Report on the RF Testing of:

KYOCERA Corporation
Mobile Phone, Model: EB1157
FCC ID: JOYEB1157

In accordance with FCC Part 15 Subpart C (15.225)

Prepared for: KYOCERA Corporation
Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku
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Document Number: JPD-TR-23078-0

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Hiroaki Suzuki			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Hiroaki Suzuki	Deputy Manager of RF Group	Approved Signatory	2023-08-18

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EXECUTIVE SUMMARY – Result: Complied
A sample(s) of this product was tested and the result above was confirmed in accordance with FCC Part 15 Subpart C (15.225).

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Japan

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1 Summary of Test

1.1 Modification history of the test report

Document Number	Modification History	Issue Date
JPD-TR-23078-0	First Issue	Refer to the cover page

1.2 Standards

CFR47 FCC Part 15 Subpart C (15.225)

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
2.1049 RSS-Gen 6.7	Occupied Bandwidth	Conducted	PASS	-
15.209 15.225 (a)(b)(c)(d)	Operation within the band 13.110-14.010MHz	Radiated	PASS	-
15.209 15.225 (d)	Transmitter Radiated Spurious Emissions	Radiated	PASS	-
15.225 (e)	Frequency Tolerance	Conducted	PASS	-
15.207	AC Power Line Conducted Emissions	Conducted	PASS	-

1.6 Test information

None

1.7 Test set up

Table-top

1.8 Test period

23-June-2023- 4-August-2023

Japan

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	EB1157
Serial number	358018240001065
Trade name	Kyocera
Number of sample(s)	1
EUT condition	Pre-Production
Power rating	Battery: DC 3.87 V
Size	(W) 75 mm × (D) 14.6 mm × (H) 154 mm
Environment	Indoor and Outdoor use
Terminal limitation	-20 ˚C to 60 ˚C
Hardware version	Pre-Production
Software version	0.130RI
Firmware version	Not applicable
RF Specification	
Frequency range	13.56MHz
Modulation method	ASK
Antenna type	Loop antenna

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: EB1157, Serial Number: 358018240001065			
0	As supplied by the applicant	Not Applicable	Not Applicable

Japan

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 Operating mode

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 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.

2.5 Operating flow

[Tx mode]
i) NFC test program setup to the Software
ii) Start test mode

Japan

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	EB1157	358018240001065	JOYEB1157	EUT
2	AC Adapter	KDDI	0602PQA	N/A	N/A	*

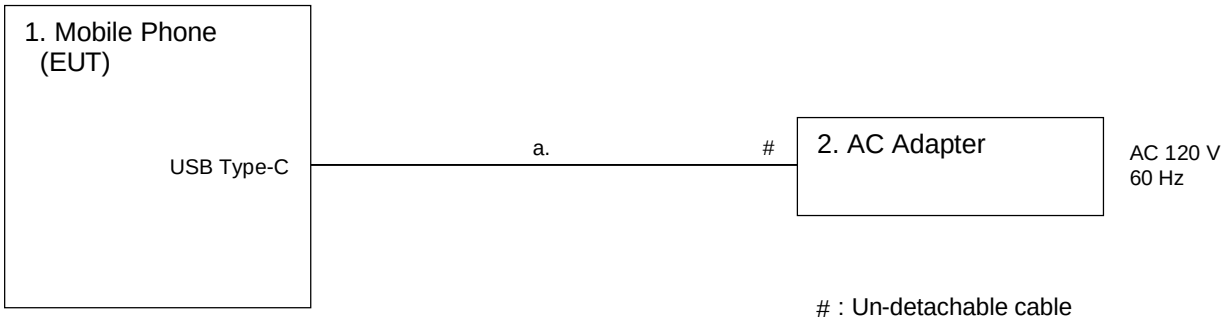
*:AC power line Conducted Emission Test.

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 Occupied Bandwidth

4.1.1 Measurement procedure

[FCC 2.1049, RSS-Gen 6.7]

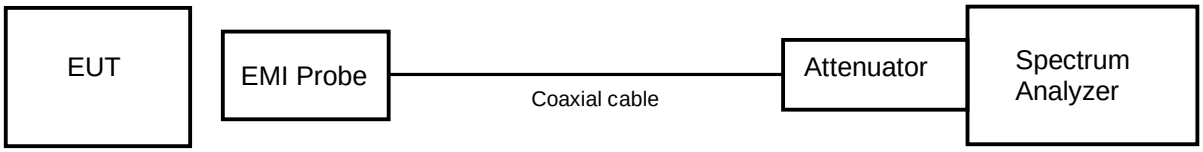
The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to approach 1% of the selected span or less than 1%. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

The spectrum analyzer is set to;
- RBW=1kHz, VBW=3kHz, Span=100kHz, Sweep=auto, Detector=Peak, Trace mode = max hold.

