



# 料件承認書



SPECIFICATION FOR APPROVAL

Ver.F9

品 名

DIPOLE ANTENNA 2T2R RSMA

Part Name

華碩料號

14008-02650400

ASUS P/N

供應商料號

LA9RF251-CS-H

Supplier P/N

提出日期

2020/ 04/ 22

Submitted Date



供應商

LUXSHARE PRECISION LIMITED

工廠地址

TEL:

+86-0755-66859588

FAX :

| 核准 | 工程部 | 品管部 | 承辦業務 |
|----|-----|-----|------|
|    |     |     |      |

## 1. Revision History

[illegible]

# Data Sheet

CUSTOMER: \_\_\_\_\_ ASUS

MODEL NAME: \_\_\_\_\_ DIPOLE ANTENNA 2T2R RSMA

CUSTOMER P/N: \_\_\_\_\_ 14008-02650400

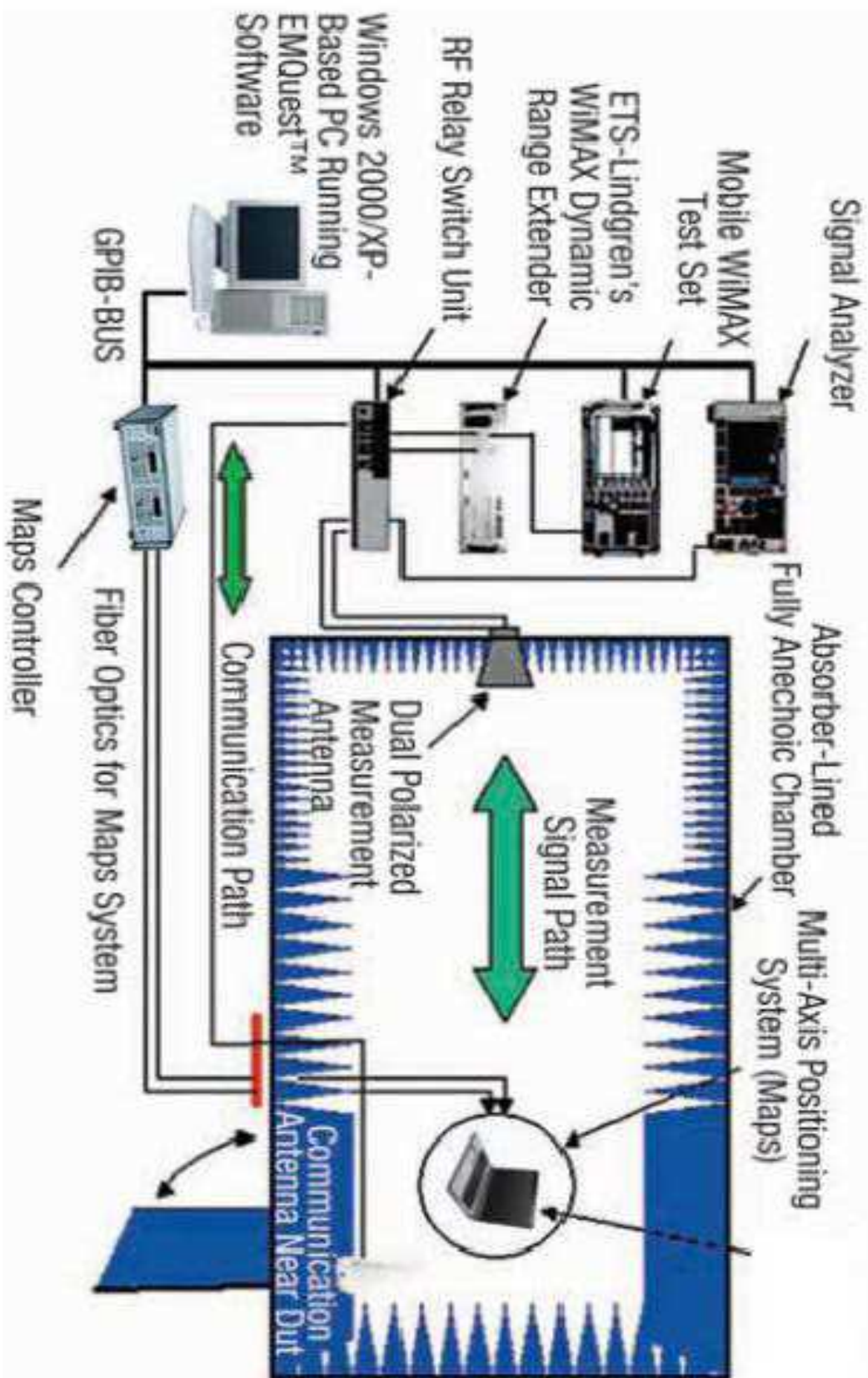
ICT P/N: \_\_\_\_\_ LA9RF251-CS-H

| APPROVED     |              |
|--------------|--------------|
| MANUFACTURER | CUSTOMER     |
|              |              |
| PREPARED BY: | APPROVED BY: |
| CHECK BY:    |              |
| APPROVED BY: |              |

# Description

## Specifications

|                    |                                                  |                |               |
|--------------------|--------------------------------------------------|----------------|---------------|
| Antennas Type      | DIPOLE Antenna for WLAN 802.11 a/b/g application |                |               |
| Connector Type     | SMA R/P PLUG                                     |                |               |
| Cable Type         | RF-1.37T/50                                      |                |               |
| Impedance          | 50Ω                                              |                |               |
| Polarization       | Linear                                           |                |               |
| Radiation pattern  | Omni-directional                                 |                |               |
| Frequency Range    | WLAN 802.11b/g                                   |                | 2.40~2.50 GHz |
|                    | WLAN 802.11a                                     |                | 5.15~5.85 GHz |
| VSWR               | Main Antenna                                     | WLAN 802.11b/g | 2.00 Max      |
|                    |                                                  | WLAN 802.11a   |               |
|                    | Aux Antenna                                      | WLAN 802.11b/g |               |
|                    |                                                  | WLAN 802.11a   |               |
| Peak gain          | Main Antenna                                     | WLAN 802.11b/g | 0.4 dBi       |
|                    |                                                  | WLAN 802.11a   | 0.1 dBi       |
|                    | Aux Antenna                                      | WLAN 802.11b/g | -0.8 dBi      |
|                    |                                                  | WLAN 802.11a   | 2.7 dBi       |
| Cable Loss         | Main Antenna                                     | WLAN 802.11b/g | 2.21 dB       |
|                    |                                                  | WLAN 802.11a   | 3.54 dB       |
|                    | Aux Antenna                                      | WLAN 802.11b/g | 2.21 dB       |
|                    |                                                  | WLAN 802.11a   | 3.54 dB       |
| Cable length/Color |                                                  | WLAN           | 800mm ,Black  |
|                    |                                                  |                |               |



## Description

### Antenna Picture1



### Antenna Picture2





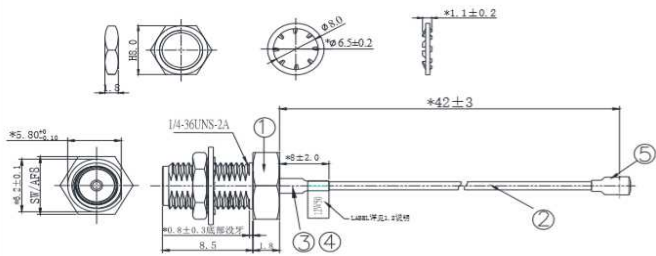
# IPEX cable



## CNC SMA Jack 0.81 BK 42mm

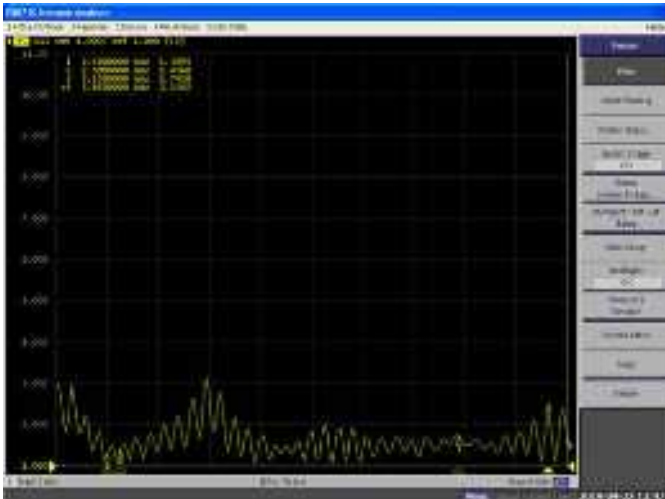
### 1. Appearance dimension ( Unit : mm ) :

