

# RADIO TEST REPORT

## Test Report No. 14577969S-C-R1

|                     |                       |
|---------------------|-----------------------|
| Customer            | CANON INC.            |
| Description of EUT  | Wireless Microphone   |
| Model Number of EUT | DS586233              |
| FCC ID              | AZD250                |
| Test Regulation     | FCC Part 15 Subpart C |
| Test Result         | Complied              |
| Issue Date          | May 27, 2024          |
| Remarks             | -                     |

**Representative Test Engineer**Kenichi Adachi  
Engineer**Approved By**Toyokazu Imamura  
Engineer

CERTIFICATE 1266.03

- ☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.
- ☒ There is no testing item of "Non-accreditation".

Report Cover Page - Form-ULID-003532 (DCS:13-EM-F0429) Issue# 23.0

# ANNOUNCEMENT

- This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
- The results in this report apply only to the sample tested. (Laboratory was not involved in sampling.)
- This sample tested is in compliance with the limits of the above regulation.
- The test results in this test report are traceable to the national or international standards.
- This test report must not be used by the customer to claim product certification, approval, or endorsement by the A2LA accreditation body.
- This test report covers Radio technical requirements.  
It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
- The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided by the customer for this report is identified in SECTION 1.
- The laboratory is not responsible for information provided by the customer which can impact the validity of the results.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

# REVISION HISTORY

## Original Test Report No.: 14577969S-C

This report is a revised version of 14577969S-C. 14577969S-C is replaced with this report.

| Revision        | Test Report No. | Date           | Page Revised Contents                                                                                          |
|-----------------|-----------------|----------------|----------------------------------------------------------------------------------------------------------------|
| -<br>(Original) | 14577969S-C     | April 26, 2024 | -                                                                                                              |
| 1               | 14577969S-C-R1  | May 27, 2024   | p.9 Modified software date: From 2023.03.30 to 2023.11.01<br>p.11 Modified model number: DSS586233 -> DS586233 |

## Reference: Abbreviations (Including words undescribed in this report)

|                |                                                                 |         |                                                     |
|----------------|-----------------------------------------------------------------|---------|-----------------------------------------------------|
| A2LA           | The American Association for Laboratory Accreditation           | ICES    | Interference-Causing Equipment Standard             |
| AC             | Alternating Current                                             | IEC     | International Electrotechnical Commission           |
| AFH            | Adaptive Frequency Hopping                                      | IEEE    | Institute of Electrical and Electronics Engineers   |
| AM             | Amplitude Modulation                                            | IF      | Intermediate Frequency                              |
| Amp, AMP       | Amplifier                                                       | ILAC    | International Laboratory Accreditation Conference   |
| ANSI           | American National Standards Institute                           | ISED    | Innovation, Science and Economic Development Canada |
| Ant, ANT       | Antenna                                                         | ISO     | International Organization for Standardization      |
| AP             | Access Point                                                    | JAB     | Japan Accreditation Board                           |
| ASK            | Amplitude Shift Keying                                          | LAN     | Local Area Network                                  |
| Atten., ATT    | Attenuator                                                      | LIMS    | Laboratory Information Management System            |
| AV             | Average                                                         | MCS     | Modulation and Coding Scheme                        |
| BPSK           | Binary Phase-Shift Keying                                       | MRA     | Mutual Recognition Arrangement                      |
| BR             | Bluetooth Basic Rate                                            | N/A     | Not Applicable                                      |
| BT             | Bluetooth                                                       | NIST    | National Institute of Standards and Technology      |
| BT LE          | Bluetooth Low Energy                                            | NS      | No signal detect.                                   |
| BW             | BandWidth                                                       | NSA     | Normalized Site Attenuation                         |
| Cal Int        | Calibration Interval                                            | NVLAP   | National Voluntary Laboratory Accreditation Program |
| CCK            | Complementary Code Keying                                       | OBW     | Occupied Band Width                                 |
| Ch., CH        | Channel                                                         | OFDM    | Orthogonal Frequency Division Multiplexing          |
| CISPR          | Comite International Special des Perturbations Radioelectriques | P/M     | Power meter                                         |
| CW             | Continuous Wave                                                 | PCB     | Printed Circuit Board                               |
| DBPSK          | Differential BPSK                                               | PER     | Packet Error Rate                                   |
| DC             | Direct Current                                                  | PHY     | Physical Layer                                      |
| D-factor       | Distance factor                                                 | PK      | Peak                                                |
| DFS            | Dynamic Frequency Selection                                     | PN      | Pseudo random Noise                                 |
| DQPSK          | Differential QPSK                                               | PRBS    | Pseudo-Random Bit Sequence                          |
| DSSS           | Direct Sequence Spread Spectrum                                 | PSD     | Power Spectral Density                              |
| EDR            | Enhanced Data Rate                                              | QAM     | Quadrature Amplitude Modulation                     |
| EIRP, e.i.r.p. | Equivalent Isotropically Radiated Power                         | QP      | Quasi-Peak                                          |
| EMC            | ElectroMagnetic Compatibility                                   | QPSK    | Quadri-Phase Shift Keying                           |
| EMI            | ElectroMagnetic Interference                                    | RBW     | Resolution Band Width                               |
| EN             | European Norm                                                   | RDS     | Radio Data System                                   |
| ERP, e.r.p.    | Effective Radiated Power                                        | RE      | Radio Equipment                                     |
| EU             | European Union                                                  | RF      | Radio Frequency                                     |
| EUT            | Equipment Under Test                                            | RMS     | Root Mean Square                                    |
| Fac.           | Factor                                                          | RSS     | Radio Standards Specifications                      |
| FCC            | Federal Communications Commission                               | Rx      | Receiving                                           |
| FHSS           | Frequency Hopping Spread Spectrum                               | SA, S/A | Spectrum Analyzer                                   |
| FM             | Frequency Modulation                                            | SG      | Signal Generator                                    |
| Freq.          | Frequency                                                       | SVSWR   | Site-Voltage Standing Wave Ratio                    |
| FSK            | Frequency Shift Keying                                          | TR      | Test Receiver                                       |
| GFSK           | Gaussian Frequency-Shift Keying                                 | Tx      | Transmitting                                        |
| GNSS           | Global Navigation Satellite System                              | VBW     | Video BandWidth                                     |
| GPS            | Global Positioning System                                       | Vert.   | Vertical                                            |
| Hori.          | Horizontal                                                      | WLAN    | Wireless LAN                                        |

| <b>CONTENTS</b>                                                      | <b>PAGE</b> |
|----------------------------------------------------------------------|-------------|
| <b>SECTION 1: Customer Information .....</b>                         | <b>5</b>    |
| <b>SECTION 2: Equipment Under Test (EUT).....</b>                    | <b>5</b>    |
| <b>SECTION 3: Test Specification, Procedures &amp; Results .....</b> | <b>6</b>    |
| <b>SECTION 4: Operation of EUT during testing .....</b>              | <b>9</b>    |
| <b>SECTION 5: Conducted Emission.....</b>                            | <b>12</b>   |
| <b>SECTION 6: Radiated Spurious Emission.....</b>                    | <b>13</b>   |
| <b>SECTION 7: Antenna Terminal Conducted Tests .....</b>             | <b>15</b>   |
| <b>APPENDIX 1: Test Data .....</b>                                   | <b>16</b>   |
| Conducted Emission .....                                             | 16          |
| 99 % Occupied Bandwidth and 6 dB Bandwidth.....                      | 17          |
| Maximum Peak Output Power .....                                      | 19          |
| Average Output Power.....                                            | 19          |
| Burst rate confirmation.....                                         | 20          |
| Radiated Spurious Emission.....                                      | 21          |
| Conducted Spurious Emission.....                                     | 27          |
| Power Density.....                                                   | 30          |
| <b>APPENDIX 2: Test Instruments .....</b>                            | <b>31</b>   |
| <b>APPENDIX 3: Photographs of Test Setup .....</b>                   | <b>33</b>   |
| Conducted Emission .....                                             | 33          |
| Radiated Spurious Emission.....                                      | 34          |
| Pre-check of Worst Case Position .....                               | 35          |
| Antenna Terminal Conducted Tests .....                               | 36          |

## **SECTION 1: Customer Information**

|                  |                                                           |
|------------------|-----------------------------------------------------------|
| Company Name     | CANON INC.                                                |
| Address          | 30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan |
| Telephone Number | +81-3-3757-4264                                           |
| Contact Person   | Tomohiro Suzuki                                           |

The information provided by the customer is as follows;

- Customer, Description of EUT, Model Number of EUT, FCC ID on the cover and other relevant pages
- Operating/Test Mode(s) (Mode(s)) on all the relevant pages
- SECTION 1: Customer Information
- SECTION 2: Equipment Under Test (EUT) other than the Receipt Date and Test Date
- SECTION 4: Operation of EUT during testing

## **SECTION 2: Equipment Under Test (EUT)**

### **2.1 Identification of EUT**

|               |                                                                                                                                     |
|---------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Description   | Wireless Microphone                                                                                                                 |
| Model Number  | DS586233                                                                                                                            |
| Serial Number | Refer to SECTION 4.2                                                                                                                |
| Condition     | Engineering prototype<br>(Not for Sale: This sample is equivalent to mass-produced items.)                                          |
| Modification  | No Modification by the test lab                                                                                                     |
| Receipt Date  | November 1, 2023 (Antenna Terminal Conducted Tests sample)<br>March 6, 2023 (Conducted Emission, Radiated Spurious Emission sample) |
| Test Date     | November 6, 2023 to April 1, 2024                                                                                                   |

### **2.2 Product Description**

#### **General Specification**

|                       |                          |
|-----------------------|--------------------------|
| Rating                | DC 3.3 V                 |
| Operating temperature | -20 deg. C to +40 deg. C |

#### **Radio Specification**

This report contains data provided by the customer which can impact the validity of results. UL Japan, Inc. is only responsible for the validity of results after the integration of the data provided by the customer. The data provided by the customer is marked "a)" in the table below.

#### **Bluetooth (Low Energy)**

|                            |                      |
|----------------------------|----------------------|
| Equipment Type             | Transceiver          |
| Frequency of Operation     | 2402 MHz to 2480 MHz |
| Type of Modulation         | GFSK                 |
| Antenna Type               | Monopole Antenna     |
| Antenna Gain <sup>a)</sup> | -0.35 dBi            |

## SECTION 3: Test Specification, Procedures & Results

### 3.1 Test Specification

|                    |                                                                                                                                                                                                              |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Specification | FCC Part 15 Subpart C<br>The latest version on the first day of the testing period                                                                                                                           |
| Title              | FCC 47 CFR Part 15 Radio Frequency Device Subpart C Intentional Radiators<br>Section 15.207 Conducted limits<br>Section 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz,<br>and 5725-5850 MHz |

### 3.2 Procedures and Results

| Item                                    | Test Procedure                                                              | Specification                                                              | Worst Margin                                                  | Results  | Remarks                                                           |
|-----------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------|----------|-------------------------------------------------------------------|
| Conducted Emission                      | FCC: ANSI C63.10-2013<br>6. Standard test methods<br>ISED: RSS-Gen 8.8      | FCC: Section 15.207<br>ISED: RSS-Gen 8.8                                   | 21.9 dB,<br>0.41559 MHz,<br>L1, QP                            | Complied | -                                                                 |
| 6dB Bandwidth                           | FCC: KDB 558074 D01<br>15.247<br>Meas Guidance v05r02<br>ISED: -            | FCC: Section<br>15.247(a)(2)<br>ISED: RSS-247 5.2(a)                       | See data.                                                     | Complied | Conducted                                                         |
| Maximum Peak Output Power               | FCC: KDB 558074 D01<br>15.247<br>Meas Guidance v05r02<br>ISED: RSS-Gen 6.12 | FCC: Section<br>15.247(b)(3)<br>ISED: RSS-247 5.4(d)                       |                                                               | Complied | Conducted                                                         |
| Power Density                           | FCC: KDB 558074 D01<br>15.247<br>Meas Guidance v05r02<br>ISED: -            | FCC: Section 15.247(e)<br>ISED: RSS-247 5.2(b)                             |                                                               | Complied | Conducted                                                         |
| Spurious Emission Restricted Band Edges | FCC: KDB 558074 D01<br>15.247<br>Meas Guidance v05r02<br>ISED: RSS-Gen 6.13 | FCC: Section 15.247(d)<br>ISED: RSS-247 5.5<br>RSS-Gen 8.9<br>RSS-Gen 8.10 | 1.9 dB<br>4804.000 MHz,<br>AV, Verical,<br>Tx BT LE, 2402 MHz | Complied | Conducted<br>(below 30 MHz)/<br>Radiated<br>(above 30 MHz)<br>*1) |

Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.

