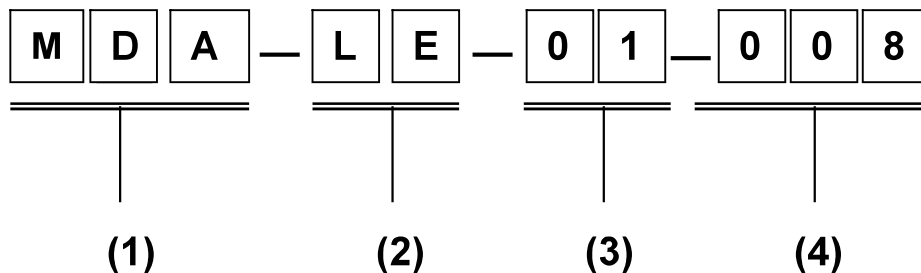


Embedded Multi-Band Wi-Fi Antenna for MDA-LE-01-008

1. Explanation of part number :



- (1) Product type/Material : Wireless Antenna/ Holder+LDS
 (2) Frequency/Band code : 2400~2500 ; 5150~5850MHz ; 5925~7125 MHz
 (3) Coaxial Cable Type : White Cable
 (4) Suffix : 008

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 MHz	5150~7125 MHz	2400~2500 MHz	5150~7125 MHz			
INPAQ P/N: MDA-LE-01-008 ASUS P/N: 14008-05620300 (Aux)	PIFA	-0.44	4.39	1.08	1.66	I-PEX MHF-4L	450 mm	UM3504

Antenna Type	PIFA Antenna For WIFI 802.11a/b/g/n/ax	
Connector Type	I-PEX MHF-4L Connector 20565-001R-13	
Cable Type	OD 1.13 Low Loss RF Cable	
Impedance	50Ω	
Polarization	Linear	
Radiation Pattern	Omni-directional	
Frequency Range	WLAN 802.11a/b/g/n	2.4~2.5GHz & 5.15~7.125 GHz
Operation Temperature	-10℃~+55℃	
Storage Temperature	-30℃~+75℃	
Return Loss	≤ -10dB	
Max Power	1W	

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
 ANGLES=± HOLEDIA=±



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SCALE : N/A

UNIT : mm

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CHECKED BY:鄭榮謀

DESIGNED BY:吳承憲

APPROVED BY:張建焜

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TITLE : Embedded Multi-Band Antenna for
MDA-LE-01-008

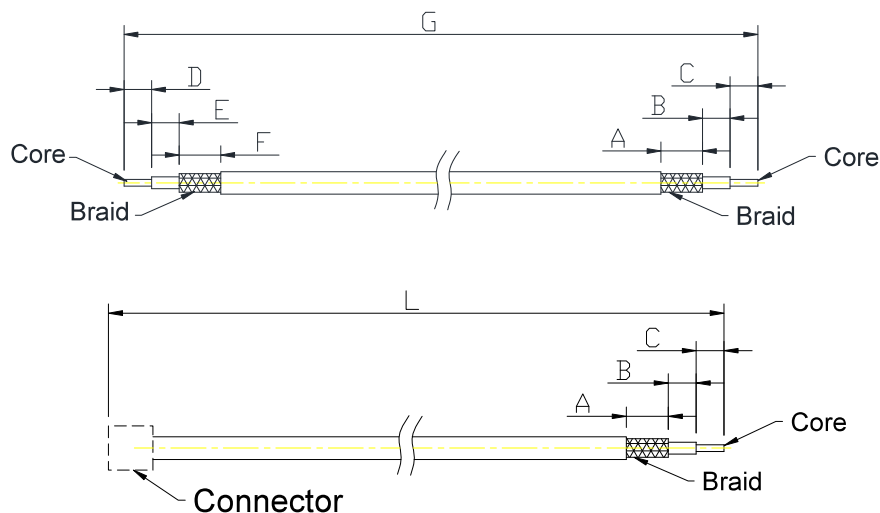
DOCUMENT
NO.

