

## TEST REPORT

**Report No.: 26030371HKG-001**

Hallmark Marketing Company, LLC

Application For Certification  
(Original Grant)

**FCC ID: SQ9XKT9062**

Transceiver – 2.4GHz Christmas Tree

**Prepared and Checked by:**

**Approved by:**

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Date: April 30, 2026

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## TEST REPORT

### GENERAL INFORMATION

|                                  |                                                                                                                                       |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Grantee:</b>                  | Hallmark Marketing Company, LLC                                                                                                       |
| <b>Grantee Address:</b>          | 2501 McGee Street MD 339,<br>PO Box 419580,<br>Kansas City, MO 64141,<br>United States.                                               |
| <b>FCC ID:</b>                   | SQ9XKT9062                                                                                                                            |
| <b>Model:</b>                    | XKT9062, XKT9063, XKT9064                                                                                                             |
| <b>Type of EUT:</b>              | Transceiver                                                                                                                           |
| <b>Description of EUT:</b>       | Interactive Figurine with Sound and Light                                                                                             |
| <b>Brand Name:</b>               | Hallmark Marketing Company, LLC                                                                                                       |
| <b>Serial Number:</b>            | Not Labelled                                                                                                                          |
| <b>Sample Receipt Date:</b>      | March 12, 2026                                                                                                                        |
| <b>Date of Test:</b>             | March 26, 2026 to March 27, 2026                                                                                                      |
| <b>Report Date:</b>              | April 30, 2026                                                                                                                        |
| <b>Environmental Conditions:</b> | Temperature: +10 to 40°C<br>Relative Humidity: 10 to 90%                                                                              |
| <b>Conclusion:</b>               | Test was conducted by client submitted sample.<br>The submitted sample as received complied with the 47 CFR Part 15<br>Certification. |

## TEST REPORT

### SUMMARY OF TEST RESULT

| Test Items                                 | FCC Part 15 Section | Results  |
|--------------------------------------------|---------------------|----------|
| Transmitter Power Line Conducted Emissions | 15.207              | Complied |
| Radiated Emission                          | 15.249, 15.209      | Complied |
| Radiated Emission on the Bandedge          |                     | Complied |
| Radiated Emission in Restricted Bands      | 15.205              | Complied |

The equipment under test is found to be complying with the following standards:

FCC Part 15, October 1, 2024 Edition

- Note:
1. The EUT uses a permanently attached antenna which, in accordance to section 15.203, is considered sufficient to comply with the pervisions of this section.
  2. Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

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## TEST REPORT

### 1.0 GENERAL DESCRIPTION

#### 1.1 Product Description

The Equipment Under Test (EUT), is a portable 2.4GHz Transceiver for a Christmas tree. The sample supplied operated on 3 channels which are 2410MHz, 2452MHz and 2474MHz.

The EUT can be powered by 3 x 1.5V AA batteries or an AC/DC adaptor. After switching on the EUT, the EUT can interact with 2 toy houses, and they can emit light and sound.

The Models: XKT9063, XKT9064 are the same as the Model: XKT9062 in hardware aspect as declared by client. The models are different in color, exterior casing and model number only as declared by client.

Antenna Type: Internal, Integral

For electronic filing, the brief circuit description is saved with filename: Descri.pdf.

#### 1.2 Related Submittal(s) Grants

This is a single application for certification of a transceiver.

#### 1.3 Test Methodology

Both AC mains line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024. All radiated measurements were performed in an 3m Chamber. Preliminary scans were performed in the 3m Chamber only to determine worst case modes. All radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the “**Justification Section**” of this Application.

#### 1.4 Test Facility

The 3m Chamber used to collect the radiated data is located at Workshop No. 3, G/F., World-Wide Industrial Centre, 43-47 Shan Mei Street, Fo Tan, Sha Tin, N.T., Hong Kong SAR, China. This test facility and site measurement data have been placed on file with the FCC.

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### 2.0 SYSTEM TEST CONFIGURATION

#### 2.1 Justification

The system was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+Errata to C63.10a-2024.

The device was powered by 4.5VDC (3 x 1.5V AA Batteries) or AC/DC Adaptor.

For maximizing emissions, the EUT was rotated through 360°, the antenna height was varied from 1 meter to 4 meters above the ground plane, and the antenna polarization was changed. This step by step procedure for maximizing emissions led to the data reported in Exhibit 3.0.

For 4.5VDC (3 x 1.5V AA Batteries), the unit was operated standalone and placed in the center of the turntable.

For AC/DC Adaptor, the rear of unit shall be flushed with the rear of the table.

The equipment under test (EUT) was configured for testing in a typical fashion (as a customer would normally use it). The EUT was mounted to a plastic stand if necessary and placed on the wooden turntable, which enabled the engineer to maximize emissions through its placement in the three orthogonal axes.

#### 2.2 EUT Exercising Software

The EUT exercise program (if any) used during radiated testing was designed to exercise the various system components in a manner similar to a typical use.

#### 2.3 Special Accessories

There are no special accessories necessary for compliance of this product.

#### 2.4 Measurement Uncertainty

Decision Rule for compliance: For FCC/IC standard, the measured value must be within the limits of applicable standard without accounting for the measurement uncertainty. For EN/IEC/HKTA/HKTC standard, conformity rules will be used as per standard directly excepted EN/IEC 61000-3-2, EN/IEC 61000-3-3, HKTA1004, HKCA1008, HKTA1019, HKTA1020, HKTA1041 and HKTA1044.