#### 1.1 尺寸图

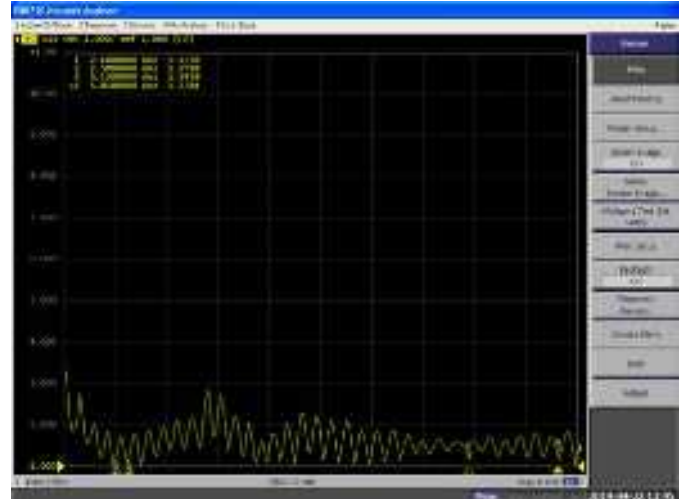


## Performance Data

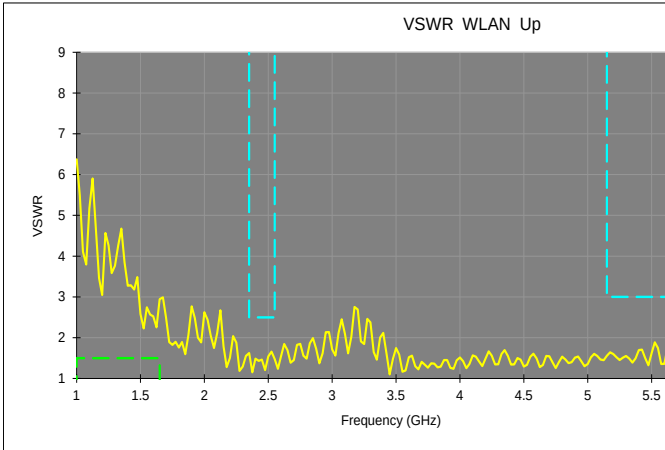
### 1. VSWR : Main Antenna



### Aux Antenna



### 2. SPEC

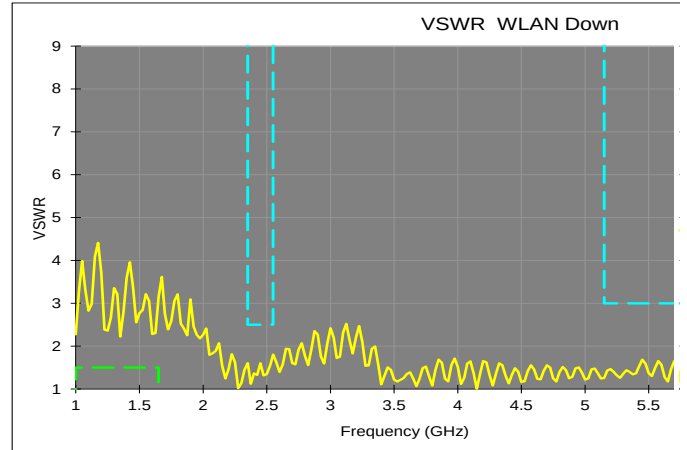


Spec:

1.00 ~ 1.65 GHz > 1.5

2.35 ~ 2.55 GHz < 2.5

5.15 ~ 6.00 GHz < 3.0



Spec:

1.00 ~ 1.65 GHz > 1.5

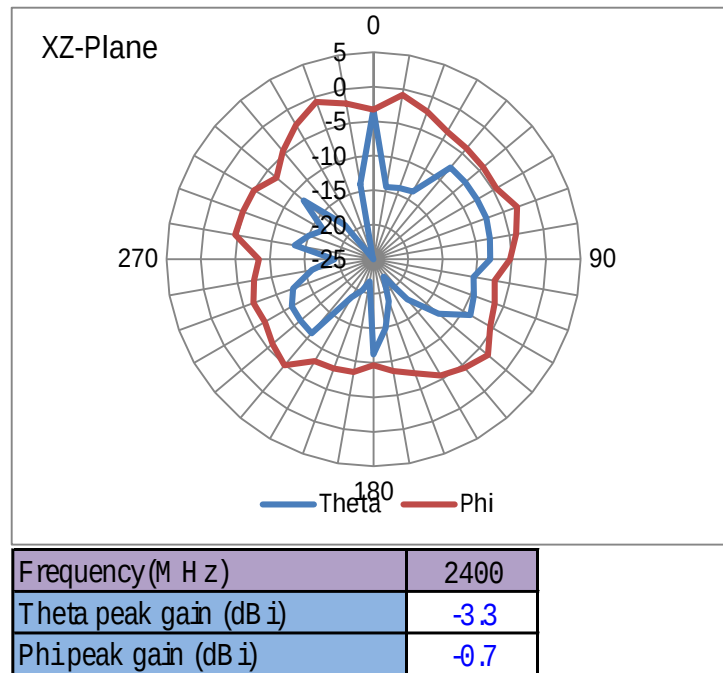
2.35 ~ 2.55 GHz < 2.5

5.15 ~ 6.00 GHz < 3.0



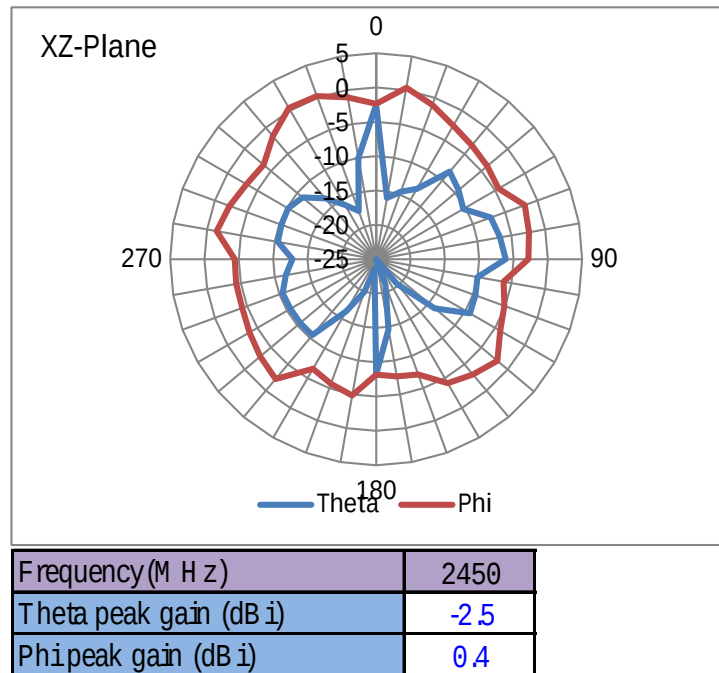
## Radiation pattern Main Antenna

Antenna: 2400MHz



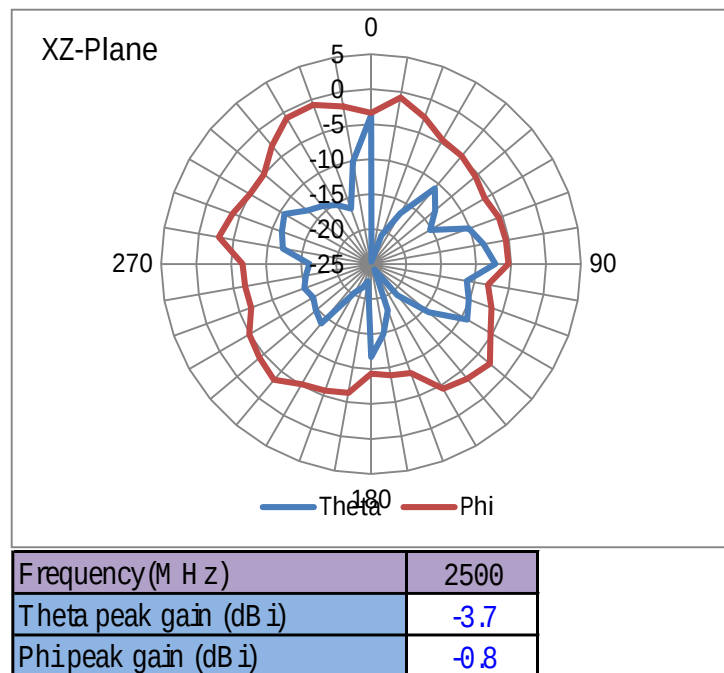
## Radiation pattern Main Antenna

Antenna: 2450MHz



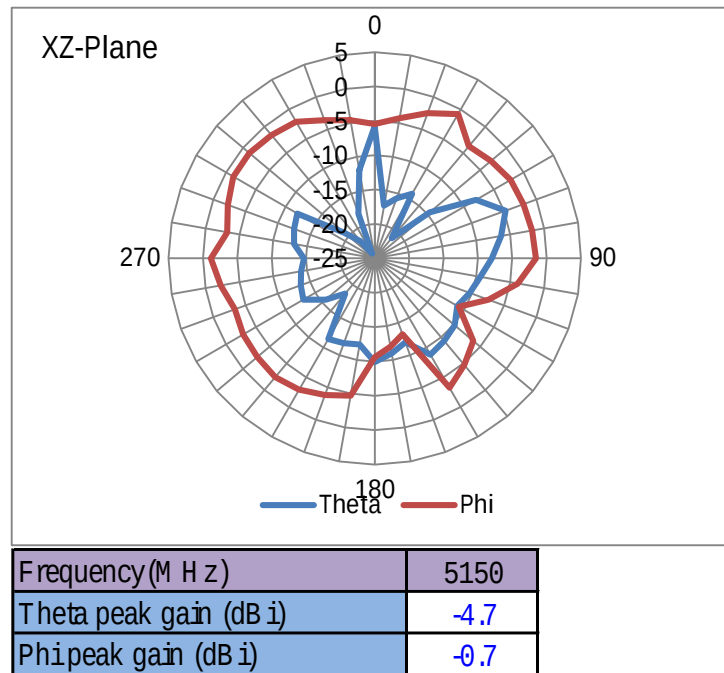
## Radiation pattern Main Antenna

Antenna: 2500MHz



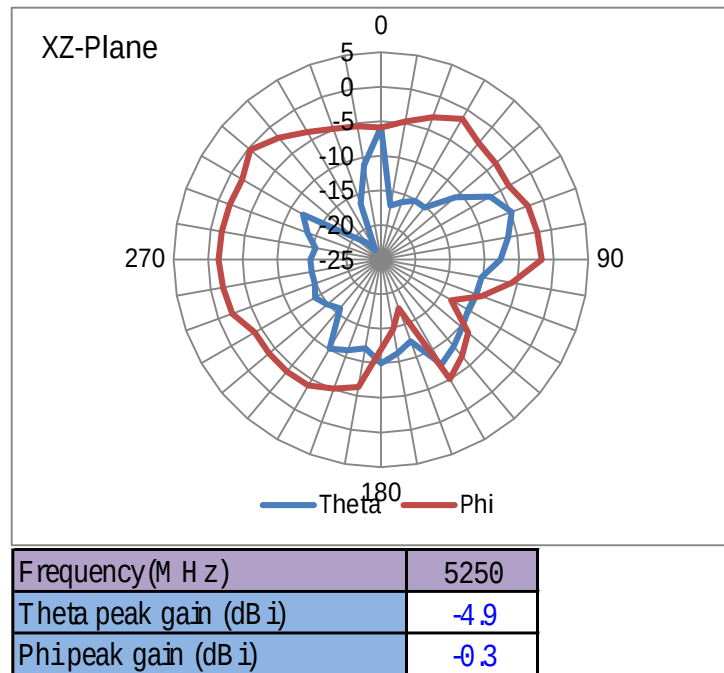
## Radiation pattern Main Antenna

Antenna: 5150MHz



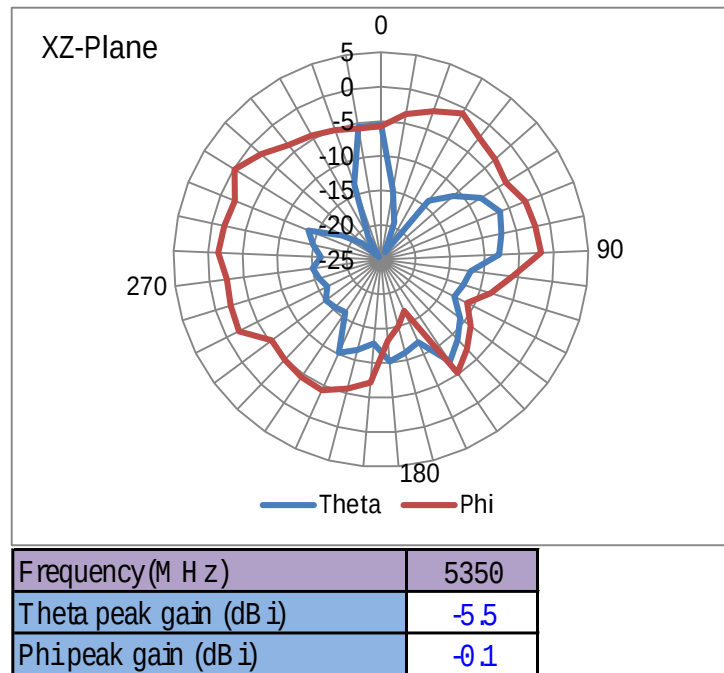
## Radiation pattern Main Antenna

Antenna: 5250MHz



## Radiation pattern Main Antenna

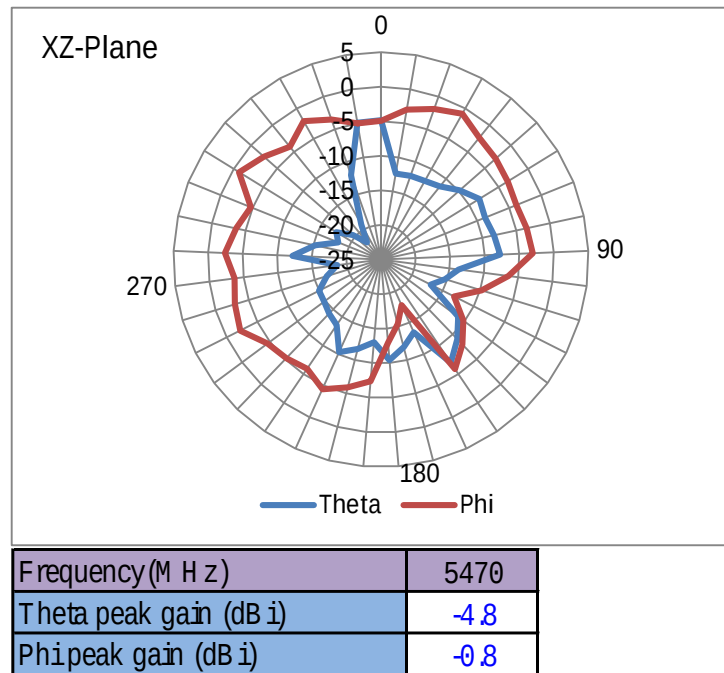
Antenna: 5350MHz





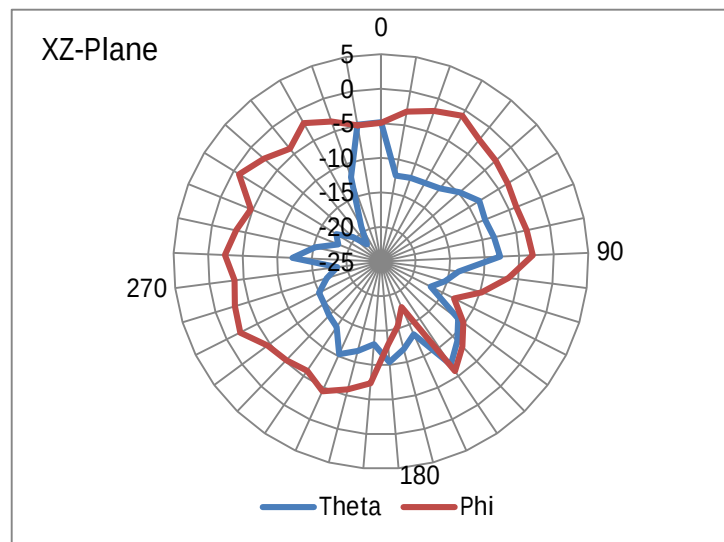
## Radiation pattern Main Antenna

Antenna: 5470MHz



# Radiation pattern Main Antenna

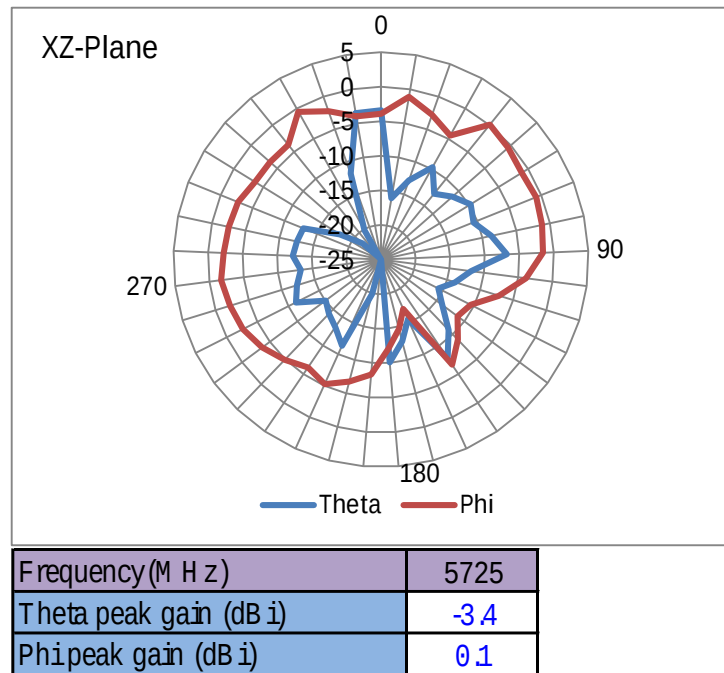
Antenna: 5600MHz



|                       |      |
|-----------------------|------|
| Frequency(M H z)      | 5600 |
| Theta peak gain (dBi) | -4.4 |
| Phi peak gain (dBi)   | -0.9 |