ENS000175710

SPEC REV.
P1

5. RF Connector :

5-1 Cable Dimension :



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

L : 460.5 ± 2.0

D : 1.00 ± 0.1

A : 3.0 ± 0.5 (沾錫)

E : 0.72 ± 0.1

B : 1.0 ± 0.5

F : 1.15 ± 0.1

C : 0.5 ± 0.5 (沾錫)

G : 459.5 ± 2.0

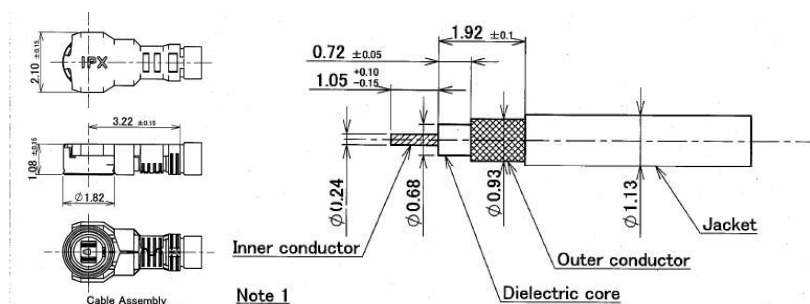
unit : mm

5-1.1 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。

5-1.2 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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SPEC REV.

P1

6. Electrical Specification :

Those specifications were specially defined for UM3504 model, and all characteristics were measured under the model's handset testing jig.

6-1. Frequency Band :

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

6-2. Impedance :

50 ohm nominal

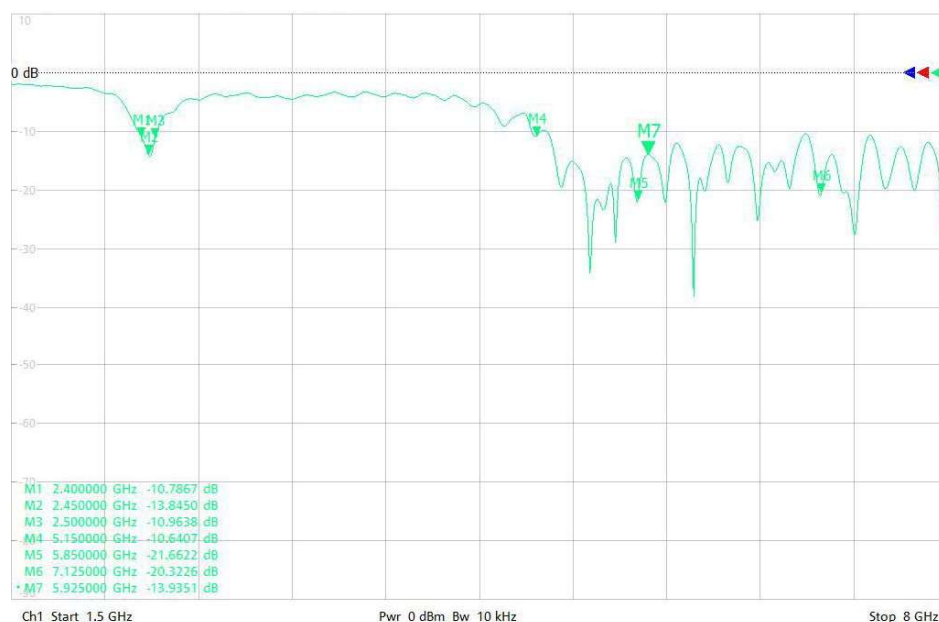
6-3. Matching circuit :

None

6-4. Return loss/VSWR :

Frequency(MHz)	2400	2500	5150	5850	7125
Aux S11	-10.78	-10.96	-10.64	-21.66	-20.32

Aux



UNLESS OTHER SPECIFIED TOLERANCES ON :

