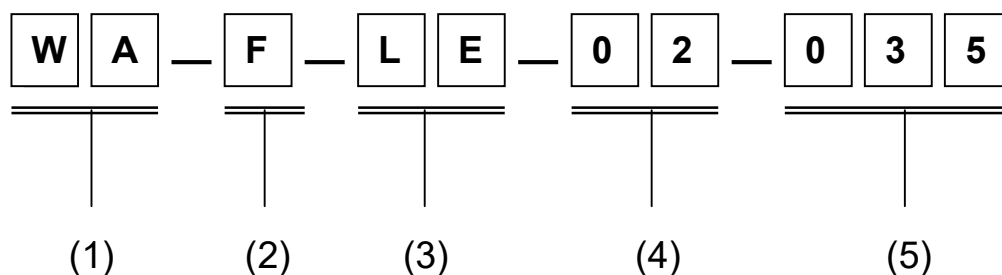


Embedded Multi-Band Antenna for WA-F-LE-02-035

1. Explanation of part number :



1. Product Type : Wireless Antenna
2. Material : FPCB
3. Frequency/Band code : 2400~2500 & 5150~7125MHz
4. Coaxial Cable Type : Black Coaxial Cable
5. Suffix : 035

2. Electrical Specification :

Ant. Part Number (main & aux parts)	Type	Highest Peak Gain with Cable Loss (dBi)		Cable loss (dB)		Connector Type	Cable length	Laptop/ Host Model
		2400~2500	5150~7125	2400~2500	5150~7125			
		MHz	MHz	MHz	MHz			
Main: INPAQ P/N: WA-F-LE-02-035 ASUS P/N: 14008-05570000	PIFA	2.8	4.3	0.85	1.34	I-PEX MHF4-L	260mm	H7604

Antenna Type	PIFA Antenna For WIFI 802.11a/b/g/n/ac/ax	
Connector Type	I-PEX MHF4-L Connector 20565-001R-13	
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=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

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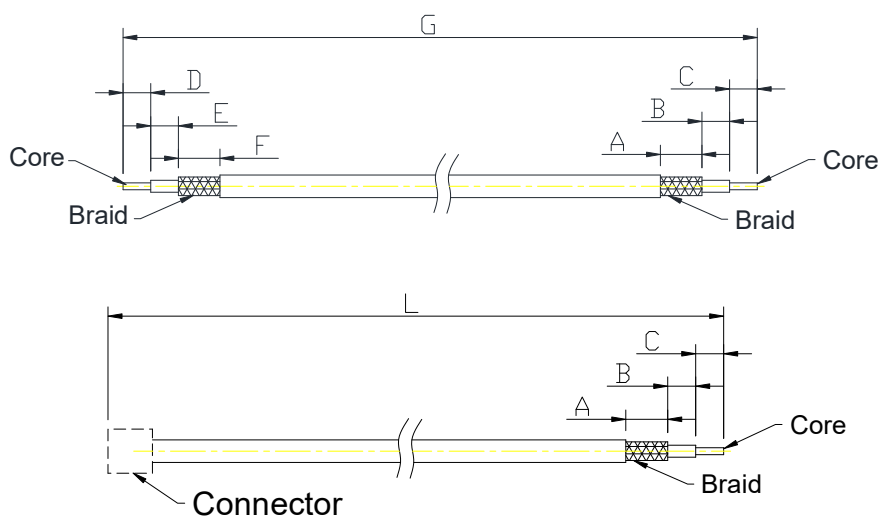
TITLE : Embedded Multi-Band Antenna for
WA-F-LE-02-035

DOCUMENT
NO.

SPEC REV.
P0

4. RF Connector :

4-1 Cable Dimension :



Connector : I-PEX MHF-4L ; Cable : RF Cable ϕ 1.13 Low Loss (Black)

L : 279.0 \pm 2.0

D : 1.2 \pm 0.15

A : 3.0 \pm 0.5(沾錫)

E : 0.72 \pm 0.15

B : 1.0 \pm 0.5

F : 1.00 \pm 0.15

C : 1.0 \pm 0.5(沾錫)

G : 278.0 \pm 2.0

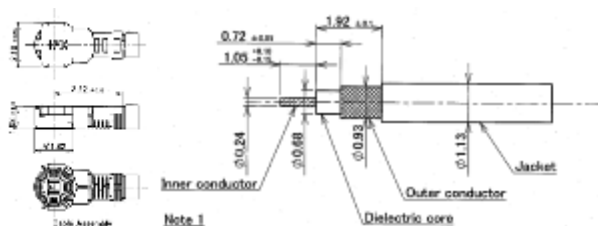
unit : mm

4-1.1 Electric SPEC :

短路/斷路測試 : (使用三用電表量測)

- 心線與 Braid wires 間不可短路。
- Connector 之 Ground 與線路另一端之 Braid wires 間不可斷路。
- Connector 之心線與線路另一端之心線間不可斷路。

4-1.2 Connector Appearance : I-PEX MHF-4L (此為示意圖)



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=±

X.X=±

X.XX=±

ANGLES=±

HOLEDIA=±



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UNIT : mm

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WA-F-LE-02-035

DOCUMENT
NO.

