



REPORT No.: SZ24040032E10

# TEST REPORT

**APPLICANT** : TECMEN ELECTRONICS CO., LTD

**PRODUCT NAME** : Active over-the-head earmuff/Active hard-hat-mount earmuff

**MODEL NAME** : AMB S3A/AMB S3E

**TRADE NAME** : Tecmen

**BRAND NAME** : Tecmen

**STANDARD(S)** : IEEE Std 149-2021

**RECEIPT DATE** : 2024-05-23

**TEST DATE** : 2024-06-21

**ISSUE DATE** : 2024-07-16



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**MORLAB**

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| Change History |            |                   |
|----------------|------------|-------------------|
| Version        | Date       | Reason for change |
| 1.0            | 2024-07-16 | First edition     |



# 1. Technical Information

**Note:** Provide by applicant.

## 1.1. Applicant and Manufacturer Information

|                              |                                                                                          |
|------------------------------|------------------------------------------------------------------------------------------|
| <b>Applicant:</b>            | TECMEN ELECTRONICS CO., LTD                                                              |
| <b>Applicant Address:</b>    | NO. 8 HUYUE EAST ROAD, LONGCHI STREET, LUHE DISTRICT, NANJING 211599, P.R.CHINA          |
| <b>Manufacturer:</b>         | TECMEN ELECTRONICS CO., LTD                                                              |
| <b>Manufacturer Address:</b> | NO. 8 HUYUE EAST ROAD, LONGCHI STREET, LUHE DISTRICT, NANJING 211599, P.R.CHINA          |
| <b>Factory:</b>              | TECMEN ELECTRONICS CO., LTD                                                              |
| <b>Factory Address:</b>      | BUILDING D-B, NO.21 NORTH LIUZHOU ROAD, XIAOLIU INDUSTRY PARK, NANJING 210031, P.R.CHINA |

## 1.2. Equipment Under Test (EUT) Description

|                           |                 |
|---------------------------|-----------------|
| <b>Wireless Type</b>      | Bluetooth       |
| <b>Frequency</b>          | 2400MHz-2500MHz |
| <b>Antenna Type</b>       | PCB Antenna     |
| <b>Product HW Version</b> | N/A             |
| <b>Product SW Version</b> | N/A             |
| <b>IMEI</b>               | N/A             |
| <b>Sample No.</b>         | 3#              |

**Note:**

We, TECMEN ELECTRONICS CO., LTD declare that for product name:Active over-the-head earmuff,model name:AMB S3A and product name:Active hard-hat-mount earmuff,model name:AMB S3E, only have differences in appearance , model name and whether with a hat. Except for the differences shown above. Their electrical circuit design, layout, components used and internal wiring are identical. No other changes.

## 2. Test Results

### 2.1. Applied Reference Documents

Leading reference documents for testing:

| No. | Identity          | Document Title                                     |
|-----|-------------------|----------------------------------------------------|
| 1   | IEEE Std 149-2021 | IEEE Recommended Practice for Antenna Measurements |

### 2.2. Test Conditions

Test Environment Conditions:

|                       |         |
|-----------------------|---------|
| Relative Humidity(%): | 25 - 75 |
| Temperature(°C):      | 10 - 30 |

### 2.3. Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the “Guide to the Expression of Uncertainty in Measurement” (GUM) published by ISO. When the test result is a critical value, we will use the measurement uncertainty give the judgment result based on the 95% Confidence intervals.

