



Freq(Hz)	2.45G	5.2G	5.3G	5.6G	5.785G
Ant. 1 Max Gain (dBi)	2.99	2.33	2.99	4.08	4.06
Ant. 2 Max Gain (dBi)	3.28	1.27	1.18	1.51	2.11
Ant. 3 Max Gain (dBi)		5.01	4.1	3.76	3.67
Ant. 4 Max Gain (dBi)		4.09	3.32	2.64	4.21
Ant. 1 Polarization/θ(°)/ϕ(°)	Theta/112.5/232.5	Phi/150/82.5	Phi/135/97.5	Phi/142.5/97.5	Phi/142.5/97.5
Ant. 2 Polarization/θ(°)/ϕ(°)	Phi/75/225	Theta/82.5/240	Theta/82.5/232.5	Theta/105/270	Theta/120/345
Ant. 3 Polarization/θ(°)/ϕ(°)		Phi/127.5/195	Phi/127.5/0	Phi/127.5/0	Phi/157.5/172.5
Ant. 4 Polarization/θ(°)/ϕ(°)		Phi/30/0	Phi/30/352.5	Phi/37.5/352.5	Phi/135/0
Max Gain (dBi)	3.28	5.01	4.1	4.08	4.21
DG [1SS] (dBi)	3.61	5.11	5.21	4.93	4.77
DG [2SS] (dBi)	3.28	5.01	4.1	4.08	4.21
DG [4SS] (dBi)		5.01	4.1	4.08	4.21



Radiated Composite Gain Data

Appendix A

Theta	1.250/1.4	0.761/1.2	1.080/81	-0.181/1.1	-1.541/1.93	-2.471/2.62	-2.981/1.93	-0.041/3.6	1.630/88	-0.040/21	0.881/15	1.161/0.09	-0.210/9	0.411/1.07	-0.71/0.1	-0.481/0.78	-0.78/1	-1.151/0.75	-0.821/2.2	-2.811/0.88	0.031/0.08	0.831/35	2.121/81	3.071/61	
Theta(60°)	1.471/49	0.720/79	0.941/19	0.850/4	-0.561/2.08	-3.531/4.14	-3.891/2.93	-1.251/0.03	0.30/95	1.521/0.9	2.171/2	2.391/84	1.851/92	1.060/23	0.750/0.6	0.271/0.9	0.510/98	2.281/72	0.281/1.41	-1.871/1.06	-1.41/1.47	0.241/0.4	0.781/41	1.661/51	
Theta(67.5°)	2.121/75	1.621/61	1.012/02	2.671/25	0.751/1.47	-5.171/7.19	-4.291/2.18	-1.761/0.76	-0.281/0.4	-0.451/0.62	-0.060/52	1.421/0.7	2.451/2.48	1.051/0.5	-0.070/2.2	0.451/55	1.111/25	1.021/34	0.271/1.41	-1.391/1.18	-1.411/1.61	-2.021/1.36	-1.260/26	1.571/0.9	
Theta(75°)	-1.051/0.95	1.081/83	2.791/49	3.311/2.61	0.31/1.97	-3.911/6.51	-2.891/1.94	-0.871/0.74	-0.171/0.34	-0.611/0.78	0.030/95	1.851/1.2	1.261/76	0.351/0.71	-1.451/2.31	-0.191/3.6	0.961/41	1.871/35	1.741/5	0.140/76	-1.11/3.1	-2.281/2.55	-2.151/1.57	0.681/0.52	
Theta(82.5°)	-1.81/1.39	-1.241/0.59	1.551/2.72	3.081/6.4	0.71/1.67	-2.961/3.88	-2.781/2.13	-2.631/3.23	-1.91/0.03	0.431/47	1.961/12	1.951/63	2.131/53	1.030/86	-0.831/3.24	-3.691/0.85	1.441/94	-0.010/5.2	0.181/0.76	0.550/86	-1.041/1.47	-0.821/0.98	-0.91/0.95	-0.861/1.57	
Theta(90°)	1.231/21	0.411/0.9	-0.241/0.42	-0.171/0.89	-1.941/2.97	-3.61/2.05	-2.161/4.25	-2.311/1.55	-2.340/0.2	0.511/46	1.381/21	0.580/0.6	0.121/0.21	0.511/22	0.561/0.9	-8.071/4.84	-0.110/4.2	0.641/0.36	0.380/13	1.811/76	-0.461/0.48	0.711/1.57	-1.451/0.34	0.011/0.04	
Theta(97.5°)	3.471/2.62	1.061/1.19	-1.921/1.21	-1.81/2.06	-3.41/3.23	-2.841/5.26	-5.561/3.82	-0.771/0.97	-0.351/1.9	2.380/78	0.081/0.26	-0.51/0.16	-0.411/1.11	-0.851/2.51	-2.261/1.74	-3.931/3.45	-0.761/0.53	-0.491/0.66	-0.861/0.58	2.950/5	-3.761/0.12	-0.081/0.31	-1.060/34	0.841/3	
Theta(105°)	4.051/2.11	2.070/34	-0.491/3.1	1.471/0.56	-4.371/4.02	-5.591/6.07	-5.021/1.82	0.211/0.91	-0.971/2.09	0.751/0.41	-1.251/0.24	-0.341/0.72	0.021/0.73	-3.141/0.96	-0.61/2.32	-2.071/2.28	-0.860/1.1	2.361/2.5	1.321/0.27	1.160/59	0.490/82	1.061/61	2.961/2.76	2.561/3.96	
Theta(112.5°)	2.560/82	0.240/92	1.320/51	0.801/81	-1.711/6.17	-6.641/6.8	-5.241/3.24	-2.121/1.54	0.051/2.34	2.611/64	0.141/0.29	0.861/68	2.310/82	-2.351/3.46	-1.771/1.64	-1.561/1.56	-5.881/1.01	1.061/3.1	0.831/0.83	-1.521/0.6	1.271/45	0.960/0.9	0.171/2.14	2.241/2.42	
Theta(120°)	3.331/75	4.674/23	3.261/49	0.561/2.17	-2.921/2.91	-2.381/3.51	-4.71/3.99	-2.41/1.52	0.641/53	2.611/51	0.250/44	1.731/38	2.471/39	-2.060/0.5	-0.061/4.26	-1.781/0.35	2.510/4	0.971/0.19	-2.411/1.78	-2.091/1.2	1.331/0.81	0.150/67	-0.031/4	0.641/9	
Theta(127.5°)	4.771/3.96	2.941/2.48	1.570/67	0.171/1.38	0.241/0.43	-1.721/3.27	-3.211/2.59	-1.751/1.38	-0.470/3.2	-0.531/1.27	-1.461/2.66	-1.351/2.51	0.380/98	-21/0.74	-0.311/2.04	-1.161/1.51	0.591/52	2.790/25	-2.911/0.53	1.251/2.89	2.741/0.83	-0.521/1.22	-2.851/86	3.991/26	
Theta(135°)	3.541/3.62	3.221/0.5	0.051/1.09	-1.421/1.05	-0.161/1.01	-0.081/0.79	-0.161/0.5	-0.611/0.65	-0.080/1.3	-0.5101/0.7	-1.411/2.33	-3.781/3.19	-1.581/2.01	-0.181/1.6	-0.791/0.72	-1.421/1.48	3.531/3.49	0.581/2.58	0.911/2.59	2.711/0.77	-1.971/3.62	-2.61/0.56	0.491/2	1.731/12	
Theta(142.5°)	1.411/63	1.420/32	0.591/0.89	-1.741/0.86	0.571/1.79	1.320/87	1.841/2.69	2.080/84	1.020/36	0.450/88	-0.471/0.02	1.471/3.26	3.461/2.26	0.271/3.32	-2.921/1.76	-0.801/38	0.860/18	-1.261/1.2	-1.581/2.55	0.621/0.4	1.311/1.19	-1.671/1.46	-2.911/2.1	-0.360/76	
Theta(150°)	-4.671/5.79	-7.911/10.16	-9.131/5.39	-1.771/0.2	0.090/63	0.5401/26	0.2101/68	0.5301/19	-0.251/0.72	-0.561/0.13	0.7911/72	2.321/65	2.831/3	0.891/93	-2.721/4.58	-5.251/5.84	-6.971/3.67	-1.251/1.01	-1.891/2.2	-1.021/2.33	-0.661/1.02	-0.991/0.56	-0.431/1.37	-2.241/3.49	