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5. Electrical Specification :

Those specifications were specially defined for H7604 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 :

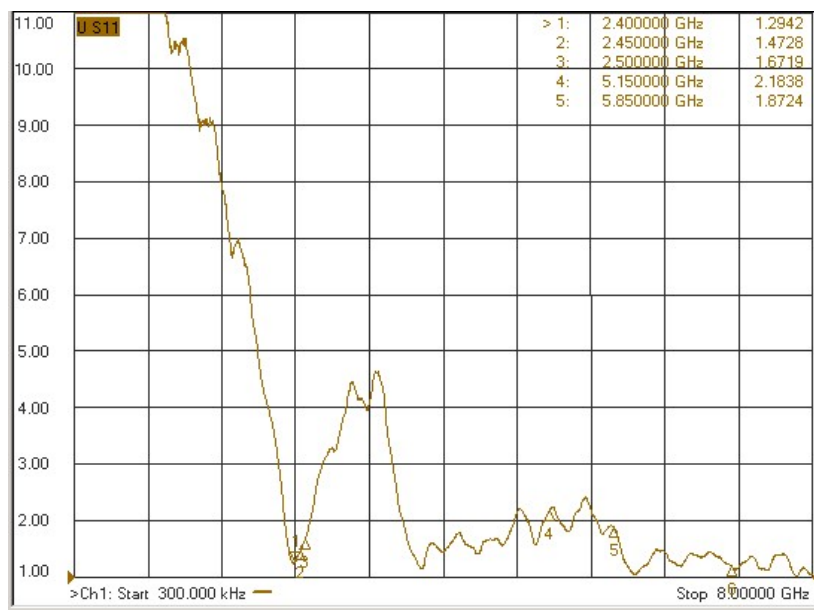
50 ohm nominal

5-3. Matching circuit :

None

5-4. Return loss/VSWR :

Frequency(MHz)	2400	2500	5150	5850	7125
Main VSWR(dB)	1.29	1.67	2.18	1.87	1.35



UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

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 WA-F-LE-02-035

DOCUMENT NO.

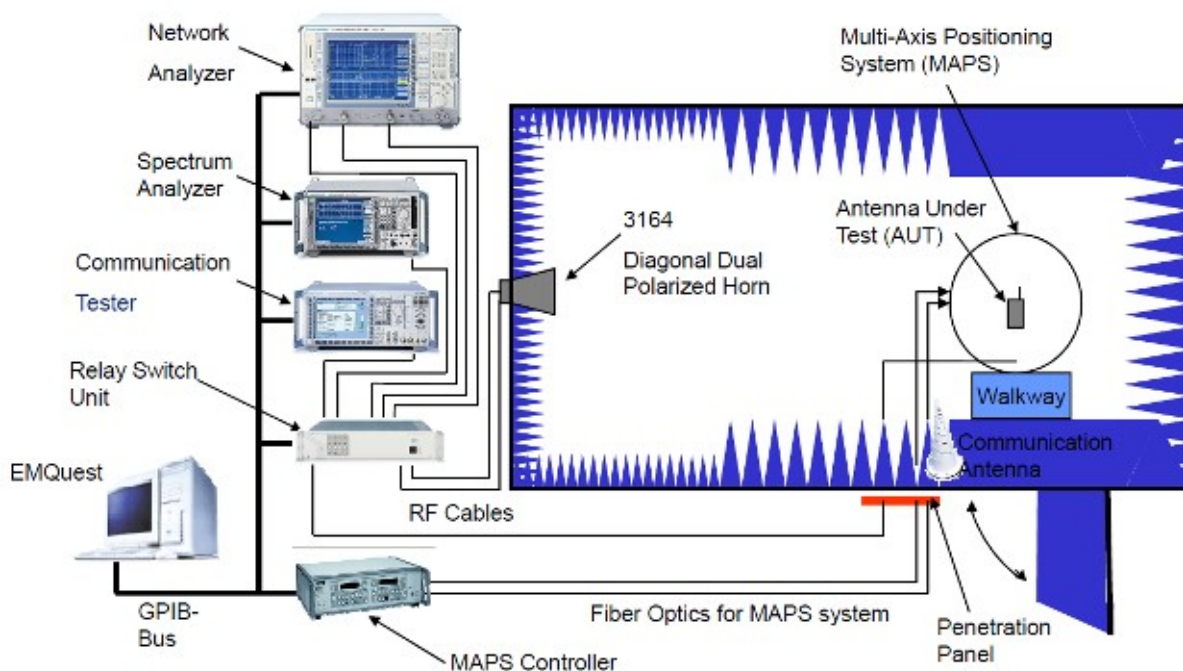
SPEC REV.
 P0

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=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

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TITLE : Embedded Multi-Band Antenna for
 WA-F-LE-02-035

DOCUMENT NO.

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5-5.3 Gain data and radiation pattern

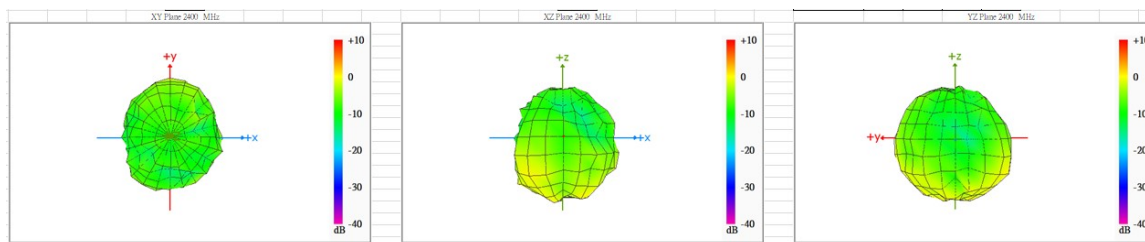
Antenna gain is marked (dBi) and is based on **STANDARD HORN** antenna. The data shows Peak-Gain and Average-Gain.