\* In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.

\*1) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02 8.5 and 8.6.

#### FCC Part 15.31 (e)

This EUT provides the stable voltage constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

#### FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

### 3.3 Addition to Standard

| Item                    | Test Procedure    | Specification | Worst Margin | Results | Remarks   |
|-------------------------|-------------------|---------------|--------------|---------|-----------|
| 99 % Occupied Bandwidth | ISED: RSS-Gen 6.7 | ISED: -       | N/A          | -       | Conducted |

Other than above, no addition, exclusion nor deviation has been made from the standard.

### 3.4 Uncertainty

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.  
Note: When margins obtained from test results are less than the measurement uncertainty, the test results may exceed the limit.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor  $k = 2$ .

Shonan EMC Lab.

| Item                                             | Frequency range   | Uncertainty (+/-) |
|--------------------------------------------------|-------------------|-------------------|
| Conducted Emission (AC Mains) LISN               | 150 kHz to 30 MHz | 3.2 dB            |
| Radiated Emission<br>(Measurement distance: 3 m) | 9 kHz to 30 MHz   | 3.3 dB            |
|                                                  | 30 MHz to 200 MHz | 4.9 dB            |
|                                                  | 200 MHz to 1 GHz  | 6.2 dB            |
|                                                  | 1 GHz to 6 GHz    | 4.7 dB            |
|                                                  | 6 GHz to 18 GHz   | 5.3 dB            |
|                                                  | 18 GHz to 40 GHz  | 5.5 dB            |
| Radiated Emission<br>(Measurement distance: 1 m) | 1 GHz to 18 GHz   | 5.6 dB            |
|                                                  | 18 GHz to 40 GHz  | 5.8 dB            |

| Antenna terminal test                                         | Uncertainty (+/-) |
|---------------------------------------------------------------|-------------------|
| Power Measurement above 1 GHz (Average Detector) SPM-06       | 1.1 dB            |
| Power Measurement above 1 GHz (Peak Detector) SPM-06          | 1.8 dB            |
| Power Measurement above 1 GHz (Average Detector) SPM-07       | 1.0 dB            |
| Power Measurement above 1 GHz (Peak Detector) SPM-07          | 1.2 dB            |
| Power Measurement above 1 GHz (Average Detector) SPM-13       | 0.81 dB           |
| Power Measurement above 1 GHz (Peak Detector) SPM-13          | 1.1 dB            |
| Spurious Emission (Conducted) below 1 GHz                     | 0.91 dB           |
| Conducted Emissions Power Density Measurement 1 GHz to 3 GHz  | 1.3 dB            |
| Conducted Emissions Power Density Measurement 3 GHz to 18 GHz | 2.5 dB            |
| Spurious Emission (Conducted) 18 GHz to 26.5 GHz              | 2.8 dB            |
| Spurious Emission (Conducted) 26.5 GHz to 40 GHz              | 2.6 dB            |
| Bandwidth Measurement                                         | 0.012 %           |
| Duty Cycle and Time Measurement                               | 0.27 %            |
| Temperature_SCH-01                                            | 0.96 deg.C.       |
| Humidity_SCH-01                                               | 4.0 %             |
| Temperature_SCH-02                                            | 2.2 deg.C.        |
| Voltage                                                       | 0.74 %            |

### 3.5 Test Location

UL Japan, Inc. Shonan EMC Lab.

1-22-3, Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 Japan

Telephone: +81-463-50-6400

A2LA Certificate Number: 1266.03

(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

| Test room                          | Width x Depth x Height (m) | Size of reference ground plane (m) / horizontal conducting plane | Maximum measurement distance |
|------------------------------------|----------------------------|------------------------------------------------------------------|------------------------------|
| No.1 Semi-anechoic chamber (SAC1)  | 20.6 x 11.3 x 7.65         | 20.6 x 11.3                                                      | 10 m                         |
| No.2 Semi-anechoic chamber (SAC2)  | 20.6 x 11.3 x 7.65         | 20.6 x 11.3                                                      | 10 m                         |
| No.3 Semi-anechoic chamber (SAC3)  | 12.7 x 7.7 x 5.35          | 12.7 x 7.7                                                       | 5 m                          |
| No.4 Semi-anechoic chamber (SAC4)  | 8.1 x 5.1 x 3.55           | 8.1 x 5.1                                                        | -                            |
| Wireless anechoic chamber 1 (WAC1) | 9.5 x 6.0 x 5.4            | 9.5 x 6.0                                                        | 3 m                          |
| Wireless anechoic chamber 2 (WAC2) | 9.5 x 6.0 x 5.4            | 9.5 x 6.0                                                        | 3 m                          |
| No.1 Shielded room                 | 6.8 x 4.1 x 2.7            | 6.8 x 4.1                                                        | -                            |
| No.2 Shielded room                 | 6.8 x 4.1 x 2.7            | 6.8 x 4.1                                                        | -                            |
| No.3 Shielded room                 | 6.3 x 4.7 x 2.7            | 6.3 x 4.7                                                        | -                            |
| No.4 Shielded room                 | 4.4 x 4.7 x 2.7            | 4.4 x 4.7                                                        | -                            |
| No.5 Shielded room                 | 7.8 x 6.4 x 2.7            | 7.8 x 6.4                                                        | -                            |
| No.6 Shielded room                 | 7.8 x 6.4 x 2.7            | 7.8 x 6.4                                                        | -                            |
| No.8 Shielded room                 | 3.45 x 5.5 x 2.4           | 3.45 x 5.5                                                       | -                            |
| No.1 Measurement room              | 2.55 x 4.1 x 2.5           | -                                                                | -                            |
| No.2 Measurement room              | 4.5 x 3.5 x 2.5            | -                                                                | -                            |
| Wireless shielded room 1           | 3.0 x 4.5 x 2.7            | 3.0 x 4.5                                                        | -                            |
| Wireless shielded room 2           | 3.0 x 4.5 x 2.7            | 3.0 x 4.5                                                        | -                            |

### 3.6 Test Data, Test Instruments, and Test Set Up

Refer to APPENDIX.

## SECTION 4: Operation of EUT during testing

### 4.1 Operating Mode(s)

#### [BT LE]

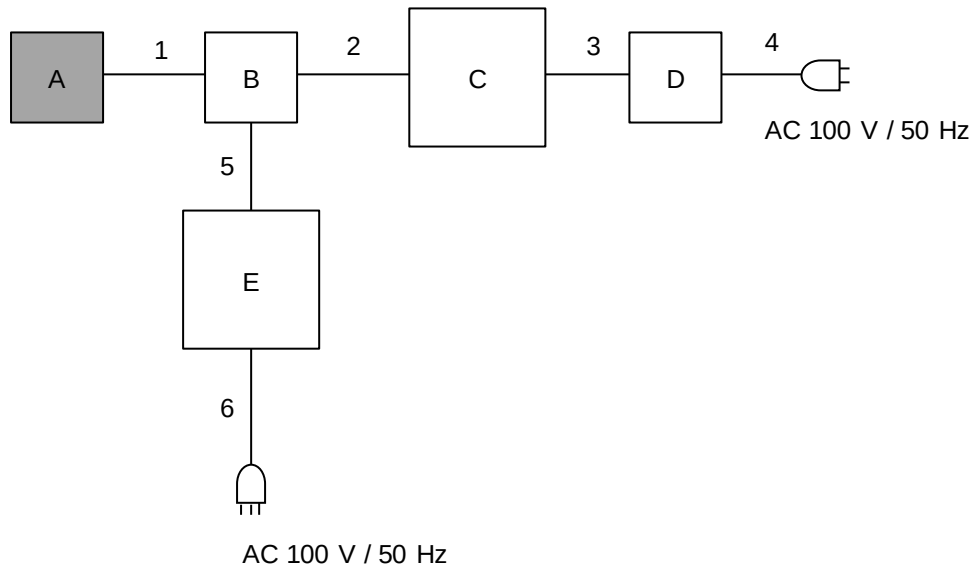
| Mode                                                                                                                                                                                                                                                                                                                                                                                                                                    | Remarks*                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Bluetooth Low Energy (BT LE)                                                                                                                                                                                                                                                                                                                                                                                                            | 1 M-PHY Uncoded PHY (1 M-PHY), Maximum Packet Size, PRBS9 |
| <p>*Power of the EUT was set by the software as follows;<br/> Power Setting: 0 dBm<br/> Software: Direct Test Mode Version: 2.1.0<br/> (Date: 2023.11.01, Storage location: Driven by connected PC)</p> <p>*This setting of software is the worst case.<br/> Any conditions under the normal use do not exceed the condition of setting.<br/> In addition, end users cannot change the settings of the output power of the product.</p> |                                                           |

#### \*The Details of Operating Mode(s)

| Test Item                                                                                                                                                                                                                                                                                                              | Operating Mode | Tested Frequency                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------------------------|
| Conducted Emission,<br>Radiated Spurious Emission (Below 1 GHz)                                                                                                                                                                                                                                                        | Tx BT LE       | 2440 MHz                         |
| Radiated Spurious Emission (Above 1 GHz),<br>Maximum Peak Output Power,<br>Power Density,<br>6 dB Bandwidth,<br>99 % Occupied Bandwidth,<br>Conducted Spurious Emission                                                                                                                                                | Tx BT LE       | 2402 MHz<br>2440 MHz<br>2480 MHz |
| <p>*1) Conducted emissions and Spurious emissions for frequencies below 1 GHz were limited to the channel that had the highest power during the antenna terminal test, as preliminary testing indicated that changing the operating frequency had no significant impact on the emissions in those frequency bands.</p> |                |                                  |

## 4.2 Configuration and Peripherals

<For Antenna Terminal Conducted Tests>



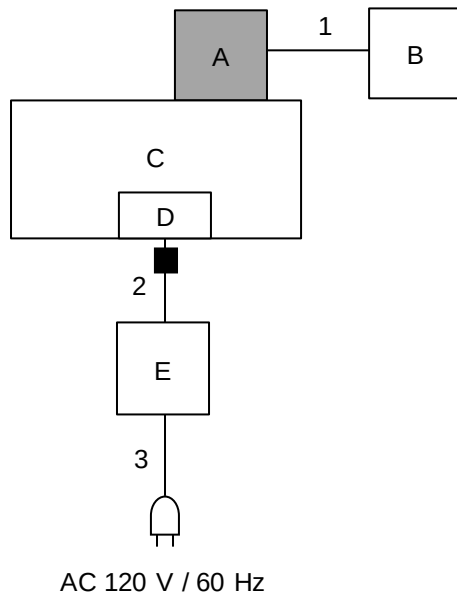
### Description of EUT and Support Equipment

| No. | Item                             | Model Number      | Serial Number           | Manufacturer            | Remarks |
|-----|----------------------------------|-------------------|-------------------------|-------------------------|---------|
| A   | RF module of Wireless Microphone | BL5340            | A013                    | Laird Connectivity, LLC | EUT     |
| B   | Jig board                        | -                 | 18                      | Canon. Inc              | -       |
| C   | Laptop Computer                  | ThinkPad E14 Gen2 | PF397TQG                | LENOVO                  | -       |
| D   | AC Adapter                       | ADLX65YCC2D       | 8SSA10R16922C2TJ19M1368 | LENOVO                  | -       |
| E   | Power Supply (DC)                | PAN35-10A         | ML002085                | KIKUSUI                 | -       |

### List of Cables Used

| No. | Name   | Length (m) | Shield     |            | Remarks |
|-----|--------|------------|------------|------------|---------|
|     |        |            | Cable      | Connector  |         |
| 1   | Signal | 0.1        | Unshielded | Unshielded | -       |
| 2   | USB    | 0.8        | Shielded   | Shielded   | -       |
| 3   | DC     | 1.8        | Unshielded | Unshielded | -       |
| 4   | AC     | 0.9        | Unshielded | Unshielded | -       |
| 5   | DC     | 2.4        | Unshielded | Unshielded | -       |
| 6   | AC     | 1.5        | Unshielded | Unshielded | -       |

<For Radiated Emission Test and Conducted Emission Test>



■ : Standard Ferrite Core

TDK, ZCAT2032-0930, 125mm from D, 3T

\* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.  
\*As a result of comparing AC 120 V and AC 240 V at pre-check, conducted emission test was performed with AC 120 V of the worst voltage as representative.

