# Report on the EMC Testing of:

## KYOCERA Corporation
## Mobile Phone, Model: EB1083

## In accordance with FCC Part 15 Subpart B Class B

Prepared for: KYOCERA Corporation
Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku,
Yokohama-shi, Kanagawa, 224-8502 Japan
Phone: +81-45-943-6253 Fax: +81-45-943-6314

TÜV SÜD Japan

Add value.
Inspire trust.

## COMMERCIAL-IN-CONFIDENCE

Document Number: JPD-TR-21141-0

| SIGNATURE | | | |
|---|---|---|---|
| Hiroaki Suzuki | | | |
| **NAME** | **JOB TITLE** | **RESPONSIBLE FOR** | **ISSUE DATE** |
| Hiroaki Suzuki | Deputy Manager of RF Group | Approved Signatory | 2021.10.08 |

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 B (excluding the deviations mentioned in section 1.4 of this document).


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

Japan

**Additional signatures required by FCC 47 CFR Part 2, § 2.938 (b) (10)**

**Signatures of the individuals responsible for testing the product**

ENGINEERING STATEMENT
The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC Part 15 Subpart B. The sample tested was found Complied compliant with the requirements defined in the applied rules.

| NAME | RESPONSIBLE FOR | SIGNATURE |
|---|---|---|
| Mitsuhiro Takeda | Testing | Mitsuhiro Takeda |

Japan

# Contents

Japan

# 1 Summary of Test

## 1.1 Modification history of the test report

| Document Number | Modification History | Issue Date |
|---|---|---|
| JPD-TR-21141-0 | First Issue | Refer to the cover page |

## 1.2 Standards

FCC Part 15 Subpart B

## 1.3 Measurement standards

ANSI C63.4 2014

## 1.4 Deviation from standards

None

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

Regarding judgment of conformance to Emission test, a value of measurement uncertainty was not taken in account.

| Test Name | Classification of EUT | Test | Worst Point (Margin) | Result | Remarks |
|---|---|---|---|---|---|
| Conducted emission at mains port | Class B | Applied | MP4 + USB read with PC<br>L2 0.150 MHz QP 12.2 dB | Pass | - |
| Radiated emission (below 1 GHz) | Class B | Applied | Out camera with ADP<br>V 62.878 MHz QP 8.0 dB | Pass | - |
| Radiated emission (above 1 GHz) | Class B | Applied | MP4 + USB read with PC<br>V 2999.908 MHz AV 17.7 dB | Pass | - |

## 1.6 Test information

The following contents were tested based on the conditions specified by the applicant.
- Tested supply voltage and supply frequency
- Operation mode

## 1.7 Test set up

Table-top

## 1.8 Test period

29-September-2021 - 01-October-2021

Japan

# 2 Equipment Under Test

All information in this chapter was provided by the applicant.

## 2.1 EUT information

| | |
|---|---|
| Applicant | KYOCERA Corporation<br>Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku, Yokohama-shi, Kanagawa, 224-8502 Japan<br>Phone: +81-45-943-6253 Fax: +81-45-943-6314 |
| Equipment Under Test (EUT) | Mobile Phone |
| Model number | EB1083 |
| Serial number | EMC1 |
| Trade name | KYOCERA |
| Authorization | JOYEB1083 |
| Number of sample(s) | 1 |
| EUT condition | Pre-production |
| Maximum frequency | 2000 MHz |
| Power rating | Battery DC 3.87 V |
| Size | (W) 156 mm × (D) 72 mm × (H) 8.9 mm |

## 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 |
|---|---|---|---|
| EB1083, S/N: EMC1 | | | |
| 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)

Not applicable

### 2.3.2 Reason for selection of EUT

Not applicable

## 2.4 Operation mode

1. In Camera with ADP mode
i) Power ON
ii) Record

2. Out Camera with ADP mode
i) Power ON
ii) Record

3. MP4 with Earphone mode
i) Power ON
ii) Execution of Color Bar moving picture data

4. MP4 + USB Read with PC mode
i) Power ON
ii) EUT connects to PC via USB cable
iii) Read / write of MP4 moving picture data
iv) Execution of Color Bar moving picture data

# 3 Configuration of Equipment

Numbers assigned to equipment or cables in “3.1 Equipment(s) used” and “3.2 Cable(s) used” correspond to numbers in "3.3 System configuration".
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 | Remarks |
|---|---|---|---|---|---|---|
| EUT1 | Mobile Phone | KYOCERA | EB1083 | EMC1 | JOYEB1083 | EUT |
| AE1 | AC adapter | KDDI | 0602PQA | NKA | N/A | *1 |
| AE2 | Earphone | N/A | N/A | N/A | N/A | - |
| AE3 | Personal Computer | Lenovo | TYPE 7854-CTO | LR-0GDNF | DoC | *2 |
| AE4 | AC adapter | Lenovo | 42T4418 | 11S42T4418ZGWG212MKX REV:H | N/A | *2 |

*1: AC adapter is connected to keep operating.
*2: The property of TÜV SÜD Japan was used.

## 3.2 Cable(s) used

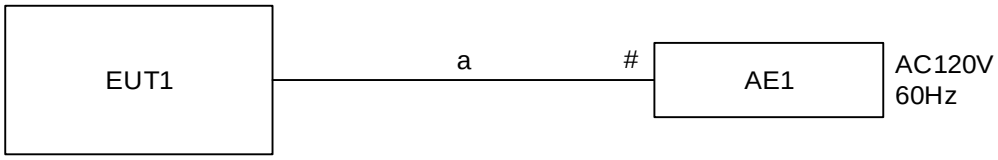
| No. | Cable | Length (m) | Shield | EUT accessory Ferrite core | Remarks |
|---|---|---|---|---|---|
| a | DC cable | 1.5 | Yes | - | - |
| b | USB cable | 0.1 | Yes | - | - |
| c | Earphone cable | 1.0 | No | - | - |
| d | USB cable | 1.0 | Yes | - | - |
| e | DC cable for PC AC adapter | 1.8 | No | - | *1 |
| f | AC power cord for PC AC adapter | 0.8 | No | - | *1 |

*1: The property of TÜV SÜD Japan was used.

Japan

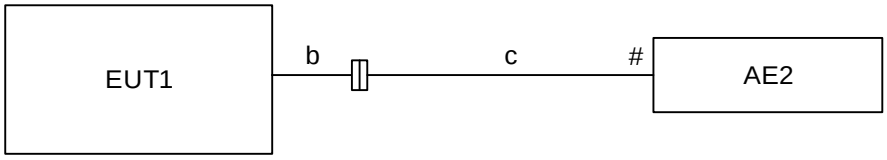
### 3.3 System configuration

1. In Camera with ADP mode
2. Out Camera with ADP mode



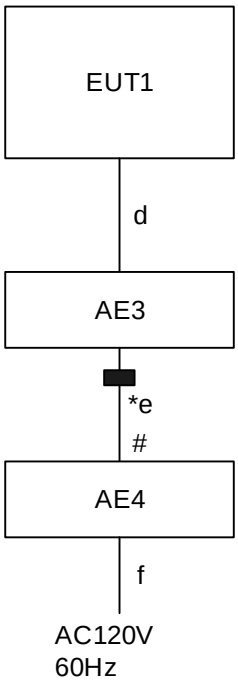

# : Un-detachable cable

3. MP4 with Earphone mode




: Connecter
# : Un-detachable cable

4. MP4 + USB Read with PC mode




# : Un-detachable cable
* : Bundled excess cable
: Ferrite core

Japan

# 4 Test Result

## 4.1 Conducted emission at mains port

### 4.1.1 Measurement condition

| | |
|---|---|
| Frequency range | 0.15 MHz-30 MHz |
| Test place | 10 m Semi-Anechoic Chamber No. 2 |
| EUT was placed on | FRP table (W) 2.0 × (D) 1.0 × (H) 0.8 m |
| Metal reference plane | Vertical |
| Test receiver setting | Detector: Quasi-peak, Average<br>Bandwidth: 9 kHz |
| Line Impedance Stabilization Network (LISN) | Specification: 50 Ω/50 μH<br>Distance from EUT: 0.8 m |

EUT is placed on a non-conducting table for table-top equipment or on insulation material for a floor-standing equipment. In addition, a table-top equipment is located 0.4 m to a metal reference plane.

