

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

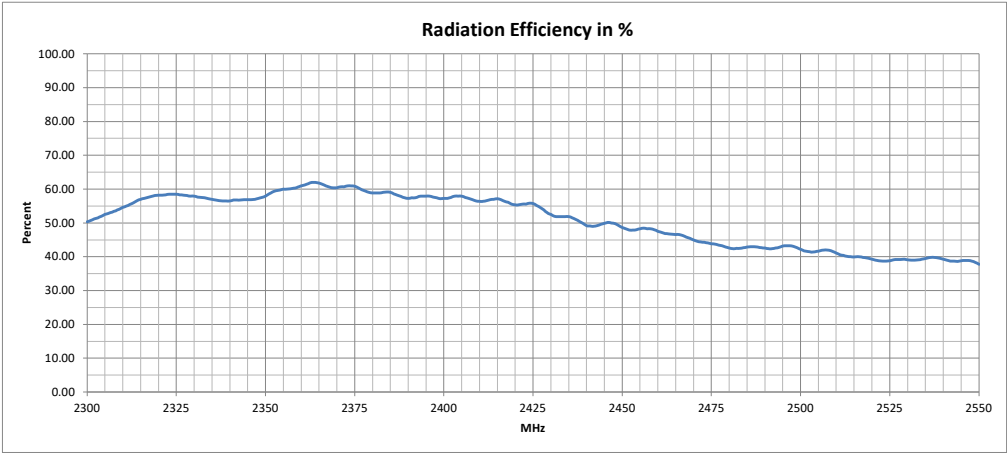
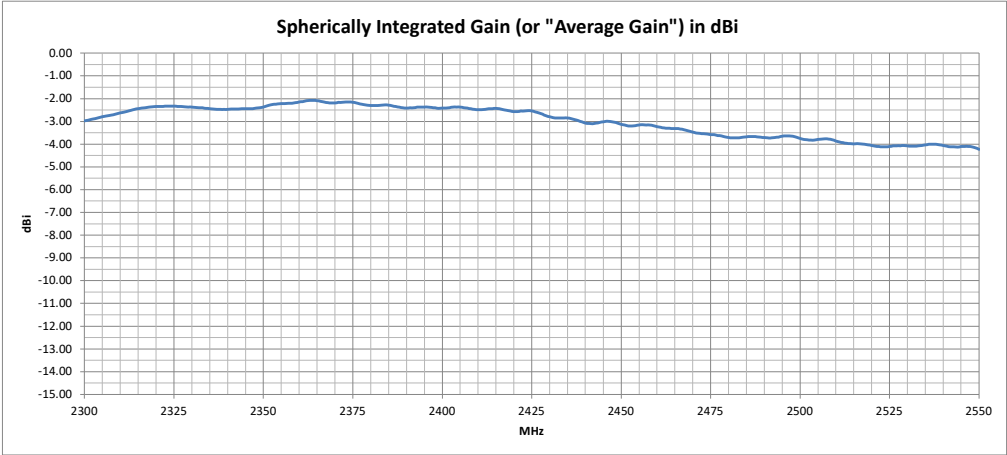
Axis	Antenna Under Test Orientation Notes (See Coordinate Diagram Tab And Separate Setup Photos)
+Z Axis is Theta= 0 & Phi=any	
-Z Axis is Theta= 180 & Phi=any	Axis of feed line
+X axis is Theta=90 & Phi=0	
-X axis is Theta=90 & Phi=180	
+Y axis is Theta=90 & Phi=90	
-Y axis is Theta=90 & Phi=270	
Other 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 dB
2000	-0.11
2005	-0.12
2010	-0.17
2015	-0.27
2020	-0.38
2025	-0.51
2030	-0.66
2035	-0.81
2040	-0.97
2045	-1.14
2050	-1.32
2055	-1.51
2060	-1.71
2065	-1.92
2070	-2.14
2075	-2.37
2080	-2.61
2085	-2.86
2090	-3.12
2095	-3.39
2100	-3.67
2105	-3.96
2110	-4.26
2115	-4.57
2120	-4.89
2125	-5.22
2130	-5.56
2135	-5.91
2140	-6.27
2145	-6.64
2150	-7.02
2155	-7.41
2160	-7.81
2165	-8.22
2170	-8.64
2175	-9.07
2180	-9.51
2185	-9.96
2190	-10.42
2195	-10.89
2200	-11.37
2205	-11.86
2210	-12.36
2215	-12.87
2220	-13.39
2225	-13.92
2230	-14.46
2235	-15.01
2240	-15.57
2245	-16.14
2250	-16.72
2255	-17.31
2260	-17.91
2265	-18.52
2270	-19.14
2275	-19.77
2280	-20.41
2285	-21.06
2290	-21.72
2295	-22.39
2300	-23.07
2305	-23.76
2310	-24.46
2315	-25.17
2320	-25.89
2325	-26.62
2330	-27.36
2335	-28.11
2340	-28.87
2345	-29.64
2350	-30.42
2355	-31.21
2360	-32.01
2365	-32.82
2370	-33.64
2375	-34.47
2380	-35.31
2385	-36.16
2390	-37.02
2395	-37.89
2400	-38.77
2405	-39.66
2410	-40.56
2415	-41.47
2420	-42.39
2425	-43.32
2430	-44.26
2435	-45.21
2440	-46.17
2445	-47.14
2450	-48.12
2455	-49.11
2460	-50.11
2465	-51.12
2470	-52.14
2475	-53.17
2480	-54.21
2485	-55.26
2490	-56.32
2495	-57.39
2500	-58.47
2505	-59.56
2510	-60.66
2515	-61.77
2520	-62.89
2525	-64.02
2530	-65.16
2535	-66.31
2540	-67.47
2545	-68.64
2550	-69.82
2555	-71.01
2560	-72.21
2565	-73.42
2570	-74.64
2575	-75.87
