# TEST REPORT

| | | |
|---|---|---|
| **Reference No.** | : | WTS17S1092280-1E |
| **FCC ID** | : | 2AIRP8580020 |
| **Applicant** | : | ALPHA GROUP CO., LTD. |
| **Address** | : | AULDEYIND. AREA, WENGUAN RD.(CENTRAL),CHENGHAI, SHANTOU,GUANGDONG, CHINA |
| **Manufacturer** | : | ALPHA GROUP CO., LTD. |
| **Address** | : | AULDEYIND. AREA, WENGUAN RD.(CENTRAL),CHENGHAI, SHANTOU,GUANGDONG, CHINA |
| **Product** | : | 2.4G remote control |
| **Model(s)** | : | US858240-6 |
| **Standards** | : | FCC CFR Title 47 Chapter I Subchapter A Part 15 Subpart C Section 15.249 :2017 |
| **Date of Receipt sample** | : | 2017-10-12 |
| **Date of Test** | : | 2017-10-13 to 2017-10-20 |
| **Date of Issue** | : | 2017-10-21 |
| **Test Result** | : | Pass |

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.


**Prepared By:**
**Waltek Services (Shenzhen) Co., Ltd.**
Address: 1/F., Fukangtai Building, West Baima Road, Songgang Street, Baoan District, Shenzhen, Guangdong, China
Tel :+86-755-83551033
Fax:+86-755-83552400


Compiled by:

Robin Zhou / Test Engineer

Approved by:

Philo Zhong / Manager

# 1 Laboratories Introduction

**Waltek Services Test Group Ltd.** is one of the largest and the most comprehensive third party testing organizations in China, our headquarter located in Shenzhen (CNAS Registration No. L3110, A2LA Certificate Number: 4243.01) and have branches in Foshan (CNAS Registration No. L6478), Dongguan (CNAS Registration No. L9950), Zhongshan, Suzhou (CNAS Registration No. L7754), Ningbo and Hong Kong, Our test capability covered four large fields: safety test. Electronic Magnetic Compatibility(EMC), reliability and energy performance, Chemical test. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC(The Federal Communications Commission), CPSC(Consumer Product Safety Commission), CEC(California energy efficiency), IC(Industry Canada) and ELI(Efficient Lighting Initiative). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as UL, Intertek(ETL-SEMKO), CSA, TÜV Rheinland, TÜV SÜD, etc. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

**Waltek Services (Shenzhen) Co., Ltd.**

**A. Accreditations for Conformity Assessment (International)**

| Country/Region | Accreditation Body | Scope | Note |
|---|---|---|---|
| USA | **CNAS (Registration No.: L3110) A2LA (Certificate No.: 4243.01)** | FCC ID \ DOC \ VOC | 1 |
| Canada | | IC ID \ VOC | 2 |
| Japan | | MIC-T \ MIC-R | - |
| Europe | | EMCD \ RED | - |
| Taiwan | | NCC | - |
| Hong Kong | | OFCA | - |
| Australia | | RCM | - |
| India | **International Services** | WPC | - |
| Thailand | | NTC | - |
| Singapore | | IDA | - |
| Note:<br>1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.<br>2. IC Canada Registration No.: 7760A | | | |

**B. TCBs and Notify Bodies Recognized Testing Laboratory.**

| Recognized Testing Laboratory of … | Notify body number |
|---|---|
| TUV Rheinland | Optional. |
| Intertek | |
| TUV SUD | |
| SGS | |
| Phoenix Testlab GmbH | 0700 |
| Element Materials Technology Warwick Ltd | 0891 |
| Timco Engineering, Inc. | 1177 |
| Eurofins Product Service GmbH | 0681 |

# 2 Contents

## 3 Revision History

| Test report No. | Date of Receipt sample | Date of Test | Date of Issue | Purpose | Comment | Approved |
|---|---|---|---|---|---|---|
| WTS17S1092280-1E | 2017-10-12 | 2017-10-13 to 2017-10-20 | 2017-10-21 | original | - | Valid |

# 4 General Information

## 4.1 General Description of E.U.T.

| | |
|---|---|
| Product | :2.4G remote control |
| Model(s) | :US858240-6 |
| Model Differences | :N/A |
| Type of Modulation | :GFSK |
| Frequency Range | :2410MHz-2465MHz, 56 Channels in total |
| Antenna installation | : Internal Antenna |
| Antenna Gain | : 2.3dBi |

## 4.2 Details of E.U.T.

Ratings : DC 6V by 1.5V 4 (size “AAA”)

## 4.3 Channel List

| Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) | Channel No. | Frequency (MHz) |
|---|---|---|---|---|---|---|---|
| 1 | 2410 | 15 | 2424 | 29 | 2438 | 43 | 2452 |
| 2 | 2411 | 16 | 2425 | 30 | 2439 | 44 | 2453 |
| 3 | 2412 | 17 | 2426 | 31 | 2440 | 45 | 2454 |
| 4 | 2413 | 18 | 2427 | 32 | 2441 | 46 | 2455 |
| 5 | 2414 | 19 | 2428 | 33 | 2442 | 47 | 2456 |
| 6 | 2415 | 20 | 2429 | 34 | 2443 | 48 | 2457 |
| 7 | 2416 | 21 | 2430 | 35 | 2444 | 49 | 2458 |
| 8 | 2417 | 22 | 2431 | 36 | 2445 | 50 | 2459 |
| 9 | 2418 | 23 | 2432 | 37 | 2446 | 51 | 2460 |
| 10 | 2419 | 24 | 2433 | 38 | 2447 | 52 | 2461 |
| 11 | 2420 | 25 | 2434 | 39 | 2448 | 53 | 2462 |
| 12 | 2421 | 26 | 2435 | 40 | 2449 | 54 | 2463 |
| 13 | 2422 | 27 | 2436 | 41 | 2450 | 55 | 2464 |
| 14 | 2423 | 28 | 2437 | 42 | 2451 | 56 | 2465 |

## 4.4 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Table 1 Tests carried out under FCC part 15.249

| Test mode | Low channel | Middle channel | High channel |
|---|---|---|---|
| Transmitting | 2410MHz | 2440MHz | 2465MHz |

Table 2 Tests carried out under FCC part 15.209

| Test Item | Test Mode |
|---|---|
| Radiation Emissions Test | Transmitting |

Note: The EUT is powered by new batteries during the test.

