

APPROVAL SHEET

DESCRIPTION

:

Chip series antenna 2.4 GHz&5.8G
Bandwidth 100MHz

NOMINAL FREQ.

:

2.4GHz&5.8G

P/N

:

ACA-3216-ANT-00021

MODEL

:

3216

REVISION

:

01

DATE

:

07/18/2019

Approved	Checked	Prepared
<i>Jim Lin</i>	<i>Michael Wu</i>	<i>Sain</i>

REVISION HISTORY

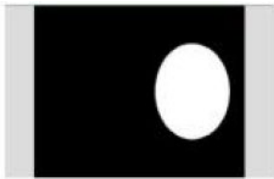
Rev.	Revised Page	Revision Content	Date	Ref. No.	Reviser
01	N/A	Initial Released	07/18/2019	N/A	Sain

1. SCOPE :This specification applies to Chip series antenna

2. Rating:

Operating Temperature:-40°C~110°C
Storage Temperature: -10°C~40°C R.H.30%~70%

3. Marking:



4. Configuration and Dimensions:

Figure	Dimensions(mm)	
The figure shows two views of the antenna. The top view is a black rectangle with a white oval in the center. The length of the rectangle is labeled 'L' and the width is labeled 'W'. The diameter of the oval is labeled 'D'. The side view shows the thickness of the antenna, labeled 'T'.	L	3.2±0.2
	W	1.6±0.2
	D	0.5±0.2
	T	0.5±0.2

TERMINAL CONFIGURATION



(1) Feed Termination
(2) Solder Termination

5. Electrical Specification

5-1. 2400~2500 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		3.2 x 1.6 x 0.5	mm
Ground Plane		80 x 40	mm
Working Frequency		2400~2484	MHz
Bandwidth (return loss < -10dB)		90 (typical)	MHz
VSWR(@Center Frequency)		2 (typical)	
Impedance(typical after matching)		50	Ω
Polarization		Linear Polarization	
Gain	Peak	1.5 (typical)	dBi
	Efficiency	73.4 (typical)	%

5-2. 5150~5850 MHz Band

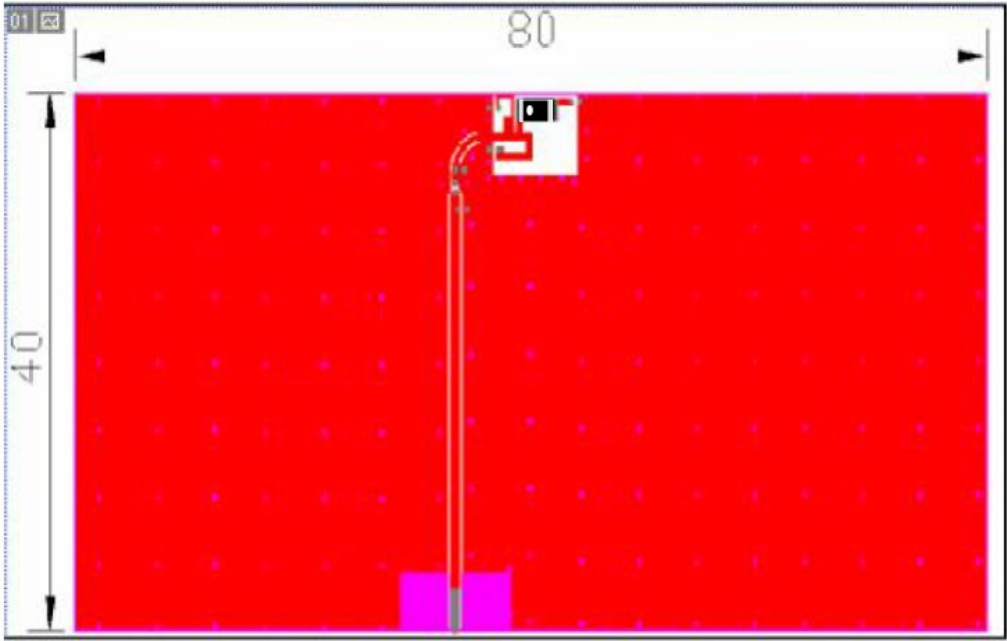
Characteristics		Specifications	Unit
Outline Dimensions		3.2 x 1.6 x 0.5	mm
Ground Plane		80 x 40	mm
Working Frequency		5150~5850	MHz
Bandwidth(return loss < -10dB)		700 (typical)	MHz
VSWR (@Center Frequency)*		2 (typical)	
Impedance(typical after matching)		50	Ω
Polarization		Linear Polarization	
Gain	Peak	1.2 (typical)	dBi
	Efficiency	80.2(typical)	%

