ISM Band 433.925/315MHz Helix Antenna

1. Explanation of Product Number:

R	A	0	6	L	C	H	B	0	1	R	A	0	1	0
		(1)		(2)	(3)		(4)	(5)		(6)				

Product Code:

(1) Dimensions:
06: 22.5x4.65x4.65(mm)

(2) Polarization:
L: linear polarization

(3) Product categories:
CH: copper helix

(4) Working frequency:
B: 433.925/315MHz

(5) Applications:
01: ISM band system

(6) Antenna series:
RA010: serial number

Tolerances (Unless otherwise specified) **X : ± 1** **X.X : ± 0.1** **X.XX : ± 0.01** **Angle : ±** **Hole Dia. : ±**	RIFO Technologies Corporation Website: www.rifo.com.tw	
Scale : / **Unit : mm**	THIS SPECIFICATION IS THE PROPERTY OF RIFO TECHNOLOGIES CORPORATION AND SHALL NOT BE REPRODUCED OR USED IN ALL CIRCUMSTANCES WITHOUT WRITTEN PERMISSION	
Prepared By : Helen / **Checked By :Jeff**		
Designed By :Jason / **Approved By :Allen**		
TITLE : ISM Band 433.925/315MHz Helix Antenna	**DOCUMENT NO.**	**RA06LCHB01RA010** / **REV.** **A**

2. Features:

*Stable and reliable in performances
*Compact size
*Low temperature coefficient of frequency

3. Applications:

*ISM Band system

4. Description:

RIFO's chip antenna series are specially designed for 433.925/315MHz band application. Based on RIFO's proprietary designs and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Electrical Specifications:

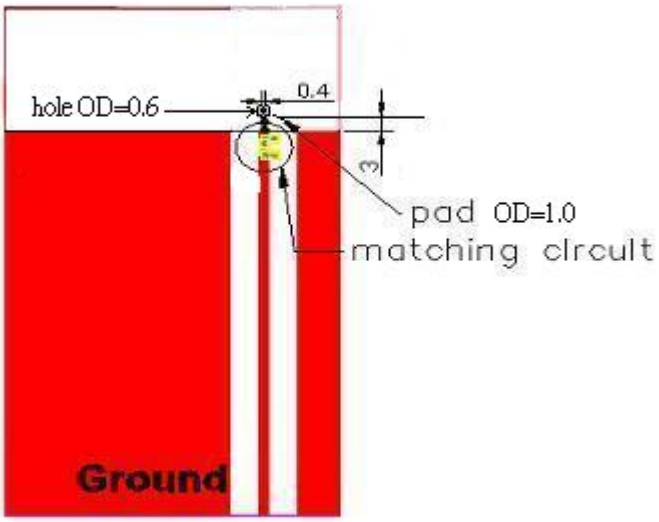
No	Item	SPEC.	Unit
1	Dimensions (LxWxH)	22.5*4.65*4.65	mm
2	Operating Frequency	433.925/315	MHz
3	VSWR	2 max.	
4	Impedance	50	Ω
5	Polarization	Linear	
6	Peak gain	1.0	dBi
7	Bandwidth(typ.)	11	MHz
8	Efficiency(typ.)	50	%

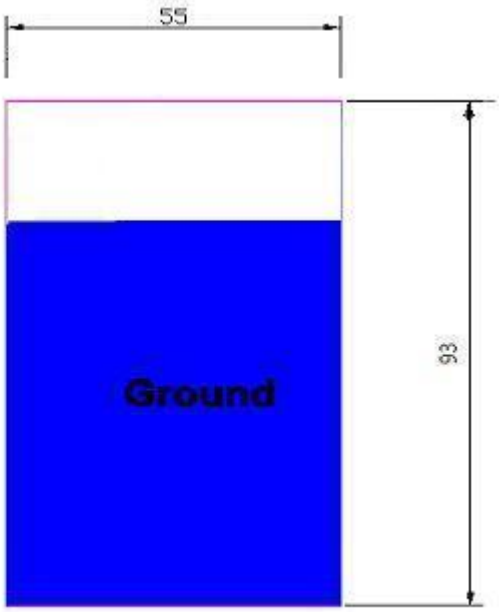
*The antenna performance is measured on 93*55mm test Board.

*Center frequency will be offset to operating frequency according to the conditions of user's ground plane and radome.

