

EMI TEST REPORT

Test Report No. 16220783H-R2

Customer	DENSO CORPORATION
Description of EUT	Remote Keyless Entry System and TPMS (Receiver)
Model Number of EUT	23ABR
FCC ID	HYQ23ABR
Test Regulation	FCC Part 15 Subpart B
Test Result	Complied
Issue Date	March 5, 2026
Remarks	-

Representative test engineerMasaya Minami
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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- For any test report referred in this report, the latest version (including any revisions) is always referred to.
- If the latest version is a revision, it replaces the previous version. See the table below for revisions and versions.

REVISION HISTORY

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	16220783H	February 24, 2026	-
1	16220783H-R1	March 2, 2026	Correction of the Cable name and Length in Clause 4.2; <u>For Mode 1 and 2</u> No.1: Signal → DC + Signal <u>For Mode 3</u> No.1: Signal → DC + Signal No.2: Antenna → DC No.3: Signal → DC No.6: Signal → DC / 0.3 → 1.3
2	16220783H-R2	March 5, 2026	Correction to the Shield description in Clause 4.2; <u>For Mode 3</u> No.2: Shielded → Unshielded

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	+81-50-1723-9869
Contact Person	Masahiro Fukuda

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	23ABR
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	February 13, 2026
Test Date	February 19, 2026

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): 314.00 MHz RKES (CH2): 312.50 MHz TPMS: 314.98 MHz
Type of Modulation	RKES: FSK (F1D) TPMS: FSK (F1D)
Intermediate frequency	280 kHz
Voltage Controlled Oscillator	RKES (CH1): 1882.32 MHz RKES (CH2): 1873.32 MHz TPMS: 1888.20 MHz
Antenna Type	ANT1: Internal antenna (Inverse F antenna)

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

2.3 Variant model(s)

23ABR has 2 variations. Details of the variations are as follows:

Serial Number ^{*1)}	Variation	Inverse F Antenna (ANT1)
No.1	1	TYPE 1
No.2	2	TYPE 3

<Reference>

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

SECTION 3: Test Summary

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 Reference Standards

ANSI/USEMCSC C63.2-2023
ANSI C63.4-2014+C63.4a-2017
ANSI C63.5-2017
ANSI C63.25.1-2018

3.3 Summary of Test Results

Item	Limits	Result	Remarks
Conducted emission	FCC: Part 15 Subpart B 15.107(a) ISED: RSS-Gen 7.2	N/A	*1)
Radiated emission	FCC: Part 15 Subpart B 15.109(a) ISED: RSS-Gen 7.3	Complied	-
Antenna Terminal	FCC: Part 15 Subpart B 15.111(a) ISED: RSS-Gen 7.4	N/A	*2)
* 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. *2) The receiving antenna (of this EUT) is installed inside the EUT and cannot be removed (permanently attached). Therefore, Radiated emission test was performed.			

3.4 Addition to standard

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

3.5 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	4.8
	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	9 kHz to 30 MHz		dB	4.7
	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

3.6 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 (SAC1)	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 (SAC2)	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber (SAC3)	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room (PR3)	3 m
No.3 shielded room (SR3)	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber (SAC4)	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room (PR4)	3 m
No.4 shielded room (SR4)	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber (SAC5)	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.5 measurement room (MR5)	6.4 x 6.4 x 3.0	6.4 x 6.4	-	-
No.6 shielded room (SR6)	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room (MR6)	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room (SR7)	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room (MR8)	3.1 x 5.0 x 2.7	3.1 x 5.0	-	-
No.9 measurement room (MR9)	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.10 shielded room (SR10)	3.8 x 2.8 x 2.8	3.8 x 2.8	-	-
No.11 measurement room (MR11)	4.0 x 3.4 x 2.5	N/A	-	-
No.12 measurement room (MR12)	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	-	-

3.7 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 (314.00 MHz)
	2. RKES Receiving mode (312.50 MHz)
	3. TPMS Receiving mode (314.98 MHz)
Software(s)	DN-2585002440-01

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

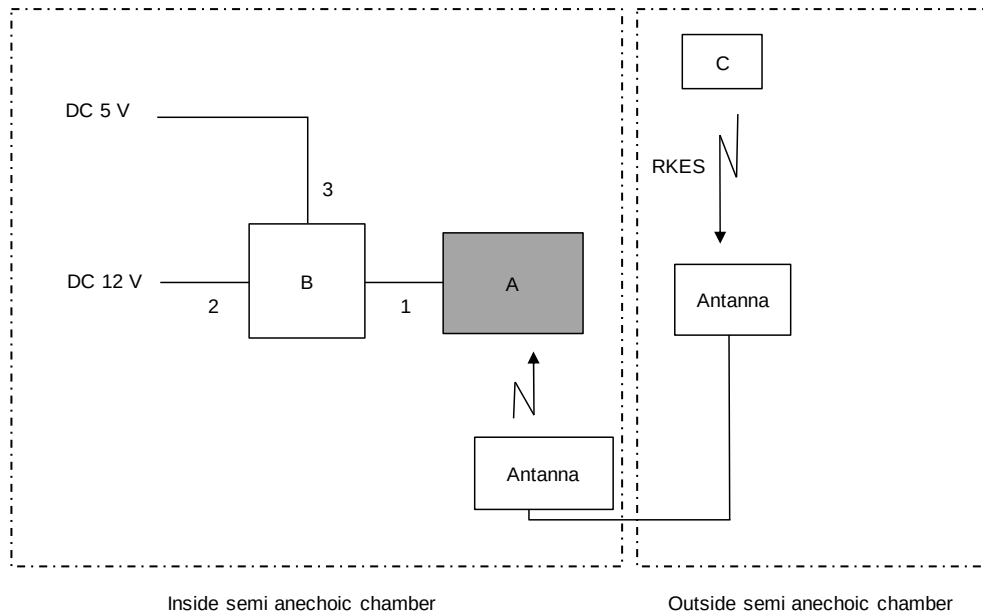
* It was confirmed by using checker that the EUT receives the signal from the transmitter (pair of EUT).

