# Report on the RF Testing of:

## KYOCERA Corporation
## Mobile Phone, Model: EB1136
## FCC ID: JOYEB1136

## In accordance with FCC Part 15 Subpart C

Japan

Add value.
Inspire trust.

Prepared for: KYOCERA Corporation
Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku
Yokohama-shi, Kanagawa, Japan
Phone: +81-45-943-6253 Fax: +81-45-943-6314

## COMMERCIAL-IN-CONFIDENCE

Document Number: JPD-TR-22181-0

| SIGNATURE | | | |
|---|---|---|---|
| Hiroaki Suzuki | | | |
| **NAME** | **JOB TITLE** | **RESPONSIBLE FOR** | **ISSUE DATE** |
| Hiroaki Suzuki | Deputy Manager of RF Group | Approved Signatory | 2022.10.21 |

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Japan Ltd. document control rules.

EXECUTIVE SUMMARY – Result: Complied
A sample of this product was tested and the result above was confirmed in accordance with FCC Part 15 Subpart C.

ACCREDITED
Certificate #3686.03



TÜV SÜD Japan Ltd.
Yonezawa Testing Center
5-4149-7 Hachimanpara,
Yonezawa-shi, Yamagata,
992-1128 Japan

Phone: +81 (0) 238 28 2881
www.tuvsud.com/ja-jp

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# Contents

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# 1 Summary of Test

## 1.1 Modification history of the test report

| Document Number | Modification History | Issue Date |
|---|---|---|
| JPD-TR-22181-0 | First Issue | Refer to the cover page |

## 1.2 Standards

CFR47 FCC Part 15 Subpart C

## 1.3 Test methods

ANSI C63.10-2013

## 1.4 Deviation from standards

None

## 1.5 List of applied test(s) of the EUT

| Test item section | Test item | Condition | Result | Remark |
|---|---|---|---|---|
| 15.247(a)(1) | 20dB Bandwidth | Conducted | N/A | *1 |
| 15.247(a)(1) | Carrier Frequency Separation | Conducted | N/A | *1 |
| 15.247(a)(1)(iii) | Number of Hopping Frequencies | Conducted | N/A | *1 |
| 15.247(a)(1)(iii) | Time of Occupancy (Dwell Time) | Conducted | N/A | *1 |
| 15.247(b)(1) | Maximum Peak Output Power | Conducted | N/A | *1 |
| 15.247(d) | Band Edge Compliance of RF Conducted Emissions | Conducted | N/A | *1 |
| 15.247(d)<br>15.205<br>15.209 | Spurious Emissions | Conducted | N/A | *1 |
| | | Radiated | PASS | - |
| 15.247(d)<br>15.205<br>15.209 | Restricted Bands of Operation | Radiated | PASS | - |
| 15.207 | AC Power Line Conducted Emissions | Conducted | PASS | - |

*1 Since there is no change in Module from FCC ID: JOYEB1134, only the Radiated test items were performed. Please refer to the test report “JPD-TR-22094-0” of “FCC ID: JOYEB1134”.

## 1.6 Test information

None

## 1.7 Test set up

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## 1.8 Test period

15-September-2022 - 22-September-2022

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# 2 Equipment Under Test

All information in this chapter was provided by the applicant.

## 2.1 EUT information

| | |
|---|---|
| Applicant | KYOCERA Corporation |
| | Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku Yokohama-shi, Kanagawa, Japan |
| | Phone: +81-45-943-6253 Fax: +81-45-943-6314 |
| Equipment Under Test (EUT) | Mobile Phone |
| Model number | EB1136 |
| Serial number | 354649890001171, 354649890001189, 350246240000195, 350246240000203 |
| Trade name | Kyocera |
| Number of sample(s) | 4 |
| EUT condition | Pre-Production |
| Power rating | Battery: DC 3.8 V |
| Size | (W) 112.9 mm × (D) 51.3 mm × (H) 18.1 mm |
| Environment | Indoor and Outdoor use |
| Terminal limitation | -20 ˚C to 60 ˚C |
| Hardware version | DMT1 |
| Software version | 0.090GC.0015.a |
| Firmware version | Not applicable |
| RF Specification | |
| Protocol | Bluetooth 5.1 + EDR |
| Frequency range | 2402 MHz-2480 MHz |
| Number of RF Channels | 79 Channels |
| Modulation method/Data rate | FHSS: GFSK (1 Mbps), π/4-DQPSK (2 Mbps), 8-DPSK (3 Mbps) |
| Channel separation | 1 MHz |
| Conducted power | 8.880 mW (DH5) |
| | 7.133 mW (3-DH5) |
| Antenna type | Internal antenna |
| Antenna gain | 1.99 dBi |

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## 2.2 Modification to the EUT

The table below details modifications made to the EUT during the test project.

| Modification State | Description of Modification | Modification fitted by | Date of Modification |
|---|---|---|---|
| Model: EB1136, Serial Number: 354649890001171, 354649890001189, 350246240000195, 350246240000203 | | | |
| 0 | As supplied by the applicant | Not Applicable | Not Applicable |

## 2.3 Variation of family model(s)

### 2.3.1 List of family model(s)

EB1136 has model with camera and without camera.

### 2.3.2 Reason for selection of EUT

Not applicable

## 2.4 Operating channels and frequencies

| Channel | Frequency [MHz] | Channel | Frequency [MHz] | Channel | Frequency [MHz] |
|---|---|---|---|---|---|
| 0 | 2402 | 27 | 2429 | 54 | 2456 |
| 1 | 2403 | 28 | 2430 | 55 | 2457 |
| 2 | 2404 | 29 | 2431 | 56 | 2458 |
| 3 | 2405 | 30 | 2432 | 57 | 2459 |
| 4 | 2406 | 31 | 2433 | 58 | 2460 |
| 5 | 2407 | 32 | 2434 | 59 | 2461 |
| 6 | 2408 | 33 | 2435 | 60 | 2462 |
| 7 | 2409 | 34 | 2436 | 61 | 2463 |
| 8 | 2410 | 35 | 2437 | 62 | 2464 |
| 9 | 2411 | 36 | 2438 | 63 | 2465 |
| 10 | 2412 | 37 | 2439 | 64 | 2466 |
| 11 | 2413 | 38 | 2440 | 65 | 2467 |
| 12 | 2414 | 39 | 2441 | 66 | 2468 |
| 13 | 2415 | 40 | 2442 | 67 | 2469 |
| 14 | 2416 | 41 | 2443 | 68 | 2470 |
| 15 | 2417 | 42 | 2444 | 69 | 2471 |
| 16 | 2418 | 43 | 2445 | 70 | 2472 |
| 17 | 2419 | 44 | 2446 | 71 | 2473 |
| 18 | 2420 | 45 | 2447 | 72 | 2474 |
| 19 | 2421 | 46 | 2448 | 73 | 2475 |
| 20 | 2422 | 47 | 2449 | 74 | 2476 |
| 21 | 2423 | 48 | 2450 | 75 | 2477 |
| 22 | 2424 | 49 | 2451 | 76 | 2478 |
| 23 | 2425 | 50 | 2452 | 77 | 2479 |
| 24 | 2426 | 51 | 2453 | 78 | 2480 |
| 25 | 2427 | 52 | 2454 | | |
| 26 | 2428 | 53 | 2455 | | |

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## 2.5 Operating mode

The EUT had been tested under operating condition.
There are three channels have been tested as following:

| Tested Channel | Frequency [MHz] |
|---|---|
| Low | 2402 |
| Middle | 2441 |
| High | 2480 |

The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

| Tested Channel | Modulation Technology | Modulation Type | Packet Type |
|---|---|---|---|
| Low, Middle, High | FHSS | GFSK | DH5 |
| Low, Middle, High | FHSS | 8-DPSK | 3-DH5 |

The field strength of spurious emissions was measured at each position of all three axis X, Y and Z to compare the level, and the maximum noise.
The worst emission was found in X-axis, Open, With camera and the worst case recorded.
Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.

## 2.6 Operating flow

[Tx mode]
i) Test program setup to the Software
ii) Select a Test mode
Operating frequency: Channel Low: 2402 MHz, Channel Middle: 2441 MHz, Channel High: 2480 MHz
iii) Start test mode

[Rx mode]
i) Test program setup to the Software
ii) Select a Test mode
Operating frequency: Channel Low: 2402 MHz, Channel Middle: 2441 MHz, Channel High: 2480 MHz
iii) Start test mode

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# 3 Configuration of Equipment

Numbers assigned to equipment on the diagram in “3.3 System configuration” correspond to the list in “3.1 Equipment used” and “3.2 Cable(s) used”.
This test configuration is based on the manufacture’s instruction.
Cabling and setup(s) were taken into consideration and test data was taken under worse case condition.

## 3.1 Equipment used

| No. | Equipment | Company | Model No. | Serial No. | FCC ID/DoC | Comment |
|---|---|---|---|---|---|---|
| 1 | Mobile Phone | KYOCERA | EB1136 | 354649890001171, 354649890001189, 350246240000195, 350246240000203 | JOYEB1136 | EUT |
| 2 | AC Adapter | KDDI | 0602PQA | N/A | N/A | * |

*:AC power line Conducted Emission Test.

## 3.2 Cable(s) used

| No. | Equipment | Length[m] | Shield | Connector | Comment |
|---|---|---|---|---|---|
| a | USB cable (for AC Adapter) | 1.5 | No | Plastic | * |

*:AC power line Conducted Emission Test.

## 3.3 System configuration

Japan

# 4 Test Result

## 4.1 Spurious Emissions - Radiated -

### 4.1.1 Measurement procedure

**[FCC 15.247(d), 15.205, 15.209]**

Test was applied by following conditions.

| | | |
|---|---|---|
| Test method | : | ANSI C63.10 |
| Frequency range | : | 9kHz to 25GHz |
| Test place | : | 3m Semi-anechoic chamber |
| EUT was placed on | : | Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m (below 1GHz)<br>Styrofoam table / (W)0.6m × (D)0.6m ×(H)1.5m (above 1GHz) |
| Antenna distance | : | 3m |
| | | |
| Test receiver setting | | Below 1GHz |
| - Detector | : | Average (9kHz-90kHz, 110kHz-490kHz), Quasi-peak |
| - Bandwidth | : | 200Hz, 120kHz |
| Spectrum analyzer setting | | Above 1GHz |
| - Peak | : | RBW=1MHz, VBW=3MHz, Span=0Hz, Sweep=auto |
| - Average | : | RBW=1MHz, VBW=1kHz, Span=0Hz, Sweep=auto<br>Display mode=Linear |

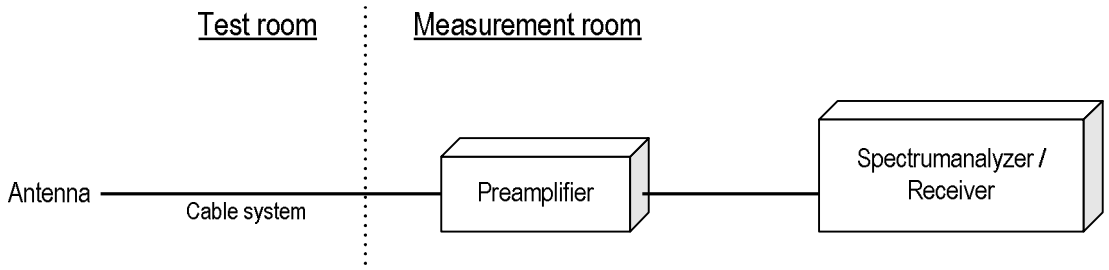
Average Measurement Setting [VBW]

| Mode | Duty Cycle (%) | $T_{on}$ (us) | $T_{off}$ (us) | $1/T_{on}$ (kHz) | Determined VBW Setting |
|---|---|---|---|---|---|
| Bluetooth 5.1 BDR | 76.80 | 2880 | 870 | 0.347 | 1kHz |
| Bluetooth 5.1 EDR | 76.80 | 2880 | 870 | 0.347 | 1kHz |

Although these tests were performed other than open area test site,
adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna, Double ridged guide antenna and Broad-band horn Antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission. As for the Loop antenna, it is positioned with its plane vertical, and the center of the Loop antenna is 1m above the ground plane.
The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst case emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed in order for them to warm up to their normal operating condition.

