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Freq(Hz)	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	3.99	3.39	3.9	3.24
Ant. 2 Max Gain (dBi)	4.89	4.71	4.62	4.55
Ant. 3 Max Gain (dBi)	4.51	4.93	4.62	4.23
Ant. 4 Max Gain (dBi)	4.39	4.6	3.97	4.4
Ant. 1 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/60/150	Phi/112.5/300	Phi/105/187.5	Phi/112.5/247.5
Ant. 2 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/127.5/292.5	Theta/127.5/292.5	Theta/165/255	Theta/135/262.5
Ant. 3 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Theta/60/255	Theta/97.5/277.5	Theta/45/262.5	Theta/90/285
Ant. 4 Polarization/ $\theta(^{\circ})/\phi(^{\circ})$	Phi/97.5/300	Phi/97.5/292.5	Phi/90/60	Phi/105/60
Max Gain (dBi)	4.89	4.93	4.62	4.55
DG [1SS] (dBi)	6.47	6.4	6.64	5.78
DG [2SS] (dBi)	4.89	4.93	4.62	4.55
DG [4SS] (dBi)	4.89	4.93	4.62	4.55



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ(22.5°)	2.722.34	1.71.42	0.870.02	-0.34/-1.21	-2.74/-4.95	-7.38/-8.19	-5.57/-3.56	-2.28/-1.56	-1.02/-0.62	-0.280.04	-0.05/-0.99	-2.5/-3.79	-2.76/-0.56	0.82/1.53	2.07/2.4	2.12/1.19	0.48/0.11	-0.83/-2.11	-3.14/-2.53	-1.40	1.33/2.11	2.42/2.57	2.33/2.28	2.01/2.43
Θ(30°)	3.38/2.4	1.51/1.37	0.68/0.47	0.38/0.05	0.03/-1.46	-2.44/-4.2	-3.61/-3.22	-2.61/-2.1	-1.83/-1.34	-0.31/0.67	0.88/0.19	-1.05/-1.61	-0.85/-1.06	2.44/3.11	3.42/2.92	1.48/0.31	-0.51/-0.82	-1.15/-1.69	-3/-3.03	-1.57/-0.55	0.06/0.86	2.03/3.34	3.91/3.96	4.06/3.67
Θ(37.5°)	3.79/3.95	3.39/3.62	3.67/3.7	3.51/3.02	1.86/0.16	0.14/0.46	0.68/0.76	1.12/1.23	1.17/1.12	0.81/0.91	1.25/1.31	0.37/0.13	0.68/1.78	2.82/3.51	2.56/-0.56	-2.14/-3.06	-2.28/-1.81	-2.16/-2.01	-1.76/-1.28	-0.50/2.3	1.01/2.8	4.03/4.5	4.71/4.83	4.79/3.91
Θ(45°)	5.175/7.4	5.45/4.51	3.172/2.7	2.98/3.14	2.05/-0.28	-1.47/-1.42	-0.96/-0.64	-0.27/-0.15	-0.08/0.64	1.05/1.28	2.15/2.84	2.41/1.92	2.61/3.16	3.42/2.8	0.46/0.19	0.34/0.33	0.16/0.04	-0.34/-0.59	1.3/2.6	3.12/3.39	3.91/4.04	4.44/5.15	5.75/6.03	6.54/6.09
Θ(52.5°)	5.79/6.64	5.49/4.45	3.54/3.2	4.52/3.53	2.54/2.04	1.93/2.15	2.38/2.36	2.08/1.66	1.28/1.53	1.3/0.43	1.23/2.66	2.05/1.76	2.44/3.1	3.01/1.93	1.74/2.17	1.89/1.84	1.77/0.14	-1.16/-0.59	1.48/3.93	5.15/5.06	4.64/4.81	5.35/4.43	5.19/5.69	5.77/6.2
Θ(60°)	6.35/6.16	5.67/4.68	4.16/4.92	4.83/4.76	4.04/2.68	0.79/-0.28	-0.26/0.36	1.87/2.97	2.62/1	0.91/1.64	2.44/3.8	3.62/2.23	3.13/3.91	2.95/2.92	3.27/1.88	1.78/2.45	2.13/1.38	1.61/1.51	0.7/0.17	1.68/3.13	3.39/3.31	3.24/12	5.37/6.04	6.47/6.07
Θ(67.5°)	5.41/6	5.27/3.8	3.64/7.3	5.68/5.28	3.54/1.56	0.57/0.47	0/-0.86	0.62/2.61	2.94/1.46	0.03/1.53	2.57/3.58	4.58/3.25	2.24/2.08	1.45/1.73	3.08/3.18	2.15/2.84	2.02/1.57	1.17/1.98	1.77/0.53	0.78/1.37	1.64/1.75	2.49/3.86	3.97/4.71	5.59/5.88
Θ(75°)	4.27/4.44	3.63/3.47	3.75/4.54	5.68/4.88	2.98/1.29	1.42/1.51	0.39/-1.44	-1.33/2.07	3.4/2.7	1.93/2.02	2.52/3.27	3.67/3.86	1.92/1.75	1.38/1.18	1.76/2.94	2.78/2.86	2.62/2.13	1.83/1.66	1.43/1.15	1.41/1.29	-0.08/-0.95	0.63/2.29	3.35/4.13	5.43/4.88
Θ(82.5°)	4.46/3.21	4.43/3.84	3.01/4.08	4.96/4.32	3.68/4.11	4.79/4.69	3.49/1.29	-0.23/1.78	3.82/3.28	2.15/2.83	3.4/3.29	2.53/1.58	2.39/2.54	1.89/1.44	1.95/3.34	3.01/2.12	2.16/2.27	1.64/1.36	1.62/2.23	1.38/1.25	0.53/0.05	-0.1/1.65	3.64/5.69	5.64/5.14
Θ(90°)	3.83/3.68	4.32/3.21	2.81/4.17	5.34/9.7	4/3.43	3.87/4.25	3.41/1.25	0.41/1.77	3.98/4.77	4.34/2.1	4.17/3.88	3.16/1.43	1.31/1.69	0.91/-0.78	0.75/1.4	2.75/2.51	2.24/2.6	1.99/0.13	0.4/2.02	2.93/3.24	3.17/1.4	1.82/1.8	3.48/5.55	6.23/5.47
Θ(97.5°)	4.68/3.39	3/2.71	3/2.98	4.27/3.78	3.11/3.72	4.66/5.17	4.21/2.16	0.98/3.14	4.03/3.78	4.07/4.7	5.01/4.67	2.62/2.66	2.09/0.57	1.76/3.64	3.51/2.61	0.85/1.23	0.83/1.21	0.76/1.84	3.04/3.2	2.73/1.87	2.05/3.63	4.79/4.44	5.23/5.12	
Θ(105°)	4.2/3.35	2.94/0.85	1.68/2.33	3.32/3.57	3.53/4.6	3.4/3.29	2.50/1.03	1.73/3.19	3.66/3.43	3.24/0.1	5.08/4.5	2.57/0.82	1.59/3.65	2.26/0.27	1.26/1.46	2.81/1.73	1.51/1.71	3.26/3.34	2.35/2.81	2.19/3.12	3.06/2.33	2.36/4.33	4.83/4.79	5.67/5.46
Θ(112.5°)	3.02/1.45	2.07/-0.29	-0.91/7.7	2.89/2.68	0.06/1.57	2.85/2.95	2.14/0.6	1.52/3.25	3.14/1.62	2.34/3.6	4.42/4.44	3.46/1.29	3.33/0.8	2.14/2.19	2.22/1.89	3.01/2.49	1.27/2.74	3.27/2.9	1.7/2.86	0.94/-1.26	2.42/2.35	3.27/3.27	2.97/4.86	6.15/5.1
Θ(120°)	-0.06/-0.01	1.17/0.29	-0.69/0.58	0.94/1.38	0.36/-0.81	-0.49/-0.71	-1.59/-1.74	-0.25/1.28	1.93/1.83	3.15/4.14	4.12/3.92	2.43/2.93	3.95/4.06	2.45/0.89	1.43/0.91	1.26/1.43	1.68/1.85	1.58/-1.83	0.22/1.23	0.44/1.63	2.4/0.99	2.32/4.12	5.23/3.92	1.44/0.9
Θ(127.5°)	-0.54/-0.62	1.76/1.89	-1.16/-2.51	0.25/0.41	-0.08/-1.06	-1.16/-0.58	-1.02/-2.85	-0.58/1.14	0.89/-0	1.85/2.98	2.77/1.42	1.43/1.24	1.47/1.39	0.21/0.31	2.51/-0.52	-2.73/-0.8	-2.94/-0.58	-1.45/-1.29	-2.39/-1.87	-1.57/-0.07	0.31/-0	-1.58/2.59	3.72/4.69	0.92/0.41
Θ(135°)	0.64/-0.13	1.06/0.03	-2.56/-3.92	-4.67/-2.07	-0.05/0.58	0.05/-0.9	-1.02/0.53	1.61/3.9	-0.37/0.28	1.24/2.2	1.31/2.14	3.28/3.11	4.24/3.7	2.98/1.38	1.23/0.58	-1.47/-2.8	-1.8/-3.77	-2.86/-2.9	-6.76/-4.7	-1.77/-0.29	-0.53/0.86	1.31/-0.55	2.15/2.14	0.62/0.58
Θ(142.5°)	0.14/-0.27	-0.88/-1.24	-1.68/-1.62	-2.19/-2.52	-1.3/-1.05	-1.13/-1.14	-0.73/-0.77	-0.64/-1.12	-0.33/-0.53	0.04/-0.36	1.63/3.29	2.6/-0.1	-0.25/-2.4	-2.91/-2.18	-1.48/-4.65	-4.08/-1.81	-0.77/-1.87	-3.1/-2.87	-3.38/-2.07	0.07/-0.55	-0.32/-1.99	-0.9/-0.49	-2.86/-1.24	
Θ(150°)	-1.56/-2.48	-2.73/-1.83	-1.69/-1.68	-2.58/-1.14	-5.08/-4.02	-3.04/-2.12	-1.12/-0.54	-0.65/-1.28	-1.95/-2.42	-2.47/-2.05	-1.09/-0.45	-1.6/-2.12	-1.49/0.14	1.22/1.96	2.20/2.49	2.24/1.35	0.67/-0.23	-0.79/-1.47	-2.23/-3.76	-5.88/-4.07	-1.22/-0.16	0.12/0.85	1.28/1.47	0.71/-1.01
Θ(157.5°)	3.51/2.52	1.03/0.96	0.74/0.01	-1.16/-2.96	-5.19/-6.48	-6.51/-5.02	-3.58/-2.03	-1.34/-1.43	-1.58/-2.06	-1.82/-1.8	-2.28/-3.03	-1.68/0.22	1.07/1.24	0.95/-0.61	-2.32/-2.54	-1.85/-2.04	-2.97/-3.04	-2.38/-2.53	-3.12/-4.2	-5.18/-5.08	-3.31/-1.41	-0.22/0.73	2.13/3.29	3.62/3.5
Θ(165°)	0.35/0.23	0.31/-0.03	-0.97/-1.57	-1.71/-2.27	-2.53/-2.21	-1.08/0	0.81/-4.6	1.81/2.04	2.19/2.18	2.08/1.92	1.53/0.78	-0.46/-1.93	-2.8/-2.48	-1.34/-0.49	-0.05/0.08	-0.19/-0.94	-1.85/-1.8	-2.2/-2.72	-3.19/-3.62	-4.2/-3.61	-2.95/-4.9	-1.25/-0.34	0.54/0.9	0.86/0.75
Θ(172.5°)	-1.72/-2.16	-2.28/-3.83	-5.33/-5.46	-5.5/-4.86	-3.44/-1.85	-0.47/0.49	0.95/1.24	1.41/1.78	2.06/2.12	2/1.64	0.98/0.04	-1.39/-2.4	-2.99/-3.03	-3.38/-4.1	-5.41/-6.96	-7.71/-8.03	-7.89/-7.83	-7.09/-5.42	-4.1/-3.19	-2.18/-1.66	-1.62/-1.15	-0.5/-0.53	-0.91/-1.34	-1.5/-1.55
Θ(180°)	-4.41/5	-5.08/4.65	-4.66/-4.89	-5.39/-6.45	-7.1/-7.39	-6.73/-5.71	-4.86/-4.56	-4.4/-4.25	-4.07/-3.68	-3.5/-3.16	-3.02/-2.94	-3.4/-3.96	-4.7/-5.6	-6.25/-7.01	-7.9/-9.4	-9.46/-8.6	-6.91/-5.68	-5.16/-4.59	-4.05/-3.67	-3.65/-3.87	-4.1/-4.56	-5.26/-6.85	-7.02/-6.89	-5.71/-4.51
Freq(Pol)	5.66/Pol	Theta/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-
DG(dB)	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	0.24/-0.11	-0.37/-0.44	-0.8/-1.04	-0.42/0.32	0.85/1.19	1.28/1.12	0.93/0.65	0.67/0.71	0.88/1.1	1.31/1.51	1.67/1.62	1.18/0.52	-0.09/-0.58	-0.6/-0.41	0.03/0.43	0.72/0.99	1.14/1.13	1.01/1.01	0.6/0.09	0.21/0.38	0.65/0.74	0.97/1.16	1.1/0.82	4.08/0.37
Θ(7.5°)	-0.98/-1.6	-1.5/-1.07	-0.87/-0.58	0.06/0.74	0.77/0.43	-0.15/-0.56	-0.72/-1.01	-1.42/-1.26	-0.96/-0.14	0.71/1.34	1.69/1.61	1.34/0.85	0.05/-0.51	-1.18/-1.45	-1.32/-0.93	-0.41/0.11	0.41/0.71	1.02/1.24	1.51/1.75	2.09/2.28	2.35/2.26	2.02/1.73	1.33/0.78	0.33/-0.32
Θ(15°)	-3.52/-3.92	-3.24/-2.25	-1.61/-1.41	-1.07/0.31	-0.29/-0.56	-0.46/-0.3	-0.44/-0.39	-0.77/-1.2	-1.75/-1.26	-0.38/0.32	0.54/0.44	0.2/-0.3	-0.75/-1.4	-2.92/-3.67	-2.81/-1.39	-0.22/0.58	0.88/1.02	1.02/1.15	1.39/1.68	1.69/1.56	1.46/1.27	1.16/0.78	0.41/0.17	-0.38/-2.17
Θ(22.5°)	-4.87/-5.79	-3.94/-3.13	-2.08/-1.24	-0.52/0.23	0.32/0.14	-0.14/-0.33	0.01/0.2	0.14/-0.4	-0.68/-0.81	-0.7/-0.37	-0.75/-1.66	-2.24/-2.9	-3.4/-3.92	-3.26/-2.85	-0.96/0.76	2.03/2.61	2.7/2.2	1.46/0.45	0.05/0.46	1.28/1.99	2.25/2.14	1.37/0.58	-0.13/-0.78	-1.21/-2.77
Θ(30°)	-4.19/-5.53	-4.68/-3.54	-2.62/-1.67	-1.31/-1.35	-0.72/-0.26	-0.33/-0.76	-0.7/-0.59	-0.28/-0.2	-0.25/-0.17	0.08/0.23	-0.11/-0.89	-1.98/-2.39	-2.64/-3.29	-4.01/-1.98	0.81/2.16	2.72/2.43	1.24/0.01	-0.24/0	1.1/2.38	2.87/2.24	1.25/0.3	-0.49/-0.84	-1.46/-1.37	-1.1/-2.14
Θ(37.5°)	-0.85/-0.44	0.33/0.04	0.36/-1.44	-2.17/-0.96	-0.3/0.14	0.91/0.95	0.88/0.97	1.2/1.22	1.28/1.17	0.98/0.7	-0.8/-4.53	-7.5/-6.31	-5.89/-4.66	-1.19/1.01	1.49/0.85	-1.13/-1.86	-0.96/-0.04	2.49/3.88	3.94/3.61	3.35/3.17	2.16/0.42	-0.49/-0.87	-2.02/-1.56	-0.22/0.06
Θ(45°)	0.08/-0.44	-0.09/-0.89	-1.55/-2.4	-1.81/-0.53	0.04/0.81	0.74/0.59	0.96/1.72	2.27/2.05	1.67/1.48	0.42/-0.39	-0.73/-1.9	-2.95/-3.99	-5.33/-3.72	-0.96/0.35	0.06/-0.04	0.11/0.62	1.01/2.43	3.48/3.91	3.57/2.86	2.38/1.76	0.7/-0.26	-1.48/-2.88	-2.62/-1.21	-0.42/0.61
Θ(52.5°)	-2.49/-1.87	-0.06/-1.11	-2.49/-3.22	-2.25/-0.96	-0.82/-0.51	-0.73/-0.86	-0.55/0.31	1.43/1.7	1.31/0.45	-0.63/-1.36	-1.82/-2.25	-2.18/-4.3	-5.79/-3.05	-0.97/-0.97	-3.02/-2.33	-1.08/-0.05	1.34/1.9	2.46/2.91	2.37/1.33	-0.19/-1.93	-1.88/-1.33	-0.86/0.07	-1.49/-2.47	-2.36/-2
Θ(60°)	-1.29/-0.42	0.81/-0.76	-4.83/-5.07	-2.77/-1.11	-0.8/-0.31	-0.11/-0.25	-0.19/-0.23	0.61/0.3	1.23/1.47	0.86/0.84	0.33/0.1	0.97/-0.69	-4.26/-4.06	-0.89/-0.51	-2.91/-2.72	-0.84/-0.38	-0.01/1.2	1.75/1.92	1.99/1.19	-0.49/-1.05	-0.39/-0.84	-0.97/-0.88	-0.89/-3.08	-2.03/-0.51
Θ(67.5°)	-1.31/-2.07	-3.31/-4.93	-6.16/-5.05	-2.35/-0.96	-0.52/-0.9	-0.73/-0.09	0.38/0.06	-1.37/-1.39	-3.84/-3.34	-3.24/-5.61	-4.25/-0.99	-0.82/-2.47	-5.23/-3.41	0.61/0.34	-2.31/-1.97	0.06/0.66	1.48/2.55	3.59/3.06	1.79/0.44	-0.52/-1.3	-2.91/-1.98	-2.93/-1.79	-1.26/-1.3	-0.54/-0.25
Θ(75°)	-3.61/-3.87	-2.05/-1.69	-2.05/-1.93	-1.44/-1.4	-1.12/-1.85	-1.08/0.08	0.1/0.04	0.42/-0.31	-1.76/-1.5	-1.13/-3	-4.76/-3.23	-1.18/-1.01	-6.25/-4.89	-1.38/-0.56	-3.42/-4.81	-2.81/-3.83	-1.52/0.19	1.89/2.19	0.48/-1.64	-1.07/0.16	0.67/0.82	-0.41/-2.5	-2.26/-2.23	-2.52/-1.8
Θ(82.5°)	-1.37/-0.47	-0.66/-1.1	-1.59/-1.49	-4.27/-2.05	-1.82/-2.75	-3.44/-2.44	-1.49/-1.27	-1.6/-2.65	-3.88/-4.25	-4.26/-3.76	-4.27/-0.87	0.43/-1.18	-4.57/-1.14	1.85/1.36	-2.07/-3.27	-5.								

