Antenna Gain, Efficiency, and Characterization report

Report No. ET-20-0622
Demo Board: Sunlord Demo PCB
Part Number: SLDA52-2R540G-S1TF
Supplier: Shenzhen Sunlord Electronics Co., Ltd.
Web：www.sunlordinc.com

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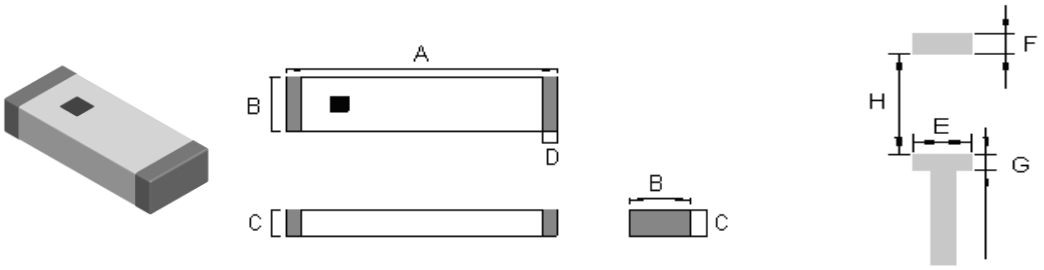
1. Specifications

Antennas Type	Chip Antenna for 2.4GHz Application
Frequency	2.4G~2.5GHz
Impedance	50Ω
Polarization	Linear
Radiation pattern	Omni-directional
VSWR	2 Max
Peak Gain	4.99dBi(type)on Demo
Connector Type	w/o
Cable Type	w/o
Cable length	w/o

2. Shape and Dimensions



Unit: mm

Series	A	B	C	D.	E	F	G	H
SLDA52	5.2±0.2	2.1±0.2	1.0±0.2	0.5±0.2	2.0±0.2	1.5±0.2	1.0±0.2	4.0±0.2

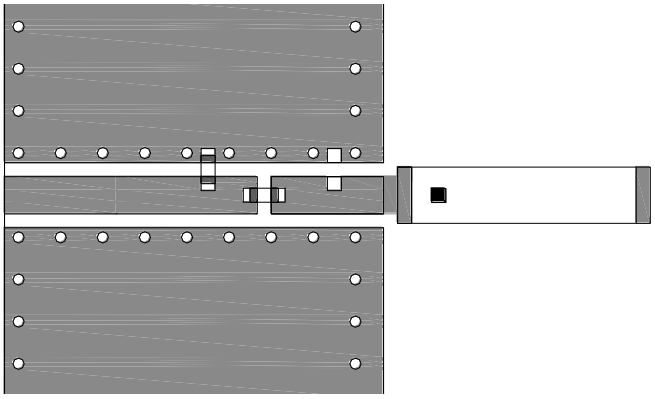
3. Terminal Configuration

No.	Terminal Name	No.	Terminal Name
(1)	Feeding Point	(2)	NC

4. Electrical Test

4.1 Matching circuit

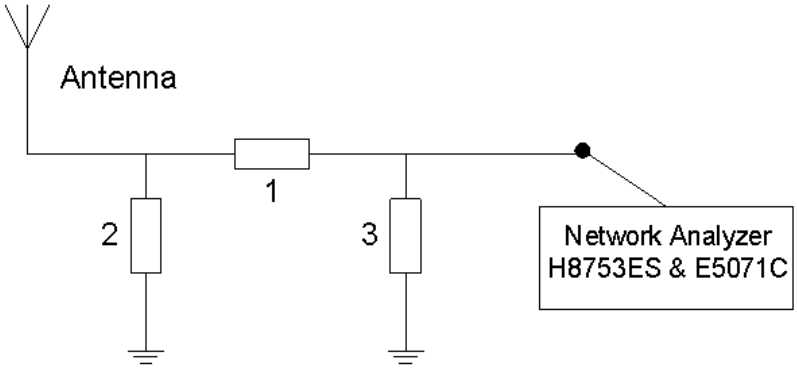
Evaluation board: 25*25mm



*Line width should be designed to match 50Ω characteristic impedance, depending on PCB material and thickness.

