

Unictron AA222
Dual-Band Wi-Fi/Bluetooth
PCB Antenna MHF4 100mm
V1.0

Datasheet





WiFi Dual Band PCB Substrate Antenna
with IPEX IV connector
Model: AA222
Product Number: H2B1PD1A1C385L

REFERENCE SPECIFICATION

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1 Introduction

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

Features

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

Applications

- * IEEE802.11 b/g/n
- * Wireless PCMCIA cards or USB dongles

2 Electrical Characteristics

2.1 Table with electrical properties:

Note: Antenna is attached on a 2.0mm-thick ABS + PC material plate

2400 – 2500 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		40.0 x 6.0 x 0.5	mm
Working Frequency		2400 – 2500	MHz
Bandwidth **		100 (min)	MHz
VSWR (@Center Frequency)*		2 (max)	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	3.0 (typical)	dBi
	Efficiency	72 (typical)	%

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

** Bandwidth & VSWR are tested at Unitron test environment.

* The cable loss is ± 0.2 dBi

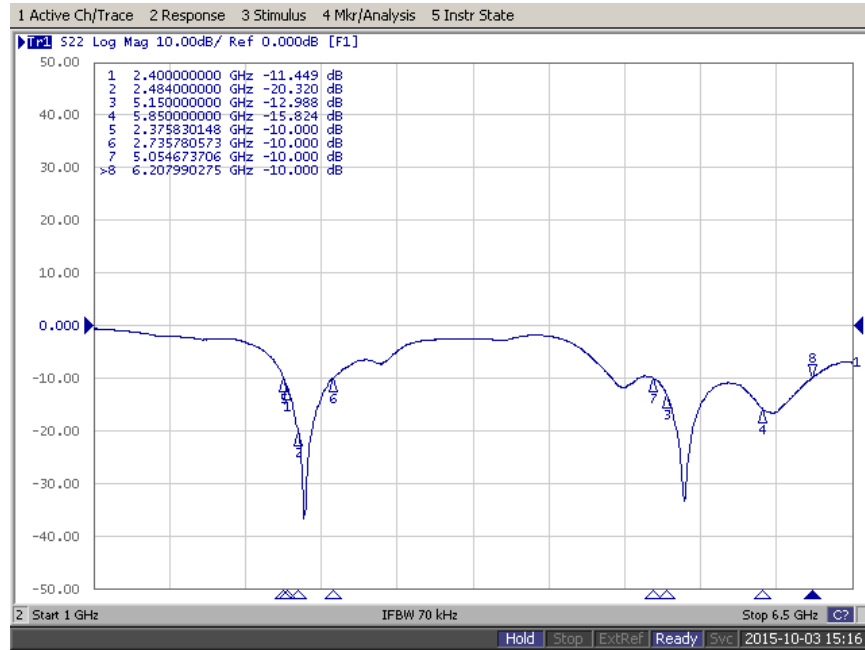
4900 – 5900 MHz Band

Characteristics		Specifications	Unit
Working Frequency		4900 – 5900	MHz
Bandwidth **		1000 (min)	MHz
VSWR (@Center Frequency)*		2 (max)	
Characteristic Impedance		50	Ω
Polarization		Linear Polarization	
Gain	Peak	4.4 (typical)	dBi
	Efficiency	77.9 (typical)	%

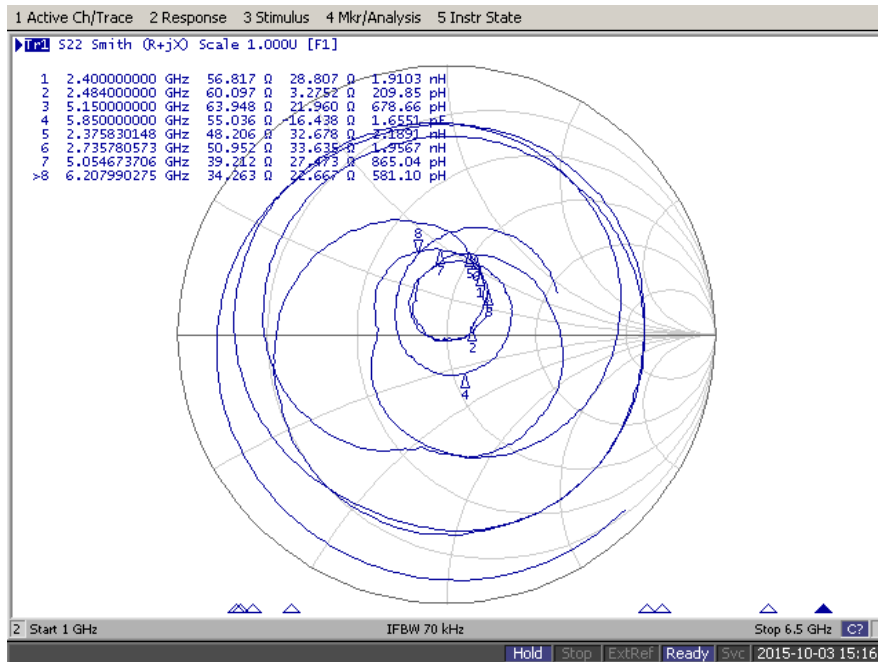
* Center frequency will be offset to another frequency according to the conditions of user's ground plane and radome.

