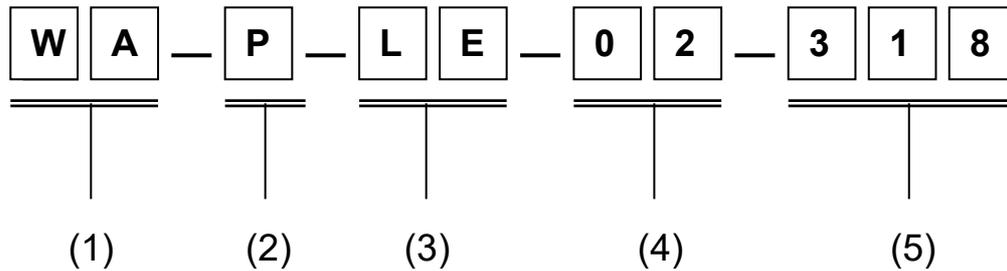


## Embedded Multi-Band Antenna for WA-P-LE-02-318

### 1.Explanation of part number :



- (1) Product type : Wireless Antenna
- (2) Material : PCB
- (3) Frequency : 2400~2500 / 5150~5850 /5925~7125MHz
- (4) Coaxial Cable Type : Black Cable
- (5) Suffix : 318

### 2. Electrical Specification :

Ant. Part Number (main & aux parts)	Type	Highest Peak Gain with Cable Loss (dBi)		Cable loss (dB)		Connector Type	Cable Length (mm)	Laptop/ Host Model
		2400~2500 MHz	5150~7125 MHz	2400~2500 MHz	5150~7125 MHz			
Aux: INPAQ P/N: WA-P-LE-02-318 ASUS P/N 14008-06010200	PIFA	2.91	4.31	0.97	1.70	I-PEX MHF4-L	349	UM5606

Antenna Type	PIFA Antenna For WIFI 802.11a/b/g/n/ac/ax	
Connector Type	I-PEX MHF4-L Connector	
Cable Type	OD 1.13 LLS RF Cable	
Impedance	50Ω	
Polarization	Linear	
Radiation Pattern	Omni-directional	
Frequency Range	WLAN 802.11a/b/g/n/ac/ax	2.4~2.5GHz & 5.15~7.125 GHz
VSWR	WLAN 802.11a/b/g/n/ac/ax	≤ 3.5
Operation Temperature	-10°C ~+55°C	
Storage Temperature	-30°C ~+75°C	
Return Loss	≤ -6 dB	
Max Power	1W	

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.**

SCALE : N/A

UNIT : mm

DRAWN BY: 周敬晨

CHECKED BY: 鄭榮謀

DESIGNED BY: 張建焜

APPROVED BY: 宋承翰

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WA-P-LE-02-318**

**DOCUMENT  
NO.**

**ENS000194410**

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**P0**

### 5. Electrical Specification :

Those specifications were specially defined for UM5606 model, and all characteristics were measured under the model's handset testing jig.

