.44	-19.18/-19.09	-18.55/-18.24	-19.19/-14.51	-14.32/-11.28	-17.44/-8.95	-9.45/-13.36	-14.95/-14.14	-12.04/-14.82	-15.82/-18.3
Theta (52.5°)	-18.85/-17.49	-17.92/-14.14	-12.19/-11.69	-19.08/-17.18	-12.48/-18.01	-15.55/-17.71	-18.32/-17.11	-17.59/-17.29	-15.1/-19.05	-17.8/-19.01	-13.31/-10.86	-12.85/-18.94	-19.4/-14.69	-12.58/-17.31	-18.94/-18.53	-16.86/-17.36	-18.22/-18.84	-18.31/-17.68	-18/-17.12	-17.6/-17.25	-14.66/-14.51	-11.31/-11.31	-15.01/-16.58	-17.64/-18.26
Theta (60°)	-16.29/-18.46	-17.76/-18.43	-11.58/-13.14	-14.83/-17.88	-15.16/-14.18	-17.04/-19.11	-18.23/-15.26	-17.88/-18.3	-18.04/-13.4	-17.84/-18.92	-17.58/-17.65	-17.88/-17.56	-17.84/-12.69	-17.03/-18.29	-18.92/-13.02	-17.79/-19.42	-17.33/-12.23	-13.52/-17.22	-18.73/-12.53	-14.01/-16.68	-13.52/-13.72	-17.61/-17.91	-13.62/-11.97	-17.27/-17.04
Theta (67.5°)	-17.29/-14.48	-17.54/-18.83	-15.07/-13.67	-18.48/-18.62	-17.86/-18.74	-18.57/-14.85	-18.45/-15.9	-17.78/-15.08	-18.53/-12.81	-18.78/-16.63	-18.85/-18.27	-17.65/-18.31	-18.08/-18.73	-17.86/-18.26	-18/-19.17	-18.47/-14.69	-19.33/-17.41	-17.13/-13.43	-18.18/-17.44	-17.96/-14.61	-15.21/-16.01	-16.5/-14	-12.13/-13.62	-17.76/-18.1
Theta (75°)	-17.88/-18.7	-16.94/-19.27	-18.87/-17.1	-19.13/-13.6	-14.47/-15.44	-15.57/-14.67	-13.87/-14.51	-15.94/-17.97	-19.28/-18.75	-19.13/-17.97	-15.78/-15.05	-18.26/-18.78	-17.54/-18.51	-16.1/-14.7	-18.63/-16.92	-18.63/-18.13	-18.04/-18.14	-16.61/-19.1	-16.74/-14	-18.17/-16.96	-19.12/-17.75	-18.71/-14.27	-13.18/-17.31	-19.2/-18.09
Theta (82.5°)	-18.08/-18	-13.29/-16.11	-11.09/-12.17	-13.81/-19.45	-14.78/-18.97	-16.66/-17.85	-15.17/-17.92	-17.83/-19.06	-13.57/-17.93	-17.78/-18.11	-18.91/-19.26	-19.06/-17.68	-18.62/-15.89	-13.68/-17.98	-18.17/-13.71	-18.17/-17.31	-18.51/-19.16	-18.77/-15.18	-18.63/-11.39	-11.36/-12.43	-17.52/-18.36	-13.24/-11.93	-19.12/-16.75	-14.08/-18.76
Theta (90°)	-18.67/-19.29	-12.46/-18.4	-13.31/-13.26	-11.98/-18.68	-18.46/-19.07	-12.61/-18.48	-16.67/-13.93	-10.85/-18.26	-17.53/-15.11	-19.27/-16.48	-18.39/-17.2	-19.05/-17.48	-18.74/-17.51	-18.09/-17.84	-18.75/-15.94	-15.53/-9.9	-18.36/-15.75	-16.66/-18.87	-14.54/-12.77	-17.65/-13.74	-15.68/-14.32	-15.48/-15.17	-19.84/-15.23	-17.62/-18.83
Theta (97.5°)	-19.15/-18.92	-17.03/-15.37	-9.86/-10.48	-13.73/-15.72	-17.81/-19.18	-13.72/-14.19	-16.84/-16.87	-13.35/-17.86	-19.07/-18.64	-18.99/-18.53	-18.71/-18.27	-17.18/-18.39	-18.33/-16.46	-18.71/-18.46	-14.26/-14.92	-15.51/-16.63	-15.15/-17.87	-18.3/-18.75	-18.66/-11.04	-12.02/-14.66	-16.6/-13.3	-10.53/-11.37	-16.63/-16.9	-18.07/-18.13
Theta (105°)	-17.03/-18.93	-18.43/-15.22	-12.94/-11.49	-14.07/-11.49	-18.54/-14.72	-9.83/-14.17	-17.84/-13.89	-9.46/-15.08	-17.57/-18.09	-18.85/-19.71	-18.08/-18.97	-17.88/-16.46	-18.42/-18.46	-19.45/-18.69	-19.02/-18.09	-17.21/-15.24	-18.84/-13.62	-13.68/-13.06	-17.86/-18.53	-19.87/-19.17	-17.83/-14.46	-17.68/-17.48	-18.22/-17.44	-14.77/-16.17
Theta (112.5°)	-18.32/-18.02	-12.81/-17.86	-17.83/-11.51	-11.75/-14.64	-17.94/-18.83	-10.43/-17.88	-18.46/-15.82	-8.34/-9.88	-16.24/-18.59	-18.13/-18.36	-17.67/-17.57	-16.57/-18.57	-17.47/-18.45	-17.47/-15.91	-16.78/-19.33	-13.49/-16.82	-11.19/-18.98	-17.05/-18.07	-17.71/-17.53	-17.65/-13.74	-15.68/-14.32	-15.48/-15.17	-19.84/-15.23	-17.62/-18.56
Theta (120°)	-15.02/-14.35	-13.54/-15.62	-12.61/-9.46	-8.33/-11.28	-17.04/-17.91	-12.34/-15.04	-19.42/-18.17	-7.39/-8.56	-17.2/-16.2	-18.2/-18.79	-18.71/-17.98	-13.79/-18.42	-18.74/-17.45	-17.48/-19.12	-18.16/-19.04	-17.71/-17.79	-17.23/-14.38	-19.28/-14.32	-17.04/-15.62	-10.31/-10.14	-13.08/-18.41	-13.95/-8.14	-13.49/-15.58	-18.86/-16.03
Theta (127.5°)	-16.97/-10.76	-13.76/-7.09	-10.26/-9.93	-10.62/-10.16	-18.27/-17.76	-16.23/-18.85	-18.11/-10.63	-9.74/-9.19	-13.28/-7.87	-10.79/-12.26	-13.45/-19.33	-17.37/-18.24	-17.26/-15.54	-18.19/-16.99	-18.02/-18.09	-10.96/-18.69	-11.46/-9.98	-9.36/-10.74	-11.48/-16.02	-17.76/-17.62	-18.84/-14.32	-11.21/-18.04	-16.01/-11.22	-18.23/-17.04
Theta (135°)	-12.93/-10.87	-12.12/-10.28	-6.26/-9.98	-10.92/-9.79	-12.95/-12.35	-11.91/-14.43	-19.21/-18.76	-17.67/-14.51	-16.79/-13.19	-9.06/-9.28	-10.64/-11.87	-12.31/-12.67	-13.35/-10.14	-9.04/-9.88	-16.08/-18.7	-8.95/-8.78	-12.59/-9.61	-12.51/-18.86	-19.14/-18.52	-17.11/-14.82	-15.49/-12.52	-7.11/-11.74	-13.86/-18.08	-18.25/-18.85
Theta (142.5°)	-18.98/-18.38	-8.63/-9.08	-8.32/-12.91	-9.24/-13.01	-14.29/-18.5	-15.79/-15.75	-17.64/-19.02	-19.01/-15.86	-11.58/-10.45	-11.61/-13.88	-14.94/-14.64	-12.17/-12.63	-13.36/-15.59	-18.47/-17.72	-17.93/-14.28	-10.43/-6.33	-7.57/-13.62	-12.17/-17.91	-16.99/-9.54	-11.89/-9.22	-6.02/-7.77	-12.32/-8.98	-8.4/-14.06	-16.59/-18.34
Theta (150°)	-18.89/-17.8	-13.1/-12.87	-11.55/-11.7	-8.27/-10.33	-11.55/-17.13	-18.22/-18.36	-18.89/-18.4	-18.3/-16.48	-15.75/-16.3	-12.88/-11.01	-13.11/-12.59	-11.85/-12.48	-17.88/-19.17	-9.8/-9.48	-10.51/-14.39	-9.02/-10.3	-17.56/-13.68	-10.22/-8.73	-10.9/-11.76	-11.21/-10.95	-12.15/-12.17	-18.68/-17.43	-17.39/-18.69	-15.07/-18.51
Theta (157.5°)	-15.84/-18.12	-18.78/-18.53	-17.8/-13.75	-11.38/-11.65	-11.36/-14.12	-15.88/-18.64	-17.25/-19.01	-18.05/-14.3	-13.62/-13.76	-12.71/-12.16	-14.33/-15.57	-16.63/-18.85	-18.59/-18.23	-18.48/-11.56	-10.29/-12.69	-13.13/-16.13	-13.61/-10.66	-12.82/-15.8	-15.01/-16.95	-18.9/-15.41	-14.2/-18.01	-17.56/-18.46	-16.78/-18.62	-16.32/-15.71
Theta (165°)	-18.79/-17.89	-18.4/-16.65	-15.31/-13.62	-13.87/-10.87	-10.03/-11.56	-12.9/-16.11	-18.68/-18.16	-18.68/-19	-14.64/-19.22	-15.79/-17.01	-16.85/-17.22	-10.7/-8.04	-6.41/-7.49	-14.13/-14.58	-13.79/-12.89	-12.97/-12.42	-15.32/-19.11	-18.07/-16.1	-17.27/-19.5	-17.99/-18.32	-18.09/-19.05	-19.23/-18.87	-18.21/-17.93	
Theta (172.5°)	-18.67/-17.53	-17.91/-17.8	-17.37/-15.75	-15.17/-13.13	-13.07/-14.65	-14.48/-13.54	-13.74/-12.27	-15.16/-17.04	-15.87/-13.98	-14.93/-14.47	-13.3/-11.58	-10.48/-9.63	-8.97/-8.95	-12.24/-13.1	-14.46/-13.8	-14.63/-16.82	-18.09/-18.08	-18.29/-18.33	-18.04/-16.79	-14.16/-13.37	-13.67/-15.22	-16.77/-18.11	-17.35/-18.37	
Theta (180°)	-17.26/-18.25	-18.54/-19.2	-17.76/-19.2	-18.86/-19.14	-16.45/-16.76	-18.85/-17.3	-15.01/-14.53	-16.47/-14.67	-13.98/-13.14	-15.85/-14.22	-14.75/-14.92	-13.89/-15.76	-13.76/-17.81	-17.17/-18.47	-18.01/-17.17	-16.13/-16.62	-14.16/-13.26	-14.22/-14.02	-12.35/-10.38	-8.67/-7.99	-7.55/-9.51	-9.99/-11.92	-11.77/-11.32	-12.89/-13.14
Freq(Hz)	5.785GPol.	Theta/Ant. 4																						
Gain	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)
Theta (0°)	-18.71/-18.77	-17.46/-17.47	-17.67/-18.45	-18.58/-17.65	-17.33/-18.47	-18.64/-19.17	-19.09/-17.92	-17.62/-17.23	-17.93/-17.56	-17.61/-16.68	-15.79/-16.72	-15.26/-18.29	-19.25/-18.34	-17.46/-18.38	-17.29/-18.39	-19.17/-19.12	-18.09/-18.03	-18.73/-19.26	-16.5/-14.85	-16.47/-17.77	-13.63/-13.27	-15.23/-18.46	-17.13/-17.66	-19.08/-19.19
Theta (7.5°)	-19.08/-17.53	-17.85/-19.55	-18.71/-17.99	-18.45/-18.35	-19.11/-18.84	-18.13/-15.22	-15.03/-14.09	-12.77/-10.95	-10.95/-12.06	-11.33/-12.71	-13.67/-14.15	-16.48/-13.18	-13.79/-11.35	-14.85/-19.25	-18.74/-16.17	-13.63/-14.06	-14.77/-14.58	-14.78/-18	-18.14/-19.12	-17.14/-17.13	-18.13/-18.47	-18.47/-17.89	-18.02/-17.8	-17.91/-17.98
Theta (15°)	-12.51/-13.73	-14.22/-15.66	-17.77/-18.29	-18.34/-17.73	-18.68/-16.99	-16/-12.26	-10.52/-8.7	-10.48/-11.8	-13.35/-13.72	-13.04/-11.68	-10.76/-11.31	-12.89/-13.92	-15.13/-12.61	-11.55/-14.74	-18.96/-13.86	-11.66/-11.7	-12.82/-12.13	-10.56/-9.31	-8.71/-9.14	-11.17/-11.71	-13.07/-16.12	-15.23/-15.28	-14.42/-14.58	-14.04/-13.38
Theta (22.5°)	-17.63/-17.48	-17.64/-16.97	-11.94/-8.17	-7.88/-8.43	-10.68/-12.96	-10.71/-7.59	-8.31/-12.22	-13.3/-10.8	-9/-7.78	-9.06/-11.25	-9.48/-9.59	-9.36/-10.84	-11.96/-11.68	-7.46/-7.48	-7.11/-5.									

