

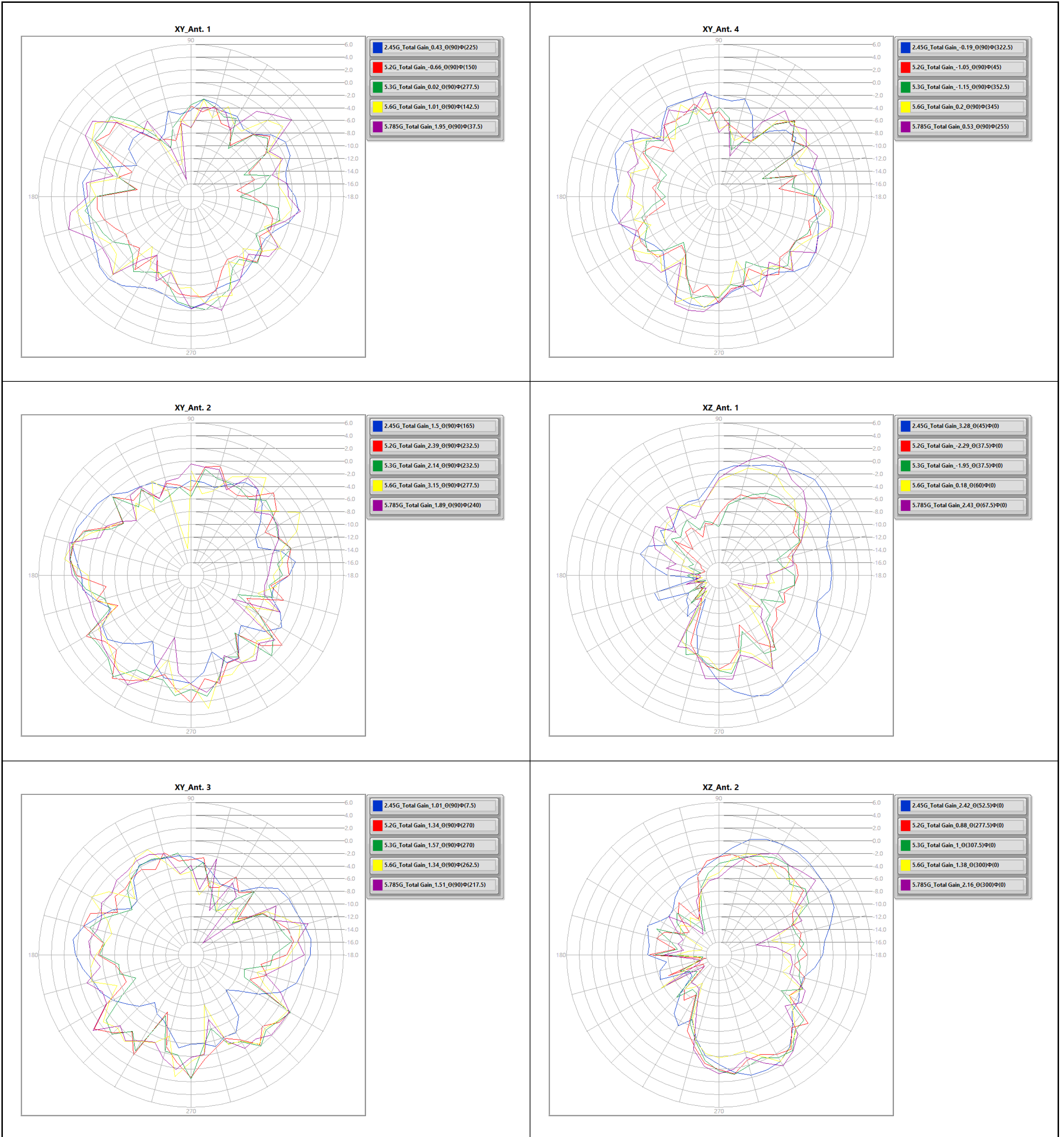


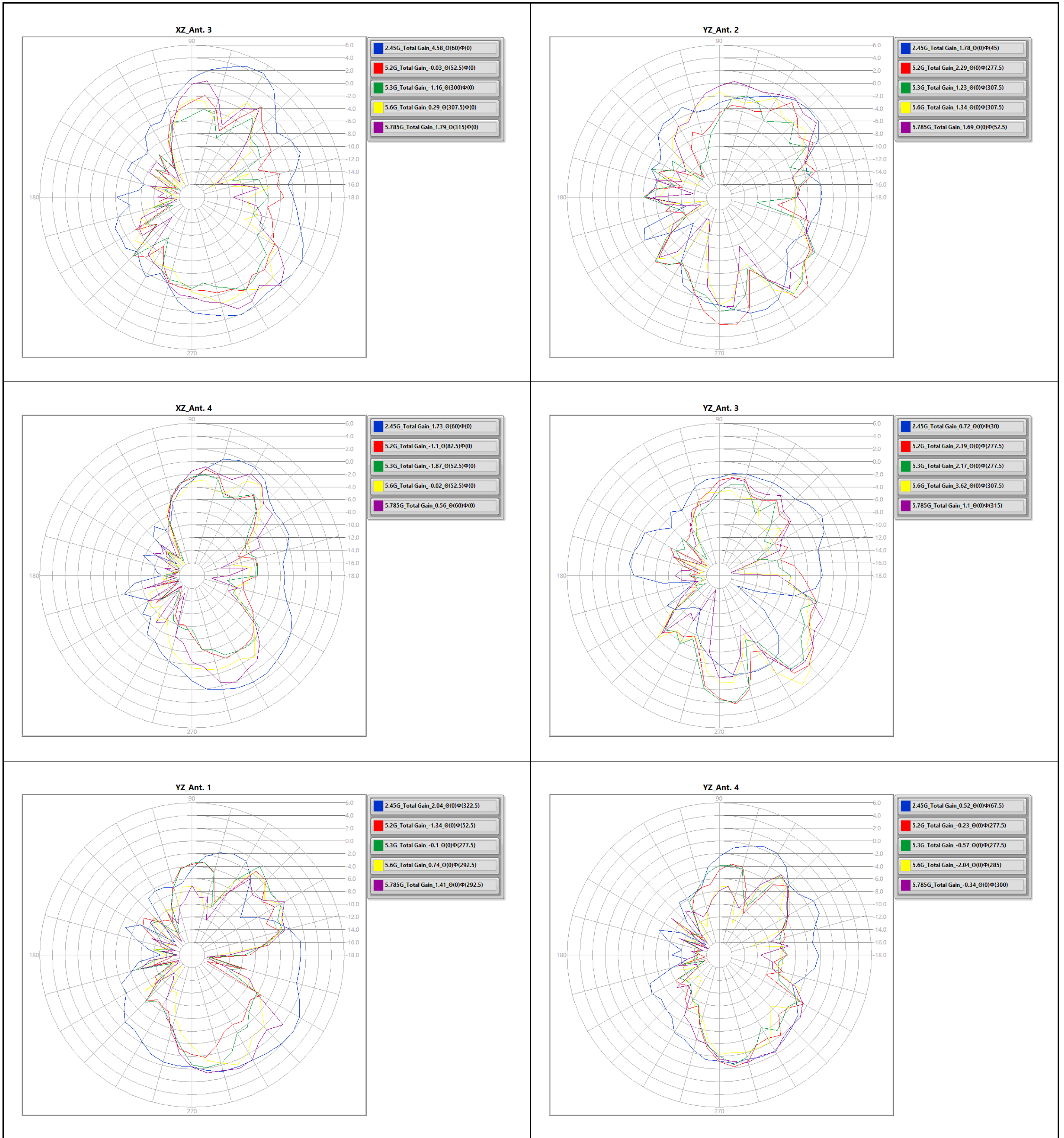
Antenna Pattern_Radio 1

Appendix D

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(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(100°)	Phi(0°)	-12.99	-13.18	-13.50	-14.04	-14.74	-15.55	-16.46	-17.43	-18.46	-19.55	-20.69	-21.87	-23.09	-24.34	-25.61	-26.90	-28.20	-29.51	-30.82	-32.13	-33.44	-34.74	-36.03	-37.31	-38.58	-39.84	-41.09	-42.33	-43.56	-44.78	-45.99	-47.19	-48.38	-49.56	-50.73	-51.89	-53.04	-54.18	-55.31	-56.43	-57.54	-58.64	-59.73	-60.81	-61.88	-62.94	-63.99	-65.03	-66.06	-67.08	-68.09	-69.09	-70.08	-71.06	-72.03	-73.00	-73.96	-74.91	-75.86	-76.80	-77.73	-78.66	-79.58	-80.50	-81.41	-82.31	-83.21	-84.10	-84.98	-85.86	-86.73	-87.60	-88.46	-89.32	-90.18	-91.03	-91.88	-92.72	-93.56	-94.39	-95.22	-96.05	-96.87	-97.69	-98.50	-99.31	-100.12	-100.92	-101.72	-102.51	-103.30	-104.08	-104.86	-105.63	-106.40	-107.17	-107.93	-108.69	-109.45	-110.21	-110.96	-111.71	-112.46	-113.20	-113.94	-114.68	-115.41	-116.14	-116.87	-117.60	-118.32	-119.04	-119.76	-120.47	-121.18	-121.89	-122.59	-123.29	-123.98	-124.67	-125.36	-126.04	-126.72	-127.40	-128.07	-128.74	-129.41	-130.07	-130.73	-131.39	-132.04	-132.69	-133.34	-133.98	-134.62	-135.26	-135.89	-136.52	-137.15	-137.78	-138.40	-139.02	-139.64	-140.25	-140.86	-141.47	-142.07	-142.67	-143.27	-143.86	-144.45	-145.04	-145.62	-146.20	-146.78	-147.36	-147.93	-148.50	-149.07	-149.64	-150.20	-150.76	-151.32	-151.88	-152.43	-152.98	-153.53	-154.08	-154.62	-155.16	-155.70	-156.24	-156.77	-157.30	-157.83	-158.35	-158.87	-159.39	-159.90	-160.41	-160.92	-161.43	-161.93	-162.43	-162.93	-163.42	-163.91	-164.40	-164.88	-165.36	-165.84	-166.31	-166.78	-167.25	-167.72	-168.18	-168.64	-169.10	-169.55	-170.00	-170.45	-170.90	-171.34	-171.78	-172.22	-172.65	-173.08	-173.51	-173.94	-174.36	-174.78	-175.20	-175.61	-176.02	-176.43	-176.84	-177.24	-177.64	-178.04	-178.44	-178.83	-179.22	-179.61	-180.00	-180.38	-180.76	-181.14	-181.51	-181.88	-182.25	-182.62	-182.99	-183.35	-183.71	-184.07	-184.43	-184.78	-185.13	-185.48	-185.83	-186.18	-186.52	-186.87	-187.21	-187.55	-187.89	-188.23	-188.56	-188.89	-189.22	-189.55	-189.88	-190.21	-190.53	-190.85	-191.17	-191.49	-191.81	-192.12	-192.43	-192.74	-193.05	-193.35	-193.65	-193.95	-194.25	-194.54	-194.83	-195.12	-195.41	-195.70	-195.98	-196.26	-196.54	-196.82	-197.10	-197.37	-197.64	-197.91	-198.18	-198.45	-198.72	-198.98	-199.25	-199.51	-199.77	-200.03	-200.29	-200.54	-200.79	-201.04	-201.29	-201.54	-201.78	-202.02	-202.26	-202.50	-202.74	-202.97	-203.20	-203.43	-203.66	-203.89	-204.11	-204.34	-204.56	-204.78	-205.00	-205.22	-205.44	-205.65	-205.86	-206.07	-206.28	-206.48	-206.68	-206.88	-207.08	-207.27	-207.46	-207.65	-207.84	-208.03	-208.21	-208.39	-208.57	-208.75	-208.93	-209.10	-209.28	-209.45	-209.62	-209.79	-209.96	-210.13	-210.30	-210.46	-210.63	-210.79	-210.95	-211.11	