Antenna Test Lab Co. Summary

www.AntennaTestLab.com

Test Date	Friday, May 5, 2023
Tested By:	Glenn Robb (919) 200-0292 Info@AntennaTestLab.com
Sample Description	See file name for model number and/or test configuration

Axis	**Antenna Under Test Orientation Notes** (See Coordinate Diagram Tab And Separate Setup Photos)
+Z Axis is Theta= 0 & Phi=any	
-Z Axis is Theta= 180 & Phi=any	Axis of feed line
+X axis is Theta=90 & Phi=0	
-X axis is Theta=90 & Phi=180	
+Y axis is Theta=90 & Phi=90	
-Y axis is Theta=90 & Phi=270	

Other Coordinate Notes, 3-Axis Cuts in Spherical Coordinates …

XZ Cut (Turntable) is Theta=0-360 & Phi=0, or Theta=0-180 & Phi=0 then Theta=180-0 & Phi=180

YZ Cut is Theta=0-360 & Phi=90, or Theta=0-180 & Phi=90 then Theta=180-0 & Phi=270

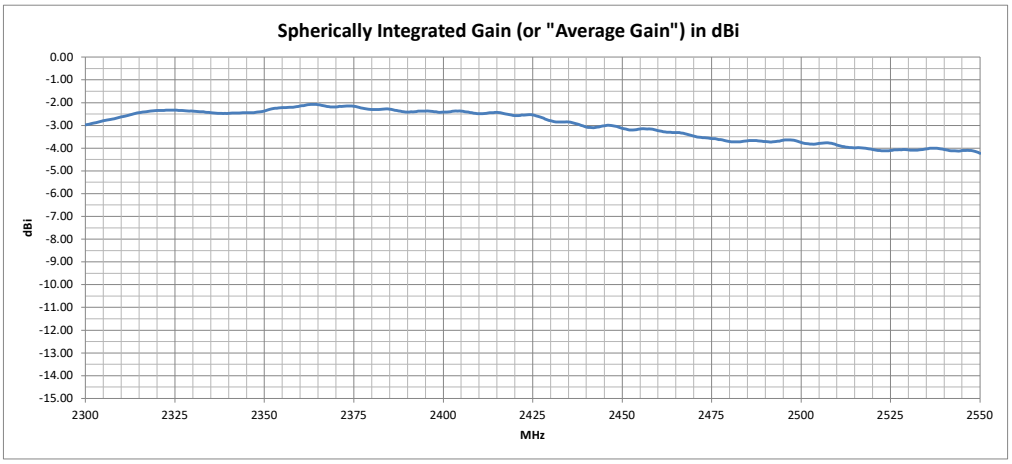
XY Cut is Theta=90 & Phi=0-360

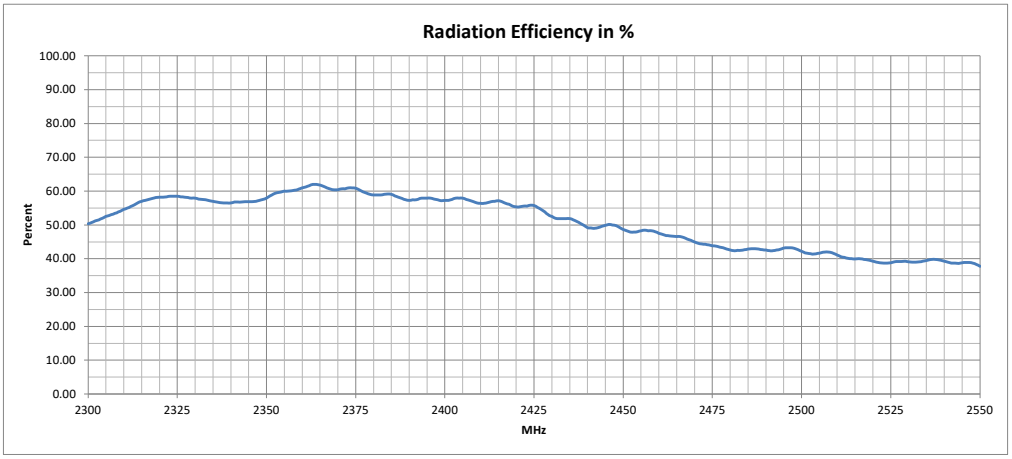
Notes And Observations

Customers may download 3-Dimensional pattern visualization software (use on Theta-Ring.TXT file) from