** Bandwidth & VSWR are tested at Unitron test environment.

2.2 Return Loss (S_{11})



2.3 Smith Chart



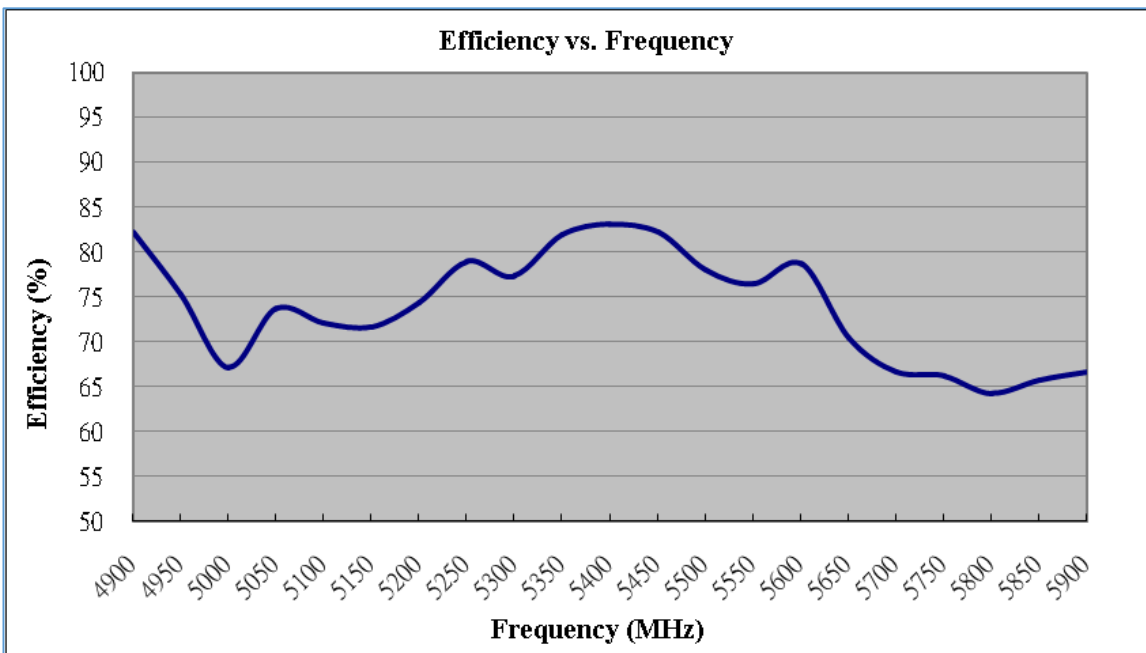
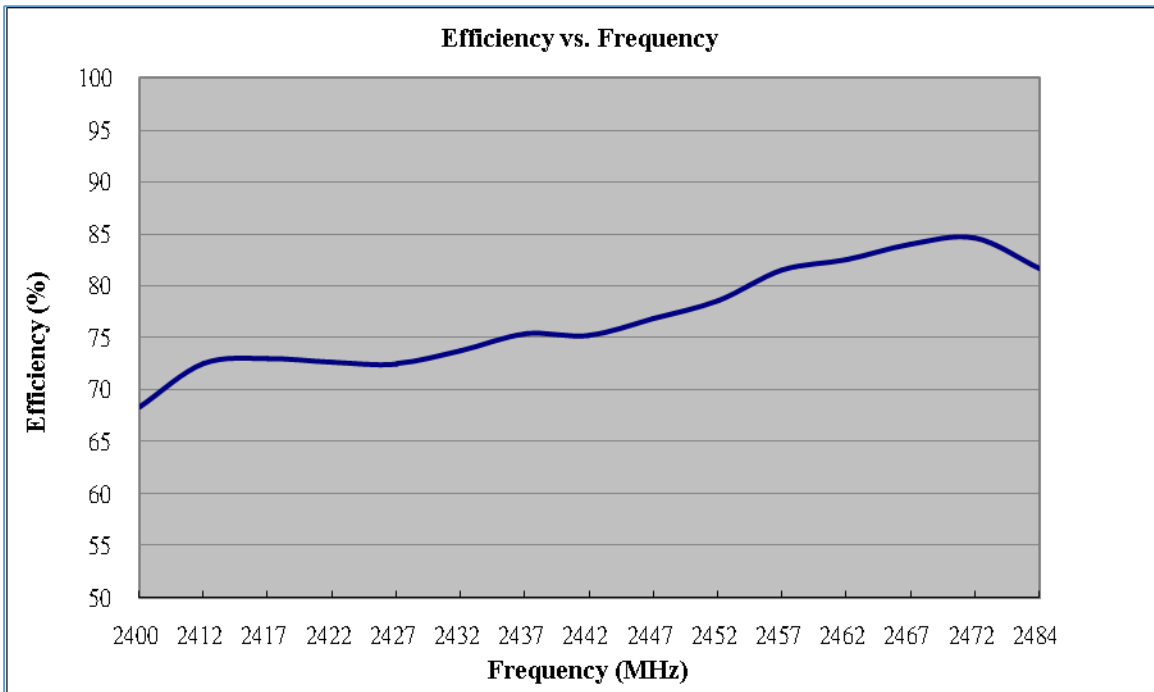
2.4 Efficiency Table (without cable loss)