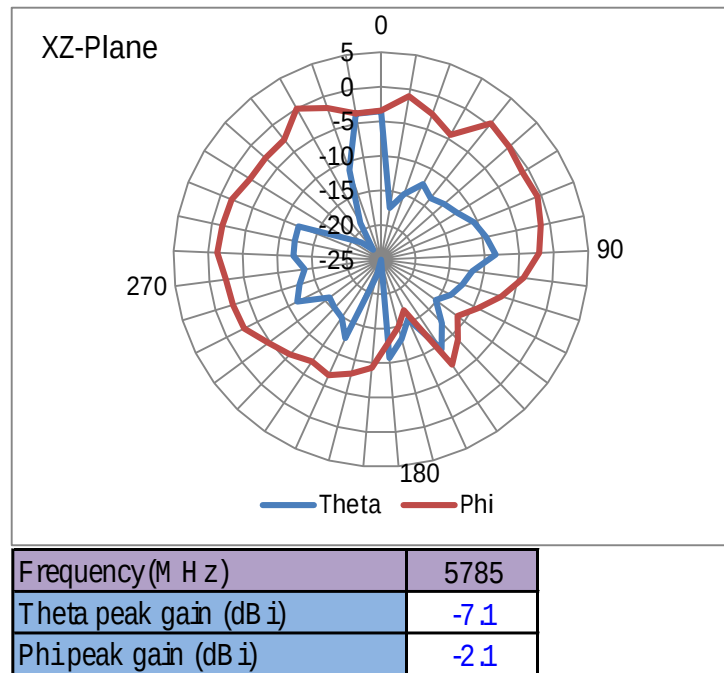
## Radiation pattern Main Antenna

Antenna: 5725MHz



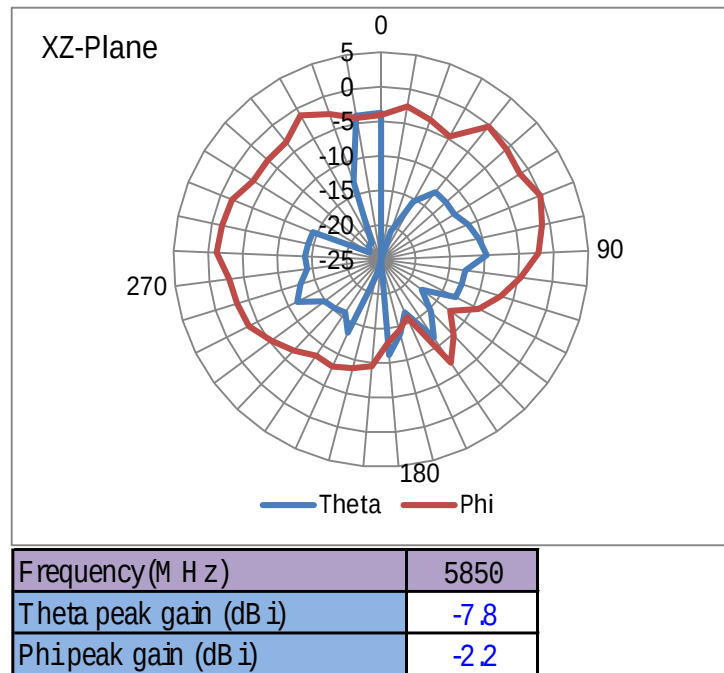
## Radiation pattern Main Antenna

Antenna: 5785MHz



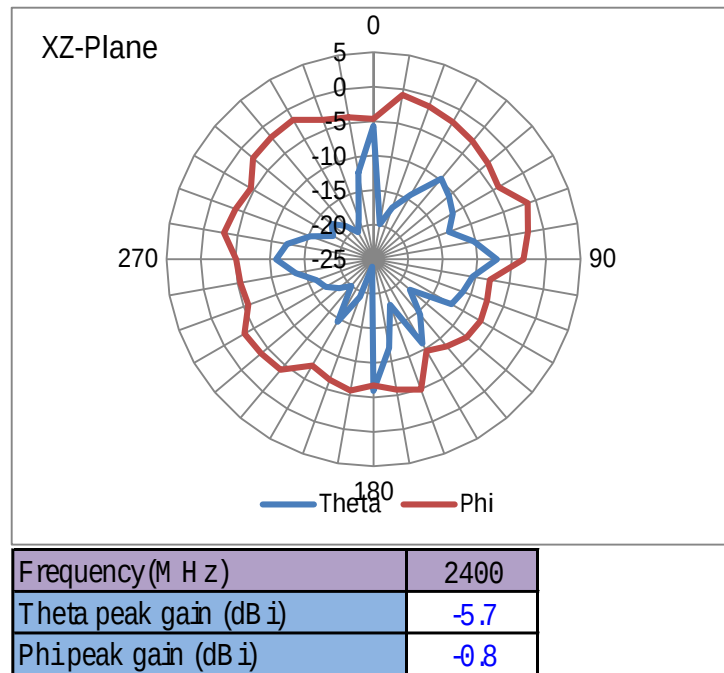
## Radiation pattern Main Antenna

Antenna: 5850MHz



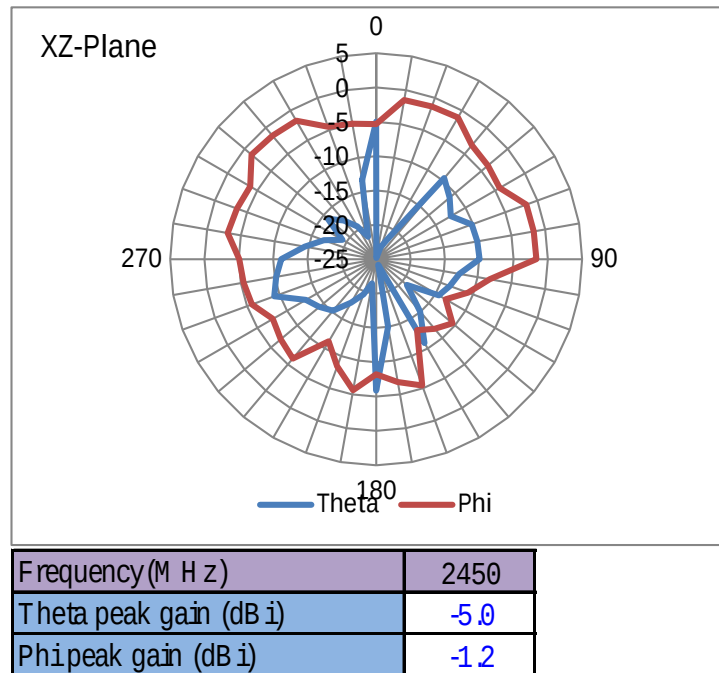
## Radiation pattern Aux Antenna

Antenna: 2400MHz



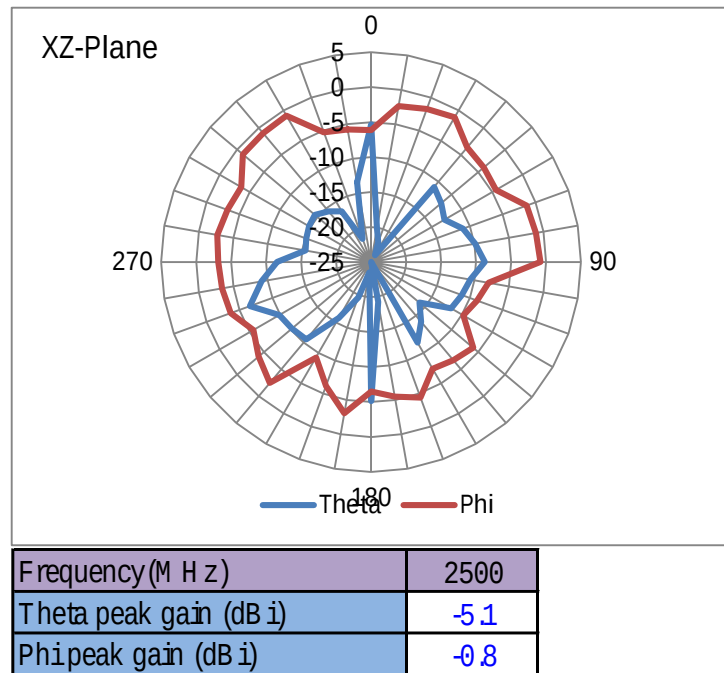
## Radiation pattern Aux Antenna

Antenna: 2450MHz



## Radiation pattern Aux Antenna

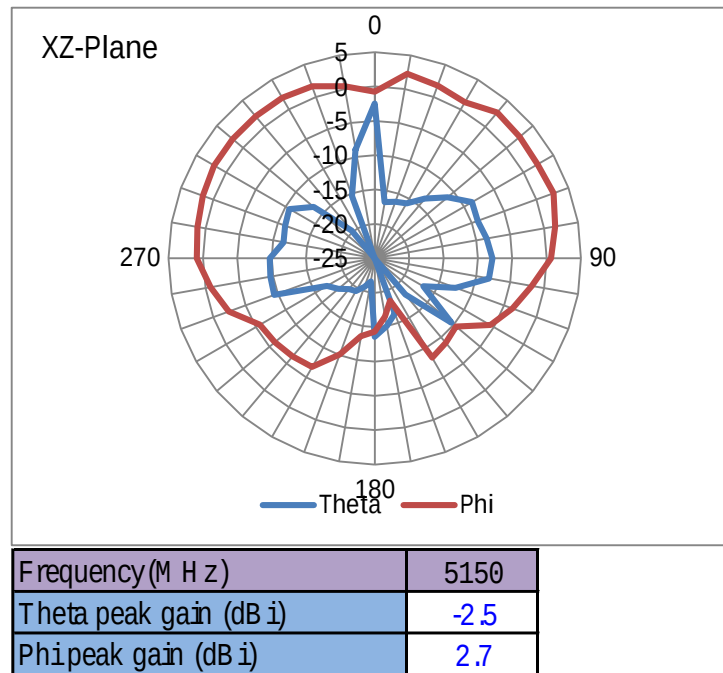
Antenna: 2500MHz





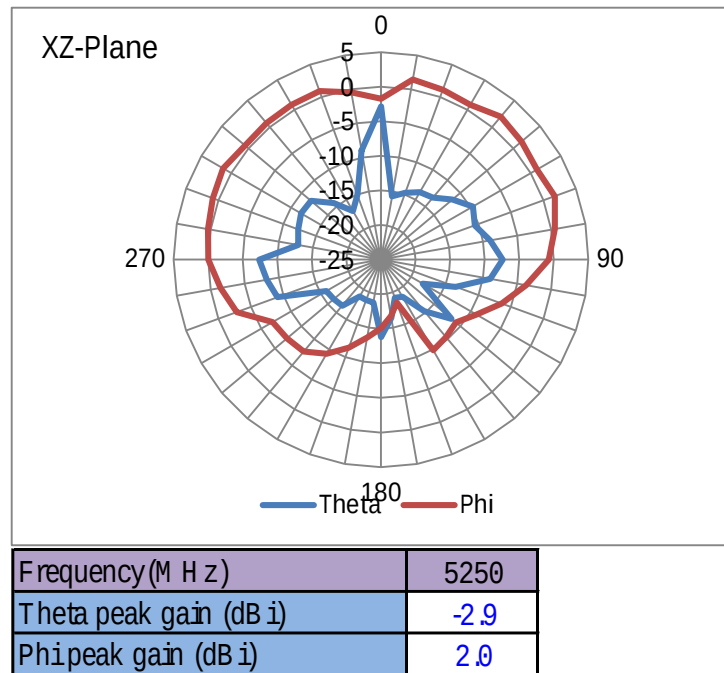
## Radiation pattern Aux Antenna

Antenna: 5150MHz



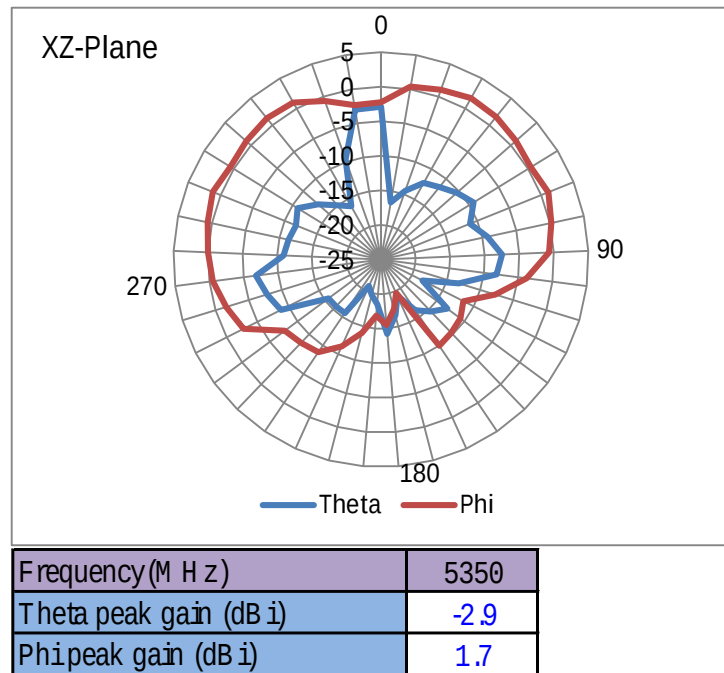
## Radiation pattern Aux Antenna

Antenna: 5250MHz



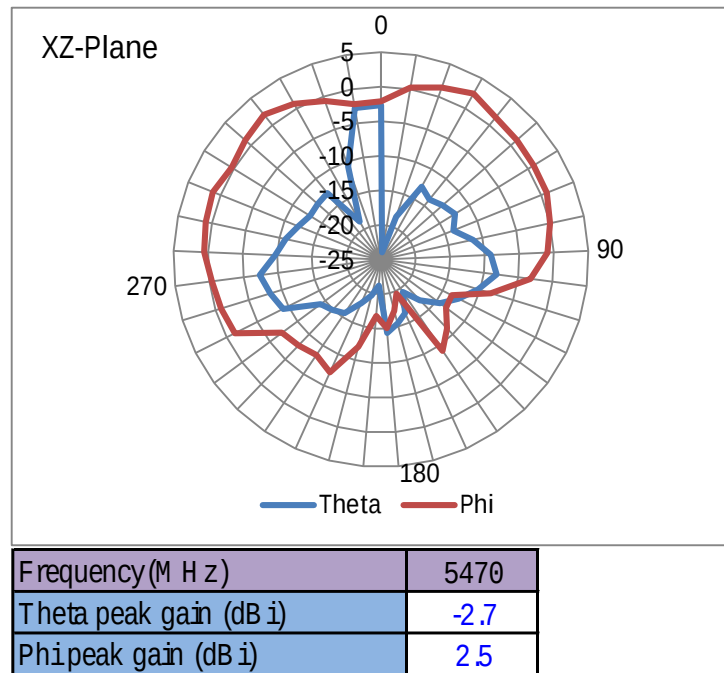
## Radiation pattern Aux Antenna

Antenna: 5350MHz



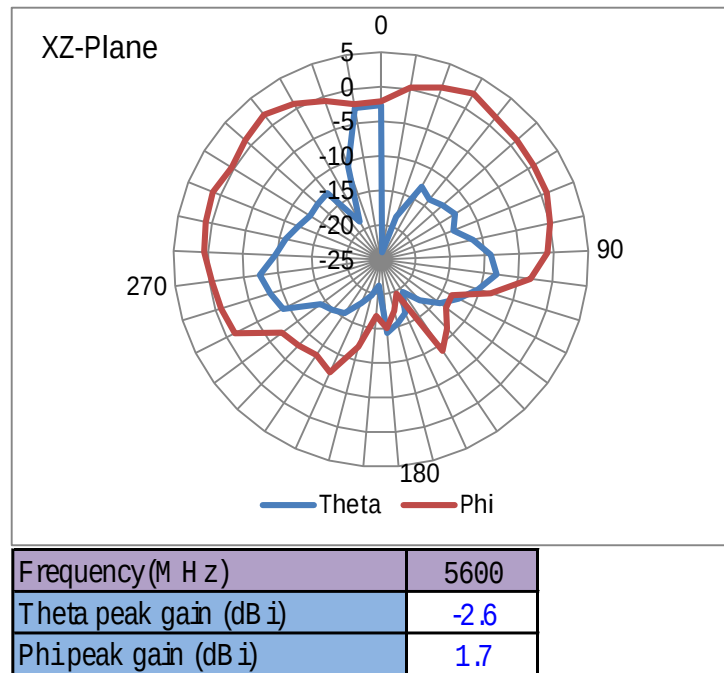
## Radiation pattern Aux Antenna

Antenna: 5470MHz



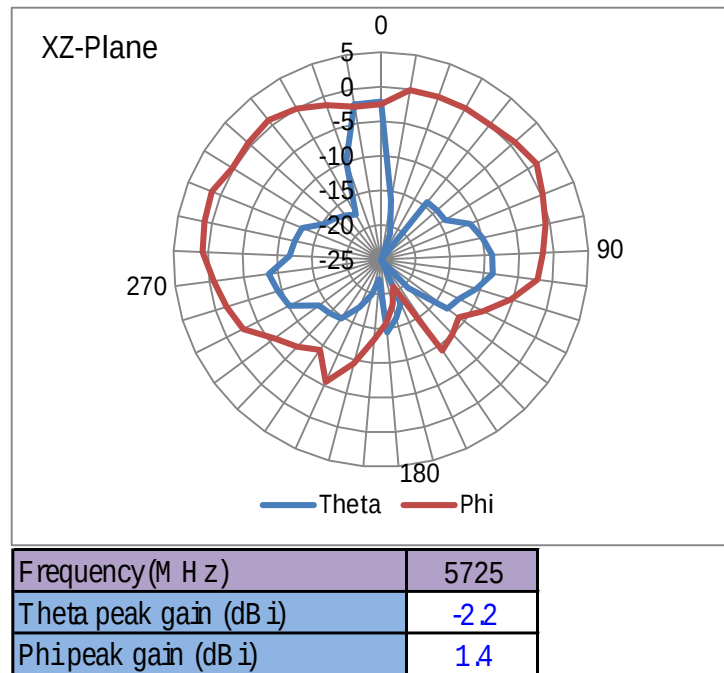
## Radiation pattern Aux Antenna

Antenna: 5600MHz



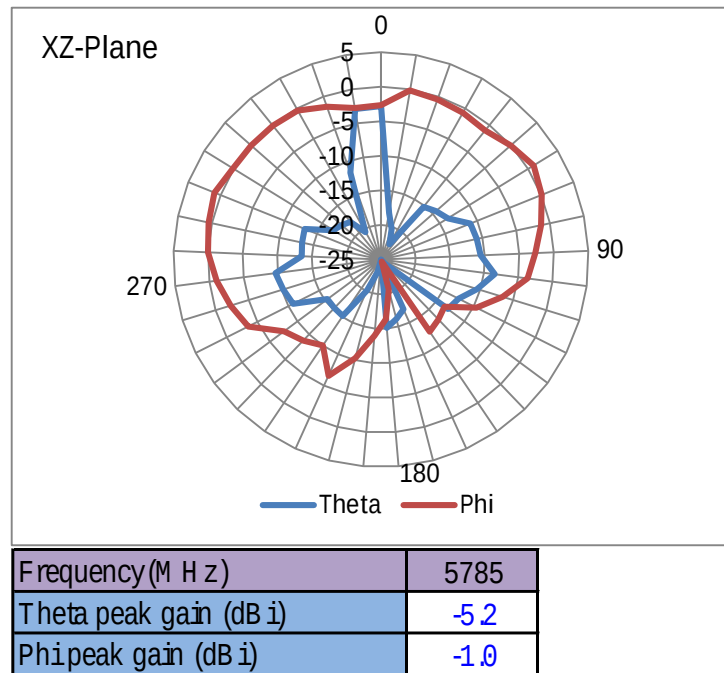
## Radiation pattern Aux Antenna

Antenna: 5725MHz



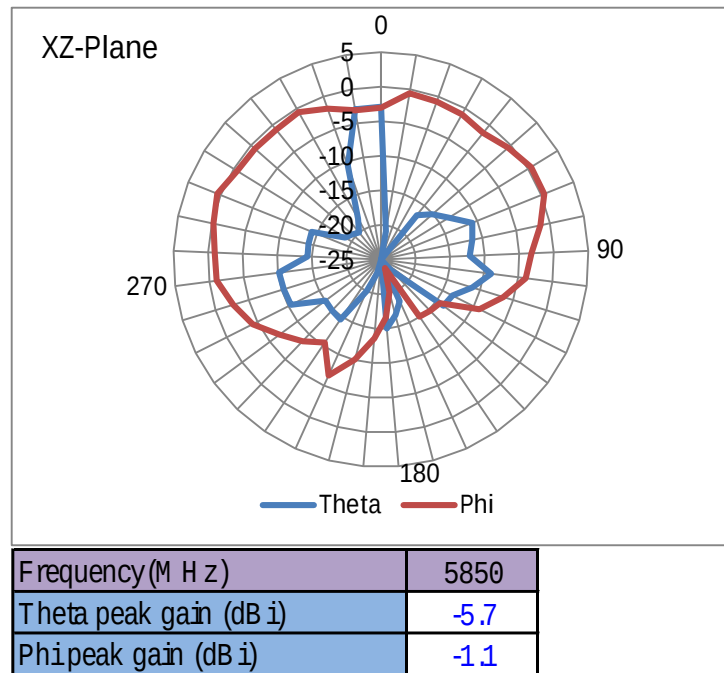
## Radiation pattern Aux Antenna

Antenna: 5785MHz



## Radiation pattern Aux Antenna

Antenna: 5850MHz





## Main Antenna Gain Table (dBi)

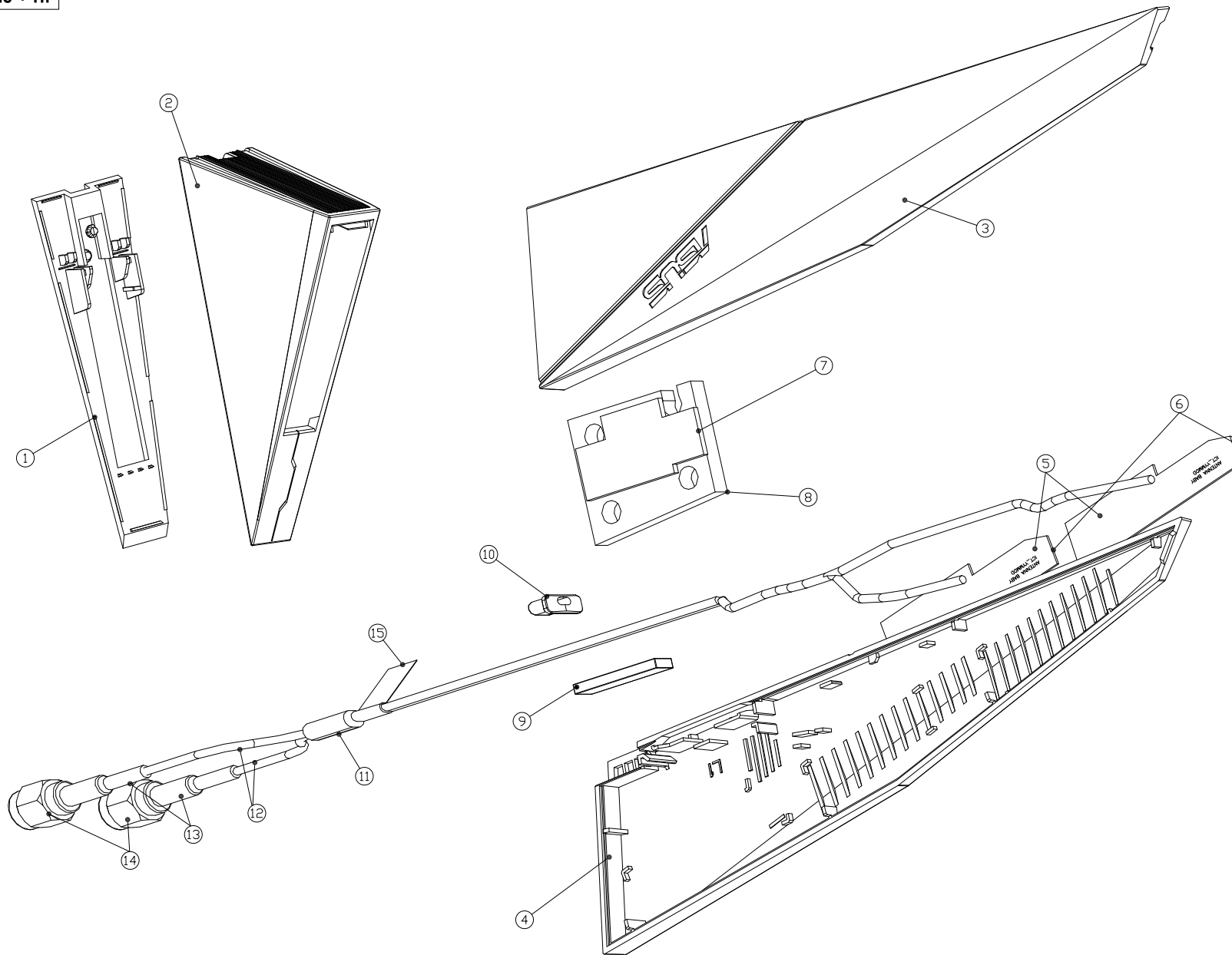
|                    | Peak Gain         |                     |                   | Cable Loss<br>(dBi) |