Gain Result

Freq(Hz)	5.2GPol.	PhiAnt.1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)
Θ(0°)	-10.2/-10.1	-10.2/-11.96	-13.3/-12.6	-10.38/-6.77	-8.38/-7.8	-17.16-6.33	-5.71/-5.33	-5.18/-5.31	-5.32/-5.54	-5.7/-5.85	-5.88/-5.97	-6.26/-6.66	-7.46/-8.4	-9.1/-9.13	-8.87/-8.64	-8.64/-8.91	-8.88/-8.82	-8.37/-7.36	-6.35/-6.67	-5.23/-4.54	-4.71/-5.75	-6.39/-6.51	-6.53/-6.45	-7.44/-8.71
Θ(7.5°)	-7.3/-6.73	-6.91/-7.82	-8.8/-8.84	-7.86/-6.6	-6.02/-6.28	-5.97/-5.24	-4.86/-4.7	-4.96/-5.28	-5.71/-5.88	-6.23/-6.68	-7.57/-7.77	-8.39/-9.06	-10.3/-11.84	-13.15/-12.77	-12.33/-11.47	-11.01/-10.3	-9.36/-6.68	-9.03/-9.1	-8.74/-8.25	-7.84/-7.04	-6.55/-6.63	-6.47/-6.35	-6.36/-6.51	-7.35/-6.82
Θ(15°)	-6.19/-6.14	-5.52/-5.25	-4.87/-4.71	-4.42/-4.34	-4.25/-4.69	-4.73/-4.31	-4.06/-4.27	-4.9/-5.99	-7.55/-9.83	-9.73/-10.67	-12.26/-13.8	-15.4/-16.61	-18.24/-17.65	-18.59/-16.57	-13.98/-13.19	-14.02/-12.81	-17.22/-17.84	-18.61/-17.93	-16.86/-14.43	-13.58/-10.93	-8.84/-7.55	-7.21/-7.1	-6.64/-6.24	-6.43/-5.79
Θ(22.5°)	-1.98/-2.25	-2.34/-1.95	-1.57/-1.71	-1.45/-0.97	-0.88/-1.42	-0.22/-3.76	-4.43/-4.5	-4.09/-3.99	-4.41/-5.53	-7.17/-8.85	-10.27/-11.3	-12.26/-12.19	-11.25/-10.71	-10.31/-10.8	-12.19/-13.69	-13.52/-12.23	-11.65/-11.11	-9.87/-8.36	-6.94/-6.74	-7.17/-7.6	-5.01/-4.36	-3.32/-2.61	-2.86/-2.41	
Θ(30°)	-2.4/-1.68	-1.53/-1.44	-1.62/-2.27	-2.69/-3.09	-3.33/-3.92	-4.14/-8.84	-5.26/-5.95	-6.12/-5.84	-5.26/-7.41	-4.87/-5.59	-6.44/-7.47	-8.99/-14	-12.83/-12.2	-11.46/-13.06	-14.79/-11.33	-8.77/-6	-7.939/-9.08	-10.4/-10.73	-9.9/-9.3	-8.28/-6.9	-4.79/-3.64	-3.69/-4.3	-3.51/-2.79	-3.03/-3.11
Θ(37.5°)	-1.92/-1.62	-1.6/-2.26	-2.34/-1.74	-1.17/-1.9	-3.34/-5.68	-4.73/-8.39	-7.39/-9.52	-4.66/-3.96	-3.46/-3.03	-3.01/-3.67	-4.19/-4.14	-4.71/-4.67	-5.43/-5.96	-6.9/-8.94	-6.78/-9.94	-9.41/-8.95	-9.16/-9.91	-9.41/-8.57	-6.72/-5.58	-5.07/-5.29	-4.95/-4.23	-3.64/-2.97	-1.78/-1.01	-1.38/-1.67
Θ(45°)	-0.36/-0.23	-2.39/-2.95	-1.88/-1.96	-3.47/-4.78	-5.16/-6.8	-3.6/-2.01	-1.28/-1.67	-2.49/-2.58	-1.31/-0.14	0.14/-0.53	-2.15/-3.27	-2.76/-2.63	-5.08/-8.76	-9.66/-8.74	-6.73/-9.4	-3.67/-3.56	-4.28/-4.63	-3.95/-3.77	-2.79/-2.28	-0.92/-0.56	-1.37/-2.58	-2.65/-2.06	-1.28/-0.45	
Θ(52.5°)	-3.53/-3.93	-2.54/-1.81	-2.15/-2.93	-2.34/-1.32	-1.92/-3.51	-6.36/-7.62	-6.23/-4.57	-3.05/-2.62	-1.430/-41	2.012/0.3	-0.23/-0.35	-1.36/-0.45	-2.98/-4.98	-3.95/-3.39	-2.48/-1.46	-1.52/-2.56	-3.88/-4.01	-3.72/-3.32	-2.62/-2.15	-2.05/-1.13	-0.78/-1.16	-1.36/-1.01	-1.17/-2.17	-3.09/-2.94
Θ(60°)	-4.2/-3.47	-3.21/-2.61	-2.67/-1.34	-0.93/-1.73	-3.44/-5.61	-7.12/-9.03	-10.27/-7.47	-4.5/-2.15	-0.93/-0.29	1.423/0.4	-0.50/-0.58	-0.19/-4.27	-4.63/-2.88	-2.89/-2.7	-2.68/-2.58	-2.29/-1.46	-0.4/-0.11	-1.16/-1.97	-1.57/-0.91	-0.46/-0.14	-0.34/-1.99	-3.77/-3	-1.96/-2.54	
Θ(67.5°)	-2.82/-2.16	-2.2/-2.65	-2.51/-2.48	-1.10/-3.2	-5.75/-2.61	-5.1/-7.68	-9.19/-11.06	-8.79/-2.83	0.281/37	1.572/6.4	3.843/3.6	1.181/0.6	1.71/-3.35	-1.660/-28	-1.57/-3.77	-3.28/-1.02	-1.83/-1.79	-1.3/-0.39	0.780/83	0.161/-35	-2.81/-3.27	-2.51/-2.28	-1.71/-1.98	
Θ(75°)	-2.18/-2.76	-1.03/-1.29	-2.88/-0.77	1.24/-19	-0.84/-2.48	-1.35/-0.55	-1.1/-2.46	-4.89/-7.83	-4.04/-0.21	1.852/98	3.172/91	2.781/96	1.420/74	-0.530/15	-0.24/-1.81	-0.79/-1.17	-1.79/-2.17	-2.11/-0.64	-0.11/-0.14	-1.39/-0.33	-3.03/-4.12	-5.56/-3.83	-1.08/-0.53	-1.71/-2.14
Θ(82.5°)	-1.040/03	-0.18/-1.07	-0.660	0.14/-0.64	-1.64/-1.03	0.310/86	0.26/-1.07	-3.19/-3.11	-1.58/-1.13	0.843/22	3.92/78	2.873/01	1.63/1	1.060/53	-1.47/-2.62	-1.59/-1.29	-1.3/-1.31	-2.55/-1.62	-1.72/-3.25	-2.17/-1.97	-3.08/-3.62	-3.19/-3.02	-2.35/-0.45	0.34/-0.47
Θ(90°)	-0.08/-0.93	-0.35/-0.45	-0.59/-0.38	-0.01/-1.88	-4.18/-2.92	-0.350/55	0.4/-0.78	-3.96/-4.26	-1.96/-0.46	-0.761/03	3.32/73	1.82/3	0.960/15	1.961/27	-0.75/-1.45	-2.24/-2.42	-1.52/-1.82	-1.09/-1.54	-0.37/-0.35	-1.08/-0.35	-2.04/-2.29	-2.49/-2.14	-0.250/67	
Θ(97.5°)	0.930/03	1/0.32	-1.41/-0.01	0.17/-0.97	-3.12/-2.76	-0.730/7	-0.19/-2.8	-4.96/-3.62	0.2/94	-0.87/-0.54	1.741/67	1.391/52	1.1/1.19	1.661/26	-0.20/-0.74	-0.130/88	1.611/43	1.552/37	2.493/17	0.80/-39	0.79/-0.17	-0.43/-0.23	-1.33/-0.52	0.981/35
Θ(105°)	-0.15/-1	0.1/-1.56	-5.44/-1.24	-0.51/-1.66	-6.22/-5.8	-1.71/-0.5	-0.82/-3.07	-9.8/-7.07	-1.280/13	-0.36/-0.13	0.450/17	0.930/24	-0.41/05	1.460/51	-0.17/-1.25	-1.09/-0.41	0.871/25	1.110/9	1.52/69	2.450/7	0.661/97	2.511/46	0.36/-0.64	-1.02/-0.55
Θ(112.5°)	-1.73/-4.58	-1.66/-1.4	-6.14/-4.9	-3.07/-6.3	-10.59/-4.69	-0.690/3	-0.153/-4.9	-9.31/-4.74	-1.83/-1.6	-2.67/-1.08	-1.40/-2.77	-1.33/-2.73	-3.39/-0.76	-0.12/-1.25	-1.72/-1.64	-3.28/-1.28	-0.23/-0.24	0.11/-1.08	0.461/7	1.070/18	1.561/08	-0.010/06	-0.46/-4.8	-4.21/-1.27
Θ(120°)	-5.23/-8.78	-3.73/-3.49	-10.49/-7.3	-2.6/-2.38	-6.21/-12.48	-12.75/-9.12	-11.28/-18	-9.04/-3.87	-1.19/-1.61	-3.82/-3.07	-3.43/-5.18	-2.19/-1.85	-4.09/-4.62	-2.67/-2.84	-5.39/-4.77	-4.64/-4.89	-3.83/-3.42	-3.59/-4.31	-2.47/-2.01	-3.39/-2.67	-1.46/-2.03	-3.52/-5.85	-9.13/-10.03	-5.39/-2.55
Θ(127.5°)	-5.48/-8.85	-4.5/-4.8	-9.48/-6.91	-3.17/-2.38	-6.52/-14.23	-5.93/-2.43	-5.6/-8.6	-19.17/-8.78	-3.81/-3.92	-3.25/-4.41	-5.81/-8.3	-6.58/-6.72	-5.24/-23	-3.67/-3.01	-6.57/-11.45	-10.04/-8.37	-7.62/-7.92	-7.56/-5.65	-8.54/-12.67	-14.52/-17.07	-1.85/-6.93			
Θ(135°)	-10.27/-8.51	-5.29/-4.43	-8.67/-12.17	-11.59/-13.1	-17.16/-16.05	-5.98/-2.99	-3.15/-6.4	-5.17/-8.96	-1.26/-4.75	-3.73/-2.37	-3.16/-4.18	-3.12/-3.11	-3.43/-3.07	-3.41/-5.42	-9.83/-7.64	-7.04/-5.52	-4.19/-6.16	-8.8/-9.42	-10.81/-10.72	-14.17/-10.23	-7.26/-7.97	-16.37/-19.3	-10.38/-7.42	
Θ(142.5°)	-6.23/-7.51	-9.64/-8.68	-9/-12.36	-18.01/-13.99	-8.94/-8.28	-8.68/-8.57	-9.69/-12.96	-14.19/-13.44	-12.97/-10.37	-8.5/-9.12	-10.45/-8.03	-6.19/-6.34	-6.45/-7.3	-8.27/-8.58	-10.57/-13.11	-9.65/-8.63	-10.14/-10.88	-9.76/-9.32	-8.53/-8.26	-8.9/-12.65	-18.16/-14.16	-8.98/-7.68	-4.76/-4.28	-7.4/-7.68
Θ(150°)	-9.12/-9.63	-12.03/-12.64	-11.11/-12.55	-17.29/-19	-18.08/-18.5	-16.83/-11.82	-16.01/-11.3	-8.57/-7.65	-7.59/-7.48	-6.58/-6.19	-14.59/-15.32	-11.58/-10.99	-14.76/-18.11	-14.24/-9.54	-9.2/-10.8	-11.36/-13.3	-18.44/-18.81	-18.4/-18.65	-18.17/-16.65	-15.13/-16.24	-17.4/-17.89	-18.79/-18	-15.61/-10.65	
Θ(157.5°)	-9.96/-11.98	-15.9/-10.23	-18.05/-17.26	-14.14/-13.01	-12.85/-13.58	-13.06/-17.34	-9.95/-6.87	-7.34/-6.45	-6.62/-7.17	-7.22/-6.04	-4.6/-3.25	-1.73/-2.7	-17.74/-14.65	-10.64/-9.39	-9.4/-9.89	-7.8/-7.66	-8.3/-9.4	-10.56/-8.66	-7.47/-7.86	-8.95/-9.65	-12.71/-11.01	-9.97/-129		
Θ(165°)	-17.41/-18	-18.45/-18.29	-15.59/-12.19	-10.19/-8.99	-7.56/-6.52	-6.14/-5.79	-5.18/-4.45	-4.15/-4.39	-5/-5.99	-6.83/-6.79	-5.41/-4.27	-3.89/-4.51	-5.75/-7.26	-8.72/-9.47	-10.09/-11.45	-14.39/-17.83	-14.94/-10.74	-8.74/-8.09	-7.32/-6.72	-5.87/-5.65	-6.84/-8.36	-9.48/-10.17	-11.13/-14.02	-17.84/-17.78
Θ(172.5°)	-13.85/-13.43	-13.9/-15.22	-17.95/-16.38	-12.53/-10.48	-9.22/-8.89	-7.75/-8.89	-8.73/-8.78	-9.74/-9.14	-8.64/-7.79	-6.88/-6.11	-5.33/-5.08	-5.22/-6.06	-7.69/-10.53	-15.76/-18.57	-18.42/-14.85	-19.39/-7.31	-4.87/-3.65	-2.89/-2.62	-2.44/-3.29	-2.48/-2.35	-4.41/-6.04	-8.2/-10.96	-17.81/-17.96	-16.61/-15.5
Θ(180°)	-0.175/-19.73	-18.14/-19.02	-18.48/-17.44	-18.78/-18.25	-17.53/-13.17	-10.86/-8.69	-8.86/-8.06	-7.49/-7.67	-8.91/-9.18	-9.88/-10.45	-11.26/-12.54	-15.11/-18.66	-18.95/-17.21	-13.5/-10.87	-9.15/-7.85	-6.97/-6.6	-5.95/-5.45	-5.45/-5.61	-6.23/-7.35	-9.14/-10.28	-13.69/-17.64	-17.87/-18.02		
Freq(Hz)	5.2GPol.	ThetaAnt.1	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
Gain	Φ(0°)Ψ(7.5°)	Φ(15°)Ψ(22.5°)	Φ(30°)Ψ(37.5°)	Φ(45°)Ψ(52.5°)	Φ(60°)Ψ(67.5°)	Φ(75°)Ψ(82.5°)	Φ(90°)Ψ(97.5°)	Φ(105°)Ψ(112.5°)	Φ(120°)Ψ(127.5°)	Φ(135°)Ψ(142.5°)	Φ(150°)Ψ(157.5°)	Φ(165°)Ψ(172.5°)	Φ(180°)Ψ(187.5°)	Φ(195°)Ψ(202.5°)	Φ(210°)Ψ(217.5°)	Φ(225°)Ψ(232.5°)	Φ(240°)Ψ(247.5°)	Φ(255°)Ψ(262.5°)	Φ(270°)Ψ(277.5°)	Φ(285°)Ψ(292.5°)	Φ(300°)Ψ(307.5°)	Φ(315°)Ψ(322.5°)	Φ(330°)Ψ(337.5°)	Φ(345°)Ψ(352.5°)
Θ(0°)	-4.58/-4.12	-4.15/-4.46	-4.91/-4.96	-5.47/-5.78	-5.79/-5.8	-6.84/-6.36	-7.36/-8.84	-8.75/-8.39	-8.44/-8.5	-8.17/-8.7	-7.53/-7	-6.7/-6.5	-6.23/-5.93	-5.55/-5.23	-4.79/-4.71	-5.16/-6.29	-7.19/-7.41	-7.39/-7.28	-8.2/-8.75	-9.64/-10.9	-10.54/-10.35	-9.23/-8.01	-7.77/-7.48	-6.18/-5.28
Θ(7.5°)	-6.14/-5.95	-6.74/-7.02	-7.93/-8.73	-8.78/-8.31	-8.28/-7.93	-8.48/-9.78	-12.94/-14.92	-12.78/-11.06	-10.38/-10.7	-10.93/-10.25	-9.93/-7.81	-7.19/-6.91	-6.82/-6.54	-6.18/-5.3	-4.52/-4.19	-4.73/-6.05	-8.02/-9.01	-7.73/-6.02	-5.39/-5.44	-6.11/-7.05	-7.05/-7.09	-6.8/-6.82	-7.69/-7.81	-7.55/-6.97
Θ(15°)	-7.98/-9.91	-11.52/-11.66	-10.73/-10.21	-9.52/-10.26	-12.76/-10.63	-14.33/-12.5	-15.56/-19.02	-12.96/-9.72	-7.23/-6.33	-6.33/-1.73	-8.11/-8.9	-9.68/-9.79	-9.28/-8.37	-7.15/-6.12	-6.02/-7.08	-4.9/-11.74	-14.01/-12.28	-8.78/-6.17	-5.51/-6.02	-7.75/-8.37	-8.31/-7.4	-6.04/-5.57	-5.78/-6.37	-6.6/-6.74
Θ(22.5°)	-3.38/-4.29	-4.53/-4.93	-6.12/-6.32	-9.55/-9.08	-10.2/-13.46	-18.24/-17.14	-12.18/-11.86	-12.10/-10.67	-7.64/-6.38	-6.19/-4.13	-5.07/-6.8	-6.68/-6.79	-8.67/-7.38	-8.3/-9.77	-11.26/-13.69	-7.28/-18.67	-18.73/-16.46	-12.34/-10.14	-9.26/-10.7	-11.21/-9.87	-7.88/-6.31	-4.63/-3.31	-2.56/-2.86	
Θ(30°)	-7.09/-7.7	-7.82/-7.73	-7.56/-7.7	-8.66/-11.64	-17.71/-17.85	-17.89/-19.32	-18.47/-14.01	-9.86/-7.27	-5.48/-4.55	-4.11/-4.37	-4.94/-5.71	-5.93/-5.96	-6.58/-8.33	-11.38/-14.93	-17.97/-17.93	-17.68/-18.04	-17.89/-17.38	-18.78/-18.81	-15.42/-11.83	-9.05/-8.14	-8.32/-9.46	-9.13/-7.95	-7.38/-7.59	-7.71/-7.05
Θ(37.5°)	-6.18/-5.67	-6.35/-7.21	-7.76/-9.1	-12.67/-18.39	-18.38/-18.74	-17.37/-19.21	-17.66/-13.88	-10.37/-7.32	-5.6/-6.41	-3.76/-3.34	-3.69/-6.45	-4.48/-6.68	-9.05/-12.29	-14.23/-14.85	-16.19/-16.98	-18.97/-18.16	-16.83/-11.59	-8.85/-8.76	-10.71/-10.93	-13.66/-10.63	-8.66/-6.32	-6.7/-7.29	-8.13/-6.73	
Θ(45°)	-8.97/-7.32	-6.27/-8.44	-8.96/-10.62	-12.45/-14.75	-16.12/-16.08	-14.64/-11.32	-6.97/-6.64	-5.62/-4.55	-3.24/-2.5	-3.26/-4.77	-5.38/-7.29	-12.67/-12.68	-15.24/-14.9	-18.57/-16.84	-17.47/-18.36	-17.3/-11.93	-9.19/-10.5	-12.84/-11.59	-10.17/-10.34	-12.5				



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ(22.5°)	-3.03/3.46	-4.36/6.11	-7.71/8.13	-8.06/7.75	-8.67/10.02	-12.14/12.92	-9.74/8.96	-8.61/7.43	-6.13/4.85	-4.76/5.2	-6.35/6.5	-11.44/16.27	-15.36/11.73	-10.71/9.86	-8.89/9.1	-10.61/14.05	-16.46/14.38	-13.61/16.25	-18.92/14.51	-9.14/6.21	-4.63/4.71	-5.53/5.65	-6.1/7.19	-7.54/3.5
Θ(30°)	-1.75/-3.31	-5.01/-3.82	-2.8/-2.59	-3.04/-1.8	-4.82/-6.34	-7.13/-8.9	-9.88/-5.96	-8.34/-6.91	-6/-5.6	-4.61/-4.66	-5.14/-6.25	-7.91/-11.37	-14.51/-11.23	-7.5/-5.64	-5.55/-6.86	-9.08/-10.48	-9.25/-3.7	-7.91/-11.1	-15.57/-13.12	-11.31/-10.98	-9.31/-6.11	-3.79/-3.61	-3.75/-4.1	-3.45/-1.77
Θ(37.5°)	-0.98/-1.26	-0.06/0.31	0.13/-1.01	-2.34/-2.2	-1.96/-1.95	-1.51/-1.79	-2.29/-2.91	-2.29/-2.38	-2.64/-3.65	-5.03/-6.99	-8.54/-7.61	-7.24/-8.79	-9.08/-4.04	-3.37/-2.5	-1.37/-4.99	-6.87/-2.5	-5.96/-5.13	-4.9/-4.79	-5.5/-7.08	-7.65/-7.41	-6.67/-3.61	-0.61/0.69	-0.26/-2.04	-2.69/-1.52
Θ(45°)	0.79/0.72	1.93/1.48	-0.53/-1.48	-1.15/-0.64	-1.36/-3.77	-7.63/-12.25	-13.67/-11.98	-7.96/-4.62	-2.65/-2.42	-3.93/-6.31	-6.21/-5.16	-5.8/-7.54	-6.44/-4.45	-3.8/-4.75	-5.41/-4.02	-2.49/-1.83	-1.48/-0.84	-0.04/-0.02	-0.56/-0.54	-0.69/-1.47	-2.33/-2.85	-2.13/-1.29	-1.41/-1.1	0.79/0.93
Θ(52.5°)	0.36/0.25	0.46/-0.48	-1.68/-2	-2.91/-5.38	-6.64/-4.96	-3.54/-4.18	-7.13/-9.19	-5.27/-6.24	-1.14/-0.43	-0.37/-2.26	-4.34/-4.62	-4.96/-8.57	-4.93/-3.73	-3.92/-3.74	-2.74/-1.89	-1.58/-0.84	-0.22/-0.51	-0.96/-0.95	0.43/2.23	2.82/1.81	0.66/-0.47	-0.80/-39	1.13/-0.05	-0.01/-0.93