The EUT was set to operate with following conditions.
- 13.56MHz

The test mode of EUT is as follows.
- Transmit mode

- Test configuration



4.1.2 Limit

None

4.1.3 Measurement result

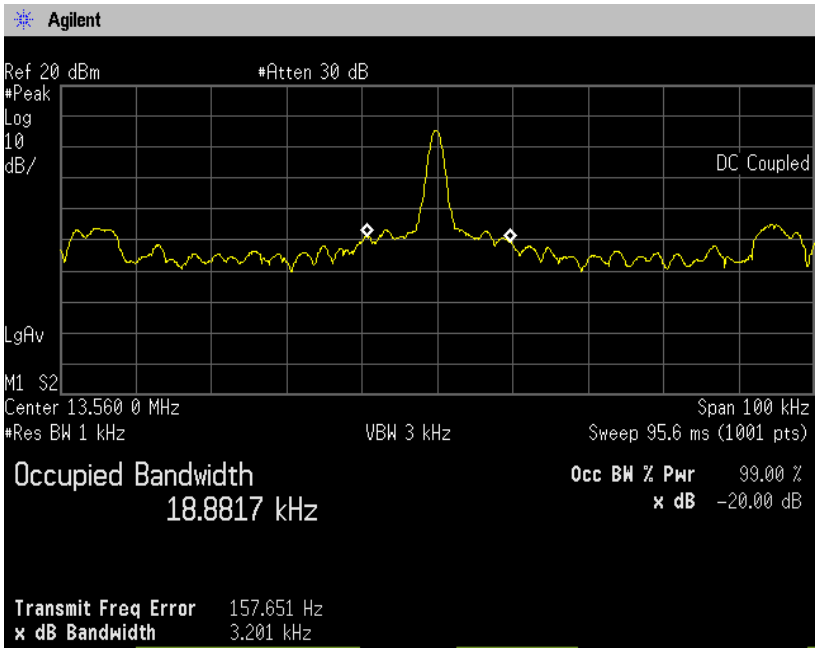
Date : 3-August-2023
Temperature : 23.3 [˚C]
Humidity : 49.4 [%]
Test place : Shielded room No.4

Test engineer : Kazunori Saito

Frequency (MHz)	Occupied Bandwidth (kHz)
13.56	18.8817

Japan

4.1.4 Trace data



4.2 Operation within the band 13.110-14.010MHz

4.2.1 Measurement procedure

[FCC 15.209, 15.225 (a)(b)(c)(d)]

Test was applied by following conditions.

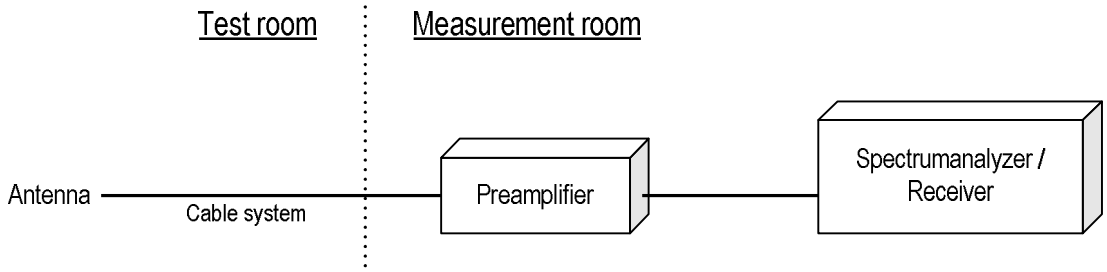
Test method	:	ANSI C63.10
Frequency range	:	13.110MHz to 14.010MHz
Test place	:	3m Semi-anechoic chamber
EUT was placed on	:	Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m
Antenna distance	:	3m

Test receiver setting

- Detector	:	Quasi-peak
- Bandwidth	:	9kHz

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Then, emission measurements frequency range 13.110MHz to 14.010MHz were performed with test receiver in above setting. The turntable and the Loop antenna are rotated by 360 degrees and stopped at azimuth of producing the maximum emission. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition.

- Test configuration



4.2.2 Calculation method

Emission level = Reading + (Ant. factor + Cable system loss – Amp. Gain)
Margin = Limit – Emission level

Japan

4.2.3 Limit

(a) The field strength of any emissions within the band 13.553-13.567MHz shall not exceed 15,848uV/m at 30m.
(b) Within the band 13.410-13.553MHz and 13.567-13.710MHz, the field strength of any emissions shall not exceed 334uV/m at 30m.
(c) Within the band 13.110-13.410MHz and 13.710-14.010MHz, the field strength of any emissions shall not exceed 106uV/m at 30m.
(d) The field strength of any emissions appearing outside of the 13.110-14.010MHz and shall not exceed the general radiated emission limits in FCC 15.209.

Note:
1. The lower limit shall apply at the transition frequencies.
2. Emission level [dBuV/m] = 20log Emission [uV/m]
3. Measurements were corrected to 30m using 40log (3/30) = -40.0dB