-211.27	-211.43	-211.58	-211.74	-211.89	-212.04	-212.19	-212.34	-212.49	-212.64	-212.78	-212.93	-213.07	-213.21	-213.35	-213.49	-213.63	-213.77	-213.90	-214.04	-214.17	-214.30	-214.43	-214.56	-214.69	-214.81	-214.94	-215.06	-215.18	-215.30	-215.42	-215.54	-215.65	-215.76	-215.87	-215.98	-216.09	-216.19	-216.29	-216.39	-216.49	-216.58	-216.68	-216.77	-216.86	-216.95	-217.04	-217.13	-217.22	-217.30	-217.38	-217.46	-217.54	-217.62	-217.70	-217.78	-217.85	-217.93	-218.00	-218.07	-218.14	-218.21	-218.28	-218.35	-218.42	-218.48	-218.55	-218.61	-218.68	-218.74	-218.80	-218.86	-218.92	-218.98	-219.03	-219.09	-219.14	-219.19	-219.24	-219.29	-219.34	-219.39	-219.43	-219.48	-219.53	-219.57	-219.62	-219.66	-219.70	-219.74	-219.78	-219.82	-219.86	-219.90	-219.94	-219.98	-220.02	-220.06	-220.10	-220.14	-220.18	-220.22	-220.26	-220.29	-220.33	-220.37	-220.40	-220.44	-220.47	-220.50	-220.53	-220.56	-220.59	-220.62	-220.65	-220.68	-220.71	-220.74	-220.77	-220.80	-220.83	-220.86	-220.89	-220.92	-220.95	-220.98	-221.01	-221.04	-221.07	-221.10	-221.13	-221.16	-221.19	-221.22	-221.25	-221.28	-221.31	-221.34	-221.37	-221.40	-221.43	-221.46	-221.49	-221.52	-221.55	-221.58	-221.61	-221.64	-221.67	-221.70	-221.73	-221.76	-221.79	-221.82	-221.85	-221.88	-221.91	-221.94	-221.97	-222.00	-222.03	-222.06	-222.09	-222.12	-222.15	-222.18	-222.21	-222.24	-222.27	-222.30	-222.33	-222.36	-222.39	-222.42	-222.45	-222.48	-222.51	-222.54	-222.57	-222.60	-222.63	-222.66	-222.69	-222.72	-222.75	-222.78	-222.81	-222.84	-222.87	-222.90	-222.93	-222.96	-222.99	-223.02	-223.05	-223.08	-223.11	-223.14	-223.17	-223.20	-223.23	-223.26	-223.29	-223.32	-223.35	-223.38	-223.41	-223.44	-223.47	-223.50	-223.53	-223.56	-223.59	-223.62	-223.65	-223.68	-223.71	-223.74	-223.77	-223.80	-223.83	-223.86	-223.89	-223.92	-223.95	-223.98	-224.01	-224.04	-224.07	-224.10	-224.13	-224.16	-224.19	-224.22	-224.25	-224.28	-224.31	-224.34	-224.37	-224.40	-224.43	-224.46	-224.49	-224.52	-224.55	-224.58	-224.61	-224.64	-224.67	-224.70	-224.73	-224.76	-224.79	-224.82	-224.85	-224.88	-224.91	-224.94	-224.97	-225.00	-225.03	-225.06	-225.09	-225.12	-225.15	-225.18	-225.21	-225.24	-225.27	-225.30	-225.33	-225.36	-225.39	-225.42	-225.45	-225.48	-225.51	-225.54	-225.57	-225.60	-225.63	-225.66	-225.69	-225.72	-225.75	-225.78	-225.81	-225.84	-225.87	-225.90	-225.93	-225.96	-225.99	-226.02	-226.05	-226.08	-226.11	-226.14	-226.17	-226.20	-226.23	-226.26	-226.29	-226.32	-226.35	-226.38	-226.41	-226.44	-226.47	-226.50	-226.53	-226.56	-226.59	-226.62	-226.65	-226.68	-226.71	-226.74	-226.77	-226.80	-226.83	-226.86	-226.89	-226.92	-226.95	-226.98	-227.01	-227.04	-227.07	-227.10	-227.13	-227.16	-227.19	-227.22	-227.25	-227.28	-227.31	-227.34	-227.37	-227.40	-227.43	-227.46	-227.49	-227.52	-227.55	-227.58	-227.61	-227.64	-227.67	-227.70	-227.73	-227.76	-227.79	-227.82	-227.85	-227.88	-227.91	-227.94	-227.97	-228.00	-228.03	-228.06	