6. Layout Guide: (unit:mm)

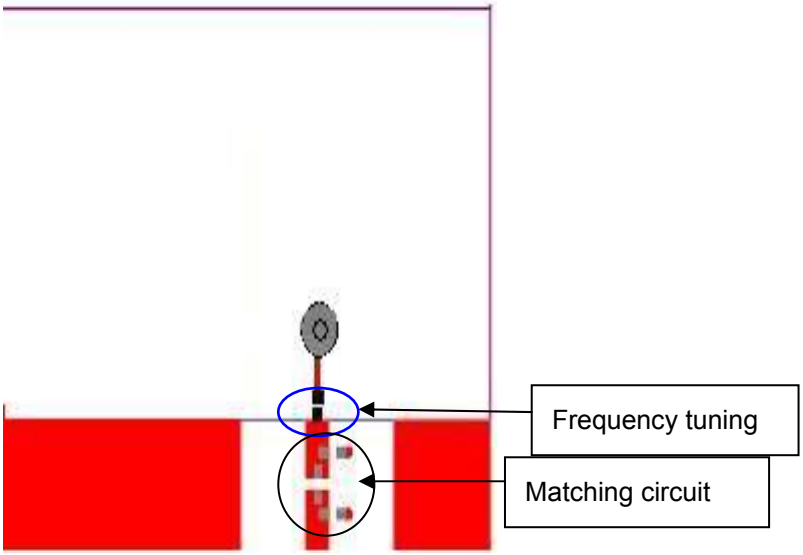
6.1 Test Board Dimension





※ Test Board size is 93*55mm

6.2 PCB Design Guide



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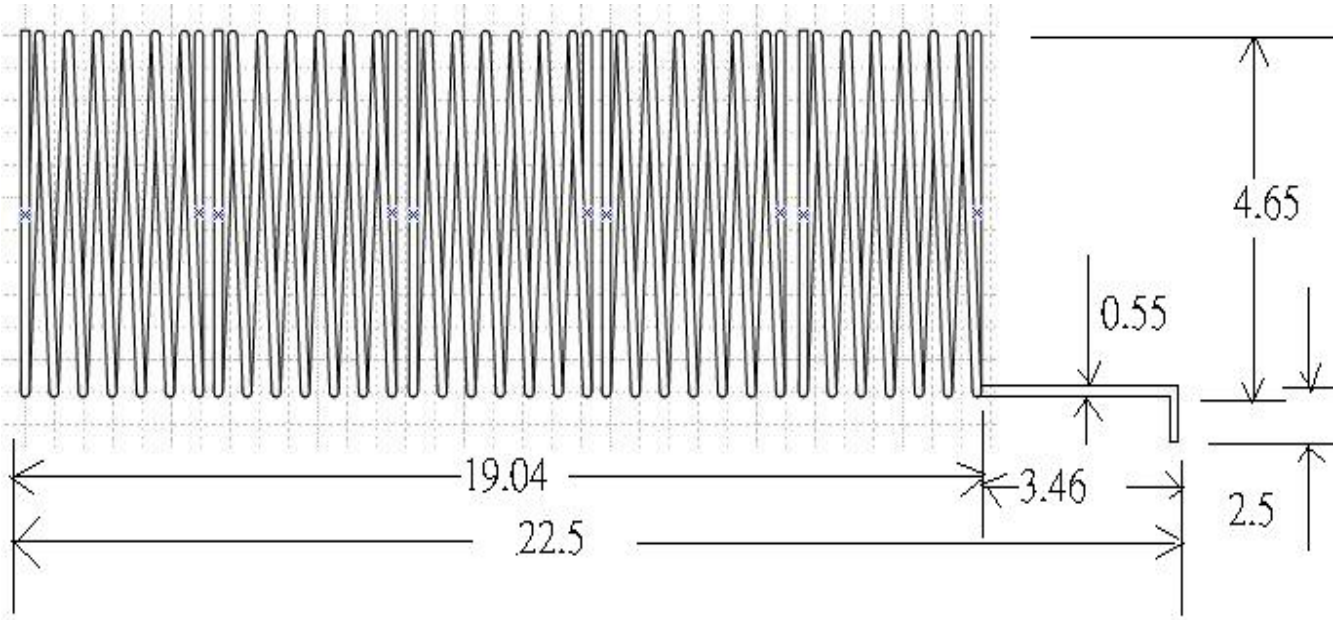
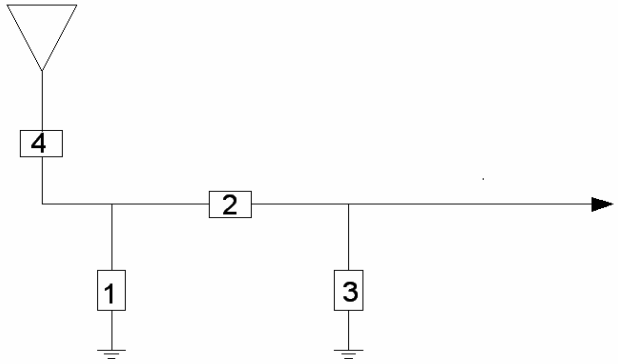
7. Antenna Dimensions: (unit: mm)



