

## RADIO TEST REPORT

For

Dongguan Debao Intelligent Technology Co., LTD

Remote control

Test Model: AS-1500-HGB

Additional Model No.: AS-120-WA

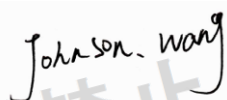
|                                |   |                                                                                                                                      |
|--------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------|
| Prepared for                   | : | Dongguan Debao Intelligent Technology Co., LTD                                                                                       |
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| Date of receipt of test sample | : | August 09, 2025                                                                                                                      |
| Number of tested samples       | : | 2                                                                                                                                    |
| Serial number                  | : | Prototype                                                                                                                            |
| Date of Test                   | : | August 09, 2025~August 15, 2025                                                                                                      |
| Date of Report                 | : | August 15, 2025                                                                                                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <b>RADIO TEST REPORT</b><br><b>MIC Notice No.88 Appendix No. 22</b><br><b>Item 8 of Article 2-1 of Certification Ordinance</b>                                                                                                                                                                                                                                                                                                                                                                                                               |  |
| <b>Report Reference No. .... : AOC250811101E</b><br>Date of Issue ..... : August 15, 2025                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |
| <b>Testing Laboratory Name ..... : Shenzhen AOCE Electronic Technology Service Co., Ltd</b><br>Address ..... : Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China<br>Testing Location/ Procedure..... : Full application of Harmonised standards ■<br>Partial application of Harmonised standards □<br>Other standard testing method □                                                                                                                        |  |
| <b>Applicant's Name ..... : Dongguan Debao Intelligent Technology Co., LTD</b><br>Address ..... : Room 602, Building 3, No. 26, Qile Park Road, Xiegang Town, Dongguan, Guangdong, China                                                                                                                                                                                                                                                                                                                                                     |  |
| <b>Test Specification</b><br>Standard..... : MIC Notice No.88 Appendix No. 22<br>Item 8 of Article 2-1 of Certification Ordinance<br><b>Test Report Form No..... : AOCEEMC-1.0</b><br>TRF Originator..... : Shenzhen AOCE Electronic Technology Service Co., Ltd<br>Master TRF ..... : Dated 2011-03                                                                                                                                                                                                                                         |  |
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| <b>EUT Description. .... : Remote control</b><br>Trade Mark ..... : N/A<br>Test Model..... : AS-1500-HGB<br>Ratings ..... : DC 12V by Battery<br>Result ..... : <b>Positive</b>                                                                                                                                                                                                                                                                                                                                                              |  |

Compiled by:

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Approved by:

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administrators

Joey.Liu/ Technique principal



Murry Yu / Manager

## RADIO -- TEST REPORT

|                                 |                                  |
|---------------------------------|----------------------------------|
| Test Report No. : AOC250811101E | August 15, 2025<br>Date of issue |
|---------------------------------|----------------------------------|

|                           |                                                                                                                                                   |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Model.....           | : AS-1500-HGB                                                                                                                                     |
| EUT.....                  | : Remote control                                                                                                                                  |
| <b>Applicant</b> .....    | : <b>Dongguan Debao Intelligent Technology Co., LTD</b>                                                                                           |
| Address.....              | : Room 602, Building 3, No. 26, Qile Park Road, Xiegang Town,<br>Dongguan, Guangdong, China                                                       |
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| <b>Manufacturer</b> ..... | : <b>Shenzhen Anfei Weiye Technology Co., Ltd.</b>                                                                                                |
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| <b>Factory</b> .....      | : <b>Shenzhen Anfei Weiye Technology Co., Ltd.</b>                                                                                                |
| Address.....              | : Room 301, 3rd Floor, Building C, No. 6340, Pingshan Avenue,<br>Jinsha Community, Kengzi Subdistrict, Pingshan District, Shenzhen<br>City, China |
| Telephone.....            | :                                                                                                                                                 |
| Fax.....                  | :                                                                                                                                                 |

|             |          |
|-------------|----------|
| Test Result | Positive |
|-------------|----------|

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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## 1. GENERAL INFORMATION

### 1.1. Description of Device (EUT)

|                     |                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------|
| EUT                 | : Remote control                                                                                       |
| Model Number        | : AS-1500-HGB, AS-120-WA                                                                               |
| Model Declaration   | : All the models above PCB board, internal structure all the same, only the model number is different. |
| Test Model          | : AS-1500-HGB                                                                                          |
| Power Supply        | : DC 12V by Battery                                                                                    |
| Hardware Version    | : YK-KG-215T                                                                                           |
| Software Version    | : 62675K_Y599_241109                                                                                   |
| Frequency Range     | : 315MHz                                                                                               |
| Channel Number      | : 1                                                                                                    |
| Modulation Type     | : ASK                                                                                                  |
| Antenna Description | : PCB Antenna, 0dBi (Max.)                                                                             |

### 1.2. Host System Configuration List and Details

| Manufacturer | Description | Model | Serial Number | Certificate |
|--------------|-------------|-------|---------------|-------------|
| --           | --          | --    | --            | --          |

### 1.3. External I/O Cable

| I/O Port Description | Quantity | Cable |
|----------------------|----------|-------|
| --                   | --       | --    |

### 1.4. Test Conditions

|                   |   |           |
|-------------------|---|-----------|
| Temperature Range | : | 21-25℃    |
| Humidity Range    | : | 45-85%    |
| Pressure Range    | : | 86-106kPa |

### 1.5. Frequency of Channels

| Channel | Frequency (MHz) |
|---------|-----------------|
| 1       | 315             |

## 2. TEST METHODOLOGY

### 2.1. EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of MIC Notice No.88 Appendix No. 22 and Item 8 of Article 2-1 of Certification Ordinance.

### 2.2. Measurement Uncertainty

| Test Item                   |   | MU                  | Remark |
|-----------------------------|---|---------------------|--------|
| Bandwidth                   | : | $\pm 0.2E^{-6}$     | /      |
| Antenna Power               | : | $\pm 0.33\text{dB}$ | /      |
| Frequency Tolerance         | : | $\pm 0.3E^{-6}$     | /      |
| Conducted spurious emission | : | $\pm 0.13\text{dB}$ | /      |
| DC Power                    | : | $\pm 1\%$           | /      |

- (1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=2$ .

### 2.3. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

Power Parameters:

|                       |        |
|-----------------------|--------|
| Test Software Version | N/A    |
| Power Level           | N/A    |
| Frequency             | 315MHz |

### 2.4. Description of Test Modes

| Tested mode and channel information |         |                |
|-------------------------------------|---------|----------------|
| Mode                                | Channel | Frequency(MHz) |
| TX                                  | 1       | 315            |

## 2.5. Test Voltage

## POWER SUPPLY VOLTAGE FLUCTUATION TEST

| Voltage Fluctuation Test | Normal Voltage | High Voltage +10% of Normal Voltage | Low Voltage -10% of Normal Voltage |
|--------------------------|----------------|-------------------------------------|------------------------------------|
| Input To EUT             | DC 12V         | DC 13.2V                            | DC 10.8V                           |
| Output To RF Module      | DC 3.3V        | DC 3.3V                             | DC 3.3V                            |
| Voltage Variation (%)    | --             | --                                  | --                                 |

Note:

As normal use, the EUT is powered by DC 12V from battery. The DC 12V power was converted to DC 3.3V and supplied to RF module (controlled by the HX7533,U3).