Frequency (MHz)	Main		
	Efficiency (dB)	Efficiency (%)	3D Peak gain (dBi)
2400	-4.3	37%	2.7
2412	-4.5	35%	2.2
2437	-5.1	31%	1.3
2462	-5.5	28%	2.8
2500	-4.5	36%	1.6
5150	-4.8	33%	3.5
5250	-4.9	32%	3.3
5350	-4.8	33%	3.5
5470	-5.5	28%	3.9
5600	-5.9	26%	3.2
5725	-5.3	30%	4.0
5780	-5.8	27%	3.7
5850	-5.5	28%	3.8
5895	-5.0	31%	3.7
5925	-4.9	32%	3.5
6125	-3.9	41%	3.9
6425	-3.9	41%	3.0
6525	-4.1	39%	2.9
6725	-3.3	46%	4.3
6875	-3.9	40%	3.5
6925	-4.1	39%	3.3
7125	-3.4	46%	3.9

UNLESS OTHER SPECIFIED TOLERANCES ON :			INPAQ TECHNOLOGY CO., LTD.
X=±	X.X=±		
ANGLES=±		HOLEDIA=±	
SCALE : N/A	UNIT : mm	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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DESIGNED BY:林易暄	APPROVED BY:張建焜		
TITLE : Embedded Multi-Band Antenna for WA-F-LE-02-035		DOCUMENT NO.	SPEC REV. P0

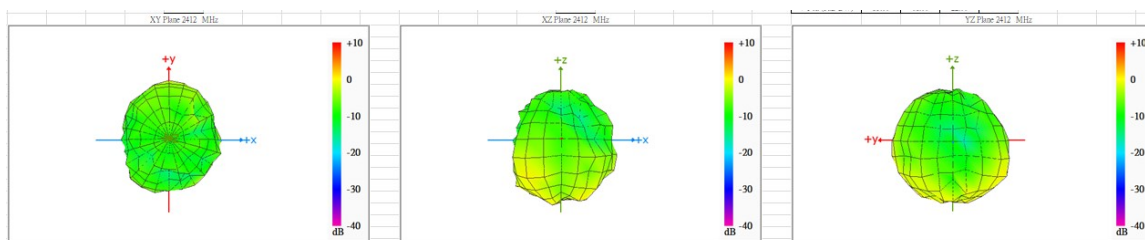
2400-2500MHz radiation characteristic

Main antenna: 2400 MHz



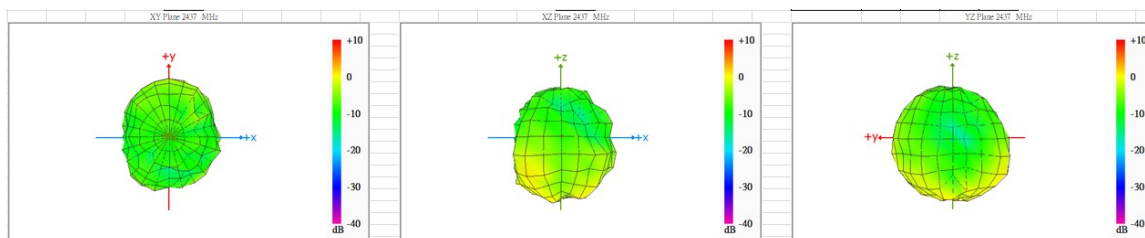
Center Frequency	2400 MHz
Three-dimensional (dBi) peak	2.7

Main antenna: 2412 MHz



Center Frequency	2412 MHz
Three-dimensional (dBi) peak	2.2

Main antenna: 2437 MHz



Center Frequency	2437 MHz
Three-dimensional (dBi) peak	1.3

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



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SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

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DESIGNED BY:林易暄

APPROVED BY:張建焜

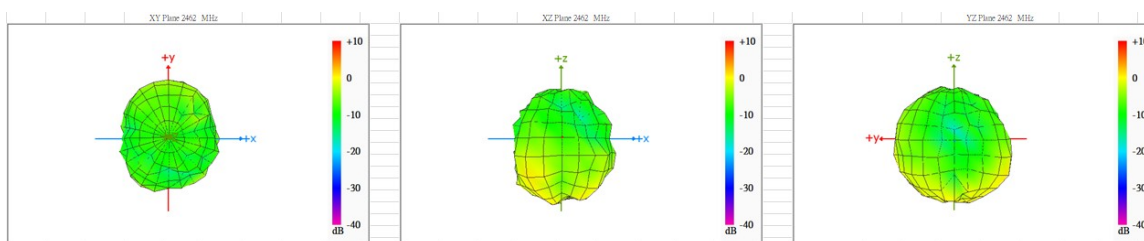
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 WA-F-LE-02-035

DOCUMENT
 NO.