The EUT has been tested under its typical operating condition. Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting. Only the worst case data were reported.

# 5 Equipment Used during Test

## 5.1 Equipments List

| 3m Semi-anechoic Chamber for Radiation Emissions (Waltek Services (Shenzhen) Co., Ltd.) | | | | | | |
|---|---|---|---|---|---|---|
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Calibration Date** | **Calibration Due Date** |
| 1 | Spectrum Analyzer | R&S | FSP | 100091 | 2017-04-29 | 2018-04-28 |
| 2 | Trilog Broadband Antenna | SCHWARZBECK | VULB9163 | 336 | 2017-04-09 | 2018-04-08 |
| 3 | Broad-band Horn Antenna | SCHWARZBECK | BBHA 9120 D | 667 | 2017-04-09 | 2018-04-08 |
| 4 | Amplifier | Agilent | 8447D | 2944A10178 | 2017-04-13 | 2018-04-12 |
| 5 | Broadband Preamplifier | COMPLIANCE DIRECTION | PAP-1G18 | 2004 | 2017-04-13 | 2018-04-12 |
| 6 | Coaxial Cable (above 1GHz) | Top | 1GHz-18GHz | EW02014-7 | 2017-04-13 | 2018-04-12 |
| **3m Semi-anechoic Chamber for Radiation Emissions (Waltek Services (Shenzhen) Co., Ltd.)** | | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No** | **Last Calibration Date** | **Calibration Due Date** |
| 1 | Test Receiver | R&S | ESCI | 101296 | 2017-04-13 | 2018-04-12 |
| 2 | Trilog Broadband Antenna | SCHWARZBECK | VULB9160 | 9160-3325 | 2017-04-13 | 2018-04-12 |
| 3 | Active Loop Antenna | Beijing Dazhi | ZN30900A | - | 2017-04-09 | 2018-04-08 |
| 4 | Amplifier | ANRITSU | MH648A | M43381 | 2017-04-13 | 2018-04-12 |
| 5 | Cable | HUBER+SUHNER | CBL2 | 525178 | 2017-04-13 | 2018-04-12 |
| 6 | Coaxial Cable (below 1GHz) | Top | TYPE16(13M) | - | 2017-09-12 | 2018-09-11 |
| **10m Semi-anechoic Chamber for Radiation Emissions (Above18GHz) (Shenzhen Balun Technology Co.,Ltd.)** | | | | | | |
| **Item** | **Equipment** | **Manufacturer** | **Model No.** | **Serial No.** | **Last Calibration Date** | **Calibration Due Date** |
| 1. | Spectrum Analyzer | R&S | FSV-40 | 101544 | 2017-02-17 | 2018-02-16 |
| 2 | Antenna-Horn (18-40 GHz) | A-INFO | LB-180400KF | J211060273 | 2017-01-07 | 2018-01-06 |
| 3 | Amplifier | COM-MV | ZLNA-18-40G-021 | 1608001 | 2017-02-17 | 2018-02-16 |
| 4 | Cable | Top | 18-40GHz | - | 2017-02-17 | 2018-02-16 |

## 5.2 Measurement Uncertainty

| Parameter | Uncertainty |
|---|---|
| Radio Frequency | ± 1 x $10^{-6}$ |
| RF Power | ± 1.0 dB |
| RF Power Density | ± 2.2 dB |
| Radiated Spurious Emissions test | ± 5.03 dB (Bilog antenna 30M~1000MHz) |
| | ± 5.47 dB (Horn antenna 1000M~25000MHz) |

## 5.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by GUANG ZHOU GRG METROLOGY & TEST CO., LTD. address is No.163, Pingyun Rd. West of Huangpu Ave, Tianhe District, Guangzhou, Guangdong, China.

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## 5.4 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

☒ Yes ☐ No

If Yes, list the related test items and lab information:

Test Lab: Shenzhen Balun Technology Co.,Ltd.

Lab address: Block B, FL1, Baisha Science and Technology Park,Shahe Xi Road, Nanshan District, ShenZhen, GuangDong Province, P. R. China
FCC Designation No.: CN1196. Test Firm Registration No.: 935607.

Test items: Radiated Spurious Emission(18GHz to 25GHz)

# 6 Test Summary

| Test Items | Test Requirement | Result |
|---|---|---|
| Conducted Emissions | 15.207 | N/A* |
| Radiated Emission | 15.249(a)<br>15.209<br>15.205(a) | Pass |
| Outside of Band Emission | 15.249<br>15.205<br>15.209 | Pass |
| 20dB Bandwidth | 15:215(c) | Pass |
| Antenna Requirement | 15.203 | Pass |
| Note: Pass=Compliance; NC=Not Compliance; NT=Not Tested; N/A=Not Applicable<br>*: The EUT is only powered by battery, no need to evaluate AC Power Conducted Emission. | | |

# 7 Radiation Emission Test

Test Requirement: FCC CFR Title 47 Chapter I Subchapter A Part 15 Subpart C Section 15.205&15.209&15.249

Test Method: ANSI C63.10: 2013

Measurement Distance: 3m

Test Result: PASS

15.249(a)Limit:

| Fundamental frequency | Field strength of fundamental | | Field strength of harmonics | |
|---|---|---|---|---|
| | mV/m | dBuV/m | uV/m | dBuV/m |
| 902-928 MHz | 50 | 94 | 500 | 54 |
| 2400-2483.5 MHz | 50 | 94 | 500 | 54 |
| 5725-5875 MHz | 50 | 94 | 500 | 54 |
| 24.0-24.25 GHz | 250 | 108 | 2500 | 68 |

15.209 Limit:

| Frequency (MHz) | Field Strength | | Field Strength Limit at 3m Measurement Dist | |
|---|---|---|---|---|
| | uV/m | Distance (m) | uV/m | dBuV/m |
| 0.009 ~ 0.490 | 2400/F(kHz) | 300 | 10000 2400/F(kHz) | $20\log^{(2400/F(kHz))} + 80$ |
| 0.490 ~ 1.705 | 24000/F(kHz) | 30 | 100 24000/F(kHz) | $20\log^{(24000/F(kHz))} + 40$ |
| 1.705 ~ 30 | 30 | 30 | 100 30 | $20\log^{(30)} + 40$ |
| 30 ~ 88 | 100 | 3 | 100 | $20\log^{(100)}$ |
| 88 ~ 216 | 150 | 3 | 150 | $20\log^{(150)}$ |
| 216 ~ 960 | 200 | 3 | 200 | $20\log^{(200)}$ |
| Above 960 | 500 | 3 | 500 | $20\log^{(500)}$ |