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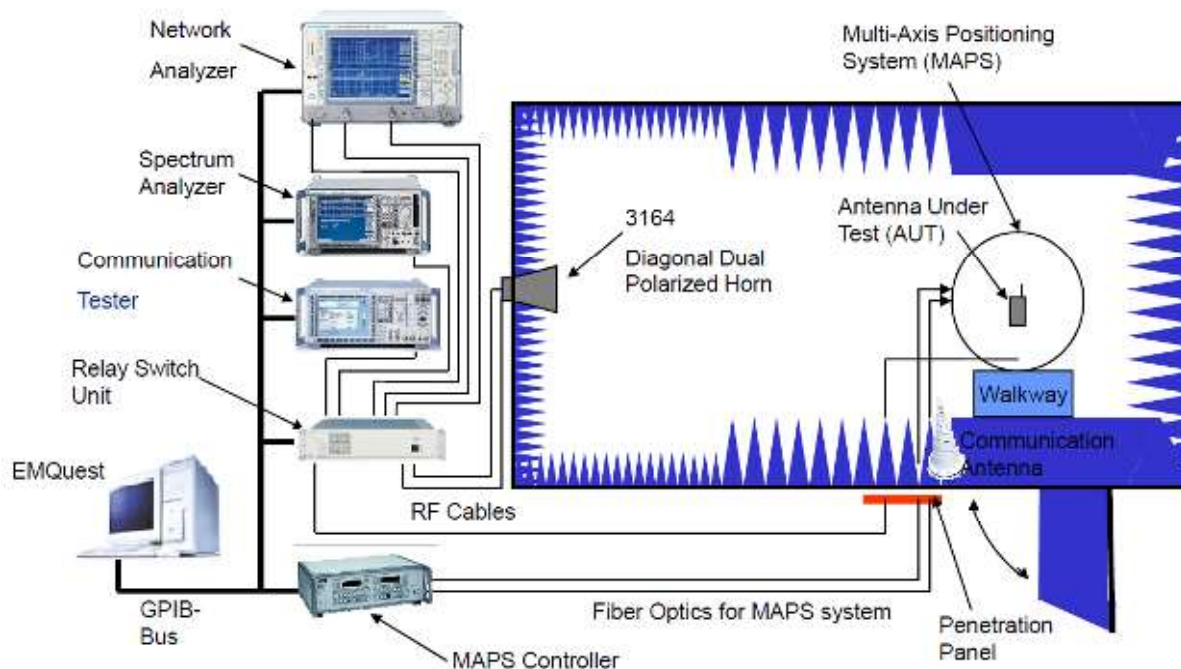
SPEC REV.
P1

6-5 Gain and Radiation Pattern

6-5.1 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

6-5.2 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=±



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6-5.3 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.

Aux Gain Data				
Freq. [unit: MHz]	Three-dimensional peak [dBi]	Average [dBi]	Efficiency [%]	Cable loss [dB]
2400	-0.44	-5.76	26.55	1.08
2412	-0.87	-5.58	27.67	1.08
2437	-1.23	-5.70	26.92	1.08
2462	-1.33	-5.79	26.36	1.08
2500	-0.88	-5.64	27.29	1.08
5150	3.08	-5.70	26.92	1.66
5250	3.41	-5.08	31.05	1.66
5350	3.20	-4.62	34.51	1.66
5470	3.43	-4.83	32.89	1.66
5600	3.48	-5.38	28.97	1.66
5725	3.51	-5.56	27.80	1.66
5785	4.05	-5.00	31.62	1.66
5850	4.39	-4.94	32.06	1.66
5895	4.22	-4.67	34.12	1.66
5925	4.09	-4.66	34.20	1.66
6125	3.54	-5.19	30.27	1.67
6425	2.68	-5.85	26.00	1.67
6525	2.90	-5.84	26.06	1.67
6725	1.82	-5.86	25.94	1.67
6875	1.36	-5.74	26.67	1.67
6925	2.10	-5.57	27.73	1.67
7125	2.44	-5.06	31.19	1.67