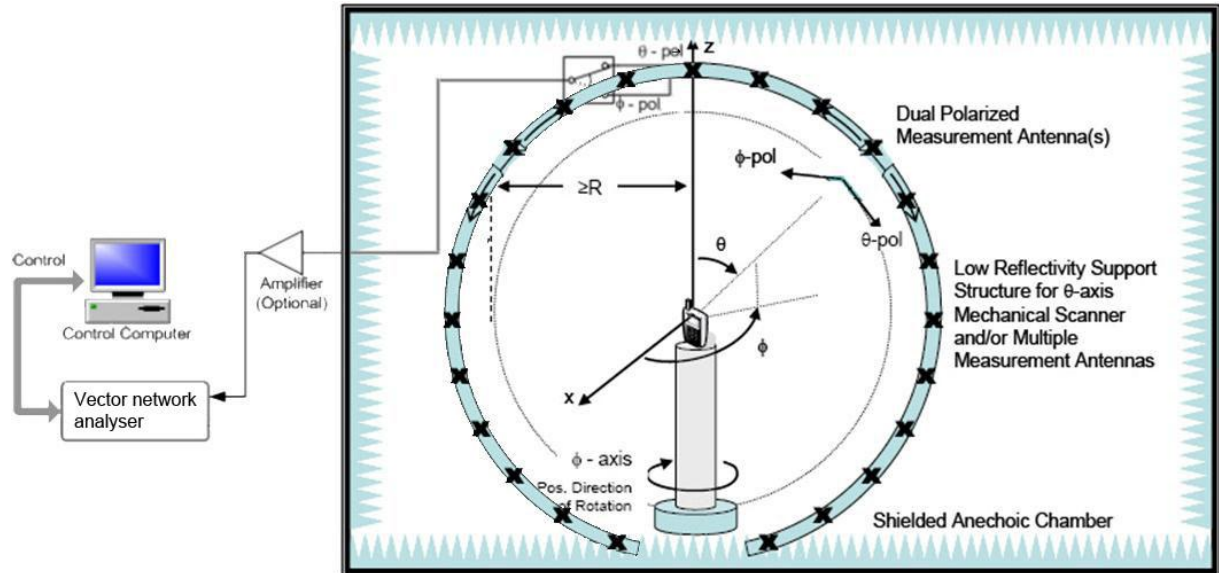


## 2.4. Test Results lists

### 2.4.1. Gain

| Frequency<br>(MHz) | Gain(dBi) |
|--------------------|-----------|
| 2400               | -0.40     |
| 2410               | -0.19     |
| 2420               | 0.03      |
| 2430               | 0.17      |
| 2440               | 0.31      |
| 2450               | 0.74      |
| 2460               | 1.07      |
| 2470               | 1.24      |
| 2480               | 1.30      |
| 2490               | 1.16      |
| 2500               | 1.01      |

