

EMI TEST REPORT

Test Report No. 15411803H-A-R1

Customer	DENSO CORPORATION
Description of EUT	Remote Keyless Entry System and TPMS (Receiver)
Model Number of EUT	23ACC
FCC ID	HYQ23ACC
Test Regulation	FCC Part 15 Subpart B
Test Result	Complied
Issue Date	September 26, 2024
Remarks	-

Representative test engineerJunya Okuno
Engineer**Approved by**Shinichi Miyazono
Leader

CERTIFICATE 5107.02

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

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REVISION HISTORY

Original Test Report No. 15411803H-A

This report is a revised version of 15411803H-A. 15411803H-A is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15411803H-A	September 18, 2024	-
1	15411803H-A-R1	September 26, 2024	Correction of the Figure 1: Test Setup as follows. - Deletion of the "Test Distance:" part from the Test Distance calculating formula - Change the Test Distance for 6 GHz to 10 GHz; from 3 m to 3.25 m
1	15411803H-A-R1	September 26, 2024	Correction of the Local oscillator frequency for Radiated Emission test data (Page 22, 32, 42, 52, 58).

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	Hori.	Horizontal
AAN	Asymmetric Artificial Network	ICES	Interference-Causing Equipment Standard
AC	Alternating Current	I/O	Input/Output
AE	Auxiliary equipment	IEC	International Electrotechnical Commission
AM	Amplitude Modulation	IEEE	Institute of Electrical and Electronics Engineers
AMN	Artificial Mains Network	IF	Intermediate Frequency
Amp, AMP	Amplifier	ILAC	International Laboratory Accreditation Conference
ANSI	American National Standards Institute	ISED	Innovation, Science and Economic Development Canada
Ant, ANT	Antenna	ISN	Impedance Stabilization Network
AP	Access Point	ISO	International Organization for Standardization
ASK	Amplitude Shift Keying	JAB	Japan Accreditation Board
Atten., ATT	Attenuator	LAN	Local Area Network
AV	Average	LCL	Longitudinal Conversion Loss
BPSK	Binary Phase-Shift Keying	LIMS	Laboratory Information Management System
BR	Bluetooth Basic Rate	LISN	Line Impedance Stabilization Network
BT	Bluetooth	MRA	Mutual Recognition Arrangement
BT LE	Bluetooth Low Energy	N/A	Not Applicable
BW	BandWidth	NIST	National Institute of Standards and Technology
C.F	Correction Factor	NS	No signal detect.
Cal Int	Calibration Interval	NSA	Normalized Site Attenuation
CAV	CISPR AV	OBW	Occupied BandWidth
CCK	Complementary Code Keying	OFDM	Orthogonal Frequency Division Multiplexing
CDN	Coupling Decoupling Network	PER	Packet Error Rate
Ch., CH	Channel	PK	Peak
CISPR	Comite International Special des Perturbations Radioelectriques	P _{LT}	long-term flicker severity
Corr.	Correction	POHC(A)	Partial Odd Harmonic Current
CPE	Customer premise equipment	Pol., Pola.	Polarization
CW	Continuous Wave	PR-ASK	Phase Reversal ASK
DBPSK	Differential BPSK	P _{ST}	short-term flicker severity
DC	Direct Current	QAM	Quadrature Amplitude Modulation
DET	Detector	QP	Quasi-Peak
D-factor, D.fac.	Distance factor	QPSK	Quadrature Phase Shift Keying
Dmax	maximum absolute voltage change during an observation period	r.m.s., RMS	Root Mean Square
DQPSK	Differential QPSK	RBW	Resolution BandWidth
DSSS	Direct Sequence Spread Spectrum	RE	Radio Equipment
DUT	Device Under Test	REV	Reverse
EDR	Enhanced Data Rate	RF	Radio Frequency
e.i.r.p., EIRP	Equivalent Isotropically Radiated Power	RFID	Radio Frequency Identifier
EM clamp	Electromagnetic clamp	RNSS	Radio Navigation Satellite Service
EMC	ElectroMagnetic Compatibility	RSS	Radio Standards Specifications
EMI	ElectroMagnetic Interference	Rx	Receiving
EMS	ElectroMagnetic Susceptibility	S.fac.	Site factor
EN	European Norm	SINAD	Ratio of (Signal + Noise + Distortion) to (Noise + Distortion)
e.r.p., ERP	Effective Radiated Power	S/N	Signal to Noise ratio
ETSI	European Telecommunications Standards Institute	SA, S/A	Spectrum Analyzer
EU	European Union	SABS	South African Bureau of Standards
EUT	Equipment Under Test	SANS	South African National Standards
Fac.	Factor	SG	Signal Generator
FCC	Federal Communications Commission	SVSWR	Site-Voltage Standing Wave Ratio
FHSS	Frequency Hopping Spread Spectrum	THC(A)	Total Harmonic Current
FM	Frequency Modulation	THD(%)	Total Harmonic Distortion
Freq.	Frequency	TR, T/R	Test Receiver
FSK	Frequency Shift Keying	Tx	Transmitting
Fund	Fundamental	UFA	Uniform field area
FWD	Forward	VBW	Video BandWidth
GFSK	Gaussian Frequency-Shift Keying	Vert.	Vertical
GNSS	Global Navigation Satellite System	WLAN	Wireless LAN
GPS	Global Positioning System	xDSL	Generic term for all types of DSL technology (DSL: Digital Subscriber Line)

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SECTION 1: Customer information

Company Name	DENSO CORPORATION
Address	1-1, Showa-cho, Kariya-shi, Aichi-ken, 448-8661, Japan
Telephone Number	+81-50-1800-3904
Contact Person	Shingo Moritoh

The information provided by the customer is as follows;

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

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT

Description	Remote Keyless Entry System and TPMS (Receiver)
Model Number	23ACC
Serial Number	Refer to SECTION 4.2
Condition	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	August 8, 2024
Test Date	August 23 and 27, 2024

2.2 Product Description

General Specification

Rating	DC 12 V
Clock frequency (ies) in the system	30.265 MHz

Radio Specification

Type of receiving system	Super-heterodyne
Frequency of Operation	RKES (CH1): 433.58 MHz RKES (CH2): 434.42 MHz TPMS: 433.90 MHz
Type of Modulation	RKES: FSK (F1D) TPMS: FSK (F1D)
Intermediate frequency	280 kHz
Voltage Controlled Oscillator	RKES (CH1): 1733.20 MHz RKES (CH2): 1736.56 MHz TPMS: 1734.48 MHz
Antenna Type	ANT1: Internal antenna (Inverse F antenna) ANT2: Internal antenna (Inverse L antenna) ANT3: External antenna (Connector)

- * RKES: Remote Keyless Entry System
TPMS: Tire Pressure Monitoring System

2.3 Variant model(s)

23ACC has 9 variations. Details of the variations are as follows:

Serial Number ^{*1)}	Variation	Inverse F Antenna (ANT1)	Inverse L Antenna (ANT2)	External Antenna (ANT3)
No.1	1	TYPE 1	-	TYPE 1
No.6	2	TYPE 1	-	TYPE 2
-	3	TYPE 2	-	TYPE 1
No.2	4	TYPE 2	-	TYPE 2
-	5	TYPE 3	-	TYPE 1
No.3	6	TYPE 3	-	TYPE 2
-	7	TYPE 4	-	TYPE 1
No.4	8	TYPE 4	-	TYPE 2
No.5	9	-	TYPE 1	TYPE 1

<Reference>

Inverse F Antenna	Directivity	Resonance Capacitor/Inductor
TYPE 1	Normal	Unmounted
TYPE 2	Normal	Mounted
TYPE 3	Change	Unmounted
TYPE 4	Change	Mounted

Inverse L Antenna	Directivity
TYPE 1	Counterclockwise

External Antenna	Connector	Connected to External Antenna
TYPE 1	12pin	No
TYPE 2	12pin+Coaxial	Yes

*1) Refer to the "Description of EUT and Support Equipment" table in Clause 4.2.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	FCC Part 15 Subpart B The latest version on the first day of the testing period
Title	FCC 47CFR Part15 Radio Frequency Device Subpart B Unintentional Radiators

3.2 Procedures and results

Item	Test Procedure	Limits	Worst margin	Result	Remarks
Conducted emission	FCC: ANSI C63.4: 2014 + C63.4a: 2017 7. AC power - line conducted emission measurements ISED: RSS-Gen 7.1	FCC: Part 15 Subpart B 15.107(a) ISED: RSS-Gen 7.2	-	N/A	*1)
Radiated emission	FCC: ANSI C63.4: 2014 + C63.4a: 2017 8. Radiated emission measurements ISED: RSS-Gen 7.1	FCC: Part 15 Subpart B 15.109(a) ISED: RSS-Gen 7.3	19.92 dB 868.280 MHz, Horizontal / Vertical, QP (Mode 2, Variation 6, Internal Antenna)	Complied	-
Antenna Terminal	FCC: ANSI C63.4: 2014 + C63.4a: 2017 12. Measurement of unintentional radiators other than ITE ISED: RSS-Gen 7.1	FCC: Part 15 Subpart B 15.111(a) ISED: RSS-Gen 7.4	27.98 dB 1734.480 MHz, PK (Mode 3)	Complied	-
* Note: UL Japan, Inc.'s EMI Work Procedure: Work Instructions-ULID-003591. *1) The test is not applicable since the EUT is not the device that is designed to be connected to the public utility (AC) power line.					

3.3 Addition to standard

No addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

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

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

Radiated emission

Measurement distance	Frequency range		Unit	Calculated Uncertainty (+/-)
3 m	9 kHz to 30 MHz		dB	3.3
10 m			dB	3.1
3 m	30 MHz to 200 MHz	Horizontal	dB	5.0
		Vertical	dB	5.0
	200 MHz to 1000 MHz	Horizontal	dB	5.2
		Vertical	dB	6.2
10 m	30 MHz to 200 MHz	Horizontal	dB	5.5
		Vertical	dB	5.4
	200 MHz to 1000 MHz	Horizontal	dB	5.5
		Vertical	dB	5.5
3 m	1 GHz to 6 GHz		dB	5.1
	6 GHz to 18 GHz		dB	5.4
1 m	10 GHz to 18 GHz		dB	5.4
	18 GHz to 26.5 GHz		dB	5.3
	26.5 GHz to 40 GHz		dB	4.8
0.5 m	26.5 GHz to 40 GHz		dB	5.0

Antenna Terminal test

Item	Unit	Calculated Uncertainty (+/-)
Antenna terminal conducted emission	dB	3.1

3.5 Test Location

UL Japan, Inc. Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 Japan

Telephone: +81-596-24-8999

A2LA Certificate Number: 5107.02 / FCC Test Firm Registration Number: 884919

ISED Lab Company Number: 2973C / CAB identifier: JP0002

Test site	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	19.2 x 11.2 x 7.7	7.0 x 6.0	No.1 Power source room	10 m
No.2 semi-anechoic chamber	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room	3 m
No.3 shielded room	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room	3 m
No.4 shielded room	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.5 measurement room	6.4 x 6.4 x 3.0	6.4 x 6.4	-	-
No.6 shielded room	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room	3.1 x 5.0 x 2.7	3.1 x 5.0	-	-
No.9 measurement room	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.10 shielded room	3.8 x 2.8 x 2.8	3.8 x 2.8	-	-
No.11 measurement room	4.0 x 3.4 x 2.5	N/A	-	-
No.12 measurement room	2.6 x 3.4 x 2.5	N/A	-	-
Large Chamber	16.9 x 22.1 x 10.17	16.9 x 22.1	-	10 m
Small Chamber	5.3 x 6.69 x 3.59	5.3 x 6.69	-	-

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

Mode	1. RKES Receiving mode (433.58 MHz)
	2. RKES Receiving mode (434.42 MHz)
	3. TPMS Receiving mode (433.90 MHz)
Software(s)	DN-2586000010-01

*The test signal level was confirmed to be sufficient to stabilize the local oscillator of the EUT.

[for Antenna Terminal Conducted Emission]

*Tuning was confirmed to be locked on each mode by checking local oscillator frequency to be stable using a search-coil.

[for Radiated Emission]

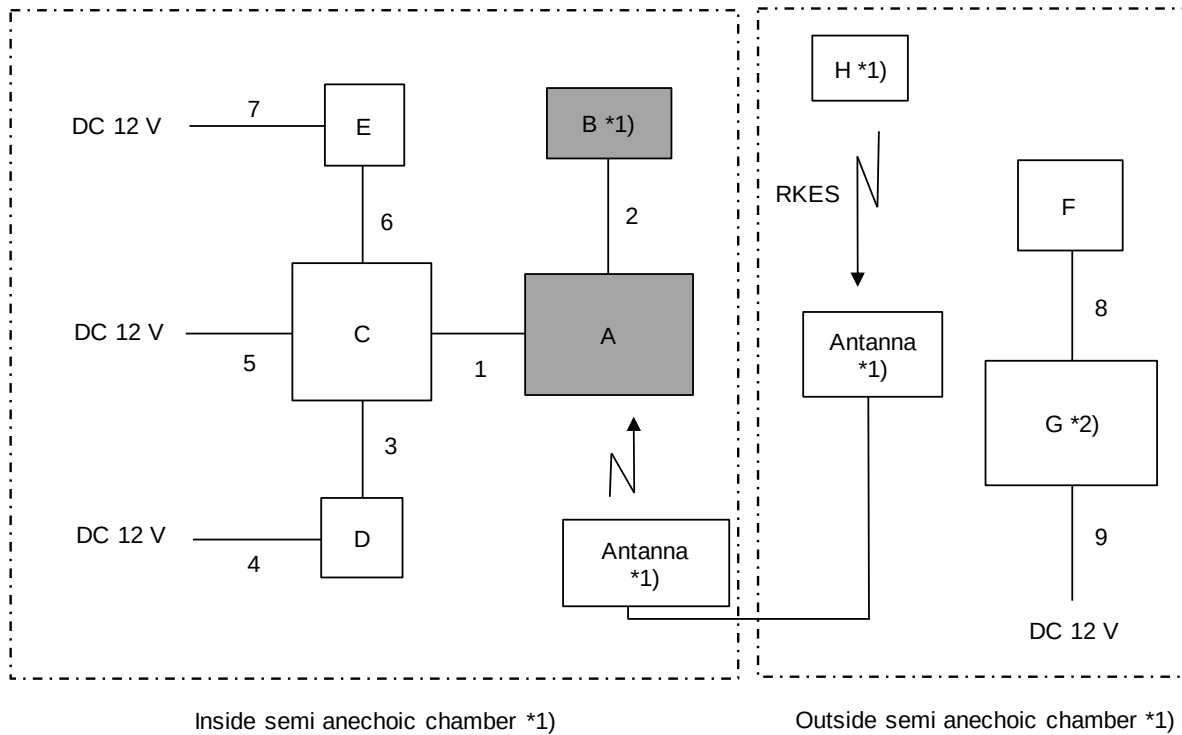
* It was confirmed by using checker that the EUT receives the signal from the transmitter (pair of EUT).