Θ(60°)	0.90/-48	-0.83/-1.88	-2.59/-2.93	-0.02/-2.82	-2.05/-3.19	-5.59/-7.63	-5.59/-9.58	-7.42/-3.15	-0.16/-0.5	1.13/-1.3	-5.26/-2.86	-3.46/-9.54	-3.58/-1.57	-3.61/-3.36	-1.04/-4.04	-0.75/-0.89	-1.11/-0.99	-0.04/0.57	0.89/0.61	1.56/2.83	3.02/1.5	-1.66/-1.61	0.21/2.1	1.49/0.87
Θ(67.5°)	-0.21/0.18	-2.38/-2.5	-1.35/-2.11	-1.6/-1.69	-3.33/-5.45	-5.75/-4.7	-5.13/-8.79	-7.89/-3.02	-0.86/-0.26	1.22/1.72	-1.58/-5.57	-2.33/-4.35	-4.18/-1.26	-3.16/-2.68	0.54/0.22	-1.12/-0.98	-2.14/-2.53	-2.26/-1.22	-0.58/-0.95	0.07/1.38	1.31/-0.6	-2.08/-0.4	0.26/-0.33	0.6/0.27
Θ(75°)	0.21/-0.25	-4.5/-1.32	-1.56/-2.23	0.37/-0.41	-3.54/-5.34	-3.64/-2.75	-3.42/-6.31	-10.36/-3.24	0.22/0.62	0.69/1.87	2.23/0.12	-1.21/-0.67	-3.25/-1.81	-0.91/-3.41	-1.21/-0.22	-0.63/-0.33	-1.1/-1.82	-2.04/-2.25	-1.44/-1.43	0.12/0.78	-2.3/-3.21	-0.69/-0.49	-0.19/0.66	0.15/-1.16
Θ(82.5°)	-0.03/-6.68	-2.62/-0.13	-1.98/-0.86	0.08/-0.85	-2.06/-0.47	0.98/1.35	0.99/-1.35	-5.75/-4.19	-0.56/0.77	1.19/1.61	1.51/8.3	1.38/-0.77	-0.10/-2.6	-0.77/-2.49	-0.55/0.5	0.32/-1	-1.45/-0.45	-1.63/-1.58	-2.13/-0.34	-0.03/-0.52	-0.65/-1.56	-1.6/-1.38	0.53/1.27	-3.66/-0.98
Θ(90°)	-2.4/-4.67	-1.25/-0.34	-1.14/-1.32	0.31/-0.09	-2.61/-3.01	-0.13/1.77	0.89/-2.47	-4.47/-1.87	0.87/1.27	1.49/2.72	2.38/2.02	2.28/0.91	0.96/1.8	0.19/-1.99	-1.69/-1.35	0.45/-0.12	0.6/0.41	-2.39/-3.95	-2.29/0.19	0.36/-1.4	-1.93/-1.17	-0.39/-1	-0.98/0.09	-0.30/3.6
Θ(97.5°)	-0.88/-2.7	-1.27/0.49	0.57/-1.2	0.15/-0.97	-2.77/-0.29	2.14/2.61	-0.64/-1.3	-6/-1.58	0.98/0.58	0.96/1.58	2.38/3.13	3.01/1.92	1.09/3.13	0.73/-2.1	-1.95/0.96	0.42/0.3	0.74/-0.69	-3.54/-3.82	-1.13/0.13	-0.96/-2.17	-0.83/-0.15	0.89/-0.24	-0.34/0.76	
Θ(105°)	-2.25/-5.93	-2.62/-0.85	-2.17/-5.64	-0.58/0.12	-3.91/-3.19	-0.93/-4.16	-1.63/-5.35	-7.03/-1.34	0.12/-0.09	0.02/0.8	1.89/2.76	3.06/6.66	1.925/9.9	3.06/6.66	-0.77/0.27	0.92/1.1	1.65/1.41	0.44/1.26	1.35/0.94	-0.58/-1.57	0.05/0.6	1.36/1.35	0.25/0.22	1.78/1.05
Θ(112.5°)	-1.73/-4.44	-3.72/-3.12	-4.84/-4.22	-1.82/-2.68	-10.09/-4.6	-0.24/0.68	-1.46/-11.17	-8.85/-1.77	-0.15/-2.4	-1.36/0.91	-0.28/0.91	2.13/-0.69	0.79/2.76	1.72/-0.67	-2.22/-1.25	0.42/0.69	1.93/2.02	1.37/1.13	0.66/2.68	-1.6/-5.21	1.82/9.3	2.41/0.93	-1.45/-0.7	1.50/7.8
Θ(120°)	-8.17/-8.52	-8.17/-4.94	-5/-11.52	-5.71/-3.95	-6.83/-11.43	-7.45/-5.03	-6.45/-11.57	-8.46/-2.8	-2.02/-4.02	-1.91/-0.27	-2.36/-1.31	0.22/-1.43	0.73/-2.1	1.83/-0.97	-4.12/-4.68	-1.8/-0.05	1.62/0.99	0.72/-3.03	-1.32/0.33	-4.62/-2.48	1.04/1.24	-0.21/-1.84	-5.66/-4.53	-4.66/-6.81
Θ(127.5°)	-7.61/-9.93	-6.28/-4.65	-11.41/-13.52	-6.58/-3.05	-5.34/-8.08	-6.44/-4.16	-10.06/-5.19	-8.69/-6.69	-3.2/-2.5	-3.36/-0.85	-0.14/-5.48	-7.92/-1.95	-1.53/-5.42	-10.55/-5.9	-6.31/-4.87	-5.13/-4.6	-7.12/-11.21	-7.04/-5.49	-7.93/-4.84	-2.92/-3.08	-4.97/-5.37	-6.89/-7.91	-9.72/-12.24	
Θ(135°)	-9.06/-9.49	-5.47/-4.57	-7.4/-9.64	-15.38/-16.07	-7.73/-5.41	-6.01/-6.57	-6.13/-4.96	-4.36/-6.91	-13.91/-6.32	-2.24/-1.34	-4.58/-3.97	-0.3/-0.73	-3.39/-3.5	-1.63/-3.08	-6.1/-7.47	-5.48/-11.76	-11.05/-8.94	-11.07/-8.04	-10.14/-13.03	-9.69/-8.36	-11.5/-11.31	-10.66/-10.66	-12.64/-14.22	-19/-10.01
Θ(142.5°)	-7.31/-9.05	-9.6/-8.97	-12.75/-15.73	-18.96/-14.94	-9.18/-7.28	-7.27/-8.55	-7.04/-6.29	-7.62/-10.61	-17.98/-13.29	-5.2/-2.62	-2.54/-3.37	-3.3/-3.34	-4.19/-4.91	-4.88/-8.21	-13.25/-13.61	-16.5/-9.48	-4.66/-6.06	-8.7/-8.35	-8.63/-7.36	-7.69/-15.66	-17.19/-13.67	-6.68/-5.46	-8.23/-8.56	
Θ(150°)	-10.22/-14.8	-17.49/-14.6	-11.42/-12.7	-14.97/-17.33	-15.41/-15.98	-19.33/-19.01	-8.31/-9.26	-10.83/-9.32	-7.03/-6.55	-5.05/-6.36	-10.86/-14.38	-10.74/-13.42	-13.47/-7.06	-4.65/-6.68	-11.21/-14.2	-14.43/-11.8	-9.03/-9.27	-15.15/-16.63	-11.14/-8.33	-7.81/-9.74	-13.44/-12.05	-11.08/-10.19		
Θ(157.5°)	-3.75/-5.77	-10.33/-12.79	-11.55/-11.35	-13.05/-16.28	-18.33/-19.27	-18.95/-12.85	-8.88/-6.21	-4.86/-3.89	-3.19/-3.11	-2.83/-2.82	-10.49/-3.08	-2.38/-2.57	-4.24/-8.6	-16.62/-18.37	-18.48/-18.62	-18.62/-12.99	-7.31/-5.55	-6.27/-8.66	-10.27/-10.21	-8.85/-9.07	-11.13/-12.42	-11.26/-8.35	-5.33/-3.86	
Θ(165°)	-15.2/-18.04	-17.2/-14.44	-15.43/-16.22	-15.76/-17.16	-18.59/-16.64	-12.15/-8.52	-6/-4.19	-3.33/-2.81	-2.37/-2.4	-2.47/-2.69	-3.04/-3.61	-3.98/-3.94	-3.82/-4.4	-5.41/-6.78	-8.13/-10.08	-13.44/-18.02	-18.93/-11.19	-7.67/-5.99	-5.69/-6	-6.62/-7.09	-7.58/-9.65	-11.51/-12.04	-11.39/-11.34	-11.98/-12.09
Θ(172.5°)	-18.31/-17.34	-15.57/-17.73	-19.33/-19.17	-18.62/-17.77	-13.93/-10.46	-8.51/-7.2	-6.24/-5.08	-4.35/-3.66	-2.42/-1.71	-1.07/-1.1	-1.68/-2.85	-4.42/-5.45	-5.86/-6.06	-6.61/-8.21	-11.69/-19.02	-19.12/-16.1	-11.44/-8.57	-6.47/-4.51	-3.12/-2.14	-1.21/-1.07	-1.74/-3.11	-4.65/-6.26	-8.42/-11.79	-17.81/-18.02
Θ(180°)	-14.81/-18.08	-18.93/-18.97	-18/-18.3	-17.7/-16.46	-17.49/-18.92	-18.38/-18.11	-17.08/-14.66	-13.31/-12.79	-12.08/-10.98	-9.61/-7.92	-6.85/-6.46	-7.31/-8.42	-9.31/-9.84	-9.99/-9.98	-11.57/-15.6	-18.67/-18.08	-13.87/-11.91	-11.2/-10.06	-8.89/-8	-7.16/-7.84	-9.42/-11.37	-13.63/-14.79	-14.45/-14.43	-14.54/-15.04
Freq(Hz)	5.65GPol	ThetaAnt. 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-3.51/-2.85	-3.19/-4.02	-4.93/-5.35	-5.49/-5.43	-6.13/-6.95	-8.25/-9.81	-11.31/-13.58	-14.28/-16.43	-15.88/-13.17	-10.43/-8.5	-7.01/-6.04	-5.72/-5.08	-4.4/-3.66	-3.12/-2.97	-3.04/-3.33	-3.72/-3.9	-4.3/-5	-6.41/-7.54	-9.84/-12.05	-13.44/-14.06	-8.77/-7.33	-4.64/-5.65	-5.28/-4.57	
Θ(7.5°)	-4.09/-3.47	-3.14/-3.32	-3.34/-3.13	-3.01/-3.11	-3.92/-4.83	-5.76/-7.9	-9.07/-13.04	-11.51/-18.63	-17.11/-12.36	-9.25/-8.7	-5.41/-4.6	-4.4/-4.74	-5.29/-5.41	-5.61/-5.96	-6.64/-7.47	-8.57/-9.98	-11.94/-13.35	-14.14/-14.56	-14.71/-12.75	-13.1/-11.25	-9.53/-8.44	-7.15/-6.37	-5.89/-5.43	-4.98/-4.42
Θ(15°)	-5.01/-4.58	-4.55/-4.75	-5.53/-5.87	-6.73/-7.63	-9.4/-10.47	-10.73/-10.51	-12.51/-16.18	-18.11/-17.94	-16.23/-12.14	-8.95/-6.1	-5.24/-4.83	-5.16/-5.72	-6.62/-7.41	-8.7/-9.56	-10.54/-10.3	-9.78/-10.44	-12.79/-15.85	-16.75/-13.85	-11.16/-9.07	-8.11/-6.97	-8.16/-8.62	-8.27/-7.51	-6.7/-5.69	-4.95/-2.8
Θ(22.5°)	-7.44/-9.1	-9.66/-10.82	-10.85/-12.14	-15.84/-18.12	-19.06/-18.52	-19.6/-18.67	-19.04/-18.06	-17.82/-18.39	-16.74/-16.12	-14.34/-10.78	-8.43/-8.3	-9.51/-9.85	-9.99/-11.01	-12.49/-12.33	-10.26/-8.46	-7.3/-7.35	-8.54/-19.4	-13.7/-15.51	-14.2/-12.28	-9.13/-6.69	-6.46/-7.61	-9.02/-8.99	-7.75/-6.38	-5.8/-6.36
Θ(30°)	-9.85/-14.24	-12.29/-14.73	-12.99/-12.5	-13.03/-16.76	-17.7/-18.81	-19.34/-19.26	-17.46/-17.51	-12.75/-10.75	-10.47/-10.47	-9.52/-8.86	-8.24/-7.51	-6.85/-7.32	-9.03/-13.43	-18.42/-12.29	-10.26/-11.74	-13.61/-13.51	-11.57/-10.62	-10.33/-12.27	-13.74/-10.71	-7.69/-6.96	-7.13/-7.67	-7.37/-11.56	-12.47/-9.85	-7.09/-7.02
Θ(37.5°)	-4.44/-6.54	-7.13/-5.51	-6.36/-11.84	-19.13/-18.69	-19.05/-19.2	-13.81/-10.14	-8.41/-6.7	-5.57/-4.86	-4.37/-4.9	-5.14/-5.14	-7.24/-12.05	-14.76/-11.7	-11.03/-15.66	-17.61/-15.99	-15.36/-14.32	-13.05/-10.65	-7.8/-7.16	-7.19/-5.91	-4.64/-3.32	-2.95/-4.56	-8.78/-12.39	-10.63/-10.56	-11.06/-7.39	-4.67/-3.15
Θ(45°)	-5.51/-5.23	-6.67/-9.16	-9.32/-9.38	-11.64/-13.42	-17.78/-18.55	-17.65/-17.09	-13.06/-9.15	-6.35/-4.32	-2.88/-2.98	-4.7/-5.62	-6.28/-8.88	-11.45/-11.98	-15.54/-18.77	-17.46/-18.63	-17.91/-9.04	-6.05/-6.8	-7.72/-6.96	-5.25/-4.55	-4.91/-6.17	-7.21/-7.5	-7.71/-10.5	-13.58/-12.74	-10.96/-8.47	-6.49/-6.41
Θ(52.5°)	-8/-7.97	-7.28/-10.42	-11.03/-9.16	-10.27/-10.76	-13.24/-14.15	-13.21/-16.21	-18.1/-13.44	-7.25/-3.7	-3.9/-3.12	-4.45/-6.68	-9.36/-11.9	-10.46/-12.44	-16.98/-17.7	-19.05/-16.78	-18.91/-11.92	-12.39/-12.55	-10.73/-13.1	-18.95/-17.39	-15.89/-13.67	-12.23/-16.9	-18.58/-17.17	-10.36/-12.99	-13.39/-11.76	-7.14/-6.94
Θ(60°)	-3.8/-3.73	-4.08/-9.34	-13.6/-7.67	-8.45/-11.97	-18.63/-15.42	-13.46/-17.86	-17.88/-15.84	-9.67/-6.33	-3.73/-2.46	-2.79/-3.12	-5.14/-7.79	-9.53/-13.27	-15.71/-19.1	-17.9/-18.73	-17.94/-11.58	-9.06/-7.86	-10.65/-13.75	-13.38/-10.93	-8.14/-9.91	-14.98/-17.05	-11.1/-10.06	-11.66/-15.01	-17.49/-12.73	-4.61/-2.14
Θ(67.5°)	-5.23/-8.78	-13.59/-12.19	-9.65/-11.47	-18.6/-19.46	-15.12/-16.22	-17.9/-18.36	-16.16/-15.22	-16.98/-18.75	-12.17/-7.56	-6.78/-10.01	-9.55/-8.8	-11.69/-18.51	-17.75/-18.3	-16.9/-13.4	-9.87/-9.07	-12.24/-16.91	-12.91/-9.88	-8.77/-8.85	-12.29/-15.6	-18.05/-15.35	-17.91/-16.35	-13.9/-9.73	-5.06/-4.07	
Θ(75°)	-13.46/-13.56	-7.78/-5.54	-6.43/-7.94	-18.5/-18.33	-13.28/-10.4	-14.49/-14.37	-19.13/-18.93	-10.98/-9.68	-1.38/-10.07	-6.85/-7.42	-13.16/-17.83	-14.71/-14.49	-13.71/-12.1	-19.11/-12.82										



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ(67.5°)	-3.77/-3.49	-2.87/-2.97	-3.68/-3.01	-2.38/-3.11	-4.47/-5.65	-8.85/-15.2	-11.93/-5.32	-2.66/-2.38	-3.96/-7.24	-8.67/-9.42	-6.68/-3.91	-2.5/-4.2	-4.8/-1.01	-0.23/-1.08	-0.96/-3.81	-5.02/-8.25	-13.55/-17.03	-16.12/-12.33	-9.32/-6.77	-5.4/-1.587	-7.29/-7.47	-7.18/-5.79	-4.03/-1.32	-1.77/-1.66
Θ(75°)	-0.63/-1.82	-3.5/-3.13	-3.06/-2.44	-4.2/-4.55	-3.2/-2.02	-3.17/-8.12	-16.14/-9.59	-6.93/-5.74	-5.27/-1.72	-10.8/-14.33	-17.84/-10.99	-7.65/-8.36	-5.88/-5.41	-4.54/-3.95	-5.22/-5.5	-6.31/-7.07	-9.05/-15.77	-18.21/-17.32	-13.95/-8.58	-8.56/-10.16	-13.89/-15.01	-8.6/-3	0.79/-1.55	1.13/-0.6
Θ(82.5°)	-2.69/-2.49	-3.8/-3.46	-2.52/-2.09	-2.92/-3.44	-3.34/-4.47	-5.2/-7.23	-11.3/-14.99	-11.0/-9.07	-8.66/-7.97	-7.76/-11.1	-18.6/-14.63	-12.2/-19.08	-7.63/-6.26	-3.43/-4.79	-4.46/-5.16	-3.04/-3.36	-10.44/-9.44	-10.56/-13.64	-18.13/-15.12	-11.34/-6.02	-2.29/-0.47	-1.1/-1.42		
Θ(90°)	-1.91/-1.1	-1.05/-3.56	-3.36/-3.2	-4.52/-5.72	-3.78/-1.51	-1.95/-4.9	-9.85/-19.08	-18.49/-9.88	-6.83/-9.3	-11.51/-7.36	-8.2/-18.12	-18.91/-14.34	-3.43/-1.75	-1.42/-4.83	-10.55/-8.54	-4.77/-3.27	-6.41/-9.23	-12.13/-10.61	-10.82/-11.97	-8.74/-11.29	-14.02/-13.08	-6.98/-4.25	-1.87/-0.15	0.43/-0.8
Θ(97.5°)	-0.27/-0.57	0.5/-1.19	-2/-2.02	-2.05/-2.76	-1.39/-2.05	-4.52/-4.68	-5.45/-7.61	-10.42/-11.77	-12.82/-13.11	-12.18/-10.57	-8.2/-9.89	-13.89/-6.37	-2.82/-1.37	-5.31/-11.49	-14.52/-13.1	-10.69/-9.37	-8.09/-11.67	-7.8/-6.05	-7.56/-6.8	-7.03/-6.41	-5.91/-5.43	-3.78/-3.67	-5.54/-1.26	1.01/-0.42
Θ(105°)	-3.69/-2.52	0.28/-0.18	-0.54/-0.44	-3.25/-5.26	-6.26/-3.47	-1.85/-2.7	-4.53/-6.27	-6.85/-9.16	-14.14/-13.2	-10.79/-6.85	-8.66/-16.11	-16.07/-14.39	-6.24/-13.1	-15.51/-17.54	-13.25/-10.95	-18.81/-9.32	-5.88/-5.41	-7.81/-18.67	-11.78/-8.06	-3.79/-2.6	-2.43/-4	-2.89/-1.01	-3.99/-1.87	
Θ(112.5°)	-3.63/-4.91	-5.55/-3.55	-0.8/-1.1	-0.07/-1.34	-3.57/-5.31	-6.94/-7.9	-6.81/-5.95	-7.07/-11.89	-18.56/-17.94	-10.63/-7.28	-6/-14.29	-15.9/-5.21	-1.250/5.5	-4.03/-10.8	-8.34/-17.52	-18.05/-18.01	-14.29/-11.3	-9.81/-11.12	-19.14/-17.42	-12.07/-6.81	-4.53/-2.13	-0.41/-0.76	-3.02/-6.14	-4.25/-3.26
Θ(120°)	-3.27/-4.63	-6.34/-5.99	-4.23/-4.54	-4.61/-8.64	-10.01/-11.5	-10.97/-8.02	-7.11/-9.38	-12.34/-13.81	-15.08/-12.87	-17.99/-18.92	-14.88/-18.9	-15.08/-13.58	-2.85/-3.56	-8.75/-7.59	-19.53/-8.42	-17.89/-16.55	-18.29/-9.19	-10.68/-18.42	-17.55/-12.62	-8.73/-9.19	-4.27/-0.6	-0.82/-1.14	-0.06/-0.1	-5.79/-3.27
Θ(127.5°)	2.08/0.55	1.04/-0.13	0.41/-1.4	-6.03/-12.5	-18.45/-18.42	-15.23/-15.55	-11.95/-8.67	-8.48/-8.61	-10.96/-18.96	-18.94/-10.63	-7.89/-14.63	-13.88/-10.63	-8.72/-4.3	-7.74/-4.57	-5.95/-19.26	-7.79/-17.43	-11.84/-18.09	-9.71/-9.28	-9.36/-6.44	-7.02/-8.18	-4.49/-0.01	-0.2/-0.83	2.03/-4.5	0.96/-0.71
Θ(135°)	-2.8/-5.08	-5.44/-0.53	-0.11/-0.38	0.3/-0.84	-1.51/-3.93	-6.68/-9.77	-14.24/-17.01	-12.78/-12.15	-14.53/-14.29	-13.78/-8.46	-4.04/-1.45	-1.460/3.4	2.92/-0.21	-1.64/-6.31	-11.63/-6.87	-14.56/-8.52	-13.67/-13.71	-18.74/-17.86	-14.81/-16.96	-14.72/-9.11	-2.34/-1.86	-0.24/-6.67	-7.71/-4.22	-9.39/-6.29