8. Measurement Result:

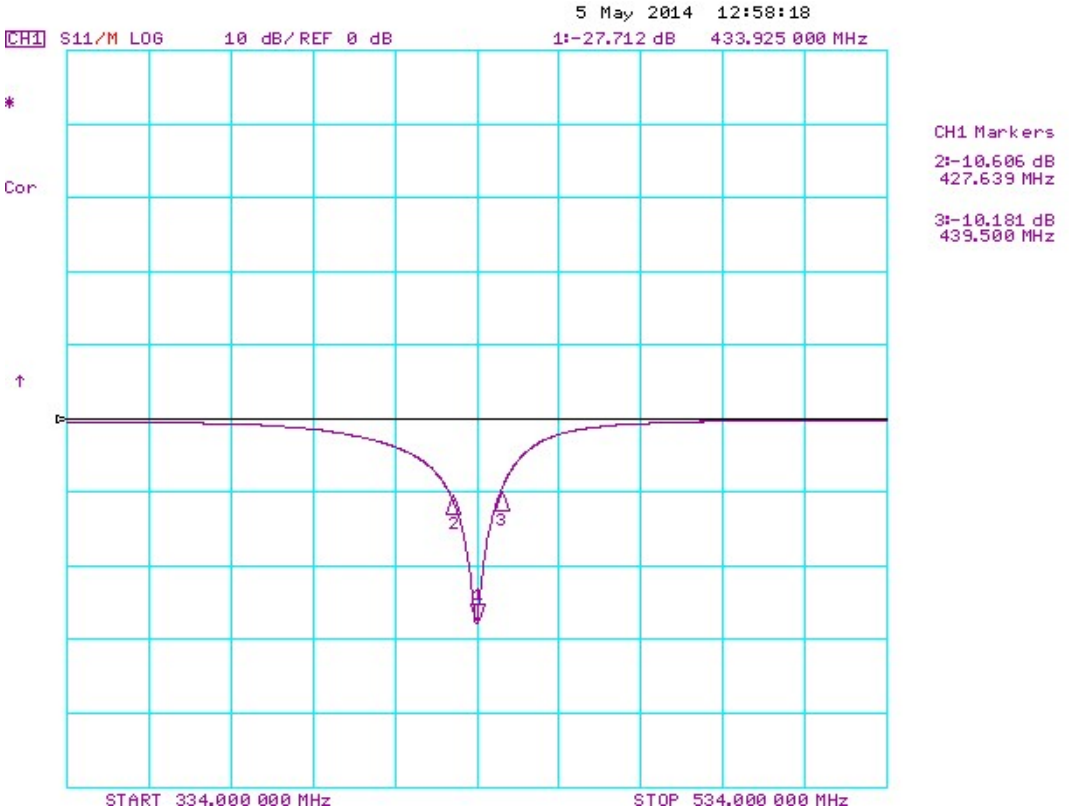
8.1 Matching circuit for 433.925MHz

Antenna

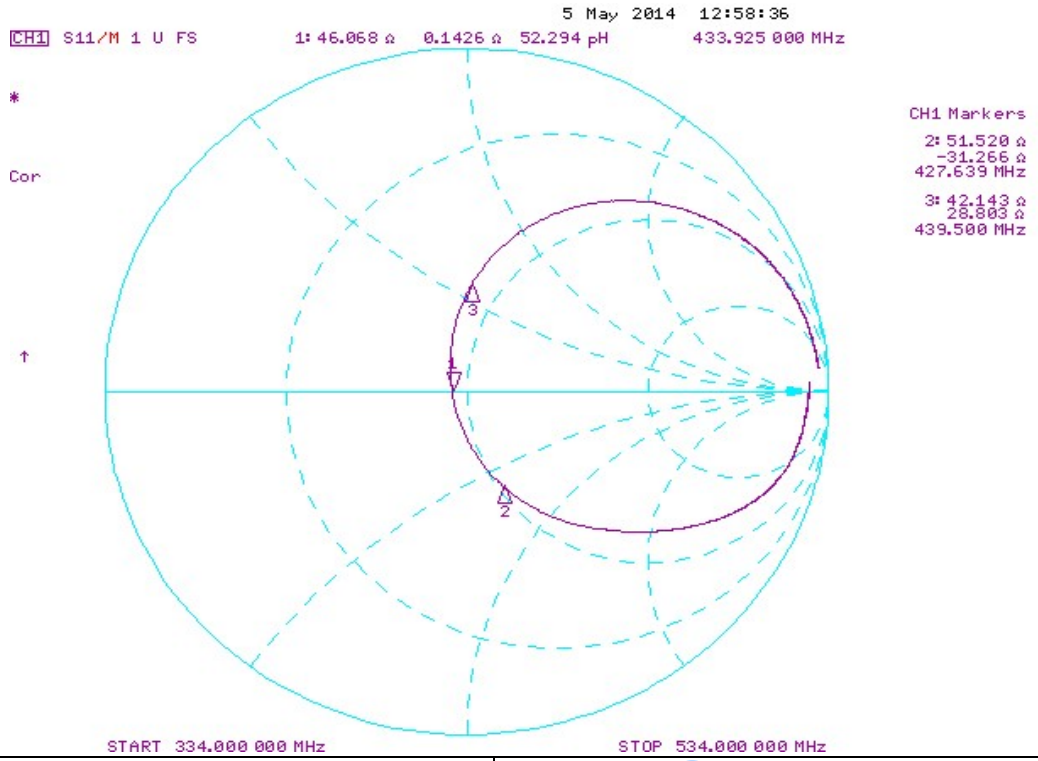


System Matching Circuit Component		
Location	Description	Vendor
1	100nH	DARFON(0402)
