EcoTech LLC
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Boulevard, Suite 101,
Bethlehem PA 18015, USA

Antenna Information:

In order to comply with FCC 15.203, NeroSubmersiblePump NX7, NX5 and NX3 products utilize an onboard printed circuit board antenna. This antenna is manufactured on the printed circuit board and therefore cannot be removed or modified. There are no connectors to the RF output of the device, so no external antenna can reasonably be attached to our device. Clear photos of our antenna can be seen in the photos.

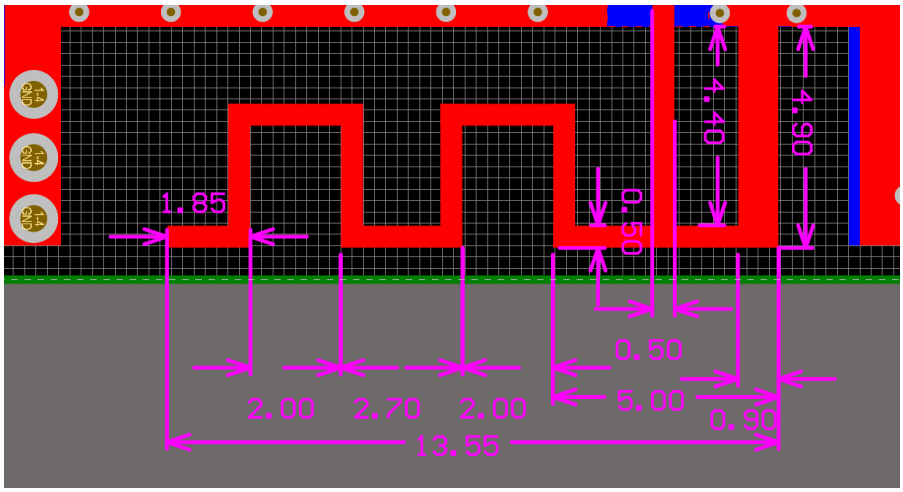
Antenna Test Lab Co. performed an antenna gain test on our antenna in order to find exact values for the gain of our design. The test was performed on a bare, non-populated circuit board, with a test signal fed into the antenna.

List of Antennas:

Only 1 antenna can be used with our device

Antenna 1:

Type: PCB antenna
Manufacturer: ICape
Part Number: 901-00053Meander
Maximum gain: 2.55 dBi
Description: Meander Type
Dimensions: 13.55mm x 4.90mm



Antenna Test Lab Co Testing Summary

www.AntennaTestLab.com

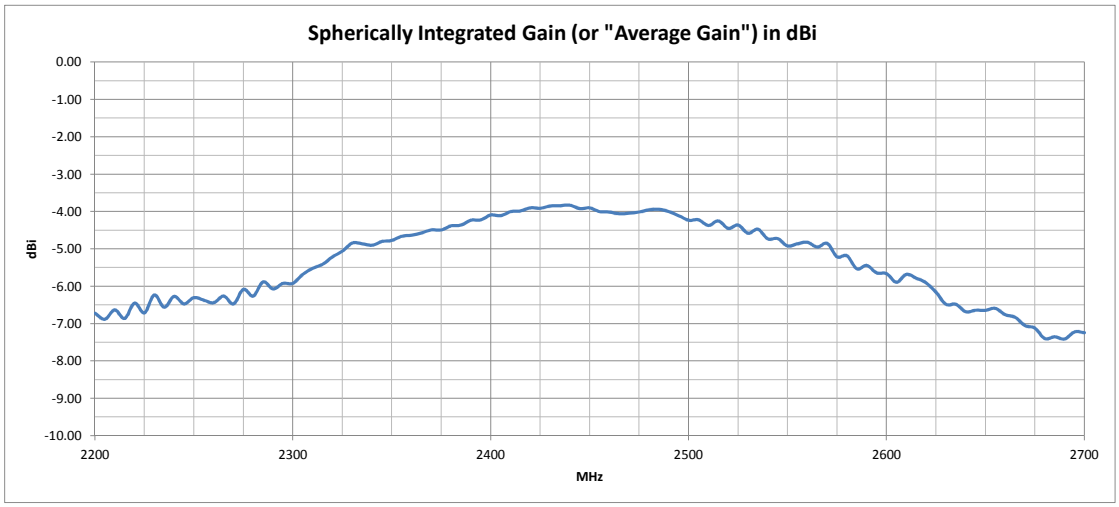
Test Date	Thursday, August 17, 2017
Tested By:	Glenn Robb (919) 200-0292 Glenn@AntennaTestLab.com
Sample Description	PCB planar Antenna with hand soldered coax probe/feed and SMA connector
	See file name for PCB part number