Theta(157.5°)	1.1601/75	0.7711/03	1.2701/8	-0.1111/0.72	-0.6511/0.27	-0.4411/0.87	-0.9411/0.32	0.2101/2	-0.0811/0.25	-0.4101/55	21/18	3.7211/64	3.4111/87	2.0211/46	0.9501/2	-0.3311/1.28	-2.0911/1.81	-1.8111/2.77	-4.0411/4.33	-3.8711/3.29	-2.7711/2.61	-1.8911/0.66	0.4911/2	1.4311/35	
Theta(165°)	3.961/4.18	4.171/3.68	2.301/62	-0.941/2.19	-2.751/3.01	-3.651/3.94	-4.21/4.51	-4.891/4.93	-5.351/5.48	-4.681/3.67	-3.041/3.01	-3.941/4.97	-5.131/3.42	-1.891/0.85	-0.311/0.46	-1.341/2.21	-2.041/2.22	-2.991/4.35	-5.831/7.4	-7.981/7.43	-6.471/5.24	-3.591/1.5	0.6311/96	2.761/3.49	
Theta(172.5°)	-3.241/2.58	-2.621/2.71	-3.371/3.17	-3.051/2.49	-2.411/2.8	-3.561/4.06	-3.841/3.46	-3.031/2.46	-2.551/2.73	-2.981/3.31	-3.891/4.56	-5.561/5.11	-3.721/1.99	-0.941/0.44	-0.291/0.55	-1.211/2.12	-3.611/6.2	-9.851/10.06	-8.481/6.88	-5.951/5.46	-4.791/4.27	-4.371/4.84	-5.21/4.92	-4.371/3.82	
Theta(180°)	-1.711/1.11	0.781/0.72	0.531/0.61	-1.221/2.26	3.391/4.55	5.571/6.34	6.71/7.22	-7.751/8.16	-8.71/8.67	-8.791/9.06	-9.221/8.5	-8.321/8.28	-8.411/8.32	9.041/10.1	-11.151/11.63	-11.061/10.36	-10.321/9.44	-8.721/8.05	-7.661/7.58	-7.531/7.88	-8.061/8	-7.831/7.93	-6.851/5.03	-2.971/2.11	
Freq(Hz)	5.785GPol.	Theta	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	Phi	
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°)
Theta(75°)	-5.981/5.79	-4.841/3.4	2.211/1.31	-0.471/0.01	0.721/2.6	1.581/98	1.981/96	1.751/54	1.271/1.9	0.930/43	-0.261/1.1	-2.131/1	-3.081/3.1	-2.531/1.57	-0.831/0.16	0.330/54	0.781/0.4	1.271/1.9	0.810/21	-0.541/1.01	-1.51/1.89	-2.611/3.2	-3.91/3.78	-4.431/5.45	
Theta(15°)	-4.391/2.7	-1.3501/0.7	0.6501/81	1.231/5	1.961/21	2.331/2.49	1.911/38	1.0601/81	0.8801/72	0.4301/0.3	-0.351/0.96	-1.691/2.2	-2.741/2.62	-2.321/2.37	-2.071/1.79	-1.391/0.84	0.0701/82	1.0701/8	0.111/2.24	-2.251/2.52	-2.51/2.44	-2.631/3.65	-5.511/6.16	-6.871/5.78	
Theta(22.5°)	-4.711/2.4	-0.9101/21	1.021/33	1.781/15	2.451/2.52	2.641/2.28	1.2801/48	-0.241/0.75	-0.61/0.03	0.091/0.12	-0.251/0.04	-0.151/0.87	-2.091/2.36	-1.291/0.57	-0.481/1.06	-1.771/2.21	-1.461/0.61	-0.411/1.02	-1.511/1.96	-1.861/1.68	-2.41/3.09	-3.341/3.23	-4.531/6.54	-8.541/7.33	
Theta(30°)	-2.931/1.3	-0.681/0.5	0.211/1	1.641/2.5	2.571/2.35	2.071/1.76	1.711/37	0.271/0.68	-0.0701/53	0.8801/62	0.051/0.42	-1.21/2.47	-3.621/3.53	-2.031/0.19	1.031/4	1/0.38	-1.831/2.19	-3.091/3.05	-2.531/2.4	-2.371/1.12	-0.171/0.55	-0.41/0.27	-1.421/2.82	-3.651/3.99	
Theta(37.5°)	-3.161/1.27	-0.211/0.8	-0.6501/17	0.981/11	2.771/2.63	2.221/1.53	0.9101/29	-0.0801/26	1.311/73	1.3201/42	0.4401/55	-0.81/2.16	-2.321/3.22	-4.341/2.17	0.0801/73	0.111/0.7	-1.451/2.76	-3.111/2.21	-3.161/5.13	-5.651/2.36	-0.611/0.29	-1.031/0.21	-1.041/2	-2.761/3.91	
Theta(45°)	-4.331/2.63	-0.41/0.43	-1.151/1.15	0.131/1.64	2.571/3.3	3.521/2.84	0.941/0.77	-0.391/0.03	0.0101/81	1.221/44	2.431/2.39	1.1601/17	-1.141/2.97	-3.171/2.62	-0.901/0.8	0.4701/7	0.331/1.45	-3.071/3.37	-3.831/3.49	-3.11/3.21	-2.131/0.71	-1.591/2.91	-3.351/3.41	-2.941/3.28	
Theta(52.5°)	-1.531/1.31	-0.461/0.22	0.201/1	0.621/1.35	2.311/2.74	1.7401/3	-1.021/0.86	-0.0101/17	-0.1401/37	0.8901/44	1.411/16	-0.81/1.57	-2.081/2.52	-2.011/1.4	-0.5701/27	-0.311/0.22	-0.111/2.86	-2.911/3.76	-3.31/3.77	-3.741/2.09	-2.721/3.81	-3.631/3.36	-3.021/2.92	-2.781/2.19	
Theta(60°)	-4.11/3.72	-2.411/1.25	0.2701/91	0.951/44	2.411/2.56	1.351/0.78	-2.431/1.62	-1.221/1.92	-2.971/1.71	0.8801/82	0.4901/25	-1.761/3.77	-2.031/2.23	-3.741/1.71	-0.461/2.3	-3.711/1.69	-1.421/0.76	-1.891/2.77	-2.961/3.04	-2.521/1.81	-1.771/3.01	-1.791/2.33	-2.971/1.68	-2.231/3.5	
Theta(67.5°)	-3.61/2.7	-2.671/1.61	0.611/7	1.671/33	0.6501/25	-0.211/0.44	-0.321/0.33	-0.771/1.57	0.861/0.54	0.1801/96	0.4201/56	-1.281/2.29	-0.281/0.55	-2.941/2.18	-1.521/4.77	-3.51/1.21	0.911/1.76	-1.551/1.13	-0.791/1.95	-1.911/1.26	0.561/0.46	-0.581/0.98	-3.11/2.23	-1.821/2.31	
Theta(75°)	-4.11/3.86	-2.281/0.97	-0.0601/89	0.431/0.06	-0.121/0.96	-1.1301/27	0.611/1	1.01/2	-0.671/0.79	-1/0.89	0.0701/58	-0.791/0.71	-0.21/1.34	-2.821/1.56	-0.731/2.5	-1.3601/1	-0.281/1.59	0.831/0.13	-0.361/0.66	-1.261/0.11	1.0401/6	-1.911/4.32	-4.71/3.85	5.371/5.12	
Theta(82.5°)	-3.761/2.88	-1.0601/16	-0.651/0.35	-1.221/1.08	-1.521/2.15	-1.821/0.86	-0.341/0.23	-0.111/0.13	-0.2801/0.5	1.711/71	1.821/02	0.3801/32	-0.611/2.09	0.0401/11	-0.511/1.11	0.111/0.3	-1.041/0.38	1.091/0.45	-1.0601/73	1.991/66	1.3601/72	0.591/0.45	-2.131/3.5	-4.531/7.36	
Theta(90°)	-3.731/3.11	-1.141/0.71	-1.641/0.37	-2.331/2.62	-2.781/3.04	-2.731/1.59	1.81/0.47	0.4501/47	-1.151/1.47	0.311/84	1.791/15	0.4301/1	-2.431/2.77	-1.231/0.15	-1.2501/37	-0.131/0.57	-1.191/1.13	-0.671/1.48	-0.421/1.41	0.371/57	0.1901/44	-0.271/0.32	-2.891/2.86	-1.51/4.82	
Theta(97.5°)	-2.561/2.89	-0.3801/21	-0.0301/5	-0.961/2.08	-3.041/1.1	-0.5																			