|--------------------|-------------------|---------------------|-------------------|---------------------|
| Frequency<br>(MHZ) | Vertical<br>(dBi) | Horizontal<br>(dBi) | Efficiency<br>[%] | Loss                |
| 2400               | -3.3              | -0.7                | -3.6              | 1.5                 |
| 2450               | -2.5              | 0.4                 | -3.4              | 1.5                 |
| 2500               | -3.7              | -0.8                | -3.6              | 1.5                 |
| 5150               | -4.7              | -0.7                | -3.8              | 2.4                 |
| 5250               | -4.9              | -0.3                | -4.1              | 2.4                 |
| 5350               | -5.5              | -0.1                | -4.4              | 2.4                 |
| 5470               | -4.8              | -0.8                | -4.7              | 2.4                 |
| 5600               | -4.4              | -0.9                | -4.7              | 2.5                 |
| 5725               | -3.4              | 0.1                 | -4.6              | 2.5                 |
| 5785               | -7.1              | -2.1                | -4.9              | 2.5                 |
| 5850               | -7.8              | -2.2                | -4.9              | 2.5                 |

## Aux Antenna Gain Table (dBi)

|                    | Peak Gain         |                     |                   | Cable Loss<br>(dBi) |
|--------------------|-------------------|---------------------|-------------------|---------------------|
| Frequency<br>(MHZ) | Vertical<br>(dBi) | Horizontal<br>(dBi) | Efficiency<br>[%] | Loss                |
| 2400               | -5.7              | -0.8                | -3.1              | 1.5                 |
| 2450               | -5.0              | -1.2                | -3.2              | 1.5                 |
| 2500               | -5.1              | -0.8                | -2.9              | 1.5                 |
| 5150               | -2.5              | 2.7                 | -2.9              | 2.4                 |
| 5250               | -2.9              | 2.0                 | -3.7              | 2.4                 |
| 5350               | -2.9              | 1.7                 | -3.8              | 2.4                 |
| 5470               | -2.7              | 2.5                 | -3.6              | 2.4                 |
| 5600               | -2.6              | 1.7                 | -3.3              | 2.5                 |
| 5725               | -2.2              | 1.4                 | -3.2              | 2.5                 |
| 5785               | -5.2              | -1.0                | -3.8              | 2.5                 |
| 5850               | -5.7              | -1.1                | -3.9              | 2.5                 |