Line Impedance Stabilization Network (LISN) is placed 0.8 m away from the EUT. The power code of the EUT is connected to LISN and its excess part is bundled in the center. The length of bundling is 0.3-0.4 m.

A power code of a peripheral is connected to LISN and terminated into 50 Ω.

Excess cables between equipment are bundled in the center. The length of bundling is 0.3-0.4 m.

Where LISN cannot be applied, the test is performed using a voltage probe.

After overall frequency range is investigated with spectrum analyzer using peak detector, measurements are performed with test receiver in setting to the defined values.

### 4.1.2 Calculation method

Emission level = Reading + c.f. (correction factor)*
Margin = Limit – Emission level

*Note: c.f. = LISN factor + Cable system loss + Attenuator loss

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

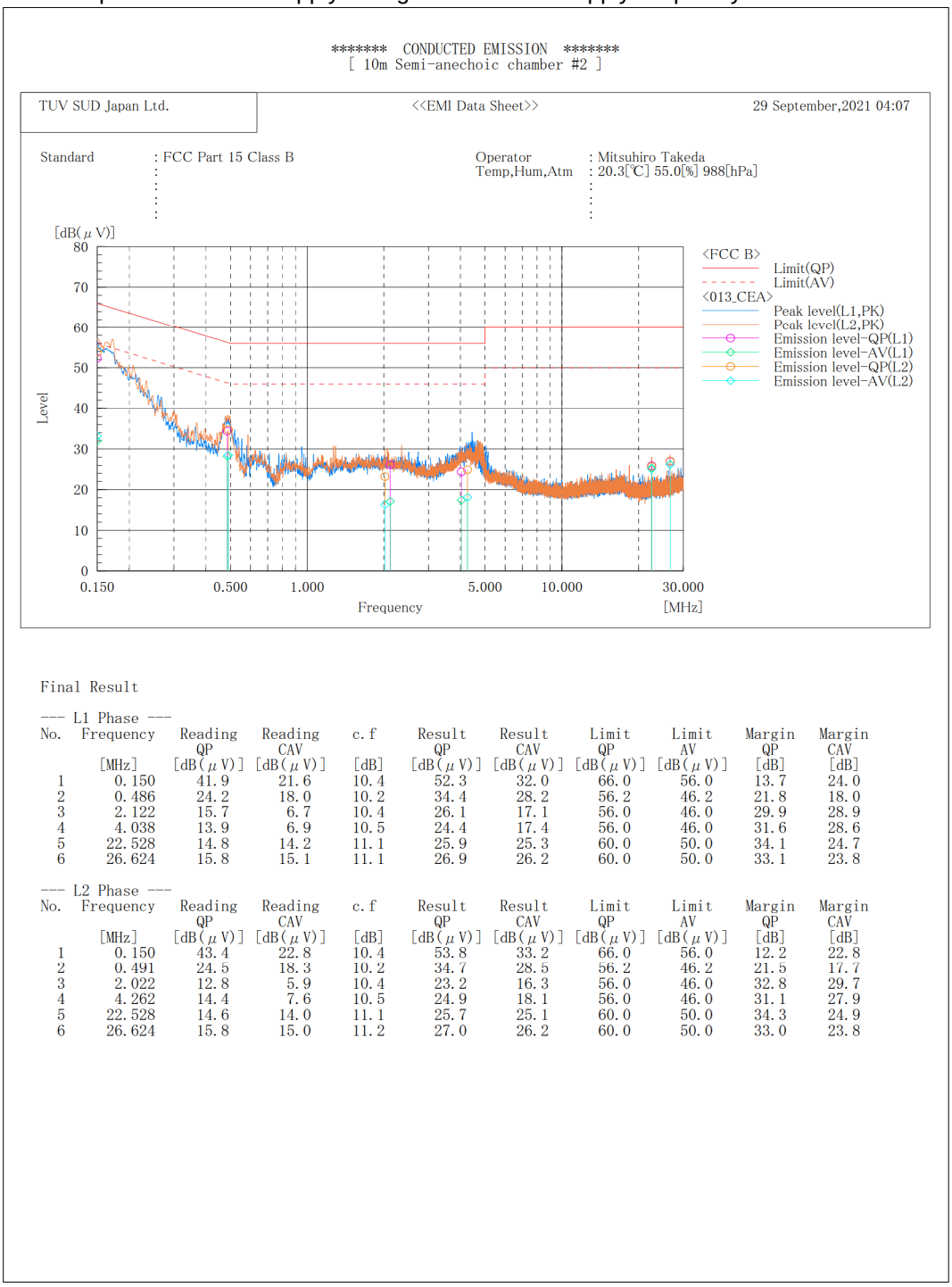
Average
Reading = 35.0 dBμV c.f. = 10.3 dB
Emission level = 35.0 + 10.3 = 45.3 dBμV
Margin = 50.0 - 45.3 = 4.7 dB

Japan

### 4.1.3 Test data and Configuration photographs

| | |
|---|---|
| Operation mode | MP4 + USB Read with PC mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 29-September-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz




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 | 41.9 | 21.6 | 10.4 | 52.3 | 32.0 | 66.0 | 56.0 | 13.7 | 24.0 |
| 2 | 0.486 | 24.2 | 18.0 | 10.2 | 34.4 | 28.2 | 56.2 | 46.2 | 21.8 | 18.0 |
| 3 | 2.122 | 15.7 | 6.7 | 10.4 | 26.1 | 17.1 | 56.0 | 46.0 | 29.9 | 28.9 |
| 4 | 4.038 | 13.9 | 6.9 | 10.5 | 24.4 | 17.4 | 56.0 | 46.0 | 31.6 | 28.6 |
| 5 | 22.528 | 14.8 | 14.2 | 11.1 | 25.9 | 25.3 | 60.0 | 50.0 | 34.1 | 24.7 |
| 6 | 26.624 | 15.8 | 15.1 | 11.1 | 26.9 | 26.2 | 60.0 | 50.0 | 33.1 | 23.8 |

--- 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 | 43.4 | 22.8 | 10.4 | 53.8 | 33.2 | 66.0 | 56.0 | 12.2 | 22.8 |
| 2 | 0.491 | 24.5 | 18.3 | 10.2 | 34.7 | 28.5 | 56.2 | 46.2 | 21.5 | 17.7 |
| 3 | 2.022 | 12.8 | 5.9 | 10.4 | 23.2 | 16.3 | 56.0 | 46.0 | 32.8 | 29.7 |
| 4 | 4.262 | 14.4 | 7.6 | 10.5 | 24.9 | 18.1 | 56.0 | 46.0 | 31.1 | 27.9 |
| 5 | 22.528 | 14.6 | 14.0 | 11.1 | 25.7 | 25.1 | 60.0 | 50.0 | 34.3 | 24.9 |
| 6 | 26.624 | 15.8 | 15.0 | 11.2 | 27.0 | 26.2 | 60.0 | 50.0 | 33.0 | 23.8 |

Japan

## 4.2 Radiated emission (below 1 GHz)

### 4.2.1 Measurement condition

| | |
|---|---|
| Frequency range | 30 MHz-1000 MHz |
| Test place | 10 m Semi-Anechoic Chamber No. 2 |
| EUT was placed on | FRP table (W) 2.0 × (D) 1.0 × (H) 0.8 m |
| Axis | 0°-360° |
| Antenna | Distance from EUT: 3 m<br>Height: 1-4 m<br>Polarity: Horizontal/Vertical |
| Test receiver setting | Detector: Quasi-peak<br>Bandwidth: 120 kHz |

EUT is placed on a non-conducting table for table-top equipment or on insulation material for a floor-standing equipment. The non-conducting table or the insulation material is placed on a rotating turn table.

