

DATA SHEET

ARUBA 9004 LTE-ANTI INDOOR ANTENNA

R4Y94A

The 9004-LTE-ANTI is a high-performance omni-directional indoor dipole antenna. It is ideally designed for use with Aruba 9004-LTE Gateways. The 9004-LTE-ANTI plugs into onboard RP-SMA connectors on 9004-LTE Gateways as Main and Diversity antennas. The antenna can be used as a GPS antenna and can also be extended using an indoor antenna extender kit.



SPECIFICATIONS

A. Electrical Characteristics

Frequency	V.S.W.R.	Peak Gain (max.)	Efficiency (avg.)
700 ~ 960 MHz	< 3.0	0.1dBi	45%
1166 ~ 1186 MHz	< 2.5	1.3dBi	45%
1428 ~ 1600 MHz	< 2.5	2.9dBi	55%
1700 ~ 2700 MHz	< 2.5	3.7dBi	75%
Polarization	Linear, vertical		
Impedance	50 Ohm		

B. Material & Mechanical Characteristics

Material of Radiator	PCB
Material of Plastic	PC / POM
Cable Type	RG-178U-03
Connector Type	SMA Male
Radome Color	Black
Dimensions	138.8 x 20 x 9.4

C. Environmental

Operation Temperature	- 40 °C ~ + 65 °C
Storage Temperature	- 40 °C ~ + 80 °C
Antenna Color Storage life	< 2 year

GPS antenna range: 1448~1511MHz



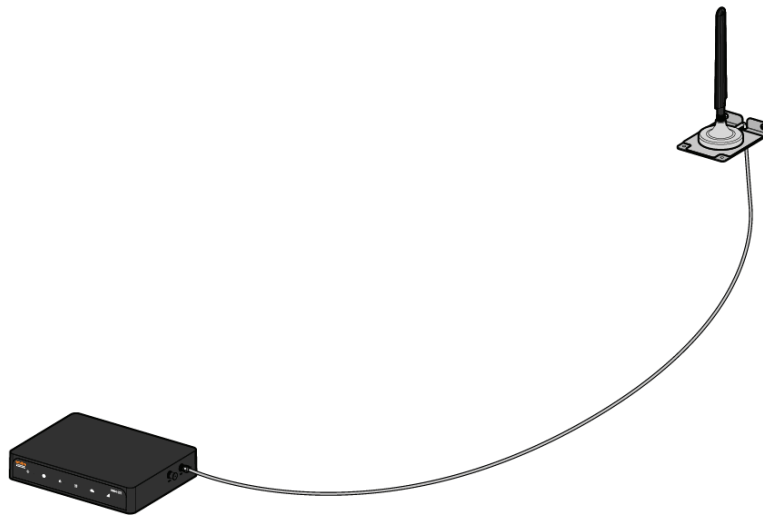
INDOOR ANTENNA EXTENDER KITS

The indoor antennas can be extended by 20 or 40 feet using the following extender kits:

Part Number	Description
R4Y91A	Aruba 90xx-LTE Indoor Ant Ext Kit-20ft
R4Y92A	Aruba 90xx-LTE Indoor Ant Ext Kit-40ft

Each kit is for extending one antenna. To extend both Main and Diversity antennas, two (2) kits are needed. To extend the GPS antenna, one additional kit is needed. To install, the LTE/GPS antenna connected to the 9004-LTE gateway would be detached and reattached to the other end of the extender cable as depicted below.

Please refer to Aruba 9004-LTE Gateway Installation Guide for installation steps.