<Test Mode>

	Radiated Emission								Antenna Terminal
Serial No.	No.1	No.2		No.3		No.4		No.5	No.6
Variation No.	1	4		6		8		9	2
Receiving Ant.	Internal	Internal	External	Internal	External	Internal	External	Internal	External
Mode 1 RKES 433.58 MHz	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mode 2 RKES 434.42 MHz	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mode 3 TPMS 433.90 MHz	✓		✓		✓		✓	✓	✓

4.2 Configuration and peripherals

Mode 1 and 2



*1) Used for Radiated Emission only

*2) Power ON only

* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

* Item No. A includes Receiver Antenna.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Remote Keyless Entry System and TPMS (Receiver)	23ACC	No.1 (Variation No.1) *1) No.2 (Variation No.4) *1) No.3 (Variation No.6) *1) No.4 (Variation No.8) *1) No.5 (Variation No.9) *1) No.6 (Variation No.2) *2)	DENSO CORPORATION	EUT
B	External Antenna	89768-77020	158420-0410	DENSO CORPORATION	EUT (For Item A: No.2, 3, 4 only)
C	Check bench	-	No.1	DENSO CORPORATION	-
D	CAN communication bench	85XS0046	J2406133-M01-240602	DENSO CORPORATION	-
E	Smart ECU	19CY_Ver.3	No.3	DENSO CORPORATION	-
F	TPMS Antenna	-	No.1	DENSO CORPORATION	-
G	TPMS signal bench	-	No.1	DENSO CORPORATION	-
H	Smart transmitter	19CY_Ver.3	No.1	DENSO CORPORATION	-

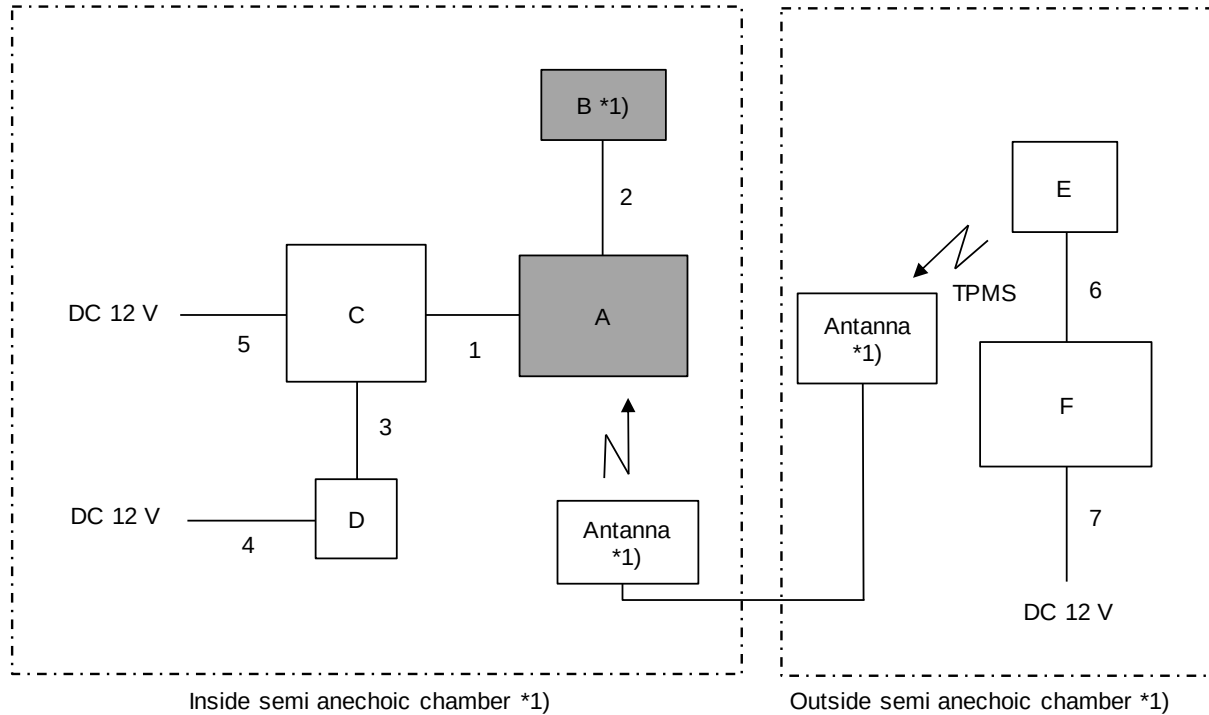
*1) Used for Radiated Emission test

*2) Used for Antenna Terminal conducted test

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Signal Cable	0.7	Unshielded	Unshielded	-
2	Antenna Cable	3.2	Shielded	Shielded	-
3	Signal Cable	0.3	Unshielded	Unshielded	-
4	DC Cable	3.1	Unshielded	Unshielded	-
5	DC Cable	2.5	Unshielded	Unshielded	-
6	Signal Cable	0.6	Unshielded	Unshielded	-
7	DC Cable	2.6	Unshielded	Unshielded	-
8	Signal Cable	0.3	Unshielded	Unshielded	-
9	DC Cable	2.4	Unshielded	Unshielded	-

Mode 3



*1) Used for Radiated Emission only

* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.
* Item No. A includes Receiver Antenna.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Remote Keyless Entry System and TPMS (Receiver)	23ACC	No.1 (Variation No.1) *1) No.2 (Variation No.4) *1) No.3 (Variation No.6) *1) No.4 (Variation No.8) *1) No.5 (Variation No.9) *1) No.6 (Variation No.2) *2)	DENSO CORPORATION	EUT
B	External Antenna	89768-77020	158420-0410	DENSO CORPORATION	EUT (For Item A: No.2, 3, 4 only)
C	Check bench	-	No.1	DENSO CORPORATION	-
D	CAN communication bench	85XS0046	J2406133-M01-240602	DENSO CORPORATION	-
E	TPMS Antenna	89740-5240	271300-7170	DENSO CORPORATION	-
F	TPMS signal bench	-	No.1	DENSO CORPORATION	-

*1) Used for Radiated Emission test

*2) Used for Antenna Terminal conducted test

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Signal Cable	0.7	Unshielded	Unshielded	-
2	Antenna Cable	3.2	Shielded	Shielded	-
3	Signal Cable	0.3	Unshielded	Unshielded	-
4	DC Cable	3.1	Unshielded	Unshielded	-
5	DC Cable	2.5	Unshielded	Unshielded	-
6	Signal Cable	0.3	Unshielded	Unshielded	-
7	DC Cable	2.4	Unshielded	Unshielded	-

SECTION 5: Radiated Emission

5.1 Operating environment

Date : See data
Test place : See data
Temperature : See data
Humidity : See data
Test engineer : See data

5.2 Test configuration

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

The EUT was set on the edge of the tabletop.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

Photographs of the set up are shown in APPENDIX 3.

5.3 Test conditions

Frequency range : 30 MHz to 200 MHz (Biconical antenna)
200 MHz to 1000 MHz (Logperiodic antenna)
1000 MHz to 10000 MHz (Horn antenna)
Test distance : 3 m
EUT position : Table top
EUT operation mode : See Clause 4.1

5.4 Test procedure

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

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

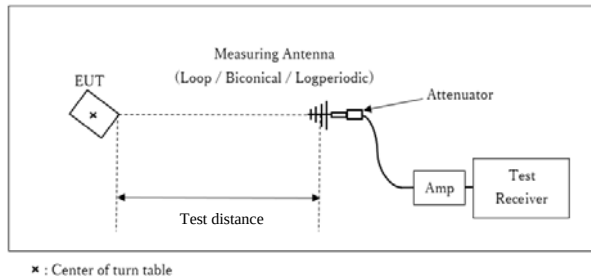
The radiated emission measurements were made with the following detector function of the Test Receiver. Test antenna was aimed at the emission source for receiving the maximum signal and always kept. (Above 1 GHz)

Frequency	Below 1 GHz	Above 1 GHz *1)
Instrument used	Test Receiver	Test Receiver
IF Bandwidth	QP: BW 120 kHz	PK: BW 1 MHz, CAV: BW 1 MHz

*1) The measurement data was adjusted to a 3 m distance using the following Distance Factor.
Distance Factor: See Figure 1

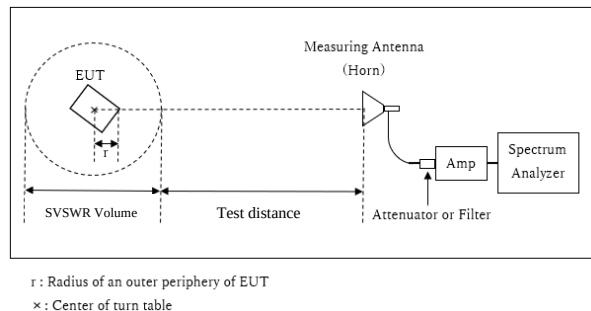
Figure 1: Test Setup

Below 1 GHz



Test Distance: 3 m

1 GHz to 6 GHz



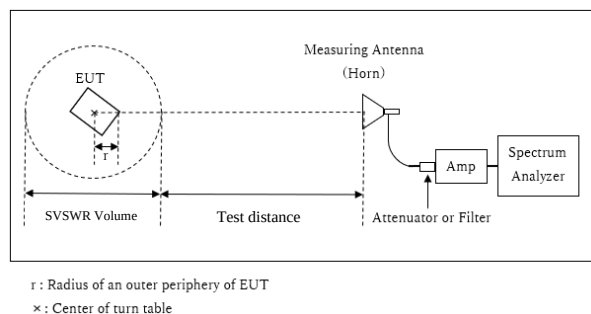
Test Distance: 3 m

Distance Factor: $20 \times \log (3.3 \text{ m}^*/3.0 \text{ m}) = 0.83 \text{ dB}$
* $(3 + \text{SVSWR Volume} / 2) - r = 3.3 \text{ m}$

SVSWR Volume: 1.5 m

(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.45 \text{ m}$

6 GHz to 10 GHz



Test Distance: 3.25 m

Distance Factor: $20 \times \log (3.3 \text{ m}^*/3.0 \text{ m}) = 0.83 \text{ dB}$
* $(3.25 + \text{SVSWR Volume} / 2) - r = 3.3 \text{ m}$

SVSWR Volume: 1.0 m

(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.45 \text{ m}$

The noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at representative X-axis since no difference was found among each position.

5.5 Test result

Summary of the test results: Pass

Test results are rounded off and limit are rounded down, so some differences might be observed.

SECTION 6: Antenna Terminal

6.1 Operating environment

Date : See data
Test place : See data
Temperature : See data
Humidity : See data
Test engineer : See data

6.2 Test configuration

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m from the ground. Photographs of the set up are shown in APPENDIX 3.

6.3 Test conditions

Frequency range : 30 MHz to 1000 MHz / 1000 MHz to 10000 MHz
Test distance : N/A
EUT position : Table top
EUT operation mode : See Clause 4.1

6.4 Test procedure

The Antenna Terminal was measured with a spectrum analyzer connected to the antenna port.

Frequency	Below 1 GHz	Above 1 GHz
Instrument used	Test Receiver	Test Receiver
IF Bandwidth	PK: RBW: 120 kHz	PK: BW: 1 MHz AV: BW: 1 MHz

6.5 Test result

Summary of the test results: Pass

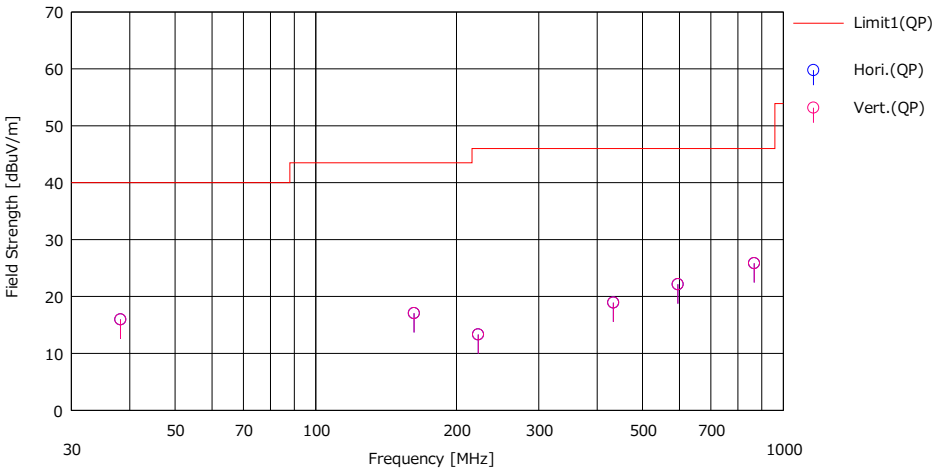
APPENDIX 1: Test data

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac	Loss	Gain	Result (QP)	Limit (QP)	Margin (QP)	Pola	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]					
1	38.222	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Hori.	100	0	BA	
2	162.245	21.80	15.58	7.84	28.17	17.06	43.50	26.45	Hori.	100	0	BA	
3	222.572	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Hori.	100	0	LA21	
5	595.190	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	866.600	21.80	21.86	11.10	28.92	25.84	46.00	20.16	Hori.	100	0	LA21	
7	38.222	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Vert.	100	0	BA	
8	162.245	21.80	15.58	7.84	28.17	17.06	43.50	26.45	Vert.	100	0	BA	
9	222.572	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Vert.	100	0	LA21	
11	595.190	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	866.600	21.80	21.86	11.10	28.92	25.84	46.00	20.16	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

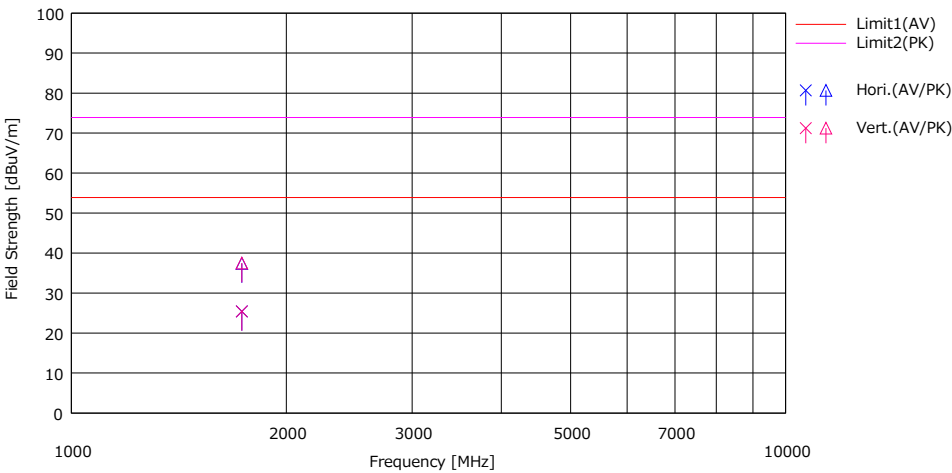
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 1