http://antennatestlab.com/antenna-education-tutorials/plotting

Frequency (MHz)	Integrated Spherical Total Isotropic Gain (dBi)	Estimated Radiation Efficiency (%)
2300	-2.98	50.35
2301	-2.95	50.70
2302	-2.91	51.17
2303	-2.88	51.52
2304	-2.84	52.00
2305	-2.80	52.48
2306	-2.77	52.84
2307	-2.74	53.21
2308	-2.71	53.58
2309	-2.67	54.08
2310	-2.63	54.58
2311	-2.60	54.95
2312	-2.56	55.46
2313	-2.52	55.98
2314	-2.47	56.62
2315	-2.44	57.02
2316	-2.42	57.28
2317	-2.40	57.54
2318	-2.38	57.81
2319	-2.36	58.08
2320	-2.35	58.21
2321	-2.35	58.21
2322	-2.34	58.34
2323	-2.33	58.48
2324	-2.33	58.48
2325	-2.33	58.48
2326	-2.34	58.34
2327	-2.35	58.21
2328	-2.36	58.08
2329	-2.37	57.94
2330	-2.37	57.94
2331	-2.39	57.68
2332	-2.40	57.54
2333	-2.41	57.41
2334	-2.43	57.15
2335	-2.44	57.02
2336	-2.46	56.75
2337	-2.47	56.62
2338	-2.48	56.49
2339	-2.48	56.49
2340	-2.48	56.49
2341	-2.46	56.75
2342	-2.46	56.75
2343	-2.46	56.75
2344	-2.45	56.89
2345	-2.45	56.89
2346	-2.45	56.89
2347	-2.44	57.02
2348	-2.42	57.28
2349	-2.40	57.54
2350	-2.37	57.94
2351	-2.32	58.61
2352	-2.28	59.16
2353	-2.25	59.57
2354	-2.24	59.70
2355	-2.22	59.98
2356	-2.22	59.98
2357	-2.21	60.12
2358	-2.20	60.26
2359	-2.18	60.53
2360	-2.15	60.95
2361	-2.13	61.24
2362	-2.10	61.66
2363	-2.08	61.94
2364	-2.08	61.94
2365	-2.09	61.80
2366	-2.12	61.38
2367	-2.15	60.95
2368	-2.18	60.53
2369	-2.19	60.39
2370	-2.19	60.39
2371	-2.17	60.67
2372	-2.17	60.67
2373	-2.15	60.95
2374	-2.15	60.95
2375	-2.16	60.81
2376	-2.19	60.39
2377	-2.23	59.84
2378	-2.26	59.43
2379	-2.29	59.02
2380	-2.30	58.88
2381	-2.30	58.88
2382	-2.30	58.88
2383	-2.29	59.02
2384	-2.28	59.16
2385	-2.29	59.02
2386	-2.32	58.61
2387	-2.35	58.21
2388	-2.38	57.81
2389	-2.41	57.41
2390	-2.42	57.28
2391	-2.41	57.41