**Note**: RF Voltage(dBuV)=20 $\log_{10}$ RF Voltage(uV)

## 7.1 EUT Operation

Operating Environment **:**

Temperature: 23.5 °C

Humidity: 51.1 % RH

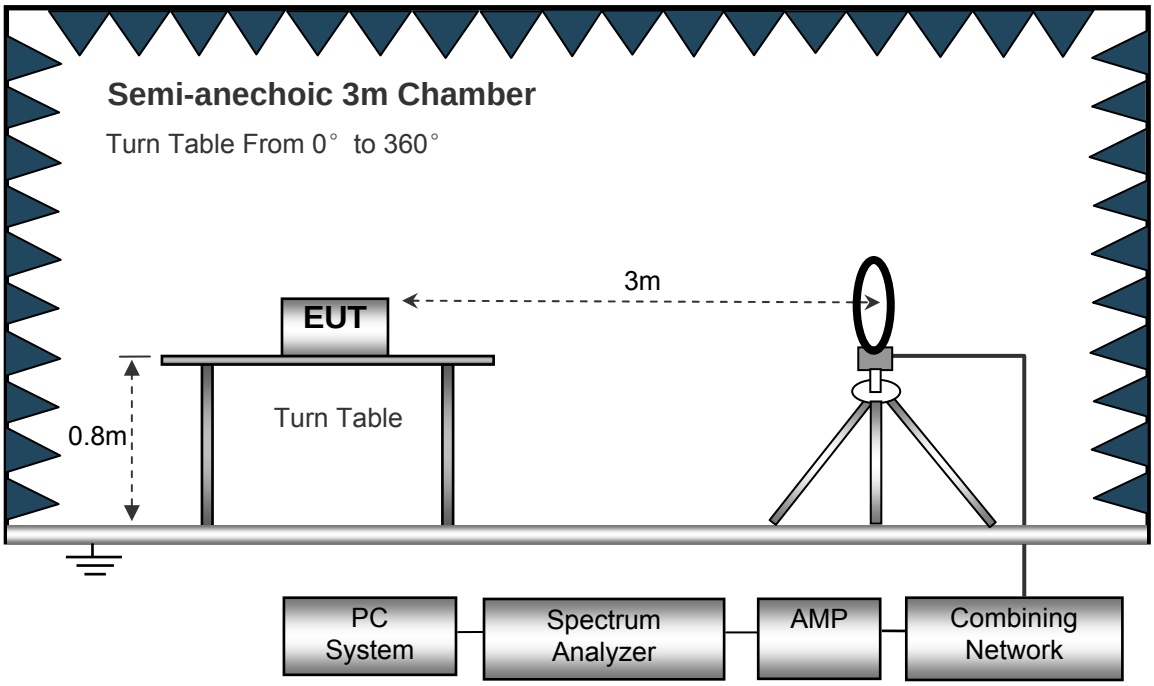
Atmospheric Pressure: 101.2kPa

EUT Operation **:**

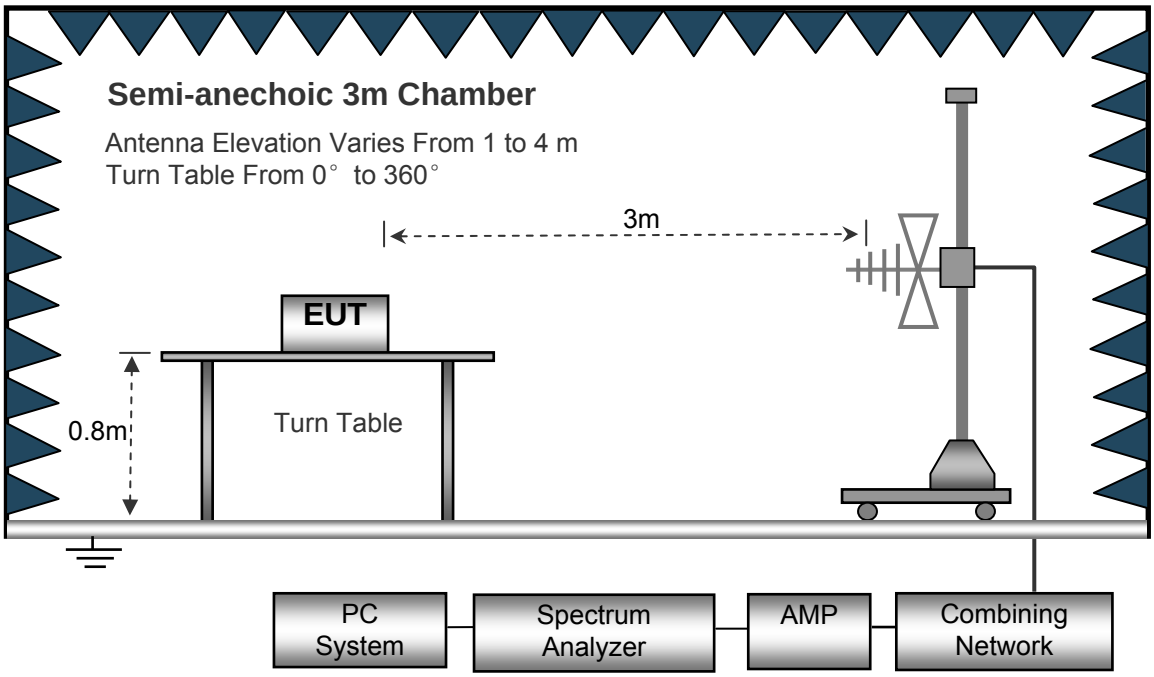
Refer to section 4.4.