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±
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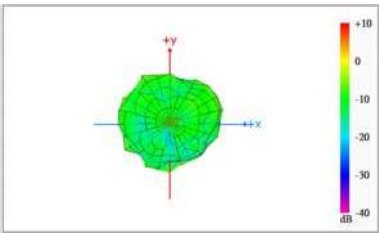
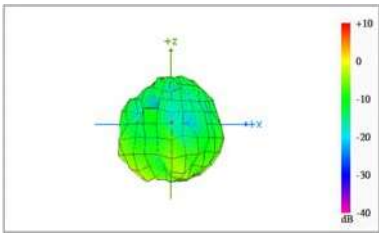
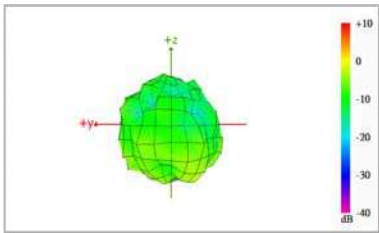
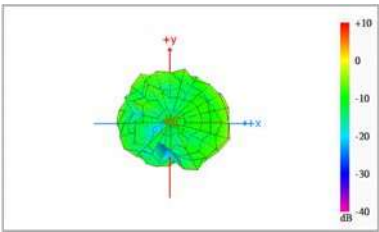
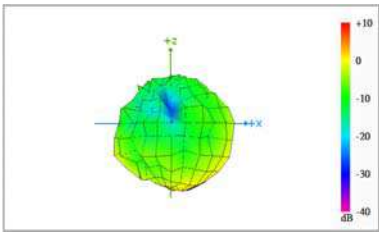
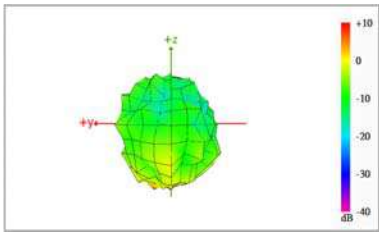
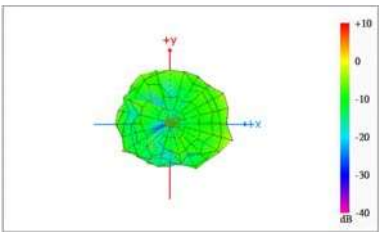
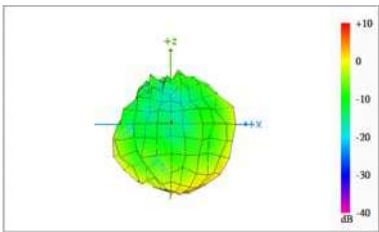
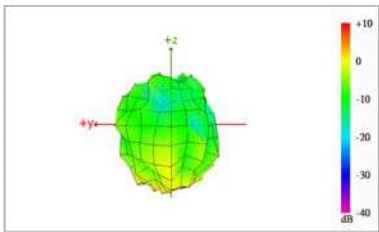
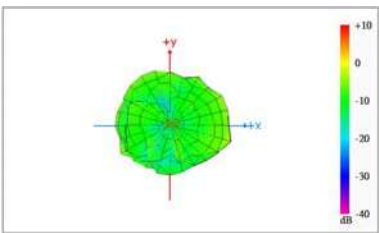
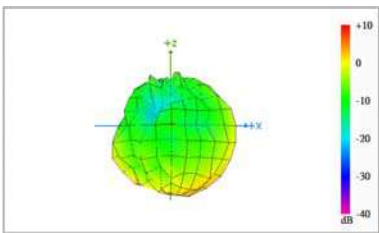
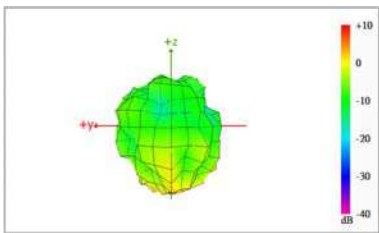
TITLE : Embedded Multi-Band Antenna for
MDA-LE-01-008

DOCUMENT
NO.

ENS000175710

SPEC REV.
P1

3D Radiation Pattern				
Aux				
XY-plane		XZ-plane		YZ-plane
Center Frequency			2400 MHz	
Three-dimensional (dBi) peak			-0.44	
XY-plane		XZ-plane		YZ-plane
Center Frequency			2412 MHz	
Three-dimensional (dBi) peak			-0.87	
XY-plane		XZ-plane		YZ-plane
Center Frequency			2437 MHz	
Three-dimensional (dBi) peak			-1.23	
XY-plane		XZ-plane		YZ-plane
Center Frequency			2462 MHz	
Three-dimensional (dBi) peak			-1.33	
UNLESS OTHER SPECIFIED TOLERANCES ON :				
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ANGLES=±		HOLEDIA=±		
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DESIGNED BY:吳承憲		APPROVED BY:張建焜		
TITLE : Embedded Multi-Band Antenna for MDA-LE-01-008			DOCUMENT NO.	ENS000175710
				SPEC REV. P1

