3.2 x 1.6 x 1.2 (mm) WiFi / Bluetooth Chip Antenna (YF300F) Engineering Specification

1. Product Number

S	2	M	1	E	1	2	0	Z	2	9	6	0	3	0

         (1)   (2)   (3)   (4)   (5)   (6)

2. Features

*Stable and reliable in performances
*Low profile, compact size
*RoHS compliance
*SMT processes compatible

3. Applications

*ISM 2.4 GHz applications
*ZigBee/BLE applications
*Bluetooth earphone systems
*Hand-held devices when WiFi / Bluetooth functions are needed, e.g., Smart phones
*IEEE802.11 b/g/n
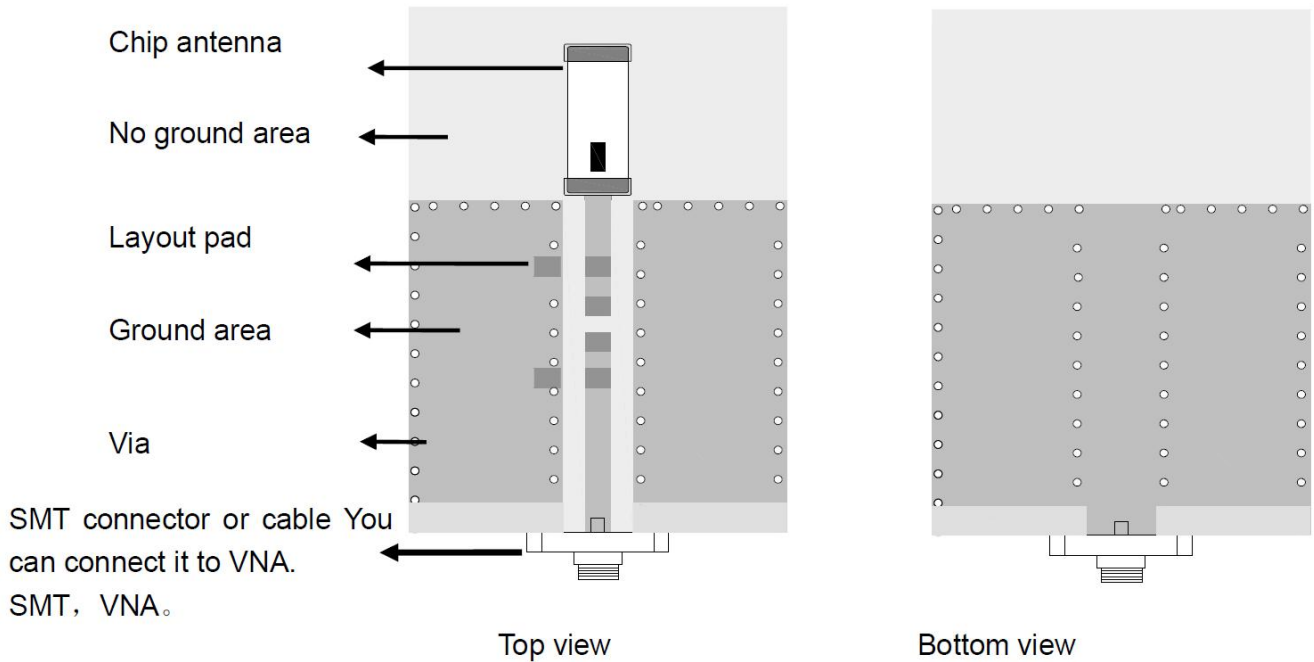*Wireless PCMCIA cards or USB dongles

4. Description

Unictron's AB002 chip antenna is designed for ISM 2.4GHz applications, covering frequencies 2400~2500 MHz. Fabricated with proprietary design and processes, AB002 shows excellent performance and is fully compatible with SMT processes which can decrease the assembly cost and improve device's quality and consistency.

