

50.0 x 5.0 x 0.5 (mm) WiFi PCB Substrate Antenna (AA107) Engineering Specification

1. Explanation of Product Number

H	2	B	1	B	E	1	A	1	B	3	4	5	L
				(1)	(2)	(3)	(4)	(5)					



Product Code:

- (1) Product Applications:
 B: WiFi Antenna
- (2) Dimensions:
 E1: 50.0 x 5.0 x 0.5(mm)
- (3) Material:
 A: GF
- (4) Working Frequencies:
 1B: 2400~2484 MHz
- (5) Antenna Series:
 34: serial number



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 Unictron Technologies Corporation
 Website: www.unictron.com

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Prepared by : **Xenia** Designed by : **Sam** Checked by : **Chinling** Approved by : **Herbert**

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2. Features

- *Stable and reliable in performances
- *Compact size
- *RoHS compliance

3. Applications

- * IEEE802.11 (b/g/n).
- * Hand-held devices when WiFi (802.11 b/g/n) functions are needed.

4. Description

Unictron's PCB antenna series are specially designed for WiFi (802.11 b/g/n) applications. Based on Unictron's proprietary design and processes, this PCB antenna has excellent stability and sensitivity to consistently provide high signal reception efficiency.

5. Operating Condition:

Temperature	-10 to +85 °C	(With double-sided tape)
	- 40 to +85 °C	(Without double-sided tape)
Humidity	10 to 95% RH	

6. Storage Condition:

Temperature	-10 to +85 °C	(With double-sided tape)
	- 40 to +85 °C	(Without double-sided tape)
Humidity	10 to 95% RH	

7. Electrical Specifications (Antenna on the plastic housing)

7-1. 2400~2484 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		50.0 x 5.0 x 0.5	mm
Working Frequency		2400~2484	MHz
Bandwidth		84Min (typical)	MHz
VSWR(@Center Frequency)*		2Max (typical)	
Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@ 2442 MHz)	3.4 (typical)	dBi
Efficiency		76.6 (typical)	%

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



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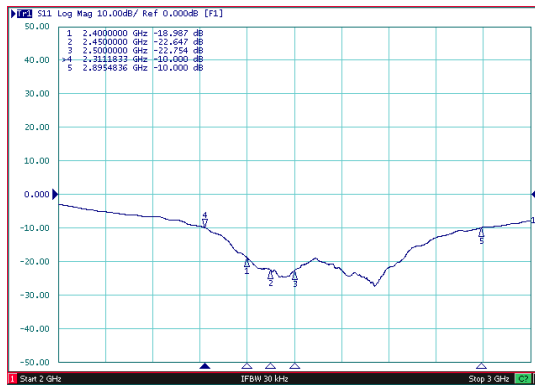
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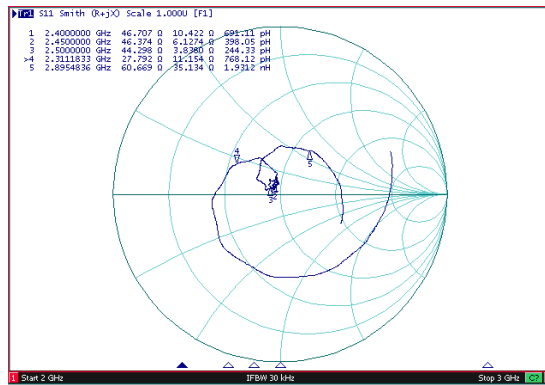
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7-2. Return Loss & Smith Chart