**Description of EUT and Support Equipment**

| No. | Item                | Model Number | Serial Number | Manufacturer | Remarks |
|-----|---------------------|--------------|---------------|--------------|---------|
| A   | Wireless Microphone | DS586233     | 40            | Canon. Inc   | EUT     |
| B   | Jig Board           | -            | -             | Canon. Inc   | -       |
| C   | Camera              | DS126841     | 141034001061  | Canon. Inc   | -       |
| D   | DC Coupler          | DR-E6        | -             | Canon. Inc   | -       |
| E   | AC Adapter          | AC-E6N       | 9             | Canon. Inc   | -       |

**List of Cables Used**

| No. | Name   | Length (m) | Shield     |            | Remarks |
|-----|--------|------------|------------|------------|---------|
|     |        |            | Cable      | Connector  |         |
| 1   | Signal | 0.1        | Unshielded | Unshielded | *1)     |
| 2   | DC     | 2.9        | Unshielded | Unshielded | -       |
| 3   | AC     | 1.0        | Unshielded | Unshielded | -       |

\*1) Cable for test operation

## **SECTION 5: Conducted Emission**

### **Test Procedure and Conditions**

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.

The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT via AE in a Shielded Room.

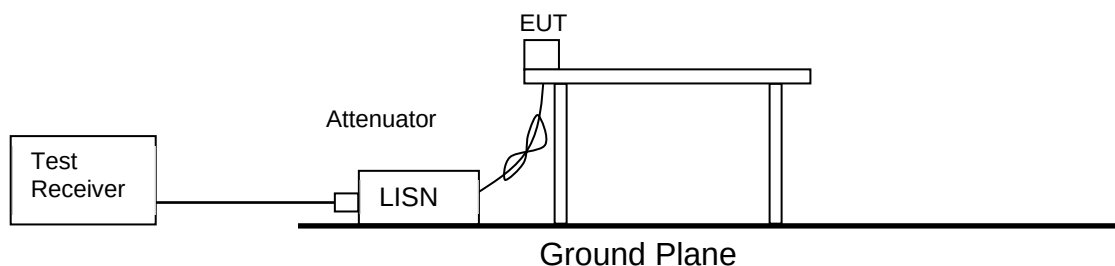
The EUT via AE was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

|                          |                             |
|--------------------------|-----------------------------|
| <b>Detector</b>          | <b>: QP and CISPR AV</b>    |
| <b>Measurement Range</b> | <b>: 0.15 MHz to 30 MHz</b> |
| <b>Test Data</b>         | <b>: APPENDIX</b>           |
| <b>Test Result</b>       | <b>: Pass</b>               |

**Figure 1: Test Setup**



## **SECTION 6: Radiated Spurious Emission**

### **Test Procedure**

It was measured based on "8.5 and 8.6 of KDB 558074 D01 15.247 Meas Guidance v05r02".

[For below 1 GHz]

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[For above 1 GHz]

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane. Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

The height of the measuring antenna varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

#### **Test Antennas are used as below;**

|              |                   |                  |             |
|--------------|-------------------|------------------|-------------|
| Frequency    | 30 MHz to 200 MHz | 200 MHz to 1 GHz | Above 1 GHz |
| Antenna Type | Biconical         | Logperiodic      | Horn        |

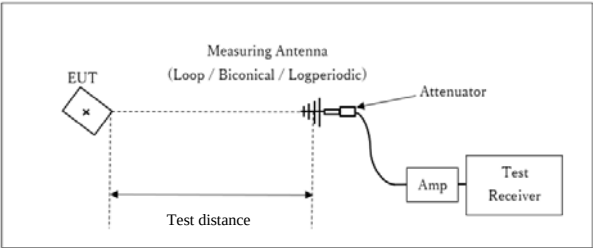
In any 100 kHz bandwidth outside the restricted band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

#### **20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9(ISED) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (ISED).**

|                 |               |                          |                                                                                                                                                               |                              |
|-----------------|---------------|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Frequency       | Below 1 GHz   | Above 1 GHz              |                                                                                                                                                               | 20 dBc                       |
| Instrument Used | Test Receiver | Spectrum Analyzer        |                                                                                                                                                               | Spectrum Analyzer            |
| Detector        | QP            | PK                       | AV                                                                                                                                                            | PK                           |
| IF Bandwidth    | BW 120 kHz    | RBW: 1 MHz<br>VBW: 3 MHz | <u>11.12.2.5.2</u><br>RBW: 1 MHz<br>VBW: 3 MHz<br>Detector:<br>Power Averaging (Linear voltage)<br>Trace: 100 traces<br>Duty factor was added to the results. | RBW: 100 kHz<br>VBW: 300 kHz |

Figure 2: Test Setup

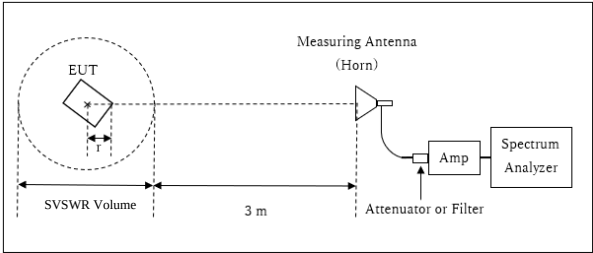
Below 1 GHz



x : Center of turn table

Test Distance: 3 m

1 GHz to 10 GHz

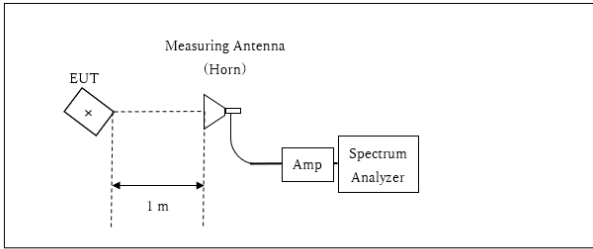


r : Radius of an outer periphery of EUT  
x : Center of turn table

Distance Factor:  $20 \times \log (3.93 \text{ m} / 3.0 \text{ m}) = 2.35 \text{ dB}$   
\* Test Distance:  $(3 + \text{SVSWR Volume} / 2) - r = 3.93 \text{ m}$

SVSWR Volume : 2.0 m  
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)  
 $r = 0.07 \text{ m}$

10 GHz to 26.5 GHz



x : Center of turn table

Distance Factor:  $20 \times \log (1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$   
\*Test Distance: 1 m

The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

BT LE:

| Antenna polarization | Carrier | Spurious (30 MHz to 1 GHz) | Spurious (1 GHz to 2.8 GHz) | Spurious (2.8 GHz to 10 GHz) | Spurious (10 GHz to 18 GHz) | Spurious (18 GHz to 26.5 GHz) |
|----------------------|---------|----------------------------|-----------------------------|------------------------------|-----------------------------|-------------------------------|
| Horizontal           | Z       | Z                          | Z                           | Z                            | X                           | X                             |
| Vertical             | Y       | Y                          | Y                           | Y                            | X                           | X                             |

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement Range : 30 MHz to 26.5 GHz  
Test Data : APPENDIX  
Test Result : Pass

## SECTION 7: Antenna Terminal Conducted Tests

### Test Procedure

The tests were made with below setting connected to the antenna port.

| Test                                | Span                                    | RBW              | VBW                | Sweep time | Detector             | Trace    | Instrument Used                    |
|-------------------------------------|-----------------------------------------|------------------|--------------------|------------|----------------------|----------|------------------------------------|
| 6 dB Bandwidth                      | 3 MHz                                   | 100 kHz          | 300 kHz            | Auto       | Peak                 | Max Hold | Spectrum Analyzer                  |
| 99 % Occupied Bandwidth *1)         | Enough width to display emission skirts | 1 to 5 % of OBW  | Three times of RBW | Auto       | Peak                 | Max Hold | Spectrum Analyzer                  |
| Maximum Peak Output Power           | -                                       | -                | -                  | Auto       | Peak/<br>Average *2) | -        | Power Meter<br>(Sensor: 50 MHz BW) |
| Peak Power Density                  | 1.5 times the 6 dB Bandwidth            | 3 kHz            | 9.1 kHz            | Auto       | Peak                 | Max Hold | Spectrum Analyzer *3)              |
| Conducted Spurious Emission *4) *5) | 9 kHz to 150 kHz<br>150 kHz to 30 MHz   | 200 Hz<br>10 kHz | 620 Hz<br>30 kHz   | Auto       | Peak                 | Max Hold | Spectrum Analyzer                  |

\*1) Peak hold was applied as Worst-case measurement.

\*2) Reference data

\*3) Section 11.10.2 Method PKPSD (peak PSD) of "ANSI C63.10-2013".

\*4) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.

Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.

(9 kHz - 150 kHz: RBW = 200 Hz, 150 kHz - 30 MHz: RBW = 10 kHz)

\*5) The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to  $45.5 - 51.5 = -6.0$  dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

The test results and limit are rounded off to two decimals place, so some differences might be observed.  
The equipment and cables were not used for factor 0 dB of the data sheets.

Test Data : APPENDIX  
Test Result : Pass

APPENDIX 1: Test Data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

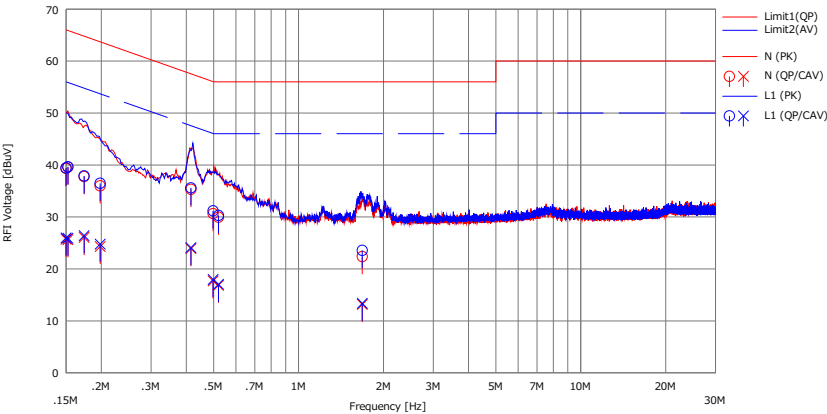
UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room  
Date : 2024/04/01

Company : CANON.INC  
Kind of EUT : Wireless Microphone  
Model No. : D5S86233  
Serial No. : 40  
Remarks : -

Mode : Tx\_BT LE\_2440 MHz  
Order No. : 14577969  
Power : AC 120 V / 60 Hz  
Temp./Humi. : 24 deg.C / 30 %RH

Limit : FCC\_Part 15 Subpart C(15.207)