2392	-2.41	57.41
2393	-2.38	57.81
2394	-2.37	57.94
2395	-2.37	57.94
2396	-2.37	57.94
2397	-2.39	57.68
2398	-2.41	57.41
2399	-2.43	57.15
2400	-2.42	57.28
2401	-2.42	57.28
2402	-2.40	57.54
2403	-2.37	57.94
2404	-2.37	57.94
2405	-2.37	57.94
2406	-2.40	57.54
2407	-2.42	57.28
2408	-2.45	56.89
2409	-2.48	56.49
2410	-2.49	56.36
2411	-2.49	56.36
2412	-2.47	56.62
2413	-2.45	56.89
2414	-2.44	57.02
2415	-2.43	57.15
2416	-2.45	56.89
2417	-2.49	56.36
2418	-2.51	56.10
2419	-2.55	55.59
2420	-2.57	55.34
2421	-2.57	55.34
2422	-2.55	55.59
2423	-2.55	55.59
2424	-2.53	55.85
2425	-2.54	55.72
2426	-2.58	55.21
2427	-2.63	54.58
2428	-2.69	53.83
2429	-2.76	52.97
2430	-2.80	52.48
2431	-2.84	52.00
2432	-2.85	51.88
2433	-2.85	51.88
2434	-2.85	51.88
2435	-2.85	51.88
2436	-2.88	51.52
2437	-2.92	51.05
2438	-2.97	50.47
2439	-3.02	49.89
2440	-3.08	49.20
2441	-3.09	49.09
2442	-3.10	48.98
2443	-3.08	49.20
2444	-3.05	49.55
2445	-3.02	49.89
2446	-3.00	50.12
2447	-3.01	50.00
2448	-3.03	49.77
2449	-3.08	49.20
2450	-3.13	48.64
2451	-3.16	48.31
2452	-3.20	47.86
2453	-3.20	47.86
2454	-3.19	47.97
2455	-3.16	48.31
2456	-3.15	48.42
2457	-3.16	48.31
2458	-3.16	48.31
2459	-3.19	47.97
2460	-3.23	47.53
2461	-3.26	47.21
2462	-3.29	46.88
2463	-3.30	46.77
2464	-3.31	46.67
2465	-3.32	46.56
2466	-3.32	46.56
2467	-3.35	46.24
2468	-3.39	45.81
2469	-3.43	45.39
2470	-3.47	44.98
2471	-3.51	44.57
2472	-3.53	44.36
2473	-3.54	44.26
2474	-3.56	44.06
2475	-3.58	43.85
2476	-3.59	43.75
2477	-3.62	43.45
2478	-3.64	43.25
2479	-3.68	42.85
2480	-3.71	42.56
2481	-3.73	42.36
2482	-3.72	42.46
2483	-3.72	42.46
2484	-3.70	42.66
2485	-3.68	42.85
2486	-3.67	42.95
2487	-3.67	42.95
2488	-3.68	42.85
2489	-3.70	42.66

2490	-3.71	42.56
2491	-3.73	42.36
2492	-3.73	42.36
2493	-3.71	42.56
2494	-3.69	42.76
2495	-3.65	43.15
2496	-3.64	43.25
2497	-3.64	43.25
2498	-3.66	43.05
2499	-3.70	42.66
2500	-3.75	42.17
2501	-3.79	41.78
2502	-3.81	41.59
2503	-3.83	41.40
2504	-3.82	41.50
2505	-3.80	41.69
2506	-3.78	41.88
2507	-3.77	41.98
2508	-3.78	41.88
2509	-3.81	41.59
2510	-3.86	41.11
2511	-3.91	40.64
2512	-3.94	40.36
2513	-3.97	40.09
2514	-3.98	39.99
2515	-3.99	39.90
2516	-3.98	39.99
2517	-3.99	39.90
2518	-4.01	39.72
2519	-4.03	39.54
2520	-4.06	39.26
2521	-4.09	38.99
2522	-4.11	38.82
2523	-4.12	38.73
2524	-4.12	38.73
2525	-4.11	38.82
2526	-4.08	39.08
2527	-4.07	39.17
2528	-4.07	39.17
2529	-4.06	39.26
2530	-4.08	39.08
2531	-4.09	38.99
2532	-4.09	38.99
2533	-4.08	39.08
2534	-4.06	39.26
2535	-4.04	39.45
2536	-4.01	39.72
2537	-4.00	39.81
2538	-4.01	39.72
2539	-4.03	39.54
2540	-4.06	39.26
2541	-4.09	38.99
2542	-4.12	38.73
2543	-4.12	38.73
2544	-4.13	38.64
2545	-4.11	38.82
2546	-4.10	38.90
2547	-4.10	38.90
2548	-4.12	38.73
2549	-4.16	38.37
2550	-4.23	37.76