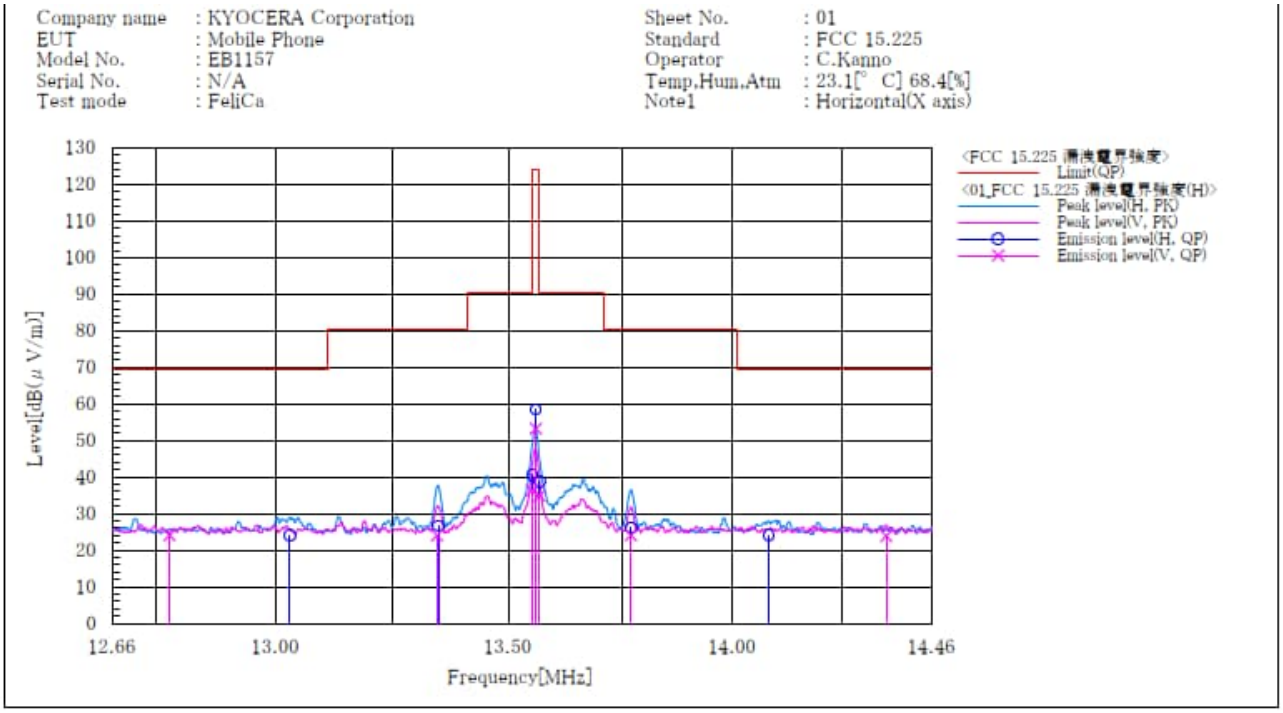
4.2.4 Test data

Date : 23-June-2023
Temperature : 23.1 [˚C]
Humidity : 68.4 [%] Test engineer : Chiaki Kanno
Test place : 3m Semi-anechoic chamber

Frequency range (MHz)	Frequency (MHz)	Level		Limit (dBuV/m)	Margin (dB)	Result
		Measurered at 3m (dBuV/m)	Measurered at 30m (dBuV/m)			
13.553-13.567	13.560	59.9	19.9	84.0	64.1	PASS
13.41-13.553	13.552	42.0	2.0	50.5	48.5	PASS
13.567-13.71	13.568	40.1	0.1	50.5	50.4	PASS
13.11-13.41	13.347	27.3	-12.7	40.5	53.2	PASS
13.71-14.01	13.771	26.5	-13.5	40.5	54.0	PASS
12.66-13.11	12.953	24.1	-15.9	29.5	45.4	PASS
14.01-14.46	14.082	24.0	-16.0	29.5	45.5	PASS

Japan

4.2.5 Trace data

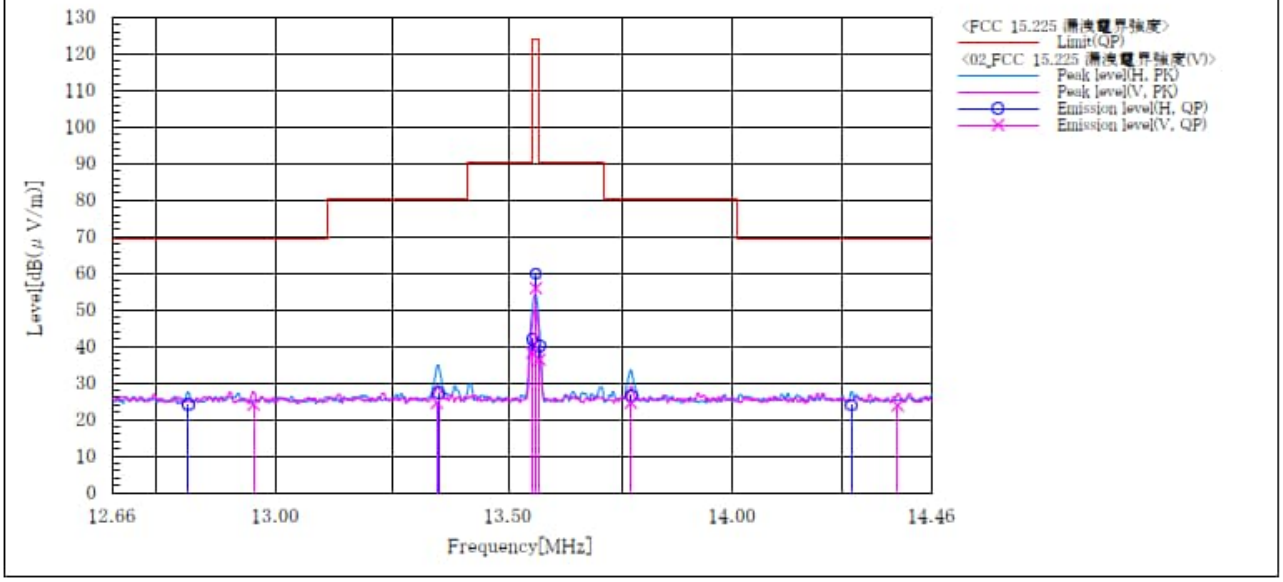


Final Result

No.	Frequency [MHz]	Pol	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 [deg]	Remark
1	13.560	V	59.6	-6.4	53.2	124.0	70.8	100.0	94.0	
2	13.552	V	42.7	-6.4	36.3	90.5	54.2	100.0	94.0	
3	13.568	V	41.3	-6.4	34.9	90.5	55.6	100.0	94.0	
4	13.345	V	30.4	-6.4	24.0	80.5	56.5	100.0	276.0	
5	13.771	V	30.5	-6.4	24.1	80.5	56.4	100.0	101.0	
6	12.778	V	30.5	-6.4	24.1	69.5	45.4	100.0	27.0	
7	14.353	V	30.3	-6.4	23.9	69.5	45.6	100.0	316.0	
8	13.560	H	64.9	-6.4	58.5	124.0	65.5	100.0	0.0	
9	13.552	H	47.1	-6.4	40.7	90.5	49.8	100.0	0.0	
10	13.568	H	45.3	-6.4	38.9	90.5	51.6	100.0	0.0	
11	13.347	H	33.1	-6.4	26.7	80.5	53.8	100.0	3.0	
12	13.771	H	32.6	-6.4	26.2	80.5	54.3	100.0	2.0	
13	13.029	H	30.4	-6.4	24.0	69.5	45.5	100.0	204.0	
14	14.082	H	30.4	-6.4	24.0	69.5	45.5	100.0	320.0	