Radiated Composite Gain Data

Appendix A

Theta	Phi	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(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(7.5)	Phi(0)	16.13/16.43	15.16/14.12	12.74/12.17	10.94/10.18	9.72/9.89	8.92/9.21	8.27/11.37	11.41/11.48	12.62/13.91	15.86/16.65	14.65/12.22	10.58/10.03	9.77/10.07	10.21/9.94	9.3/9.43	8.36/10.38	10.62/10.08	8.91/7.69	5.32/5.25	2.01/1.17	0.37/4.22	6.98/3.6	4.96/8.89	11.45/11.85	14.56/6.64										
Theta(7.5)	Phi(7.5)	10.47/9.17	7.9/7.51	7.28/6.87	6.64/6.49	6.46/6.68	6.86/7.21	7.95/8.21	8.24/8.32	7.48/7.25	7.67/7.45	7.71/8.61	10.78/14.37	19.21/17.16	17.69/18.61	16.53/13.25	11.13/9.83	9.14/8.69	8.5/8.57	9.35/10.27	11.04/12.36	14.76/17.25	18.5/19.04	17.13/13												
Theta(15)	Phi(0)	5.59/4.97	4.27/4.61	5.01/5.01	4.94/4.65	4.78/4.89	4.82/4.91	5.31/5.49	5.58/5.17	4.86/4.78	4.91/4.83	5.16/6.08	7.6/9.1	10.88/12.02	11.75/14.23	15.17/19.08	19.12/17.98	14.43/11.66	9.98/9.48	9.95/11.02	12.74/13.86	13.2/12.14	11.52/11.36	9.65/6.99												
Theta(15)	Phi(7.5)	4.68/4.4	3.41/3.4	3.94/4.14	4.06/3.6	3.27/3.29	2.71/3.05	3.21/3.23	2.85/2.34	2.25/2.32	2.64/3.28	3.91/4.67	7.59/9.14	10.42/10.63	10.53/11.4	13.29/17.23	18.12/11.11	18.68/13.11	10.48/9.48	10.16/11.58	11.79/9.87	8.25/7.27	7.11/7.06	5.92/4.96												
Theta(15)	Phi(15)	4.69/6.54	5.36/4.08	3.84/4.34	3.87/2.83	2.21/1.67	1.16/1.38	1.43/1.4	0.99/0.53	0.14/0.08	0.09/0.07	2.15/3.5	4.45/5.74	7.16/7.76	7.88/8.09	8.75/10.07	12.02/14.2	16.69/17.78	18.31/17.91	17.23/13.94	11.92/13.13	13.89/9.59	7.31/6.59	6.45/5.88	5.14/5.68											
Theta(15)	Phi(22.5)	2.29/3.07	5/6.46	5.71/5.24	4.58/3.22	2.95/2.55	1.93/1.51	0.90/0.37	0.08/0.43	0.58/0.64	1.95/3.36	4.42/5.1	4.88/6.43	5.01/5.65	6.14/7.06	8.91/10.66	11.01/12.07	14.98/18.85	18.91/18.38	18.05/12.67	12.73/13.45	11.2/8.49	6.83/6.54	4.19/2.96												
Theta(15)	Phi(30)	4.14/2.21	2.22/3.37	3.43/3.51	4.76/3.57	4.94/3.37	2.53/1.95	1.29/0.42	0.18/0.46	0.54/0.43	0.06/0.41	1.08/1.92	3.05/3.98	4.24/5.11	5.82/6.56	5.99/7.34	9.39/12.42	15.36/15.45	12.52/13.32	18.31/17.35	19.17/12.73	11.87/8.84	9.34/10	8.86/7.06	6.08/6.32											
Theta(15)	Phi(37.5)	3.26/1.59	1.07/1.44	0.81/0.4	0.77/1.55	2.7/2.95	2.63/2.87	2.53/1.34	0.26/0.58	1.01/0.79	0.62/1.84	3.21/4.97	4.63/6.1	4.97/3.92	3.12/3.22	4.97/5.68	6.05/9.45	6.11/9.38	18.01/19.13	17.67/18.9	17.12/18.12	16.12/13.2	10.31/8.01	6.94/5.83	4.54/2.3											
Theta(15)	Phi(45)	5.53/3.3	2.39/1.33	0.14/0.39	0.36/0.16	0.72/1.74	2.15/1.49	1.38/1.2	1.08/1.09	0.82/0.31	0.67/1.73	1.98/2.87	4.51/4.49	3.23/2.98	2.52/1.76	2.59/3.53	5.67/4.94	8.25/14.5	18.91/17.73	17.48/18.19	18.62/17.95	15.63/13.41	14.28/12.12	8.22/6.56	6.32/6.65											
Theta(15)	Phi(52.5)	6.41/5	3.84/1.82	0.77/0.22	0.75/0.66	0.48/0.48	1.53/2.32	2.44/1.97	2.3/2.04	1.62/1.09	1.66/4.46	6.12/6.97	9.71/7.34	5.49/7.47	5.15/4.31	4.12/3.46	1.05/1.57	5/8.69	10.75/14.73	18.98/18.15	17.09/16.76	19.18/16.39	9.66/6.74	5.82/4.63	5.41/6.78											
Theta(15)	Phi(60)	7.21/5.09	6.37/5.26	3.2/2.04	0.34/0.77	1.27/1.78	2.11/1.58	1.77/2	1.08/1.29	2.68/1.9	1.06/1.37	2.42/3.7	5.4/3.2	4.2/3.07	2.18/4.1	5.4/3.3	1.84/3.9	7.04/5.28	5.77/7.74	13.69/13.35	19.04/18.03	18.56/11.25	7.25/6.08	4.21/4.49	4.76/5.85											
Theta(15)	Phi(67.5)	14.33/1.69	7.1/3.11	1.62/0.89	1.01/2.4	2.35/2.18	1.66/2	1.04/1.78	3.02/3.45	4.11/3.18	1.41/2.07	3.24/3.39	5.64/3.86	4.53/6.03	4.52/5.1	7.39/5.87	5.77/5.33	6.54/5.33	4.61/6.73	16.79/18.29	18.96/14.42	13.96/11	4.21/3.39	5.53/7.2	7.18/8.1											
Theta(15)	Phi(75)	9.77/5.33	3.86/0.92	0.04/0.64	0.29/0.96	1.89/2.39	1.85/2.31	3.93/4.36	4.31/3.16	1.53/1.79	0.39/1.2	2.88/2.85	3.91/3.02	3.63/3.43	4.39/4.72	7.31/7.77	6.64/6.85	8.66/6.14	4.3/3.79	18.54/18.52	15.26/15.58	13.81/11.43	7.4/5.96	7.19/11.48	10.42/19.38											
Theta(15)	Phi(82.5)	8.44/4.96	3.03/0.63	0.12/0.06	1.24/1.96	4.09/2.84	2.22/1.37	2.23/4.73	3.37/3.15	0.42/1.2	1.57/0.29	0.02/2.54	4.56/3.93	3.72/3.21	3.78/3.11	3.72/5.96	14.83/6.85	4.73/9.29	6.22/6.3	9.55/11.22	9.35/15.94	19.71/16.37	18.07/18.74	15.41/13.03												
Theta(15)	Phi(90)	6.61/6.02	3.48/3.27	0.95/0.76	1.76/0.79	1.72/0.34	0.09/0.36	0.64/1.04	3.55/4.61	1.65/1.17	2.72/2.4	1.47/0.28	1.63/1.22	1.9/2.53	0.93/1.2	1.28/1.85	1.52/7.99	8.65/7.74	8.76/4.46	7.05/11.03	11.75/15.49	7.17/8.56	8.52/11.67	15.65/15.87	11.75/5.35											
Theta(15)	Phi(105)	6.85/7.15	3.13/4.34	2.02/1.97	2.59/2.22	1.42/0.02	0.76/0.6	0.63/2.56	3.69/5.03	2.69/0.18	1.99/1.61	1.23/0.98	2.01/2.08	3.82/1.97	0.96/0.66	0.04/0.58	3.39/5.37	8.03/5.9	3.77/4.51	14.24/18.2	12.19/8.62	6.5/8.01	8.57/10.48	18.65/14.39	8.42/4.95											
Theta(15)	Phi(120)	7.28/8.96	7.73/5.81	4.45/3.02	2.96/2.31	1.69/0.76	1.06/0.45	0.24/1.18	2.2/2.68	2.67/2.06	0.01/0.55	1.12/0.75	0.57/1.32	1.25/0.66	0.09/0.63	1.84/0.58	3.26/0.74	4.75/3.72	5.17/4.74	3.95/1.2	8.64/8.49	9.89/12.38	8.58/8.61													
Theta(15)	Phi(135)	10.91/13.85	7.95/3.76	1.15/0.02	0.97/2.8	3.84/2.72	0.66/0.81	1.44/1.14	0.46/2.44	3.96/4.89	3.79/2.3	2.69/1.44	0.73/1.19	0.11/0.04	1.22/2.1	0.78/2.61	5.71/3.95	1.55/1.04	5.52/11.26	7.93/17.58	6.93/3.4	17.36/6.82	8.76/16.61	9.17/8.78	8.09/5.5											
Theta(15)	Phi(150)	3.16/2.13	1.85/1.84	1.15/1.39	2.59/4.53	5.3/3.16	1.61/0.39	0.14/0.95	1.79/2.79	4.15/4.87	4.24/3.47	2.46/2.01	4.22/5.18	5.1/5.51	1.41/1.26	0.39/1.76	3.5/4.84	3.24/3.24	4.81/4.4	6.54/13.83	6.33/9.93	17.93/13	8.38/11.14	3.57/3.54	3.34/2.63											
Theta(15)	Phi(165)	13.76/6.44	3.89/2.52	1.65/1.4	1.78/3.41	5.32/1.59	4.07/3.77	3.01/2.01	1.31/1.09	0.77/0.46	0.83/1.45	2.24/3.04	3.18/2.84	4.69/5.17	2.22/0.83	1.48/3.26	4.63/6.1	7.58/13.86	18.02/14.35	14.99/16.52	18.92/12.92	14.81/14.2	9.38/5.36	6.54/12.92												
Theta(15)	Phi(180)	2.72/2.04	2.42/4.22	6.38/6.7	6.37/7.22	8.89/9.54	9.76/11.67	12.69/11.55	8.77/6.03	4.52/3.84	3.62/4.21	4.81/4.33	3.79/4.78	5.61/3.66	2.08/2.52	4/5.66	6.42/6.55	5.7/3.76	4.1/7.55	13.89/17.85	19.37/19.24	18.18/11.92	8.05/5.5	3.72/2.48	2.52/2.86											
Theta(15)	Phi(195)	3.13/1.64	1.21/1.84	2.69/3.39	4.19/4.76	5.58/6.78	7.98/9.67	10.81/10.18	8.02/5.94	4.71/4.29	3.96/3.2	2.41/1.89	1.95/2.35	2.13/3.1	0.81/0.08	1.43/3.21	3.54/4.71	5.34/5.93	7.61/9.19	19.06/17.11	14.73/14.94	14.49/13.97	13.31/10.8	7.86/5.84	5.28/4.6											
Theta(15)	Phi(210)	13.68/18.95	16.23/18.96	6.71/5.48	5.52/5.95	6.65/7.98	9.64/11.5	14.52/18.65	19.41/16.62	9.64/5.81	3.81/2.87	2.61/2.31	1.87/1.12	0.17/0.34	0.27/0.62	2.41/4.86	7.81	8.71/8.36	8.83/10.9	15.44/18.6	19.29/16.77	15.91/15.65	13.12/12.5	10.14/9.01	9.35/10.92											
Theta(15)	Phi(225)	10.92/12.59	15.28/17.66	18.99/18.07	15.89/14.87	15.38/15.63	14.63/13.21	13.09/12.64	11.45/10.25	8.24/6.22	4.81/4.05	3.62/3.1	2.77/2.28	3.41/4.98	7.57/9.68	7.39/4.93	3.66/3.64	4.33/5.51	7.33/10.4	15.07/15.19	11.21/8.48	7.08/6.68	6.75/6.9	6.87/7.11	8.24/9.69											
Theta(15)	Phi(240)	9.41/9.02	8.42/8.07	7.31/6.75	6.4/6.82	7.96/9.66	11.51/13.39	15.93/19.34	19.27/17.86	17.97/18.97	17.87/18.71	18.22/15.9	13/10.01	7.62/5.71	3.86/2.69	2.1/2.26	3.05/4.2	5.71/7.84	10.86/15.37	18.97/19.22	14.64/11.55	10.16/6.98	9.16/8.65	8.48/8.81	9.28/9.39											
Theta(15)	Phi(255)	5.6/6/Pol	PhiAnt 1																																	
Gain	Phi(0)	16.13/16.43	15.16/14.12	12.74/12.17	10.94/10.18	9.72/9.89	8.92/9.21	8.27/11.37	11.41/11.48	12.62/13.91	15.86/16.65	14.65/12.22	10.58/10.03	9.77/10.07	10.21/9.94	9.3/9.43	8.36/10.38	10.62/10.08	8.91/7.69	5.32/5.25	2.01/1.17	0.37/4.22	6.98/3.6	4.96/8.89	11.45/11.85	14.56/6.64										
Theta(7.5)	Phi(7.5)	10.47/9.17	7.9/7.51	7.28/6.87	6.64/6.49	6.46/6.68	6.86/7.21	7.95/8.21	8.24/8.32	7.48/7.25	7.67/7.45	7.71/8.																								