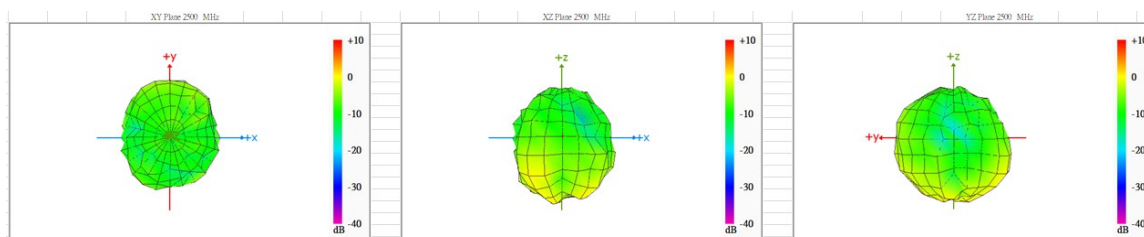
SPEC REV.
P0

Main antenna: 2462 MHz



Center Frequency	2462 MHz
Three-dimensional (dBi) peak	2.8

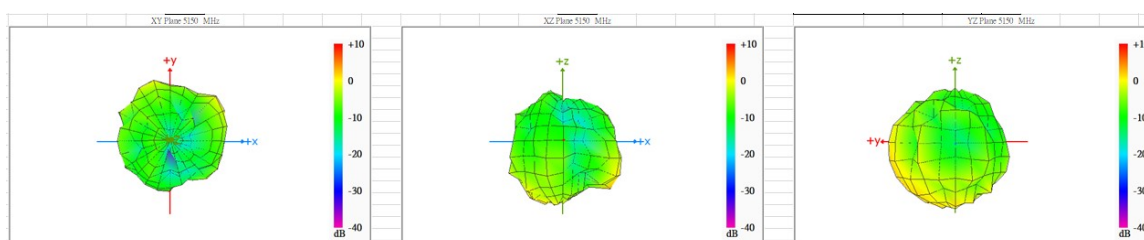
Main antenna: 2500 MHz



Center Frequency	2500 MHz
Three-dimensional (dBi) peak	1.6

5150-5350MHz radiation characteristic

Main antenna: 5150 MHz



Center Frequency	5150 MHz
Three-dimensional (dBi) peak	3.5

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

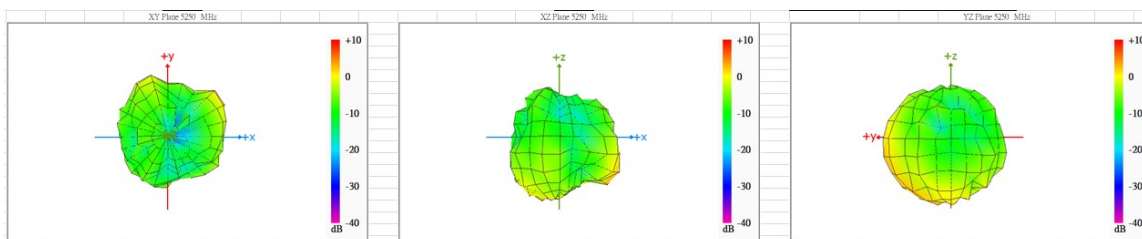
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 WA-F-LE-02-035

DOCUMENT
 NO.