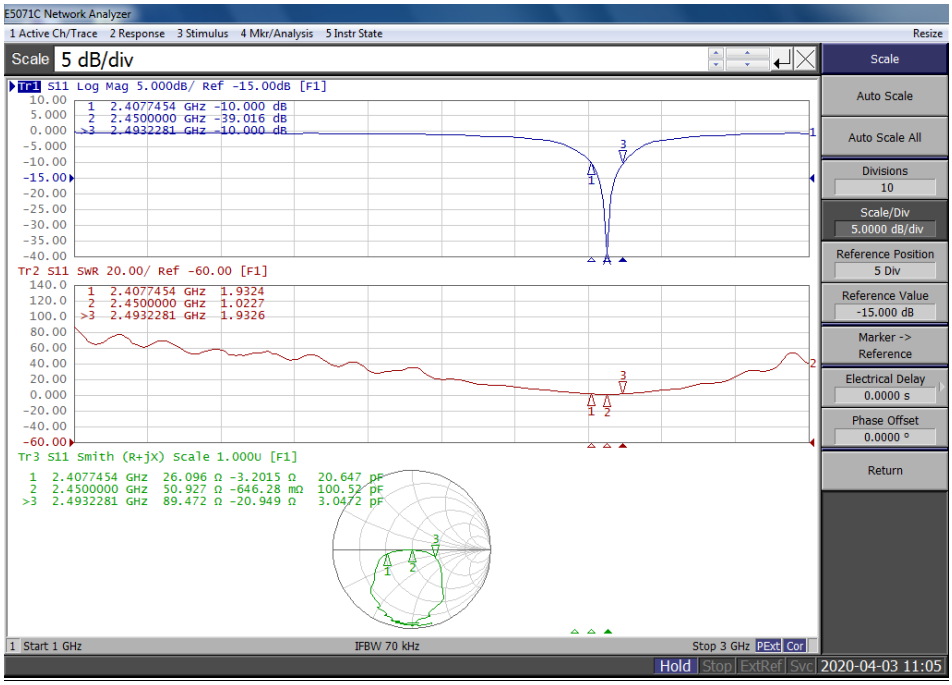
(Matching circuit and component values will be different, depending on PCB layout)

4.2 Passive Test with Network Analyzer



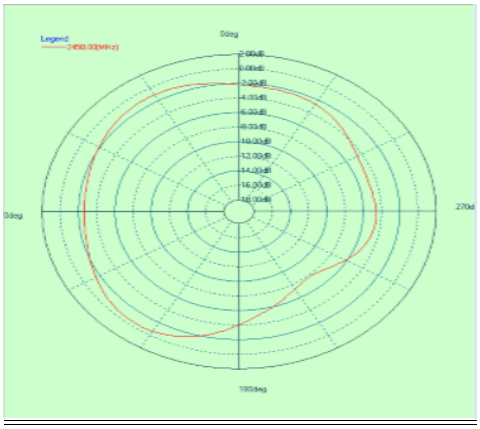
Item	Default Component	Value	Manufacturer	Part No.
Antenna	Chip Antenna	-	Sunlord	SLDA52-2R540G-S1TF
1	Inductor	1.5nH	Sunlord	SDCL1005C2N7HTDF
2	N/C	—	—	—
3	Capacitor	1.2pF	Murata	GRM1555C1H1R6CA01