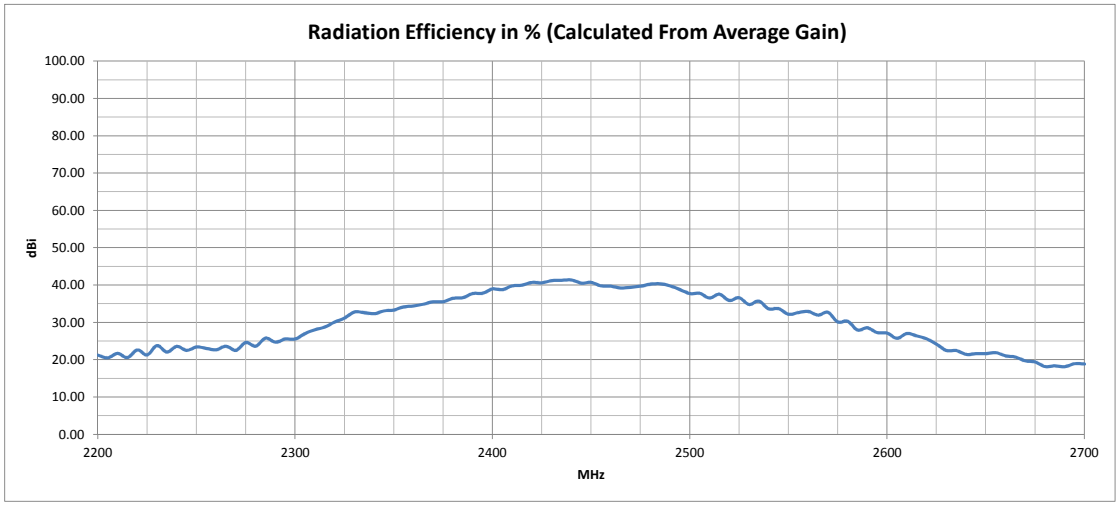
Axis	**Antenna Under Test Orientation Notes** (See Coordinate Diagram Tab And Separate Setup Photos)
+Z Axis is Theta= 0 & Phi=any	
-Z Axis is Theta= 180 & Phi=any	Axis of feed line for pattern testing
+X axis is Theta=90 & Phi=0	
-X axis is Theta=90 & Phi=180	
+Y axis is Theta=90 & Phi=90	
-Y axis is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

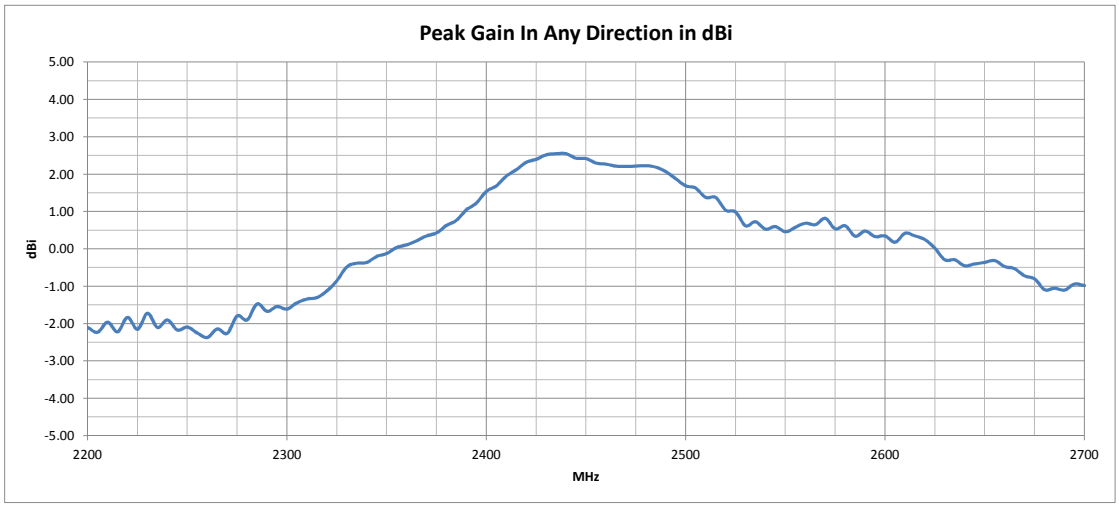
Notes And Observations
Customers may download 3-Dimensional pattern visualization software (use on Theta-Ring.TXT file) from
http://antennatestlab.com/antenna-education-tutorials/plotting

