

# MDL GNCLTEWiFi / U5W 3.0 V / FAKRA C CODE RG174 / SMA

## PLUG & RP-SMA PLUG ALSR200 / 3 M 9

### GNCLTEWiFi36U5W-S3-07-A SPECIFICATION

#### 1. Application

This product shall be applied as an antenna unit in positioning and communication application.

#### 2. Appearance

Antenna Unit (with radome, connector, and cable - refer to an attached drawing)


Dimensions		138*67*11 mm
Radome		#U5W
Connector	GPS	FAKRA C CODE
	LTE Main	SMA PLUG
	LTE Sub	SMA PLUG
	WIFI	RP-SMA PLUG
Cable	GPS	RG-174 / 3 m
	LTE Main	ALSR200 / 3 m
	LTE Sub	ALSR200 / 3 m
	WIFI	ALSR200 / 3 m
Magnet		NO
Adhesive		YES
Label		YES
Weight		521.9 g typ.

#### 3. Operating Condition

Temperature	-40~+90 °C
Humidity	20~95 %RH

#### 4. Storage Condition

Temperature	-40~+90 °C
Humidity	20~95 %RH
Recommended Storage Condition	Store in the indoor condition as listed below : Temperature -20~+45 °C , Humidity 80 % Max.

UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A			INPAQ TECHNOLOGY CO., LTD.	
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DRAWN BY : 蔡繼德	CHECKED BY : 鄭榮謀			
DESIGNED BY : 李昇鴻	APPROVED BY : 蔡凱翔			
TITLE : MDL GNCLTEWiFi / U5W 3.0 V / FAKRA C CODE RG174 / SMA Plug & RP-SMA Plug ALSR200 / 3 M 9 GNCLTEWiFi36U5W-S3-07-A Specification		DOCUMENT NO.	ENS000123300	SPEC REV. A1

## 5. Electrical Specification

\* All value are defined at 25±15 °C, 65±20 %RH, power handling 1 u watt, air pressure 960 ±100 hPa unless otherwise noted.

\* Patch characteristics are measured with the project device in an anechoic chamber.

### 5-1. GPS Patch

Characteristics		Specification
Frequency Range		1540~1610 MHz
Peak Gain	1561 MHz	2.0 dBic
	1575.42 MHz	2.0 dBic
	1602 MHz	2.0 dBic
Polarization		RHCP
VSWR		2.5 typ.
Impedance		50 ohm
Testing Condition		The antenna performance is measured without cable loss.

### 5-2. GPS Filter / LNA

Characteristics		Specification	
Frequency Range		1561~1602 MHz	
Gain	1561 MHz	28.0±3.0 dB	
	1575.42 MHz	28.0±3.0 dB	
	1602 MHz	27.0±3.0 dB	
Noise Figure		3.0 dB typ.	
Filter Out Band Attenuation	F <sub>1</sub> = 1561 MHz	F <sub>1</sub> -50 MHz	> 50 dB
	F <sub>2</sub> = 1602 MHz	F <sub>2</sub> +50 MHz	> 50 dB
Output VSWR		2.0 typ.	
Operation Voltage		3.0 V	
Current		8.0±3.0 mA	

