

# 3.2X1.6X0.5 (mm) WiFi/Bluetooth Ceramic Chip Antenna (YF300D-2) Engineering Specification

## 1. Product Number

YF	3216	FF	P	2G45	02
1	2	3	4	5	6



(1)Product Type	Chip Antenna
(2)Size Code	3.2x1.6mm
(3)Type Code	FH
(4)Packing	Paper Tape

## 2. Features

- \*Stable and reliable in performances
- \*Low temperature coefficient of frequency
- \*Low profile, compact size
- \*RoHS compliance
- \*SMT processes compatible



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SHEN ZHEN YINGFENG ANTENNA TECHNOLOGYCO.,LTD

Prepared by : JIEXI

Designed by : Jason

Checked by : Jason

Approved by : MR.FANG

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DOCUMENT NO.

YF3216FFP2G4502

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### 3. Applications

- \*Bluetooth earphone systems
- \*Hand-held devices when WiFi /Bluetooth functions are needed, e.g., Smart phone.
- \*IEEE802.11 b/g/n
- \*ZigBee
- \*Wireless PCMCIA cards or USB dongle

### 4. Description

Yingfeng chip antenna series are specially designed for WiFi/Bluetooth applications. Based on yingfeng proprietary design and processes, this chip antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

### 5. Electrical Specifications (80 x 40 mm<sup>2</sup> ground plane)

5-1. Electrical Table

Characteristics		Specifications	Unit
Outline Dimensions		3.2x1.6x0.5	mm
Working Frequency		2400~2500	MHz
VSWR		2 Max.	
Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	3.5	dBi
	Efficiency	78	%



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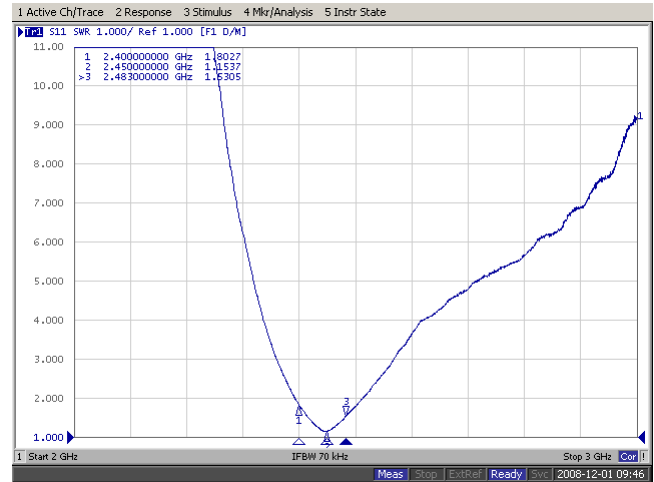
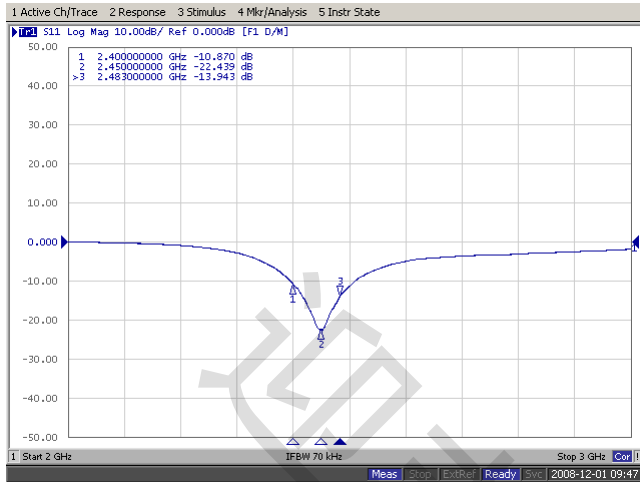
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## 5-2. Return Loss & VSWR

Return Loss (S<sub>11</sub>)