## 7.2 Test Setup

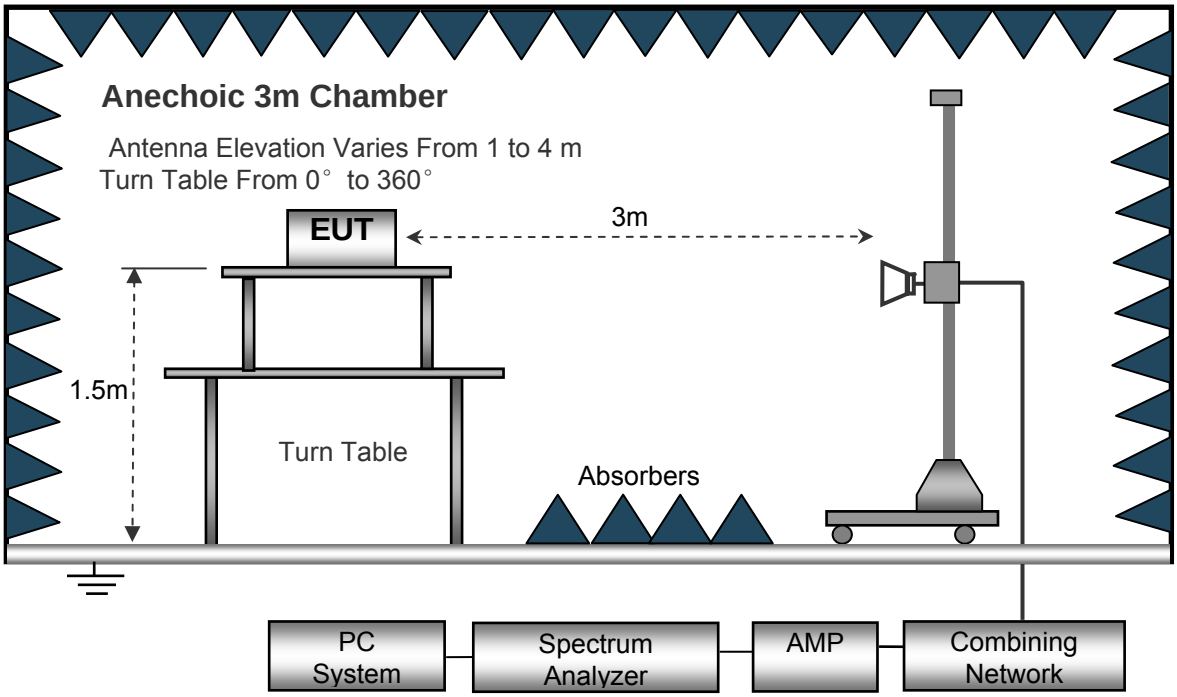
The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013.
The test setup for emission measurement below 30MHz.




The test setup for emission measurement from 30MHz to 1GHz.



The test setup for emission measurement above 1 GHz.




## 7.3 Spectrum Analyzer Setup

Below 30MHz

| | |
|---|---|
| Sweep Speed | Auto |
| IF Bandwidth | 10kHz |
| Video Bandwidth | 10kHz |
| Resolution Bandwidth | 10kHz |

30MHz ~ 1GHz

| | |
|---|---|
| Sweep Speed | Auto |
| Detector | PK |
| Resolution Bandwidth | 100kHz |
| Video Bandwidth | 300kHz |

Above 1GHz

| | |
|---|---|
| Sweep Speed | Auto |
| Detector | PK |
| Resolution Bandwidth | 1MHz |
| Video Bandwidth | 3MHz |
| Detector | Ave. |
| Resolution Bandwidth | 1MHz |
| Video Bandwidth | 10Hz |

## 7.4 Test Procedure

1. 1The EUT is placed on a turntable. For below 1GHz, the EUT is 0.8m above ground plane; For above1GHz, the EUT is 1.5m above ground plane.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.

3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

6. Repeat above procedures until the measurements for all frequencies are complete.

7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the Z position only.

8. For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

## 7.5 Test Result

**Test Frequency: 9 KHz ~ 30 MHz**

The measurements were more than 20 dB below the limit and not reported.

**Test Frequency: 30MHz ~ 18GHz**

| Frequency | Receiver Reading | Detector | Turn table Angle | RX Antenna | | Corrected Factor | Corrected Amplitude | Limit | Margin |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Height | Polar | | | | |
| (MHz) | (dBμV) | (PK/QP/Ave) | Degree | (m) | (H/V) | (dB) | (dBμV/m) | (dBμV/m) | (dB) |
| GFSK Low Channel | | | | | | | | | |
| 34.40 | 31.38 | QP | 280 | 1.4 | H | -16.98 | 14.40 | 40.00 | -25.60 |
| 34.40 | 38.66 | QP | 228 | 1.5 | V | -16.98 | 21.68 | 40.00 | -18.32 |
| 2410.00 | 92.76 | PK | 23 | 1.8 | V | -11.84 | 80.92 | 114.00 | -33.08 |
| 2410.00 | 76.84 | Ave | 23 | 1.8 | V | -11.84 | 65.00 | 94.00 | -29.00 |
| 4820.00 | 50.93 | PK | 141 | 1.0 | H | -5.19 | 45.74 | 74.00 | -28.26 |
| 4820.00 | 35.01 | Ave | 141 | 1.0 | H | -5.19 | 29.82 | 54.00 | -24.18 |
| 7230.00 | 44.69 | PK | 33 | 1.9 | H | 0.76 | 45.45 | 74.00 | -28.55 |
| 7230.00 | 28.77 | Ave | 33 | 1.9 | H | 0.76 | 29.53 | 54.00 | -24.47 |
| 2323.96 | 45.00 | PK | 177 | 1.7 | V | -13.19 | 31.81 | 74.00 | -42.19 |
| 2323.96 | 39.52 | Ave | 177 | 1.7 | V | -13.19 | 26.33 | 54.00 | -27.67 |
| 2377.80 | 42.99 | PK | 66 | 1.2 | H | -13.14 | 29.85 | 74.00 | -44.15 |
| 2377.80 | 38.65 | Ave | 66 | 1.2 | H | -13.14 | 25.51 | 54.00 | -28.49 |
| 2498.96 | 44.56 | PK | 55 | 1.3 | V | -13.08 | 31.48 | 74.00 | -42.52 |
| 2498.96 | 36.34 | Ave | 55 | 1.3 | V | -13.08 | 23.26 | 54.00 | -30.74 |