Company name : KYOCERA Corporation
EUT : Mobile Phone
Model No. : EB1157
Serial No. : N/A
Test mode : FeliCa

Sheet No. : 02
Standard : FCC 15.225
Operator : C.Kanno
Temp,Hum,Atm : 23.1[℃ C] 68.4[%]
Note1 : Vertical(Z axis)



Final Result

No.	Frequency [MHz]	Pol	Reading QP [dB(μ V)]	c.f [dB(1/m)]	Result QP [dB(μ V/m)]	Limit QP [dB(μ V/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	13.560	V	62.3	-6.4	55.9	124.0	68.1	100.0	228.0	
2	13.552	V	44.7	-6.4	38.3	90.5	52.2	100.0	228.0	
3	13.568	V	42.8	-6.4	36.4	90.5	54.1	100.0	228.0	
4	13.344	V	30.9	-6.4	24.5	80.5	56.0	100.0	82.0	
5	13.771	V	31.0	-6.4	24.6	80.5	55.9	100.0	89.0	
6	12.953	V	30.5	-6.4	24.1	69.5	45.4	100.0	234.0	
7	14.380	V	30.3	-6.4	23.9	69.5	45.6	100.0	3.0	
8	13.560	H	66.3	-6.4	59.9	124.0	64.1	100.0	125.0	
9	13.552	H	48.4	-6.4	42.0	90.5	48.5	100.0	125.0	
10	13.568	H	46.5	-6.4	40.1	90.5	50.4	100.0	125.0	
11	13.347	H	33.7	-6.4	27.3	80.5	53.2	100.0	154.0	
12	13.771	H	32.9	-6.4	26.5	80.5	54.0	100.0	296.0	
13	12.816	H	30.4	-6.4	24.0	69.5	45.5	100.0	176.0	
14	14.273	H	30.3	-6.4	23.9	69.5	45.6	100.0	4.0	

Japan

4.3 Radiated Emissions

4.3.1 Measurement procedure

[FCC 15.209, 15.225 (d)]

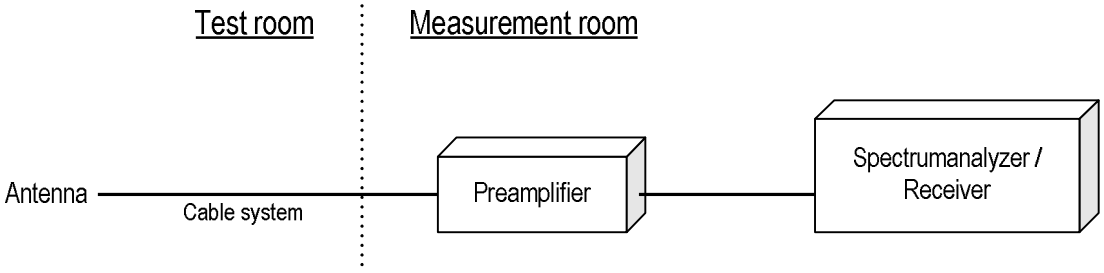
Test was applied by following conditions.

Test method	:	ANSI C63.10
Frequency range	:	9kHz to 30MHz
Test place	:	3m Semi-anechoic chamber
EUT was placed on	:	Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m
Antenna distance	:	3m
Test receiver setting		
- Detector	:	Average (9kHz-90kHz, 110kHz-490kHz), Quasi-peak
- Bandwidth	:	200Hz, 9kHz

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.

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Then, emission measurements up to 30MHz were performed with test receiver in above setting. The turntable and the Loop antenna are rotated by 360 degrees and stopped at azimuth of producing the maximum emission. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition.

- Test configuration



Test was applied by following conditions.

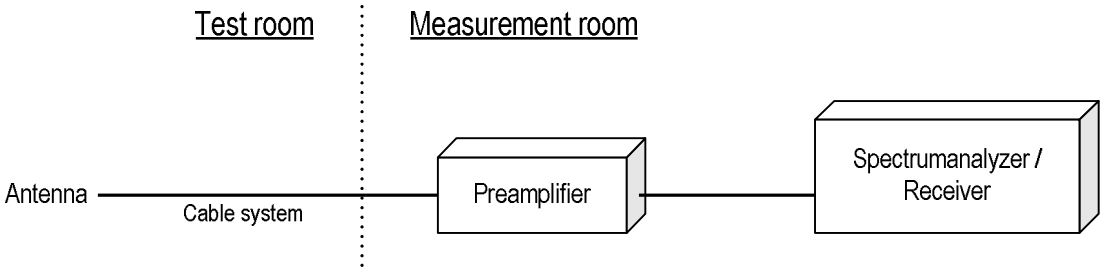
Test method	:	ANSI C63.10
Frequency range	:	30MHz to 1000MHz
Test place	:	3m Semi-anechoic chamber
EUT was placed on	:	Styrofoam table / (W)1.0m × (D)1.0m × (H)0.8m
Antenna distance	:	3m

Test receiver setting

- Detector	:	Quasi-peak
- Bandwidth	:	120kHz

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Then, emission measurements up to 1000MHz were performed with test receiver in above setting. In order to find the maximum emissions, antenna is adjusted between 1m and 4m in height and varied its polarization (horizontal and vertical), and EUT azimuth was also varied by rotating turntable 0 to 360 degrees. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition.