Radiated Composite Gain Data

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(105°)	Phi(15°)	-18.4/18.94	-19.15/14.65	-17.53/18.99	-18.43/17.93	-16.96/15.01	-10.1/8.77	-8.58/7.95	-8.18/9.73	-6.79/3.99	-3.7/5.57	-11.04/19.11	-16.92/8.26	-4.12/4.27	-6.36/8.13	-6.67/7.55	-10.58/11.4	-10.86/9.94	-4.77/3.37	-3.21/4.77	-3.59/2.2	-3.71/4.26	-8.75/10.85	-12.43/17.42	-13.18/11.72																							
Theta(112.5°)	Phi(15°)	-15/17.66	-15.76/15.14	-18.09/18.82	-19.18/16.37	-11.66/11.69	-11.06/11.92	-10.29/8.04	-10.66/18.51	-11.58/14.9	-1.97/4.29	-10.9/19.11	-14.84/6.67	-1.59/1.27	-2.99/3.7	-6.04/8.26	-5.44/5.21	-10.04/8.17	-3.4/4.37	-6.31/4.85	-2.59/1.85	-3/4.86	-9.91/16.05	-10.05/9.43	-13.29/16.51																							
Theta(120°)	Phi(15°)	-6.42/10.07	-18.33/17.8	-19.12/18.82	-16.61/11.43	-8.17/1.72	-13.55/11.97	-13.72/12.94	-14.15/15.8	-8.6/3.95	-2.69/2.9	-6.68/12.01	-10.6/17.5	-1.52/1.77	-8.31/7.17	-3.86/5.22	-6.72/7.9	-10.92/7.26	-3.2/3.94	-6.55/5.4	-4.87/7.23	-18.85/11.96	-9.39/2.86	-4.87/11.96	-9.39/2.86																							
Theta(127.5°)	Phi(15°)	-4.98/3.92	-4.31/6.83	-8.99/13.84	-13.42/10.96	-8.99/9.85	-11.94/11.47	-14.98/14.45	-14.02/16.93	-9.64/4.53	-3.78/3.23	-4.63/3.89	-6.29/11.57	-3.31/4.86	-6.45/11.87	-3.59/6.62	-7.64/10.85	-11.67/4.94	-1.33/2.86	-5.63/4.95	-3.52/1.42	-2.6/4.51	-9.35/12.71	-6.61/5.49	-2.34/3.37																							
Theta(135°)	Phi(15°)	-11.12/12.55	-10.07/10.06	-11.61/12.85	-15.15/12.36	-13.16/12.04	-8.13/6.12	-6.16/5.79	-11.8/12.07	-9.78/10.14	-8.53/9.29	-16.35/18.61	-13.59/12.52	-3.47/4.62	-5.96/10.8	-7.99/3.85	-4.7/8.86	-11.61/9.33	-2.72/3.59	-5.6/4.05	-2.99/1.94	-2.9/8.11	-6.84/12.93	-13.58/9.05	-9.51/8.88																							
Theta(142.5°)	Phi(15°)	-6.16/6.07	-6.62/10.2	-9.24/9.85	-10.59/12.33	-14.68/14.27	-11.56/13.3	-5.41/6.24	-7.46/7.06	-6.59/7.47	-10.59/12.91	-12.65/14.78	-18.75/8.57	-4.55/3.97	-6.22/5.84	-3.77/4.62	-9.43/17.93	-11.52/6.29	-5.34/6.75	-7.95/8.84	-9.35/7.16	-5.99/8.38	-8.42/6.73	-8.14/5.97	-4.81/5.31																							
Theta(150°)	Phi(15°)	-6.01/9.83	-15.45/17	-13.94/15.95	-18.38/13.44	-9.13/7.53	-7.6/7.81	-7.46/7.16	-7.6/8.9	-9.83/11.32	-13.5/12.99	-11.39/8.4	-4.18/1.57	-1.14/2.76	-6.08/9.93	-14.04/17.56	-17.94/18.83	-14.53/9.36	-7.94/8.78	-9.05/9.3	-10.16/8.84	-5.8/4.37	-4.61/4.19	-3.16/2.67	-2.55/3.61																							
Theta(157.5°)	Phi(15°)	-4.6/6.14	-7.98/10.45	-15.55/17.54	-14.95/11.02	-9.58/8.21	-7.1/6.65	-6.74/7.23	-8.63/11.07	-14.63/18.08	-16.54/11.88	-9.28/7.6	-6.5/6.38	-7.56/9.27	-10.46/11.6	-13.4/15.3	-14.5/12.5	-11.88/12.96	-16.49/19.36	-18.98/17.75	-16.43/14.98	-12.1/9.12	-7.71/6.68	-4.79/3.31	-2.96/3.41																							
Theta(165°)	Phi(15°)	-0.17/1.12	-2.86/5.49	-8.33/10.69	-13.53/17.62	-19.03/16.81	-13.37/11.39	-11.33/12.41	-13.65/11.07	-18.42/19.75	-14.17/10.74	-8.49/6.99	-5.81/4.92	-4.56/4.99	-6.02/7.5	-8.43/8.3	-7.97/8.52	-9.9/13.06	-18.47/17.5	-18.45/14.73	-12.62/10.94	-8.27/5.5	-3.38/2.22	-1.41/0.53	0.01/0.01																							
Theta(172.5°)	Phi(15°)	-6.71/8.11	-11.33/16.82	-17.81/18.06	-14.03/11.77	-11.01/10.98	-11.74/12.83	-15.32/17.78	-18.48/19.01	-14.13/11.19	-8.81/7.3	-7.19/7.88	-8.71/9.33	-9.7/9.77	-9.6/9.29	-9.17/9.44	-10.59/12.59	-14.99/16.49	-15.21/13.67	-12.68/12.32	-12.63/12.12	-11.26/9.54	-8.1/7.67	-8.24/7.86	-7.04/6.81																							
Theta(180°)	Phi(15°)	-9.77/8.9	-7.59/6.23	-6.24/7.06	-8.11/10.09	-13.78/18.05	-19.15/17.79	-19.01/16.82	-14.78/12.96	-11.51/9.91	-8.66/7.63	-7.24/7.39	-7.68/7.89	-8.31/8.81	-9.76/10.89	-11.68/12.75	-13.55/15.84	-18.54/18.15	-17.48/17.88	-15.77/14.13	-13/12.41	-12.79/12.71	-12.69/12.47	-12.95/13.09	-11.35/10.46																							
Theta(187.5°)	Phi(15°)	5.2/6.04	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°)	Phi(7.5°)	-3.69/3.74	-3.75/3.99	-4.95/6.11	-6.96/8.35	-10.36/13.54	-18.31/18.31	-18.74/17.53	-13.97/11.55	-9.28/8.13	-6.61/5.48	-4.9/4.36	-4.01/3.93	-3.92/3.84	-4.05/4.68	-5.38/6.12	-7.09/8.15	-9.57/11.74	-15/17.74	-18.25/16.7	-12.66/9.99	-7.91/6.62	-6.09/5.65	-5.24/4.45	-4.05/3.92																							
Theta(7.5°)	Phi(7.5°)	-4.76/4.85	-4.99/5.27	-6.4/7.5	-8.41/9.62	-11.37/13.89	-16.13/19.16	-19.03/18.7	-18.06/16.23	-11.81/9.5	-7.35/5.89	-4.79/3.91	-3.52/3.43	-3.18/3.04	-3.18/3.59	-4.26/5.18	-6.31/7.66	-9.64/12.65	-13.34/18.77	-17.34/12.95	-10.4/9.35	-8.24/7.73	-6.82/8.12	-7.74/6.48	-5.62/5.22																							
Theta(15°)	Phi(7.5°)	-5.84/5.63	-5.67/5.61	-6.29/7.18	-7.91/9.29	-11.5/13.4	-13.56/14.56	-16.69/18.37	-18.31/17.79	-12.46/9.55	-7.03/5.36	-4.39/3.96	-4.05/4.08	-4.11/3.95	-3.6/3.29	-3.26/3.25	-3.78/4.77	-6.06/8.06	-9.9/11.35	-12.27/11.89	-11.52/10.55	-8.98/8.4	-8.47/8.77	-8.8/7.98	-7.4/6.8																							
Theta(22.5°)	Phi(7.5°)	-6.32/6.77	-6.57/6.46	-6.71/6.82	-6.66/6.87	-6.11/3.56	-4.17/16.79	-18.1/18.16	-18.88/14	-11.25/8.82	-6.96/5.38	-4.33/3.91	-3.66/3.27	-3.09/3.17	-3.33/3.3	-2.8/2.08	-1.95/2.21	-3.96/6.05	-6.94/6.25	-6.32/6.75	-6.72/5.98	-5.68/6	-6.25/5.95	-5.89/5.91																								
Theta(30°)	Phi(7.5°)	-8.22/8.79	-8.38/7.59	-7.91/7.69	-9.3/11.27	-15.11/18.57	-18.8/19.18	-18.17/16.12	-13.68/10.54	-7.96/5.72	-4.12/3.12	-2.41/2.14	-1.76/1.94	-0.94/1.21	-2.04/2.87	-3.06/2.43	-1.71/1.75	-2.67/3.45	-4.05/4.92	-5.61/4.99	-4.52/5.51	-7.76/8.88	-8.81/9.12	-9.84/9.19	-8.35/7.48																							
Theta(37.5°)	Phi(7.5°)	-10.38/10	-8.51/6.58	-6.03/7.19	-10.42/17.63	-13.99/15.55	-13.96/16.14	-19.04/18.09	-15.92/11.26	-8.21/5.43	-3.03/1.33	-0.67/0.9	-1.08/0.38	-0.420/0.33	-0.9/2.74	-3.93/4.07	-3.76/3.58	-3.11/2.1	-1.88/2.95	-5.9/9.5	-10.23/9.8	-11.33/14.59	-13.93/11.37	-10.33/9.84	-9.69/9.77																							
Theta(45°)	Phi(7.5°)	-13.21/14.17	-12.09/8.69	-7.44/9.25	-12.65/18.35	-17.87/10.71	-8.65/9.83	-15.5/18.22	-16.79/11.8	-9.78/7.87	-5.38/2.95	-1.63/2.04	-2.58/1.81	-0.99/0.97	-2.16/4.6	-7.05/7.36	-5.14/2.25	-0.74/1.28	-3.52/5.3	-5.4/5.73	-6.55/7.77	-9.33/12.82	-15.22/11.91	-10.25/9.54	-9.67/11.14																							
Theta(52.5°)	Phi(7.5°)	-12.01/12.46	-12.26/12.75	-14.98/18.37	-18.53/18.44	-14.63/9.39	-7.79/8.88	-11.07/18.18	-18.35/14.3	-8.53/6.22	-4.84/2.76	-1.49/2.39	-3.72/3.48	-3.95/1.18	-4.98/6.22	-8.34/9.02	-6.02/3.06	-1.81/1.78	-1.8/2.12	-2.75/4.77	-9.61/14.28	-15.23/15.89	-12.36/8.82	-8.49/8.26	-7.86/8.3																							
Theta(60°)	Phi(7.5°)	-6.78/8.1	-8.72/11.64	-18.71/18.99	-17.89/17.88	-15.71/11.41	-10.43/9.72	-9.71/10.6	-16.86/18.35	-8.5/6.1	-6.74/5.86	-2.95/3.53	-5.38/3.26	-3.38/6.84	-9.75/9.27	-8.63/8.4	-6.33/4.16	-3.31/2.6	-1.61/2.23	-4.44/5.44	-6.3/8.43	-8.18/9.26	-9.24/7.07	-6.78/5.74	-5.12/5.49																							
Theta(67.5°)	Phi(7.5°)	-9.82/11.17	-13.7/15.28	-18.17/18.35	-17.67/18.29	-17.23/14.57	-13.9/2.28	-7.08/6.73	-14.71/18.13	-9.8/4.6	-3.72/4.35	-1.6/3.5	-4.11/4.84	-2.35/8.83	-11.91/9.44	-8.5/6.46	-2.52/1.5	-2.02/2.42	-2.53/2.35	-2.69/3.65	-5.18/6.26	-7.02/8.39	-10.83/10.69	-9.9/7.14	-7.89/9.31																							
Theta(75°)	Phi(7.5°)	-12.61/13.7	-16.53/16.33	-18.16/18.49	-19.33/16.41	-16.68/13.24	-9.01/5.59	-4.27/4.76	-7.94/15.45	-12.05/5.05	-2.58/0.57	-0.81/2.54	-1.47/0.53	-2.21/1.48	-11.47/14.39	-8.79/3.43	-0.040/0.53	0.44/0.11	-1.33/3.32	-4.6/3.63	-3.82/3.7	-2.85/3.41	-10.82/9.21	-13.8/12.5	-14.9/16.45																							
Theta(82.5°)	Phi(7.5°)	-9.37/11.35	-11.04/13.67	-19.05/17.06	-16.38/10.52	-13.23/9.91	-7.13/5.23	-4.1/4.95	-6.9/11.44	-18.81/6.91	-3.08/5.38	-0.98/5.22	-5.92/4.88	-11.26/18.72	-19.19/14.11	-6.23/1.21	1.04/1.24	1.270/2.4	-0.88/3.19	-5.18/3.85	-2.91/1.97	-2.42/2.02	-4.09/8.3	-15.5/18.65	-17.81/11.67																							
Theta(90°)	Phi(7.5°)	-5.93/6.94	-5.83/8.61	-12.52/15.05	-12.89/7.56	-9.17/8.02	-7.27/6.96	-7.94/9.16	-7.79/8.08	-9.09/18.92	-8.1/10.11	-3.23/1.74	-8.62/9.96	-18.69/17.71	-18.15/15.32	-9.09/5.23	-0.94/1.01	0.46/1.95	-1.76/1.74	-3.56/2.61	-1.93/1.66	-2.75/3.53	-4.49/8.33	-12.82/9.98	-6.64/4.4																							
Theta(97.5°)	Phi(7.5°)	-3.03/4.28	-3.75/6.92	-12.99/17.19	-13.85/10.7	-11.49/7.4	-8.93/9.79	-9.08/7.34	-5.56/6	-7.21/19.03	-16.58/12.26	-6.82/8.86	-8.03/11.87	-10.34/13.6	-15.99/11.57	-6.9/5.04	-1.64/3.52	-4.76/4.79	-2.32/1.47	-1.68/2.78	-1.98/2.07	-1.98/2.61	-6.09/6.06	-6.77/4.74	-1.53/1.11																							
Theta(105°)	Phi(7.5°)	-2.64/2.2	-3.19/6.6	-10.96/11.5	-11.24/11.81	-16.63/13.06	-8.11/6.59	-4.98/3.56	-3.61/5.16	-8.04/17.61	-17.55/11.16	-7.16/9.25	-9.47/12.79	-18.15/18.35	-17.99/17.67	-15.72/8.85	-8.19/5.67	-7.56/4.42	-1.73/1.17	-1.53/1.61	-2.67/0.46	-1.65/2.44	-4.49/7.35	-6.33/3.94	-0.62/0.65																							
Theta(112.5°)	Phi(7.5°)	-4.38/4.73	-3.49/5	-7.57/9.64	-9.25/11.7	-11.76/14.61	-11.93/17.6	-5.24/4.53	-5.16/8	-13.82/14.08	-18.19/16.56	-14.37/14.81	-10.78/14.83	-7.69/6.5	-13.24/10.03	-12.69/13.2	-5.12/6.27	-6.76/7.87	-1.83/1.39	-3.56/2.97	-5.19/6.23	-1.47/2.22	-2.45/4.91	-5.81/4.56	-0.94/0.46																							
Theta(120°)	Phi(7.5°)	-2.25/4.84	-3.86/5.16	-7.54/8.34	-7.43/5.67	-5.36/8.01	-10.46/9.13	-5.88/3.74	-3.15/2.99	-4.34/7.97	-13.66/18.67	-18.25/16.3	-12.99/18.88	-7.62/6.13	-11.27/15.71	-7.33/5.59																																