- Test configuration




### 4.1.2 Calculation method

[9kHz to 150kHz]
Emission level = Reading + (Ant factor + Cable system loss)
Margin = Limit – Emission level

[150kHz to 25GHz]
Emission level = Reading + (Ant factor + Cable system loss - Amp. Gain)
Margin = Limit – Emission level

Example:
Limit @ 4804.0MHz : 74.0dBuV/m (Peak Limit)
S.A Reading = 49.0dBuV Cable system loss = 8.3dB
Result = 49.0 + 8.3 = 57.3dBuV/m
Margin = 74.0 - 57.3 = 16.7dB

### 4.1.3 Limit

| Frequency [MHz] | Field strength | | Distance [m] |
|---|---|---|---|
| | [uV/m] | [dBuV/m] | |
| 0.009-0.490 | 2400 / F [kHz] | 20logE [uV/m] | 300 |
| 0.490-1.705 | 24000 / F [kHz] | 20logE [uV/m] | 30 |
| 1.705-30 | 30 | 29.5 | 30 |
| 30-88 | 100 | 40.0 | 3 |
| 88-216 | 150 | 43.5 | 3 |
| 216-960 | 200 | 46.0 | 3 |
| Above 960 | 500 | 54.0 | 3 |

Note:
1. The lower limit shall apply at the transition frequencies.
2. Emission level [dBuV/m] = 20log Emission [uV/m]
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition modulation.

Japan

### 4.1.4 Test data

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 15-September-2022 | | | |
| Temperature | : | 24.2 [˚C] | | | |
| Humidity | : | 55.8 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Tadahiro Seino |

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 16-September-2022 | | | |
| Temperature | : | 23.1 [˚C] | | | |
| Humidity | : | 59.6 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Kazunori Saito |

| | | | | | |
|---|---|---|---|---|---|
| Date | : | 17-September-2022 | | | |
| Temperature | : | 22.0 [˚C] | | | |
| Humidity | : | 61.7 [%] | Test engineer | : | |
| Test place | : | 3m Semi-anechoic chamber | | | Kazunori Saito |

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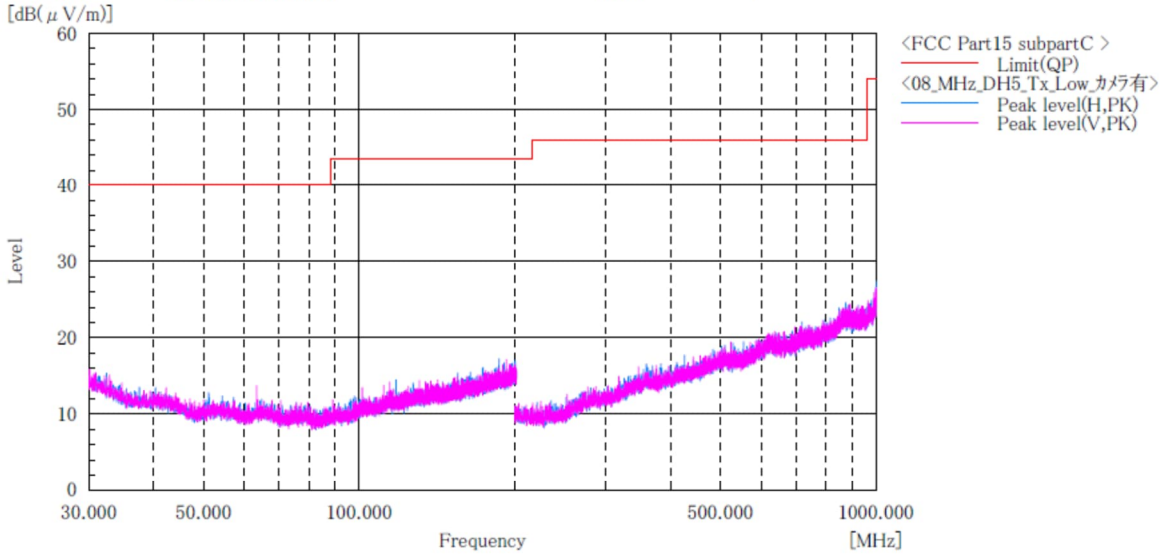
**[Transmission mode]**
**[DH5]**
**Channel: Low**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 23.1[℃] 59.6[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_DH5_Tx_ch:Low | Note2 | : |



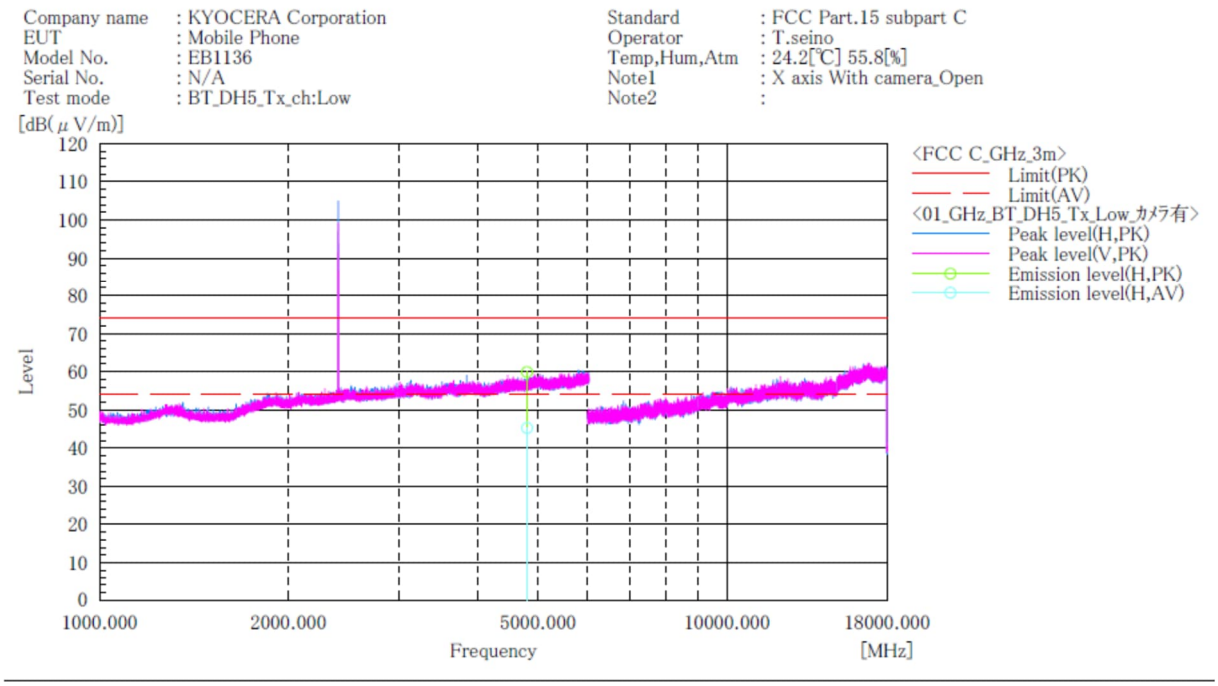

Final Result

| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

Japan

**[DH5]**
**Channel: Low**
**ABOVE 1 GHz**



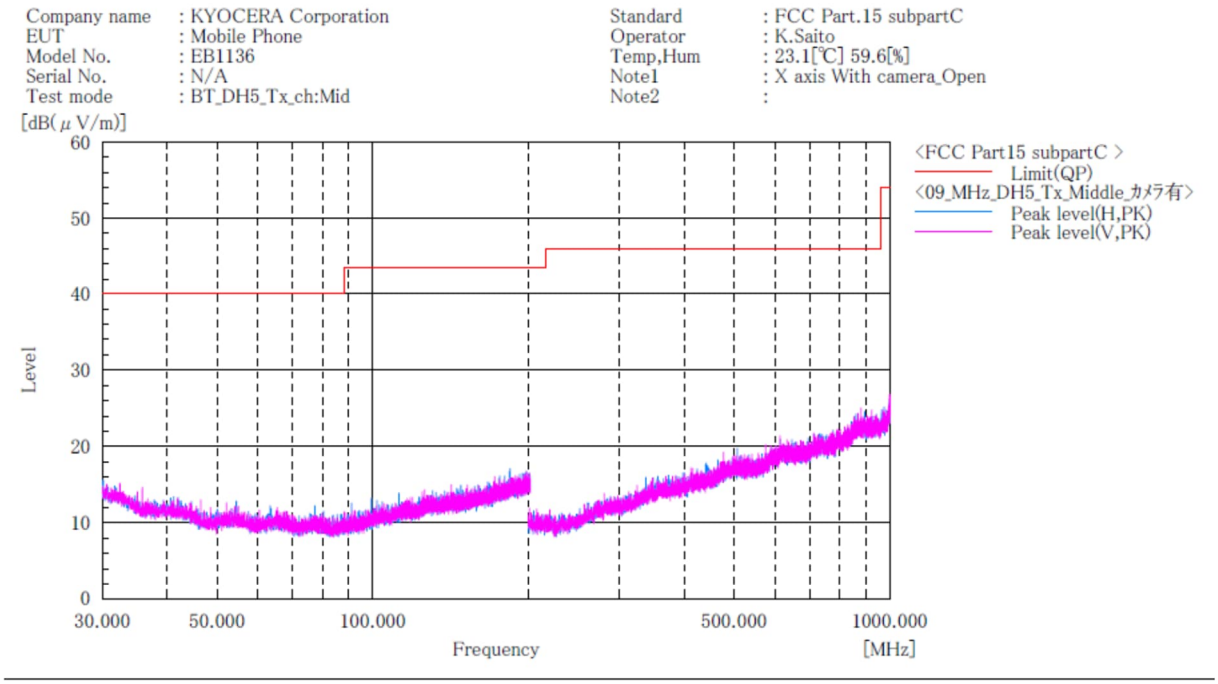

Final Result

| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4804.000 | H | 49.7 | 35.1 | 10.2 | 59.9 | 45.3 | 74.0 | 54.0 | 14.1 | 8.7 | 158.0 | 161.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

Japan

**[DH5]**
**Channel: Middle**
**BELOW 1 GHz**




Final Result

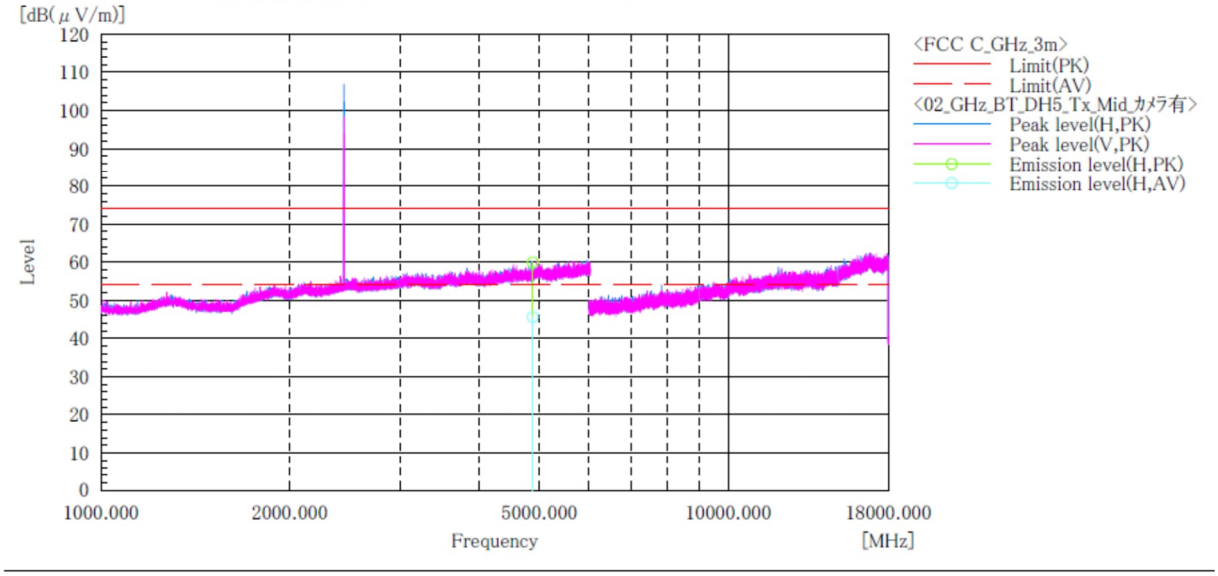
| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