Frequency (MHz)	Integrated Spherical Total Isotropic Gain (dBi)	Estimated Radiation Efficiency (%)
2200	-6.72	21.28
2205	-6.88	20.51
2210	-6.63	21.73
2215	-6.86	20.61
2220	-6.45	22.65
2225	-6.71	21.33
2230	-6.23	23.82
2235	-6.56	22.08
2240	-6.27	23.60
2245	-6.47	22.54
2250	-6.30	23.44
2255	-6.37	23.07
2260	-6.44	22.70
2265	-6.26	23.66
2270	-6.47	22.54
2275	-6.08	24.66
2280	-6.26	23.66
2285	-5.88	25.82
2290	-6.07	24.72
2295	-5.92	25.59
2300	-5.92	25.59
2305	-5.68	27.04
2310	-5.52	28.05
2315	-5.41	28.77
2320	-5.21	30.13
2325	-5.06	31.19
2330	-4.84	32.81
2335	-4.86	32.66
2340	-4.90	32.36
2345	-4.80	33.11
2350	-4.77	33.34
2355	-4.66	34.20
2360	-4.63	34.43
2365	-4.57	34.91
2370	-4.49	35.56
2375	-4.49	35.56
2380	-4.38	36.48
2385	-4.36	36.64
2390	-4.23	37.76
2395	-4.22	37.84
2400	-4.09	38.99
2405	-4.11	38.82
2410	-4.00	39.81
2415	-3.98	39.99
2420	-3.90	40.74
2425	-3.91	40.64
2430	-3.85	41.21
2435	-3.84	41.30
2440	-3.83	41.40
2445	-3.92	40.55
2450	-3.90	40.74
2455	-4.00	39.81
2460	-4.01	39.72
2465	-4.06	39.26
2470	-4.04	39.45
2475	-4.01	39.72
2480	-3.95	40.27
2485	-3.94	40.36
2490	-4.00	39.81
2495	-4.11	38.82
2500	-4.23	37.76
2505	-4.22	37.84
2510	-4.37	36.56
2515	-4.25	37.58
2520	-4.45	35.89
2525	-4.36	36.64
2530	-4.58	34.83
2535	-4.47	35.73
2540	-4.73	33.65
2545	-4.72	33.73
2550	-4.92	32.21
2555	-4.86	32.66
2560	-4.82	32.96
2565	-4.95	31.99
2570	-4.85	32.73
2575	-5.21	30.13
2580	-5.18	30.34
2585	-5.53	27.99
2590	-5.44	28.58
2595	-5.64	27.29
2600	-5.66	27.16
2605	-5.89	25.76
2610	-5.68	27.04





Frequency (MHz)	Peak Gain in Any Direction (dBi)
2200	-2.10
2205	-2.23
2210	-1.96
2215	-2.22
2220	-1.83
2225	-2.15
2230	-1.72
2235	-2.10
2240	-1.90
2245	-2.17
2250	-2.09
2255	-2.25
2260	-2.37
2265	-2.14
2270	-2.26
2275	-1.79
2280	-1.90
2285	-1.47
2290	-1.67
2295	-1.54
2300	-1.61
2305	-1.44
2310	-1.34
2315	-1.30
2320	-1.12
2325	-0.85
2330	-0.48
2335	-0.38
2340	-0.36
2345	-0.20
2350	-0.12
2355	0.04
2360	0.11
2365	0.22
2370	0.35
2375	0.43
2380	0.63
2385	0.77
2390	1.05
2395	1.23
2400	1.54
2405	1.69
2410	1.95
2415	2.12
2420	2.32
2425	2.40
2430	2.52
2435	2.55
2440	2.55
2445	2.43
2450	2.42
2455	2.30
2460	2.27
2465	2.22
2470	2.21
2475	2.22
2480	2.23
2485	2.19
2490	2.07
2495	1.88
2500	1.69
2505	1.63
2510	1.38
2515	1.38
2520	1.04
2525	0.99
2530	0.62
2535	0.73
2540	0.53
2545	0.60
2550	0.46
2555	0.58
2560	0.69
2565	0.65
2570	0.82
2575	0.54
2580	0.62
2585	0.34
2590	0.48
2595	0.33
2600	0.35
2605	0.18
2610	0.42