Excess cables between equipment are bundled in the center. The length of bundling is 0.3-0.4 m.

An antenna is adjusted between 1-4 m in height and varied its polarization (horizontal and vertical), and the EUT azimuth is varied by the rotating turntable 0 to 360 degrees.

After overall frequency range is investigated with spectrum analyzer using peak detector, measurements are performed with test receiver in setting to the defined values.

### 4.2.2 Calculation method

Emission level = Reading + c.f. (correction factor)*
Margin = Limit - Emission level

*Note: c.f. = Antenna factor + Cable system loss + Attenuator loss - Amplifier Gain

Example)

Limit @ 350.0 MHz: 37.0 dBµV/m

Reading = 41.1 dBµV c.f. = -11.8 dB/m
Emission level = 41.1 - 11.8 = 29.3 dBµV/m
Margin = 37.0 - 29.3 = 7.7 dB

Japan

### 4.2.3 Test data and Configuration photographs

| | |
|---|---|
| Operation mode | In Camera with ADP mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

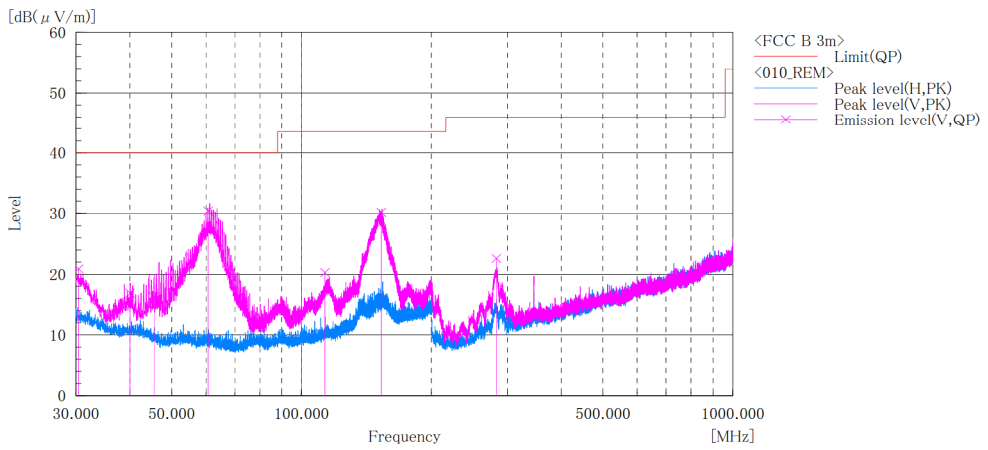
Date of test: 29-September-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz

******* RADIATED EMISSION *******
[ 10m Semi-anechoic chamber #2 ]

TUV SUD Japan Ltd. <<EMI Data Sheet>> 29 September,2021 00:48

Standard : FCC Part 15 Class B

Operator : Mitsuhiro Takeda
Temp,Hum,Atm : 21.9[℃] 54.3[%] 988[hPa]




Final Result

| No. | Frequency | (P) | Reading QP | c.f | Result QP | Limit QP | Margin QP | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [cm] | [° ] |
| 1 | 30.405 | V | 34.0 | -13.1 | 20.9 | 40.0 | 19.1 | 100.0 | 148.0 |
| 2 | 40.057 | V | 32.1 | -15.2 | 16.9 | 40.0 | 23.1 | 100.0 | 229.0 |
| 3 | 45.508 | V | 32.3 | -16.0 | 16.3 | 40.0 | 23.7 | 100.0 | 145.0 |
| 4 | 60.697 | V | 47.8 | -17.4 | 30.4 | 40.0 | 9.6 | 100.0 | 160.0 |
| 5 | 113.367 | V | 35.9 | -15.6 | 20.3 | 43.5 | 23.2 | 100.0 | 162.0 |
| 6 | 153.127 | V | 43.6 | -13.4 | 30.2 | 43.5 | 13.3 | 100.0 | 203.0 |
| 7 | 282.762 | V | 37.1 | -14.5 | 22.6 | 46.0 | 23.4 | 210.0 | 358.0 |

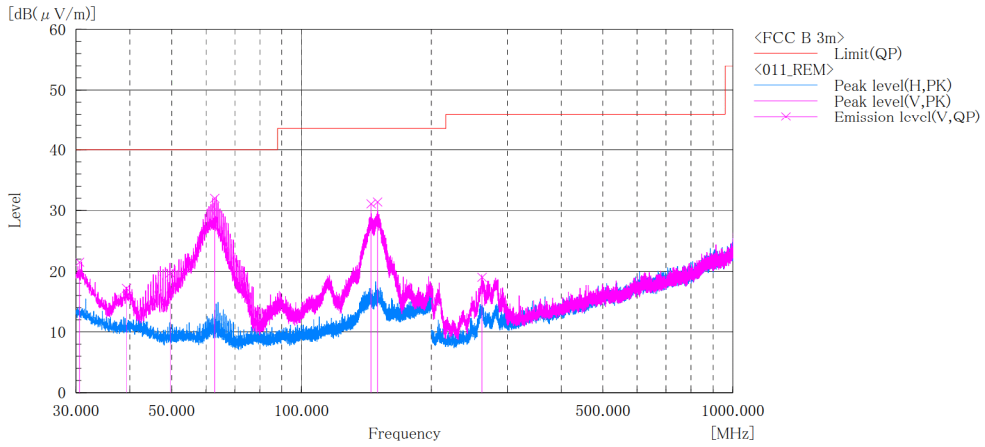
| | |
|---|---|
| Operation mode | Out Camera with ADP mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 29-September-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz

******* RADIATED EMISSION *******
[ 10m Semi-anechoic chamber #2 ]

TUV SUD Japan Ltd. <<EMI Data Sheet>> 29 September,2021 01:40

Standard : FCC Part 15 Class B
Operator : Mitsuhiro Takeda
Temp,Hum,Atm : 21.9[℃] 54.3[%] 988[hPa]




Final Result

| No. | Frequency | (P) | Reading QP | c.f | Result QP | Limit QP | Margin QP | Height | Angle |
|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | | [dB(μV)] | [dB(1/m)] | [dB(μV/m)] | [dB(μV/m)] | [dB] | [cm] | [° ] |
| 1 | 30.566 | V | 34.7 | -13.2 | 21.5 | 40.0 | 18.5 | 100.0 | 167.0 |
| 2 | 39.276 | V | 32.3 | -15.1 | 17.2 | 40.0 | 22.8 | 100.0 | 225.0 |
| 3 | 49.556 | V | 36.2 | -16.5 | 19.7 | 40.0 | 20.3 | 120.0 | 171.0 |
| 4 | 62.878 | V | 49.6 | -17.6 | 32.0 | 40.0 | 8.0 | 100.0 | 192.0 |
| 5 | 145.033 | V | 44.7 | -13.6 | 31.1 | 43.5 | 12.4 | 100.0 | 98.0 |
| 6 | 149.958 | V | 44.9 | -13.5 | 31.4 | 43.5 | 12.1 | 100.0 | 185.0 |
| 7 | 262.017 | V | 34.6 | -15.6 | 19.0 | 46.0 | 27.0 | 208.0 | 169.0 |

| | |
|---|---|
| Operation mode | MP4 with Earphone mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