Radiated Composite Gain Data

Appendix A

Theta (157.5°)	2.18/2.64	3.42/4.77	-7.55/-12.1	-14.18/-10.7	-8.17/7.4	-7.91/8.51	-8.2/-7.7	-7.82/8.42	-10.16/-14.7	-17.41/-13.14	-9.77/-8.16	-7.41/8.03	-11.48/17.65	-17.67/15.18	-15.25/17.15	-17.78/17.08	-15.58/15.55	-17.96/18.56	-17.26/18.61	-16.89/16.4	-12.79/9.83	9.25/7.99	5.46/3.43	-2.39/2.01
Theta (165°)	-4.83/5.19	-6.06/7.91	-10.6/-11.81	-12.12/-12.29	-10.89/9.17	-8.23/7.64	-7.49/8.31	-10.1/-13.1	-13.19/-15.27	-15.55/-12.51	-10.87/9.74	-9.08/7.83	-9.48/-11.61	-15.94/-18.62	-15.5/-11.62	-9.99/-10.52	-12.84/11.53	-18.95/18.37	-18.97/18.43	-18.63/18.23	-14.81/-12.12	-10.12/8.77	-6.9/-5.42	-5.13/-5.2
Theta (172.5°)	6/-6.6	-8.13/-11.83	-17.81/-18.13	-13.15/-12.08	-17.91/15.18	-12.78/-12.08	-12.78/-15.29	-16.33/16.82	-10.63/11.12	-18.54/-18.34	-17.35/14.88	-14.42/14.34	-12.86/10.83	-8.66/7.22	6.32/6.02	-5.84/6.17	-6.91/8.03	-10.09/11.69	-15.02/15.19	-15.02/15.19	-13.44/11.81	-10.92/10.62	-9.53/8.47	-8.23/7.34
Theta (180°)	9.34/7.65	6.33/5.82	5.77/5.74	6.57/8.79	-11.49/13.72	-15.06/16.6	-16.71/15.8	-14.14/13.01	-13.29/13.75	-13/12.49	-11.98/12.07	-12.17/12.32	-13.08/14.25	-15.67/16.76	-17.47/18.17	-18.58/18.23	-15.96/15.36	-14.02/14.7	-13.81/14.49	-15.87/16.57	-17.53/17.21	-19.48/18.12	-19.17/18.04	-16.52/12.04
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	4.91/4.85	4.89/5.46	5.13/5.39	5.9/6.2	6.19/6.61	7.8/8.41	8.31/8.59	8.98/9.28	9.87/9.82	9.09/8.32	7.34/6.87	6.48/6.07	5.54/5	4.33/4.13	-4.07/4.3	-4.5/5.12	-5.94/6.43	-7.14/7.6	-8.03/8.19	-8.85/9.43	-9.25/8.45	-7.6/7.15	-6.45/5.77	-5.43/5.31
Theta (7.5°)	4.6/4.57	4.4/4.15	4/4.18	4.85/5.12	5.52/6.47	8.01/9.52	9.79/10.83	12.36/12.89	11.85/10.26	8.73/7.29	6.22/5.38	5.03/4.94	4.73/4.54	4.37/4.61	5.22/5.92	6.82/7.65	8.2/8.39	8.44/8.2	7.76/7.88	8.15/8.43	8.88/9.35	9.84/9.75	8.42/7.27	5.97/5.34
Theta (15°)	5.91/5.56	5.13/4.93	4.73/4.68	5.58/6.28	6.95/8.49	10.58/13.57	16.49/18.13	19.18/15.18	12.24/10.02	7.99/6.65	5.7/5.15	4.74/4.26	3.48/2.76	2.14/1.84	1.97/2.56	3.45/4.58	5.69/6.95	7.85/7.63	6.82/6.18	6.56/7.28	8.25/9.54	11.02/10.98	10.48/9.44	8.08/6.67
Theta (22.5°)	10.96/10.32	9.94/9.11	7.71/7.21	8.06/8.5	8.37/8.52	9.16/10.33	13.24/18.15	18.08/18.64	13.49/9.91	6.98/5.19	4.26/4.06	-4.54/5	-4.83/3.75	-2.38/1.63	-1.03/1.11	-1.76/2.43	-2.8/3.42	-4.27/5.6	6.28/5.98	6.35/7.47	9.63/11.94	13.39/12.85	14.17/13.62	13/11.75
Theta (30°)	17.73/18.69	19.71/15.14	11.77/9.44	8.32/8.14	7.39/7.81	9.03/10.1	11.62/12.79	15/15.37	11.08/7.05	4.64/3.34	2.95/3.72	4.58/5.75	5.29/3.76	2.16/1.31	1.09/1.26	1.78/2.26	3.32/4.32	5.14/6.43	8.54/11.91	11.91/10.99	10.9/12.8	14.85/14.59	16.14/16.21	16.43/18.34
Theta (37.5°)	11.86/11.9	-12.62/13.55	-13.02/10.03	-8.29/7.51	-6.95/7.67	-10.84/16.07	-19.39/16.8	-15/15.27	-11.5/8.18	-5.71/3.28	-1.45/0.78	-1.86/2.84	-2.74/3.17	-3.78/3.24	-2.18/1.43	-0.87/0.88	2.49/6.32	10.97/11.31	8.52/8.28	11.33/13.81	14.28/16.62	18.03/18.62	17.79/16.57	16.58/14.88
Theta (45°)	9.54/12.58	17.5/18.42	12.96/11.08	-10.7/10.31	9.74/10.18	-13.05/14.87	16.64/18.46	15.84/10.93	8.29/5.91	-5.22/3.24	0.47/0.23	1.96/2.1	0.74/0.77	-2.09/3.53	4.28/3.83	3.13/3.12	4.09/4.57	4.71/6.36	10.26/11.52	12.24/14.54	15.18/15.73	18/18.89	12.53/11.87	12.23/10.01
Theta (52.5°)	9.78/10.33	9.5/8.64	9.65/11.12	-11.43/12.69	16.15/15.2	-10.18/8.94	10.49/12.73	-13.93/16.83	-1.7/8.63	-8.05/6.51	-2.17/1.68	-3.65/1.99	0.94/2.61	-4.63/4.63	5.65/6.81	-5.53/3.09	-1.96/2.25	4.1/6.31	7.2/9.48	-10.89/9.99	12.23/19.17	-14.33/13.82	-13.21/10.87	-9.94/9.72
Theta (60°)	-12.03/13.12	-12.13/13.19	-13.02/10.03	-9.7/11.19	-16.14/18.75	-12.99/10.08	-8.89/9	-11.26/13.72	-18.97/11.4	-6.53/6.06	-4.15/3.78	-6.99/4.81	-2.7/3.33	8.13/7.6	6.74/7.83	-6.65/3.64	-2.33/2.24	-1.89/2.61	-4.67/6.55	-7.88/7.06	-7.75/13.25	-10.6/9.18	-12.46/11.29	-10.03/9.9
Theta (67.5°)	-16.8/14.31	-12/12.85	-15.3/14.7	-14.25/16.73	-18.26/19.16	-15.48/12.53	-12.75/10.17	-10.4/15.01	-15.53/12.97	-11.03/10.68	-5/2.91	-9.3/3.6	-1.95/6.9	-18.4/12.98	-7.51/6.84	-4.5/3.39	-4/2.8	0.74/0.63	2.13/4.21	-5.94/5.9	-5.4/10.5	-12.62/10.36	-12.03/15.21	-19.21/17.71
Theta (75°)	-11.87/11.47	-11.77/10.18	-10.88/11.56	-15.82/17.34	-18.67/18.18	-13.18/12.88	9.12/7.41	10.7/14.55	-18.34/14.68	-6.47/8.24	4.19/1.33	-7.58/3.22	-1.89/5.64	-15.77/12.53	-7.59/6.13	-2.52/1.15	-3.09/3.49	-1.05/0.1	-1.23/3.08	-2.29/3.62	2.08/0.51	9.29/14.94	-18.46/18.63	-19.28/14.51
Theta (82.5°)	-9.02/8.56	-6.15/4.74	6.91/6.66	-17.92/18.1	-18.43/18.03	-17.65/17.18	-8.19/5.75	-7.79/13.74	-18.49/14.77	-3.48/4.15	-1.45/0.96	-5.92/2.99	-6.07/1.65	-10.92/12.62	-6.52/2.89	0.48/0.3	-1.71/2.08	-2.23/1.35	0.50/0.84	-2.06/2.96	0.80/0.35	-4.47/6.65	-16.63/18.36	-19/11.68
Theta (90°)	6.04/7.31	5.56/4.78	6.55/5.56	-11.62/18.48	-18.29/18.72	-17.59/14.16	8.74/7.08	8.47/7.29	-11.13/15.24	5.16/4.56	-2.88/2	-5.31/4.06	17.66/9.78	8.27/7.69	5.46/1	0.61/0.1	0.42/1.16	-1.71/1.39	0.21/0.69	-1.23/0.6	0.290/5.6	-2.51/5.87	-11.48/12.9	9.25/6.75
Theta (97.5°)	-4.56/4.7	-4.69/4.8	6.68/5.15	8.36/10.16	-12.59/17.23	-17.42/19.16	-14.48/10.77	5.63/3.59	5.64/11.28	-12.11/12.41	6.14/10.02	8.37/10.75	-11.07/10.8	6.44/9.4	-4.39/2.03	-1.48/2.96	-1.68/1.49	-2.28/0.34	0.43/0.19	-1.13/0.21	0.41/0.67	-2.87/5.74	-9.41/8.46	4.45/4.39
Theta (105°)	-4.45/3.9	-3.97/3.56	-5.42/5.79	6.71/10.96	9.76/16.16	-18.7/16.33	-12.5/8.21	5.46/4.57	6.58/10.88	-11.7/13.28	-7.46/12.03	-10.47/9.76	-17.87/7.5	5.61/7.51	-5.85/4.77	-4.84/7.23	-2.77/0.34	1.51/0.33	-0.41/0.14	1.43/0.15	-3.08/5.87	-8.6/6.12	-3.19/3.7	
Theta (112.5°)	3.38/3.78	4.84/6.39	8.46/6.76	4.79/7.46	10.79/12.24	-13.22/19.03	7.99/6.5	7.09/6.48	10.09/16.29	14.02/13.64	-12.65/15.17	-18.67/18.17	-17.48/17.59	-14.4/14.57	-11.79/5.57	-6.87/5.65	-8.07/8.08	4.19/0.65	0.56/1.77	2.01/0.24	0.69/0.18	-4.66/6.86	10.81/4.18	-1.45/2.03
Theta (120°)	-5.37/5.09	-3.48/3.98	4.62/6.44	6.43/5.79	5.73/6.27	8.5/9.01	-11.21/16.09	-3.03/3.89	-4.42/4.64	-7.26/10.88	-10.88/11.27	-18.84/17.86	-15.47/11.78	-12.13/13.49	-10.1/8.61	-4.34/3.56	-12.13/10.4	2.9/2.2	-2.78/2.95	4.62/0.96	1.22/1.48	-3.58/4.62	-1.94/5.06	-0.19/0.57
Theta (127.5°)	-4.45/5.05	-4.14/8.35	-10.68/6.5	-5.25/4.1	-3.27/3.64	-4.37/8.88	-9.68/5.68	-4.34/2.02	-2.06/3.49	5.63/7.2	-10.41/14.61	-15.27/10.42	-5.45/5.03	-11.58/16.67	-11.96/12.75	-11.59/9.98	-11.88/9.99	-1.07/1.01	-4.44/3.37	-3.18/4.98	0.31/1.48	-4.92/4.43	-10.11/4.78	0.01/0.14
Theta (135°)	-4.72/9.43	-5.64/6.06	-7.98/7.18	-3.88/3.1	-2.57/2.86	-6.16/10.85	-15.27/13.71	-8.09/7.79	6.73/4.6	-4.69/7.09	-8.55/8.93	-11.16/12.79	9.3/8.94	15.18/18.57	-13.28/17.72	-10.1/8.36	-11.11/8.71	-7.24/3.9	6.01/4.46	-8.37/10.36	-6.97/0.89	-4.14/6.18	-6.28/7.7	-1.93/0.73
Theta (142.5°)	-4.86/12.38	-17.86/10.16	-4.51/2.39	-1/0.56	-1.67/2.7	-3.89/7.4	-14.7/18.12	-11.27/9.79	-6.59/6.68	-7.09/10.57	-15.32/18.1	-17.66/13.76	-10.84/10.53	-12.02/16.77	-14.67/7.09	-7.25/18.97	-7.23/8.86	-14.7/9.79	-9.77/9.08	-13.79/6.24	9.32/8.57	-7.66/14.27	-10.77/6.11	-3.52/2.52
Theta (150°)	5.03/9.58	-15.87/19.31	-14.55/9.45	6.46/5.36	5.36/6.91	9.64/11.06	11.34/11.06	-11.42/15.03	-18.25/18.69	-15.71/13.43	-15.64/18.52	-16.99/11.49	-10.88/10.46	12.69/17.17	-15.41/17.77	8.79/6.81	6.22/6.13	8.8/10.35	8.3/6.46	6.18/8.48	6.14/6.29	6.76/6.28	-3.74/3.11	
Theta (157.5°)	5.94/4.93	3.94/3.76	4.54/4.42	-7.23/7.3	-7.77/8.4	9.55/11.28	12.08/12.38	-11.99/11.94	12.84/14.5	-15.44/14.66	-15.43/15.8	-15.36/14.82	-16.61/19.11	18.34/18.88	-18.19/18.42	-13.41/9.27	-7.53/7.07	-6.93/7.77	10.9/13.7	-11.92/10.89	-11.27/11.74	-11.85/9.84	-6.93/6.46	-6.86/5.96
Theta (165°)	-9.06/10.35	-11.59/10.88	8.78/8.63	-7.02/8.28	-9.22/9.09	8.8/9.5	9.55/9.18	9.77/10.93	-12.33/12.8	-10.68/9.86	-8.26/8.25	-8.5/9.15	9.9/10.23	9.83/9.84	-10.88/12.44	-12.3/10.29	8.4/7.87	-8.83/10.54	-13.6/17.07	-16.41/13.5	-10.92/8.12	-6.39/6.09	-5.67/5.06	-5.53/5.70
Theta (172.5°)	-11.88/8.76	-6.67/5.39	-4.6/4.96	-6.95/9.68	-11.42/11.1	-10.11/9.79	-8.83/7.8	-7.75/8.33	9.25/9.74	-9.09/8.52	-8.12/7.65	-7.37/7.53	-18.91/8.94	9.65/10.7	-10.26/10.38	-10.79/11.7	-12.82/15.11	-18.53/18.37	-14.5/11.88	-10.28/9.42	9.03/9.07	9.34/10.75	-13.22/16	-18.5/15.78
Theta (180°)	-10.96/12.81	-16.23/18.77	-18.96/13.09	9.67/8.27	-8.17/8.57	9.4/10.21	-10.57/10.67	-11.88/13.78	-15.92/18.03	-18.06/18.79	-18.77/19.12	-18.95/18.85	-18.07/17.44	16.86/15.99	-15.05/14.21	-13.67/13.5	-13.55/15.39	-18.49/18.44	-17.96/18.27	-14.87/12.81	-11.45/9.87	-9.7/9.93	-8.65/7.46	-8.31/9.83
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	12.79/18.58	18.91/18.98	17.18/14.23	-11.68/10.12	8.76/7.09	6.62/6.33	6.22/5.99	5.56/5.46	5.51/5.83	6.23/6.55	7.19/7.79	8.48/10.04	12.91/16.5	18.83/17.9	18.94/14.55	12.01/10.46	8.63/6.79	5.5/5	4.75/4.72	4.82/5.03	5.65/6.17	6.35/6.43	6.71/6.7	9.18/11.52
Theta (7.5°)	8.92/10.04	-13.68/17.04	-18.54/18.12	-15.55/12.01	-9.92/7.42	6.57/5.65	5.05/4.39	-3.99/4.07	4.34/8.3	-5.68/7.09	9.09/11.86	14.46/18.63	-18.24/19.19	15.43/11.58	-9.21/8.58	-7.91/7.58								