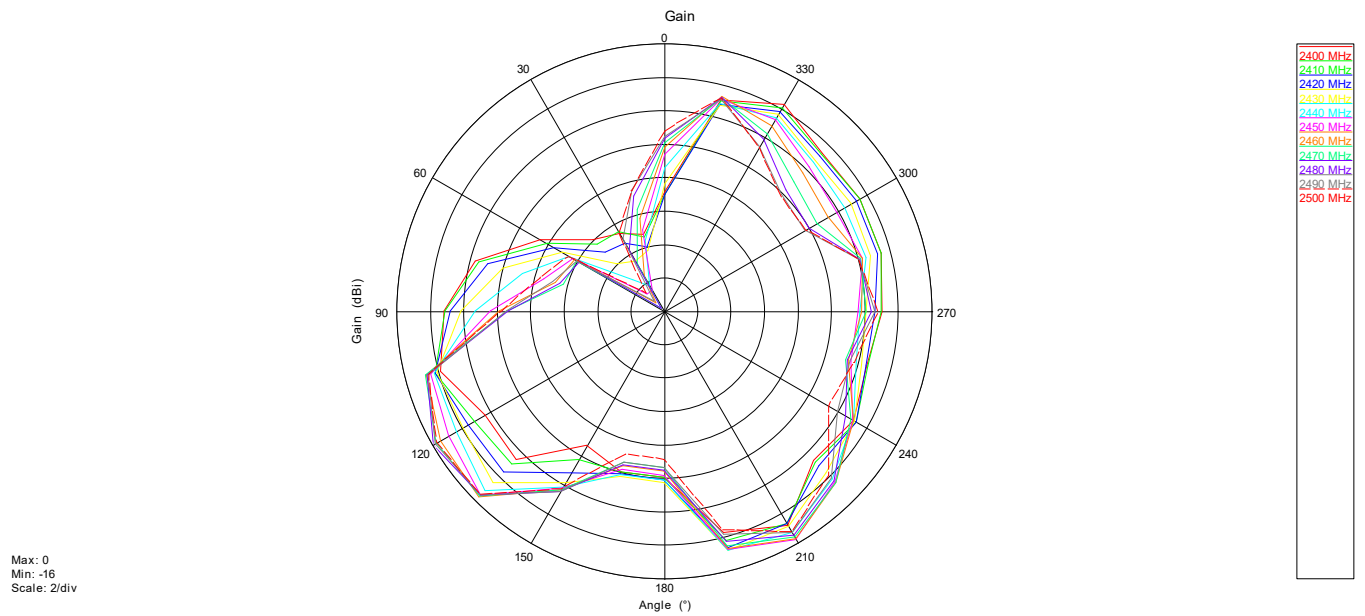
## Annex A Test Setup Photos



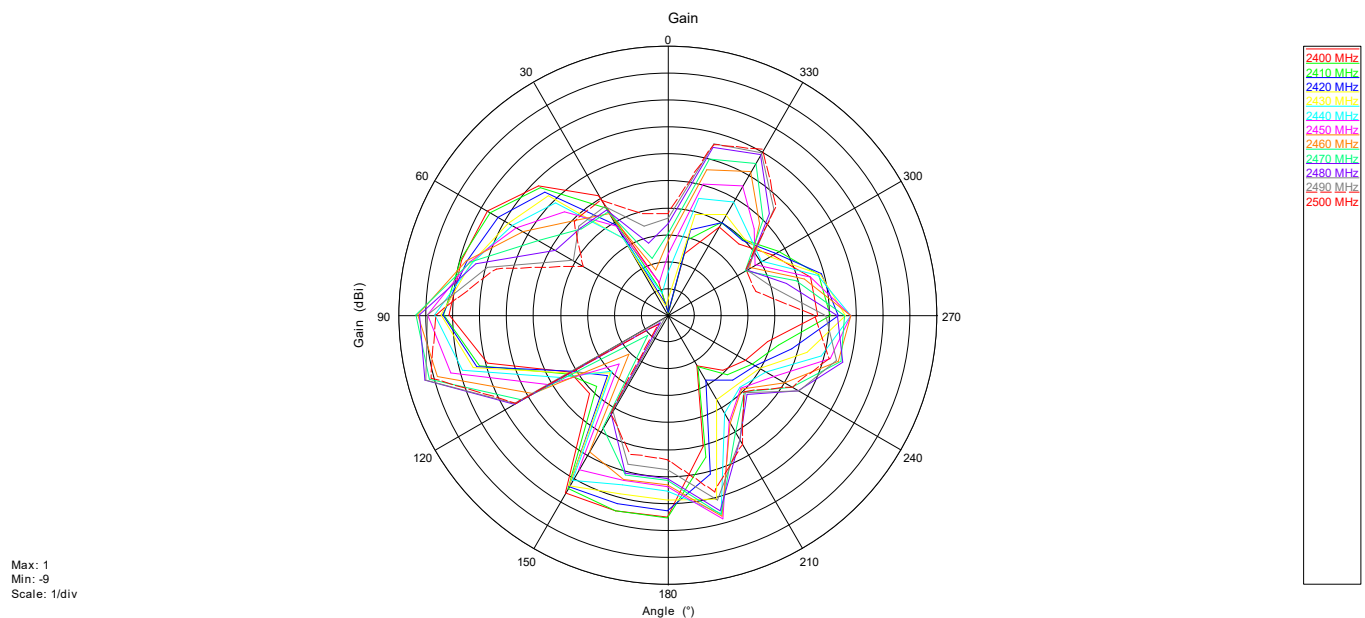


## Annex B Figures

### 1. 2D Radiation Pattern



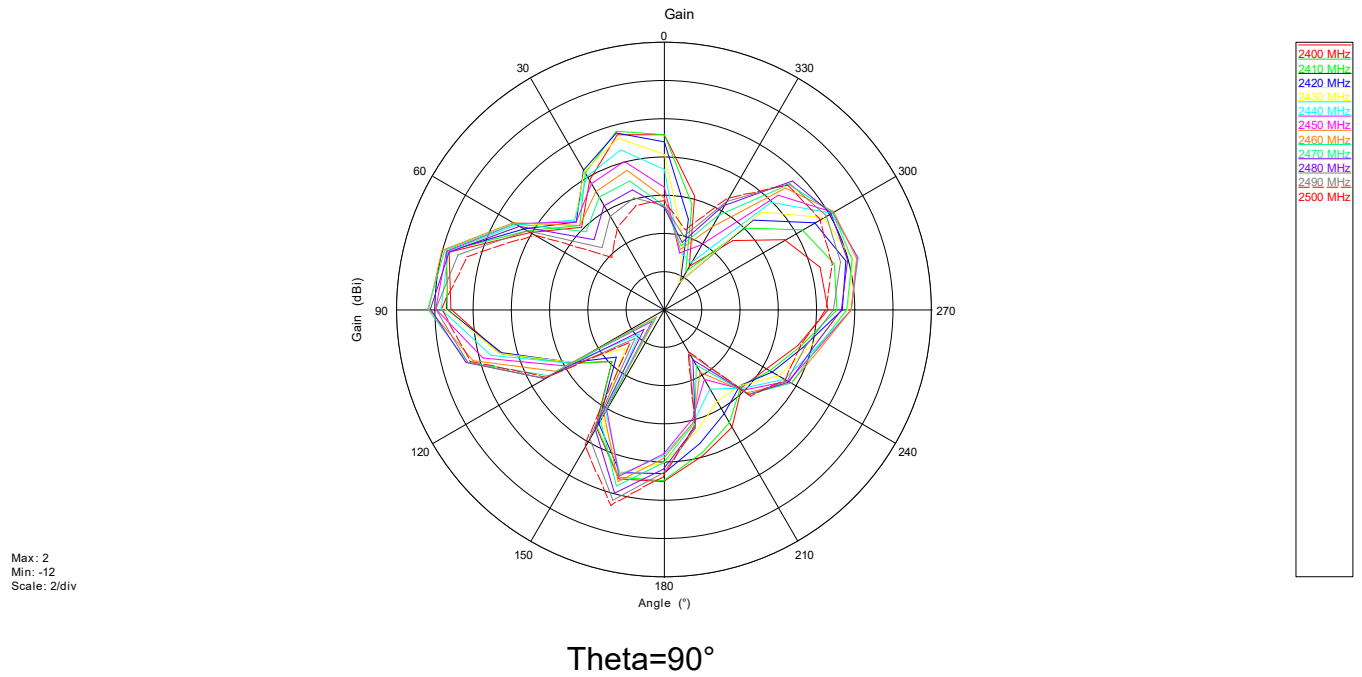
Phi=0°



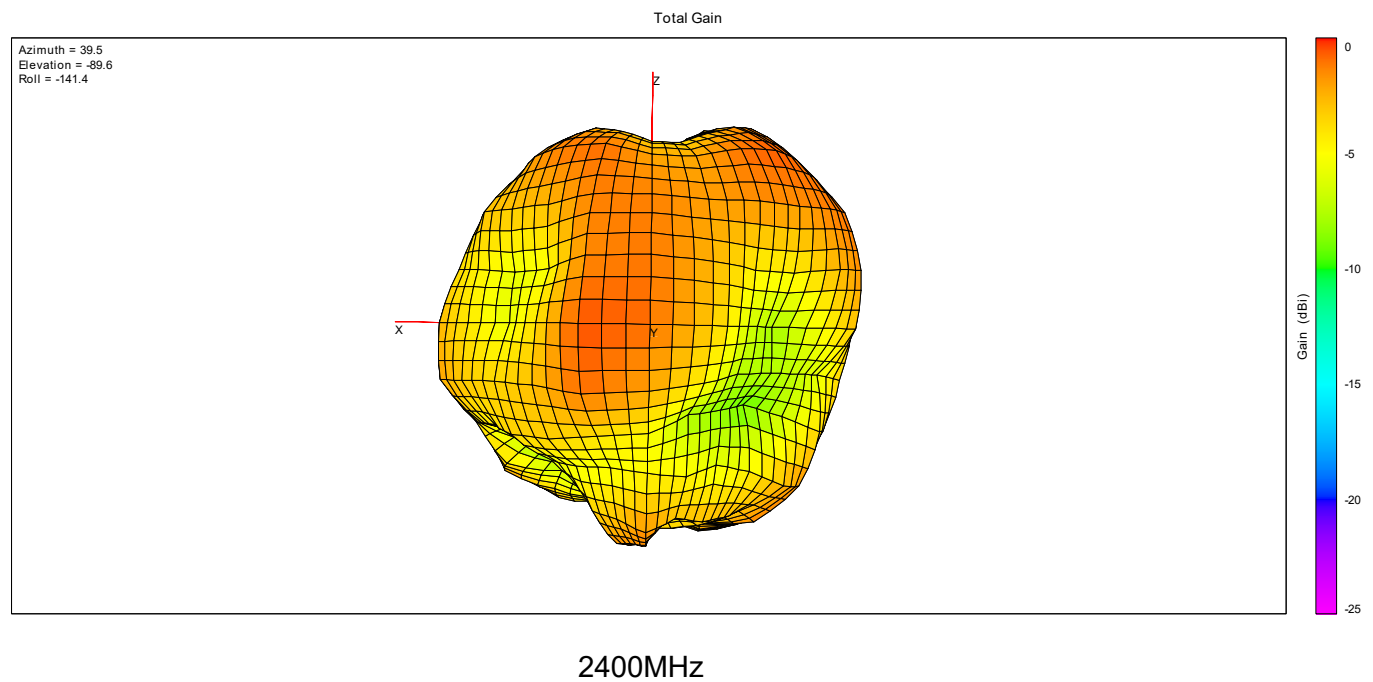
Phi=90°

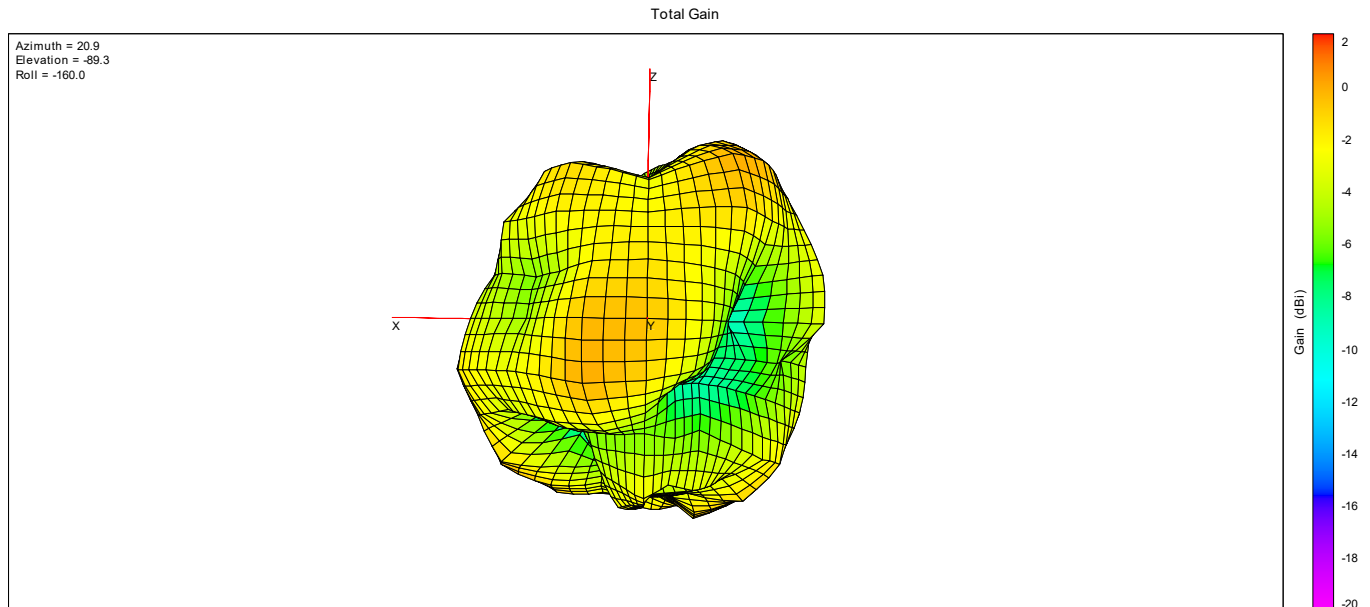


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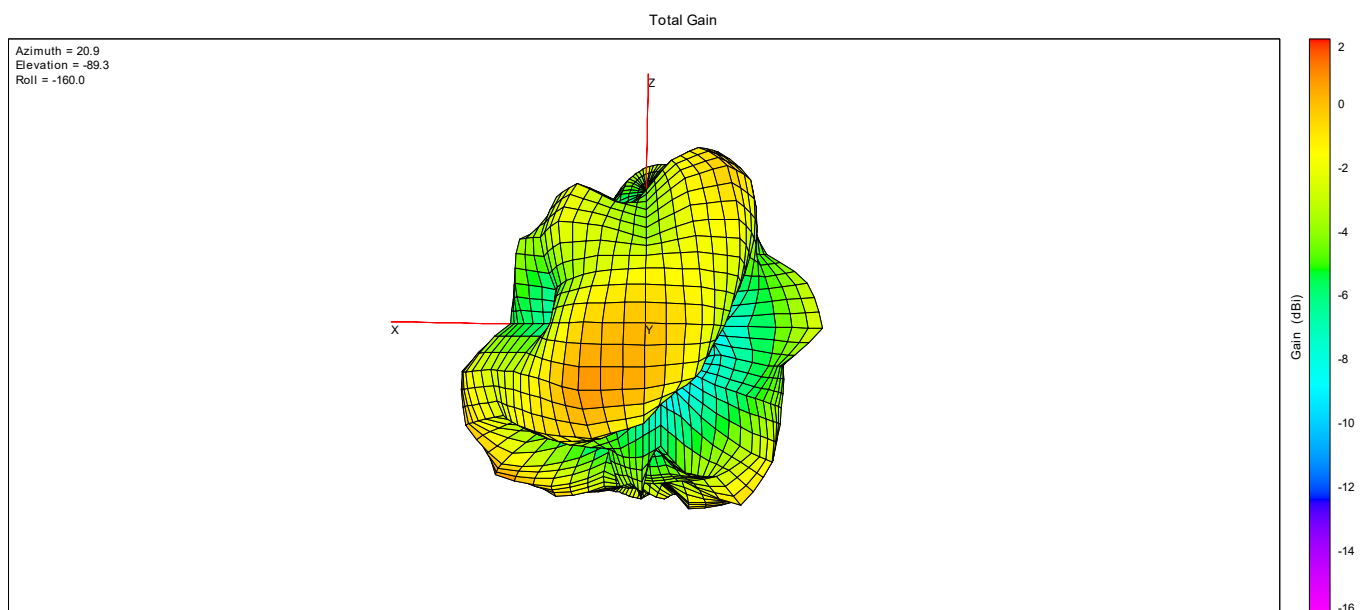


## 2. 3D Radiation Pattern





2440MHz



2480MHz



## Annex C General Information

### 1.1 Identification of the Responsible Testing Laboratory

|                     |                                                                                                                                    |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Laboratory Name:    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                |
| Laboratory Address: | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , Guangdong Province, P. R. China |
| Telephone:          | +86 755 36698555                                                                                                                   |
| Facsimile:          | +86 755 36698525                                                                                                                   |

### 1.2 Identification of the Responsible Testing Location

|          |                                                                                                                                    |
|----------|------------------------------------------------------------------------------------------------------------------------------------|
| Name:    | Shenzhen Morlab Communications Technology Co., Ltd.                                                                                |
| Address: | FL.1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , Guangdong Province, P. R. China |

### 1.3 Test Equipments Utilized

| No. | Equipement Name  | Serial No.   | Type          | Manufacturer | Cal.Date   | Cal.Due Date |
|-----|------------------|--------------|---------------|--------------|------------|--------------|
| 1   | Network Analyzer | MY46110140   | E5071C        | Agilent      | 2024.05.30 | 2025.05.29   |
| 2   | OTA Chamber      | TJ2235-Q1793 | AMS-8923 -150 | ETS          | 2022.11.30 | 2025.11.29   |

### 1.4 Test Software Utilized

| No. | Software Name              | Serial No. | Version                            | Manufacturer |
|-----|----------------------------|------------|------------------------------------|--------------|
| 1   | Antenna Measurement System | 1685       | EMQuest EMQ-100 V 1.13 Build 21267 | ETS          |

**Note:**The Main report is end here and the other Annex D will be submitted separately.

————— END OF MIAN REPORT —————