Voltage Variation (%)

= (Output high or Low Voltage - Output Normal Voltage) / Output Normal Voltage \* 100

The sample power supply was confirmed that input voltage variation at the radio unit in the radio equipment to be tested is less than  $\pm 1\%$  against a variation of  $\pm 10\%$  at the input voltage from the external power supply to the radio equipment, and the radio equipment was designed so as to be operated in a specified voltage variation limit within  $\pm 10\%$ , Radio can only tested at rated voltage.

### 3. SYSTEM TEST CONFIGURATION

#### 3.1. Justification

The system was configured for testing in engineering mode.

#### 3.2. EUT Exercise Software

N/A.

#### 3.3. Special Accessories

N/A.

#### 3.4. Block Diagram/Schematics

Please refer to the related document

#### 3.5. Equipment Modifications

Shenzhen AOCE Electronic Technology Service Co., Ltd has not done any modification on the EUT.

#### 3.6. Test Setup

Please refer to the test setup photo.

#### 4. SUMMARY OF TEST RESULTS

| MIC Notice No.88 Appendix No.22<br>Item 8 of Article 2-1 of Certification Ordinance |                                                 |        |
|-------------------------------------------------------------------------------------|-------------------------------------------------|--------|
| Clause                                                                              | Description of Test<br>(Transmitter Parameters) | Result |
| 4                                                                                   | Antenna Power                                   | PASS   |
| 2.5 (1)                                                                             | Frequency Tolerance                             | PASS   |
| 2.5 (2)                                                                             | Occupied Bandwidth (99%)                        | PASS   |
| 6                                                                                   | Transmission time control                       | PASS   |
| 3                                                                                   | Transmitter Spurious Emissions                  | PASS   |
| Receiver Parameters                                                                 |                                                 |        |
| 5                                                                                   | Secondary Radiated Emissions                    | N/A    |

## 5. TEST RESULT

### 5.1. Antenna Power

#### 5.1.1. Standard Applicable

| Frequency                                | Antenna power           |
|------------------------------------------|-------------------------|
| more than 312 MHz and 315.25 MHz or less | 25μW (e.i.r.p.) or less |

It is noted that if the center frequency of a band having occupied frequency bandwidth plus frequency deviation is more than 312 MHz and 315.05 MHz or less, the antenna power shall be 250 μW or less in Equivalent Isotropically Radiated Power.

The Output Power Tolerance +20% only.

#### 5.1.2. Measuring Instruments

Please refer to section 6 of equipments list in this report.

#### 5.1.3. Test Procedures

##### 5.1.3.1. With antenna terminal

1. Perform zero adjustment of the high frequency wattmeter;
2. Transmit and measure average power or peak power;
3. When measuring the average power, the value of the average wattmeter is taken as the measured value. However, in the case of burst waves, the burst duration is fixed and transmitted, and the burst wave power is repeatedly measured with a wattmeter for a sufficiently long time;

##### 4. The average power is as follows:

- a). In case of continuous wave;

The Value obtained in Cycle.

- b). In case of burst wave;

A value obtained by calculating the average power in the burst from the value obtained in the above and the transmission time ratio by the following formula.

$$\text{Average power in burst} = \frac{\text{The Value obtained in Cycle}}{\text{Transmission time rate}}$$

$$\text{Transmission time rate} = \frac{\text{Burst transmission time}}{\text{Burst Repetition Cycle}}$$

5. In the average power measurement, when the burst cycle becomes long, measure the average power within the burst by setting the spectrum analyzer to 2 IV and setting the center frequency as the center frequency obtained in the 2 term. When the measured value fluctuates from burst to burst, a value at which the average power within the burst is the maximum is measured several times, and it is taken as the measured value.
6. The peak power is measured by the value of the peak power meter. When using a spectrum analyzer to measure the peak power, measure the peak power with the center frequency as the center frequency obtained in the second term in the setting of 2 (3) of MIC Notice No.88 Appendix No. 22 Item 8 of Article 2-1.
7. Equivalent isotropic radiated power  $P_o$  is calculated by the following equation using the obtained average power or peak power to obtain the measured value.

$$P_O = P_P + G_T \text{ (dBm)}$$

$P_P$ : Measured value of average power or peak power (dBm)

$G_T$ : Transmit antenna absolute gain (dBi) at carrier frequency

#### 5.1.3.2. In case of antenna integrated type

##### When using spectral analyzer

- (a) Make the measurement antenna vertically polarized and make the height and direction of the test equipment and the measuring antenna roughly face each other.
- (b) The receive spectrum analyzer settings are as following table.

| Spectrum Parameter | Setting                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------|
| Center Frequency   | Test frequency                                                                                                 |
| Span Frequency     | About 10 times the occupied frequency bandwidth                                                                |
| RBW                | 1MHz                                                                                                           |
| VBW                | $\geq 3 \times \text{RBW}$                                                                                     |
| Sweep Time         | Minimum time to guarantee measurement accuracy (In the case of burst waves, one burst is included per sample). |
| Trigger condition  | Free run                                                                                                       |
| Sweep mode         | Continuous sweep                                                                                               |
| Detector           | Peak                                                                                                           |

- (c) Rotate the test equipment and adjust it to the direction of maximum received power.
- (d) Change the ground level of the measurement antenna between 1 m and 4 m, adjust the orientation of the measurement antenna and find the position where the power is maximum. In the case of peak power, the spectral analyzer setting as 2(3) of MIC Notice No.88 Appendix No. 22 Item 8 of Article 2-1, and the spectrum analyzer display is "E". In the case of average power, the setting of the spectrum analyzer at the point where the electric power becomes the maximum is set to 2(4) of MIC Notice No.88 Appendix No. 22 Item 8 of Article 2-1, and the value indicated by the wattmeter connected to the IF output end is set to "E".
- (e) Disconnect the test equipment from the platform, set the position of the replacement antenna to the same position as the antenna of the test equipment, transmit radio waves of the same frequency from the replacement standard signal generator, and receive it with the spectrum analyzer. In this case, the polarization plane of the replacement antenna should be the same as the polarization plane of the measurement antenna.
- (f) Rotate the replacement antenna and adjust it in the power maximum direction.
- (g) Change the ground level of the measurement antenna between 1 m and 4 m, adjust the orientation of the measurement antenna and find the position where the power is maximum.
- (h) Adjust the output of the standard signal generator to record power  $P_S$  that is equal to "E", or convert it from the difference from "E" which is close to "E" (within  $\pm 1$  dB) Record  $P_S$ .
- (i) The antenna power (equivalent isotropic radiation power) is obtained by the following equation.