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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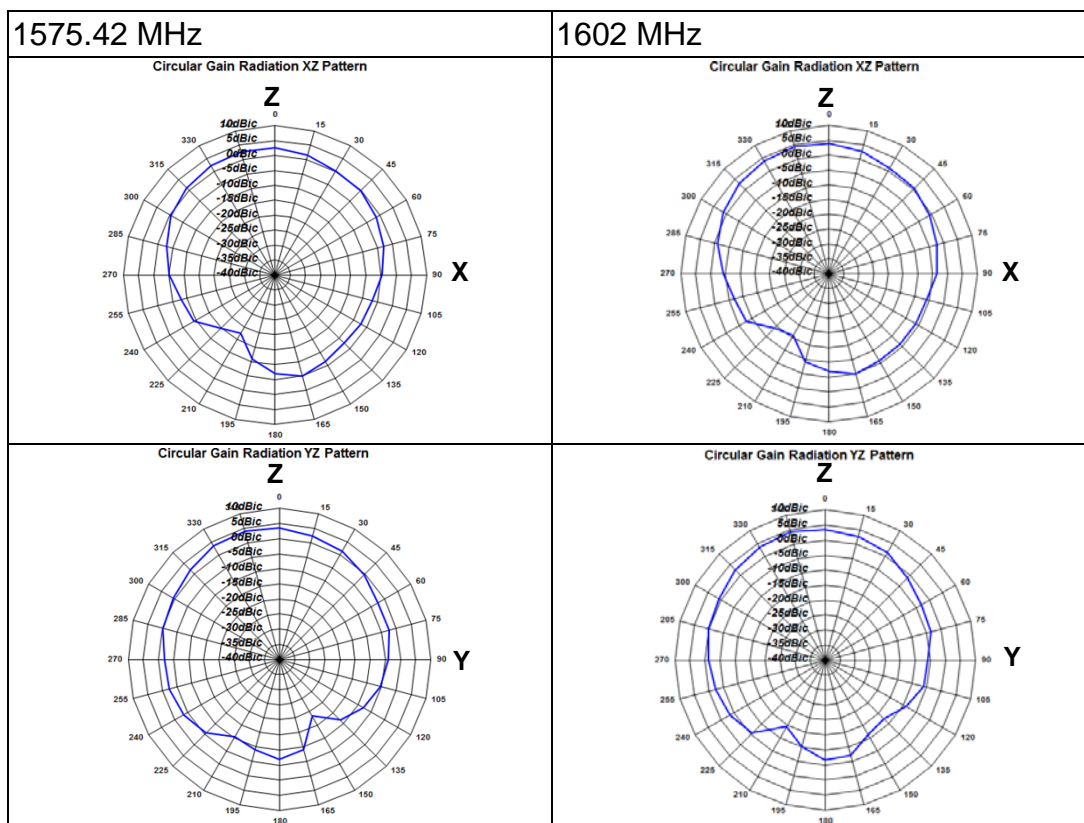
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### 5-3. GPS Overall Specification (Through Antenna, LNA, Without Cable Loss)

Characteristics	Specification	
Frequency Range	1561~1602 MHz	
Gain	1561 MHz	30.0±3.0 dB
	1575.42 MHz	30.0±3.0 dB
	1602 MHz	29.0±3.0 dB
Output VSWR	2.0 typ.	
Operation Voltage	3.0 V	
Current	8.0±3.0 mA	
Testing Condition	The antenna performance is measured without cable loss.	

### 5-4. GPS Patch Antenna Radiation Pattern



UNLESS OTHER SPECIFIED TOLERANCES ON :  
X=N/A      X.X=N/A      X.XX=N/A  
ANGLES=N/A      HOLEDIA=N/A



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### 5-5. LTE Main Antenna

Characteristics	Specification	
Frequency Range	698~729 MHz 814~960 MHz 1710~2170 MHz 2500~2690 MHz	
VSWR	5.0 typ.	
Peak Gain	698~729 MHz	-0.3~1.8 dBi
	814~960 MHz	-0.7~0.5 dBi
	1710~2170 MHz	-0.3~2.3 dBi
	2500~2690 MHz	0.4~1.7 dBi
Average Gain	698~729 MHz	-4.3~-3.2 dBi
	814~960 MHz	-4.2~-3.6 dBi
	1710~2170 MHz	-4.4~-2.4 dBi
	2500~2690 MHz	-3.9~-3.2 dBi
Efficiency	698~729 MHz	37.6~48.3 %
	814~960 MHz	35.3~43.3 %
	1710~2170 MHz	36.0~56.4 %
	2500~2690 MHz	40.5~47.9 %
Testing Condition	The antenna performance is including 3 meter cable loss.	