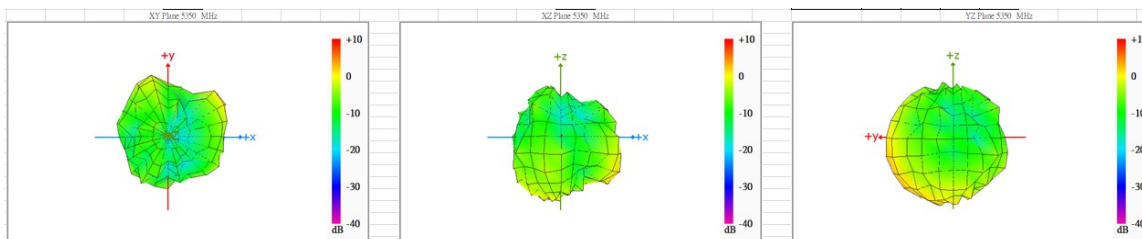
SPEC REV.
P0

Main antenna: 5250 MHz



Center Frequency	5250 MHz
Three-dimensional (dBi) peak	3.3

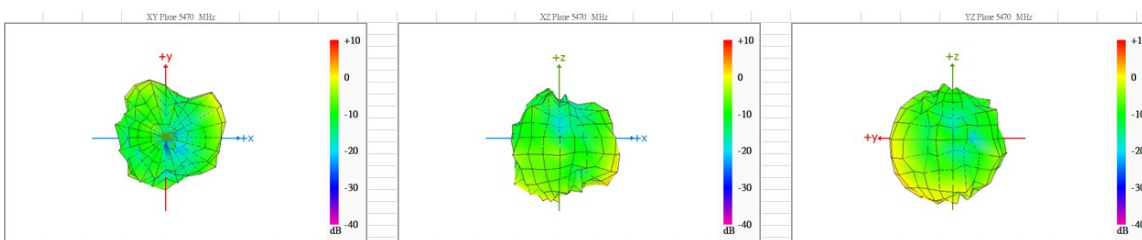
Main antenna: 5350 MHz



Center Frequency	5350 MHz
Three-dimensional (dBi) peak	3.5

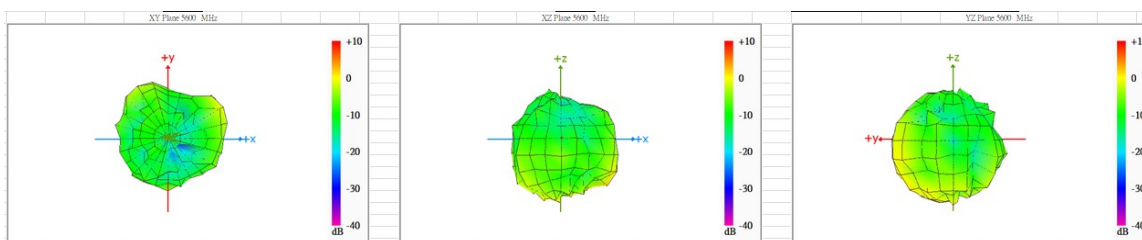
5470-5725MHz radiation characteristic

Main antenna: 5470 MHz



Center Frequency	5470 MHz
Three-dimensional (dBi) peak	3.9

Main antenna: 5600 MHz



Center Frequency	5600 MHz
Three-dimensional (dBi) peak	3.2

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

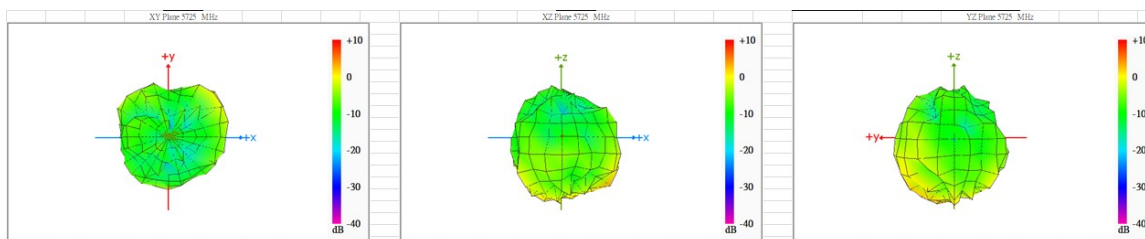
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 WA-F-LE-02-035

DOCUMENT
 NO.

SPEC REV.
 P0

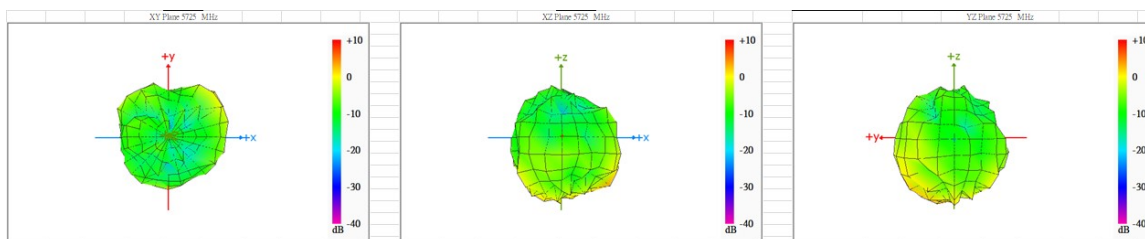
Main antenna: 5725 MHz



Center Frequency	5725 MHz
Three-dimensional (dBi) peak	4.0

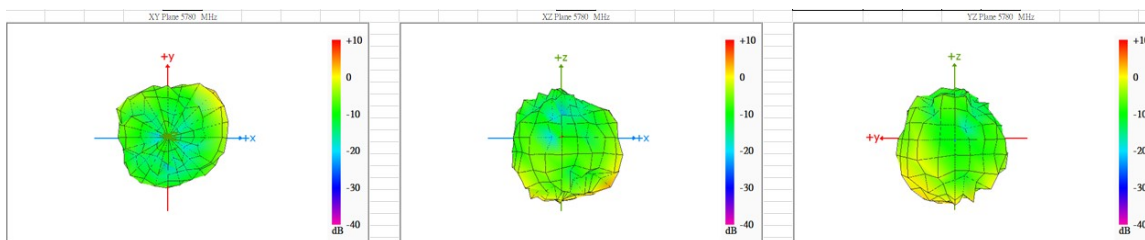
5725-5895MHz radiation characteristic

Main antenna: 5725 MHz



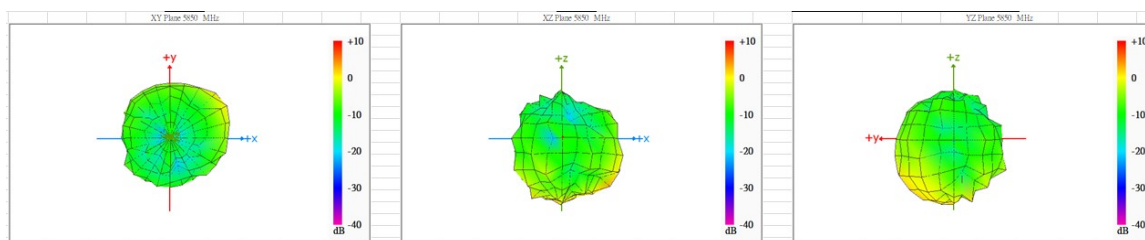
Center Frequency	5725 MHz
Three-dimensional (dBi) peak	4.0

