

RADIO TEST REPORT

Test Report No. 15366608H-R1

Customer	Panasonic Automotive Systems Co., Ltd.
Description of EUT	Wireless Charger
Model Number of EUT	AT2501
FCC ID	ACJ932AT2501
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	May 7, 2025
Remarks	-

Representative test engineerHiroki Numata
Engineer**Approved by**Akihiko Maeda
Leader

CERTIFICATE 5107.02

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

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REVISION HISTORY

Original Test Report No. 15366608H

This report is a revised version of 15366608H. 15366608H is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15366608H	September 18, 2024	-
1	15366608H-R1	May 7, 2025	Corrections and additions of the following items due to retest of OBW: - SECTION 2.1: Test date - SECTION 6: -20 dB Bandwidth - SECTION 7: 99 % emission bandwidth - APPENDIX 1: Test data (Mode 1 to 3 in "-20 dB Bandwidth / 99 % emission bandwidth") - APPENDIX 2: Test instruments

Reference: Abbreviations (Including words undescribed in this report)

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

CONTENTS	PAGE
SECTION 1: Customer Information.....	5
SECTION 2: Equipment Under Test (EUT)	5
SECTION 3: Test specification, procedures & results	6
SECTION 4: Operation of EUT during testing.....	9
SECTION 5: Radiated emission (Fundamental and Spurious Emission).....	12
SECTION 6: -20 dB Bandwidth.....	14
SECTION 7: 99 % emission bandwidth	14
APPENDIX 1: Test data	15
Radiated Emission (Fundamental and Spurious Emission)	15
-20 dB Bandwidth / 99 % emission bandwidth	25
APPENDIX 2: Test instruments	40
APPENDIX 3: Photographs of test setup.....	41
Radiated Emission (Below 30 MHz).....	41
Radiated Emission (Above 30 MHz)	44
Worst Case Position	47

SECTION 1: Customer Information

Company Name	Panasonic Automotive Systems Co., Ltd.* ¹⁾
Address	4261, Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken 224-8520, Japan
Telephone Number	+81-80-3444-7148
Contact Person	Takahisa Sakai

*1) The Grantee name in the FCC application is "Panasonic Corporation of North America".

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	Wireless Charger
Model Number	AT2501
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	July 2, 2024
Test Date	July 16, 2024 to May 7, 2025

2.2 Product Description

General Specification

Rating	DC +10.5 V to +16 V (Typ: +12 V)
Feature of EUT	Use the ACC KEY of the car to turn the Wireless charger power ON/OFF. Place the charging side of the portable device (etc. mobile phone) down. When charging, the operation indicator light (orange) comes on. If charging is not occurring, try placing the portable device as close to the center of the charging area as possible When charging is complete, the operation indicator light (green) comes on.

Radio Specification

Frequency Band	120.3 kHz / 127.0 kHz / 127.5 kHz / 116.4 kHz to 132.2 kHz
Rated Output Power	5 W / 15 W
Coil system	Single Coil
Charging distance	Contact

SECTION 3: Test specification, procedures & results

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 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	<FCC> Section 15.207 <ISED> RSS-Gen 8.8	<FCC> Section 15.207 <ISED> RSS-Gen 8.8	N/A	N/A	*1)
Electric Field Strength of Fundamental Emission	<FCC> Section 15.209 <ISED> RSS-210 8.2 RSS-Gen 8.9	<FCC> Section 15.209 <ISED> RSS-210 7.2 RSS-Gen 8.9	10.4 dB 119.4 kHz, 0 deg. Peak with Duty factor (Mode 8)	Complied	Radiated
Electric Field Strength of Spurious Emission	<FCC> Section 15.209 <ISED> RSS-210 8.3 RSS-Gen 8.9	<FCC> Section 15.209 <ISED> RSS-210 7.3 RSS-Gen 8.9	9.0 dB 64.000 MHz, Vertical, QP (Mode 2, 5)	Complied	Radiated
-20 dB Bandwidth	<FCC> Reference data <ISED> -	<FCC> Reference data <ISED> -	N/A	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)

This EUT constantly provides the stable voltage to RF part through the regulator regardless of input voltage.

Therefore, this 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 EUT.