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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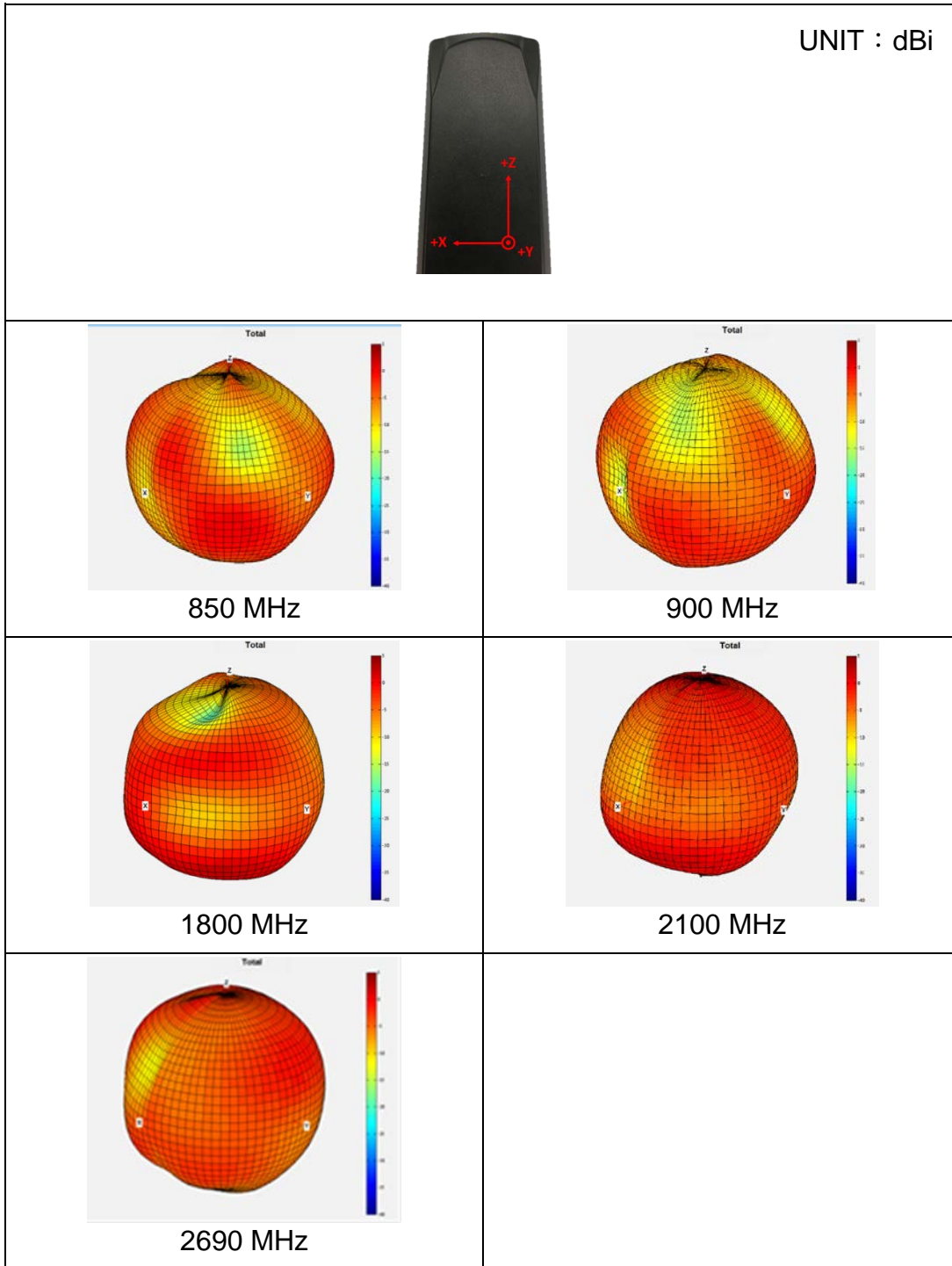
SCALE : N/A      UNIT : mm  
 DRAWN BY : 蔡繼德      CHECKED BY : 鄭榮謀  
 DESIGNED BY : 李昇鴻      APPROVED BY : 蔡凱翔

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 Specification**

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### 5-6. LTE Main Antenna Radiation Pattern



UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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### 5-7. LTE Sub Antenna

Characteristics	Specification	
Frequency Range	698~729 MHz 814~960 MHz 1710~2170 MHz 2500~2690 MHz	
VSWR	5.0 typ.	
Peak Gain	698~729 MHz	-5.7~-4.9 dBi
	814~960 MHz	-2.0~-1.0 dBi
	1710~2170 MHz	-0.3~2.8 dBi
	2500~2690 MHz	-3.7~-0.4 dBi
Average Gain	698~729 MHz	-9.6~-9.2 dBi
	814~960 MHz	-6.3~-4.7 dBi
	1710~2170 MHz	-4.9~-2.6 dBi
	2500~2690 MHz	-7.8~-5.2 dBi
Efficiency	698~729 MHz	10.9~11.9 %
	814~960 MHz	23.4~34.1 %
	1710~2170 MHz	32.4~55.6 %
	2500~2690 MHz	16.8~30.1 %
Testing Condition	The antenna performance is including 3 meter cable loss.	

UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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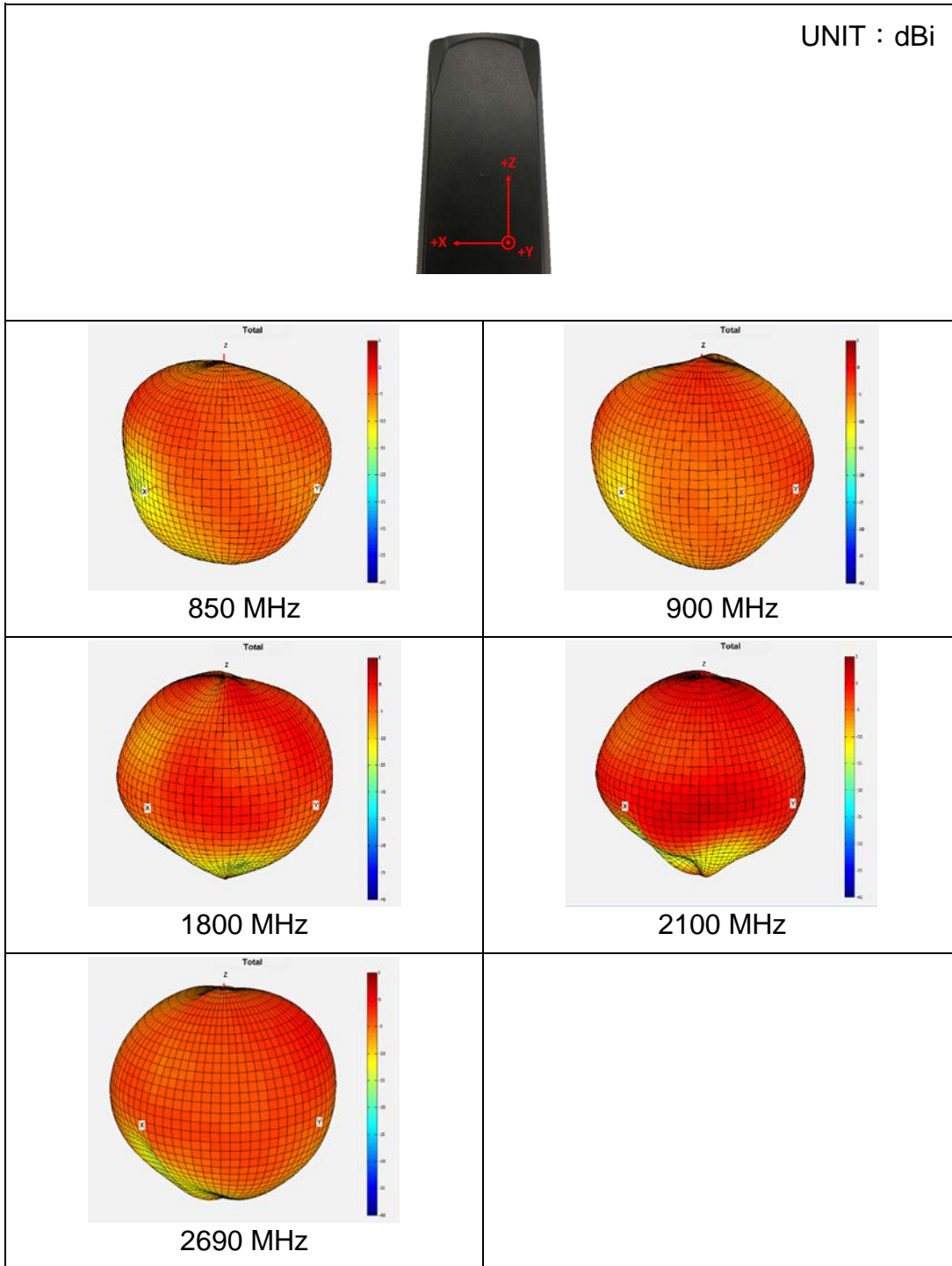
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 DRAWN BY : 蔡繼德      CHECKED BY : 鄭榮謀  
 DESIGNED BY : 李昇鴻      APPROVED BY : 蔡凱翔