Japan

**[DH5]**
**Channel: Middle**
**ABOVE 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpart C |
| EUT | : Mobile Phone | Operator | : T.Seino |
| Model No. | : EB1136 | Temp,Hum,Atm | : 24.2[℃] 55.8[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_DH5_Tx_ch:Middle | Note2 | : |




Final Result

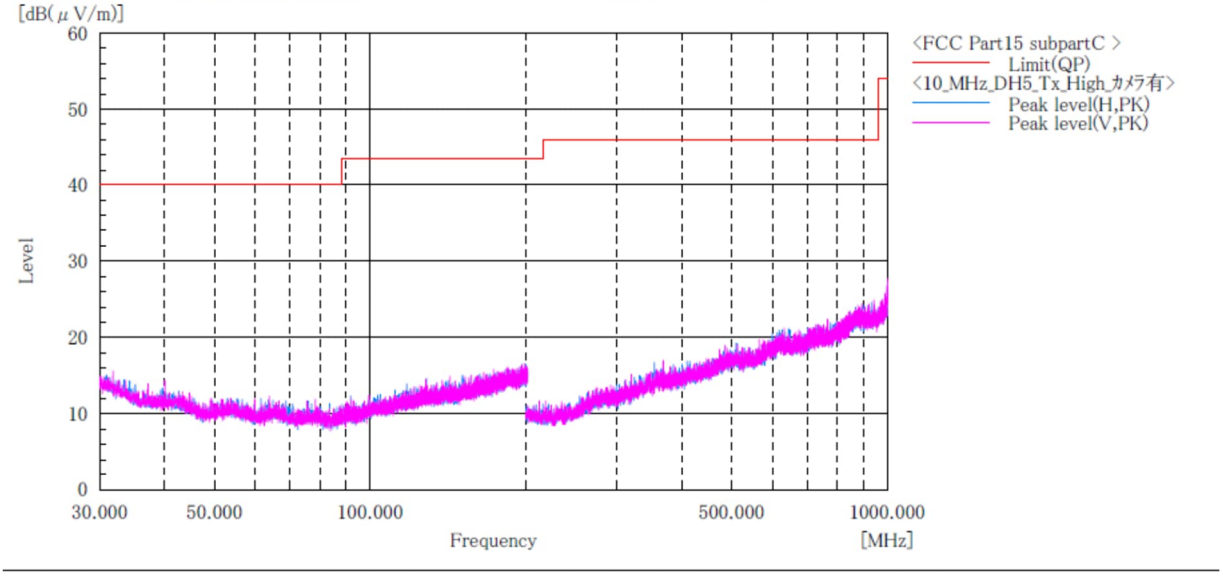
| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4882.000 | H | 49.5 | 35.2 | 10.4 | 59.9 | 45.6 | 74.0 | 54.0 | 14.1 | 8.4 | 155.0 | 163.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

Japan

**[DH5]**
**Channel: High**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 23.1[℃] 59.6[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_DH5_Tx_ch:High | Note2 | : |



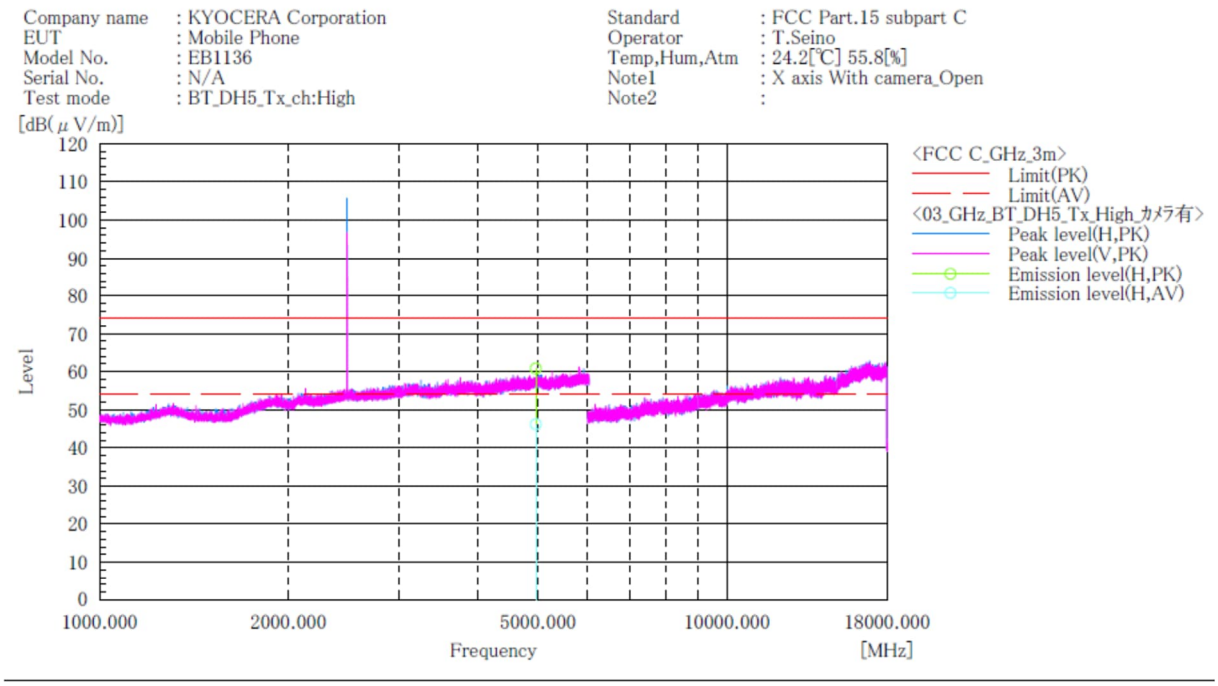

Final Result

| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

Japan

**[DH5]**
**Channel: High**
**ABOVE 1 GHz**

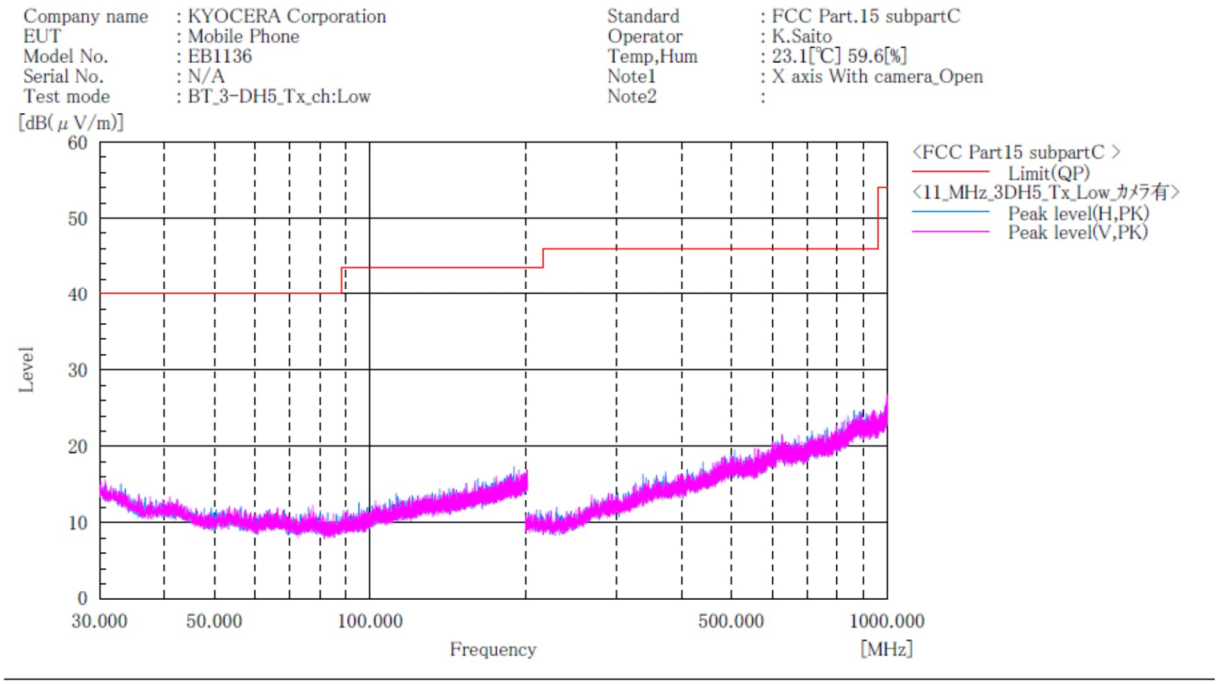



Final Result

| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4960.000 | H | 49.9 | 35.2 | 11.0 | 60.9 | 46.2 | 74.0 | 54.0 | 13.1 | 7.8 | 174.0 | 161.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[3-DH5]**
**Channel: Low**
**BELOW 1 GHz**




Final Result

| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

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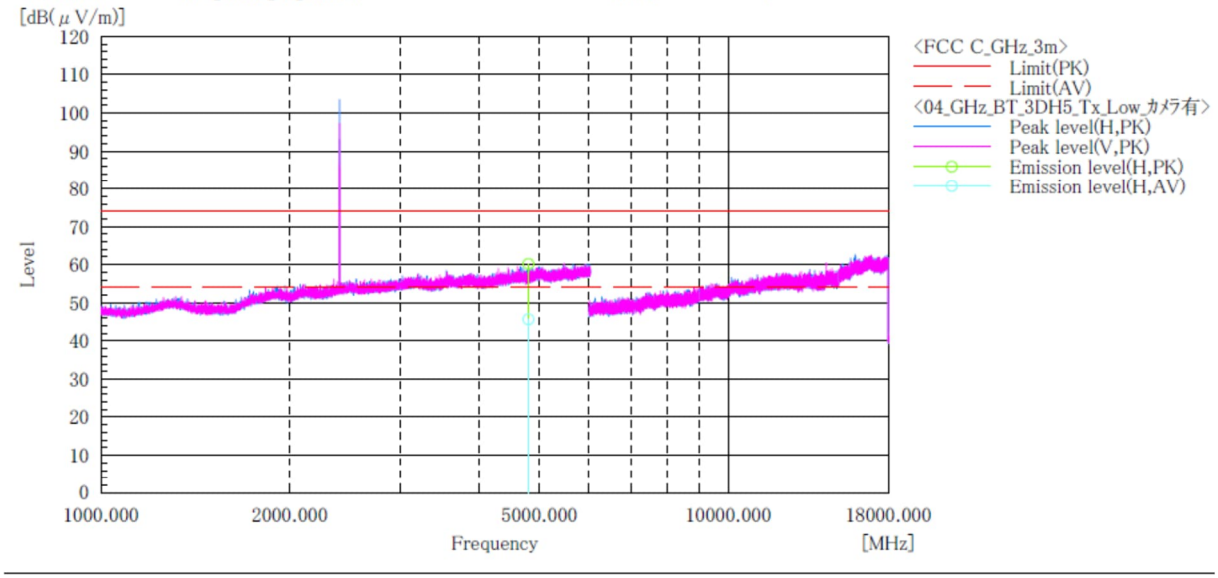
**[3-DH5]**
**Channel: Low**
**ABOVE 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpart C |
| EUT | : Mobile Phone | Operator | : T.Seino |
| Model No. | : EB1136 | Temp,Hum,Atm | : 24.2[℃] 55.8[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_3DH5_Tx_ch:Low | Note2 | : |