2	4.7pF	YAGEO(0402)
3	N/A	(0402)
4	0 ohm	(0402)

(a) Return Loss (S11)



(b) Smith Chart (S11)



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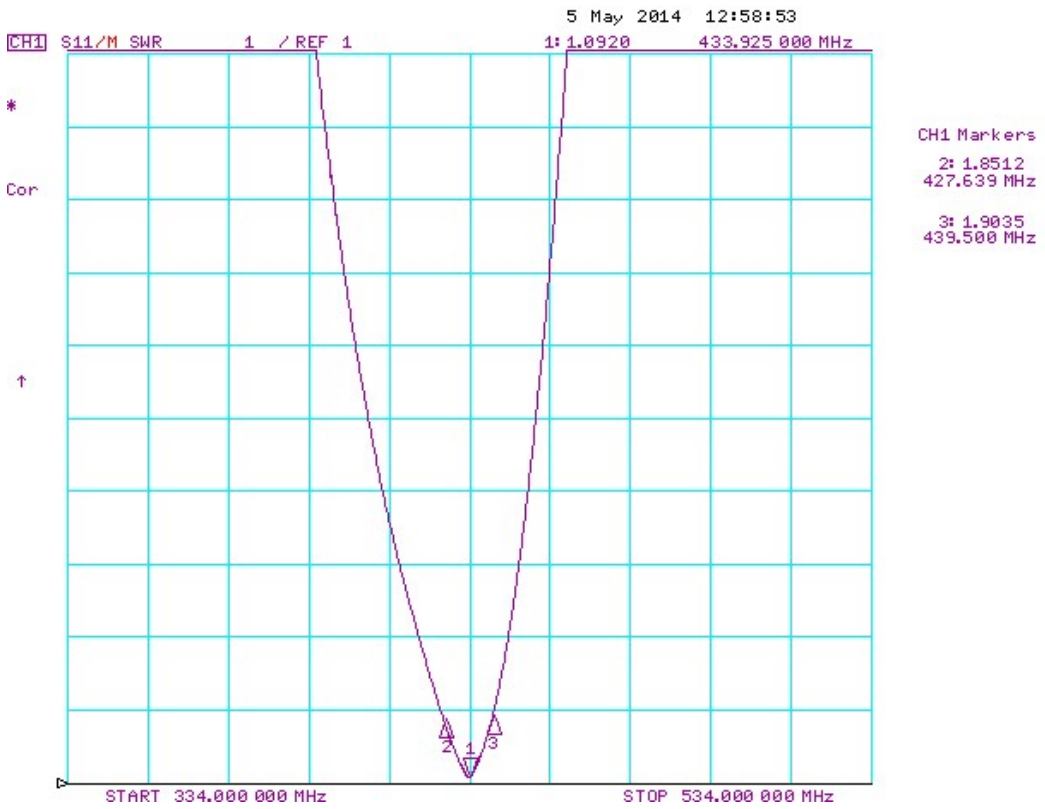
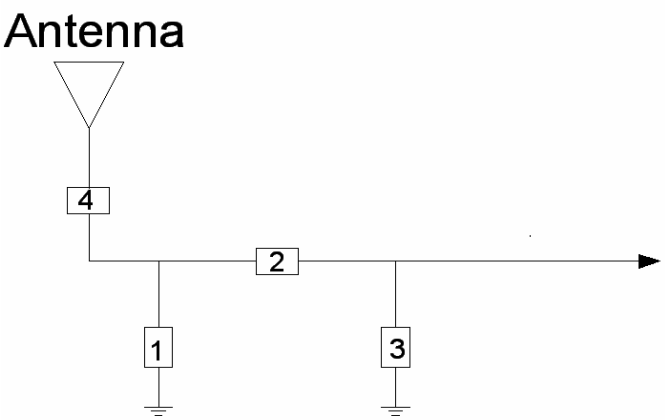
(c) VSWR (S11)