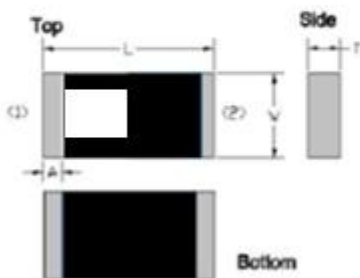
VSWR(S<sub>11</sub>)



## 6. Antenna Dimensions & Test Board (unit: mm)

- a. Antenna Dimensions
- b. Test Board with Antenna

### Dimension and Terminal Configuration



Dimension (mm)	
L	3.15±0.15
W	1.55±0.15
T	0.50±0.10
A	0.35±0.10

No.	Terminal Name
1	Feeding point
2	GND



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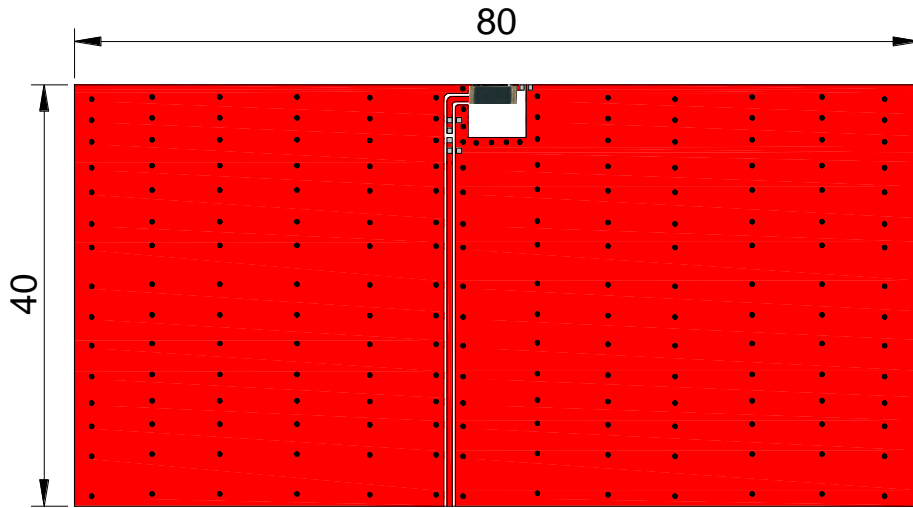
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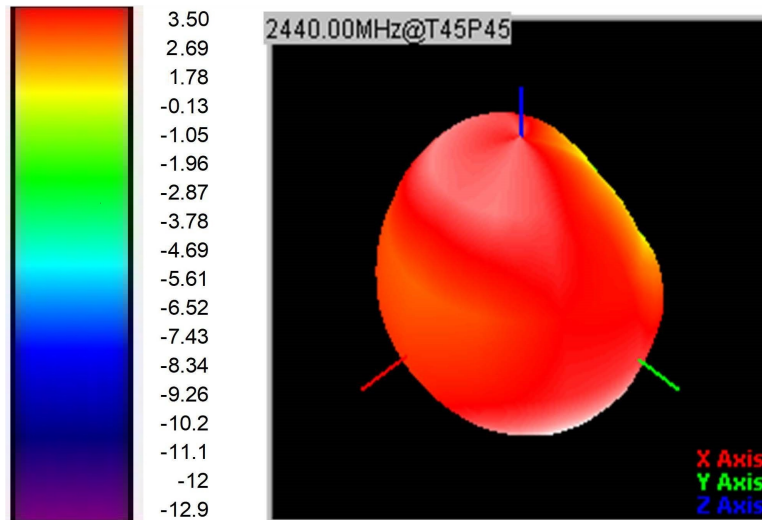
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Unit: mm