- Test configuration



4.3.2 Calculation method

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

[150kHz to 1000MHz]
Emission level = Reading + (Ant. factor + Cable system loss – Amp. Gain)
Margin = Limit – Emission level

Japan

4.3.3 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. Measurements were corrected to 300m using 40log (3/300) = -80.0dB
   Measurements were corrected to 30m using 40log (3/30) = -40.0dB

Japan

4.3.4 Test data

Date : 24-June-2023
Temperature : 23.1 [˚C]
Humidity : 68.4 [%] Test engineer :
Test place : 3m Semi-anechoic chamber Chiaki Kanno

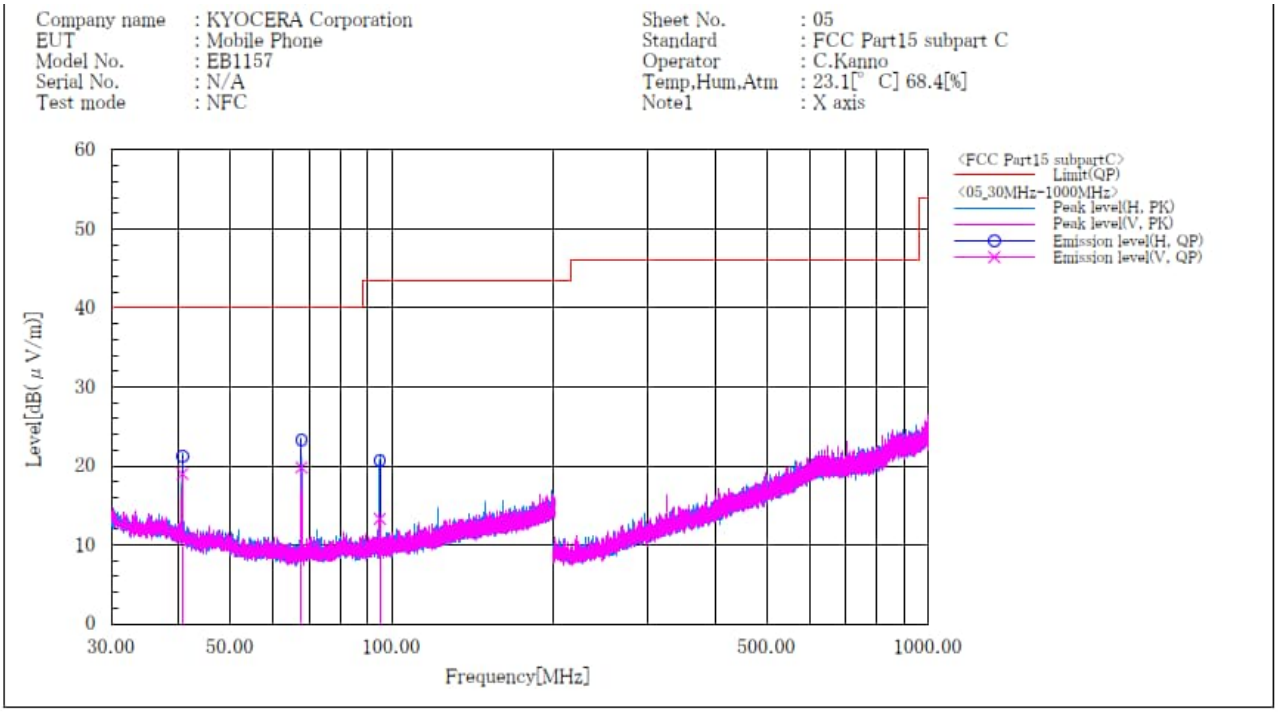
[9kHz to 30MHz]

Frequency (MHz)	Reading [dBuV] At 3m	c.f [dB(1/m)]	Result [dBuV/m] At 3m	Result [dBuV/m] At 30m	Limit [dBuV/m] At 30m	Margin (dB)	Result
27.12	29.1	-5.4	23.7	-16.3	29.5	45.8	PASS

[30MHz to 1000MHz]

Company name : KYOCERA Corporation
EUT : Mobile Phone
Model No. : EB1157
Serial No. : N/A
Test mode : NFC

Sheet No. : 05
Standard : FCC Part15 subpart C
Operator : C.Kanno
Temp,Hum,Atm : 23.1[˚ C] 68.4[%]
Note1 : X axis



Final Result

No.	Frequency [MHz]	Pol	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 [deg]	Remark
1	40.680	H	35.9	-14.7	21.2	40.0	18.8	223.0	3.0	
2	40.680	V	33.7	-14.7	19.0	40.0	21.0	100.0	263.0	
3	67.800	H	40.2	-16.9	23.3	40.0	16.7	276.0	10.0	
4	67.800	V	36.7	-16.9	19.8	40.0	20.2	100.0	287.0	
5	94.930	H	36.6	-15.9	20.7	43.5	22.8	195.0	25.0	
6	94.930	V	29.2	-15.9	13.3	43.5	30.2	100.0	282.0	

Japan

4.4 Frequency Tolerance

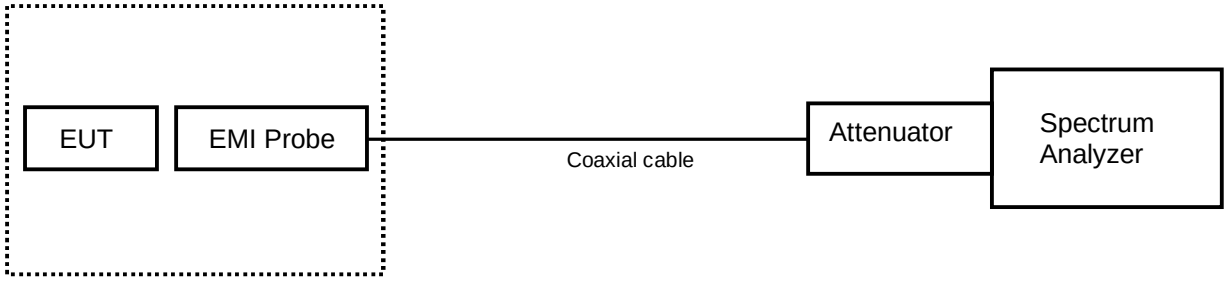
4.4.1 Measurement procedure

[FCC 15.205 (e)]

The EUT was placed of an inside of a constant temperature chamber as the temperature in the chamber was varied between -30˚C and +50˚C. The temperature was incremented by 10˚C intervals and the unit was allowed to stabilize at each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channels center frequency was recorded.

