
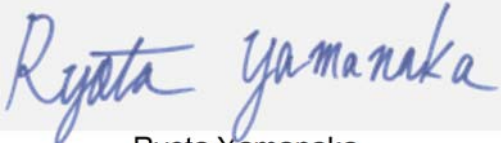




EMI TEST REPORT

Test Report No. 14937633H-B-R2

Customer	DENSO TEN Limited
Description of EUT	Car Audio
Model Number of EUT	TN0046A
FCC ID	BABTN0046A
Test Regulation	FCC Part 15 Subpart B
Test Result	Complied
Issue Date	February 9, 2024
Remarks	-

Representative test engineer	Approved by
	
Tetsuro Yoshida Engineer	Ryota Yamanaka Engineer
 	
CERTIFICATE 5107.02	
<input type="checkbox"/> The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.	
<input checked="" type="checkbox"/> There is no testing item of "Non-accreditation".	

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

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- The test results in this test report are traceable to the national or international standards.
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- This test report covers EMC technical requirements. It does not cover administrative issues such as Manual or non-EMC test related Requirements. (if applicable)
- The all test items in this test report are conducted by UL Japan, Inc. Ise EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided from the customer for this report is identified in SECTION 1.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No. 14937633H-B

This report is a revised version of 14937633H-B-R1. 14937633H-B-R1 is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	14937633H-B	December 18, 2023	-
1	14937633H-B-R1	February 7, 2024	Correction of following points by re-test. - P.5: Section 2.1: Test Date - P.6 Section 3.2: Worst margin - P.15 to 20, 23 to 25: Test data
2	14937633H-B-R2	February 9, 2024	P.26: Update and add Last Calibration Date for LIMS ID (141530, 141566, 141568, 141532, 141554, 141903)

Reference: Abbreviations (Including words undescribed in this report)

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

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SECTION 1: Customer information

Company Name	DENSO TEN Limited
Address	2-28 Goshō-Dori 1-Chome, Hyogo-Ku Kobe 652-8510 Japan
Telephone Number	+81-78-682-2159
Contact Person	Kaoru Abe

The information provided from 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

* The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT

Description	Car Audio
Model Number	TN0046A
Serial Number	Refer to SECTION 4.2
Condition	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	November 27, 2023
Test Date	November 30, 2023 to February 6, 2024

2.2 Product Description

General Specification

Rating	DC 12 V
Clock frequency (ies) in the system	Main 216 MHz

Radio Specification

Bluetooth (BR / EDR)

Equipment Type	Transceiver
Frequency of Operation	2402 MHz to 2480 MHz
Type of Modulation	FHSS (GFSK, $\pi/4$ DQPSK, 8 DPSK)
Antenna Gain	-2.4 dBi

AM/FM

Equipment Type	Receiver
Frequency of Operation	AM: 530 kHz to 1710 kHz FM: 87.75 MHz to 107.9 MHz
Type of Modulation	AM FM
Antenna Connector Type	JASO
Impedance	75 ohm

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	ANSI C63.4: 2014 + C63.4a: 2017 7. AC power - line conducted emission measurements IEEE 187: 2003	Part 15 Subpart B 15.107(a)	-	N/A	*1)
Radiated emission	ANSI C63.4: 2014 + C63.4a: 2017 8. Radiated emission measurements IEEE 187: 2003	Part 15 Subpart B 15.109(a)	5.96 dB 36.006 MHz, Vertical, Mode 1	Complied	-
Antenna Terminal	ANSI C63.4: 2014 + C63.4a: 2017 12. Measurement of unintentional radiators other than ITE IEEE 187: 2003	Part 15 Subpart B 15.111(a)	12.88 dB 1409.044 MHz	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	4.8
		Vertical	dB	5.0
	200 MHz to 1000 MHz	Horizontal	dB	5.1
		Vertical	dB	6.2
10 m	30 MHz to 200 MHz	Horizontal	dB	4.8
		Vertical	dB	4.8
	200 MHz to 1000 MHz	Horizontal	dB	4.9
		Vertical	dB	5.0
3 m	1 GHz to 6 GHz	Test Receiver	dB	5.1
		Spectrum Analyzer	dB	4.9
	6 GHz to 18 GHz	Test Receiver	dB	5.4
		Spectrum Analyzer	dB	5.2
1 m	10 GHz to 18 GHz	Spectrum analyzer	dB	5.0
	18 GHz to 26.5 GHz	Spectrum analyzer	dB	5.6
	26.5 GHz to 40 GHz	Spectrum analyzer	dB	4.9
0.5 m	26.5 GHz to 40 GHz	Spectrum analyzer	dB	4.9
10 m	1 GHz to 18 GHz	Test Receiver	dB	5.4

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.