## 7. Radiation Pattern

### 7-1. 3D Gain Pattern @ 2440MHz



Frequency(MHz)	MaxGain(dBi)
2440	3.5



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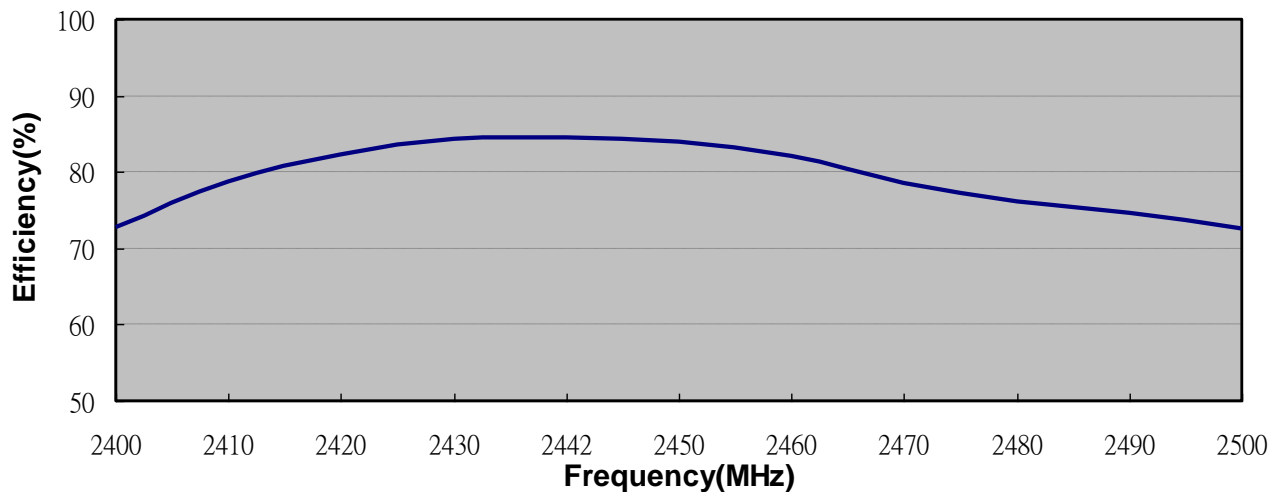
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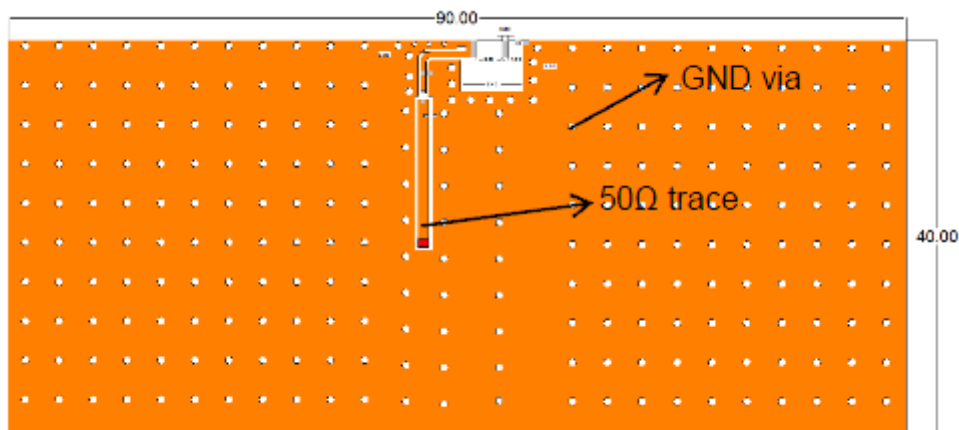
Efficiency vs. Frequency



## 8. Layout Guide

### a. Solder Land Pattern:

Land pattern for soldering (gray marking areas) is as shown below. Depending on Customer's requirement, matching circuit as shown below is also recommended.