Limit : FCC15.247(d)(FCC15.209),3 m, below 1 GHz:QP, above 1 GHz:AV/PK



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBUV]	[PK]				[dBUV/m]	[PK]	[dBUV/m]	[PK]	[dB]	[PK]					
1	1733.135	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Hori.	100	0	HA6	
2	1733.135	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

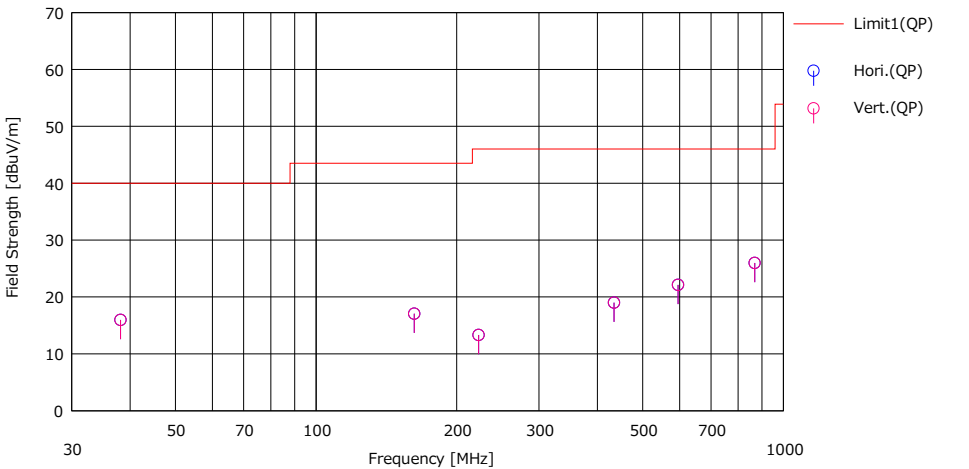
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



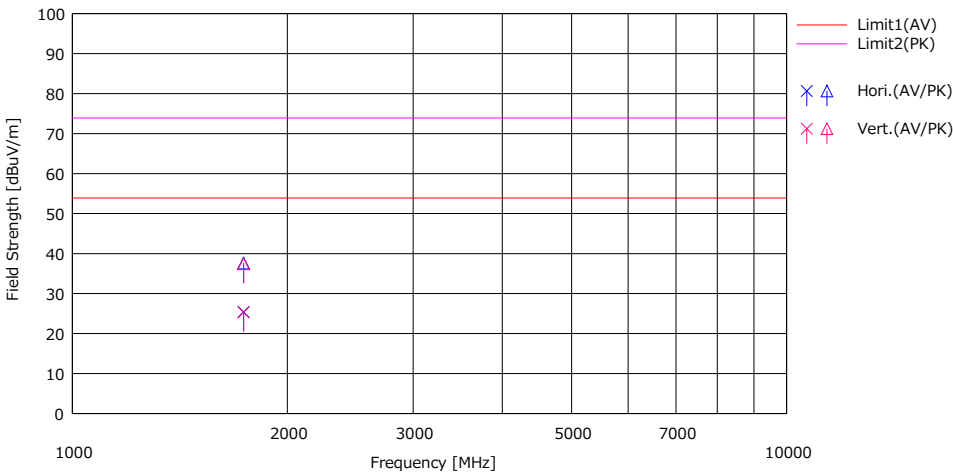
No.	Freq. [MHz]	Reading (QP)	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result (QP)	Limit (QP)	Margin (QP)	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.181	22.30	15.48	6.74	28.54	15.98	40.00	24.02	Hori.	100	0	BA	
2	162.233	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.750	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	434.140	22.00	16.26	9.49	28.74	19.01	46.00	26.99	Hori.	100	0	LA21	
5	595.156	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Hori.	100	0	LA21	
7	38.181	22.30	15.48	6.74	28.54	15.98	40.00	24.02	Vert.	100	0	BA	
8	162.233	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.750	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	434.140	22.00	16.26	9.49	28.74	19.01	46.00	26.99	Vert.	100	0	LA21	
11	595.156	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date August 23, 2024
Temperature / Humidity 22 deg. C / 62 % RH
Engineer Daiki Matsui
Mode (Above 1 GHz)
Mode 2, Variation 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



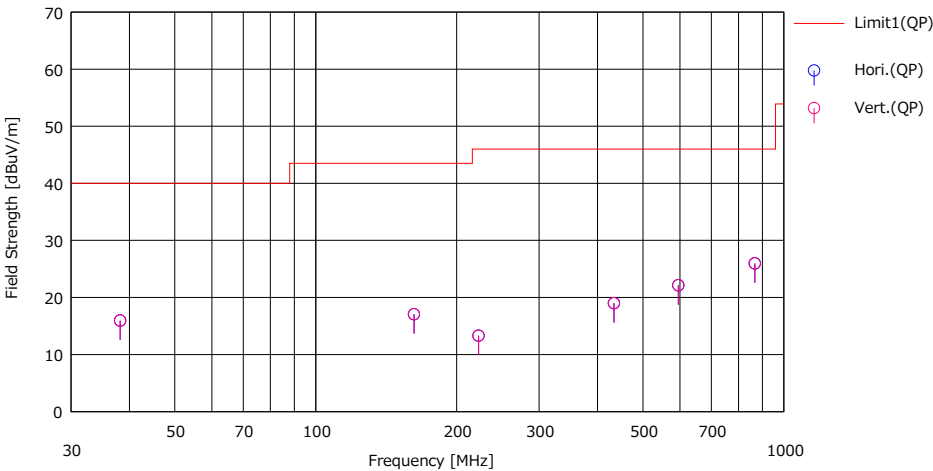
No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.40	25.15	3.05	32.99	25.41	37.61	53.90	73.90	28.49	36.29	Hori.	100	0		
2	1736.759	30.10	42.20	25.15	3.05	32.99	25.31	37.41	53.90	73.90	28.59	36.49	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date August 23, 2024
Temperature / Humidity 22 deg. C / 62 % RH
Engineer Daiki Matsui
Mode (Below 1 GHz)
Mode 3, Variation 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margn	Polz.	Height	Angle	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.224	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Hori.	100	0	BA	
2	162.201	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.788	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Hori.	100	0	LA21	
5	595.244	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Hori.	100	0	LA21	
7	38.224	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Vert.	100	0	BA	
8	162.201	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.788	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Vert.	100	0	LA21	
11	595.244	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

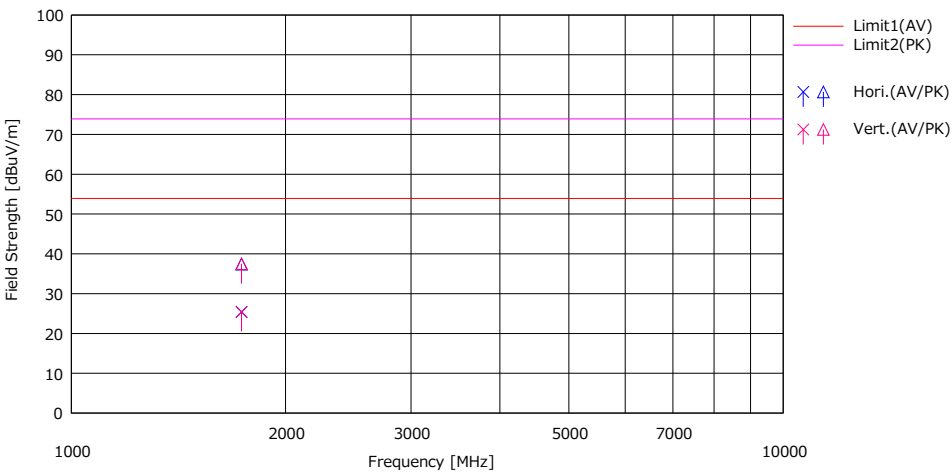
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 3, Variation 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1734.480	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Hori.	100	0	HA6	
2	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 4, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

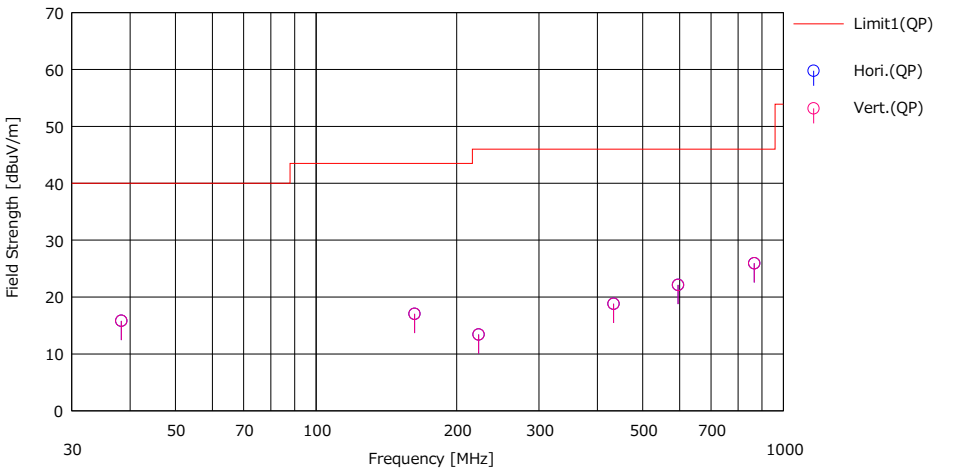


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

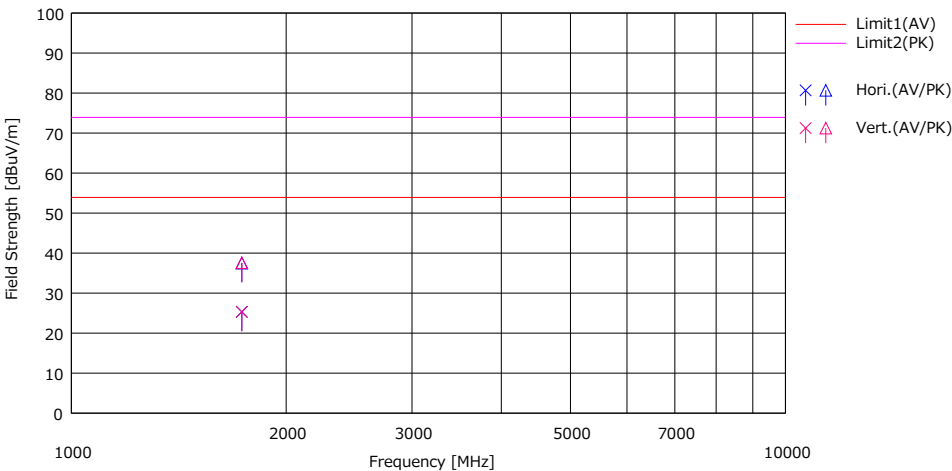
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 4, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.10	42.30	25.15	3.05	33.00	25.30	37.50	53.90	73.90	28.60	36.40	Hori.	100	0	HA6	
2	1733.135	30.10	42.40	25.15	3.05	33.00	25.30	37.60	53.90	73.90	28.60	36.30	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

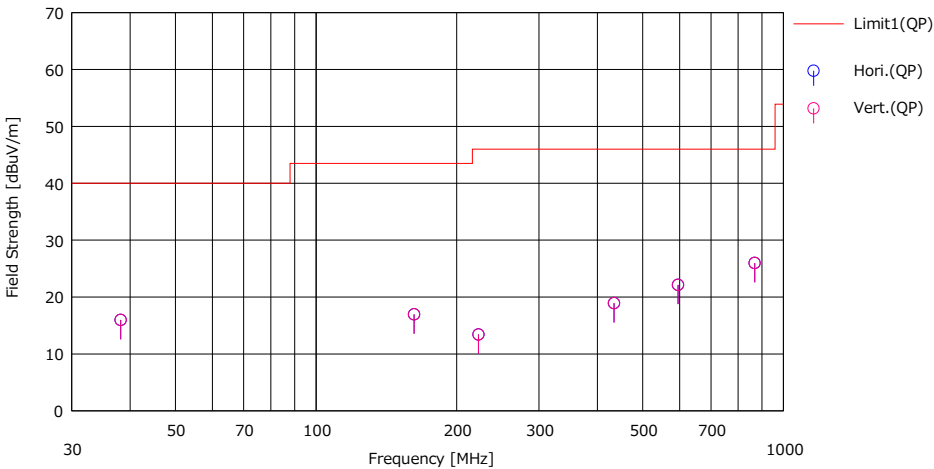
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 4, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margn	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBUV]				[dBUV/m]	[dBUV/m]	[dB]					
1	38.188	22.30	15.47	6.74	28.54	15.97	40.00	24.03	Hori.	100	0	BA	
2	162.202	21.70	15.58	7.84	28.17	16.95	43.50	26.55	Hori.	100	0	BA	
3	222.658	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA2 1	
4	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Hori.	100	0	LA2 1	
5	595.195	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA2 1	
6	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Hori.	100	0	LA2 1	
7	38.188	22.30	15.47	6.74	28.54	15.97	40.00	24.03	Vert.	100	0	BA	
8	162.202	21.70	15.58	7.84	28.17	16.95	43.50	26.55	Vert.	100	0	BA	
9	222.658	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA2 1	
10	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Vert.	100	0	LA2 1	
11	595.195	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA2 1	
12	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Vert.	100	0	LA2 1	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

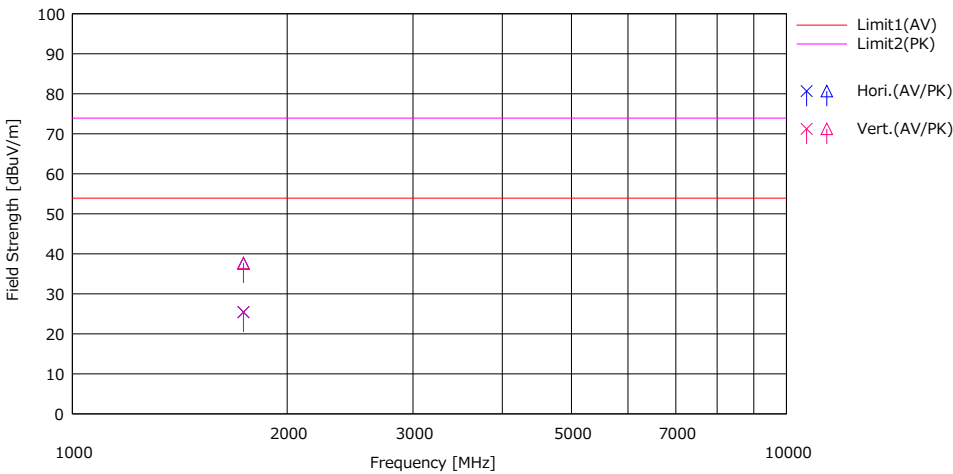
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 4, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.40	25.15	3.05	32.99	25.41	37.61	53.90	73.90	28.49	36.29	Hori.	100	0	HA6	
2	1736.759	30.20	42.50	25.15	3.05	32.99	25.41	37.71	53.90	73.90	28.49	36.19	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