CABLE LOSS

Frequency (MHz)	Cable loss (dB)			
	20 Feet		40 Feet	
	Cable#1	Cable#2	Cable#1	Cable#2
600	2.41	2.41	4.74	4.77
1200	3.61	3.59	7.07	7.10
1800	4.57	4.60	9.04	9.10
2400	5.57	5.59	10.91	11.00
3000	6.61	6.63	12.86	12.97



VSWR / ISOLATION

Frequency (MHz)	VSWR		Isolation (dB)
	Main	Diversity	90°
699~960	<4.0	<4.0	20
1448~1511	<2.0	<2.0	25
1710~2170	<2.0	<2.0	25
2300~2700	<2.0	<2.0	25

EFFICIENCY / PEAK GAIN

	Frequency (MHz)	Efficiency (%)	Peak Gain (dBi)
Main	699~960	55	2.68
	1448~1511	55	0.95
	1710~2170	64	2.99
	2300~2700	51	3.19
Diversity	699~960	53	2.16
	1448~1511	57	1.34
	1710~2170	65	2.98
	2300~2700	54	3.17



EFFICIENCY / PEAK GAIN -698MHZ ~ 960MHZ

EFFICIENCY				
Frequency	Main (%)	Diversity (%)	w/20ft (%)	w/40ft (%)
698	71	64	44	27
704	75	68	44	27
710	74	70	44	26
716	71	67	42	25
734	72	67	41	24
740	70	67	41	23
746	66	63	36	21
751	63	59	34	21
756	62	58	34	20
777	54	57	37	19
782	50	51	36	16
787	52	52	33	16
791	54	55	35	16
806	51	54	42	17
821	60	53	37	17
824	54	49	34	16
836	49	47	36	17
849	52	45	34	17
862	50	52	31	19
869	42	42	31	18
880	48	43	34	17
894	39	44	27	15
900	37	40	29	14
915	47	46	28	16
925	40	46	28	17
940	41	41	29	16
960	36	42	33	14
Avg.	55	53	35	19

PEAK GAIN				
Frequency	Main	Diversity	w/20ft	w/40ft
698	2.45	1.59	0.78	0.30
704	2.68	1.88	0.64	0.19
710	2.64	2.10	0.35	0.07
716	2.44	1.94	-0.20	-0.28
734	2.50	2.10	0.75	-0.63
740	2.23	2.16	0.69	-0.76
746	1.81	1.86	0.05	-1.11
751	1.51	1.61	-0.40	-1.35
756	1.35	1.43	-0.47	-1.57
777	0.71	1.40	0.39	-1.81
782	0.45	0.93	0.27	-2.53
787	0.69	1.11	-0.16	-2.77
791	0.85	1.38	0.00	-3.09
806	0.92	1.44	0.76	-2.75
821	1.10	1.26	0.76	-2.26
824	0.58	0.93	0.44	-2.73
836	0.01	0.71	0.72	-2.28
849	0.40	0.49	0.59	-2.45
862	0.39	1.13	-0.16	-1.68
869	-0.30	0.18	0.11	-2.17
880	0.56	0.31	0.52	-2.18
894	-0.26	0.37	-0.65	-2.48
900	-0.80	0.06	-0.21	-2.41
915	-0.09	0.61	-0.41	-2.43
925	-0.80	0.48	0.01	-2.17
940	-0.73	-0.23	0.23	-2.43
960	-1.01	-0.11	0.84	-2.90
Max.	2.68	2.16	0.84	0.30



EFFICIENCY / PEAK GAIN - 1448MHZ ~ 1511MHZ

EFFICIENCY				
Frequency	Main (%)	Diversity (%)	w/20ft (%)	w/40ft (%)
1448	49	54	35	13
1455	46	50	34	13
1463	51	48	34	13
1476	57	60	37	14
1486	52	54	35	13
1496	64	60	38	14
1503	64	67	38	14
1511	56	61	35	13
Avg.	55	57	36	14

PEAK GAIN				
Frequency	Main	Diversity	w/20ft	w/40ft
1448	-0.39	0.22	0.06	-3.91
1455	-0.63	-0.15	-0.02	-3.70
1463	-0.17	-0.33	0.02	-4.19
1476	0.43	0.68	0.33	-3.80
1486	0.09	0.22	0.15	-3.97
1496	0.93	0.81	0.61	-3.72
1503	0.95	1.34	0.66	-3.56
1511	0.43	1.02	0.37	-3.46
Max.	0.95	1.34	0.66	-3.46