Frequency(MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
Efficiency(dB)	-1.6	-1.4	-1.4	-1.4	-1.4	-1.3	-1.2	-1.2	-1.1	-1	-0.9	-0.8	-0.8	-0.7	-0.9
Efficiency(%)	67.5	72.0	72.3	72.3	72.1	73.8	74.9	74.2	76.4	78.4	80.5	81.8	83.1	84.0	81.1
Gain(dBi)	2.5	2.7	2.7	2.8	2.8	2.8	2.9	2.8	2.9	2.9	3.0	3.0	3.0	2.9	2.9

Frequency(MHz)	4900	4950	5000	5050	5100	5150	5200	5250	5300	5350	5400
Efficiency(dB)	-0.9	-1.2	-1.7	-1.3	-1.4	-1.6	0.3	2.0	0.8	0.6	0.3
Efficiency(%)	82.4	75.1	67.1	73.4	72.0	71.2	74.1	79.1	77.4	81.8	83.0
Gain(dBi)	3.7	3.7	4.2	4.2	4.3	3.7	3.8	3.9	4.4	4.2	4.0

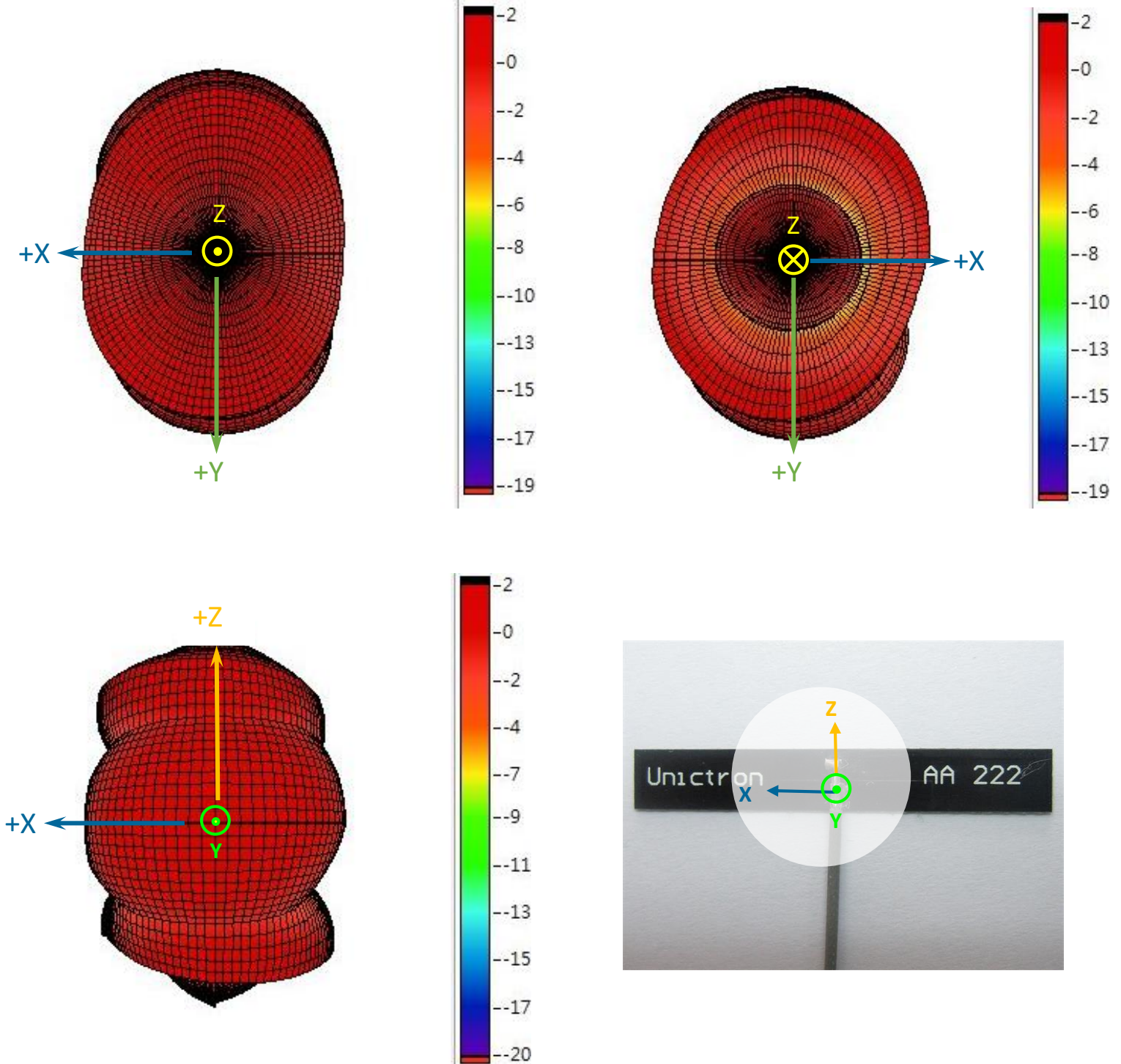
Frequency(MHz)	5450	5500	5550	5600	5650	5700	5750	5800	5850	5900
Efficiency(dB)	-0.9	-1.7	-1.7	-1.0	-1.5	-1.8	-1.8	-2.1	-1.8	-2.3
Efficiency(%)	82.3	78.9	77.5	79.7	70.4	68.2	68.3	63.4	64.9	63.6
Gain(dBi)	3.8	3.8	4.4	4.3	4.0	3.8	4.0	4.0	3.7	3.6