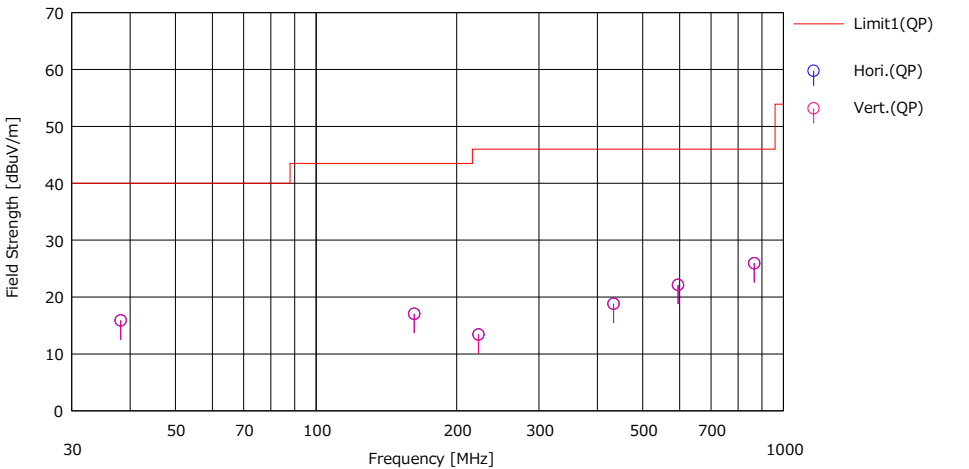
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margn	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBUV]				[dBUV/m]	[dBUV/m]	[dB]					
1	38.185	22.20	15.48	6.74	28.54	15.88	40.00	24.12	Hori.	100	0	BA	
2	162.208	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.742	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA2 1	
4	433.300	21.80	16.25	9.49	28.73	18.81	46.00	27.19	Hori.	100	0	LA2 1	
5	595.083	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA2 1	
6	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Hori.	100	0	LA2 1	
7	38.185	22.20	15.48	6.74	28.54	15.88	40.00	24.12	Vert.	100	0	BA	
8	162.208	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.742	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA2 1	
10	433.300	21.80	16.25	9.49	28.73	18.81	46.00	27.19	Vert.	100	0	LA2 1	
11	595.083	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA2 1	
12	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Vert.	100	0	LA2 1	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

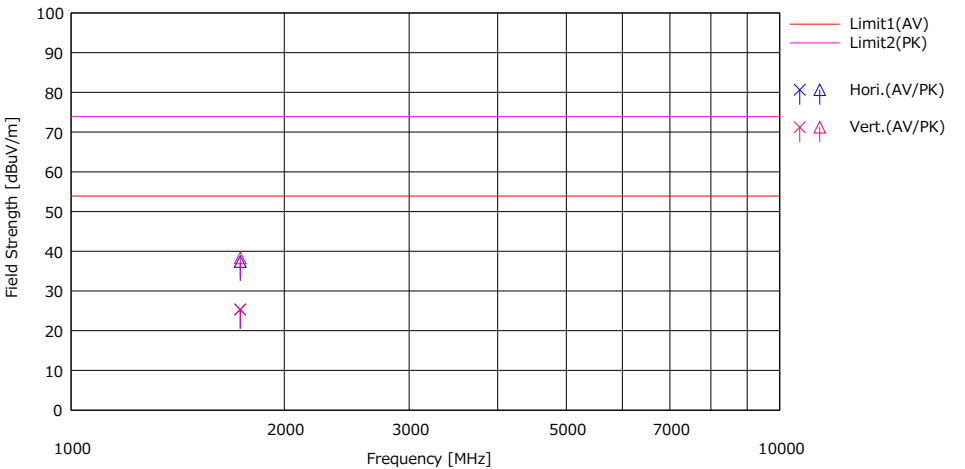
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pols. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.10	42.20	25.15	3.05	33.00	25.30	37.40	53.90	73.90	28.60	36.50	Hori.	100	0	HA6	
2	1733.135	30.10	43.10	25.15	3.05	33.00	25.30	38.30	53.90	73.90	28.60	35.60	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

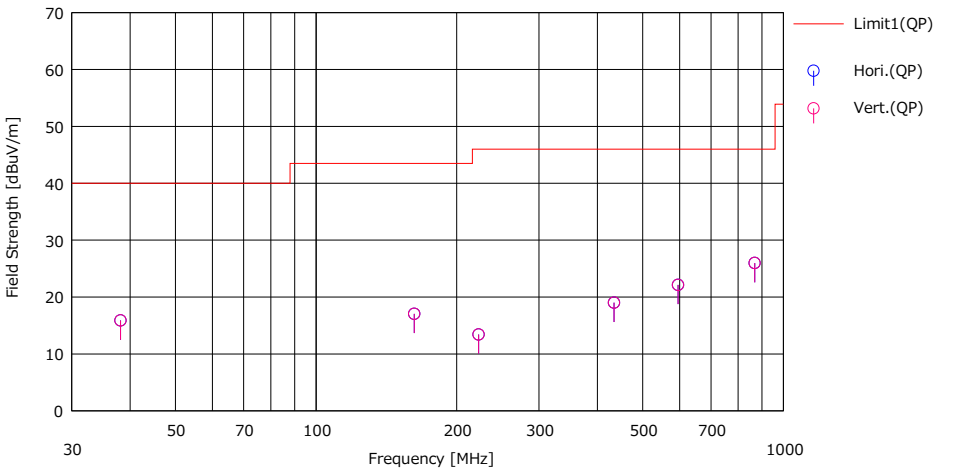


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

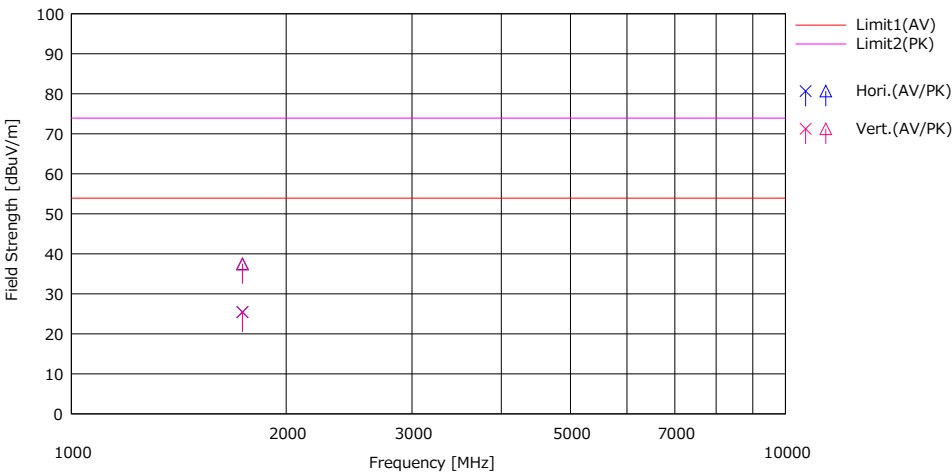
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.30	25.15	3.05	32.99	25.41	37.51	53.90	73.90	28.49	36.39	Hori.	100	0	HA6	
2	1736.759	30.20	42.20	25.15	3.05	32.99	25.41	37.41	53.90	73.90	28.49	36.49	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

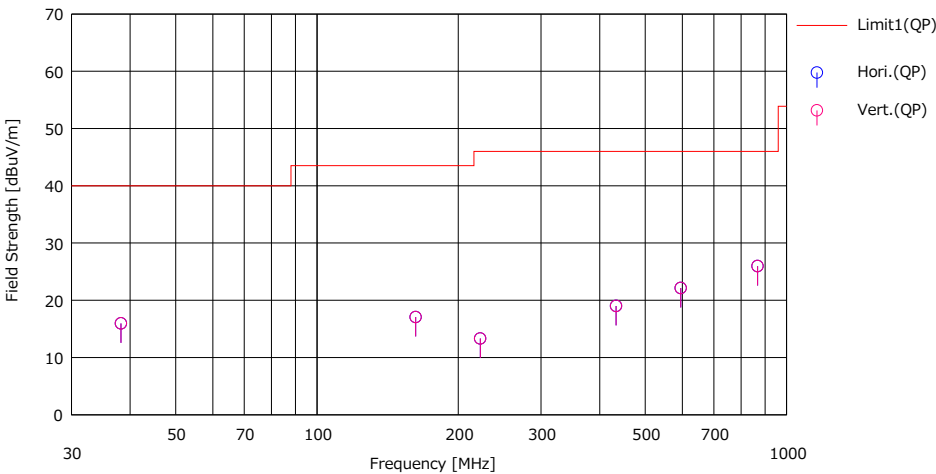
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Below 1 GHz)
Mode 3, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result (QP)	Limit (QP)	Margin (QP)	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.242	22.30	15.45	6.74	28.54	15.95	40.00	24.05	Hori.	100	0	BA	
2	162.211	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.692	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Hori.	100	0	LA21	
5	595.200	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Hori.	100	0	LA21	
7	38.242	22.30	15.45	6.74	28.54	15.95	40.00	24.05	Vert.	100	0	BA	
8	162.211	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.692	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Vert.	100	0	LA21	
11	595.200	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

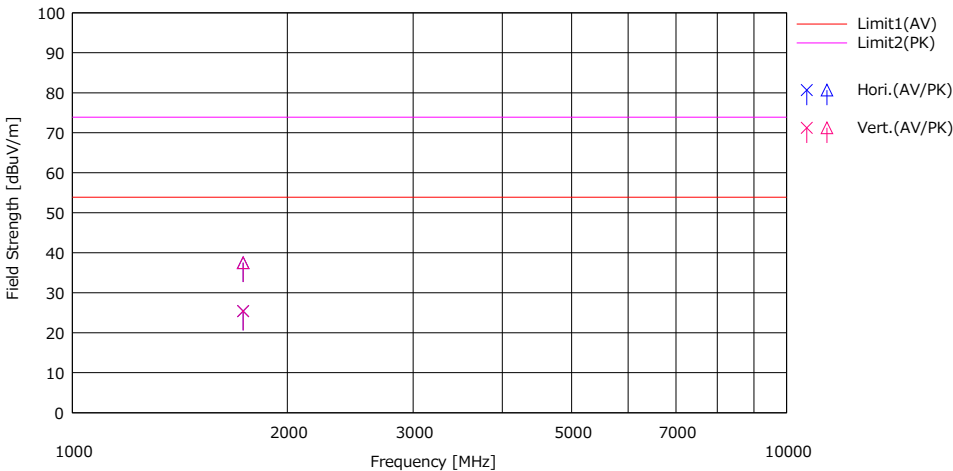
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 3, Variation 4, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 6, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

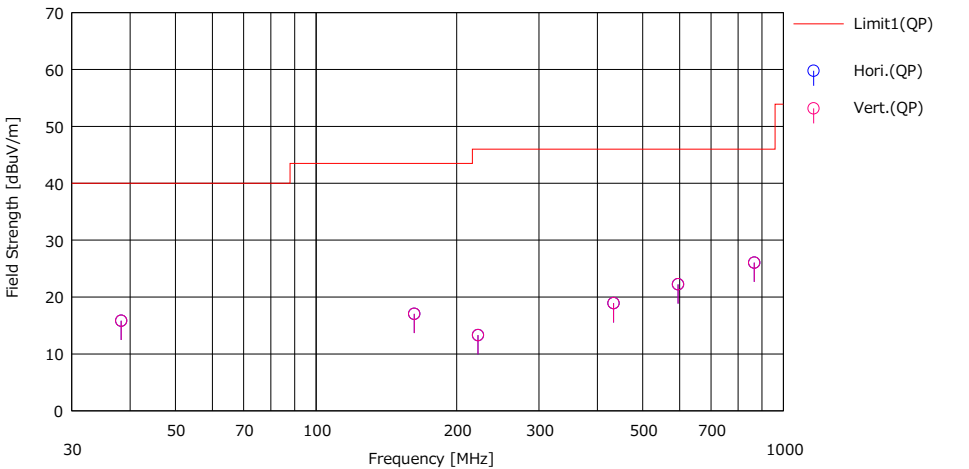


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

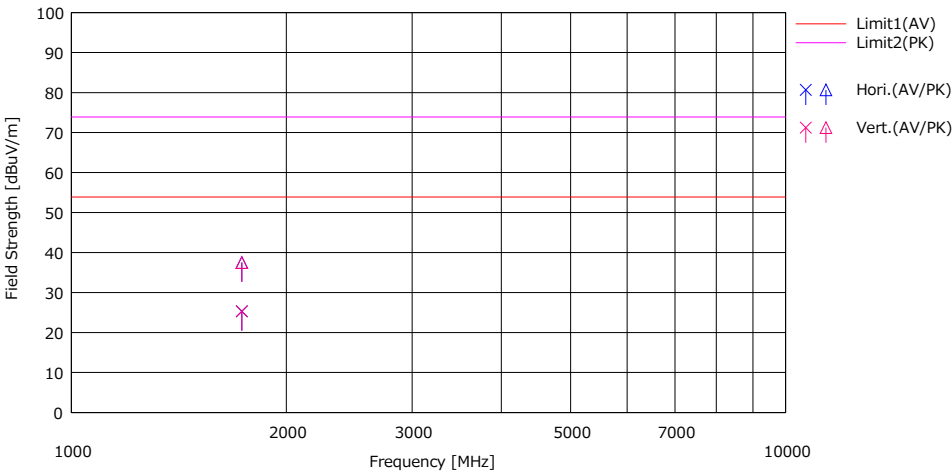
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 6, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dBuV/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pols. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.10	42.30	25.15	3.05	33.00	25.30	37.50	53.90	73.90	28.60	36.40	Hori.	100	0	HA6	
2	1733.135	30.10	42.30	25.15	3.05	33.00	25.30	37.50	53.90	73.90	28.60	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

