

# 40.0 x 6.0 x 0.5 (mm) Wi-Fi Dual Band PCB Substrate Antenna (AA222) Engineering Specification

## 1. Explanation of Product Number

H	2	B	1	P	D	1	A	1	C	3	0	5	L
				(1)	(2)		(3)	(4)		(5)			



**Product Code:**

- (1) Product Applications:  
    P: Wi-Fi Dual Band Antenna
- (2) Dimensions:  
    D1: 40.0 x 6.0 x 0.5 (mm)
- (3) Material:  
    A: GF
- (4) Working Frequencies:  
    1C: 2400~2484 & 5150~5850 MHz
- (5) Antenna Series:  
    30: 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(a/b/g/n).
- \* Hand-held devices when IEEE802.11(a/b/g/n) functions are needed.

## 4. Description

Unictron's PCB antenna with cable series are specially designed for IEEE802.11(a/b/g/n) applications. Based on Unictron's proprietary design and processes, this 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 in device)

### 7-1. 2400~2484 MHz Band

Characteristics		Specifications	Unit
Outline Dimensions		40.0 x 6.0 x 0.5	mm
Working Frequency		2400~2484	MHz
Bandwidth		84 Min (typical)	MHz
VSWR		2 Max. (typical)	
Impedance		50	Ω
Polarization		Linear Polarization	
Peak Gain	(@ 2442 MHz)	2.7 (typical)	dBi
Efficiency		80 (typical)	%

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



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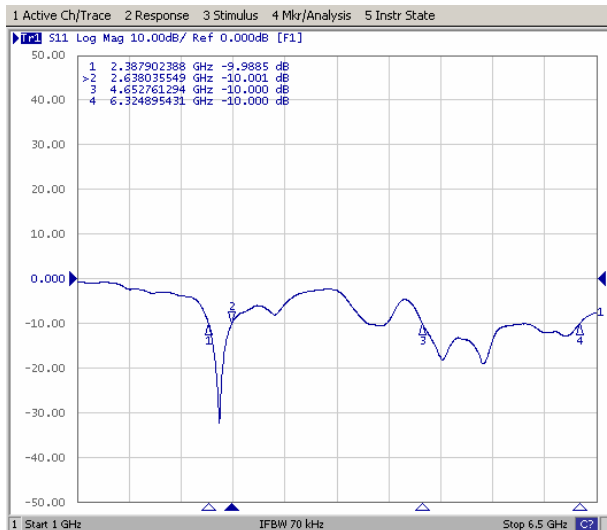
## 7-2. 5150~5850 MHz Band

Characteristics		Specifications	Unit
Working Frequency		5150~5850	MHz
Bandwidth		800 Min. (typical)	MHz
VSWR(		2.5 Max. (typical)	
Impedance		50	$\Omega$
Polarization		Linear Polarization	
Peak Gain	(@5550 MHz)	3.5 (typical)	dBi
Efficiency		72.3 (typical)	%

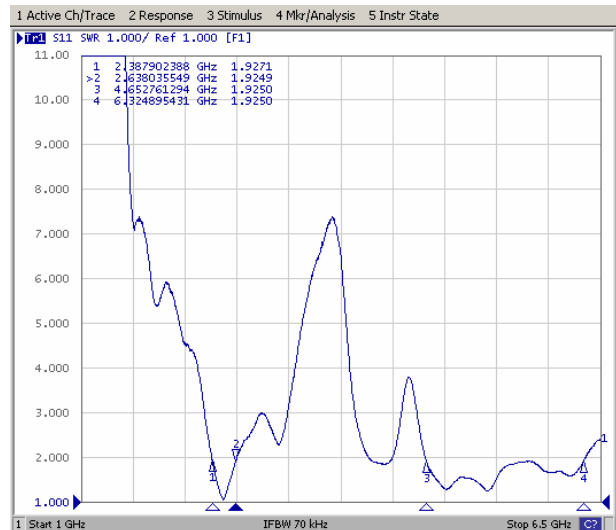
\*Center frequency will be offset to another frequency according to the conditions of user's ground plane and radome