2.5 Efficiency vs. Frequency

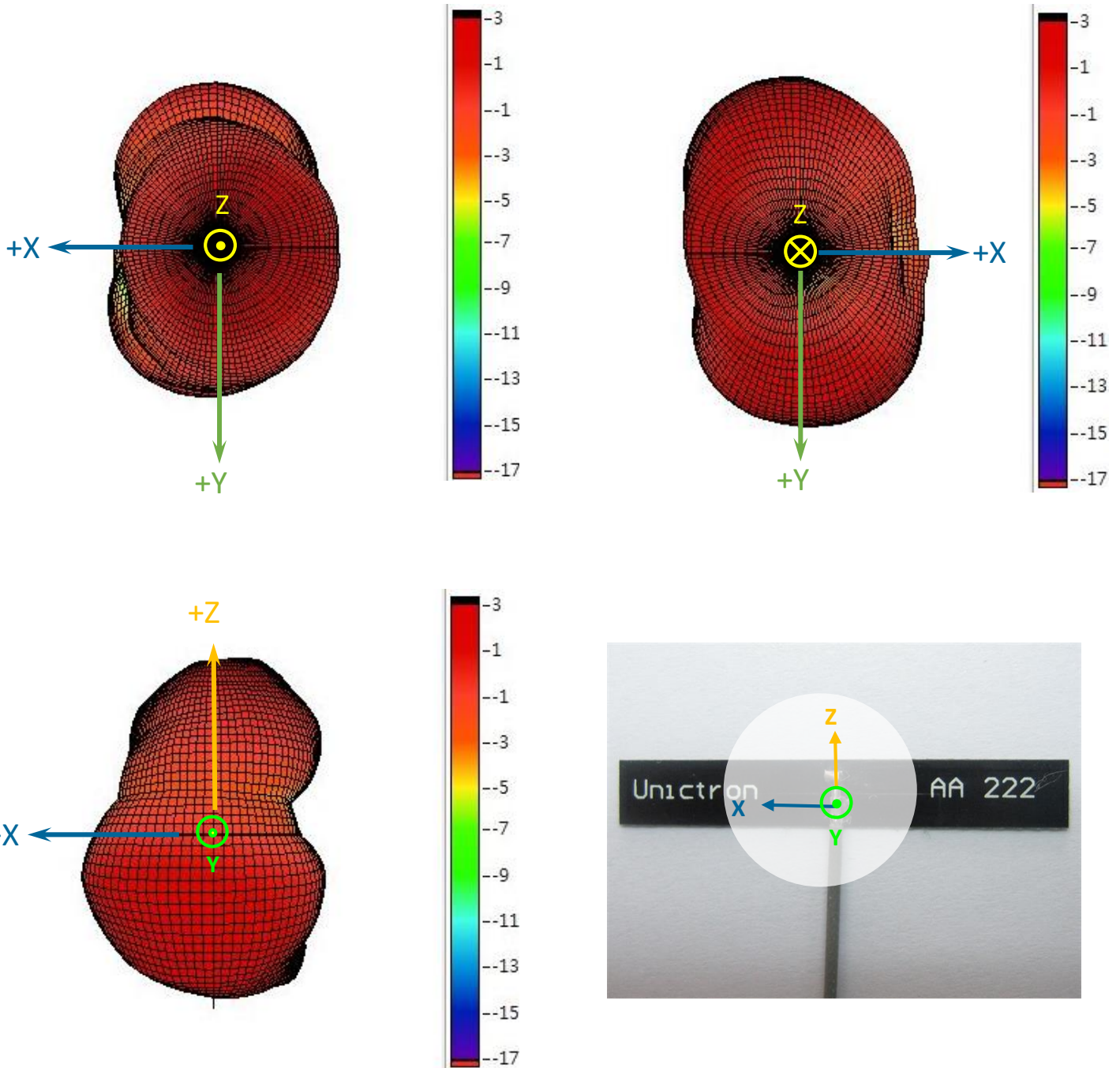


2.6 Radiation Pattern