Freq(Hz)	6.175G	6.475G
Ant. 1 Max Gain (dBi)	1.8	1.69
Ant. 2 Max Gain (dBi)	1.95	1.21
Ant. 3 Max Gain (dBi)	1.82	1.56
Ant. 4 Max Gain (dBi)	1.74	2.31
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/82.5/127.5	Theta/82.5/7.5
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/90/60	Theta/82.5/97.5
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/60/195	Theta/82.5/352.5
Ant. 4 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/60/150	Theta/120/232.5
Max Gain (dBi)	1.95	2.31
DG [1SS] (dBi)	5.66	6.09
DG [2SS] (dBi)	1.95	2.31
DG [4SS] (dBi)	1.95	2.31



Radiated Composite Gain of 6GHz UNII 5 and UNII 6

Appendix B

DG 1SS Result

Freq(Hz)	6.175GPol.	PhiL	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)
DG(dB)	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)	
Theta(°)	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)	
Theta(7.5°)	-7.51/7.24	-6.77/7.48	-8.19/9.17	-9.32/9.82	-9.89/9.95	-9.04/9.33	-11.45/10.15	-11.16/11.97	-11.47/11.47	-11.98/10.84	-10.93/10.68	-10.93/10.11	-10.78/10.29	-8.64/6.99	-6.98/6.46	-6.45/6.29	-6.99/8.23	-8.16/7.66	-7.9/8.4	-8.34/8.94	-8.91/8.09	9.41/8	-8.23/8.07	-8.32/8.23	
Theta(15°)	-9.69/9.39	-9.73/11.71	-11.26/10	-7.96/9.59	-6.37/7.1	-6.44/7.87	-9.56/10.44	-11.11/11.65	-11.33/10.95	-8.56/10.35	-8.64/9.56	-9.05/9.38	-8.51/8.98	-7.64/6.55	-7.46/7.67	-7.6/7.9	-10.68/10.4	-9.65/6.76	-6.88/6.83	-7.71/7.8	-8.91/9.95	-12.07/11.78	-11.73/11.52	-11.42/11.43	
Theta(22.5°)	-10.93/10.37	-11.87/10.82	-10.1/8.74	-9.44/9.02	-7.91/10.06	-8.74/7.78	-7.5/8.34	-11.96/10.43	-12.15/10.17	-7.68/7.51	-8.16/10.32	-10.77/11.54	-11.04/10	-9.98/9.06	-9.51/9.12	-7.65/9.49	-10.41/11.16	-11.08/10.82	-11.32/11.63	-10.75/9.53	-9.04/8.74	-9.23/11.37	-12.37/11.22	-11.27/10.15	
Theta(30°)	-10.67/8.52	-9.94/10.58	-9.65/9.13	-8.12/9.73	-10.6/10.52	-10.07/10.2	-9.09/7.69	-10.68/8.88	-10.92/9.84	-9.63/9.24	-8.78/6.65	-9.46/11.43	-10.65/10.1	-8.46/8.95	-10.58/9.94	-8.71/6.05	-7.94/6.17	-8.32/12.26	-11.55/12.55	-9.83/7.32	-6/7.3	-6.07/5.17	-4.91/9.17	-10.91/11.34	
Theta(37.5°)	-9.37/10.74	-7.41/9.19	-10.35/9.51	-8.61/8.74	-10.72/10.94	-10.86/9.3	-7.4/7.96	-11.78/6.75	-9.83/9.83	-8.14/9.27	-8.12/6.72	-10.66/9.08	-8.11/9.84	-9.38/9.7	-9.38/10.86	-8.53/8.3	-11.3/6.28	-5.76/8.82	-11.67/9.47	-11.36/12.11	-12.11/10.97	-12.03/9.94	-8.2/8.13	-10.47/10.65	
Theta(45°)	-11.2/10.27	-11.49/7.77	-6.83/10.05	-8.09/10.21	-12.13/7.7	-9.65/9.32	-7.02/8.62	-8.16/7.85	-8.11/7.48	-8.06/10.36	-9.61/9.49	-9.91/10.36	-11.52/10.21	-7.86/8.78	-8.48/11.29	-10.78/12.14	-12.32/11.97	-11.45/11.05	-11.06/9.24	-10.89/8.58	-8.65/9.86	-11.6/8.86	-7.72/7.3	-8.52/12.57	
Theta(52.5°)	-11.38/11.79	-11.79/8.96	-7.49/10.2	-11.19/8.48	-9.65/8.16	-8.78/10.73	-8.85/11.14	-8.41/9.94	-11.42/11.06	-11.10/10.45	-6.94/7.84	-11/12.1	-11.04/10.26	-9.47/10.06	-10.25/11.33	-7.92/7.69	-8.38/9.26	-9.62/9.97	-7.42/8.9	-9.97/8.93	-7.32/6.83	-8.52/10.37	-8.01/9.32	-8.69/10.32	
Theta(60°)	-11.38/10.71	-12.26/12.6	-9.62/9.02	-8.66/8.45	-11.13/10.79	-11.52/10.68	-6.69/10.47	-12.41/10.54	-9.03/9.76	-11.34/10.04	-8.79/7.49	-11.91/12.21	-10.93/10.7	-10.09/8.98	-10.75/13	-9.09/8.1	-9.41/10.4	-8.69/11.34	-10.33/8.92	-10.71/9.32	-10.32/9.29	-7.75/7.23	-9.27/10.87	-10.95/10.73	
Theta(67.5°)	-10.44/11.92	-8.96/12.45	-10.73/7.75	-7.05/8.24	-10.71/9.22	-11.27/11.15	-9.15/10.75	-9.69/10.14	-10.67/11.48	-10.78/11.65	-10.56/10.78	-11.59/9.48	-8.95/10.69	-12.36/8.44	-9.64/9.91	-9.6/7.75	-9.3/9.36	-10.23/9.54	-9.09/11.53	-9.47/8.27	-10.36/11.05	-12.31/10.54	-10.11/9.14	-11.05/10.62	
Theta(75°)	-8.61/11.57	-11.46/12.54	-10.82/7.52	-11.43/9.57	-8.46/6.78	-10.16/11.08	-8.71/9.92	-9.54/10.11	-9.79/11.05	-10.53/8.85	-11.22/8.85	-9.73/10.67	-10.29/12.79	-10.65/12.12	-8.19/11.86	-10.32/6.77	-11.67/11.67	-8.97/11.51	-10.37/11.87	-10.23/9.93	-7.5/7.77	-7.01/8.01	-7.24/10.7	-10.7/8.33	
Theta(82.5°)	-8.93/12.16	-12.69/12.22	-9.02/9.46	-12.54/10.23	-12.13/8.5	-10.23/12.53	-10.06/11.75	-11.76/12.03	-12.11/9.89	-11.03/7.17	-9.49/11.42	-10.59/11.3	-12.09/10.31	-12.59/10.88	-11.48/9.58	-11.33/9.92	-11.18/8.74	-10.33/11.46	-11.34/10.32	-10.51/9.6	-7.65/7.08	-7.8/8.94	-9.71/6.99	-8.16/10.65	
Theta(90°)	-8.98/11.87	-11.01/10.63	-8.25/10.45	-11.06/10.5	-9.49/7.15	-10.17/8.95	-9.12/10.57	-8.63/11.82	-10.93/12.14	-12.15/9.05	-12/11.73	-11.37/11.47	-11.84/12.09	-12.12/11.96	-10.51/10.59	-12.35/11.82	-10.33/11.5	-10.09/10.23	-9.58/9.2	-11.51/10.07	-7.04/8.69	-8.61/6.48	-8.32/8.07	-10.29/7.25	
Theta(97.5°)	-9.41/11.3	-10.52/10.78	-8.05/10.21	-7.98/8.07	-9.08/5.98	-11.14/10.18	-8.27/10.4	-10.84/10.51	-9.74/7.95	-9.99/7.33	-8.29/11.45	-8.89/10.12	-11.17/12	-11.45/9.07	-10.69/11.28	-11.47/10.5	-10.27/9.7	-9.81/9.03	-11.08/9.88	-10.67/9.79	-8.89/8.05	-7.65/5.4	-7.17/8.28	-8.98/6.76	
Theta(105°)	-11.72/12.69	-10.1/9.38	-8.66/10	-11.02/10	-9.5/8.41	-10.26/10.99	-10.67/11.68	-10.31/11.66	-11.95/11.41	-11.03/7.17	-9.49/11.42	-10.59/11.3	-11.71/12.42	-11.19/13.1	-11.51/10.63	-11.18/8.74	-10.33/11.46	-11.34/10.32	-10.51/9.6	-7.65/7.08	-7.8/8.94	-9.71/6.99	-8.16/10.65		
Theta(112.5°)	-11.49/7.54	-10.39/10.17	-8.68/10.04	-9.24/10.16	-10.94/9.45	-10.58/10.64	-9.19/12.33	-9.62/10.71	-9.94/12.61	-12.59/9.69	-9.87/10.41	-9.36/10.87	-12.12/11.61	-11.84/12.24	-12.32/10.65	-7/5.57	-8.04/8.71	-11.33/7.63	-10.42/10.04	-9.72/9.29	-8.25/9.29	-8.66/7.02	-8.4/10.06	-9.61/9.54	
Theta(120°)	-11.32/9.1	-12.41/7.71	-7.78/8.28	-8.57/8.49	-12.26/11.5	-11.56/8.23	-10.6/10.03	-9.53/9.97	-9.5/11.34	-10.86/10.57	-8.61/12.74	-10.01/10.99	-12.23/10.99	-10.31/11.34	-11.33/10.36	-7.26/12.01	-8.95/9.3	-11.33/9.28	-9.85/11.23	-12.28/9.03	-5.66/9.51	-9.19/7.21	-8.37/12	-10.16/12.22	
Theta(127.5°)	-12.35/7.89	-9.96/9.49	-8.88/9.65	-10.85/9.54	-11.35/8.76	-9.01/10.56	-10.09/9.79	-11.84/9.19	-9.17/10.01	-11.7/10.38	-9.64/8.93	-11.97/9.94	-9.64/11.3	-12.12/10.09	-7.63/6.05	-6.9/12.06	-6.95/8.06	-5/11.83	-9.02/8.29	-8.59/8.28	-8.55/7.28	-9.66/9.2	-11.31/9.89	-11.49/12.25	
Theta(135°)	-8.26/9.1	-9.09/8.55	-7.66/7.88	-11.49/11.07	-9.14/8.42	-10.12/9.39	-10.48/7.52	-11.79/10.43	-9.54/7.95	-10.12/9.58	-7.11/7.31	-9.31/9.27	-11.02/11.39	-10.49/10.6	-9.53/7.44	-10.59/9.41	-8.51/11.35	-10.77/10.02	-10.06/10.11	-9.38/10.52	-6.84/5.37	-8.97/7.53	-8.9/5.64	-9.44/10.42	
Theta(142.5°)	-8.25/11.95	-9.45/9.76	-12.02/9.56	-10.92/10.67	-10.89/12	-11.09/6.44	-7.64/9.15	-12.36/12.04	-10.56/12.45	-8.63/11.61	-8.79/9.95	-6.31/8.04	-10.41/9.11	-10.44/9.76	-8.91/9.51	-10.11/11.24	-8.23/9.57	-10.62/12.14	-12.2/10.03	-10.36/9.19	-8.08/8.18	-9.85/12.24	-7.79/6.9	-8.93/9.61	
Theta(150°)	-12.1/12.34	-11.6/10.96	-11.05/11.19	-9.86/10.28	-9.71/10.68	-9.63/8.65	-12.12/10.68	-10.85/10.34	-12.12/12.72	-11.26/12.32	-12.12/11.72	-11.85/10.47	-9.5/11.78	-10.16/8.45	-8.29/7.74	-6.62/12.02	-11.7/11.2	-11.68/11.33	-9.13/8.71	-7.92/8.78	-12.26/10.15	-8.64/10.22	-10.13/9.65		
Theta(157.5°)	-9.72/11.74	-11.68/10.17	-11.65/9.3	-10.51/10.39	-10.74/9.67	-9.96/11.12	-12.32/12.39	-12.54/11.86	-11.44/12.66	-11.16/10.34	-10.93/10.18	-11.23/10.07	-8.06/8.24	-9.15/10.25	-10.94/12.2	-12.46/11.6	-11.19/11.09	-11.46/11.96	-10.82/9.52	-9.24/9.43	-11.41/11.76	-11.88/11.68	-11.38/11.95	-9.91/8	
Theta(165°)	-9.14/8.41	-9.79/8.97	-12.13/12.58	-11.63/11.72	-9.33/10.95	-12.19/10.75	-9.02/8.6	-10.43/11.68	-12.11/9.4	-7.6/7.05	-10.16/7.57	-9.12/10.38	-11.8/7.1	-9.95/8.26	-11.51/9.6	-6.76/9.28	-10.26/10.65	-9.85/9.07	-10.34/11.39	-11.19/10.18	-9.64/8.81	-7.1/8.26	-8.54/6.82	-8.2/8.04	
Theta(172.5°)	-11.53/11.51	-12.42/10.51	-10.21/8.3	-8.72/9.24	-8.67/7.72	-8.5/7.73	-8.12/8.24	-9.45/9.22	-10.8/10.85	-10.1/10.23	-10.64/9.28	-9.69/9.15	-9.72/11.12	-12.51/11.55	-11.97/11.7	-10.52/11.44	-10.04/9.92	-9.13/9.44	-10/11.94	-12.21/11.53	-9.7/8.44	-7.21/7.34	-7.19/8.83	-10.61/11.84	
Theta(180°)	-11.37/12.56	-11.6/12.49	-12.31/11.47	-12.53/10.38	-9.87/9.79	-9.3/8.57	-9.36/9.39	-9.01/8.7	-7.69/8.38	-8.1/9.04	-10.51/10.29	-10.78/12.78	-12.78/12.25	-12.75/12.2	-11.42/10.8	-10.44/10.58	-10.5/10.5	-10.37/8.63	-8.68/8.36	-8.5/7.98	-7.95/7.3	-7.48/8.23	-9.94/10.64	-10.54/10.12	
Theta(7.5°)	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)	
Theta(15°)	-10.06/9.56	-9.84/10.23	-11.87/9.48	-10.39/10.32	-8.94/8.88	-8.86/9.39	-8.99/8.58	-7.8/7.75	-7.66/8.1	-7.83/7.97	-8.17/9.59	-9.36/9.78	-9.95/10.47	-11.68/10.93	-11.07/10.99	-10.82/11.57	-10.59/10.05	-9.26/9.5	-8.87/9.79	-9.06/8.73	-9.23/9.49	-8.66/8.72	-8.78/9.05	-9.68/10.22	
Theta(22.5°)	-9.8/8.87	-8.98/8.33	-8.37/7.78	-7.24/9.29	-9.25/10.22	-11.17/11.57	-11.61/11.72	-10.32/9.29	-10.53/9.97	-8.82/8.89	-8.17/8.81	-8.02/9.07	-8.34/9.57	-9.3/9.92	-8.84/8.5	-7.53/6.67									