Main antenna: 5780 MHz



Center Frequency	5780 MHz
Three-dimensional (dBi) peak	3.7

Main antenna: 5850 MHz



Center Frequency	5850 MHz
Three-dimensional (dBi) peak	3.8

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

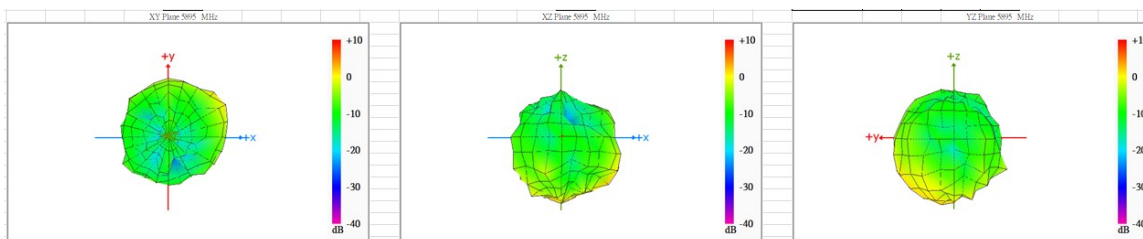
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DOCUMENT NO.

SPEC REV.
P0

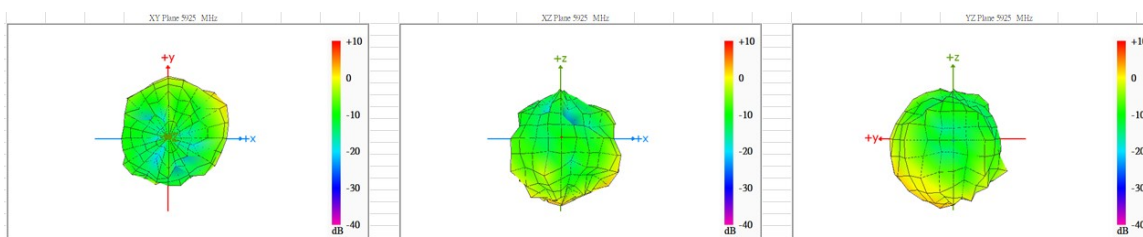
Main antenna: 5895 MHz



Center Frequency	5895 MHz
Three-dimensional (dBi) peak	3.7

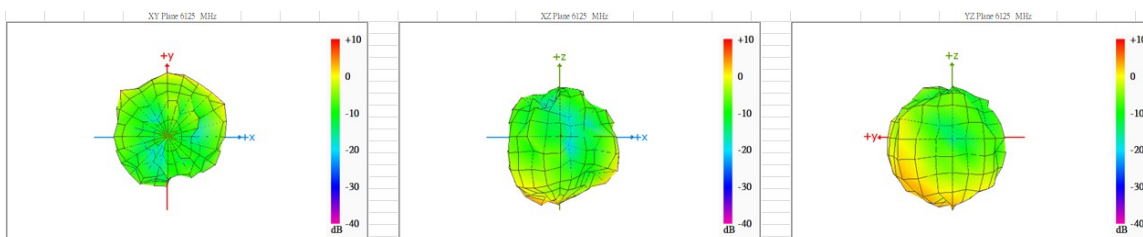
5925-6425MHz radiation characteristic

Main antenna: 5925 MHz



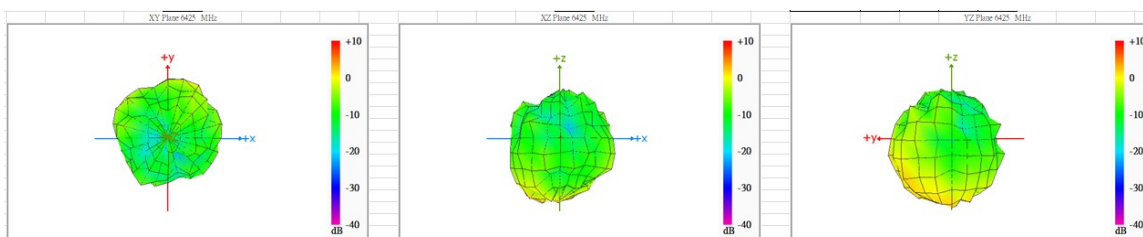
Center Frequency	5925 MHz
Three-dimensional (dBi) peak	3.5

Main antenna: 6125 MHz



Center Frequency	6125 MHz
Three-dimensional (dBi) peak	3.9

Main antenna: 6425 MHz



Center Frequency	6425 MHz
Three-dimensional (dBi) peak	3.0

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

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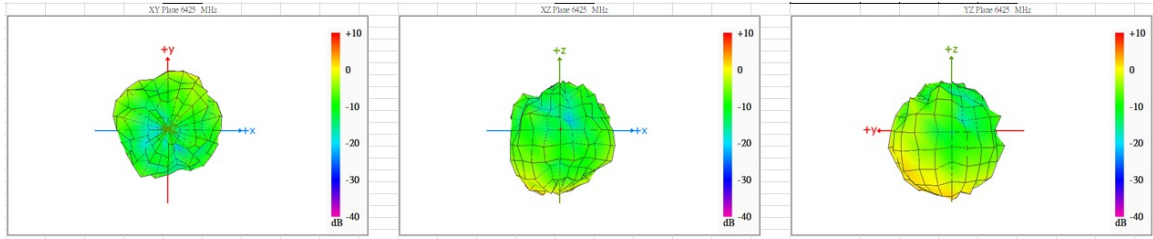
TITLE : Embedded Multi-Band Antenna for
 WA-F-LE-02-035

DOCUMENT
 NO.