8.2 Matching circuit for 315MHz



System Matching Circuit Component		
Location	Description	Vendor
1	39nH	DARFON(0402)
2	3.3pF	YAGEO(0402)
3	N/A	(0402)
4	100nH	DARFON (0402)

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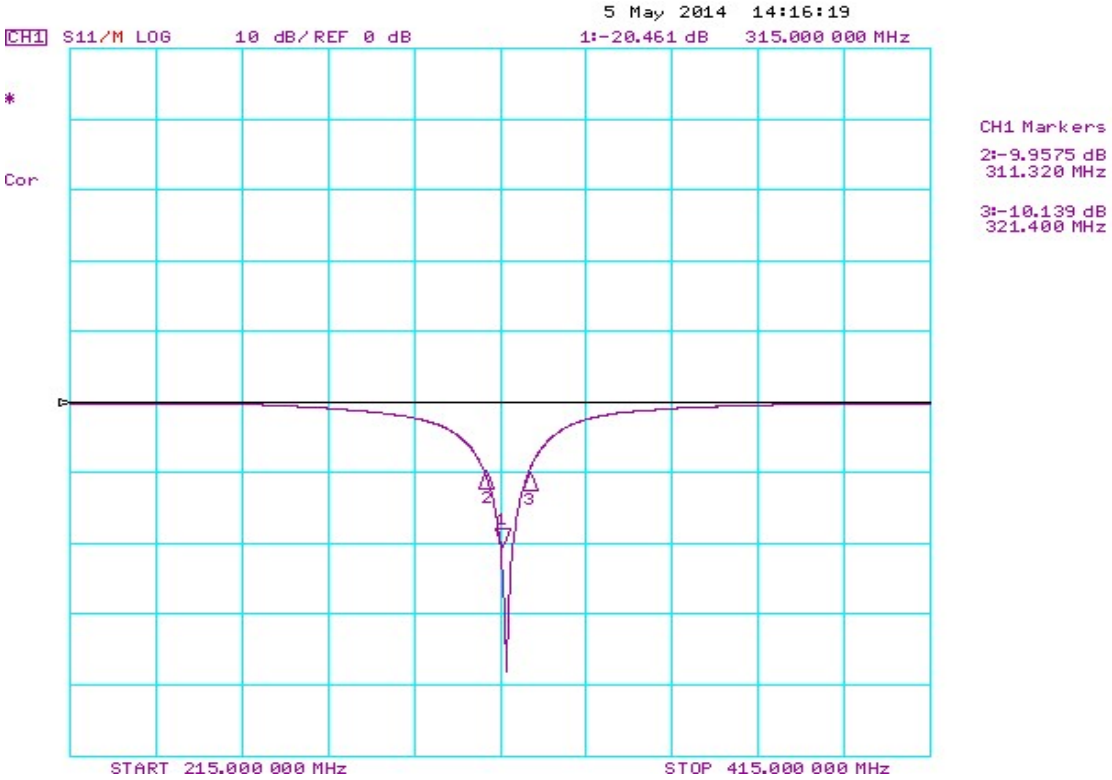
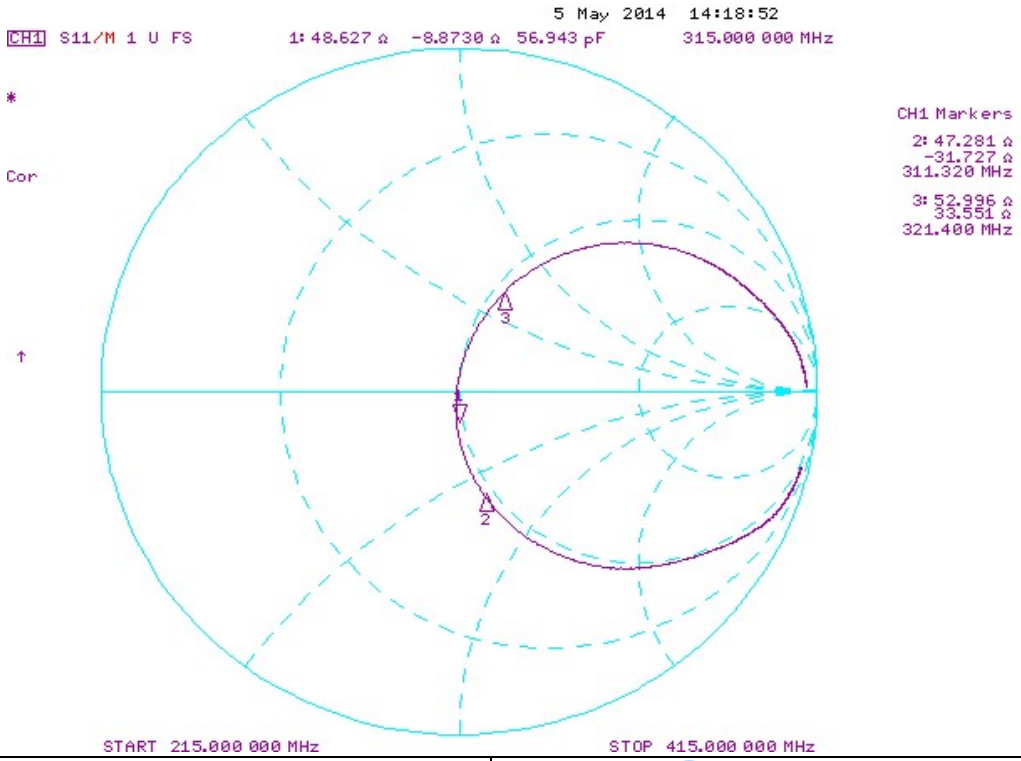
(a) Return Loss (S11)