#### 2.5 Support Equipment List and Description

| Description                                                                          | Remark                |
|--------------------------------------------------------------------------------------|-----------------------|
| AC/DC Adaptor<br>Model: SJB0500700VU; Input: 120VAC/60Hz, 0.3A; Output: 5.0VDC, 0.7A | Provided by Applicant |
| 2.5m keepsake power cord                                                             | Provided by Applicant |

## TEST REPORT

### 3.0 EMISSION RESULTS

Data is included of the worst case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

#### 3.1 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any), Average Factor (optional) from the measured reading.

The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CF - AG - AV$$

where

|    |   |                                                     |
|----|---|-----------------------------------------------------|
| FS | = | Field Strength in dBμV/m                            |
| RA | = | Receiver Amplitude (including preamplifier) in dBμV |
| AF | = | Antenna Factor in dB                                |
| CF | = | Cable Attenuation Factor in dB                      |
| AG | = | Amplifier Gain in dB                                |
| AV | = | Average Factor in dB                                |

In the following table(s), the reading shown on the data table reflects the preamplifier gain.

An example for the calculations in the following table is as follows:

$$FS = RR + LF$$

where

|    |   |                          |
|----|---|--------------------------|
| FS | = | Field Strength in dBμV/m |
| RR | = | RA - AG - AV in dBμV     |
| LF | = | CF + AF in dB            |

Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB are added. The amplifier gain of 29.0 dB and average factor of 5.0 dB are subtracted, giving a field strength of 27.0 dBμV/m. This value in dBμV/m was converted to its corresponding level in μV/m.

|    |   |                          |                |
|----|---|--------------------------|----------------|
| RA | = | 52.0 dBμV/m              |                |
| AF | = | 7.4 dB                   | RR = 18.0 dBμV |
| CF | = | 1.6 dB                   | LF = 9.0 dB    |
| AG | = | 29.0 dB                  |                |
| AV | = | 5.0 dB                   |                |
| FS | = | RR + LF                  |                |
| FS | = | 18.0 + 9.0 = 27.0 dBμV/m |                |

Level in μV/m = Common Antilogarithm [(27.0 dBμV/m)/20] = 22.4 μV/m

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### 3.2 Radiated Emission Configuration Photograph

The worst case in radiated emission was found at 181.926 MHz

For electronic filing, the worst case radiated emission configuration photographs are saved with filename: Radiated Photos.pdf.

### 3.3 Radiated Emission Data

The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Passed by 0.8 dB

### 3.4 Conducted Emission Configuration Photograph

The worst case in line-conducted emission was found at 0.429 MHz

For electronic filing, the worst-case line-conducted configuration photographs are saved with filename: Setup Photos.pdf.

### 3.5 Conducted Emission Data

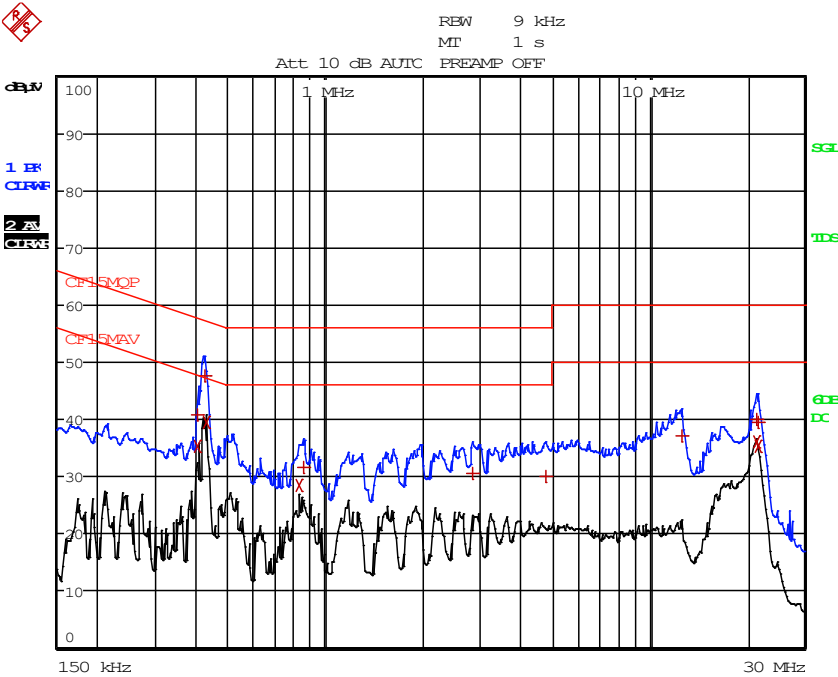
The data on the following page lists the significant emission frequencies, the limit and the margin of compliance. Numbers with a minus sign are below the limit.

Judgment: Pass by 7.77 dB

TEST REPORT

CONDUCTED EMISSION

Model: XKT9062  
Date of Test: March 27, 2026  
Worst-Case Operating Mode: Sound and light with pairing (powered by adaptor)