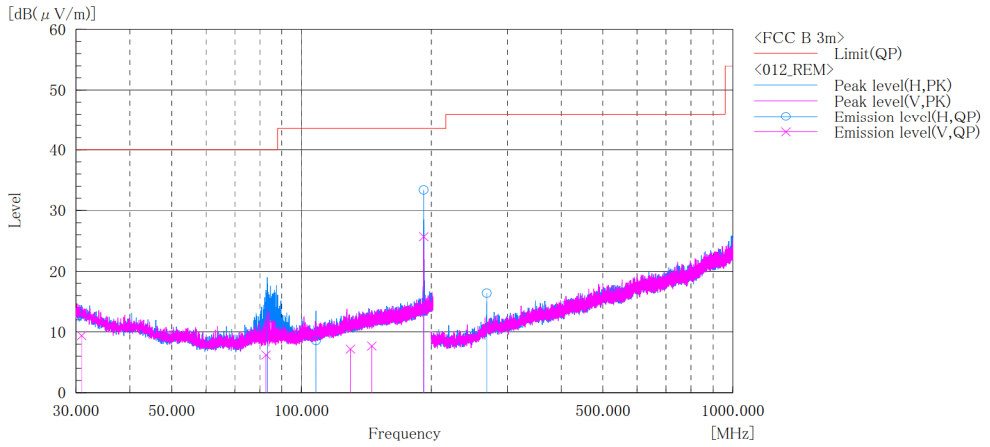
Date of test: 29-September-2021 Supply voltage: DC 3.87 V

******* RADIATED EMISSION *******
[ 10m Semi-anechoic chamber #2 ]

TUV SUD Japan Ltd. <<EMI Data Sheet>> 29 September,2021 03:05

Standard : FCC Part 15 Class B

Operator : Mitsuhiro Takeda
Temp,Hum,Atm : 21.9[℃] 54.3[%] 988[hPa]




Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(μV)] | c.f [dB(1/m)] | Result QP [dB(μV/m)] | Limit QP [dB(μV/m)] | Margin QP [dB] | Height [cm] | Angle [° ] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.910 | V | 22.6 | -13.2 | 9.4 | 40.0 | 30.6 | 100.0 | 147.0 |
| 2 | 82.701 | V | 23.0 | -16.8 | 6.2 | 40.0 | 33.8 | 100.0 | 144.0 |
| 3 | 83.422 | H | 30.8 | -16.8 | 14.0 | 40.0 | 26.0 | 279.0 | 269.0 |
| 4 | 107.979 | H | 24.5 | -15.9 | 8.6 | 43.5 | 34.9 | 281.0 | 93.0 |
| 5 | 129.783 | V | 21.6 | -14.4 | 7.2 | 43.5 | 36.3 | 100.0 | 42.0 |
| 6 | 145.398 | V | 21.3 | -13.6 | 7.7 | 43.5 | 35.8 | 100.0 | 26.0 |
| 7 | 191.944 | V | 37.4 | -11.7 | 25.7 | 43.5 | 17.8 | 151.0 | 21.0 |
| 8 | 191.975 | H | 45.1 | -11.7 | 33.4 | 43.5 | 10.1 | 100.0 | 295.0 |
| 9 | 268.842 | H | 31.5 | -15.1 | 16.4 | 46.0 | 29.6 | 140.0 | 210.0 |

| | |
|---|---|
| Operation mode | MP4 + USB Read with PC mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

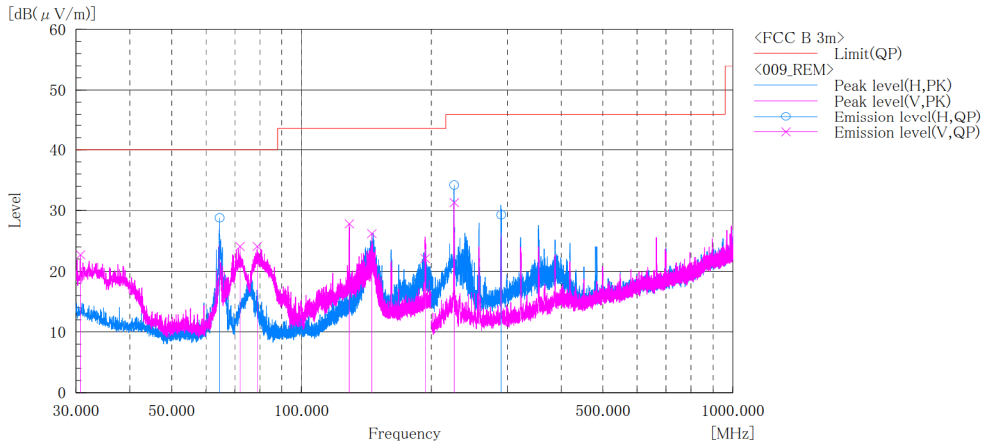
Date of test: 29-September-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz

******* RADIATED EMISSION *******
[ 10m Semi-anechoic chamber #2 ]

TUV SUD Japan Ltd. <<EMI Data Sheet>> 28 September,2021 23:50

Standard : FCC Part 15 Class B

Operator : Mitsuhiro Takeda
Temp,Hum,Atm : 21.9[℃] 54.3[%] 988[hPa]




Final Result

| No. | Frequency [MHz] | (P) | Reading QP [dB(μV)] | c.f [dB(1/m)] | Result QP [dB(μV/m)] | Limit QP [dB(μV/m)] | Margin QP [dB] | Height [cm] | Angle [° ] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 30.723 | V | 35.9 | -13.2 | 22.7 | 40.0 | 17.3 | 100.0 | 97.0 |
| 2 | 64.546 | H | 46.4 | -17.6 | 28.8 | 40.0 | 11.2 | 302.0 | 165.0 |
| 3 | 72.000 | V | 41.4 | -17.3 | 24.1 | 40.0 | 15.9 | 100.0 | 158.0 |
| 4 | 78.896 | V | 40.9 | -16.8 | 24.1 | 40.0 | 15.9 | 100.0 | 142.0 |
| 5 | 129.055 | V | 42.3 | -14.5 | 27.8 | 43.5 | 15.7 | 100.0 | 189.0 |
| 6 | 145.403 | V | 39.8 | -13.6 | 26.2 | 43.5 | 17.3 | 100.0 | 189.0 |
| 7 | 193.524 | V | 33.7 | -11.6 | 22.1 | 43.5 | 21.4 | 100.0 | 265.0 |
| 8 | 225.901 | V | 48.2 | -16.9 | 31.3 | 46.0 | 14.7 | 100.0 | 161.0 |
| 9 | 226.020 | H | 51.1 | -16.9 | 34.2 | 46.0 | 11.8 | 140.0 | 161.0 |
| 10 | 290.353 | H | 43.7 | -14.4 | 29.3 | 46.0 | 16.7 | 100.0 | 227.0 |

## 4.3 Radiated emission (above 1 GHz)

### 4.3.1 Measurement condition

| | |
|---|---|
| Frequency range | 1000 MHz-10000 MHz |
| Test place | 10 m Semi-Anechoic Chamber No. 2 |
| EUT was placed on | Styrene foam table (W) 2.0 × (D) 1.0 × (H) 0.8 m |
| Axis | 0°-360° |
| Antenna | Distance: 3.89m, 4.00m<br>Height: 1-4 m<br>Polarity: Horizontal/Vertical |
| Test receiver setting | Detector: Peak, Average<br>Bandwidth: 1 MHz |

EUT is placed on a styrene form table for table-top equipment or on insulation material for a floor-standing equipment. The styrene form table or the insulation material is placed on a rotating turn table.

Excess cables between equipment are bundled in the center. The length of bundling is 0.3-0.4 m.

Absorbers are placed between the EUT and an antenna.