## 7-3. Return Loss & VSWR

Return Loss

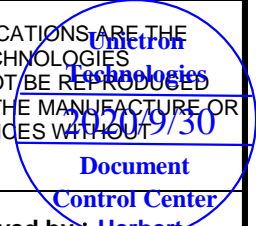


VSWR



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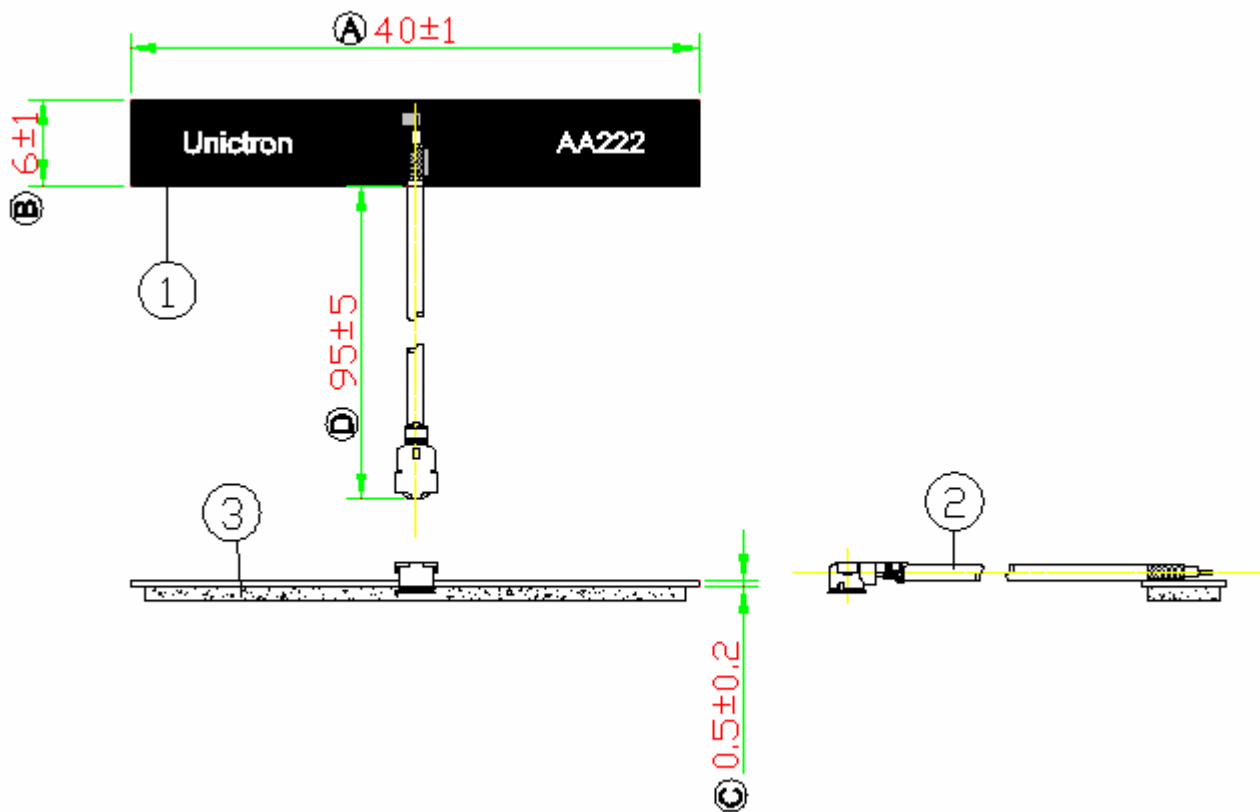
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## 8. Dimensions of PCB antenna with cable (unit: mm)



### NOTE:

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

Item	Name	Material	Color	Q'ty
1	AA222_PCB	FR4	Black	1
2	I-PEX Connector (MHF I) _ Cable1.13mm	FEP	Gray	1
3	Adhesive	PE	Black	1



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2020/9/30  
Document  
Control Center