Frequency (MHz)	Peak Gain (From Highest Direction) in dBi
2300	0.14
2301	0.18
2302	0.24
2303	0.27
2304	0.34
2305	0.38
2306	0.44
2307	0.47
2308	0.53
2309	0.60
2310	0.66
2311	0.72
2312	0.78
2313	0.83
2314	0.90
2315	0.94
2316	0.99
2317	1.02
2318	1.08
2319	1.10
2320	1.13
2321	1.15
2322	1.19
2323	1.19
2324	1.23
2325	1.23
2326	1.23
2327	1.26
2328	1.28
2329	1.28
2330	1.28
2331	1.29
2332	1.30
2333	1.31
2334	1.31
2335	1.30
2336	1.32
2337	1.33
2338	1.31
2339	1.33
2340	1.34
2341	1.37
2342	1.38
2343	1.40
2344	1.41
2345	1.43
2346	1.44
2347	1.45
2348	1.46
2349	1.52
2350	1.55
2351	1.60
2352	1.63
2353	1.67
2354	1.68
2355	1.70
2356	1.70
2357	1.73
2358	1.76
2359	1.74
2360	1.77
2361	1.78
2362	1.81
2363	1.81
2364	1.83
2365	1.82
2366	1.76
2367	1.71
2368	1.68
2369	1.68
2370	1.67
2371	1.69
2372	1.69
2373	1.70
2374	1.69
2375	1.68
2376	1.65
2377	1.61
2378	1.58
2379	1.56
2380	1.55
2381	1.56
2382	1.57
2383	1.60
2384	1.63
2385	1.63
2386	1.62
2387	1.59
2388	1.58
2389	1.57
2390	1.60
2391	1.60
2392	1.63
2393	1.68
2394	1.70
2395	1.73
2396	1.73
2397	1.73
2398	1.73
2399	1.70
2400	1.72
2401	1.73
2402	1.77
2403	1.83
2404	1.82
2405	1.83
2406	1.80
2407	1.79
2408	1.77
2409	1.75
2410	1.78
2411	1.80
2412	1.83
2413	1.86
2414	1.89
2415	1.91
2416	1.93
2417	1.90
2418	1.90
2419	1.88
2420	1.88
2421	1.90
2422	1.94
2423	1.94
2424	1.99
2425	1.99
2426	1.93
2427	1.94
2428	1.89
2429	1.84
2430	1.83
2431	1.79
2432	1.79
2433	1.81
2434	1.83
2435	1.84
2436	1.83
2437	1.79
2438	1.77
2439	1.72
2440	1.69
2441	1.68
2442	1.67
2443	1.71
2444	1.74
2445	1.77
2446	1.80
2447	1.80
2448	1.77
2449	1.74
2450	1.70
2451	1.62
2452	1.61
2453	1.62
2454	1.61
2455	1.64
2456	1.63
2457	1.61
2458	1.60
2459	1.57
2460	1.51
2461	1.46
2462	1.41
2463	1.38
2464	1.34
2465	1.30
2466	1.30
2467	1.28
2468	1.21
2469	1.13
2470	1.05
2471	1.00
2472	0.95
2473	0.90
2474	0.88
2475	0.84
2476	0.78
2477	0.74
2478	0.71
2479	0.64
2480	0.58
2481	0.55
2482	0.56
2483	0.53
2484	0.54
2485	0.56
2486	0.57
2487	0.55
2488	0.56
2489	0.54
2490	0.53
2491	0.53
2492	0.56
2493	0.58
2494	0.63
2495	0.65
2496	0.74
2497	0.75
2498	0.75
2499	0.75
2500	0.70
2501	0.70
2502	0.71
2503	0.71
2504	0.75
2505	0.77
2506	0.81
2507	0.86
2508	0.87
2509	0.90
2510	0.93
2511	0.77
2512	0.76
2513	0.74
2514	0.74
2515	0.77
2516	0.80
2517	0.81
2518	0.79
2519	0.78
2520	0.77
2521	0.73
2522	0.73
2523	0.73
2524	0.74
2525	0.76
2526	0.80
2527	0.83
2528	0.84
2529	0.86
2530	0.85
2531	0.85
2532	0.87
2533	0.87
2534	0.91
2535	0.94
2536	0.97
2537	0.98
2538	0.98
2539	0.97
2540	0.94
2541	0.91
2542	0.89
2543	0.87
2544	0.86
2545	0.86
2546	0.84
2547	0.84
2548	0.80
2549	0.74
2550	0.70