| Frequency | Receiver Reading | Detector | Turn table Angle | RX Antenna | | Corrected Factor | Corrected Amplitude | Limit | Margin |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Height | Polar | | | | |
| (MHz) | (dBμV) | (PK/QP/Ave) | Degree | (m) | (H/V) | (dB) | (dBμV/m) | (dBμV/m) | (dB) |
| GFSK Middle Channel | | | | | | | | | |
| 34.40 | 31.12 | QP | 171 | 1.1 | H | -16.98 | 14.14 | 40.00 | -25.86 |
| 34.40 | 38.66 | QP | 255 | 1.2 | V | -16.98 | 21.68 | 40.00 | -18.32 |
| 2440.00 | 90.58 | PK | 136 | 1.4 | V | -11.73 | 78.85 | 114.00 | -35.15 |
| 2440.00 | 74.66 | Ave | 136 | 1.4 | V | -11.73 | 62.93 | 94.00 | -31.07 |
| 4880.00 | 51.46 | PK | 84 | 1.5 | H | -5.02 | 46.44 | 74.00 | -27.56 |
| 4880.00 | 35.54 | Ave | 84 | 1.5 | H | -5.02 | 30.52 | 54.00 | -23.48 |
| 7320.00 | 45.88 | PK | 64 | 1.2 | H | 1.01 | 46.89 | 74.00 | -27.11 |
| 7320.00 | 29.96 | Ave | 64 | 1.2 | H | 1.01 | 30.97 | 54.00 | -23.03 |
| 2314.88 | 46.93 | PK | 279 | 2.0 | V | -13.19 | 33.74 | 74.00 | -40.26 |
| 2314.88 | 39.18 | Ave | 279 | 2.0 | V | -13.19 | 25.99 | 54.00 | -28.01 |
| 2361.65 | 42.04 | PK | 332 | 2.0 | H | -13.14 | 28.90 | 74.00 | -45.10 |
| 2361.65 | 37.84 | Ave | 332 | 2.0 | H | -13.14 | 24.70 | 54.00 | -29.30 |
| 2483.72 | 43.18 | PK | 201 | 1.4 | V | -13.08 | 30.10 | 74.00 | -43.90 |
| 2483.72 | 36.02 | Ave | 201 | 1.4 | V | -13.08 | 22.94 | 54.00 | -31.06 |

| Frequency | Receiver Reading | Detector | Turn table Angle | RX Antenna | | Corrected Factor | Corrected Amplitude | Limit | Margin |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Height | Polar | | | | |
| (MHz) | (dBμV) | (PK/QP/Ave) | Degree | (m) | (H/V) | (dB) | (dBμV/m) | (dBμV/m) | (dB) |
| GFSK High Channel | | | | | | | | | |
| 34.40 | 31.58 | QP | 340 | 1.1 | H | -16.98 | 14.60 | 40.00 | -25.40 |
| 34.40 | 38.28 | QP | 193 | 1.7 | V | -16.98 | 21.30 | 40.00 | -18.70 |
| 2465.00 | 94.78 | PK | 138 | 1.3 | V | -11.63 | 83.15 | 114.00 | -30.85 |
| 2465.00 | 78.86 | Ave | 138 | 1.3 | V | -11.63 | 67.23 | 94.00 | -26.77 |
| 4930.00 | 52.41 | PK | 155 | 1.9 | H | -4.87 | 47.54 | 74.00 | -26.46 |
| 4930.00 | 36.49 | Ave | 155 | 1.9 | H | -4.87 | 31.62 | 54.00 | -22.38 |
| 7395.00 | 48.89 | PK | 163 | 1.2 | H | 1.23 | 50.12 | 74.00 | -23.88 |
| 7395.00 | 32.97 | Ave | 163 | 1.2 | H | 1.23 | 34.20 | 54.00 | -19.80 |
| 2322.82 | 45.04 | PK | 310 | 1.7 | V | -13.19 | 31.85 | 74.00 | -42.15 |
| 2322.82 | 39.80 | Ave | 310 | 1.7 | V | -13.19 | 26.61 | 54.00 | -27.39 |
| 2383.73 | 43.22 | PK | 278 | 1.8 | H | -13.14 | 30.08 | 74.00 | -43.92 |
| 2383.73 | 37.49 | Ave | 278 | 1.8 | H | -13.14 | 24.35 | 54.00 | -29.65 |
| 2498.49 | 43.51 | PK | 356 | 1.8 | V | -13.08 | 30.43 | 74.00 | -43.57 |
| 2498.49 | 38.22 | Ave | 356 | 1.8 | V | -13.08 | 25.14 | 54.00 | -28.86 |

Test Frequency: From 18GHz to 25GHz

The measurements were more than 20 dB below the limit and not reported.

# 8 Outside of Band Emission

Test Requirement: 15.249(d):Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Test Method: ANSI C63.10:2013