Top view



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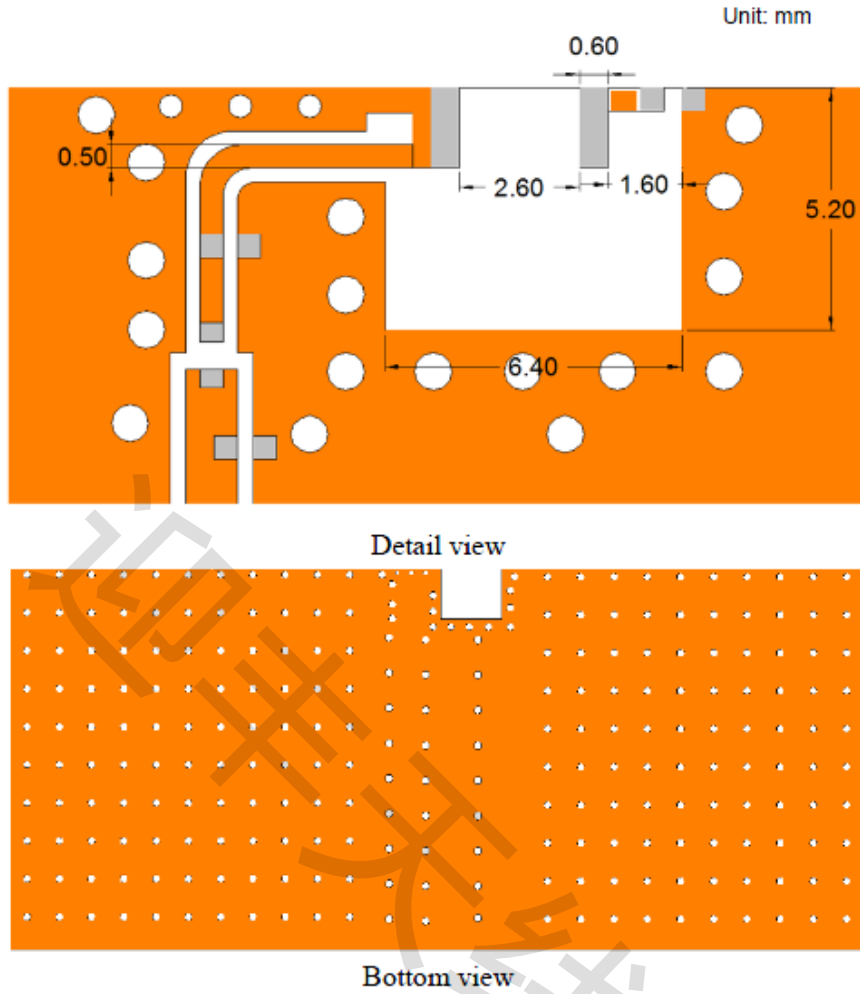
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## 9. Frequency tuning

a. Chip antenna tuning scenario:

Feed

4. Fine tuning element



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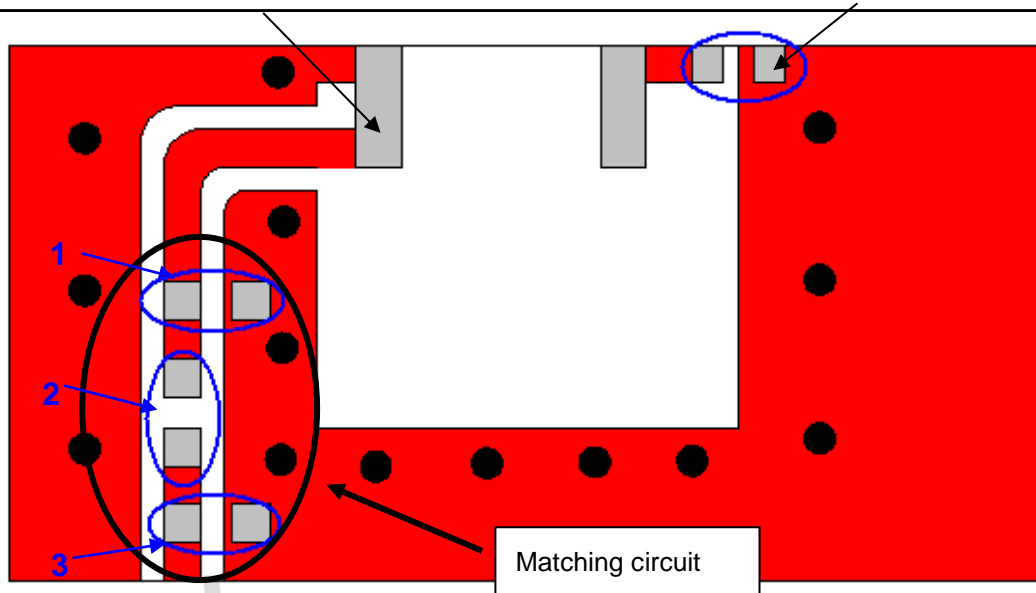
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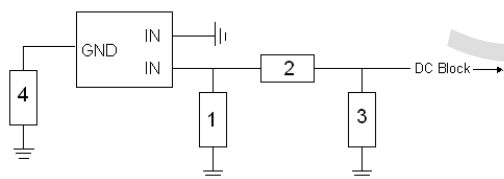
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b. Matching circuit : (Center frequency is about 2442 MHz @ 80 x 40 mm<sup>2</sup> ground plane)



System Matching Circuit Component			
Location	Description	Vendor	Tolerance
1	1.2 pF*	Murata (0402)	±0.1 pF
2	10PF*	Murata(0402)	±0.5 PF
3	N/A*	-	-
Fine tuning element 4	22pF*	Murata (0402)	±0.1 pF

\*Typical reference values which may need to be changed when circuit boards or part vendors are different.