EFFICIENCY / PEAK GAIN - 1710MHZ ~ 2170MHZ

EFFICIENCY				
Frequency	Main (%)	Diversity (%)	w/20ft (%)	w/40ft (%)
1710	71	70	25	10
1733	72	71	24	9
1750	71	73	25	9
1770	67	67	24	8
1785	60	66	23	8
1805	66	65	24	8
1840	61	64	22	8
1850	56	62	22	7
1880	61	66	24	8
1910	64	66	25	8
1920	63	65	25	8
1930	65	65	25	8
1950	63	66	26	8
1960	64	66	27	8
1980	63	65	26	8
1990	62	63	26	8
2010	62	63	26	8
2018	61	63	27	8
2025	59	63	26	8
2110	66	62	28	8
2140	62	58	25	8
2170	62	57	24	7
Avg.	64	65	25	8

PEAK GAIN				
Frequency	Main	Diversity	w/20ft	w/40ft
1710	2.05	1.73	0.75	-4.45
1733	2.03	1.63	0.74	-4.14
1750	2.26	1.57	1.03	-4.00
1770	2.10	1.31	0.95	-4.16
1785	1.53	1.48	0.81	-4.59
1805	1.71	1.58	1.09	-3.85
1840	1.39	1.83	0.59	-4.13
1850	1.06	1.63	0.60	-4.08
1880	1.57	2.16	0.77	-3.91
1910	2.11	2.47	0.88	-3.82
1920	2.17	2.39	0.53	-3.98
1930	2.37	2.38	0.37	-4.14
1950	2.27	2.55	0.01	-4.44
1960	2.23	2.71	-0.02	-4.20
1980	2.33	2.67	-0.28	-4.67
1990	2.46	2.62	-0.32	-4.73
2010	2.82	2.88	-0.35	-5.20
2018	2.83	2.98	-0.45	-5.08
2025	2.64	2.85	-0.68	-5.35
2110	2.99	2.62	-0.99	-6.26
2140	2.88	2.82	-1.52	-6.45
2170	2.85	2.79	-1.85	-6.94
Max.	2.99	2.98	1.09	-3.82



EFFICIENCY / PEAK GAIN – 2300MHZ ~ 2700MHZ

EFFICIENCY				
Frequency	Main (%)	Diversity (%)	w/20ft (%)	w/40ft (%)
2300	53	52	19	6
2305	52	55	18	6
2315	47	55	17	5
2325	49	48	17	5
2350	50	54	17	5
2375	51	57	17	5
2400	51	55	16	5
2500	48	54	19	5
2515	50	54	19	5
2535	51	54	19	5
2555	53	55	19	5
2570	53	54	20	5
2595	52	52	19	5
2620	51	55	19	5
2630	54	51	19	5
2655	50	54	19	5
2680	51	55	19	5
2690	49	52	18	5
2700	55	50	18	5
Avg.	51	54	18	5