Engineer : Makoto Hosaka



| No. | Freq.<br>[MHz] | Reading        |                 | C.Fac | Results        |                 | Limit          |                | Margin       |              | Phase | Comment |
|-----|----------------|----------------|-----------------|-------|----------------|-----------------|----------------|----------------|--------------|--------------|-------|---------|
|     |                | (QP)<br>[dBuV] | (CAV)<br>[dBuV] |       | (QP)<br>[dBuV] | (CAV)<br>[dBuV] | (QP)<br>[dBuV] | (AV)<br>[dBuV] | (QP)<br>[dB] | (AV)<br>[dB] |       |         |
| 1   | 0.15004        | 23.91          | 10.31           | 15.40 | 39.31          | 25.71           | 66.00          | 56.00          | 26.6         | 30.2         | N     |         |
| 2   | 0.15230        | 24.19          | 10.23           | 15.40 | 39.59          | 25.63           | 65.87          | 55.87          | 26.2         | 30.2         | N     |         |
| 3   | 0.17377        | 22.34          | 10.63           | 15.42 | 37.76          | 26.05           | 64.78          | 54.78          | 27.0         | 28.7         | N     |         |
| 4   | 0.19822        | 20.57          | 8.89            | 15.42 | 35.99          | 24.31           | 63.68          | 53.68          | 27.6         | 29.3         | N     |         |
| 5   | 0.41559        | 19.86          | 8.44            | 15.45 | 35.31          | 23.89           | 57.54          | 47.54          | 22.2         | 23.6         | N     |         |
| 6   | 0.49798        | 15.19          | 2.24            | 15.45 | 30.64          | 17.69           | 56.03          | 46.03          | 25.3         | 28.3         | N     |         |
| 7   | 0.52052        | 14.48          | 1.39            | 15.45 | 29.93          | 16.84           | 56.00          | 46.00          | 26.0         | 29.1         | N     |         |
| 8   | 1.68181        | 6.85           | -2.38           | 15.52 | 22.37          | 13.14           | 56.00          | 46.00          | 33.6         | 32.8         | N     |         |
| 9   | 0.15004        | 24.02          | 10.55           | 15.41 | 39.43          | 25.96           | 66.00          | 56.00          | 26.5         | 30.0         | L1    |         |
| 10  | 0.15230        | 24.22          | 10.49           | 15.41 | 39.63          | 25.90           | 65.87          | 55.87          | 26.2         | 29.9         | L1    |         |
| 11  | 0.17377        | 22.48          | 10.99           | 15.41 | 37.89          | 26.40           | 64.78          | 54.78          | 26.8         | 28.3         | L1    |         |
| 12  | 0.19822        | 21.05          | 9.35            | 15.41 | 36.46          | 24.76           | 63.68          | 53.68          | 27.2         | 28.9         | L1    |         |
| 13  | 0.41559        | 20.13          | 8.63            | 15.46 | 35.59          | 24.09           | 57.54          | 47.54          | 21.9         | 23.4         | L1    |         |
| 14  | 0.49798        | 15.74          | 2.52            | 15.44 | 31.18          | 17.96           | 56.03          | 46.03          | 24.8         | 28.0         | L1    |         |
| 15  | 0.52052        | 14.84          | 1.60            | 15.44 | 30.28          | 17.04           | 56.00          | 46.00          | 25.7         | 28.9         | L1    |         |
| 16  | 1.68181        | 8.03           | -2.15           | 15.53 | 23.56          | 13.38           | 56.00          | 46.00          | 32.4         | 32.6         | L1    |         |

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN+Cable+ATT)[dB]  
LISN(AMN): 145542

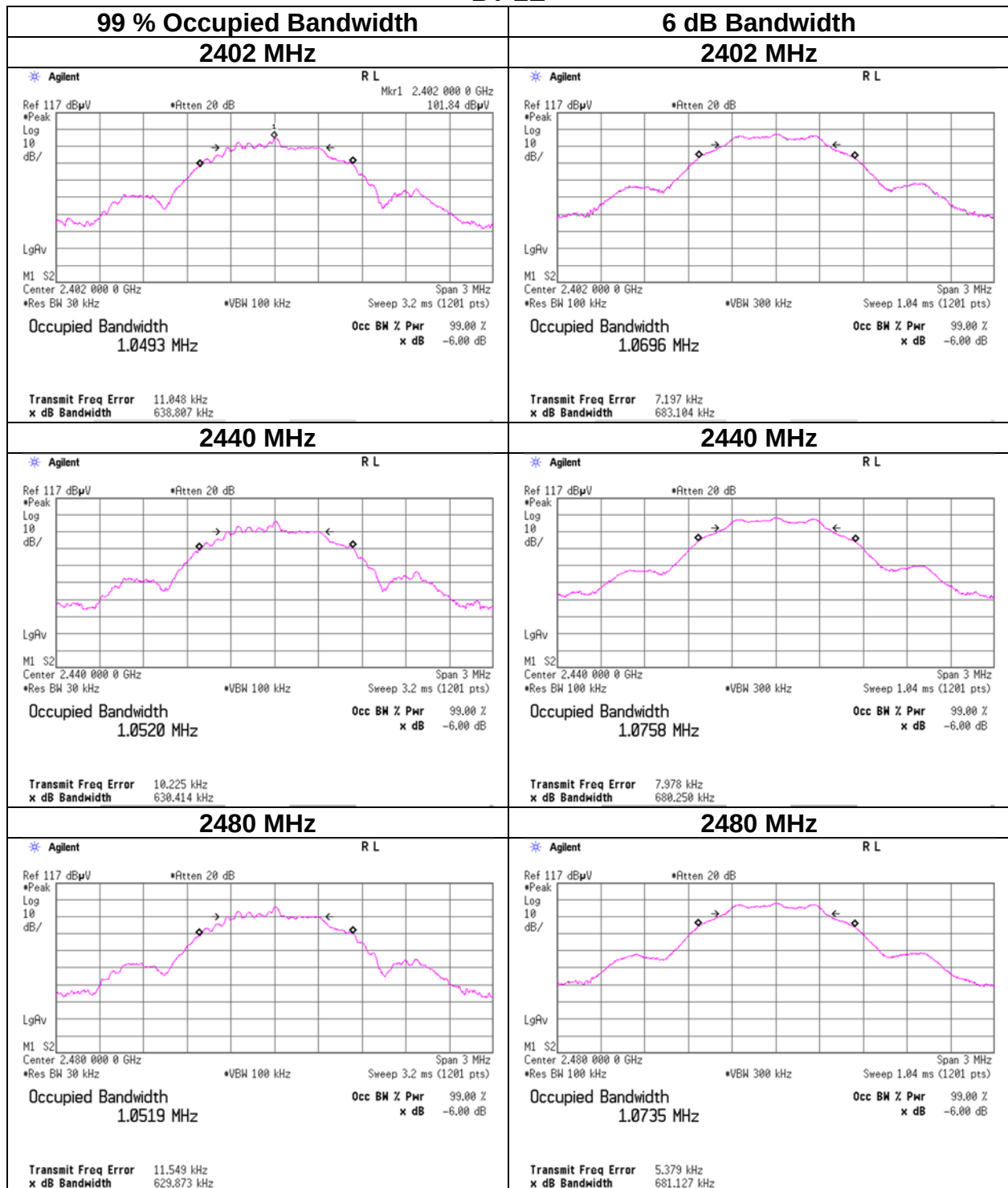
### **99 % Occupied Bandwidth and 6 dB Bandwidth**

Test place                      Shonan EMC Lab. No.3 Shielded Room  
Date                              November 6, 2023  
Temperature / Humidity      23 deg. C / 46 % RH  
Engineer                        Kenichi Adachi  
Mode                              Tx BT LE

| Mode            | Frequency<br>[MHz] | 99 % Occupied<br>Bandwidth<br>[kHz] | 6 dB Bandwidth<br>[MHz] | Limit for<br>6 dB Bandwidth<br>[MHz] |
|-----------------|--------------------|-------------------------------------|-------------------------|--------------------------------------|
| BT LE<br>1M-PHY | 2402               | 1049.3                              | 0.683                   | > 0.5000                             |
|                 | 2440               | <b>1052.0</b>                       | 0.680                   | > 0.5000                             |
|                 | 2480               | 1051.9                              | 0.681                   | > 0.5000                             |

## 99 % Occupied Bandwidth and 6 dB Bandwidth

### BT LE



## Maximum Peak Output Power

Test place Shonan EMC Lab. No.3 Shielded Room  
Date November 6, 2023  
Temperature / Humidity 23 deg. C / 46 % RH  
Engineer Kenichi Adachi  
Mode Tx BT LE

|       |         |            |             | Conducted Power |             |       |      |        | e.i.r.p. for RSS-247 |             |             |       |      |        |
|-------|---------|------------|-------------|-----------------|-------------|-------|------|--------|----------------------|-------------|-------------|-------|------|--------|
| Freq. | Reading | Cable Loss | Atten. Loss | Result          |             | Limit |      | Margin | Antenna Gain         | Result      |             | Limit |      | Margin |
| [MHz] | [dBm]   | [dB]       | [dB]        | [dBm]           | [mW]        | [dBm] | [mW] | [dB]   | [dBi]                | [dBm]       | [mW]        | [dBm] | [mW] | [dB]   |
| 2402  | -2.69   | 1.26       | 9.97        | 8.54            | 7.14        | 30.00 | 1000 | 21.46  | -0.35                | 8.19        | 6.59        | 36.02 | 4000 | 27.83  |
| 2440  | -1.66   | 1.26       | 9.97        | <b>9.57</b>     | <b>9.06</b> | 30.00 | 1000 | 20.43  | -0.35                | <b>9.22</b> | <b>8.36</b> | 36.02 | 4000 | 26.80  |
| 2480  | -1.77   | 1.27       | 9.97        | 9.47            | 8.85        | 30.00 | 1000 | 20.53  | -0.35                | 9.12        | 8.17        | 36.02 | 4000 | 26.90  |

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

\*The equipment and cables were not used for factor 0 dB of the data sheets.

## Average Output Power (Reference data for RF Exposure)

Test place Shonan EMC Lab. No.3 Shielded Room  
Date November 6, 2023  
Temperature / Humidity 23 deg. C / 46 % RH  
Engineer Kenichi Adachi  
Mode Tx BT LE

BT LE 1M-PHY

| Freq. | Reading | Cable Loss | Atten. Loss | Result (Time average) |             | Duty factor | Result (Burst power average) |             |
|-------|---------|------------|-------------|-----------------------|-------------|-------------|------------------------------|-------------|
|       |         |            |             | [dBm]                 | [mW]        |             | [dBm]                        | [mW]        |
| 2402  | -4.85   | 1.26       | 9.97        | 6.38                  | 4.35        | 1.99        | 8.37                         | 6.87        |
| 2440  | -3.78   | 1.26       | 9.97        | <b>7.45</b>           | <b>5.56</b> | 1.99        | <b>9.44</b>                  | <b>8.79</b> |
| 2480  | -3.90   | 1.27       | 9.97        | 7.34                  | 5.42        | 1.99        | 9.33                         | 8.57        |

Sample Calculation:

Result (Time average) = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

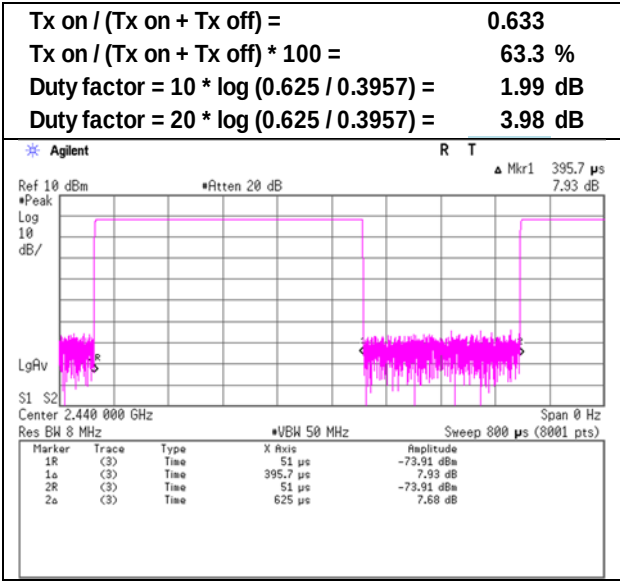
Result (Burst power average) = Time average + Duty factor

\*The equipment and cables were not used for factor 0 dB of the data sheets.

**Burst rate confirmation**

|                        |                                    |
|------------------------|------------------------------------|
| Test place             | Shonan EMC Lab. No.3 Shielded Room |
| Date                   | November 6, 2023                   |
| Temperature / Humidity | 23 deg. C / 46 % RH                |
| Engineer               | Kenichi Adachi                     |
| Mode                   | Tx BT LE                           |

**BT LE**



\* Since the burst rate is not different between the channels, the data has been obtained on the representative channel.