c. Fine tuning element vs. Center frequency



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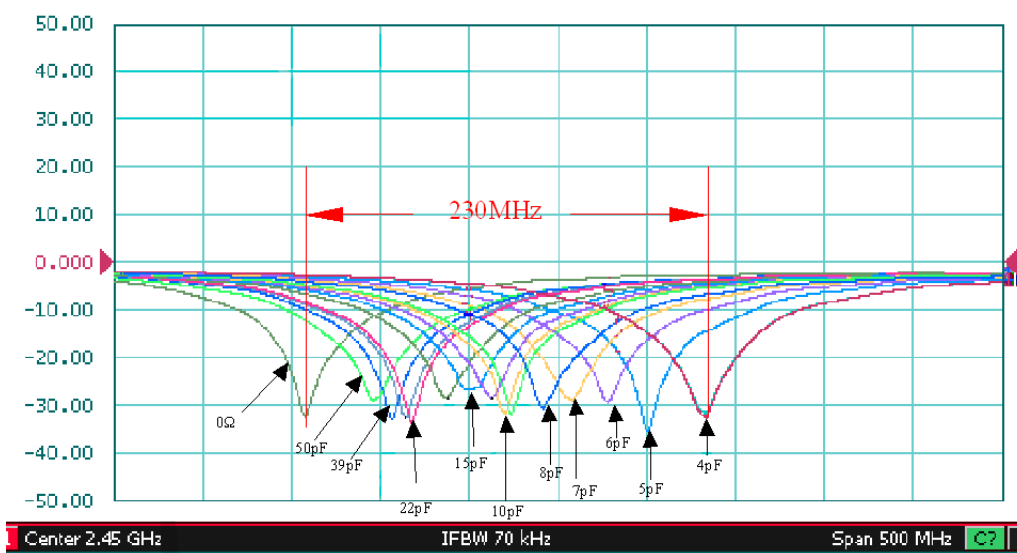
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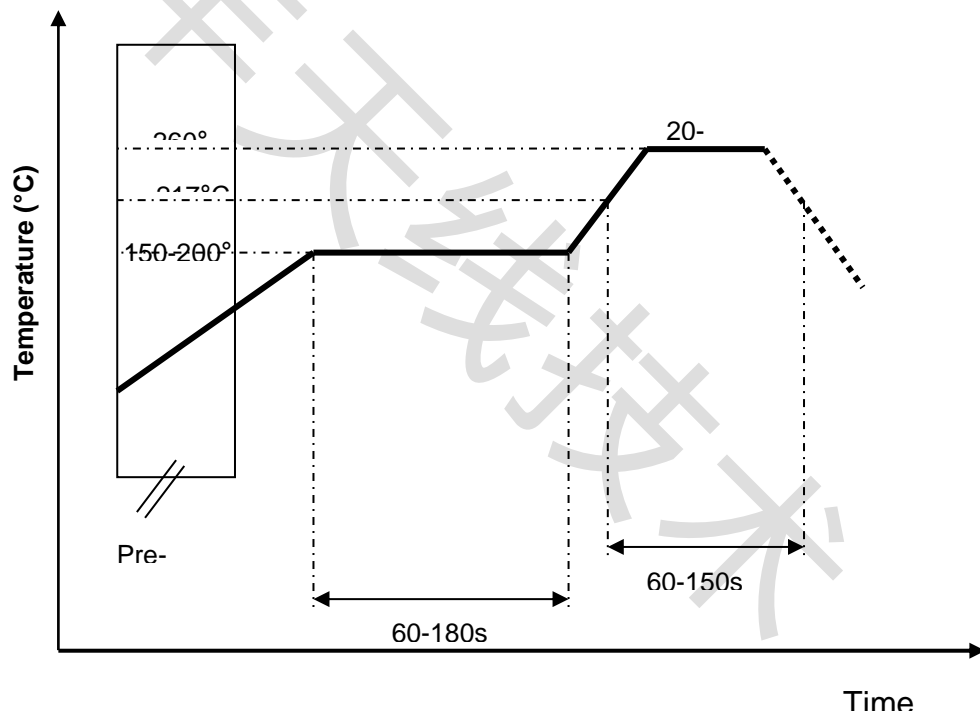
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## 10. Soldering Conditions

a. Typical Soldering Profile for Lead-free Process



## 11. Packing

(1) Quantity/Reel: 5000 pcs/Reel:



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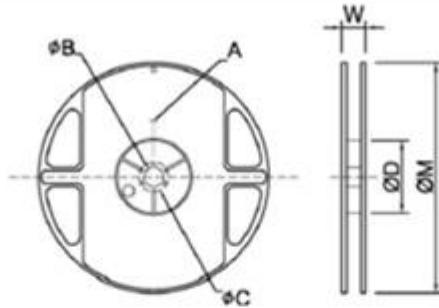
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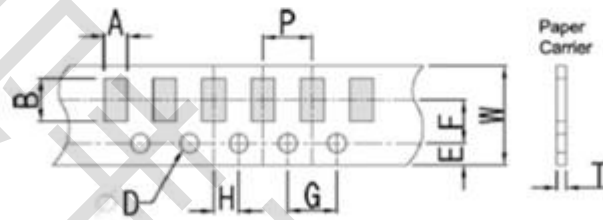
### Reel and Taping Specification

#### Reel Specification



TYPE	SIZE		A	$\phi B$	$\phi C$	$\phi D$	W	$\phi M$
3216	7"	5K/Reel	2.0±0.5	13.5±1.0	21±1.0	60±1.0	11.5±2.0	178±2.0

#### Tapping Specification



Packaging	Type	A	B	W	E	F	G	H	T	$\phi D$	P
Paper Type	3216	1.90±0.20	3.50±0.20	8.0±0.20	1.75±0.10	3.5±0.05	4.0±0.10	2.0±0.05	0.75±0.10	1.50 +0.10 -0	4.0±0.1



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