Θ(142.5°)	-3.83/-7.98	-9.84/-16.04	-3.65/-4.27	-2.21/-0.9	-0.61/-0.78	-2.91/-6.93	-12.55/-18.48	-17.38/-12.06	-12.45/-13.72	-15.07/-13.11	-8.03/-5.2	-5.59/-8.65	-13.28/-11.1	-7.33/-8.03	-6.8/-4.68	-7.15/-10.48	-3.93/-2.47	-4.72/-5.75	-7.14/-10.47	-8.1/-2.15	0.52/-0.81	-2.38/-2.98	-5.87/-6.22	-10.17/-8.35
Θ(150°)	-0.56/-0.1	-1.72/-2.53	-2.04/-2.91	-5.15/-3.6	-5.14/-4.6	-3.93/-4.7	-4.92/-6.23	-8.19/-10.08	-12.76/-13.13	-17.5/-16.52	-8.86/-7.86	-12.81/-12.59	-14.39/-11.38	-4.2/-3.5	-5.34/-5.76	-5.03/-3.28	-0.510/67	0.28/-0.39	-1.18/-3.03	-4.36/-2.45	0.18/-1.35	1.77/-2.3	2.97/-2.56	1.16/-0.94
Θ(157.5°)	2.92/2.7	2.030/2.5	-2.32/-4.34	-6.62/-7.09	-6.87/-7.38	-8.24/-10.44	-15.16/-17.67	-17.28/-13.17	-10.12/-8.19	-6.99/-6.7	-7.19/-8.7	-10.6/-9.98	-6.73/-3.95	-3.04/-3.8	-4.53/-4.17	-3.12/-2.01	-1.15/-1.02	-1.4/-2.61	-4.42/-7.42	-9.8/-9.85	-6.64/-2.58	0.582/89	4.11/-4.38	3.973/52
Θ(165°)	3.653/2.7	2.710/65	-2.02/-4.72	-7.65/-10.17	-11.48/-11.92	-10.97/-9.95	-9.12/-7.74	-6.25/-4.55	-3.09/-1.83	-1/-0.24	0.07/-0.04	-0.48/-1.13	-1.67/-2.02	-1.64/-0.96	0.020/0.3	-0.36/-1.24	-2.61/-4.45	-6.61/-9.47	-12.36/-11.88	-6.81/-1.77	1.332/97	3.543/91	4.074/0.1	
Θ(172.5°)	-4.73/-4.46	-5.49/-10	-15.36/-16.52	-17.48/-15.01	-15.59/-16.89	-18.36/-18.2	-14.62/-10.35	-6.98/-4.91	-3.6/-2.55	-1.79/-0.99	-0.49/-0.23	0.090/0.14	0.170/0.06	0.01/-0.15	-0.64/-1.58	-3.05/-4.53	-6.31/-8.73	-9.14/-7.13	-11.97/-10.7	-14.7/-13.04	-3.59/-4.19	-5.75/-5.6	-5.02/-5.24	
Θ(180°)	-6.64/-5.84	-6.01/-4.65	-3.34/-3.02	-3.22/-3.62	-4.24/-4.99	-6.3/-7.75	-9.9/-12.93	-17.55/-18.87	-16.39/-13.3	-10.61/-8.19	-6.23/-4.81	-3.75/-2.98	-2.47/-2.43	-2.24/-2.24	-2.18/-2.38	-2.72/-3.24	-3.92/-4.83	-5.97/-7.08	-7.87/-8.64	-9.34/-9.47	-9.72/-11.23	-13.41/-18.47	-16.41/-11.64	-9.35/-8.01
Freq(Hz)	5.2GPol.	ThetaAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-11.72/-18.71	-19.23/-17.87	-12.18/-8.82	-7.38/-6.37	-5.12/-4.5	-3.74/-3.11	-2.54/-2.21	-2.4/-2.51	-2.92/-3.53	-4.6/-5.92	-7.32/-8.49	-10.23/-12.64	-15.95/-18.84	-18.6/-15.9	-12.23/-10.21	-8.46/-6.55	-5.5/-4.78	-4.28/-3.8	-3.61/-3.35	-3.19/-2.91	-2.69/-2.9	-3.4/-3.83	-4.47/-5.5	-7.17/-9.57
Θ(7.5°)	-14.14/-19.17	-18.84/-16.04	-12.7/-9.04	-7.82/-6.66	-5.22/-3.84	-2.08/-1.36	-0.54/-0.19	-0.32/-0.29	-0.502/-0.89	-1.76/-3.24	-4.96/-6.89	-8.83/-11.18	-15.15/-18.42	-17.49/-18.27	-16.14/-12.72	-9.87/-6.1	-6.1/-4.66	-3.44/-2.5	-1.91/-1.63	-1.5/-1.41	-1.21/-1.62	-2.18/-3.01	-4/-5.25	-7.25/-10.43
Θ(15°)	-12.81/-17.85	-17.89/-17.88	-16.77/-10.55	-6.77/-10.42	-3.27/-1.53	-0.83/-0.4	0.93/-0.14	1.14/-1.12	0.950/-7.1	0.11/-0.75	-2.11/-3.94	-6.4/-9.95	-13.75/-17.25	-16.88/-12.74	-10.58/-9.9	-8.93/-7.76	-6.16/-4.48	-3.2/-2.15	-1.37/-0.59	-1.30/-1.07	-1.45/-2.04	-3.44/-4.57	-7.01/-10.07	
Θ(22.5°)	-18.81/-19.4	-18.8/-16	-8.3/-4.08	-2.18/-1.77	-1.13/-1.12	-1.12/-0.9	-0.93/-0.9	-1.09/-1.35	-1.78/-2.24	-2.67/-2.96	-3.44/-4.65	-7.29/-13.52	-18.99/-15.21	-13.77/-13.19	-11.83/-11.15	-11.4/-10.6	-8.07/-5.66	-4.37/-4.17	-5.58/-7.66	-9.19/-9.21	-7.13/-5.14	-4.22/-4.45	-5.51/-7.3	-10.24/-15.01
Θ(30°)	-15/-18.57	-17.81/-16.76	-9.1/-3.62	-0.960/-2	1.552/-11	2.11/-79	0.63/-107	-0.81/-1.33	-1.98/-2.98	-4.35/-5.31	-5.44/-4.83	-11.9/-14.7	-18.94/-18.17	-14.5/-12.58	-9.81/-6.76	-6.53/-12.74	-16.61/-8.9	-10.81/-13.73	-8.8/-7.14	-8.31/-8.82	-17.1/-5.75	-4.67/-4.3	-4.76/-4.72	
Θ(37.5°)	-10.71/-18.69	-16.34/-13.03	-9.08/-5.07	-2.51/-1.11	0.64/-99	2.542/64	1.921/08	-0.01/-0.92	-1.99/-3.17	-4.63/-7.01	-8.87/-8.67	-7.87/-8.46	-13.75/-17.19	-12.77/-15.15	-9.08/-9.52	-4.26/-6.35	-3.84/-0.6	-2.64/-0.6	-15.31/-13.3	-15.75/-15.39	-8.94/-7.47	-5.76/-5.42	-5.66/-6.97	
Θ(45°)	-10.83/-11.71	-12.25/-9.73	-8.01/-5.33	-2.65/-0.49	0.93/-1.52	1.972/0.4	1.851/56	0.990/3	-0.6/-1.75	-3.12/-5.88	-9.06/-9.18	-7.51/-6.33	-9.26/-17.78	-18.95/-12.37	-11.03/-8.73	-7.56/-5.18	-2.31/-4.8	-10.61/-12.5	-14.76/-10.28	-9.81/-15.1	-14.48/-14.11	-14.95/-13.5	-14.56/-10.87	-8.87/-10.14
Θ(52.5°)	-5.9/-8.95	-8.87/-11.62	-10.78/-31.1	-6.65/-3.36	-0.371/66	2.732/61	1.910/78	-0.81/-3.17	-5.3/-5.9	-5.59/-6.95	-8.65/-8.28	-4.33/-2.95	-4.8/-11.83	-18.14/-11.55	-17.22/-18.19	-11.39/-7.65	-11.4/-11.37	-16.43/-15.82	-15.32/-14.43	-10.78/-9.3	-10.17/-9.59	-6.94/-11.27	-10.86/-11.27	-9.6/-6.79
Θ(60°)	-9.77/-9.04	-6.18/-7.3	-6.07/-4.92	-2.320/73	1.632/-43	3.062/9	1.960/3	-1.93/-4.51	-6.96/-11.29	-10.73/-8.84	-8.15/-10.5	-9.36/-4.88	-7.01/-12.84	-19.07/-11.59	-18.92/-18.87	-9.54/-9.05	-15.39/-11.95	-18.08/-14.18	-12.56/-11.48	-8.49/-6.37	-5.51/-4.71	-4/-6.08	-8.48/-8.38	
Θ(67.5°)	-9.87/-9.57	-7.44/-8.07	-7.11/-5.8	-3.38/-0.82	0.81/-2.19	2.592/0.5	1.060/65	-0.44/-1.53	-3.5/-6.24	-7.23/-7.74	-10.49/-14.47	-6.9/-5.98	-7.34/-13.65	-11.99/-8.54	-10.99/-15.74	-18.14/-12.93	-13.79/-11.64	-11.42/-15.12	-14.15/-16.11	-9.19/-12.06	-8.93/-6.52	-4.06/-5.14	-4.11/-6.68	-11.02/-9.64
Θ(75°)	-4.69/-3.3	-3.08/-5.81	-9.69/-6.61	-4.22/-1.19	-0.90/-13	0.890/94	0.900/3	-0.54/-0.94	-3.51/-8.9	-18.61/-11.37	-11.43/-18.62	-6.8/-4.89	-41/-143	-14.99/-7.13	-7.46/-13.91	-16.38/-14.47	-12.35/-14.11	-10.87/-9.11	-17.99/-14.71	-11.95/-8.88	-8.01/-5.9	-4.02/-4.27	-7.11/-8.65	-8.12/-4.45
Θ(82.5°)	-2.93/-1.56	-0.91/-3.57	-3.44/-1.86	0.170/5	-0.23/-0.14	0.02/-0.1	-1.16/-1.69	-0.92/-0.85	-1.44/-5.83	-16.37/-11.7	-9.45/-16.92	-11.92/-6.68	-4.64/-10.09	-12.03/-7.3	-5.47/-9.57	-18.61/-12.76	-11.3/-16	-17.84/-12.64	-9.2/-5.88	-3.04/-2.25	-1.17/-2.45	-3.11/-4.37	-2.64/-3.19	-8.19/-3.22
Θ(90°)	-3.28/-2.4	-0.33/-0.8	0.06/-2.15	-3.1/-2.61	-2.84/-2.52	-2.66/-2.72	-3.81/-5.4	-7.09/-7.83	-10.82/-16.28	-19.08/-13.46	-12.53/-18	-8.84/-9.15	-7.05/-18.13	-8.91/-4.27	-8.86/-11.06	-13.64/-12.73	-12.97/-12.36	-14.62/-9.7	-6.35/-4.11	-1.3/-0.44	-3.15/-1.44	-3.17/-3.42	-4.88/-7.18	-11.85/-10.11
Θ(97.5°)	-0.96/-1.63	-0.48/-1.23	-5.29/-18.57	-11.36/-4.77	-5.06/-3.72	-5.97/-8.39	-13.12/-16.47	-12.54/-9.29	-9.31/-11.09	-19.25/-0.98	-7.88/-15.26	-18.56/-8.91	-6.85/-6.76	-11.68/-6.28	-6.24/-7.3	-8.9/-4.82	-6.66/-1.74	-7.3/-4.47	-1.65/-0.12	0.630/34	0.31/-0.72	-1.12/-3.11	-4.34/-3.03	-0.9/-2.42
Θ(105°)	-2.91/-2.74	-1.5/-3.48	-6.94/-4.7	-4.26/-3.21	-5.9/-5.92	-3.98/-3.78	-4.78/-6.24	-7.3/-7.09	-8.52/-16.2	-11.23/-14.63	-12.36/-15.65	-11.86/-12.95	-7.17/-10.81	-8.82/-6.38	-10.28/-9.97	-10.22/-8.85	-3.85/-5.03	-8.9/-1.02	-0.26/-0.52	1.510/78	0.34/-1.92	-3.91/-3.55	-4.38/-1.78	-2.83/-2.77
Θ(112.5°)	-3.77/-6.21	-5.54/-3.91	-5.29/-5.81	-8.93/-8.04	-8.23/-7.58	-6.99/-9.86	-12.91/-12.68	-9.7/-9.05	-8.11/-17.98	-10.99/-9.38	-7.15/-12.44	-4.89/-8.77	-10.97/-12.35	-9.91/-13.32	-15.33/-18.52	-10.06/-5.17	-2/-5.57	-3.540/61	-1.68/-3.85	0.320/08	-0.53/-8.3	-7.06/-8.98	-5.3/-2.59	-12.34/-8.8
Θ(120°)	-5.21/-5.01	-4.02/-4.24	-7.53/-11.68	-11.81/-10.82	-8.28/-5.31	-5.29/-4.27	-3.98/-4.25	-4.61/-3.9	-5.54/-7.16	-9.95/-11.82	-12.11/-18.49	-13.35/-8.3	-4.93/-14.28	-18.49/-12.38	-2.97/-17.02	-4.89/-2	0.89/-6.23	-5.80/-32	-0.35/-3.37	0.77				



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ(120°)	-1.71/-2.11	-3.07/-3.6	-4.83/-1.99	-3/2-18	-3.29/-5.18	-8.63/-14.33	-16.88/-13.61	-12.64/-17.58	-18.1/-18.11	-9.98/-4.55	-1.83/-3.97	-5.4/-2.34	-2.87/-1.5	-4.95/-3.67	-11.42/-11.3	-18.93/-17.9	-13.16/-13.52	-16.42/-10.95	-8.66/-5.59	-4.36/-6.62	-3.97/-3.48	-3.49/-4.99	-0.34/-3.56	-4.22/-0.65
Θ(127.5°)	0.2/-1.23	-0.84/-0.95	-0.66/-1.67	-1.62/-4.87	-5.74/-5.75	-11.96/-16.28	-11.84/-9.05	-6.24/-7.85	-11.03/-14.55	-11/-5.83	-3.32/-4.06	-11.28/-16.82	-18.2/-18.82	-18.49/-10.87	-1.69/-15.2	-9.94/-8.59	-17.4/-10.88	-13.03/-4.74	-6.27/-6.33	-3.54/-4	-4.59/-3.69	-16.75/-5.66	-0.32/-34	-0.860-83
Θ(135°)	1.37/-1.53	-4.09/-14.15	-12.63/-6.3	-5.51/-4.29	-3.21/-2.98	-4.06/-8.63	-14.29/-13.4	-7.31/-7.85	-7.39/-9.05	-8.62/-4.3	-7.69/-2.32	-10.81/-1.71	0.750/-27	-10.89/-6.56	-10.88/-7.76	-8.41/-10.61	-7.57/-14.59	-9.73/-6.52	-8.77/-8.03	-4.37/-2.79	-4.18/-2.25	-4.04/-6.27	0.732/17	1.761/96
Θ(142.5°)	-2.19/-1.71	-2.53/-3.88	-4.18/-3.09	-4.19/-5.04	-3.55/-2.58	-2.53/-3.72	-6.54/-11.87	-14.56/-11.33	-10.03/-12.08	-15.19/-18.22	-17.2/-13.77	-13.29/-6.46	-2.89/-5.25	-6.78/-6.48	-10.86/-11.61	-8.99/-12.73	-16.05/-8.64	-9.76/-11.9	-12.42/-13.33	-17.08/-5.88	-1.51/-0.49	0.07/-2.66	-4.31/-5.18	-7.68/-4.69
Θ(150°)	-4.93/-3.92	-4.12/-4.28	-4.57/-5.87	-7.01/-8.69	-8.82/-6.36	-4.75/-4.27	-5.27/-5.3	-11.43/-16.32	-18.08/-15.67	-12.33/-9.21	-7.39/-8.35	-15.73/-15.5	-8.01/-4.74	-2.22/-1.34	-1.03/-1.14	-1.41/-2.96	-6.08/-7.92	-7.97/-9.03	-7.78/-4.92	-2.03/-0.44	0.310/92	1.241/35	0.37/-13.13	
Θ(157.5°)	2.93/2.61	1.96/1.6	-0.12/-2.46	-8.83/-7.08	-8.93/-8.57	-7.62/-8.02	-9.17/-11.49	-13.93/-14.32	-12.71/-10.43	-9.43/-9.87	-9.43/-11.03	-10.39/-9.7	-4.19/-0.92	0.14/-1.16	-4.19/-6.81	-5.94/-4.53	-9.11/-11.21	-10.28/-10.78	-11.89/-10.7	-6.04/-2.71	0.17/2.15	3.53/4.23	3.82/3.06	
Θ(165°)	2.78/2.83	2.88/1.62	-0.95/-2.94	-4.36/-5.69	-7.03/-7.55	-7.05/-6.81	-6.23/-5.04	-3.82/-2.87	-2.15/-1.43	-0.95/-0.89	-1.28/-2.14	-3.65/-5.32	-6.05/-5.55	-4.44/-3.38	-2.53/-1.79	-1.23/-1.09	-1.57/-2.94	-5.38/-8	-10.62/-13.38	-15.14/-12.67	-7.33/-2.03	1/2.94	3.81/3.74	3.47/3.07
Θ(172.5°)	-1.23/-2.03	-2.74/-5.46	-9.09/-10.78	-12.48/-14.52	-14.49/-12.57	-10.03/-8.28	-6.74/-9.52	-5.22/-4.74	-4.38/-4.16	-4.2/-4.19	-4.24/-4.34	-4.66/-4.87	-5.11/-5.28	-5.37/-5.65	-6.22/-6.96	-8.18/-9.64	-11.21/-13.41	-17.87/-18.54	-19.06/-18.09	-14.63/-11.13	-7.73/-4.82	-2.96/-2.43	-2.39/-2.22	-1.5/-1.21
Θ(180°)	-8.07/-7.8	-7.56/-6.6	-6.67/-6.89	-7.52/-10.32	-12.46/-17.66	-18.93/-16.04	-12.99/-12.11	-11.65/-11.58	-10.81/-9.71	-9.62/-9.04	-9/-6.2	-10.66/-11.04	-11.81/-12.93	-13.6/-13.65	-13.5/-14.2	-15.86/-17.78	-18.7/-17.83	-18.37/-18.86	-19.05/-18.23	-18.64/-19.18	-16.66/-14.97	-13.19/-16.29	-18.32/-17.94	-12.34/-8.21
Freq(Hz)	5.6GPol	ThetaAnt. 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)Φ(7.5°)	Φ(15°)Φ(22.5°)	Φ(30°)Φ(37.5°)	Φ(45°)Φ(52.5°)	Φ(60°)Φ(67.5°)	Φ(75°)Φ(82.5°)	Φ(90°)Φ(97.5°)	Φ(105°)Φ(112.5°)	Φ(120°)Φ(127.5°)	Φ(135°)Φ(142.5°)	Φ(150°)Φ(157.5°)	Φ(165°)Φ(172.5°)	Φ(180°)Φ(187.5°)	Φ(195°)Φ(202.5°)	Φ(210°)Φ(217.5°)	Φ(225°)Φ(232.5°)	Φ(240°)Φ(247.5°)	Φ(255°)Φ(262.5°)	Φ(270°)Φ(277.5°)	Φ(285°)Φ(292.5°)	Φ(300°)Φ(307.5°)	Φ(315°)Φ(322.5°)	Φ(330°)Φ(337.5°)	Φ(345°)Φ(352.5°)
Θ(0°)	-13.52/-17.69	-16.8/-12.26	-11.22/-10.99	-7.3/-3.52	-3.58/-2.31	-1.54/-1.36	-0.92/-4.04	-0.2/-2.3	-0.48/-0.9	-1.47/-2.12	-2.77/-3.64	-4.96/-7.02	-9.21/-11.46	-12.78/-11.97	-9.44/-7.53	5.78/-4.46	-3.27/-2.39	-1.78/-1.23	-1/-0.81	-0.69/-0.78	-1.01/-1.66	-2.46/-3.32	-4.54/-6.43	-8.48/-10.62
Θ(7.5°)	-11.97/-16.66	-16.66/-11.7	-9.49/-8.08	-6.91/-4.65	-3.38/-2.92	-2.61/-2.21	-2.14/-2.32	-2.94/-3.24	-3.93/-4.61	-5/-5.43	-5.69/-6.41	-7.21/-8.29	-10.35/-11.94	-12.28/-10.31	-7.47/-5.69	-4.35/-2.95	0.350/75	0.850/74	0.580/07	-0.46/-1.06	-2.17/-3.65	-5.49/-7.7		
Θ(15°)	-12.65/-18.76	-13.76/-9	-5.78/-4.12	-2.89/-1.13	-0.66/-0.85	-0.41/-0.34	-1.09/-1.77	-2.98/-3.76	-4.93/-6.08	-7.57/-9.92	-12.05/-12.6	-12.68/-14.05	-13.45/-12.5	-12.52/-10.85	-9.39/-7.8	-6.36/-5.03	-3.93/-2.92	-2.57/-2.58	-2.97/-3.23	-3.33/-3.06	-2.75/-2.45	-2.28/-2.38	-3.05/-3.37	-4.81/-7.5
Θ(22.5°)	-14.97/-13.15	-8/-5.47	-2.6/-0.75	0.84/2.25	2.53/2.76	3.032/3.9	2.912/65	1.860/72	-0.76/-2.28	-3.88/-5.97	-10.55/-17.81	-17.5/-17.87	-15.65/-13.79	-13.69/-18.1	-18.94/-16.4	-12.89/-11.07	-9.59/-6.19	-9.85/-11.87	-11.43/-7.68	-4.9/-3.5	-3/-2.9	-3.27/-3.63	-4.43/-5.05	-6.22/-9.37