SPEC REV.
 P0

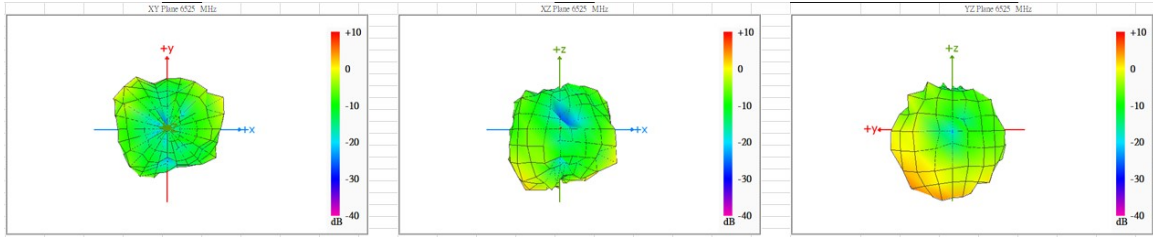
6425-6525MHz radiation characteristic

Main antenna: 6425 MHz



Center Frequency	6425 MHz
Three-dimensional (dBi) peak	3.0

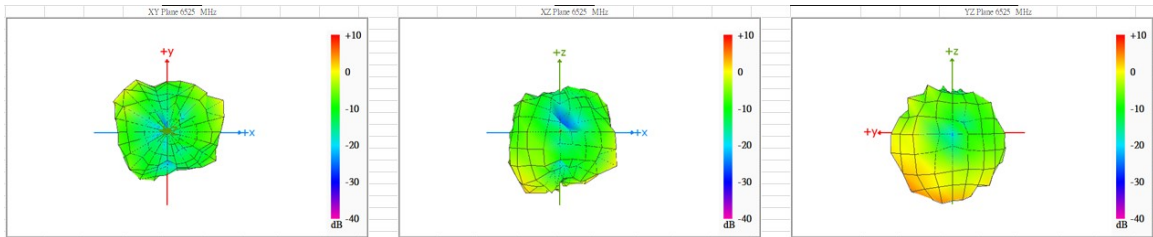
Main antenna: 6525 MHz



Center Frequency	6525 MHz
Three-dimensional (dBi) peak	2.9

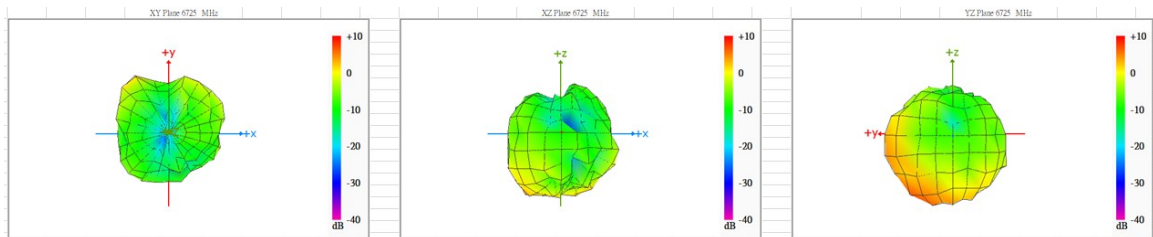
6525-6875MHz radiation characteristic

Main antenna: 6525 MHz



Center Frequency	6525 MHz
Three-dimensional (dBi) peak	2.9

Main antenna: 6725 MHz



Center Frequency	6725 MHz
Three-dimensional (dBi) peak	4.3

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

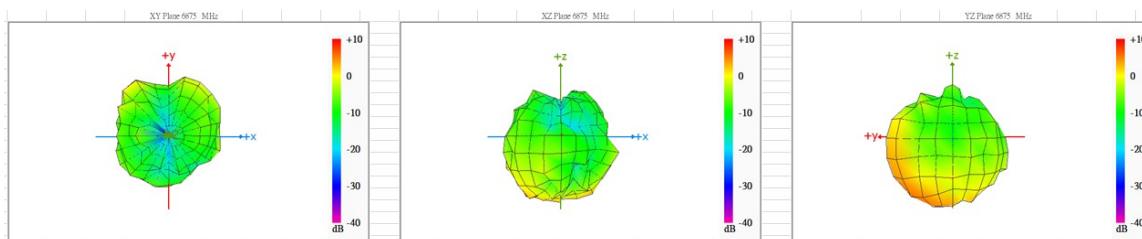
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 WA-F-LE-02-035

DOCUMENT
 NO.