<Test Mode>

Serial No.	No.1	No.2
Variation No.	1	2
Receiving Ant.	Internal	Internal
Mode 1 (RKES: 314.00 MHz)	✓	✓
Mode 2 (RKES: 312.50 MHz)	✓	✓
Mode 3 (TPMS: 314.98 MHz)	✓	✓

4.2 Configuration and peripherals

Mode 1 and 2



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

* Item No. A includes Receiver Antenna.

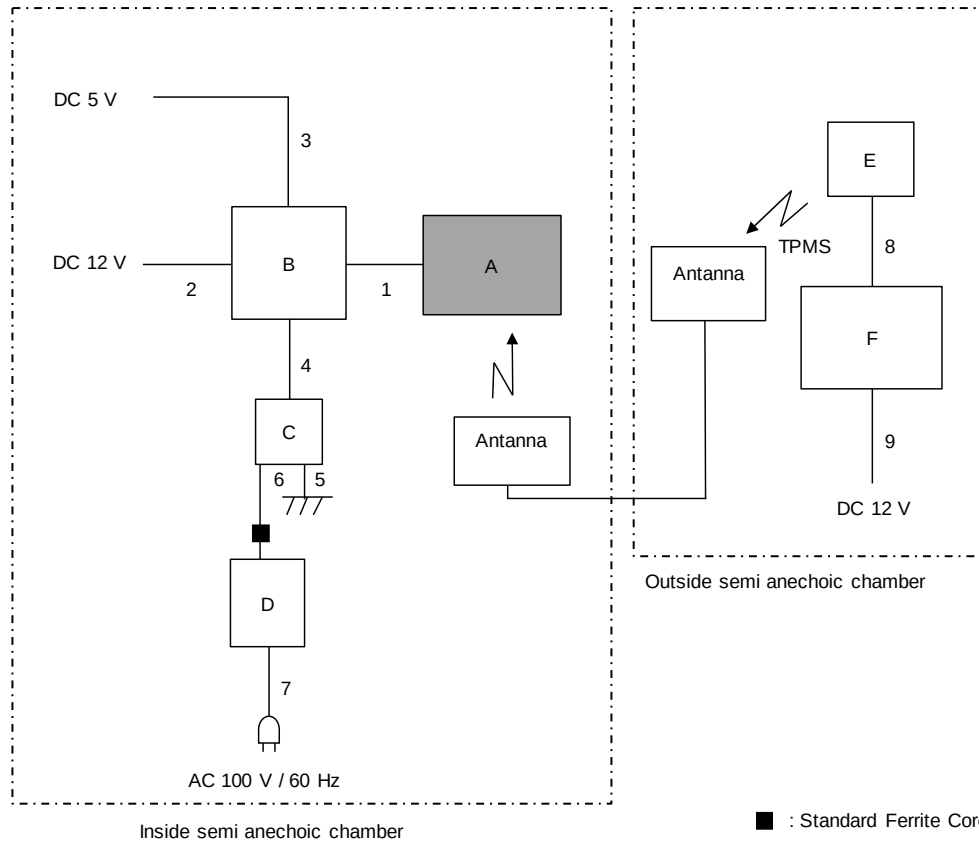
Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Remote Keyless Entry System and TPMS (Receiver)	23ABR	No.1 (Variation No.1) No.2 (Variation No.2)	DENSO CORPORATION	EUT
B	Check bench	-	No.6	DENSO CORPORATION	-
C	Smart transmitter	14FAW	No.1	DENSO CORPORATION	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC + Signal Cable	1.2	Unshielded	Unshielded	-
2	DC Cable	2.7	Unshielded	Unshielded	-
3	DC Cable	1.9	Unshielded	Unshielded	-

Mode 3



* 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)	23ABR	No.1 (Variation No.1) No.2 (Variation No.2)	DENSO CORPORATION	EUT
B	Check bench	-	No.6	DENSO CORPORATION	-
C	Meter bench	-	No.1	DENSO CORPORATION	-
D	AC Adapter	ATS065-P240	-	DENSO CORPORATION	-
E	TPMS Antenna	RH3	-	DIAMOND	-
F	TPMS signal bench	-	6	DENSO CORPORATION	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC + Signal Cable	1.2	Unshielded	Unshielded	-
2	DC Cable	2.7	Unshielded	Unshielded	-
3	DC Cable	1.9	Unshielded	Unshielded	-
4	Signal Cable	1.0	Unshielded	Unshielded	-
5	Earth Cable	2.5	Unshielded	Unshielded	-
6	DC Cable	1.3	Unshielded	Unshielded	-
7	AC Cable	1.8	Unshielded	Unshielded	-
8	Antenna Cable	1.0	Shielded	Shielded	-
9	DC Cable	1.9	Shielded	Shielded	-

SECTION 5: Radiated Emission

5.1 Operating environment

Date	Test site	Temperature	Humidity	Engineer	Mode
See data	See data	See data	See data	See data	See data

5.2 Test configuration

EUT was placed on the 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 platform.

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.