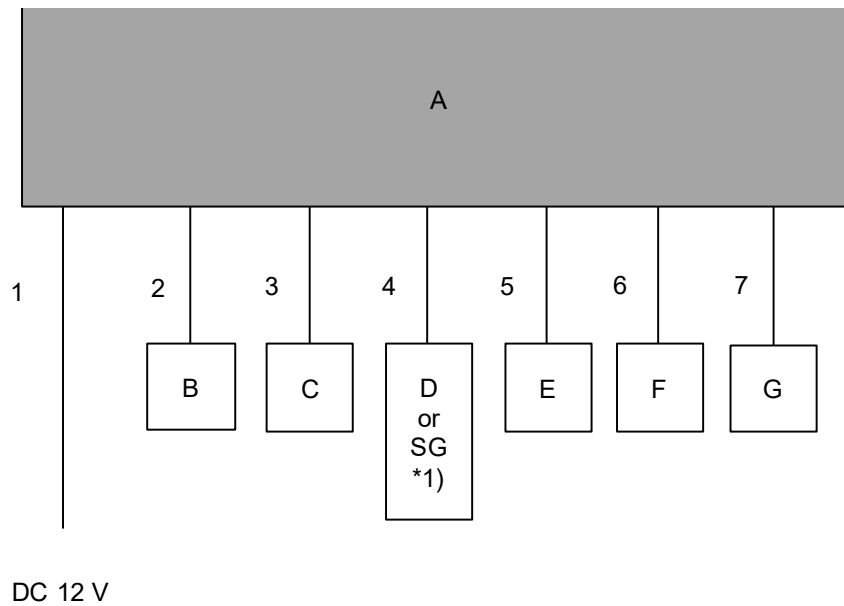
SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

Mode	Remarks
Mode 1: USB Play mode	Radiated Emission test
Mode 2: FM Receiving mode (Local / Other)	Radiated Emission test
Mode 3: FM Seek mode	Antenna Terminal test only

Software(s)	TN0046A Version: 1.0
-------------	----------------------

4.2 Configuration and peripherals



*1) SG(Signal Generator) used Mode 2.

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

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Car Audio	TN0046A	BWB00048	DENSO TEN Limited	EUT
B	Speaker	TS-F1600	-	Pioneer Corporation	-
C	Speaker	-	-	-	-
D	AM/FM Antenna	-	-	-	-
E	Switch	-	-	-	-
F	Android	SM-A510FD	R58H11M9Y8N	Samsung	-
G	USB Memory	RUF3-K16GB	P10416	Buffalo	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC Cable	3.0	Unshielded	Unshielded	-
2	Speaker Cable	1.2	Unshielded	Unshielded	*RE Only
3	Speaker Cable	1.2	Unshielded	Unshielded	*RE Only
4	FM/AM Cable	2.3	Shielded	Shielded	*RE Only
5	Signal Cable	2.4	Unshielded	Unshielded	*RE Only
6	Audio Cable	1.6	Shielded	Shielded	*RE Only
7	USB Cable	3.0	Shielded	Shielded	*RE Only

* RE: Radiated Emission

SECTION 5: Radiated Emission

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 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.

6.3 Test conditions

Frequency range : 30 MHz to 200 MHz (Biconical antenna)
 200 MHz to 1000 MHz (Logperiodic antenna)
 1000 MHz to 13000 MHz (Horn antenna)
 Test distance : 3 m
 EUT position : Table top
 EUT operation mode : See Clause 4.1

6.4 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
 The test of Local oscillator spurious has been measured up to appropriate frequency based on the result of the antenna terminal test.

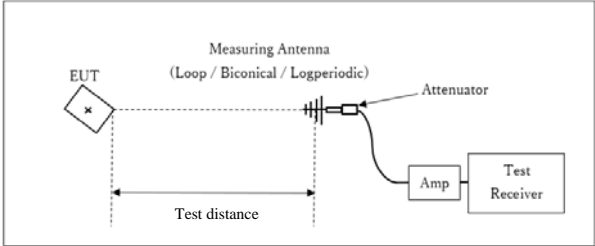
Test antenna was aimed at the emission source for receiving the maximum signal and always kept. (Above 1 GHz)

Frequency	Below 1 GHz	Above 1 GHz
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

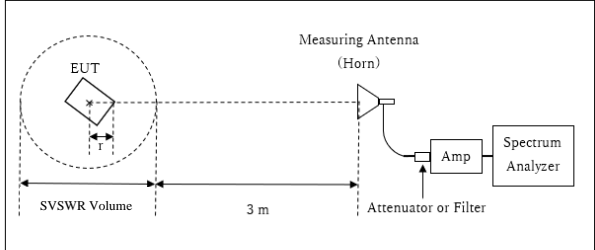
Below 1 GHz



* : Center of turn table

Test Distance: 3 m

1 GHz to 13 GHz



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

Distance Factor: $20 \times \log(3.00 \text{ m}^*/3.0 \text{ m}) = 0 \text{ dB}$
 * Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.00 \text{ m}$

SVSWR Volume: 2 m
 (SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 1.0\text{m}$

The test was made on EUT at the normal use position.