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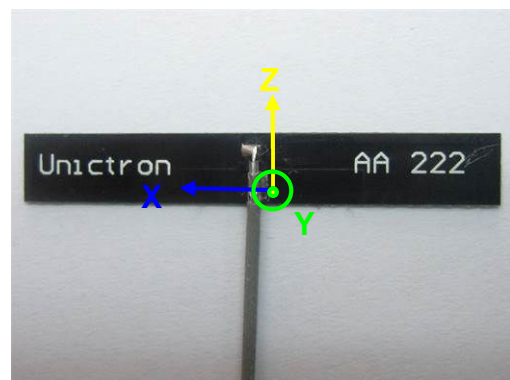
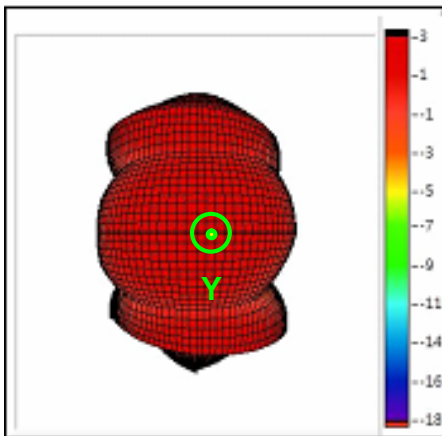
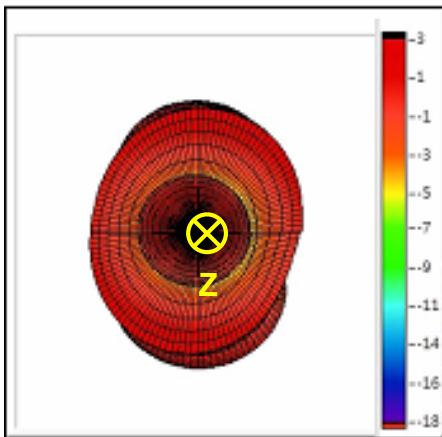
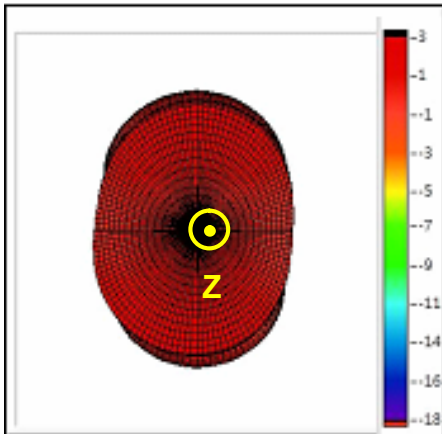
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## 9. Radiation Pattern

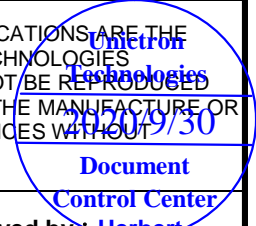
9-1.2400~2484 MHz Band

9-1-1.3D Gain Pattern @ 2442 MHz (unit: dBi)



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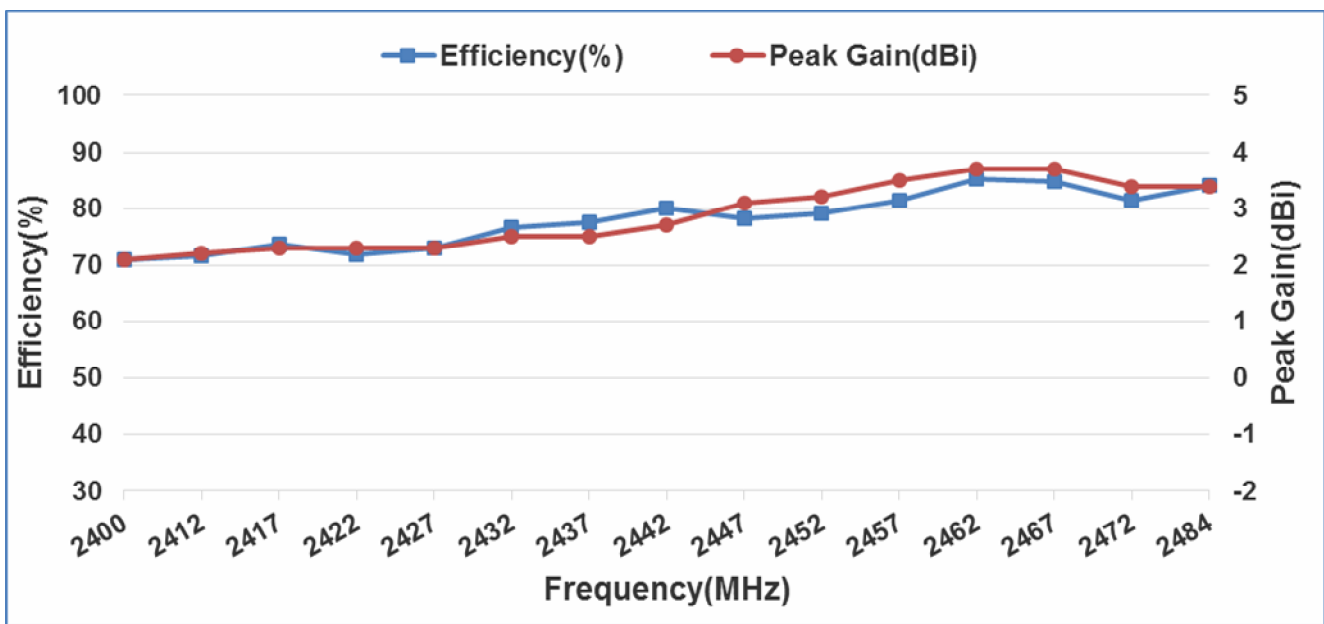
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### 9-1-2. 3D Efficiency Table