$$P_O = P_S + G_S - L_F$$

$P_S$ : Output of standard signal generator (dBm)

$G_S$ : The absolute gain of the replacement antenna (dBi)

$L_F$ : Loss of the feeder line between the standard signal generator and the replacement antenna (dB)

(j) The antenna power shall be as follows.

a). In case of continuous wave;

The Value obtained in Cycle.

b). In case of burst wave;

A value obtained by calculating the average power in the burst from the value obtained in the above and the transmission time ratio by the following formula.

$$\text{Average power in burst} = \frac{\text{The Value obtained in Cycle}}{\text{Transmission time rate}}$$

$$\text{Transmission time rate} = \frac{\text{Burst transmission time}}{\text{Burst Repetition Cycle}}$$

- (k) In the average power measurement, when the burst period becomes a long time, the center frequency of the spectrum analyzer is set as the center frequency obtained in the second term, and the average power within the burst is measured. However, if the measured value varies from burst to burst, measure it several times and measure the value at which the average power within the burst becomes maximum.
- (l) Let the measurement antenna be horizontal polarization, repeat the procedure from (a) to (k) and set the maximum value as the measurement result.

#### When using wattmeter

- (a) According to 1 (2) A of MIC Notice No.88 Appendix No. 22 Item 8 of Article 2-1, make the measurement antenna vertically polarized, and make the height and direction of the test equipment and measurement antenna roughly face each other.
- (b) Rotate the test equipment and adjust it to the direction of maximum received power.
- (c) Change the ground height of the measurement antenna between about 1 m and 4 m and adjust the orientation of the measurement antenna to find the position where the electric power becomes maximum and set the value indicated by the wattmeter at this point as "E".
- (d) Disconnect the test equipment from the platform, set the position of the replacement aerial at the same position as the antenna of the test equipment, transmit radio waves with the same frequency as the test frequency from the replacement standard signal generator, receive with the wattmeter. The plane of polarization of the replacement antenna should be the same as the polarization plane of the measurement antenna.
- (e) Rotate the replacement antenna and adjust it in the power maximum direction.
- (f) Change the ground level of the measurement antenna between 1 m and 4 m, adjust the orientation of the measurement antenna and find the position where the power is maximum.
- (g) Adjust the output of the standard signal generator to record power  $P_s$  that is equal to "E", or convert it from the difference from "E" which is close to "E" (within  $\pm 1$  dB) Record  $P_s$ .
- (h) The antenna power (equivalent isotropic radiation power) is obtained by the following equation.

$$P_o = P_s + G_s - L_f$$

$P_s$ : Output of standard signal generator (dBm)

$G_s$ : The absolute gain of the replacement antenna (dBi)

$L_f$ : Loss of the feeder line between the standard signal generator and the replacement antenna (dB)

(i) The antenna power shall be as follows.

a). In case of continuous wave;

The Value obtained in Cycle.

b). In case of burst wave;

A value obtained by calculating the average power in the burst from the value obtained in the above and the transmission time ratio by the following formula.

$$\text{Average power in burst} = \frac{\text{The Value obtained in Cycle}}{\text{Transmission time rate}}$$

$$\text{Transmission time rate} = \frac{\text{Burst transmission time}}{\text{Burst Repetition Cycle}}$$

- (j) In the average power measurement, when the burst period becomes a long time, the center frequency of the spectrum analyzer is set as the center frequency obtained in the second term, and the average power within the burst is measured. However, if the measured value varies from burst to burst, measure it several times and measure the value at which the average power within the burst becomes maximum.
- (k) Let the measurement antenna be horizontal polarization, repeat the procedure from (a) to (j) and set the maximum value as the measurement result.

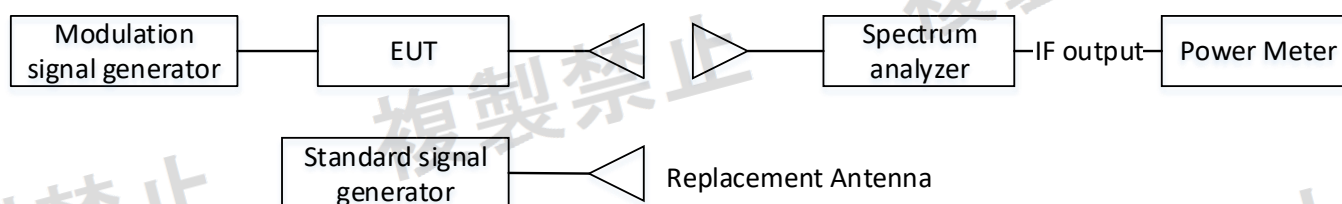
#### 5.1.4. Test Setup Layout

##### With antenna terminal

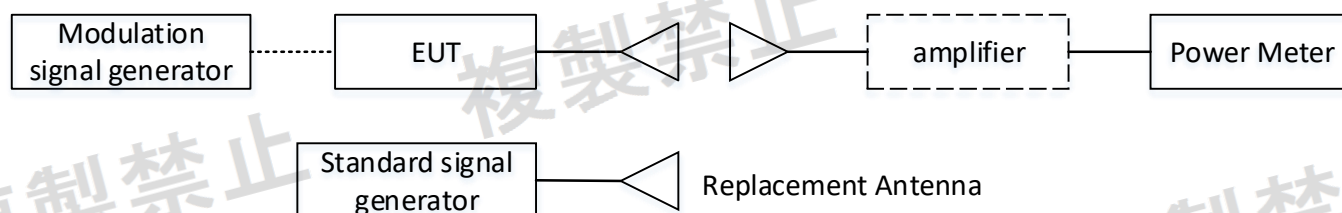


##### In case of antenna integrated type

In case of power measurement using a spectral analyzer



In the case of power measurement directly connected to the wattmeter



## 5.1.5. EUT Operation during Test

The EUT was programmed to be in TX mode.

## 5.1.6. Test result

|               |              |              |                |
|---------------|--------------|--------------|----------------|
| Temperature   | 24.1°C       | Humidity     | 52.3%          |
| Test Engineer | Johnson Wang | Test Voltage | Normal Voltage |

| Freq. | SGO/P  | Ant.       | Cable | Corrected  |       | Limit |
|-------|--------|------------|-------|------------|-------|-------|
| (MHz) | (dBm)  | Gain (dBi) | (dB)  | Power EIRP |       | EIRP  |
|       |        |            |       | (dBm)      | (μW)  | (μW)  |
| 315   | -10.18 | 0          | 0.64  | -10.82     | 82.79 | 250   |

**Remark:** Corrected Power (dBm) = SG O/P - Cable + Ant Gain.

| Mode         | Freq. (MHz) | Declared Antenna Power | Result | Tolerance | Limit |
|--------------|-------------|------------------------|--------|-----------|-------|
|              |             | (μW)                   | (μW)   |           |       |
| Transmitting | 315         | 90.00                  | 82.79  | -8.01%    | +20%  |

**Note:** All test modes were tested, and only record the worst case.

## 5.2. Frequency Tolerance and Occupied Bandwidth (99%)

### 5.2.1. Standard Applicable

Frequency tolerance shall be within the assigned frequency band (more than 312 MHz and 315.25 MHz or less).