(b) Smith Chart (S11)



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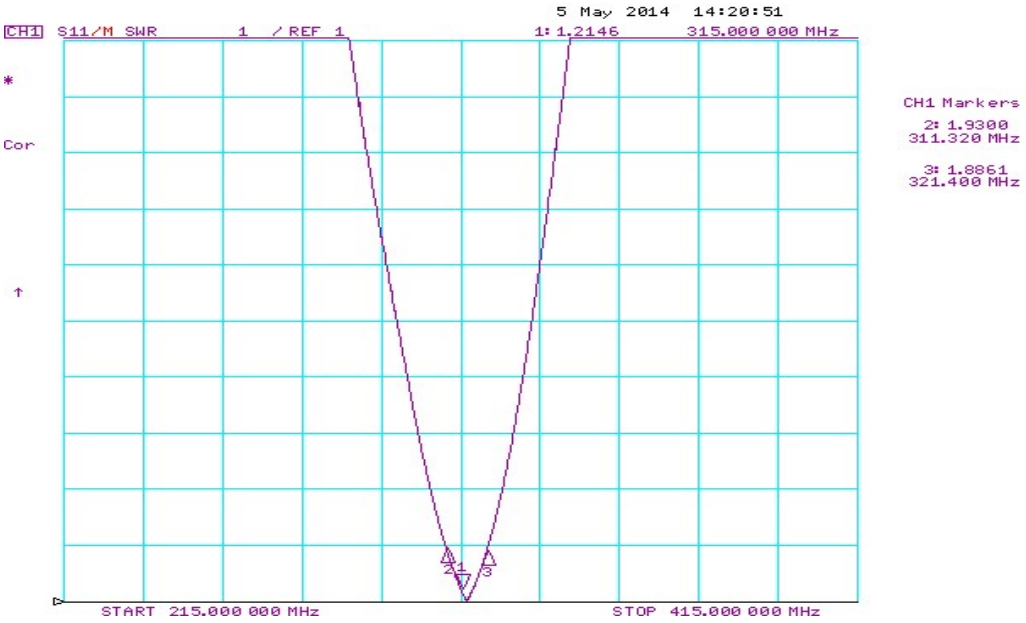
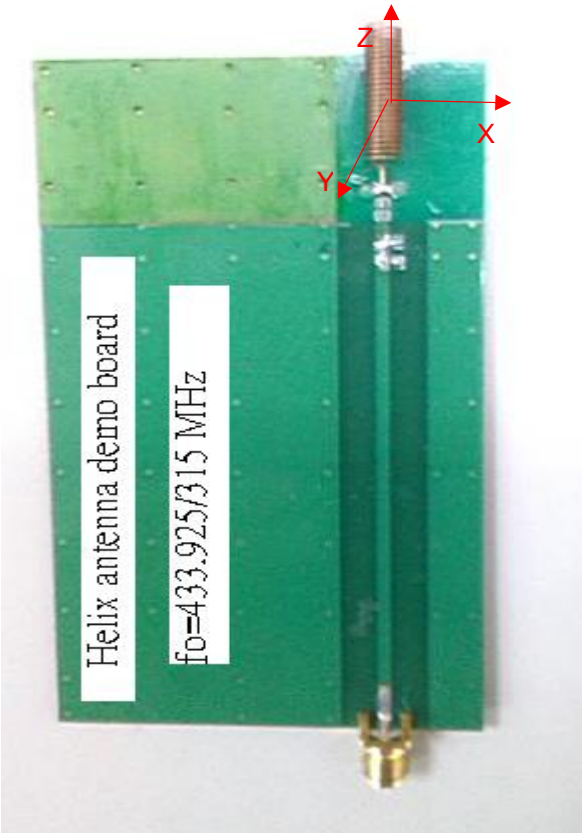
(c) VSWR (S11)