Return Loss



Smith Chart



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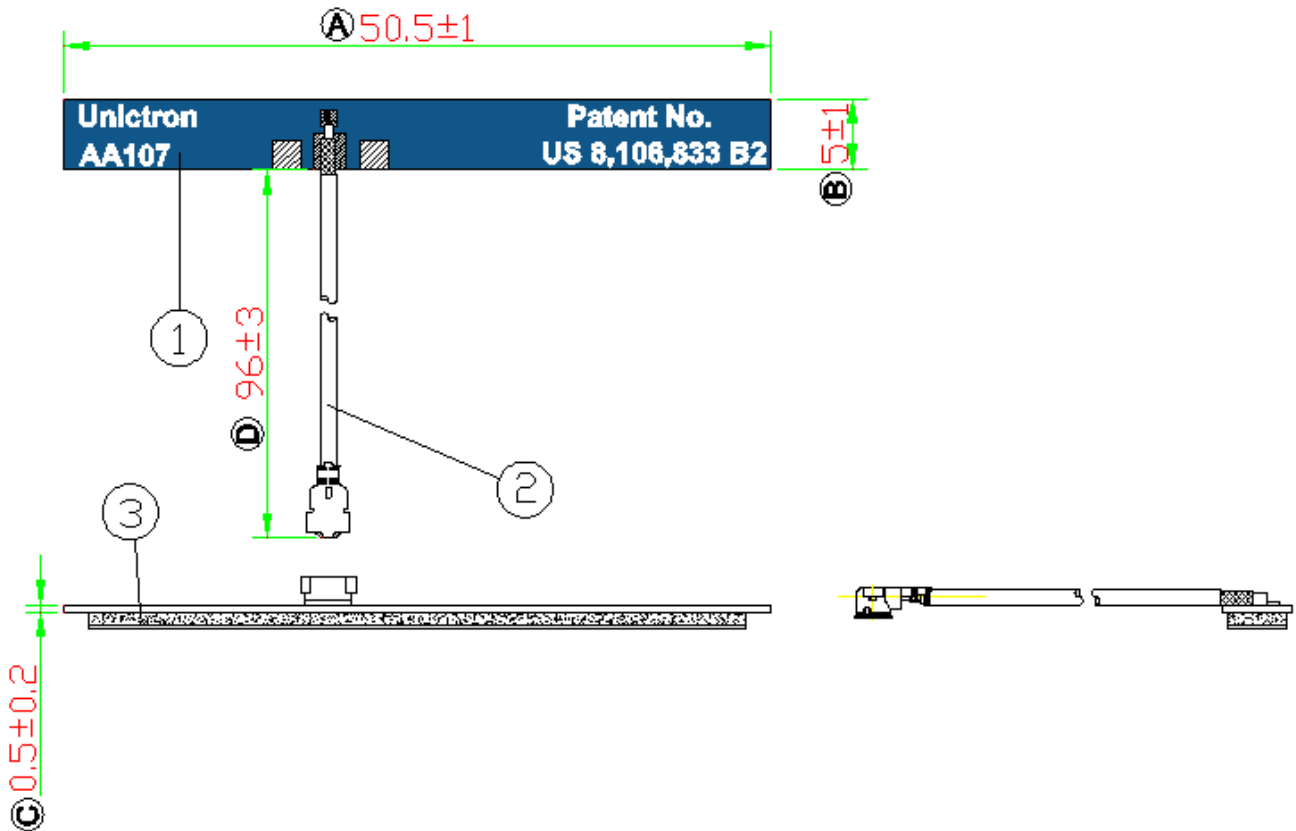
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8. Dimensions of PCB antenna with cable (unit: mm)



NOTE:

1. All materials are RoHS compliant.
2. " (A)~(D) " Critical Dimensions.
3. "() " Reference Dimensions.

Item	Name	Material	Color	Q'ty
1	AA107_PCB	FR4	Black	1
2	I-PEX Connector (MHF I)_ Cable1.13mm	FEP	Gray	1
3	Adhesive	PE	Black	1



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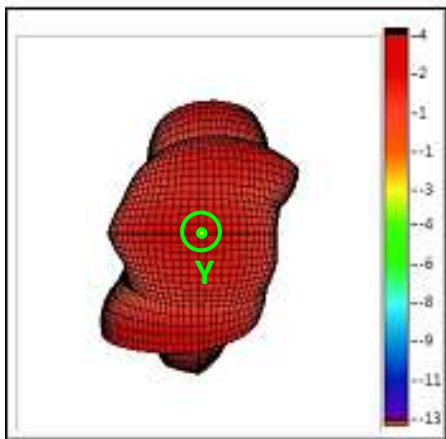
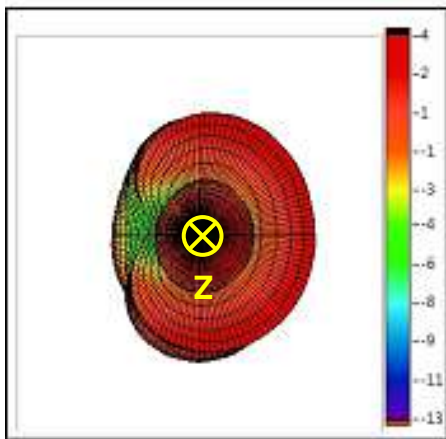
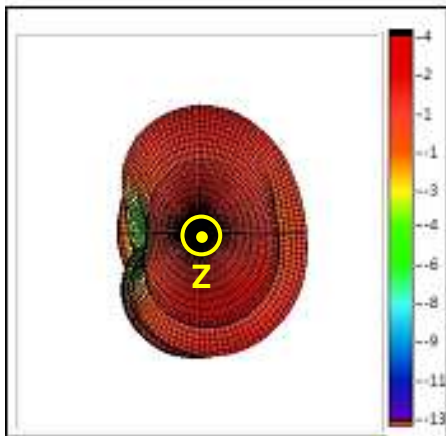
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9. Radiation Pattern