Occupied bandwidth  $\leq$  1MHz

### 5.2.2. Test Procedures

- (a) Set the spectrum analyzer as shown in following table, repeat the sweep until the change is not recognized in the display, then work on the array variables of the computer with the values of all the data points.

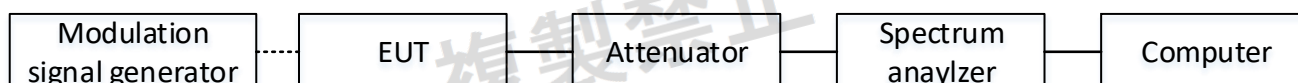
The spectrum analyzer is set as follows:

| Spectrum Parameter | Setting                                                                                                        |
|--------------------|----------------------------------------------------------------------------------------------------------------|
| Center Frequency   | Test frequency                                                                                                 |
| Span Frequency     | From 2 to 3.5 times the tolerance stipulated in the equipment regulations                                      |
| RBW                | Approximately 3% or less of the tolerance stipulated in the equipment regulations                              |
| VBW                | Equivalent to the resolution bandwidth                                                                         |
| Sweep Time         | Minimum time to guarantee measurement accuracy (In the case of burst waves, one burst is included per sample). |
| Input level        | The carrier level is sufficiently higher than the noise level of the spectrum analyzer                         |
| Sweep Time         | Minimum time to guarantee measurement accuracy (In the case of burst waves, one burst is included per sample)  |
| Sweep mode         | Continuous sweep                                                                                               |
| Detector           | Peak                                                                                                           |
| Trace              | Max hold                                                                                                       |

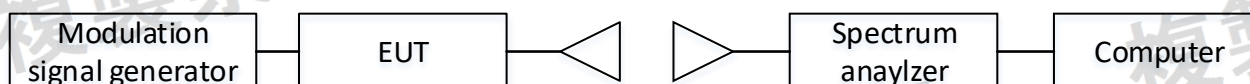
- (b) For all data, convert the dB value to the real number of the power dimension.
- (c) The total power sum of all data is obtained and stored as "total power".
- (d) Power is sequentially added upward from the data of the lowest frequency and a limit data point where this value becomes 0.5% of "total power" is obtained. The limit point is converted into a frequency and stored as "lower limit frequency".
- (e) Power is added sequentially downward from the data of the highest frequency and a limit data point where this value becomes 0.5% of "total power" is obtained. Converts the limit point into a frequency, and stores it as "upper limit frequency".

### 5.2.3. Test Setup Layout

**With antenna terminal**



## In case of antenna integrated type



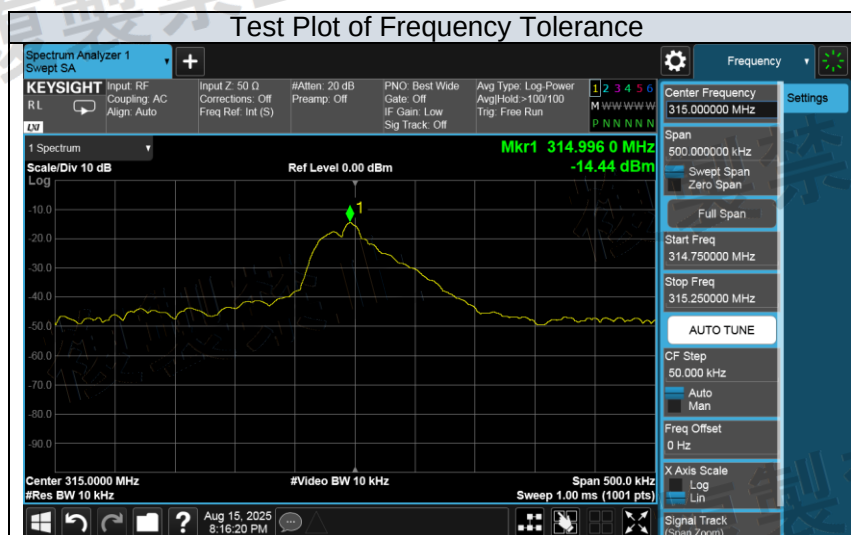
## 5.2.4. EUT Operation during Test

The EUT was programmed to be in TX mode.

## 5.2.5. Test Result of Frequency Tolerance

|               |              |              |                |
|---------------|--------------|--------------|----------------|
| Temperature   | 24.1°C       | Humidity     | 52.3%          |
| Test Engineer | Johnson Wang | Test Voltage | Normal Voltage |

| Channel | Frequency MHz | Measured MHz | Tolerance KHz | Limit            |
|---------|---------------|--------------|---------------|------------------|
| 1       | 315           | 314.996      | -4            | 312MHz~315.25MHz |

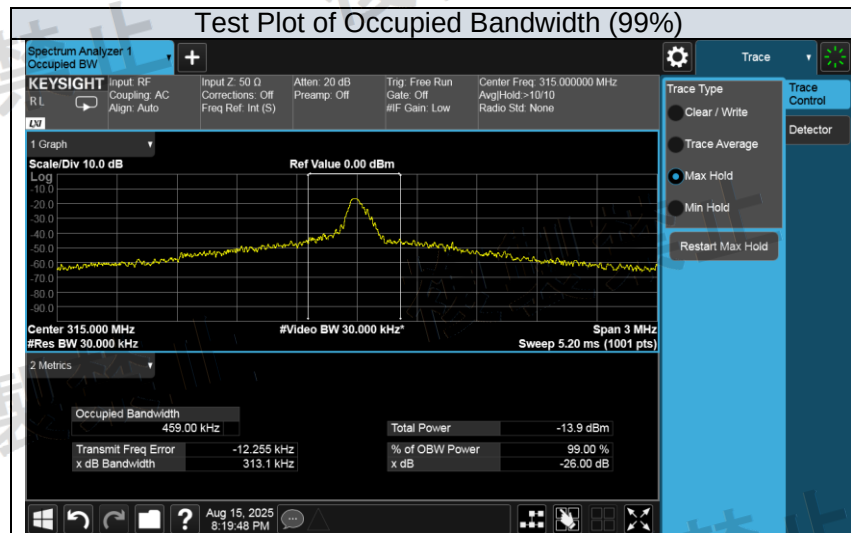


**Note:** All test modes were tested, and only record the worst case.

## 5.2.6. Test Result of Occupied Bandwidth (99%)

|               |              |              |                |
|---------------|--------------|--------------|----------------|
| Temperature   | 24.1°C       | Humidity     | 52.3%          |
| Test Engineer | Johnson Wang | Test Voltage | Normal Voltage |

| Channel | Frequency MHz | Occupied Bandwidth (99%) KHz | Limit |
|---------|---------------|------------------------------|-------|
| 1       | 315           | 459                          | ≤1MHz |