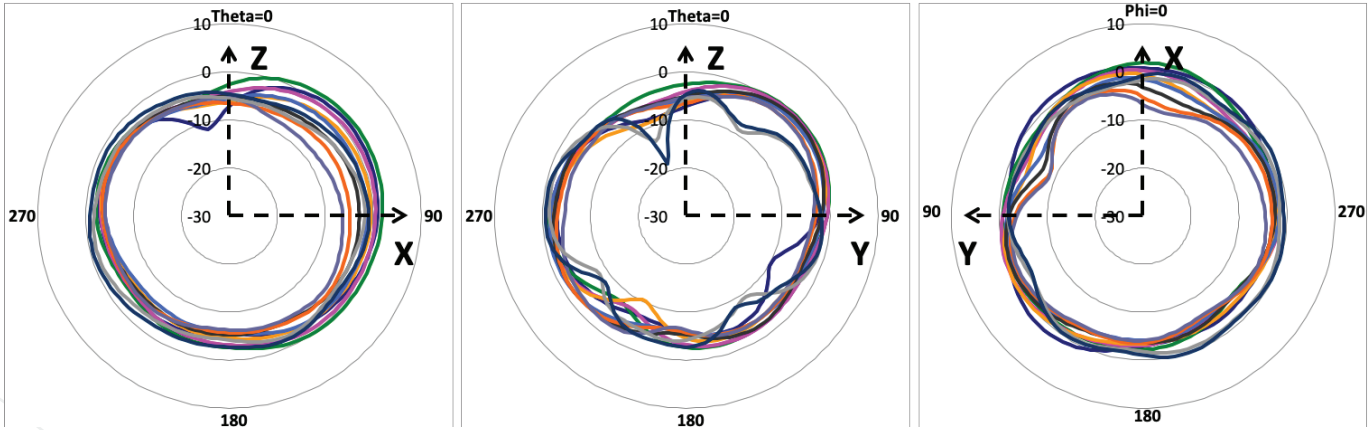
PEAK GAIN				
Frequency	Main	Diversity	w/20ft	w/40ft
2300	2.69	2.47	-2.85	-7.75
2305	2.58	2.68	-3.20	-7.83
2315	2.18	2.66	-3.37	-7.96
2325	2.29	2.29	-3.27	-8.36
2350	2.42	2.38	-3.25	-8.14
2375	2.58	2.74	-3.07	-8.30
2400	2.85	2.87	-2.99	-8.09
2500	2.14	2.77	-2.60	-7.80
2515	2.28	2.90	-2.55	-7.97
2535	2.66	3.05	-2.58	-7.74
2555	3.07	3.08	-2.72	-8.04
2570	3.19	2.93	-2.72	-8.18
2595	2.87	2.99	-3.19	-8.42
2620	2.74	2.74	-2.97	-8.50
2630	3.13	3.03	-3.12	-8.77
2655	2.72	3.17	-3.45	-8.72
2680	2.66	2.43	-3.60	-9.40
2690	2.55	3.07	-3.57	-9.68
2700	3.03	2.82	-3.58	-9.67
Max.	3.19	3.17	-2.55	-7.74