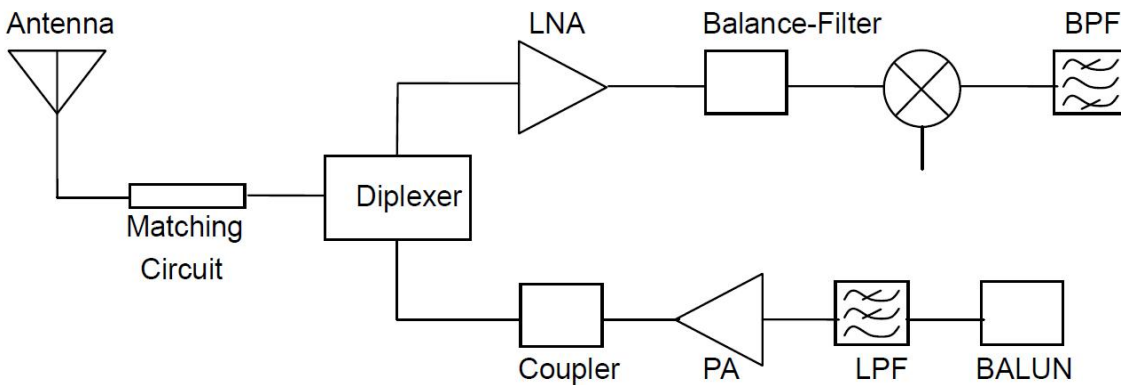# 5. Layout Guide & Electrical Specifications

5-1. Layout Guide (unit：mm)

Solder Land Pattern:

The solder land pattern (gold marking areas) is shown below. Recommendation on matching circuit will be provided according to customer's installation conditions.

Chip antenna

No ground area

Layout pad

Ground area

Via

SMT connector or cable You can connect it to VNA. SMT，VNA。

Top view

Bottom view

Transmission Line with 50Ω Impedance Characteristic

6. APPLICATIOM GUIDE

Antenna

Matching Circuit

Diplexer

LNA

Balance-Filter

BPF

Coupler

PA

LPF

BALUN

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5-2. Electrical Specifications (Evaluation Board Dimensions: 40 x 40 mm^2)

5-2-1. Electrical Table

| Characteristics		Specifications	Unit
Outline Dimensions		3.2 x 1.6 x 1.2	mm
Working Frequency		2400 ~ 2500	MHz
VSWR(@ center frequency)*		2 Max.	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@2442 MHz)	1.2 (typical)	dBi
Efficiency		52 (typical)	%

*Center frequency means the frequency with the lowest value in return loss of the chip antenna on the evaluation board.