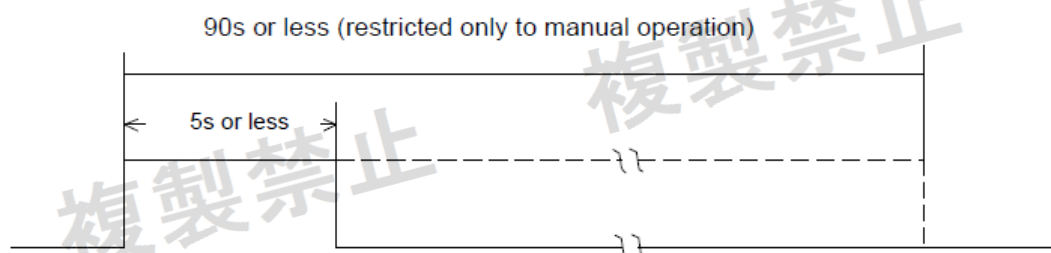
**Note:** All test modes were tested, and only record the worst case.

### 5.3. Transmission time control

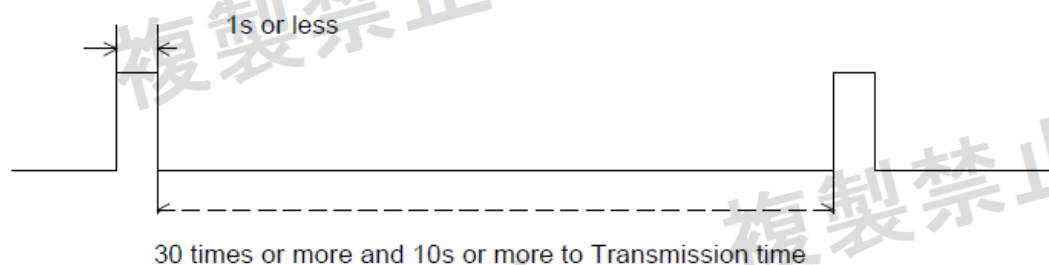
#### 5.3.1. Standard Applicable

The transmission time restricting device is a device having functions that stop radio wave emission within the next specified transmission time after the radio wave emission and resume the subsequent transmission only after the transmission halt time has elapsed, or restrict the transmission time automatically within the next specified transmission time, and does not resume communication unless the transmission halt time has elapsed after the end of the communication. The transmission time and the transmission halt time shall have either of the following functions:

(i) The radio equipment that does not transmit periodically shall have the function to limit one transmission time within 5 seconds, although manually operated transmission allows one transmission time to be within 90 seconds.



(ii) The radio equipment that transmit periodically shall have the function to automatically limit the transmission time for one transmission time within 1 second, with one transmission halt time being more than 10 seconds and no less than 30 times for the transmission time. It is noted that if the radio equipment is used for safety operation of an auto vehicle or any other vehicles and in the unavoidable reason, the transmission halt time of the radio equipment does not require 10 seconds or more.



#### 5.3.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of the Spectrum Analyzer.

| Spectrum Parameter | Setting                                             |
|--------------------|-----------------------------------------------------|
| Center Frequency   | Test Center Frequency                               |
| Span Frequency     | 0Hz                                                 |
| RBW                | About 1MHz                                          |
| VBW                | The same as RBW                                     |
| Sweep Time         | About 10 s (about 100 s when manually transmitting) |
| Sweep Mode         | Single sweep                                        |
| Detection mode     | Peak                                                |

The external test apparatus is a device capable of transmitting an activation signal to the test equipment. As an alternative to this, it is possible to use an opponent machine capable of transmitting an activation signal to the test equipment. Also, when transmitting manually or not receiving control from external test equipment, external test equipment is unnecessary.

### 5.3.3. Test Procedures

#### Radio equipment that performs periodic transmission

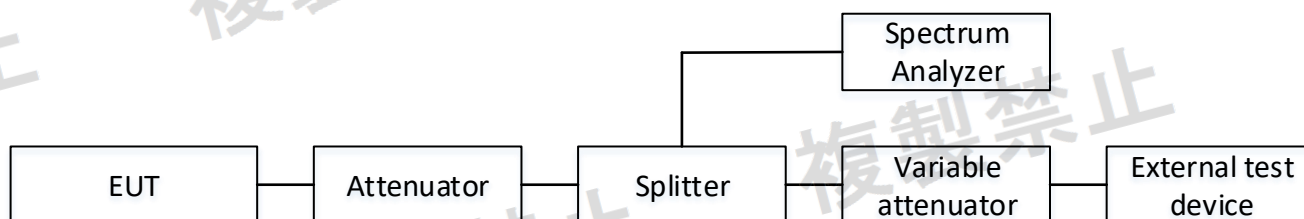
- In the case of a radio equipment that emits a radio wave in a state of receiving an activation signal or the like from an external test apparatus, it is confirmed by the spectrum analyzer that it receives the activation signal and emits the radio wave.
- In the radio equipment that emits radio waves without an activation signal or the like from the external test equipment, the spectrum analyzer confirms that radio waves are being emitted.
- Measure the maximum transmission time and minimum pause time.

#### Radio equipment that does not perform periodic transmission

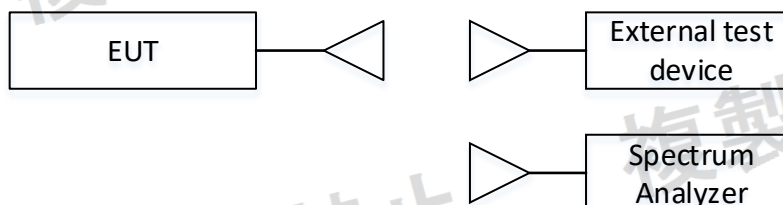
- The spectrum analyzer confirms that radio waves are emitted in a state in which a manual operation or an activation signal from the external test apparatus is received.
- It manually receives an activation signal etc. from the external test apparatus once and measures the maximum transmission time. Also, confirm that the radio wave is not emitted beyond the allowable maximum transmission time.

### 5.3.4. Test Setup Layout

#### With antenna terminal



#### Antenna integrated type



### 5.3.5. EUT Operation during Test

The EUT was programmed to be in TX mode.