Radiated Composite Gain of 6GHz UNII 5 and UNII 6

Appendix B

Gain Result

Freq(Hz)	6.175GPol.	PhiAnt. 1	PhiAnt. 2	PhiAnt. 3	PhiAnt. 4	PhiAnt. 5	PhiAnt. 6	PhiAnt. 7	PhiAnt. 8	PhiAnt. 9	PhiAnt. 10	PhiAnt. 11	PhiAnt. 12	PhiAnt. 13	PhiAnt. 14	PhiAnt. 15	PhiAnt. 16	PhiAnt. 17	PhiAnt. 18	PhiAnt. 19	PhiAnt. 20	PhiAnt. 21	PhiAnt. 22	PhiAnt. 23	PhiAnt. 24	PhiAnt. 25	PhiAnt. 26	PhiAnt. 27	PhiAnt. 28	PhiAnt. 29	PhiAnt. 30	PhiAnt. 31	PhiAnt. 32	PhiAnt. 33	PhiAnt. 34	PhiAnt. 35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Gain	Phi(7.5°)	Phi(15°)	Phi(22.5°)	Phi(30°)	Phi(37.5°)	Phi(45°)	Phi(52.5°)	Phi(60°)	Phi(67.5°)	Phi(75°)	Phi(82.5°)	Phi(90°)	Phi(97.5°)	Phi(105°)	Phi(112.5°)	Phi(120°)	Phi(127.5°)	Phi(135°)	Phi(142.5°)	Phi(150°)	Phi(157.5°)	Phi(165°)	Phi(172.5°)	Phi(180°)	Phi(187.5°)	Phi(195°)	Phi(202.5°)	Phi(210°)	Phi(217.5°)	Phi(225°)	Phi(232.5°)	Phi(240°)	Phi(247.5°)	Phi(255°)	Phi(262.5°)	Phi(270°)	Phi(277.5°)	Phi(285°)	Phi(292.5°)	Phi(300°)	Phi(307.5°)	Phi(315°)	Phi(322.5°)	Phi(330°)	Phi(337.5°)	Phi(345°)	Phi(352.5°)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Gain	Phi(7.5°)	Phi(15°)	Phi(22.5°)	Phi(30°)	Phi(37.5°)	Phi(45°)	Phi(52.5°)	Phi(60°)	Phi(67.5°)	Phi(75°)	Phi(82.5°)	Phi(90°)	Phi(97.5°)	Phi(105°)	Phi(112.5°)	Phi(120°)	Phi(127.5°)	Phi(135°)	Phi(142.5°)	Phi(150°)	Phi(157.5°)	Phi(165°)	Phi(172.5°)	Phi(180°)	Phi(187.5°)	Phi(195°)	Phi(202.5°)	Phi(210°)	Phi(217.5°)	Phi(225°)	Phi(232.5°)	Phi(240°)	Phi(247.5°)	Phi(255°)	Phi(262.5°)	Phi(270°)	Phi(277.5°)	Phi(285°)	Phi(292.5°)	Phi(300°)	Phi(307.5°)	Phi(315°)	Phi(322.5°)	Phi(330°)	Phi(337.5°)	Phi(345°)	Phi(352.5°)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
Theta(0°)	-9.15-7.9	7.95-8.9	9.29-10.5	10.63-12.0	12.07-13.5	13.71-15.2	15.55-17.1	17.59-19.2	19.83-21.6	22.27-24.1	24.91-26.8	27.75-29.8	30.79-33.0	34.03-36.4	37.47-39.9	41.11-43.7	44.95-47.6	48.99-51.7	53.23-56.4	57.67-61.0	62.31-65.8	67.15-71.1	72.19-76.3	77.43-81.7	82.87-87.4	88.51-93.3	94.35-99.3	100.39-105.5	106.63-111.9	108.07-113.4	109.71-115.1	111.55-117.4	113.59-119.4	115.83-121.8	118.27-124.3	120.91-126.9	123.75-129.8	126.79-132.9	129.93-136.1	133.27-139.4	136.81-143.0	140.55-146.7	144.49-150.7	148.63-154.8	152.97-159.0	157.51-163.5	162.25-168.2	167.19-173.0	172.33-178.1	177.67-183.4	183.21-188.9	188.95-194.4	194.89-200.3	201.03-206.3	207.37-212.6	213.91-219.0	220.65-225.6	227.59-232.4	234.73-239.4	242.07-246.6	249.61-254.1	257.35-261.7	265.29-269.5	273.43-277.5	281.77-285.7	290.31-294.1	299.05-302.7	308.09-311.6	317.33-320.7	326.77-330.0	336.41-339.5	346.25-349.2	356.29-359.1	366.53-369.2	376.97-379.4	387.61-390.0	398.45-400.6	409.49-411.4	420.73-422.5	432.17-433.8	443.81-445.3	455.55-456.9	467.49-468.7	479.63-480.7	491.97-492.9	504.51-505.3	517.25-517.8	530.19-530.6	543.33-543.6	556.67-556.8	570.21-570.2	583.95-583.8	597.89-597.6	612.03-611.7	626.37-625.9	640.91-640.3	655.65-654.9	670.59-669.7	685.73-684.8	701.07-700.1	716.61-715.4	732.35-730.9	748.29-746.7	764.43-742.7	780.77-778.9	797.31-795.2	814.05-811.7	830.99-828.3	848.13-845.2	865.47-861.9	883.01-879.3	900.75-896.8	918.69-914.5	936.83-932.4	955.17-950.4	973.71-968.6	992.45-986.9	1011.39-1005.5	1030.53-1024.4	1049.87-1043.4	1069.41-1062.6	1089.15-1081.9	1109.09-1101.5	1129.23-1121.3	1149.57-1141.2	1170.11-1161.4	1190.85-1181.7	1211.79-1202.3	1232.93-1223.1	1254.27-1243.9	1275.81-1265.1	1297.55-1286.4	1319.49-1307.9	1341.63-1329.7	1363.97-1351.6	1386.51-1373.8	1409.25-1396.1	1432.19-1418.6	1455.33-1441.4	1478.57-1464.2	1501.91-1487.1	1525.35-1510.1	1548.89-1533.2	1572.53-1556.5	1596.25-1579.9	1620.01-1603.4	1643.81-1626.8	1667.65-1650.2	1691.53-1673.7	1715.45-1697.2	1739.41-1720.8	1763.41-1744.4	1787.45-1768.0	1811.53-1791.7	1835.65-1815.4	1859.81-1839.2	1884.01-1863.1	1908.25-1887.0	1932.53-1911.0	1956.85-1935.3	1981.21-1959.4	2005.61-1983.5	2029.51-2007.1	2053.45-2030.7	2077.43-2054.3	2101.45-2078.0	2125.51-2101.7	2149.61-2125.4	2173.75-2149.1	2197.93-2173.0	2222.15-2196.9	2246.41-2220.8	2270.71-2245.1	2295.07-2269.1	2319.45-2293.2	2343.85-2317.3	2368.27-2341.4	2392.71-2365.6	2417.17-2390.1	2441.65-2414.2	2466.15-2438.3	2490.67-2462.5	2515.21-2486.8	2539.77-2511.1	2564.35-2535.4	2588.95-2559.6	2613.57-2583.8	2638.21-2608.1	2662.87-2632.3	2687.55-2656.7	2712.25-2681.1	2736.97-2705.4	2761.71-2730.1	2786.47-2754.6	2811.25-2779.3	2836.05-2803.8	2860.85-2828.3	2885.67-2852.8	2910.51-2877.4	2935.27-2901.9	2960.05-2926.4	2984.85-2950.8	3009.67-2975.1	3034.51-3000.0	3059.17-3024.2	3083.85-3048.6	3108.55-3073.0	3133.25-3097.3	3157.97-3121.9	3182.61-3146.3	3207.27-3170.7	3231.85-3195.1	3256.45-3219.5	3281.07-3244.0	3305.71-3268.4	3330.37-3292.8	3355.05-3318.1	3379.75-3342.4	3404.47-3366.8	3429.21-3391.2	3453.97-3417.6	3478.75-3442.1	3503.55-3466.8	3528.15-3491.2	3552.77-3516.3	3577.41-3540.7	3602.07-3565.2	3626.45-3589.6	3650.85-3615.0	3675.27-3639.5	3700.01-3664.1	3724.77-3689.1	3749.55-3714.2	3774.35-3738.8	3800.07-3764.3	3825.81-3790.6	3851.57-3816.6	3877.35-3843.1	3903.15-3868.4	3928.95-3893.4	3954.77-3919.5	3980.61-3945.4	4006.47-3971.0	4032.35-3996.6	4058.25-4022.6	4084.17-4048.4	4110.11-4074.2	4136.07-4099.3	4162.05-4125.9	4188.05-4151.4	4214.07-4177.2	4240.11-4202.1	4266.17-4227.8	4292.25-4253.6	4318.35-4278.8	4344.45-4309.1	4370.57-4334.4	4396.71-4360.3	4422.87-4386.4	4449.05-4412.2	4475.25-4438.1	4501.47-4464.1	4527.71-4489.8	4553.97-4517.2	4580.25-4543.3	4606.55-4569.3	4632.87-4595.0	4659.21-4624.4	4685.57-4650.3	4711.95-4676.4	4738.35-4703.2	4764.77-4729.3	4791.21-4755.5	4817.67-4781.4	4844.15-4807.8	4870.65-4834.3	4897.17-4860.3	4923.71-4886.4	4950.27-4914.3	4976.85-4940.3	5003.45-4967.1	5030.05-4993.6	5056.67-5020.0	5083.31-5046.4	5109.97-5072.8	5136.65-5099.8	5163.35-5126.1	5190.07-5152.2	5216.81-5178.6	5243.57-5205.1	5270.35-5231.4	5297.15-5257.9	5323.97-5284.9	5350.81-5311.4	5377.67-5337.8	5404.55-5364.3	5431.45-5391.4	5458.37-5418.1	5485.31-5442.1	5512.27-5468.8	5539.25-5495.4	5566.25-5522.6	5593.27-5549.3	5620.31-5575.9	5647.37-5602.6	5674.45-5629.3	5701.55-5655.9	5728.67-5682.9	5755.81-5712.6	5782.97-5739.3	5810.15-5766.4	5837.35-5793.1	5864.55-5820.4	5891.77-5847.3	5918.91-5874.4	5946.07-5901.3	5973.25-5928.2	6000.45-5955.1	6027.65-5981.9	6054.87-6010.4	6082.11-6037.3	6109.37-6064.1	6136.65-6091.4	6163.95-6120.1	6191.27-6147.4	6218.61-6174.4	6245.87-6199.9	6273.15-6228.6	6300.45-6255.8	6327.75-6282.6	6355.07-6309.5	6382.41-6337.4	6409.77-6364.3	6437.15-6391.2	6464.55-6420.1	6491.97-6447.6	6519.41-6474.8	6546.87-6502.0	6574.35-6529.3	6601.85-6556.2	6629.35-6583.6	6656.87-6613.1	6684.41-6640.3	6711.97-6667.8	6739.55-6695.4	6767.15-6723.6	6794.77-6750.5	6822.41-6777.6	6850.07-6806.3	6877.75-6833.2	6905.45-6860.9	6933.15-6889.1	6960.87-6917.4	6988.61-6944.8	7016.37-6972.8	7044.11-7000.3	7071.87-6998.3	7099.65-7055.4	7127.45-7082.1	7155.25-7110.4	7183.07-7137.2	7210.91-7165.1	7238.77-7192.6	7266.65-7222.3	7294.55-7249.6	7322.47-7277.3	7350.41-7305.3	7378.37-7332.8	7406.35-7360.4	7434.35-7387.6	7462.37-7415.4	7490.41-7442.1	7518.47-7470.3	7546.55-7497.6	7574.65-7526.4	7602.77-7554.1	7630.91-7581.4	7659.07-7606.3	7687.25-7633.6	7715.45-7661.4	7743.67-7690.1	7771.91-7718.3	7800.17-7746.2	7828.45-7773.1	7856.75-7802.6	7885.07-7830.6	7913.41-7858.4	7941.77-7886.8	7970.15-7915.2	7998.55-7942.9	8026.97-7970.8	8055.41-7998.7	8083.87-8026.2	8112.35-8053.8	8140.85-8081.4	8169.35-8115.6	8197.87-8143.4	8226.41-8171.1	8254.97-8198.3	8283.55-8225.6	8312.15-8253.4	8340.77-8281.1	8369.41-8309.3	8398.07-8337.2	8426.75-8365.2	8455.45-8393.1	8484.17-8421.6	8512.91-8450.3	8541.67-8478.6	8570.45-8507.8	8599.25-8536.1	8628.07-8564.0	8656.91-8593.9	8685.77-8623.3	8714.65-8651.6	8743.55-8679.4	8772.47-8709.8	8801.41-8737.4	8830.37-8765.1	8859.35-8792.8	8888.35-8820.1	8917.37-8847.4	8946.41-8874.3	8975.47-8901.8	9004.55-8930.0	9033.65-8958.1	9062.77-8986.1	9091.91-9013.8	9121.07-9041.1	9150.25-9068.4	9179.45-9095.3	9208.67-9122.2	9237.91-9148.6	9267.17-9182.4	9296.45-9207.6	9325.75-9239.8	9355.07-9267.4	9384.41-9294.6	9413.77-9321.4	9443.15-9348.6	9472.55-9375.4	9501.97-9401.8	9531.41-9428.3	9560.87-9454.4	9590.35-9480.1	9619.85-9505.4	9649.35-9530.8	9678.87-9556.4	9708.41-9581.6	9737.97-9606.6	9767.55-9631.4	9797.15-9656.4	9826.77-9681.1	9856.41-9705.4	9886.07-9729.4	9915.75-9753.1	9945.45-9776.4	9975.17-9799.3	10004.91-9822.1	10034.67-9845.4	10064.45-9868.1	10094.25-9890.8	10124.07-9913.1	10153.91-9935.4	10183.77-9956.6	10213.65-9977.4	10243.55-9998.1	10273.47-10018.3	10303.41-10038.6	10333.27-10058.4	10363.15-10077.8	10393.05-10096.8	10422.97-10115.4	10452.91-10132.1	10482.87-10148.3	10512.85-10163.4	10542.85-10178.1	10572.87-10192.1	10602.91-10205.4	10632.97-10218.3	10663.05-10231.1	10693.15-10243.4	10723.27-10255.6	10753.41-10267.1	10783.57-10279.1	10813.75-10290.6	10843.95-10301.6	10874.17-10312.1	10904.41-10322.6	10934.67-10333.1	10964.95-10343.1	10995.25-10352.6	11025.47-10361.6	11055.91-10370.1	11086.37-10377.1	11116.85-10383.1	11147.35-10394.1	11177.87-10400.1	11208.41-10406.1	11238.97-10411.6	11269.55-10417.1	11300.15-10422.1	11330.77-10427.1	11361.41-10432.1	11392.07-10437.1	11422.75-10442.1	11453.15-10447.1	11483.57-10452.1	11514.01-10457.1	11544.41-10462.1	11574.85-10467.1	11605.31-10472.1	11635.77-10477.1	11666.25-10482.1	11696.75-10487.1	11727.27-10492.1	11757.81-10497.1	11788.37-10502.1	11818.95-10507.1	11850.61-10512.1	11882.37-10517.1	11914.15-10522.1	11945.87-10527.1	11977.51-10532.1	12009.17-10537.1	12040.91-10542.1	12072.77-10547.1	12104.65-10552.1	12136.41-10557.1	12168.17-10562.1	12200.07-10567.1	12231.85-10572.1	12263.65-1057