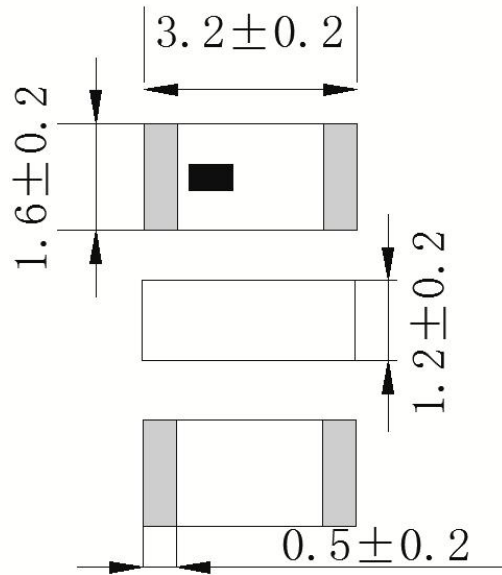### 5-2-2. Return Loss & VSWR
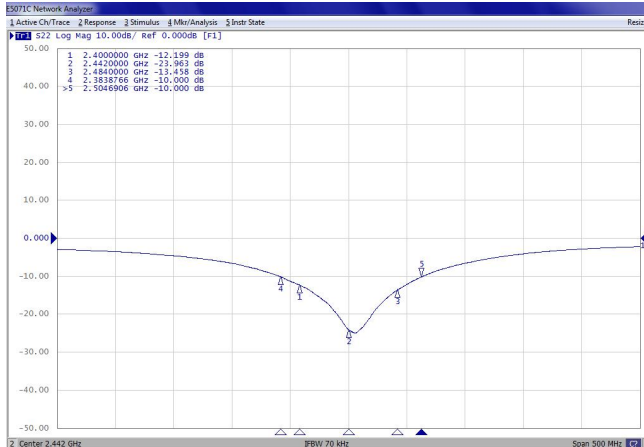
Return Loss (S$_{11}$)   VSWR (S$_{11}$)
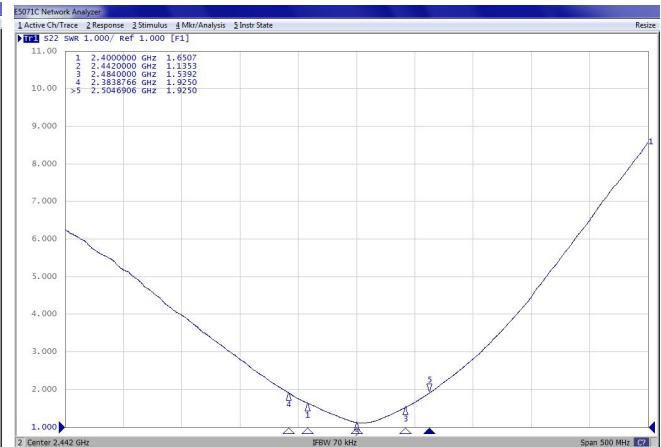
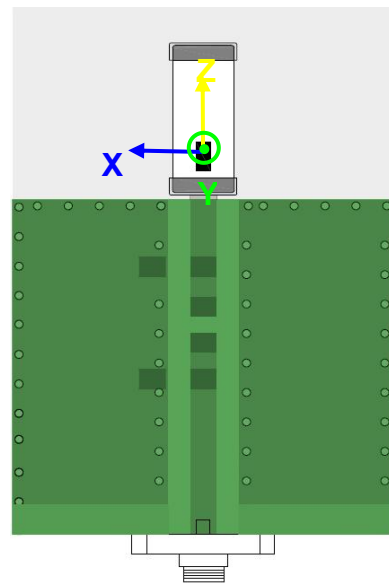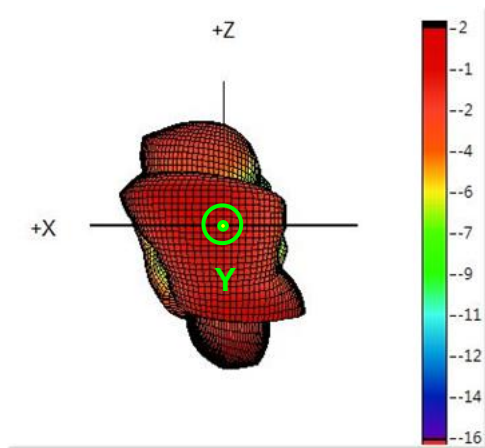# 7. Outline Dimensions of Antenna & Evaluation Board (unit: mm)
6-1. Antenna Dimensions

3.2 ± 0.2

1.6 ± 0.2

1.2 ± 0.2

0.5 ± 0.2

PIN Definitions

8. Radiation Pattern (with 40 x 40 mm² Evaluation Board)

7-1. 3D Gain Pattern @ 2442 MHz (unit: dBi)

