

RADIO TEST REPORT

Test Report No. 16202089H

Customer	TOYOTA MOTOR CORPORATION
Description of EUT	Smart LF oscillator
Model Number of EUT	TMLF19D-C
FCC ID	NI4TMLF19D-C
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	February 24, 2026
Remarks	-

Representative test engineerTakafumi Noguchi
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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- 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)	16202089H	February 24, 2026	-

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	IEC	International Electrotechnical Commission
AC	Alternating Current	IEEE	Institute of Electrical and Electronics Engineers
AFH	Adaptive Frequency Hopping	IF	Intermediate Frequency
AM	Amplitude Modulation	ILAC	International Laboratory Accreditation Conference
Amp, AMP	Amplifier	ISED	Innovation, Science and Economic Development Canada
ANSI	American National Standards Institute	ISO	International Organization for Standardization
Ant, ANT	Antenna	JAB	Japan Accreditation Board
AP	Access Point	LAN	Local Area Network
ASK	Amplitude Shift Keying	LIMS	Laboratory Information Management System
Atten., ATT	Attenuator	MCS	Modulation and Coding Scheme
AV	Average	MRA	Mutual Recognition Arrangement
BPSK	Binary Phase-Shift Keying	N/A	Not Applicable
BR	Bluetooth Basic Rate	NIST	National Institute of Standards and Technology
BT	Bluetooth	NS	No signal detect.
BT LE	Bluetooth Low Energy	NSA	Normalized Site Attenuation
BW	BandWidth	NVLAP	National Voluntary Laboratory Accreditation Program
Cal Int	Calibration Interval	OBW	Occupied Band Width
CCK	Complementary Code Keying	OFDM	Orthogonal Frequency Division Multiplexing
Ch., CH	Channel	P/M	Power meter
CISPR	Comite International Special des Perturbations Radioelectriques	PCB	Printed Circuit Board
CW	Continuous Wave	PER	Packet Error Rate
DBPSK	Differential BPSK	PHY	Physical Layer
DC	Direct Current	PK	Peak
D-factor	Distance factor	PN	Pseudo random Noise
DFS	Dynamic Frequency Selection	PRBS	Pseudo-Random Bit Sequence
DQPSK	Differential QPSK	PSD	Power Spectral Density
DSSS	Direct Sequence Spread Spectrum	QAM	Quadrature Amplitude Modulation
EDR	Enhanced Data Rate	QP	Quasi-Peak
EIRP, e.i.r.p.	Equivalent Isotropically Radiated Power	QPSK	Quadri-Phase Shift Keying
EMC	ElectroMagnetic Compatibility	RBW	Resolution Band Width
EMI	ElectroMagnetic Interference	RDS	Radio Data System
EN	European Norm	RE	Radio Equipment
ERP, e.r.p.	Effective Radiated Power	RF	Radio Frequency
EU	European Union	RMS	Root Mean Square
EUT	Equipment Under Test	RSS	Radio Standards Specifications
Fac.	Factor	Rx	Receiving
FCC	Federal Communications Commission	SA, S/A	Spectrum Analyzer
FHSS	Frequency Hopping Spread Spectrum	SG	Signal Generator
FM	Frequency Modulation	SVSWR	Site-Voltage Standing Wave Ratio
Freq.	Frequency	TR	Test Receiver
FSK	Frequency Shift Keying	Tx	Transmitting
GFSK	Gaussian Frequency-Shift Keying	VBW	Video BandWidth
GNSS	Global Navigation Satellite System	Vert.	Vertical
GPS	Global Positioning System	WLAN	Wireless LAN
Hori.	Horizontal	WPT	Wireless Power Transfer
ICES	Interference-Causing Equipment Standard	-	-

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SECTION 1: Customer Information

Company Name	TOYOTA MOTOR CORPORATION
Address	1, Toyota-Cho, Toyota, Aichi, 471-8572, Japan
Telephone Number	+81-90-6393-0351
Contact Person	Toru Yoshihara

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	Smart LF oscillator
Model Number	TMLF19D-C
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	January 27, 2026
Test Date	January 27 and February 5, 2026

2.2 Product Description

General Specification

Rating	DC 12 V
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Radio Specification

Equipment Type	Transmitter
Frequency of Operation	125 kHz
Type of Modulation	ASK
Antenna type	Outside antenna Var.3 (*1), Inside antenna Var.1 (*2), Inside antenna Var.3 (*3), Rear antenna (*4) *1: Maximum number of this antenna is 4. *2: Maximum number of this antenna is 2. *3: Maximum number of this antenna is 1. *4: Maximum number of this antenna is 2.

Smart LF oscillator (model: TMLF19D-C) consists of the following parts:

- Smart ECU
- Outside Antenna Var.3
- Inside Antenna Var.1
- Inside antenna Var.3
- Rear Antenna

SECTION 3: Test Summary

3.1 Test Specification

Test Specification	FCC Part 15 Subpart C The latest version on the first day of the testing period
Title	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.209 Radiated emission limits; general requirements.

3.2 Reference Standards

ANSI/USEMCSC C63.2-2023
ANSI C63.4-2014+C63.4a-2017
ANSI C63.5-2017
ANSI C63.10-2020
ANSI/USEMCSC C63.10/Cor 1-2023
ANSI/USEMCSC C63.10a-2024 (incl. Errata) for ISED
ANSI C63.25.1-2018

3.3 Summary of Test Results

Item	Specification	Results	Remarks
Conducted Emission	<FCC> Section 15.207 <ISED> RSS-Gen 8.8	N/A	*1)
Electric Field Strength of Fundamental Emission	<FCC> Section 15.209 <ISED> RSS-210 8.2 RSS-Gen 8.9	Complied	Radiated
Electric Field Strength of Spurious Emission	<FCC> Section 15.209 <ISED> RSS-210 8.3 RSS-Gen 8.9	Complied	Radiated
-20 dB Bandwidth	<FCC> Reference data <ISED> -	Complied	Radiated

Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.