Radiated Composite Gain of 6GHz UNII 5 and UNII 6

Appendix B

Theta (°)	Phi (°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)
Theta(22.5°)	-16.771-16.21	-18.791-17.63	-14.588-19.12	-18.51-16.62	-15.181-16.61	-17.951-18.73	-18.915-19.29	-17.141-12.41	-16.671-16.57	-18.581-15.35	-17.091-15.26	-14.661-15.29	-14.471-14.29	-12.111-10.83	-13.541-18.83	-16.251-17.66	-15.091-14.35	-13.351-14.16	-14.361-14.6	-16.611-15.52	-17.791-13	-12.091-15.87	-19.041-18.09	-16.361-18.45
Theta(30°)	-17.821-14.21	-18.221-16.52	-12.221-18.14	-17.541-16.86	-17.111-18.07	-18.711-15.04	-14.381-12.22	-14.551-10.22	-17.311-12.28	-17.131-18.39	-14.031-9.68	-13.541-19.06	-18.261-18.85	-17.281-18.43	-15.261-14.78	-14.081-16	-18.831-16.32	-17.951-18.39	-17.621-18.19	-16.171-13.51	-12.541-15.9	-7.521-8.47	-8.941-14.52	-14.521-18.35
Theta(37.5°)	-11.721-10.04	-18.161-19.39	-18.651-17.82	-17.911-17.33	-16.771-19.24	-18.211-19.43	-18.831-14.11	-15.551-11.71	-11.941-12.62	-16.411-17.29	-11.261-11.71	-16.721-15.9	-16.721-15.75	-15.891-18.72	-17.961-17.47	-16.641-14.14	-18.791-14.06	-9.681-12.09	-15.271-19.01	-17.421-19.29	-17.531-16.24	-19.111-18.29	-16.541-14.12	-18.871-18.06
Theta(45°)	-15.131-14.5	-18.791-11.05	-10.711-18.92	-13.251-15.38	-18.861-18.21	-17.991-17.95	-18.061-19.17	-13.461-12.03	-8.581-12.85	-13.991-10.77	-12.811-18.05	-17.631-19.46	-18.971-12.9	-11.591-19.02	-12.661-15.82	-17.871-18.54	-18.881-17.82	-18.531-17.05	-18.011-16.33	-18.341-12.24	-17.781-15.9	-17.471-11.33	-9.421-18.52	-18.211-18.74
Theta(52.5°)	-17.241-18.19	-17.591-10.09	-12.291-18.75	-18.411-16.26	-19.041-17.41	-19.011-18.17	-19.421-19.13	-16.621-16.46	-16.631-18.22	-15.911-16.87	-18.251-12.37	-17.591-18.87	-16.541-12.64	-17.481-17.56	-11.131-12.19	-12.341-19.87	-13.671-14.4	-14.191-14.61	-17.841-19	-17.061-16.67	-17.521-19.24	-13.871-13.99	-12.511-17.37	-12.511-18.73
Theta(60°)	-18.071-14.41	-17.711-19.22	-18.181-18.66	-17.391-17.76	-18.981-18.68	-18.121-17.17	-15.661-17.72	-18.251-17.85	-19.461-18.83	-18.131-18.35	-18.711-16.7	-16.451-17.64	-13.711-18.8	-15.051-12.93	-16.911-18.69	-18.471-18.74	-16.231-18.08	-11.411-18.19	-15.791-15.58	-15.611-18.03	-17.961-12.11	-17.551-10.99	-17.161-12	-17.161-12
Theta(67.5°)	-15.411-16.81	-10.981-18.8	-18.181-18.56	-15.331-17.75	-19.171-18.35	-18.171-18.58	-15.771-15.56	-19.061-16.79	-14.521-16.69	-17.641-18.91	-17.231-18.09	-18.921-15.51	-19.151-18.9	-18.911-18.47	-19.131-18.55	-13.911-17.48	-10.731-18.2	-14.361-18.81	-19.011-18.99	-17.551-18.56	-18.021-19.11	-17.311-13.23	-18.131-12.59	-13.661-16.7
Theta(75°)	-12.481-14.27	-15.971-18.68	-18.611-16.1	-18.351-18.03	-18.421-19.16	-17.781-17.28	-17.711-18.05	-18.911-13.85	-13.961-14.47	-11.851-11.69	-14.211-12.37	-19.181-15.09	-18.251-18.37	-14.461-17.73	-18.041-18.36	-18.771-11.67	-18.941-18.23	-11.181-18.57	-19.141-15.13	-14.511-17.78	-12.821-15.93	-13.451-16.57	-13.581-18.48	-14.681-12.84
Theta(82.5°)	-19.041-18.24	-18.071-17.62	-18.181-17.94	-18.971-18.78	-18.931-18.03	-18.231-18.84	-17.951-16.59	-18.091-19.37	-18.411-17.17	-13.711-10.46	-18.171-18.93	-18.581-14.66	-16.371-15.59	-19.141-18.05	-17.471-17.47	-18.391-18.46	-15.511-18.23	-16.131-18	-18.411-17.68	-17.691-18.86	-14.411-17.25	-17.911-18.92	-14.441-14.4	-18.781-19.09
Theta(90°)	-13.191-15.82	-15.521-17.23	-15.921-17.68	-15.961-18.16	-18.391-17.68	-17.411-17.79	-14.391-16.7	-18.441-17.61	-13.831-18.32	-19.131-12.86	-16.591-16.05	-19.011-18.88	-18.961-17.32	-19.021-18.52	-17.561-19.25	-18.841-18.5	-19.311-18.99	-16.881-18.49	-17.861-18.62	-15.811-13.71	-18.731-13.3	-18.021-14.33	-16.891-17.51	-13.761-10.24
Theta(97.5°)	-13.381-17.27	-17.991-15.41	-18.471-16.13	-14.751-18.66	-17.891-18.98	-17.831-19.29	-17.411-15.56	-19.011-13.71	-11.591-9.92	-17.971-18.14	-14.871-15.32	-15.571-19.11	-16.211-13.15	-17.831-18.25	-17.861-18.31	-16.121-17.82	-17.861-18.31	-18.951-19.3	-17.911-19.11	-18.241-14.58	-19.391-18.96	-18.611-18.68	-18.471-18.73	-17.091-14.06
Theta(105°)	-19.131-18.63	-17.891-19.06	-18.721-18.99	-18.891-17.8	-13.311-14.6	-18.941-14.91	-18.851-15.52	-17.551-16.57	-16.651-16.68	-15.941-19.13	-18.001-19.08	-14.561-18.78	-17.871-19.03	-18.371-19.92	-17.771-19.26	-16.121-17.82	-19.221-18.76	-18.331-17.48	-13.211-18.09	-12.461-16.58	-16.991-14.33	-14.061-15.41	-15.821-18.16	-19.511-13.27
Theta(112.5°)	-19.111-13.5	-15.811-17.95	-19.061-18.81	-17.511-18.9	-17.221-17.55	-18.811-16.91	-18.481-18.45	-17.611-17.4	-17.221-18.14	-18.971-17.05	-19.111-18.96	-14.081-17.62	-17.651-17.08	-18.831-18.89	-18.781-15.1	-18.331-16.22	-16.071-18.13	-18.471-18.84	-18.331-18.75	-15.221-18	-19.331-17.12	-10.311-16.81	-11.111-17.88	-11.731-11.45
Theta(120°)	-17.431-13.22	-13.341-18.88	-15.971-17.61	-18.221-18.16	-17.661-19.38	-18.621-17.41	-19.011-19.26	-17.451-16.06	-13.561-17.5	-16.111-17.5	-19.391-18.37	-12.151-18.04	-18.571-18.51	-17.511-17.44	-9.991-18.39	-17.171-17	-17.881-18.06	-18.611-18.52	-18.741-16.84	-13.071-18.9	-17.941-17.99	-18.471-17.12	-14.351-17.8	-14.351-17.8
Theta(127.5°)	-19.091-9.56	-15.641-17.76	-13.171-18.26	-15.451-16.18	-15.281-13.7	-18.811-19.17	-17.791-15.92	-16.541-17.82	-17.811-19.23	-18.321-18.59	-19.231-18.33	-17.991-19.19	-17.561-17.65	-17.811-15.94	-18.531-13.37	-10.071-19.13	-13.641-17.4	-12.471-18.57	-18.861-18.09	-18.971-15.61	-18.681-16.11	-18.971-14.23	-18.911-11.81	-17.411-18.89
Theta(135°)	-13.511-10.5	-19.021-18.75	-13.381-12.03	-19.161-19.19	-18.581-15.87	-16.561-16.49	-15.411-16.51	-18.731-16.95	-18.481-18.89	-14.941-18.64	-18.011-17.66	-15.711-17.79	-18.341-15.09	-19.061-19.74	-18.511-15.21	-17.611-19.19	-15.221-18.23	-19.291-18.47	-17.941-18.11	-18.011-17.61	-10.251-11.6	-18.671-13.52	-16.951-10.86	-17.951-14.31
Theta(142.5°)	-13.321-18.24	-18.111-18.72	-18.611-17.51	-17.471-17.57	-18.161-17.71	-18.021-18.48	-18.901-19.38	-16.711-15.56	-13.221-18.46	-17.611-18.11	-14.281-16.06	-12.311-18.79	-18.051-13.41	-18.781-14.44	-17.691-16.06	-19.241-15.48	-17.551-19.14	-17.791-15.66	-11.851-11.87	-11.931-14.42	-12.891-18.83	-11.071-15.05	-17.971-12.89	-17.971-12.89
Theta(150°)	-18.811-18.65	-19.091-15.38	-19.141-18.18	-18.011-17.76	-18.931-18.44	-19.061-16.42	-18.991-19.2	-16.951-14.42	-18.811-19.32	-14.831-18.98	-18.111-17.54	-18.521-15.18	-18.921-17.42	-18.491-19.01	-18.011-18.48	-17.691-19.27	-18.651-17.98	-18.951-18.41	-13.751-15.07	-11.311-12.04	-12.851-19.37	-19.091-17.43	-15.241-15.07	-15.241-15.07
Theta(157.5°)	-17.221-18.24	-14.961-12.14	-16.391-14.17	-16.211-18.05	-17.491-16.81	-17.811-18.18	-18.881-19.16	-17.611-17.51	-18.411-18.05	-16.591-17.5	-18.831-18.77	-17.971-17.75	-18.391-17.92	-18.191-16	-18.391-18.22	-18.511-16.7	-18.521-18.63	-18.341-19.29	-18.721-19.94	-18.071-17.29	-18.351-17.85	-18.111-16.09	-15.111-18.23	-18.091-18.14
Theta(165°)	-18.911-18.9	-18.581-17.24	-17.581-18.91	-18.611-17.29	-18.251-16.77	-17.751-17.16	-18.391-18.37	-18.121-17.87	-19.261-18.08	-16.871-14.61	-16.721-17.01	-18.231-17.14	-18.331-18.77	-18.871-18.11	-18.811-17.89	-17.541-17.5	-16.371-17.84	-19.311-17.56	-18.441-17.91	-17.731-18.51	-18.541-17.53	-17.821-17.91	-19.191-19.11	-17.561-17.66
Theta(172.5°)	-17.491-19.17	-18.431-16.13	-18.621-13.19	-13.211-14.45	-12.091-10.6	-12.661-12.46	-14.431-14.1	-15.271-16.07	-16.811-18.38	-18.261-17.43	-18.261-17.8	-18.791-18.64	-16.971-16.19	-18.611-18.21	-18.311-18.58	-18.291-18.46	-19.241-17.09	-18.021-19.45	-19.081-18.46	-18.061-17.37	-17.861-17.81	-18.361-18.79	-17.811-17.27	-17.511-19.1
Theta(180°)	-17.021-18.87	-18.421-18.96	-18.241-18.12	-18.951-17.48	-15.861-13.89	-14.081-11.79	-13.391-12.39	-15.111-15.26	-14.311-16.03	-14.661-14.82	-15.331-16.4	-15.671-18.65	-19.311-17.95	-18.551-17.24	-14.941-15.15	-14.941-15.15	-16.511-17.3	-19.351-17.73	-17.411-18.53	-17.411-18.53	-16.531-15.23	-12.671-14.06	-15.951-16.25	-15.611-16.04
Freq(Hz)	6.175GPol.	Theta/Ant. 2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Phi(0°)/Phi(7.5°)	Phi(15°)/Phi(22.5°)	Phi(30°)/Phi(37.5°)	Phi(45°)/Phi(52.5°)	Phi(60°)/Phi(67.5°)	Phi(75°)/Phi(82.5°)	Phi(90°)/Phi(97.5°)	Phi(105°)/Phi(112.5°)	Phi(120°)/Phi(127.5°)	Phi(135°)/Phi(142.5°)	Phi(150°)/Phi(157.5°)	Phi(165°)/Phi(172.5°)	Phi(180°)/Phi(187.5°)	Phi(195°)/Phi(202.5°)	Phi(210°)/Phi(217.5°)	Phi(225°)/Phi(232.5°)	Phi(240°)/Phi(247.5°)	Phi(255°)/Phi(262.5°)	Phi(270°)/Phi(277.5°)	Phi(285°)/Phi(292.5°)	Phi(300°)/Phi(307.5°)	Phi(315°)/Phi(322.5°)	Phi(330°)/Phi(337.5°)	Phi(345°)/Phi(352.5°)
Theta(0°)	-18.741-18.67	-18.581-18.53	-19.211-18.41	-19.321-18.32	-16.971-17.59	-17.561-15	-15.851-10.87	-16.531-17.62	-18.331-18.26	-18.071-17.97	-18.181-16.55	-18.531-18.62	-18.561-17.83	-18.341-18.76	-18.831-18.76	-18.141-18.34	-17.661-18.49	-16.761-18.22	-16.711-17.61	-18.591-16.76	-18.091-17.87	-18.161-16.69	-18.261-17.94	-18.941-18.99
Theta(7.5°)	-16.911-15.62	-14.131-15.45	-15.241-13.03	-13.871-16.03	-14.121-15.28	-14.811-15.95	-18.741-18.49	-16.771-15.21	-17.151-16.62	-15.021-17.58	-18.591-18.06	-17.251-18.19	-17.891-19.82	-18.761-18.57	-18.291-18.13	-16.451-11.23	-10.611-8.42	-8.261-7.99	-6.861-7.35	-7.421-9.36	-11.481-13.31	-16.411-18.15	-18.631-18.76	-17.851-17.32
Theta(15°)	-15.291-16.32	-12.161-11.3	-11.411-10.97	-12.341-12.84	-11.131-10.68	-11.571-10.48	-11.071-10.77	-13.521-10.93	-12.821-10.43	-18.831-13.33	-14.131-11.62	-10.511-10.73	-11.421-14.11	-18.381-18.69	-17.411-15.82	-10.821-10.18	-11.081-10.57	-13.921-10.13	-13.221-13.5	-12.711-12.02	-10.011-11.05	-9.961-9.59	-13.361-15.02	-14.261-13.58
Theta(22.5°)	-10.511-14.89	-11.211-10.69	-13.																					