SPEC REV.
P0

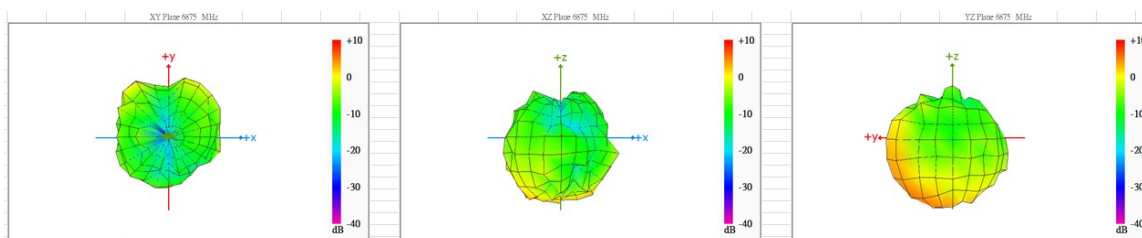
Main antenna: 6875 MHz



Center Frequency	6875 MHz
Three-dimensional (dBi) peak	3.5

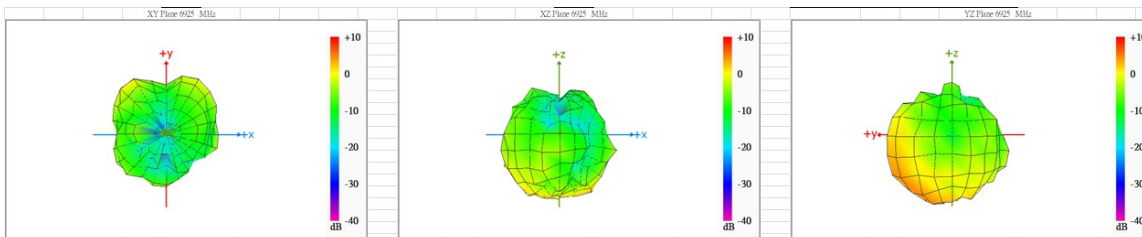
6875-7125MHz radiation characteristic

Main antenna: 6875 MHz



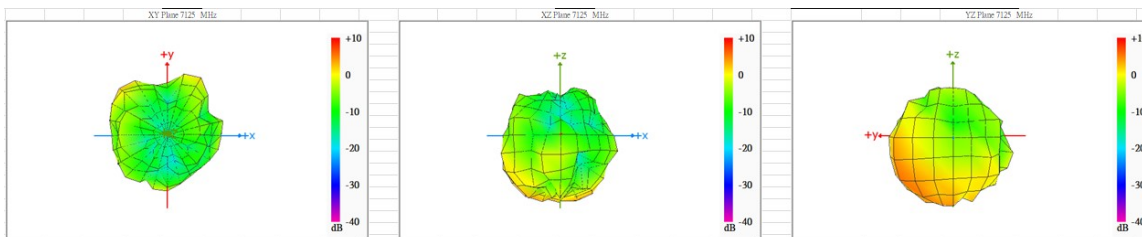
Center Frequency	6875 MHz
Three-dimensional (dBi) peak	3.5

Main antenna: 6925 MHz



Center Frequency	6925 MHz
Three-dimensional (dBi) peak	3.3

Main antenna: 7125 MHz



Center Frequency	7125 MHz
Three-dimensional (dBi) peak	3.9

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:王聖元

CHECKED BY:鄭榮謀

DESIGNED BY:林易暄

APPROVED BY:張建焜

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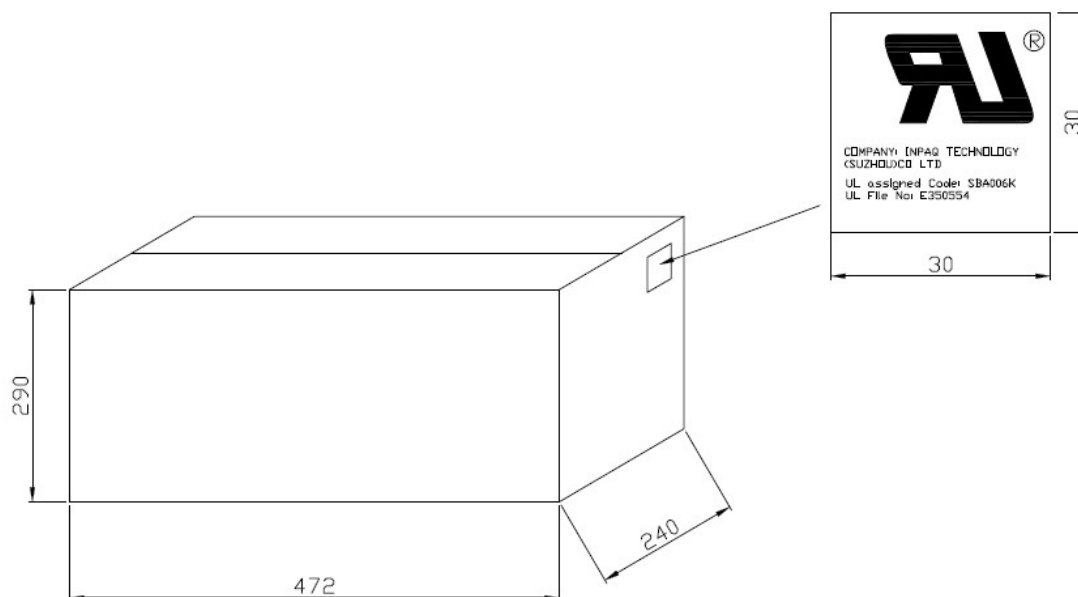
TITLE : Embedded Multi-Band Antenna for
 WA-F-LE-02-035

DOCUMENT
 NO.

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 P0

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=± X.X=± X.XX=± ANGLES=± HOLEDIA=±		 INPAQ TECHNOLOGY CO., LTD.
SCALE : N/A	UNIT : mm	
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