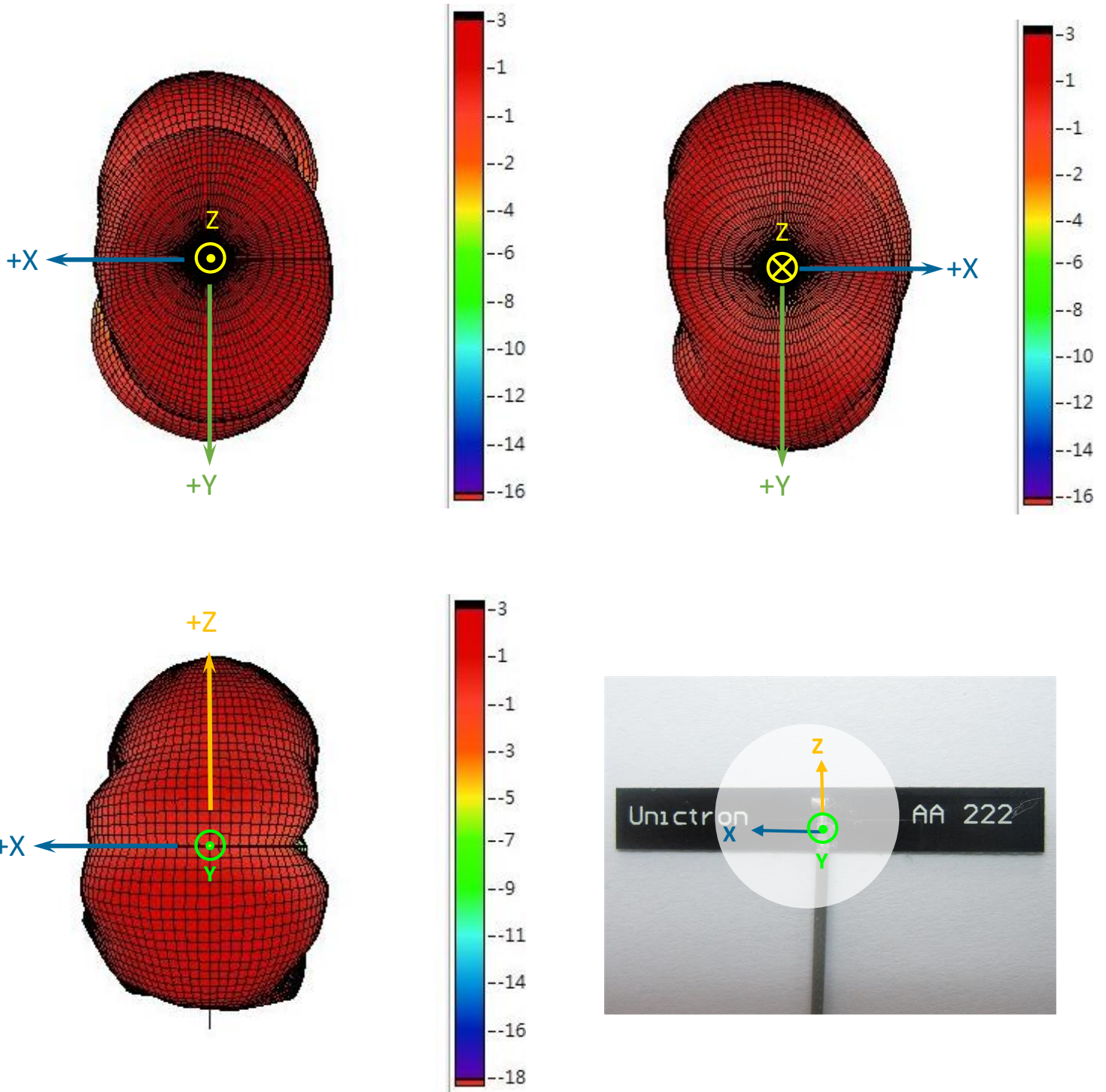
3D Gain Pattern @ 2442 MHz (unit: dBi)