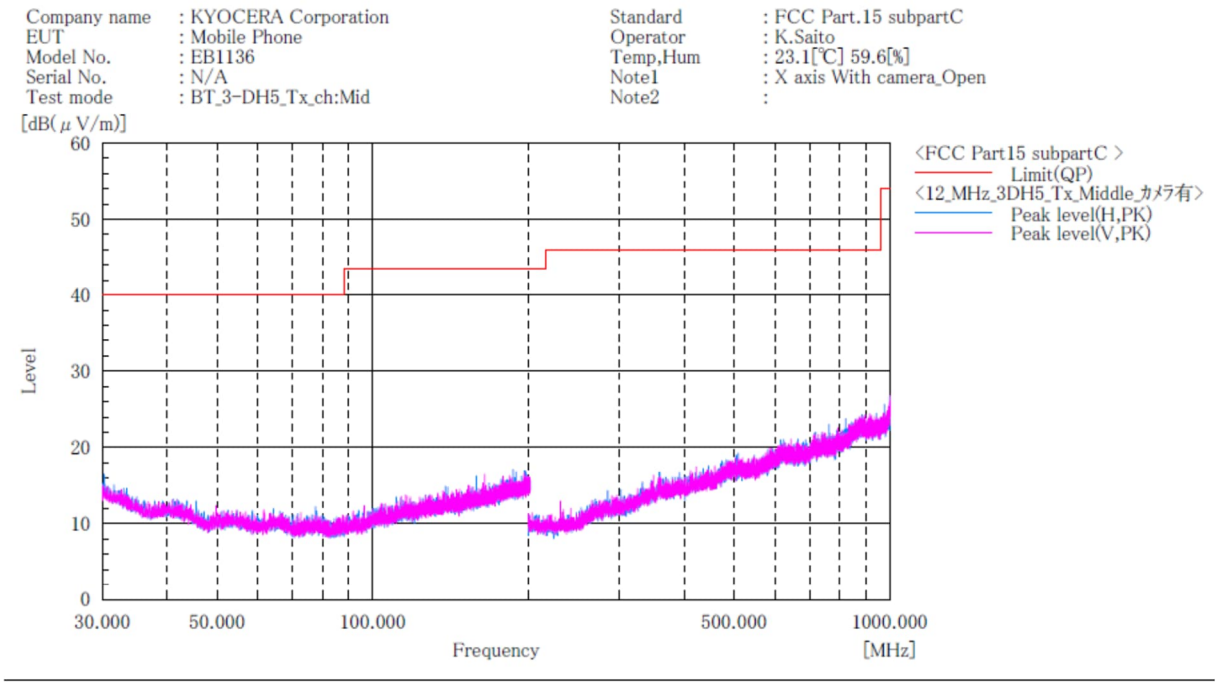

Final Result

| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4804.000 | H | 50.0 | 35.5 | 10.2 | 60.2 | 45.7 | 74.0 | 54.0 | 13.8 | 8.3 | 155.0 | 157.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

Japan

**[3-DH5]**
**Channel: Middle**
**BELOW 1 GHz**



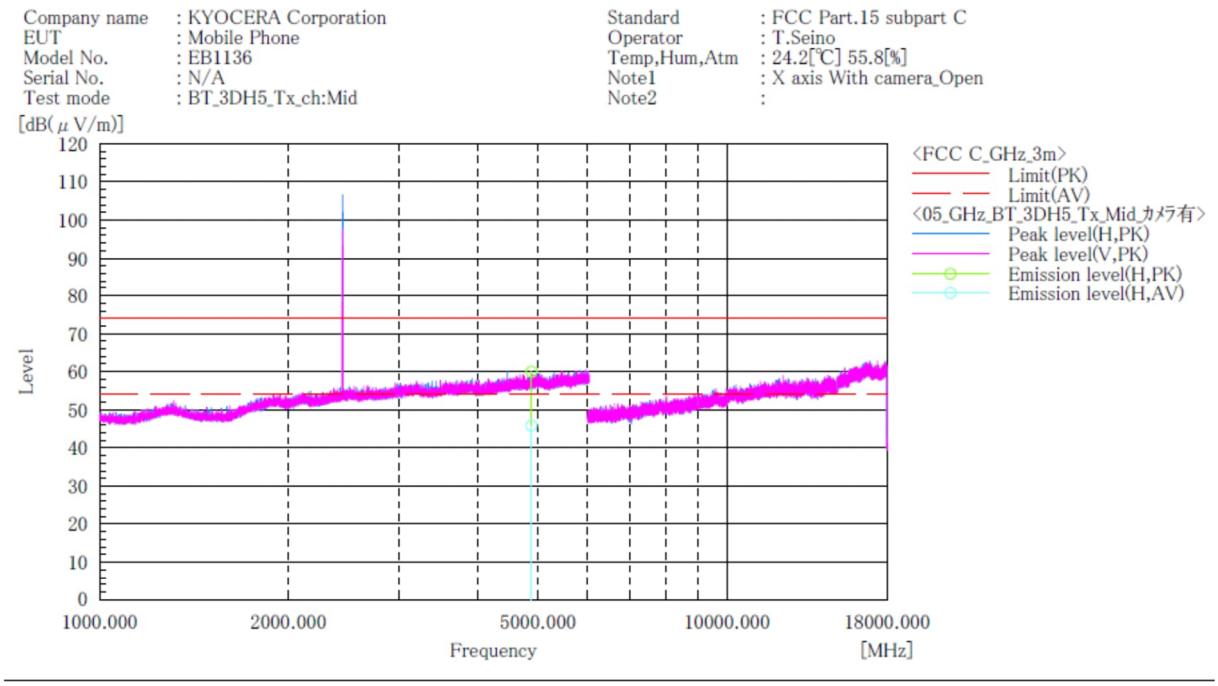

Final Result

| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

Japan

**[3-DH5]**
**Channel: Middle**
**ABOVE 1 GHz**



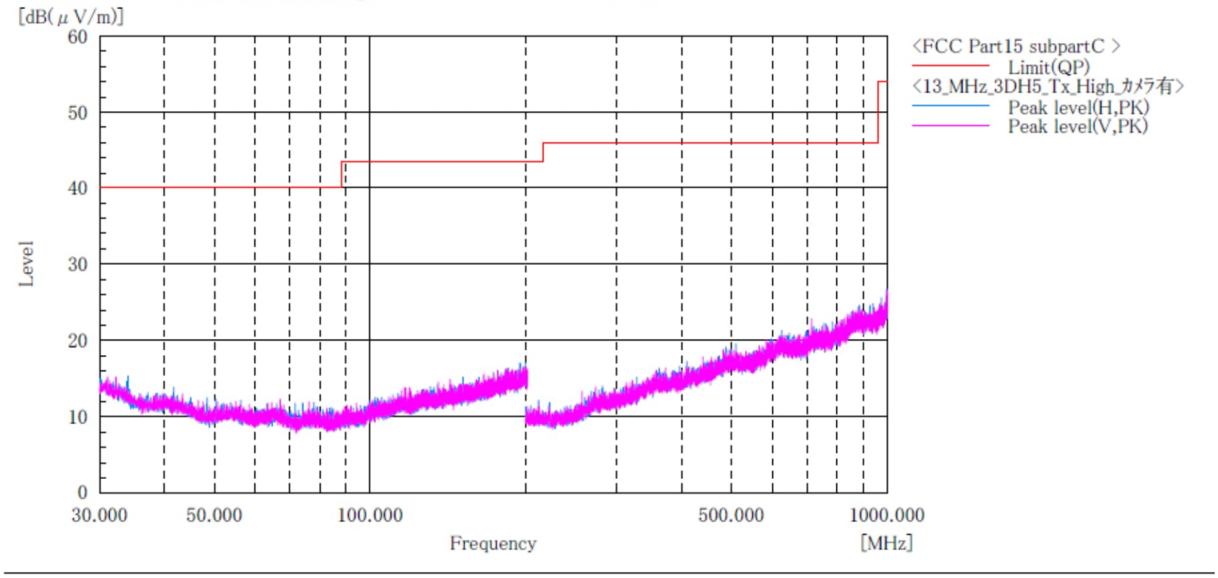

Final Result

| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4882.000 | H | 49.6 | 35.5 | 10.4 | 60.0 | 45.9 | 74.0 | 54.0 | 14.0 | 8.1 | 229.0 | 156.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

**[3-DH5]**
**Channel: High**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 23.1[℃] 59.6[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_3-DH5_Tx_ch:High | Note2 | : |




Final Result

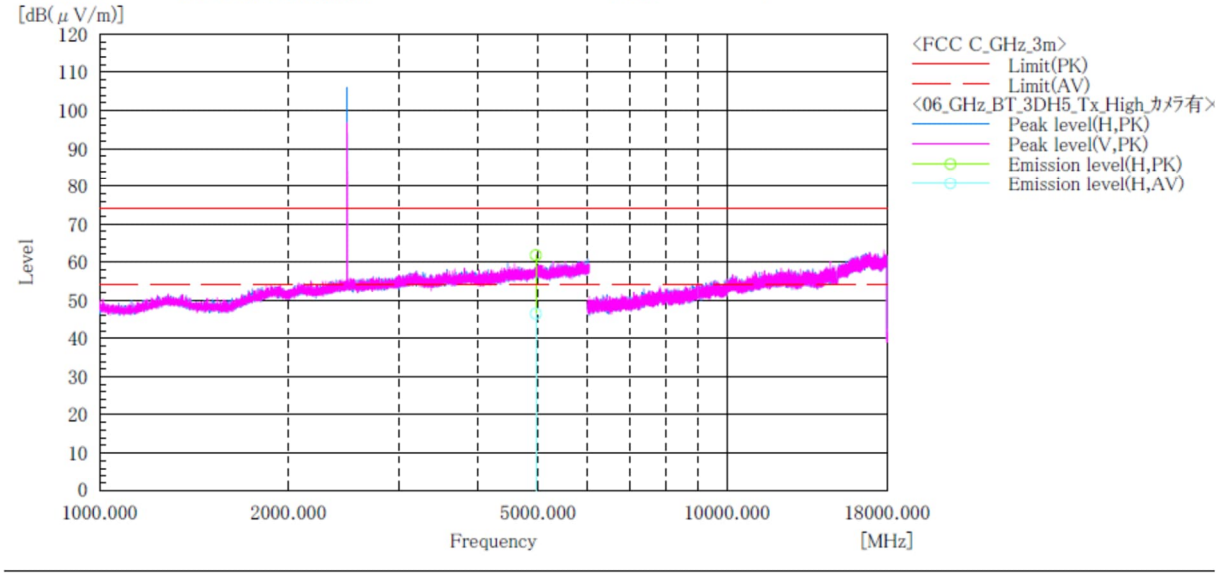
| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz at the 3 meters distance.