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	:	See Figure 2
EUT position	:	Table top
EUT operation mode	:	See Clause 4.1

5.4 Test procedure

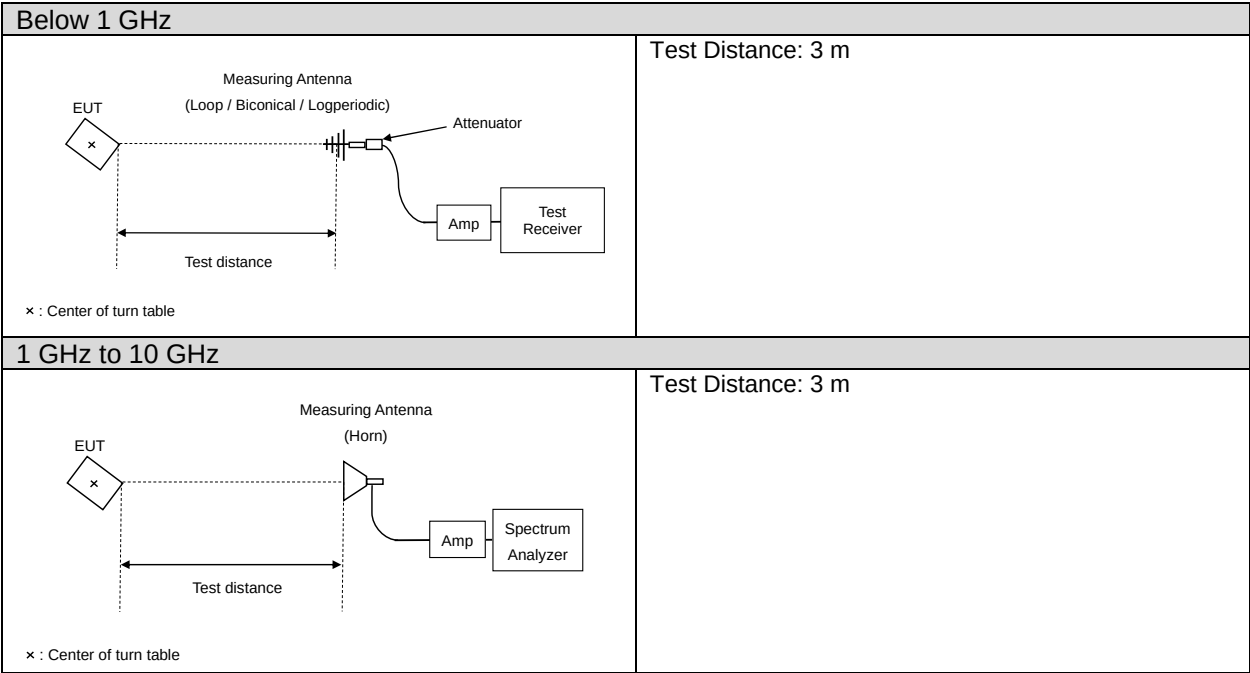
The height of the measuring antenna varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

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
Instrument used	Test Receiver	Test Receiver
IF Bandwidth	QP: BW 120 kHz	PK: BW 1 MHz, CAV: BW 1 MHz

Figure 1: Test Setup



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

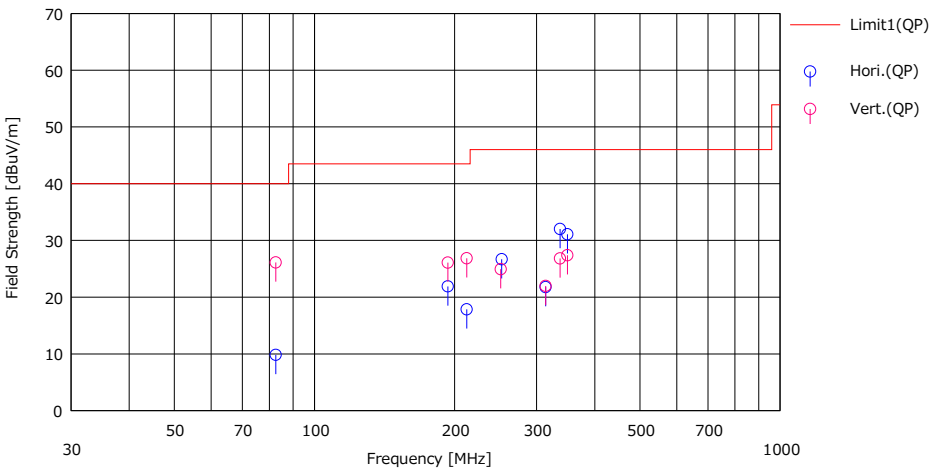
Test results are rounded off and limit are rounded down, so some differences might be observed.

APPENDIX 1: Test data

Radiated Emission

Mode	Mode 1, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



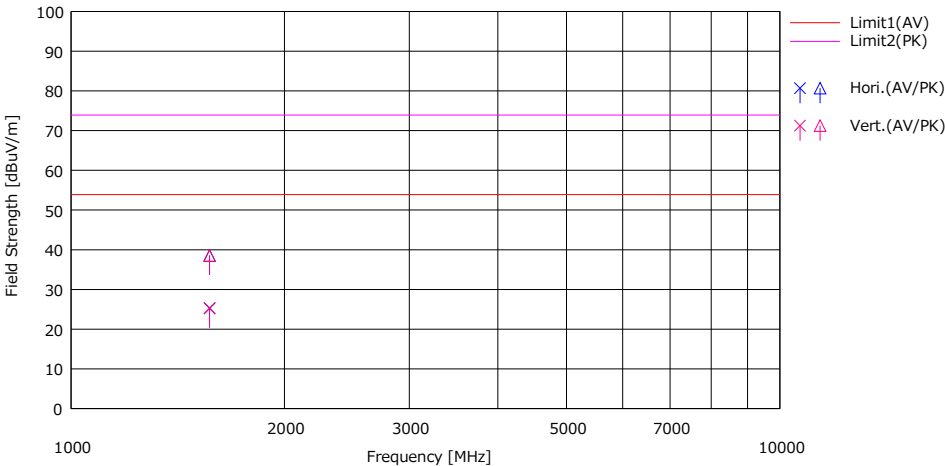
No.	Freq. [MHz]	Reading (QP) [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margn (QP) [dB]	Polz. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	82.573	23.60	7.36	7.33	28.47	9.82	40.00	30.18	Hori.	279	223	BA	
2	193.378	25.30	16.48	8.16	28.04	21.90	43.50	21.60	Hori.	301	260	BA	
3	212.304	26.30	11.22	8.28	27.95	17.85	43.50	25.65	Hori.	100	272	LA21	
4	252.425	34.00	11.92	8.52	27.77	26.67	46.00	19.33	Hori.	100	238	LA21	
5	313.720	26.70	14.03	8.89	27.84	21.78	46.00	24.22	Hori.	100	0	LA21	
6	336.856	36.20	14.78	9.02	27.98	32.02	46.00	13.98	Hori.	100	110	LA21	
7	349.357	35.00	15.05	9.10	28.06	31.09	46.00	14.91	Hori.	100	126	LA21	
8	82.573	39.90	7.36	7.33	28.47	26.12	40.00	13.88	Vert.	100	176	BA	
9	193.378	29.50	16.48	8.16	28.04	26.10	43.50	17.40	Vert.	100	348	BA	
10	212.304	35.30	11.22	8.28	27.95	26.85	43.50	16.65	Vert.	100	172	LA21	
11	251.311	32.30	11.87	8.52	27.77	24.92	46.00	21.08	Vert.	100	165	LA21	
12	313.720	26.90	14.03	8.89	27.84	21.98	46.00	24.02	Vert.	100	0	LA21	
13	336.856	31.00	14.78	9.02	27.98	26.82	46.00	19.18	Vert.	100	48	LA21	
14	349.357	31.30	15.05	9.10	28.06	27.39	46.00	18.61	Vert.	100	171	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