Θ(30°)	-14.2/-14.66	-7.76/-4.3	-2.82/-1.33	-0.080/67	0.911/91	2.37/2.33	2.111/61	1.140/62	0.11/-0.68	-1.42/-2.35	-4.44/-8.11	-16.52/-18.06	-12.89/-13.88	-16.42/-18.54	-14.03/-9.8	-6.56/-5.93	-10.18/-15.77	-12.16/-8.95	-5.37/-3.79	-3.94/-5.74	-7.57/-10.5	-11.73/-7.47	-5.48/-5.24	-6.01/-9.09
Θ(37.5°)	-10.27/-6.87	-2.670/35	0.410/01	0.81/99	2.452/91	3.262/95	2.071/25	0.720/21	0.2/-0.58	-1.31/-2.29	-3.11/-6.31	-13.71/-17.63	-13.71/-16.31	-10.92/-11.99	-13.29/-13.22	-10.55/-17.68	-10.48/-6.21	-6.51/-7.87	-7.26/-6.37	-7.92/-9.83	-11.37/-14.99	-17.98/-12.98	-7.78/-7.3	
Θ(45°)	-10.47/-8.89	-4.84/-1.79	-1.1/-1.57	-0.381/-4.6	2.453/6	4/3.9	3.773/44	2.861/86	0.790/21	-0.78/-1.38	-1.51/-3.74	-6.83/-13.27	-18.14/-13.47	-12.91/-13.51	-15.57/-12.36	-6.89/-6.68	-13.94/-15.17	-12.66/-14.61	-17.61/-17.57	-13.15/-10.34	-8.2/-7.74	-10.61/-6.68	-19.45/-10.56	-7.84/-7.3
Θ(52.5°)	-18.49/-4.97	-2.92/-1.71	-2.77/-4.88	-3.16/-0.68	0.631/87	2.181/93	1.441/07	1.060/36	-1.38/-2.8	-4.8/-5.68	-4.41/-4.29	-5.95/-11.3	-16.12/-10.01	-10.59/-15.57	-18.94/-8.29	-3.72/-4.82	-4.87/-6.3	-6.89/-3.22	-3.55/-7.02	-9.81/-14.2	-10.85/-11.13	-8.44/-6.8	-6.96/-11.57	-19.34/-16.24
Θ(60°)	-18.61/-9.13	-3.16/-1.71	-4.83/-9.43	-5.1/-0.87	1.112/34	3.033/05	2.421/28	0.23/-1.16	-2.13/-1.16	-1.46/-2.14	-3.54/-3.02	-1.34/-3	-10.28/-18.61	-13.94/-13.9	-19.11/-10.55	-6.95/-10.2	-12.97/-7.75	-5.52/-6.51	-6.5/-6.2	-7.69/-10.94	-10.68/-9.38	-7.28/-4.47	-2.83/-6.68	-15.31/-18.52
Θ(67.5°)	-16.62/-7.83	-6.32/-8.31	-11.22/-7.3	-1.12/0.84	1.842/81	2.972/89	2.461/73	0.45/-1.81	-4.91/-8.25	-6.83/-6.8	-9.88/-7.98	-4.63/-5.09	-12.23/-15.48	-9.99/-10.41	-18.35/-6.77	-5.22/-5.42	-6.35/-4.03	-1.98/-2.66	-4.09/-5.67	-7.8/-7.88	-7.69/-5.03	-5.16/-4.6	-2.92/-4.11	-7.61/-12.34
Θ(75°)	-14.8/-12.8	-6.28/-7.07	-6.8/-4.21	-1.48/-1.23	-0.07/0.58	1.822/32	2.242/34	1.2/-0.87	-4.21/-6.75	-6.64/-7.17	-11.06/-9.92	-5.47/-4.11	-15.33/-15.44	-9.32/-7.26	-18.25/-17.83	-7.96/-11.98	-13.05/-11.33	-7/-8.11	-9.23/-8.94	-7.47/-4.51	-2.53/-1.15	-1.07/-3.46	-4.28/-6.93	-13.07/-14.27
Θ(82.5°)	-7.88/-4.71	-3.92/-5.27	-9.82/-7.64	-0.89/-1.31	-1.34/-0.56	-0.27/0.02	0.620/42	0.19/-0.82	-3.2/-8.21	-18.1/-15.59	-18.58/-6.2	-1.82/-2.25	-12.84/-10.67	-5.95/-6.75	-10.92/-10.34	-13.77/-15.43	-15.5/-12.76	-13.77/-13.45	-10.49/-6.93	-5.28/-2.76	-2.24/-3.7	-7.67/-7.04	-6.48/-7.61	-12.66/-13.05
Θ(90°)	-6.19/-4.2	-1.43/-2.25	-3.89/-4.35	-1.79/-2.6	-1.71/-0.62	-0.09/-0.38	-0.83/-0.14	-1.6/-2.78	-8.29/-16.75	-16.98/-14.49	-18.38/-6.36	-3.52/-1.28	-6.32/-6.59	-5.42/-6.89	-7.84/-11.48	-12.52/-17.75	-14.35/-18.73	-17.59/-19.41	-17.91/-14.88	-4.45/-1.64	0.07/0.08	-2.57/-3.03	-3.5/-3.08	-7.55/-9.31
Θ(97.5°)	-11.44/-10.94	-2.91/-1.43	-2.25/-4.65	-9.92/-8.68	-4.76/-4.63	-4.35/-4.68	-4.84/-3.53	-2.53/-2.88	-3.39/-5.58	-8.48/-12.03	-19/-73.4	-2.72/-4.15	-12.81/-13.81	-7.43/-6.97	-15.44/-18.16	-14.73/-14.19	-10.38/-7.69	-8.08/-7.1	-7.15/-6.15	-2.63/-5.05	-0.31/-1.07	-3.4/-8.52	-8.8/-8.45	-13.68/-18.36
Θ(105°)	-2.4/-3.86	-1.06/-3.5	-5.94/-18.89	-17.17/-11.84	-10.68/-6.26	-3.12/-1.71	-1.5/-1.33	-1.77/-3.57	-1.88/-8.1	-7.64/-10.36	-18.15/-7.74	-3.81/-3.16	-12.67/-13.85	-10.61/-12.88	-10.21/-9.21	-14.4/-8.6	-4.99/-5.56	-4.12/-2.98	-2.49/-0.49	-6.48/-3.81	-6.11/-6.14	-5.6/-3.13	-2.99/-4.23	
Θ(112.5°)	-4.18/-4.72	-2.58/-5.3	-9.17/-18.29	-13.1/-13.83	-11.2/-7.38	-7.74/-6.85	-6.75/-6.95	-6.18/-5.45	-4.3/-4	-4.32/-7.95	-11.44/-14.25	-7.55/-8.67	-15.11/-6.64	-3.72/-10.79	-13.01/-16.37	-9.96/-6.71	-2.5/-3.88	-3.96/-1.4	-1.92/-6.32	-1.32/0.23	1.44/-0.08	-3.77/5.04	-4.35/-2.57	-3.75/-1.8
Θ(120°)	-7.11/-4.75	-3.31/-2.93	-5.11/-8.35	-6.79/-6.78	-5.46/-5.59	-4.35/-3.56	-2.7/-3.42	-4.68/-4.59	-5.19/-5.16	-4.1/-9.5	-15.46/-9.69	-7.02/-7.96	-16.14/-7.62	-8.77/-14.25	-11.28/-11.77	-7.37/-7.78	-0.82/-3.96	-5.45/-6.04	-1.51/-1.73	-2.25/-7.1	-8.35/-6.65	-0.22/-9.96	-5.5/-4.97	
Θ(127.5°)	-4.18/-5.96	-8.04/-1.77	-8.41/-7.32	-8.54/-7.7	-8.18/-9.32	-8.53/-8.88	-11.36/-10.55	-12.85/-18.52	-8.86/-5.81	-5.89/-6.29	-10.85/-12.45	-5.16/-2.75	-6.53/-6.59	-9.6/-9.8	-4.52/-6.59	-6.080/53	0.33/-17.83	-2.302/56	-1.17/-8.84	-0.396/23	0.921/02	-2.62/-3.38	-1.01/-9.92	-1.36/-1.66
Θ(135°)	-4.59/-8.22	-7.78/-8.99	-15.09/-14.6	-10.24/-10.96	-16.7/-19.05	-18.43/-16.68	-17.53/-16.09	-11.11/-6.86	-5.33/-4.7	-4.26/-4.25	-6.31/-16.45	-7.6/-11.91	-6.15/-14.24	-9.56/-12.23	-11.39/-12.93	-6.990/59	-3.61/-7.92	-1.773/68	-0.07/-13.5	-5.06/132	-1.65/-5.43	-10.79/-5.81	-0.08/-1.36	-4.26/-4.15
Θ(142.5°)	-13/-18.16	-13.31/-7.08	-8.04/-9.9	-10.58/-9.1	-14.66/-15.36	-6.78/-3.02	-1.48/-1.36	-1.4/-2.03	-5.03/-9.13	-16.1/-17.85	-16.78/-10.21	-9.99/-10.62	-18.59/-8.72	-12.73/-17.24	-13.38/-8.89	-2.42/-5.68	-18.9/-5.72	0.583/79	2.2/-2.03	-3.91/0.68	1.35/-2.48	-3.06/-4.3	-4.16/-5.14	-8.81/-7.22
Θ(150°)	-8.45/-6.41	-10.11/-14.49	-10.83/-6.99	-9.52/-8.84	-10.59/-6.15	-4.64/-4.17	-3.96/-3.55	-3.92/-5.16	-6.52/-7.63	-11.44/-19.16	-17.28/-13.14	-10.47/-10.19	-14.47/-11.57	-7.05/-4.45	-2.39/-1.19	-0.87/-2.39	-1.062/26	3.99/3.51	2.036/83	1.092/32	3.30/-3.33	-1.89/-3.1	-3.72/-4.16	-3.97/-3.72
Θ(157.5°)	-3.22/-4.59	-7.25/-14.79	-18.13/-12.11	-10.46/-11.34	-15.17/-19.31	-15.25/-6.52	-5.55/-4.07	-3.5/-3.96	-5.55/-4.14	-9.34/-10.09	-12.26/-13.07	-11.97/-10.96	-9.33/-6.67	-4.52/-3.72	-4.04/-4.74	0.382/55	3.984/24	3.692/75	2.282/51	2.471/9	0.90/13	-0.21/-1.2	-2.31/-3.08	
Θ(165°)	-7.16/-6.52	-6.32/-6.01	-6.47/-6.81	-6.24/-10.69	-13.42/-13.4	-9.53/-7.3	-6.62/-6.43	-7.36/-8.95	-10.83/-12.85	-16.76/-19.1	-18.98/-15.93	-12.52/-10.71	-9.63/-9.66	-10.9/-13.55	-12.99/-7.48	-2.87/0.3	2.714/12	4.62/4.28	3.37/2.25	1.38/1.4	1.822/31	2.331/14	-0.83/-3.02	-5.41/-7.26
Θ(172.5°)	-10.26/-8.33	-8.53/-8.23	-8.54/-8.19	-7.86/-7.85	-8.03/-7.08	-5.71/-5.82	-8.42/-9.21	-10.38/-11.98	-13.28/-14.48	-16.04/-16.76	-14.77/-11.5	-9.11/-7.77	-6.65/-5.89	-5.55/-5.23	-4.97/-4.69	-4.06/-3.57	-3.33/-3.36	-3.59/-3.68	-3.56/-3					



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ (085°)	-17.47/-17.4	-17.73/-15.58	-12.85/-12.51	-13.59/-15.95	-18.58/-18.57	-13.15/-9.66	-8.49/-7.74	-7.82/-7.3	-7.28/-7.27	-8.35/-10.03	-12.27/-13.36	-12.45/-10.51	-8.99/-8.1	-7.94/-7.68	-7.12/-6.92	-7.44/-9.09	-11.89/-13.86	-13.66/-13.16	-12.81/-11.43	-9.85/-10.14	-12.7/-18.54	-18.24/-12.89	-12.05/-13	-15.16/-17.52
Θ (172.5°)	-16.37/-13.66	-11.19/-10.31	-10.22/-10.68	-10.95/-10.97	-11.79/-13.51	-16.74/-18.76	-18.19/-18.64	-18.49/-19.11	-17.65/-14.94	-13.68/-10.34	-13.02/-12.17	-11.23/-10.26	-9.2/-8.21	-7.69/-7.62	-7.92/-8.37	-9.05/-9.77	-10.2/-10.1	-9.89/-9.45	-9.16/-9.1	-9.91/-12.12	-15.16/-18.61	-16.65/-11.49	-9.89/-10.86	-14.31/-17.23
Θ (180°)	-15.16/-12.96	-11.51/-12.91	-13.43/-14.54	-14.95/-15	-15.23/-16.84	-18.57/-18.44	-15.23/-16.84	-18.14/-18.24	-19.12/-17.82	-19.01/-18.06	-17.75/-15.92	-14.25/-13.83	-14.66/-13.36	-12.89/-13.02	-13.94/-14.95	-15.53/-15.13	-13.93/-12.56	-11.93/-11.43	-11.08/-10.45	-10.10/-10.22	-10.84/-11.79	-12.42/-11.19	-12.93/-15.53	-18.73/-19.24
Freq(Hz)	5.2GPol	ThetaAnt.3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-12.09/-10.35	-9.09/-11.7	-5.82/-4.87	-3.98/-3.53	-3.36/-3.12	-2.89/-2.58	-2.83/-3.15	-3.66/-4.31	-5.17/-5.84	-6.74/-7.57	-9.16/-11.49	-14.01/-16.28	-15.19/-12.52	-10.17/-8.7	-7.77/-7.06	-6.06/-5.3	-4.87/-4.56	-4.58/-4.87	-4.97/-5.11	-5.64/-6.36	-6.93/-7.66	-8.37/-10.29	-12.39/-14.37	-14.93/-14.13
Θ (7.5°)	-18.67/-16.24	-14.21/-12.4	-11.45/-10.73	-10.43/-11	-10.26/-9.77	-8.19/-6.84	-6.23/-6.31	-6.9/-7.42	-7.77/-7.71	-7.62/-8.15	-9.75/-12	-13.57/-12.4	-10.47/-8.44	-6.61/-5.1	-3.91/-2.81	-2.03/-1.69	-1.42/-1.6	-1.9/-2.22	-2.57/-2.93	-3.47/-4.34	-5/-5.58	-6.35/-7.29	-9.03/-11.62	-15.47/-18.1
Θ (15°)	-11.97/-14.5	-15.67/-18.6	-19.12/-18.76	-16.51/-16.85	-17.83/-18.19	-18.42/-18.81	-17.79/-17.47	-15.91/-14.14	-12.14/-10.55	-9.74/-10.39	-11.94/-14.34	-15.73/-13.69	-10.5/-8.29	-6.51/-5.31	-4.2/-3.54	-2.97/-3.03	-3.03/-3.31	-3.76/-4.19	-4.86/-4.88	-4.66/-4.44	-4.67/-5.11	-5.93/-6.71	-7.87/-8.57	-9.66/-10.01
Θ (22.5°)	-4.05/-4.88	-6.44/-8.9	-10.94/-9.81	-9.87/-11.94	-13.7/-12.67	-10.6/-10.13	-11/-13.28	-18.44/-18.57	-15.99/-11.59	-10.06/-9.59	-9.92/-11.19	-13.37/-12.88	-11.59/-10.37	-9.97/-8.75	-7.12/-5.62	-4.51/-3.73	-3.01/-2.76	-2.52/-2.78	-3.14/-3.48	-3.83/-4.28	-4.76/-4.9	-4.25/-3.81	-3.82/-3.87	
Θ (30°)	-0.53/-1.81	-3.23/-4.32	-5.21/-5.33	-6.53/-9.34	-9.31/-7.48	-7.13/-8.24	-7.89/-7.46	-7.98/-10.22	-16.3/-18.66	-16.73/-14.98	-13.17/-14.05	-13.37/-10.45	-9.44/-9.02	-7.95/-6.31	-5.39/-4.35	-3.32/-2.49	-0.891/0.1	1.320/85	0.540/52	-0.1/-1.28	-2.22/-2.38	-2.2/-2.17	-2.49/-1.97	-1.06/-0.24
Θ (37.5°)	-1.4/-2.44	-5.27/-6.42	-7.66/-6.67	-5.77/-5.99	-5.99/-5.33	-6.13/-7.87	-7.92/-7.35	-6.79/-7.22	-8.62/-11.25	-14.25/-14.81	-15.42/-14.38	-11.04/-8.46	-6.6/-5.04	-4.79/-4.87	-4.99/-4.49	-3.7/-1.4	0.860/8	1.532/28	1.37/-0.64	-1.8/-1.67	-1.63/-1.81	-2.2/-2.18	-1.98/-1.62	-1.97/-2.01
Θ (45°)	0.32/-1.61	-5.42/-8.05	-9.23/-9.06	-7.7/-5.97	-7.49/-6.23	-7.06/-8.04	-7.62/-8.91	-7.2/-8.9	-7.06/-8.04	-6.81/-7.54	-7.78/-8.69	-6.96/-4.91	-4.33/-2.6	-2.4/-3.08	-3.84/-4.24	-1.83/-0.32	0.512/22	1.470/73	-0.99/-2.26	-2.08/-1.86	-1.74/-1.53	-1.22/-0.86	0.020/33	
Θ (52.5°)	-1.8/-4.31	-11.29/-16.98	-18.45/-14.2	-8.13/-5.75	-5.41/-4.74	-4.97/-6.13	-8.06/-10.07	-11.98/-12.12	-13.04/-9.66	-6.48/-6.65	-4.31/-5.28	-3.62/-2.17	-1.010/0.82	0.29/-0.92	-1.92/-2.65	-0.53/-1.92	3.263/91	4.283/48	2.561/06	-0.96/-3.11	-4.45/-3.8	-2.58/-1.35	-1.06/-0.56	0/-1.41
Θ (60°)	-2.8/-5.18	-11.81/-11.88	-13.12/-8.74	-7.23/-6.64	-7.92/-9.4	-12.86/-13.23	-10.33/-8.23	-8.58/-9.93	-12.47/-15.23	-9.23/-6.44	-3.89/-4.06	-4.21/-3.2	-1.050/33	0.371/-109	-3.86/-6.86	-1.53/-15	3.684/43	4.514/32	3.061/16	-1.6/-5.42	-10.4/-10.26	-6.55/-3.72	-2.62/-3.9	-2.21/-1.69
Θ (67.5°)	-3.73/-6.25	-12.48/-14.67	-11.69/-7.48	-8.15/-9.36	-10.82/-12.19	-13.27/-12.8	-10.61/-8.62	-8.28/-6.68	-10.22/-9.93	-4.84/-3.41	-2.84/-2.64	-0.320/52	-0.62/-3.25	-6.92/-8.51	-4.78/-1.19	1.492/47	2.642/83	1.63/-0.43	-2.18/-4.49	-3.88/-5.12	-5.89/-7.56	-1.74/-3.73		
Θ (75°)	-4.74/-6.73	-16.63/-11.94	-7.75/-4.38	-5.42/-12.31	-18.36/-13.24	-14/-17.56	-17.74/-13.41	-12.27/-12.76	-11.19/-10.18	-3.68/-0.99	0.2220/7	-0.380/17	1.31/74	0.86/-1.17	-5.44/-4.66	-3.24/-0.01	0.921/7	2.462/11	2.1/111	-1.61/-6.86	-13.45/-18.43	-10.45/-8.01	-5.38/-5.75	-6.98/-3.4
Θ (82.5°)	-2.82/-7.48	-13.57/-8.87	-6.68/-5.1	-7.49/-12.7	-17.92/-19.77	-12.34/-9.09	-8.65/-10.45	-12.91/-12.85	-12.88/-12.19	-7.13/-4.71	-2.97/-2.51	-2.56/-2.15	-0.630/29	0.25/-0.75	-2.02/-1.53	-1.64/-1.49	-0.61/71	3.364/22	4.153/1	-0.02/-5.31	-10.38/-12.43	-10.43/-8.85	-6.23/-5.98	-5.86/-1.59
Θ (90°)	-2.74/-69	-9.53/-15.43	-10.29/-5.49	-6.01/-8.73	-16.31/-10.84	-4.49/-2.08	-1.93/-3.62	-5.25/-4.58	-4.83/-4.74	-2.34/-1.11	-0.39/-1.45	-2.38/-3.64	-1.83/-2.05	-1.48/-4.06	-5.89/-5.36	-11.99/-5.72	-1.860/79	2.963/2	3.02/2	0.92/-1.45	-7.68/-15.44	-4.74/-6.21	-8.86/-12.81	-14.28/-3.29
Θ (97.5°)	-2.78/-3.81	-6.63/-8.39	-8.36/-8.84	-6.41/-8.97	-13.47/-12.46	-5.31/-2.82	-1.39/-2.56	-4.45/-5.16	-4.14/-4.02	-0.870/74	1.85/-0.29	-3.07/-5.65	-4.35/-3.53	-2.95/-5.62	-4.39/-3.65	-4.71/-2.46	-0.891/48	2.283/46	3.223/39	2.76/-2.03	-6.77/-4.16	-6.35/-6.89	-6.43/-9.86	-11.5/-4.93
Θ (105°)	-6.73/-6.23	-5.99/-5.1	-7.09/-16.3	-5.1/-4.16	-3.1/-4.47	-1.830/42	0.07/-0.12	-1.35/-1.19	-1.33/-2.19	-1.29/-1.48	0.04/-0.63	-2.26/-2.18	-3.57/-3.4	-4.38/-4.91	-6.17/-3.94	-7.49/-6.82	-4.1/-11.68	0.20/57	0.640/88	0.37/-1.58	-3.68/-6.99	-8.37/-5	-6.47/-18.69	-13.56/-4.89