9. Three D Radiation Pattern measurements:



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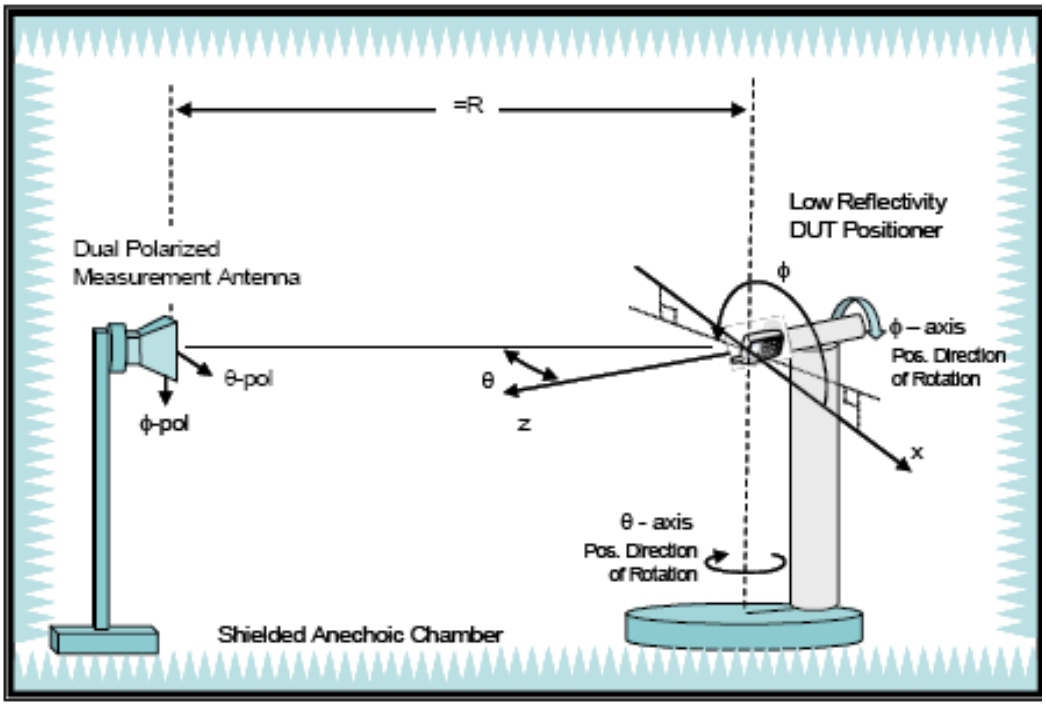