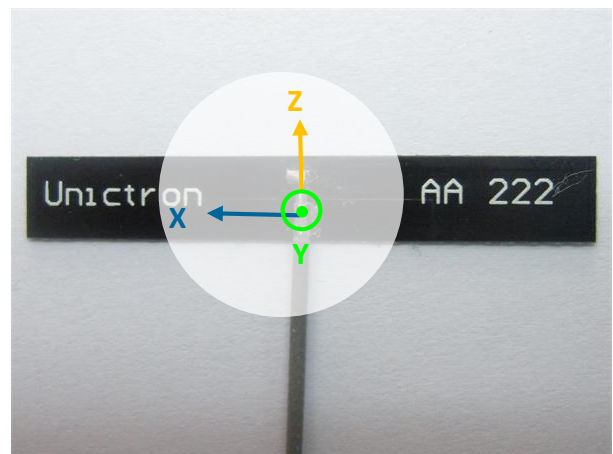
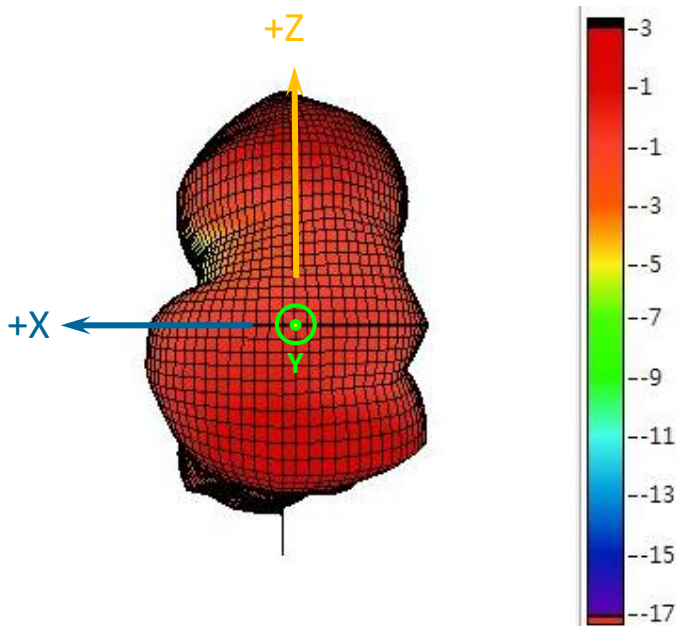
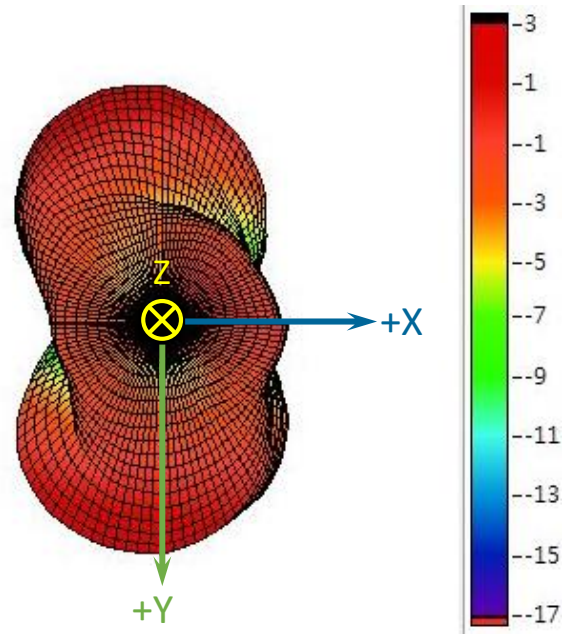
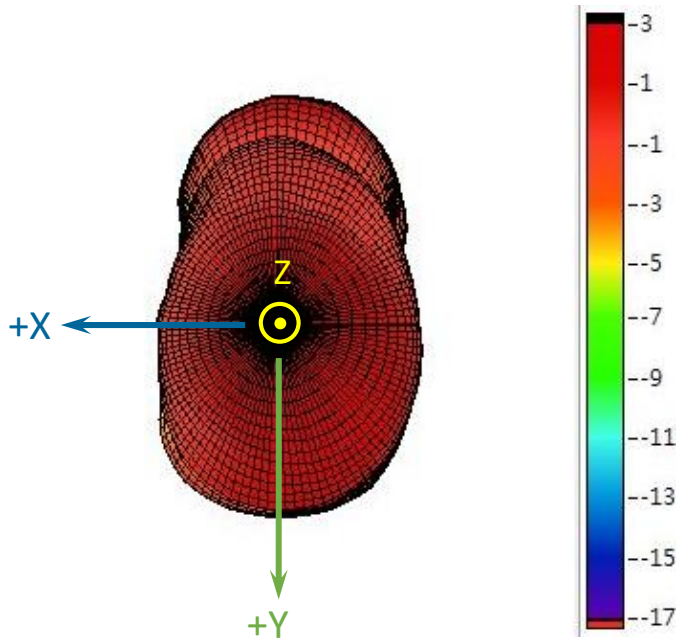
3D Gain Pattern @ 5150 MHz (unit: dBi)