Note:

*All electrical properties shown in this spec. are obtained on Unictron's standard demo board with 80x40 mm ground plane.

*Center frequency may be shifted to another frequency according to the conditions of user's circuit board and surrounding environment.

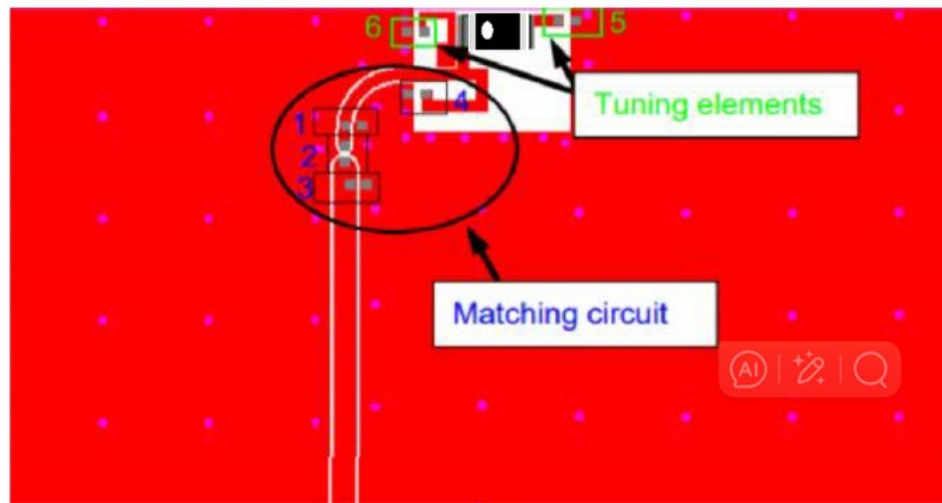
6. Recommended PCB Pattern



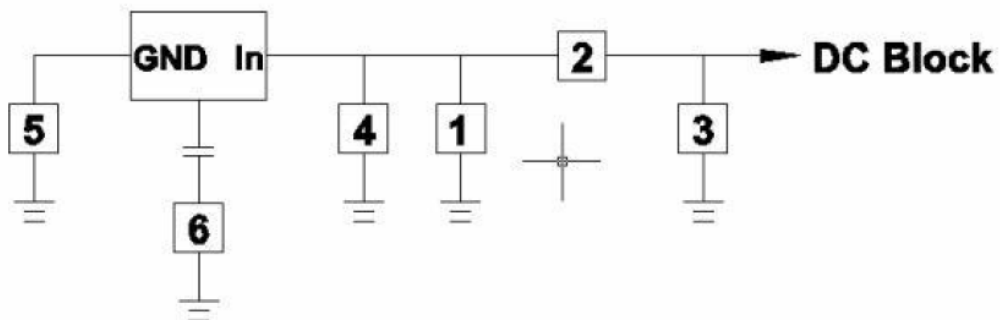
Top View



Bottom View



c. Matching circuit : (Working frequencies are about 2400~2500 & 5150~5850 MHz
@ 80 x 40 mm² ground plane)