6.5 Test result

Summary of the test results: Pass

The limit is rounded down to one decimal place.
 The test result is rounded off to one or two decimal places, 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 table 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 13000 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	Spectrum Analyzer	Spectrum Analyzer *1)
IF Bandwidth	PK: RBW: 100 kHz / VBW: 300 kHz	PK: RBW: 1 MHz / VBW: 3 MHz

*1) The Spectrum Analyzer was used in 3 dB resolution bandwidth.

6.5 Test result

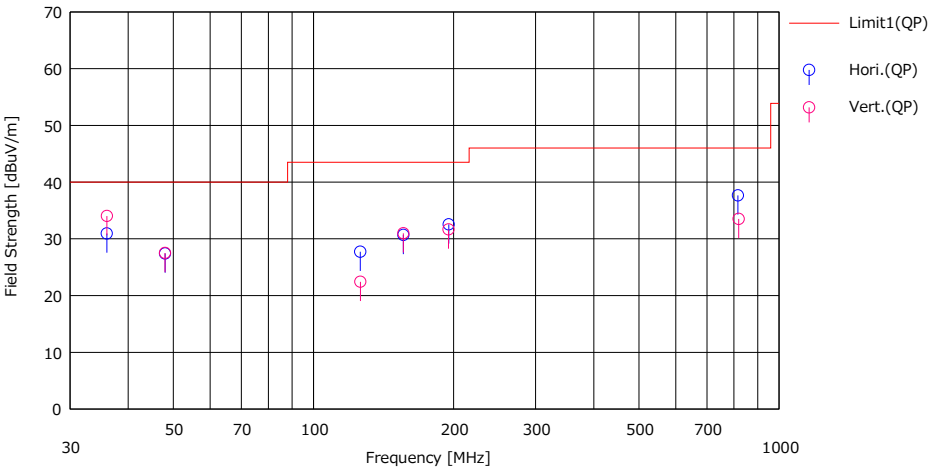
Summary of the test results: Pass

APPENDIX 1: Test data

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.1
Date November 30, 2023
Temperature / Humidity 20 deg. C / 46 % RH
Engineer Kiyoshiro Okazaki
(Below 1 GHz)
Mode Mode 1

Limit : FCC_Part 15 Subpart B(15.109)_Class B



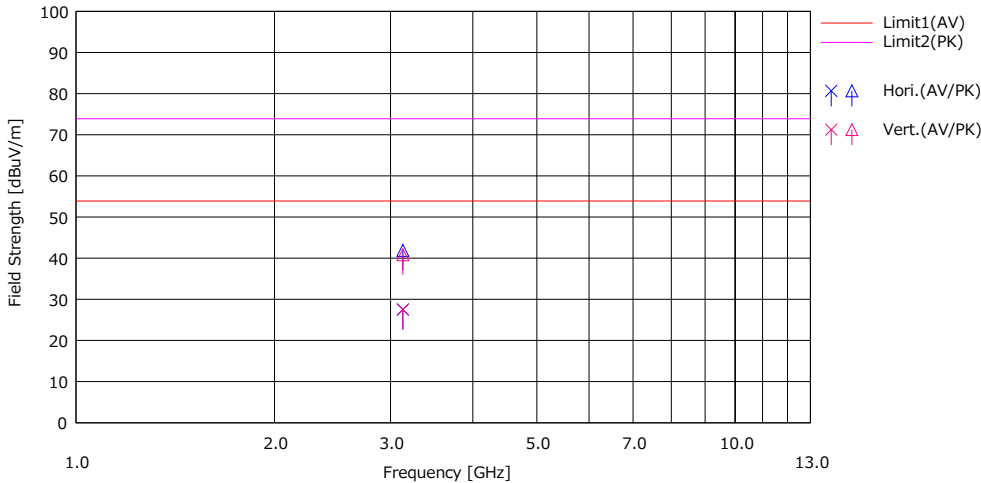
No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margan	Polz. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				<(QP)>	<(QP)>	<(QP)>					
1	35.980	46.00	16.32	7.36	38.73	30.95	40.00	9.05	Hori.	400	333	BA	
2	48.004	46.70	11.86	7.59	38.74	27.41	40.00	12.59	Hori.	333	155	BA	
3	126.057	44.60	13.30	8.71	38.87	27.74	43.50	15.76	Hori.	260	68	BA	
4	156.003	45.20	15.28	9.07	38.87	30.68	43.50	12.82	Hori.	286	209	BA	
5	195.201	45.30	16.60	9.47	38.82	32.55	43.50	10.95	Hori.	226	248	BA	
6	816.210	41.00	20.96	13.70	38.01	37.65	46.00	8.35	Hori.	158	159	LA23	
7	36.006	49.10	16.31	7.36	38.73	34.04	40.00	5.96	Vert.	100	55	BA	
8	47.992	46.80	11.86	7.59	38.74	27.51	40.00	12.49	Vert.	400	221	BA	
9	126.104	39.30	13.30	8.71	38.87	22.44	43.50	21.06	Vert.	100	270	BA	
10	156.003	45.50	15.28	9.07	38.87	30.98	43.50	12.52	Vert.	218	281	BA	
11	194.991	44.40	16.61	9.47	38.82	31.66	43.50	11.84	Vert.	100	195	BA	
12	819.230	36.80	20.99	13.72	38.00	33.51	46.00	12.49	Vert.	100	124	LA23	