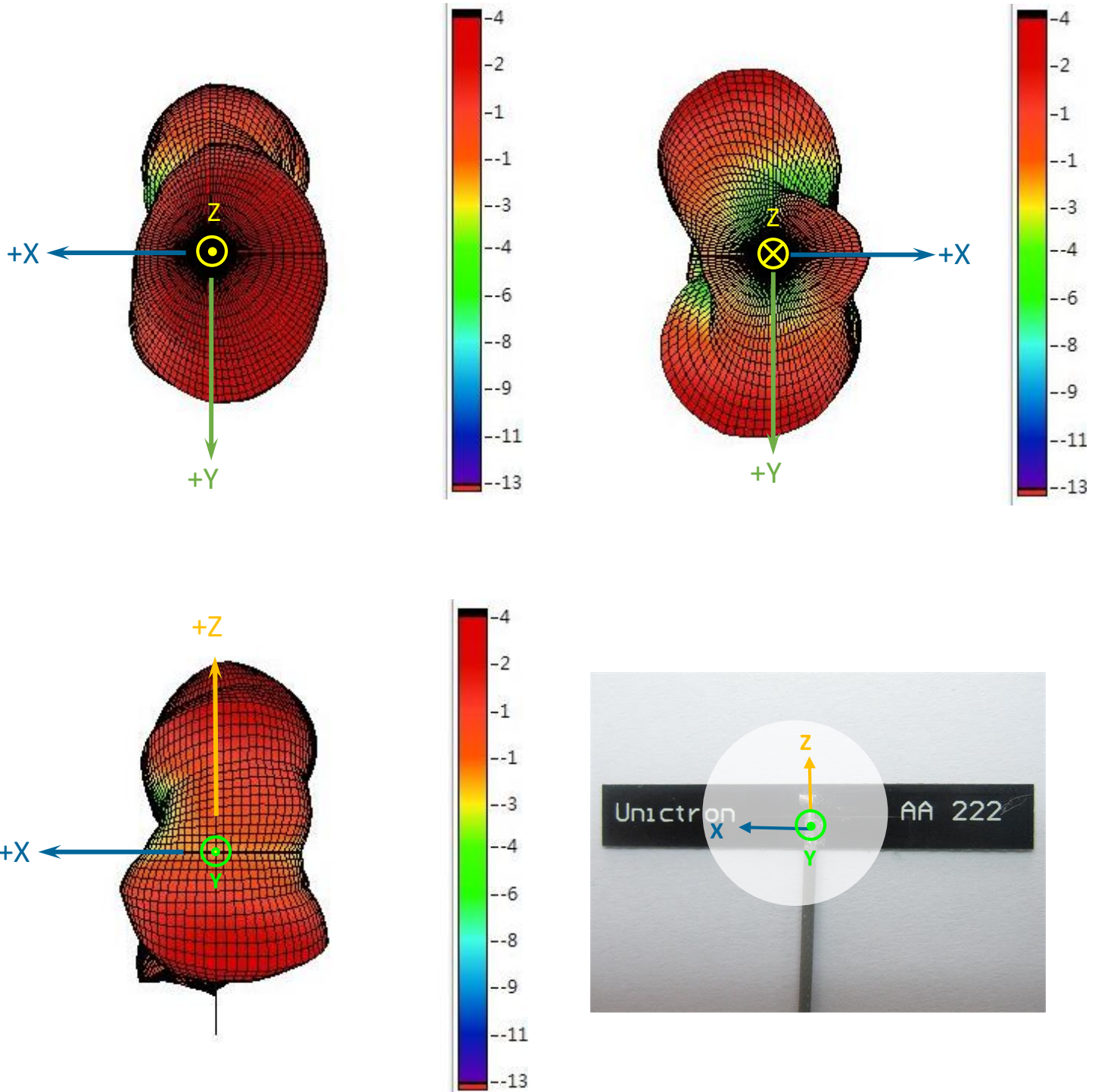
3D Gain Pattern @ 5350 MHz (unit: dBi)