-228.09	-228.12	-228.15	-228.18	-228.21	-228.24	-228.27	-228.30	-228.33	-228.36	-228.39	-228.42	-228.45	-228.48	-228.51	-228.54	-228.57	-228.60	-228.63	-228.66	-228.69	-228.72	-228.75	-228.78	-228.81	-228.84	-228.87	-228.90	-228.93	-228.96	-228.99	-229.02	-229.05	-229.08	-229.11	-229.14	-229.17	-229.20	-229.23	-229.26	-229.29	-229.32	-229.35	-229.38	-229.41	-229.44	-229.47	-229.50	-229.53	-229.56	-229.59	-229.62	-229.65	-229.68	-229.71	-229.74	-229.77	-229.80	-229.83	-229.86	-229.89	-229.92	-229.95	-229.98	-230.01	-230.04	-230.07	-230.10	-230.13	-230.16	-230.19	-230.22	-230.25	-230.28	-230.31	-230.34	-230.37	-230.40	-230.43	-230.46	-230.49	-230.52	-230.55	-230.58	-230.61	-230.64	-230.67	-230.70	-230.73	-230.76	-230.79	-230.82	-230.85	-230.88	-230.91	-230.94	-230.97	-231.00	-231.03	-231.06	-231.09	-231.12	-231.15	-231.18	-231.21	-231.24	-231.27	-231.30	-231.33	-231.36	-231.39	-231.42	-231.45	-231.48	-231.51	-231.54	-231.57	-231.60	-231.63	-231.66	-231.69	-231.72	-231.75	-231.78	-231.81	-231.84	-231.87	-231.90	-231.93	-231.96	-231.99	-232.02	-232.05	-232.08	-232.11	-232.14	-232.17	-232.20	-232.23	-232.26	-232.29	-232.32	-232.35	-232.38	-232.41	-232.44	-232.47	-232.50	-232.53	-232.56	-232.59	-232.62	-232.65	-232.68	-232.71	-232.74	-232.77	-232.80	-232.83	-232.86	-232.89	-232.92	-232.95	-232.98	-233.01	-233.04	-233.07	-233.10	-233.13	-233.16	-233.19	-233.22	-233.25	-233.28	-233.31	-233.34	-233.37	-233.40	-233.43	-233.46	-233.49	-233.52	-233.55	-233.58	-233.61	-233.64	-233.67	-233.70	-233.73	-233.76	-233.79	-233.82	-233.85	-233.88	-233.91	-233.94	-233.97	-234.00	-234.03	-234.06	-234.09	-234.12	-234.15	-234.18	-234.21	-234.24	-234.27	-234.30	-234.33	-234.36	-234.39	-234.42	-234.45	-234.48	-234.51	-234.54	-234.57	-234.60	-234.63	-234.66	-234.69	-234.72	-234.75	-234.78	-234.81	-234.84	-234.87	-234.90	-234.93	-234.96	-234.99	-235.02	-235.05	-235.08	-235.11	-235.14	-235.17	-235.20	-235.23	-235.26	-235.29	-235.32	-235.35	-235.38	-235.41	-235.44	-235.47	-235.50	-235.53	-235.56	-235.59	-235.62	-235.65	-235.68	-235.71	-235.74	-235.77	-235.80	-235.83	-235.86	-235.89	-235.92	-235.95	-235.98	-236.01	-236.04	-236.07	-236.10	-236.13	-236.16	-236.19	-236.22	-236.25	-236.28	-236.31	-236.34	-236.37	-236.40	-236.43	-236.46	-236.49	-236.52	-236.55	-236.58	-236.61	-236.64	-236.67	-236.70	-236.73	-236.76	-236.79	-236.82	-236.85	-236.88	-236.91	-236.94	-236.97	-237.00	-237.03	-237.06	-237.09	-237.12	-237.15	-237.18	-237.21	-237.24	-237.27	-237.30	-237.33	-237.36	-237.39	-237.42	-237.45	-237.48	-237.51	-237.54	-237.57	-237.60	-237.63	-237.66	-237.69	-237.72	-237.75	-237.78	-237.81	-237.84	-237.87	-237.90	-237.93	-237.96	-237.99	-238.02	-238.05	-238.08	-238.11	-238.14	-238.17	-238.20	-238.23	-238.26	-238.29	-238.32	-238.35	-238.38	-238.41	-238.44	-238.47	-238.50	-238.53	-238.56	-238.59	-238.62	-238.65	-238.68	-238.71	-238.74	-238.77	-238.80	-238.83	-238.86	-238.89