| EDIT PEAK LIST (Final Measurement Results) |             |       |      |        |       |
|--------------------------------------------|-------------|-------|------|--------|-------|
| Trace1:                                    | CF15MQP     |       |      |        |       |
| Trace2:                                    | CF15MAV     |       |      |        |       |
| Trace3:                                    | ---         |       |      |        |       |
| TRACE                                      | FREQUENCY   | LEVEL | dBμV | DELTA  | LIMIT |
| 1 Quasi Peak                               | 402 kHz     | 40.74 | L1   | -17.06 |       |
| 2 CISPR Average                            | 402 kHz     | 35.20 | N    | -12.60 |       |
| 1 Quasi Peak                               | 424.5 kHz   | 47.68 | L1   | -9.67  |       |
| 2 CISPR Average                            | 429 kHz     | 39.49 | N    | -7.77  |       |
| 2 CISPR Average                            | 834 kHz     | 28.48 | N    | -17.51 |       |
| 1 Quasi Peak                               | 856.5 kHz   | 31.50 | L1   | -24.49 |       |
| 1 Quasi Peak                               | 2.859 MHz   | 30.49 | L1   | -25.50 |       |
| 1 Quasi Peak                               | 4.812 MHz   | 30.13 | L1   | -25.86 |       |
| 1 Quasi Peak                               | 12.579 MHz  | 37.25 | L1   | -22.74 |       |
| 2 CISPR Average                            | 21.3495 MHz | 36.04 | N    | -13.95 |       |
| 1 Quasi Peak                               | 21.3855 MHz | 40.12 | L1   | -19.87 |       |
| 2 CISPR Average                            | 21.606 MHz  | 35.23 | N    | -14.76 |       |
| 1 Quasi Peak                               | 21.615 MHz  | 39.61 | L1   | -20.38 |       |

Note: Measurement Uncertainty is ±4.2dB at a level of confidence of 95%.

## TEST REPORT

### RADIATED EMISSIONS

Model: XKT9062  
Date of Test: March 26, 2026  
Worst-Case Operating Mode: Transmitting

Table 1

Pursuant to FCC Part 15 Section 15.249 Requirement

#### Lowest Channel

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Average (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|------------------------------|------------------------------|-------------|
| H            | 2410.000        | 69.4           | 33                | 29.4                | 65.8                         | 94.0                         | -28.2       |
| H            | 2400.000        | 49.0           | 33                | 29.4                | 45.4                         | 54.0                         | -8.6        |
| V            | 4820.000        | 35.1           | 33                | 34.9                | 37.0                         | 54.0                         | -17.0       |
| H            | 7230.000        | 33.1           | 33                | 37.9                | 38.0                         | 54.0                         | -16.0       |
| H            | 9640.000        | 33.1           | 33                | 40.4                | 40.5                         | 54.0                         | -13.5       |
| H            | 12050.000       | 37.6           | 33                | 40.5                | 45.1                         | 54.0                         | -8.9        |
| V            | 14460.000       | 38.3           | 33                | 40.0                | 45.3                         | 54.0                         | -8.7        |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Peak (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|---------------------------|---------------------------|-------------|
| H            | 2410.000        | 89.0           | 33                | 29.4                | 85.4                      | 114.0                     | -28.6       |
| H            | 2400.000        | 63.0           | 33                | 29.4                | 59.4                      | 74.0                      | -14.6       |
| V            | 4820.000        | 53.5           | 33                | 34.9                | 55.4                      | 74.0                      | -18.6       |
| H            | 7230.000        | 49.6           | 33                | 37.9                | 54.5                      | 74.0                      | -19.5       |
| H            | 9640.000        | 46.8           | 33                | 40.4                | 54.2                      | 74.0                      | -19.8       |
| H            | 12050.000       | 51.7           | 33                | 40.5                | 59.2                      | 74.0                      | -14.8       |
| V            | 14460.000       | 51.6           | 33                | 40.0                | 58.6                      | 74.0                      | -15.4       |

- Notes: 1. Peak Detector Data unless otherwise stated.  
2. Average detector is applied according to ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+ Errata to C63.10a-2024.  
3. All measurements were made at 3 meters.  
4. Negative value in the margin column shows emission below limit.  
5. Horn antenna is used for the emission over 1000MHz.  
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205.  
7. Measurement Uncertainty is  $\pm 5.3$ dB at a level of confidence of 95%.

## TEST REPORT

### RADIATED EMISSIONS

Model: XKT9062  
Date of Test: March 26, 2026  
Worst-Case Operating Mode: Transmitting

Table 2

Pursuant to FCC Part 15 Section 15.249 Requirement

#### Middle Channel

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Average (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|------------------------------|------------------------------|-------------|
| H            | 2452.000        | 69.2           | 33                | 29.4                | 65.6                         | 94.0                         | -28.4       |
| V            | 4904.000        | 35.4           | 33                | 34.9                | 37.3                         | 54.0                         | -16.7       |
| H            | 7356.000        | 34.6           | 33                | 37.9                | 39.5                         | 54.0                         | -14.5       |
| H            | 9808.000        | 33.5           | 33                | 40.4                | 40.9                         | 54.0                         | -13.1       |
| H            | 12260.000       | 38.5           | 33                | 40.5                | 46.0                         | 54.0                         | -8.0        |
| H            | 14712.000       | 38.0           | 33                | 38.4                | 43.4                         | 54.0                         | -10.6       |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Peak (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|---------------------------|---------------------------|-------------|
| H            | 2452.000        | 88.5           | 33                | 29.4                | 84.9                      | 114.0                     | -29.1       |
| V            | 4904.000        | 53.6           | 33                | 34.9                | 55.5                      | 74.0                      | -18.5       |
| H            | 7356.000        | 52.1           | 33                | 37.9                | 57.0                      | 74.0                      | -17.0       |
| H            | 9808.000        | 47.4           | 33                | 40.4                | 54.8                      | 74.0                      | -19.2       |
| H            | 12260.000       | 51.8           | 33                | 40.5                | 59.3                      | 74.0                      | -14.7       |
| H            | 14712.000       | 51.1           | 33                | 38.4                | 56.5                      | 74.0                      | -17.5       |

- Notes: 1. Peak Detector Data unless otherwise stated.  
2. Average detector is applied according to ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+ Errata to C63.10a-2024.  
3. All measurements were made at 3 meters.  
4. Negative value in the margin column shows emission below limit.  
5. Horn antenna is used for the emission over 1000MHz.  
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205.  
7. Measurement Uncertainty is  $\pm 5.3$ dB at a level of confidence of 95%.