The EUT was set to operate with following conditions.
- 13.56MHz
The test mode of EUT is as follows.
- Transmit mode

- Test configuration



Constant Temperature Chamber

4.4.2 Limit

The Frequency tolerance of the carrier signal shall be maintained within +/- 0.01% over a temperature variation of -30 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

Japan

4.4.3 Test data

Date : 3-August-2023
Temperature : 23.3 [˚C]
Humidity : 49.4 [%] Test engineer :
Test place : Shielded room No.4 Kazunori Saito

Reference Frequency: EUT Channel 13.56MHz at 20ºC Limit: ±0.01% = ±100ppm = ±0.135603MHz											
Power Supply [V]	Temperature [ºC]	Measurements Frequency (startup) [MHz]	Frequency Tolerance (startup) [ppm]	Measurements Frequency (2mins) [MHz]	Frequency Tolerance (2mins) [ppm]	Measurements Frequency (5mins) [MHz]	Frequency Tolerance (5mins) [ppm]	Measurements Frequency (10mins) [MHz]	Frequency Tolerance (10mins) [ppm]	Limit [ppm]	Result
3.87	50	13.559791	-15.413	13.559786	-15.782	13.559782	-16.077	13.559781	-16.150	±100	PASS
	40	13.559814	-13.717	13.559807	-14.233	13.559805	-14.381	13.559803	-14.528		
	30	13.559841	-11.726	13.559832	-12.389	13.559831	-12.463	13.559825	-12.906		
	20	13.560000	-	13.559816	-13.569	13.559806	-14.307	13.559808	-14.159		
	10	13.559813	-13.791	13.559814	-13.717	13.559812	-13.864	13.559814	-13.717		
	0	13.559911	-6.563	13.559912	-6.490	13.559911	-6.563	13.559909	-6.711		
	-10	13.559883	-8.628	13.559879	-8.923	13.559880	-8.850	13.559879	-8.923		
	-20	13.559908	-6.785	13.559908	-6.785	13.559905	-7.006	13.559905	-7.006		
	-30	13.559906	-6.932	13.559907	-6.858	13.559906	-6.932	13.559908	-6.785		
3.29	20	13.559856	-10.619	13.559853	-10.841	13.559852	-10.914	13.559850	-11.062		
4.45	20	13.559827	-12.758	13.559820	-13.274	13.559816	-13.569	13.559814	-13.717		

Note. Frequency Tolerance (ppm) = (Measurements Frequency (MHz) – Reference Frequency (MHz)) / Reference Frequency (MHz) x 1000000

The primary power supply voltage rating of this EUT is 85% to 115%

Japan

4.5 AC Power Line Conducted Emissions

4.5.1 Measurement procedure

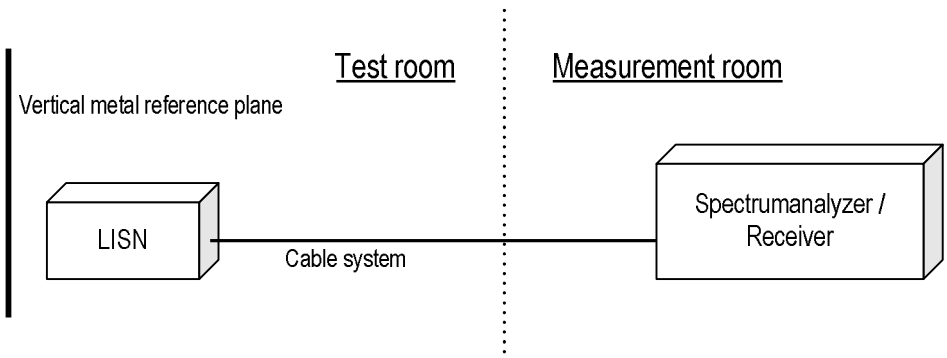
[FCC 15.207]

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



Japan

4.5.2 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

4.5.3 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.