*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.

FCC Part 15.31 (e)

The battery voltage (DC 12 V) is provided to the EUT. Input voltage to RF part does not go through the regulator.

So the test was performed with the supply voltage varied between 85 % and 115 % of the nominal rated supply voltage (DC 12 V) and the variation of the input power does not affect the test result, therefore the EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the vehicle.

Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.4 Addition to standard

Item	Specification	Results	Remarks
99 % emission bandwidth	-	-	Radiated

Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.
Other than above, 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
10 m			dB	4.7
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

-20 dB Bandwidth and 99% Occupied Bandwidth, Frequency Tolerance

Item	Unit	Calculated Uncertainty (+/-)
Bandwidth (OBW)	%	0.96
Frequency Readout (Frequency counter)	ppm	0.67
Frequency Readout (Spectrum analyzer frequency readout function)	ppm	2.13

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

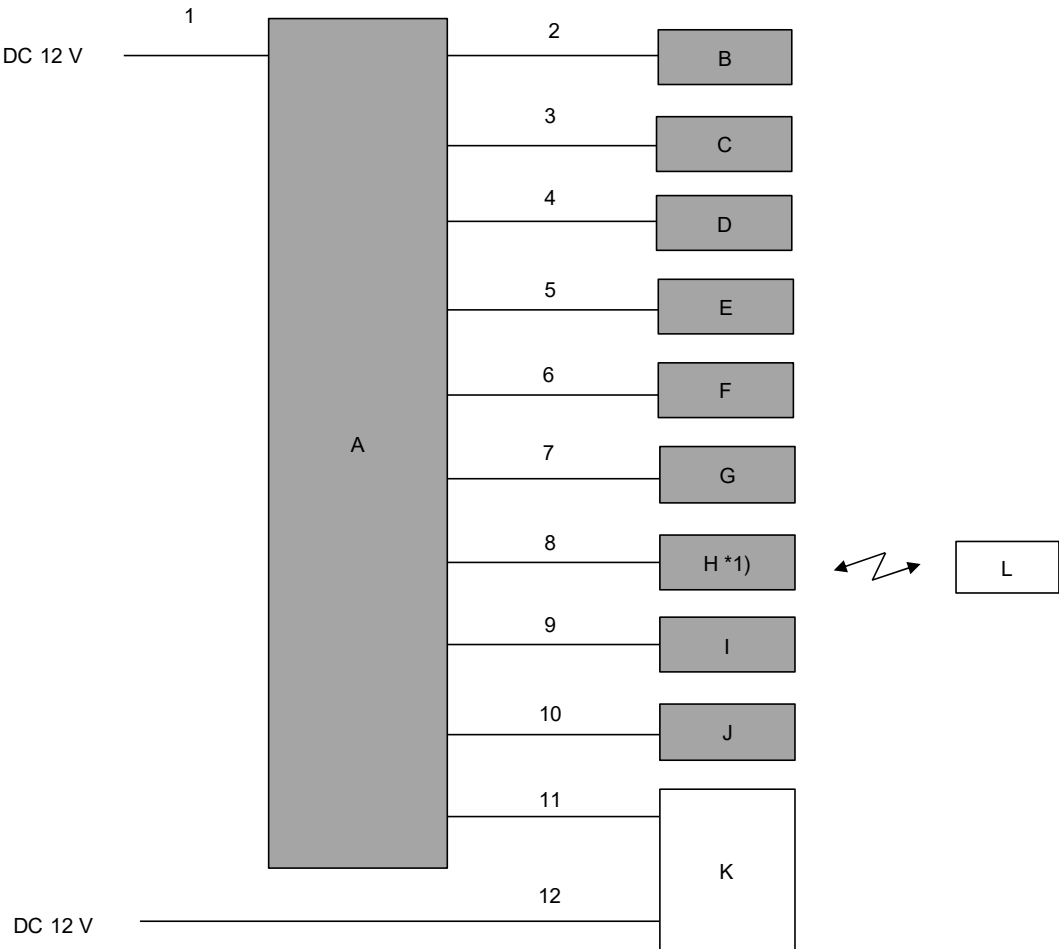
4.1. Operating Mode(s)

Test mode	Remarks
1) Tx 125 kHz, Outside Antenna Var.3	*1)
2) Tx 125 kHz, Inside Antenna Var.3 (Inside Mode)	*1)
3) Tx 125 kHz, Inside Antenna Var.3 (Immobilizer mode)	*1), *2)
4) Tx 125 kHz, Inside Antenna Var.1	*1)
5) Tx 125 kHz, Rear Antenna	*1)
6) Tx 125 kHz, Outside Antenna and Rear Antenna (Outside Antenna 1, 2, 3, 4 and Rear Antenna 5, 6)	*1)
*Power of the EUT was set by the software as follows; Software: 19CYV3_IDT_denpa_v01_cm0_240411 Version:01 (Date: 2024.04.11, Storage location: EUT memory) 19CYV3_IDT_denpa_v01_cm4_240411 Version:01 (Date: 2024.04.11, Storage location: EUT memory) *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product. Justification: The system was configured in typical fashion (as a user would normally use it) for testing.	

*1) Refer to "Operational Description-Timing of transmission" for details.

*2) This EUT has two modes which transponder key is attached or not. The worst case was confirmed with and without transponder key attached, as a result, the test without transponder key attached was the worst case. Therefore the test without transponder key attached was performed only.