RoHS + HF

| REV | DESCRIPTION              | DESIGN   | DATE       |
|-----|--------------------------|----------|------------|
| X1  | NEW DRAWING              | HELENA   | 2018.04.25 |
| X2  | NEW DRAWING              | REBECCA  | 2018.06.20 |
| X3  | MODIFY LABEL AREA        | REBECCA  | 2018.10.18 |
| X4  | ADD CABLE MATERIAL & P/N | REBECCA  | 2019.04.09 |
| X5  | ADD CUSTOMER P/N         | REBECCA  | 2019.04.22 |
| X6  | MODIFY PART NO.          | Helena   | 2019.08.05 |
| X7  | MODIFY COLOR             | ANDERSON | 2019.12.12 |
| X8  | ADD GROOVE               | ANDERSON | 2020.04.23 |



備註:

1.本圖為全組立圖+0/00

2.整機特性測試: 100%

3.標註尺寸須做量點檢驗(SPC)

4.組立完成應妥善包裝, 不得有外傷等

5.本產品使用原物料及制程必須符合

立訊/QW-QA-43環境管理物質相關規定

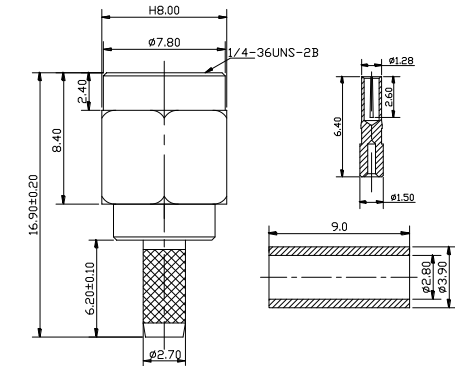
6.此產品及其附屬包裝材料的均質成份須滿足產商管制要求:

Br<90ppm,Cr<900ppm,Bi<Cr<1500ppm

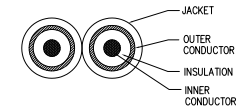
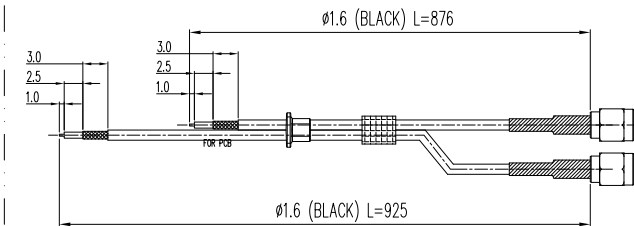
| ITEM                               | PART NO | NAME                                  | DESCRIPTION                                                                                    | COLOR                  | Q'TY |
|------------------------------------|---------|---------------------------------------|------------------------------------------------------------------------------------------------|------------------------|------|
| 15                                 | ----    | LABEL                                 | 25 x 6mm                                                                                       | PAPER:WHITE,BORD:BLACK | 1    |
| 14                                 | ----    | CONN SMA                              | SAM R/P PULG,<br>BODY : C3604 ,<br>MIN 14" AU PLATING,<br>MIN 80" NI PLATING,<br>INSULATOR:PIE | GOLDEN                 | 2    |
| 13                                 | ----    | SHRK TUBE                             | #3.5 x 20mm                                                                                    | BLACK                  | 2    |
| 12                                 | ----    | CABLE                                 | DOUBLE CABLE#1.8 ,<br>BLACK , L=925mm<br>TYPE : RP-1.37T/50<br>P/N :SY137/50-D06(BLACK)        | BLACK                  | 1    |
| 11                                 | ----    | SR FWMG CABLE                         | SILICONE , 10 x 5.3 x 3.55mm                                                                   | BLACK                  | 1    |
| 10                                 | ----    | SR OUTLE 27ZR                         | SILICONE , 8.5 x 6 x 3.6mm                                                                     | BLACK                  | 1    |
| 9                                  | ----    | MAGNET N35                            | TN35 Nd-Fe-B4W 486Gmm ,<br>20 x 4 x 1.95mm                                                     | LIGHT BLUE WHITE       | 1    |
| 8                                  | ----    | CLUMP WEIGHT                          | SPCC , 29.5 x 25 x 3mm                                                                         | LIGHT BLUE WHITE       | 1    |
| 7                                  | ----    | SILICONE                              | EVA, 28.5 x 15 x 1.3mm                                                                         | BLACK                  | 1    |
| 6                                  | ----    | ADHESIVE TAPE                         | GROOD , 42.5 x 9.5 x 0.15mm                                                                    | COLORLESS              | 2    |
| 5                                  | ----    | PCB ANT                               | FRA , 43.5 x 10.5 x 0.4mm                                                                      | BLACK                  | 2    |
| 4                                  | ----    | CAS ANT L                             | TN3713B (ABS+PC)                                                                               | BLACK                  | 1    |
| 3                                  | ----    | CAS ANT R                             | TN3713B (ABS+PC)                                                                               | BLACK                  | 1    |
| 2                                  | ----    | CAS BASE UP                           | TN3713B (ABS+PC)                                                                               | BLACK                  | 1    |
| 1                                  | ----    | CAS BASE DOWN                         | TN3713B (ABS+PC)                                                                               | BLACK                  | 1    |
| TOLERANCE(UNLESS SPECIFIED):       |         |                                       |                                                                                                |                        |      |
| "X" .40(.05)                       |         |                                       |                                                                                                |                        |      |
| "Y,X" .40(.05)                     |         |                                       |                                                                                                |                        |      |
| "Z,X" .25(.10)                     |         |                                       |                                                                                                |                        |      |
| "Z,X,X" .40(.05)                   |         |                                       |                                                                                                |                        |      |
| LIMIT:                             |         |                                       |                                                                                                |                        |      |
| THREE DRAWINGS AND OPERATIONS      |         |                                       |                                                                                                |                        |      |
| AND THE PROPERTY OF LUXSHARE       |         |                                       |                                                                                                |                        |      |
| AND SHALL NOT BE REPRODUCED        |         |                                       |                                                                                                |                        |      |
| FORMED WITHOUT THE WRITTEN CONSENT |         |                                       |                                                                                                |                        |      |
| OF LUXSHARE                        |         |                                       |                                                                                                |                        |      |
| CUSTOMER P/N: 1408-02650400        |         | LUXSHARE-ICT                          |                                                                                                |                        |      |
| APPD: ANDERSON                     |         | TITLE: DPOLE ANTENNA 27ZR RSMA - ASSY |                                                                                                |                        |      |
| CHKD: ANDERSON                     |         | PART NO: LA08F251-CS-II               |                                                                                                |                        |      |
| DRAW: REBECCA                      |         | SCALE: 1:1                            |                                                                                                |                        |      |
|                                    |         | SHEET: 1/4                            |                                                                                                |                        |      |
|                                    |         | REV: ---                              |                                                                                                |                        |      |
|                                    |         | X8                                    |                                                                                                |                        |      |

RoHS + HF

CONN SMA



CABLE



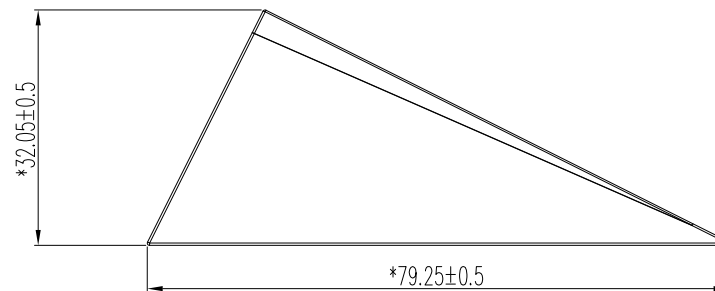
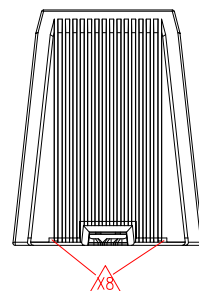
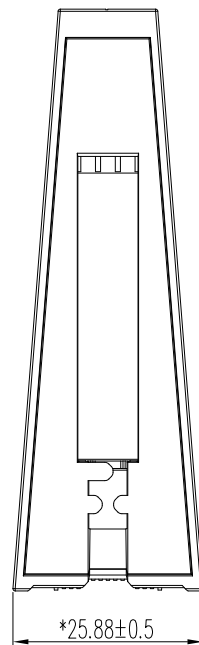
| TYPE : RF-137T/50 |                                       | P/N : SY137T/50-006(BLACK)       |
|-------------------|---------------------------------------|----------------------------------|
| INNER CONDUCTOR   | MATERIAL                              | SILVER PLATED COPPER WIRE        |
|                   | MAKEUP: TOTAL, O.D. OF EVERY WIRE(mm) | 7/0.102                          |
|                   | INTERWST NOM.O.D.(mm)                 | 0.306 $\pm$ 0.02                 |
| INSULATION        | MATERIAL                              | FEP                              |
|                   | COLOR                                 | CLARITY                          |
|                   | NOM.O.D.(mm)                          | 0.90 $\pm$ 0.03                  |
| OUTER CONDUCTOR   | MATERIAL                              | TINNED COPPER WIRE               |
|                   | MAKEUP: TOTAL, O.D. OF EVERY WIRE(mm) | 5/0.05                           |
|                   | NOM.O.D.(mm)                          | 1.13 $\pm$ 0.05                  |
|                   | COVERAGE RATIO(%)                     | 90 $\pm$ 5                       |
| JACKET            | MATERIAL                              | FRPE                             |
|                   | COLOR                                 | BLACK                            |
|                   | NOM.O.D.(mm)                          | 1.6 $\pm$ 0.10 / 3.20 $\pm$ 0.10 |