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







Antenna Pattern_Radio 2

Appendix E

Theta	Phi	0.00	0.15	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	3.00	3.15	3.30	3.45	3.60	3.75	3.90	4.05	4.20	4.35	4.50	4.65	4.80	4.95	5.10	5.25	5.40	5.55	5.70	5.85	6.00	6.15	6.30	6.45	6.60	6.75	6.90	7.05	7.20	7.35	7.50	7.65	7.80	7.95	8.10	8.25	8.40	8.55	8.70	8.85	9.00	9.15	9.30	9.45	9.60	9.75	9.90	10.05	10.20	10.35	10.50	10.65	10.80	10.95	11.10	11.25	11.40	11.55	11.70	11.85	12.00	12.15	12.30	12.45	12.60	12.75	12.90	13.05	13.20	13.35	13.50	13.65	13.80	13.95	14.10	14.25	14.40	14.55	14.70	14.85	15.00	15.15	15.30	15.45	15.60	15.75	15.90	16.05	16.20	16.35	16.50	16.65	16.80	16.95	17.10	17.25	17.40	17.55	17.70	17.85	18.00	18.15	18.30	18.45	18.60	18.75	18.90	19.05	19.20	19.35	19.50	19.65	19.80	19.95	20.10	20.25	20.40	20.55	20.70	20.85	21.00	21.15	21.30	21.45	21.60	21.75	21.90	22.05	22.20	22.35	22.50	22.65	22.80	22.95	23.10	23.25	23.40	23.55	23.70	23.85	24.00	24.15	24.30	24.45	24.60	24.75	24.90	25.05	25.20	25.35	25.50	25.65	25.80	25.95	26.10	26.25	26.40	26.55	26.70	26.85	27.00	27.15	27.30	27.45	27.60	27.75	27.90	28.05	28.20	28.35	28.50	28.65	28.80	28.95	29.10	29.25	29.40	29.55	29.70	29.85	30.00	30.15	30.30	30.45	30.60	30.75	30.90	31.05	31.20	31.35	31.50	31.65	31.80	31.95	32.10	32.25	32.40	32.55	32.70	32.85	33.00	33.15	33.30	33.45	33.60	33.75	33.90	34.05	34.20	34.35	34.50	34.65	34.80	34.95	35.10	35.25	35.40	35.55	35.70	35.85	36.00	36.15	36.30	36.45	36.60	36.75	36.90	37.05	37.20	37.35	37.50	37.65	37.80	37.95	38.10	38.25	38.40	38.55	38.70	38.85	39.00	39.15	39.30	39.45	39.60	39.75	39.90	40.05	40.20	40.35	40.50	40.65	40.80	40.95	41.10	41.25	41.40	41.55	41.70	41.85	42.00	42.15	42.30	42.45	42.60	42.75	42.90	43.05	43.20	43.35	43.50	43.65	43.80	43.95	44.10	44.25	44.40	44.55	44.70	44.85	45.00	45.15	45.30	45.45	45.60	45.75	45.90	46.05	46.20	46.35	46.50	46.65	46.80	46.95	47.10	47.25	47.40	47.55	47.70	47.85	48.00	48.15	48.30	48.45	48.60	48.75	48.90	49.05	49.20	49.35	49.50	49.65	49.80	49.95	50.10	50.25	50.40	50.55	50.70	50.85	51.00	51.15	51.30	51.45	51.60	51.75	51.90	52.05	52.20	52.35	52.50	52.65	52.80	52.95	53.10	53.25	53.40	53.55	53.70	53.85	54.00	54.15	54.30	54.45	54.60	54.75	54.90	55.05	55.20	55.35	55.50	55.65	55.80	55.95	56.10	56.25	56.40	56.55	56.70	56.85	57.00	57.15	57.30	57.45	57.60	57.75	57.90	58.05	58.20	58.35	58.50	58.65	58.80	58.95	59.10	59.25	59.40	59.55	59.70	59.85	60.00	60.15	60.30	60.45	60.60	60.75	60.90	61.05	61.20	61.35	61.50	61.65	61.80	61.95	62.10	62.25	62.40	62.55	62.70	62.85	63.00	63.15	63.30	63.45	63.60	63.75	63.90	64.05	64.20	64.35	64.50	64.65	64.80	64.95	65.10	65.25	65.40	65.55	65.70	65.85	66.00	66.15	66.30	66.45	66.60	66.75	66.90	67.05	67.20	67.35	67.50	67.65	67.80	67.95	68.10	68.25	68.40	68.55	68.70	68.85	69.00	69.15	69.30	69.45	69.60	69.75	69.90	70.05	70.20	70.35	70.50	70.65	70.80	70.95	71.10	71.25	71.40	71.55	71.70	71.85	72.00	72.15	72.30	72.45	72.60	72.75	72.90	73.05	73.20	73.35	73.50	73.65	73.80	73.95	74.10	74.25	74.40	74.55	74.70	74.85	75.00	75.15	75.30	75.45	75.60	75.75	75.90	76.05	76.20	76.35	76.50	76.65	76.80	76.95	77.10	77.25	77.40	77.55	77.70	77.85	78.00	78.15	78.30	78.45	78.60	78.75	78.90	79.05	79.20	79.35	79.50	79.65	79.80	79.95	80.10	80.25	80.40	80.55	80.70	80.85	81.00	81.15	81.30	81.45	81.60	81.75	81.90	82.05	82.20	82.35	82.50	82.65	82.80	82.95	83.10	83.25	83.40	83.55	83.70	83.85	84.00	84.15	84.30	84.45	84.60	84.75	84.90	85.05	85.20	85.35	85.50	85.65	85.80	85.95	86.10	86.25	86.40	86.55	86.70	86.85	87.00	87.15	87.30	87.45	87.60	87.75	87.90	88.05	88.20	88.35	88.50	88.65	88.80	88.95	89.10	89.25	89.40	89.55	89.70	89.85	90.00	90.15	90.30	90.45	90.60	90.75	90.90	91.05	91.20	91.35	91.50	91.65	91.80	91.95	92.10	92.25	92.40	92.55	92.70	92.85	93.00	93.15	93.30	93.45	93.60	93.75	93.90	94.05	94.20	94.35	94.50	94.65	94.80	94.95	95.10	95.25	95.40	95.55	95.70	