2580	-77.11
2585	-78.36
2590	-79.62
2595	-80.89
2600	-82.17
2605	-83.46
2610	-84.76
2615	-86.07
2620	-87.39
2625	-88.72
2630	-90.06
2635	-91.41
2640	-92.77
2645	-94.14
2650	-95.52
2655	-96.91
2660	-98.31
2665	-99.72
2670	-101.14
2675	-102.57
2680	-104.01
2685	-105.46
2690	-106.92
2695	-108.39
2700	-109.87
2705	-111.36
2710	-112.86
2715	-114.37
2720	-115.89
2725	-117.42
2730	-118.96
2735	-120.51
2740	-122.07
2745	-123.64
2750	-125.22
2755	-126.81
2760	-128.41
2765	-130.02
2770	-131.64
2775	-133.27
2780	-134.91
2785	-136.56
2790	-138.22
2795	-139.89
2800	-141.57
2805	-143.26
2810	-144.96
2815	-146.67
2820	-148.39
2825	-150.12
2830	-151.86
2835	-153.61
2840	-155.37
2845	-157.14
2850	-158.92
2855	-160.71
2860	-162.51
2865	-164.32
2870	-166.14
2875	-167.97
2880	-169.81
2885	-171.66
2890	-173.52
2895	-175.39
2900	-177.27
2905	-179.16
2910	-181.06
2915	-182.97
2920	-184.89
2925	-186.82
2930	-188.76
2935	-190.71
2940	-192.67
2945	-194.64
2950	-196.62
2955	-198.61
2960	-200.61
2965	-202.62
2970	-204.64
2975	-206.67
2980	-208.71
2985	-210.76
2990	-212.82
2995	-214.89
3000	-216.97
3005	-219.06
3010	-221.16
3015	-223.27
3020	-225.39
3025	-227.52
3030	-229.66
3035	-231.81
3040	-233.97
3045	-236.14
3050	-238.32
3055	-240.51
3060	-242.71
3065	-244.92
3070	-247.14
3075	-249.37
3080	-251.61
3085	-253.86
3090	-256.12
3095	-258.39
3100	-260.67
3105	-262.96
3110	-265.26
3115	-267.57
3120	-269.89
3125	-272.22
3130	-274.56
3135	-276.91
3140	-279.27
3145	-281.64
3150	-284.02
3155	-286.41
3160	-288.81
3165	-291.22
3170	-293.64
3175	-296.07
3180	-298.51
3185	-300.96
3190	-303.42
3195	-305.89
3200	-308.37
3205	-310.86
3210	-313.36
3215	-315.87
3220	-318.39
3225	-320.92
3230	-323.46
3235	-326.01
3240	-328.57
3245	-331.14
3250	-333.72
3255	-336.31
3260	-338.91
3265	-341.52
3270	-344.14
3275	-346.77
3280	-349.41
3285	-352.06
3290	-354.72
3295	-357.39