Japan

**[3-DH5]**
**Channel: High**
**ABOVE 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpart C |
| EUT | : Mobile Phone | Operator | : T.Seino |
| Model No. | : EB1136 | Temp,Hum,Atm | : 24.2[℃] 55.8[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_3DH5_Tx_ch:High | Note2 | : |




Final Result

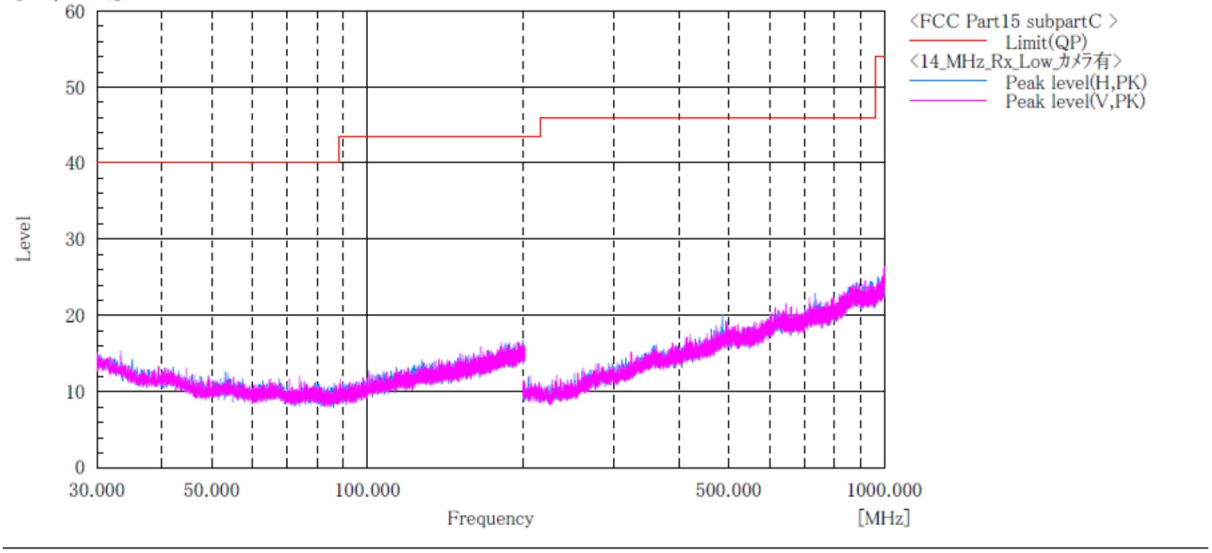
| No. | Frequency | (P) | Reading PK | Reading AV | c.f | Result PK | Result AV | Limit PK | Limit AV | Margin PK | Margin AV | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [dB] | [cm] | [° ] |
| 1 | 4960.000 | H | 50.8 | 35.5 | 11.0 | 61.8 | 46.5 | 74.0 | 54.0 | 12.2 | 7.5 | 148.0 | 164.0 |

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.

Japan

**[Receive mode]**
**Channel: Low**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 22.0[℃] 61.7[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_Rx_ch:Low | Note2 | : |




Final Result

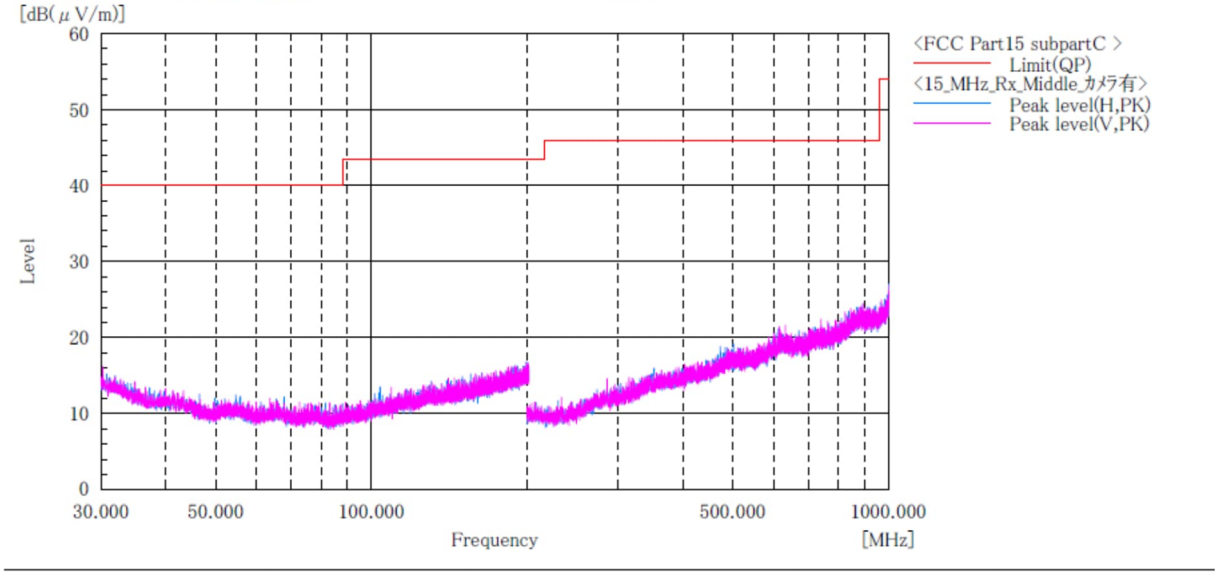
| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz and 1GHz to 25GHz at the 3 meters distance.

Japan

**Channel: Middle**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 22.0[℃] 61.7[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_Rx_ch:Mid | Note2 | : |




Final Result

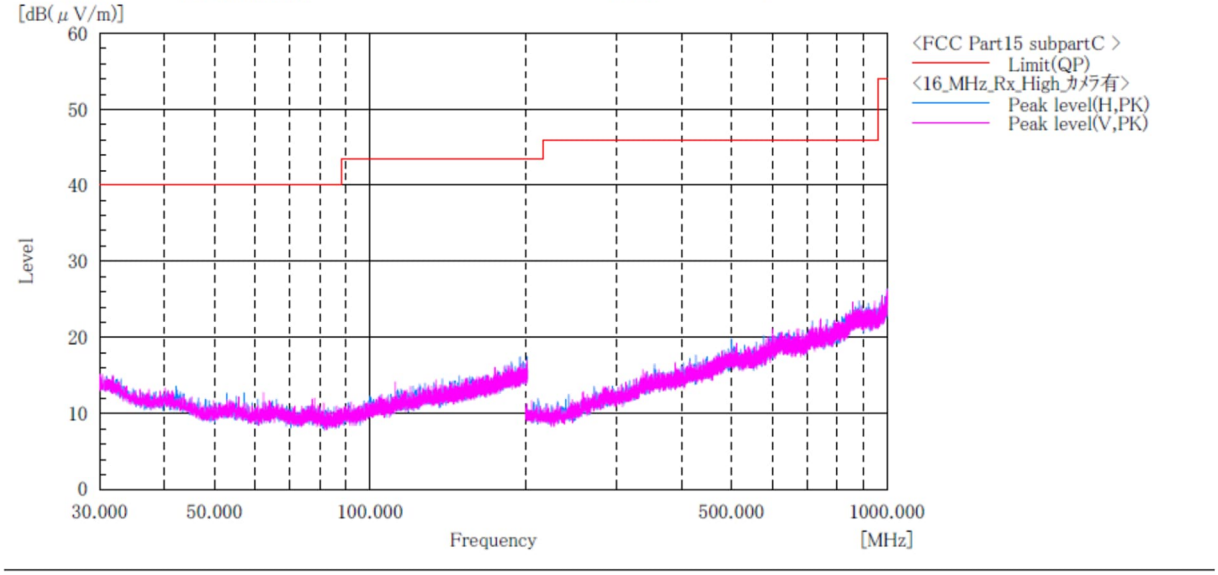
| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz and 1GHz to 25GHz at the 3 meters distance.

Japan

**Channel: High**
**BELOW 1 GHz**

| | | | |
|---|---|---|---|
| Company name | : KYOCERA Corporation | Standard | : FCC Part.15 subpartC |
| EUT | : Mobile Phone | Operator | : K.Saito |
| Model No. | : EB1136 | Temp,Hum | : 22.0[℃] 61.7[%] |
| Serial No. | : N/A | Note1 | : X axis With camera_Open |
| Test mode | : BT_Rx_ch:High | Note2 | : |




Final Result

| No. | Frequency [MHz] | (P) | c.f [dB(1/m)] | Height [cm] | Angle [° ] | Remark |
|---|---|---|---|---|---|---|

Note:
1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable – Amp)]
2. No emission were detected in frequency range 9kHz to 30MHz and 1GHz to 25GHz at the 3 meters distance.

Japan

## 4.2 Restricted Band of Operation

### 4.2.1 Measurement procedure

**[FCC 15.247(d), 15.205, 15.209]**

Test was applied by following conditions.

| | | |
|---|---|---|
| Test method | : | ANSI C63.10 |
| Test place | : | 3m Semi-anechoic chamber |
| EUT was placed on | : | Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m (below 1GHz)<br>Styrofoam table / (W)0.6m × (D)0.6m ×(H)1.5m (above 1GHz) |
| Antenna distance | : | 3m |
| Spectrum analyzer setting | | |
| - Peak | : | RBW=1MHz, VBW=3MHz, Span=Arbitrary setting, Sweep=auto |
| - Average | : | RBW=1MHz, VBW=1kHz, Span=Arbitrary setting, Sweep=auto<br>Display mode=Linear |

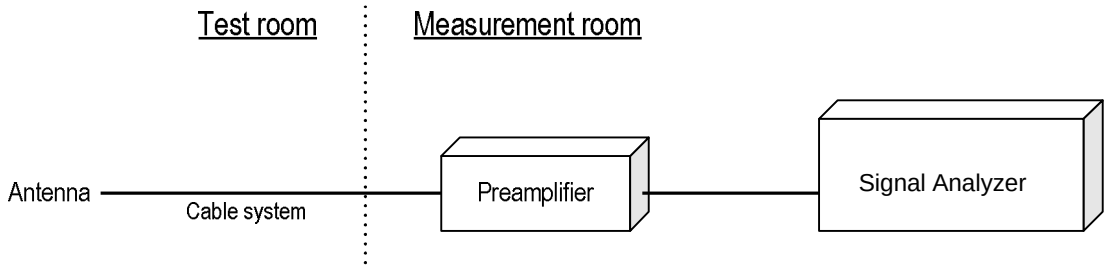
Average Measurement Setting [VBW]

| Mode | Duty Cycle (%) | $T_{on}$ (us) | $T_{off}$ (us) | $1/T_{on}$ (kHz) | Determined VBW Setting |
|---|---|---|---|---|---|
| Bluetooth 5.1 BDR | 76.80 | 2880 | 870 | 0.347 | 1kHz |
| Bluetooth 5.1 EDR | 76.80 | 2880 | 870 | 0.347 | 1kHz |

Although these tests were performed other than open area test site,
adequate comparison measurements were confirmed against 30 m open are test site.
Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna, Double ridged guide antenna and Broad-band horn Antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission. As for the Loop antenna, it is positioned with its plane vertical, and the center of the Loop antenna is 1m above the ground plane.
The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst case emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed in order for them to warm up to their normal operating condition.

- Test configuration



Japan

### 4.2.2 Limit

Emission at the boundary of the restricted band provided by 15.205 shall be lower than 15.209 limit.