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 Specification**

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NO.		A1

### 5-8. LTE Sub Antenna Radiation Pattern



UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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SCALE : N/A      UNIT : mm

DRAWN BY : 蔡繼德      CHECKED BY : 鄭榮謀

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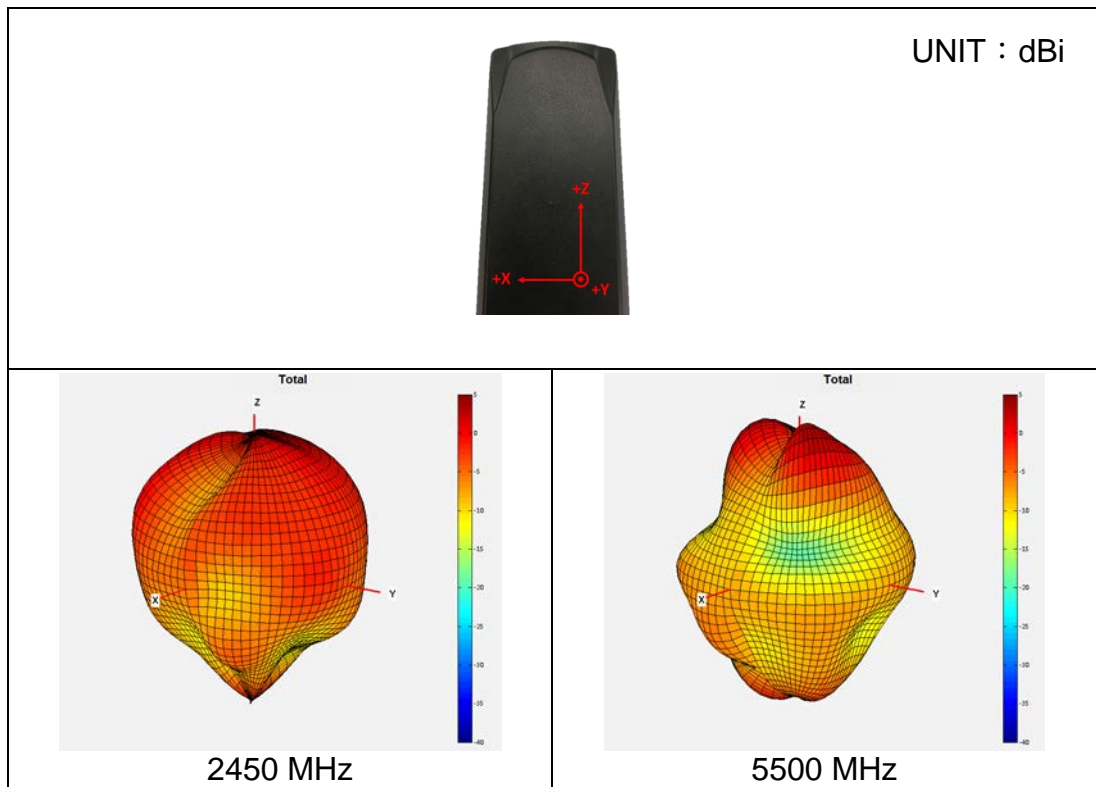
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### 5-9. WIFI Antenna

Characteristics	Specification	
Frequency Range	2400~2500 MHz 5150~5850 MHz	
VSWR	4.0 typ.	
Peak Gain	2400~2500 MHz	-0.6~-0.7 dBi
	5150~5850 MHz	-2.8~-0.2 dBi
Average Gain	2400~2500 MHz	-6.0~-5.2 dBi
	5150~5850 MHz	-7.7~-5.9 dBi
Efficiency	2400~2500 MHz	25.0~30.1 %
	5150~5850 MHz	17.3~26.1 %
Testing Condition	The antenna performance is including 3 meter cable loss.	