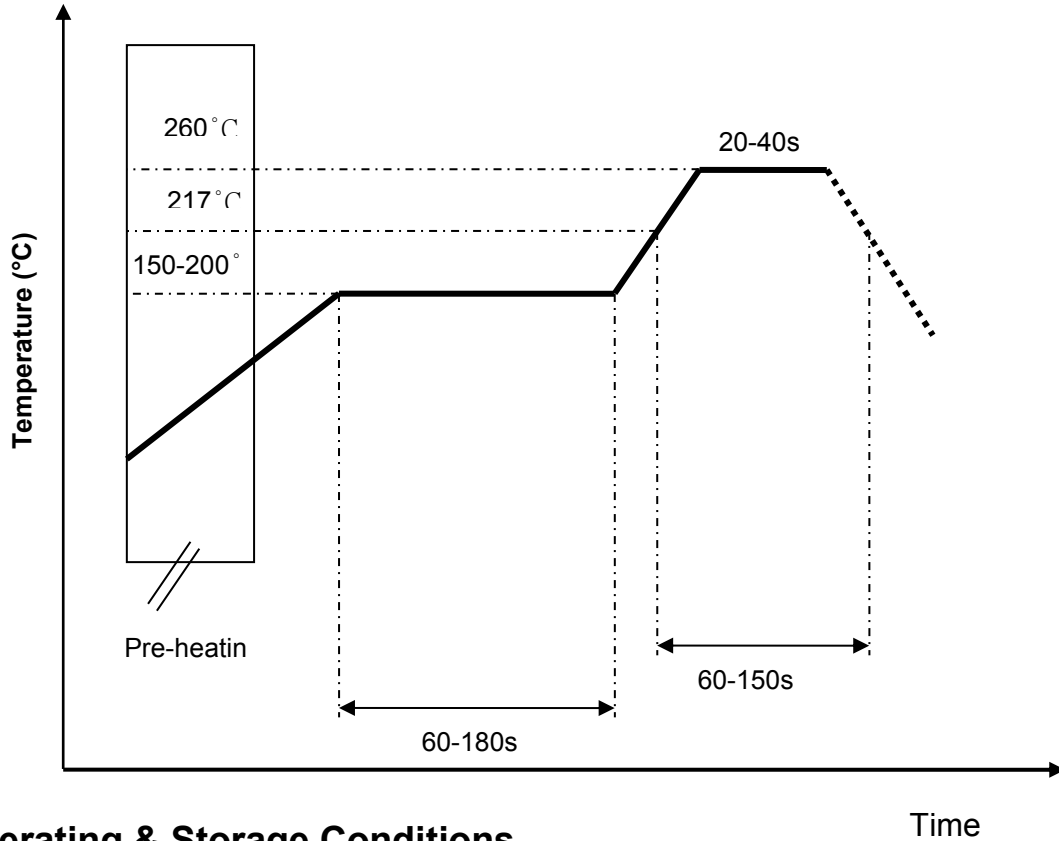| TITLE :	3.2 x 1.6 x 1.2 WiFi / Bluetooth Chip Antenna (YF300F) Engineering Specification	DOCUMENT NO.		REV.
				A
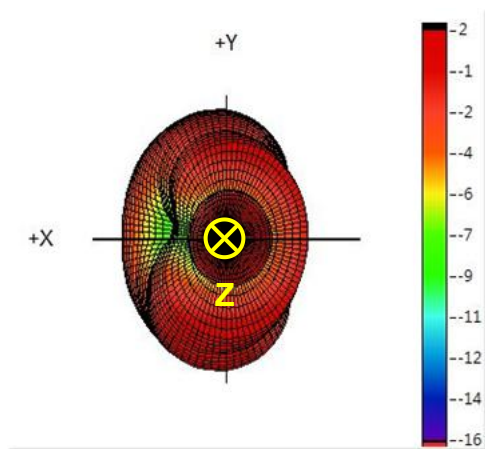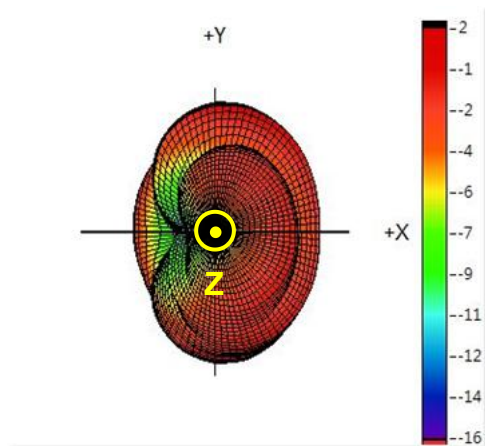
7-2. 3D Efficiency Table