### 4.2.3 Measurement result

| Channel | Frequency [MHz] | Results Chart | Result |
|---|---|---|---|
| Low | 2402 | See the Trace Data | Pass |
| High | 2480 | See the Trace Data | Pass |

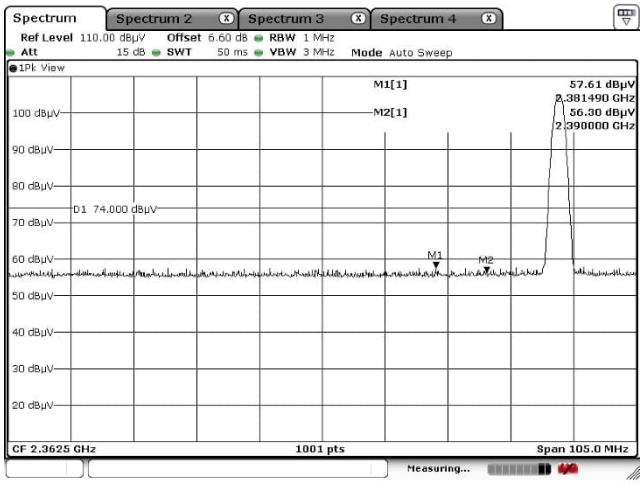
### 4.2.4 Test data

Date : 21-September-2022
Temperature : 21.7 [˚C]
Humidity : 49.7 [%]
Test place : 3m Semi-anechoic chamber

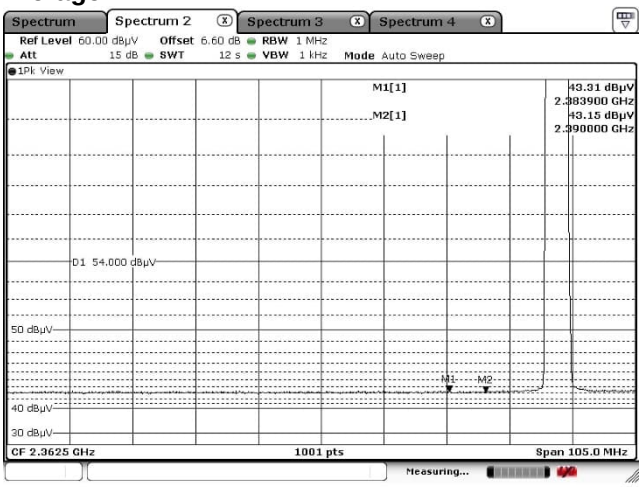
Test engineer : Tadahiro Seino

Japan

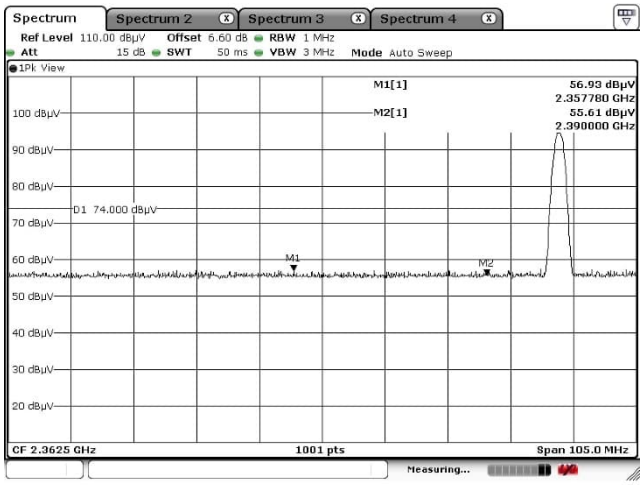
**[DH5]**
**Channel: Low**
**Horizontal**
**Peak**



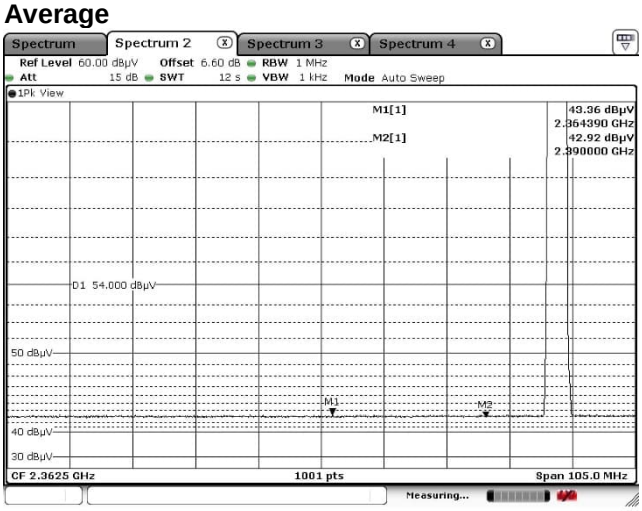

**Average**




**Vertical**
**Peak**

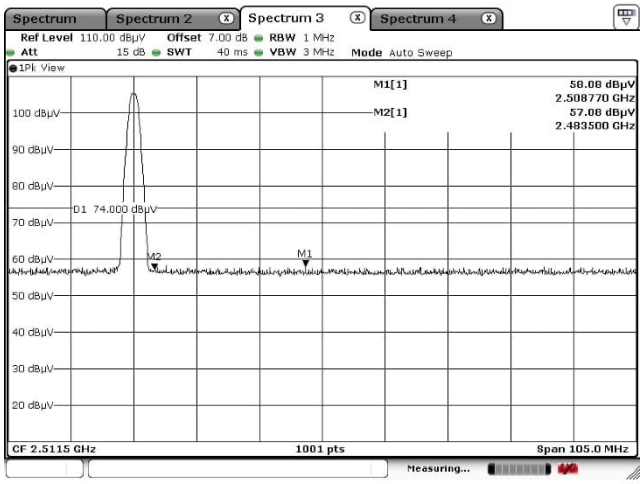



**Average**

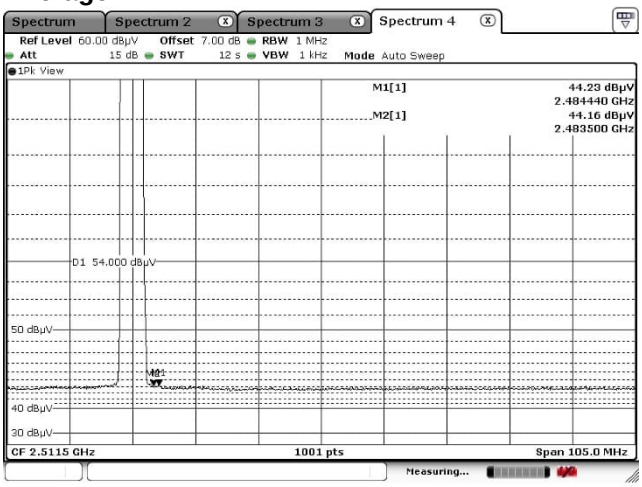


Japan

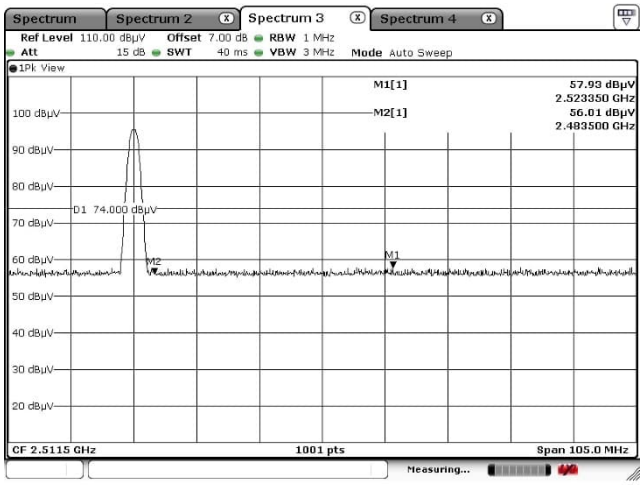
**[DH5]**
**Channel: High**
**Horizontal**
**Peak**



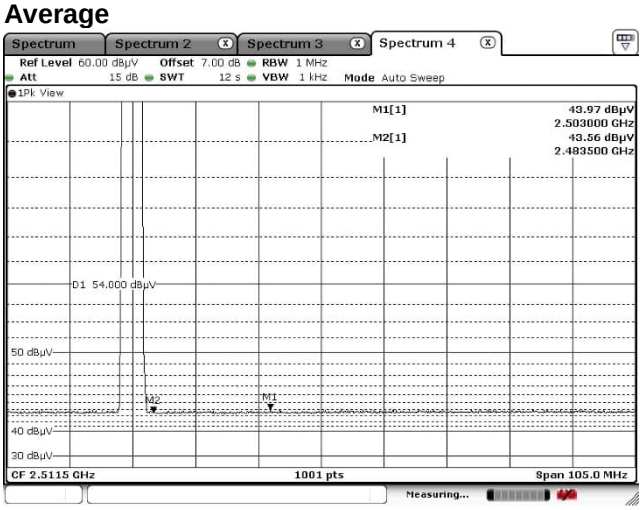

**Average**




**Vertical**
**Peak**

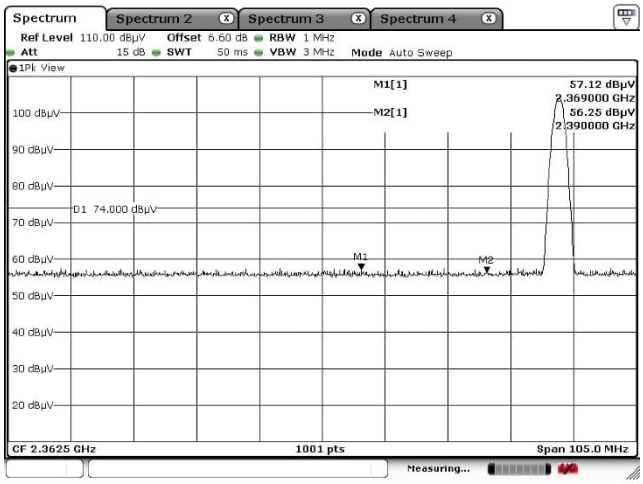



**Average**

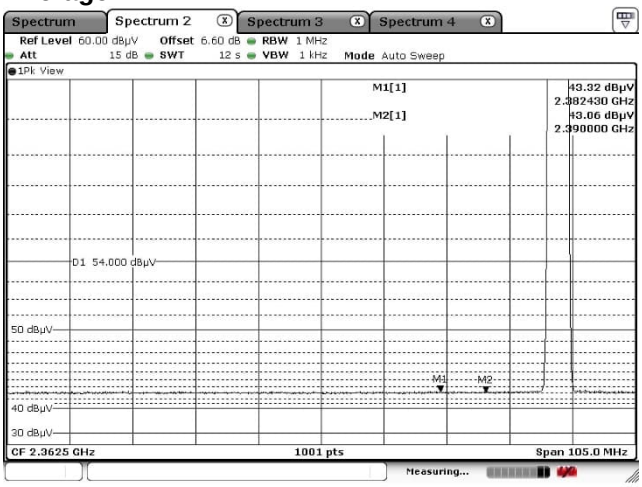


Japan

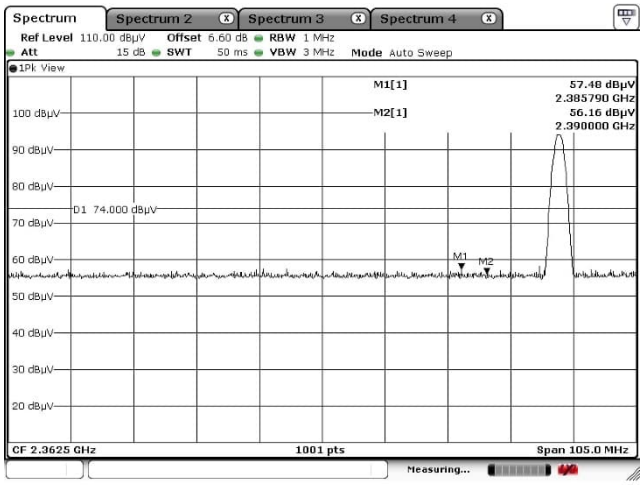
**[3-DH5]**
**Channel: Low**
**Horizontal**
**Peak**