3D Radiation Pattern		
XY-plane	XZ-plane	YZ-plane
		
Center Frequency		2500 MHz
Three-dimensional (dBi) peak		-0.88
XY-plane	XZ-plane	YZ-plane
		
Center Frequency		5150 MHz
Three-dimensional (dBi) peak		3.08
XY-plane	XZ-plane	YZ-plane
		
Center Frequency		5250 MHz
Three-dimensional (dBi) peak		3.41
XY-plane	XZ-plane	YZ-plane
		
Center Frequency		5350 MHz
Three-dimensional (dBi) peak		3.20

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±

ANGLES=± HOLEDIA=±



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SCALE : N/A

UNIT : mm

DRAWN BY:周敬晨

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DESIGNED BY:吳承憲

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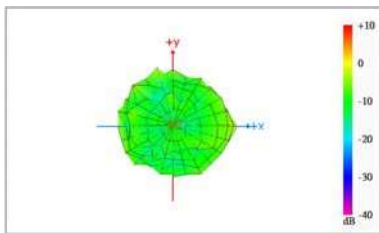
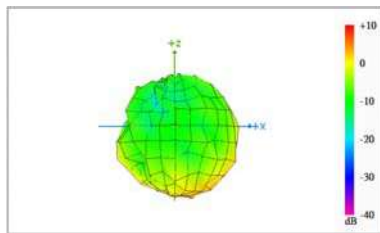
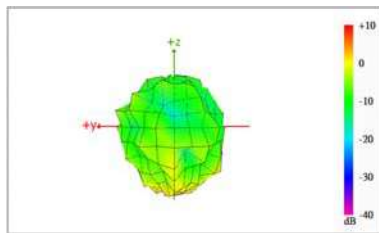
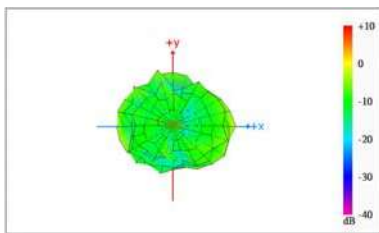
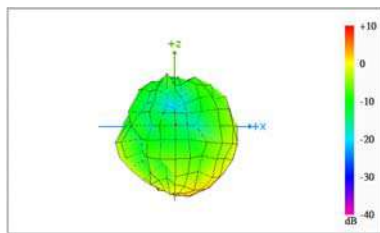
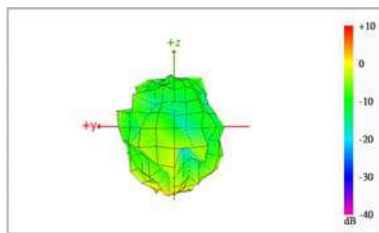
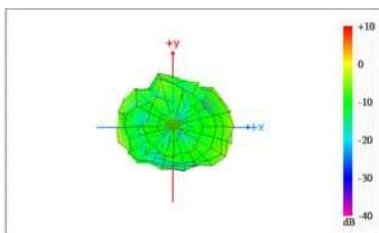
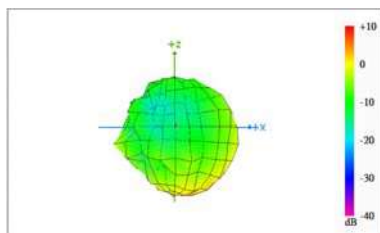
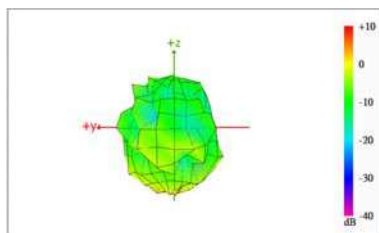
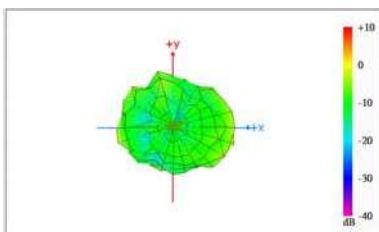
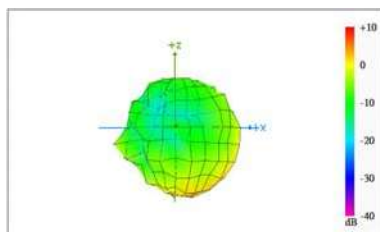
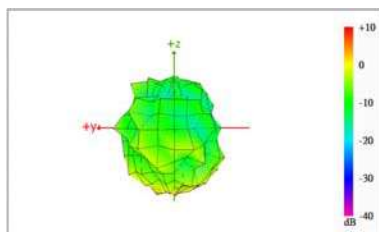
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TITLE : Embedded Multi-Band Antenna for
MDA-LE-01-008