#### 5-1. Frequency Band :

Frequency Band	MHz	MHz
Wi-Fi 6e	2400~2500	5150~7125

#### 5-2. Impedance :

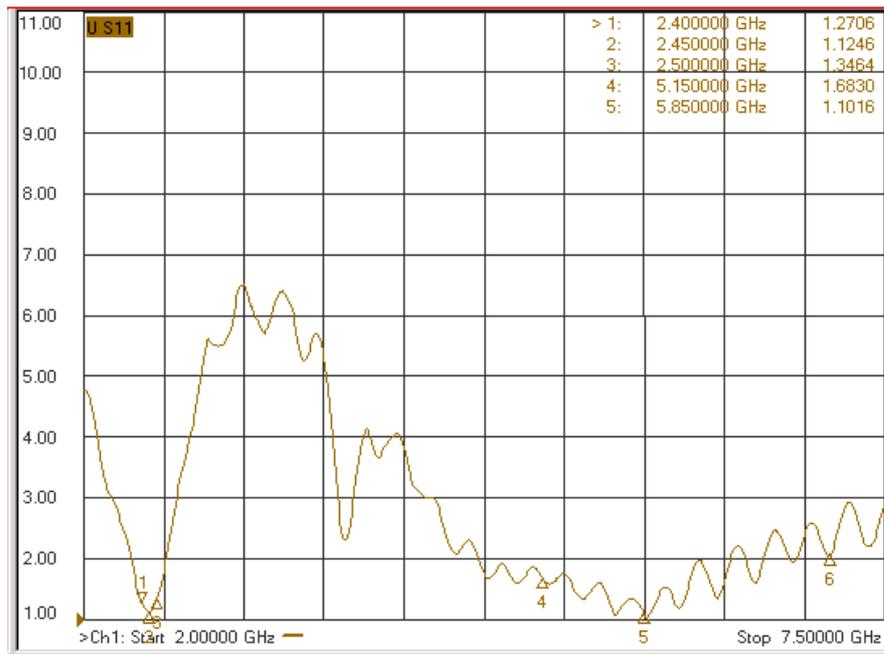
50 ohm nominal

#### 5-3. Matching circuit :

None

#### 5-4. Return loss/VSWR :

Frequency(MHz)	2400	2500	5150	5850	7125
VSWR	1.27	1.34	1.68	1.10	2.03



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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DOCUMENT NO.      ENS000194410

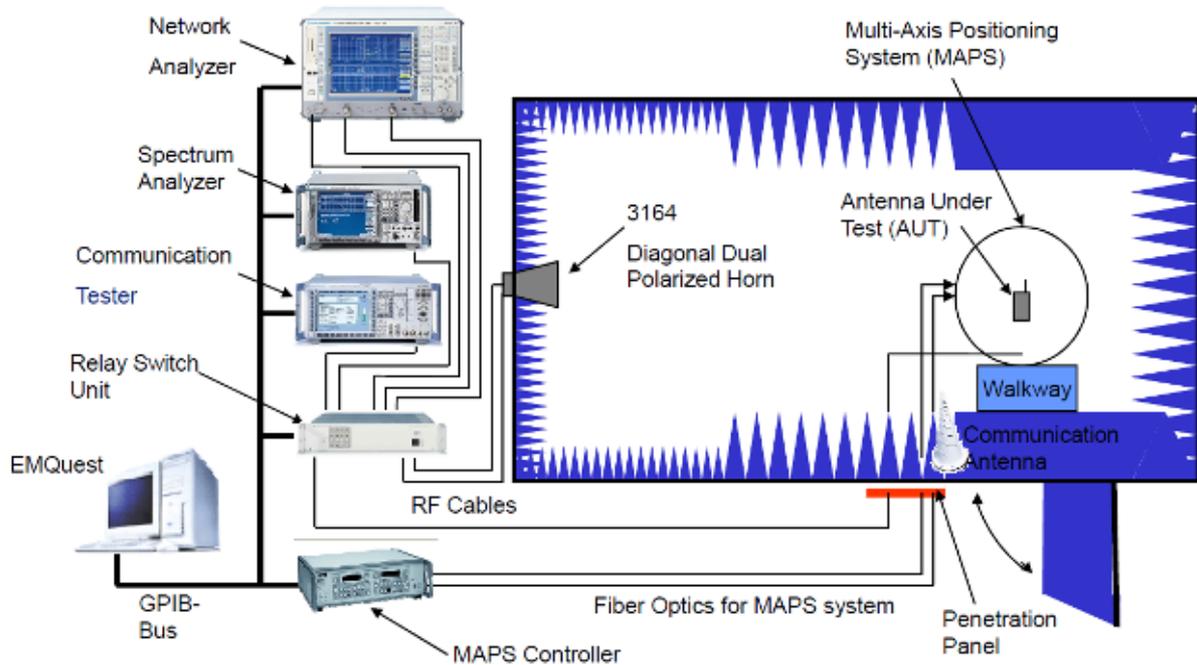
SPEC REV.      P0

### 5-5 Gain and Radiation Pattern

#### 5-5.1 Measure method

1. Using a low loss coaxial cable to link a standard handset jig
2. Fixed this handset jig on chamber's rotator plane
3. Linking jig into network analyzer port and using a probing horn antenna to collect data.
4. Using another standard gain horn antenna to calibrated those data