Mode	Mode 1, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



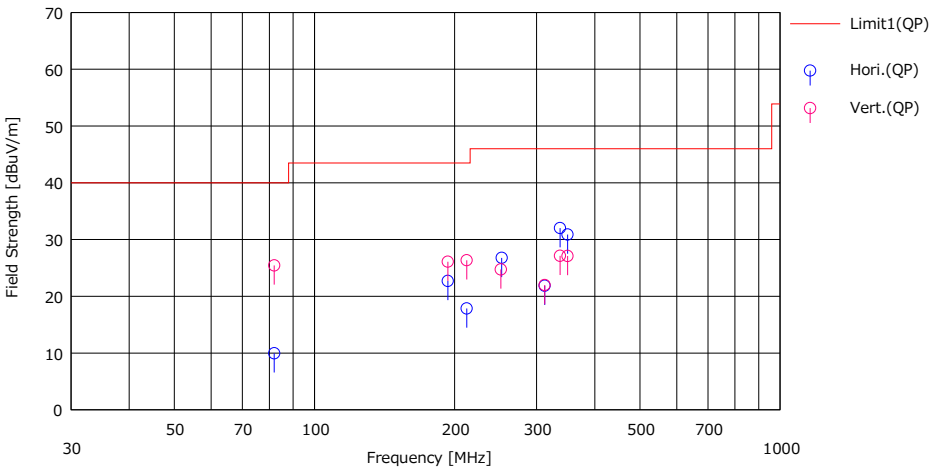
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1568.600	31.70	45.00	25.22	1.90	33.60	25.22	38.52	53.90	73.90	28.68	35.38	Hori.	100	0	HA6	
2	1568.600	31.80	45.00	25.22	1.90	33.60	25.32	38.52	53.90	73.90	28.58	35.38	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) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Mode	Mode 2, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



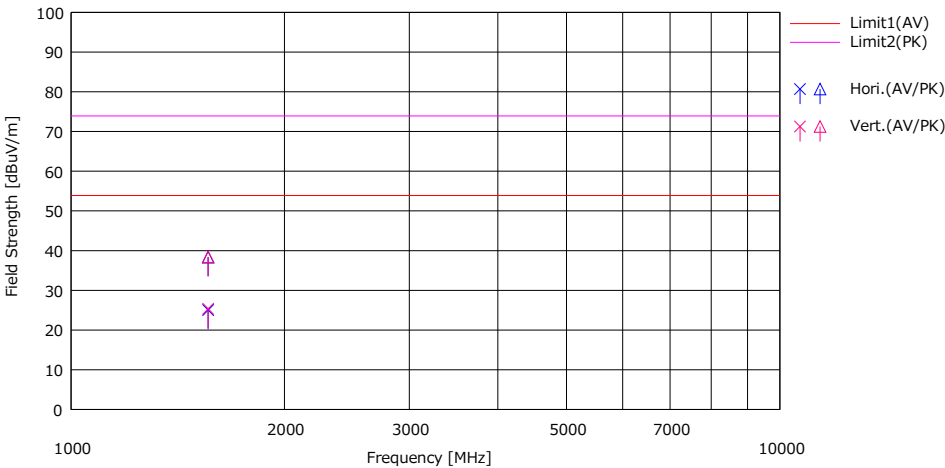
No.	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margn	Pola	Height	Angle	Ant. Type	Comment
		(QP)				(QP)	(QP)	(QP)					
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]					
1	81.972	23.80	7.28	7.33	28.47	9.94	40.00	30.06	Hori.	267	231	BA	
2	193.392	26.10	16.48	8.16	28.04	22.70	43.50	20.80	Hori.	305	263	BA	
3	212.289	26.30	11.22	8.28	27.95	17.85	43.50	25.65	Hori.	100	275	LA21	
4	252.496	34.10	11.92	8.52	27.77	26.77	46.00	19.23	Hori.	100	232	LA21	
5	312.220	26.83	13.99	8.88	27.83	21.87	46.00	24.13	Hori.	100	0	LA21	
6	336.843	36.20	14.78	9.02	27.98	32.02	46.00	13.98	Hori.	100	112	LA21	
7	349.601	34.80	15.05	9.10	28.06	30.89	46.00	15.11	Hori.	100	131	LA21	
8	81.972	39.30	7.28	7.33	28.47	25.44	40.00	14.56	Vert.	100	135	BA	
9	193.392	29.50	16.48	8.16	28.04	26.10	43.50	17.40	Vert.	100	132	BA	
10	212.289	34.80	11.22	8.28	27.95	26.35	43.50	17.15	Vert.	100	172	LA21	
11	251.392	32.10	11.88	8.52	27.77	24.73	46.00	21.27	Vert.	100	161	LA21	
12	312.220	26.94	13.99	8.88	27.83	21.98	46.00	24.02	Vert.	100	0	LA21	
13	336.843	31.30	14.78	9.02	27.98	27.12	46.00	18.88	Vert.	100	43	LA21	
14	349.601	31.00	15.05	9.10	28.06	27.09	46.00	18.91	Vert.	100	170	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