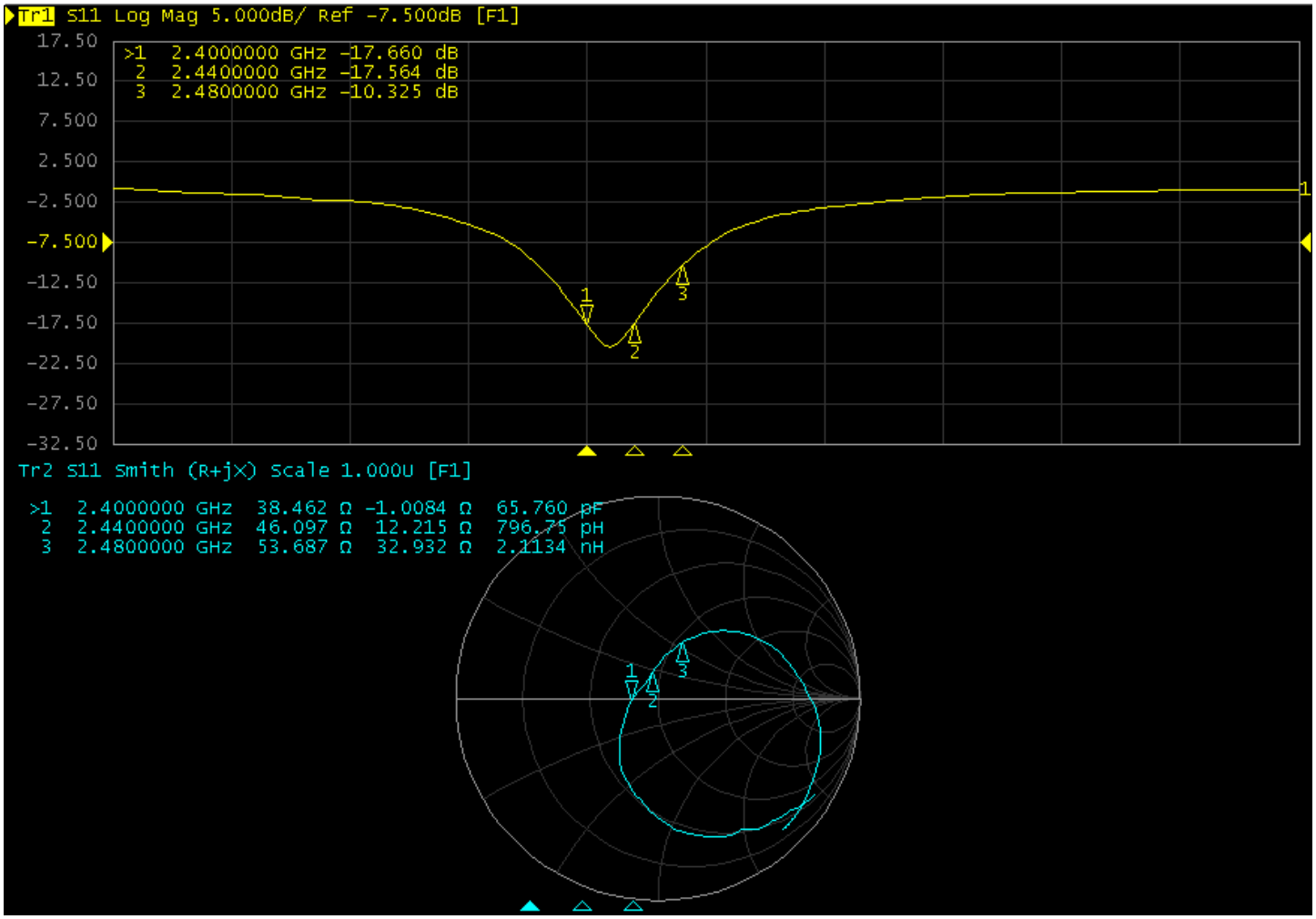
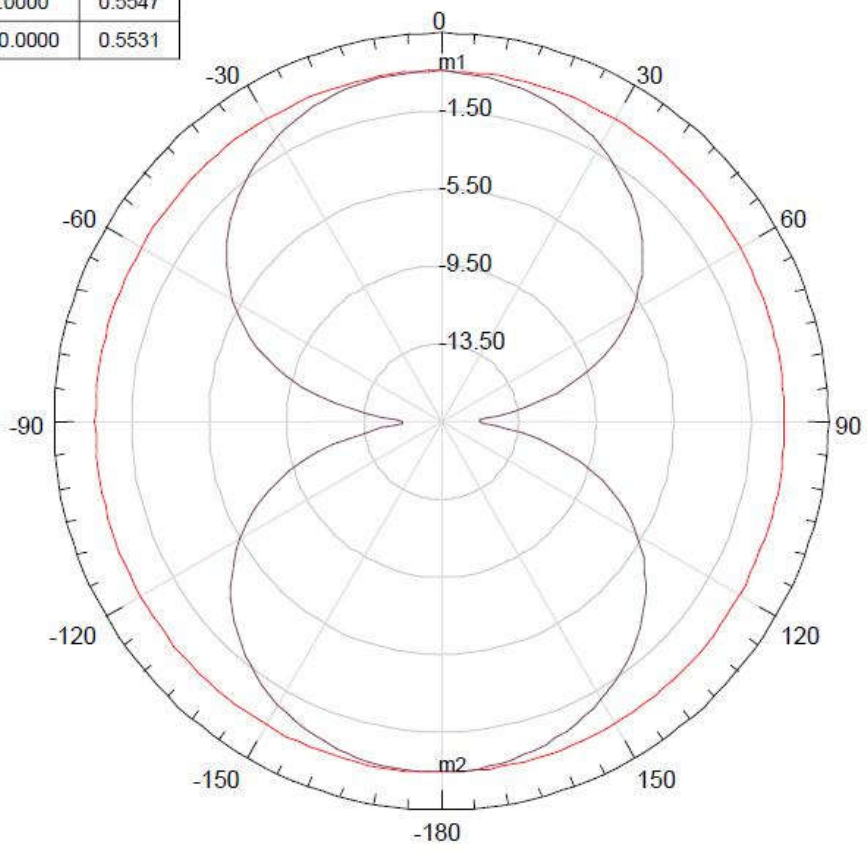