CHART: WITH FACTOR
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT + 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.1
Date November 30, 2023
Temperature / Humidity 21 deg. C / 39 % RH
Engineer Masaya Minami
(Above 1 GHz)
Mode Mode 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		Pol.	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	3131.500	32.20	46.60	28.81	2.70	36.20	27.51	41.91	53.90	73.90	26.39	31.99	Hori.	100	359	HA5	
2	3131.500	32.20	45.50	28.81	2.70	36.20	27.51	40.81	53.90	73.90	26.39	33.09	Vert.	100	359	HA5	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Below 1 GHz)
Mode	Mode 2 Local 87.75 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< QP DATA >>

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
		(QP)				(QP)	(QP)	[dBuV/m]					
1	88.050	38.60	8.30	8.24	38.84	16.30	43.50	27.20	Hori.	246	270	BA	
2	176.100	28.10	15.98	9.29	38.84	14.53	43.50	28.97	Hori.	100	0	BA	
3	264.150	27.70	12.44	10.11	38.74	11.51	46.00	34.49	Hori.	100	0	LA23	
4	352.200	27.50	15.04	10.81	38.51	14.84	46.00	31.16	Hori.	100	0	LA23	
5	440.250	27.20	16.24	11.45	38.34	16.55	46.00	29.45	Hori.	100	0	LA23	
6	528.300	27.10	17.59	12.02	38.24	18.47	46.00	27.53	Hori.	100	0	LA23	
7	616.350	26.60	19.38	12.57	38.07	20.48	46.00	25.52	Hori.	100	0	LA23	
8	704.400	26.40	19.91	13.07	38.04	21.34	46.00	24.66	Hori.	100	0	LA23	
9	792.450	26.30	20.73	13.56	38.04	22.55	46.00	23.45	Hori.	100	0	LA23	
10	880.500	26.20	21.93	14.02	37.89	24.26	46.00	21.74	Hori.	100	0	LA23	
11	968.550	26.30	22.29	14.47	37.52	25.54	53.90	28.36	Hori.	100	0	LA23	
12	88.050	37.40	8.30	8.24	38.84	15.10	43.50	28.40	Vert.	114	339	BA	
13	176.100	28.10	15.98	9.29	38.84	14.53	43.50	28.97	Vert.	100	0	BA	
14	264.150	27.70	12.44	10.11	38.74	11.51	46.00	34.49	Vert.	100	0	LA23	
15	352.200	27.50	15.04	10.81	38.51	14.84	46.00	31.16	Vert.	100	0	LA23	
16	440.250	27.20	16.24	11.45	38.34	16.55	46.00	29.45	Vert.	100	0	LA23	
17	528.300	27.10	17.59	12.02	38.24	18.47	46.00	27.53	Vert.	100	0	LA23	
18	616.350	26.60	19.38	12.57	38.07	20.48	46.00	25.52	Vert.	100	0	LA23	
19	704.400	26.40	19.91	13.07	38.04	21.34	46.00	24.66	Vert.	100	0	LA23	
20	792.450	26.30	20.73	13.56	38.04	22.55	46.00	23.45	Vert.	100	0	LA23	
21	880.500	26.20	21.93	14.02	37.89	24.26	46.00	21.74	Vert.	100	0	LA23	
22	968.550	26.30	22.29	14.47	37.52	25.54	53.90	28.36	Vert.	100	0	LA23	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Above 1 GHz)
Mode	Mode 2 Local 87.75 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pda. [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	1056.600	33.50	48.10	24.75	1.53	36.78	23.00	37.60	53.90	73.90	30.90	36.30	Hori.	100	0	HA5	
2	1144.650	33.30	47.30	25.10	1.58	36.71	23.27	37.27	53.90	73.90	30.63	36.63	Hori.	100	0	HA5	
3	1056.600	33.50	46.80	24.75	1.53	36.78	23.00	36.30	53.90	73.90	30.90	37.60	Vert.	100	0	HA5	
4	1144.650	33.30	46.40	25.10	1.58	36.71	23.27	36.37	53.90	73.90	30.63	37.53	Vert.	100	0	HA5	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Below 1 GHz)
Mode	Mode 2 Local 97.9 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< QP DATA >>