Frequency(MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484	2500
Efficiency(dB)	-3.2	-3.2	-3.1	-3.0	-2.9	-2.9	-2.9	-2.8	-2.9	-2.8	-2.8	-2.8	-2.7	-2.8	-3.0	-3.1
Efficiency(%)	48.1	47.6	49.1	50.7	50.9	51.2	51.3	52.0	51.6	52.5	52.7	53.1	53.6	52.6	50.5	49.0
Peak Gain(dBi)	0.9	0.8	0.9	1.0	1.0	1.1	1.2	1.2	1.2	1.2	1.1	1.1	1.2	1.1	0.8	0.7

7-3. 3D Efficiency vs. Frequency

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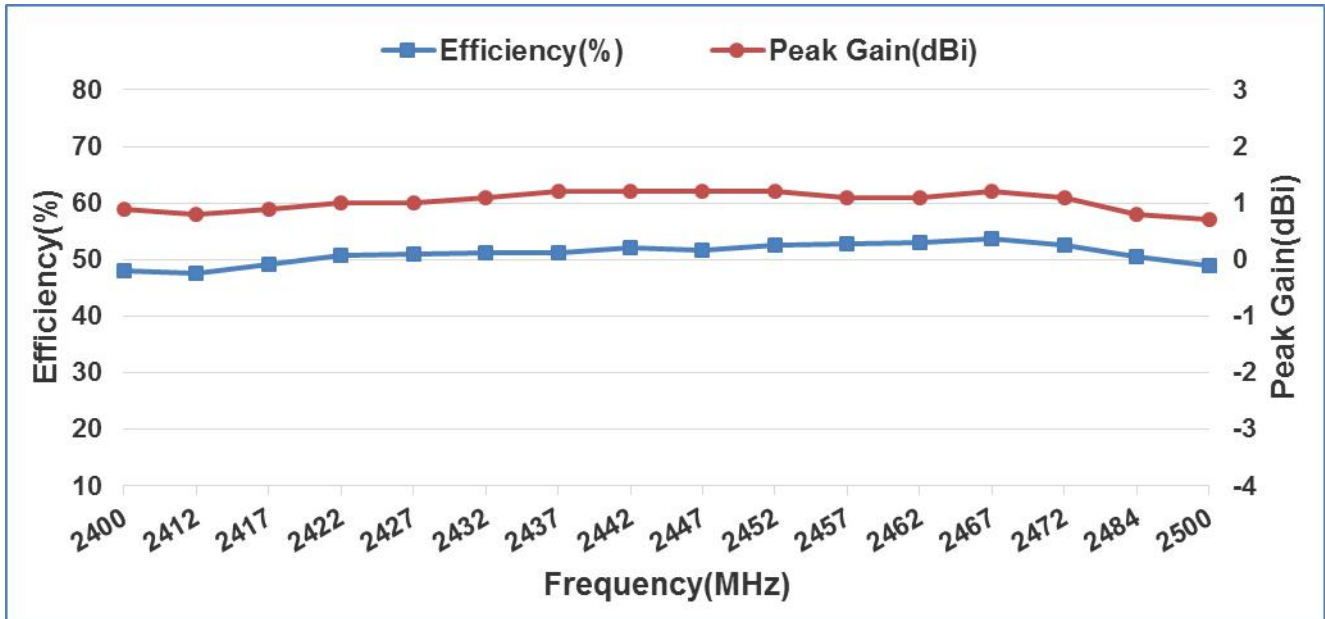
9. Soldering Conditions

9-1. Typical Soldering Profile for Lead-free Process

10. Operating & Storage Conditions

11-1. Operating
(1) Maximum Input Power**:** 2 W

(2) Operating Temperature**:** -40℃ to 85℃

11-2. Storage
(1) Storage Temperature**:** -5℃ to 40℃

(2) Relative Humidity**:** 20% to 70%

(3) Shelf Life**:** 1 year

11. Notice
(1) Installation Guide:

Please refer to Unictron's application note "General guidelines for the installation of Unictron's chip antennas" for further information.

(2) All specifications are subject to change without notice.

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