## TEST REPORT

### RADIATED EMISSIONS

Model: XKT9062  
Date of Test: March 26, 2026  
Worst-Case Operating Mode: Transmitting

Table 3

Pursuant to FCC Part 15 Section 15.249 Requirement

#### Highest Channel

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Average (dBμV/m) | Average Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|------------------------------|------------------------------|-------------|
| V            | 2474.000        | 67.3           | 33                | 29.4                | 63.7                         | 94.0                         | -30.3       |
| V            | 2483.500        | 49.6           | 33                | 29.4                | 46.0                         | 54.0                         | -8.0        |
| V            | 4948.000        | 34.6           | 33                | 34.9                | 36.5                         | 54.0                         | -17.5       |
| H            | 7422.000        | 33.3           | 33                | 37.9                | 38.2                         | 54.0                         | -15.8       |
| H            | 9896.000        | 33.4           | 33                | 40.4                | 40.8                         | 54.0                         | -13.2       |
| H            | 12370.000       | 39.1           | 33                | 40.5                | 46.6                         | 54.0                         | -7.4        |
| H            | 14844.000       | 39.1           | 33                | 38.4                | 44.5                         | 54.0                         | -9.5        |

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-Amp Gain (dB) | Antenna Factor (dB) | Net at 3m - Peak (dBμV/m) | Peak Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|-------------------|---------------------|---------------------------|---------------------------|-------------|
| V            | 2474.000        | 86.2           | 33                | 29.4                | 82.6                      | 114.0                     | -31.4       |
| V            | 2483.500        | 62.7           | 33                | 29.4                | 59.1                      | 74.0                      | -14.9       |
| V            | 4948.000        | 52.3           | 33                | 34.9                | 54.2                      | 74.0                      | -19.8       |
| H            | 7422.000        | 48.9           | 33                | 37.9                | 53.8                      | 74.0                      | -20.2       |
| H            | 9896.000        | 46.8           | 33                | 40.4                | 54.2                      | 74.0                      | -19.8       |
| H            | 12370.000       | 52.4           | 33                | 40.5                | 59.9                      | 74.0                      | -14.1       |
| H            | 14844.000       | 52.7           | 33                | 38.4                | 58.1                      | 74.0                      | -15.9       |

- Notes: 1. Peak Detector Data unless otherwise stated.  
2. Average detector is applied according to ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+ Errata to C63.10a-2024.  
3. All measurements were made at 3 meters.  
4. Negative value in the margin column shows emission below limit.  
5. Horn antenna is used for the emission over 1000MHz.  
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205.  
7. Measurement Uncertainty is  $\pm 5.3$ dB at a level of confidence of 95%.

## TEST REPORT

### RADIATED EMISSIONS

Model: XKT9062  
Date of Test: March 26, 2026  
Worst-Case Operating Mode: Sound and light with pairing (powered by batteries)

Table 4

Pursuant to FCC Part 15 Section 15.209 Requirement

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-amp (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|--------------|---------------------|--------------------|----------------------|-------------|
| H            | 181.441         | 33.0           | 16           | 20.0                | 37.0               | 43.5                 | -6.5        |
| H            | 191.384         | 30.7           | 16           | 16.0                | 30.7               | 43.5                 | -12.8       |
| H            | 282.928         | 29.1           | 16           | 22.0                | 35.1               | 46.0                 | -10.9       |
| V            | 302.691         | 29.5           | 16           | 22.0                | 35.5               | 46.0                 | -10.5       |
| V            | 312.755         | 31.7           | 16           | 23.0                | 38.7               | 46.0                 | -7.3        |
| H            | 403.450         | 25.2           | 16           | 24.0                | 33.2               | 46.0                 | -12.8       |

- Notes: 1. Peak Detector Data unless otherwise stated.  
2. All measurements were made at 3 meters.  
3. Negative value in the margin column shows emission below limit.  
4. Horn antenna is used for the emission over 1000MHz.  
5. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205.  
6. Measurement Uncertainty is  $\pm 5.3$ dB at a level of confidence of 95%.

## TEST REPORT

### RADIATED EMISSIONS

Model: XKT9062  
Date of Test: March 26, 2026  
Worst-Case Operating Mode: Sound and light with pairing (powered by adaptor)

Table 5

Pursuant to FCC Part 15 Section 15.209 Requirement

| Polarization | Frequency (MHz) | Reading (dBμV) | Pre-amp (dB) | Antenna Factor (dB) | Net at 3m (dBμV/m) | Limit at 3m (dBμV/m) | Margin (dB) |
|--------------|-----------------|----------------|--------------|---------------------|--------------------|----------------------|-------------|
| H            | 76.924          | 34.9           | 16           | 6.0                 | 24.9               | 40.0                 | -15.1       |
| H            | 181.926         | 38.7           | 16           | 20.0                | 42.7               | 43.5                 | -0.8        |
| V            | 188.110         | 24.8           | 16           | 16.0                | 24.8               | 43.5                 | -18.7       |
| V            | 191.263         | 40.5           | 16           | 16.0                | 40.5               | 43.5                 | -3.0        |
| V            | 192.354         | 27.7           | 16           | 16.0                | 27.7               | 43.5                 | -15.8       |
| V            | 201.569         | 33.3           | 16           | 16.0                | 33.3               | 43.5                 | -10.2       |

- Notes:
1. Quasi-Peak Detector Data unless otherwise stated.
  2. All measurements were made at 3 meters.
  3. Negative value in the margin column shows emission below limit.
  4. Horn antenna is used for the emission over 1000MHz.
  5. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205.
  6. Measurement Uncertainty is  $\pm 5.3$ dB at a level of confidence of 95%.