RADIATION PATTERN -698MHZ ~ 1511 MHZ

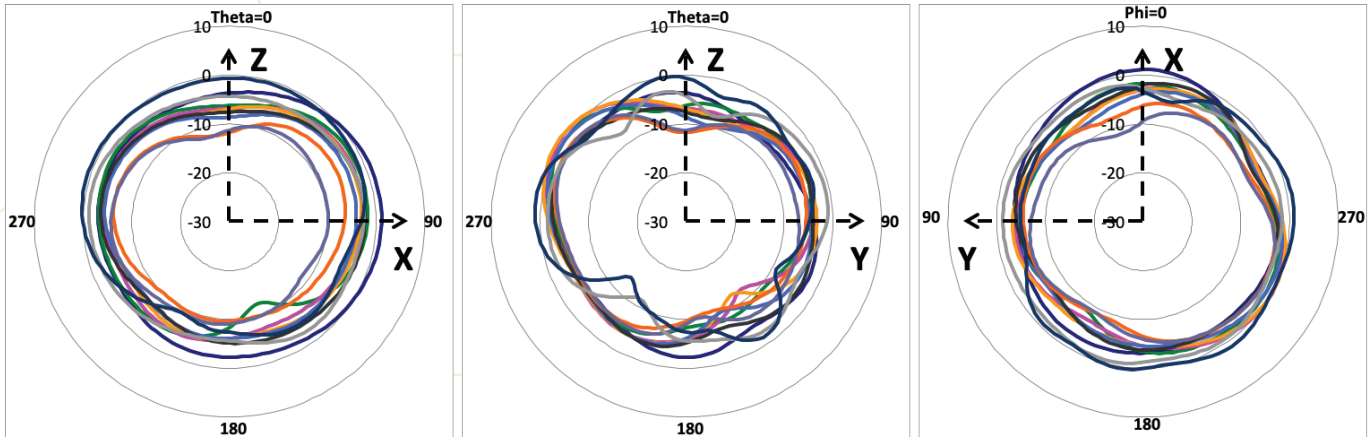
Main Antenna

- | | | |
|----------|----------|-----------|
| — 698MHz | — 836MHz | — 1448MHz |
| — 734MHz | — 880MHz | — 1511MHz |
| — 756MHz | — 925MHz | |
| — 791MHz | — 960MHz | |



Diversity antenna

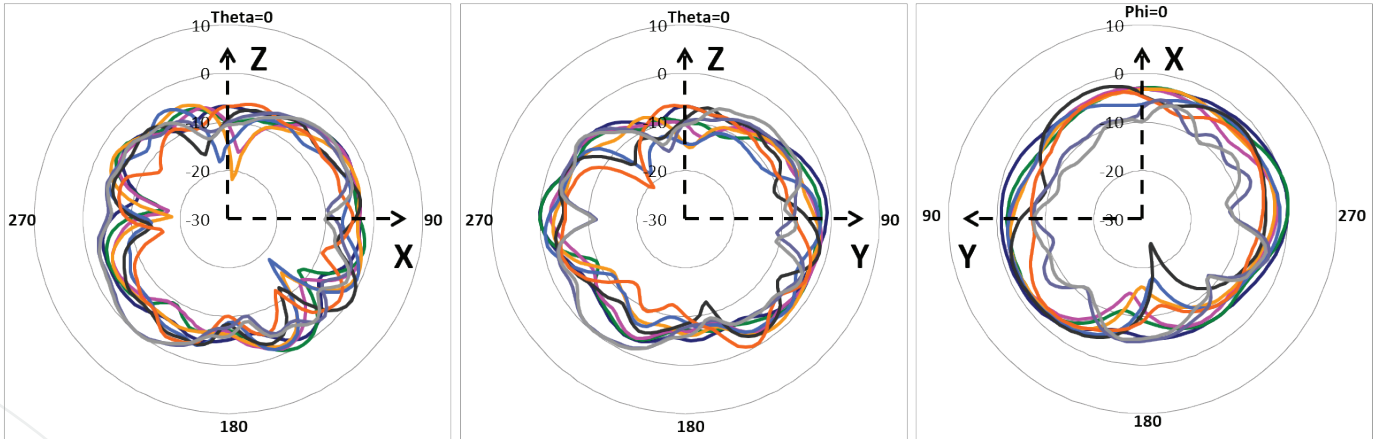
- | | | |
|----------|----------|-----------|
| — 698MHz | — 836MHz | — 1448MHz |
| — 734MHz | — 880MHz | — 1511MHz |
| — 756MHz | — 915MHz | |
| — 791MHz | — 960MHz | |