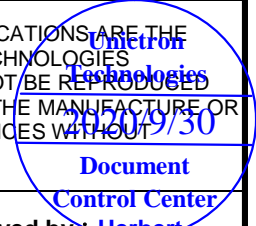
Frequency (MHz)	2400	2412	2417	2422	2427	2432	2437	2442	2447	2452	2457	2462	2467	2472	2484
Efficiency (dB)	-1.5	-1.5	-1.3	-1.4	-1.4	-1.2	-1.1	-1.0	-1.1	-1.0	-0.9	-0.7	-0.7	-0.9	-0.8
Efficiency (%)	71.0	71.6	73.8	71.8	73.1	76.7	77.5	80.0	78.3	79.1	81.5	85.3	84.8	81.5	84.2
Gain (dBi)	2.1	2.2	2.3	2.3	2.3	2.5	2.5	2.7	3.1	3.2	3.5	3.7	3.7	3.4	3.4

### 9-1-3. 3D Efficiency vs. Frequency



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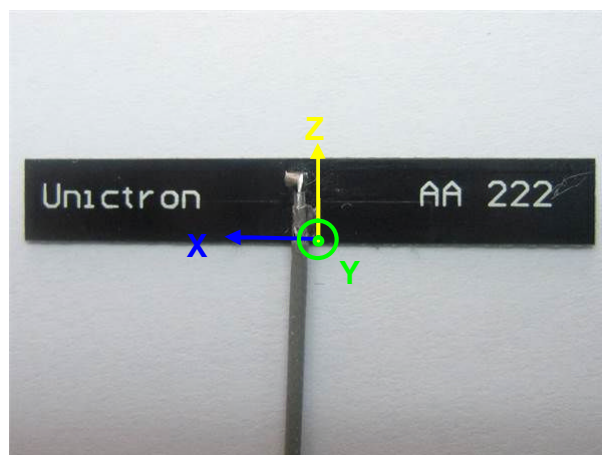
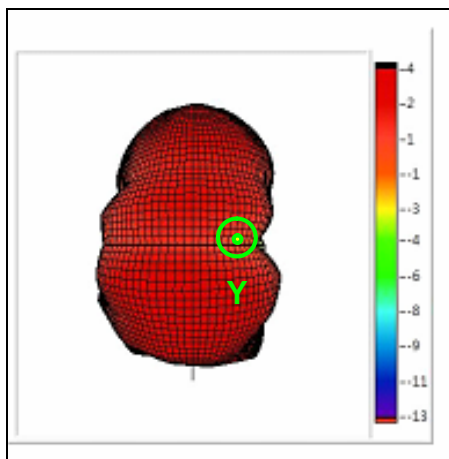
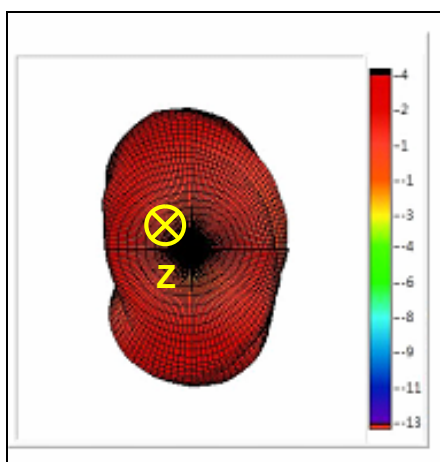
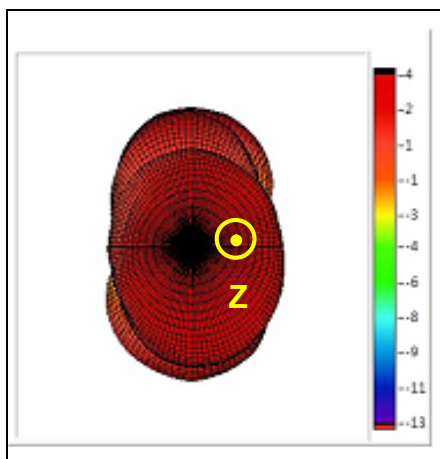
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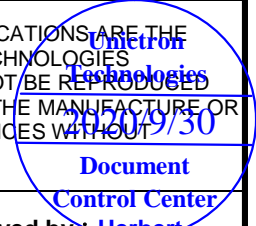
## 9-2. 5150~5850 MHz Band