Θ (112.5°)	-5.6/-3.6	-5.29/-5.8	-9.31/-18.06	-2.9/-2.4	-1.89/-2.36	-1.64/-0.09	-0.50/-0.78	-1.11/-0.05	0.551/13	1.280/57	-0.31/-1.12	-2.57/-2.78	-4.38/-1.53	-16.05/-18.02	-18.54/-15.84	-13.02/-18.82	-19.22/-13.86	-9.12/-3.31	-2.47/-1.14	-2.78/-3.02	-6.45/-5.46	-6.42/-5.44	-14.33/-11.23	-6.87/-11.14
Θ (120°)	-0.360/36	-0.29/-3.99	-5.74/-17.71	-6.43/-0.58	-1.22/-1.58	-1.86/-2.56	-2.77/-3.43	-3.52/-2.33	-0.5401/07	2.292/11	0.81/-1.56	-3.76/-2.4	-1.61/-1.91	-5.4/-8.58	-9.82/-7.07	-9.03/-12.43	-11.52/-14.83	-9.79/-11.33	-9.12/-7.69	-6.97/-7	-11.99/-8.87	-5/-12.37	-16.22/-15.37	-13.28/-10.87
Θ (127.5°)	-0.06/-0.5	-3.13/-6.11	-13.71/-8.44	-4.03/-1	-0.38/-0.84	-1.68/-2.02	-1.8/-1.75	-1.98/-2.85	-3.18/-2.61	-2.24/-2.37	-4.22/-4.89	-8.68/-6.13	-2.98/-3.22	-5.43/-4.86	-9.12/-8.47	-10.55/-10.27	-12.03/-13.34	-18.57/-15.63	-13.78/-14.72	-13.39/-11.81	-5.36/-4.39	-3.48/-5	-13.11/-13.67	-13.42/-3.9
Θ (135°)	-2.08/-5.57	-12.54/-19.31	-12.9/-33	-2.44/-2.84	-1.73/-1.53	-1.04/-1.3	-2.51/-3.31	-4.05/-4.35	-4.76/-5.11	-6.31/-8.86	-15.51/-19.17	-16.44/-10.82	-8.71/-8.25	-9.05/-10.87	-6.29/-52	-5.43/-8.2	-4.97/-5.74	-8.7/-4.91	-6.58/-8.06	-3.44/-2.88	-14.92/-6.66	-10.47/-11.6	-16.12/-12.06	-8.94/-6.1
Θ (142.5°)	-4.53/-5.79	-7.13/-6.48	-7.48/-5.21	-2.21/-0.72	-0.83/-1.7	-3.03/-5.35	-9.53/-11.02	-6.17/-3.18	-1.58/-1.11	-1.92/-2.8	-3.57/-5.71	-0.66/-5.05	-6.11/-6.26	-3.89/-4.82	-7.44/-11.55	-15.85/-14.42	-14.76/-9.94	-18.08/-16.46	-18.03/-18.89	-15.73/-5.4	-4.91/-9.23	-6.95/-5.71	-7.64/-7.61	-8.45/-7.63
Θ (150°)	-5.04/-5.91	-7.91/-8.3	-10.2/-133	-12.72/-11.66	-9.82/-10.89	-14.66/-12.47	-8.31/-5.65	-3.83/-2.8	-2.33/-2.31	-2.35/-2.01	-2.13/-2.53	-3.08/-4.3	-5.37/-8.47	-17.81/-18.83	-12.2/-9.28	-9.22/-7.49	-9.64/-15.88	-9.28/-6.38	-9.4/-7.3	-4.04/-2.79	-3.65/-6.86	-8.1/-1.75	-4.84/-4.35	-7.14/-6.71
Θ (157.5°)	-5.1/-7.63	-16.10/-10.18	-11.71/-12.53	-10.97/-11.02	-11.84/-13.84	-17.61/-13.03	-18.55/-19.29	-15.38/-14.63	-15.24/-12.76	-10.44/-9.93	-4.69/-5.28	-5.65/-6.02	-5.38/-4.1	-2.96/-2.45	-3.54/-5.53	-9.18/-13.67	-10.12/-6.62	-11.32/-19.66	-17.86/-18	-10.41/-13.44	-10.13/-14.4	-16.12/-12.06	-8.94/-6.1	
Θ (165°)	-6.81/-8.36	-10.71/-11.82	-14.67/-18.37	-18.41/-18.38	-17.84/-18.17	-17.44/-18.46	-17.7/-13.48	-9.94/-7.25	-5.44/-4.03	-3.59/-3.43	-3.19/-2.79	-2.54/-2.38	-2.48/-3.1	-4.32/-6.33	-9.08/-12.32	-18.54/-19.26	-10.45/-7.22	-6.01/-6.04	-7.1/-9.13	-11.44/-12.61	-11.88/-11.21	-12.44/-14.54	-10.19/-6.79	-8.69/-5.29
Θ (172.5°)	-9.44/-9.35	-10.71/-13.71	-14.78/-17.38	-18.25/-18.27	-18.53/-17.1	-16.53/-17.03	-18.55/-18.91	-17.83/-18.4	-19.07/-17.31	-19.02/-16.68	-16.02/-15.66	-15.8/-16.51	-18.21/-1.95	-17.4/-18.88	-16.72/-14.7	-12.81/-10.44	-9.07/-8.8	-9.15/-9.75	-11.43/-13.18	-14.93/-16.21	-18.28/-18.84	-17.93/-18.15	-17.69/-12.72	-9.56/-6.82
Θ (180°)	-7.55/-8.07	-9.17/-10.77	-13.37/-14.76	-18.21/-18.46	-18.78/-16.56	-13.91/-12.29	-11.65/-11.16	-10.74/-10.3	-9.32/-8.59	-7.91/-7.66	-7.71/-7.94	-8.34/-8.92	-9.21/-9.36	-9.56/-9.39	-9.04/-9.03	-9.59/-10.55	-11.1/-11.97	-12.71/-12.76	-12.83/-11.96	-10.83/-9.68	-9.13/-8.52	-7.89/-8.38	-9.11/-9.2	-8.57/-7.66
Freq(Hz)	5.3GPol	PhiAnt.3	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-0.150/-0.5	-0.15/-1	-2.36/-3.69	-4.7/-5.2	-7.17/-8.39	-9.35/-8.56	-7.62/-4.46	-5.61/-4.67	-3.99/-3.11	-2.24/-15	-1.2/-11	-0.93/-104	-0.93/-103	-1.43/-2.3	-3.34/-3.8	-5.79/-9.88	-10.66/-14.6	-18.58/-18.63	-1.53/-0.78	-3.98/-2.72	-1.53/-0.59	-0.03/-0.26	-0.74/-0.8	
Θ (7.5°)	-1.54/-1.41	-1.69/-2.46	-4.1/-6.21	-7.75/-9.62	-11.22/-14.52	-17.39/-14.95	-12.63/-10.15	-7.84/-5.97	-4.59/-3.65	-2.69/-1.85	-1.32/-1.17	-1.06/-1.02	-0.95/-1.04	-1.35/-1.84	-2.21/-2.7	-3.62/-4.58	-5.8/-7.2	-8.63/-9.64	-10.9/-19	-8.68/-7.73	-5.77/-4.3	-2.9/-1.89	-1.27/-1.3	-1.73/-1.97
Θ (15°)	-1.86/-2.43	-3.27/-5.09	-6.42/-7.68	-9.18/-12.46	-15.49/-17.98	-17.16/-18.46	-18.83/-19.01	-18.71/-15.79	-11.86/-8.72	-6.85/-8.3	-5.19/-4.52	-4.01/-3.4	-2.73/-2.18	-1.91/-1.7	-1.6/-1.66	-2.05/-2.81	-4.12/-5.21	-6.56/-8.13	-10.06/-12.06	-13.87/-12.96</				



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ (15°)	-18.91/-17.47	-16.69/-13.19	-10.34/-8.5	-6.77/-5.82	-5.35/-5.33	-6.2/-6.33	-5.58/-4.53	-3.94/-3.71	-4.01/-4.25	-4.09/-3.94	-4.44/-5.27	-5.76/-6.32	-7.09/-8.89	-13.72/-16.78	-9.54/-4.84	-2.1/-0.38	0.45/0.91	1.29/1.58	1.78/1.63	1.05/0.23	-0.48/-1.38	-2.6/-4.55	-7.1/-8.84	-10.76/-14.97
Θ (22.5°)	-11.13/-9.15	-7.75/-6.96	-7.25/-6.97	-6.02/-5.87	-5.99/-7.62	-9.6/-10.99	-9.33/-8.66	-6.46/-5.38	-4.5/-3.88	-3.33/-3.11	-3.67/-5.1	-7.13/-9.8	-14.19/-18.7	-9.73/-4.68	-1.65/0.22	1.54/2.31	2.77/3.26	3.58/3.45	2.89/2.34	1.88/1.37	1.06/0.82	-0.17/-1.66	-3.74/-4.62	-8.72/-10.89
Θ (30°)	-5.84/-6.36	-7.24/-6.04	-8.6/-8.1	-8.16/-8.62	-7.21/-6.9	-8.28/-10.68	-10.04/-8.65	-8.31/-7.5	-6.04/-4.77	-6.82/-4.59	-4.99/-7.82	-13.09/-17.49	-17.63/-9.02	-4.72/-1.84	0.22/1.54	1.92/1.69	1.99/2.09	3.29/2.54	2.96/3.39	3.34/2.81	1.32/0.92	1.54/-0.12	-2.29/-3.07	-3.31/-4.57
Θ (37.5°)	-5.11/-4.87	-5.3/-8.62	-11.98/-12.69	-12.32/-10.43	-8.67/-7.82	-7.19/-8.29	-8.27/-7.17	-6.96/-7.58	-8.5/-7.76	-6.72/-6.11	-6.74/-11.32	-16.49/-18.89	-18.53/-6.73	-0.53/2.31	2.6/0.94	-1.2/-1.04	-0.32/1.38	3.2/3.58	3.05/2.08	1.26/1.51	1.66/0.56	-0.12/0.87	0.31/-1.21	-2.77/-4.64
Θ (45°)	-2.03/-4.38	-6.47/-10.55	-15.73/-17.65	-17.48/-12.07	-9.26/-8.41	-9.23/-10.39	-9.57/-8.14	-7.65/-9.47	-11.81/-9.39	-8.2/-8.15	-8.14/-9.77	-11.15/-12.28	-11.22/-4.23	0.08/1.85	1.46/0.24	-0.92/0.39	2.6/4.25	4.43/6.62	4.37/3.68	2.86/1.92	0.28/-0.17	-0.21/-1.05	-0.29/-0.61	-0.99/-1.23
Θ (52.5°)	-3.16/-4.79	-6.47/-8.77	-14.74/-14.95	-14.33/-9.2	-8.38/-9.96	-13.45/-10.79	-7.3/-4.78	-3.87/-4.57	-7.34/-7.27	-9.74/-6.93	-5.27/-5.24	-5.64/-7.13	-5.49/-1.56	1.11/1.47	-0.49/-3.13	-2.49/0.5	2.37/3.2	4.13/3.68	3.1/3	20/34	0.80/8.07	-0.34/-0.61	-2.74/-2.12	-1.3/-1.97
Θ (60°)	-4.19/-5	-6.53/-9.83	-15.45/-15.18	-13.36/-9.47	-9.29/-10.16	-13.44/-12.34	-8.97/-6.43	-4.83/-4.45	-5.92/-10.58	-17.61/-11.15	-4.84/-2.69	-2.5/-5	-5.01/-9.97	2.02/2.67	0.19/-3.46	-1.1/0.63	2.6/3.37	3.45/3.45	3.01/2.44	1.49/1.72	1.54/-0.25	-1.64/-3.44	-4.46/-5.06	-3.04/-2.44
Θ (67.5°)	-4.83/-8.3	-7.99/-10.83	-12.64/-12.54	-12.07/-9.05	-8.87/-16.45	-15.75/-9.97	-7.93/-8.49	-10.23/-11.48	-11.43/-12.04	-15.29/-19.69	-7.08/-2.15	-2.19/-4.45	-4.89/-0.25	3.25/2.49	-1.58/-3.4	0.44/2.12	2.99/3.18	3.05/3.62	2.48/0.85	0.27/-0.27	-1.82/-2.54	-4.34/-8.47	-5.83/-4.92	-2.92/-2.99
Θ (75°)	-6.07/-6	-4.53/-5.03	-6.22/-8.21	-9.13/-7.65	-9.22/-17.33	-16.52/-8.01	-6.14/-6.58	-6.86/-6.58	-6.31/-5.53	-7.56/-13.25	-6.63/-1.82	-1.18/-3.25	-6.74/-4.65	-1.47/-1.66	-3.79/-17.8	-3.97/-3.47	-0.65/0.57	1.78/2.26	1.65/-0.34	-0.35/-1.22	-2.89/-4.02	-5.11/-7.19	-7.26/-8.83	-6.19/-3.65
Θ (82.5°)	-6.87/-8.19	-5/-4.89	-4.87/-8	-13.25/-17.95	-13.64/-14.63	-17.9/-18.15	-17.46/-14.93	-12.22/-10.82	-8.68/-6.1	-5.55/-5.4	-2.51/-0.27	-0.58/-3.56	-3.84/0.5	2.29/1.19	-5.2/-5.13	-6.36/-3.69	-2.09/0.22	1.85/0.57	0.71/0.51	-1.49/-2.24	-4.61/-11.26	-13.66/-14.43	-17.09/-11.98	-11.8/-3.91
Θ (90°)	-6.28/-6.75	-5.26/-3.73	-4.41/-6.95	-7.58/-9.76	-9.48/-7.82	-9.29/-11	-9.25/-5.74	-3.52/-2.13	-2.01/-2.52	-2.93/-4.76	-4.98/-1.52	-1.55/-4.05	-6.36/-2.98	1.04/0.31	-0.47/-1.5	-3.59/-4.15	-2.25/0.78	1.88/1.73	0.88/1.23	1.35/-2.04	-9.07/-15.75	-17.78/-13.46	-8.99/-10.33	-10.61/-3.01
Θ (97.5°)	-8.29/-8.82	-12.78/-5.4	-4.81/-7.18	-6.77/-4.77	-6.22/-3.59	-3.1/-3.53	-3.58/-1.53	-0.35/-0.05	-0.11/-0.39	-0.71/-2.44	-2.24/0.85	-3.44/-9.45	-9.76/-3.07	-0.57/-2.75	-5.18/-8.76	-17.71/-7.81	-2.18/-0.95	0.01/-1.25	0.42/1.26	1.57/-1.77	-10.55/-12.4	-11.72/-12.44	-11.73/-12.98	-11.89/-5.72
Θ (105°)	-7.9/-6.66	-5.58/-3.79	-7.86/-17.51	-8.86/-6.34	-6.5/-4	-3.54/-3.81	-3.52/-1.73	-0.35/0.59	-0.34/-1.48	-0.79/0.25	0.41/0.93	-1.57/-9.06	-6.76/-3.88	-0.15/-1.59	-3.1/-4.41	-7.88/-6.22	-2.97/-0.81	-0.23/0.25	1.47/2.64	2.65/-2.18	-4.1/-5.63	-12.54/-14.11	-12.97/-11.5	-9.15/-7.74
Θ (112.5°)	-5.67/-7.17	-12.43/-5.96	-10.47/-19.02	-6.29/-2.66	-1.88/-4.09	0.68/0.61	0.02/0.06	2.29/3.53	3.09/1.84	0.13/-0.4	0.85/1.28	-0.17/-6.06	-4.35/-4.28	-1.45/-2.2	-4.56/-4.58	-7.67/-12.51	-3.83/-3.34	-3.6/-2.85	-3.93/-6.21	-2.67/-5.81	-6.8/-11.14	-6.61/-5.58	-6.5/-4.19	-9.02/-6.63
Θ (120°)	-12.06/-4.3	-4.4/-5.91	-11.24/-19.03	-9.11/-6.33	-2.97/-1.86	-0.66/-0.58	-1.39/-0.98	0.13/1.5	2.59/2.32	0.8/-0.25	0.69/1.1	0.51/-3.25	-2.74/-0.25	0.45/-2.86	-13.27/-7.45	-7.83/-5.41	-8.19/-6.66	-6.29/-5.51	-10.79/-5.44	-8.86/-15.85	-15.48/-6.6	-8.11/-11.65	-19.45/-18.77	-7.9/-14.32
Θ (127.5°)	-5.23/-2.67	-2.27/-5.81	-8.37/-7.02	-5.79/-4.31	-3.19/-4.03	-4.56/-6.2	-5.06/-3.79	-2.63/-1.63	-0.85/-0.4	0.07/0.63	0.65/-0.05	-2.24/-3.35	-1.85/0.76	1.03/-1.91	-7.73/-7.4	-7.23/-12.87	-6.39/-5.09	-4.63/-7.56	-16.54/-10.28	-6.59/-11.05	-6.9/-13.1	-4.23/-9.52	-18.39/-16.69	-12.88/-10.98
Θ (135°)	-9.96/-5.71	-6.22/-5.15	-15.04/-6.9	-2.79/-1.34	-1.58/-1.56	-3.57/-6.43	-6.25/-3.44	-1.27/-0.92	-1.45/-2.75	-4.57/-5.51	-5.15/-3.13	-5.16/-6.35	-4.66/-4.99	-2.52/-3.08	-5.96/-7.65	-12.8/-8.68	-4.76/-9.33	-3.19/-5.17	-13.29/-13.63	-3.05/-1.77	-18.12/-17.1	-18.59/-17.47	-10.74/-12.23	-11.03/-9.66
Θ (142.5°)	-5.42/-13	-11.31/-10.79	-7.81/-2.83	-0.95/-1.48	-3.09/-7.27	-11.24/-8	-4.45/-2.57	-1.69/-1.28	-1.76/-2.88	-3.83/-5.22	-5.6/-6.5	-8.98/-8.48	-6.69/-5.34	-2.58/-0.88	-2.31/-3.47	-12.22/-9.27	-14.57/-9.97	-17.41/-8.1	-7.22/-7.39	-10.12/-13.13	-14.25/-16.54	-17.22/-19.94	-14/-11.93	-13.89/-5.28
Θ (150°)	-9.83/-9.61	-11.57/-17.63	-18.52/-11.75	-7.05/-5.97	-6.58/-6.75	-6.83/-7.37	-8.61/-8.85	-8.81/-10.96	-13.73/-13.41	-11.47/-12.27	-14.02/-12.72	-8.6/-8.53	-10.96/-11.61	-17.35/-9.64	-8.06/-7.93	-10.63/-14.8	-19.26/-10.16	-4.59/-4.69	-5.85/-5.44	-3.51/-1.85	-1.48/-2	-4.02/-5.11	-2.16/-3.14	-7.88/-7.98
Θ (157.5°)	-7.32/-8.42	-6.9/-8.14	-9.74/-9.85	-11.4/-14.75	-15.84/-15.27	-12.43/-8.78	-6.51/-5.59	-4.75/-3.68	-2.96/-3.14	-3.77/-3.6	-3.04/-4.06	-7.72/-12.07	-11.82/-17.67	-16.56/-8.78	-6.76/-4.44	-3.34/-9.41	-10.22/-19.44	-10.85/-9.49	-16.71/-18.52	-13.29/-12.54	-10.73/-10.33	-15.55/-15.8	-7.2/-5.15	-5.17/-5.39
Θ (165°)	-9.85/-12.06	-13.47/-16.94	-17.89/-16.48	-13.94/-13.78	-12.82/-13.35	-14.43/-14.34	-13.69/-11.87	-9.65/-7.91	-6.09/-4.51	-3.87/-3.8	-4.46/-4.44	-3.46/-2.42	-1.86/-1.88	-2.49/-3.7	-5.31/-5.08	-6.06/-8.73	-15.61/-15.01	-9.66/-8.77	-9.75/-13.04	-15.91/-16.82	-16.21/-16.85	-18.89/-19.68	-11.35/-8.27	-8.45/-9.92
Θ (172.5°)	-12.79/-13.44	-13.74/-13.03	-15.2/-19.27	-17.81/-15.86	-16.88/-17.86	-19.23/-18.88	-14.74/-11.79	-10.1/-9.23	-9.15/-9.37	-10.07/-10.61	-10.03/-8.37	-7.13/-6.51	-6.71/-7.83	-9.52/-11.51	-13.18/-13.05	-13.2/-14.91	-16.24/-14.54	-12.43/-11.77	-11.93/-13.77	-16.25/-18.46	-17.16/-14.96	-14.6/-16.77	-19.01/-16.61	-13.09/-13.06
Θ (180°)	-8.65/-8.29	-8.65/-8.73	-12.68/-16.39	-17.46/-16.44	-16.14/-18.03	-16.29/-13.44	-11.53/-10.4	-9.64/-8.81	-8.25/-8.13	-7.73/-7.42	-7.52/-7.91	-8.61/-9.29	-9.7/-10.24	-10.76/-11.41	-12.25/-12.57	-13.17/-14.17	-14.33/-13.33	-11.04/-8.75	-7.67/-7.76	-8.28/-8.05	-7.14/-5.76	-5.53/-6.16	-7.57/-8.11	-6.98/-7.69
Freq(Hz)	5.785GPol	PhiAnt.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ (0°)	-1.48/-0.85	-1.1/-1.9	-2.82/-3.4	-3.22/-3.81	-4.95/-6.34	-8.74/-11.68	-17.18/-18.77	-17.85/-13.57	-10.37/-7.47	-5.15/-3.55	-2.73/-1.95	-1.15/-0.64	-0.41/-0.39	-0.86/-1.41	-2.1/-2.8	-3.95/-5.21	-6.45/-8.12	-10.49/-13.08	-15.3/-18.67	-17.49/-13.38	-9.57/-7.03	-5.53/-4.35	-3.93/-3.98	-3.17/-3.23