DOCUMENT
NO.

ENS000175710

SPEC REV.
P1

3D Radiation Pattern					
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5470 MHz		
Three-dimensional (dBi) peak			3.43		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5600 MHz		
Three-dimensional (dBi) peak			3.48		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5725 MHz		
Three-dimensional (dBi) peak			3.51		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5785 MHz		
Three-dimensional (dBi) peak			4.05		

UNLESS OTHER SPECIFIED TOLERANCES ON :

$X=\pm$ $X.X=\pm$ $X.XX=\pm$
 $ANGLES=\pm$ $HOLEDIA=\pm$



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SCALE : N/A

UNIT : mm

DRAWN BY:周敬晨

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DESIGNED BY:吳承憲

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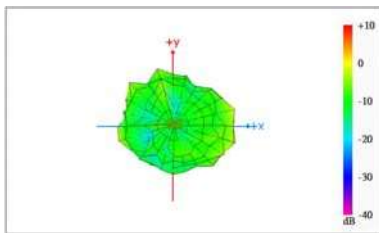
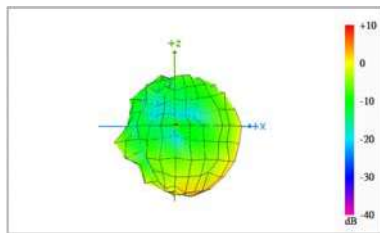
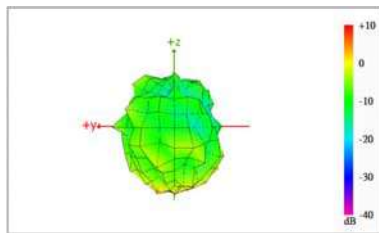
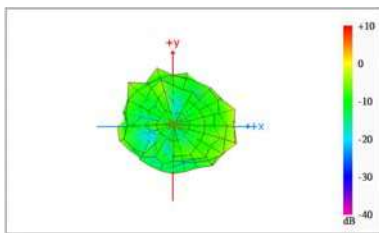
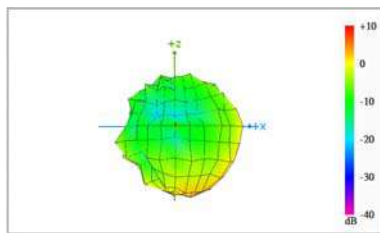
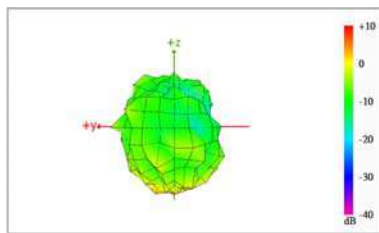
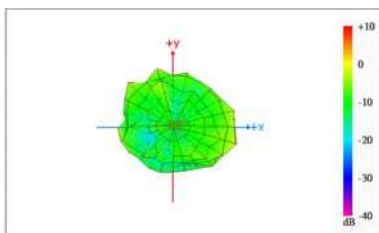
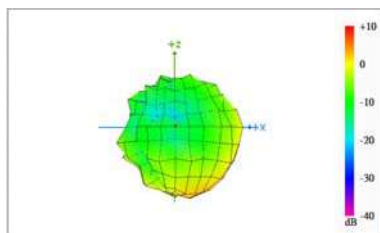
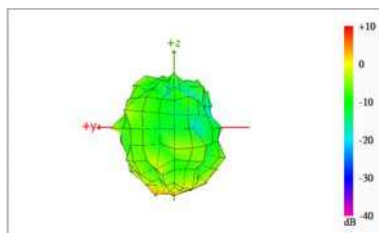
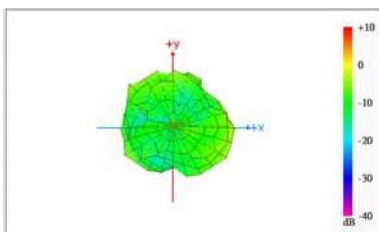
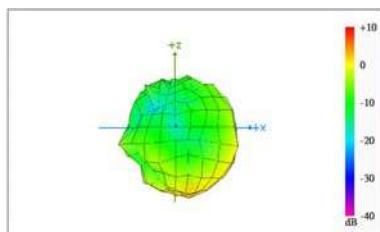
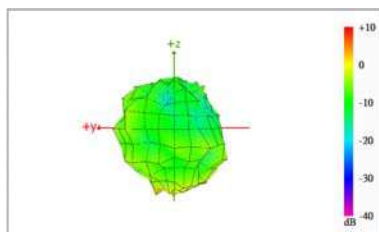
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MDA-LE-01-008