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

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % emission bandwidth	RSS-Gen 6.7	-	N/A	-	Radiated

Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

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

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

Radiated emission

Measurement distance	Frequency range		Unit	Calculated Uncertainty (+/-)
3 m	9 kHz to 30 MHz		dB	3.3
10 m			dB	3.1
3 m	30 MHz to 200 MHz	Horizontal	dB	5.0
		Vertical	dB	5.0
	200 MHz to 1000 MHz	Horizontal	dB	5.2
		Vertical	dB	6.2
10 m	30 MHz to 200 MHz	Horizontal	dB	5.5
		Vertical	dB	5.4
	200 MHz to 1000 MHz	Horizontal	dB	5.5
		Vertical	dB	5.5

-20 dB Bandwidth and 99% Occupied Bandwidth

Item	Unit	Calculated Uncertainty (+/-)
Bandwidth (OBW)	%	0.96

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)

Test mode	Remarks
1) Normal Operating mode (120.3 kHz / BPP 0 W)	*1)
2) Normal Operating mode (127.0 kHz / BPP 0 W)	*1)
3) Normal Operating mode (127.5 kHz / BPP 0 W)	*1)
4) Normal Operating mode (120.3 kHz / EPP 15 W)	*2)
5) Normal Operating mode (127.0 kHz / EPP 15 W)	*2)
6) Normal Operating mode (127.5 kHz / EPP 15 W)	*2)
7) Normal Operating mode (116.4 kHz / EPP 15 W)	-
8) Normal Operating mode (119.4 kHz / EPP 15 W)	-
9) Normal Operating mode (124.5 kHz / EPP 15 W)	-
10) Normal Operating mode (122.6 kHz / EPP 15 W)	-
11) Normal Operating mode (126.0 kHz / EPP 15 W)	-
12) Normal Operating mode (131.7 kHz / EPP 15 W)	-
13) Normal Operating mode (123.1 kHz / EPP 15 W)	-
14) Normal Operating mode (126.5 kHz / EPP 15 W)	-
15) Normal Operating mode (132.2 kHz / EPP 15 W)	-
*Power of the EUT was set by the software as follows; Software: WC3_GEN5S_Z224.hex Version: Z224 (Date: 2024.07.17, 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.	

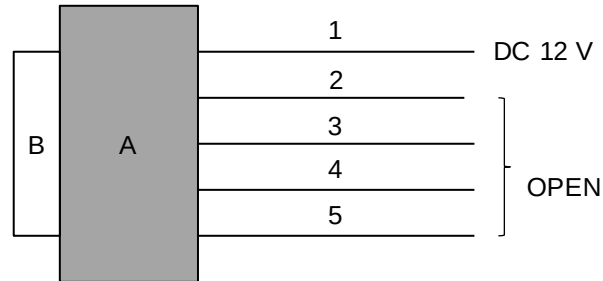
*1) After the output level between 5 W, 2.5 W, and 0 W were compared at pre-check, all the tests were performed only with 0 W as representative, which had the worst result.

*2) After the output level between 15 W, 7.5 W, and 0 W were compared at pre-check, all the tests were performed only with 15 W as representative, which had the worst result.

For Radiated emission test, the test for FSK (Mode 7 to 15) was performed near center frequency each the channel as representative.

4.2 Configuration and Peripherals

Mode 1 to 6



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

*Item A and Item B communicates and charges via air interface.