## Radiated Spurious Emission

Test place                      Shonan EMC Lab.  
Semi Anechoic Chamber      SAC1  
Date                              March 13, 2024  
Temperature / Humidity      23 deg. C / 33 % RH  
Engineer                        Yosuke Murakami  
                                        ( 1 GHz -26.5 GHz )  
Mode                              Tx BT LE, 2402 MHz

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg] | Remark      |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|----------------------|-----------------|----------------|-------------|-------------|-------------|-------------|
| Hori.    | 2390.000        | PK       | 45.81          | 27.77           | 15.04     | 39.49     | 2.35                 | 51.48           | 73.9           | 22.4        | 149         | 60          | -           |
| Hori.    | 4804.000        | PK       | 53.21          | 31.06           | 7.96      | 39.62     | 2.35                 | 54.96           | 73.9           | 18.9        | 148         | 88          | -           |
| Hori.    | 7206.000        | PK       | 44.57          | 36.74           | 9.69      | 39.36     | 2.35                 | 53.99           | 73.9           | 19.9        | 150         | 0           | -           |
| Hori.    | 9608.000        | PK       | 44.26          | 38.14           | 11.14     | 39.60     | 2.35                 | 56.29           | 73.9           | 17.6        | 150         | 0           | -           |
| Hori.    | 7206.000        | AV       | 34.98          | 36.74           | 9.69      | 39.36     | 2.35                 | 44.40           | 53.9           | 9.5         | 150         | 0           | Floor noise |
| Hori.    | 9608.000        | AV       | 34.53          | 38.14           | 11.14     | 39.60     | 2.35                 | 46.56           | 53.9           | 7.3         | 150         | 0           | Floor noise |
| Vert.    | 2390.000        | PK       | 45.28          | 27.77           | 15.04     | 39.49     | 2.35                 | 50.95           | 73.9           | 22.9        | 146         | 81          | -           |
| Vert.    | 4804.000        | PK       | 54.06          | 31.06           | 7.96      | 39.62     | 2.35                 | 55.81           | 73.9           | 18.0        | 104         | 53          | -           |
| Vert.    | 7206.000        | PK       | 44.47          | 36.74           | 9.69      | 39.36     | 2.35                 | 53.89           | 73.9           | 20.0        | 150         | 0           | -           |
| Vert.    | 9608.000        | PK       | 44.33          | 38.14           | 11.14     | 39.60     | 2.35                 | 56.36           | 73.9           | 17.5        | 150         | 0           | -           |
| Vert.    | 7206.000        | AV       | 35.03          | 36.74           | 9.69      | 39.36     | 2.35                 | 44.45           | 53.9           | 9.4         | 150         | 0           | Floor noise |
| Vert.    | 9608.000        | AV       | 34.57          | 38.14           | 11.14     | 39.60     | 2.35                 | 46.60           | 53.9           | 7.3         | 150         | 0           | Floor noise |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz :  $20\log(3.93\text{ m} / 3.0\text{ m}) = 2.35\text{ dB}$

10 GHz - 40 GHz :  $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

### Average measurement value with duty factor

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Duty Factor [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|------------------|----------------------|-----------------|----------------|-------------|--------|
| Hori.    | 2390.000        | AV       | 36.24          | 27.77           | 15.04     | 39.49     | 3.98             | 2.35                 | 45.89           | 53.9           | 8.0         | *1)    |
| Hori.    | 4804.000        | AV       | 45.74          | 31.06           | 7.96      | 39.62     | 3.98             | 2.35                 | 51.47           | 53.9           | 2.4         | -      |
| Vert.    | 2390.000        | AV       | 35.75          | 27.77           | 15.04     | 39.49     | 3.98             | 2.35                 | 45.40           | 53.9           | 8.5         | *1)    |
| Vert.    | 4804.000        | AV       | 46.24          | 31.06           | 7.96      | 39.62     | 3.98             | 2.35                 | 51.97           | 53.9           | 1.9         | -      |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Duty factor + Distance factor

Distance factor : 1 GHz - 10 GHz :  $20\log(3.93\text{ m} / 3.0\text{ m}) = 2.35\text{ dB}$

10 GHz - 40 GHz :  $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Duty factor refer to "Burst rate confirmation" sheet.

\*1) Not out of band emission (Leakage Power)

### 20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark  |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|----------------------|-----------------|----------------|-------------|---------|
| Hori.    | 2402.000        | PK       | 94.47          | 27.76           | 15.06     | 39.49     | 2.35                 | 100.15          | -              | -           | Carrier |
| Hori.    | 2400.000        | PK       | 42.73          | 27.76           | 15.06     | 39.49     | 2.35                 | 48.41           | 80.1           | 31.6        | -       |
| Vert.    | 2402.000        | PK       | 89.35          | 27.76           | 15.06     | 39.49     | 2.35                 | 95.03           | -              | -           | Carrier |
| Vert.    | 2400.000        | PK       | 38.80          | 27.76           | 15.06     | 39.49     | 2.35                 | 44.48           | 75.0           | 30.5        | -       |

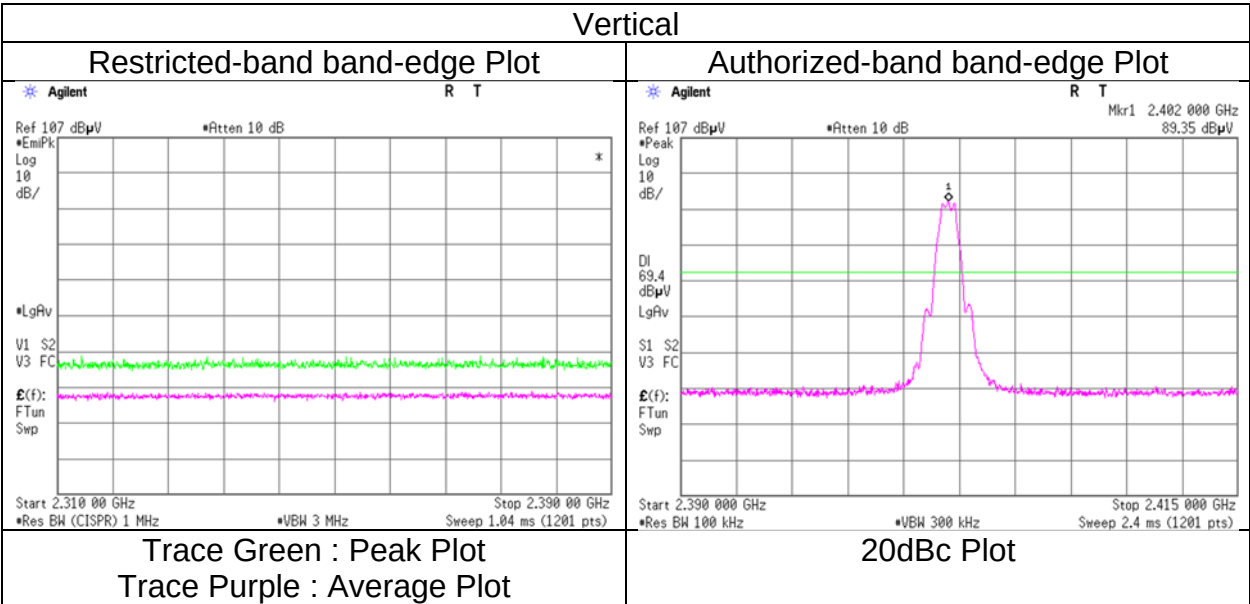
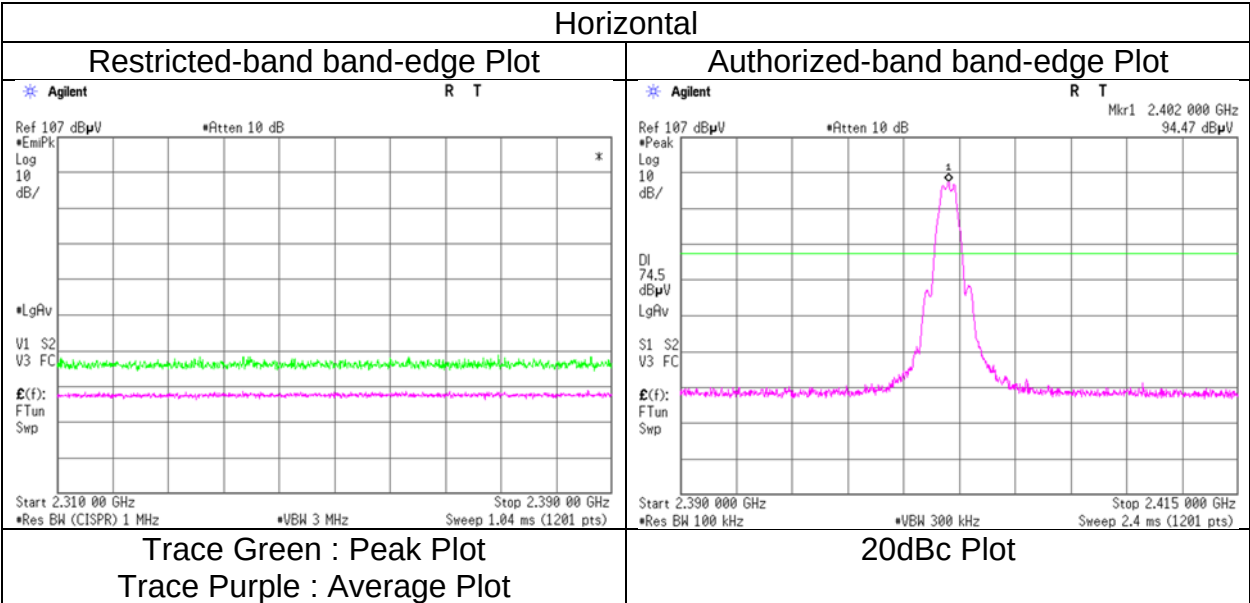
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz :  $20\log(3.93\text{ m} / 3.0\text{ m}) = 2.35\text{ dB}$

10 GHz - 40 GHz :  $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**

|                        |                     |
|------------------------|---------------------|
| Test place             | Shonan EMC Lab.     |
| Semi Anechoic Chamber  | SAC1                |
| Date                   | March 13, 2024      |
| Temperature / Humidity | 23 deg. C / 33 % RH |
| Engineer               | Yosuke Murakami     |
|                        | ( 1 GHz -10 GHz )   |
| Mode                   | Tx BT LE, 2402 MHz  |



\* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.  
Final result of restricted band edge and authorized band edge were shown in tabular data.

**Radiated Spurious Emission**

|                        |                     |                     |
|------------------------|---------------------|---------------------|
| Test place             | Shonan EMC Lab.     |                     |
| Semi Anechoic Chamber  | SAC3                | SAC1                |
| Date                   | April 1, 2024       | March 13, 2024      |
| Temperature / Humidity | 24 deg. C / 33 % RH | 23 deg. C / 33 % RH |
| Engineer               | Makoto Hosaka       | Yosuke Murakami     |
|                        | ( 30 MHz -1 GHz )   | ( 1 GHz -26.5 GHz ) |
| Mode                   | Tx BT LE, 2440 MHz  |                     |