#### 5-5.2 Chamber definition



1. An anechoic chamber (10mx3mx3m) which satisfied far-field condition was applied to avoid multi-path effect
2. The quiet room region is 50cmx50cmx50cm at the center of rotator
3. The distance between DUT and standard antenna is 9.14m
4. Two measurement antennas is 3164-06 (300MHz - 6GHz) and 3164-05 (2 - 18GHz)

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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UNIT : mm

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ENS000194410

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### 5-5.3 Gain data and radiation pattern

Antenna gain is marked (dBi) and is based on **STANDARD HORN** antenna. The data shows Peak-Gain and Average-Gain.

Frequency (MHz)	Aux Gain Data		
	Three-dimensional peak (dBi)	Average (dBi)	Efficiency(%)
2400	2.91	-3.79	41.78
2412	2.74	-3.71	42.56
2437	2.62	-3.70	42.66
2462	2.67	-3.59	43.75
2500	2.66	-3.96	40.18
5150	3.43	-5.29	29.58
5250	3.51	-4.96	31.92
5350	3.67	-4.66	34.20
5470	3.98	-4.26	37.50
5600	4.19	-4.04	39.45
5725	4.28	-4.05	39.36
5785	4.21	-3.98	39.99
5850	4.27	-4.36	36.64
5895	4.25	-4.11	38.82
5925	4.31	-3.76	42.07
6125	4.29	-3.83	41.40
6425	4.11	-4.36	36.64
6525	4.19	-4.43	36.06
6725	2.60	-4.75	33.50
6875	2.50	-4.89	32.43
6925	2.53	-5.22	30.06
7125	2.24	-5.27	29.72

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.**

SCALE : N/A

UNIT : mm

DRAWN BY: 周敬晨

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DESIGNED BY: 張建焜

APPROVED BY: 宋承翰

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Frequency (MHz)	Cable loss
2400-2500	0.97
5150-5250	1.44
5250-5350	1.46
5470-5725	1.49
5725-5850	1.51
5850-5925	1.52
5925-6425	1.58
6425-6525	1.62
6525-6875	1.65
6875-7125	1.70

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.**

SCALE : N/A

UNIT : mm

DRAWN BY: 周敬晨

CHECKED BY: 鄭榮謀

DESIGNED BY: 張建焜

APPROVED BY: 宋承翰

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TITLE : Embedded Multi-Band Antenna for  
 WA-P-I-E-02-318

DOCUMENT  
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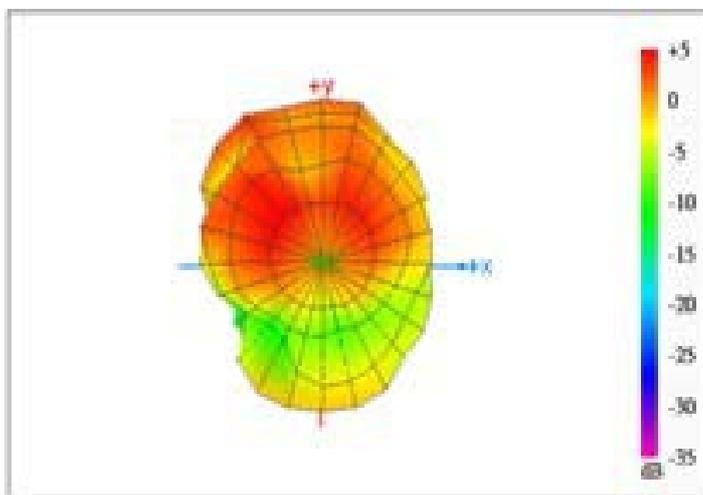
**ENS000194410**