Radiated Composite Gain of 6GHz UNII 5 and UNII 6

Appendix B

Theta (°)	-19.21-18.27	-18.821-18.56	-18.371-17.78	-18.511-15.04	-16.881-10.95	-17.531-14.2	-19.081-18.55	-13.441-14.14	-17.691-17.81	-18.781-17.26	-14.491-13.87	-18.491-18.5	-15.311-18.38	-19.151-19.32	-17.511-18.95	-15.821-9.5	-15.871-13.53	-17.261-14.37	-11.221-17.74	-12.141-13.05	-15.361-14.92	-19.121-18.26	-17.511-18.01	-18.981-19.36																						
Phi (°)	18.851-18.96	-18.261-18.39	-15.921-15.7	-16.951-15.42	-11.561-8.81	-14.671-14.12	-12.771-13.69	-14.151-15.27	-17.791-18.27	-18.771-17.98	-18.921-13.18	-18.841-18.6	-19.151-18.76	-16.871-18.75	-15.741-19	-11.361-14.44	-17.431-18.95	-14.061-18.15	-17.741-19.39	-17.761-17.37	-10.031-10.62	-10.331-15.11	-16.241-15.16	-15.641-17.88																						
Theta (°)	18.511-17.98	-18.271-18.04	-14.781-17.78	-13.551-10.4	-15.511-8.94	-18.771-11.15	-17.461-14.12	-15.911-12.5	-18.131-18	-16.251-19.15	-18.441-18.22	-18.351-17.86	-17.971-19.07	-17.831-18.13	-17.791-11.14	-14.871-11.14	-18.821-16.64	-14.541-16.55	-16.841-13.04	-13.111-9.96	-14.071-10.37	-15.071-13.11	-14.871-13.11	-15.071-13.11																						
Phi (°)	18.941-18.6	-18.611-12.99	-15.811-12.99	-18.511-18.16	-13.171-18.31	-17.731-17.85	-19.181-19.39	-17.651-17.29	-18.111-17.04	-14.651-14.76	-13.611-18.09	-17.611-18.67	-18.841-18.09	-16.951-16.37	-17.911-19.07	-17.791-15.53	-18.211-18.95	-18.711-18.35	-18.841-16.55	-18.711-16.76	-18.031-15.6	-17.271-17.48	-18.661-14.64	-18.661-14.64																						
Theta (°)	17.931-17.19	-18.891-18.59	-16.411-18	-18.791-17.36	-16.021-15.87	-16.621-14.73	-16.931-16.65	-16.111-19.23	-17.141-18.59	-18.081-18.73	-18.211-18.35	-18.291-18.79	-18.551-18.24	-18.061-15.1	-18.811-18.87	-11.721-11.01	-18.281-18.03	-19.061-15.11	-15.771-16.19	-18.061-17.99	-17.761-13.64	-16.931-11.94	-17.221-18.09	-18.231-17.58																						
Phi (°)	18.721-17.4	-18.751-18.9	-18.911-17.9	-18.611-19.9	-19.311-15.5	-17.641-10.84	-17.741-16.52	-13.631-14.96	-17.071-18.35	-15.791-18.29	-11.041-19.1	-17.761-18.05	-18.081-16.14	-17.871-17.5	-19.131-18.71	-17.571-17.71	-13.961-19	-19.511-18.93	-14.811-18.83	-19.011-17.24	-13.931-18.02	-11.821-11.46	-18.711-17.92	-18.171-17.03																						
Theta (°)	17.031-13.07	-17.171-15.89	-18.611-13.44	-18.721-12.88	-17.561-15.54	-10.751-12.2	-15.341-18.99	-19.381-14.92	-16.711-12.96	-17.981-17.35	-12.711-11.6	-19.091-18.01	-18.441-15.44	-18.411-18.54	-19.611-17.45	-17.361-18.71	-11.511-15.96	-18.361-12.21	-18.021-18.21	-19.101-17.04	-11.311-10.15	-17.891-12.28	-17.211-16.42	-17.711-17.03																						
Phi (°)	10.651-16.73	-13.071-16.25	-11.331-13.86	-18.321-13.75	-11.191-10.41	-15.551-10.6	-14.691-13.34	-16.211-16.49	-15.181-13.02	-16.921-15.08	-11.441-12.18	-16.431-15.16	-18.271-18.88	-14.211-18.31	-12.421-10.35	-16.211-18.14	-18.711-18.54	-16.571-15.31	-15.241-11.91	-18.231-18.37	-9.011-11.08	-16.621-12.32	-16.471-16.53	-15.221-16.32																						
Theta (°)	19.581-18.62	-14.951-16.81	-18.791-13.86	-16.971-14.07	-16.511-18.12	-17.721-11.14	-14.591-18.7	-17.971-17.96	-13.641-13.3	-10.241-8.57	-16.691-14.38	-19.041-14.77	-14.221-12.77	-15.011-18.25	-19.331-18.13	-18.381-19.14	-17.231-14.38	-18.001-17.77	-14.821-18.38	-18.271-17.77	-15.621-19.65	-19.231-17.65	-16.861-16.56	-12.921-13.88																						
Phi (°)	17.691-17.92	-18.081-17.98	-18.951-18.42	-17.611-17.8	-17.611-17.49	-18.691-18.99	-18.411-18.56	-15.571-16.66	-18.721-18.89	-17.831-18.07	-11.551-11.06	-15.891-18.61	-16.661-17.87	-18.081-12.53	-11.591-14.85	-16.871-17.67	-17.221-18.13	-18.211-18.41	-19.271-17.89	-18.611-18.15	-17.131-19.92	-17.131-19.92	-17.131-19.92	-17.131-19.92																						
Theta (°)	16.981-17.53	-18.991-17.7	-16.771-12.79	-17.581-18.97	-15.131-34	-18.711-18.38	-17.451-18.9	-19.731-19	-17.931-18.87	-18.671-19.41	-18.891-16.58	-17.151-15.48	-15.361-18.62	-19.311-18.27	-17.281-17.84	-18.891-17.27	-15.041-15.78	-17.931-17.29	-18.641-19.18	-16.611-16.2	-16.551-19.16	-17.611-17.67	-18.781-18.09	-17.731-15.59																						
Phi (°)	18.261-13.71	-14.611-14.54	-18.211-19.15	-16.411-17.92	-12.551-16.46	-18.911-17.48	-14.891-15.54	-16.561-16.71	-16.671-14.49	-11.411-19.11	-16.221-18.52	-18.061-18.12	-18.651-18.14	-15.811-12.03	-14.521-13.98	-17.911-15.14	-10.451-10.21	-13.021-14.71	-14.931-15.29	-12.761-10.59	-10.471-12.09	-13.911-15.15	-17.411-17.17	-14.711-17.17																						
Theta (°)	17.551-15.63	-18.321-15.69	-18.061-16.02	-17.931-17.74	-16.381-15.65	-14.141-59	-14.911-17.49	-15.131-13.59	-12.871-17.4	-12.131-13.72	-18.131-18.45	-18.091-14.86	-17.171-15.66	-12.951-15.64	-11.311-9.14	-10.211-14.88	-13.441-17.36	-18.891-15.48	-11.941-9.71	-9.271-10.17	-12.251-10.9	-12.251-10.9	-12.251-10.9	-12.251-10.9																						
Phi (°)	19.331-18.38	-19.321-17.74	-19.061-16.24	-17.941-12.45	-12.141-14.65	-14.991-15.48	-18.411-18.26	-17.521-17.49	-17.211-18.23	-18.171-18.36	-19.251-18.93	-18.811-17.89	-18.811-18.75	-19.091-18.26	-18.121-18.33	-18.711-17.51	-16.391-15.22	-16.191-14.5	-13.071-13.12	-12.091-12.12	-12.811-12.82	-14.511-14.67	-16.721-18.65	-18.341-17.93																						
Gain	Phi(7.5)Phi(15)	Phi(15)Phi(22.5)	Phi(22.5)Phi(30)	Phi(30)Phi(37.5)	Phi(37.5)Phi(45)	Phi(45)Phi(52.5)	Phi(52.5)Phi(60)	Phi(60)Phi(67.5)	Phi(67.5)Phi(75)	Phi(75)Phi(82.5)	Phi(82.5)Phi(90)	Phi(90)Phi(97.5)	Phi(97.5)Phi(105)	Phi(105)Phi(112.5)	Phi(112.5)Phi(120)	Phi(120)Phi(127.5)	Phi(127.5)Phi(135)	Phi(135)Phi(142.5)	Phi(142.5)Phi(150)	Phi(150)Phi(157.5)	Phi(157.5)Phi(165)	Phi(165)Phi(172.5)	Phi(172.5)Phi(180)	Phi(180)Phi(187.5)	Phi(187.5)Phi(195)	Phi(195)Phi(202.5)	Phi(202.5)Phi(210)	Phi(210)Phi(217.5)	Phi(217.5)Phi(225)	Phi(225)Phi(232.5)	Phi(232.5)Phi(240)	Phi(240)Phi(247.5)	Phi(247.5)Phi(255)	Phi(255)Phi(262.5)	Phi(262.5)Phi(270)	Phi(270)Phi(277.5)	Phi(277.5)Phi(285)	Phi(285)Phi(292.5)	Phi(292.5)Phi(300)	Phi(300)Phi(307.5)	Phi(307.5)Phi(315)	Phi(315)Phi(322.5)	Phi(322.5)Phi(330)	Phi(330)Phi(337.5)	Phi(337.5)Phi(345)	Phi(345)Phi(352.5)
Theta (°)	-13.271-12.69	-12.321-13.24	-15.291-13.81	-18.181-19.22	-18.121-18.38	-17.751-18.09	-18.711-16.28	-16.181-16.04	-14.891-12.81	-11.851-11.44	-11.361-13.1	-12.481-13.96	-15.141-17.2	-19.351-19.2	-18.171-14.3	-18.581-18.64	-17.651-18.98	-18.331-19.07	-17.751-18.63	-18.071-17.69	-17.291-16.4	-14.661-13.85	-12.441-12.44	-12.111-11.74																						
Phi (°)	-15.831-15.78	-16.321-14.1	-14.311-13.18	-11.451-17.81	-16.411-19.4	-18.031-19.09	-18.891-17.68	-18.831-18.14	-18.731-16.47	-17.911-14.81	-13.121-12.36	-9.711-10.81	-9.741-10.69	-10.561-10.98	-10.541-11.1	-14.411-12.77	-16.841-18.03	-18.531-18.83	-16.881-17.43	-13.091-13.43	-13.391-12.59	-14.091-14.74	-11.881-12.98	-16.331-14.07																						
Theta (°)	-12.581-11.76	-10.811-10.63	-11.771-10.11	-11.721-15.01	-11.921-12.4	-12.531-13.49	-13.391-13.8	-14.211-14.1	-17.711-17.02	-15.911-12.52	-14.531-12.08	-14.841-18.49	-15.181-13.25	-11.911-11.9	-9.241-10	-12.481-11.02	-12.481-15.55	-17.851-14.2	-10.831-13.54	-11.071-12.52	-15.211-15.71	-14.551-16.68	-17.511-11.92																							
Phi (°)	-8.771-10.37	-12.541-11.6	-13.681-11.27	-11.741-11.61	-19.191-10.26	-9.961-11.27	-14.051-15.25	-14.691-13.19	-13.211-16.15	-17.191-18.59	-17.111-14.09	-16.181-18.65	-18.621-17.28	-15.181-18.26	-18.381-19.03	-18.111-17.61	-14.491-12.35	-12.381-10.27	-17.711-7.6	-11.681-15.21	-12.551-11.6	-8.811-7.32	-7.691-8.12	-6.531-7.19																						
Theta (°)	-7.321-10.42	-9.361-8.59	-7.771-8.9	-10.331-13.2	-12.931-13.84	-15.441-10.69	-9.131-18	-10.821-9.01	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74	-10.221-11.36	-11.411-10.74																						
Phi (°)	-5.861-5.31	-3.561-4.08	-3.561-4.08	-7.311-9.32	-12.051-9.59	-8.691-7.69	-9.451-14.91	-5.711-4.53	-6.611-6.76	-5.581-3.48	-6.341-7.83	-9.411-6.86	-6.581-6.12	-5.831-4.34	-3.531-4.29	-6.571-4.78	-11.281-4.45	-3.641-9.44	-8.111-5.9	-8.511-9.95	-5.621-7.46	-1.741-2.62	-4.711-3.99																							
Theta (°)	-4.031-3.27	-3.511-3.57	-4.691-3.19	-4.781-6.53	-10.591-5.12	-5.891-5.62	-6.651-6.67	-6.511-5.51	-7.091-12.81	-5.631-3.71	-3.191-5.04	-2.191-1.65	-3.111-1.7	-3.381-2.82	-6.661-7.48	-7.311-3.68	-4.051-5.95	-3.761-2.75	-6.821-6.68	-6.851-4.53	-3.541-7.69	-3.371-1.49	-3.811-4.59																							
Phi (°)	0.641-1.92	-4.011-3.62	-1.271-6.6	-5.661-4.52	-3.671-1.59	-4.891-4.57	-4.671-3.45	-3.081-7.09	-3.711-2.66	-2.461-3.75	-4.521-6.2	-10.381-10.96	-8.351-3.77	-2.051-1.7	-2.131-2.33	-3.681-2.27	-2.051-1.32	-4.531-4.68	-6.991-9.0	-6.171-4.08	-3.691-3.95	-0.891-7.22	-8.291-6.1																							
Theta (°)	-0.281-2.28	-1.461-2.94	-4.791-3.1	-3.111-2.04	-2.791-1.61	-5.761-1.06	-4.051-2.89	-0.541-2.93	-4.791-5.24	-1.9201-0.6	0.781-8.4	1.8201-2.7	-2.151-1.79	-4.731-2.9	-5.751-4.17	-4.621-5.46	-2.031-6.21	-6.641-4.28	-0.111-3.47	1.811-4.57	-0.961-1.71	-4.721-0.85																								
Phi (°)	0.441-1.64	-2.061-2.09	-3.211-5.47	-4.121-2.04	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42	-4.161-1.75	-3.231-4.42																						
Theta (°)	-9.701-4.9	-0.171-0.69	-0.781-0.87	-1.9601-3.8	-3.341-2.64	-4.021-6.24	-2.351-1.85	-0.961-7.1	-2.361-1.9	-5.921-1.32	-0.651-0.22	-0.3701-2.5	-0.521-1.0	0.881-1.43	-0.291-0.41	-2.271-1.56	-4.951-4.57	-5.591-6.31	-2.691-2.58	-3.211-2.44	-2.731-1.25	-0.891-2.7	-3.921-2.55	-0.251-0.49																						
Phi (°)	2.191-0.53	-0.2801-0.6	0.331-3.54	-0.681-1.58	-3.561-1.28	-3.831-1.33	-2.791-1.96	-2.371-4.46	-1.091-2.79	-2.361-5.43	-1.911-3.58	-4.671-4.77	-1.461-1.78	7.211-3.58	-3.411-1.95	-3.831-5.62	-1.951-2.2	-5.511-5.99	-0.8801-0.5	-0.341-1.99	0.851-1.36																									
Theta (°)	-4.321-2.65	-1.311-3.04	-1.121-2.7	-2.141-0.18	-2.431-4.67	-5.281-3.14	-4.571-3.2	-2.181-3.39	-2.771-1.31	-5.271-1.19	-0.561-4.06	0.8601-0.1	-2.271-2.19	-0.211-2	-9.311-1.39	-3.551-4.24	-10.651-3.6	-4.431-8.12	-3.281-3.21</																											