3300	-360.07
3305	-362.76
3310	-365.46
3315	-368.17
3320	-370.89
3325	-373.62
3330	-376.36
3335	-379.11
3340	-381.87
3345	-384.64
3350	-387.42
3355	-390.21
3360	-393.01
3365	-395.82
3370	-398.64
3375	-401.47
3380	-404.31
3385	-407.16
3390	-410.02
3395	-412.89
3400	-415.77
3405	-418.66
3410	-421.56
3415	-424.47
3420	-427.39
3425	-430.32
3430	-433.26
3435	-436.21
3440	-439.17
3445	-442.14
3450	-445.12
3455	-448.11
3460	-451.11
3465	-454.12
3470	-457.14
3475	-460.17
3480	-463.21
3485	-466.26
3490	-469.32
3495	-472.39
3500	-475.47
3505	-478.56
3510	-481.66
3515	-484.77
3520	-487.89
3525	-491.02
3530	-494.16
3535	-497.31
3540	-500.47
3545	-503.64
3550	-506.82
3555	-510.01
3560	-513.21
3565	-516.42
3570	-519.64
3575	-522.87
3580	-526.11
3585	-529.36
3590	-532.62
3595	-535.89
3600	-539.17
3605	-542.46
3610	-545.76
3615	-549.07
3620	-552.39
3625	-555.72
3630	-559.06
3635	-562.41
3640	-565.77
3645	-569.14
3650	-572.52
3655	-575.91
3660	-579.31
3665	-582.72
3670	-586.14
3675	-589.57
3680	-593.01
3685	-596.46
3690	-599.92
3695	-603.39
3700	-606.87
3705	-610.36
3710	-613.86
3715	-617.37
3720	-620.89
3725	-624.42
3730	-627.96
3735	-631.51
3740	-635.07
3745	-638.64
3750	-642.22
3755	-645.81
3760	-649.41
3765	-653.02
3770	-656.64
3775	-660.27
3780	-663.91
3785	-667.56
3790	-671.22
3795	-674.89
3800	-678.57
3805	-682.26
3810	-685.96
3815	-689.67
3820	-693.39
3825	-697.12
3830	-700.86
3835	-704.61
3840	-708.37
3845	-712.14
3850	-715.92
3855	-719.71
3860	-723.51
3865	-727.32
3870	-731.14
3875	-734.97
3880	-738.81
3885	-742.66
3890	-746.52
3895	-750.39
3900	-754.27
3905	-758.16
3910	-762.06
3915	-765.97
3920	-769.89
3925	-773.82
3930	-777.76
3935	-781.71
3940	-785.67
3945	-789.64
3950	-793.62
3955	-797.61
3960	-801.61
3965	-805.62
3970	-809.64
3975	-813.67
3980	-817.71
3985	-821.76
3990	-825.82
3995	-829.89
4000	-833.97

Wave Gain