SPEC REV.  
**P0**

Auxiliary Antenna

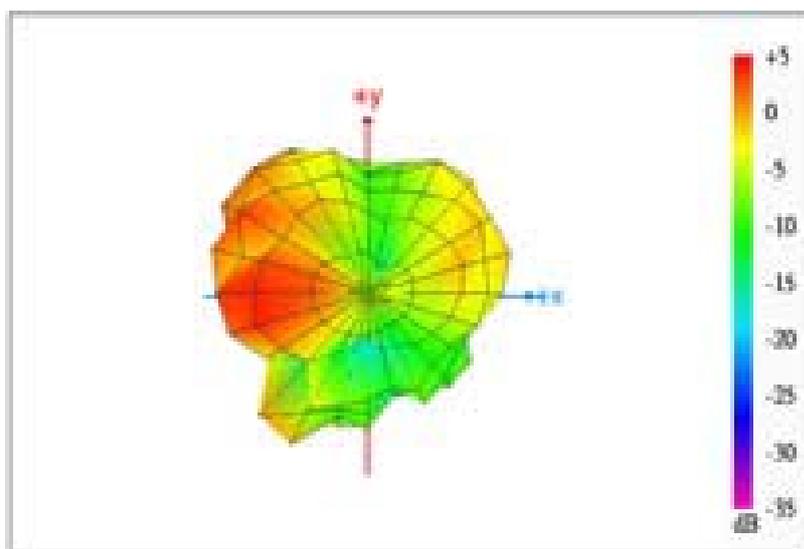
Max Antenna 3D Radiation Pattern 2400 – 2483.5 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
2400-2483.5	2.91



Max Antenna 3D Radiation Pattern 5150-5250 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5150-5250	3.51



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.

SCALE : N/A      UNIT : mm  
 DRAWN BY: 周敬晨      CHECKED BY: 鄭榮謀  
 DESIGNED BY: 張建焜      APPROVED BY: 宋承翰

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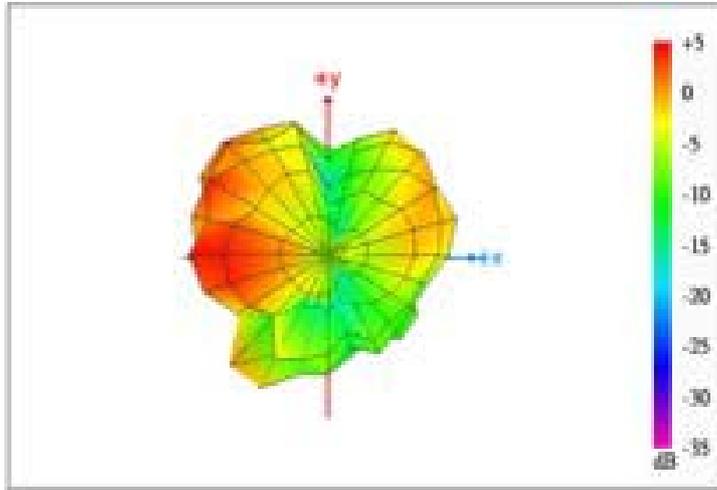
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DOCUMENT NO.      ENS000194410

SPEC REV.      P0

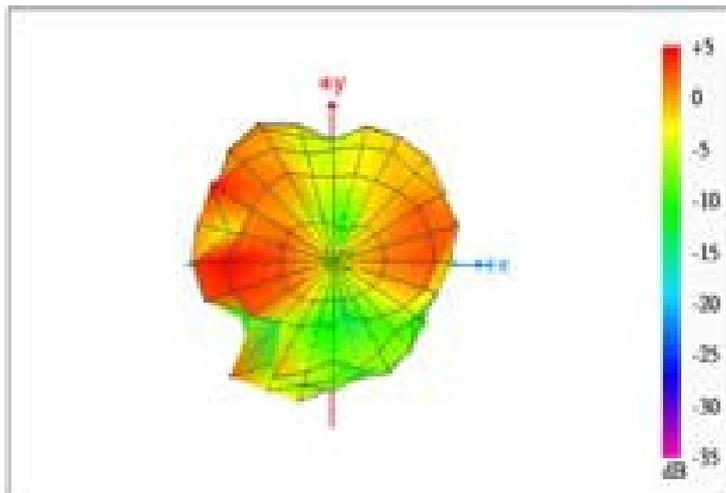
Max Antenna 3D Radiation Pattern 5250-5350 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5250-5350	3.67