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]	[dBUV/m]					
1	98.200	29.50	9.73	8.38	38.85	8.76	43.50	34.74	Horiz.	207	244	BA	
2	196.400	27.90	16.56	9.49	38.82	15.13	43.50	28.37	Horiz.	100	0	BA	
3	294.600	27.70	13.63	10.36	38.68	13.01	46.00	32.99	Horiz.	100	0	LA23	
4	392.800	27.40	15.53	11.11	38.38	15.66	46.00	30.34	Horiz.	100	0	LA23	
5	491.000	27.10	17.59	11.78	38.31	18.16	46.00	27.84	Horiz.	100	0	LA23	
6	589.200	26.70	19.03	12.40	38.10	20.03	46.00	25.97	Horiz.	100	0	LA23	
7	687.400	26.50	19.71	12.98	38.04	21.15	46.00	24.85	Horiz.	100	0	LA23	
8	785.600	26.40	20.62	13.52	38.04	22.50	46.00	23.50	Horiz.	100	0	LA23	
9	883.800	26.30	21.94	14.04	37.88	24.40	46.00	21.60	Horiz.	100	0	LA23	
10	982.000	26.00	22.29	14.53	37.46	25.36	53.90	28.54	Horiz.	100	0	LA23	
11	98.200	29.30	9.73	8.38	38.85	8.56	43.50	34.94	Vert.	100	305	BA	
12	196.400	27.90	16.56	9.49	38.82	15.13	43.50	28.37	Vert.	100	0	BA	
13	294.600	27.70	13.63	10.36	38.68	13.01	46.00	32.99	Vert.	100	0	LA23	
14	392.800	27.40	15.53	11.11	38.38	15.66	46.00	30.34	Vert.	100	0	LA23	
15	491.000	27.10	17.59	11.78	38.31	18.16	46.00	27.84	Vert.	100	0	LA23	
16	589.200	26.70	19.03	12.40	38.10	20.03	46.00	25.97	Vert.	100	0	LA23	
17	687.400	26.50	19.71	12.98	38.04	21.15	46.00	24.85	Vert.	100	0	LA23	
18	785.600	26.40	20.62	13.52	38.04	22.50	46.00	23.50	Vert.	100	0	LA23	
19	883.800	26.30	21.94	14.04	37.88	24.40	46.00	21.60	Vert.	100	0	LA23	
20	982.000	26.00	22.29	14.53	37.46	25.36	53.90	28.54	Vert.	100	0	LA23	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Above 1 GHz)
Mode	Mode 2 Local 97.9 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< AV/PK DATA >>

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	1080.200	32.80	46.80	24.87	1.54	36.76	22.45	36.45	53.90	73.90	31.45	37.45	Hori.	100	0	HA5	
2	1178.400	32.70	46.10	25.35	1.61	36.69	22.97	36.37	53.90	73.90	30.93	37.53	Hori.	100	0	HA5	
3	1276.600	32.50	46.70	25.84	1.67	36.62	23.39	37.59	53.90	73.90	30.51	36.31	Hori.	100	0	HA5	
4	1374.800	32.40	46.10	26.20	1.73	36.54	23.79	37.49	53.90	73.90	30.11	36.41	Hori.	100	0	HA5	
5	1080.200	32.80	46.30	24.87	1.54	36.76	22.45	35.95	53.90	73.90	31.45	37.95	Vert.	100	0	HA5	
6	1178.400	32.70	46.30	25.35	1.61	36.69	22.97	36.57	53.90	73.90	30.93	37.33	Vert.	100	0	HA5	
7	1276.600	32.50	46.30	25.84	1.67	36.62	23.39	37.19	53.90	73.90	30.51	36.71	Vert.	100	0	HA5	
8	1374.800	32.40	45.90	26.20	1.73	36.54	23.79	37.29	53.90	73.90	30.11	36.61	Vert.	100	0	HA5	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Below 1 GHz)
Mode	Mode 2 Local 107.9 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< QP DATA >>

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
		(QP) [dBuV]				(QP) [dBuV/m]	(QP) [dB]						
1	108.200	28.30	11.09	8.51	38.85	9.05	43.50	34.45	Hor.	155	250	BA	
2	216.400	27.60	11.20	9.68	38.80	9.68	46.00	36.32	Hor.	100	0	LA23	
3	324.600	27.40	14.35	10.60	38.59	13.76	46.00	32.24	Hor.	100	0	LA23	
4	432.800	27.10	16.11	11.40	38.34	16.27	46.00	29.73	Hor.	100	0	LA23	
5	541.000	26.90	17.72	12.10	38.21	18.51	46.00	27.49	Hor.	100	0	LA23	
6	649.200	26.60	19.29	12.76	38.06	20.59	46.00	25.41	Hor.	100	0	LA23	
7	757.400	26.30	20.19	13.37	38.04	21.82	46.00	24.18	Hor.	100	0	LA23	
8	865.600	26.10	21.82	13.95	37.92	23.95	46.00	22.05	Hor.	100	0	LA23	
9	973.800	26.20	22.32	14.49	37.50	25.51	53.90	28.39	Hor.	100	0	LA23	
10	108.200	29.00	11.09	8.51	38.85	9.75	43.50	33.75	Vert.	118	258	BA	
11	216.400	27.60	11.20	9.68	38.80	9.68	46.00	36.32	Vert.	100	0	LA23	
12	324.600	27.40	14.35	10.60	38.59	13.76	46.00	32.24	Vert.	100	0	LA23	
13	432.800	27.10	16.11	11.40	38.34	16.27	46.00	29.73	Vert.	100	0	LA23	
14	541.000	26.90	17.72	12.10	38.21	18.51	46.00	27.49	Vert.	100	0	LA23	
15	649.200	26.60	19.29	12.76	38.06	20.59	46.00	25.41	Vert.	100	0	LA23	
16	757.400	26.30	20.19	13.37	38.04	21.82	46.00	24.18	Vert.	100	0	LA23	
17	865.600	26.10	21.82	13.95	37.92	23.95	46.00	22.05	Vert.	100	0	LA23	
18	973.800	26.20	22.32	14.49	37.50	25.51	53.90	28.39	Vert.	100	0	LA23	