95.85	96.00	96.15	96.30	96.45	96.60	96.75	96.90	97.05	97.20	97.35	97.50	97.65	97.80	97.95	98.10	98.25	98.40	98.55	98.70	98.85	99.00	99.15	99.30	99.45	99.60	99.75	99.90	100.05	100.20	100.35	100.50	100.65	100.80	100.95	101.10	101.25	101.40	101.55	101.70	101.85	102.00	102.15	102.30	102.45	102.60	102.75	102.90	103.05	103.20	103.35	103.50	103.65	103.80	103.95	104.10	104.25	104.40	104.55	104.70	104.85	105.00	105.15	105.30	105.45	105.60	105.75	105.90	106.05	106.20	106.35	106.50	106.65	106.80	106.95	107.10	107.25	107.40	107.55	107.70	107.85	108.00	108.15	108.30	108.45	108.60	108.75	108.90	109.05	109.20	109.35	109.50	109.65	109.80	109.95	110.10	110.25	110.40	110.55	110.70	110.85	111.00	111.15	111.30	111.45	111.60	111.75	111.90	112.05	112.20	112.35	112.50	112.65	112.80	112.95	113.10	113.25	113.40	113.55	113.70	113.85	114.00	114.15	114.30	114.45	114.60	114.75	114.90	115.05	115.20	115.35	115.50	115.65	115.80	115.95	116.10	116.25	116.40	116.55	116.70	116.85	117.00	117.15	117.30	117.45	117.60	117.75	117.90	118.05	118.20	118.35	118.50	118.65	118.80	118.95	119.10	119.25	119.40	119.55	119.70	119.85	119.95	120.10	120.25	120.40	120.55	120.70	120.85	121.00	121.15	121.30	121.45	121.60	121.75	121.90	122.05	122.20	122.35	122.50	122.65	122.80	122.95	123.10	123.25	123.40	123.55	123.70	123.85	124.00	124.15	124.30	124.45	124.60	124.75	124.90	125.05	125.20	125.35	125.50	125.65	125.80	125.95	126.10	126.25	126.40	126.55	126.70	126.85	127.00	127.15	127.30	127.45	127.60	127.75	127.90	128.05	128.20	128.35	128.50	128.65	128.80	128.95	129.10	129.25	129.40	129.55	129.70	129.85	129.95	130.10	130.25	130.40	130.55	130.70	130.85	131.00	131.15	131.30	131.45	131.60	131.75	131.90	132.05	132.20	132.35	132.50	132.65	132.80	132.95	133.10	133.25	133.40	133.55	133.70	133.85	134.00	134.15	134.30	134.45	134.60	134.75	134.90	135.05	135.20	135.35	135.50	135.65	135.80	135.95	136.10	136.25	136.40	136.55	136.70	136.85	137.00	137.15	137.30	137.45	137.60	137.75	137.90	138.05	138.20	138.35	138.50	138.65	138.80	138.95	139.10	139.25	139.40	139.55	139.70	139.85	139.95	140.10	140.25	140.40	140.55	140.70	140.85	141.00	141.15	141.30	141.45	141.60	141.75	141.90	142.05	142.20	142.35	142.50	142.65	142.80	142.95	143.10	143.25	143.40	143.55	143.70	143.85	144.00	144.15	144.30	144.45	144.60	144.75	144.90	145.05	145.20	145.35	145.50	145.65	145.80	145.95	146.10	146.25	146.40	146.55	146.70	146.85	147.00	147.15	147.30	147.45	147.60	147.75	147.90	148.05	148.20	148.35	148.50	148.65	148.80	148.95	149.10	149.25	149.40	149.55	149.70	149.85	149.95	150.10	150.25	150.40	150.55	150.70	150.85	151.00	151.15	151.30	151.45	151.60	151.75	151.90	152.05	152.20	152.35	152.50	152.65	152.80	152.95	153.10	153.25	153.40	153.55	153.70	153.85	154.00	154.15	154.30	154.45	154.60	154.75	154.90	155.05	155.20	155.35	155.50	155.65	155.80	155.95	156.10	156.25	156.40	156.55	156.70	156.85	157.00	157.15	157.30	157.45	157.60	157.75	157.90	158.05	158.20	158.35	158.50	158.65	158.80	158.95	159.10	159.25	159.40	159.55	159.70	159.85	159.95	160.10	160.25	160.40	160.55	160.70	160.85	161.00	161.15	161.30	161.45	161.60	161.75	161.90	162.05	162.20	162.35	162.50	162.65	162.80	162.95	163.10	163.25	163.40	163.55	163.70	163.85	164.00	164.15	164.30	164.45	164.60	164.75	164.90	165.05	165.20	165.35	165.50	165.65	165.80	165.95	166.10	166.25	166.40	166.55	166.70	166.85	167.00	167.15	167.30	167.45	167.60	167.75	167.90	168.05	168.20	168.35	168.50	168.65	168.80	168.95	169.10	169.25	169.40	169.55	169.70	169.85	169.95	170.10	170.25	170.40	170.55	170.70	170.85	171.00	171.15	171.30	171.45	171.60	171.75	171.90	172.05	172.20	172.35	172.50	172.65	172.80	172.95	173.10	173.25	173.40	173.55	173.70	173.85	174.00	174.15	174.30	174.45	174.60	174.75	174.90	175.05	175.20	175.35	175.50	175.65	175.80	175.95	176.10	1
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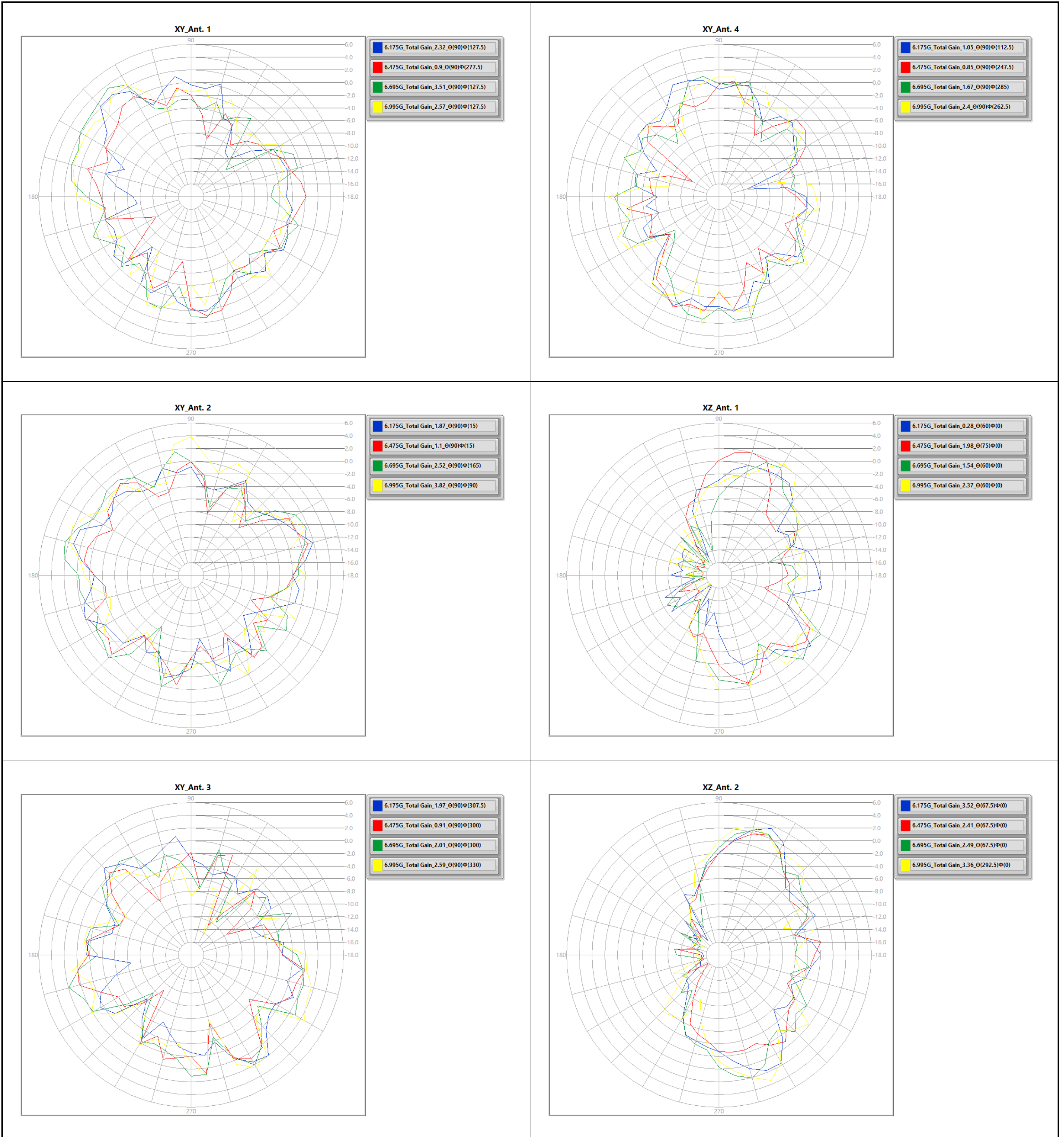