## **TEST REPORT**

### **4.0 EQUIPMENT PHOTOGRAPHS**

For electronic filing, the photographs are saved with filename: External Photos.pdf and Internal Photos.pdf.

### **5.0 PRODUCT LABELLING**

For electronics filing, the FCC ID label artwork and the label location are saved with filename: Label.pdf.

### **6.0 TECHNICAL SPECIFICATIONS**

For electronic filing, the block diagram and schematic of the tested EUT are saved with filename: Block.pdf and Circuit.pdf respectively.

### **7.0 INSTRUCTION MANUAL**

For electronic filing, a preliminary copy of the Instruction Manual is saved with filename: Manual.pdf.

This manual will be provided to the end-user with each unit sold/leased in the United States.

## TEST REPORT

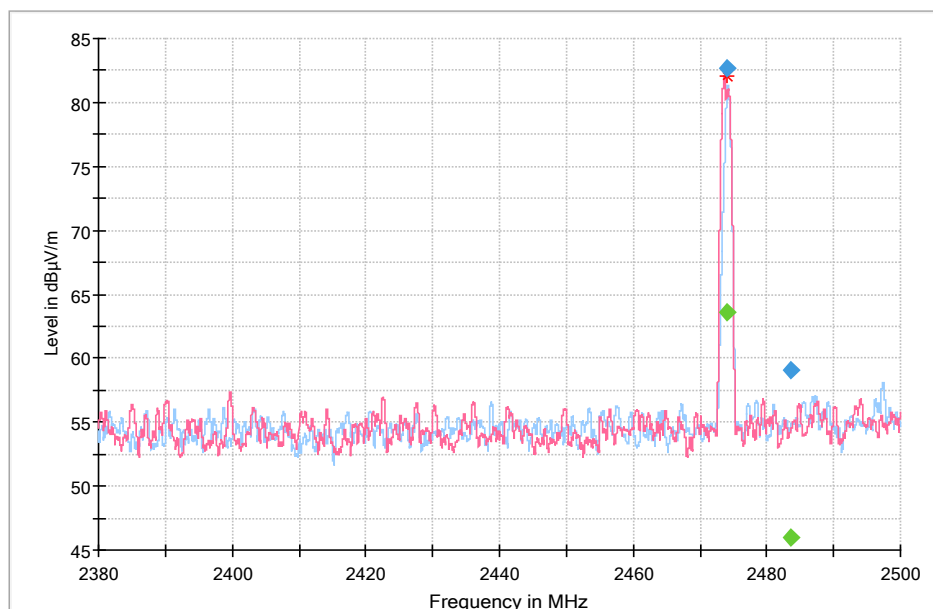
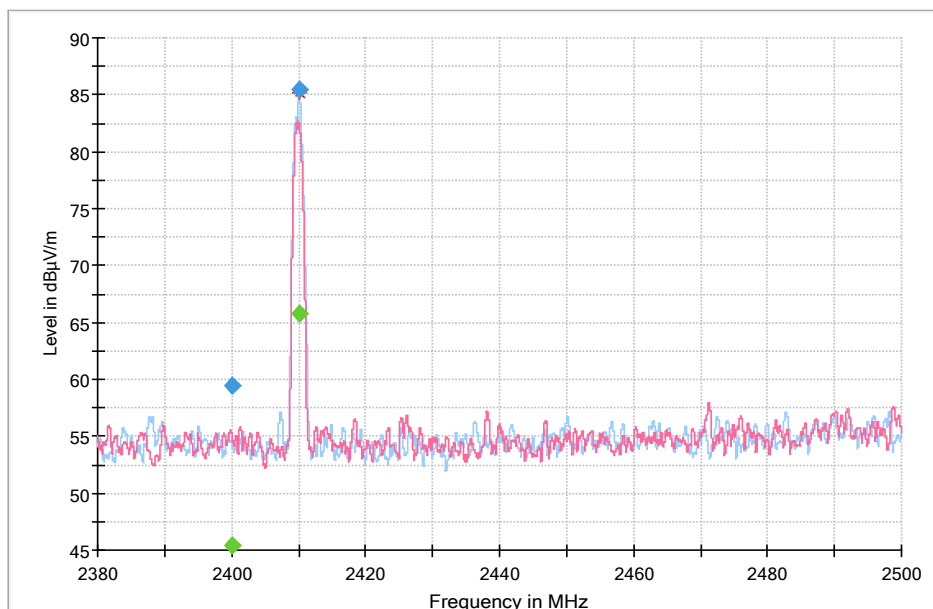
### 8.0 MISCELLANEOUS INFORMATION

The miscellaneous information includes details of the test procedure and measured bandwidth.

#### 8.1 Radiated Emission on the Bandedge

The emission of bandedge data were shown on the above radiated data table of 1 & 3 respectively.

Emissions radiated outside of the specified frequency bands, except harmonics, are attenuated by 50dB below the level of the fundamental or to the general radiated emissions limits in Section 15.209, whichever is the lesser attenuation, which meet the requirement of Part 15.249(d).



## TEST REPORT

### 8.2 Emissions Test Procedures

The following is a description of the test procedure used by Intertek Testing Services Hong Kong Ltd. in the measurements of transmitter operating under the Part 15, Subpart C rules.