Mode	Mode 2, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



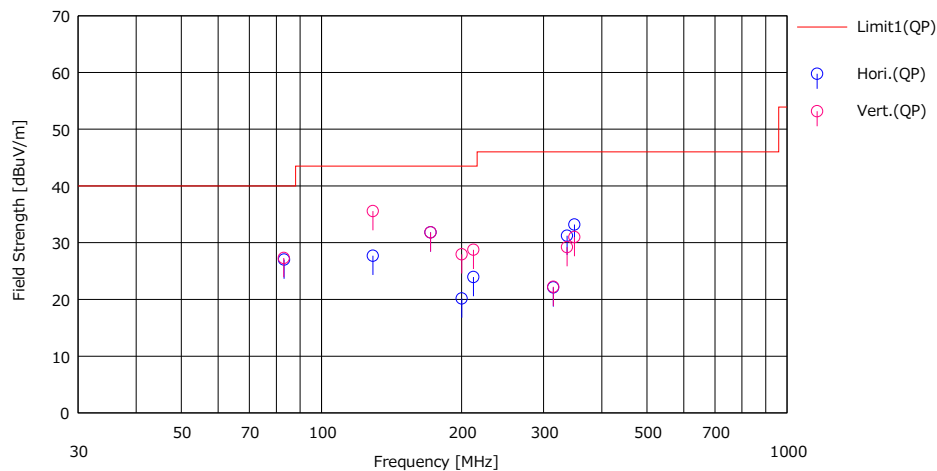
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1561.100	31.50	44.90	25.25	1.89	33.61	25.03	38.33	53.90	73.90	28.87	35.57	Hori.	100	0	HA6	
2	1561.100	31.80	44.90	25.25	1.89	33.61	25.33	38.43	53.90	73.90	28.57	35.47	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) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Mode	Mode 3, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP)	Ant.Fac	Loss	Gain	Result (QP)	Limit (QP)	Margn (QP)	Polz.	Height	Angle	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg.]		
1	83.124	40.70	7.44	7.34	28.47	27.01	40.00	12.99	Hori.	100	340	BA	
2	128.911	34.60	13.70	7.71	28.33	27.68	43.50	15.82	Hori.	138	0	BA	
3	171.519	36.10	15.85	8.01	28.15	31.81	43.50	11.69	Hori.	184	165	BA	
4	200.039	28.30	11.67	8.20	28.01	20.16	43.50	23.34	Hori.	268	116	LA21	
5	212.057	32.40	11.23	8.27	27.95	23.95	43.50	19.55	Hori.	171	255	LA21	
6	314.700	27.00	14.06	8.90	27.84	22.12	46.00	23.88	Hori.	100	0	LA21	
7	336.800	35.40	14.78	9.02	27.98	31.22	46.00	14.78	Hori.	117	95	LA21	
8	349.285	37.10	15.05	9.10	28.06	33.19	46.00	12.81	Hori.	131	94	LA21	
9	83.000	41.00	7.42	7.34	28.47	27.29	40.00	12.71	Vert.	100	6	BA	
10	128.911	42.50	13.70	7.71	28.33	35.58	43.50	7.92	Vert.	100	346	BA	
11	171.519	36.10	15.85	8.01	28.15	31.81	43.50	11.69	Vert.	100	116	BA	
12	200.039	36.10	11.67	8.20	28.01	27.96	43.50	15.54	Vert.	100	0	LA21	
13	212.057	37.20	11.23	8.27	27.95	28.75	43.50	14.75	Vert.	100	155	LA21	
14	314.700	27.10	14.06	8.90	27.84	22.22	46.00	23.78	Vert.	100	0	LA21	
15	336.800	33.40	14.78	9.02	27.98	29.22	46.00	16.78	Vert.	100	233	LA21	
16	349.285	34.90	15.05	9.10	28.06	30.99	46.00	15.01	Vert.	138	245	LA21	