DOCUMENT
NO.

ENS000175710

SPEC REV.
P1

3D Radiation Pattern					
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5850 MHz		
Three-dimensional (dBi) peak			4.39		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5895 MHz		
Three-dimensional (dBi) peak			4.22		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			5925 MHz		
Three-dimensional (dBi) peak			4.09		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			6125 MHz		
Three-dimensional (dBi) peak			3.54		

UNLESS OTHER SPECIFIED TOLERANCES ON :

$X=\pm$ $X.X=\pm$ $X.XX=\pm$
 $ANGLES=\pm$ $HOLEDIA=\pm$



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SCALE : N/A

UNIT : mm

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CHECKED BY:鄭榮謀

DESIGNED BY:吳承憲

APPROVED BY:張建焜

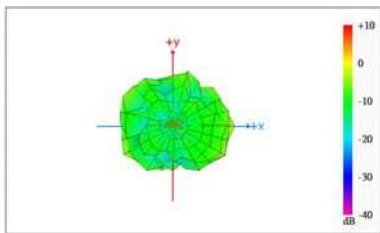
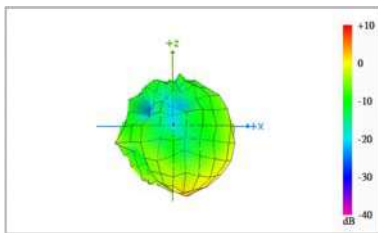
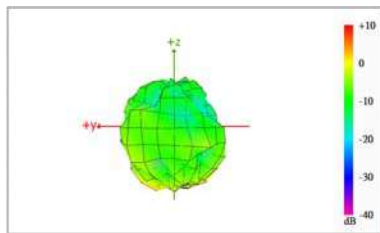
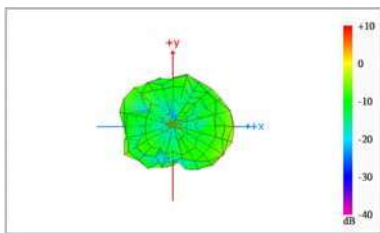
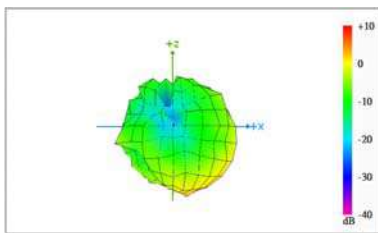
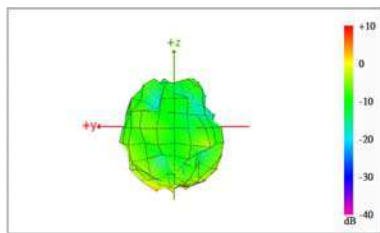
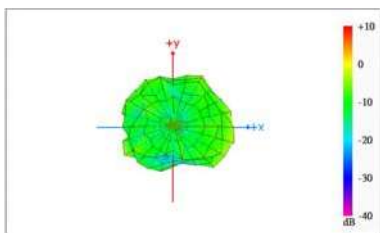
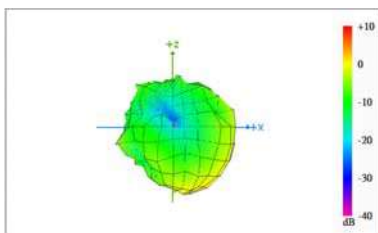
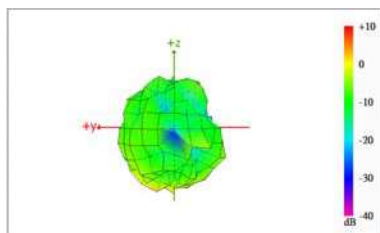
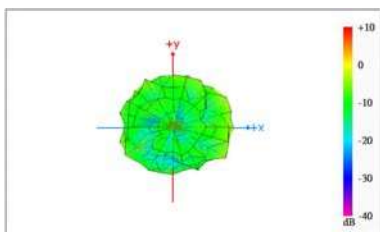
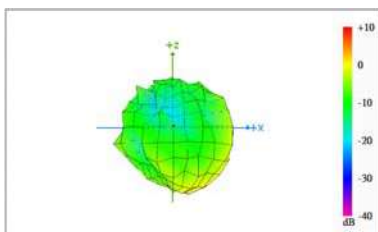