- 備註:
- 本圖為ANTENNA CIS 成品圖
  - 空氣特種測試 - 100%
  - 標註尺寸須做重點檢驗(SPC)
  - 組立完成應妥善包裝, 不得有外傷
  - 本產品使用原物料及製程必須符合
  - 立業"QW-C2A-43"環境管理物質相關規定
  - 此產品及其附屬包裝材料的均含成份須滿足業管制要求:  
Br<900ppm,Cl<900ppm,Br+Cl<1500ppm

|                                                                                                                                                                                  |       |                              |                |               |                                |   |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------|----------------|---------------|--------------------------------|---|-----|
| TOLERANCES UNLESS SPECIFIED                                                                                                                                                      |       | CUSTOMER P/N: 14008-02650400 |                | LUXSHARE-ICT  |                                | H |     |
| "X"                                                                                                                                                                              | ±0.5  | APPD: ANDERSON               | CHKD: ANDERSON | DRAW: REBECCA | TITLE: DPOLE ANTENNA 272R ISMA |   | REV |
| "XX"                                                                                                                                                                             | ±0.25 |                              |                |               | - ASSY                         |   |     |
| "XXX"                                                                                                                                                                            | ±0.10 |                              |                |               | PART NO: LA08F251-CS-II        |   |     |
| "C" LOCK                                                                                                                                                                         | ±0.05 |                              |                |               | SCALE SHEET SIZE               |   |     |
| UNITS:                                                                                                                                                                           | mm    |                              |                |               | 1:1 2/4 -- XS                  |   |     |
| THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF LUXSHARE-ICT AND SHALL NOT BE REPRODUCED OR COPIED IN ANY FORM OR BY ANY MEANS WITHOUT THE WRITTEN CONSENT OF LUXSHARE-ICT |       |                              |                |               |                                |   |     |

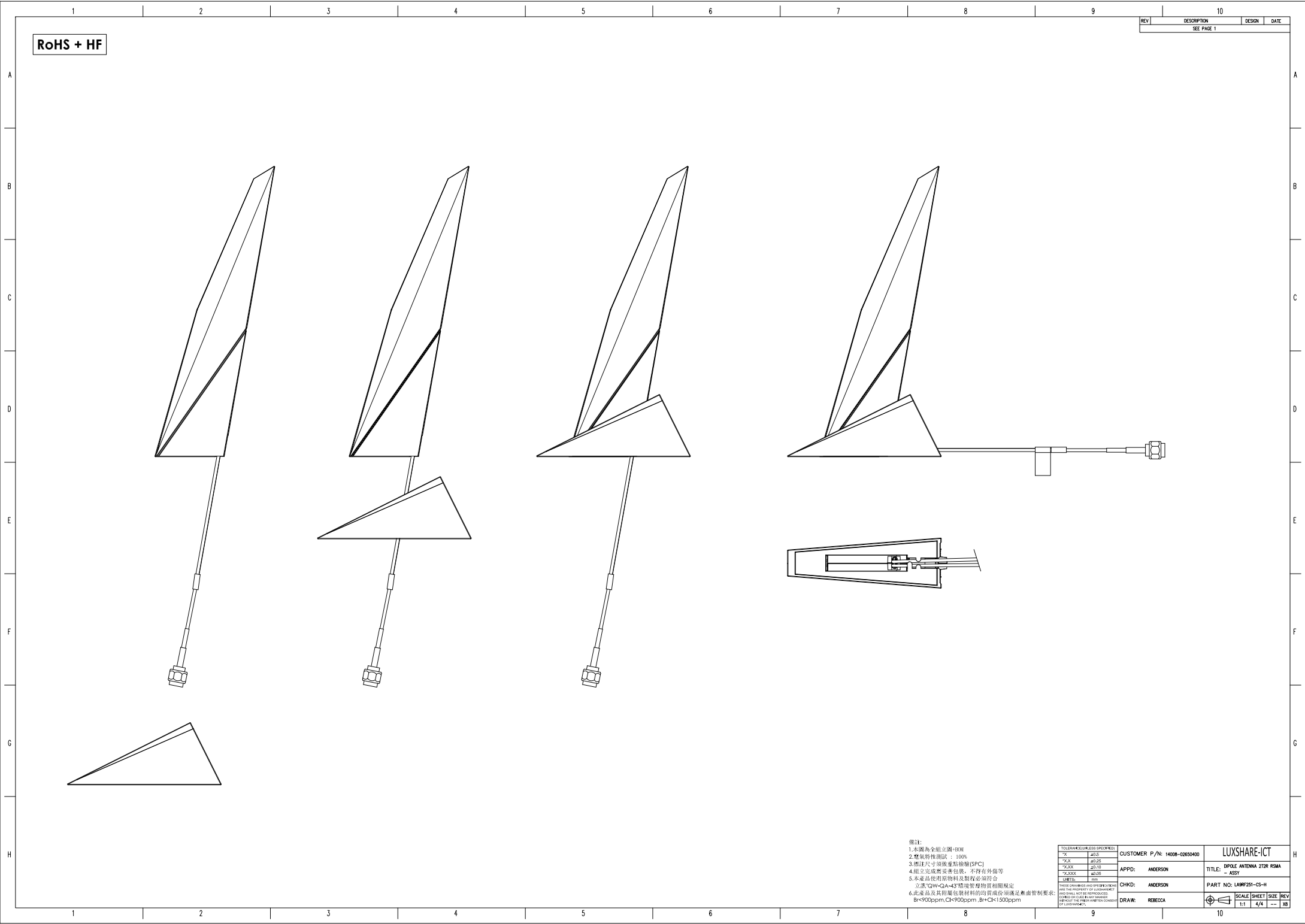
RoHS + HF

| REV        | DESCRIPTION | DESIGN | DATE |
|------------|-------------|--------|------|
| SEE PAGE 1 |             |        |      |



- 備註:
- 1.本圖為CAS BASE 成品圖
  - 2.電氣特性測試：100%
  - 3.標註尺寸須做重點檢驗(SPC)
  - 4.組立完成需妥善包裝，不得有外傷
  - 5.本產品使用原物料及製程必須符合  
立訊"QW-QA-43"環境管理物質相關規定
  - 6.此產品及其附屬包裝材料的均質成份須滿足無鹵管制要求:  
Br<900ppm,Cl<900ppm ,Br+Cl<1500ppm

|                                                                                                                                                                  |       |                              |          |                                                                                                  |     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|------------------------------|----------|--------------------------------------------------------------------------------------------------|-----|
| TOLERANCES(UNLESS SPECIFIED)                                                                                                                                     |       | CUSTOMER P/N: 14008-02650400 |          | LUXSHARE-ICT                                                                                     |     |
| "D"                                                                                                                                                              | ±0.5  |                              |          |                                                                                                  |     |
| "R"                                                                                                                                                              | ±0.05 |                              |          |                                                                                                  |     |
| "DIA"                                                                                                                                                            | ±0.10 |                              |          |                                                                                                  |     |
| "DIA"                                                                                                                                                            | ±0.05 |                              |          |                                                                                                  |     |
| UNIT:                                                                                                                                                            | mm    |                              |          |                                                                                                  |     |
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|                                                                                                                                                                  |       | APPD:                        | ANDERSON | TITLE: DIPOLE ANTENNA 212R R3MA<br>- ASSY                                                        |     |
|                                                                                                                                                                  |       | CHKD:                        | ANDERSON | PART NO: LA08251-CS-II                                                                           |     |
|                                                                                                                                                                  |       | DRAW:                        | REBECCA  |  SCALE: 1:1 |     |
|                                                                                                                                                                  |       |                              |          | SHEET                                                                                            | 3/4 |
|                                                                                                                                                                  |       |                              |          | SIZE                                                                                             | A4  |
|                                                                                                                                                                  |       |                              |          | REV                                                                                              | X8  |



RoHS + HF

| REV | DESCRIPTION | DESIGN | DATE |
|-----|-------------|--------|------|
|     | SEE PAGE 1  |        |      |

備註:

- 1.本圖為全組立圖(BOB)
- 2.整氣特性測試：100%
- 3.標註尺寸須做重點檢驗(SPC)
- 4.組立完成需妥善包裝，不得有外傷等
- 5.本產品使用原物料及制程必須符合

立訊/QW-QA-43環境管理物質相關規定  
6.此產品及其附屬包裝材料的均質成份須滿足垂直管制要求:  
Br<90ppm,Cr<900ppm,Bi+Cr<1500ppm

| TOLERANCES(UNLESS SPECIFIED) |       |
|------------------------------|-------|
| "X"                          | ±0.5  |
| "Y,X"                        | ±0.05 |
| "Y,X,X"                      | ±0.10 |
| "Z,X,X,X"                    | ±0.05 |
| LENGTH                       | mm    |

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CUSTOMER P/N: 14008-02650400

APPD: ANDERSON

CHKD: ANDERSON

DRAW: REBECCA

LUXSHARE-ICT

TITLE: DPXLE ANTENNA 272R RSM

- ASSY

PART NO: LA087251-CS-II

SCALE SHEET SIZE REV  
1:1 4/4 --- XS