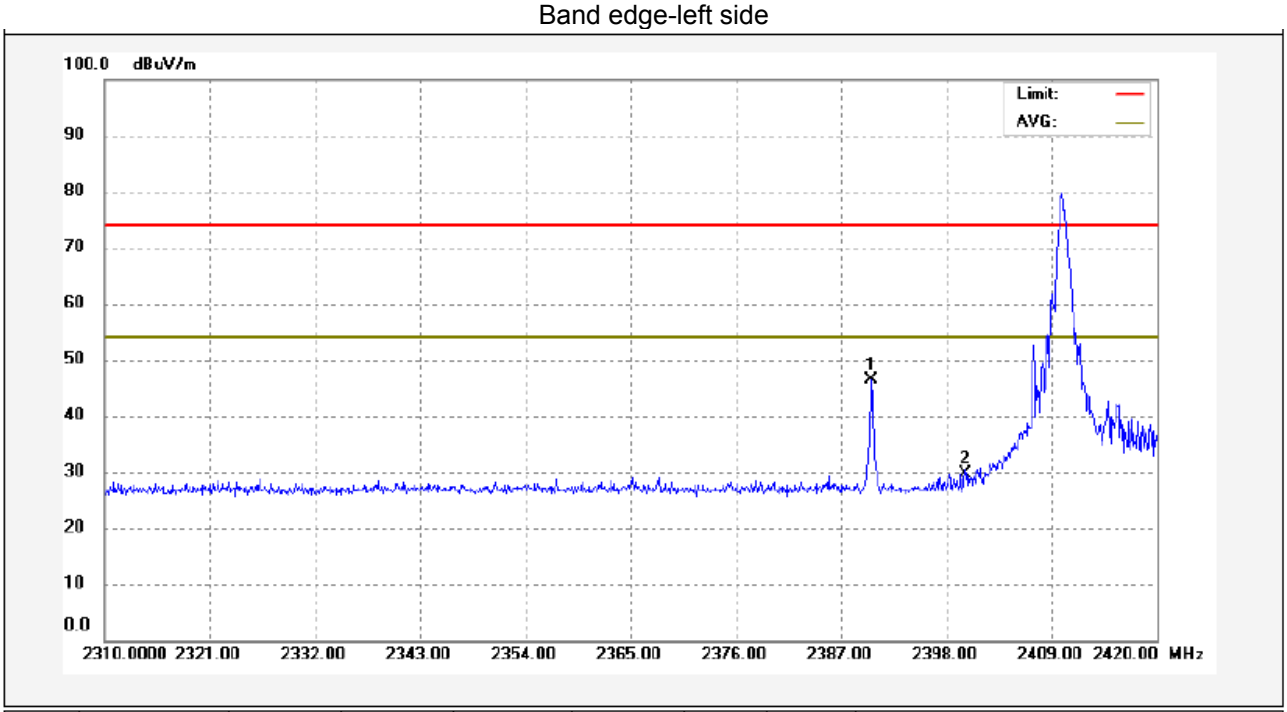
Test Mode: Transmitting

## 8.1 Test Procedure

Refer to section 7.4 of this test report.

## 8.2 Test Result

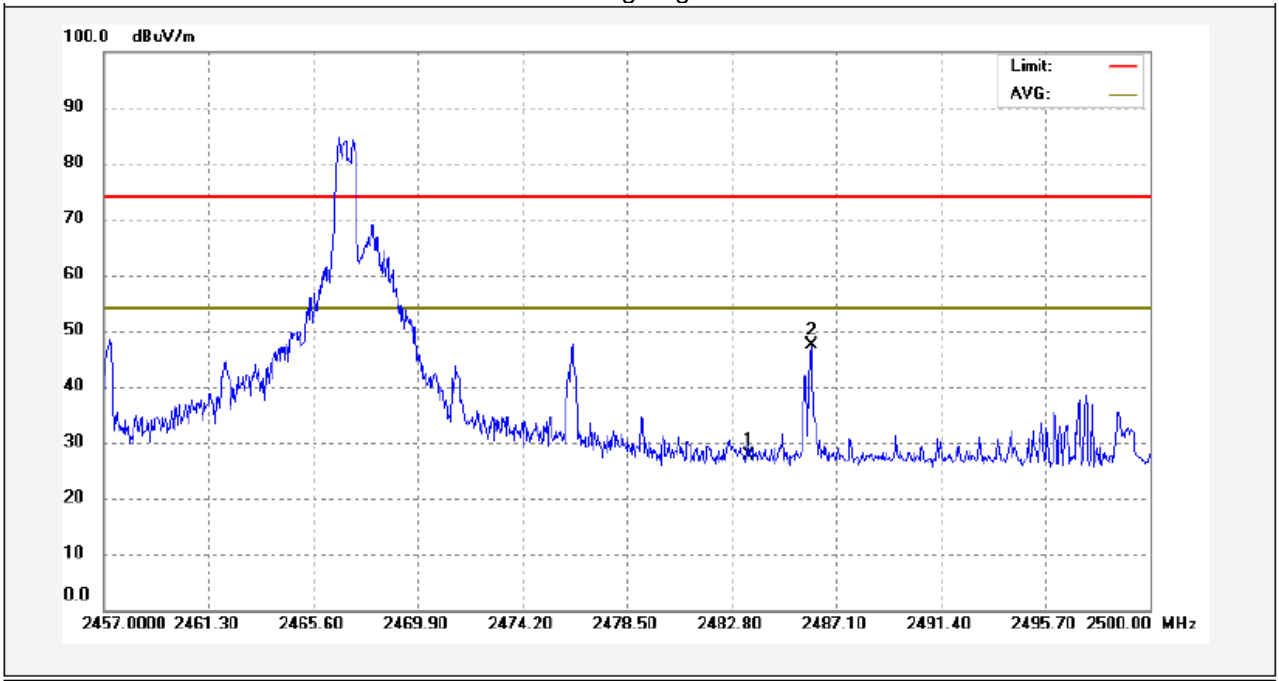
Band edge-left side




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 2390.190 | 58.22 | -11.92 | 46.30 | 74.00 | -27.70 | peak | |
| 2 | 2400.000 | 41.46 | -11.88 | 29.58 | 74.00 | -44.42 | peak | |

Remark: The worst case (Vertical) was recoded.

Band edge-right side




| No. | Freq. (MHz) | Reading (dBuV/m) | Factor (dB) | Result (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 2483.500 | 39.10 | -11.56 | 27.54 | 74.00 | -46.46 | peak | |
| 2 | 2486.068 | 58.98 | -11.55 | 47.43 | 74.00 | -26.57 | peak | |

Remark: The worst case (Horizontal) was recoded.

# 9 Bandwidth Measurement

Test Requirement: FCC CFR Title 47 Chapter I Subchapter A Part 15 Subpart C Section 15.215(c)

Test Method: ANSI C63.10:2013

Test Mode: Transmitting

## 9.1 Test Procedure

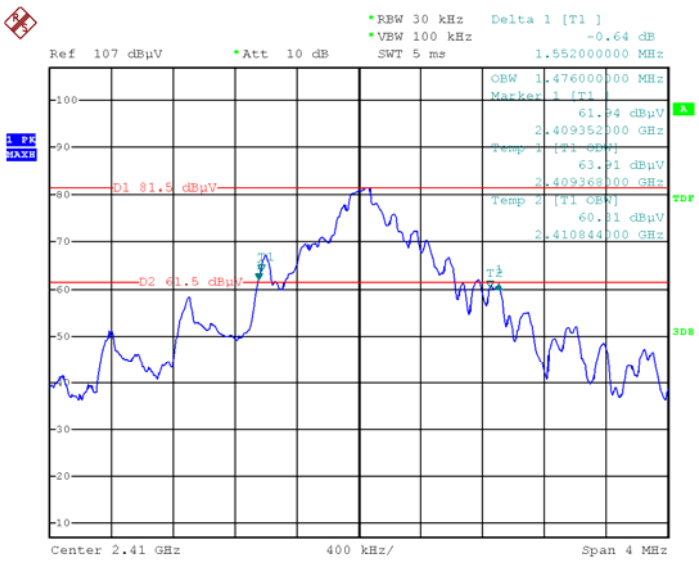
Refer to section 7.4 of this test report.