The transmitting equipment under test (EUT) is placed on a wooden turntable which is four feet in diameter and approximately 0.8m in height above the ground plane for emission measurement at or below 1GHz and 1.5m in height above the ground plane for emission measurement above 1GHz. During the radiated emissions test, the turntable is rotated and any cables leaving the EUT are manipulated to find the configuration resulting in maximum emissions. The EUT is adjusted through all three orthogonal axis to obtain maximum emission levels. The antenna height and polarization are also varied during the testing to search for maximum signal levels. The height of the antenna is varied from one to four meters.

Detector function for radiated emissions is in peak mode. Average readings, when required, are taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in Exhibit 8.3.

The frequency range scanned is from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or 40 GHz, whichever is lower. For line conducted emissions, the range scanned is 150 kHz to 30 MHz.

The EUT is warmed up for 15 minutes prior to the test.

AC power to the unit is varied from 85% to 115% nominal and variation in the fundamental emission field strength is recorded. If battery powered, a new, fully charged battery is used.

Conducted measurements were made as described in ANSI C63.10-2020+Cor.1-2023+C63.10a-2024+ Errata to C63.10a-2024.

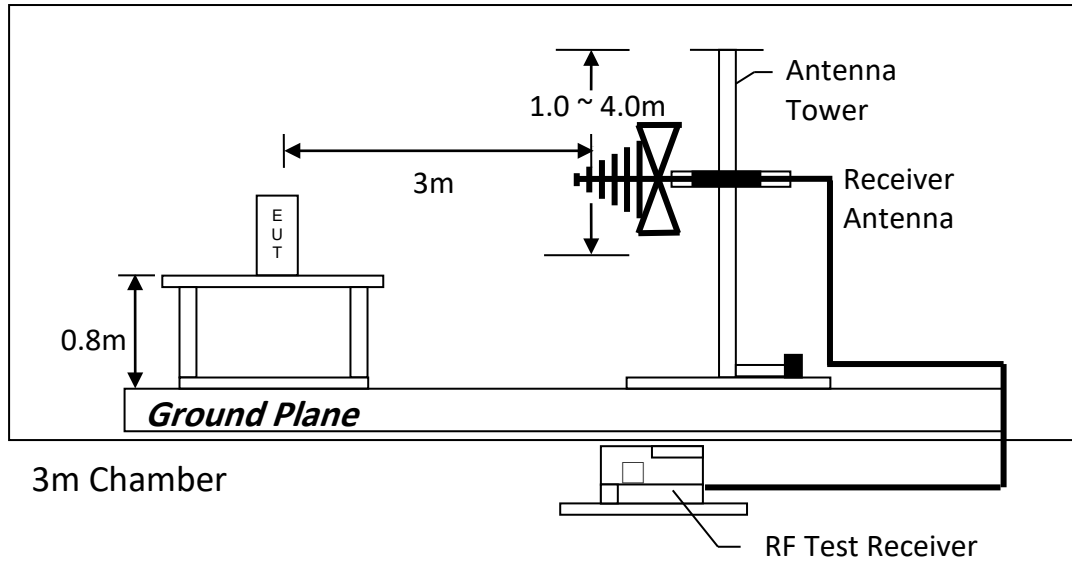
The IF bandwidth used for measurement of radiated signal strength was 100 kHz or greater when frequency is below 1000 MHz. Where pulsed transmissions of short enough pulse duration warrant, a greater bandwidth is selected according to the recommendations of Hewlett Packard Application Note 150-2. A discussion of whether pulse desensitivity is applicable to this unit is included in this report (See Exhibit 8.1). Above 1000 MHz, a resolution bandwidth of 3 MHz is used.

Transmitter measurements are normally conducted at a measurement distance of three meters. However, to assure low enough noise floor in the forbidden bands and above 1 GHz, signals are acquired at a distance of one meter or less. All measurements are extrapolated to three meters using inverse scaling, unless otherwise reported. Measurements taken at a closer distance are so marked.

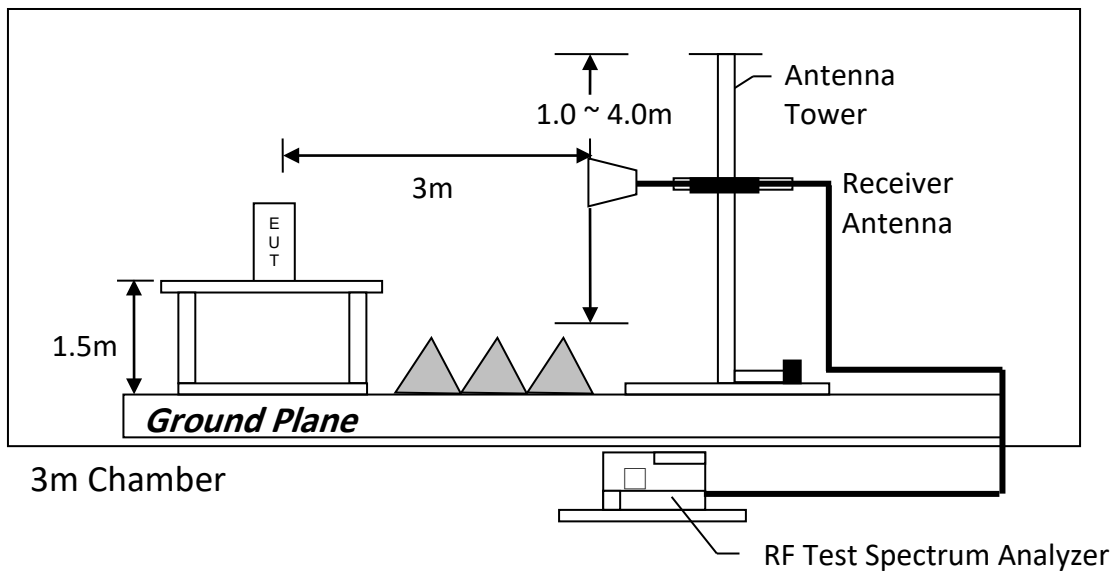
## TEST REPORT

### 8.2.1 Radiated Emission Test Setup

The figure below shows the test setup, which is utilized to make these measurements.