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

| Polarity | Frequency<br>[MHz] | Detector | Reading<br>[dBuV] | Ant.Fac.<br>[dB/m] | Loss<br>[dB] | Gain<br>[dB] | Distance<br>Factor [dB] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Height<br>[cm] | Angle<br>[deg] | Remark      |
|----------|--------------------|----------|-------------------|--------------------|--------------|--------------|-------------------------|--------------------|-------------------|----------------|----------------|----------------|-------------|
| Hori.    | 400.498            | QP       | 36.20             | 15.99              | 9.07         | 31.91        | 0.00                    | 29.35              | 46.0              | 16.6           | 119            | 263            | -           |
| Hori.    | 409.497            | QP       | 39.40             | 16.20              | 9.11         | 31.91        | 0.00                    | 32.80              | 46.0              | 13.2           | 100            | 19             | -           |
| Hori.    | 418.501            | QP       | 40.10             | 16.28              | 9.16         | 31.91        | 0.00                    | 33.63              | 46.0              | 12.3           | 100            | 7              | -           |
| Hori.    | 427.500            | QP       | 38.60             | 16.29              | 9.20         | 31.91        | 0.00                    | 32.18              | 46.0              | 13.8           | 100            | 0              | -           |
| Hori.    | 2503.933           | PK       | 51.06             | 27.63              | 15.17        | 39.54        | 2.35                    | 56.67              | 73.9              | 17.2           | 100            | 56             | -           |
| Hori.    | 4880.000           | PK       | 50.67             | 31.09              | 8.01         | 39.64        | 2.35                    | 52.48              | 73.9              | 21.4           | 165            | 94             | -           |
| Hori.    | 7320.000           | PK       | 42.97             | 36.82              | 9.78         | 39.36        | 2.35                    | 52.56              | 73.9              | 21.3           | 150            | 0              | -           |
| Hori.    | 9760.000           | PK       | 43.65             | 38.69              | 11.24        | 39.46        | 2.35                    | 56.47              | 73.9              | 17.4           | 150            | 0              | -           |
| Hori.    | 7320.000           | AV       | 34.15             | 36.82              | 9.78         | 39.36        | 2.35                    | 43.74              | 53.9              | 10.1           | 150            | 0              | Floor noise |
| Hori.    | 9760.000           | AV       | 34.28             | 38.69              | 11.24        | 39.46        | 2.35                    | 47.10              | 53.9              | 6.8            | 150            | 0              | Floor noise |
| Vert.    | 80.717             | QP       | 39.80             | 6.76               | 7.59         | 32.13        | 0.00                    | 22.02              | 40.0              | 17.9           | 100            | 256            | -           |
| Vert.    | 88.732             | QP       | 36.20             | 8.16               | 7.59         | 32.13        | 0.00                    | 19.82              | 43.5              | 23.6           | 100            | 339            | -           |
| Vert.    | 125.459            | QP       | 35.80             | 13.71              | 7.34         | 32.09        | 0.00                    | 24.76              | 43.5              | 18.7           | 100            | 177            | -           |
| Vert.    | 400.498            | QP       | 36.40             | 15.99              | 9.07         | 31.91        | 0.00                    | 29.55              | 46.0              | 16.4           | 100            | 274            | -           |
| Vert.    | 2503.933           | PK       | 51.37             | 27.63              | 15.17        | 39.54        | 2.35                    | 56.98              | 73.9              | 16.9           | 240            | 116            | -           |
| Vert.    | 4880.000           | PK       | 51.66             | 31.09              | 8.01         | 39.64        | 2.35                    | 53.47              | 73.9              | 20.4           | 165            | 97             | -           |
| Vert.    | 7320.000           | PK       | 43.00             | 36.82              | 9.78         | 39.36        | 2.35                    | 52.59              | 73.9              | 21.3           | 150            | 0              | -           |
| Vert.    | 9760.000           | PK       | 43.68             | 38.69              | 11.24        | 39.46        | 2.35                    | 56.50              | 73.9              | 17.4           | 150            | 0              | -           |
| Vert.    | 7320.000           | AV       | 34.11             | 36.82              | 9.78         | 39.36        | 2.35                    | 43.70              | 53.9              | 10.2           | 150            | 0              | Floor noise |
| Vert.    | 9760.000           | AV       | 34.30             | 38.69              | 11.24        | 39.46        | 2.35                    | 47.12              | 53.9              | 6.7            | 150            | 0              | Floor noise |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.93 m / 3.0 m) = 2.35 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

**Average measurement value with duty factor**

| Polarity | Frequency<br>[MHz] | Detector | Reading<br>[dBuV] | Ant.Fac.<br>[dB/m] | Loss<br>[dB] | Gain<br>[dB] | Duty<br>Factor<br>[dB] | Distance<br>Factor [dB] | Result<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Remark |
|----------|--------------------|----------|-------------------|--------------------|--------------|--------------|------------------------|-------------------------|--------------------|-------------------|----------------|--------|
| Hori.    | 2503.933           | AV       | 38.05             | 27.63              | 15.17        | 39.54        | 3.98                   | 2.35                    | 47.64              | 53.9              | 6.2            | -      |
| Hori.    | 4880.000           | AV       | 43.77             | 31.09              | 8.01         | 39.64        | 3.98                   | 2.35                    | 49.56              | 53.9              | 4.3            | -      |
| Vert.    | 2503.933           | AV       | 38.36             | 27.63              | 15.17        | 39.54        | 3.98                   | 2.35                    | 47.95              | 53.9              | 5.9            | -      |
| Vert.    | 4880.000           | AV       | 43.71             | 31.09              | 8.01         | 39.64        | 3.98                   | 2.35                    | 49.50              | 53.9              | 4.4            | -      |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Duty factor + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.93 m / 3.0 m) = 2.35 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Duty factor refer to "Burst rate confirmation" sheet.

## Radiated Spurious Emission

Test place                      Shonan EMC Lab.  
Semi Anechoic Chamber      SAC1  
Date                              March 13, 2024  
Temperature / Humidity      23 deg. C / 33 % RH  
Engineer                        Yosuke Murakami  
                                      ( 1 GHz -26.5 GHz )  
Mode                              Tx BT LE, 2480 MHz

(\* PK: Peak, AV: Average, QP: Quasi-Peak)

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Height [cm] | Angle [deg] | Remark      |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|----------------------|-----------------|----------------|-------------|-------------|-------------|-------------|
| Hori.    | 2483.500        | PK       | 48.58          | 27.65           | 15.16     | 39.53     | 2.35                 | 54.21           | 73.9           | 19.6        | 109         | 51          | -           |
| Hori.    | 4960.000        | PK       | 47.04          | 31.30           | 8.08      | 39.66     | 2.35                 | 49.11           | 73.9           | 24.7        | 141         | 98          | -           |
| Hori.    | 7440.000        | PK       | 43.74          | 36.95           | 9.90      | 39.36     | 2.35                 | 53.58           | 73.9           | 20.3        | 150         | 0           | -           |
| Hori.    | 9920.000        | PK       | 44.23          | 38.66           | 11.33     | 39.31     | 2.35                 | 57.26           | 73.9           | 16.6        | 150         | 0           | -           |
| Hori.    | 7440.000        | AV       | 34.48          | 36.95           | 9.90      | 39.36     | 2.35                 | 44.32           | 53.9           | 9.5         | 150         | 0           | Floor noise |
| Hori.    | 9920.000        | AV       | 34.66          | 38.66           | 11.33     | 39.31     | 2.35                 | 47.69           | 53.9           | 6.2         | 150         | 0           | Floor noise |
| Vert.    | 2483.500        | PK       | 46.65          | 27.65           | 15.16     | 39.53     | 2.35                 | 52.28           | 73.9           | 21.6        | 180         | 105         | -           |
| Vert.    | 4960.000        | PK       | 47.65          | 31.30           | 8.08      | 39.66     | 2.35                 | 49.72           | 73.9           | 24.1        | 175         | 68          | -           |
| Vert.    | 7440.000        | PK       | 43.83          | 36.95           | 9.90      | 39.36     | 2.35                 | 53.67           | 73.9           | 20.2        | 150         | 0           | -           |
| Vert.    | 9920.000        | PK       | 44.38          | 38.66           | 11.33     | 39.31     | 2.35                 | 57.41           | 73.9           | 16.4        | 150         | 0           | -           |
| Vert.    | 7440.000        | AV       | 34.46          | 36.95           | 9.90      | 39.36     | 2.35                 | 44.30           | 53.9           | 9.6         | 150         | 0           | Floor noise |
| Vert.    | 9920.000        | AV       | 34.63          | 38.66           | 11.33     | 39.31     | 2.35                 | 47.66           | 53.9           | 6.2         | 150         | 0           | Floor noise |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.93 m / 3.0 m) = 2.35 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

### Average measurement value with duty factor

| Polarity | Frequency [MHz] | Detector | Reading [dBuV] | Ant.Fac. [dB/m] | Loss [dB] | Gain [dB] | Duty Factor [dB] | Distance Factor [dB] | Result [dBuV/m] | Limit [dBuV/m] | Margin [dB] | Remark |
|----------|-----------------|----------|----------------|-----------------|-----------|-----------|------------------|----------------------|-----------------|----------------|-------------|--------|
| Hori.    | 2483.500        | AV       | 37.54          | 27.65           | 15.16     | 39.53     | 3.98             | 2.35                 | 47.15           | 53.9           | 6.7         | *1)    |
| Hori.    | 4960.000        | AV       | 37.61          | 31.30           | 8.08      | 39.66     | 3.98             | 2.35                 | 43.66           | 53.9           | 10.2        | -      |
| Vert.    | 2483.500        | AV       | 36.75          | 27.65           | 15.16     | 39.53     | 3.98             | 2.35                 | 46.36           | 53.9           | 7.5         | *1)    |
| Vert.    | 4960.000        | AV       | 37.80          | 31.30           | 8.08      | 39.66     | 3.98             | 2.35                 | 43.85           | 53.9           | 10.0        | -      |

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Duty factor + Distance factor

Distance factor : 1 GHz - 10 GHz : 20log (3.93 m / 3.0 m) = 2.35 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

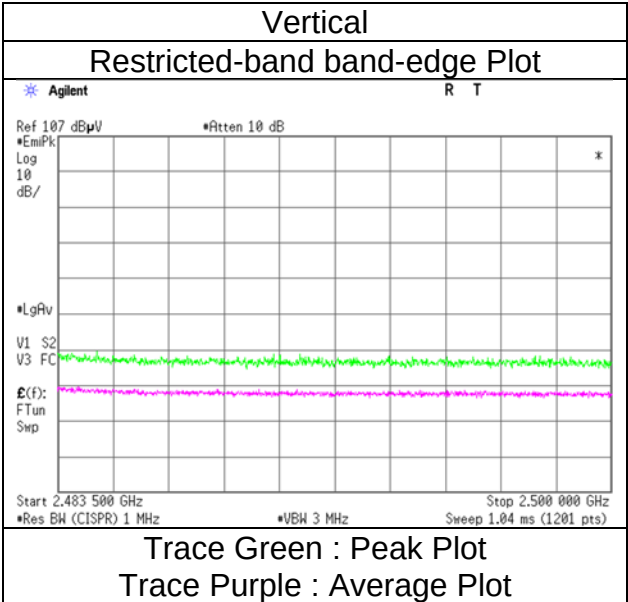
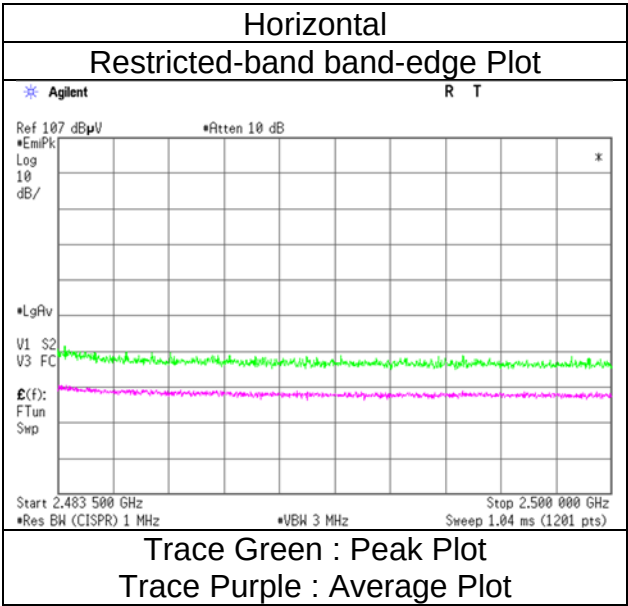
Duty factor refer to "Burst rate confirmation" sheet.