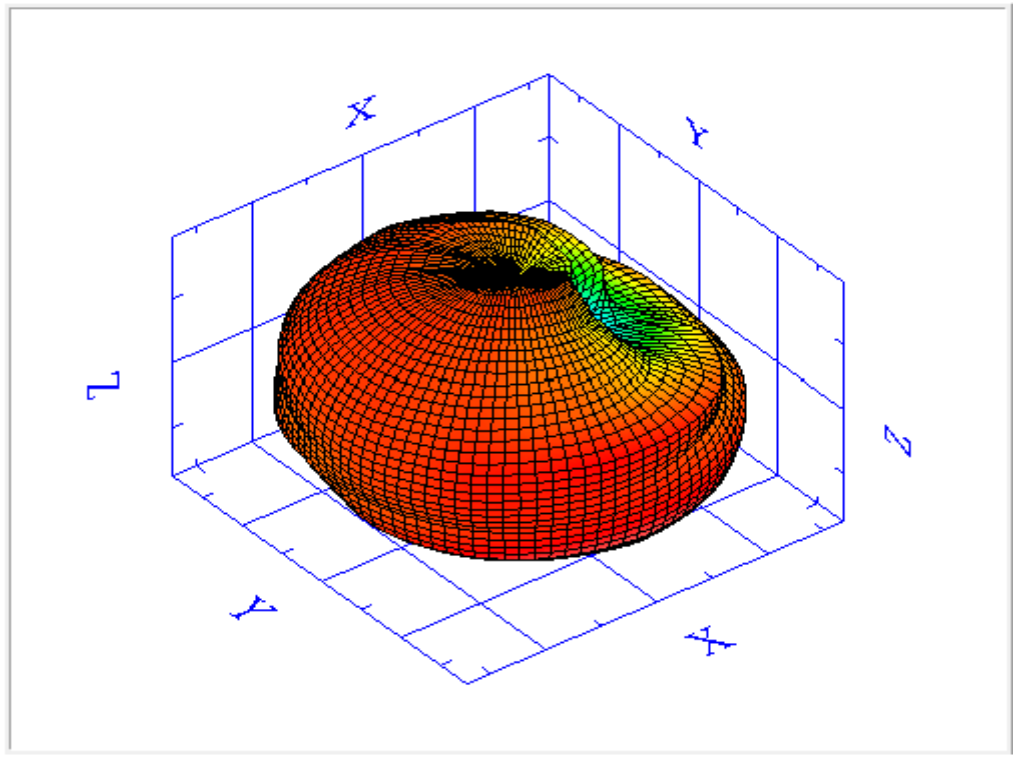

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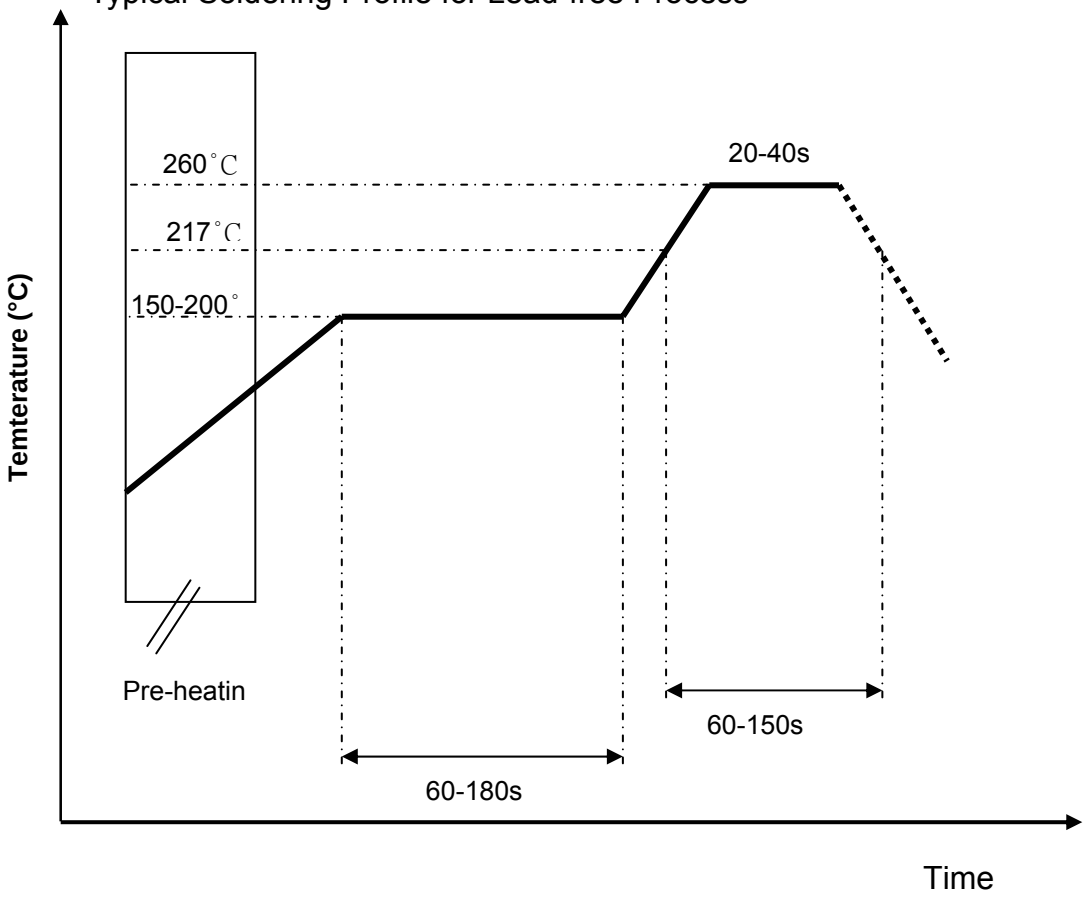
10. Soldering Conditions:

Typical Soldering Profile for Lead-free Process



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