Antenna specification

Introduction

This antenna is a inverted F antenna which can be used with all 2.4GHz transceivers and transmitters.

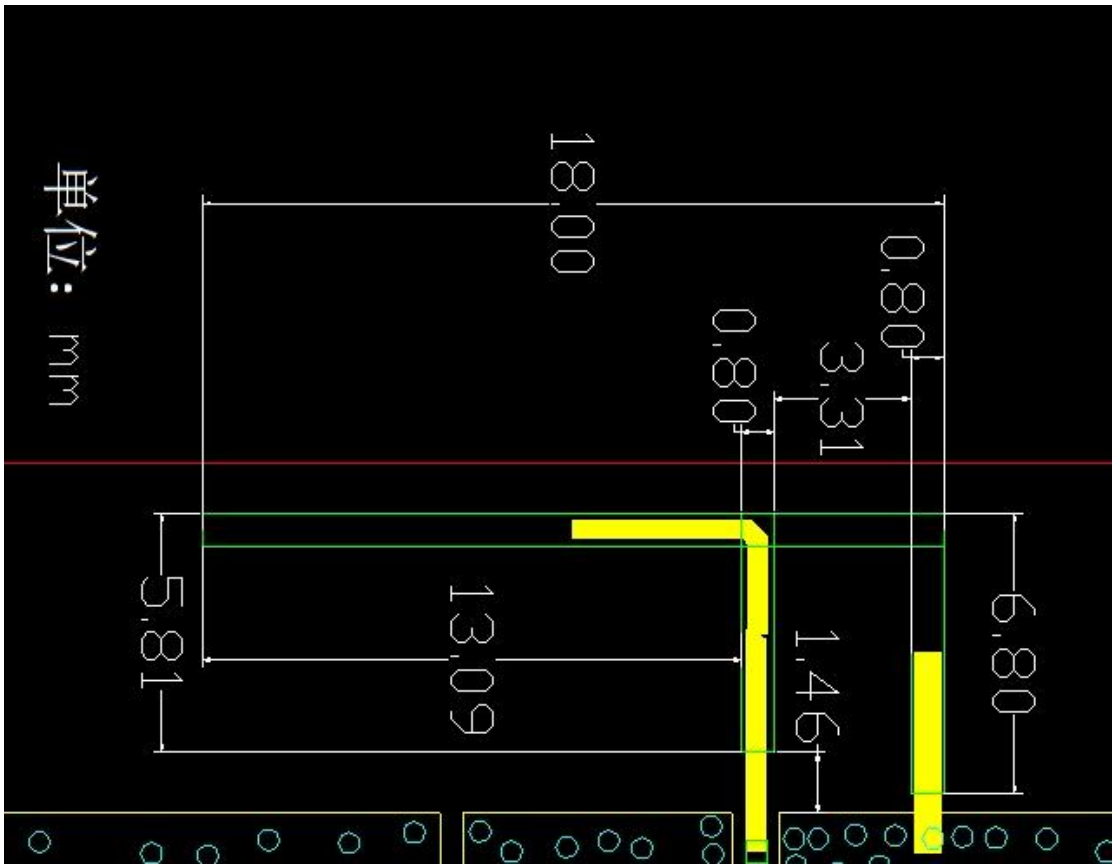


Figure 1:IFA Dimensions

Since there is no ground plane beneath the antenna, PCB thickness will have little effect onthe performance. The results presented in this design note are based on an antenna implemented on a pcb with 1 mm thickness.

Performance

Input impedance

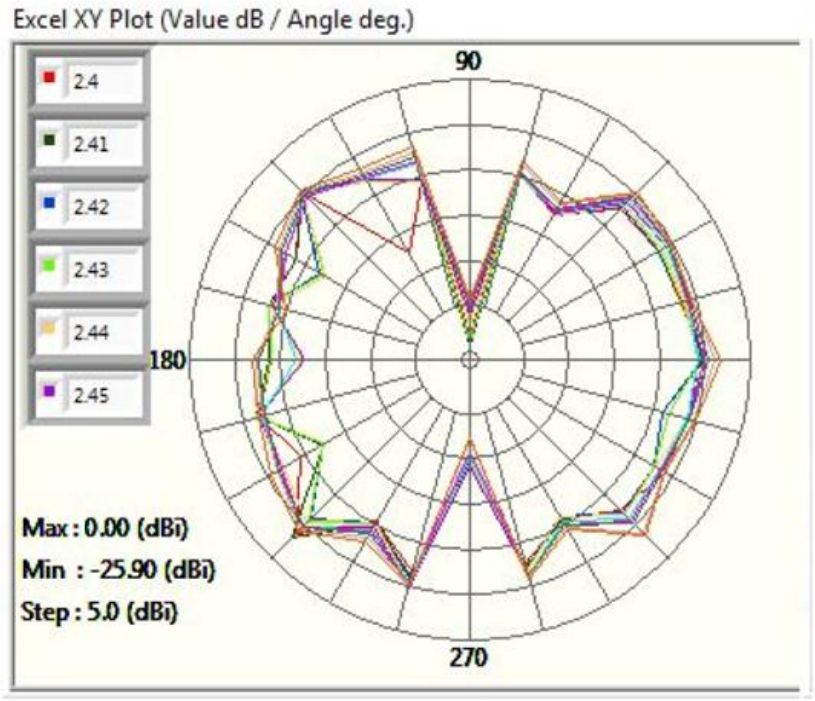
No.	Test Frequency (MHz)	Real Values (Ω)	Imaginary Values (Ω)	Imaginary Values (pF)	Result
1	2400	22.903	-65.942	1.0057	/
2	2410	22.844	-60.983	1.0829	/
3	2420	22.390	-56.541	1.1632	/
4	2430	21.934	-52.175	1.2553	/
5	2440	21.807	-47.844	1.3633	/
6	2450	21.626	-43.923	1.4790	/
7	2460	21.808	-40.276	1.6064	/
8	2470	21.618	-36.702	1.7556	/
9	2480	21.579	-32.992	1.9452	/