Max Antenna 3D Radiation Pattern 5470-5725 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5470-5725	4.28



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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UNIT : mm

DRAWN BY: 周敬晨

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DESIGNED BY: 張建焜

APPROVED BY: 宋承翰

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TITLE : Embedded Multi-Band Antenna for  
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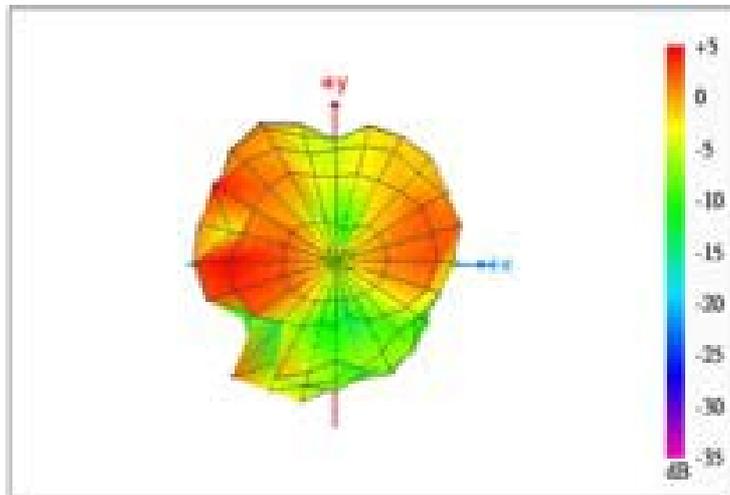
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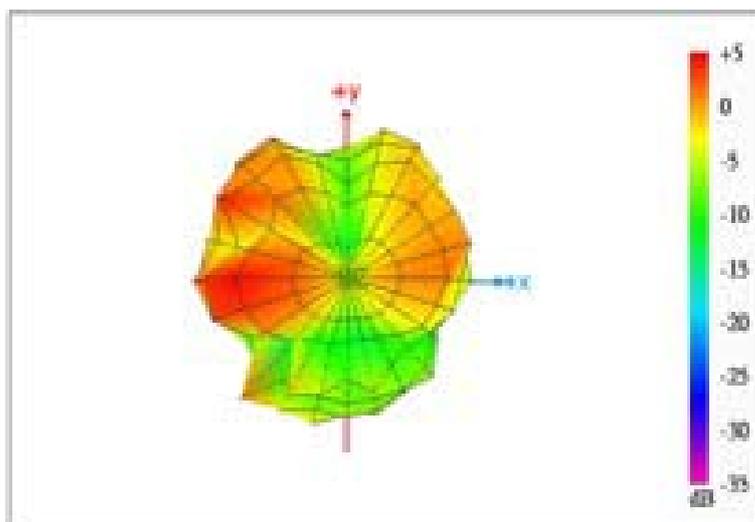
## Max Antenna 3D Radiation Pattern 5725-5850 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5725-5850	4.28



## Max Antenna 3D Radiation Pattern 5850-5895 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5850-5895	4.27



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.