### 9-2-1.3D Gain Pattern @ 5550 MHz (unit: dBi)



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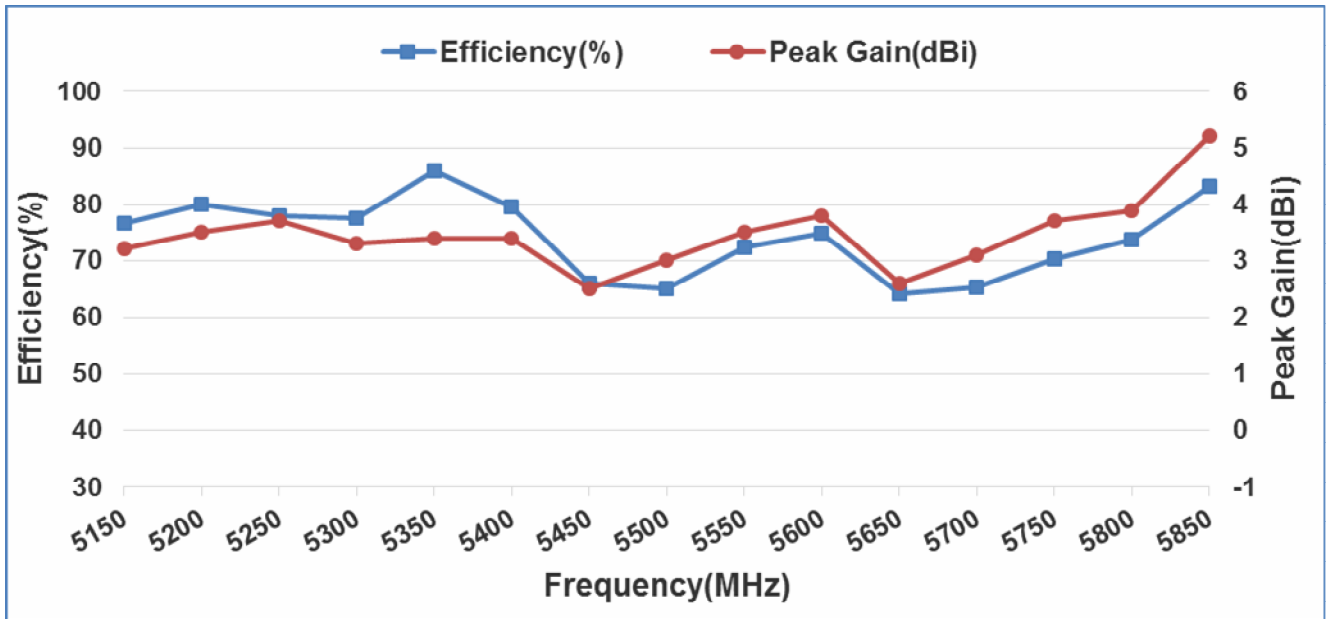
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### 9-2-4. 3D Efficiency Table