Gain Efficiency

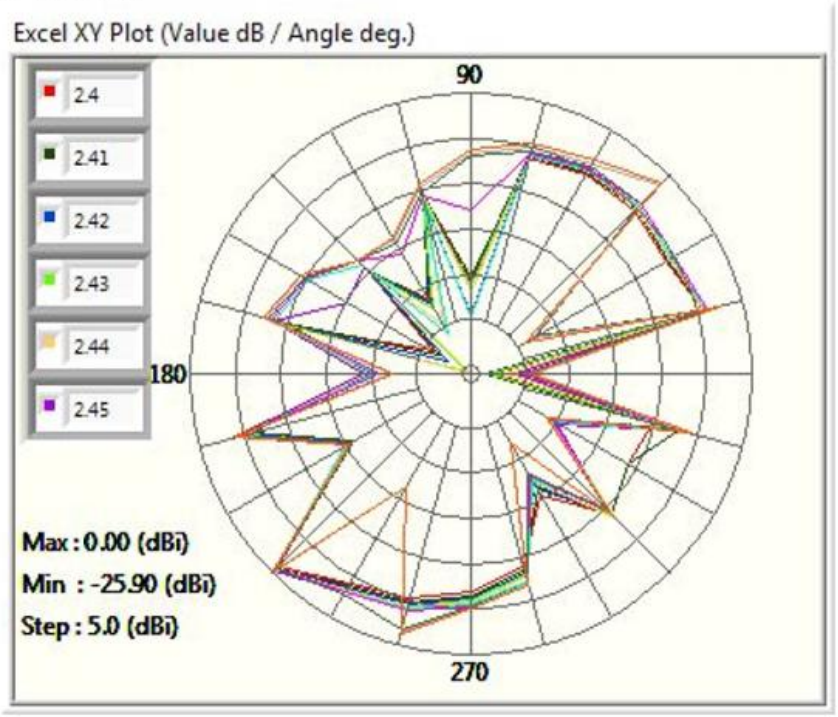
No.	Test Frequency (MHz)	Gain (dBi)	Efficiency (%)
1	2400	-0.94	20.26
2	2410	-0.91	23.10
3	2420	0.00	24.42
4	2430	-0.53	23.92
5	2440	-0.67	21.99
6	2450	-0.45	21.45
7	2460	-0.40	21.45
8	2470	-0.42	21.13
9	2480	-0.64	21.38
10	2490	-0.51	21.28
11	2500	-0.27	21.51

P9attern

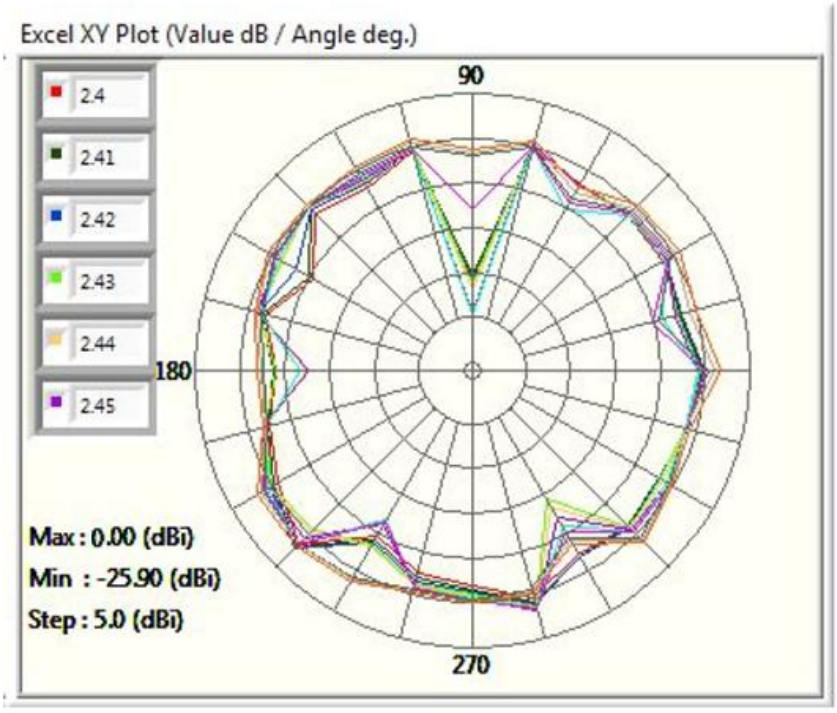
Y-Z Plane



X-Z Plane



X-Y Plane


Excel XY Plot (Value dB / Angle deg.)
2.4
2.41
2.42
2.43
2.44
2.45
90
180
270
Max : 0.00 (dBi)
Min : -25.90 (dBi)
Step : 5.0 (dBi)