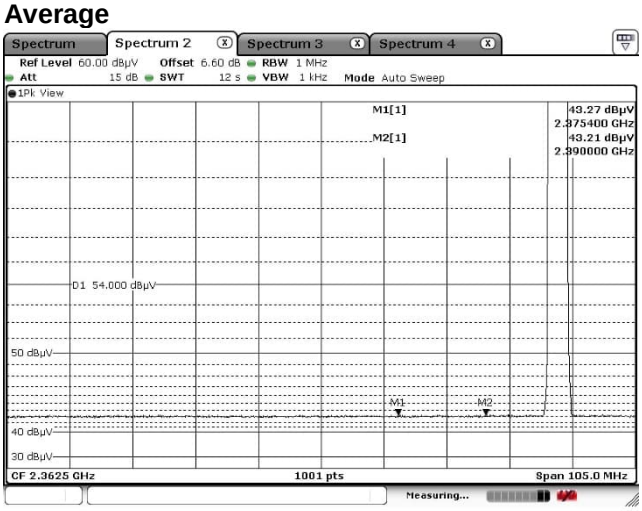

**Average**




**Vertical**
**Peak**

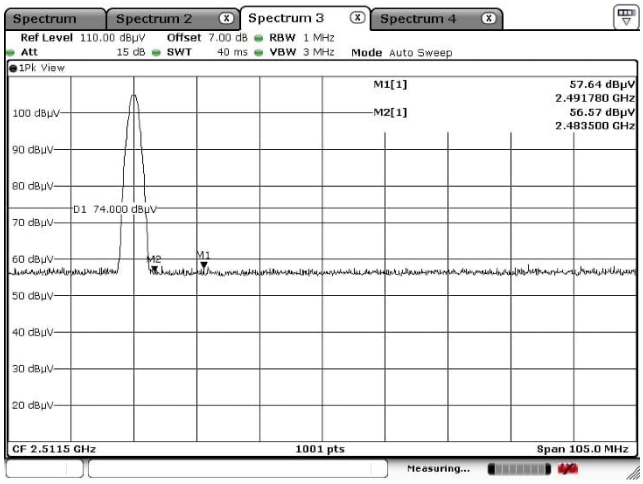



**Average**

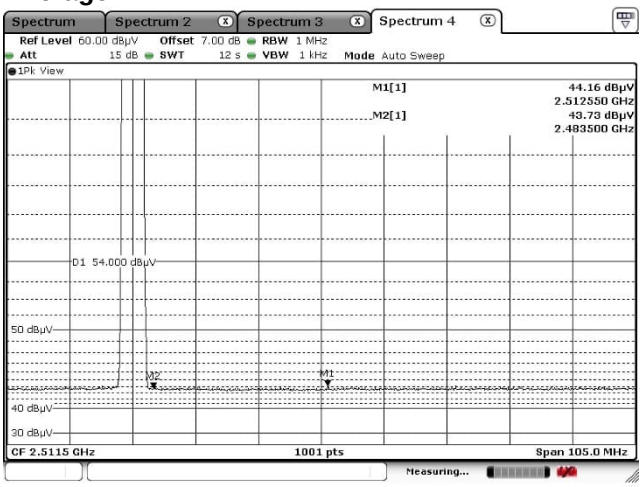


Japan

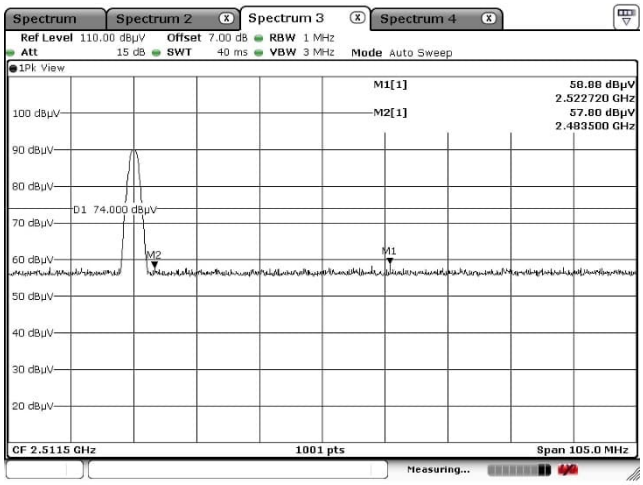
**[3-DH5]**
**Channel: High**
**Horizontal**
**Peak**



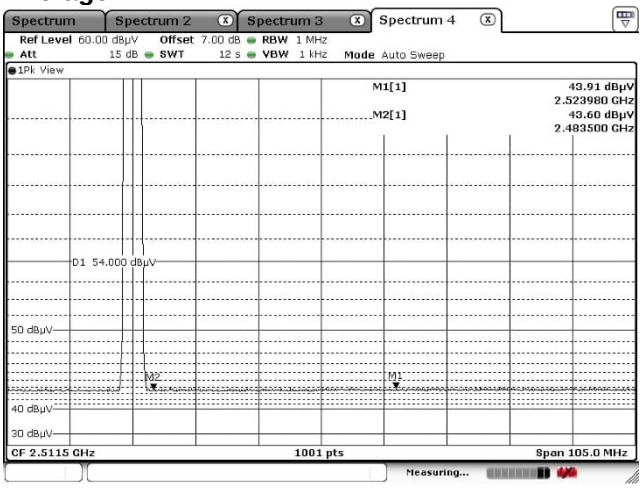

**Average**




**Vertical**
**Peak**




**Average**



Japan

## 4.3 AC Power Line Conducted Emissions

### 4.3.1 Measurement procedure

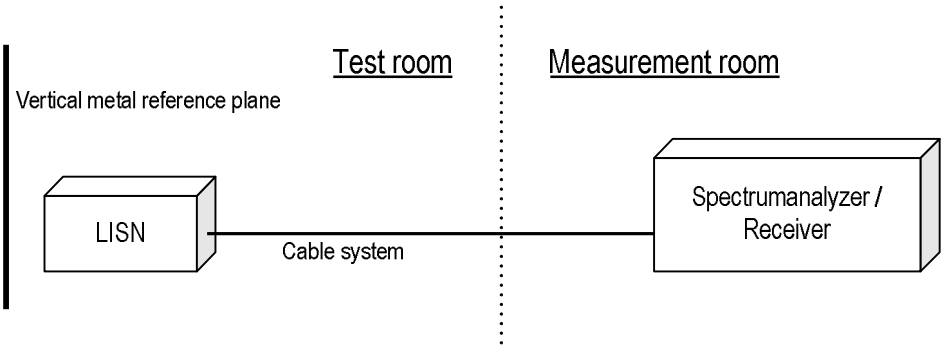
**[FCC 15.207]**

Test was applied by following conditions.

| | | |
|---|---|---|
| Test method | : | ANSI C63.10 |
| Frequency range | : | 0.15 MHz to 30 MHz |
| Test place | : | 3 m Semi-anechoic chamber |
| EUT was placed on | : | FRP table / (W)2.0 m × (D)1.0 m × (H)0.8 m |
| Vertical Metal Reference Plane | : | (W)2.0 m × (H)2.0 m  0.4 m away from EUT |
| Test receiver setting | | |
| - Detector | : | Quasi-peak, Average |
| - Bandwidth | : | 9 kHz |

EUT and peripherals are connected to 50Ω/50μH Line Impedance Stabilization Network (LISN) which are connected to reference ground plane, and are placed 80cm away from EUT. Excess of AC power cable is bundled in center.
LISN for peripheral is terminated in 50Ω.
EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Then, emission measurements are performed with test receiver in above setting to each current-carrying conductor of the mains port. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

- Test configuration



### 4.3.2 Calculation method

Emission level = Reading + (LISN. Factor + Cable system loss)
Margin = Limit – Emission level

Example:
Limit @ 6.770 MHz : 60.0 dBµV(Quasi-peak)
: 50.0 dBµV(Average)
(Quasi peak) Reading = 41.2 dBµV c.f = 10.3 dB
Emission level = 41.2 + 10.3 = 51.5 dBµV
Margin = 60.0 – 51.5 = 8.5 dB
(Average) Reading = 35.0 dBµV c.f = 10.3 dB
Emission level = 35.0 + 10.3 = 45.3 dBµV
Margin = 50.0 – 45.3 = 4.7 dB

### 4.3.3 Limit

| Frequency [MHz] | Limit | |
|---|---|---|
| | QP [dBuV] | AV [dBuV] |
| 0.15-0.5 | 66-56* | 56-46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

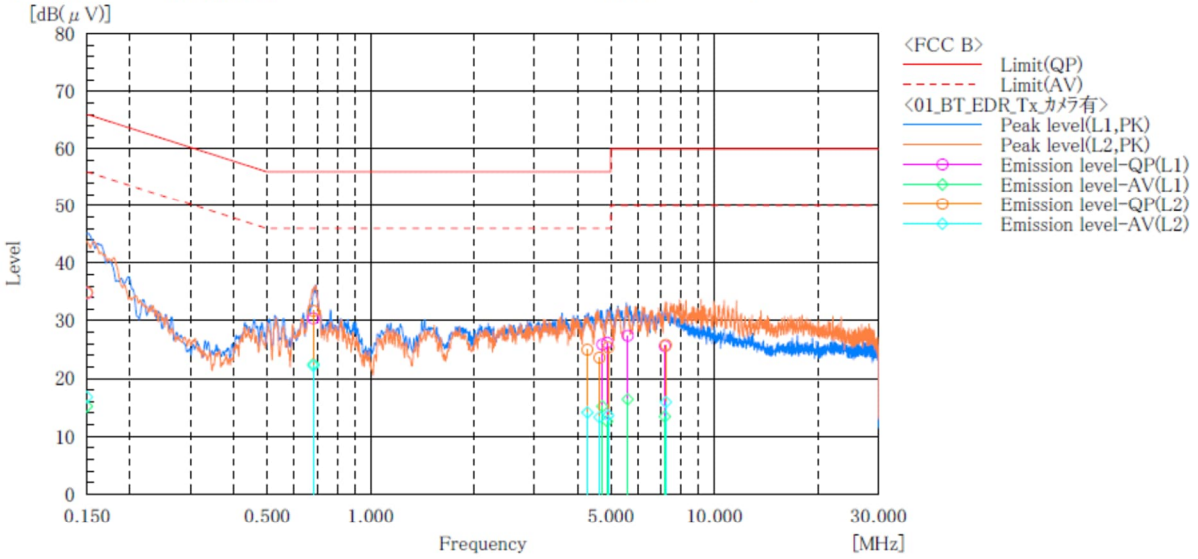
Japan

### 4.3.4 Test data

Date : 22-September-2022
Temperature : 20.8 [°C]
Humidity : 59.8 [%] Test engineer :
Test place : 3m Semi-anechoic chamber Tadahiro Seino

Company Name : KYOCERA Corporation
EUT : Mobile Phone
Model No. : EB1136
Serial No. : N/A
Test mode : BT_EDR_Tx

Standard : FCC Part.15 Subpart C
Operator : T.Seino
Temp,Hum,Atm : 20.9[℃] 58.9[%]
Note1 : With Camera
Note2 :




Final Result

--- L1 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB] | Result QP [dB(μV)] | Result CAV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin CAV [dB] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.150 | 24.3 | 4.7 | 10.5 | 34.8 | 15.2 | 66.0 | 56.0 | 31.2 | 40.8 |
| 2 | 0.682 | 20.1 | 12.2 | 10.3 | 30.4 | 22.5 | 56.0 | 46.0 | 25.6 | 23.5 |
| 3 | 4.720 | 15.3 | 4.6 | 10.6 | 25.9 | 15.2 | 56.0 | 46.0 | 30.1 | 30.8 |
| 4 | 4.880 | 15.6 | 2.0 | 10.6 | 26.2 | 12.6 | 56.0 | 46.0 | 29.8 | 33.4 |
| 5 | 5.600 | 16.7 | 5.7 | 10.7 | 27.4 | 16.4 | 60.0 | 50.0 | 32.6 | 33.6 |
| 6 | 7.180 | 14.8 | 2.6 | 10.8 | 25.6 | 13.4 | 60.0 | 50.0 | 34.4 | 36.6 |