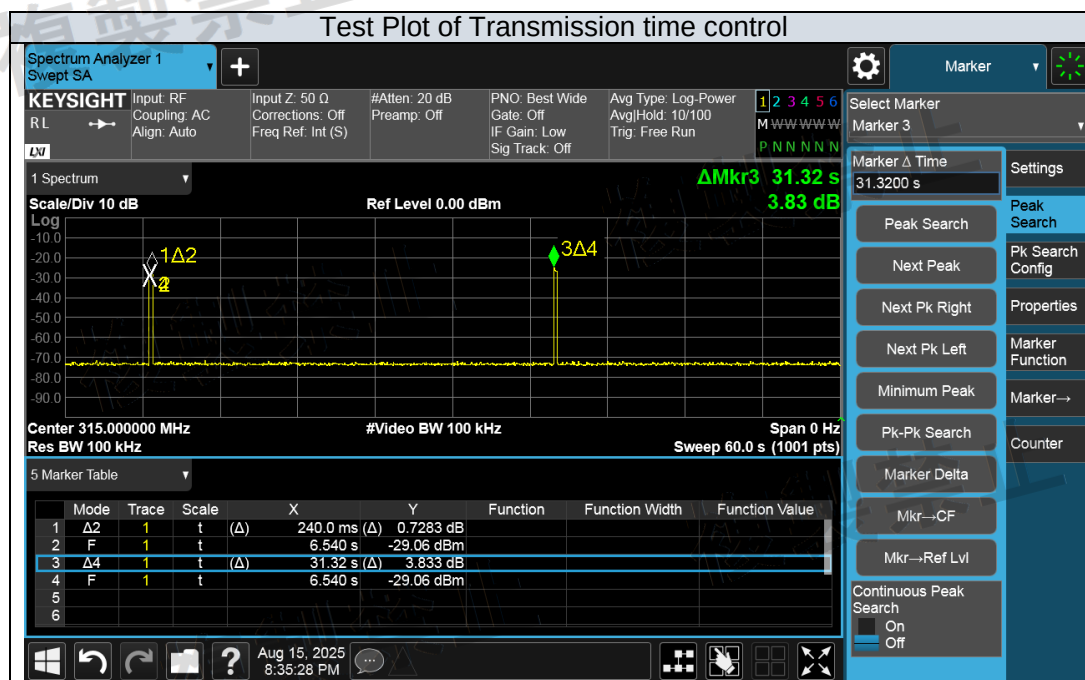
### 5.3.6. Test Result

Please refer to the following page.

|               |              |                |         |
|---------------|--------------|----------------|---------|
| Temperature   | 24.1°C       | Humidity       | 52.3%   |
| Test Engineer | Johnson Wang | Configurations | TX Mode |

| Frequency (MHz) | Duration of each Transmission Time (s) | Limit: not more than 1 seconds (1) | Conclusion |
|-----------------|----------------------------------------|------------------------------------|------------|
| 315             | 0.24                                   | 1                                  | PASS       |

| Frequency (MHz) | The silent period (s) | Limit: At least 30 times the duration of the transmission but in no case less than 10s | Conclusion |
|-----------------|-----------------------|----------------------------------------------------------------------------------------|------------|
| 315             | 31.32                 | >10s                                                                                   | PASS       |



**Note:** All test modes were tested, and only record the worst case.

## 5.4. Transmitter Spurious Emissions

### 5.4.1. Standard Applicable

Permissible Values of Unwanted Emission Intensity

| Frequency band | Permissible Values of Unwanted Emission Intensity | Reference bandwidth |
|----------------|---------------------------------------------------|---------------------|
| 1GHz or less   | 250 nW (e.i.r.p.) or less                         | 100 kHz             |
| more than 1GHz | 1 $\mu$ W (e.i.r.p.) or less                      | 1 MHz               |

### 5.4.2. Measuring Instruments and Setting

Please refer to equipment list in this report. The following table is the setting of spectrum analyzer and receiver.

### 5.4.3. Test Procedures

- Set EUT work in test mode as described in clause 2.4.
- Connected the EUT's antenna port to the Spectrum Analyzer by suitable attenuator, set the Spectrum Analyzer as below:

Below 1GHz: RBW/VBW= 100 KHz/ 100KHz

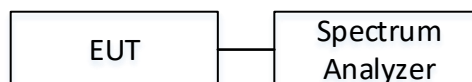
Above 1GHz: RBW/VBW= 1MHz / 1MHz.

Detector: Peak.

Trace Mode: Max Hold.

- All the emissions from 30MHz to 4GHz were measured and record.