Radiated Composite Gain of 6GHz UNII 5 and UNII 6

Appendix B

Theta (°)	-14.85/-15.39	-17.67/-12.01	-9.68/-8.88	-8.48/-9.59	-18.34/-17.63	-16.61/-12.49	-14.51/-12.12	-18.98/-18.67	-16.76/-15.07	-17.8/-18.25	-18.44/-18.41	-19.08/-18.83	-17.55/-14.55	-18.78/-15.48	-18.47/-16.8	-14.97/-17.83	-18.53/-12.65	-14.63/-12.45	-16.38/-17.51	-17.65/-10.44	-6.62/-10.58	-17.46/-10.63	-9.68/-18.95	-17.21/-18.64	
Theta (127.5°)	-19.42/-18.44	-16.19/-17.47	-11.65/-15.19	-15.26/-15.41	-17.89/-18.46	-17.65/-19.18	-18.56/-17.92	-17.24/-16.81	-17.41/-17.56	-17.12/-18.07	-18.15/-14.17	-18.61/-10.78	-10.52/-17.72	-17.98/-13.35	-11.57/-7.27	-15.56/-18.42	-16.55/-10.88	-15.12/-17.97	-11.48/-13.62	-11.6/-8.64	-12.39/-11.25	-11.36/-19.65	-18.46/-18.65	-19.29/-19.67	
Theta (135°)	-16.11/-16.84	-18.74/-17.67	-13/-13.6	-14.57/-19.08	-14.65/-15.36	-14.67/-19.13	-17.86/-13.09	-17.77/-16.36	-14.08/-15.02	-15.83/-12.67	-14.51/-14.99	-15.32/-12.09	-16.71/-18.21	-15.26/-12.03	-15.03/-11.73	-18.62/-18.99	-10.87/-16.75	-15.76/-18.3	-16.78/-18.75	-12.81/-9.17	-19.06/-9.79	-11.75/-11.1	-10.31/-7.76	-11.91/-18.2	
Theta (142.5°)	-9.99/-18.55	-11.98/-11.46	-18.09/-13.76	-17.03/-19.07	-14.53/-18.21	-16.64/-10.45	-11.53/-13.79	-18.41/-18.93	-18.44/-18.59	-13.51/-16.75	-14.05/-15.03	-13.12/-16	-13.01/-15.55	-11.71/-13.01	-11.51/-17.22	-18.67/-18.11	-16.54/-14.57	-13.11/-16.15	-18.11/-17.24	-18.44/-16.98	-12.49/-11.31	-14.08/-18.5	-11.29/-9.87	-12.08/-18.49	
Theta (150°)	-17.02/-18.7	-18.97/-16.34	-11.47/-16.37	-13.77/-18.22	-15.73/-17.86	-13.46/-11.52	-18.94/-12.9	-16.48/-15.7	-18.56/-18.1	-18.55/-17.83	-17.22/-17.4	-18.25/-18.55	-18.47/-14.12	-11.48/-17.75	-18.01/-18.05	-15.52/-11.66	-15.98/-18.14	-16.47/-17.78	-17.35/-17.64	-12.33/-10.68	-10.55/-13.06	-18.43/-14.15	-11.33/-13.13	-15.12/-13.66	
Theta (157.5°)	-13.12/-16.51	-18.36/-19.11	-18.53/-16.45	-14.43/-12.03	-16.59/-18.98	-13.84/-14.5	-18.58/-16.75	-18.17/-17.53	-15.59/-18.69	-16.62/-12.09	-13.18/-16.17	-17.98/-14.23	-10.35/-10.81	-9.28/-13.76	-18.67/-18.22	-18.51/-17.85	-18.33/-18.99	-13.05/-11.71	-11.98/-12.98	-16.65/-16.33	-17.6/-18.7	-17.56/-18.55	-18.13/-12.52		
Theta (165°)	-18.55/-17.92	-18.87/-13.77	-17.97/-17.65	-17.34/-16.83	-14.16/-16.11	-17.74/-15.53	-10.76/-9.87	-13.26/-17.8	-17.83/-14.95	-14.95/-16.14	-11.27/-10.17	-9.71/-13.09	-13.72/-8.48	-9.51/9.86	-18.08/-18.32	-14.93/-13.48	-14.23/-19.11	-18.94/-17.95	-16.53/-19	-19.02/-15.96	-14.09/-14.75	-9.71/-12.81	-13.24/-15.27	-11.77/-17.25	
Theta (172.5°)	-17.79/-16.71	-18.13/-16.33	-15.61/-11.3	-11.25/-11.67	-15.94/-18.02	-19.21/-16.35	-13.77/-13.62	-13.75/-11.3	-14.68/-13.7	-13.71/-16.87	-17.93/-18.67	-18.35/-19.23	-15.81/-17.43	-18.91/-18.3	-18.61/-18.84	-18.74/-18.64	-17.48/-18.82	-16.74/-14.92	-15.76/-17.39	-17.52/-18.3	-16.73/-14.76	-13.14/-13.32	-11.45/-15.51	-16.78/-19.2	
Theta (180°)	-16.92/-18.59	-14.77/-19.05	-18.34/-18.34	-19.28/-18.51	-18.67/-17.07	-16.79/-18.93	-17.98/-17.35	-14.68/-13.45	-11.48/-12.16	-13.11/-15.32	-17.24/-17.63	-17.83/-19.39	-18.46/-17.81	-18.59/-18.67	-19.01/-17.77	-18.12/-17.28	-18.87/-18.99	-18.25/-16.36	-17.67/-19.86	-18.29/-18.81	-17.73/-13.49	-14.11/-16.29	-16.63/-18.93	-18.08/-17.77	
Freq(Hz)	6.175GPol.	Theta/Ant. 4																							
Gain	Phi(0°)Phi(7.5°)	Phi(15°)Phi(22.5°)	Phi(30°)Phi(37.5°)	Phi(45°)Phi(52.5°)	Phi(60°)Phi(67.5°)	Phi(75°)Phi(82.5°)	Phi(90°)Phi(97.5°)	Phi(105°)Phi(112.5°)	Phi(120°)Phi(127.5°)	Phi(135°)Phi(142.5°)	Phi(150°)Phi(157.5°)	Phi(165°)Phi(172.5°)	Phi(180°)Phi(187.5°)	Phi(195°)Phi(202.5°)	Phi(210°)Phi(217.5°)	Phi(225°)Phi(232.5°)	Phi(240°)Phi(247.5°)	Phi(255°)Phi(262.5°)	Phi(270°)Phi(277.5°)	Phi(285°)Phi(292.5°)	Phi(300°)Phi(307.5°)	Phi(315°)Phi(322.5°)	Phi(330°)Phi(337.5°)	Phi(345°)Phi(352.5°)	
Theta (0°)	-14.75/-13.87	-16.23/-15.8	-18.54/-15.96	-15.12/-15.5	-16.03/-15.21	-15.29/-16.92	-18.22/-19.11	-15.92/-16.42	-14.88/-17.36	-17.19/-14.77	-14.11/-14.22	-13.83/-13.22	-13.58/-13.67	-14.81/-12.88	-15.71/-18.73	-18.07/-18.08	-18.58/-18.14	-19.15/-18.45	-17.81/-18.64	-18.41/-17.98	-18.42/-18.77	-18.04/-17.43	-17.85/-15.87	-17.14/-18.51	
Theta (7.5°)	-13.28/-11.13	-12.35/-11.39	-10.99/-11.83	-11.04/-11.02	-14.37/-14.44	-17.91/-19.16	-17.55/-18	-14.49/-13.52	-14.91/-14.85	-14.21/-15.95	-14.12/-16.36	-14.21/-14.79	-14.66/-16.28	-16.21/-16.29	-17.05/-17.3	-12.73/-12.28	-11.71/-11.36	-10.71/-11.77	-14.97/-17	-19.15/-16.6	-13.21/-15.55	-14.82/-13.57	-14.01/-13.32	-14.41/-12.86	
Theta (15°)	-17.54/-10.55	-12.05/-7.97	-8.75/-4.72	-7.93/-8.89	-10.38/-14.27	-18.44/-16.26	-11.39/-9.8	-7.78/-6.21	-8.19/9	-9.04/-10.37	-8.94/-10.12	-8.51/9.21	-9.29/-10.3	-12.14/-15.72	-19.12/-19.09	-14.98/-10.32	-9.38/-10.19	-11.29/-14.69	-14.06/-14.63	-13.51/-12.73	-11.88/-14.38	-17.29/-12.86	-16.43/-15.01	-17.46/-18.21	
Theta (22.5°)	-13.63/-11.9	-13.78/-16	-9.71/-10.37	-13.91/-12.44	-9.99/-10.14	-11.72/-10.95	-11.21/-11.23	-14.15/-18.27	-15.47/-13.47	-12.96/-12.66	-10.54/-12.92	-12.02/-11.96	-10.97/-10.44	-9.94/-11.41	-13.94/-18.79	-15.65/-9.98	-6.98/-10.06	-13.16/-17.8	-12.55/-8.61	-6.72/-5.92	-6.77/-5.9	-8.95/-10.65	-9.91/-10.59		
Theta (30°)	-6.26/-4.34	-4.59/-4.23	-4.51/-6.37	-11.75/-7.73	-6.52/-6.21	-9.12/-10.82	-8.34/-12.04	-12.55/-7.06	-6.21/9.02	-8.75/-7.2	-4.42/-3.5	-3.81/-5.27	-5.48/-4.42	-4.28/-5.12	-6.91/-11.77	-14.78/-6.99	-9.51/-8.88	-8.66/-10.68	-17.75/-8.55	-6.05/-5.31	-5.99/-7.1	-6.46/-5.12	-4.35/-6.8	-7.63/-8.13	
Theta (37.5°)	-4.72/-1.58	-2.86/-1.88	-2.41/-1.82	-4.82/-8.78	-4.8/-6.97	-5.09/-4.29	-6.02/-6.56	-5.99/-8.25	-9.73/-6.42	-7.71/-6.82	-5.71/-5.47	-3.37/-1.72	-3.72/-3.75	-6.51/-5.04	-3.04/-1.97	-4.03/-5.66	-6.59/-6.76	-4.07/-7.61	-7.63/-5.51	-4.73/-3.7	-3.83/-3.86	-3.61/-2.81	-2.99/-3.7	-6.85/-8.98	
Theta (45°)	-1.21/-2.96	-2.21/-1.53	-4.06/-2.72	-2.61/9.6	-4.56/-5.59	-4.56/-2.96	-5.36/-4.12	-5.68/-6.39	-3.13/-2.88	-5.54/-5.02	-4.94/-4.45	-5.87/-7.28	-13.18/-5.35	-5.45/-8.05	-8.1/6.05	-5.42/-15	-3.79/-5.5	-4.47/-4.4	-4.09/-3.87	-3.95/-5.88	-3.13/-3.76	-4.32/-2.81	-3.03/-2.3		
Theta (52.5°)	-1.130.61	-0.67/-2.9	-5.43/-3.12	-2.45/-6.32	-1.77/-4.23	-5.12/-7.31	-5.37/-4.71	-4.15/-3.98	-5.04/-4.16	-6.69/-5.48	-4.89/-5.09	-0.530.67	-1.02/-0.52	-1.44/-2.1	-2.98/-3.8	-4.07/-7.42	-7.08/-6.05	-5.23/-4.46	-5.73/-2.65	-4.58/-4.2	-4.48/-6.3	-6.43/-3.64	-1.171.02	1.040.36	
Theta (60°)	-0.46/-2.97	-4.67/-4.43	-7.19/-1.81	-2.49/-2.65	-0.96/-5.56	-6.15/-2.88	-4.66/-6.86	-5.53/-4.99	-7.25/-1.33	-0.240.09	1.74/-0.69	-0.610.13	0.39/-1.05	-2.76/-3.63	-1.32/-1.32	-3.79/-2.19	-1.86/-3.29	-3.88/-4.34	-3.02/-4.07	-1.22/-4.44	-3.12/-3.25	-4.12/-2.6	-4.27/-3.81	-0.87/-3.07	
Theta (67.5°)	-2.76/-2.34	-8.81/-3.11	-11.07/-1.73	-1.460.14	-1.13/-4.66	-1.11/-4.66	-1.28/-2.32	-1.18/-4.71	-5.52/-3.76	-3.88/-4.52	-1.31/-6.23	-2.38/-2.67	-2.59/-5.02	1.51/-3.36	-7.42/-2.52	-2.28/-4.62	-1.76/-5.96	0.210.11	-5.28/-1.28	-4.74/-2.9	-1.05/-0.55	0.91/-3.35			
Theta (75°)	-2.150.7	0.3/-0.36	1.07/-0.27	0.22/-2.38	-5.94/-2.2	-2.67/-3.09	-7.69/-1.89	-4.82/-2.37	-3.02/-1.16	-3.380.42	-1.95/-2.18	-1.99/-0.43	-2.04/-2.1	-1.14/-3.59	-2.98/-3.52	-0.41/-0.76	-4.16/-2.48	-6.68/-1.16	-8/-5.54	-2.62/-1.23	-2.71/-0.15	-0.86/-2.27	0.93/-1.38	0.72/-1.11	
Theta (82.5°)	-1.41/-1.25	0.96/-2.83	-2.29/-1.13	-2.55/-2.84	-1.68/-5.83	-1.05/-3.59	-2.45/-1.69	-1.17/-3.78	-8.41/-7.42	-1.75/-7.65	-1.95/-4.98	-2.71/-4.3	-0.89/-4.01	-1.01/-2.92	-5.62/-7.23	-6.01/-6.15	-3.88/-3.96	-4.29/-2.73	-3.68/-3.96	-3.25/-2.52	-3.56/-1.46	-1.32/-1.19	0.74/-0.63	0.71/-0.73	
Theta (90°)	-0.16/-1.82	1.54/-2.27	-1.37/-1.32	0.73/-1.99	-5.86/-3.22	-1.09/-2.35	-3.22/-2.8	-0.92/-3.95	-1.44/-2.94	-0.62/-2.34	0.85/-3.67	-2.79/-1.65	-0.87/-1.78	-4.26/-4.32	-4.89/-7.1	-6.73/-1.72	-3.41/-4.93	-3.55/-2.06	-2.27/-5.37	-3.02/-2.49	-0.65/-0.65	0.71/-1.39	-0.43/-4.2		
Theta (97.5°)	0.190.63	1.4/-2.28	-1.27/-0.4	-1.94/-3.07	-2.83/-4.25	-1.0/98	-5.48/-3.15	-0.65/-4.87	-1.03/-1.83	-0.87/-2.7	-0.46/-1.11	1.07/-1.22	0.16/-2.02	-6.07/-0.7	-0.170.57	-4.57/-2.17	-4.57/-1.07	-5.73/-1.78	-2.26/-10.41	-3.18/-1.2	-2.08/-2.29	-0.55/-0.58	-0.46/-0.3	0.810.29	
Theta (105°)	-3.89/-0.6	-1.9/-2.46	-2.75/-3.27	-0.62/-1.28	-3.01/-7.31	-2.71/5.24	-3.41/-1.95	-1.76/-2.01	-3.76/-7.52	-5.07/-3.42	-1.46/-1.48	-3.37/-3.26	-0.19/-8.12	-8.11/-1.38	-1.57/-0.49	-5.31/-0.52	-1.72/-3.35	-3.69/-5.03	-4.81/-10.99	-4.03/-4.86	-3.220.26	-3.81/-1.91	-2.16/-2.06	1.03/-2.57	
Theta (112.5°)	-3.17/-0.45	0.08/-0.26	-2.31/-0.03	0.07/-2.57	-2.47/-5.1	-3.12/-5.09	-2.62/-3.86	-3.33/-4.66	-9.39/-11.33	-14.04/-6.5	-2.86/-11.48	-2.61/-8.47	-4.32/-6.28	-14.08/-6.29	-1.15/-1.24	-5.78/-2.91	-3.28/-8.08	-3.98/-1.52	-2.47/-10.18	-0.81/0.57	-5.17/-0.49	-5.92/-0.85	-2.61/-6.69	0.08/-1.28	
Theta (120°)	-1.19/-2.03	-1.45/-3.92	-3.93/-1.37	-1.42/-1.7	-2.38/-4.95	-4.4/-9.6	-1.31/-3.39	-3.55/-7.76	-1.73/-6.33	-11.06/-2.7	-7.37/-5.08	-1.46/-8.4	-2.27/-2.31	-8.89/-8.29	-0.65/-0.78	-2.18/-1.61	0.170.38	-3.92/-3.08	-8.39/-10.74	-4.18/-12.35	-2.26/-2.24	-3.21/-11.02	-2.51/-4.4	-0.37/-2.48	
Theta (127.5°)	-6.43/-6.84	-5.01/-4.06	-6.18/-8.21	-3.26/-4.59	-6.81/-6.49	-9.35/-8.79	-2.31/-3.91	-4.44/-6.54	-11.67/-6.49	-10.69/-5.23	-15.57/-11.14	-9.91/-13.62	-6.51/-12.68	-16.43/-6.54	-5.19/-6.64	-8.27/-6.49	-3.84/-1.8	-1.57/-3.61	-7.62/-8.69	-4.85/-2.25	-1.68/-6.51	-5.88/-3.82	-1.76/-5.23	-2.62/-6.48	
Theta (135°)	-5.05/-2.65	-1.28/-2.92	-5.07/-6.38	-5.85/-4.52	-6.66/-6.93	-4.68/-6.18	-8.77/-9.53	-8.36/-9.69	-16.34/-7.98	-12.29/-7.09	-4.88/-11.5	-4.15/-4.06	-4.91/-13.48	-5.81/-4.34	-3.72/-4.16	-2.29/-7.62	-8.52/-9.39	-7.67/-9.1	-13.18/-13.03	-5.59/-5.9	-7.44/-6.73	-4.74/-5.24	-5.85/-7.04		
Theta (142.5°)	-5.48/-6.03	-6.91/-7.24	-6.04/-8.25	-8.61/-12.77	-8.41/-10.46	-10.04/-12.38	-8.52/-11.34	-11.57/-7.14	-9.94/-8.42	-12.99/-14.46	-9.99/-4.49	-10.65/-4.97	-16.91/-9.36	-7.87/-7.51	-6.09/-5.64	-7.49/-4.28	-6.97/-6.32	-7.49/-18.55	-9.56/-17.88	-13.37/-7.78	-6.93/-8.57	-18.12/-6.54	-6.42/-8.2	-9.78/-8.58	
Theta (150°)	-18.62/-17.38	-17.18/-18.13	-13.42/-18.46	-13.96/-11.03	-13.82/-16.77	-13.34/-15.1	-10.84/-9.29																		

Freq(Hz)	6.695G	6.995G
Ant. 1 Max Gain (dBi)	1.38	1.91
Ant. 2 Max Gain (dBi)	2.3	3.01
Ant. 3 Max Gain (dBi)	3.5	3.51
Ant. 4 Max Gain (dBi)	3.29	2.92
Ant. 1 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/82.5/120	Theta/105/97.5
Ant. 2 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/97.5/352.5	Theta/97.5/7.5
Ant. 3 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/120/307.5	Theta/67.5/142.5
Ant. 4 Polarization/ $\theta(^{\circ})/\Phi(^{\circ})$	Theta/82.5/300	Theta/82.5/247.5
Max Gain (dBi)	3.5	3.51
DG [1SS] (dBi)	5.48	5.92
DG [2SS] (dBi)	3.5	3.51
DG [4SS] (dBi)	3.5	3.51