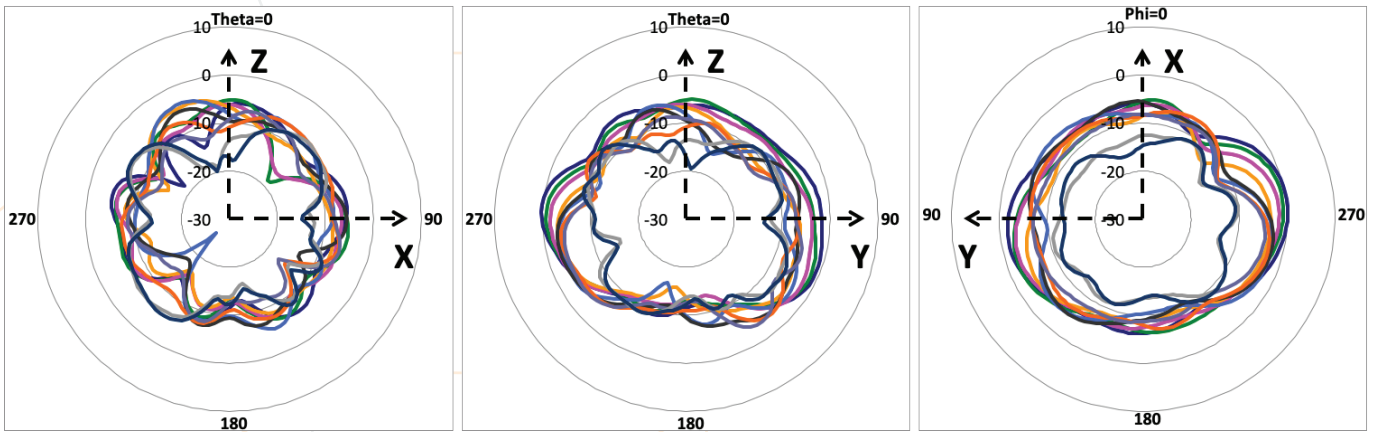
Antenna w/ 20ft. cable

- | | | |
|----------|-----------|-----------|
| — 698MHz | — 836MHz | — 1511MHz |
| — 734MHz | — 880MHz | |
| — 756MHz | — 925MHz | |
| — 791MHz | — 1448MHz | |



Antenna w/ 40ft. cable

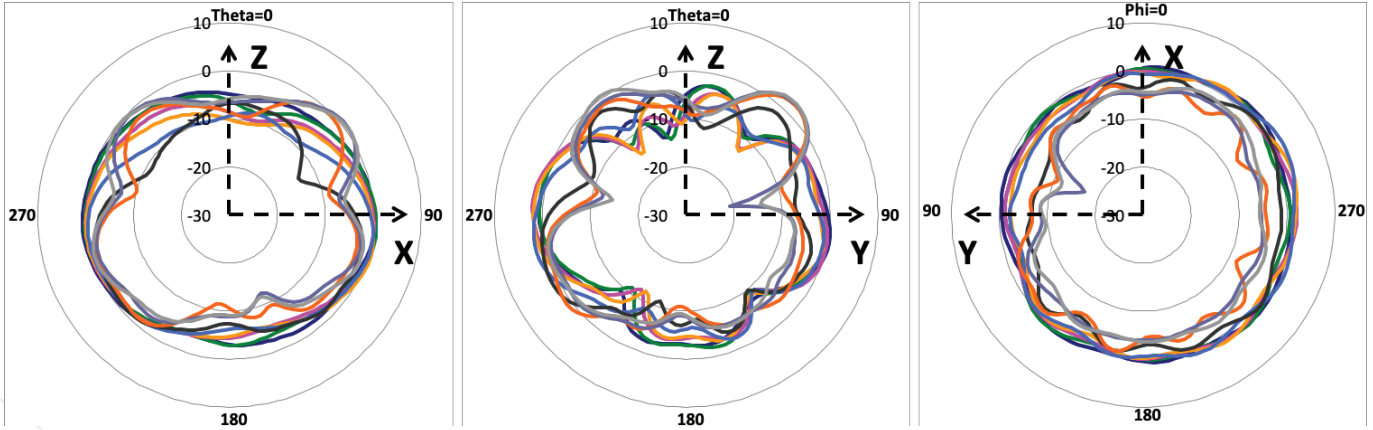
- | | | |
|----------|----------|-----------|
| — 698MHz | — 836MHz | — 1448MHz |
| — 734MHz | — 880MHz | — 1511MHz |
| — 756MHz | — 925MHz | |
| — 791MHz | — 960MHz | |