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.1
Date	February 6, 2024
Temperature / Humidity	20 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
	(Above 1 GHz)
Mode	Mode 2 Local 107.9 MHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B

<< AV/PK DATA >>

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	1082.000				33.20	46.80	24.88	1.54	36.76	22.86					
2	1190.200	33.80	46.90	25.43	1.61	36.68	24.16	37.26	53.90	73.90	29.74	36.64	Hori.	100	0	HA5	
3	1298.400	32.50	45.90	25.98	1.68	36.60	23.56	36.96	53.90	73.90	30.34	36.94	Hori.	100	0	HA5	
4	1406.600	33.70	47.30	26.15	1.75	36.52	25.08	38.68	53.90	73.90	28.82	35.22	Hori.	100	0	HA5	
5	1514.800	32.30	45.90	25.73	1.82	36.44	23.41	37.01	53.90	73.90	30.49	36.89	Hori.	100	0	HA5	
6	1082.000	33.10	46.50	24.88	1.54	36.76	22.76	36.16	53.90	73.90	31.14	37.74	Vert.	100	0	HA5	
7	1190.200	33.80	47.20	25.43	1.61	36.68	24.16	37.56	53.90	73.90	29.74	36.34	Vert.	100	0	HA5	
8	1298.400	32.50	46.20	25.98	1.68	36.60	23.56	37.26	53.90	73.90	30.34	36.64	Vert.	100	0	HA5	
9	1406.600	33.70	47.50	26.15	1.75	36.52	25.08	38.88	53.90	73.90	28.82	35.02	Vert.	100	0	HA5	
10	1514.800	32.30	46.40	25.73	1.82	36.44	23.41	37.51	53.90	73.90	30.49	36.39	Vert.	100	0	HA5	

CHART: WITH FACTOR

ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN

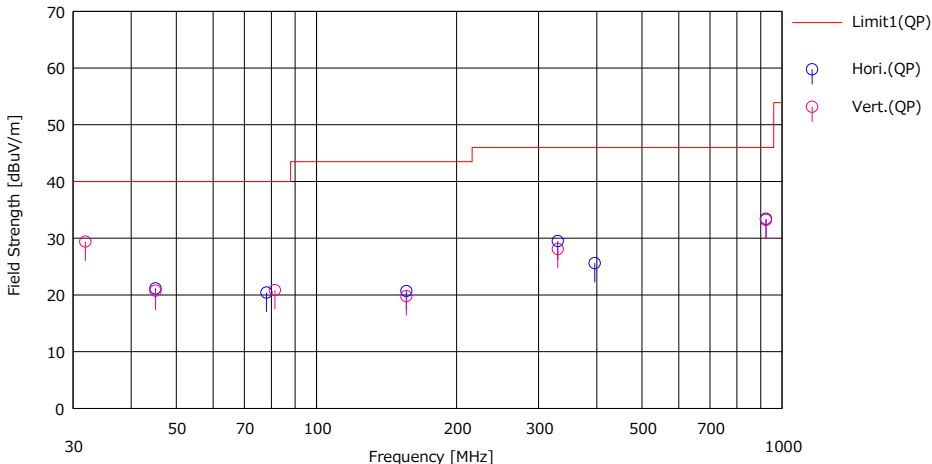
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)

Except for the above table: adequate margin data below the limits.

Radiated Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.1
Date November 30, 2023
Temperature / Humidity 20 deg. C / 46 % RH
Engineer Kiyoshiro Okazaki
(Below 1 GHz)
Mode Mode 2 Other