4.2 Configuration and Peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.
*1) *Item H has two modes: LF transmission mode and Immobilizer communication mode.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	Smart ECU	TMLF19D-C	TE243 for Mode 1 to 5 TE245 for Mode 6	-	EUT
B	Outside Antenna Var.3	D19B3	TD1143	-	EUT
C	Outside Antenna Var.3	D19B3	TD1144	-	EUT
D	Outside Antenna Var.3	D19B3	TD1145	-	EUT
E	Outside Antenna Var.3	D19B3	TD1146	-	EUT
F	Rear Antenna	12TA0	TT306	-	EUT
G	Rear Antenna	12TA0	TT307	-	EUT
H	Inside Antenna Var.3	R19A1	TR499	-	EUT
I	Inside Antenna Var.1	18WA0	TR485	-	EUT
J	Inside Antenna Var.1	18WA0	TR486	-	EUT
K	Switch Box	-	No.19	-	-
L	Smart key	19CY_V3	TK164	-	*1)

*1) Used for Mode 3 only

List of Cables Used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	3.0	Unshielded	Unshielded	-
2	Outside Antenna Cable 1	3.0	Unshielded	Unshielded	-
3	Outside Antenna Cable 2	3.0	Unshielded	Unshielded	-
4	Outside Antenna Cable 3	3.0	Unshielded	Unshielded	-
5	Outside Antenna Cable 4	3.0	Unshielded	Unshielded	-
6	Rear Antenna Cable 5	3.0	Unshielded	Unshielded	-
7	Rear Antenna Cable 6	3.0	Unshielded	Unshielded	-
8	Inside Antenna Cable 5	3.0	Unshielded	Unshielded	-
9	Inside Antenna Cable 6	3.0	Unshielded	Unshielded	-
10	Inside Antenna Cable 7	3.0	Unshielded	Unshielded	-
11	Signal Cable	3.0	Unshielded	Unshielded	-
12	DC Cable	3.0	Unshielded	Unshielded	-

SECTION 5: Radiated emission (Fundamental and Spurious Emission)

Test Procedure

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 Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[Limit conversion]

The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to $45.5 - 51.5 = -6.0$ dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

[Frequency: From 9 kHz to 30 MHz]

The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for vertical polarization (antenna angle: 0 deg., 45 deg., 90 deg., and 135 deg., 180 deg.) and horizontal polarization.

*Refer to Figure 2 about Direction of the Loop Antenna.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open field test site. Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

These tests were performed in semi anechoic chamber. Therefore, the measured level of emissions may be higher than if measurements were made without a ground plane. However, test results were confirmed to pass against standard limit.

[Frequency: From 30 MHz to 1 GHz]

The measuring antenna height 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.

[Test instruments and test settings]

Frequency	Below 30 MHz	30 MHz to 200 MHz	200 MHz to 1 GHz
Antenna Type	Loop	Biconical	Logperiodic

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Frequency	From 9 kHz to 90 kHz and From 110 kHz to 150 kHz	From 90 kHz to 110 kHz	From 150 kHz to 490 kHz	From 490 kHz to 30 MHz	From 30 MHz to 1 GHz
Instrument used	Test Receiver				
Detector	PK / AV	QP	PK / AV	QP	QP
IF Bandwidth	200 Hz	200 Hz	9 kHz	9 kHz	120 kHz
Test Distance	3 m *1)	3 m *1)	3 m *1)	3 m *2)	3 m

*1) Distance Factor: $40 \times \log (3 \text{ m} / 300 \text{ m}) = -80 \text{ dB}$

*2) Distance Factor: $40 \times \log (3 \text{ m} / 30 \text{ m}) = -40 \text{ dB}$

Figure 1: Test Setup

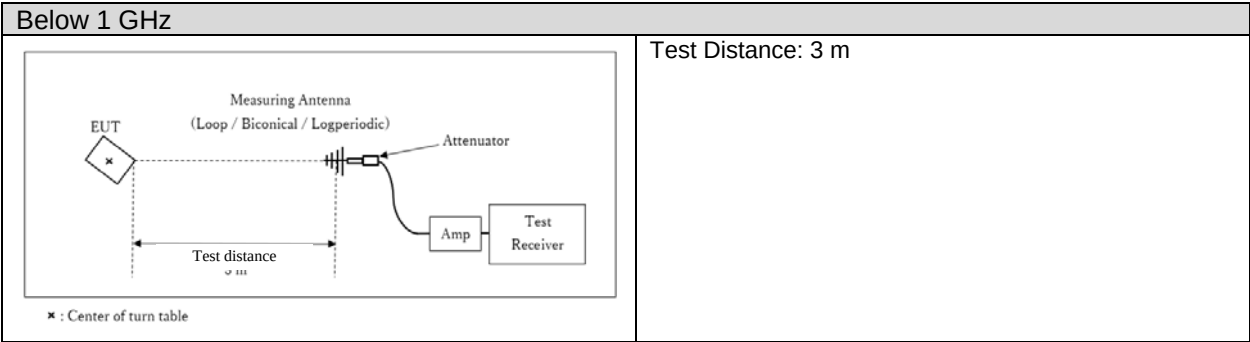
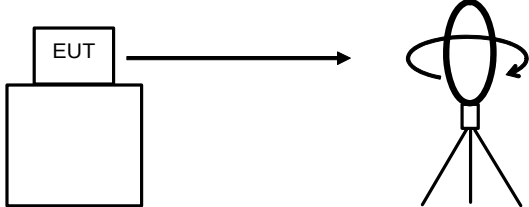
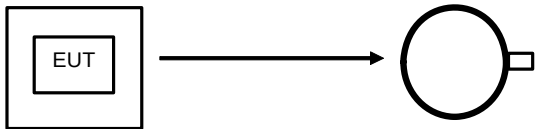


Figure 2: Direction of the Loop Antenna

Side View (Vertical)

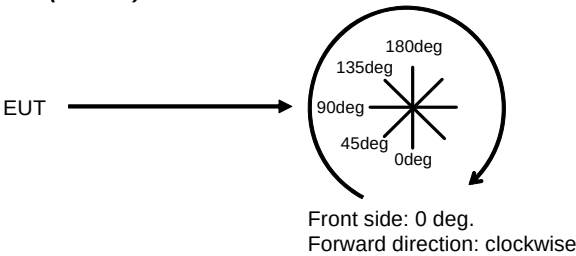


Top View (Horizontal)



Antenna was not rotated.