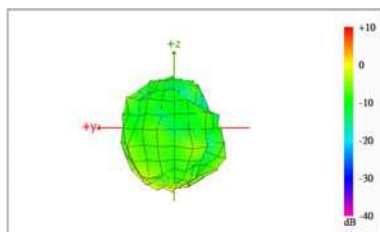
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3D Radiation Pattern					
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			6425 MHz		
Three-dimensional (dBi) peak			2.68		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			6525 MHz		
Three-dimensional (dBi) peak			2.90		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			6725 MHz		
Three-dimensional (dBi) peak			1.82		
XY-plane		XZ-plane		YZ-plane	
					
Center Frequency			6875 MHz		
Three-dimensional (dBi) peak			1.36		

UNLESS OTHER SPECIFIED TOLERANCES ON :

X=± X.X=± X.XX=±

ANGLES=± HOLEDIA=±



INPAQ TECHNOLOGY CO., LTD.

SCALE : N/A

UNIT : mm

DRAWN BY:周敬晨

CHECKED BY:鄭榮謀

DESIGNED BY:吳承憲

APPROVED BY:張建焜

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TITLE : Embedded Multi-Band Antenna for
MDA-LE-01-008DOCUMENT
NO.

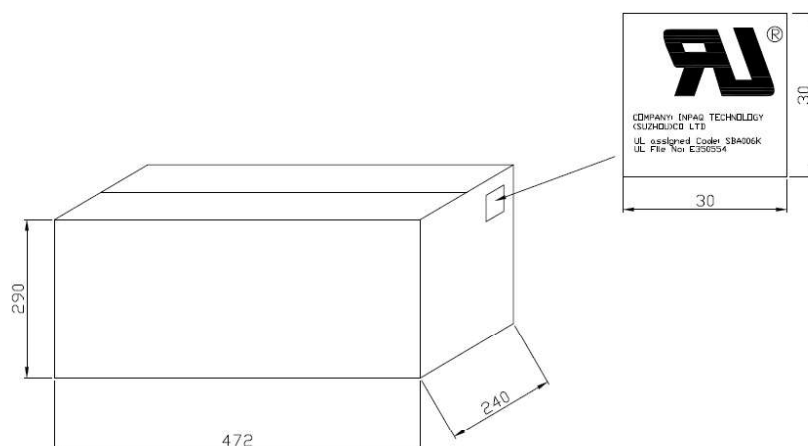
ENS000175710

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7. 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

DRAWN BY:周敬晨

CHECKED BY:鄭榮謀

DESIGNED BY:吳承憲

APPROVED BY:張建焜

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**DOCUMENT
NO.**

ENS000175710

**SPEC REV.
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