### 5.4.4. Test Setup Layout

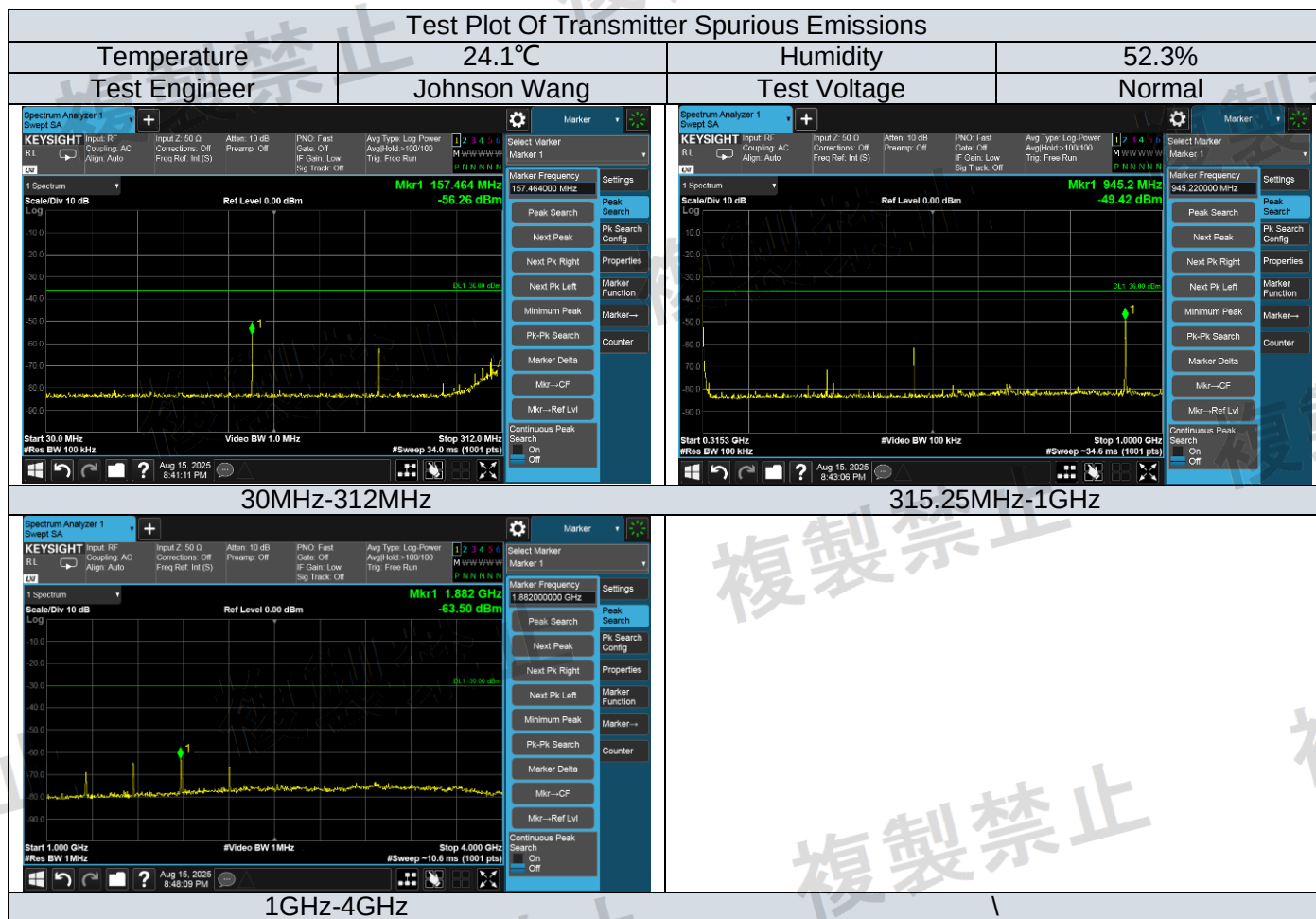


### 5.4.5. EUT Operation during Test

The EUT was programmed to be in TX mode.

### 5.4.6. Test Results

Please refer to the following page.



Note: All test modes were tested, and only record the worst case.

## 5.5. Secondary Radiated Emissions

### 5.5.1. Standard Applicable

Limit of Secondary Radiated Emissions

| Frequency band | Permissible Values of Unwanted Emission Intensity | Reference bandwidth |
|----------------|---------------------------------------------------|---------------------|
| 1GHz or less   | 4 nW (e.i.r.p.) or less                           | 100 kHz             |
| more than 1GHz | 4 μW (e.i.r.p.) or less                           | 1 MHz               |

### 5.5.2. Measuring Instruments and Setting

- a). The spectrum analyzer at the time of searching the limits of secondary radio waves etc. (hereinafter referred to as "secondary fire" in this table) is set as follows.

| Spectrum Parameter    | Setting                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------|
| Sweep frequency width | The search for the secondary emission shall be a frequency from 30 MHz to 3 GHz.                              |
| RBW                   | 100 kHz when the frequency is 1 GHz or less, 1 MHz in the case of exceeding 1 GHz                             |
| VBW                   | Equivalent to the resolution bandwidth                                                                        |
| Sweep Time            | Minimum time to guarantee measurement accuracy                                                                |
| Sweep Time            | Minimum time to guarantee measurement accuracy (In the case of burst waves, one burst is included per sample) |
| Sweep mode            | Single sweep                                                                                                  |
| Detector              | Peak                                                                                                          |

- b). The spectrum analyzer at the time of the secondary emission measurement is set as follows.

| Spectrum Parameter    | Setting                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------|
| Center Frequency      | Secondary firing frequency searched                                                                           |
| Sweep frequency width | 0Hz                                                                                                           |
| RBW                   | 100 kHz when the frequency is 1 GHz or less, 1 MHz in the case of exceeding 1 GHz                             |
| VBW                   | Equivalent to the resolution bandwidth                                                                        |
| Sweep Time            | Minimum time to guarantee measurement accuracy                                                                |
| Sweep Time            | Minimum time to guarantee measurement accuracy (In the case of burst waves, one burst is included per sample) |
| Sweep mode            | Single sweep                                                                                                  |
| Detector              | Peak                                                                                                          |

### 5.5.3. Test Procedures

#### With antenna terminal

- (a) Set the spectrum analyzer setting as 5.3.2. a), and sweep and search for secondary emission. When the value obtained by calculating the equivalent isotropic radiated power  $P_O$  by the following formula using the searched secondary emission amplitude satisfies the allowable value specified in the equipment regulation, it is taken as the measured value.

$$P_O = P_P + G_R \text{ (dBm)}$$

$P_P$ : Secondary firing measurement by spectrum analyzer (dBm)

$G_R$ : Receive antenna absolute gain (dBi) at secondary emission frequency

- (b) If the equivalent isotropic radiated power  $P_O$  obtained from the searched secondary emission amplitude exceeds the allowable value specified in the equipment regulation, the sweep frequency

width of the spectrum analyzer is sequentially narrowed, and the secondary emission frequency . Using the value obtained by setting the spectrum analyzer 2 2 and using the value obtained by obtaining the average value of the amplitude of the secondary emission (in the case of burst waves, the average value in each burst), equivalent isotropic radiation The power PO is calculated and used as the measured value.

### Antenna integrated type

#### (a) A Search for secondary launch

1. The measurement antenna is vertically polarized, and the height and direction of the test instrument and the measurement antenna are roughly opposite to each other.
2. With the setting of spectrum analyzer as 5.3.2. a), search for secondary emission.

#### (b) Measurement of level of secondary emission

Regarding the frequency of secondary emission searched for by (for each of them, for each of them), the following:

1. After the maximum instruction value is recorded by the operation from (1) to (3), the measured value is obtained by the formula of (E), and when it is lower by 10 dB or more than the allowable value prescribed in the equipment regulation, it is taken as the measured value. If the measured value is not lower by 10 dB or more than the allowable value specified in the equipment regulations, as shown in (6), by measuring from (7) to (11) for frequencies corresponding to the frequency of each secondary emission Measure the level of secondary emission.
2. Set the spectrum analyzer to 5.3.2. b).
3. Rotate the test equipment and adjust it to the direction of the maximum receive power of the secondary launch.
4. The ground height of the measurement antenna is changed from 1 m to 4 m or so, the orientation of the measurement antenna is adjusted to find the position where the received power of the secondary emission is maximum and the indication of the spectrum analyzer at this point The value to be set is "E".
5. The power of the secondary emission (equivalent isotropic radiated power dBm) is obtained by the following equation:  
Secondary sub-radiation power =  $P_{SA} - G_{SA} + L_{FA} - 13.3 + 20\log F$   
 $P_{SA}$ : measured value of spectrum analyzer (dBm)  
 $G_{SA}$ : Measuring antenna absolute gain (dBi)  
 $L_{FA}$ : Loss of feed line between spectrum analyzer and measurement antenna (dB) Loss of feed line between antenna (dB)  
 $F$ : Secondary launch frequency (MHz)
6. In the case where the secondary emission power obtained here is lower by 10 dB or more than the allowable value specified in the equipment regulation, the value obtained here is taken as the measurement value. If it is not lower than 10 dB, the measured value is obtained by the following procedure from (7) to (11).
7. Disconnect the test equipment from the table, set the position of the replacement antenna to the same position as the antenna of the test equipment, transmit radio waves of the same frequency from the replacement standard signal generator, and receive with the wattmeter. The polarization plane of the replacement antenna should be the same as the polarization plane of the measurement antenna.
8. Rotate the replacement antenna and adjust it in the power maximum direction.
9. Change the ground level of the measurement antenna between about 1 m and 4 m, adjust the orientation of the measurement antenna and find the position where the received power is the maximum.