Test setup of radiated emissions up to 1GHz



Test setup of radiated emissions above 1GHz

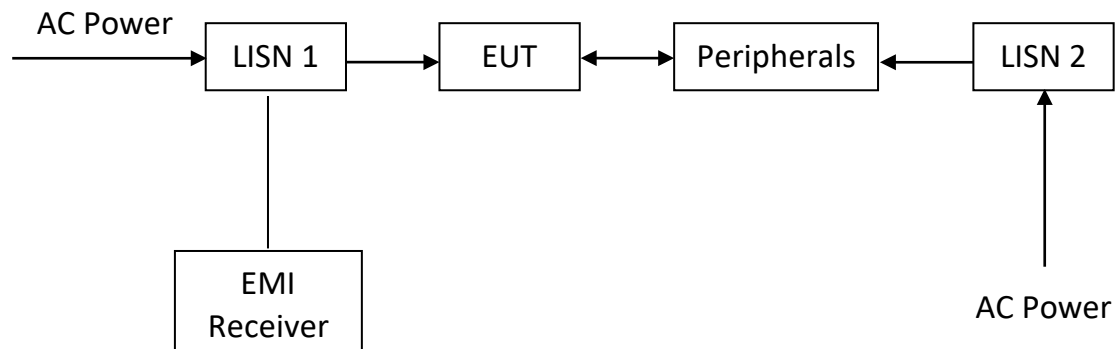
## TEST REPORT

### 8.2.2 Conducted Emission Test Procedures

For tabletop equipment, the EUT along with its peripherals were placed on a 1.0m(W)×1.5m(L) and 0.8m in height wooden table. For floor-standing equipment, the EUT and all cables were insulated, if required, from the ground plane by up to 12 mm of insulating material. The EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room. The excess power cable between the EUT and the LISN was bundled.

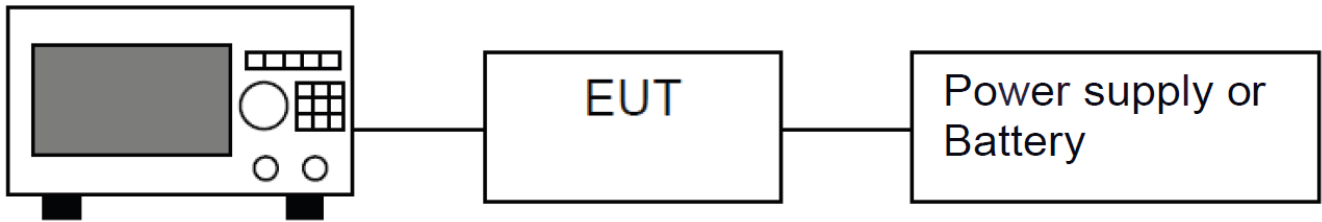
All connecting cables of EUT and peripherals were moved to find the maximum emission.

### 8.2.3 Conducted Emission Test Setup



## TEST REPORT

### 8.3 Occupied Bandwidth



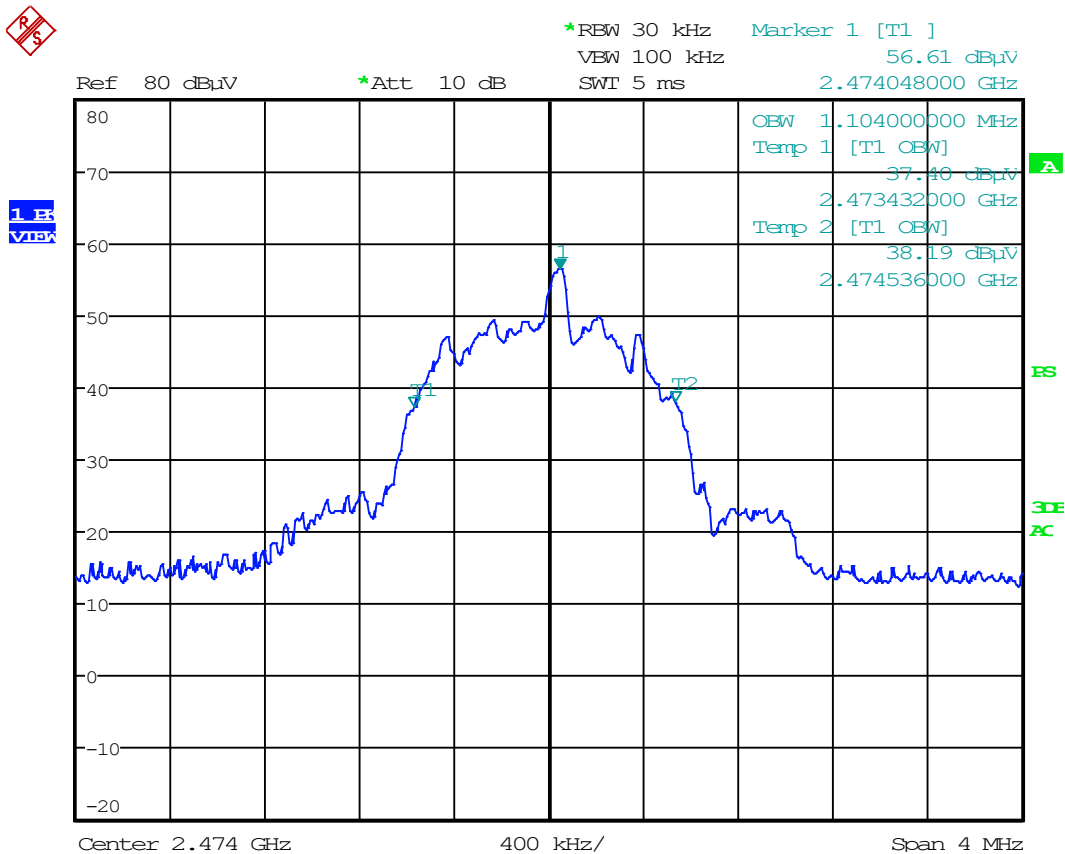
Spectrum Analyzer

Block diagram of Test setup

Occupied Bandwidth Results:

|                      | Occupied Bandwidth (kHz) |
|----------------------|--------------------------|
| Low Channel: 2410    | 1072                     |
| Middle Channel: 2452 | 1080                     |
| High Channel: 2474   | 1104                     |

The worst case is shown as below:



## TEST REPORT

### 9.0 CONFIDENTIALITY REQUEST

For electronic filing, a preliminary copy of the confidentiality request is saved with filename: request.pdf.

### 10.0 EQUIPMENT LIST

#### 1) Radiated Emissions Test & Bandedge Measurement

| Equipment            | EMI Test Receiver<br>(9kHz to 26.5GHz) | Biconical Antenna<br>(30MHz to 300MHz) | Log Periodic Antenna |
|----------------------|----------------------------------------|----------------------------------------|----------------------|
| Registration No.     | EW-3156                                | EW-3242                                | EW-3243              |
| Manufacturer         | ROHDESCHWARZ                           | EMCO                                   | EMCO                 |
| Model No.            | ESR26                                  | 3110C                                  | 3148B                |
| Calibration Date     | May 02, 2025                           | July 30, 2024                          | July 30, 2024        |
| Calibration Due Date | May 02, 2026                           | July 30, 2026                          | July 30, 2026        |

| Equipment            | Double Ridged Guide<br>Antenna (1GHz - 18GHz) | Active Loop Antenna<br>(H-field) (9kHz to<br>30MHz) | Solid State Low Noise<br>Preamplifier<br>Assembly (1 - 18)GHz |
|----------------------|-----------------------------------------------|-----------------------------------------------------|---------------------------------------------------------------|
| Registration No.     | EW-1133                                       | EW-2313                                             | EW-3431                                                       |
| Manufacturer         | EMCO                                          | ELECTROMETRI                                        | BONN ELEKTRO                                                  |
| Model No.            | 3115                                          | EM-6876                                             | BLMA 0118-5G                                                  |
| Calibration Date     | January 23, 2025                              | December 19, 2025                                   | December 11, 2025                                             |
| Calibration Due Date | July 23, 2026                                 | December 19, 2027                                   | December 11, 2026                                             |

| Equipment            | Notch Filter (cutoff<br>frequency 2.4GHz to<br>2.5GHz) | 14m Double Shield RF<br>Cable (9kHz - 6GHz) | RF Cable 14m<br>(1GHz to 26.5GHz) |
|----------------------|--------------------------------------------------------|---------------------------------------------|-----------------------------------|
| Registration No.     | EW-2213b                                               | EW-2376                                     | EW-2781                           |
| Manufacturer         | MICROTRONICS                                           | RADIALL                                     | GREATBILLION                      |
| Model No.            | BRM50701-02                                            | n m/br56/bnc m 14m                          | SMA m/SHF5MPU<br>/SMA m ra14m,26G |
| Calibration Date     | March 04, 2026                                         | November 06, 2025                           | February 18, 2025                 |
| Calibration Due Date | March 04, 2027                                         | November 06, 2026                           | May 18, 2026                      |

| Equipment            | 12 metre RF Cable<br>(1-40)GHz | Pyramidal Horn<br>Antenna |
|----------------------|--------------------------------|---------------------------|
| Registration No.     | EW-2774                        | EW-0905                   |
| Manufacturer         | GREATBILLION                   | EMCO                      |
| Model No.            | SMA m-m ra 12m 40G<br>outdoor  | 3160-09                   |
| Calibration Date     | February 18, 2025              | November 06, 2025         |
| Calibration Due Date | May 18, 2026                   | May 06, 2027              |

## TEST REPORT

### 2) Conducted Emissions Test

| Equipment            | EMI Test Receiver<br>(9kHz to 3GHz) | Artificial Mains<br>Network |
|----------------------|-------------------------------------|-----------------------------|
| Registration No.     | EW-3095                             | EW-3360                     |
| Manufacturer         | ROHDESCHWARZ                        | ROHDESCHWARZ                |
| Model No.            | ESCI                                | ENV216                      |
| Calibration Date     | June 19, 2025                       | June 23, 2025               |
| Calibration Due Date | June 19, 2026                       | June 23, 2026               |

### 3) OBW Measurement

| Equipment            | EMI Test Receiver<br>(9kHz to 3GHz) |
|----------------------|-------------------------------------|
| Registration No.     | EW-3095                             |
| Manufacturer         | ROHDESCHWARZ                        |
| Model No.            | ESCI                                |
| Calibration Date     | June 19, 2025                       |
| Calibration Due Date | June 19, 2026                       |

### 4) Control Software for Radiated Emission

| Software Information |              |
|----------------------|--------------|
| Software Name        | EMC32        |
| Manufacturer         | ROHDESCHWARZ |
| Software version     | 10.50.40     |

**END OF TEST REPORT**