Top View (Vertical)



- The carrier level and 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 the position that has the maximum noise.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 9 kHz to 1 GHz
Test data : APPENDIX
Test result : Pass

SECTION 6: -20 dB Bandwidth

Test Procedure

The test was measured with a spectrum analyzer.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
-20 dB Bandwidth	Between two times and five times the OBW	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer

Test data : APPENDIX

Test result : Pass

SECTION 7: 99 % emission bandwidth

Test Procedure

The test was measured with a spectrum analyzer.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
99 % emission bandwidth	Between 1.5 times and 5.0 times the OBW	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer

Peak hold was applied as Worst-case measurement.

Test data : APPENDIX

Test result : Pass

APPENDIX 1: Test data

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 1				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP											
Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	-	15.0	45.6	30.6	Fundamental (DC 10.2 V)
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	-	15.0	45.6	30.6	Fundamental (DC 12.0 V)
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	-	15.0	45.6	30.6	Fundamental (DC 13.8 V)
0deg	0.25000	PK	57.2	19.8	-64.2	32.2	-	-19.4	39.6	59.0	
0deg	0.37500	PK	59.9	19.8	-64.3	32.2	-	-16.8	36.1	52.9	
0deg	0.50000	QP	33.0	19.9	-24.3	32.1	-	-3.5	33.6	37.1	
0deg	0.62500	QP	49.0	19.9	-24.3	32.1	-	12.5	31.7	19.2	
0deg	0.75000	QP	27.4	19.9	-24.3	32.1	-	-9.1	30.1	39.2	
0deg	0.87500	QP	43.2	19.8	-24.2	32.1	-	6.7	28.7	22.0	
0deg	1.00000	QP	27.3	19.8	-24.2	32.1	-	-9.2	27.6	36.8	
0deg	1.12500	QP	38.6	19.8	-24.2	32.1	-	2.1	26.5	24.4	
0deg	1.25000	QP	27.3	19.8	-24.2	32.1	-	-9.2	25.6	34.8	
Hori.	33.250	QP	23.8	17.5	7.0	32.1	-	16.2	40.0	23.8	
Hori.	36.000	QP	23.8	16.4	7.1	32.1	-	15.2	40.0	24.8	
Hori.	63.625	QP	28.3	7.0	7.5	32.1	-	10.7	40.0	29.3	
Hori.	65.875	QP	34.2	6.6	7.5	32.1	-	16.2	40.0	23.8	
Hori.	68.375	QP	33.2	6.5	7.5	32.1	-	15.1	40.0	24.9	
Hori.	92.952	QP	31.4	9.1	7.8	32.1	-	16.2	43.5	27.3	
Vert.	33.250	QP	28.7	17.5	7.0	32.1	-	21.1	40.0	18.9	
Vert.	36.000	QP	28.0	16.4	7.1	32.1	-	19.4	40.0	20.6	
Vert.	63.625	QP	33.9	7.0	7.5	32.1	-	16.3	40.0	23.7	
Vert.	65.875	QP	36.3	6.6	7.5	32.1	-	18.3	40.0	21.7	
Vert.	68.375	QP	35.3	6.5	7.5	32.1	-	17.2	40.0	22.8	
Vert.	92.952	QP	33.9	9.1	7.8	32.1	-	18.7	43.5	24.8	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor											
Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	0.0	15.0	25.6	10.6	Fundamental (DC 10.2 V)
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	0.0	15.0	25.6	10.6	Fundamental (DC 12.0 V)
0deg	0.12500	PK	101.5	19.7	-74.0	32.2	0.0	15.0	25.6	10.6	Fundamental (DC 13.8 V)
0deg	0.25000	PK	57.2	19.8	-64.2	32.2	0.0	-19.4	19.6	39.0	
0deg	0.37500	PK	59.9	19.8	-64.3	32.2	0.0	-16.8	16.1	32.9	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *
* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor											
Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	101.5	19.7	6.0	32.2	-	95.0	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 2
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Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	-	17.5	45.6	28.1	Fundamental (DC 10.2 V)
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	-	17.5	45.6	28.1	Fundamental (DC 12.0 V)
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	-	17.5	45.6	28.1	Fundamental (DC 13.8 V)
0deg	0.25000	PK	41.2	19.8	-64.2	32.2	-	-35.4	39.6	75.0	
0deg	0.37500	PK	37.3	19.8	-64.3	32.2	-	-39.4	36.1	75.5	
0deg	0.50000	QP	28.0	19.9	-24.3	32.1	-	-8.5	33.6	42.1	
0deg	0.62500	QP	27.4	19.9	-24.3	32.1	-	-9.1	31.7	40.8	
0deg	0.75000	QP	27.4	19.9	-24.3	32.1	-	-9.1	30.1	39.2	
0deg	0.87500	QP	27.2	19.8	-24.2	32.1	-	-9.3	28.7	38.0	
0deg	1.00000	QP	27.2	19.8	-24.2	32.1	-	-9.3	27.6	36.9	
0deg	1.12500	QP	27.1	19.8	-24.2	32.1	-	-9.4	26.5	35.9	
0deg	1.25000	QP	27.2	19.8	-24.2	32.1	-	-9.3	25.6	34.9	
Hori.	63.625	QP	23.4	7.0	7.5	32.1	-	5.8	40.0	34.2	
Hori.	66.069	QP	26.4	6.6	7.5	32.1	-	8.4	40.0	31.6	
Hori.	71.893	QP	23.8	6.4	7.6	32.1	-	5.7	40.0	34.3	
Hori.	73.792	QP	26.1	6.5	7.6	32.1	-	8.1	40.0	31.9	
Hori.	83.675	QP	27.9	7.6	7.7	32.1	-	11.1	40.0	28.9	
Hori.	92.952	QP	31.4	9.1	7.8	32.1	-	16.2	43.5	27.3	
Vert.	63.625	QP	25.7	7.0	7.5	32.1	-	8.1	40.0	31.9	
Vert.	66.069	QP	27.9	6.6	7.5	32.1	-	9.9	40.0	30.1	
Vert.	71.893	QP	28.6	6.4	7.6	32.1	-	10.5	40.0	29.5	
Vert.	73.792	QP	30.6	6.5	7.6	32.1	-	12.6	40.0	27.4	
Vert.	83.675	QP	32.7	7.6	7.7	32.1	-	15.9	40.0	24.1	
Vert.	92.952	QP	33.9	9.1	7.8	32.1	-	18.7	43.5	24.8	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	0.0	17.5	25.6	8.1	Fundamental (DC 10.2 V)
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	0.0	17.5	25.6	8.1	Fundamental (DC 12.0 V)
0deg	0.12500	PK	104.0	19.7	-74.0	32.2	0.0	17.5	25.6	8.1	Fundamental (DC 13.8 V)
0deg	0.25000	PK	41.2	19.8	-64.2	32.2	0.0	-35.4	19.6	55.0	
0deg	0.37500	PK	37.3	19.8	-64.3	32.2	0.0	-39.4	16.1	55.5	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *

* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor

Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	104.0	19.7	6.0	32.2	-	97.5	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 3
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Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	-	19.1	45.6	26.5	Fundamental (DC 10.2 V)
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	-	19.1	45.6	26.5	Fundamental (DC 12.0 V)
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	-	19.1	45.6	26.5	Fundamental (DC 13.8 V)
0deg	0.25000	PK	40.3	19.8	-64.2	32.2	-	-36.3	39.6	75.9	
0deg	0.37500	PK	36.9	19.8	-64.3	32.2	-	-39.8	36.1	75.9	
0deg	0.50000	QP	27.9	19.9	-24.3	32.1	-	-8.6	33.6	42.2	
0deg	0.62500	QP	27.7	19.9	-24.3	32.1	-	-8.8	31.7	40.5	
0deg	0.75000	QP	27.4	19.9	-24.3	32.1	-	-9.1	30.1	39.2	
0deg	0.87500	QP	27.3	19.8	-24.2	32.1	-	-9.2	28.7	37.9	
0deg	1.00000	QP	27.1	19.8	-24.2	32.1	-	-9.4	27.6	37.0	
0deg	1.12500	QP	27.2	19.8	-24.2	32.1	-	-9.3	26.5	35.8	
0deg	1.25000	QP	27.2	19.8	-24.2	32.1	-	-9.3	25.6	34.9	
Hori.	63.625	QP	23.4	7.0	7.5	32.1	-	5.8	40.0	34.2	
Hori.	66.069	QP	26.5	6.6	7.5	32.1	-	8.5	40.0	31.5	
Hori.	71.893	QP	23.6	6.4	7.6	32.1	-	5.5	40.0	34.5	
Hori.	73.625	QP	25.8	6.5	7.6	32.1	-	7.8	40.0	32.2	
Hori.	83.675	QP	27.8	7.6	7.7	32.1	-	11.0	40.0	29.0	
Hori.	92.952	QP	31.4	9.1	7.8	32.1	-	16.2	43.5	27.3	
Vert.	63.625	QP	24.7	7.0	7.5	32.1	-	7.1	40.0	32.9	
Vert.	66.069	QP	28.0	6.6	7.5	32.1	-	10.0	40.0	30.0	
Vert.	71.893	QP	28.3	6.4	7.6	32.1	-	10.2	40.0	29.8	
Vert.	73.625	QP	31.0	6.5	7.6	32.1	-	13.0	40.0	27.0	
Vert.	83.675	QP	32.7	7.6	7.7	32.1	-	15.9	40.0	24.1	
Vert.	92.952	QP	33.9	9.1	7.8	32.1	-	18.7	43.5	24.8	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	0.0	19.1	25.6	6.5	Fundamental (DC 10.2 V)
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	0.0	19.1	25.6	6.5	Fundamental (DC 12.0 V)
0deg	0.12500	PK	105.6	19.7	-74.0	32.2	0.0	19.1	25.6	6.5	Fundamental (DC 13.8 V)
0deg	0.25000	PK	40.3	19.8	-64.2	32.2	0.0	-36.3	19.6	55.9	
0deg	0.37500	PK	36.9	19.8	-64.3	32.2	0.0	-39.8	16.1	55.9	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *

* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor

Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.6	19.7	6.0	32.2	-	99.1	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 4
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Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	-	14.3	45.6	31.3	Fundamental (DC 10.2 V)
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	-	14.3	45.6	31.3	Fundamental (DC 12.0 V)
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	-	14.3	45.6	31.3	Fundamental (DC 13.8 V)
0deg	0.25000	PK	42.8	19.8	-64.2	32.2	-	-33.8	39.6	73.4	
0deg	0.37500	PK	38.2	19.8	-64.3	32.2	-	-38.5	36.1	74.6	
0deg	0.50000	QP	28.0	19.9	-24.3	32.1	-	-8.5	33.6	42.1	
0deg	0.62500	QP	27.7	19.9	-24.3	32.1	-	-8.8	31.7	40.5	
0deg	0.75000	QP	27.4	19.9	-24.3	32.1	-	-9.1	30.1	39.2	
0deg	0.87500	QP	27.3	19.8	-24.2	32.1	-	-9.2	28.7	37.9	
0deg	1.00000	QP	27.2	19.8	-24.2	32.1	-	-9.3	27.6	36.9	
0deg	1.12500	QP	27.1	19.8	-24.2	32.1	-	-9.4	26.5	35.9	
0deg	1.25000	QP	27.2	19.8	-24.2	32.1	-	-9.3	25.6	34.9	
Hori.	49.152	QP	27.7	11.5	7.3	32.1	-	14.4	40.0	25.6	
Hori.	66.069	QP	26.6	6.6	7.5	32.1	-	8.6	40.0	31.4	
Hori.	71.893	QP	23.7	6.4	7.6	32.1	-	5.6	40.0	34.4	
Hori.	73.447	QP	25.1	6.5	7.6	32.1	-	7.1	40.0	32.9	
Hori.	83.675	QP	27.9	7.6	7.7	32.1	-	11.1	40.0	28.9	
Hori.	92.952	QP	31.2	9.1	7.8	32.1	-	16.0	43.5	27.5	
Vert.	49.152	QP	27.2	11.5	7.3	32.1	-	13.9	40.0	26.1	
Vert.	66.069	QP	28.2	6.6	7.5	32.1	-	10.2	40.0	29.8	
Vert.	71.893	QP	28.6	6.4	7.6	32.1	-	10.5	40.0	29.5	
Vert.	73.447	QP	30.0	6.5	7.6	32.1	-	12.0	40.0	28.0	
Vert.	83.675	QP	32.7	7.6	7.7	32.1	-	15.9	40.0	24.1	
Vert.	92.952	QP	33.6	9.1	7.8	32.1	-	18.4	43.5	25.1	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	0.0	14.3	25.6	11.3	Fundamental (DC 10.2 V)
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	0.0	14.3	25.6	11.3	Fundamental (DC 12.0 V)
0deg	0.12500	PK	100.8	19.7	-74.0	32.2	0.0	14.3	25.6	11.3	Fundamental (DC 13.8 V)
0deg	0.25000	PK	42.8	19.8	-64.2	32.2	0.0	-33.8	19.6	53.4	
0deg	0.37500	PK	38.2	19.8	-64.3	32.2	0.0	-38.5	16.1	54.6	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *

* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor

Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.8	19.7	6.0	32.2	-	94.3	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated. Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 5
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Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	-	14.0	45.6	31.6	Fundamental (DC 10.2 V)
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	-	14.0	45.6	31.6	Fundamental (DC 12.0 V)
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	-	14.0	45.6	31.6	Fundamental (DC 13.8 V)
0deg	0.25000	PK	46.0	19.8	-64.2	32.2	-	-30.6	39.6	70.2	
0deg	0.37500	PK	62.5	19.8	-64.3	32.2	-	-14.2	36.1	50.3	
0deg	0.50000	QP	38.6	19.9	-24.3	32.1	-	2.1	33.6	31.5	
0deg	0.62500	QP	51.6	19.9	-24.3	32.1	-	15.1	31.7	16.6	
0deg	0.75000	QP	28.1	19.9	-24.3	32.1	-	-8.4	30.1	38.5	
0deg	0.87500	QP	44.6	19.8	-24.2	32.1	-	8.1	28.7	20.6	
0deg	1.00000	QP	27.3	19.8	-24.2	32.1	-	-9.2	27.6	36.8	
0deg	1.12500	QP	39.0	19.8	-24.2	32.1	-	2.5	26.5	24.0	
0deg	1.25000	QP	27.1	19.8	-24.2	32.1	-	-9.4	25.6	35.0	
Hori.	33.250	QP	24.1	17.5	7.0	32.1	-	16.5	40.0	23.5	
Hori.	36.000	QP	24.8	16.4	7.1	32.1	-	16.2	40.0	23.8	
Hori.	65.750	QP	37.1	6.6	7.5	32.1	-	19.1	40.0	20.9	
Hori.	73.250	QP	28.5	6.5	7.6	32.1	-	10.5	40.0	29.5	
Hori.	83.675	QP	28.0	7.6	7.7	32.1	-	11.2	40.0	28.8	
Hori.	92.952	QP	31.3	9.1	7.8	32.1	-	16.1	43.5	27.4	
Vert.	33.250	QP	29.4	17.5	7.0	32.1	-	21.8	40.0	18.2	
Vert.	36.000	QP	30.4	16.4	7.1	32.1	-	21.8	40.0	18.2	
Vert.	65.750	QP	38.2	6.6	7.5	32.1	-	20.2	40.0	19.8	
Vert.	73.250	QP	37.5	6.5	7.6	32.1	-	19.5	40.0	20.5	
Vert.	83.675	QP	32.8	7.6	7.7	32.1	-	16.0	40.0	24.0	
Vert.	92.952	QP	33.4	9.1	7.8	32.1	-	18.2	43.5	25.3	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	0.0	14.0	25.6	11.6	Fundamental (DC 10.2 V)
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	0.0	14.0	25.6	11.6	Fundamental (DC 12.0 V)
0deg	0.12500	PK	100.5	19.7	-74.0	32.2	0.0	14.0	25.6	11.6	Fundamental (DC 13.8 V)
0deg	0.25000	PK	46.0	19.8	-64.2	32.2	0.0	-30.6	19.6	50.2	
0deg	0.37500	PK	62.5	19.8	-64.3	32.2	0.0	-14.2	16.1	30.3	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *

* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor

Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	100.5	19.7	6.0	32.2	-	94.0	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Emission (Fundamental and Spurious Emission)