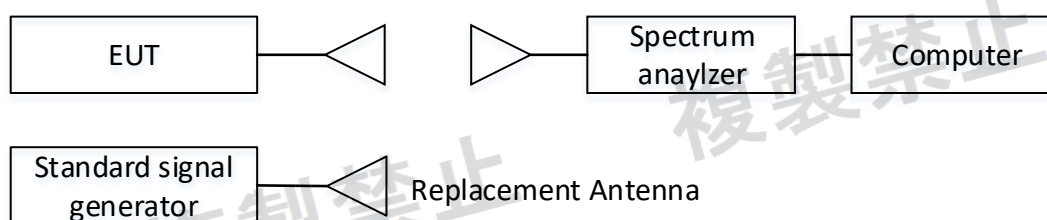
10. Adjust with the output of the standard signal generator to record the power  $P_S$  that is equal to "E" or convert it from the difference from "E" as a value close to "E" (within  $\pm 1$  dB) and convert it to  $P_S$  is recorded.
11. The power of the secondary emission (equivalent isotropic radiated power dBm) is obtained by the following equation:  
Secondary fire power =  $P_S + G_S - L_F$   
 $P_S$ : Output of standard signal generator (dBm)  
 $G_S$ : absolute gain of the replacement antenna (dBi)  
 $L_F$ : Loss of feed line between standard signal generator and replacement antenna (dB)
12. Change polarization plane  
Let the measuring antenna be horizontal polarized wave, repeat the procedures of a) and b), and set the maximum value as the measurement result.

#### 5.6.4. Test Setup Layout

##### With antenna terminal



##### Antenna integrated type



#### 5.5.5. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 5.5.6. Test Results

Note: Not applicable to this device.

## 6. LIST OF MEASURING EQUIPMENTS

| Item | Equipment                      | Manufacturer   | Model No.    | Serial No.          | Last Cal.    | Next Cal.    |
|------|--------------------------------|----------------|--------------|---------------------|--------------|--------------|
| 1    | Power Meter                    | R&S            | NRVS         | 100444              | May 19, 2025 | May 18, 2026 |
| 2    | Power Sensor                   | R&S            | NRV-Z81      | 100458              | May 19, 2025 | May 18, 2026 |
| 3    | Power Sensor                   | R&S            | NRV-Z32      | 10057               | May 19, 2025 | May 18, 2026 |
| 4    | ESA-E SERIES SPECTRUM ANALYZER | Agilent        | E4407B       | MY41440754          | May 19, 2025 | May 18, 2026 |
| 5    | MXA Signal Analyzer            | Agilent        | N9020A       | MY49100040          | May 19, 2025 | May 18, 2026 |
| 6    | SPECTRUM ANALYZER              | R&S            | FSP          | 100503              | May 19, 2025 | May 18, 2026 |
| 7    | 3m Semi Anechoic Chamber       | SIDT FRANKONIA | SAC-3M       | 03CH03-HY           | May 19, 2025 | May 18, 2026 |
| 8    | Positioning Controller         | MF             | MF-7082      | /                   | May 19, 2025 | May 18, 2026 |
| 9    | EMI Test Receiver              | R&S            | ESR 7        | 101181              | May 19, 2025 | May 18, 2026 |
| 10   | AMPLIFIER                      | Quietek        | QTK-A2525G   | CHM10809065         | May 19, 2025 | May 18, 2026 |
| 11   | Active Loop Antenna            | SCHWARZBECK    | FMZB 1519B   | 00005               | May 19, 2025 | May 18, 2026 |
| 12   | By-log Antenna                 | SCHWARZBECK    | VULB9163     | 9163-470            | May 19, 2025 | May 18, 2026 |
| 13   | Horn Antenna                   | EMCO           | 3115         | 6741                | May 19, 2025 | May 18, 2026 |
| 14   | Broadband Horn Antenna         | SCHWARZBECK    | BBHA 9170    | 791                 | May 19, 2025 | May 18, 2026 |
| 15   | Broadband Preamplifier         | SCHWARZBECK    | BBV 9719     | 9719-025            | May 19, 2025 | May 18, 2026 |
| 16   | RF Cable-R03m                  | Jye Bao        | RG142        | CB021               | May 19, 2025 | May 18, 2026 |
| 17   | RF Cable-HIGH                  | SUHNER         | SUCOFLEX 106 | 03CH03-HY           | May 19, 2025 | May 18, 2026 |
| 18   | TEST RECEIVER                  | R&S            | ESCI         | 101142              | May 19, 2025 | May 18, 2026 |
| 19   | RF Cable-CON                   | UTIFLEX        | 3102-26886-4 | CB049               | May 19, 2025 | May 18, 2026 |
| 20   | 10dB Attenuator                | SCHWARZBECK    | MTS-IMP136   | 261115-001-003<br>2 | May 19, 2025 | May 18, 2026 |
| 21   | Artificial Mains               | R&S            | ENV216       | 101288              | May 19, 2025 | May 18, 2026 |
| 22   | RF Control Unit                | Tonscend       | JS0806-2     | 178060073           | May 19, 2025 | May 18, 2026 |
| 23   | MXG Vector Signal Generator    | Agilent        | N5182A       | MY47071151          | May 19, 2025 | May 18, 2026 |
| 24   | Oscilloscope                   | Tektronix      | TBS2000      | 10167893            | May 19, 2025 | May 18, 2026 |
| 25   | DC Power supply                | ZHAOXIN        | PS-6005D     | 20170402922         | May 19, 2025 | May 18, 2026 |

Note:

1.All equipment through GRGT EST calibration

2.Calibration by the calibration agencies listed in the table correspond to paragraph 4 (ii) (c) of Article 24-2 in the Radio Law.

☐ (a) Calibration conducted by the National Institute of Information and Communications Technology (NICT) or a designated calibration agency under Article 102-18-1 of the Radio Act.

☐ (b) Calibration conducted based on the regulations of Article 135 or 144 of the Measurement Act.

☒ (c) Calibration conducted in foreign countries, which is equivalent to calibration conducted by the NICT or a designated calibration agency under Article 102-18-1 of the Radio Act.

☐ (d) Calibration, etc. conducted by using measuring instruments and other facilities listed at the bottom of appended table 3 of the Radio Act, which is to have been calibrated as described in (a) through (c) above.

## **7. TEST SETUP PHOTOGRAPHS OF EUT**

*Please refer to separated files for Test Setup Photos of the EUT.*

## **8. EXTERIOR PHOTOGRAPHS OF THE EUT**

*Please refer to separated files for External photographs of the EUT.*

## **9. INTERIOR PHOTOGRAPHS OF THE EUT**

*Please refer to separated files for Internal photographs of the EUT.*

-----THE END OF REPORT-----