The antenna is adjusted between 1-4 m in height and varied its polarization (horizontal and vertical), and the EUT azimuth is varied by the rotating turntable 0 to 360 degrees. Where height of the antenna is changed, its angle is also adjusted to the position of the EUT.

After overall frequency range is investigated with spectrum analyzer using peak detector, measurements are performed with test receiver in setting to the defined values.

The antenna is positioned from the test volume that was predetermined by the site VSWR measurement. Since this predetermined test volume is different from maximum circumference where the EUT and the peripheral devices are actually placed, the measurement distance conversion factor is added to the measurement data.

Antenna 3 dB beamwidth (antenna used: 3117)

Antenna: 3115

| Frequency (GHz) | θ3 dB (°) | 3 dB beamwidth w (m) |
|---|---|---|
| 1.0 | 66 | 3.90 |
| 2.0 | 55 | 3.12 |
| 3.0 | 39 | 2.12 |
| 4.0 | 43 | 2.36 |
| 5.0 | 44 | 2.42 |
| 6.0 | 40 | 2.18 |

Antenna: 3117

| Frequency (GHz) | θ3 dB (°) | 3 dB beamwidth w (m) |
|---|---|---|
| 1.0 | 74 | 4.52 |
| 2.0 | 60 | 3.46 |
| 3.0 | 60 | 3.46 |
| 4.0 | 53 | 2.99 |
| 5.0 | 53 | 2.99 |
| 6.0 | 50 | 2.80 |

Measurement distance: d = 3.0 m

W = 2 × d × tan (0.5 × θ3 dB)

### 4.3.2 Calculation method

Emission level = Reading + Measurement distance conversion factor + c.f. (correction factor)*

Margin = Limit - Emission level

*Note: c.f. = Antenna factor + Cable system loss + Attenuator loss - Amplifier Gain

Example)

Limit @ 1100.0 MHz: 70.0 dBµV/m (Peak)
50.0 dBµV/m (Average)

Measurement distance: 3.25 m

Measurement distance conversion factor: 20 log (3.25m/3.0m) = 0.7 dB

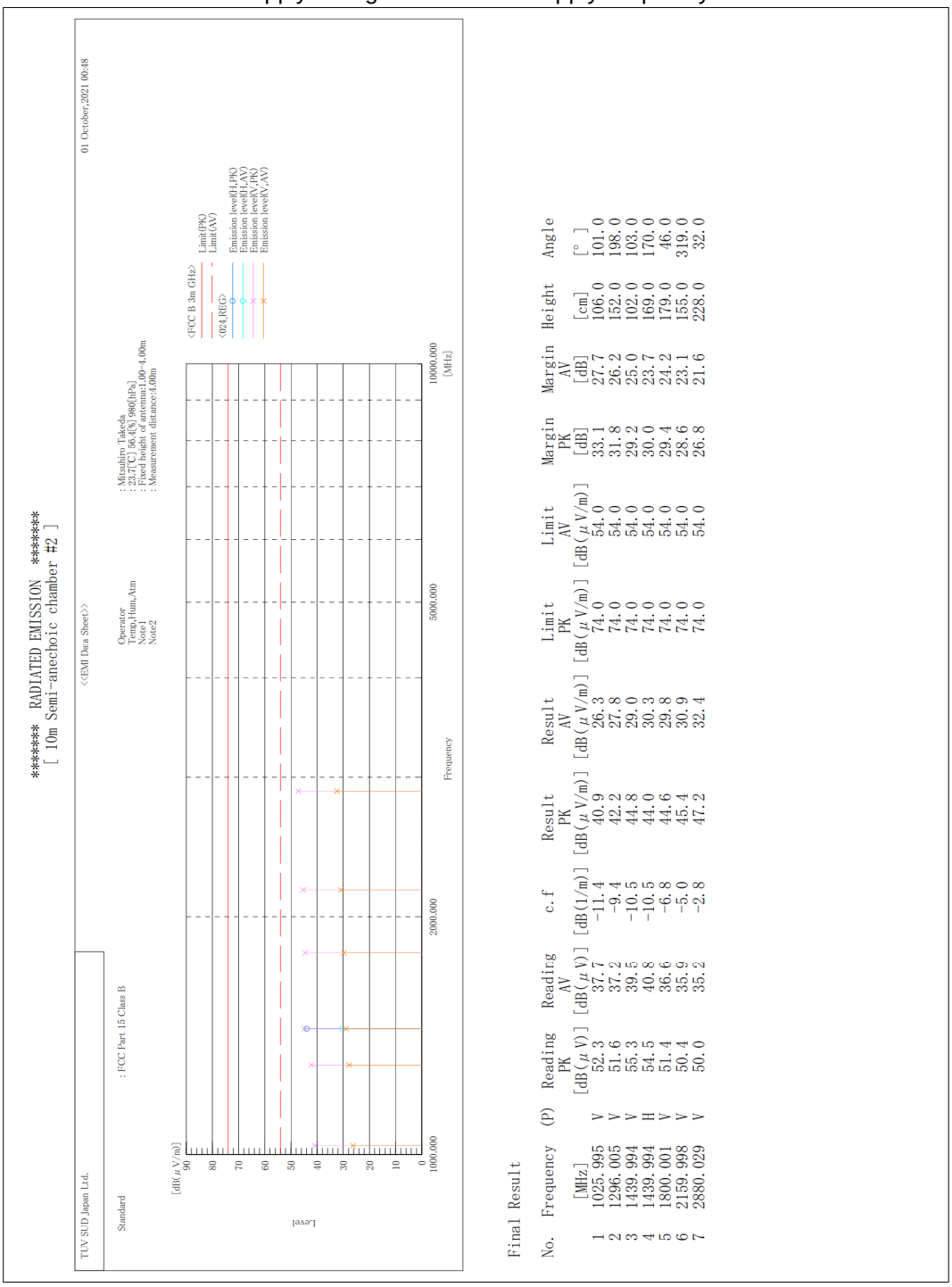
| | |
|---|---|
| Peak | Reading = 50.2 dBµV, Measurement distance conversion factor = 0.7 dB, c.f. = 1.7 dB/m<br>Emission level = 50.2 + 0.7 + 1.7 = 52.6 dBµV/m<br>Margin = 70.0 – 52.6 = 17.4 dB |
| Average | Reading = 32.0 dBµV, Measurement distance conversion factor = 0.7 dB, c.f. = 1.7 dB/m<br>Emission level = 32.0 + 0.7 + 1.7 = 34.4 dBµV/m<br>Margin = 50.0 – 34.4 = 15.6 dB |

Japan

### 4.3.3 Test data and Configuration photographs

| | |
|---|---|
| Operation mode | In Camera with ADP mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 01-October-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz

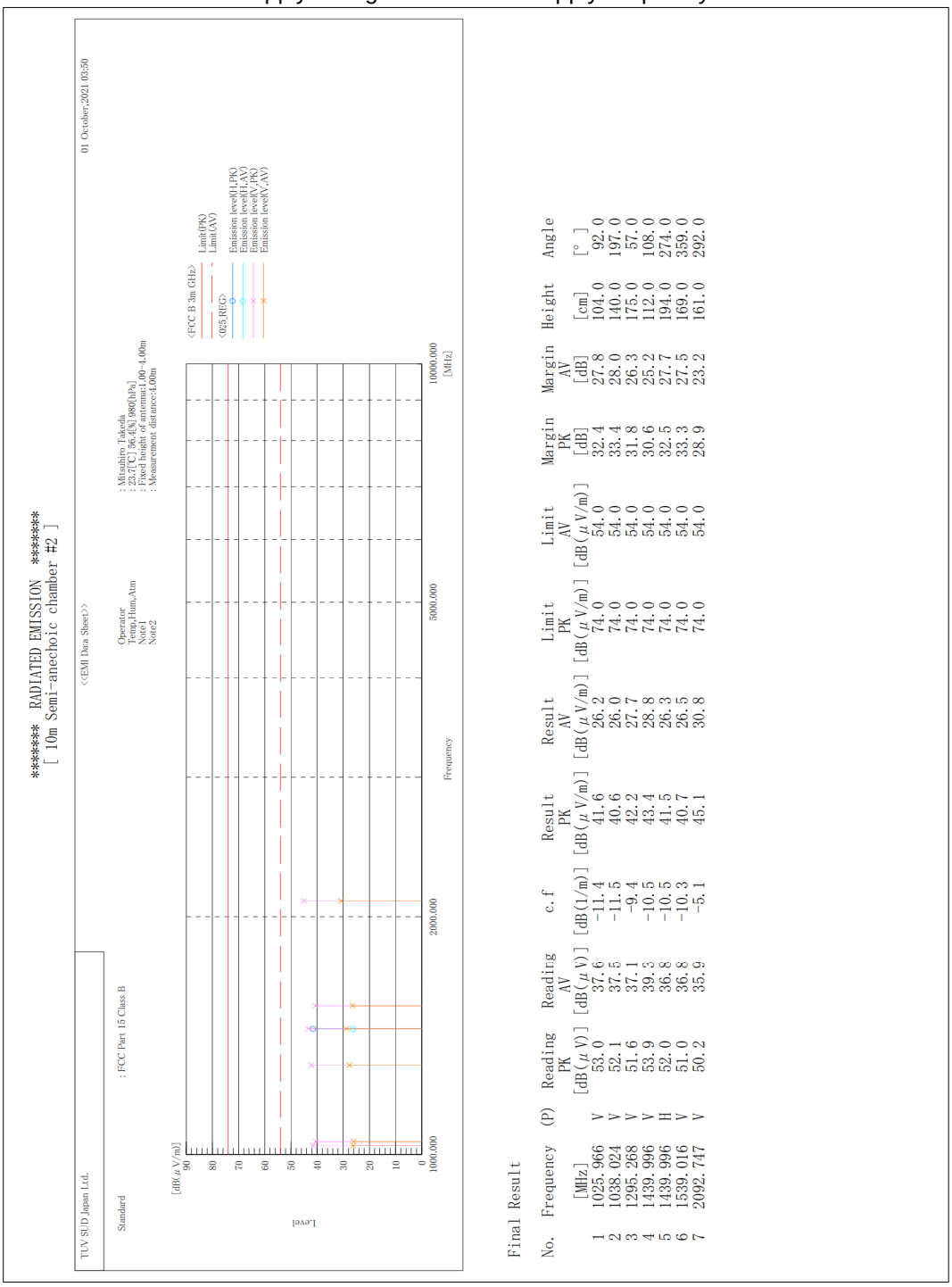



Final Result

| 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 | 1025.995 | V | 52.3 | 37.7 | -11.4 | 40.9 | 26.3 | 74.0 | 54.0 | 33.1 | 27.7 | 106.0 | 101.0 |
| 2 | 1296.005 | V | 51.6 | 37.2 | -9.4 | 42.2 | 27.8 | 74.0 | 54.0 | 31.8 | 26.2 | 152.0 | 198.0 |
| 3 | 1439.994 | V | 55.3 | 39.5 | -10.5 | 44.8 | 29.0 | 74.0 | 54.0 | 29.2 | 25.0 | 102.0 | 103.0 |
| 4 | 1439.994 | H | 54.5 | 40.8 | -10.5 | 44.0 | 30.3 | 74.0 | 54.0 | 30.0 | 23.7 | 169.0 | 170.0 |
| 5 | 1800.001 | V | 51.4 | 36.6 | -6.8 | 44.6 | 29.8 | 74.0 | 54.0 | 29.4 | 24.2 | 179.0 | 46.0 |
| 6 | 2159.998 | V | 50.4 | 35.9 | -5.0 | 45.4 | 30.9 | 74.0 | 54.0 | 28.6 | 23.1 | 155.0 | 319.0 |
| 7 | 2880.029 | V | 50.0 | 35.2 | -2.8 | 47.2 | 32.4 | 74.0 | 54.0 | 26.8 | 21.6 | 228.0 | 32.0 |

| | |
|---|---|
| Operation mode | Out Camera with ADP mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 01-October-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz

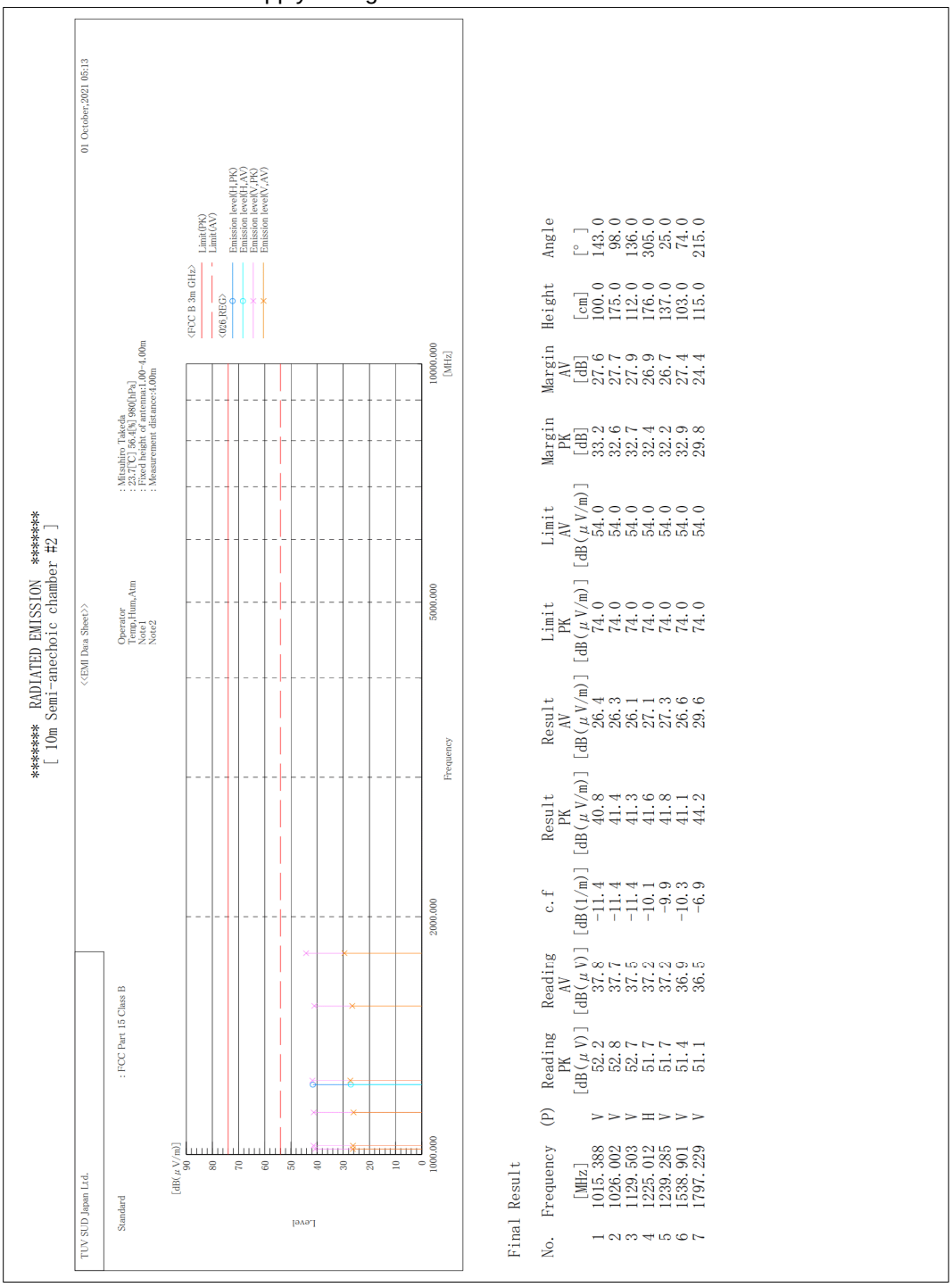



Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading AV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Margin PK [dB] | Margin AV [dB] | Height [cm] | Angle [° ] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1025.966 | V | 53.0 | 37.6 | -11.4 | 41.6 | 26.2 | 74.0 | 54.0 | 32.4 | 27.8 | 104.0 | 92.0 |
| 2 | 1038.024 | V | 52.1 | 37.5 | -11.5 | 40.6 | 26.0 | 74.0 | 54.0 | 33.4 | 28.0 | 140.0 | 197.0 |
| 3 | 1295.268 | V | 51.6 | 37.1 | -9.4 | 42.2 | 27.7 | 74.0 | 54.0 | 31.8 | 26.3 | 175.0 | 57.0 |
| 4 | 1439.996 | V | 53.9 | 39.3 | -10.5 | 43.4 | 28.8 | 74.0 | 54.0 | 30.6 | 25.2 | 112.0 | 108.0 |
| 5 | 1439.996 | H | 52.0 | 36.8 | -10.5 | 41.5 | 26.3 | 74.0 | 54.0 | 32.5 | 27.7 | 194.0 | 274.0 |
| 6 | 1539.016 | V | 51.0 | 36.8 | -10.3 | 40.7 | 26.5 | 74.0 | 54.0 | 33.3 | 27.5 | 169.0 | 359.0 |
| 7 | 2092.747 | V | 50.2 | 35.9 | -5.1 | 45.1 | 30.8 | 74.0 | 54.0 | 28.9 | 23.2 | 161.0 | 292.0 |

| | |
|---|---|
| Operation mode | MP4 with Earphone mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 01-October-2021 Supply voltage: DC 3.87 V

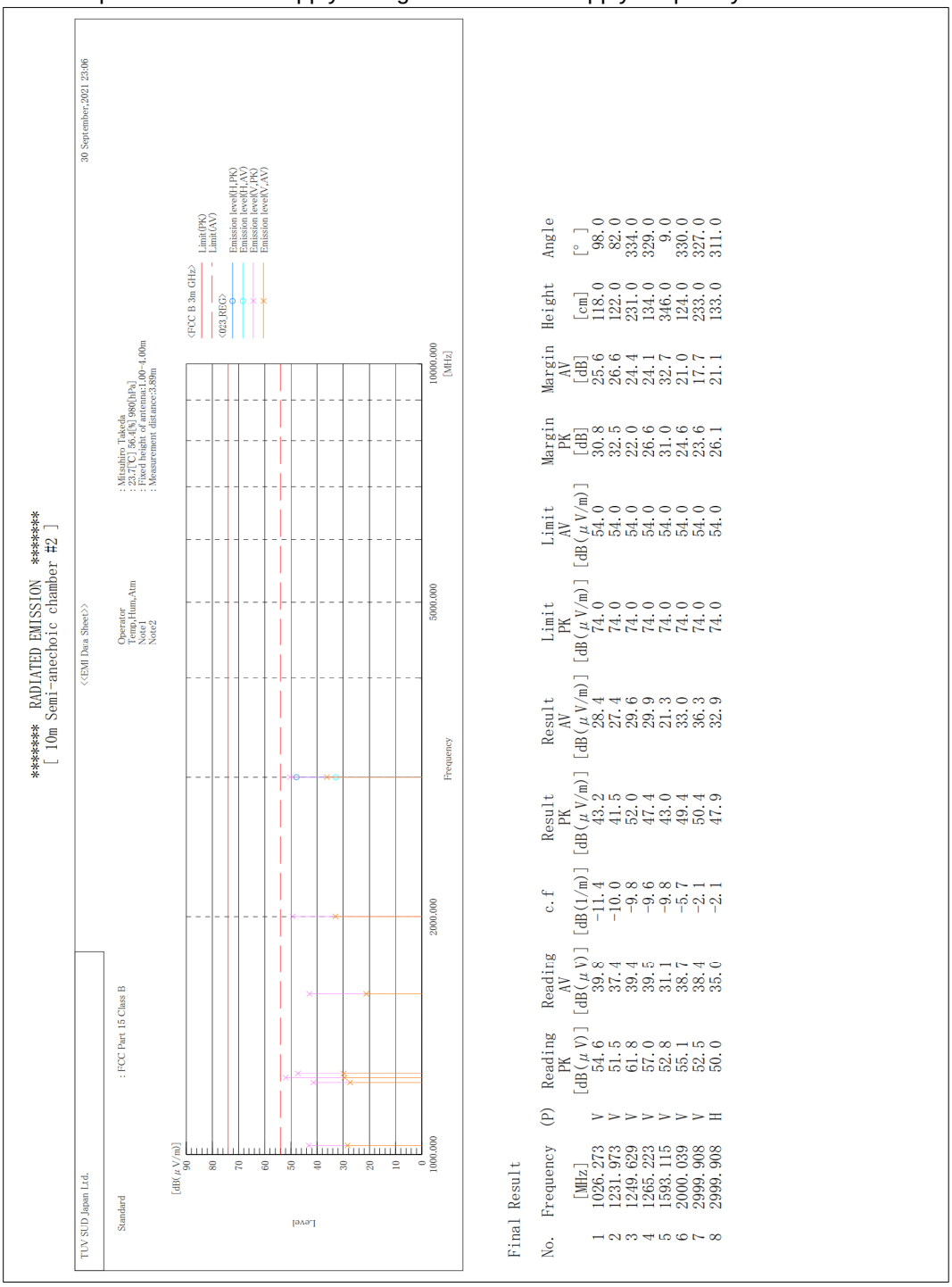



Final Result

| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading AV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Margin PK [dB] | Margin AV [dB] | Height [cm] | Angle [° ] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1015.388 | V | 52.2 | 37.8 | -11.4 | 40.8 | 26.4 | 74.0 | 54.0 | 33.2 | 27.6 | 100.0 | 143.0 |
| 2 | 1026.002 | V | 52.8 | 37.7 | -11.4 | 41.4 | 26.3 | 74.0 | 54.0 | 32.6 | 27.7 | 175.0 | 98.0 |
| 3 | 1129.503 | V | 52.7 | 37.5 | -11.4 | 41.3 | 26.1 | 74.0 | 54.0 | 32.7 | 27.9 | 112.0 | 136.0 |
| 4 | 1225.012 | H | 51.7 | 37.2 | -10.1 | 41.6 | 27.1 | 74.0 | 54.0 | 32.4 | 26.9 | 176.0 | 305.0 |
| 5 | 1239.285 | V | 51.7 | 37.2 | -9.9 | 41.8 | 27.3 | 74.0 | 54.0 | 32.2 | 26.7 | 137.0 | 25.0 |
| 6 | 1538.901 | V | 51.4 | 36.9 | -10.3 | 41.1 | 26.6 | 74.0 | 54.0 | 32.9 | 27.4 | 103.0 | 74.0 |
| 7 | 1797.229 | V | 51.1 | 36.5 | -6.9 | 44.2 | 29.6 | 74.0 | 54.0 | 29.8 | 24.4 | 115.0 | 215.0 |

| | |
|---|---|
| Operation mode | MP4 + USB Read with PC mode |
| EUT | EB1083, S/N: EMC1 - Modification State 0 |