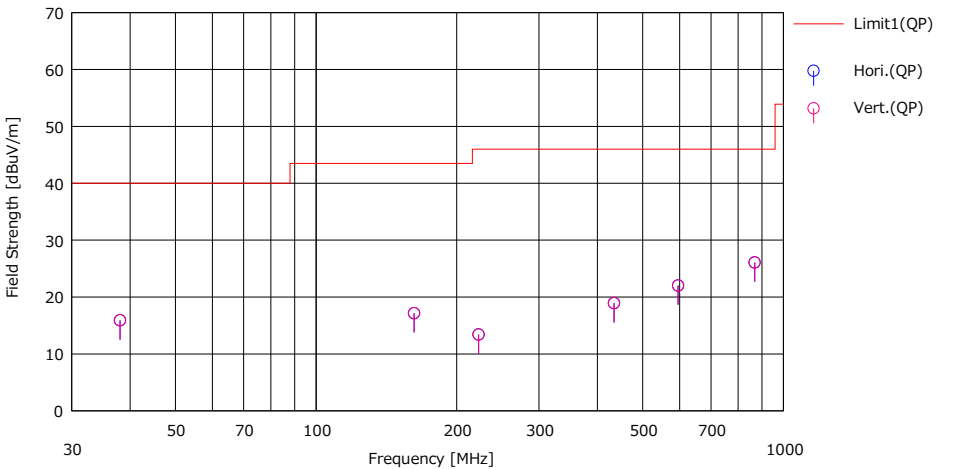
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 6, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac. (dB/m)	Loss (dB)	Gain (dB)	Result (QP)	Limit (QP)	Margin (QP)	Pola. (H/V)	Height (cm)	Angle (deg)	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.090	22.20	15.51	6.74	28.54	15.91	40.00	24.09	Hori.	100	0	BA	
2	162.177	21.90	15.58	7.84	28.17	17.15	43.50	26.35	Hori.	100	0	BA	
3	222.803	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA21	
4	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Hori.	100	0	LA21	
5	595.565	22.00	19.21	10.12	29.29	22.04	46.00	23.96	Hori.	100	0	LA21	
6	868.280	22.00	21.88	11.11	28.91	26.08	46.00	19.92	Hori.	100	0	LA21	
7	38.090	22.20	15.51	6.74	28.54	15.91	40.00	24.09	Vert.	100	0	BA	
8	162.177	21.90	15.58	7.84	28.17	17.15	43.50	26.35	Vert.	100	0	BA	
9	222.803	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA21	
10	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Vert.	100	0	LA21	
11	595.565	22.00	19.21	10.12	29.29	22.04	46.00	23.96	Vert.	100	0	LA21	
12	868.280	22.00	21.88	11.11	28.91	26.08	46.00	19.92	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

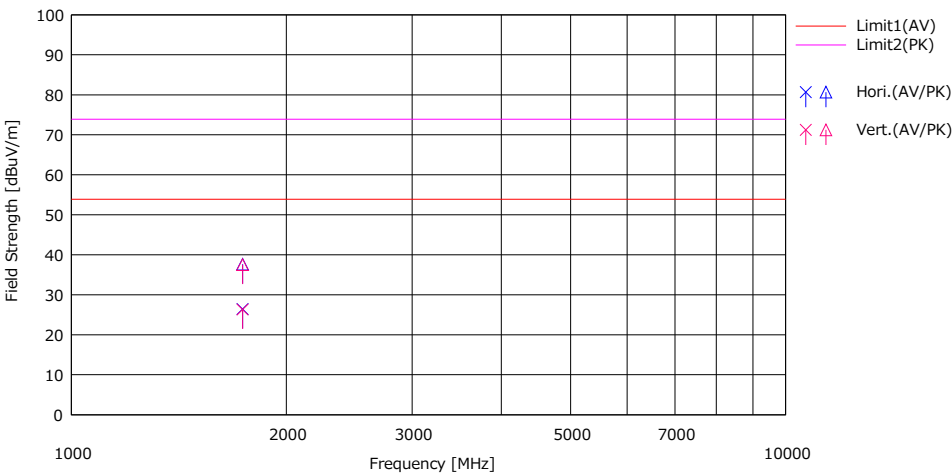
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 6, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	31.20	42.40	25.15	3.05	32.99	26.41	37.61	53.90	73.90	27.49	36.29	Hori.	100	0	HA6	
2	1736.759	31.10	42.30	25.15	3.05	32.99	26.31	37.51	53.90	73.90	27.59	36.39	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

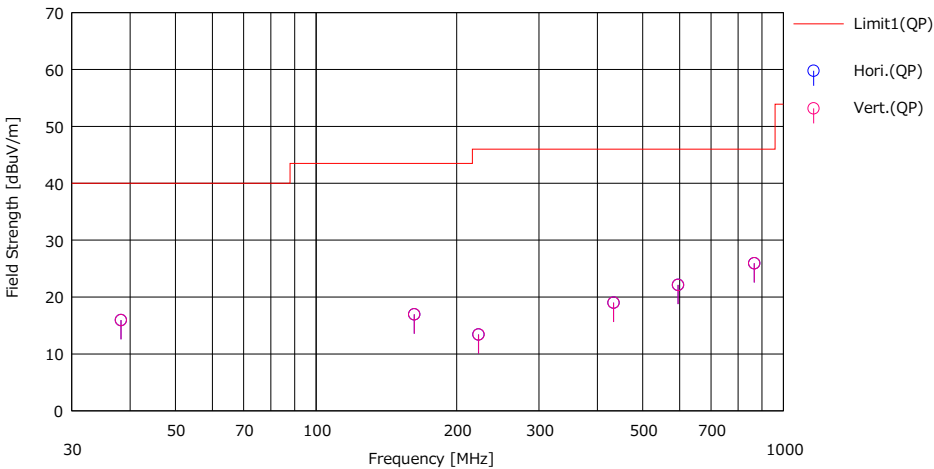


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

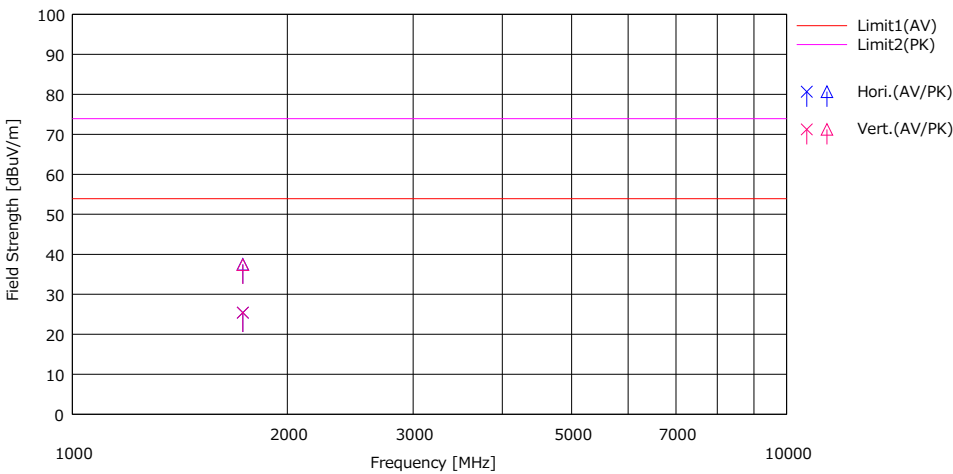
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1733.135	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

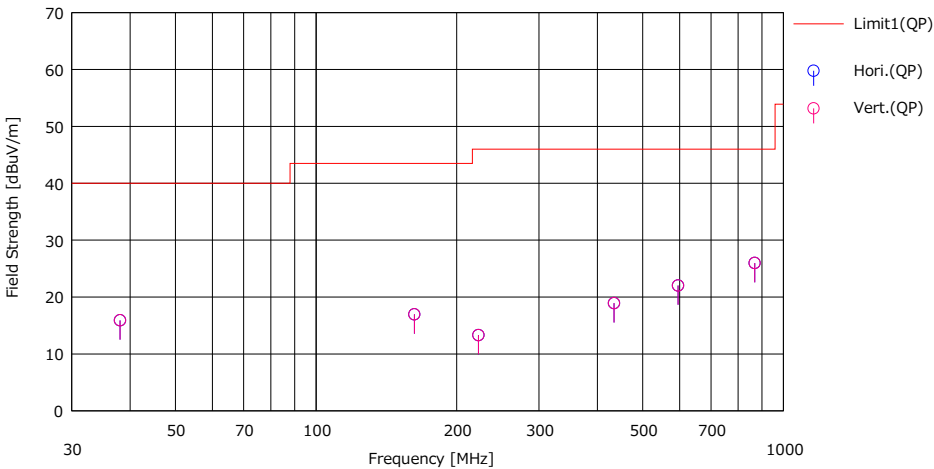


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

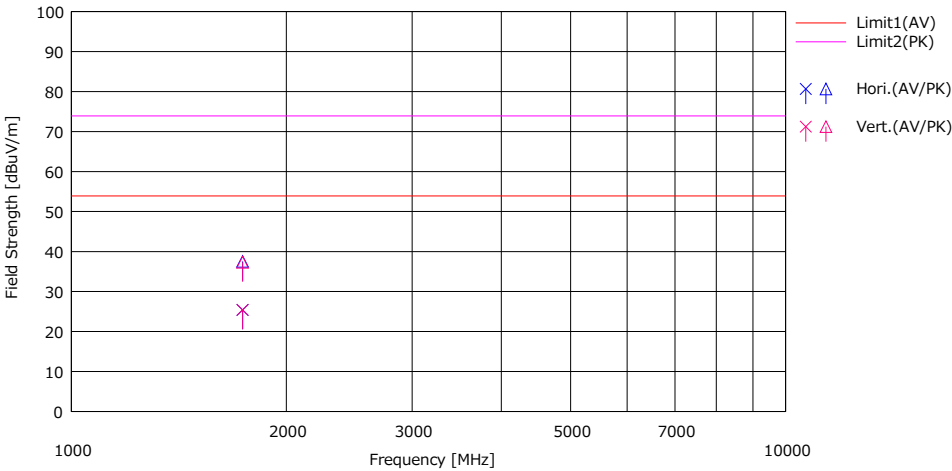
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.30	25.15	3.05	32.99	25.41	37.51	53.90	73.90	28.49	36.39	Hori.	100	0	HA6	
2	1736.759	30.20	42.10	25.15	3.05	32.99	25.41	37.31	53.90	73.90	28.49	36.59	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

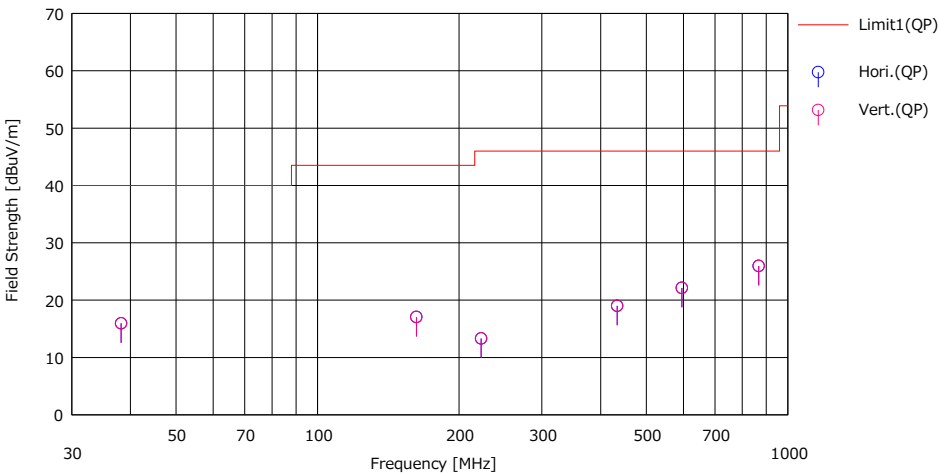
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Below 1 GHz)
Mode 3, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading	Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result	Limit	Margn	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(QP)				(QP)	(QP)	(QP)					
1	38.222	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Hori.	100	0	BA	
2	162.245	21.80	15.58	7.84	28.17	17.06	43.50	26.45	Hori.	100	0	BA	
3	222.752	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Hori.	100	0	LA21	
5	595.190	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Hori.	100	0	LA21	
7	38.222	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Vert.	100	0	BA	
8	162.245	21.80	15.58	7.84	28.17	17.06	43.50	26.45	Vert.	100	0	BA	
9	222.752	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Vert.	100	0	LA21	
11	595.190	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

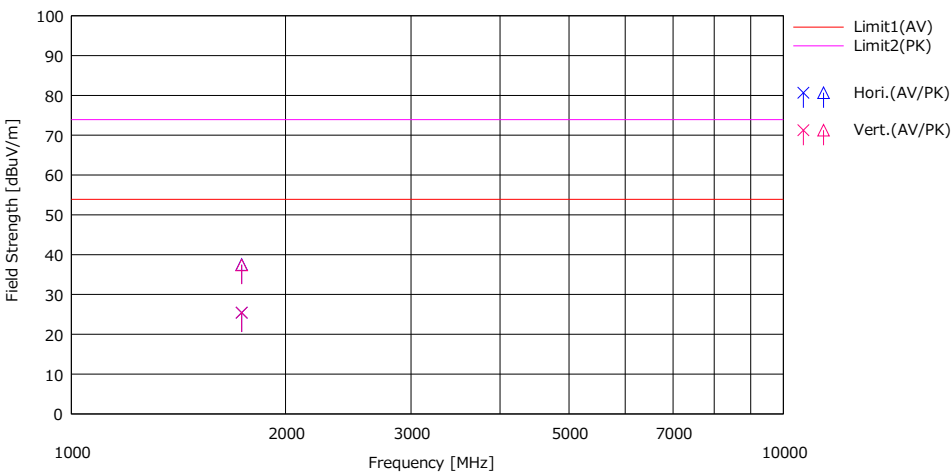
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 3, Variation 6, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1734.480	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 8, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B

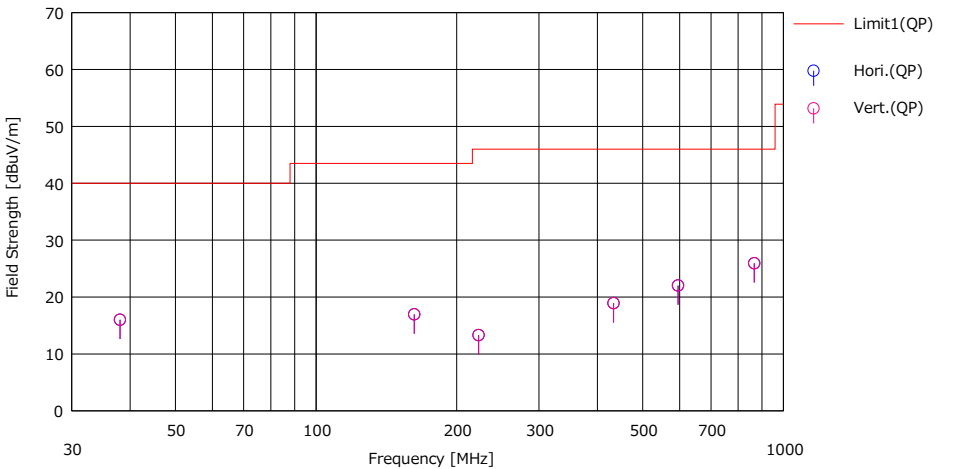


CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

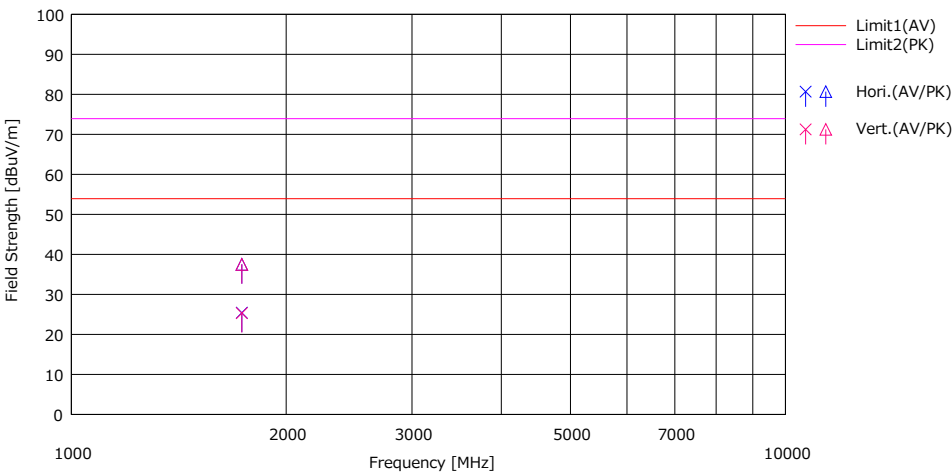
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 8, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1733.135	30.10	42.30	25.15	3.05	33.00	25.30	37.50	53.90	73.90	28.60	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