Radiated Composite Gain Data

Appendix A

Theta	19.44/19.38	18.51/18.86	19.51/17.55	17.74/17.12	6.21/5.38	5.57/5.87	6.01/6.07	6.9/7.24	6.74/6.54	9.92/13.99	14.97/18.87	19.24/18.41	15.47/13.2	14.76/13.34	12.41/13.51	15.57/14.6	13.44/11.52	10.52/8.34	8.16/8.44	9.39/12.89	17.33/14.34	14.09/13.1	10.21/8.75	9.67/14.76	
Phi	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°
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	19.44/19.38	18.51/18.86	19.51/17.55	17.74/17.12	6.21/5.38	5.57/5.87	6.01/6.07	6.9/7.24	6.74/6.54	9.92/13.99	14.97/18.87	19.24/18.41	15.47/13.2	14.76/13.34	12.41/13.51	15.57/14.6	13.44/11.52	10.52/8.34	8.16/8.44	9.39/12.89	17.33/14.34	14.09/13.1	10.21/8.75	9.67/14.76	
Phi	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	
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	19.44/19.38	18.51/18.86	19.51/17.55	17.74/17.12	6.21/5.38	5.57/5.87	6.01/6.07	6.9/7.24	6.74/6.54	9.92/13.99	14.97/18.87	19.24/18.41	15.47/13.2	14.76/13.34	12.41/13.51	15.57/14.6	13.44/11.52	10.52/8.34	8.16/8.44	9.39/12.89	17.33/14.34	14.09/13.1	10.21/8.75	9.67/14.76	
Phi	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	60°	
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°)	