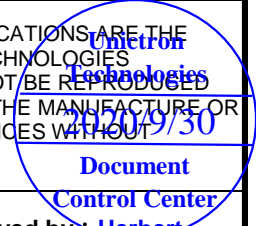
Frequency(MHz)	5150	5200	5250	5300	5350	5400	5450	5500	5550	5600	5650	5700	5750	5800	5850
Efficiency(dB)	-1.2	-1.0	-1.1	-1.1	-0.7	-1.0	-1.8	-1.9	-1.4	-1.3	-1.9	-1.9	-1.5	-1.3	-0.8
Efficiency(%)	76.7	80.0	78.1	77.5	86.0	79.6	65.9	65.0	72.3	74.8	64.1	65.4	70.3	73.6	83.1
Peak Gain(dBi)	3.2	3.5	3.7	3.3	3.4	3.4	2.5	3.0	3.5	3.8	2.6	3.1	3.7	3.9	5.2

### 9-2-5. 3D Efficiency vs. Frequency



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## 10. Package

### 10-1. Weight and Quantity:

10-1-1. Unit Weight:  $0.9 \pm 0.15$  (g)

10-1-2. Quantity:

Each PE Bag: 25 pcs

Each Outer Box: 2500 pcs

10-1-3. Total Weight:

N.W.:  $2.25 \pm 0.5$  kg

G.W.:  $3.65 \pm 0.5$  kg

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.



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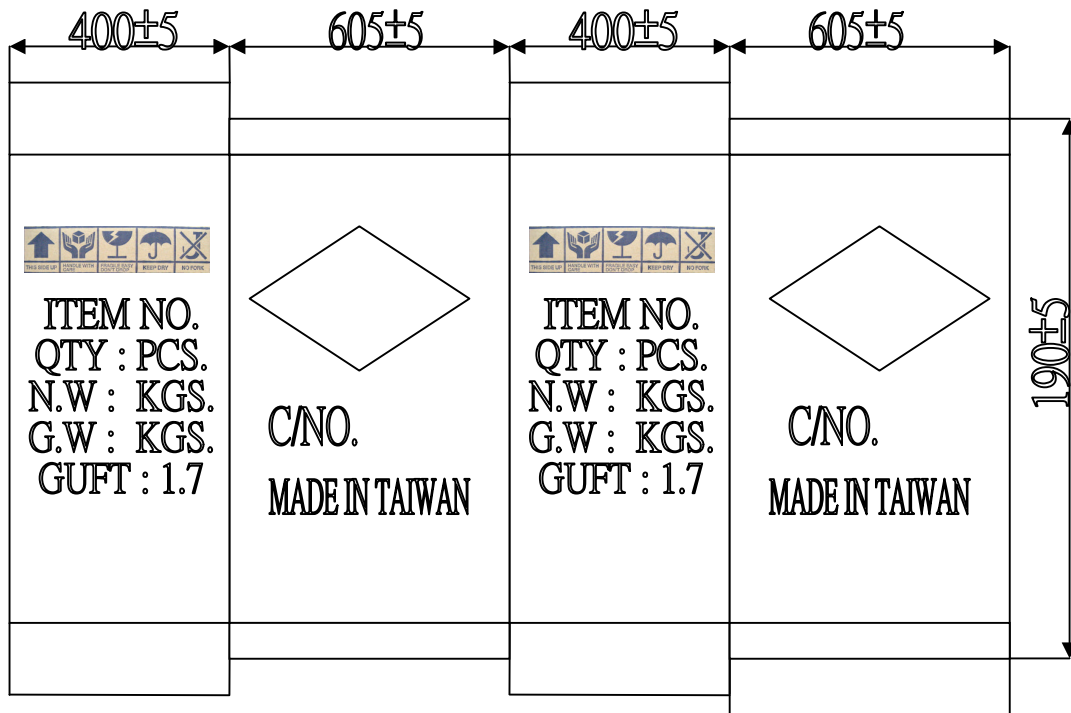
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10-2. Dimensions

10-2-1 Outer Box (605mm\*400mm\*190mm)



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