### 5-10. WIFI Antenna Radiation Pattern



UNLESS OTHER SPECIFIED TOLERANCES ON :  
X=N/A      X.X=N/A      X.XX=N/A  
ANGLES=N/A      HOLEDIA=N/A



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DESIGNED BY : 李昇鴻      APPROVED BY : 蔡凱翔

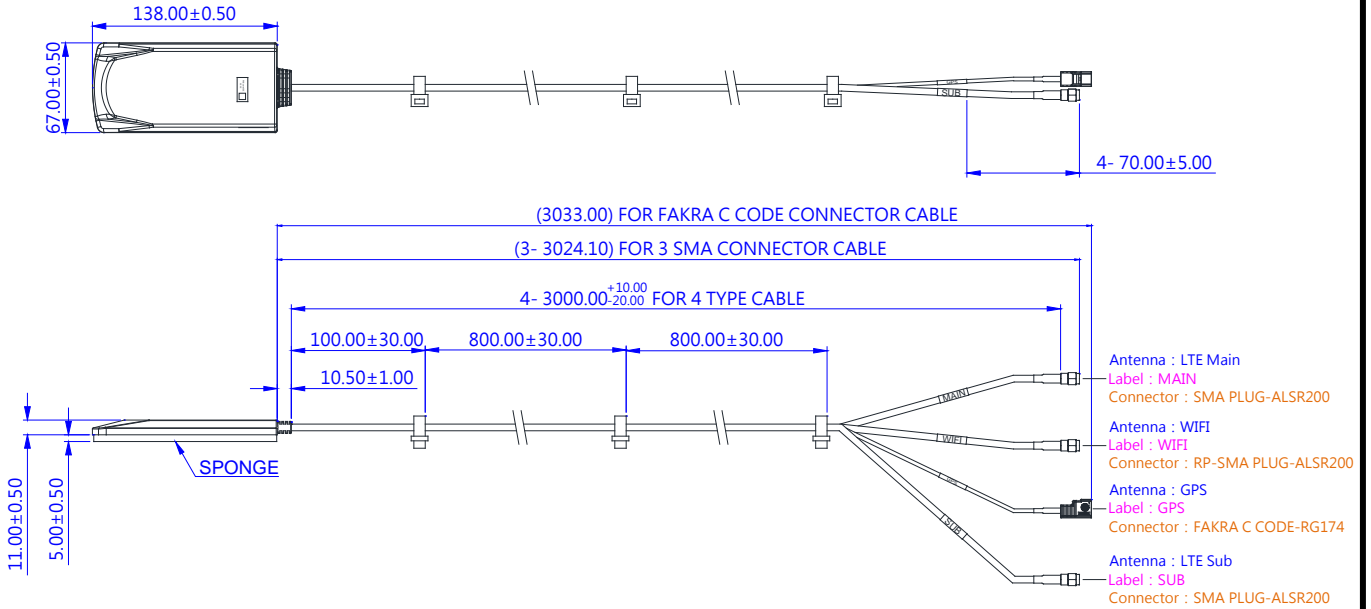
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Specification

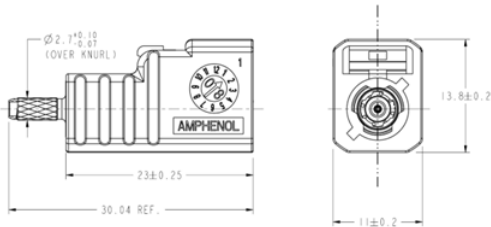
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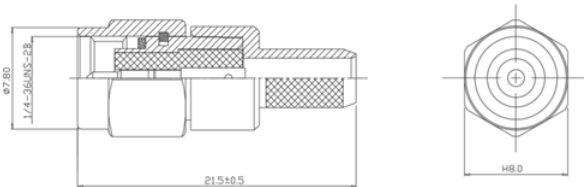
## 6. Antenna Dimensions



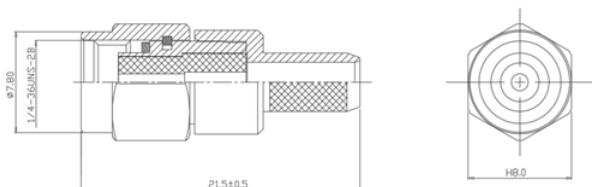
### 6-1. Connector Appearance (FAKRA C CODE-RG174)



### 6-2. Connector Appearance (SMA PLUG-ALSR200)



### 6-3. Connector Appearance (RP-SMA PLUG-ALSR200)



UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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SCALE : N/A