Radiated Composite Gain Data

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(150°)	Phi(150°)	-8.19/8.83	-10.32/11.43	-11.37/10.73	-9.53/8.74	-8.55/7.66	-6.81/5.83	-5.15/4.76	-4.89/5.07	-5.27/5.72	-6.69/7.82	-8.99/11.53	-16.21/19.64	-17.94/18	-17.84/18.47	-18.62/12.55	-9.65/9.95	-13.36/12.92	-17.29/13.43	-13.73/18.94	-18.95/17.47	-17.83/10.88	-10.31/13.71	-13.91/10.04	-7.92/7.59		
Theta(157.5°)	Phi(157.5°)	-7.88/11.32	-17.25/17.55	-16.96/12.37	-11.23/11.87	-13.01/13.51	-12.28/10.14	-8.57/8.74	-7.89/8.21	-9.29/11.39	-12.87/12.14	-10.23/9.13	-9.37/10.89	-12.71/12.84	-11.32/9.71	-9.2/9.42	-10.35/11.84	-14.07/12.92	-9.57/8.03	-9.03/10.9	-10.23/8.78	-7.86/6.63	-4.25/3.72	-4.43/5.1	-5.15/6.02		
Theta(165°)	Phi(165°)	-11.47/10.63	-8.78/7.08	-6.06/6.16	-7.56/9.93	-11.59/11.43	-9.93/7.65	-5.95/2.25	-6.53/6.22	-2.98/10.05	-12.61/13.73	-10.23/12.98	-12.09/11.12	-10.26/9.39	-8.35/7.68	-7.91/9.36	-12.64/16.67	-15.06/11.13	-8.25/8.16	-9.25/12.05	-17.66/18.93	-18.66/16.52	-12.23/9.59	-8.86/9.69	-5.10/7.11		
Theta(172.5°)	Phi(172.5°)	9.31/9.56	-10.72/12.24	-13.27/13.23	-12.03/10.43	-10.04/10.63	-11.76/13.07	-13.64/13.78	-14.17/14.54	-14.91/15.48	-17.29/18.43	-17.34/18.24	-19.06/16.58	-15.11/14.01	-13.26/13.58	-14.88/15.94	-16.25/15.38	-14.18/13.89	-14.19/15.56	-18.76/19.14	-18.91/14.22	-12.37/12.02	-12.17/11.69	9.82/8.41	8.96/9.99		
Theta(180°)	Phi(180°)	-15.31/16.82	-18.04/18.41	-17.83/15.45	-11.91/10.25	-10.23/11.51	-13.76/17.98	-17.68/17.38	-17.89/17.56	-18.51/18.94	-18.57/17.95	-18.31/18.77	-17.81/16.46	-14.78/13.33	-12.05/11.39	-11.18/11.18	-11.36/11.53	-12.05/13.05	-13.69/14.61	-15.23/14.97	-15.29/16.3	-16.89/17.21	-18.59/18.99	-16.31/13.85	-13.64/14.42		
Phi(0°)	Phi(0°)	2.98/2.82	3.43/4.56	5.25/5.99	7.32/9.06	11.06/13.41	15.64/16.19	14.13/11.07	8.81/7.09	5.79/4.85	4.13/3.42	2.89/2.51	2.22/2	1.98/2.21	2.77/3.46	4.23/5.24	6.62/8.59	11.47/15.36	18.99/17.03	13.12/10.02	7.98/6.49	5.45/4.5	3.69/3.01	2.33/2.16	2.11/2.6		
Phi(7.5°)	Phi(7.5°)	-0.65/0.7	-1.14/1.99	-3.12/3.43	-5.4/7.02	-8.72/11.71	-16.19/15.82	-12.92/10.42	-8.14/6.27	-4.79/3.71	-2.96/2.22	-1.61/1.3	-1.14/1.06	-1.17/1.39	-1.85/2.6	-3.52/4.77	-6.71/9.38	-12.67/16.58	-18.2/17.11	-14/11.82	9.77/7.89	6.11/4.61	3.33/2.27	-1.45/0.87	0.5/0.71		
Phi(15°)	Phi(15°)	2.04/2.15	1.71/0.86	-0.31/1.5	2.7/4.3	6.2/9.26	11.4/11.52	11.62/10.15	7.98/6.61	5.42/4.75	-4.05/3.32	-2.72/2.3	-2.44/2.68	-3.02/3.38	-3.79/4.55	5.92/7.67	10.07/13.16	16.23/16.57	14.94/13.5	11.76/9.29	6.48/4.13	2.34/1.02	-0.11/0.7	1.25/1.65			
Phi(22.5°)	Phi(22.5°)	1.46/1.64	1.13/0.38	0.47/1.58	2.59/3.91	5.47/7.62	8.82/10.27	11.98/11.02	10.11/9.38	8.6/9.3	5.93/5.24	4.52/3.79	3.33/3.04	2.92/3.1	3.75/4.75	5.96/7.2	8.05/8.58	9.46/10.91	13.09/15.51	17.47/18	17.53/14.04	9.46/5.73	3.18/1.7	0.87/0.08	0.71/0.9		
Phi(30°)	Phi(30°)	3.25/3.13	2.64/1.75	0.49/0.75	1.0/0.26	-1.78/4.54	-7.41/10.77	-12.81/12.41	-8.85/4.04	-2.68/1.62	-1.1/0.62	-0.020/29	-0.4/1.02	0.17/1.07	0.73/2.74	0.78/0.87	-4.28/7.26	-9.63/11.2	-11.41/11.74	-16.17/19.2	-14.43/9.03	5.65/2.94	3.00/2.58	1.66/2.36	2.97/3.2		
Phi(37.5°)	Phi(37.5°)	2.94/2.98	2.51/4.64	0.38/1.13	2.69/4.06	5.3/6.48	6.6/6.7	5.77/4.65	3.58/2.65	2.01/1.51	-1.03/0.94	-1.38/1.81	-1.61/1.81	-2.98/4.94	5.87/4.86	3.38/2.96	3.55/5.27	8.33/11.8	-13.24/12.45	-13.77/18.73	-18.07/10.53	5.79/2.52	0.05/1.7	2.54/2.7	2.54/2.69		
Phi(45°)	Phi(45°)	2.42/2.25	1.37/0.64	0.40/0.6	0.8/2.62	5.14/9.06	11.26/10.16	8.44/5.94	3.5/1.71	0.75/0.56	-0.5/0.68	-1.33/1.53	-0.54/0.01	1.08/3.23	3.77/3.82	5.53/7.19	6.58/6.07	7.53/10.76	15.49/15.46	13.13/13.68	-10.58/6.28	3.06/0.78	0.41/1.25	2.15/2.86	2.89/2.55		
Phi(52.5°)	Phi(52.5°)	0.29/0.8	0.96/0.42	0.1/0.26	1.1/0.26	-1.78/4.54	-7.41/10.77	-12.81/12.41	-8.85/4.04	-2.68/1.62	-1.1/0.62	-0.020/29	-0.4/1.02	0.17/1.07	0.73/2.74	0.78/0.87	-4.28/7.26	-9.63/11.2	-11.41/11.74	-16.17/19.2	-14.43/9.03	5.65/2.94	3.00/2.58	1.66/2.36	2.97/3.2		
Phi(60°)	Phi(60°)	1.91/1.94	2.04/1.77	1.55/1.26	-0.22/3.06	6.77/11.24	-11.9/9.38	5.87/3.04	-1.48/0.63	-0.58/0.86	-1.18/0.8	-0.48/0.32	-0.11/1.04	-1.74/1.41	-1.38/1.97	2.6/4.73	9.75/14.65	-11.74/9.99	-13.4/19.17	-18.95/12.73	8.05/6.22	4.24/2.65	-1.49/0.3	0.27/1.18	2.07/2.07		
Phi(67.5°)	Phi(67.5°)	1.01/1.3	2.03/1.72	1.53/0.81	2.38/4.94	-7.63/8.23	-8.3/7.92	6.45/5.02	-3.45/2.32	-2.41/2.32	-3.47/4.15	-5.4/8.1	-4.66/3.57	-4.25/3.19	-3.11/2.95	-2.63/3.44	5/7.69	-11.09/14.54	-11.23/16.9	-18.76/13.88	9.45/7.75	6.72/4.4	-3.44/2.08	-0.87/0.65	-1.16/0.62		
Phi(75°)	Phi(75°)	2.29/2.14	1.93/1.85	1.23/0.04	-2.24/4.23	-4.39/4.24	5.13/6.64	6.59/4.76	2.96/1.58	-1.07/1.44	-2.61/3.43	-5.43/6.25	-5.96/4.96	-3.01/2.02	-2.78/3.4	-3.9/4.36	-4.94/7.23	-9.83/9.41	-11.11/17.77	-17.54/17.38	-11.51/7.51	5.3/4.15	-2.86/2.58	-1.13/0.74	1.28/1.76		
Phi(82.5°)	Phi(82.5°)	0.71/0.89	0.03/0.97	1.65/2.86	4.23/5.29	5.85/7.07	8.81/10.34	-11.34/9.46	6.15/3.42	1.75/1.38	2.01/2.71	2.91/1.95	2.05/2.79	1.74/1.95	3.54/3.77	3.2/3.26	6.14/12.29	-18.18/19.59	-18.05/18.84	-18.22/18.29	17.03/7.96	4.63/3.24	-2.89/3.43	-2.58/1.09	0.50/8.1		
Phi(90°)	Phi(90°)	0.91/0.91	-1.04/2.23	-3.82/4.94	5.6/7.63	-10.34/12.9	-16.79/15.74	-13.64/9.67	5.91/3.22	-2.03/1.71	-1.58/1.25	-1.28/0.04	0.33/0.57	2.89/0.74	2.16/3.2	6.61/10.99	-11.04/12.9	-17.25/13.92	-11.13/19.59	-19.21/18.52	8.88/9.7	6.42/5.15	-3.41/2.74	-2.35/1.31	0.23/0.36		
Phi(97.5°)	Phi(97.5°)	0.18/0.23	-0.15/1	-1.02/1.31	-2.36/4.26	-7.15/10.31	-12.21/10.81	-7.88/6.83	6.28/5.66	-5.17/6.47	-5.53/4.11	-1.71/0.73	1.26/2.13	2.93/0.99	-1.87/6.29	8.93/12.31	-11.36/10.45	-16.19/15.94	-9.51/11.41	-17.77/18.66	-11.31/6.23	6.3/4.21	-5.32/2.87	-2.67/1.38	0.65/0.4		
Phi(105°)	Phi(105°)	-3.04/2.84	1.68/0.73	0.02/1.18	2.99/5.26	8.96/10.6	8.82/7.85	7.62/6.57	6.19/7.49	8.88/9.58	6.97/5.07	3.34/0.57	0.90/0.7	-0.19/1.25	2.19/3.47	8.29/17.19	-18.91/10.32	-14.52/18.73	-10.08/8.67	-11.31/13.71	12.98/5.84	6.39/4.46	-7.64/5.24	2.23/0.72	-1.73/2.23		
Phi(112.5°)	Phi(112.5°)	-2.54/2.39	-2.49/3.3	3.17/3.71	-7.26/9.58	-8.82/8.9	-10.16/10.63	9.22/8.68	9.45/8.34	6.52/6.15	-6.57/6.66	-7.05/4.28	-2.93/1.73	-6.01/1.68	6.25/7.52	6.77/10.98	-18.39/11.33	-7.31/7.28	-10.81/7.7	9.49/9.07	-11.87/16	6.31/6.6	-8.16/4.25	-8.06/6.55	-3.89/2.79		
Phi(120°)	Phi(120°)	0.21/0.73	-0.49/0.93	-2.78/4.74	-5.42/6.03	-5.03/4.49	-6.97/14.34	-18.16/13.67	8.75/5.76	4.15/3.38	-5.57/7.24	6.8/6.03	5.04/4.04	-2.5/2.51	2.1/1.8	4/7.48	-14.45/4.43	-1.91/5.13	-11.89/9.89	-12.64/10.44	9.05/8.28	4.95/6.28	-5.12/4.7	-3.63/1.85	-1.52/2.4		
Phi(127.5°)	Phi(127.5°)	0.08/0.31	-1.19/1.97	-2.57/4.25	-5.95/4.39	-2.88/3.1	-4.39/6.75	-11.08/15.07	-9.16/4.02	-1.89/2.95	-5.36/7.87	-12.76/10.1	-10.62/7.45	-8.72/18.18	-11.63/6.98	7.74/15.09	-7.94/5.29	4.84/7.13	-14.84/13.94	-18.78/18.18	-12.88/15.48	-10.71/8.41	8.92/10.19	-6.28/3.01	-0.34/0.64		
Phi(135°)	Phi(135°)	-2.22/1.74	2.35/4.16	5.59/4.01	-2.14/2.06	-2.75/3.73	5.47/9.56	-14.77/19.93	-17.64/8.61	-5.17/3.96	-3.31/4.3	6.49/8.92	-16.19/7.35	5.66/6.72	5.35/5.93	9.57/16.65	-12.58/8.21	-7.17/10.83	-17.41/17.41	14.29/15.25	-18.87/16.2	13.15/10.02	-10.11/66	9.79/3.96	-2.71/2.84		
Phi(142.5°)	Phi(142.5°)	-10.77/10.18	-7.23/4.78	-3.13/2.17	-1.96/1.65	-1.59/2.74	1.93/4.62	-7.17/9.63	1.91/9.63	-4.94/4.79	-5.17/9.35	-4.44/1.81	-2.91/9.09	9.43/12.02	-11.85/14.97	8.25/6.1	4.23/10.58	-1.71/5.88	-7.75/8.34	-14.89/18.68	8.58/9.36	-10.94/8.96	8.55/6.78	5.58/5.64	5.59/4.79		
Phi(150°)	Phi(150°)	0.52/1.57	-3.6/5.46	-6.39/6.75	-6.52/5.8	-6.12/7.27	-8.2/8.7	-9.93/11.88	-14.54/15.57	-14.37/12.65	-11.65/10.47	-9.03/7.71	-5.31/2.39	-0.82/0.82	-1.85/2.84	4.25/6.83	-10.18/12.85	-13.32/12.59	-14.02/16.42	-18.3/18.19	-14.78/10.37	-8.55/6.75	-5.67/5.85	-5.32/3.67	-2.14/0.85		
Phi(157.5°)	Phi(157.5°)	0.33/0.38	-0.02/0.56	-2.02/4.63	9.11/16.19	-18.72/18.56	-19.06/19.2	-17.98/17.17	-18.73/17.61	-16.58/15.94	-14.59/11.9	-8.82/5.79	-3.21/1.46	-0.95/1.72	3.73/4.77	-13.27/16.65	-18.53/18.17	-18.3/12.82	-10.79/11.17	-13.69/16.35	-14.14/10.77	9.01/8.04	-6.69/3.53	-4.07/2.52	-1.18/0.17		
Phi(165°)	Phi(165°)	1.89/1.74	1.02/0.43	-2.9/5.79	8.24/10.32	12.38/14.34	-16.11/17.41	-17.14/16.42	-15.58/14.85	-14.91/15.3	-15.88/16.21	-15.81/14.59	-14.23/14.01	-13.13/12.56	-11.29/11.72	-12.08/14.16	-18.77/18.78	-17.29/14.04	-13.39/14.65	-15.82/13.99	-11.33/9.32	-7.89/6.77	-5.2/3.57	-2.24/0.9	0.37/1.35		
Phi(172.5°)	Phi(172.5°)	-9.88/9.03	-8.77/8.69	-8.48/8.56	9.31/10.6	12.84/15.52	-17.82/18.2	-16.79/15.69	-15.26/14.77	-14.74/15.23	-15.63/16.02	-16.52/15.95	-15.15/15.33	-13.97/17.57	-18.41/18.92	-18.22/15.28	-13.39/12.55	-11.26/14.49	-16.68/17.75	-16.61/15.27	-14.87/15.51	16.74/19.31					