Limit : FCC_Part 15 Subpart B(15.109)_Class B



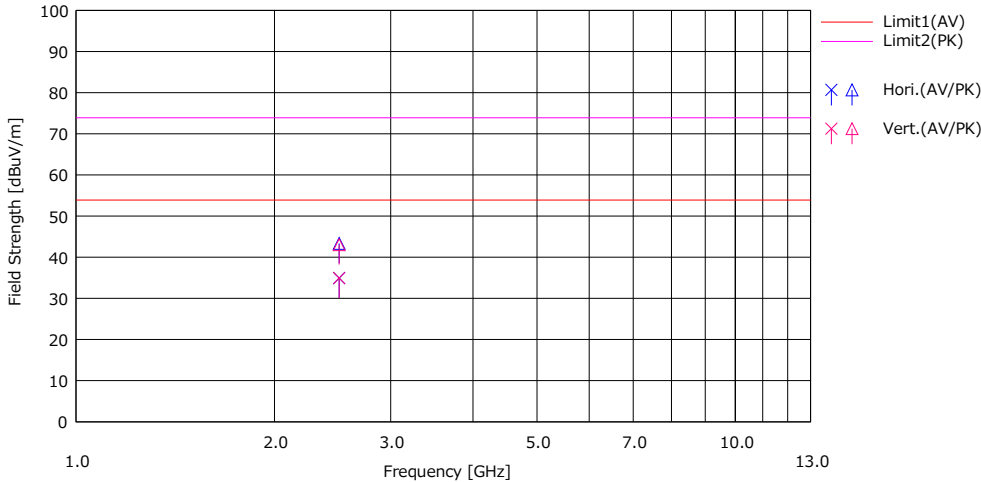
No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margin	Pol.	Height [cm]	Angle [deg.]	Ant. Type	Comment
		[dBuV]				[QP]	[QP]	[QP]					
1	45.112	39.40	12.95	7.54	38.74	21.15	40.00	18.85	Hori.	288	343	BA	
2	78.116	44.30	6.84	8.09	38.82	20.41	40.00	19.59	Hori.	215	276	BA	
3	155.998	35.20	15.28	9.07	38.87	20.68	43.50	22.82	Hori.	207	253	BA	
4	330.007	42.90	14.53	10.64	38.58	29.49	46.00	16.51	Hori.	100	251	LA23	
5	395.999	37.20	15.63	11.14	38.37	25.60	46.00	20.40	Hori.	100	338	LA23	
6	924.009	34.90	22.00	14.25	37.73	33.42	46.00	12.58	Hori.	100	69	LA23	
7	31.884	43.00	17.86	7.27	38.73	29.40	40.00	10.60	Vert.	100	319	BA	
8	45.115	39.00	12.95	7.54	38.74	20.75	40.00	19.25	Vert.	100	296	BA	
9	81.431	44.30	7.24	8.14	38.83	20.85	40.00	19.15	Vert.	100	308	BA	
10	155.995	34.30	15.28	9.07	38.87	19.78	43.50	23.72	Vert.	100	306	BA	
11	330.001	41.50	14.53	10.64	38.58	28.09	46.00	17.91	Vert.	100	318	LA23	
12	923.992	34.70	22.00	14.25	37.73	33.22	46.00	12.78	Vert.	100	349	LA23	

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.1
Date November 30, 2023
Temperature / Humidity 21 deg. C / 39 % RH
Engineer Masaya Minami
(Above 1 GHz)
Mode Mode 2 Other

Limit : FCC_Part 15 Subpart B(15.109)_Class B



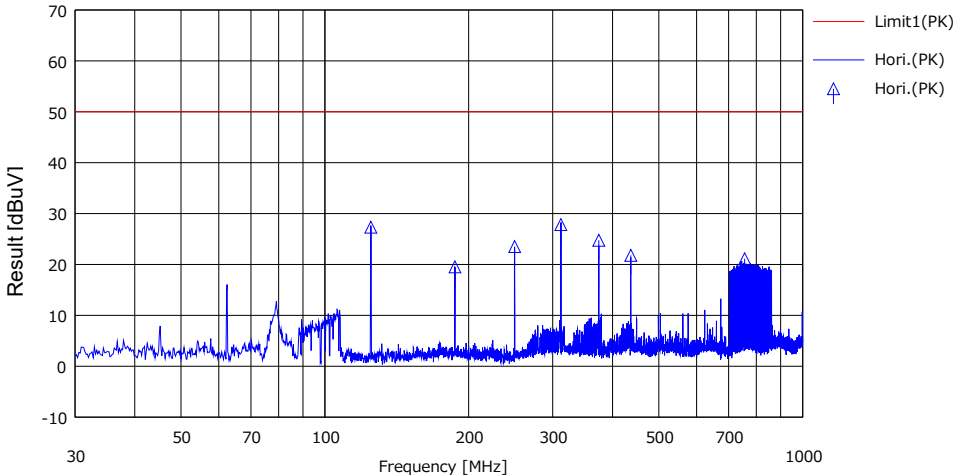
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	2507.495	41.00	49.40	27.66	2.41	36.13	34.94	43.34	53.90	73.90	18.96	30.56	Hori.	145	176	HA5	
2	2507.495	41.00	49.10	27.66	2.41	36.13	34.94	43.04	53.90	73.90	18.96	30.86	Vert.	146	176	HA5	

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.