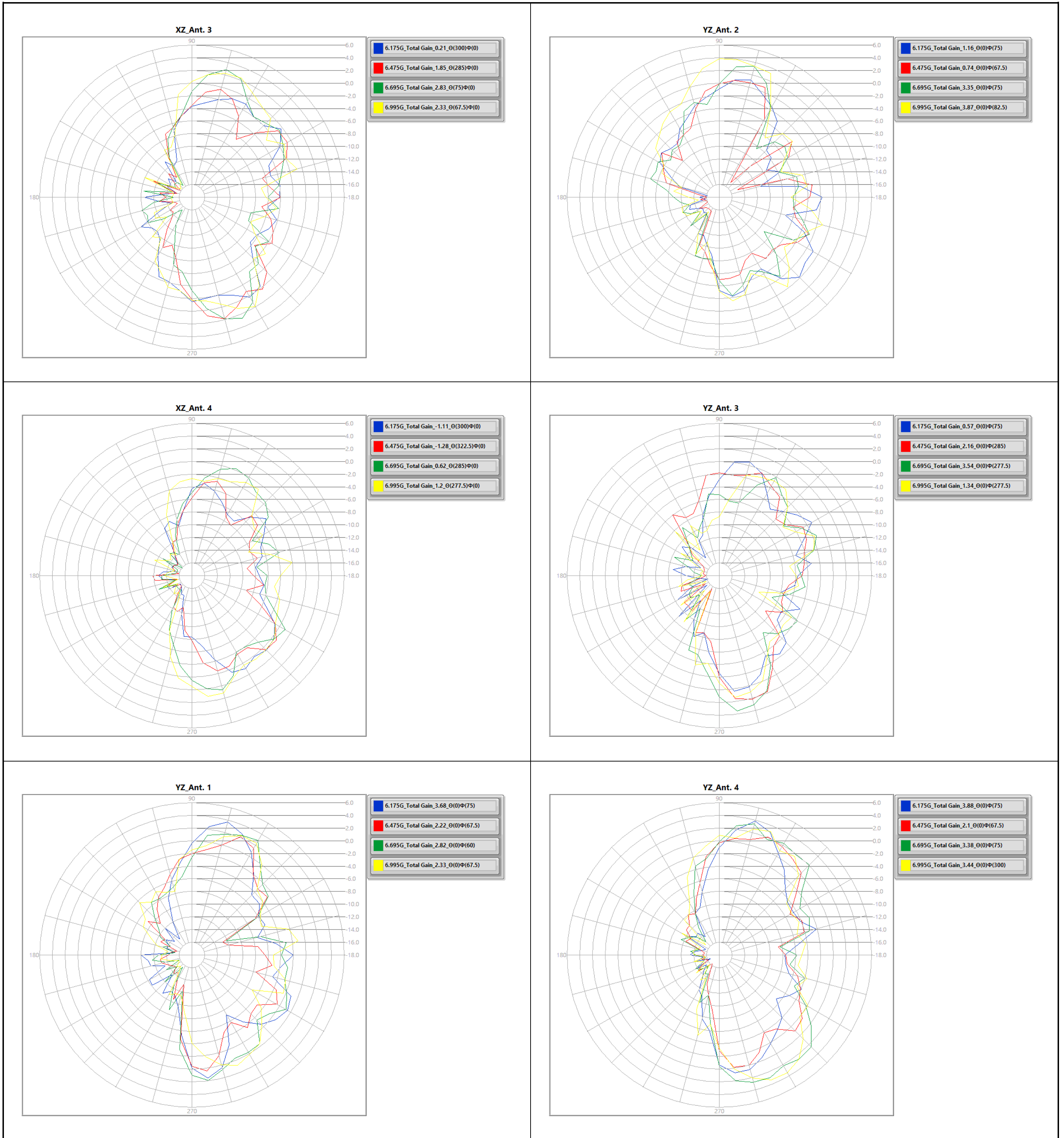
Antenna Pattern_Radio 2

Appendix E

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(10°)	Phi(0°)	9.38/13.46	-12.24/8.14	9.62/12.70	-6.99/10.49	6.70/7.57	-5.07/7.12	-10.36/10.56	-7.95/7.43	-11.20/9.07	-10.54/13.00	-14.79/12.17	-10.94/13.59	-14.67/11.10	-16.24/7.12	-10.47/14.20	-10.59/11.49	-9.29/9.67	-10.53/4.68	-11.64/10.73	-8.41/8.20	-9.75/8.45	-10.28/9.41	-9.53/8.40	-14.35/9.38	
Theta(12.5°)	Phi(15°)	-13.50/12.90	-13.22/11.02	-11.55/12.23	-12.30/9.45	-6.32/8.76	-8.13/10.29	-14.38/14.24	-10.23/8.32	-9.11/10.25	-12.68/15.25	-15.86/13.65	-9.35/13.66	-15.29/15.37	-10.92/7.66	-15.59/15.34	-15.15/12.07	-12.62/11.62	-8.39/4.80	-13.72/11.50	-9.33/10.82	-10.41/8.49	-13.48/6.19	-13.91/12.30	-13.42/10.84	
Theta(15°)	Phi(30°)	-14.38/12.56	-11.99/9.44	-10.86/15.36	-13.29/13.26	-12.06/8.87	-8.56/9.78	-13.20/9.36	-7.47/8.28	-10.98/11.57	-11.86/10.43	-15.85/14.14	-11.87/13.06	-15.70/15.95	-14.18/9.58	-11.23/14.22	-11.71/9.18	-15.35/11.25	-7.70/5.35	-14.52/14.88	-6.90/12.39	-8.08/13.66	-9.29/10.16	-11.78/13.16	-15.42/15.19	
Theta(17.5°)	Phi(45°)	-15.16/15.54	-13.89/11.40	-13.97/14.29	-10.51/12.36	-13.64/11.68	-11.74/12.77	-13.38/12.17	-10.69/12.48	-10.47/9.35	-9.92/12.70	-15.44/13.68	-14.14/14.89	-15.79/14.27	-12.06/10.89	-13.43/13.53	-15.28/14.04	-15.24/14.93	9.81/10.81	-15.48/15.18	-10.46/15.07	-14.89/11.56	-12.28/13.99	-15.37/10.36	-14.08/15.27	
Theta(20°)	Phi(60°)	-14.85/15.13	-15.79/14.64	-10.97/11.27	-14.59/15.88	-15.60/16.06	-13.74/13.20	-12.05/12.90	-11.22/9.62	-9.79/9.31	-8.69/10.50	-15.37/15.81	-14.28/14.77	-13.89/14.65	-14.21/15.56	-15.70/15.39	-14.31/13.59	-13.84/14.86	-15.72/12.82	-13.59/15.53	-15.56/11.99	-12.68/13.52	-15.90/12.92	-11.36/13.42	-14.81/14.80	
Theta(22.5°)	Phi(75°)	-14.53/15.20	-13.52/13.28	-14.14/14.30	-12.01/11.09	-10.56/11.54	-14.47/15.04	-15.69/12.82	-10.78/10.64	-11.67/12.26	-11.28/12.25	-14.50/15.37	-13.82/12.23	-12.64/15.39	-15.55/14.76	-12.87/14.34	-15.24/14.38	-12.67/13.86	-16.45/15.30	-15.45/14.41	-15.95/14.40	-13.13/14.01	-14.27/15.61	-12.90/13.52	-14.36/14.06	
Theta(25°)	Phi(90°)	-15.35/15.57	-15.29/14.05	-12.59/11.40	-11.90/13.56	-14.71/15.68	-14.71/15.28	-15.22/15.35	-14.53/13.98	-13.31/12.78	-11.60/12.29	-12.94/12.07	-11.18/12.57	-15.62/15.17	-14.12/12.90	-14.27/14.53	-13.89/11.46	-11.01/10.67	-11.33/12.61	-14.36/15.00	-15.00/15.49	-15.02/15.85	-15.96/15.25	-15.11/14.90	-12.33/14.02	
Theta(27.5°)	Phi(105°)	-13.45/13.91	-14.47/14.46	-13.31/13.76	-13.63/13.81	-13.12/13.32	-13.62/14.13	-14.05/13.57	-12.85/12.69	-12.32/12.14	-12.31/13.79	-15.18/15.57	-15.62/14.54	-13.45/13.42	-14.10/14.64	-15.16/15.84	-14.59/13.45	-14.13/15.08	-15.72/15.73	-15.44/15.47	-15.54/15.47	-15.69/15.18	-14.89/14.59	-15.22/14.51	-14.36/14.06	
Theta(30°)	Phi(120°)	-12.75/12.00	-12.82/12.66	-13.93/13.97	-14.23/13.77	-13.75/14.72	-14.55/13.95	-13.43/12.65	-12.68/12.88	-12.67/13.00	-14.25/14.65	-14.17/13.95	-12.35/11.89	-12.31/14.15	-14.28/13.65	-14.02/13.35	-12.24/12.30	-12.23/12.56	-12.60/12.45	-13.35/13.17	-13.45/13.57	-13.18/13.33	-14.16/14.66	-13.84/14.78	-14.32/14.63	
Theta(32.5°)	Phi(135°)	6.475GPol	TotalAnt. 4																							
Theta(35°)	Phi(150°)	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(37.5°)	Phi(165°)	Theta(10°)	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(40°)	Phi(180°)	Theta(12.5°)	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(42.5°)	Phi(195°)	Theta(15°)	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(45°)	Phi(210°)	Theta(17.5°)	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(47.5°)	Phi(225°)	Theta(20°)	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(50°)	Phi(240°)	Theta(22.5°)	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(52.5°)	Phi(255°)	Theta(25°)	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(55°)	Phi(270°)	Theta(27.5°)	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(57.5°)	Phi(285°)	Theta(30°)	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(60°)	Phi(300°)	Theta(32.5°)	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(62.5°)	Phi(315°)	Theta(35°)	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(65°)	Phi(330°)	Theta(37.5°)	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(67.5°)	Phi(345°)	Theta(40°)	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(70°)	Phi(0°)	Theta(42.5°)	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(72.5°)	Phi(15°)	Theta(45°)	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(75°)	Phi(30°)	Theta(47.5°)	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(77.5°)	Phi(45°)	Theta(50°)	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(80°)	Phi(60°)	Theta(52.5°)	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(82.5°)	Phi(75°)	Theta(55°)	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(85°)	Phi(90°)	Theta(57.5°)	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(87.5°)	Phi(105°)	Theta(60°)	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(90°)	Phi(120°)	Theta(62.5°)	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(92.5°)	Phi(135°)	Theta(65°)	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(95°)	Phi(150°)	Theta(67.5°)	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(97.5°)	Phi(165°)	Theta(70°)	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(100°)	Phi(180°)	Theta(72.5°)	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(102.5°)	Phi(195°)	Theta(75°)	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(210°)	Theta(77.5°)	Phi(15°)	Phi(30°)	Phi(45°)	Phi(60°)																				