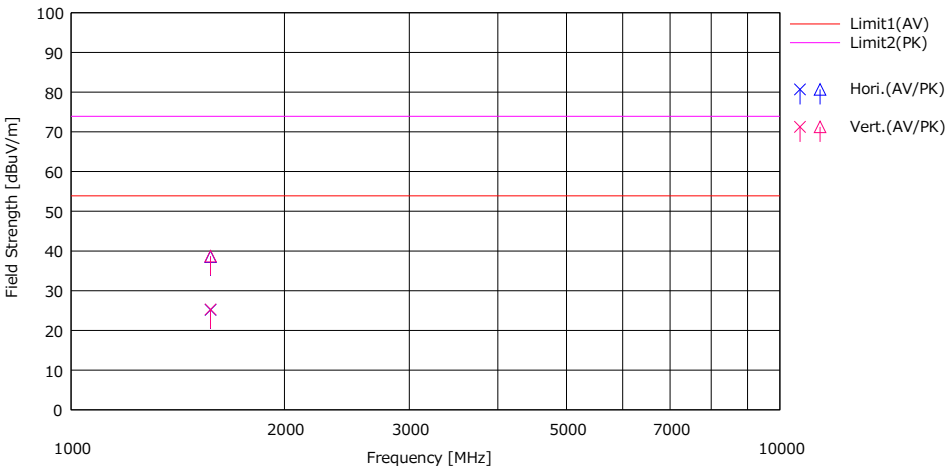
CHART: WITH FACTOR

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

Mode	Mode 3, Variation 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



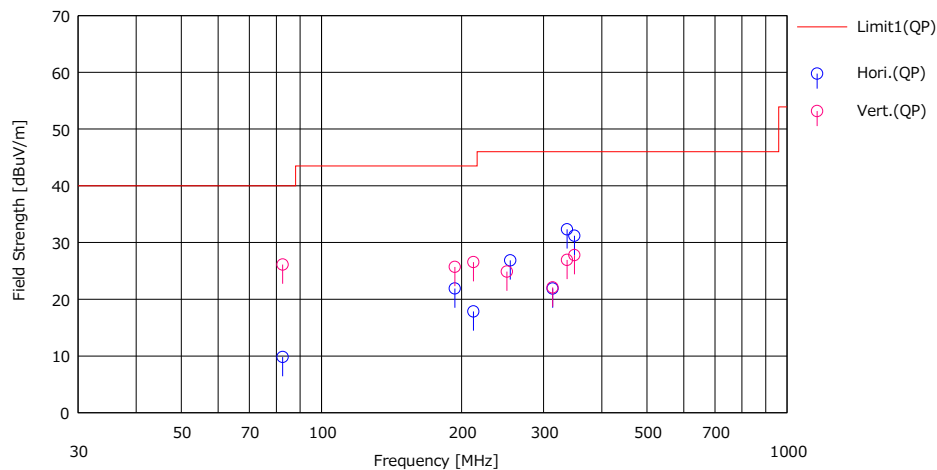
No.	Freq. [MHz]	Reading		Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pols. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1573.500	31.70	45.10	25.19	1.90	33.60	25.19	38.59	53.90	73.90	28.71	35.31	Hori.	100	0	HA6	
2	1573.500	31.80	45.20	25.19	1.90	33.60	25.29	38.69	53.90	73.90	28.61	35.21	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) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Mode	Mode 1, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP) [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margn (QP) [dB]	Polu. (H/V)	Height [cm]	Angle (deg.)	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg.]		
1	82.546	23.60	7.36	7.33	28.47	9.82	40.00	30.18	Hori.	279	230	BA	
2	193.378	25.30	16.48	8.16	28.04	21.90	43.50	21.60	Hori.	296	261	BA	
3	212.039	26.30	11.23	8.27	27.95	17.85	43.50	25.65	Hori.	100	273	LA21	
4	254.345	34.10	11.99	8.54	27.77	26.86	46.00	19.14	Hori.	100	244	LA21	
5	313.720	26.80	14.03	8.89	27.84	21.88	46.00	24.12	Hori.	100	0	LA21	
6	336.821	36.50	14.78	9.02	27.98	32.32	46.00	13.68	Hori.	100	112	LA21	
7	349.334	35.10	15.05	9.10	28.06	31.19	46.00	14.81	Hori.	100	121	LA21	
8	82.546	39.90	7.36	7.33	28.47	26.12	40.00	13.88	Vert.	100	182	BA	
9	193.378	29.10	16.48	8.16	28.04	25.70	43.50	17.80	Vert.	100	346	BA	
10	212.039	35.00	11.23	8.27	27.95	26.55	43.50	16.95	Vert.	100	175	LA21	
11	250.211	32.30	11.83	8.51	27.77	24.87	46.00	21.13	Vert.	100	161	LA21	
12	313.720	27.00	14.03	8.89	27.84	22.08	46.00	23.92	Vert.	100	0	LA21	
13	336.821	31.10	14.78	9.02	27.98	26.92	46.00	19.08	Vert.	100	52	LA21	
14	349.334	31.70	15.05	9.10	28.06	27.79	46.00	18.21	Vert.	100	172	LA21	

CHART: WITH FACTOR

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

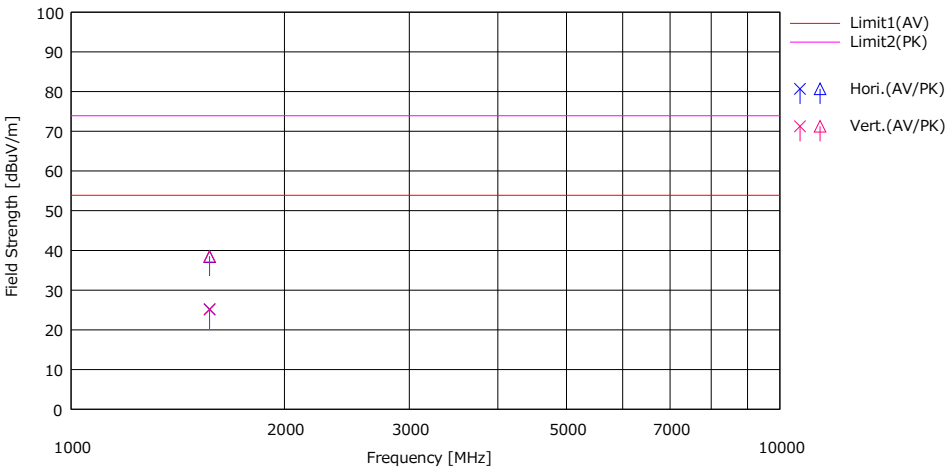
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)