4.3 Smith chart

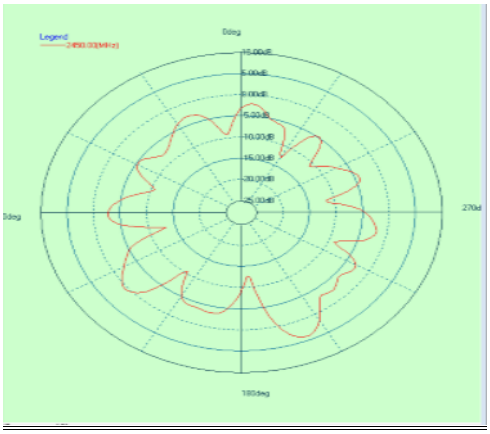


5. Radiation Pattern

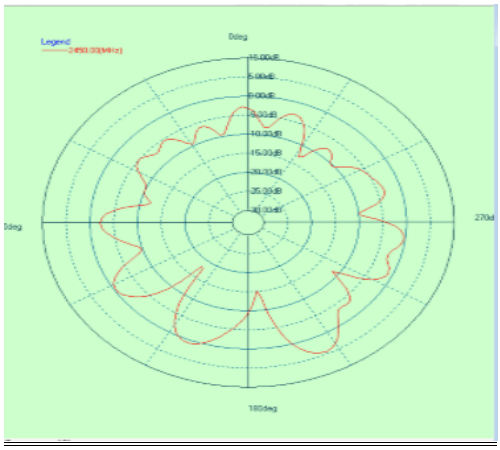
5.1 Radiation Pattern at 2.43GHz



Phi=90 deg

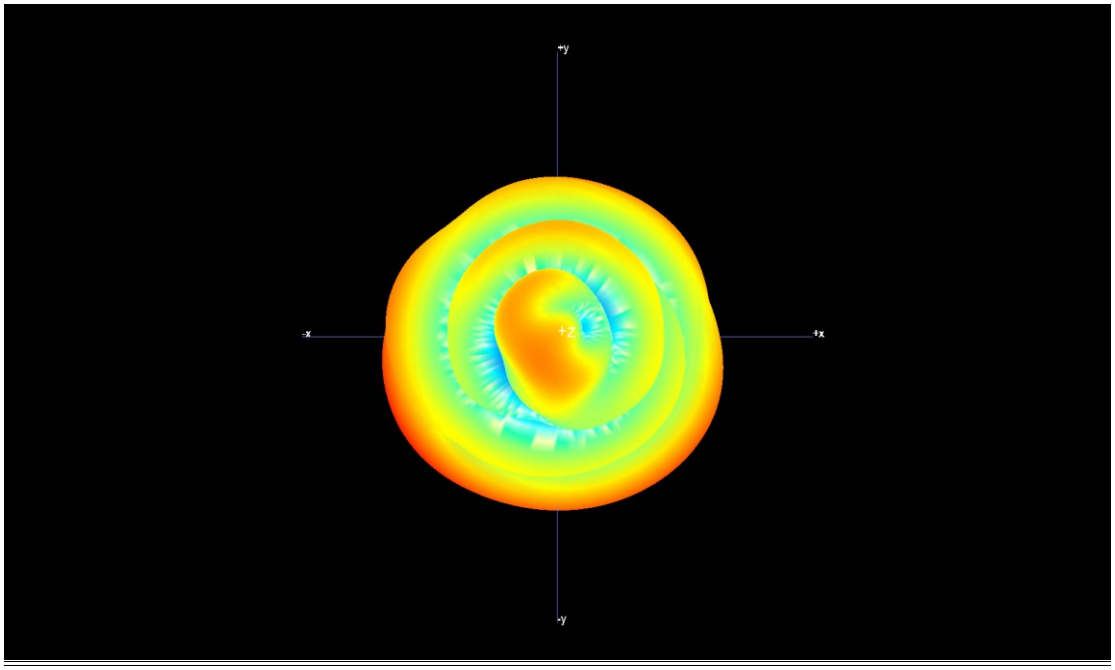


Theta=90 deg



Phi=0 deg

5.2 3D Radiation Pattern



6. Antenna Efficiency & Gain Report

Frequency (MHz)	Efficiency	Efficiency (dB)	Gain (dB)
2400	46.53%	-3.32	4.84
2410	47.99%	-3.19	3.56
2420	47.76%	-3.21	3.60
2430	45.70%	-3.40	4.99
2440	43.64%	-3.60	4.52
2450	43.32%	-3.63	4.54
2460	43.29%	-3.64	4.59
2470	42.74%	-3.69	4.71
2480	39.92%	-3.99	4.61
2490	41.18%	-3.85	4.94
2500	37.43%	-4.27	4.70

Note

1.In case using different series or manufactures' components, another value may be required to get the proper result.

2.The matching circuit with the demo board only depend on passive test. There will be some difference with active test.