\*1) Not out of band emission (Leakage Power)

**Radiated Spurious Emission**  
**(Reference Plot for band-edge)**

Test place  
Semi Anechoic Chamber  
Date  
Temperature / Humidity  
Engineer  
Mode

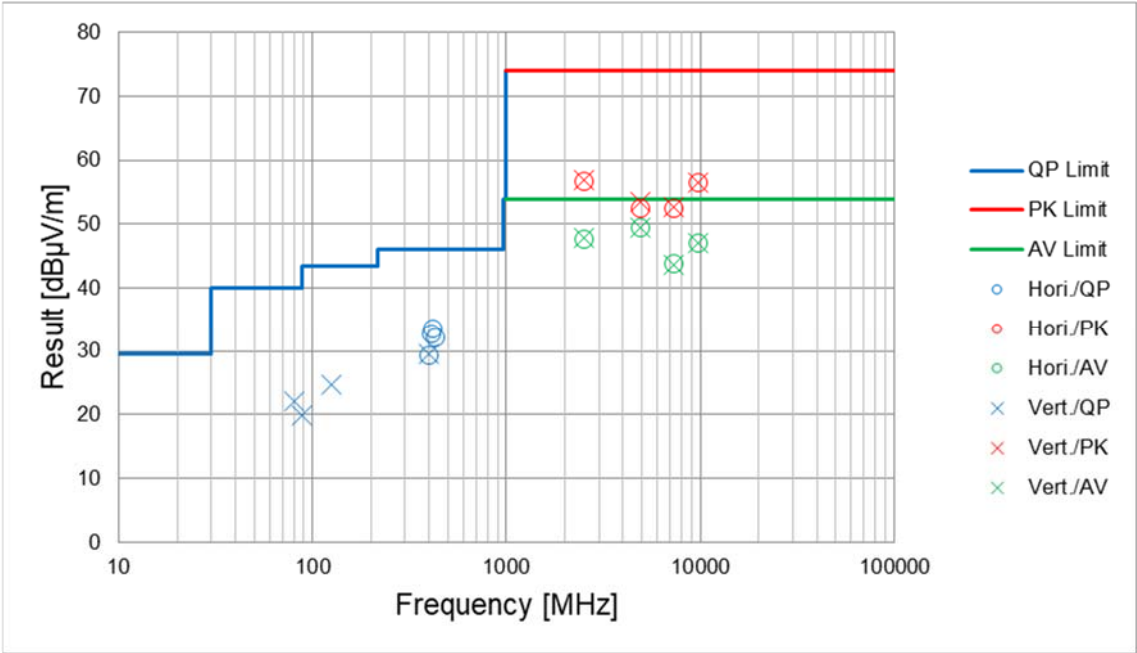
Shonan EMC Lab.  
SAC1  
March 13, 2024  
23 deg. C / 33 % RH  
Yosuke Murakami  
( 1 GHz -10 GHz )  
Tx BT LE, 2480 MHz



\* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.  
Final result of restricted band edge was shown in tabular data.

**Radiated Spurious Emission**  
**(Plot data, Worst case mode for Maximum Peak Output Power)**

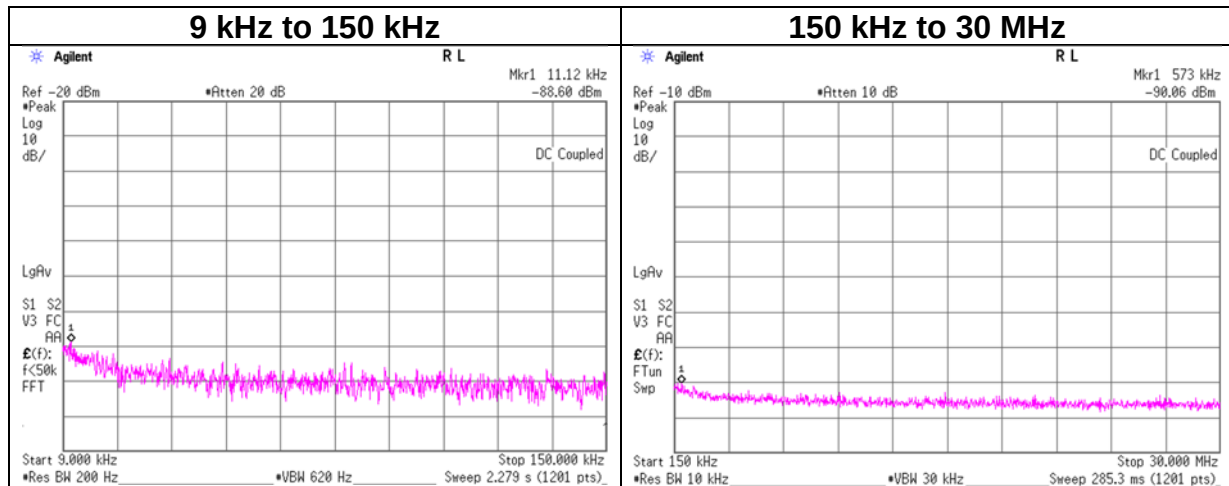
|                        |                     |                     |
|------------------------|---------------------|---------------------|
| Test place             | Shonan EMC Lab.     | SAC1                |
| Semi Anechoic Chamber  | SAC3                | March 13, 2024      |
| Date                   | April 1, 2024       | 23 deg. C / 33 % RH |
| Temperature / Humidity | 24 deg. C / 33 % RH | Yosuke Murakami     |
| Engineer               | Makoto Hosaka       |                     |
| Mode                   | Tx BT LE, 2440 MHz  |                     |



\*These plots data contain sufficient number to show the trend of characteristic features for EUT.

## Conducted Spurious Emission

Test place Shonan EMC Lab. No.3 Shielded Room  
Date November 6, 2023  
Temperature / Humidity 23 deg. C / 46 % RH  
Engineer Kenichi Adachi  
Mode Tx BT LE, 2402 MHz



| Frequency<br>[kHz] | Reading<br>[dBm] | Cable<br>Loss<br>[dB] | Attenuator<br>Loss<br>[dB] | Antenna<br>Gain*<br>[dBi] | N<br>(Number<br>of Output) | EIRP<br>[dBm] | Distance<br>[m] | Ground<br>bounce<br>[dB] | E<br>(field strength)<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Remark |
|--------------------|------------------|-----------------------|----------------------------|---------------------------|----------------------------|---------------|-----------------|--------------------------|-----------------------------------|-------------------|----------------|--------|
| 11.12              | -88.6            | 0.61                  | 9.9                        | 2.0                       | 1                          | -76.1         | 300             | 6.0                      | -14.8                             | 46.6              | 61.4           | -      |
| 573.00             | -90.1            | 0.61                  | 9.9                        | 2.0                       | 1                          | -77.5         | 30              | 6.0                      | 3.7                               | 32.4              | 28.7           | -      |

$E [dBuV/m] = EIRP [dBm] - 20 \log (Distance [m]) + Ground\ bounce [dB] + 104.8 [dBuV/m]$

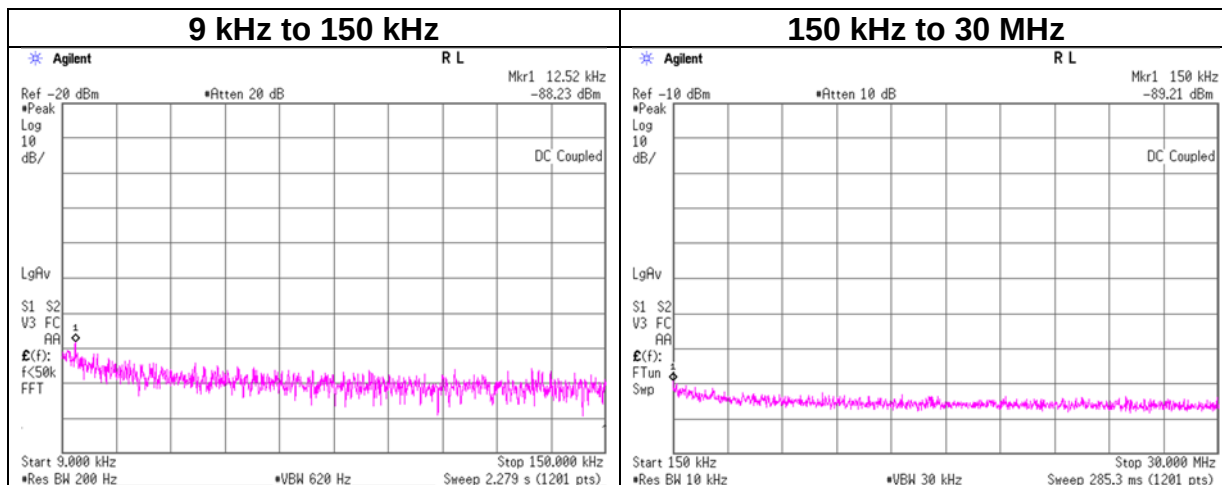
$EIRP [dBm] = Reading [dBm] + Cable\ loss [dB] + Attenuator\ Loss [dB] + Antenna\ gain [dBi] + 10 * \log (N)$

N: Number of output

\*2.0 dBi was applied to the test result based on ANSI C63.10 since antenna gain was less than 2.0 dBi.

## Conducted Spurious Emission

Test place Shonan EMC Lab. No.3 Shielded Room  
Date November 6, 2023  
Temperature / Humidity 23 deg. C / 46 % RH  
Engineer Kenichi Adachi  
Mode Tx BT LE, 2440 MHz



| Frequency<br>[kHz] | Reading<br>[dBm] | Cable<br>Loss<br>[dB] | Attenuator<br>Loss<br>[dB] | Antenna<br>Gain*<br>[dBi] | N<br>(Number<br>of Output) | EIRP<br>[dBm] | Distance<br>[m] | Ground<br>bounce<br>[dB] | E<br>(field strength)<br>[dBuV/m] | Limit<br>[dBuV/m] | Margin<br>[dB] | Remark |
|--------------------|------------------|-----------------------|----------------------------|---------------------------|----------------------------|---------------|-----------------|--------------------------|-----------------------------------|-------------------|----------------|--------|
| 12.52              | -88.2            | 0.61                  | 9.9                        | 2.0                       | 1                          | -75.7         | 300             | 6.0                      | -14.4                             | 45.6              | 60.0           | -      |
| 150.00             | -89.2            | 0.61                  | 9.9                        | 2.0                       | 1                          | -76.7         | 300             | 6.0                      | -15.4                             | 24.0              | 39.4           | -      |

$E [dBuV/m] = EIRP [dBm] - 20 \log (Distance [m]) + Ground\ bounce [dB] + 104.8 [dBuV/m]$

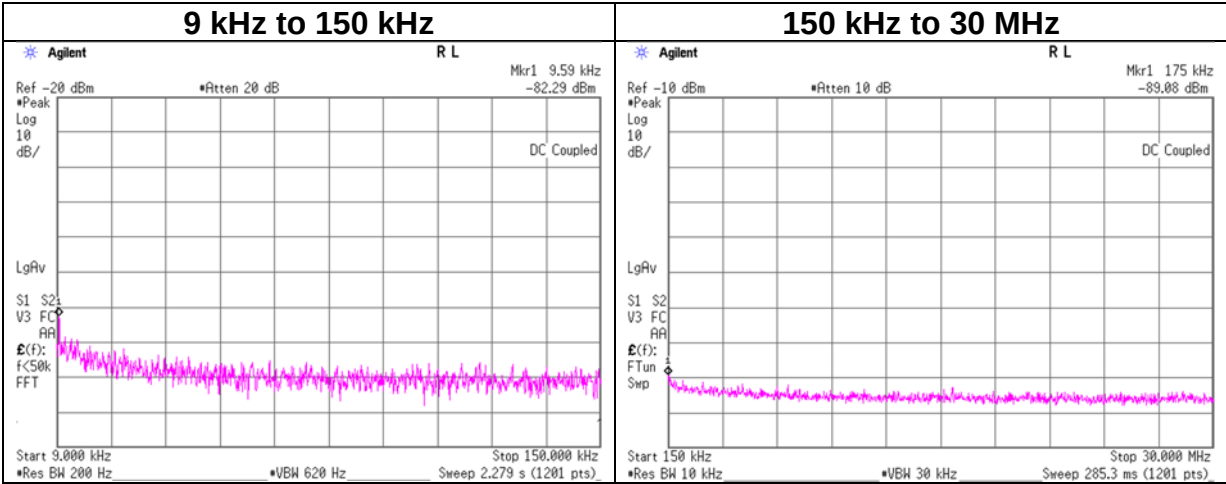
$EIRP [dBm] = Reading [dBm] + Cable\ loss [dB] + Attenuator\ Loss [dB] + Antenna\ gain [dBi] + 10 * \log (N)$

N: Number of output

\*2.0 dBi was applied to the test result based on ANSI C63.10 since antenna gain was less than 2.0 dBi.