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

Radiated Emission

Mode	Mode 1, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



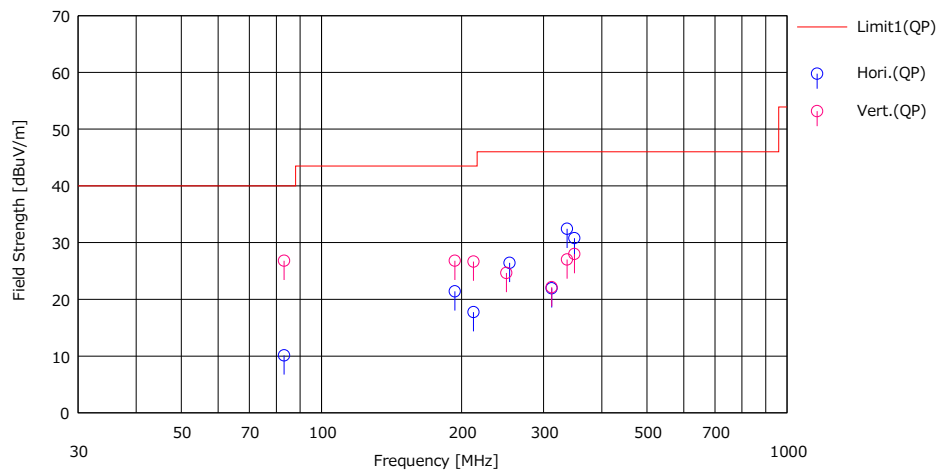
No.	Freq. [MHz]	Reading		Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pols. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1568.600	31.60	44.90	25.22	1.90	33.60	25.12	38.42	53.90	73.90	28.78	35.48	Hori.	100	0	HA6	
2	1568.600	31.70	45.00	25.22	1.90	33.60	25.22	38.52	53.90	73.90	28.68	35.38	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) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Mode	Mode 2, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading (QP) [dBuV]	Ant.Fac (dB/m)	Loss (dB)	Gain (dB)	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margin (QP) [dB]	Pol. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
1	83.128	23.80	7.44	7.34	28.47	10.11	40.00	29.89	Hori.	272	232	BA	
2	193.378	24.80	16.48	8.16	28.04	21.40	43.50	22.10	Hori.	315	256	BA	
3	212.081	26.20	11.23	8.27	27.95	17.75	43.50	25.75	Hori.	100	286	LA21	
4	253.558	33.70	11.96	8.53	27.77	26.42	46.00	19.58	Hori.	100	236	LA21	
5	312.220	26.90	13.99	8.88	27.83	21.94	46.00	24.06	Hori.	100	0	LA21	
6	336.855	36.60	14.78	9.02	27.98	32.42	46.00	13.58	Hori.	100	106	LA21	
7	349.330	34.70	15.05	9.10	28.06	30.79	46.00	15.21	Hori.	100	123	LA21	
8	83.128	40.50	7.44	7.34	28.47	26.81	40.00	13.19	Vert.	100	176	BA	
9	193.378	30.20	16.48	8.16	28.04	26.80	43.50	16.70	Vert.	100	289	BA	
10	212.081	35.10	11.23	8.27	27.95	26.65	43.50	16.85	Vert.	100	184	LA21	
11	249.551	32.10	11.81	8.51	27.77	24.65	46.00	21.35	Vert.	100	156	LA21	
12	312.220	27.10	13.99	8.88	27.83	22.14	46.00	23.86	Vert.	100	0	LA21	
13	336.855	31.20	14.78	9.02	27.98	27.02	46.00	18.96	Vert.	100	41	LA21	
14	349.330	31.90	15.05	9.10	28.06	27.99	46.00	18.01	Vert.	100	175	LA21	

CHART: WITH FACTOR

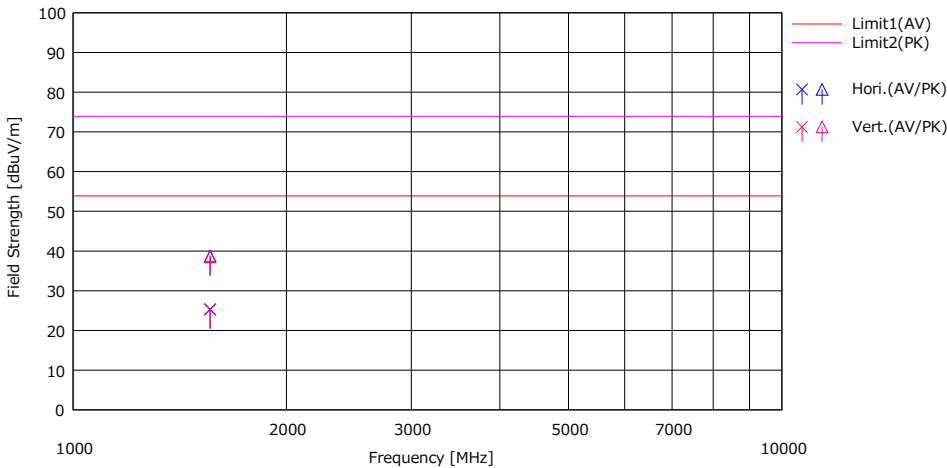
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)

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

Radiated Emission

Mode	Mode 2, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



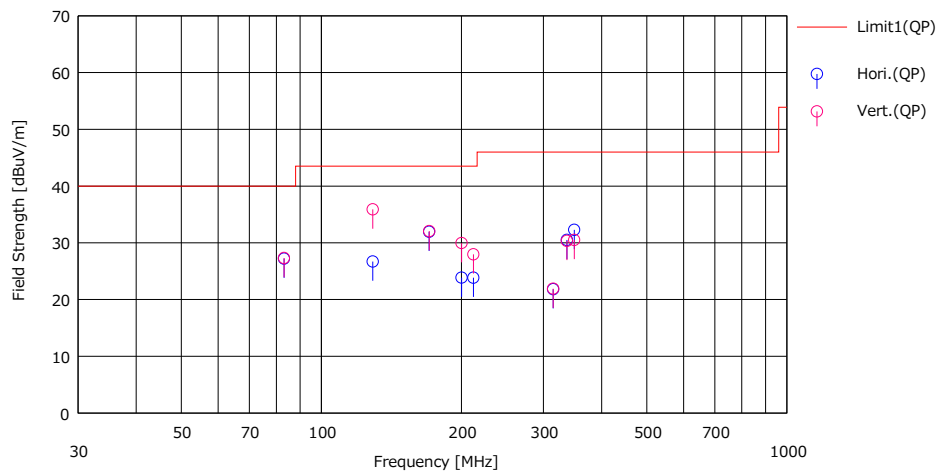
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]				(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1561.100	31.80	45.20	25.25	1.89	33.61	25.33	38.73	53.90	73.90	28.57	35.17	Hori.	100	0	HA6	
2	1561.100	31.70	45.00	25.25	1.89	33.61	25.23	38.53	53.90	73.90	28.67	35.37	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) - GAIN(AMP)
Except for the above table: adequate margin data below the limits.