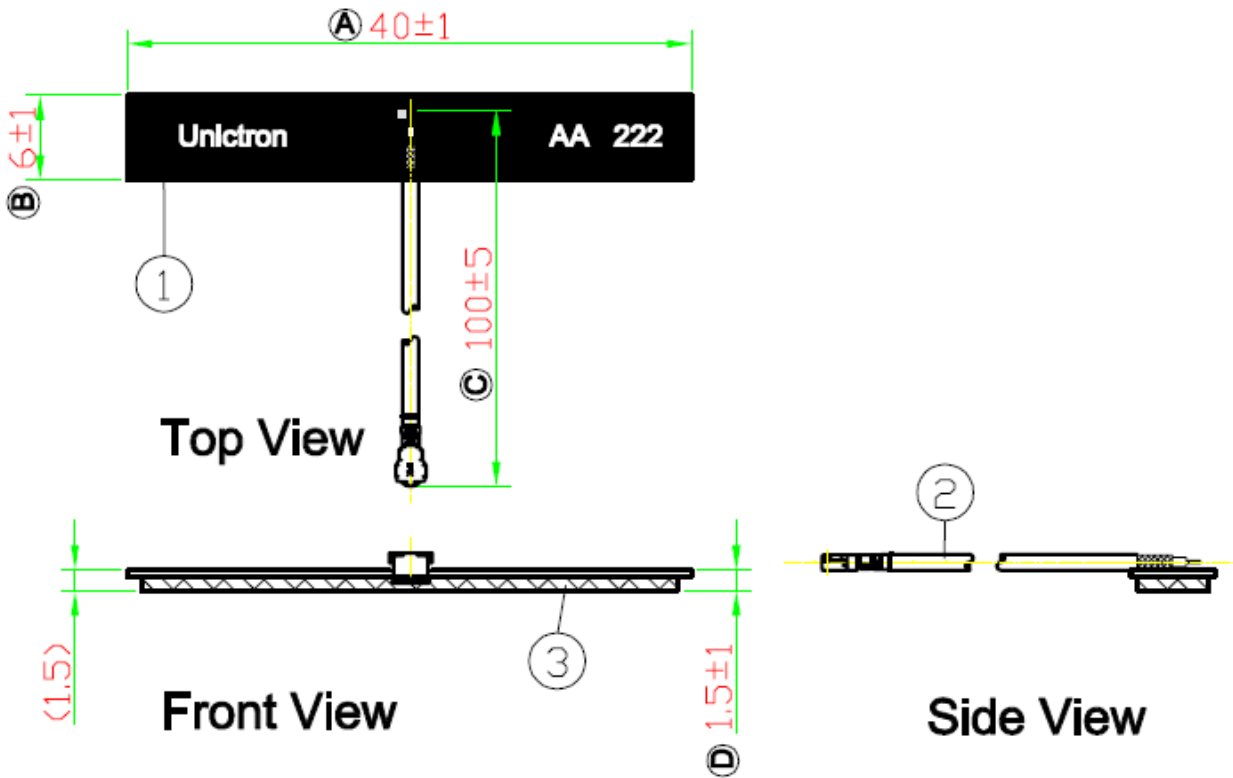
3D Gain Pattern @ 5700 MHz (unit: dBi)



3D Gain Pattern @ 5850 MHz (unit: dBi)



3 Antenna Dimensions



Item	Name	Material	Color	Q'ty
1	AA222_PCB (40mm*6mm*0.5mm)	FR4	Black	1
2	I-PEX Connector (MHF IV)_Cable Φ 1.13mm	FEP	Gray	1
3	Adhesive Tape	PE	Black	1

4 Notes

4.1 Operating conditions

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

4.2 Storage conditions

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

4.3 Package

Weight and Quantity:

Unit Weight: 0.6 ± 0.5 (g)

Quantity

Each EPE Tray: 25 pcs

Each Outer Box: 2500 pcs

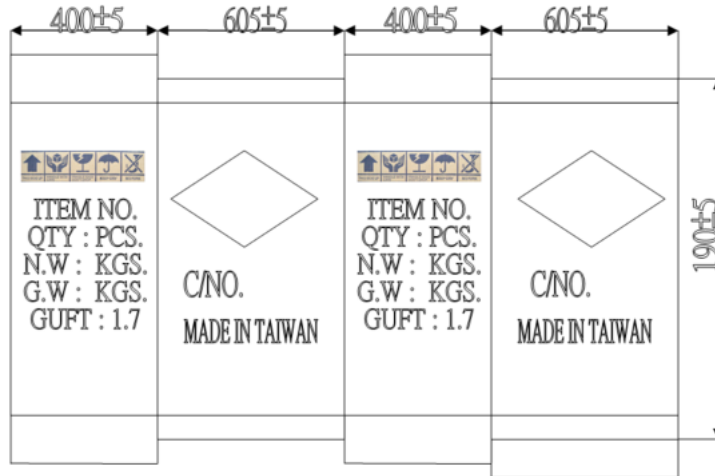
Total Weight

N.W.: 1.5 ± 1 kg

G.W.: 2.3 ± 1 kg

Dimensions

Outer Box (605mm*400mm*190mm)



Process	Photos	Remark
1		Put 25 pcs in a PE bag and attach label on PE bag.
2		Put 100 PE bags into an outer box with 2,500 pcs of antenna inside.