## 9.2 Test Result

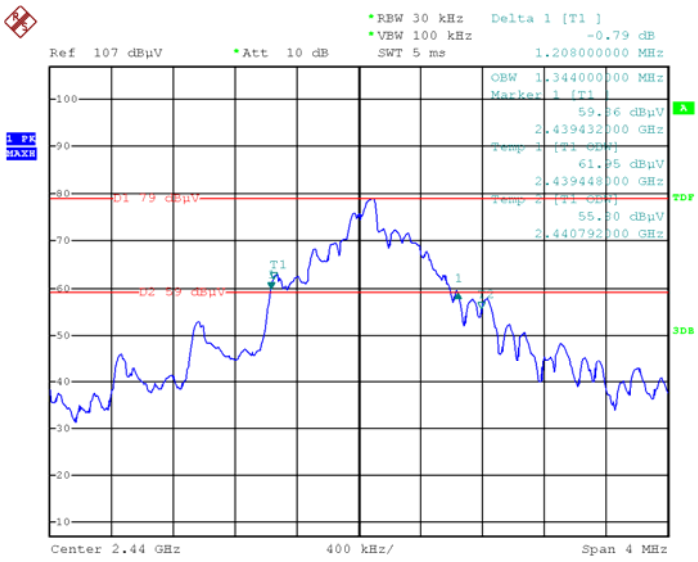
| Operation mode | 20dB Bandwidth (MHz) |
|---|---|
| Low channel | 1.552 |
| Middle channel | 1.208 |
| High channel | 1.064 |

**Test result plot as follows:**

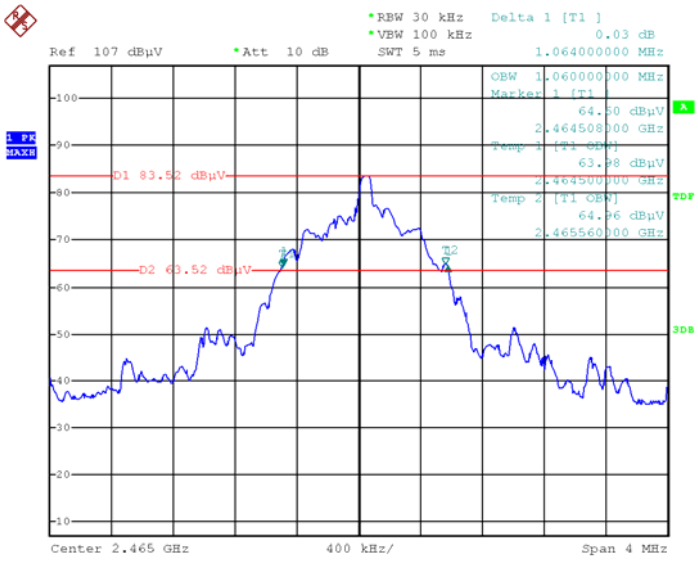
Mode: Low channel



Mode: Middle channel




Mode: High channel



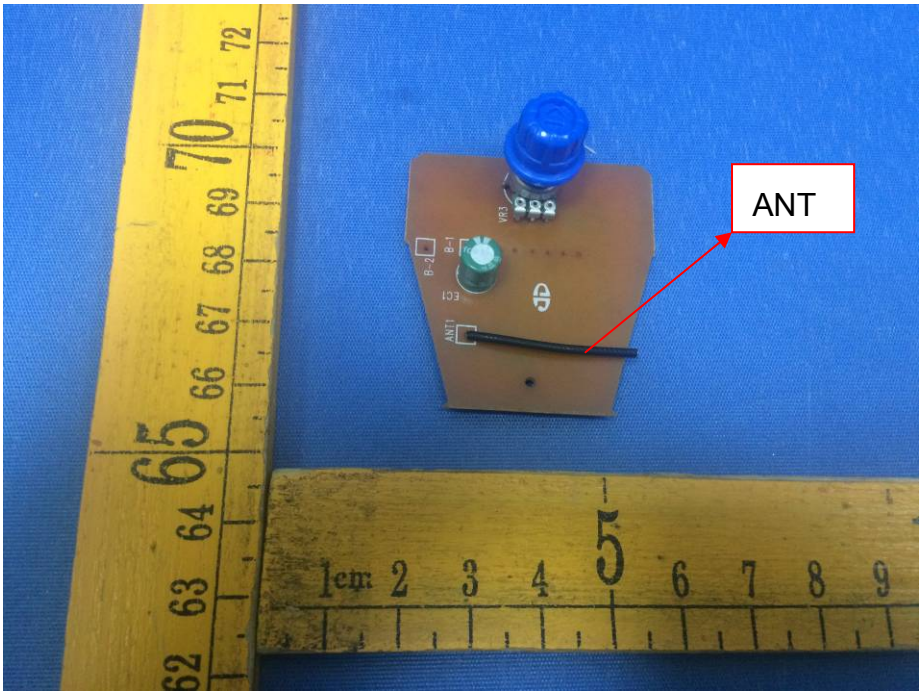
# 10 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

For intentional device, according to FCC CFR Title 47 Chapter I Subchapter A Part 15 Subpart C Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Result:

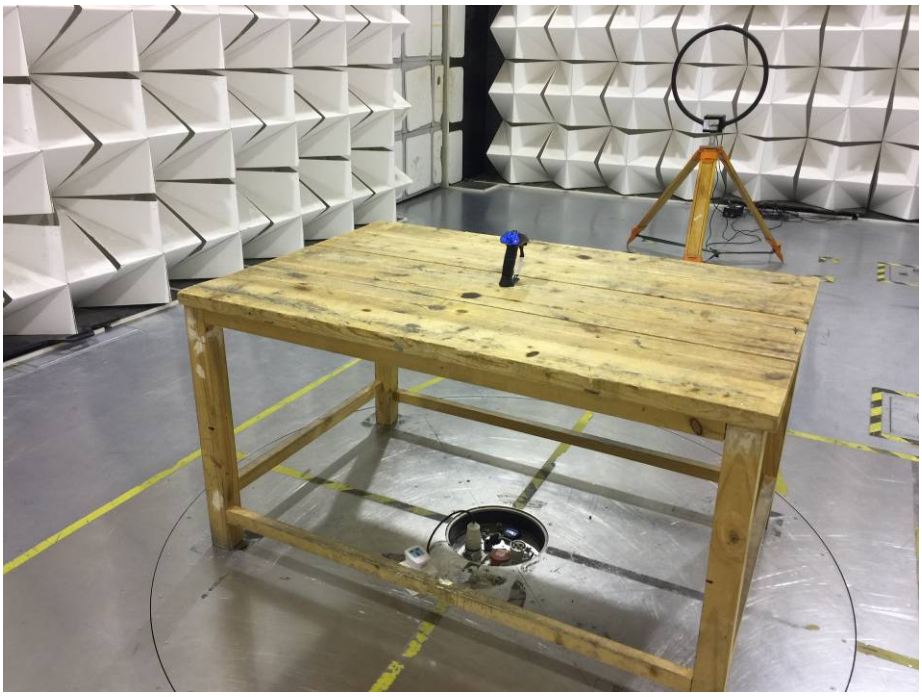
The EUT has one Internal Antenna, the gain is 2.3 dBi. meets the requirements of FCC 15.203.



# 11 Photographs- Model US858240-6 Test Setup Photos

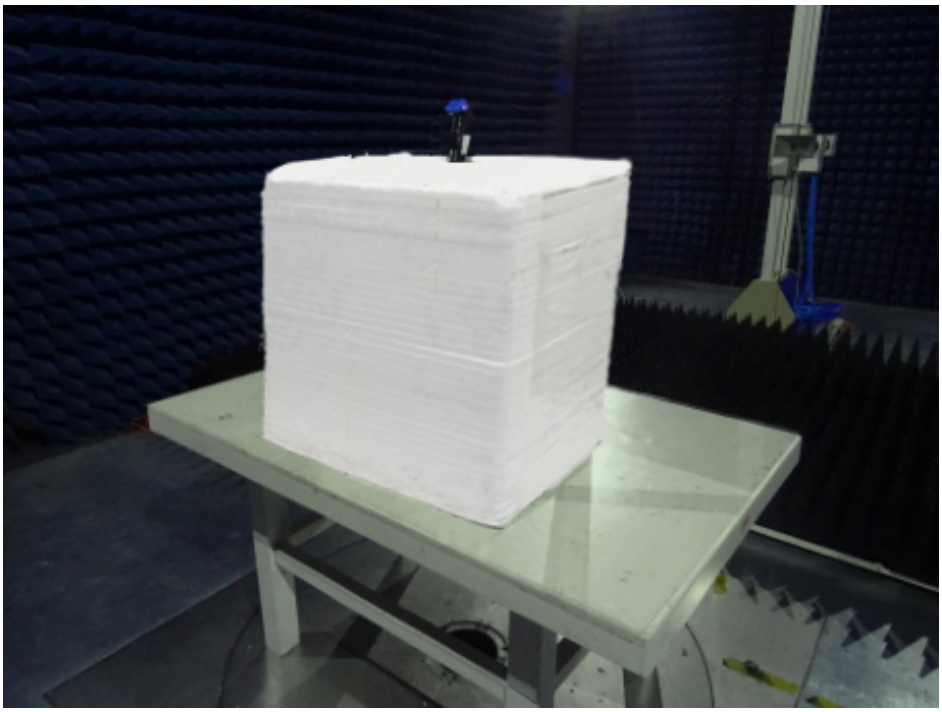
## 11.1 Photograph - Radiation Emission

Test frequency from 9 KHz to 30MHz

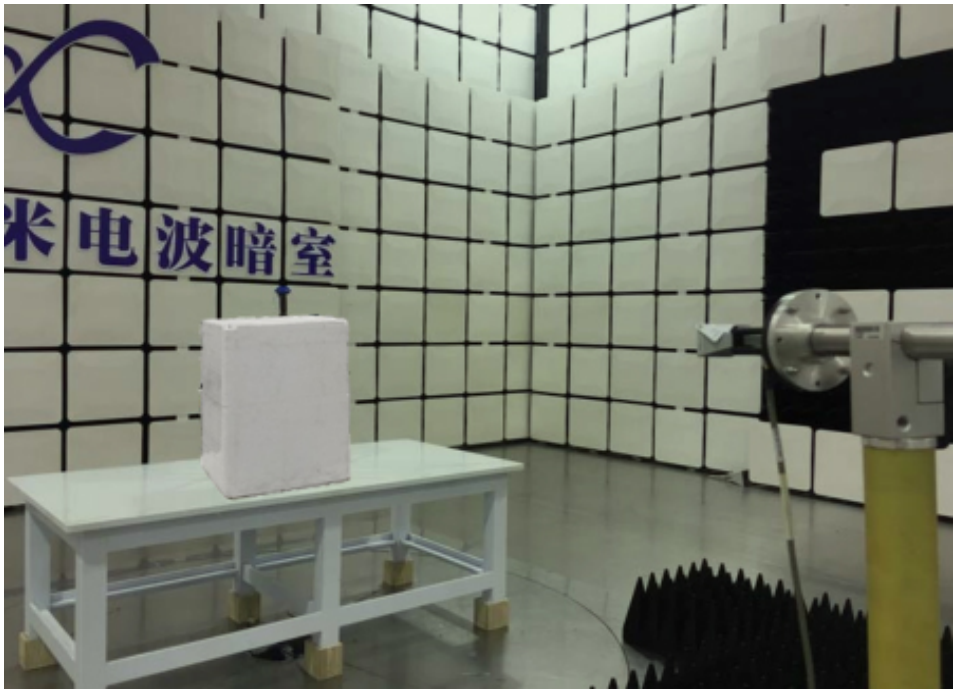


Test frequency from 30MHz to 1GHz

Test frequency from 1GHz to 18GHz



Test frequency from 18GHz to 25GHz




======End of Report======