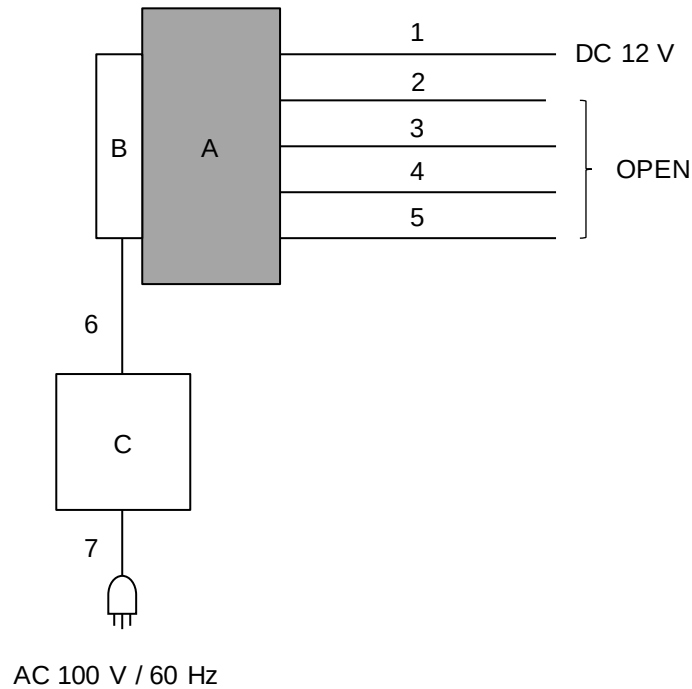
Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Wireless Charger	AT2501	500008	Panasonic Automotive Systems Co., Ltd.	EUT
B	LOAD-JIG	LOAD-JIG BPP (0 W)	-	Panasonic Automotive Systems Co., Ltd.	for Mode 1 to 3
		LOAD-JIG EPP (0 W)	-		for Mode 4 to 6

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	2.0	Unshielded	Unshielded	-
2	CAN Cable	2.0	Unshielded	Unshielded	-
3	Signal Cable	2.0	Unshielded	Unshielded	-
4	Signal Cable	2.0	Unshielded	Unshielded	-
5	Signal Cable	2.0	Unshielded	Unshielded	-

Mode 7 to 15



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

*Item A and Item B communicates and charges via air interface.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Wireless Charger	AT2501	500008	Panasonic Automotive Systems Co., Ltd.	EUT
B	Reference Receiver	TRP#MP1B	1	Nok9	-
C	Qi Reference Tester	LP/MP/FOD	200134-1807	Nok9	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	2.0	Unshielded	Unshielded	-
2	CAN Cable	2.0	Unshielded	Unshielded	-
3	Signal Cable	2.0	Unshielded	Unshielded	-
4	Signal Cable	2.0	Unshielded	Unshielded	-
5	Signal Cable	2.0	Unshielded	Unshielded	-
6	Communication Cable	0.6	Unshielded	Unshielded	-
7	AC Cable	1.5	Unshielded	Unshielded	-

SECTION 5: Radiated emission (Fundamental and Spurious Emission)

Test Procedure

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 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.

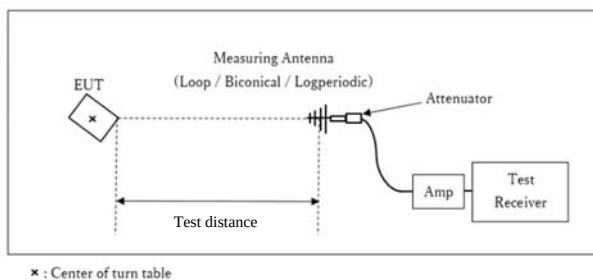
Frequency	From 9 kHz to 90 kHz and From 110 kHz to 150 kHz	From 90 kHz to 110 kHz	From 150 kHz to 490 kHz	From 490 kHz to 30 MHz	From 30 MHz to 1 GHz
Instrument used	Test Receiver				
Detector	PK / AV	QP	PK / AV	QP	QP
IF Bandwidth	200 Hz	200 Hz	9 kHz	9 kHz	120 kHz
Test Distance	3 m *1)	3 m *1)	3 m *1)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

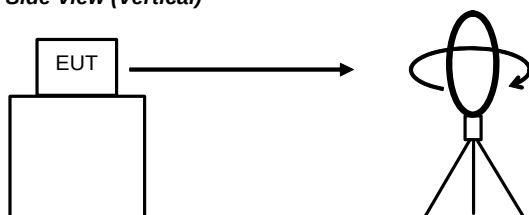
Below 1 GHz



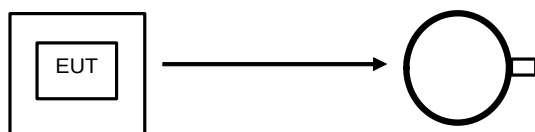
Test Distance: 3 m

Figure 2: Direction of the Loop Antenna

Side View (Vertical)