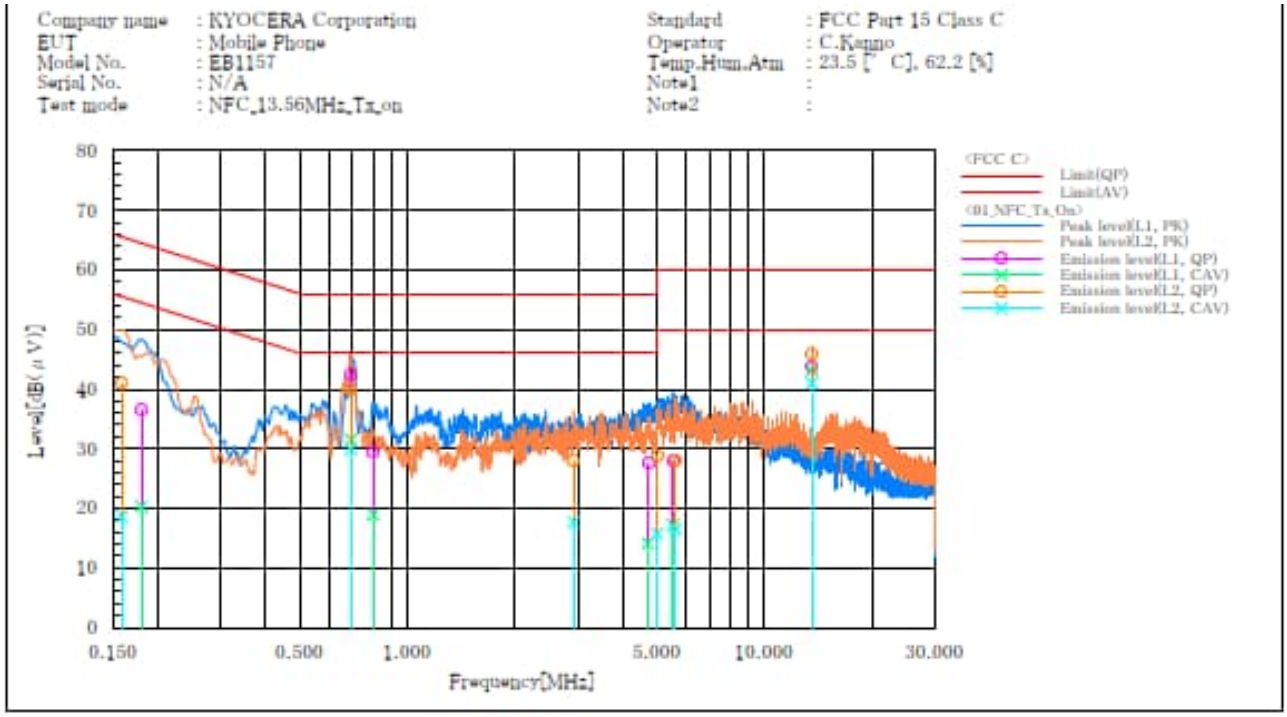
4.5.4 Measurement result

Date : 30-June-2023
Temperature : 23.5 [˚C]
Humidity : 62.2 [%] Test engineer :
Test place : 3m Semi-anechoic chamber Chiaki Kanno

Japan

4.5.5 Test data

[Transmit ON]



Final Result

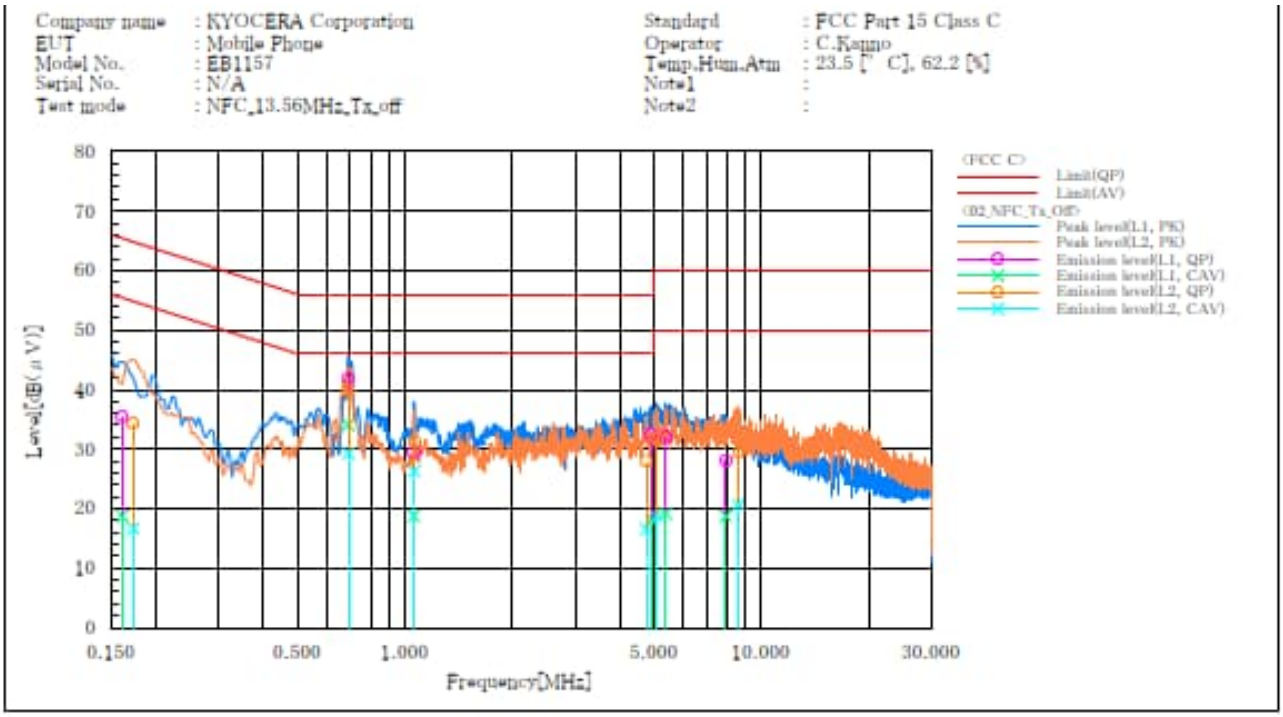
— L1 —

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	0.180	26.0	9.8	10.5	36.5	20.3	64.5	54.5	28.0	34.2
2	0.696	32.2	21.3	10.3	42.5	31.6	56.0	46.0	13.5	14.4
3	0.802	19.0	8.5	10.4	29.4	18.9	56.0	46.0	26.6	27.1
4	4.714	16.8	3.4	10.7	27.5	14.1	56.0	46.0	28.5	31.9
5	5.543	17.2	6.5	10.7	27.9	17.2	60.0	50.0	32.1	32.8
6	13.560	32.4	31.7	11.5	43.9	43.2	60.0	50.0	16.1	6.8

— L2 —

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	0.158	30.6	8.1	10.5	41.1	18.6	65.6	55.6	24.5	37.0
2	0.693	29.8	19.6	10.3	40.1	29.9	56.0	46.0	15.9	16.1
3	2.924	17.4	7.2	10.5	27.9	17.7	56.0	46.0	28.1	28.3
4	4.993	18.1	5.0	10.7	28.8	15.7	56.0	46.0	27.2	30.3
5	5.622	17.4	5.8	10.7	28.1	16.5	60.0	50.0	31.9	33.5
6	13.560	34.3	29.5	11.5	45.8	41.0	60.0	50.0	14.2	9.0