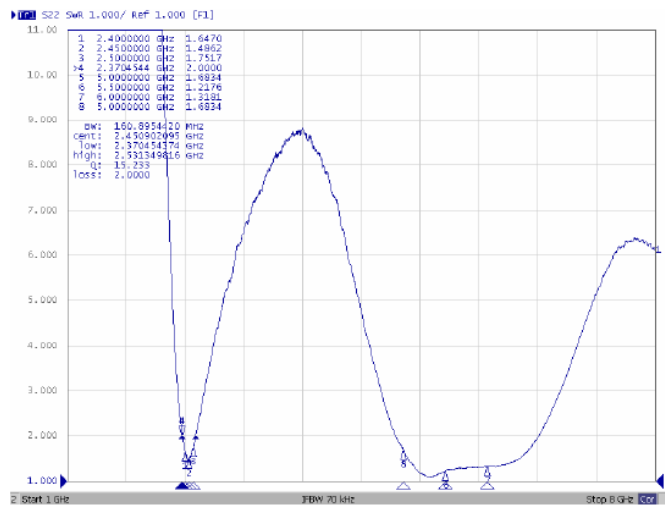


Typical Matching Circuit Components			
Location	Description	Vendor	Tolerance
1	N/A*	(0402)	-
2	1 nH*	DARFON(0402)	±0.1 nH
3	0.5 pF*	DARFON(0402)	±0.1 pF
4	22 pF*	TDK(0402)	±0.1 pF
5	1 pF*	DARFON(0402)	±0.1 pF
6	0.5 pF*	DARFON(0402)	±0.1 pF

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

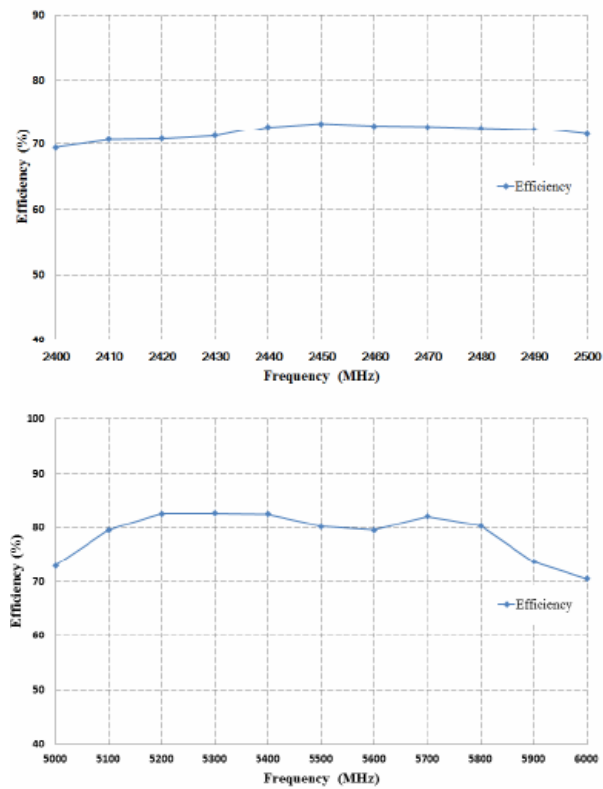
7. Measurement Results

VSWR



Frequency (MHz)	VSWR
2400	1.7
2450	1.5
2500	1.7
5000	1.7
5500	1.2
6000	1.3

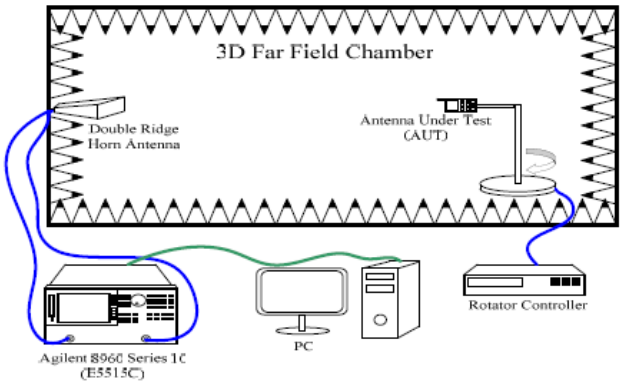
Efficiency



Frequency (MHz)	Efficiency (%)
2400	69.5
2450	73.4
2500	71.5
5000	72.9
5500	80.2
6000	70.5

Radiation Pattern

The Gain pattern is measured in INPAQ's FAR-field chamber. DUT is placed on the table of rotator, a standard horn antenna and Vector Network Analyzer is used to collect data.



3D Chamber Definition

3D Gain Pattern