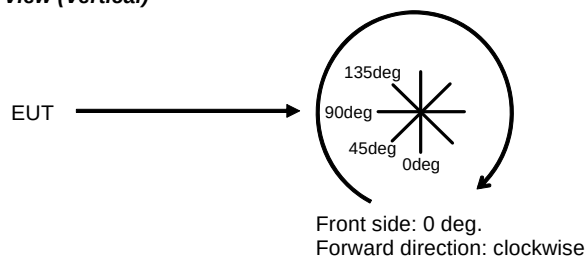


Top View (Horizontal)



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 using a test fixture.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used	Remarks
-20 dB Bandwidth	50 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer	Mode 1 to 3 *1)
	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer	Mode 4 to 15

Test data : APPENDIX
Test result : Pass

SECTION 7: 99 % emission bandwidth

Test Procedure

The test was measured with a spectrum analyzer using a test fixture.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used	Remarks
99 % emission bandwidth	50 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer	Mode 1 to 3 *1)
	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer	Mode 4 to 15
Peak hold was applied as Worst-case measurement.								

*1) Since the transmitter signal is CW-like it is impractical to use a RBW setting of 1 - 5 % of the emission bandwidth since the emission bandwidth will be proportional to the RBW.

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 18, 2024
Temperature / Humidity	23 deg. C / 65 % RH	23 deg. C / 48 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 1	

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	0.12030	PK	92.9	19.5	-74.0	32.2	-	6.2	45.9	39.7	Fundamental
0deg	0.24060	PK	48.1	19.6	-74.0	32.2	-	-38.5	39.9	78.4	
0deg	0.36090	PK	58.4	19.7	-74.0	32.2	-	-28.1	36.4	64.5	
0deg	0.48120	PK	41.2	19.7	-73.9	32.2	-	-45.2	34.0	79.2	
0deg	0.60150	QP	44.8	19.7	-33.9	32.2	-	-1.6	32.0	33.6	
0deg	0.72180	QP	40.3	19.7	-33.9	32.2	-	-6.1	30.4	36.5	
0deg	0.84210	QP	44.8	19.7	-33.9	32.2	-	-1.6	29.1	30.7	
0deg	0.96240	QP	32.0	19.7	-33.9	32.2	-	-14.4	27.9	42.3	
0deg	1.08270	QP	41.3	19.7	-33.9	32.2	-	-5.1	26.9	32.0	
0deg	1.20300	QP	31.6	19.7	-33.8	32.2	-	-14.7	26.0	40.7	
Hori.	35.728	QP	21.6	16.4	6.7	28.5	-	16.2	40.0	23.8	Floor Noise
Hori.	64.000	QP	29.6	6.9	7.0	28.5	-	15.0	40.0	25.0	
Hori.	66.175	QP	23.2	6.7	7.1	28.5	-	8.5	40.0	31.5	Floor Noise
Hori.	68.343	QP	22.5	6.4	7.1	28.5	-	7.5	40.0	32.5	Floor Noise
Hori.	127.219	QP	21.2	13.6	7.6	28.3	-	14.1	43.5	29.4	Floor Noise
Hori.	281.592	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	
Vert.	35.728	QP	22.3	16.4	6.7	28.5	-	16.9	40.0	23.1	
Vert.	64.000	QP	44.7	6.9	7.0	28.5	-	30.1	40.0	9.9	
Vert.	66.175	QP	38.9	6.7	7.1	28.5	-	24.2	40.0	15.8	
Vert.	68.343	QP	35.5	6.4	7.1	28.5	-	20.5	40.0	19.5	
Vert.	127.219	QP	21.6	13.6	7.6	28.3	-	14.5	43.5	29.0	
Vert.	281.592	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12030	PK	92.9	19.5	-74.0	32.2	0.0	6.2	25.9	19.7	Fundamental
0deg	0.24060	PK	48.1	19.6	-74.0	32.2	0.0	-38.5	19.9	58.4	
0deg	0.36090	PK	58.4	19.7	-74.0	32.2	0.0	-28.1	16.4	44.5	
0deg	0.48120	PK	41.2	19.7	-73.9	32.2	0.0	-45.2	14.0	59.2	

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	0.12030	PK	92.9	19.5	6.0	32.2	-	86.2	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 18, 2024
Temperature / Humidity	23 deg. C / 65 % RH	23 deg. C / 48 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 2	