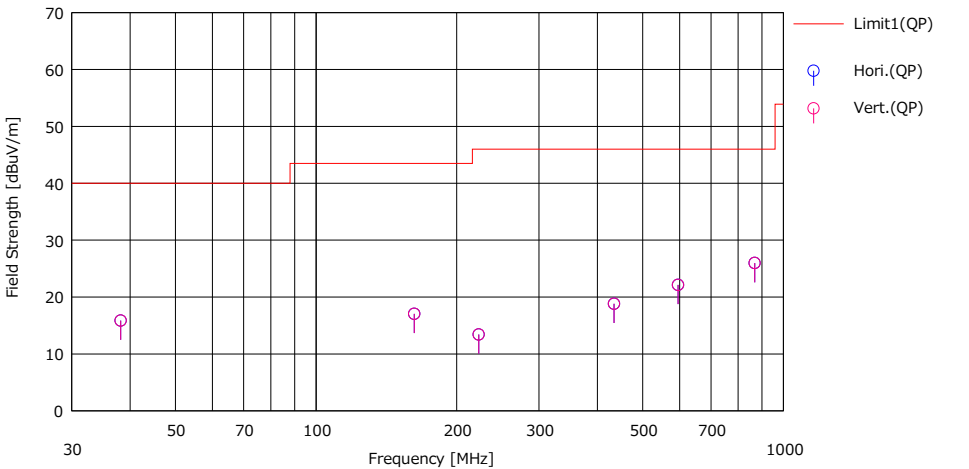
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 8, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading [QP]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [QP]	Limit [QP]	Margin [QP]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.189	22.20	15.47	6.74	28.54	15.87	40.00	24.13	Hori.	100	0	BA	
2	162.244	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.900	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA21	
4	434.140	21.80	16.26	9.49	28.74	18.81	46.00	27.19	Hori.	100	0	LA21	
5	595.203	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Hori.	100	0	LA21	
7	38.189	22.20	15.47	6.74	28.54	15.87	40.00	24.13	Vert.	100	0	BA	
8	162.244	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.900	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA21	
10	434.140	21.80	16.26	9.49	28.74	18.81	46.00	27.19	Vert.	100	0	LA21	
11	595.203	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

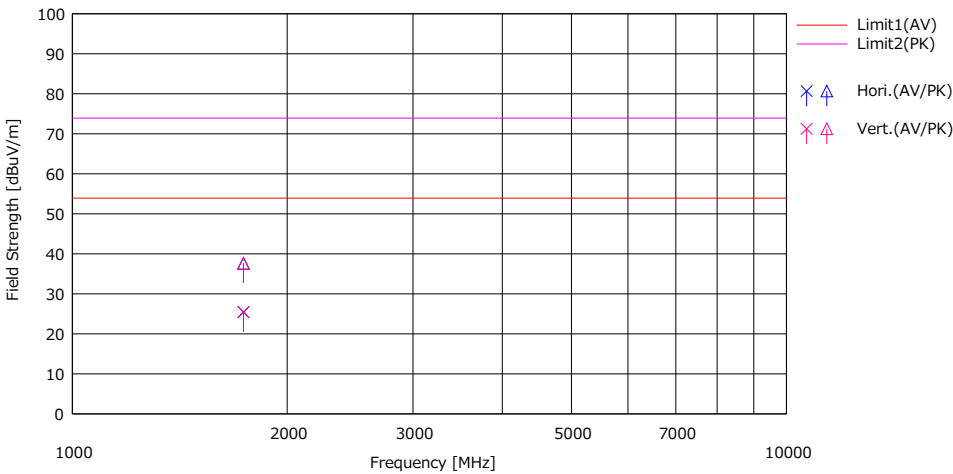
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 8, Internal Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.40	25.15	3.05	32.99	25.41	37.61	53.90	73.90	28.49	36.29	Hori.	100	0	HA6	
2	1736.759	30.20	42.40	25.15	3.05	32.99	25.41	37.61	53.90	73.90	28.49	36.29	Vert.	100	0	HA6	

SS
CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

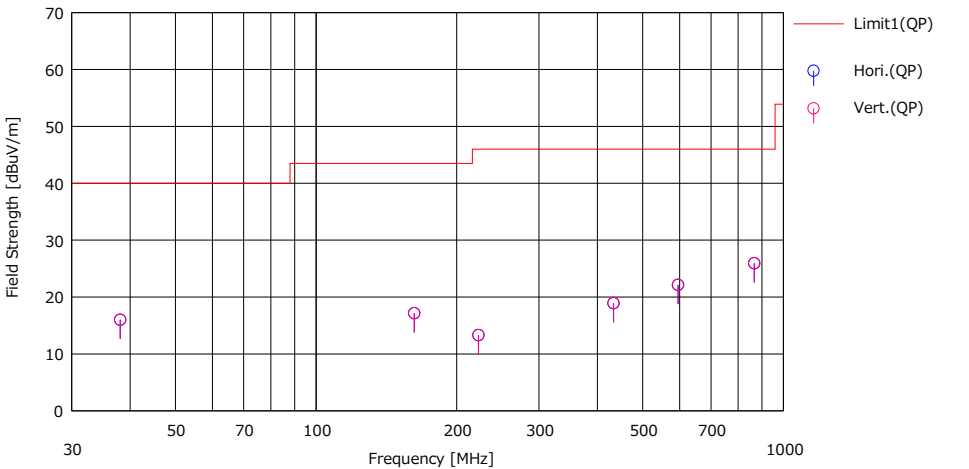
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBUV]				[dBUV/m]	[dBUV/m]	[dB]					
1	38.102	22.30	15.51	6.74	28.54	16.01	40.00	23.99	Hori.	100	0	BA	
2	162.273	21.90	15.58	7.84	28.17	17.15	43.50	26.35	Hori.	100	0	BA	
3	222.564	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Hori.	100	0	LA21	
5	595.041	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Hori.	100	0	LA21	
7	38.102	22.30	15.51	6.74	28.54	16.01	40.00	23.99	Vert.	100	0	BA	
8	162.273	21.90	15.58	7.84	28.17	17.15	43.50	26.35	Vert.	100	0	BA	
9	222.564	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Vert.	100	0	LA21	
11	595.041	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

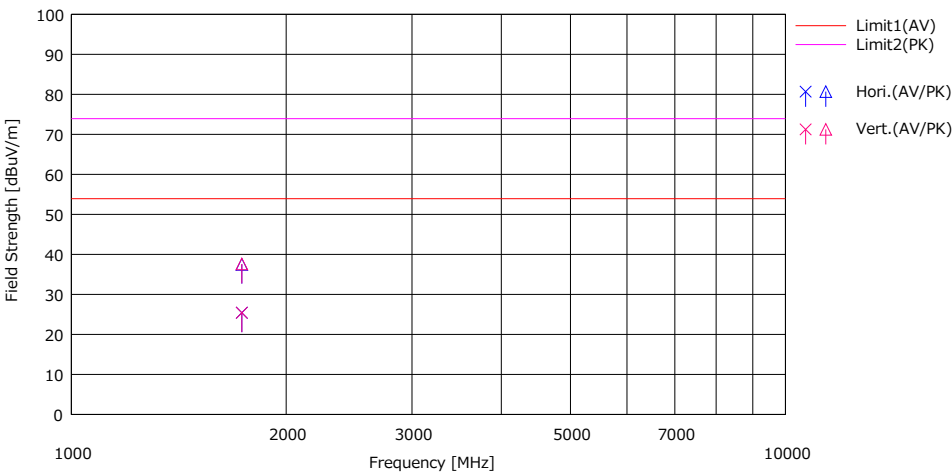
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dB]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1733.135	30.20	42.40	25.15	3.05	33.00	25.40	37.60	53.90	73.90	28.50	36.30	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

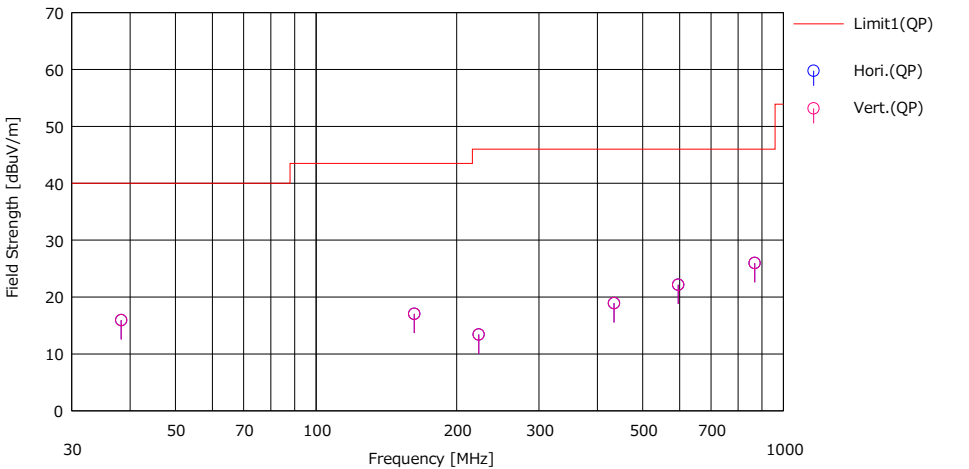
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 2, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading [QP]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [QP]	Limit [QP]	Margin [QP]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.292	22.30	15.43	6.74	28.54	15.93	40.00	24.07	Hori.	100	0	BA	
2	162.262	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.918	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA2 1	
4	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Hori.	100	0	LA2 1	
5	595.775	22.10	19.22	10.13	29.29	22.16	46.00	23.84	Hori.	100	0	LA2 1	
6	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Hori.	100	0	LA2 1	
7	38.292	22.30	15.43	6.74	28.54	15.93	40.00	24.07	Vert.	100	0	BA	
8	162.262	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.918	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA2 1	
10	434.140	21.90	16.26	9.49	28.74	18.91	46.00	27.09	Vert.	100	0	LA2 1	
11	595.775	22.10	19.22	10.13	29.29	22.16	46.00	23.84	Vert.	100	0	LA2 1	
12	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Vert.	100	0	LA2 1	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

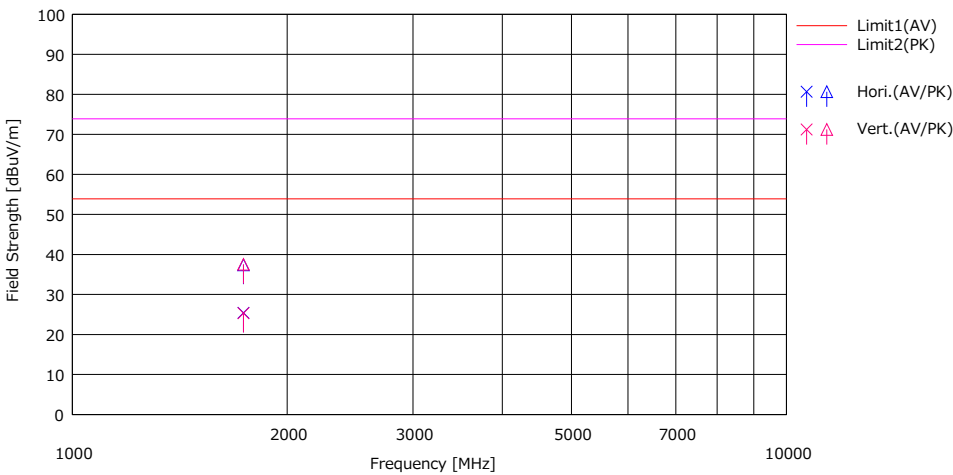
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.20	25.15	3.05	32.99	25.41	37.41	53.90	73.90	28.49	36.49	Hori.	100	0	HA6	
2	1736.759	30.10	42.30	25.15	3.05	32.99	25.31	37.51	53.90	73.90	28.59	36.39	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

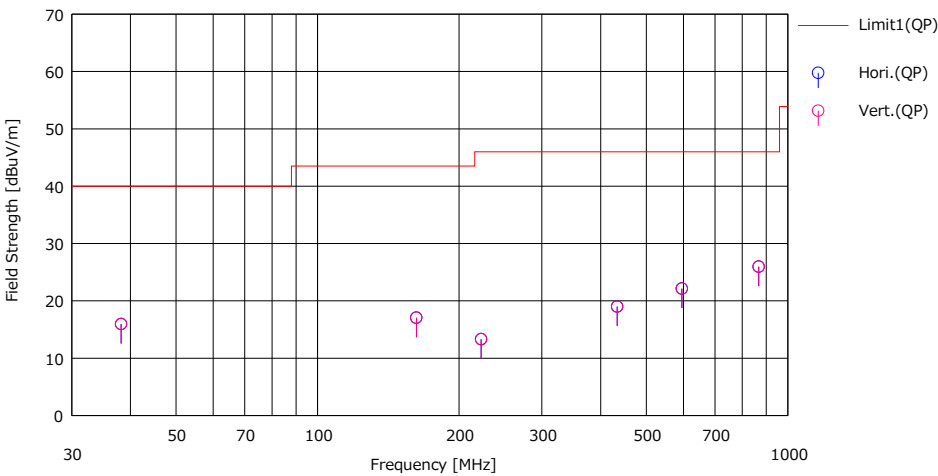
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Below 1 GHz)
Mode 3, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result (QP)	Limit (QP)	Margn (QP)	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.229	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Hori.	100	0	BA	
2	162.281	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.777	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Hori.	100	0	LA21	
5	595.121	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Hori.	100	0	LA21	
7	38.229	22.30	15.46	6.74	28.54	15.96	40.00	24.04	Vert.	100	0	BA	
8	162.281	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.777	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Vert.	100	0	LA21	
11	595.121	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