Θ (7.5°)	-2.35/-1.66	-1.74/-2.37	-4.1/-5	-5.35/-6.11	-7.34/-8.9	-10.66/-12.92	-15.83/-17.43	-18.45/-15.94	-12.46/-9.73	-7.35/-6.32	-3.57/-2.92	-1.38/-1.07	-0.31/-0.2	-0.11/-0.26	-0.88/-1.74	-2.83/-4.22	-6.34/-9.13	-12.34/-17.89	-17.93/-12.73	-8.75/-5.96	-3.98/-2.89	-2.72/-2.99	-2.82/-2.82	-
Θ (15°)	-3.8/-4.56	-4.45/-4.87	-5.75/-6.79	-7.16/-7.48	-8.37/-9.99	-11.44/-12.27	-13.91/-17.62	-19.01/-18.13	-17.74/-13.61	-10.05/-7.83	-5.92/-5.02	-4.54/-2.7	-3.7/-2.4	-0.86/0.4	1.1/-1.07	0.34/-0.6	-2.02/-3.62	-6.12/-10.2	-15.69/-18.27	-18.43/-11.26	-7.84/-5.41	-3.47/-2.47	-1.79/-1.6	-2.07/-3.1
Θ (22.5°)	-4.45/-4.97	-6.08/-7.26	-9/-10.04	-9.99/-9.72	-9.78/-9.48	-9.24/-9.59	-11.2/-14.23	-12.89/-12.24	-11.57/-10.13	-8.55/-6.73	-4.82/-3.23	-2.32/-1.82	-1.23/-0.73	-0.35/0.48	1.15/-1.15	0.47/-0.7	-2.15/-4.22	-6.58/-9.36	-12.61/-15.15	-11.75/-7.99	-7.09/-6.37	-4.96/-3.66	-2.86/-2.49	-2.35/-3.4
Θ (30°)	-6.65/-5.5	-4.76/-6.46	-9.8/-10.69	-11.79/-16.25	-17.96/-19.11	-18.33/-16.79	-18.88/-18.59	-16.08/-10.17	-7.71/-7.69	-7.4/-5.9	-2.95/-9.3	0.01/0.49	0.25/-0.87	-1.83/-1.31	-0.95/-1.82	-3.87/-6.35	-6.34/-5.97	-7.1/-7.52	-7.08/-7.84	-9.96/-10.63	-8.89/-8.89	-9.49/-7.53	-5.46/-4.55	-4.54/-5.76
Θ (37.5°)	-7.13/-10.34	-10.73/-11.64	-15.1/-14.07	-15.56/-17.71	-18.5/-17.12	-13.46/-10.51	-10.03/-10.67	-10.27/-7.56	-6.03/-3.81	-3.8/-4.29	-2.82/-0.72	-0.56/1.26	-0.93/-1.07	-2.36/-2	-1.61/-2.09	-4.49/-4.4	-3.7/-3.85	-3.79/-6.82	-13.52/-18.5	-18.01/-16.31	-11.62/-12.94	-12.08/-9.03	-5.56/-3.55	-3.85/-9.03
Θ (45°)	-3.4/-6.15	-6.21/-7.06	-8.43/-9.58	-12.48/-17.4	-18.02/-15.05	-11.45/-11.8	-15/-18.61	-18.65/-14.79	-9.25/-8.66	-4.09/-3.64	-2.43/-0.11	1.68/2.13	1.52/-0.51	-2.27/-3.55	-5.24/-9.73	-17.02/-10.78	-5.33/-4.72	-6.97/-9.43	-16.05/-17.18	-9.51/-8.64	-9.43/-6.72	-3.55/-1.88	-1.1/-0.65	-1.15/-2.48
Θ (52.5°)	-4.27/-5.24	-4.93/-6.64	-7.2/-7.74	-9.16/-13.32	-19.01/-18.33	-12.33/-9.76	-9.34/-8.98	-9.84/-12.21	-11.81/-6.68	-4.1/-2.54	-1.91/-0.92	0.42/1.96	2.15/-8.22	0.15/-4.26	-4.83/-1.09	-19.21/-7.87	-4.43/-3.32	-4.36/-7.68	-13.12/-15.54	-7.46/-5.19	-6.11/-11.01	-7.84/-3.1	0.05/0.39	-0.3/-2.39
Θ (60°)	-3.03/-2.6	-3.05/-3.56	-7/-9.99	-12.93/-15.34	-16/-18.49	-18.24/-16.42	-14.18/-12.26	-10.69/-11.82	-13.32/-12.52	-6.59/-2.22	-0.75/-0.74	-1.06/-1.42	-0.55/0.4	-0.58/-0.3	-1.9/-5.08	-7.24/-4.73	-2.64/-3.01	-4.49/-7.37	-12.84/-13.88	-5.84/-9.46	-7.55/-5.59	-13.88/-4.44	-1.07/0.04	-8.01/-1.82
Θ (67.5°)	-3.48/-4.54	-4.81/-7.78	-12.01/-12.72	-11.31/-11.18	-9.41/-10.22	-10.23/-11.01	-15.37/-13.89	-10.28/-7.28	-7.46/-10.9	-13.41/-8.82	-2.96/-0.37	-0.48/-0.47												



Radiated Composite Gain Data 5GHz

Appendix A.1

Θ(67.5°)	-11.33/-9.65	-11.35/-16.01	-17.37/-16.82	-11.88/-7.95	-6.34/-5.85	-5.86/-6.58	-8.5/-12.04	-18.12/-17.06	-15.89/-18.83	-15.8/-9.55	-8/-8.55	-10.07/-14.98	-12.98/-9.43	-8.33/-8.65	-11.8/-11.68	-10.89/-10.39	-12.32/-12.96	-15.61/-11.91	-10.75/-8.45	-6.91/-6.09	-6.47/-9.63	-15.72/-14.65	-11.35/-8.6	-10.46/-12.62
Θ(75°)	-8.63/-9.18	-13.06/-17.12	-12.85/-14.81	-14.4/-10.7	-9.46/-8.73	-8.55/-9.79	-13.73/-18.84	-18.07/-17.36	-16.62/-18.65	-13.8/-9.46	-7.78/-8.36	-11.22/-18.04	-10.68/-15.22	-7.62/-8.46	-12.75/-17.83	-17.96/-17.33	-17.44/-14.16	-11.36/-9.18	-6.65/-6.32	-5.89/-4.83	-5.94/-8.7	-13.43/-17.48	-18.88/-17.38	-15.42/-14.32
Θ(82.5°)	-8.4/-4.91	-5.8/-12.6	-18/-12.11	-10.99/-11.64	-14.66/-14.02	-13.48/-10.28	-8.5/-9.78	-13.87/-19.19	-19.33/-15.06	-18.83/-15.56	-8.23/-7.04	-9.88/-13.48	-17.88/-15.53	-10.17/-14.15	-18.2/-13.55	-10.47/-14.73	-18.4/-16.13	-14.75/-15.89	-11.96/-13.38	-18.05/-17.49	-12.8/-12.87	-18.05/-17.49	-12.8/-12.87	-11.96/-15.56
Θ(90°)	-5.62/-2.89	-3.07/-9.79	-19.65/-11.81	-14.29/-18.8	-17.8/-13.43	-10.64/-10.11	-11.54/-17.46	-18.77/-14.46	-11.3/-13.45	-18.49/-17.03	-18.05/-14.33	-10.92/-14.62	-14.94/-10.77	-7.79/-8.72	-19.52/-13.71	-9.78/-12.58	-17.9/-10.28	-6.26/-5.72	-11.55/-14.66	-12.42/-8.31	-7.09/-8.5	-10.54/-15.43	-16.26/-8.34	-7.92/-11.45
Θ(97.5°)	-10.25/-6.05	-6/-10.79	-16.83/-12.81	-10.56/-9.92	-10.19/-13.67	-14.41/-12.48	-11.47/-10.42	-11.63/-13.98	-17.79/-19.01	-17.82/-17.46	-17.76/-18.15	-18.22/-13.57	-14.22/-7.89	-8.06/-14.34	-16.08/-11.28	-8.59/-10.9	-16.94/-11.63	-7.23/-8.05	-10.86/-11.35	-12.85/-13.05	-15.43/-15.9	-12.11/-11.13	-18.03/-15.47	-10/-12.18
Θ(105°)	-8.58/-4.78	-4.78/-6.87	-16.16/-17.56	-13.35/-11.39	-10.6/-11.46	-13.05/-13.1	-10.34/-8.59	-8.8/-10.7	-12.47/-17.68	-17.92/-15.47	-19.17/-18.56	-14.21/-17.56	-10.13/-7.77	-6.38/-14.25	-18.59/-9.18	-17.07/-10.06	-9.31/-14.79	-17.07/-11.62	-11.36/-18.64	-15.83/-19.3	-13.67/-12.21	-17.32/-16.2	-10.38/-10.43	
Θ(112.5°)	-11.16/-7.54	-4.85/-6.32	-10.59/-18.01	-17.46/-18.72	-12.19/-8.44	-7.47/-8.15	-10.28/-11.09	-10.73/-11.61	-12.7/-19.05	-19.15/-15.97	-10.64/-11.43	-11.96/-8.87	-8.25/-7.92	-9.08/-7.76	-12.61/-13.94	-14.52/-17.49	-8.91/-10.31	-16.23/-10.25	-8.76/-10.62	-9.7/-15.91	-17.96/-18.43	-17.79/-18.84	-14.52/-7.47	-7.13/-8.87
Θ(120°)	-11.47/-19.17	-10.61/-5.67	-7.58/-10.01	-16.5/-17.76	-15.89/-14.82	-14.68/-11.31	-11.69/-15.12	-19.22/-15.73	-10.1/-11.48	-9.62/-13.17	-18.86/-17.97	-12.12/-12.05	-13.07/-6.46	-6.52/-8.95	-14.55/-11.14	-14.34/-15.91	-7.07/-12.39	-10.48/-3.05	-2.37/-4.04	-5.06/-8.31	-11.66/-13.25	-13.92/-11.19	-8.48/-6.54	-7.11/-7.97
Θ(127.5°)	-8.09/-7.09	-8.26/-7.22	-6.4/-6.67	-8.73/-14.82	-18.51/-13.68	-8.9/-7.56	-6.91/-8.57	-14.03/-13.85	-16.36/-13.61	-13.11/-11.41	-9.35/-16.81	-18.36/-10.81	-3.77/-8.02	-6.06/-13.54	-4.96/-8.04	-12.68/-7.55	-13.34/-18.75	-10.87/-3.15	-4.52/-7.44	-6.7/-7.18	-12.16/-10.81	-18.12/-9.85	-9.76/-12.51	-13.72/-12.73
Θ(135°)	-9.38/-4.79	-3.43/-2.92	-5.4/-7.99	-8.7/-5.77	-3.83/-3.26	-3.73/-4.64	-6.48/-8.73	-12.18/-12.71	-8.18/-5.3	-4.81/-5.36	-8.84/-17.15	-12.76/-7.53	-11.98/-11.35	-5.87/-3.97	-5.24/-9.29	-8.43/-5.89	-9.47/-7.84	-13.42/-6.43	-8.65/-12.99	-9.43/-7.32	-12.65/-12.32	-16.19/-18.09	-19.24/-12.87	-6.64/-8.16
Θ(142.5°)	-9.67/-18.31	-13.47/-9.06	-6.55/-6.57	-5.82/-7.73	-10.41/-14.05	-19.41/-18.51	-15.95/-13.04	-11.98/-12.12	-12.19/-12.01	-10.71/-12.02	-8.61/-6.35	-8.15/-14.8	-16.23/-9.33	-7.75/-12.3	-11.77/-11.49	-5.43/-3.96	-6.59/-4.07	-1.26/-0.81	-3.08/-6.17	-6.26/-3.98	-4.52/-7.95	-6.57/-7.09	-8.78/-6.01	-3.56/-4.63
Θ(150°)	-8/-12	-13.15/-17.83	-12.94/-6.49	-4.21/-7.03	-5.21/-6.65	-8.81/-13.4	-17.01/-18.76	-18.53/-14.95	-13.35/-13.41	-19.34/-14.9	-18.92/-17.74	-13.73/-15.93	-18.92/-17.74	-8.9/-11.49	-18.02/-18.04	-10.87/-9.56	-10.42/-9.63	-3.62/-5.2	-7.73/-10.41	-9.2/-6.65	-17.72/-12.18	-16.11/-17.26	-16.77/-9.11	-5.81/-5.08
Θ(157.5°)	-5.57/-5.96	-6.61/-8.09	-11.84/-11.11	-7.07/-5.33	-4.78/-4.9	-5.78/-6.21	-5.81/-5.57	-6.64/-9.82	-14.66/-12.1	-9.01/-7.67	-7.26/-7.18	-6.27/-5.68	-6.9/-9.75	-8.8/-6.11	-5.09/-4.63	-3.98/-4.19	-5.26/-5.47	-4.95/-4.5	-4.21/-3.99	-3.66/-3.61	-5.26/-9.42	-16.87/-17.66	-12.23/-8.21	-6.48/-5.98
Θ(165°)	-8.2/-7.52	-7.35/-5.72	-7.71/-7.52	-6.03/-5.45	-5.07/-5.29	-6.4/-7.84	-8.75/-9.02	-8.32/-6.7	-5.01/-3.72	-3.3/-3.03	-2.65/-2.66	-3.06/-4.02	-5.31/-6.27	-6.71/-7.74	-9.81/-13.79	-18.82/-18.77	-17.69/-16.34	-12.79/-8.3	-3.3/-4.35	-6.8/-11.15	-18.35/-15.48	-12.59/-11.34	-9.99/-9.23	
Θ(172.5°)	-7.43/-7.45	-7.5/-7.02	-6.36/-6.51	-5.01/-4.66	-4.93/-5.56	-6.13/-5.48	-5.53/-5.26	-5.18/-5.42	-6.17/-6.85	-7.51/-8.03	-8.25/-8.38	-8.43/-8.42	-9.36/-12.03	-17.75/-19.14	-14.87/-9.47	-6.46/-4.7	-7.77/-6.07	-8.99/-14.41	-19.01/-18.19	-17.59/-19.23	-18.75/-15.47	-19.1/-10.41	-9.02/-7.67	
Θ(180°)	-6.05/-6.1	-5.81/-5.31	-4.65/-4.38	-4.45/-4.99	-5.95/-7.03	-7.54/-8.19	-8.81/-9.59	-10.74/-12.36	-13.39/-12.36	-11.22/-10.46	-10.52/-10.9	-11.7/-13.39	-14.44/-14.43	-12.61/-11.02	-10.36/-9.43	-8.26/-7.64	-7.52/-7.8	-8.67/-10.19	-10.8/-10	-8.41/-7.51	-7.78/-8.28	-8.41/-7.75	-7.27/-7.16	-6.78/-5.95
Freq(Hz)	5.36GPol	PhiAnt. 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-10.44/-10.09	-8.64/-6.42	-4.78/-4.02	-3.41/-2.91	-2.75/-2.97	-3.38/-3.64	-4.16/-4.53	-5.09/-5.87	-7.05/-8.48	-9.38/-10.61	-11.78/-11.63	-10.73/-9.07	-7.44/-6.18	-5.26/-4.75	-4.24/-3.74	-3.43/-3.26	-3.12/-3.05	-3.02/-3.08	-3.04/-3.34	-3.92/-4.72	-5.92/-7.46	-9.1/-11.55	-14.21/-14.47	-13.88/-12.43
Θ(7.5°)	-8.76/-9.7	-9.68/-9.3	-8.35/-7.6	-6.68/-6.26	-5.93/-5.46	-4.52/-4.01	-3.7/-3.86	-4.24/-2.9	-4.45/-4.84	-5.87/-7.47	-9.1/-10.24	-10.59/-9.43	-7.87/-6.07	-4.59/-3.35	-2.4/-1.72	-1.3/-1.18	-1.39/-2.08	-3.04/-3.81	-4.34/-3.54	-7.02/-8.95	-11.74/-14.5	-18.92/-18.69	-16.53/-13.79	-10.95/-9.29
Θ(15°)	-11.97/-14.38	-18.13/-18.08	-19.03/-18.68	-18.28/-18.06	-18.93/-19.25	-16.36/-12.73	-11.74/-11.49	-11.57/-11.11	-8.65/-8.36	-7.28/-6.4	-6.26/-6.06	-6.02/-5.5	-4.22/-2.71	-1.54/-1.02	-0.61/-0.62	-0.37/-0.02	0.23/-0.02	-0.61/-1.31	-1.85/-2.52	-3.58/-5.35	-17.72/-10.95	-14.68/-18.83	-19.24/-16.87	-13.34/-11.51
Θ(22.5°)	-18.36/-19.03	-16.71/-14.11	-12.69/-13.17	-13.25/-12.68	-15.44/-16.54	-18.08/-16.66	-15.09/-15.09	-16.22/-19.24	-18.21/-18.41	-17.96/-12.29	-9.03/-7.65	-6.77/-6.34	-5.75/-5.26	-4.95/-4.86	-4.21/-3.04	-1.84/-0.92	-0.36/-0.14	-0.31/-0.74	-1.32/-1.91	-2.74/-3.51	-4.03/-4.37	-4.62/-5.01	-6.42/-9.15	-11.47/-14.48
Θ(30°)	-10.18/-15	-12.57/-7.89	-6.36/-6.2	-6.47/-4.75	-7.5/-6.04	-5.72/-6.21	-6.9/-6.87	-6.81/-7.06	-7.86/-9.02	-11.83/-18.1	-18.57/-14.02	-7.3/-6.16	-4.75/-3.91	-4.46/-4.76	-3.18/-1.81	-0.87/-0.32	-0.73/-2.05	-3.71/-4.64	-5.12/-8.51	-6.23/-6.02	-5.68/-5.38	-5.44/-5.08	-3.78/-3.71	-4.24/-6.11
Θ(37.5°)	-6.34/-6.1	-6.21/-3.55	-3.02/-2.69	-3.31/-4.48	-2.67/-3.08	-3.8/-4.92	-6.13/-5.8	-5.72/-6.19	-8.71/-11.52	-18.1/-11.3	-7.02/-6.62	-6.24/-8.94	-8.14/-5.46	-5.08/-5.95	-8.93/-14.14	-17.94/-11.22	-8.42/-6.86	-5.85/-14.93	-17.94/-11.22	-8.42/-6.86	-5.04/-4.26	-4.08/-2.76	-2.77/-3.49	
Θ(45°)	-4.03/-5.35	-2.51/-1.62	-2.58/-2.64	-2.79/-1.86	-1.65/-1.81	-1.74/-2.01	-2.3/-3.05	-4/-5.3	-7.66/-10.05	-11.79/-11.53	-10.54/-6.07	-3.21/-1.96	-2.12/-3.78	-5.24/-5.11	-4.32/-6.73	-12.54/-17.64	-18.25/-15.36	-10.82/-9.06	-6.62/-4.25	-2.27/-1.46	-1.18/-0.87	-2.07/-3.76	-3.81/-3.24	-1.3/-1.3
Θ(52.5°)	-1.71/-3.86	-1.63/-0.2	-0.76/-1.53	-0.25/-0.38	-0.66/-1.65	-2.07/-2.96	-3.55/-4.34	-5.73/-8.27	-16.26/-15	-6.38/-3.45	-5/-8.05	-4.45/-2.8	-2.55/-2.92	-3.49/-5.76	-8.51/-8.29	-11.74/-9.4	-8.16/-8.27	-8.98/-10.57	-9.56/-7.39	-6.28/-4.44	-1.72/-0.12	0.97/-0.44	-5.39/-4.36	-0.87/-0.21
Θ(60°)	-1.77/-2.66	0.92/-62	1.56/-0.49	0.14/-97	-0.26/-2.55	-3.82/-3.03	-2.98/-2.36	-3.49/-6.5	-11.98/-12.6	-9.68/-4.64	-2.89/-0.34	-7.07/-68	-0.58/-1.73	-2.47/-3.58	-4.77/-0.33	-6.28/-4.9	-3.19/-2.29	-1.84/-2.28	-3.14/-2.89	-2.15/-1.84	-2.71/-3.65	-1.79/-0.86	-2.04/-5.35	-3.45/-9.04
Θ(67.5°)	-1.91/-1.62	1.52/-44	1.94/-53	0.15/-0.19	-0.13/-0.7	-1.59/-1.93	-2.16/-2.07	-2.52/-3.78	-7.38/-14.4	-6.17/-3.31	-3.59/-3.84	-0.69/-1.22	-1.2/-0.52	-1.21/-0.4	-2.43/-4.2	-6.9/-6.12	-2.88/-1.24	0.44/-0.91	1.49/-1.85	1.29/-0.66	-0.82/-3.25	-2.34/-0.28	-0.37/-3.2	-3.46/-1.1
Θ(75°)	-2.07/-0.67	2.812/-94	1.13/-11	1.93/-34	0.88/-13	-0.32/-0.05	0.18/-0.07	-0.91/-2.31	-4.91/-6.49	-4.53/-1.62	-0.66/-0.4	1.16/-0.34	-0.95/-1.72	-1.53/-2.34	-2.77/-2.21	-2.44/-1.8	-0.59/-0.79	-0.92/-0.81	0.34/-0.71	1.56/-2.2	0.91/-1.57	-3.19/-0.27	0.89/-1.8	-1.14/-0.43
Θ(82.5°)	-0.69/-1.28	1.812/-87	2.08/-51	1.63/-34	1.51/-81	2.24/-95	1.95/-21	1.78/-05	-0.43/-4.28	-0.46/-0.19	0.32/-76	3.11/-95	-0.48/-2.17	-1.49/-0.82	-2.54/-4.29	-2.35/-2.91	-6.93/-5.46	-3.68/-0.98	-1.01/-0.63	1.84/-2.53	1.49/-1.98	-2.96/-1.2	0.55/-0.54	-1.27/-2.7
Θ(90°)	-2.35/-4.57	1.1/-46	0.21/-62	1.53/-165	1.72/-36	2.11/-9	2.09/-226	1.96/-179	-6.02/-5.07	-8.38/-0.1	2.65/-3.18	1.21/-0.42	-0.56/-1.27	-2.67/-2.87	-3.11/-6.2	-4.14/-7.33	-15.08/-10.5	-3.42/-1.32	-2.15/-0.52	1.32/-95	3.14/-0.05	-4.65/-0.9	0.65/-2.59	-1.86/-1.09