[Transmit OFF]



Final Result

L1

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	0.161	25.0	8.2	10.5	35.5	18.7	65.4	55.4	29.9	36.7
2	0.693	31.6	23.8	10.3	41.9	34.1	56.0	46.0	14.1	11.9
3	1.058	19.1	8.3	10.4	29.5	18.7	56.0	46.0	26.5	27.3
4	4.913	21.8	7.4	10.7	32.5	18.1	56.0	46.0	23.5	27.9
5	5.385	21.3	8.5	10.7	32.0	19.2	60.0	50.0	28.0	30.8
6	7.936	17.3	7.8	10.9	28.2	18.7	60.0	50.0	31.8	31.3

L2

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	0.173	23.8	6.1	10.5	34.3	16.6	64.8	54.8	30.5	38.2
2	0.693	29.5	19.0	10.3	39.8	29.3	56.0	46.0	16.2	16.7
3	1.062	21.0	16.0	10.3	31.3	26.3	56.0	46.0	24.7	19.7
4	4.748	17.3	5.8	10.7	28.0	16.5	56.0	46.0	28.0	29.5
5	5.076	20.9	8.0	10.7	31.6	18.7	60.0	50.0	28.4	31.3
6	8.614	18.5	9.7	11.0	29.5	20.7	60.0	50.0	30.5	29.3

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.

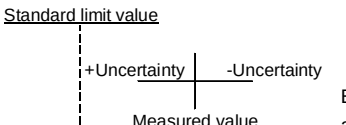
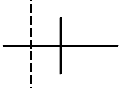
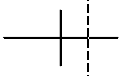
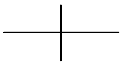
Japan

6 Measurement Uncertainty

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 %.

3m Semi Anechoic Chamber	
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)	±3.8 dB
Radiated emission (30 MHz – 1000 MHz)	±5.4 dB
Radiated emission (1 GHz – 6 GHz)	±4.6 dB
Radiated emission (6 GHz – 18 GHz)	±4.7 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 %

Measurement uncertainty of not listed immunity tests is considered to suffice because requirements of relevant standards are met.

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

Antenna port conducted test

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
Spectrum analyzer	Agilent Technologies	E4440A	US44302655	30-Sep-2023	05-Sep-2022
Attenuator	HUBER+SUHNER	6810.19.A	N/A(S450)	31-Dec-2023	19-Dec-2022
EMI Probe	ANRITSU	MA2601C	N/A(1753)	30-Nov-2023	08-Nov-2022
Micro wave cable	Junkosha Inc.	MWX221/1m	N/A(S400)	31-Mar-2024	16-Mar-2023
Low temperature and humidity chamber	Espec	PL1KP	14007261	30-Sep-2023	02-Sep-2022

Radiated emission

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESW44	103171	30-Sep-2023	20-Sep-2022
Preamplifier	SONOMA	310	372170	30-Sep-2023	15-Sep-2022
Loop antenna	ROHDE&SCHWARZ	HFH2-Z2	100515	30-Apr-2024	21-Apr-2023
Attenuator	TDC	TAT-43B-06	N/A(S209)	31-Jul-2024	20-Jul-2023
Biconical antenna	Schwarzbeck	VHBB9124/BBA9106	1145	31-Jul-2024	14-Jul-2023
Log periodic antenna	Schwarzbeck	VUSLP9111B	346	30-Nov-2023	16-Nov-2022
Attenuator	TOYO Connector	NA-PJ-6/6dB	N/A(S541)	30-Sep-2023	28-Sep-2022
Attenuator	TAMAGAWA.ELEC	CFA-10/3dB	N/A(S503)	31-Jul-2024	20-Jul-2023
Microwave cable	HUBER+SUHNER	SUCOFLEX104/9m	800690/4	31-Oct-2023	26-Oct-2022
		SUCOFLEX104/1m	my24610/4	31-Dec-2023	19-Dec-2022
		SUCOFLEX104/9m	2001099/4	31-Dec-2023	22-Dec-2022
		SUCOFLEX104/1m	MY32976/4	31-Dec-2023	22-Dec-2022
		SUCOFLEX104/2m	SN MY28404/4	31-Dec-2023	19-Dec-2022
		SUCOFLEX104/7m	41625/6	31-Dec-2023	22-Dec-2022
PC	DELL	OPTIPLEX9010	00186-228-073-851	N/A	N/A
Software	TOYO Technica	ES10/RE-AJ	Ver.2023.01.001	N/A	N/A
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-NSA)	31-May-2024	28-May-2023

Conducted emission at mains port

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESW44	103171	30-Sep-2023	20-Sep-2022
Attenuator	HUBER+SUHNER	6810.01.A	N/A (S411)	31-Dec-2023	20-Dec-2022
Line impedance stabilization network	Kyoritsu Electrical Works, Ltd.	TNW-407F2	12-17-110-2	30-Jun-2024	22-Jun-2023
Microwave cable	HUBER+SUHNER	SUCOFLEX104/5m	MY33601/4	31-Dec-2023	19-Dec-2022
Microwave cable	HUBER+SUHNER	SUCOFLEX104/2m	MY37268/4	31-Oct-2023	27-Oct-2022
Coaxial cable	HUBER+SUHNER	RG214/U/10m	N/A (S194)	31-Dec-2023	22-Dec-2022
PC	DELL	OPTIPLEX9010	00186-228-073-851	N/A	N/A
Software	TOYO Technica	ES10/RE-AJ	Ver.2023.01.001	N/A	N/A

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