UNIT : mm

DRAWN BY : 蔡繼德

CHECKED BY : 鄭榮謀

DESIGNED BY : 李昇鴻

APPROVED BY : 蔡凱翔

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DOCUMENT

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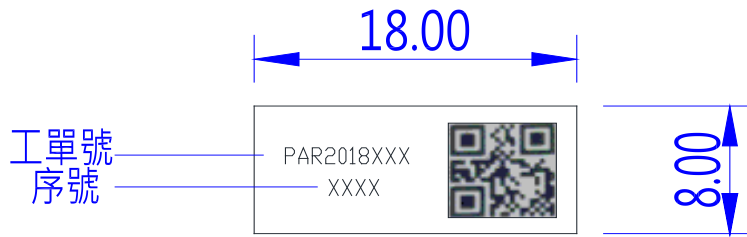
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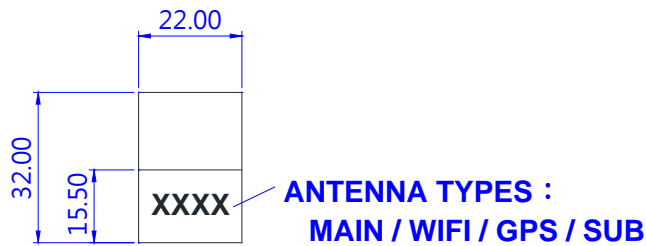
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### 6-4. Label Information

Label on antenna housing



Label for cable



UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>
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		ENS000123300
		SPEC REV.
		A1

## 7. Product Photo(s)



UNLESS OTHER SPECIFIED TOLERANCES ON :  
 X=N/A      X.X=N/A      X.XX=N/A  
 ANGLES=N/A      HOLEDIA=N/A



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## 8. Package Specification

1 pcs products per PE bag (500\*380\*0.06 mm)



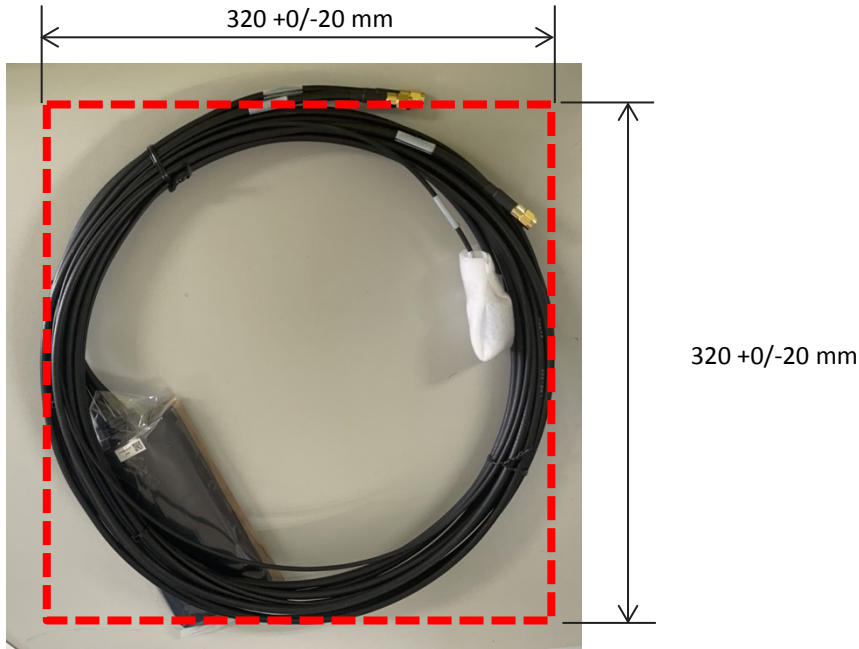
20 pcs products per carton (370\*330\*430 mm)



UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION
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## 9. Additional Requirement

Bundle size must less than red square frame (320 \* 320 mm)



Antenna sponge is covered by a cardboard in PE bag



UNLESS OTHER SPECIFIED TOLERANCES ON : X=N/A      X.X=N/A      X.XX=N/A ANGLES=N/A      HOLEDIA=N/A		 <b>INPAQ TECHNOLOGY CO., LTD.</b>	THIS DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF INPAQ TECHNOLOGY CO.,LTD.AND SHALL NOT BE REPRODUCED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS OR DEVICES WITHOUT PERMISSION	
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