Radiated Emission

Mode	Mode 3, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	Below 1 GHz

Limit : FCC_Part 15 Subpart B(15.109)_Class B



No.	Freq. [MHz]	Reading [dBP]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margn (QP) [dB]	Pola. (H/V)	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	83.125	40.90	7.44	7.34	28.47	27.21	40.00	12.79	Hori.	100	353	BA	
2	128.911	33.60	13.70	7.71	28.33	26.68	43.50	16.82	Hori.	128	3	BA	
3	170.409	36.30	15.81	8.00	28.16	31.95	43.50	11.55	Hori.	168	165	BA	
4	200.033	32.00	11.67	8.20	28.01	23.86	43.50	19.64	Hori.	100	115	LA21	
5	212.082	32.30	11.23	8.27	27.95	23.85	43.50	19.65	Hori.	159	266	LA21	
6	314.700	26.70	14.06	8.90	27.84	21.82	46.00	24.18	Hori.	100	0	LA21	
7	336.817	34.70	14.78	9.02	27.98	30.52	46.00	15.48	Hori.	143	85	LA21	
8	349.285	36.20	15.05	9.10	28.06	32.29	46.00	13.71	Hori.	116	89	LA21	
9	83.125	41.00	7.44	7.34	28.47	27.31	40.00	12.69	Vert.	100	354	BA	
10	128.911	42.80	13.70	7.71	28.33	35.88	43.50	7.62	Vert.	100	346	BA	
11	170.505	36.40	15.81	8.01	28.16	32.06	43.50	11.44	Vert.	100	24	BA	
12	200.033	38.10	11.67	8.20	28.01	29.96	43.50	13.54	Vert.	111	42	LA21	
13	212.082	36.40	11.23	8.27	27.95	27.95	43.50	15.55	Vert.	117	140	LA21	
14	314.700	26.80	14.06	8.90	27.84	21.92	46.00	24.08	Vert.	100	0	LA21	
15	336.817	34.50	14.78	9.02	27.98	30.32	46.00	15.68	Vert.	165	261	LA21	
16	349.285	34.40	15.05	9.10	28.06	30.49	46.00	15.51	Vert.	151	247	LA21	

CHART: WITH FACTOR

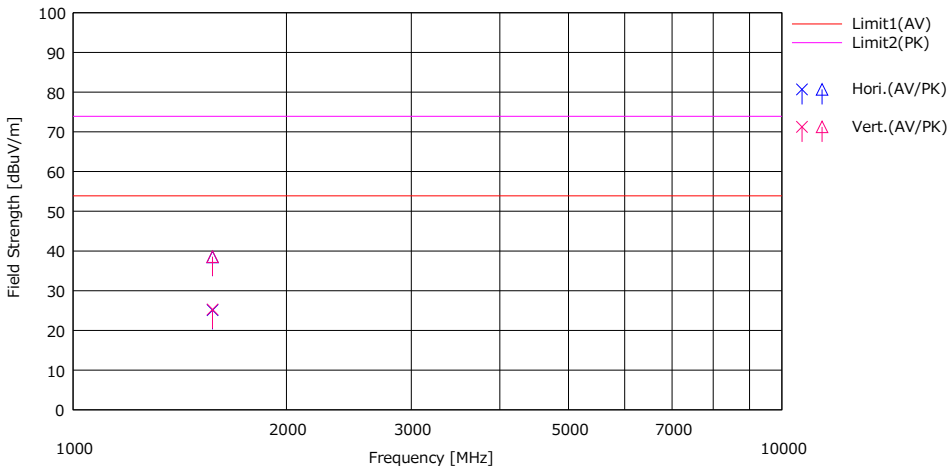
ANT TYPE: - 30 MHz: LOOP, 30 MHz - 200 MHz: BICONICAL, 200 MHz - 1000 MHz: LOGPERIODIC, 1000 MHz -: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS(CABLE + ATT) - GAIN(AMP)

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

Radiated Emission

Mode	Mode 3, Variation 2				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 19, 2026	SAC2	20 deg. C	39 % RH	Masaya Minami	1 GHz to 10 GHz

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	1573.500	31.60	45.00	25.19	1.90	33.60	25.09	38.49	53.90	73.90	28.81	35.41	Hori.	100	0	HA6	
2	1573.500	31.80	45.10	25.19	1.90	33.60	25.29	38.59	53.90	73.90	28.61	35.31	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) - 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	141265	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-190	07/22/2025	12
RE	141317	Coaxial Cable	UL-ISE	-	-	09/29/2025	12
RE	141331	Attenuator(6dB)	TME	UFA-01	-	-	-
RE	141427	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103B+BBA9106	08031	07/22/2025	12
RE	141512	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	254	10/20/2025	12
RE	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	08/01/2025	12
RE	141594	Pre Amplifier	Keysight Technologies Inc	8447D	2944A10150	02/09/2026	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	05/07/2025	12
RE	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	07/08/2025	24
RE	142006	AC2_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-06902	04/21/2025	24
RE	142228	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	244707	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202102	01/13/2026	12
RE	252663	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000MM,5000MM	616276/126E / 616275/126E	09/03/2025	12
RE	253739	Pre Amplifier	Keysight Technologies Inc	8449B	3008A01919	10/17/2025	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