Figure 1 S11

Name	Theta	Ang	Mag
m1	0.0000	0.0000	0.5547
m2	180.0000	180.0000	0.5531



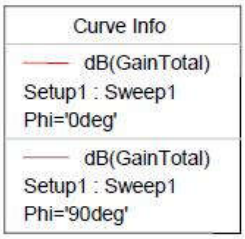


Figure 2 Curve

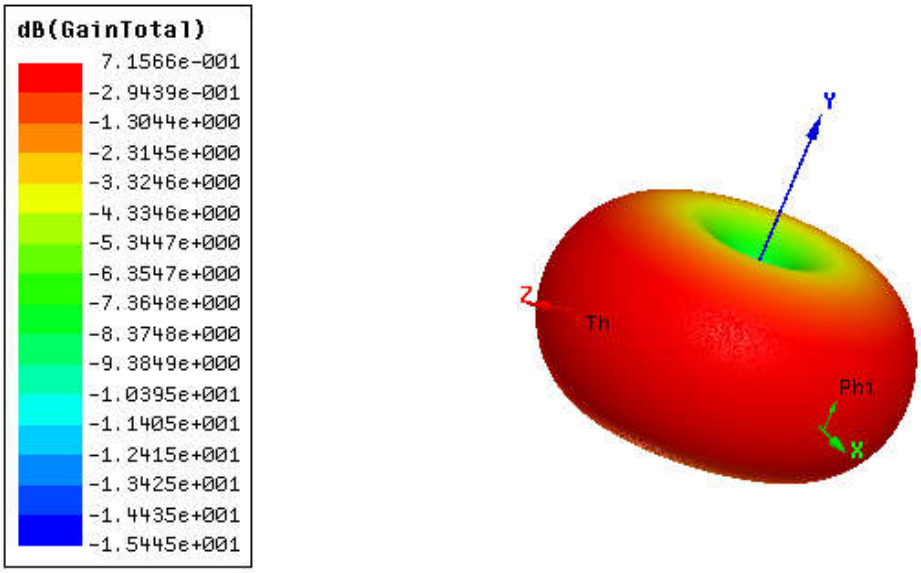


Figure 3 Gain