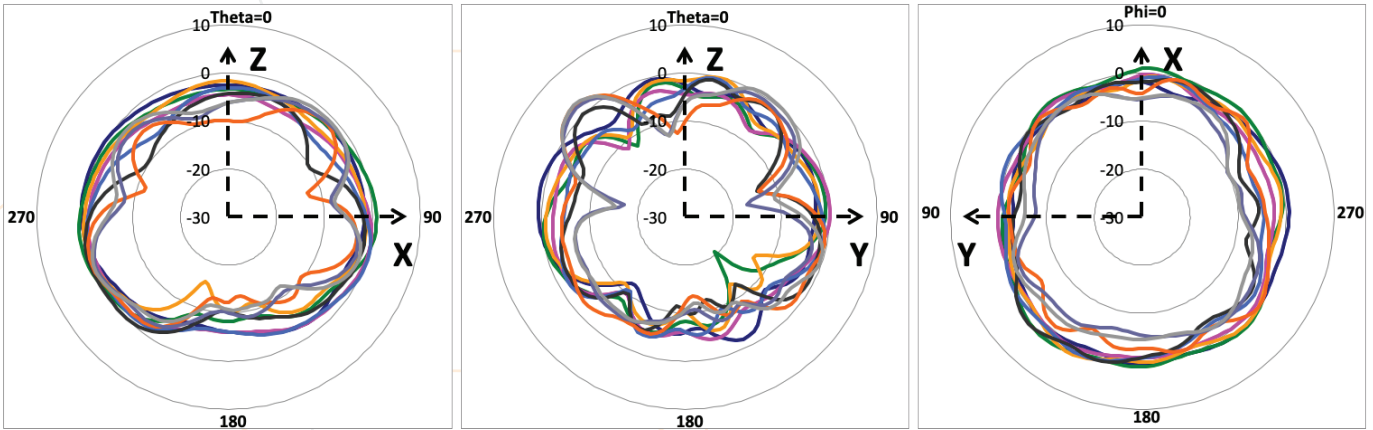


RADIATION PATTERN - 1710MHZ ~ 2700 MHZ

Main Antenna

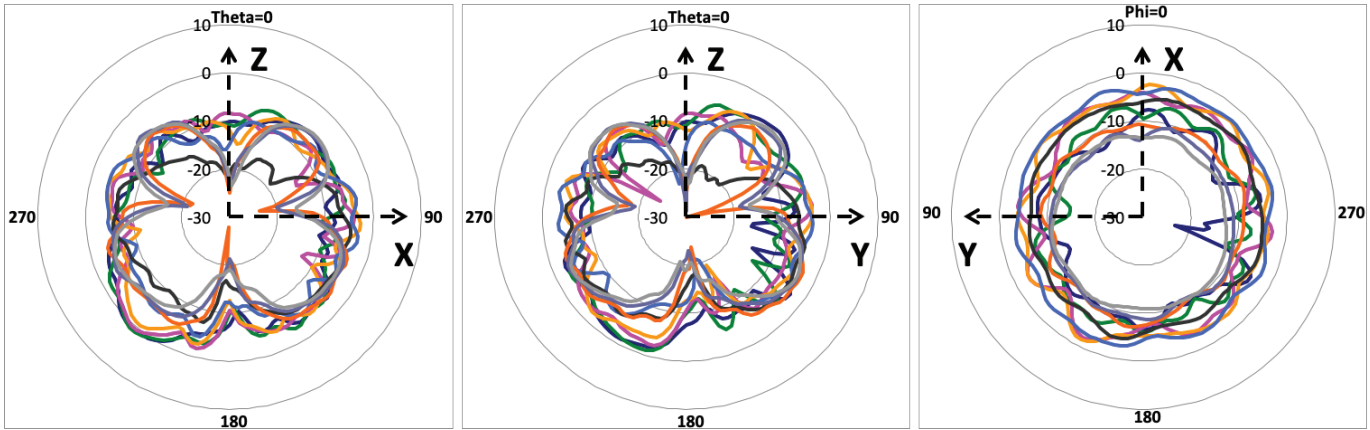


Diversity antenna





Antenna w/ 20ft. cable



Antenna w/ 40ft. cable