Antenna Terminal Conducted Emission

Test place Ise EMC Lab.
Semi Anechoic Chamber No.3
Date February 5, 2024
Temperature / Humidity 21 deg. C / 43 % RH
Engineer Tetsuro Yoshida
Mode Mode 3

Limit : FCC15.111 Antenna terminal measurement



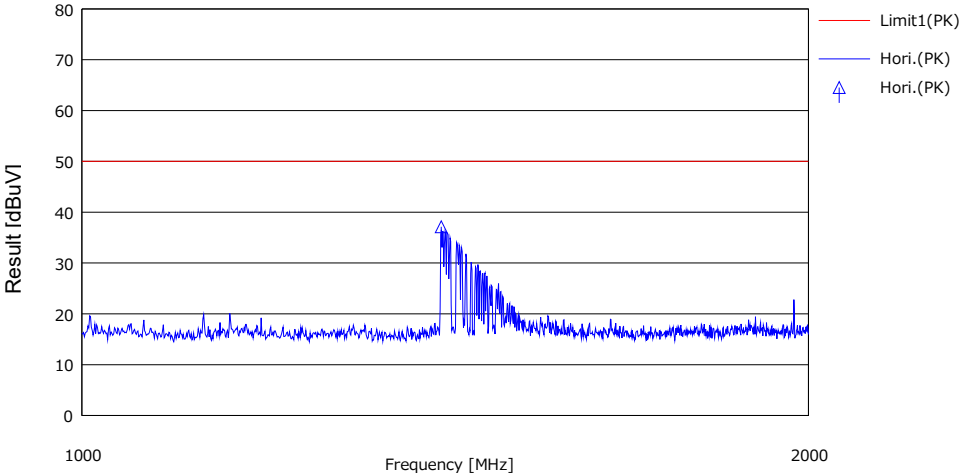
No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit *1)	Margin	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV]	[dB]	[dBuV]					
1	124.797	53.21	0.00	6.22	32.10	27.33	50.00	22.67					Other
2	187.196	45.32	0.00	6.27	32.05	19.54	50.00	30.46					Other
3	249.594	49.21	0.00	6.32	32.01	23.52	50.00	26.48					Other
4	311.993	53.43	0.00	6.36	31.97	27.82	50.00	22.18					Other
5	374.392	50.32	0.00	6.39	31.97	24.74	50.00	25.26					Other
6	436.825	47.32	0.00	6.44	31.97	21.79	50.00	28.21					Other
7	756.592	46.14	0.00	6.60	31.62	21.12	50.00	28.88					Local 94.9MHz

* 2 nW = -57 dBm = 50 dBuV
 CHART: WITH FACTOR
 CALCULATION: RESULT = READING + LOSS (CABLE + Matching Pad + DC Block) – 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.3
Date February 5, 2024
Temperature / Humidity 21 deg. C / 43 % RH
Engineer Tetsuro Yoshida
Mode Mode 3

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]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV]	[dB]	[dBuV]					
1	1409.044	64.37	0.00	6.78	34.03	37.12	50.00	12.88					Local 87.75MHz

* 2 nW = -57 dBm = 50 dBuV
CHART: WITH FACTOR
CALCULATION: RESULT = READING + LOSS (CABLE + Matching Pad + DC Block) – GAIN (AMP)
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	141198	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+BBA9106	2513	06/06/2023	12
RE	141213	Attenuator(6dB)	Weinschel Corp	2	BK7971	11/16/2023	12
RE	141267	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-192	09/21/2023	12
RE	141350	Coaxial Cable	Suhner/storm/Agilent/TSJ	-	-	03/03/2023	12
RE	141511	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	253	09/25/2023	12
RE	141530	Digital Tester	Fluke Corporation	FLUKE 26-3	78030621	01/18/2023	12
RE	141530	Digital Tester	Fluke Corporation	FLUKE 26-3	78030621	02/01/2024	12
RE	141566	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	A08Q26	01/13/2023	12
RE	141568	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	2901	01/10/2024	12
RE	141576	Pre Amplifier	Keysight Technologies Inc	8449B	3008A01671	02/14/2023	12
RE	141585	Pre Amplifier	L3 Narda-MITEQ	MLA-10K01-B01-35	1237616	02/02/2023	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	05/17/2023	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	04/10/2023	12
RE	141994	AC1_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 10m	DA-06881	09/28/2023	24
RE	141998	AC1_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	06/28/2022	24
RE	142226	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	240023	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000MM,5000MM	537060/126E / 537075/126E	09/08/2023	12
AT	141226	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S304	03/03/2023	12
AT	141377	Microwave Cable 1G-40GHz	Suhner	SUCOFLEX102	30819/2	06/19/2023	12
AT	141395	Coaxial Cable	UL Japan	-	-	11/21/2023	12
AT	141485	DC Block Filter	Keysight Technologies Inc	N9398C	51053	10/05/2023	12
AT	141532	DIGITAL HITESTER	HIOKI E.E. CORPORATION	3805	51201197	01/31/2024	12
AT	141550	Matching Pad Anritsu	Anritsu Corporation	MB-009	40063	07/26/2023	12
AT	141554	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	1301	01/25/2024	12
AT	141580	MicroWave System Amplifier	Keysight Technologies Inc	83017A	MY39500779	03/08/2023	12
AT	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/07/2023	12
AT	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	01/26/2024	12
AT	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	05/23/2022	24
AT	142183	Measure	KOMELON	KMC-36	-	10/20/2023	12
AT	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-

*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