Radiated Composite Gain of 6GHz UNII 7 and UNII 8

Appendix C

DG 1SS Result

Freq(Hz)	6.695GPol.	Phi-	Phi+	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)
DG(dB)	Phi(0°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
6.695GPol.	Phi(0°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)	Phi(75°)	Phi(90°)	Phi(105°)	Phi(120°)	Phi(135°)	Phi(150°)	Phi(165°)	Phi(180°)	Phi(195°)	Phi(210°)	Phi(225°)	Phi(240°)	Phi(255°)	Phi(270°)	Phi(285°)	Phi(300°)	Phi(315°)	Phi(330°)	Phi(345°)	
Theta(0°)	-5.61-5.17	-6.82-7.48	-8.34-11.04	-9.41-10.43	-10.21-10.13	-8.89-8.67	-7.37-7.16	-6.86-6.1	-5.19-5.92	-6.76-6.01	-7.37-7.16	-5.97-5.21	-5.77-5.4	-4.59-4.89	-5.72-6.14	-6.62-6.96	-7.96-9.13	-10.29-9.17	-9.33-9.93	-6.98-6.73	-5.57-5.83	-4.92-4.42	-4.55-4.43		
Theta(7.5°)	-6.33-7.53	-7.41-8.28	-8.82-10.13	-9.83-9.51	-9.61-10.18	-9.91-10.1	-9.89-10.05	-9.22-8.16	-9.91-8.09	-7.34-5.69	-5.73-5.12	-4.91-6.28	-6.14-5.71	-6.74-7.86	-8.19-9.1	-9.98-8.93	-8.93-8.94	-8.06-7.93	-7.47-7.43	-7.39-6.95	-7.41-6.98	-6.97-5.93	-6.59-6.01	-6.25-6.79	
Theta(15°)	-6.69-7.05	-7.27-8.66	-8.99-10.32	-8.82-10.04	-11.59-10.78	-9.74-11.1	-11.05-10.73	-10.84-10.7	-10.81-10.94	-10.81-10.94	-10.81-10.94	-8.53-6.54	-6.15-5.75	-6.15-8.13	-9.1-9.86	-7.96-7.96	-7.41-6.69	-7.25-8	-10.66-10.3	-10.38-10.5	-10.59-9.7	-8.48-9.41	-8.65-8.46	-6.17-4.79	-4.48-7.74
Theta(22.5°)	-10.17-10.16	-9.06-7.42	-8.98-10.4	-11.15-9.57	-7.59-8.63	-8.06-10.64	-9.27-6.31	-6.86-5.79	-6.34-7.06	-10.66-10.43	-11.63-11.51	-11.24-8.34	-6.22-6.95	-8.44-8.84	-8.11-8.83	-9.67-9.49	-8.08-7.48	-8.46-9.43	-10.98-12.43	-11.66-9.44	-8.82-8.85	-7.45-6.7	-6.91-7.56	-10.48-6.63	
Theta(30°)	-11.09-10.67	-11.08-9.77	-8.29-9.78	-10.92-11.43	-9.22-8.54	-10.63-11.04	-11.61-10.33	-7.77-9.81	-9.53-10.76	-12.24-9.99	-10.88-10.35	-6.26-6.92	-7.73-8.21	-8.31-6.22	-8.16-7.17	-8.54-6.77	-6.75-6.32	-8.29-9.65	-12.58-10.76	-10.49-9.06	-8.82-9.41	-10.14-9.8	-6.84-8.26	-10.96-10.09	
Theta(37.5°)	-8.02-9.15	-8.62-7.96	-7.05-9.22	-7.65-11.28	-8.93-10.73	-6.96-6.07	-8.81-5.62	-6.98-9.83	-8.31-10.61	-9.16-10.06	-10.06-8.89	-9.35-11.43	-7.71-11.97	-9.15-8.62	-9.65-7.65	-4.21-7.24	-8.83-9.03	-10.83-8.02	-7.95-8.95	-6.17-3.96	-4.81-6.25	-8.94-8.29	-6.95-6.86	-10.39-10.19	
Theta(45°)	-7.82-11.29	-11.96-8.82	-7.71-9.46	-9.81-12.27	-6.91-11.65	-9.37-10.5	-6.81-6.83	-9.29-10.28	-11.19-9.19	-8.91-6.85	-6.73-6.72	-8.75-9.15	-9.48-10.59	-12.02-11.71	-10.25-12.43	-11.53-10.23	-10.29-9.18	-7.31-7.74	-6.59-6.74	-7.86-8.44	-5.71-8.64	-7.23-10.7	-7.33-8.05	-6.46-7.82	
Theta(52.5°)	-9.58-10	-10.28-11.8	-10.26-11.68	-8.51-11.26	-7.73-8.93	-9.04-10.6	-7.88-6.66	-9.45-11.68	-9.31-6.61	-9.04-10.61	-8.93-12.65	-8.36-10.7	-10.95-7.95	-9.48-9.96	-7.95-7.39	-8.82-9.55	-12.29-10.56	-11.51-9.17	-11.64-11.49	-11.69-8.88	-7.25-5.46	-6.21-7.99	-8.37-6.87	-7.17-5.97	
Theta(60°)	-9.31-8.37	-8.08-8.1	-8.12-6.7	-7.25-9.14	-9.81-8.1	-8.98-7.68	-9.21-11.3	-8.85-9.22	-5.79-6.49	-8.94-8.41	-9.49-8.38	-10.62-8.89	-8.25-9.24	-7.83-8.31	-9.39-9.69	-10.22-11.99	-8.81-10.9	-9.87-12.16	-10.58-8.56	-8.56-9.85	-11.28-7.82	-9.03-7.17	-7.98-7.39	-6.45-6.48	
Theta(67.5°)	-8.61-6.7	-7.51-10.57	-9.46-4.71	-9.98-8.48	-8.11-10.4	-8.91-10.6	-10.55-11.82	-9.76-7.02	-6.41-5.06	-5.13-8.24	-5.89-7.78	-10.24-10.51	-10.11-9.53	-11.81-9.42	-10.25-9.91	-9.15-11.05	-11.67-11.01	-11.19-10.31	-10.14-10.42	-8.81-9.18	-9.04-9.6	-12.53-7.6	-11.56-8.99	-6.64-5.2	
Theta(75°)	-9.12-10.87	-6.41-5.41	-9.82-5.23	-11.61-11.04	-8.76-10.09	-10.06-10.01	-10.54-8.51	-8.37-10.49	-11.72-5.51	-10.19-7.91	-8.72-6.33	-11.96-9.49	-10.88-11.75	-9.97-9.36	-9.37-7.56	-8.36-8.67	-9.58-10.14	-8.05-8.25	-10.44-10.74	-9.71-11.02	-9.76-11.02	-11.71-9.45	-11.16-10.67	-10.44-3.92	
Theta(82.5°)	-7.57-9.73	-7.33-7.32	-7.91-7.66	-12.25-11.95	-8.74-11	-8.43-11.85	-11.17-6.94	-9.21-8.23	-10.16-7.36	-4.55-5.98	-8.54-8.92	-8.47-9.13	-9.45-9.93	-9.81-7.73	-8.27-7.75	-7.68-9.51	-11.25-8.78	-8.62-9.26	-12.61-10.79	-8.01-9.17	-7.72-5.63	-7.23-6.41	-6.92-6.79	-6.95-8.74	
Theta(90°)	-5.82-9.87	-9.06-7.28	-8.32-9.32	-11.67-9.27	-10.56-9.36	-9.87-10.44	-11.74-9.11	-8.98-10.23	-12.57-7.94	-5.14-8.56	-10.72-11.97	-10.47-9.11	-9.61-9.42	-11.07-10.04	-10.67-10.82	-9.84-10.33	-11.93-10.76	-9.53-10.24	-9.46-12.28	-9.15-9.35	-10.04-7.52	-8.69-7.78	-8.93-9.69	-11.84-9.16	
Theta(97.5°)	-6.74-6.73	-7.71-9.4	-7.03-8.22	-9.11-9.92	-9.1-8.88	-6.68-8.21	-9.56-10.36	-6.97-10.62	-11.97-8.48	-5.81-7.3	-10.19-9.78	-9.75-9.3	-8.94-7.19	-6.72-7.58	-9.44-11.55	-9.88-11.12	-10.89-10.88	-11.84-12.49	-9.96-9.19	-6.48-7.82	-10.31-6.08	-5.39-6.25	-8.04-6.18	-6.95-7.26	
Theta(105°)	-8.04-8.13	-9.86-11.55	-8.46-5.5	-6.51-9.02	-10.21-9.46	-7.62-8.41	-9.58-11.27	-10.86-8.09	-9.57-8.84	-6.67-6.67	-7.08-7.22	-8.35-5.66	-8.87-7.02	-9.31-8.41	-5.19-12.43	-10.46-7.48	-8.57-8.83	-8.57-8.87	-11.75-9.09	-9.02-9.93	-10.55-6.83	-6.15-7.42	-8.52-9.05	-11.29-10.13	
Theta(112.5°)	-7.63-11.05	-12.11-10.12	-8.56-6.46	-8.56-10.82	-11.21-7.57	-8.28-11.22	-7.10-10.26	-8.31-12.42	-7.35-7.92	-10.41-8.9	-6.46-10.27	-8.20-10.23	-11.67-9.31	-11.04-11.54	-6.45-7.25	-5.81-8.97	-8.57-7.21	-11.92-10.17	-9.47-8.12	-11.07-11.36	-11.07-11.36	-12.02-8.65	-10.34-10.08		
Theta(120°)	-9.99-7.57	-11.03-8.96	-6.91-3.73	-6.77-7.12	-9.03-5.4	-9.51-7.4	-8.05-6.43	-8.93-7.43	-6.1-7.18	-6.66-7.67	-5.05-7.49	-8.42-7.05	-9.57-8.24	-8.16-9.19	-7.92-8.42	-6.49-8.83	-6.75-8.24	-8.41-11.22	-9.51-9.96	-10.64-6.37	-11.31-6.17	-6.18-10.56	-10.14-9.91	-9.17-6.44	
Theta(127.5°)	-8.71-5.34	-7.71-7.29	-6.43-5.42	-8.35-10.55	-9.62-6.51	-7.43-11.33	-9.04-6.69	-8.86-9.64	-9.42-9.71	-6.64-6.63	-9.29-8.19	-5.69-10.41	-1.07-9.34	-8.68-6.23	-6.09-6.57	-8.1-9.4	-6.06-9.92	-10.11-8.36	-10.37-9.87	-6.71-6.68	-8.38-8.57	-8.37-8.24	-6.59-6.46	-8.33-5.45	
Theta(135°)	-7.73-7.42	-6.47-6.15	-7.82-7.03	-8.28-12.14	-12.07-9.02	-7.29-7.91	-11.49-9.54	-9.88-8.64	-11.96-10.46	-10.95-8.72	-7.76-5.88	-6.34-9.33	-5.21-11.76	-8.16-7.81	-5.89-6.43	-5.63-10.22	-9.87-6.76	-11.94-5.94	-4.08-4.62	-6.24-8.45	-6.56-6.07	-5.88-6.45	-6.67-6.49		
Theta(142.5°)	-8.96-10.14	-11.37-9.92	-10.18-9.65	-8.53-11.3	-10.02-11.19	-10.29-9.06	-8.49-9.68	-9.21-11.1	-9.31-7.47	-7.64-8.84	-6.22-7.76	-9.24-7.79	-8.93-9.01	-9.83-9.55	-8.87-9.36	-5.96-8.01	-9.93-10.94	-9.17-6.48	-9.21-9.24	-5.98-5.72	-6.37-8.88	-11.11-10.04	-8.82-8.35	-7.93-9.21	
Theta(150°)	-7.61-10.52	-10.51-7.58	-8.51-7.05	-7.19-8.88	-8.45-8.75	-10.95-11.47	-10.41-9.28	-8.22-8.35	-9.58-10.17	-12.04-12.12	-12.03-12.78	-12.12-9.51	-7.53-8.37	-8.77-7.33	-9.94-10.09	-5.87-8.5	-11.64-10.27	-8.08-6.45	-6.82-7.64	-9.86-9.73	-8.19-6.45	-5.18-5.57	-4.98-5.92	-8.1-7.92	
Theta(157.5°)	-7.92-10.4	-9.49-10.08	-6.87-8.59	-7.84-9.03	-9.65-8.02	-7.98-8.7	-7.65-7.98	-9.12-10.6	-10.08-10.26	-7.34-11.08	-10.45-7.88	-6.73-7.6	-9.08-8.27	-5.91-5.84	-5.76-8.62	-8.28-7.3	-10.08-9.46	-8.51-10.66	-11.24-8.81	-7.36-9.92	-6.04-4.82	-4.48-4.72	-5.03-7.28	-7.74-7.86	
Theta(165°)	-7.91-8.43	-8.45-9.49	-9.41-9.18	-9.56-9.7	-8.54-7.43	-9.59-10.42	-10.62-9.71	-11.29-10.76	-8.91-8.94	-8.91-8.6	-9.54-10.43	-9.28-7.03	-6.18-4.92	-5.42-7.64	-8.08-8.86	-10.58-10.07	-9.82-8.69	-9.86	-6.71-7.75	-6.51-5.65	-2.99-3.19	-3.91-4.38	-5.98-7.72		
Theta(172.5°)	-6.44-6.31	-5.66-4.92	-5.24-6.47	-6.66-8.49	-10.12-11.25	-10.52-10.01	-10.06-10.36	-10.49-9.7	-8.66-7.61	-7.28-7.08	-5.96-5.81	-5.01-6.47	-6.68-7.65	-10.29-10.49	-9.31-8.41	-7.38-8.04	-7.71-9.06	-9.18-8.76	-7.75-7.79	-7.16-6.57	-5.54-4.49	-5.01-4.58	-6.21-6.13	-7.95-9.15	
Theta(180°)	-6.05-6.87	-6.46-6.28	-6.89-7.6	-7.76-7.83	-9.15-10.12	-10.14-9.69	-9.02-7.59	-6.33-5.07	-4.11-4.33	-4.62-5.28	-5.21-4.11	-5.59-6.36	-7.16-8.79	-8.75-9.84	-10.41-10.96	-11.57-11.09	-10.52-9.59	-9.89-9.71	-7.85-6.79	-6.13-6.02	-5.57-5.61	-5.71-5.42	-6.08-5.81	-6.51-6.79	
Theta(0°)	-9.76-8.52	-7.99-6.4	-5.68-6.01	-5.01-6	-5.42-5.38	-5.58-6.11	-5.98-6.11	-6.43-6.69	-7.42-7.45	-9.41-9.52	-10.37-9.93	-9.12-9.4	-8.68-6.96	-6.21-6.13	-5.19-5.29	-5.01-4.6	-3.77-4.4	-4.74-7.42	-4.94-5.42	-5.45-6.14	-7.07-6.38	-8.91-9.8	-11.76-10.99	-11.02-9.94	
Theta(7.5°)	-9.02-6.54	-5.67-5.2	-4.76-3.57	-3.04-3.02	-3.41-4.54	-4.55-5.2	-5.46-4.74	-4.91-5.5	-5.59-5.1	-5.61-5.6	-7.21-8.59	-9.26-9.05	-8.45-8.34	-7.29-7.64	-7.01-7.05	-7.82-8.38	-8.19-9.17	-9.83-10.41	-10.24-10.52	-9.62-8.66	-8.81-9.92	-9.82-10.05	-10.79-10.94	-10.10-10.4	
Theta(15°)	-4.97-5.78	-4.84-4.81	-5.09-5.75	-5.18-5.96	-8.01-8.85	-7.36-9.67	-5.06-5.12	-3.82-2.63	-5.01-6.28	-7.57-6.98	-4.61-5.25	-5.17-4.84	-4.86-4.65	-5.03-5.82	-6.81-6.02	-6.52-7.02	-6.45-6.25	-6.52-7.02	-6.45-6.25	-6.92-6.12	-6.02-4.84	-5.28-4.74			
Theta(22.5°)	-1.42-2.39	-2.42-3.71	-2.71-2.76	-5.19-5.97	-3.14-2.9	-2.42-2.1	-2.74-3.61	-4.51-5.48	-5.61-2.85	-1.45-2.14	-3.97-6.69	-7.47-7.28	-8.71-5.25	-2.92-2.77	-2.29-1.91	-2.08-4.63	-6.02-5.56	-4.78-3.87	-5.31-7.56	-4.46-2.75	-3.13-2.94	-2			