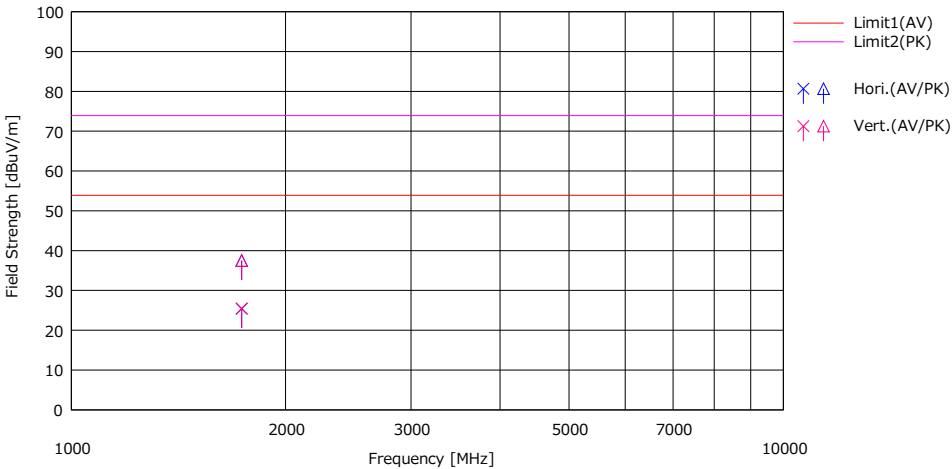
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 3, Variation 8, External Antenna

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading		Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1734.480	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

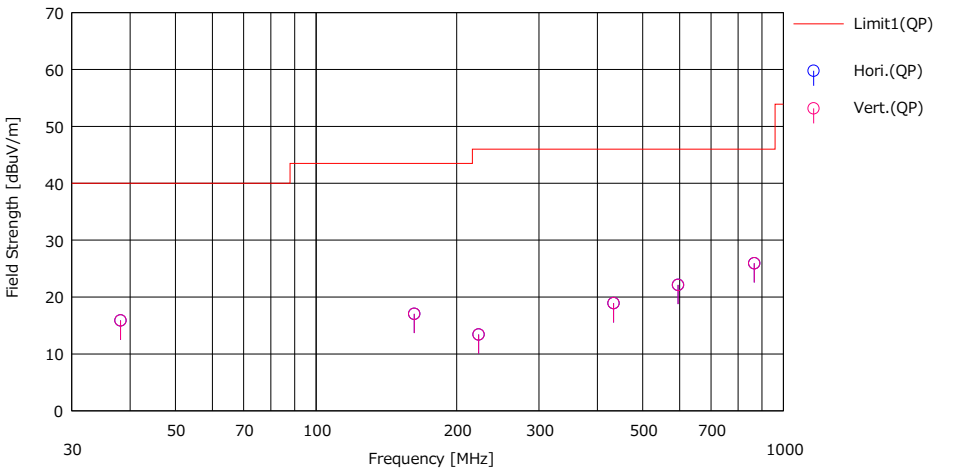
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 60 % RH
Junya Okuno
(Below 1 GHz)
Mode 1, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBUV]				[dBUV/m]	[dBUV/m]	[dB]					
1	38.172	22.20	15.48	6.74	28.54	15.88	40.00	24.12	Hori.	100	0	BA	
2	162.222	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.803	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Hori.	100	0	LA21	
4	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Hori.	100	0	LA21	
5	595.119	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Hori.	100	0	LA21	
7	38.172	22.20	15.48	6.74	28.54	15.88	40.00	24.12	Vert.	100	0	BA	
8	162.222	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.803	21.70	11.35	8.24	27.87	13.42	46.00	32.58	Vert.	100	0	LA21	
10	433.300	21.90	16.25	9.49	28.73	18.91	46.00	27.09	Vert.	100	0	LA21	
11	595.119	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	866.600	21.90	21.86	11.10	28.92	25.94	46.00	20.06	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

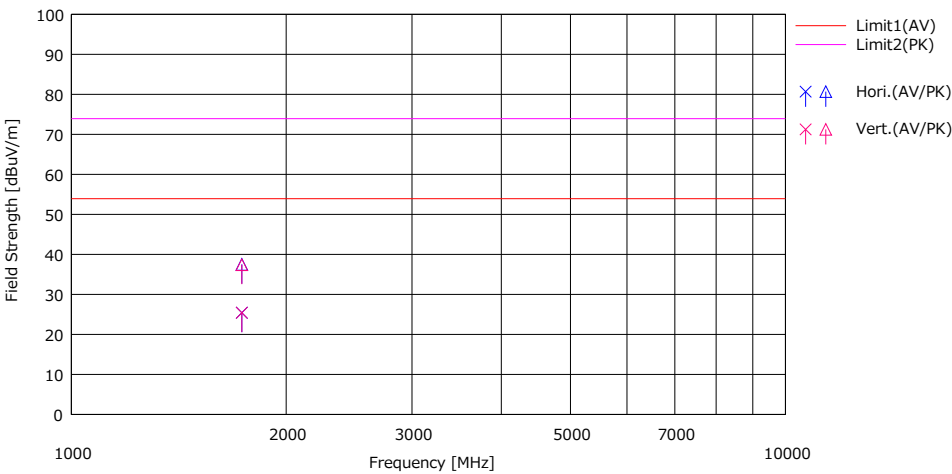
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 1, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



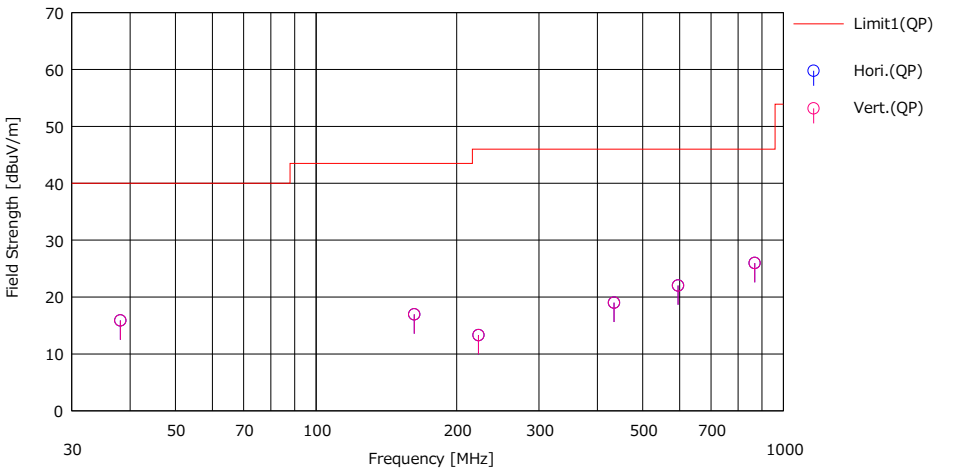
No.	Freq. [MHz]	Reading		Ant.Fac [dBuV]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1733.135	30.20	42.30	25.15	3.05	33.00	25.40	37.50	53.90	73.90	28.50	36.40	Hori.	100	0	HA6	
2	1733.135	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date August 23, 2024
Temperature / Humidity 22 deg. C / 60 % RH
Engineer Junya Okuno
(Below 1 GHz)
Mode Mode 2, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result (QP)	Limit (QP)	Margin (QP)	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.144	22.20	15.49	6.74	28.54	15.89	40.00	24.11	Hori.	100	0	BA	
2	162.270	21.70	15.58	7.84	28.17	16.95	43.50	26.55	Hori.	100	0	BA	
3	222.684	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	434.140	22.00	16.26	9.49	28.74	19.01	46.00	26.99	Hori.	100	0	LA21	
5	595.141	22.00	19.20	10.12	29.29	22.03	46.00	23.97	Hori.	100	0	LA21	
6	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Hori.	100	0	LA21	
7	38.144	22.20	15.49	6.74	28.54	15.89	40.00	24.11	Vert.	100	0	BA	
8	162.270	21.70	15.58	7.84	28.17	16.95	43.50	26.55	Vert.	100	0	BA	
9	222.684	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	434.140	22.00	16.26	9.49	28.74	19.01	46.00	26.99	Vert.	100	0	LA21	
11	595.141	22.00	19.20	10.12	29.29	22.03	46.00	23.97	Vert.	100	0	LA21	
12	868.280	21.90	21.88	11.11	28.91	25.98	46.00	20.02	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

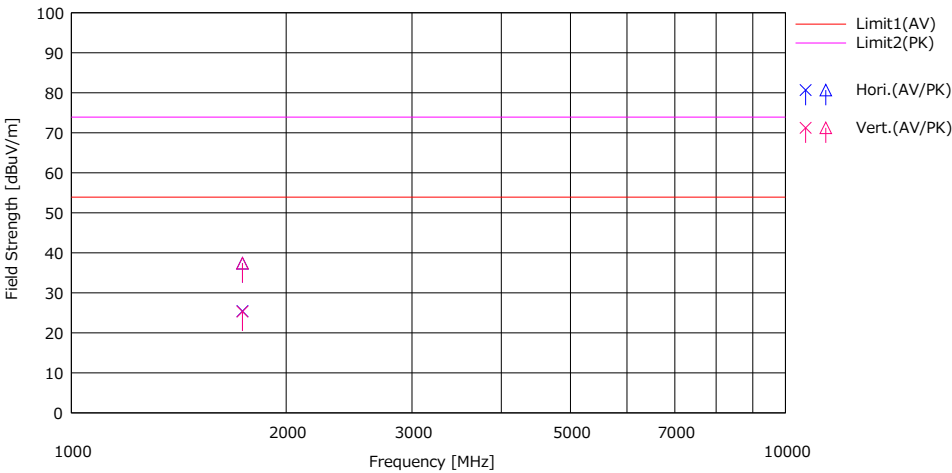
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 2, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



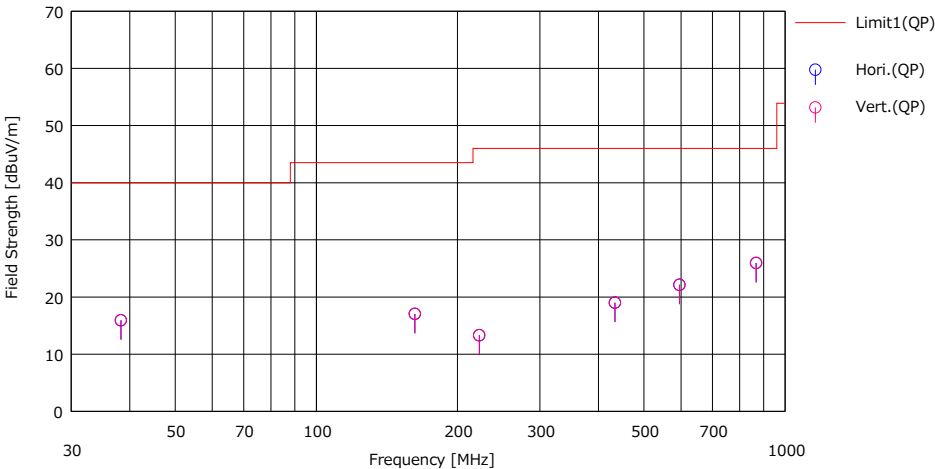
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1736.759	30.20	42.20	25.15	3.05	32.99	25.41	37.41	53.90	73.90	28.49	36.49	Hori.	100	0	HA6	
2	1736.759	30.10	42.20	25.15	3.05	32.99	25.31	37.41	53.90	73.90	28.59	36.49	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date August 23, 2024
Temperature / Humidity 22 deg. C / 62 % RH
Engineer Daiki Matsui
Mode (Below 1 GHz)
Mode 3, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading [QP]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [QP]	Limit [QP]	Margn. [QP]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	38.291	22.30	15.43	6.74	28.54	15.93	40.00	24.07	Hori.	100	0	BA	
2	162.292	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Hori.	100	0	BA	
3	222.682	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Hori.	100	0	LA21	
4	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Hori.	100	0	LA21	
5	595.236	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Hori.	100	0	LA21	
6	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Hori.	100	0	LA21	
7	38.291	22.30	15.43	6.74	28.54	15.93	40.00	24.07	Vert.	100	0	BA	
8	162.292	21.80	15.58	7.84	28.17	17.05	43.50	26.45	Vert.	100	0	BA	
9	222.682	21.60	11.35	8.24	27.87	13.32	46.00	32.68	Vert.	100	0	LA21	
10	433.620	22.00	16.25	9.49	28.74	19.00	46.00	27.00	Vert.	100	0	LA21	
11	595.236	22.10	19.20	10.12	29.29	22.13	46.00	23.87	Vert.	100	0	LA21	
12	867.240	21.90	21.87	11.11	28.92	25.96	46.00	20.04	Vert.	100	0	LA21	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

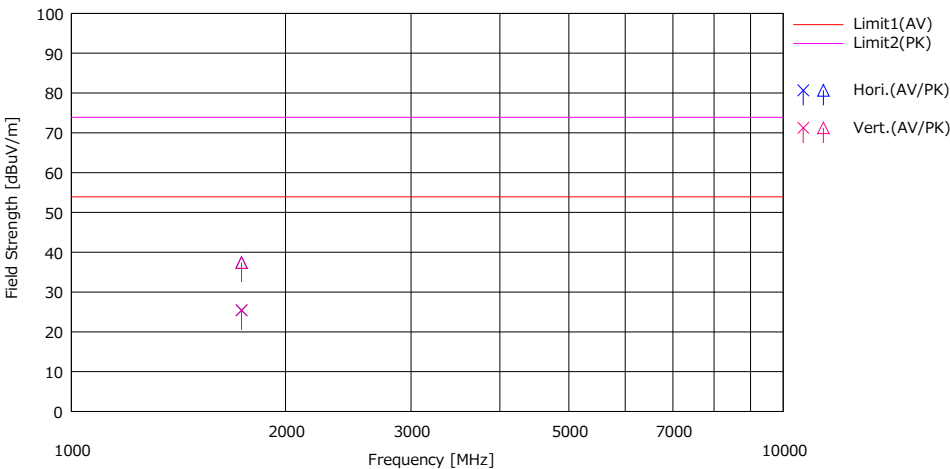
Radiated Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.2
August 23, 2024
22 deg. C / 62 % RH
Daiki Matsui
(Above 1 GHz)
Mode 3, Variation 9