Radiated Composite Gain Data

Appendix A

Theta	2.16/2.54	3.09/3.36	3.89/4.49	5.12/6.1	7.17/8.74	11.06/14.57	17.98/17.34	15.01/12.12	9.7/7.82	6.47/5.34	4.36/3.59	3.05/2.49	2.08/1.92	1.97/2.2	2.71/3.54	4.43/5.8	7.85/10.18	13.86/17.25	17.39/17.41	13.36/9.71	7.23/5.43	4.27/3.72	3.14/2.68	2.23/2.13
Theta(7.5)	2.4/2.96	3.78/3.72	4.1/4.96	5.96/7.8	9.85/13.46	18.71/18.77	18.62/13.39	10.07/7.6	5.87/4.74	3.91/3.38	3.02/2.65	2.24/1.85	1.55/1.47	1.54/1.89	2.53/3.32	4.31/5.51	7.12/8.96	11.6/14.18	17.89/16.47	13.13/9.8	7.49/6.49	5.61/4.93	4.2/3.49	3.08/2.56
Theta(15)	3.16/3.73	3.66/3.43	3.92/4.18	4.57/5.29	6.46/9.04	11.87/15.98	19.34/16.18	12.19/9.94	8.39/7.53	7.12/6.93	6.73/6.3	5.83/5.74	5.84/6.16	6.56/6.2	6.43/6.17	5.89/6.15	7.07/8.6	10.51/11.05	10.68/9.2	7.63/6.24	5.65/5.17	4.54/3.92	3.55/3.26	3.16/2.98
Theta(22.5)	0.30/19	0.44/1.7	2.95/3.61	4.42/4.95	5.7/7.33	8.68/11.41	14.71/16.63	13.65/11.05	8.91/7.07	5.58/4.46	3.34/2.33	1.74/1.75	2.13/3.02	4.29/5.9	7.59/8.88	9.57/9.68	9.34/8.92	8.63/7.99	8.09/8.24	7.6/6.9	6.48/5.52	4.25/2.99	1.63/0.58	0.09/0.24
Theta(30)	2.12/2.03	1.06/0.12	1.23/2.45	3.73/4.37	4.96/6.2	6.96/7.87	8.12/7.96	7.3/6.84	6.27/5.6	4.62/3.88	3.52/2.96	2.37/2.39	3.35/4.62	5.46/5.66	6.05/6.65	7.12/6.98	6.7/6.89	7.31/8.43	8.93/8.23	7.81/7.25	6.11/4.82	3.13/1.32	0.16/0.97	1.52/1.63
Theta(37.5)	3.032/51	1.45/0.1	1.9/3.47	4.23/4.39	4.69/5.72	5.85/6.09	6.65/7.73	8.22/7.77	6.68/5.22	4.52/5.01	5.95/5.39	3.8/2.7	2.3/2.37	2.37/2.83	4.61/7.4	9.32/9.75	10.2/11.13	10.45/9.19	9.1/10.75	10.7/8.57	6.21/3.66	1.96/0.34	1.152/0.3	2.572/81
Theta(45)	3.52/2.83	1.18/0.78	1.47/1.81	3.13/4.37	4.72/4.94	3.93/3.54	4.02/5.02	5.79/6.17	6.09/5.54	4.79/4.54	4.72/4.79	3.2/1.94	2.29/3.04	2.94/3.01	4.3/6.44	7.97/10.43	10.96/8.07	6.71/8.26	9.26/9.52	9/7.38	5.54/4.07	2.93/1.22	1.082/37	2.883/07
Theta(52.5)	4.16/3.42	2.08/0.73	0.07/1.19	2.96/3.83	4.28/5.29	5.52/5.99	7/7.77	5.77/3.42	1.97/1.54	1.5/0.93	0.53/0.23	0.28/0.6	2.51/3.95	5.24/8.64	12.82/11.46	9/10.28	12.01/12.49	11.95/10.51	11.96/16.79	14.99/10.33	6.11/3.25	1.41/0.31	1.352/74	3.594/06
Theta(60)	0.54/0.79	0.52/0.25	0.96/1.92	2.32/2.6	4.32/6.89	7.81/11.03	13.6/10.23	7.08/4.31	2.97/2.56	1.9/0.99	0.53/0.53	0.6/0.93	1.43/1.02	1.24/3.31	6.3/13.56	18.48/18.2	15.61/11.65	8.6/9.49	12.71/17.41	14.78/11.28	7.39/5.04	3.64/1.84	0.930/01	0.810/78
Theta(67.5)	0.54/0.01	0.70/6	0.33/0.52	1.38/2.52	4.98/10.01	18.12/19.26	12.86/7.79	5.02/4.58	4.88/5.17	5.33/4.45	2.71/2.28	1.5/0.59	1.01/1.22	2.34/4.98	7.6/10.88	18.35/12.03	7.16/4.93	7.15/9.56	15.22/10.9	10.79/11.25	9.76/5.66	5.53/4.36	2.32/1.74	0.76/0.03
Theta(75)	0.35/0.66	0.98/0.67	0.42/0.04	1.21/2.84	7.16/17.12	18.49/18.15	11.03/6.07	4.01/4.4	5.78/6.91	8.41/9.69	8.36/7.43	5/4.4	5.09/4.27	5.15/7.97	7.84/8.37	9.37/9.91	10.45/8.38	7.47/12.73	18.18/15.05	12.79/12.76	7.44/3.09	2.01/0.88	1.27/0.35	0.180/66
Theta(82.5)	0.471/0.05	1.0/78	0.92/0.47	0.94/3.29	5.34/7.8	10.95/13.77	9.84/5.84	3.64/3.03	2.3/2.04	2.85/3.61	4.34/5.4	4.84/4.04	1.96/1.86	2.79/3.63	6.02/11.47	13.85/10.96	7.2/6.7	10.38/11.57	18.48/17.88	18.55/12.83	14.25/16.22	8.79/4.98	2.48/1.12	0.260/31
Theta(90)	2.32/2.5	2.28/1.46	0.55/0.6	2.08/3.39	5.28/9.68	14.52/12.59	11.69/10.04	6.62/4.99	3.15/1.17	1.22/1.52	2.82/3.38	3.5/3.8	2.66/2.84	5.14/6.36	7.85/9.14	18.03/13.51	9.82/9.08	9.56/12.34	18.31/14.12	9.86/6.86	6.9/11.01	7.55/5.46	3.17/1.22	0.28/1.4
Theta(97.5)	0.120/25	0.72/1.46	1.51/1.68	2.21/3.92	7.53/13.97	17.01/14.33	14.39/11.9	7.35/4.92	2.29/1.08	0.71/1.58	2.62/2.03	2.08/2.08	1.53/3.99	5.19/8.99	17.43/12.93	9.59/7.95	7.4/10.46	14.53/10.58	3.99/7.39	15.11/13.37	7.44/3.09	2.01/0.88	0.180/66	
Theta(105)	1.49/1.52	1.59/1.48	1.39/1.02	0.4/3.1	5.96/8.08	13.13/18.59	12.62/10.84	10.64/10.84	8.3/5.29	5.84/6.14	5.62/3.38	2.72/2.34	1.55/2.67	4.7/5.99	7.9/16.69	12.73/9.28	6.13/11.36	4.9/4.38	11.98/9.03	6.74/4.37	10.22/10.67	3.98/0.65	1.09/1.84	3.022/28
Theta(112.5)	1.31/1.8	1.26/1.85	1.87/0.48	1.06/4.11	7.65/11.78	13.52/12.76	12.01/17.11	17.02/17.51	13.4/8.19	5.23/4.08	3.83/2.17	1.6/1.49	2.82/5.65	7.59/13.21	9.73/5.48	7.67/9.38	17.13/10.74	9.62/4.44	7.26/6.02	7.92/4.18	10.79/13.66	7.06/2.73	0.21/1.13	1.59/1.87
Theta(120)	0.43/0.89	2.49/3.13	3.1/1.64	1.51/7.8	10.07/12.03	18.81/17.82	17.83/15.94	18.55/13.53	9.27/8.21	6.17/1.64	5.55/6.02	5.95/9.08	15.89/5.35	5.57/12.29	16.77/2.57	0.24/1.96	4.48/5.04	11.01/5.32	7.33/2.66	4.85/4.8	4.92/2.9	2.34/1.04	1.070/01	
Theta(127.5)	3.09/2.75	2.14/1.36	0.28/0.62	2.86/5.51	4.72/3.66	4.36/9.12	14.65/14.9	18.27/9.27	7.23/5.56	6.35/6.11	5.48/4.85	4.24/7.18	7.39/5.43	9.62/15.18	15.44/11.28	4.22/0.95	0.84/2.16	4.48/5.96	12.41/9.24	7.77/7.92	8.67/13.72	10.37/5.24	1.25/1.32	3.05/0.8
Theta(135)	4.2/4.11	3.75/2.81	0.6/3.19	4.85/3.39	4.72/3.59	5.93/10.25	13.13/16.16	17.17/14.2	6.18/4.56	4.25/3.44	4.54/5.68	9.37/17.95	17.94/14.59	8.89/12.7	13.18/6.87	5.83/9.7	7.37/8.07	7.28/10.5	8.45/16.79	13/14.92	5.07/7.43	5.8/6.33	2.360/51	2.564/02
Theta(142.5)	-2.61/2.17	-2.36/2.74	-2.15/0.88	-0.71/1.53	-2/3.41	-7.42/11.81	-10.66/10.41	-14.54/16.75	-13.26/11.65	-7.69/1.03	-8.97/5.5	-7.27/2.9	-1.42/2.52	-5.67/11.13	-12.33/8.58	-5.75/3.85	-4.19/9.34	-12.15/12.9	-9.83/11.8	-7.77/13.55	9.95/5.54	5.44/4.16	-8.84/3.14	-2.59/3.01
Theta(150)	-8.84/11.65	-13.3/13.71	-13.76/10.67	-6.31/3.89	-4.03/6.07	-8.6/8.64	-8.95/10.59	-13.48/16.13	-18.86/15.63	-10.39/8.21	-6.33/4.38	-2.89/1.13	0.06/0.23	-1.99/3.56	-4.56/7.97	-15.36/16.39	-13.1/9.71	-8.18/9.82	-11.67/8.99	5.7/5.9	-9.05/9.39	9.04/8.62	-7.07/6.21	5.84/6.46
Theta(157.5)	-0.03/0.65	-1.29/1.46	-1.37/2.73	-5.73/10.01	-13.56/15.39	-16.76/18.23	-19.33/17.82	-17.26/17.91	-18.48/17.72	-18.52/12.69	-7.02/3.14	-0.62/0.97	1.38/0.6	-1.41/4.53	9.49/18.42	-19.03/19.04	-18.95/16.71	-16.18/18.17	-19.05/14.45	-10.88/8.84	-7.89/1.05	-5.34/3.6	-2/0.5	0.230/25
Theta(165)	2.162/44	2.38/1.8	0.24/2.13	4.4/6.35	7.8/9.34	-11.01/12.64	-13.63/14.56	-14.91/15.29	-15.87/17.92	-18.09/18.66	-17.96/17.78	-19.41/15.69	-12.02/9.75	-8.54/1.64	-7.41/8.2	-10.73/13.3	-12.08/10.21	-10.45/12.69	-16.12/16.02	-12.63/10.26	-8.8/7.37	-5.61/3.63	-1.9/0.5	0.71/63
Theta(172.5)	6.48/5.4	5.28/5.95	6.9/6.85	7.11/7.95	9.07/10.45	12.15/13.5	13.98/14.23	13.69/12.19	10.99/10.21	9.56/9.18	8.96/8.59	8.51/8.57	8.65/8.31	7.54/6.96	6.82/7.03	7.47/8.08	9.32/11	13.08/15.33	16.09/16.09	15.98/16.12	14.87/13.66	13.56/13	12.43/11.05	9.45/7.7
Theta(180)	-4.84/4.49	-4.97/5.23	-5.51/5.79	-6.34/6.93	-7.28/7.77	-8.35/8.96	-9.69/10.87	-12.16/13.44	-14.48/15.41	-15.34/15.27	-15/14.81	-14.91/15.47	-15.82/15.84	-16.21/17.07	-17.19/17.18	-17.31/17.73	-18.95/18.04	-19.27/17.77	-17.5/18.14	-19.14/17.95	-14.64/12.31	-9.83/7.61	-5.57/4.86	
Freq(Hz)	5.785/GPol	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(7.5)	-13.33/13.44	-12.61/10.08	-7.92/6.18	-4.71/3.73	-2.87/2.72	-2.73/2.42	-1.99/1.77	-2.01/2.41	-3/3.67	-4.69/6.06	-7.69/7.98	-12.81/17.49	-17.88/18.66	-15.33/11.49	-8/5.674	-4.97/3.89	-3.12/2.58	-2.08/1.89	-1.9/2.25	-2.89/3.54	-4.31/6.46	-6.67/7.83	-8.99/9.46	-10.96/12.74
Theta(15)	-13.25/13.82	-12.84/10.84	-8.88/6.67	-5.14/3.77	-2.55/2.31	-1.98/1.33	-1.48/2.42	-3/3.435	-5.6/7.46	9.31/11.08	-12.73/14.78	-18.81/17.78	-18.9/15.62	-13.21/12.21	-10.9/9.44	-7.3/5.52	-3.95/2.82	-2.29/2.26	-2.54/3.39	4.51/5.47	6.32/7.17	7.91/8.9	9.47/9.64	-10.96/12.03
Theta(22.5)	-13.55/11.07	-8.98/7.87	6.18/5.38	4.97/3.57	2.55/2.33	1.65/1.53	2.8/3.86	4.43/5.39	7.38/9.73	12.46/15.61	17.46/15.23	13.31/13.4	14.78/15.82	13.38/11	10.26/10.7	10.88/9.39	6.87/4.5	3.14/2.72	2.87/3.63	4.61/5.72	6.58/6.24	5.67/5.79	6.43/8.18	-10.63/13.34
Theta(30)	-15.54/11.53	-8.06/6.14	6.11/7.08	6.37/4.07	2.62/2.66	2.75/3.08	3.18/2.55	2.52/3.05	4.07/4.71	5.2/6.31	7.82/8.75	10.14/12.3	13.23/12.97	11.64/9.75	8.18/7.62	7.46/8.19	8.49/7.59	6.5/5.58	4.34/2.76	-1.4/1.16	-1.86/2.83	-3.41/4.48	-6.53/9.76	-12.63/16.39
Theta(37.5)	-11.38/7.85	5.23/4.05	3.92/3.38	2.33/1.03	0.55/0.94	1.01/1.49	2.16/3.16	3.51/2.77	2.1/2.17	3.1/5.22	6.19/7.16	9.57/10.63	10.56/14.27	19/12.94	8.8/7.51	7.84/9.71	11.45/9.06	4.86/2.5	2.67/4.23	4.12/2.43	1.49/1.32	-1.41/2.16	-3.76/6.22	-11.4/17.86
Theta(45)	-18.51/10.33	5.09/3.2	-2.87/2.32	-1.54/1.35	-1.11/0.18	0.45/0.36	2.27/3.76	3.56/3.46	-4.63/4.71</															