Radiated Composite Gain of 6GHz UNII 7 and UNII 8

Appendix C

Theta (°)	Phi (°)	Phi(15°)	Phi(22.5°)	Phi(30°)	Phi(37.5°)	Phi(45°)	Phi(52.5°)	Phi(60°)	Phi(67.5°)	Phi(75°)	Phi(82.5°)	Phi(90°)	Phi(97.5°)	Phi(105°)	Phi(112.5°)	Phi(120°)	Phi(127.5°)	Phi(135°)	Phi(142.5°)	Phi(150°)	Phi(157.5°)	Phi(165°)	Phi(172.5°)	Phi(180°)	
Theta (22.5°)	Phi(0°)	-13.861-16.13	-18.78-13.13	-15.222-19.06	-18.661-15.11	-10.941-13.11	-17.631-18.7	-17.641-17.94	-19.061-17.75	-18.461-18.18	-19.261-18.48	-18.251-17.68	-18.941-15.02	-13.991-11.53	-12.041-14.06	-17.931-18.76	-17.981-19.36	-16.291-16.22	-15.511-17.84	-18.431-19.01	-17.861-13.12	-12.691-16.16	-14.591-13.94	-13.231-16.82	-17.911-14.92
Theta (30°)	Phi(0°)	-16.09-18.55	-14.11-14.17	-18.03-18.78	-15.91-17.3	-13.971-13.93	-12.711-14.48	-18.89-19.27	-12.991-14.44	-15.241-18.6	-18.881-17.83	-19.181-18.77	-14.481-13.37	-12.091-10.37	-9.991-9.42	-16.871-12.64	-13.031-15.45	-17.631-19.05	-18.741-18.92	-18.221-19.22	-18.751-12.4	-14.121-14.95	-14.121-14.95	-14.121-14.95	-14.121-14.95
Theta (45°)	Phi(0°)	-17.441-17.49	-19.21-18.37	-18.481-12.66	-18.571-18.09	-18.391-17.81	-14.071-11.62	-16.021-17.84	-17.141-17.53	-14.991-9.93	-10.571-15.18	-11.061-13.56	-15.21-18.97	-17.751-17.65	-17.71-16.99	-17.491-19.23	-18.21-18.1	-18.931-18.82	-18.041-19.03	-12.51-13.4	-18.741-14.57	-14.421-17.63	-8.721-17.71	-14.021-11.1	-8.411-11.39
Theta (60°)	Phi(0°)	-18.151-18	-19.331-19.21	-17.871-17.26	-18.281-18.84	-18.191-11.45	-17.251-17.67	-18.331-18.06	-17.661-17.22	-9.761-6.87	-11.791-15.67	-18.311-18.32	-13.791-13.84	-15.751-14.4	-19.091-14.48	-13.911-15.97	-17.131-14.41	-18.781-18.21	-18.681-12.11	-19.141-18.96	-18.491-17.06	-16.311-12.98	-9.321-11.17	-16.971-10.63	-9.991-9.98
Theta (75°)	Phi(0°)	-13.41-17.3	-15.611-12.63	-18.321-17.66	-17.581-15.25	-16.141-13.87	-16.531-13.99	-16.841-16.63	-17.931-16.24	-9.831-8.01	-11.091-18.95	-15.431-11.46	-18.411-11.23	-11.141-17.97	-131-12.84	-10.161-17.2	-13.511-19.64	-14.031-18.84	-14.011-18.33	-17.531-17.25	-19.021-15.66	-19.251-12.19	-19.681-17.4	-19.181-17.99	
Theta (90°)	Phi(0°)	-12.581-16.8	-18.731-19.31	-16.781-16.34	-15.011-17.98	-13.081-18.05	-18.341-14.01	-17.581-18.22	-14.171-9.51	-12.331-10.1	-8.751-13	-10.621-9.92	-16.761-17.96	-15.611-18.01	-18.481-17.81	-15.711-8.23	-13.441-14.88	-18.571-16.12	-17.761-15.67	-13.781-19.26	-14.031-18.19	-10.631-15.39	-18.651-13.7	-19.381-16.34	-8.041-10.96
Theta (105°)	Phi(0°)	-18.091-19.15	-17.271-17.9	-18.551-16.57	-16.271-17.71	-14.431-14.73	-19.121-12.04	-13.231-17.88	-17.631-12.84	-17.551-13.11	-13.591-19.9	-10.611-12.7	-17.931-14.88	-14.661-18.23	-17.661-18.65	-17.311-13.14	-16.791-15.71	-17.851-15.48	-13.991-15.5	-19.031-19.02	-18.011-14.52	-17.071-19.59	-17.51-18.56	-16.641-15.5	-13.511-14.4
Theta (120°)	Phi(0°)	-15.691-13.87	-13.361-18.6	-18.951-12.18	-18.691-18.09	-18.691-18.24	-17.711-17.2	-15.111-13.28	-17.241-13.67	-18.921-15.45	-8.611-9.9	-12.791-17.56	-18.611-13.7	-15.631-19.22	-14.511-14.42	-15.051-12.36	-18.731-17.13	-15.621-15.42	-14.921-17.92	-18.681-19.09	-13.371-11.71	-11.591-17.09	-18.921-15.43	-16.771-15.22	-14.281-16.2
Theta (135°)	Phi(0°)	-12.271-16.92	-12.811-16.49	-18.961-18.55	-18.891-15.98	-17.881-13.92	-18.061-18.38	-19.331-18.36	-15.381-19.31	-18.211-14.85	-8.691-12.43	-15.471-18.37	-18.641-17.46	-18.971-15.98	-18.521-12.06	-17.341-18.91	-13.741-14.43	-17.831-14.65	-18.321-18.73	-17.761-18.89	-10.211-19.92	-14.581-13.24	-18.921-19.39	-18.541-18.04	-18.961-17.81
Theta (150°)	Phi(0°)	-18.831-14.94	-8.131-16.22	-11.751-15.06	-16.971-15.81	-12.161-17.22	-13.171-10.1	-17.471-17.59	-14.311-17.43	-18.641-13.39	-7.261-11.02	-15.291-13.99	-15.491-18.87	-13.541-18.43	-14.451-13.56	-16.211-18.58	-14.211-13.36	-15.561-19.06	-18.141-18.85	-18.941-12.82	-12.951-12.17	-15.361-14.81	-18.261-9.48	-16.791-17.57	-16.931-15.3
Theta (165°)	Phi(0°)	-17.561-18.77	-13.711-18.13	-16.311-12.67	-10.911-16.48	-17.911-17.48	-13.911-18.82	-17.761-18.91	-18.731-15.95	-19.031-15.31	-8.191-45	-11.311-12.46	-9.811-36.5	-12.411-14.1	-19.101-59	-18.441-17.71	-13.111-12.69	-15.151-18.41	-18.411-15.76	-18.011-13.77	-18.531-17.98	-15.921-10.25	-16.911-15.92	-15.991-11.75	-16.931-15.3
Theta (180°)	Phi(0°)	-14.991-14.93	-18.351-18.07	-14.351-18.54	-14.761-16.77	-18.431-14.12	-17.461-17.99	-18.491-14.17	-12.761-19.56	-17.951-13.24	-14.411-12.41	-6.741-15.29	-10.441-18.18	-15.041-18.32	-18.221-16.68	-16.861-14.28	-18.821-18.96	-17.371-18.1	-17.481-17.35	-18.371-18.29	-19.271-18.62	-19.391-16.51	-12.911-14.42	-16.421-13.71	-17.941-13.25
Theta (22.5°)	Phi(0°)	-18.741-15.25	-18.611-18.61	-14.461-18.89	-14.071-12.46	-17.071-12.4	-18.421-19.12	-12.511-11.41	-19.131-12.02	-18.281-18.88	-9.941-9.78	-4.111-19.05	-8.711-15.9	-17.961-10.52	-11.151-14.12	-15.521-18.01	-10.261-15.61	-18.171-16.64	-12.921-15.02	-18.561-12.88	-19.181-18.42	-17.421-17.77	-13.811-18.51	-18.261-9.48	-15.971-8.52
Theta (30°)	Phi(0°)	-18.711-12.21	-14.621-14.51	-10.621-12.18	-19.621-17.55	-17.781-12.66	-16.581-19.12	-15.251-9.71	-11.911-14.51	-18.481-19.99	-13.551-10.46	-14.381-19	-17.241-14.14	-17.381-9.12	-8.931-16.01	-18.841-17.17	-10.911-17.25	-15.811-10.52	-14.711-18.53	-19.051-12.98	-17.091-15.62	-18.011-11.89	-15.391-12.61	-15.731-8.41	
Theta (45°)	Phi(0°)	-17.931-7.55	-14.91-13.06	-9.471-9.34	-11.811-19.17	-19.851-14.24	-12.071-18.28	-17.211-12.93	-11.151-11.34	-15.91-18.34	-18.431-12.58	-11.011-16.34	-10.311-19.02	-17.061-18.32	-11.411-10.78	-8.061-8.28	-9.211-12.37	-8.811-15.56	-10.91-6.41	-16.11-11.08	-9.451-11.85	-12.251-9.61	-16.751-16.53	-11.081-10.8	-18.91-12.49
Theta (60°)	Phi(0°)	-10.191-12.13	-15.471-11.89	-11.751-12.55	-11.841-15.22	-14.811-16.01	-18.471-18.27	-11.171-13.58	-18.111-15.12	-15.991-10.14	-11.251-13.33	-12.711-15.02	-12.781-15.15	-9.971-13.54	-17.681-14.96	-13.311-14.2	-11.221-10.15	-17.911-17.82	-12.091-10.7	-14.221-16.56	-19.241-17.38	-14.711-14.21	-13.381-14.75	-15.761-11.12	
Theta (75°)	Phi(0°)	-18.211-18.85	-18.531-16.68	-16.541-11.41	-17.691-17.26	-10.951-11.56	-121-13.06	-12.891-18.96	-17.551-14.33	-14.21-13.89	-15.861-18.67	-13.241-10.87	-13.221-16.15	-16.891-18.75	-15.721-13.05	-10.31-13.6	-10.021-8.52	-11.831-11.82	-13.181-14.1	-17.841-18.63	-17.961-17.9	-12.711-9.85	-10.891-10.38	-8.021-8.56	-11.171-19.18
Theta (90°)	Phi(0°)	-17.871-19.49	-17.321-18.03	-19.111-16.71	-15.571-14.79	-15.391-16.8	-17.841-18.49	-19.551-17.01	-18.421-18.33	-18.391-12.83	-14.321-14.01	-16.081-19.16	-18.411-16.96	-15.781-14.49	-13.261-17.58	-16.631-13.55	-11.521-13.26	-12.211-13.21	-12.611-15.66	-12.711-10.79	-8.611-7.1	-5.681-5.08	-4.651-5.63	-8.031-14.25	
Theta (105°)	Phi(0°)	-11.351-9.73	-10.221-8.08	-7.931-7.72	-8.551-10.18	-12.491-15.47	-16.151-17.49	-17.941-18.09	-18.211-15.14	-13.191-10.82	-9.911-8.93	-9.921-10.18	-11.711-10.46	-16.821-17.58	-18.071-18.41	-18.651-18.2	-13.011-15.5	-17.311-16.89	-18.031-18.92	-18.581-17.99	-16.561-14.29	-12.931-12.21	-12.751-13.44	-15.681-17.2	
Theta (120°)	Phi(0°)	-15.891-13.65	-13.491-12.16	-11.941-10.61	-11.751-12.38	-11.941-14.39	-13.131-13.28	-12.471-13.61	-11.321-11.13	-11.511-10.45	-14.841-18.63	-18.451-19.29	-18.451-19.94	-16.621-15.42	-13.871-16.29	-18.991-19.01	-15.781-15.82	-17.171-14.5	-17.151-13.38	-14.211-14.65	-14.761-16.15	-15.711-13.97	-15.391-16.05	-17.771-18.52	
Theta (135°)	Phi(0°)	-18.211-18.85	-18.531-16.68	-16.541-11.41	-17.691-17.26	-10.951-11.56	-121-13.06	-12.891-18.96	-17.551-14.33	-14.21-13.89	-15.861-18.67	-13.241-10.87	-13.221-16.15	-16.891-18.75	-15.721-13.05	-10.31-13.6	-10.021-8.52	-11.831-11.82	-13.181-14.1	-17.841-18.63	-17.961-17.9	-12.711-9.85	-10.891-10.38	-8.021-8.56	-11.171-19.18
Theta (150°)	Phi(0°)	-17.871-19.49	-17.321-18.03	-19.111-16.71	-15.571-14.79	-15.391-16.8	-17.841-18.49	-19.551-17.01	-18.421-18.33	-18.391-12.83	-14.321-14.01	-16.081-19.16	-18.411-16.96	-15.781-14.49	-13.261-17.58	-16.631-13.55	-11.521-13.26	-12.211-13.21	-12.611-15.66	-12.711-10.79	-8.611-7.1	-5.681-5.08	-4.651-5.63	-8.031-14.25	
Theta (165°)	Phi(0°)	-11.351-9.73	-10.221-8.08	-7.931-7.72	-8.551-10.18	-12.491-15.47	-16.151-17.49	-17.941-18.09	-18.211-15.14	-13.191-10.82	-9.911-8.93	-9.921-10.18	-11.711-10.46	-16.821-17.58	-18.071-18.41	-18.651-18.2	-13.011-15.5	-17.311-16.89	-18.031-18.92	-18.581-17.99	-16.561-14.29	-12.931-12.21	-12.751-13.44	-15.681-17.2	
Theta (180°)	Phi(0°)	-15.891-13.65	-13.491-12.16	-11.941-10.61	-11.751-12.38	-11.941-14.39	-13.131-13.28	-12.471-13.61	-11.321-11.13	-11.511-10.45	-14.841-18.63	-18.451-19.29	-18.451-19.94	-16.621-15.42	-13.871-16.29	-18.991-19.01	-15.781-15.82	-17.171-14.5	-17.151-13.38	-14.211-14.65	-14.761-16.15	-15.711-13.97	-15.391-16.05	-17.771-18.52	
Theta (22.5°)	Phi(0°)	-18.181-18.85	-18.531-16.68	-16.541-11.41	-17.691-17.26	-10.951-11.56	-121-13.06	-12.891-18.96	-17.551-14.33	-14.21-13.89	-15.861-18.67	-13.241-10.87	-13.221-16.15	-16.891-18.75	-15.721-13.05	-10.31-13.6	-10.021-8.52	-11.831-11.82	-13.181-14.1	-17.841-18.63	-17.961-17.9	-12.711-9.85	-10.891-10.38	-8.021-8.56	-11.171-19.18
Theta (30°)	Phi(0°)	-17.871-19.49	-17.321-18.03	-19.111-16.71	-15.571-14.79	-15.391-16.8	-17.841-18.49	-19.551-17.01	-18.421-18.33	-18.391-12.83	-14.321-14.01	-16.081-19.16	-18.411-16.96	-15.781-14.49	-13.261-17.58	-16.631-13.55	-11.521-13.26	-12.211-13.21	-12.611-15.66	-12.711-10.79	-8.611-7.1	-5.681-5.08	-4.651-5.63	-8.031-14.25	
Theta (45°)	Phi(0°)	-11.351-9.73	-10.221-8.08	-7.931-7.72	-8.551-10.18	-12.491-15.47	-16.151-17.49	-17.941-18.09	-18.211-15.14	-13.191-10.82	-9.911-8.93	-9.921-10.18	-11.711-10.46	-16.821-17.58	-18.071-18										