Date of test: 30-September-2021 Supply voltage: AC 120 V Supply frequency: 60 Hz




Final Result

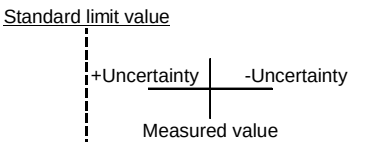
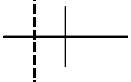
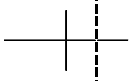
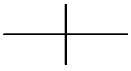
| No. | Frequency [MHz] | (P) | Reading PK [dB(μV)] | Reading AV [dB(μV)] | c.f [dB(1/m)] | Result PK [dB(μV/m)] | Result AV [dB(μV/m)] | Limit PK [dB(μV/m)] | Limit AV [dB(μV/m)] | Margin PK [dB] | Margin AV [dB] | Height [cm] | Angle [° ] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1026.273 | V | 54.6 | 39.8 | -11.4 | 43.2 | 28.4 | 74.0 | 54.0 | 30.8 | 25.6 | 118.0 | 98.0 |
| 2 | 1231.973 | V | 51.5 | 37.4 | -10.0 | 41.5 | 27.4 | 74.0 | 54.0 | 32.5 | 26.6 | 122.0 | 82.0 |
| 3 | 1249.629 | V | 61.8 | 39.4 | -9.8 | 52.0 | 29.6 | 74.0 | 54.0 | 22.0 | 24.4 | 231.0 | 334.0 |
| 4 | 1265.223 | V | 57.0 | 39.5 | -9.6 | 47.4 | 29.9 | 74.0 | 54.0 | 26.6 | 24.1 | 134.0 | 329.0 |
| 5 | 1593.115 | V | 52.8 | 31.1 | -9.8 | 43.0 | 21.3 | 74.0 | 54.0 | 31.0 | 32.7 | 346.0 | 9.0 |
| 6 | 2000.039 | V | 55.1 | 38.7 | -5.7 | 49.4 | 33.0 | 74.0 | 54.0 | 24.6 | 21.0 | 124.0 | 330.0 |
| 7 | 2999.908 | V | 52.5 | 38.4 | -2.1 | 50.4 | 36.3 | 74.0 | 54.0 | 23.6 | 17.7 | 233.0 | 327.0 |
| 8 | 2999.908 | H | 50.0 | 35.0 | -2.1 | 47.9 | 32.9 | 74.0 | 54.0 | 26.1 | 21.1 | 133.0 | 311.0 |

Japan

# 5 Measurement Uncertainty

The reported measurement uncertainty is based on a value obtained by multiplying standard uncertainty by coverage factor of k=2, and a level of confidence becomes 95 %.

| Item | Parameter | $U_{lab}$ | $U_{cispr}$ |
|---|---|---|---|
| Conducted Emission, V-AMN | 9kHz to 150kHz | ± 3.7 dB | ± 3.8 dB |
| Conducted Emission, V-AMN | 150kHz to 30MHz | ± 3.3 dB | ± 3.4 dB |
| Conducted Emission, Δ-AN | 150kHz to 30MHz | ± 4.9 dB | - |
| Conducted Emission, AN | 150kHz to 30MHz | ± 4.3 dB | - |
| Conducted Emission, AAN | 150kHz to 30MHz | ± 4.8 dB | ± 5.0 dB |
| Conducted Emission, Voltage Probe | 9kHz to 30MHz | ± 2.8 dB | ± 2.9 dB |
| Conducted Emission, Current Probe | 150kHz to 30MHz | ± 2.9 dB | ± 2.9 dB |
| Disturbance Power | 30MHz to 300MHz | ± 3.8 dB | ± 4.5 dB |
| Radiated Emission | 30MHz to 1000MHz | ± 5.5 dB | ± 6.3 dB |
| Radiated Emission | 1GHz to 6GHz | ± 4.9 dB | ± 5.2 dB |
| Radiated Emission | 6GHz to 18GHz | ± 4.6 dB | ± 5.5 dB |
| Radiated Emission | 9kHz to 30MHz | ± 3.2 dB | - |

| 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. |

# 6 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
Fax: +81-238-28-2888

**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

Japan

# Appendix A. Test Equipment

**Conducted emission at mains port**

| Equipment | Company | Model No. | Serial No. | Cal. due | Cal. Date |
|---|---|---|---|---|---|
| EMI receiver | ROHDE&SCHWARZ | ESR7 | 101742 | 31-Jan-2022 | 19-Jan-2021 |
| Line impedance stabilization network | Kyoritsu Technology Corporation | TNW-407F2 | 12-17-110-1 | 30-Jun-2022 | 01-Jun-2021 |
| Attenuator | TOYO Connector | BA-PJ-10 | N/A(S421) | 30-Jun-2022 | 01-Jun-2021 |
| Coaxial cable | FUJIKURA | 5D-2W/5m | N/A(S336) | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX106/28m | 501941/6 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/2m | MY15570/4 | 28-Feb-2022 | 03-Feb-2021 |
| Software | TOYO Corporation | EP5/CE-AJ | 0611193/V5.4.11 | N/A | N/A |

**Radiated emission (below 1 GHz)**

| Equipment | Company | Model No. | Serial No. | Cal. due | Cal. date |
|---|---|---|---|---|---|
| EMI receiver | ROHDE&SCHWARZ | ESR7 | 101742 | 31-Jan-2022 | 19-Jan-2021 |
| Biconical antenna | Schwarzbeck | VHBB9124/BBA9106 | 1344 | 31-Mar-2022 | 09-Mar-2021 |
| Log-periodic antenna | Schwarzbeck | VUSLP9111B | 344 | 31-May-2022 | 31-May-2021 |
| Attenuator | TDC | TAT-43B-03 | N/A(S396) | 31-Oct-2021 | 30-Oct-2020 |
| Attenuator | TOYO Connector | NA-PJ-6 | N/A(S508) | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/1m | SN MY20467/6 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/8m | SN MY30031/4 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX106/10m | 501942/6 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/2m | MY34424/4 | 28-Feb-2022 | 03-Feb-2021 |
| Preamplifier | SONOMA | 310 | 400316 | 31-Mar-2022 | 11-Mar-2021 |
| 10m Semi-anechoic Chamber | TOKIN | N/A | N/A(9005-NSA3m/TTΦ3m) | 28-Feb-2022 | 02-Feb-2021 |
| Software | TOYO Corporation | EP5/RE-AJ | 0611193/V5.6.0 | N/A | N/A |

**Radiated emission (above 1 GHz)**

| Equipment | Company | Model No. | Serial No. | Cal. due | Cal. date |
|---|---|---|---|---|---|
| Spectrum analyzer | ROHDE&SCHWARZ | FSV40 | 101732 | 31-Mar-2022 | 18-Mar-2021 |
| Low Noise Pre Amplifier | tsj | MLA-0118-J02-40 | 19326 | 31-Dec-2021 | 16-Dec-2020 |
| Double ridged guide antenna | ETS LINDGREN | 3117 | 00052315 | 31-May-2022 | 24-May-2021 |
| Attenuator | HUBER+SUHNER | 6803.17.B | N/A(2341) | 31-Dec-2021 | 16-Dec-2020 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/1m | MY38347/4 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/9m | 800691/4 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX106/10m | 501942/6 | 28-Feb-2022 | 03-Feb-2021 |
| Microwave cable | HUBER+SUHNER | SUCOFLEX104/2m | MY34424/4 | 28-Feb-2022 | 03-Feb-2021 |
| Absorber | NEC TOKIN | TFA | N/A | N/A | N/A |
| 10m Semi-anechoic Chamber | TOKIN | N/A | N/A(9005-SVSWR/TTΦ3m) | 28-Feb-2022 | 03-Feb-2021 |
| Software | TOYO Corporation | EP5/RE-AJ | 0611193/V6.0.140 | N/A | N/A |