Conducted Spurious Emission

Test place Shonan EMC Lab. No.3 Shielded Room  
Date November 6, 2023  
Temperature / Humidity 23 deg. C / 46 % RH  
Engineer Kenichi Adachi  
Mode Tx BT LE, 2480 MHz



| Frequency | Reading | Cable Loss | Attenuator Loss | Antenna Gain* | N                  | EIRP  | Distance | Ground bounce | E                         | Limit    | Margin | Remark |
|-----------|---------|------------|-----------------|---------------|--------------------|-------|----------|---------------|---------------------------|----------|--------|--------|
| [kHz]     | [dBm]   | [dB]       | [dB]            | [dBi]         | (Number of Output) | [dBm] | [m]      | [dB]          | (field strength) [dBuV/m] | [dBuV/m] | [dB]   |        |
| 9.59      | -82.3   | 0.61       | 9.9             | 2.0           | 1                  | -69.7 | 300      | 6.0           | -8.5                      | 47.9     | 56.4   | -      |
| 175.00    | -89.1   | 0.61       | 9.9             | 2.0           | 1                  | -76.5 | 300      | 6.0           | -15.3                     | 22.7     | 38.0   | -      |

$E\text{ [dBuV/m]} = \text{EIRP [dBm]} - 20 \log(\text{Distance [m]}) + \text{Ground bounce [dB]} + 104.8\text{ [dBuV/m]}$   
 $\text{EIRP[dBm]} = \text{Reading [dBm]} + \text{Cable loss [dB]} + \text{Attenuator Loss [dB]} + \text{Antenna gain [dBi]} + 10 * \log(N)$   
N: Number of output  
\*2.0 dBi was applied to the test result based on ANSI C63.10 since antenna gain was less than 2.0 dBi.

## Power Density

|                        |                                    |
|------------------------|------------------------------------|
| Test place             | Shonan EMC Lab. No.3 Shielded Room |
| Date                   | November 6, 2023                   |
| Temperature / Humidity | 23 deg. C / 46 % RH                |
| Engineer               | Kenichi Adachi                     |
| Mode                   | Tx BT LE                           |

BT LE 1M-PHY

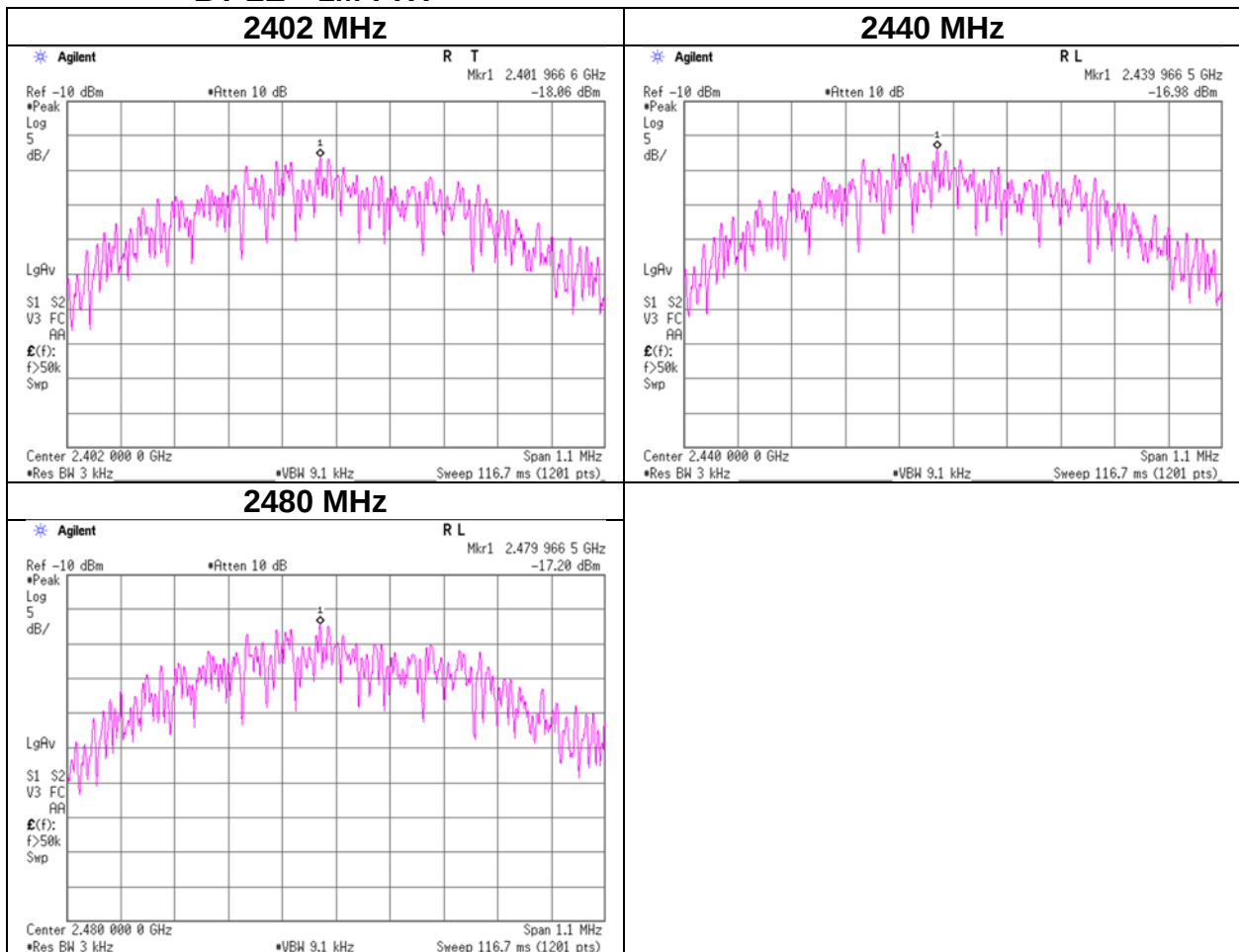
| Freq.<br>[MHz] | Measured<br>Frequency<br>[MHz] | Reading<br>[dBm / 3 kHz] | Cable<br>Loss<br>[dB] | Atten.<br>Loss<br>[dB] | Result<br>[dBm / 3 kHz] | Limit<br>[dBm / 3 kHz] | Margin<br>[dB] |
|----------------|--------------------------------|--------------------------|-----------------------|------------------------|-------------------------|------------------------|----------------|
| 2402           | 2401.97                        | -18.06                   | 1.26                  | 9.97                   | -6.83                   | 8.00                   | 14.83          |
| 2440           | 2439.97                        | -16.98                   | 1.26                  | 9.97                   | <b>-5.75</b>            | 8.00                   | 13.75          |
| 2480           | 2479.97                        | -17.20                   | 1.27                  | 9.97                   | -5.96                   | 8.00                   | 13.96          |

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

\*The equipment and cables were not used for factor 0 dB of the data sheets.

BT LE 1M-PHY



## APPENDIX 2: Test Instruments

### Test Equipment

| Test Item | LIMS ID | Description               | Manufacturer                                | Model                                      | Serial                  | Last Calibration Date | Cal Int |
|-----------|---------|---------------------------|---------------------------------------------|--------------------------------------------|-------------------------|-----------------------|---------|
| AT        | 146267  | Power Meter               | Anritsu Corporation                         | ML2495A                                    | 850009                  | 2023/05/29            | 12      |
| AT        | 146309  | Power sensor              | Anritsu Corporation                         | MA2411B                                    | 917063                  | 2023/05/29            | 12      |
| AT        | 160899  | Spectrum Analyzer         | Keysight Technologies Inc                   | E4440A                                     | MY46185516              | 2023/01/26            | 12 *1)  |
| AT        | 196945  | Coaxial Cable             | Huber+Suhner                                | SUCOFLEX 102                               | 803414/2                | 2023/03/02            | 12 *1)  |
| AT,CE     | 191841  | Thermo-Hygrometer         | CUSTOM. Inc                                 | CTH-201                                    | -                       | 2023/08/01            | 12      |
| AT,CE,RE  | 146210  | Digital Hitester          | HIOKI E.E. CORPORATION                      | 3805-50                                    | 80997823                | 2023/09/25            | 12      |
| AT,RE     | 145137  | Attenuator                | Keysight Technologies Inc                   | 8493C-010                                  | 74865                   | 2023/10/11            | 12      |
| CE        | 145036  | Coaxial Cable&RF Selector | Suhner/Suhner/TOYO                          | RG223U/141PE/NS4906                        | -/0901-271(RF Selector) | 2023/04/18            | 12      |
| CE        | 145542  | LISN                      | Rohde & Schwarz                             | ENV216                                     | 100516                  | 2024/02/06            | 12      |
| CE        | 199786  | Attenuator                | JFW                                         | 50HF-006N                                  | -                       | 2023/06/14            | 12      |
| CE,RE     | 146432  | Tape Measure              | TAJIMA                                      | GL19-55                                    | -                       | -                     | -       |
| CE,RE     | 150463  | Test Receiver             | Rohde & Schwarz                             | ESW44                                      | 101581                  | 2023/08/25            | 12      |
| CE,RE     | 170932  | EMI Software              | TSJ (Techno Science Japan)                  | TEPTO-DV3(RE,CE,ME,PE)                     | -                       | -                     | -       |
| RE        | 145007  | Pre Amplifier             | Toyo Corporation                            | HAP18-26W                                  | 19                      | 2024/03/05            | 12      |
| RE        | 145023  | Biconical Antenna         | Schwarzbeck Mess-Elektronik OHG             | BBA9106                                    | 91032666                | 2023/05/16            | 12      |
| RE        | 145089  | Spectrum Analyzer         | Keysight Technologies Inc                   | E4446A                                     | MY46180525              | 2024/02/07            | 12      |
| RE        | 145126  | Pre Amplifier             | SONOMA                                      | 310N                                       | 290213                  | 2024/02/07            | 12      |
| RE        | 145127  | Pre Amplifier             | Toyo Corporation                            | TPA0118-36                                 | 2072554                 | 2023/05/11            | 12      |
| RE        | 145171  | Coaxial Cable&RF Selector | Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO | 8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906 | -/0901-271(RF Selector) | 2023/04/18            | 12      |
| RE        | 145176  | Coaxial Cable             | Suhner                                      | SUCOFLEX 102                               | 32703/2                 | 2023/08/23            | 12      |
| RE        | 145301  | Highpass Filter           | Micro-Tronics                               | HPM50111                                   | 51                      | 2023/10/13            | 12      |
| RE        | 145383  | Horn Antenna              | Schwarzbeck Mess-Elektronik OHG             | BBHA9120D                                  | 9120D-725               | 2024/03/04            | 12      |
| RE        | 145512  | Horn Antenna              | ETS-Lindgren                                | 3160-09                                    | 00094868                | 2023/06/12            | 12      |
| RE        | 145529  | Logperiodic Antenna       | Schwarzbeck Mess-Elektronik OHG             | VUSLP9111B                                 | 196                     | 2023/05/16            | 12      |
| RE        | 145561  | Semi-Anechoic Chamber     | TDK                                         | SAEC-01(SVSWR)                             | 1                       | 2023/05/16            | 12      |
| RE        | 145565  | Semi-Anechoic Chamber     | TDK                                         | SAEC-03(NSA)                               | 3                       | 2023/04/05            | 12      |
| RE        | 145792  | Digital Hitester          | HIOKI E.E. CORPORATION                      | 3805-50                                    | 80997812                | 2023/09/25            | 12      |
| RE        | 167094  | Attenuator                | JFW                                         | 50HF-006N                                  | -                       | 2024/02/13            | 12      |
| RE        | 179540  | Coaxial Cable             | Huber+Suhner                                | SUCOFLEX 102                               | 802815/2                | 2024/03/05            | 12      |
| RE        | 191837  | Thermo-Hygrometer         | CUSTOM. Inc                                 | CTH-201                                    | -                       | 2023/08/03            | 12      |
| RE        | 191840  | Thermo-Hygrometer         | CUSTOM. Inc                                 | CTH-201                                    | -                       | 2023/08/03            | 12      |
| RE        | 194683  | Horn Antenna              | Schwarzbeck Mess-Elektronik OHG             | BBHA 9120 C                                | 694                     | 2024/03/04            | 12      |
| RE        | 196985  | Coaxial Cable             | Huber+Suhner                                | SUCOFLEX 102                               | 803650/2                | 2024/03/05            | 12      |
| RE        | 200008  | Coaxial Cable             | Huber+Suhner                                | SUCOFLEX 104                               | 575616/4                | 2023/06/06            | 12      |
| RE        | 207279  | Tape Measure              | ASKUL                                       | -                                          | -                       | -                     | -       |
| RE        | 243212  | Coaxial Cable             | Hayashi-Repic co., Ltd.                     | SMS13-13A26-NMS13-9.0m                     | 49306-01-01             | 2023/12/20            | 12      |

\*Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

The expiration date of the calibration is the end of the expired month.  
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

The expiration\*1) This test equipment was used for the tests before the expiration date of the calibration.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

**Test item:**

**AT: Antenna Terminal Conducted test**

**CE: Conducted Emission**

**RE: Radiated Emission**