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







Antenna Pattern_Radio 3 & Radio 4

Appendix F

Theta	2.492/29	4.534/21	2.752/13	4.04/9.51	1.501/03	1.931/24	1.111/56	3.66/3.67	-4.87/2.94	-2.15/5.09	-2.07/1.98	0.20/2.50	-1.00/1.68	0.66/0.90	-1.80/3.86	-2.21/1.23	-4.03/3.93	9.09/8.86	-4.72/7.45	4.92/4.03	-3.79/12.26	-2.58/0.14	1.35/3.37	2.73/21
Theta(60°)	-2.22/0.69	2.192/52	-0.84/0.72	4.20/-0.18	0.21/1.34	2.96/4.12	4.34/3.41	-0.37/-2.14	-2.30/-4.07	0.76/4.39	-3.89/1.09	1.00/-1.81	-0.80/1.71	1.09/-1.89	-0.66/-1.15	0.09/-0.47	-3.97/-4.26	-7.32/-7.98	-2.35/-3.98	3.74/-2.62	-3.87/-4.56	-4.63/-0.62	-2.81/2.97	0.37/-0.06
Theta(75°)	-5.61/0.36	2.42/57	0.30/0.93	-3.84/2.83	1.89/1.08	5.13/3.77	4.68/0.01	0.26/0.48	0.86/0.87	3.11/1.63	4.86/-1.32	0.04/1.85	1.25/1.10	-0.68/-4.38	-1.06/-2.56	0.19/-0.68	-3.23/1.83	-2.36/4.67	-1.00/-1.34	0.10/2.97	0.97/-2.22	-12.86/0.66	-0.88/2.34	0.81/0.56
Theta(90°)	-3.39/0.22	3.64/3.64	2.18/0.96	-2.47/3.59	1.67/0.25	5.07/3.79	3.69/2.52	0.11/0.87	1.69/1.50	2.93/2.42	-7.03/2.00	1.31/2.25	1.63/0.06	-1.47/-4.72	-2.88/3.76	-0.36/-1.56	-2.73/1.44	-0.38/-2.64	2.31/0.97	0.66/2.60	-0.87/-1.28	-11.85/0.79	0.87/1.46	0.77/1.01
Theta(105°)	-4.02/-1.40	2.89/3.01	1.51/1.44	-2.91/2.67	1.54/1.40	4.62/2.26	0.92/1.84	1.49/0.41	2.02/-2.02	-7.27/-3.97	0.83/1.93	0.29/0.29	-2.47/-4.29	-3.89/-4.97	-1.10/-3.83	-2.69/-2.44	-5.30/-3.52	-0.22/-3.32	-2.20/-3.23	-10.57/-0.96	-0.02/0.68	0.44/-2.98	0.44/-2.98	0.44/-2.98
Theta(120°)	-4.89/-4.40	0.96/1.50	0.15/2.50	-2.91/4.49	0.17/3.43	3.05/0.06	-2.09/2.44	-0.35/-1.74	0.65/0.21	1.32/6.05	-8.74/-2.67	0.30/0.04	-1.32/-2.70	-2.55/-4.14	-4.44/-5.24	-3.36/-5.53	-3.65/-5.89	-4.10/-3.55	-7.62/-6.59	-3.87/-1.98	-5.78/-7.29	-12.62/-2.65	-1.27/-4.19	-0.61/-7.47
Theta(135°)	-5.21/8.92	-0.48/0.04	-1.07/-3.98	-5.64/0.99	-3.44/-2.77	0.28/2.66	-4.23/2.08	-2.53/3.35	-1.57/-1.67	-2.15/6.85	-9.13/-6.28	-0.35/-1.60	-4.92/-1.54	-4.06/-7.70	-5.17/-7.62	-6.62/8.57	-5.47/-6.49	-4.37/-6.83	-10.86/-7.63	-5.25/-11.07	-11.73/-7.22	-8.62/-7.09	-1.26/-3.35	-2.88/-7.34
Theta(150°)	-12.24/9.48	-0.98/-2.18	4.38/8.00	-7.29/2.30	-6.02/5.26	-0.85/5.23	5.36/3.25	-1.59/-1.85	-2.15/-2.57	-6.89/10.48	-11.65/-4.33	-1.88/-1.40	-5.05/-3.14	-6.20/-7.65	-7.30/-7.80	-10.79/-15.21	-12.04/11.83	-5.11/2.52	-8.53/8.17	-5.07/0.05	-8.43/-11.57	-10.64/14.40	-3.12/6.13	5.24/-7.99
Theta(165°)	-12.05/10.00	4.44/4.94	7.51/10.40	-5.06/3.54	-8.28/4.08	-4.13/4.30	-4.07/2.55	-3.90/3.12	-3.17/4.50	-13.51/15.41	-12.77/3.56	-6.11/-8.54	-4.49/-4.29	-9.82/9.60	-8.13/9.82	-11.88/14.12	-11.81/15.58	9.54/11.33	-10.92/10.18	8.05/9.68	-12.72/13.07	-15.30/10.44	-7.30/6.37	-6.05/13.37
Theta(180°)	-13.53/10.21	-6.62/6.40	-4.71/9.19	-4.91/7.43	-6.84/6.48	-7.30/8.13	-7.93/6.16	-4.81/6.56	-10.03/12.95	-13.99/14.75	-7.44/4.24	-5.13/7.73	-8.16/-5.07	-6.24/11.23	-11.30/14.96	-7.30/12.25	-10.55/15.58	-11.54/9.49	-8.67/13.41	-6.51/6.15	-15.38/7.11	-11.76/12.09	-11.36/5.89	-10.07/13.61
Theta(202.5°)	-14.53/14.40	-9.24/-7.62	-8.82/6.61	-11.90/9.19	-8.12/10.35	-14.48/9.52	9.09/11.21	5.79/10.58	-12.91/12.00	-12.32/11.23	5.92/6.99	-8.52/8.60	-9.23/8.66	-8.04/8.87	-13.32/15.83	-9.39/8.23	-15.47/15.18	-11.05/11.21	-12.31/11.86	-10.24/6.73	-13.31/13.39	-13.63/11.91	-12.54/10.03	-12.89/15.18
Theta(225°)	-15.38/15.63	-11.01/10.39	-13.60/9.49	-6.89/10.46	-7.03/7.95	-14.98/9.26	-10.98/11.87	-6.41/6.55	-13.00/14.90	-10.04/5.94	-6.21/7.46	-6.90/9.58	-10.67/10.93	-6.90/8.84	-8.79/14.05	-10.65/11.16	-15.37/14.91	-12.23/11.92	-15.22/14.74	-11.37/7.26	-14.71/11.48	-8.91/15.94	-15.68/12.20	-11.19/15.19
Theta(247.5°)	-15.69/11.11	-12.07/10.01	-9.98/9.84	-11.83/6.17	-3.11/10.48	-6.84/7.01	-8.82/8.01	-8.29/5.71	-7.83/10.80	-10.13/7.41	-6.12/7.03	-9.03/13.08	-12.66/9.30	-11.82/9.13	-9.87/10.76	-10.67/15.01	-14.07/13.56	-14.16/14.23	-15.57/9.58	-12.26/11.32	-11.58/15.04	-14.77/13.33	-14.05/14.16	-14.30/13.72
Theta(270°)	-10.90/15.41	-14.72/15.40	-12.97/10.20	-9.21/9.84	-11.71/8.82	-6.35/6.62	-10.36/7.13	-9.37/6.96	-5.73/7.21	-7.46/7.84	-7.66/8.66	-9.60/10.30	-12.48/13.13	-12.83/10.03	-10.84/10.91	-11.92/15.53	-14.26/13.06	-10.47/11.96	-13.20/12.88	-15.42/13.27	-9.60/14.27	-15.58/14.97	-13.38/12.53	-12.89/15.18
Theta(300°)	-11.92/10.13	-11.14/11.29	-11.11/12.39	-13.52/14.63	-12.39/12.79	-15.02/12.27	-12.36/12.12	-10.89/9.51	-8.48/8.44	-9.42/10.69	-12.28/10.77	-10.83/14.94	-14.34/12.90	-11.75/13.24	-13.40/12.26	-12.30/14.03	-15.42/11.98	-10.37/11.06	-14.14/15.38	-15.48/13.22	-13.35/16.12	-12.42/9.99	-9.93/12.01	-11.99/15.19