SCALE : N/A

UNIT : mm

DRAWN BY: 周敬晨

CHECKED BY: 鄭榮謀

DESIGNED BY: 張建焜

APPROVED BY: 宋承翰

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TITLE : Embedded Multi-Band Antenna for  
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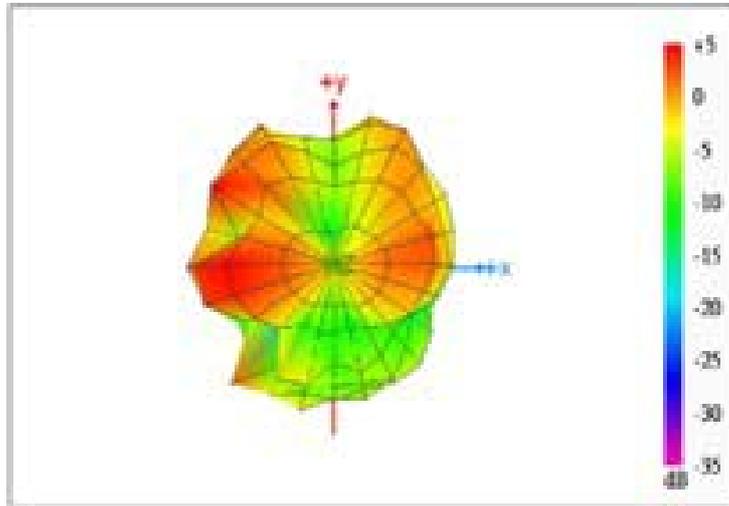
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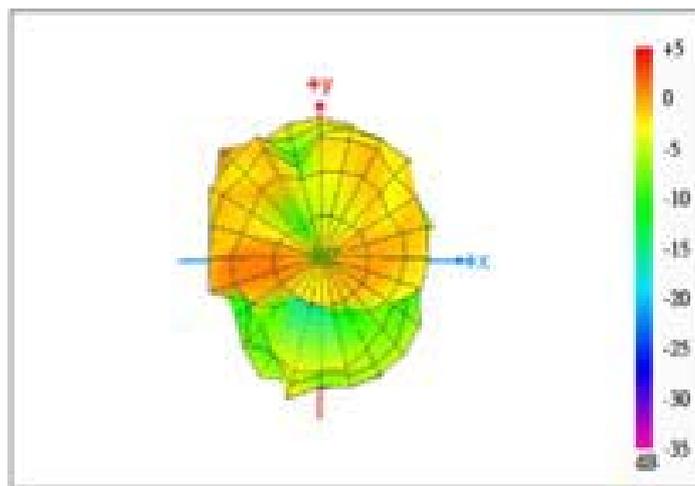
### Max Antenna 3D Radiation Pattern 5925-6425 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
5925-6425	4.31



### Max Antenna 3D Radiation Pattern 6425-6525 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6425-6525	4.19



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: 周敬晨      CHECKED BY: 鄭榮謀  
 DESIGNED BY: 張建焜      APPROVED BY: 宋承翰

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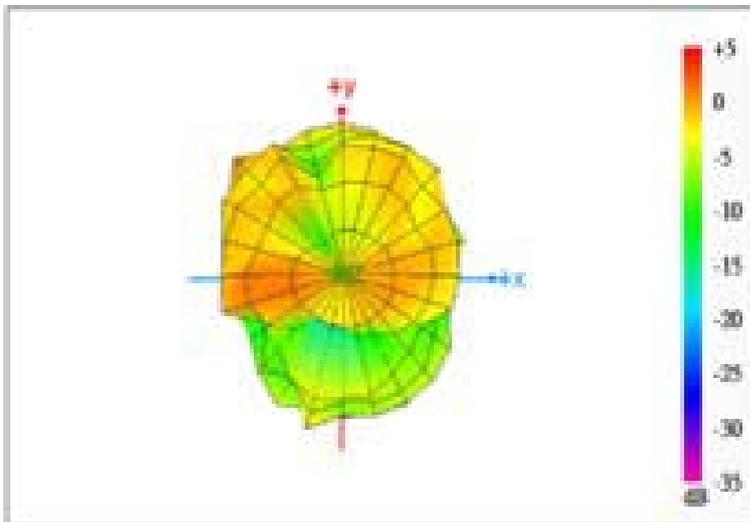
TITLE : Embedded Multi-Band Antenna for  
 WA-P-1-E-02-318