9-1.3D Gain Pattern @ 2442 MHz (unit: dBi)



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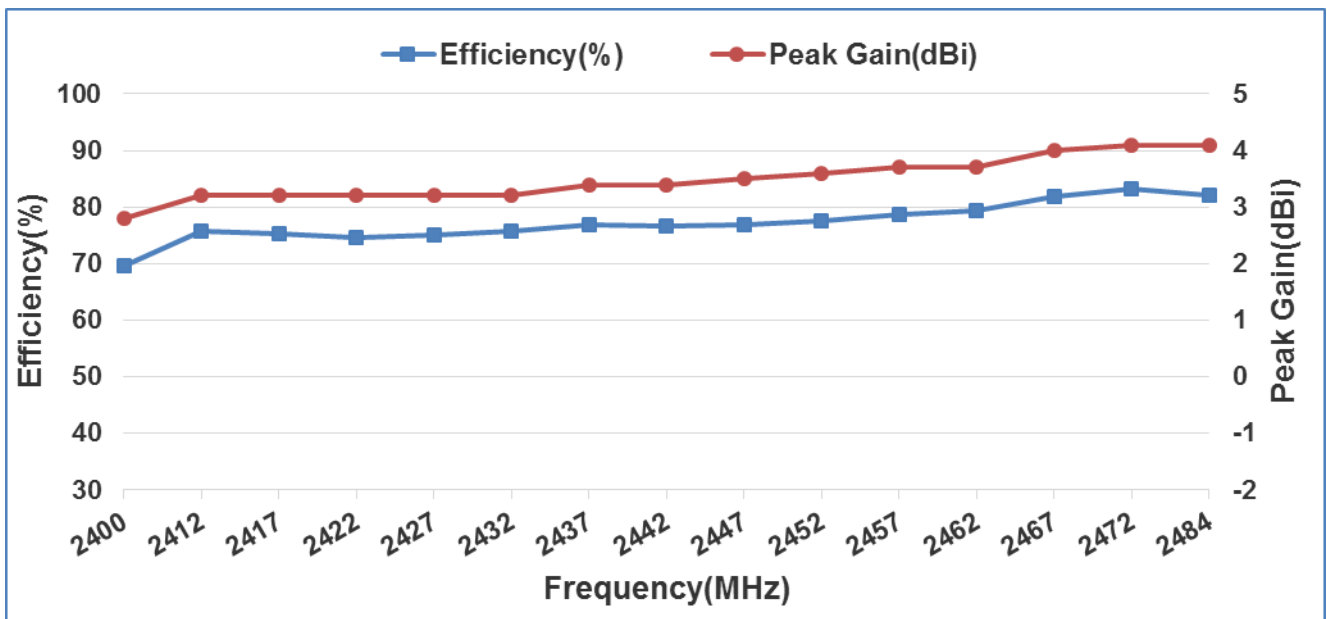
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9-2. 3D Efficiency Table

Frequency (MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
Efficiency (dB)	-1.6	-1.2	-1.2	-1.3	-1.3	-1.2	-1.1	-1.2	-1.1	-1.1	-1.0	-1.0	-0.9	-0.8	-0.9
Efficiency (%)	69.5	75.7	75.2	74.6	75.0	75.7	76.9	76.6	76.9	77.6	78.7	79.3	81.9	83.2	82.0
Gain (dBi)	2.8	3.2	3.2	3.2	3.2	3.2	3.4	3.4	3.5	3.6	3.7	3.7	4.0	4.1	4.1

9-3. 3D Efficiency vs. Frequency



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