Theta(322.5°)	-14.53/13.65	-13.71/13.65	-13.70/12.76	-12.89/11.95	-11.35/11.83	-13.55/14.52	-15.16/15.87	-13.50/13.20	-14.71/14.23	-14.69/14.45	-15.78/16.16	-15.51/15.24	-15.26/14.17	-11.30/11.78	-13.59/13.37	-13.27/12.19	-12.57/12.71	-13.18/13.93	-16.08/15.38	-15.00/15.34	-15.07/15.52	-15.38/14.95	-15.25/14.96	-13.68/14.68
Theta(345°)	-13.92/13.71	-14.46/14.99	-15.18/13.82	-12.68/13.37	-12.88/11.90	-12.24/11.48	-13.30/13.17	-12.13/12.03	-10.84/10.27	-10.60/11.98	-12.22/12.07	-11.87/13.74	-12.53/11.71	-11.56/11.86	-13.20/13.66	-13.32/13.87	-15.40/15.33	-14.42/14.61	-14.89/15.30	-15.14/15.28	-15.77/14.64	-15.72/14.19	-13.26/14.56	-13.26/14.56
Theta(360°)	-12.97/3.18	-3.64/4.09	4.24/4.35	-4.38/4.33	-4.41/4.54	-4.71/4.70	4.59/4.41	-4.24/4.14	-4.06/3.99	3.97/4.09	4.27/4.35	-4.32/3.47	-4.46/4.42	4.33/4.31	4.35/4.42	-4.37/4.34	4.51/4.78	4.76/4.63	-4.43/4.26	-4.10/3.92	3.65/3.34	-3.17/3.07	-3.06/3.11	-3.05/2.94
Theta(7.5°)	-4.22/4.19	-4.26/4.42	-4.61/4.85	-5.03/5.04	-4.94/4.80	-4.55/4.29	-3.96/3.70	-3.50/3.47	-3.34/3.18	-3.07/3.00	-3.06/3.11	-3.22/3.54	-3.37/3.67	-3.58/3.64	-3.78/3.93	-4.07/4.25	-4.47/4.80	-4.79/4.70	-4.42/4.12	-3.65/3.55	-3.48/3.48	-3.69/3.38	-3.71/4.26	-4.17/4.26
Theta(15°)	-4.54/4.30	-3.97/3.81	-3.98/4.52	-5.27/6.05	-6.39/6.15	-5.46/4.70	-4.03/3.57	-3.29/3.05	-2.71/2.35	-2.09/2.03	-2.11/2.18	-2.46/3.04	-3.50/3.69	-3.72/3.76	-3.94/4.18	-4.42/4.70	-5.05/5.06	-4.99/4.46	-3.79/3.23	-2.77/2.59	-2.62/2.71	-2.78/2.92	-3.26/3.75	-4.16/4.44
Theta(22.5°)	-3.91/0.45	-3.93/3.40	-4.22/5.00	-6.24/7.53	-6.15/6.52	-5.60/5.52	-4.85/4.57	-4.50/4.24	-3.70/3.14	-2.71/2.61	-2.60/2.69	-3.03/3.53	-4.02/4.41	-4.57/4.47	-4.40/4.49	-4.84/5.42	-6.28/6.65	-6.33/6.93	-3.57/4.74	-2.23/2.00	-1.94/1.87	-1.76/1.74	-1.93/2.28	-2.74/3.34
Theta(30°)	-2.16/3.17	-4.26/5.27	-6.40/7.70	-8.60/8.24	-6.68/5.28	-4.49/3.98	-3.86/4.20	-4.71/4.87	-6.16/4.40	-4.36/4.35	-4.11/3.80	-3.58/3.49	-3.68/4.01	-4.42/4.60	-4.41/4.16	-4.22/4.80	-6.02/7.32	-7.43/5.68	-3.94/2.85	-2.22/1.78	-1.36/0.89	-0.42/0.06	0.03/0.13	-0.51/1.22
Theta(37.5°)	0.12/-1.16	-3.05/5.36	8.06/9.84	-8.47/6.10	-4.05/2.64	-1.76/1.24	-1.08/1.46	-2.09/2.54	-2.81/3.35	-4.22/4.66	-4.12/3.36	-2.78/2.31	-1.86/-1.71	-2.12/2.87	-3.52/3.51	-3.25/3.48	-4.39/5.46	-5.69/4.97	-3.46/2.31	-1.63/1.17	-0.61/0.02	0.59/1.15	1.48/1.53	1.35/0.88
Theta(45°)	1.56/0.51	-1.38/3.78	6.14/7.65	6.42/4.02	-2.10/0.74	0.22/0.95	1.22/0.80	0.04/0.56	-0.72/-1.16	2.04/2.32	-1.49/0.72	-0.73/0.91	-0.41/0.33	0.34/0.52	-1.84/2.62	-2.43/2.22	-2.56/3.18	-3.74/3.57	-2.44/-1.04	0.23/0.01	0.09/0.30	0.63/1.12	1.61/1.93	2.10/2.01
Theta(52.5°)	2.05/0.01	-0.77/2.83	-4.81/5.81	-5.10/3.14	-1.80/3.35	1.46/2.24	2.47/1.95	0.90/0.36	0.57/0.49	0.20/1.18	0.87/1.53	0.20/1.25	-0.19/0.20	-0.59/2.09	-2.00/1.59	-2.59/2.00	-2.61/2.86	-1.85/1.09	0.59/0.35	-0.08/0.22	0.17/0.16	0.73/1.37	1.95/2.25	0.73/1.27
Theta(60°)	2.17/1.10	-0.75/2.49	-3.98/4.27	-3.79/2.45	-0.66/0.93	2.01/2.66	2.86/2.49	1.58/1.05	1.29/1.23	0.47/0.07	1.18/2.19	1.85/0.45	0.11/1.22	1.88/1.30	-0.04/1.26	-1.66/1.34	-0.98/0.99	-1.42/2.07	-1.42/2.04	0.89/0.12	-0.95/-1.39	-1.28/0.85	-0.08/0.83	1.71/2.30
Theta(67.5°)	1.69/0.72	-0.84/2.29	-2.89/2.27	-2.96/2.26	-0.70/0.93	1.95/2.41	2.59/2.61	2.15/1.51	1.13/0.54	-0.55/1.19	0.21/1.59	1.29/0.16	-0.22/1.14	1.71/1.02	-0.40/1.69	-2.26/1.68	-0.97/0.67	-1.00/1.76	-0.98/0.70	1.04/0.15	-1.68/2.42	-2.37/1.75	-0.71/0.42	1.33/1.83
Theta(75°)	1.07/0.50	-0.54/1.61	-2.26/2.67	-2.99/2.66	-1.40/0.17	1.20/1.53	1.65/2.00	1.98/2.29	0.28/0.91	-2.10/3.23	-2.07/0.04	0.18/1.16	-1.15/0.31	1.01/0.56	-0.59/1.97	-3.49/3.04	-0.93/1.72	-1.39/0.20	0.39/1.06	-2.62/3.27	-3.16/2.46	-1.24/0.01	0.78/1.16	0.78/1.16
Theta(82.5°)	0.25/0.41	-1.26/2.04	-2.56/2.93	-3.10/3.03	-2.35/1.01	0.07/0.41	0.05/1.17	1.43/0.85	-0.47/2.23	-3.51/2.26	-4.59/1.75	-1.33/2.74	-2.72/1.31	-0.64/0.75	-1.07/1.93	-3.70/4.11	-3.06/2.33	-2.10/2.63	-1.99/0.32	0.44/2.61	-4.63/5.01	-4.48/3.48	-2.05/0.65	0.07/0.28
Theta(90°)	-1.53/2.00	-2.78/2.97	-2.93/2.35	-3.85/4.85	-5.10/2.98	-1.05/4.06	-0.30/0.56	1.04/0.40	-1.22/4.49	-4.95/6.91	-7.65/6.37	-2.42/3.86	-4.42/3.60	-3.07/3.35	-2.65/2.30	-3.65/4.72	-4.17/3.46	-3.02/3.77	-3.56/4.10	-1.38/3.45	-5.56/6.11	-5.67/6.42	-3.54/1.98	-1.44/1.46
Theta(97.5°)	-2.50/2.10	-2.39/2.66	-2.93/3.65	-4.85/6.61	-6.59/3.29	-1.22/0.93	0.98/0.28	-0.33/1.38	-3.06/5.16	-5.97/7.12	-6.31/2.71	-2.08/4.09	-5.09/4.86	-5.40/6.44	-4.64/3.31	-4.28/5.34	-5.25/4.71	-4.15/4.88	-4.96/3.12	-3.19/5.52	-6.95/6.70	-5.73/4.91	-3.99/2.68	-2.57/2.81
Theta(105°)	-3.05/2.79	-2.82/3.26	-3.97/4.84	-5.91/7.44	-6.36/2.97	-1.50/2.09	-3.02/3.75	-2.83/3.32	-3.76/4.41	-4.59/5.19	-													