DOCUMENT NO.      ENS000194410

SPEC REV.      P0

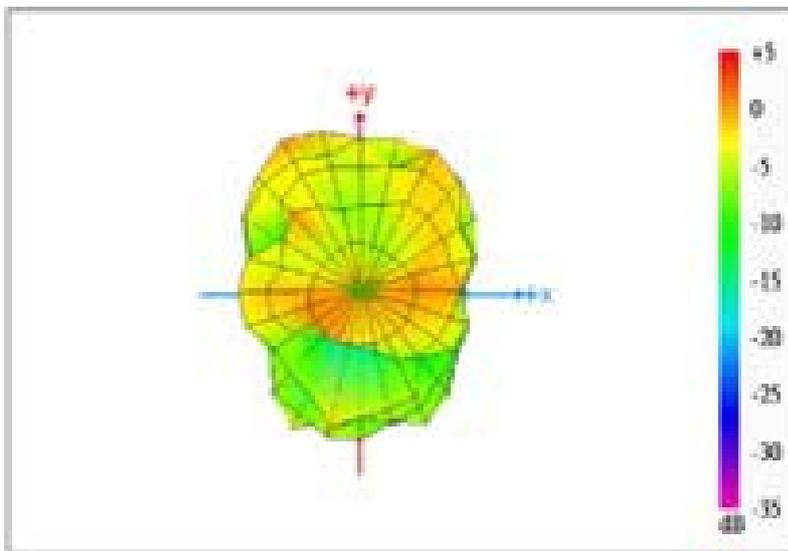
### Max Antenna 3D Radiation Pattern 6525-6875 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6525-6875	4.19



### Max Antenna 3D Radiation Pattern 6875-7125 MHz

Frequency (MHz)	Peak Gain w/ Cable Loss (dBi)
6875-7125	2.53



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: 周敬晨

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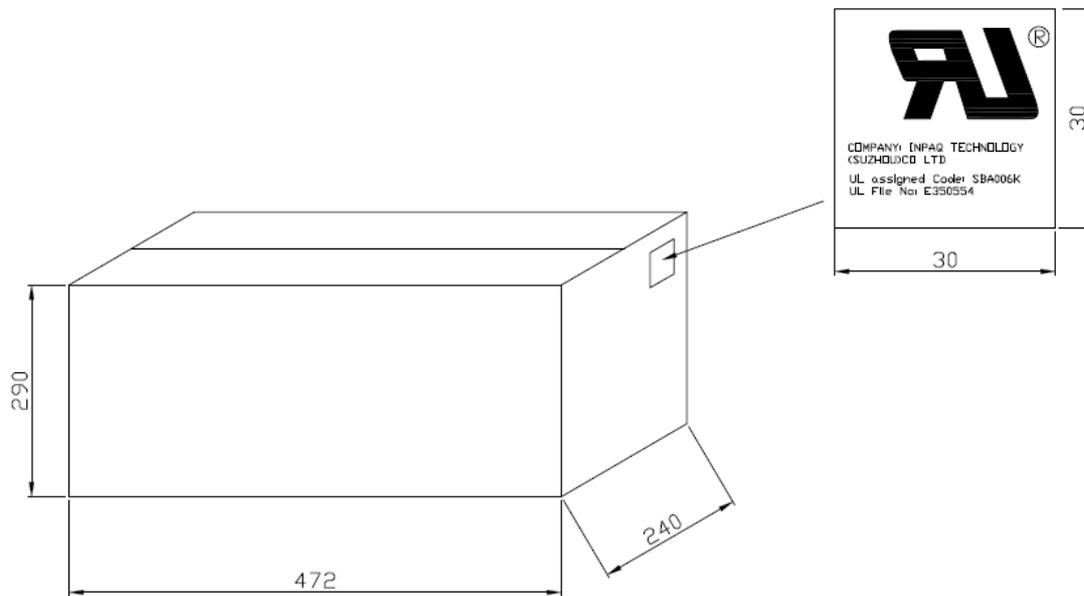
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6. 外箱貼附 Cable 的 UL 標籤：

The appearance of cable UL label is according to drawing Figure 7-1-1



帶線材的產品出貨時皆需貼附此標籤

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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DESIGNED BY: 張建焜	APPROVED BY: 宋承翰			
TITLE : Embedded Multi-Band Antenna for WA-P-I-E-02-318		DOCUMENT NO.	ENS000194410	SPEC REV. P0