Θ(97.5°)	-2.18/-3.29	-1.16/-0.5	0.69/-147	2.02/-176	1.25/-187	2.86/-83	3.76/-54	2.67/-0	-3.01/-3.41	-1.29/-0.26	1.44/-0.96	0.56/-1.34	0.48/-3.26	-2.52/-0.29	-4.1/-3.66	-4.17/-12.47	-10.1/-2.96	-0.71/-0.15	0.04/-0.34	1.97/-4.6	4.12/-0.54	-6.08/-1.51	-0.42/-0.21	-3.84/-0.78
Θ(105°)	-5.12/-84	-0.24/-0.9	-0.19/-0.18	2.26/-68	2.64/-88	3.69/-33	2.95/-519	3.392/-63	-0.18/-6.03	-3.22/-0.41	0.52/-0.74	-1.33/-1.26	-1.6/-2.82	-2.42/-3.49	-6.99/-15.62	-15.33/-12.49	-9.68/-4.88	-0.79/-1.06	1.83/-33	3.39/-77	-5.14/-1.58	-0.45/-3.6	-6.17/-5.84	
Θ(112.5°)	-4.68/-6.51	-4.69/-1.37	-1.79/-2.74	-1.98/-0.95	-1.12/-1.5	-1.29/-0.17	0.98/-1.7	0.52/-1.46	-4.53/-5.39	-0.93/-88	1.77/-0.82	-3.47/-3.92	-4.76/-6.82	-3.68/-4.37	-7.73/-18.06	-7.09/-6.81	-4.46/-1.69	1.63/-1.8	0.06/-0.2	-0.19/-1.86	-4.1/-8.5	-3.06/-0.03	-1/-6.39	-6.05/-6.84
Θ(120°)	-7.64/-8.32	-8.9/-8	-9.63/-6.66	-2.95/-4.05	-0.14/-0.26	-0.15/-0.56	1.16/-0.71	-1.19/-3.06	-5.22/-3.61	-3.97/-1.62	0													



Radiated Composite Gain Data_5GHz

Appendix A.1

Θ(120°)	-10.09/-11.26	-11.54/-18.97	-16.13/-11.83	-9.26/-6.36	-8.15/-12.34	-15.4/-17.71	-17.1/-14.17	-13.31/-12.18	-9.76/-11.96	-19.13/-11.87	-9.62/-8.44	-5.65/-5.17	-9.02/-13.07	-9.91/-6.85	-10.04/-13.79	-18.01/-13.69	-5.44/-9.89	-18.62/-5.47	-5.38/-11.3	-8.25/-8.32	-9.72/-11.01	-9.43/-10.41	-10.14/-8.35	-6.89/-12.02
Θ(127.5°)	-9.52/-8.93	-11.65/-11.07	-15.62/-14.7	-11.74/-7.75	-5.8/-6.26	-6.61/-8.29	-11.04/-15.19	-18.2/-17.88	-18.84/-15.46	-18.7/-19.29	-8.03/-3.69	-5.27/-5.86	-4.89/-7.53	-18.51/-19.05	-16.31/-8.52	-6.88/-6.32	-16.04/-18.67	-17.95/-8.92	-7.56/-10.72	-6.31/-5.11	-6.84/-4.68	-12.02/-8.52	-16.84/-7.32	-3.92/-5.81
Θ(135°)	-10.05/-10.39	-7.73/-9.68	-11.39/-18.64	-10.07/-6.44	-5.22/-6.37	-9.71/-13.12	-13.89/-14.57	-17.25/-18.47	-17.65/-18.1	-15.15/-11.88	-11.02/-12.58	-6.72/-7.15	-7.03/-17.3	-8.92/-9.73	-9.45/-15.34	-13.86/-6.45	-8.6/-9.51	-14.52/-7.93	-12.7/-17.95	-8.16/-4.12	-11.91/-9.02	-17.72/-13.48	-10.78/-7.72	-6.3/-8.89
Θ(142.5°)	-15.33/-18.54	-12.7/-9.4	-7.03/-7.58	-11.04/-14.23	-9.52/-6.43	-6.19/-7.62	-9.96/-11.5	-12.15/-13.98	-17.8/-17.83	-17.58/-18.24	-14.05/-12.03	-8.11/-9.17	-9.2/-8.18	-8.83/-14.8	-12.21/-11.21	-14.09/-9.17	-8.5/-10.32	-6.72/-4.38	-6.52/-15.25	-18.22/-11.37	-10.08/-13.96	-9.35/-11.37	-11.91/-7.5	-9.24/-14.61
Θ(150°)	-10.03/-7.88	-10.18/-8.03	-4.91/-3.75	-2.91/-3.73	-3.93/-4.47	-4.22/-4.06	-4.53/-5.49	-7.07/-9.54	-10.25/-8.39	-6.96/-7.07	-10.29/-11.7	-13.76/-18.76	-11.81/-11.15	-16.43/-17.85	-18.25/-14.16	-13.15/-9.1	-5.1/-4.01	-5.02/-6.42	-9.06/-10.53	-8.87/-8.18	-10.98/-12.01	-11.19/-17.29	-13.39/-9.86	-8.57/-12.5
Θ(157.5°)	-9.04/-9.93	-13.21/-12.66	-8.61/-6.82	-5.76/-4.7	-4.63/-5.15	-6.13/-7.38	-8.08/-7.76	-7.24/-7.76	-9.23/-10.75	-11.82/-11.25	-7.77/-6.1	-6.08/-7.61	-10.16/-10.27	-10.09/-9.15	-6.93/-6.97	-9.21/-11.99	-12.89/-12.31	-11.93/-12.96	-13.76/-11.45	-8.74/-8.68	-12.31/-18.49	-10.01/-6.65	-4.67/-3.96	-5.32/-6.83
Θ(165°)	-6.87/-7.24	-6.94/-6.38	-5.12/-3.87	-2.78/-1.98	-1.56/-1.62	-2.41/-3.93	-5.12/-6.21	-7.22/-8.08	-6.71/-4.3	-2.95/-2.38	-2.51/-3.15	-3.54/-3.25	-3.58/-5.4	-7.7/-8.16	-7.77/-8.14	-9.39/-10.21	-9.52/-7.96	-6.17/-4.96	-3.94/-3.51	-3.79/-5.94	-10.76/-18.26	-10.64/-6.78	-5.76/-5.78	-6.47/-6.78
Θ(172.5°)	-9.74/-9.38	-9.13/-8.93	-8.83/-8.06	-6.7/-6.38	-6.26/-6.59	-7.38/-8.25	-7.61/-6.33	-5.54/-5.15	-4.64/-4.14	-3.71/-3.57	-3.84/-4.96	-6.77/-9.61	-11.99/-11.77	-9.91/-9.19	-9.74/-11.6	-14.75/-16.07	-14.67/-13.8	-12.31/-11.27	-10.61/-11.26	-12.96/-15.03	-14.99/-13.22	-11.32/-10.35	-10.42/-10.85	-9.99/-10.4
Θ(180°)	-6.09/-5.75	-6.16/-6.81	-6.13/-5.58	-5.19/-4.82	-4.47/-3.95	-3.73/-3.64	-3.83/-4.46	-5.74/-7.64	-10.42/-13.63	-14.7/-12.18	-10.34/-9.4	-9.03/-9.23	-9.08/-8.75	-8.57/-8.27	-7.69/-7.4	-7.64/-7.89	-8.16/-9.08	-10.15/-11.49	-11.73/-11.04	-9.93/-9.07	-8.74/-8.5	-8.94/-9.51	-10.06/-9.22	-7.86/-6.73
Freq(Hz)	5.785GPol.	PhiAnt.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gain	Φ(0°)/Φ(7.5°)	Φ(15°)/Φ(22.5°)	Φ(30°)/Φ(37.5°)	Φ(45°)/Φ(52.5°)	Φ(60°)/Φ(67.5°)	Φ(75°)/Φ(82.5°)	Φ(90°)/Φ(97.5°)	Φ(105°)/Φ(112.5°)	Φ(120°)/Φ(127.5°)	Φ(135°)/Φ(142.5°)	Φ(150°)/Φ(157.5°)	Φ(165°)/Φ(172.5°)	Φ(180°)/Φ(187.5°)	Φ(195°)/Φ(202.5°)	Φ(210°)/Φ(217.5°)	Φ(225°)/Φ(232.5°)	Φ(240°)/Φ(247.5°)	Φ(255°)/Φ(262.5°)	Φ(270°)/Φ(277.5°)	Φ(285°)/Φ(292.5°)	Φ(300°)/Φ(307.5°)	Φ(315°)/Φ(322.5°)	Φ(330°)/Φ(337.5°)	Φ(345°)/Φ(352.5°)
Θ(0°)	-19.11/-18.77	-15.08/-11.19	-8.07/-6.31	-5.13/-3.79	-3.05/-2.28	-1.83/-1.73	-1.53/-1.48	-1.82/-2.15	-2.4/-2.61	-2.94/-3.6	-5.1/-6.76	-8.87/-12.45	-18.73/-17.46	-18.07/-12.9	-10.13/-7.92	-6.43/-5.11	-3.99/-3.18	-2.5/-2.05	-1.64/-1.45	-1.31/-1.67	-2.29/-3.12	-4.19/-4.96	-6.2/-7.74	-9.54/-12.88
Θ(7.5°)	-12.1/-17.48	-18.5/-18.21	-15.46/-13	-10.79/-8.71	-7.42/-6.61	-5.87/-5.65	-4.97/-4.5	-4.47/-4.4	-4.45/-4.58	-5.15/-6.29	-8.17/-10.52	-14.31/-17.97	-18.96/-17.28	-12.83/-10.28	-8.29/-6.95	-5.97/-5.14	-4.36/-3.74	-3.33/-3.13	-3.04/-3.09	-3.3/-3.66	-4.08/-4.5	-5.16/-5.6	-6.13/-6.86	-7.56/-9.16
Θ(15°)	-8.91/-9.67	-10.9/-12.56	-14.65/-16.88	-19.23/-19.55	-18.14/-15.92	-13.9/-12.9	-12.41/-11.41	-11.81/-12.15	-13.15/-15.49	-18.44/-18.75	-18/-17.83	-18.18/-17.76	-16.33/-12.67	-9.63/-7.29	-5.64/-4.64	-4.27/-3.97	-3.4/-2.93	-2.76/-3.16	-3.58/-3.88	-4.1/-4.53	-4.63/-4.67	-4.8/-5.58	-6.47/-7.25	-7.98/-8.65
Θ(22.5°)	-7.91/-6.72	-7.25/-8.41	-10.67/-13.48	-13.18/-10.42	-9.24/-9.24	-10.24/-10.93	-10.78/-9.09	-8.27/-8.59	-9.99/-10.86	-10.5/-9.32	-8.55/-8.46	-8.82/-9.39	-10.06/-9.19	-7.4/-6.21	-5.41/-4.72	-3.54/-1.87	-0.40/-62	1.08/1.02	0.750/36	0.13/-4.02	-1.33/-2.39	-4.29/-6.84	-9.03/-8.51	-7.67/-8.19
Θ(30°)	-6.77/-4.57	-4.08/-5.02	-5.61/-5.77	-4.62/-3.32	-3.73/-4.9	-6.13/-6.41	-6.42/-6.23	-5.89/-5.34	-4.51/-4.03	-3.85/-4.15	-3.91/-4.22	-5.43/-7.17	-7.66/-5.37	-3.76/-3.11	-2.37/-1.6	-1.13/-1.13	-1.4/-2.21	-2.92/-3.31	-3.41/-3.69	-4.23/-4.72	-4.46/-4.29	-3.66/-3.32	-4.24/-7.67	-10.77/-9.31
Θ(37.5°)	-5.73/-3.73	-2.56/-3.36	-3.02/-2.39	-1.49/-1.52	-2.42/-3.53	-4.11/-4.17	-3.42/-2.73	-2.44/-2.4	-2.34/-2.34	-2.63/-3.52	-3.38/-3.41	-4.14/-5.01	-6.13/-4.23	-2.73/-1.68	-1.51/-1.98	-2.25/-2.3	-2.45/-1.98	-2.18/-2.7	-2.85/-2.89	-2.9/-2.96	-3.21/-3.05	-3.22/-3.63	-3.34/-3.9	-8.77/-11.7
Θ(45°)	-5.53/-2.32	-1.92/-2.46	-0.820/5	1.170/7.4	0.38/-0.14	-0.10/-22	0.490/54	0.25/-0.46	-1.43/-2.06	-2.2/-2.47	-2.73/-3.15	-4.57/-6.58	-8.06/-5.41	-3.71/-1.96	-2.47/-3.48	-5.12/-7.66	-10.09/-9.44	-8.4/-7.66	-5.6/-2.87	-1.08/-0.48	-0.44/-1.56	-4.28/-4.02	-2.26/-2.07	-4.34/-9.91
Θ(52.5°)	-7.11/-2.81	-2.09/-2.11	0.391/4	0.860/38	0.550/82	1.512/15	2.723/08	2.851/8	-0.02/-0.86	-0.38/-0.85	-3.41/-5.34	-4.66/-5.84	-7.76/-6.47	-4.7/-5.53	-7.31/-11.41	-10.65/-7.99	-8.76/-11.3	-11.67/-11.72	-7.18/-3.69	-1.7/-0.82	0.370/95	0.34/-3.25	-4.2/-1.15	-2.29/-8.06
Θ(60°)	-6.81/-2.01	-1.72/-1.91	0.661/71	1.982/04	1.991/79	1.681/86	2.182/47	2.662/3	0.73/-2.16	-2.66/-1.83	-2.81/-5.09	-5.22/-6.25	-5.05/-4.08	-2.38/-3.87	-7.25/-7.09	-4.81/-5.27	-9.07/-16.25	-11.58/-8.62	-8.49/-4.49	-1.120/24	-0.210/31	0.56/-0.7	-4.04/-2.8	-2.95/-12.99
Θ(67.5°)	-6.07/-1.6	-2.72/-2.44	1.122/43	2.141/72	1.571/56	1.331/16	0.550	-0.06/-0.12	-0.72/-3.09	-4.71/-4.82	-4.48/-5.26	-5.55/-5.36	-5.13/-77	-3.92/-5.8	-6.81/-4.99	-4.32/-6.76	-10.42/-7.61	-3.82/-2.6	-2.36/-2.06	-1.170/16	0.390/47	0.88/-8.07	-2.84/-3.14	-2.98/-6.72
Θ(75°)	-6.41/-0.9	-1.43/-1.9	2.013/17	2.722/28	1.740/86	0.280/19	-0.38/-0.58	-0.74/-0.86	-1.4/-3	-4.73/-3.9	-3.6/-5.78	-3.38/-2.56	-4.88/-4.74	-4.41/-7.38	-8.59/-4.55	-3.18/-4.03	-9.2/-5.73	-1.29/-0.5	0.250/07	-0.71/-0.73	-0.52/-1.41	0.23/-0.12	-3.67/-4.73	-1.78/-5.02
Θ(82.5°)	-1.991/37	0.34/-0.54	1.792/95	2.872/62	1.130	-0.54/-0.47	0.11/-0.48	-2.07/-2.27	-1.66/-1.45	-3.98/-4.47	-2.79/-3.08	-2.08/-2.52	-6.09/-4.26	-4.06/-7.39	-7.78/-3.08	-2.33/-2.85	-0.131/23	2.531/52	0.85/-0.08	-3.17/-2.94	-0.61/1.19	-1.26/-2.89	-1.9/-4.46	
Θ(90°)	-1.051/5	0.09/-0.48	2.473/35	2.842/88	2.871/96	1.690/97	1.06/-0.1	-2.21/-2.25	0.290/64	-2.22/-4.1	0.260/44	-1.28/-2.01	-4.57/-5.26	-4.98/-7.49	-10.2/-6.44	-3.45/-4.32	-12.98/-3.02	0.462/6	2.161/99	3.763/88	1.37/5.77	-2.161/74	-2.21/-2.39	-1.4/-2.87
Θ(97.5°)	-3.56/-0.38	-0.48/-0.15	2.823/35	3.713/64	3.842/59	2.350/59	-0.34/-2.4	-3.88/-1.63	0.14/-1.93	-6.41/-1.06	0.63/-0.85	-0.91/-1.9	-4.68/-6.61	-7.47/-8.98	-16.11/-9.18	-4.53/-6.84	-18.09/-4.19	1.373/19	2.473/16	3.534/15	2/-3.24	-1.460/78	-1.83/-3.03	-1.4/-3.96
Θ(105°)	-3.970/12	-1.14/-0.97	1.932/26	2.12/83	4.43/18	3.511/65	-0.76/-2.24	-1.67/-1.4	-1.94/-18	-3.93/-0.48	-0.26/-1.55	-1.76/-2.1	-5.39/-8.57	-18.47/-14.09	-6.46/-4.95	-0.592/62	0.830/78	1.363/04	0.86/-5.28	-1.231/01	-2.61/-2.48	-1.23/-5.56		
Θ(112.5°)	-4.89/-1.59	-3.43/-6.69	-0.891/75	1.271/21	2.43/64	2.873/01	1.820/15	-1.18/-2.59	-3.91/-5.84	-4.85/-5.54	-1.26/-0.58	-2.11/-4.84	-7.43/-0.58	-9.14/-15.27	-18.29/-18.8	-5.47/-5.67	-8.66/-4.51	1.592/34	-0.11/-1.39	-1.040/11	-2.58/-6.78	-1.100/5	-3.13/-4.26	-3.83/-6.35
Θ(120°)	-8.34/-5.27	-5.02/-10.61	-5.31/-2.25	-2.02/-2.13	-1.570/13	-0.1/-1.73	-2.13/-2.79	-3.43/-3.1	-5.97/-6.81	-4.76/-5.51	-5.27/-3.53	-5.18/-8.66	-7.35/-15.6	-14.16/-10.09	-12.61/-16.94	-10.75/-7.99	-17.95/-7.36	-1.03/-3.67	-5.28/-9.1	-6.25/-3.26	-7.56/-12.38	-2.47/-0.03	-2.68/-4.08	-6.14/-8.34
Θ(127.5°)	-11.04/-6.68	-6.19/-11.1	-18.49/-9.49	-6.35/-4.69	-3.09/-2.15	-0.70/5	-0.80/-0.34	-1.32/-3.41	-6.62/-7.01	-6.97/-4.32	-3.7/-7.02	-9.88/-6.49	-5.28/-13.42	-15.38/-16.14	-18.91/-17.72	-18.15/-12.18	-10.75/-17.85	-13.94/-13.88	-8.68/-6.35	-16.97/-12.88	-2.56/-1.88	-5.93/-6.44	-7.26/-7.78	
Θ(135°)	-16.91/-10.6	-8.98/-6.69	-14.17/-18.5	-8.53/-5.1	-4.72/-4.95	-4.55/-3.76	-3.2/-3.05	-3.58/-4.33	-5.45/-6.27	-5.58/-6.12	-7.01/-9.43	-15.08/-10.45	-9.9/-15.51	-5.65/-4.69	-4.49/-7.86	-18.87/-11.44	-9.83/-12.16	-12.24/-18.06	-15.02/-8.02	-9.95/-13.25	-17.37/-6.19	-3.52/-5.2	-7.79/-10.23	-15.66/-15.52
Θ(142.5°)	-11.98/-14.33	-12.45/-6.66	-4.33/-4.11	-5.08/-5.5	-5.49/-5.23	-5.25/-5.56	-6.53/-8.06	-9.72/-10.74	-11.22/-10.06	-7.07/-7.58	-11.32/-15.91	-10.7/-10.42	-13.14/-13.92	-12.03/-14.33	-10.3/-8.8	-6.51/-8.77	-15.72/-19.11	-17.84/-10.93	-12.59/-11.2	-8.58/-6.1	-7.39/-13.58	-18.26/-15.42	-9.41/-9.59	-9.68/-9.06
Θ(150°)	-12.41/-7.92	-5.78/-2.46	-4.97/-5.83	-7.71/-9.87	-10.9/-12.22	-14.16/-17.25	-17.82/-17.08	-18.37/-17.48	-16.01/-14.65	-11.87/-8.61	-10.24/-10.45	-8.39/-7.65	-11.07/-12.1	-6.17/-6.03	-8.12/-9.95	-16.78/-11.86	-9.99/-8.86	-9.32/-9.08	-15.09/-12.02	-9.67/-11.11	-13.44/-15.53	-17.83/-18.87	-14.96/-14.65	
Θ(157.5°)	-14.57/-11.67	-7.71/-5.52	-4.62/-4.8	-6.03/-8.79	-13.71/-18.11	-17.98/-18.71	-16.82/-14.37	-13.72/-14.47	-18.68/-17.62	-15.38/-15.15	-17.77/-19.04	-17.65/-9.95	-9.62/-15.66	-19.11/-16.73	-11.41/-9.79	-8.87/-9.74	-11.99/-10.88	-8.94/-8.75	-10.44/-13.69	-15.29/-15.53	-17.93/-18.65	-14.95/-13.07	-11.79/-10.21	-9.82/-11.78
Θ(165°)	-11.11/-9.73	-9.73/-8.93	-7.4/-6.44	-6.23/-6.64	-7.1/-7.11	-6.4/-5.21	-4.23/-3.88	-3.69/-3.2	-2.62/-2.31	-2.62/-3.61	-5.29/-7.61	-11.69/-18.09	-16.95/-12.07	-9.05/-7.67	-7.44/-8.23	-9.1/-9.1	-8.91/-9.4	-9.32/-9.31	-9.27/-8.99	-9.15/-9.8	-11.19/-12.51	-14.4/-17.83	-19.01/-18.93	-14.88/-12.99
Θ(172.5°)	-10.61/-10.97	-10.24/-9.59	-8.75/-8.06	-6.98/-5.81	-4.67/-3.64	-2.69/-2.25	-2.32/-2.59	-2.75/-2.71	-2.71/-2.92	-3.56/-4.54	-5.83/-8.09	-1.56/-14.73	-14.27/-13.79	-14.92/-17.93	-18.8/-18.15	-17.66/-13.09	-11.14/-10.62	-11.11						