--- L2 Phase ---

| No. | Frequency [MHz] | Reading QP [dB(μV)] | Reading CAV [dB(μV)] | c.f [dB] | Result QP [dB(μV)] | Result CAV [dB(μV)] | Limit QP [dB(μV)] | Limit AV [dB(μV)] | Margin QP [dB] | Margin CAV [dB] |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.150 | 24.4 | 6.3 | 10.5 | 34.9 | 16.8 | 66.0 | 56.0 | 31.1 | 39.2 |
| 2 | 0.682 | 21.4 | 11.9 | 10.3 | 31.7 | 22.2 | 56.0 | 46.0 | 24.3 | 23.8 |
| 3 | 4.270 | 14.4 | 3.5 | 10.6 | 25.0 | 14.1 | 56.0 | 46.0 | 31.0 | 31.9 |
| 4 | 4.630 | 13.0 | 2.7 | 10.6 | 23.6 | 13.3 | 56.0 | 46.0 | 32.4 | 32.7 |
| 5 | 4.910 | 14.7 | 2.9 | 10.7 | 25.4 | 13.6 | 56.0 | 46.0 | 30.6 | 32.4 |
| 6 | 7.230 | 14.9 | 5.0 | 10.9 | 25.8 | 15.9 | 60.0 | 50.0 | 34.2 | 34.1 |

Japan

# 5 Antenna requirement

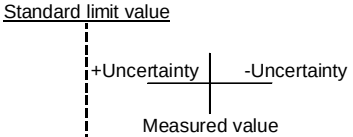
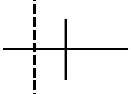
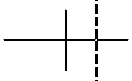
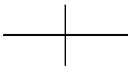
According to FCC section 15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device.
The antenna is a special antenna mounted inside of the EUT. Therefore, the EUT complies with the antenna requirement of FCC section 15.203.

Japan

# 6 Measurement Uncertainty

Expanded uncertainties stated are calculated with a coverage Factor k=2.
Please note that these results are not taken into account when measurement uncertainty considerations contained in ETSI TR 100 028 Parts 1 and 2 determining compliance or non-compliance with test result.

| Test item | Measurement uncertainty |
|---|---|
| Conducted emission, AMN (9 kHz – 150 kHz) | ±3.7 dB |
| Conducted emission, AMN (150 kHz – 30 MHz) | ±3.3 dB |
| Radiated emission (9kHz – 30 MHz) | ±3.2 dB |
| Radiated emission (30 MHz – 1000 MHz) | ±5.5 dB |
| Radiated emission (1 GHz – 6 GHz) | ±4.8 dB |
| Radiated emission (6 GHz – 18 GHz) | ±4.4 dB |
| Radiated emission (18 GHz – 40 GHz) | ±6.4 dB |
| Radio Frequency | $\pm 1.3 * 10^{-8}$ |
| RF power, conducted | ±0.7 dB |
| Adjacent channel power | ±1.5 dB |
| Temperature | ±0.6 °C |
| Humidity | ±1.2 % |
| Voltage (DC) | ±0.4 % |
| Voltage (AC, <10kHz) | ±0.2 % |

| Judge | Measured value and standard limit value |
|---|---|
| PASS | **Case1**   Even if it takes uncertainty into consideration, a standard limit value is fulfilled. |
| | **Case2**  Although measured value is in a standard limit value, a limit value won't be fulfilled if uncertainty is taken into consideration. |
| FAIL | **Case3**  Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration. |
| | **Case4**  Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled. |

Japan

# 7 Laboratory Information

Testing was performed and the report was issued at:

**TÜV SÜD Japan Ltd. Yonezawa Testing Center**

Address: 5-4149-7 Hachimanpara, Yonezawa-shi, Yamagata, 992-1128 Japan
Phone: +81-238-28-2881

**Accreditation and Registration**
A2LA
Certificate #3686.03

VLAC
Accreditation No.: VLAC-013

BSMI
Laboratory Code: SL2-IN-E-6018, SL2-A1-E-6018

Innovation, Science and Economic Development Canada
ISED#: 4224A

VCCI Council
Registration number: A-0166

# Appendix A. Test Equipment

### Radiated emission

| Equipment | Company | Model No. | Serial No. | Cal. Due | Cal. Date |
|---|---|---|---|---|---|
| EMI Receiver | ROHDE&SCHWARZ | ESCI | 100765 | 30-Sep-2022 | 15-Sep-2021 |
| EMI Receiver | ROHDE&SCHWARZ | ESR7 | 101742 | 31-Jan-2023 | 26-Jan-2022 |
| Spectrum analyzer | Agilent Technologies | E4440A | US44302655 | 30-Sep-2023 | 05-Sep-2022 |
| Spectrum analyzer | ROHDE&SCHWARZ | FSV40 | 101731 | 31-Jul-2023 | 19-Jul-2022 |
| Preamplifier | SONOMA | 310 | 372170 | 30-Sep-2022 | 15-Sep-2021 |
| Loop antenna | ROHDE&SCHWARZ | HFH2-Z2 | 100515 | 30-Apr-2023 | 18-Apr-2022 |
| Attenuator | TOYO Connector | NA-PJ-6 | N/A(S507) | 28-Feb-2023 | 03-Feb-2022 |
| Biconical antenna | Schwarzbeck | VHBB9124/BBA9106 | 1332 | 30-Nov-2022 | 08-Nov-2021 |
| Log periodic antenna | Schwarzbeck | VUSLP9111B | 346 | 31-Oct-2022 | 15-Oct-2021 |
| Attenuator | TOYO Connector | NA-PJ-6/6dB | N/A(S541) | 30-Sep-2022 | 16-Sep-2021 |
| Attenuator | TAMAGAWA.ELEC | CFA-10/3dB | N/A(S503) | 31-Jul-2023 | 14-Jul-2022 |
| Preamplifier | TSJ | MLA-100M18-B02-40 | 1929118 | 31-Dec-2022 | 22-Dec-2021 |
| Attenuator | AEROFLEX | 26A-10 | 081217-08 | 31-Dec-2022 | 22-Dec-2021 |
| Double ridged guide antenna | ETS LINDGREN | 3117 | 00052315 | 30-Jun-2023 | 22-Jun-2022 |
| Attenuator | HUBER+SUHNER | 6803.17.B | N/A(2340) | 31-Dec-2022 | 23-Dec-2021 |
| Double ridged guide antenna | A.H.Systems Inc. | SAS-574 | 469 | 31-Aug-2023 | 19-Aug-2022 |
| Preamplifier | TSJ | MLA-1840-B03-35 | 1240332 | 31-Aug-2023 | 19-Aug-2022 |
| Band rejection filter | Micro-Tronics | BRC50702 | G433 | 30-Sep-2022 | 15-Sep-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/9m | MY30037/4 | 31-Dec-2022 | 22-Dec-2021 |
| | | SUCOFLEX104/1m | my24610/4 | 31-Dec-2022 | 22-Dec-2021 |
| | | SUCOFLEX104/8m | SN MY30033/4 | 31-Dec-2022 | 22-Dec-2021 |
| | | SUCOFLEX104/1m | MY32976/4 | 31-Dec-2022 | 22-Dec-2021 |
| | | SUCOFLEX104/2m | SN MY28404/4 | 31-Dec-2022 | 22-Dec-2021 |
| | | SUCOFLEX104/7m | 41625/6 | 31-Dec-2022 | 22-Dec-2021 |
| PC | DELL | DIMENSION E521 | 75465BX | N/A | N/A |
| Software | TOYO Corporation | EP5/RE-AJ | 0611193/V6.0.140 | N/A | N/A |
| Absorber | RIKEN | PFP30 | N/A | N/A | N/A |
| 3m Semi an-echoic Chamber | TOKIN | N/A | N/A(9002-NSA) | 31-May-2023 | 28-May-2022 |
| 3m Semi an-echoic Chamber | TOKIN | N/A | N/A(9002-SVSWR) | 31-May-2023 | 28-May-2022 |

### Conducted emission at mains port

| Equipment | Company | Model No. | Serial No. | Cal. Due | Cal. Date |
|---|---|---|---|---|---|
| EMI Receiver | ROHDE&SCHWARZ | ESR7 | 101742 | 31-Jan-2023 | 26-Jan-2022 |
| Attenuator | HUBER+SUHNER | 6810.01.A | N/A (S411) | 31-Dec-2022 | 22-Dec-2021 |
| Line impedance stabilization network | Kyoritsu Electrical Works, Ltd. | TNW-407F2 | 12-17-110-2 | 30-Jun-2023 | 15-Jun-2022 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/5m | MY33601/4 | 31-Oct-2022 | 26-Oct-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/2m | MY37268/4 | 31-Oct-2022 | 28-Oct-2021 |
| Coaxial cable | HUBER+SUHNER | RG214/U/10m | N/A (S194) | 31-Dec-2022 | 22-Dec-2021 |
| PC | DELL | DIMENSION E521 | 75465BX | N/A | N/A |
| Software | TOYO Corporation | EP5/CE-AJ | 0611193/V5.4.11 | N/A | N/A |

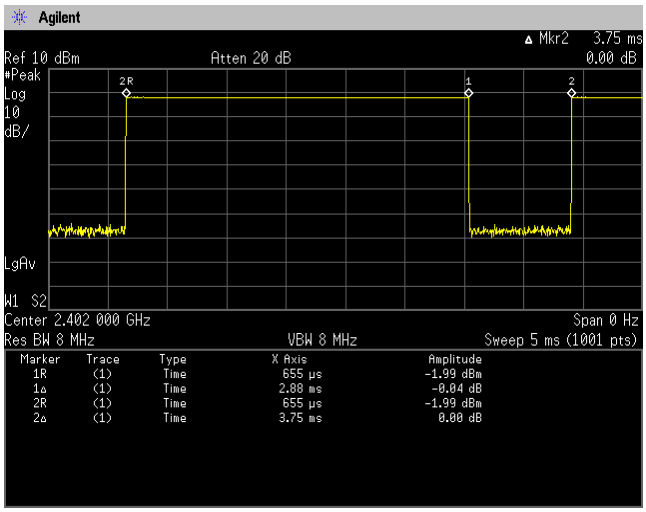
*: The calibrations of the above equipment are traceable to NIST or equivalent standards of the reference organizations.

Japan

# Appendix B. Duty Cycle

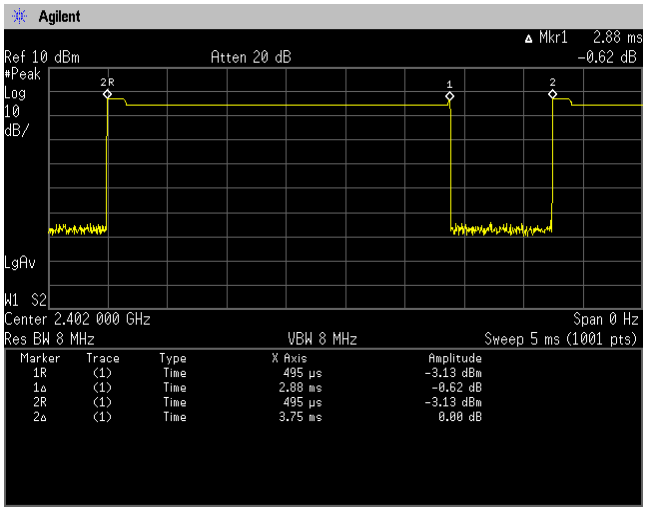
## [Plot & Calculation]

### DH5




Duty Cycle = Ton / (Ton + Toff) = 2880[µs] / (2880[µs] + 870[µs]) = 76.8[%]

### 3-DH5




Duty Cycle = Ton / (Ton + Toff) = 2880[µs] / (2880[µs] + 870[µs]) = 76.8[%]