Limit : FCC_Part 15 Subpart B(15.109)_Class B



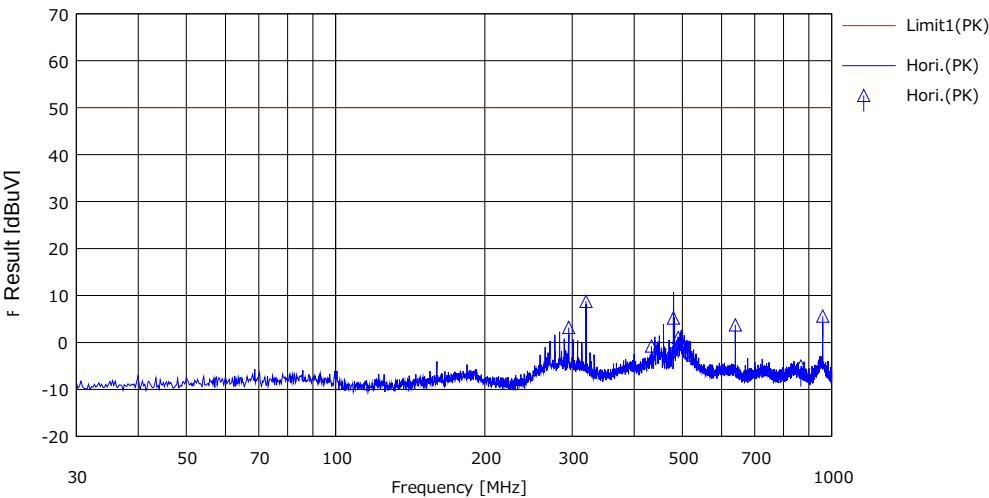
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1734.480	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Hori.	100	0	HA6	
2	1734.480	30.20	42.20	25.15	3.05	33.00	25.40	37.40	53.90	73.90	28.50	36.50	Vert.	100	0	HA6	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + D-factor) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Antenna Terminal Conducted Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.1
Date August 27, 2024
Temperature / Humidity 23 deg. C / 44 % RH
Engineer Hiroyuki Furutaka
 (Below 1 GHz)
Mode Mode 1, Variation 2

Limit : FCC15.111 Antenna terminal measurement



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit *1)	Margin	Pola. [H/V]	Ant. Type	Comment
		<PK> [dBuV]				<PK> [dBuV]	<PK> [dBuV]	<PK> [dB]			
1	295.154	41.70	0.00	0.25	38.75	3.20	50.00	46.80	Hori.	---	
2	319.825	47.20	0.00	0.25	38.69	8.76	50.00	41.24	Hori.	---	
3	433.300	37.40	0.00	0.31	38.47	-0.76	50.00	50.76	Hori.	---	
4	479.728	43.30	0.00	0.33	38.42	5.21	50.00	44.79	Hori.	---	
5	490.764	39.10	0.00	0.34	38.41	1.03	50.00	48.97	Hori.	---	
6	639.630	41.60	0.00	0.37	38.24	3.73	50.00	46.27	Hori.	---	
7	866.600	32.60	0.00	0.45	38.10	-50.5	50.00	55.05	Hori.	---	
8	959.460	42.90	0.00	0.47	37.76	5.61	50.00	44.39	Hori.	---	

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE) - GAIN
Except for the above table: adequate margin data below the limits.

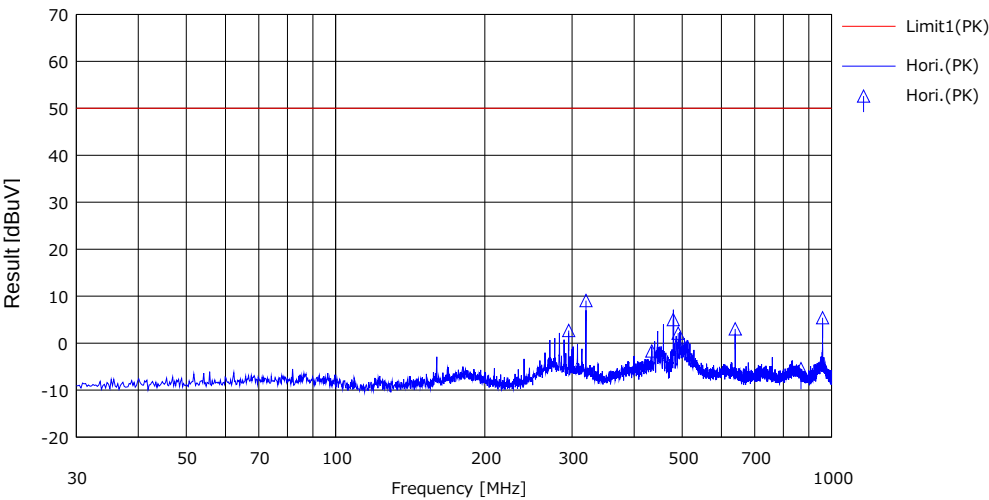
Antenna Terminal Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.1
August 27, 2024
23 deg. C / 44 % RH
Hiroyuki Furutaka
(Below 1 GHz)
Mode 2, Variation 2

Limit : FCC15.111 Antenna terminal measurement



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit*1)	Margin [dB]	Pola. [H/V]	Ant. Type	Comment
		<PK> [dBuV]				<PK> [dBuV]	<PK> [dBuV]				
1	29.5154	41.20	0.00	0.25	38.75	2.70	50.00	47.30	Hori.	---	
2	31.9825	47.50	0.00	0.25	38.69	9.06	50.00	40.94	Hori.	---	
3	43.4140	36.50	0.00	0.31	38.47	-1.66	50.00	51.66	Hori.	---	
4	47.9728	43.10	0.00	0.33	38.42	5.01	50.00	44.99	Hori.	---	
5	49.0765	40.20	0.00	0.34	38.41	2.13	50.00	47.87	Hori.	---	
6	63.9630	40.90	0.00	0.37	38.24	3.03	50.00	46.97	Hori.	---	
7	86.8280	32.20	0.00	0.45	38.10	-5.45	50.00	55.45	Hori.	---	
8	95.9460	42.70	0.00	0.47	37.76	5.41	50.00	44.59	Hori.	---	

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE) - GAIN
Except for the above table: adequate margin data below the limits.

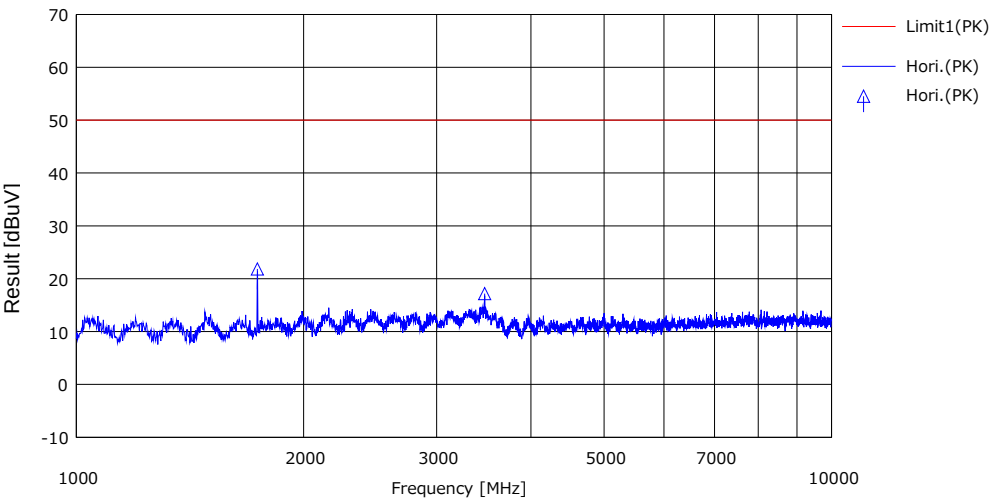
Antenna Terminal Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.1
August 27, 2024
23 deg. C / 44 % RH
Hiroyuki Furutaka
(Above 1 GHz)
Mode 2, Variation 2

Limit : FCC15.111 Antenna terminal measurement



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit *1)	Margi	Pola. [H/V]	Ant. Type	Comment
		<PK> [dBuV]				<PK> [dBuV]	<PK> [dBuV]	<PK> [dB]			
1	1736.759	54.20	0.00	0.62	32.99	21.83	50.00	28.17	Hori.	---	
2	3473.518	48.00	0.00	0.90	31.73	17.17	50.00	32.83	Hori.	---	

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE) - GAIN
Except for the above table: adequate margin data below the limits.

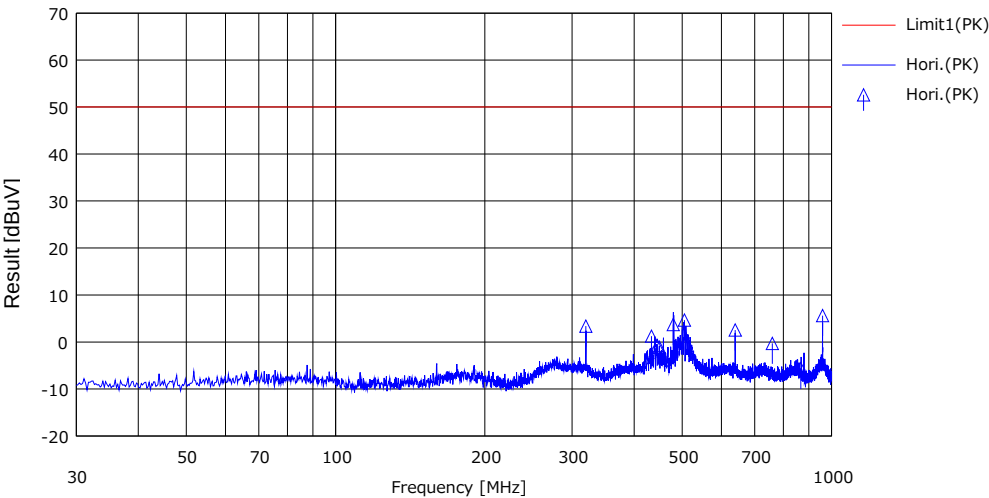
Antenna Terminal Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.1
August 27, 2024
23 deg. C / 44 % RH
Hiroyuki Furutaka
(Below 1 GHz)
Mode 3, Variation 2

Limit : FCC15.111 Antenna terminal measurement



No.	Freq. [MHz]	Reading [PK]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [PK]	Limit *1) [PK]	Margin [PK]	Pola. [H/V]	Ant. Type	Comment
		[dBuV]				[dBuV]	[dBuV]	[dB]			
1	31.9745	41.80	0.00	0.25	38.69	3.36	50.00	46.64	Hori.	---	
2	43.3620	39.40	0.00	0.31	38.47	1.24	50.00	48.76	Hori.	---	
3	44.5505	37.40	0.00	0.31	38.46	-0.75	50.00	50.75	Hori.	---	
4	450.000	37.00	0.00	0.32	38.46	-1.14	50.00	51.14	Hori.	---	
5	47.9729	41.80	0.00	0.33	38.42	3.71	50.00	46.29	Hori.	---	
6	50.5158	42.70	0.00	0.34	38.39	4.65	50.00	45.35	Hori.	---	
7	63.9635	40.40	0.00	0.37	38.24	2.53	50.00	47.47	Hori.	---	
8	76.0000	37.50	0.00	0.42	38.23	-0.31	50.00	50.31	Hori.	---	
9	86.7240	32.00	0.00	0.45	38.10	-5.65	50.00	55.65	Hori.	---	
10	95.9452	42.90	0.00	0.47	37.76	5.61	50.00	44.39	Hori.	---	

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE) - GAIN
Except for the above table: adequate margin data below the limits.

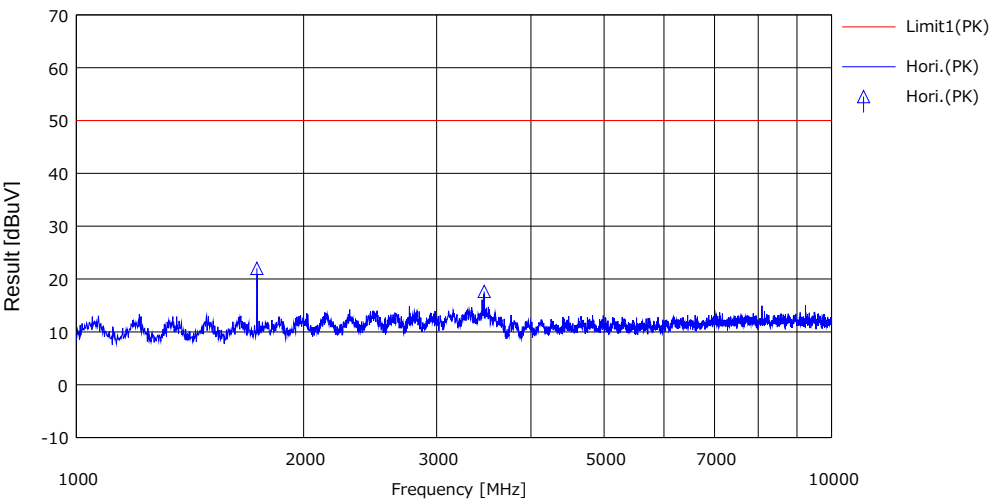
Antenna Terminal Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer

Mode

Ise EMC Lab.
No.1
August 27, 2024
23 deg. C / 44 % RH
Hiroyuki Furutaka
(Above 1 GHz)
Mode 3, Variation 2

Limit : FCC15.111 Antenna terminal measurement



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit *1)	Margin	Pola. [H/V]	Ant. Type	Comment
		<PK> [dBuV]				<PK> [dBuV]	<PK> [dBuV]	<PK> [dB]			
1	1734.480	54.40	0.00	0.62	33.00	22.02	50.00	27.98	Hori.	---	
2	3468.960	48.50	0.00	0.90	31.74	17.66	50.00	32.34	Hori.	---	

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE) - GAIN
Except for the above table: adequate margin data below the limits.

APPENDIX 2: Test instruments

Test equipment

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141261	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	USLP9143	174	-	-
RE	141262	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	UKLP9140-A	N/A	-	-
RE	141265	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-190	07/10/2024	12
RE	141317	Coaxial Cable	UL Japan	-	-	09/12/2023	12
RE	141427	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103B+BBA9106	08031	07/30/2024	12
RE	141512	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	254	10/17/2023	12
RE	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	08/06/2024	12
RE	141580	MicroWave System Amplifier	Keysight Technologies Inc	83017A	MY39500779	03/08/2024	12
RE	141594	Pre Amplifier	Keysight Technologies Inc	8447D	2944A10150	02/17/2024	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	06/05/2024	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	05/17/2024	12
RE	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	12/12/2023	24
RE	142228	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	220646	Attenuator	Huber+Suhner	6806 N-50-1	-	03/12/2024	12
RE	234602	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000M,5000M	537063/126E / 537074/126E	03/08/2024	12
RE	238713	Double Ridge Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	688	08/10/2023	12
RE	244707	Thermo-Hygrometer	HIOKI E.E. CORPORATION	LR5001	231202102	01/25/2024	12
AT	141279	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S303	03/04/2024	12
AT	141530	Digital Tester	Fluke Corporation	FLUKE 26-3	78030621	02/01/2024	12
AT	141568	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	2901	01/10/2024	12
AT	141580	MicroWave System Amplifier	Keysight Technologies Inc	83017A	MY39500779	03/08/2024	12
AT	141585	Pre Amplifier	L3 Narda-MITEQ	MLA-10K01-B01-35	1237616	02/17/2024	12
AT	141950	EMI Test Receiver	Rohde & Schwarz	ESU26	100412	11/20/2023	12
AT	141998	AC1_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	12/06/2023	24
AT	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
AT	248911	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000MM	537060/126E	05/29/2024	12

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

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

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

Test item:

RE: Radiated emission

AT: Antenna Terminal Conducted