Mode	Mode 6				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

PK or QP

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-	18.9	45.6	26.7	Fundamental (DC 10.2 V)
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-	18.9	45.6	26.7	Fundamental (DC 12.0 V)
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-	18.9	45.6	26.7	Fundamental (DC 13.8 V)
0deg	0.25000	PK	50.6	19.8	-64.2	32.2	-	-26.0	39.6	65.6	
0deg	0.37500	PK	75.7	19.8	-64.3	32.2	-	-1.0	36.1	37.1	
0deg	0.50000	QP	42.5	19.9	-24.3	32.1	-	6.0	33.6	27.6	
0deg	0.62500	QP	58.5	19.9	-24.3	32.1	-	22.0	31.7	9.7	
0deg	0.75000	QP	28.0	19.9	-24.3	32.1	-	-8.5	30.1	38.6	
0deg	0.87500	QP	52.2	19.8	-24.2	32.1	-	15.7	28.7	13.0	
0deg	1.00000	QP	27.1	19.8	-24.2	32.1	-	-9.4	27.6	37.0	
0deg	1.12500	QP	47.1	19.8	-24.2	32.1	-	10.6	26.5	15.9	
0deg	1.25000	QP	27.1	19.8	-24.2	32.1	-	-9.4	25.6	35.0	
Hori.	33.500	QP	25.6	17.4	7.1	32.1	-	18.0	40.0	22.0	
Hori.	36.000	QP	24.5	16.4	7.1	32.1	-	15.9	40.0	24.1	
Hori.	61.875	QP	34.5	7.3	7.4	32.1	-	17.1	40.0	22.9	
Hori.	63.625	QP	31.8	7.0	7.5	32.1	-	14.2	40.0	25.8	
Hori.	67.500	QP	35.5	6.5	7.5	32.1	-	17.4	40.0	22.6	
Hori.	92.952	QP	32.0	9.1	7.8	32.1	-	16.8	43.5	26.7	
Vert.	33.500	QP	33.7	17.4	7.1	32.1	-	26.1	40.0	13.9	
Vert.	36.000	QP	31.6	16.4	7.1	32.1	-	23.0	40.0	17.0	
Vert.	61.875	QP	36.5	7.3	7.4	32.1	-	19.1	40.0	20.9	
Vert.	63.625	QP	39.0	7.0	7.5	32.1	-	21.4	40.0	18.6	
Vert.	67.500	QP	39.6	6.5	7.5	32.1	-	21.5	40.0	18.5	
Vert.	92.952	QP	34.6	9.1	7.8	32.1	-	19.4	43.5	24.1	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier)

PK with Duty factor

Ant Deg [deg] or Polarity [Hori/Vert]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-21.4	-2.5	25.6	28.1	Fundamental (DC 10.2 V)
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-21.4	-2.5	25.6	28.1	Fundamental (DC 12.0 V)
0deg	0.12500	PK	105.4	19.7	-74.0	32.2	-21.4	-2.5	25.6	28.1	Fundamental (DC 13.8 V)
0deg	0.25000	PK	50.6	19.8	-64.2	32.2	-21.4	-47.4	19.6	67.0	
0deg	0.37500	PK	75.7	19.8	-64.3	32.2	-21.4	-22.4	16.1	38.5	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amplifier) + Duty factor *

* Since the peak emission result satisfied the average limit, duty factor was omitted.

Result of the fundamental emission at 3 m without Distance factor

Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12500	PK	105.4	19.7	6.0	32.2	-	98.9	-	-	Fundamental

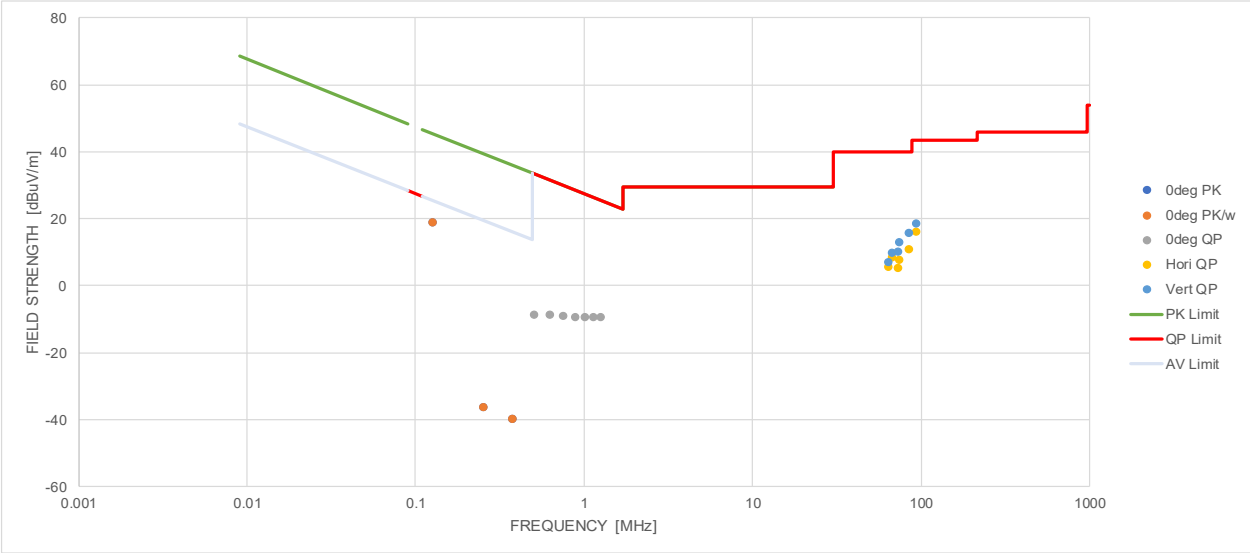
Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

*It was confirmed that there were no differences in the spurious emission due to the input voltage.

Radiated Spurious Emission
(Plot data, Worst case for Fundamental Emission)

Mode	Mode 3				
Date	Test site	Temperature	Humidity	Engineer	Measurement Range
February 5, 2026	SAC4	21 deg. C	45 % RH	Takumi Nishida	Below 30 MHz
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi	Above 30 MHz

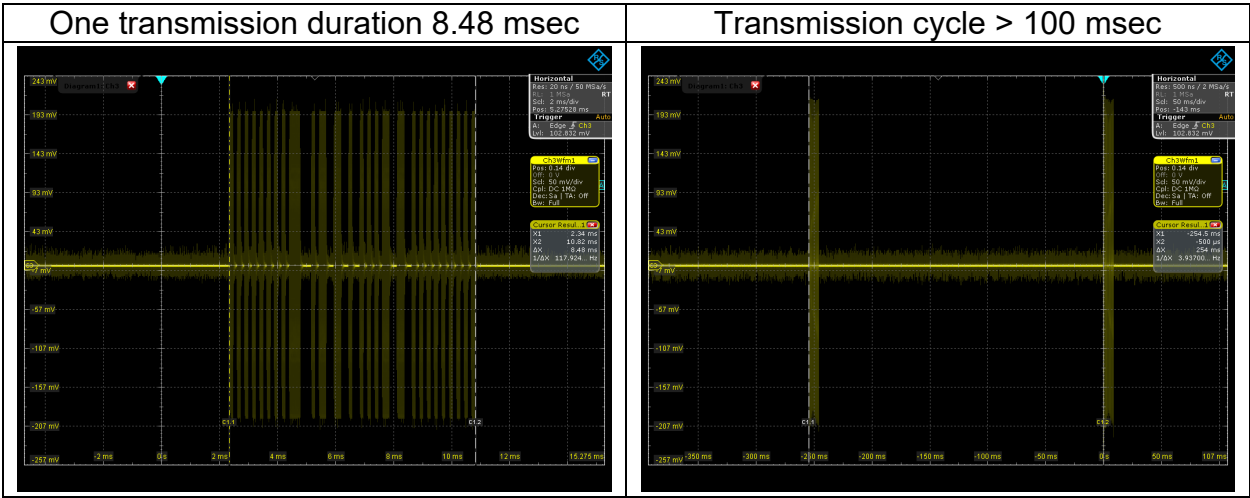


Duty Cycle

Mode	Mode 6			
Date	Test site	Temperature	Humidity	Engineer
January 27, 2026	SMR6	23 deg. C	55 % RH	Takumi Nishida

ON time [ms]	Cycle [ms]	Duty (On time/Cycle)	Duty factor [dB]
8.48	100	0.0848	-21.4

Duty = 20 * log₁₀(ON time/Cycle)



-20 dB Bandwidth / 99 % emission bandwidth

Mode	Mode 1 to Mode 5
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Date	Test site	Temperature	Humidity	Engineer
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi

Mode	99 % emission bandwidth [kHz]	-20 dB Bandwidth [kHz]
1	27.2809	10.523
2	23.2214	9.835
3 with key	18.0329	12.252
3 without key	18.0161	12.222
4	23.0695	10.103
5	29.9388	16.573

-20 dB Bandwidth / 99 % emission bandwidth

Mode	Mode1 to Mode 5
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Date	Test site	Temperature	Humidity	Engineer
February 5, 2026	SAC4	22 deg. C	44 % RH	Takafumi Noguchi

Mode 1 Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 27.2809 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error 694.246 Hz x dB Bandwidth 10.523 kHz	Mode 2 Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 23.2214 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -43.012 Hz x dB Bandwidth 9.835 kHz
Mode 3 with key Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 18.0329 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -105.369 Hz x dB Bandwidth 12.252 kHz	Mode 3 without key Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 18.0161 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error -136.743 Hz x dB Bandwidth 12.222 kHz
Mode 4 Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 23.0695 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error 613.519 Hz x dB Bandwidth 10.103 kHz	Mode 5 Agilent R T Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ DC Coupled LgAv M1 S2 Center 125.00 kHz #Res BW 300 Hz Span 60 kHz VBW 910 Hz Sweep 636.6 ms (1201 pts) Occupied Bandwidth 29.9388 kHz Occ BW % Pwr 99.00 % x dB -20.00 dB Transmit Freq Error 2.051 kHz x dB Bandwidth 16.573 kHz

APPENDIX 2: Test instruments

Test Equipment

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141217	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM141/421-010/sucoform141-PE/RFM-E121(SW)	-/04178	06/24/2025	12
RE	141267	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-192	09/12/2025	12
RE	141295	High Pass Filter 0.15-30MHz	Rohde & Schwarz	EZ-25/3	100041	02/14/2025	12
RE	141397	Coaxial Cable	UL-ISE EMC	-	-	11/12/2025	12
RE	141425	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+BBA9106	VHA 91031302	08/14/2025	12
RE	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	04/02/2025	12
RE	141902	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187105	10/06/2025	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	06/30/2025	12
RE	142011	AC4_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	07/10/2025	24
RE	142230	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	207745	Coaxial Cable	UL-ISE	-	-	03/19/2025	12
RE	220646	Attenuator	Huber+Suhner	6806 N-50-1	-	03/06/2025	12
RE	244710	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202104	01/14/2026	12
RE	252514	Active Loop Antenna	Schwarzbeck Mess-Elektronik OHG	FMZB 1519-60 D	1519-60 D-067	10/14/2025	12
RE	272098	DIGITAL MULTIMETER	HIOKI E. E. CORPORATION	DT4255	250902199	11/27/2025	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