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	0.12700	PK	92.8	19.5	-74.0	32.2	-	6.1	45.5	39.4	Fundamental
0deg	0.25400	PK	48.0	19.6	-74.0	32.2	-	-38.6	39.5	78.1	
0deg	0.38100	PK	57.2	19.7	-74.0	32.2	-	-29.3	36.0	65.3	
0deg	0.50800	QP	33.6	19.7	-33.9	32.2	-	-12.8	33.5	46.3	
0deg	0.63500	QP	45.9	19.7	-33.9	32.2	-	-0.5	31.5	32.0	
0deg	0.76200	QP	32.3	19.7	-33.9	32.2	-	-14.1	29.9	44.0	
0deg	0.88900	QP	45.9	19.7	-33.9	32.2	-	-0.5	28.6	29.1	
0deg	1.01600	QP	31.7	19.7	-33.9	32.2	-	-14.7	27.4	42.1	
0deg	1.14300	QP	37.6	19.7	-33.8	32.2	-	-8.7	26.4	35.1	
0deg	1.27000	QP	31.5	19.7	-33.8	32.2	-	-14.8	25.5	40.3	
Hori.	36.238	QP	21.7	16.2	6.7	28.5	-	16.1	40.0	23.9	Floor Noise
Hori.	64.000	QP	28.9	6.9	7.0	28.5	-	14.3	40.0	25.7	
Hori.	66.502	QP	22.2	6.6	7.1	28.5	-	7.4	40.0	32.6	Floor Noise
Hori.	69.894	QP	21.9	6.4	7.1	28.5	-	6.9	40.0	33.1	Floor Noise
Hori.	127.767	QP	21.2	13.6	7.6	28.3	-	14.1	43.5	29.4	Floor Noise
Hori.	281.592	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise
Vert.	36.238	QP	22.0	16.2	6.7	28.5	-	16.4	40.0	23.6	
Vert.	64.000	QP	45.6	6.9	7.0	28.5	-	31.0	40.0	9.0	
Vert.	66.502	QP	36.3	6.6	7.1	28.5	-	21.5	40.0	18.5	
Vert.	69.894	QP	34.3	6.4	7.1	28.5	-	19.3	40.0	20.7	
Vert.	127.767	QP	21.6	13.6	7.6	28.3	-	14.5	43.5	29.0	
Vert.	281.592	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12700	PK	92.8	19.5	-74.0	32.2	0.0	6.1	25.5	19.4	Fundamental
0deg	0.25400	PK	48.0	19.6	-74.0	32.2	0.0	-38.6	19.5	58.1	
0deg	0.38100	PK	57.2	19.7	-74.0	32.2	0.0	-29.3	16.0	45.3	

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	0.12700	PK	92.8	19.5	6.0	32.2	-	86.1	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 18, 2024
Temperature / Humidity	23 deg. C / 65 % RH	23 deg. C / 48 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 3	

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	0.12750	PK	92.3	19.5	-74.0	32.2	-	5.6	45.4	39.8	Fundamental
0deg	0.25500	PK	49.1	19.6	-74.0	32.2	-	-37.5	39.4	76.9	
0deg	0.38250	PK	55.9	19.7	-74.0	32.2	-	-30.6	35.9	66.5	
0deg	0.51000	QP	32.9	19.7	-33.9	32.2	-	-13.5	33.5	47.0	
0deg	0.63750	QP	45.4	19.7	-33.9	32.2	-	-1.0	31.5	32.5	
0deg	0.76500	QP	31.8	19.7	-33.9	32.2	-	-14.6	29.9	44.5	
0deg	0.89250	QP	45.1	19.7	-33.9	32.2	-	-1.3	28.6	29.9	
0deg	1.02000	QP	31.3	19.7	-33.9	32.2	-	-15.1	27.4	42.5	
0deg	1.14750	QP	39.1	19.7	-33.8	32.2	-	-7.2	26.4	33.6	
0deg	1.27500	QP	31.1	19.7	-33.8	32.2	-	-15.2	25.4	40.6	
Hori.	36.563	QP	21.6	16.1	6.7	28.5	-	15.9	40.0	24.1	Floor Noise
Hori.	64.000	QP	28.9	6.9	7.0	28.5	-	14.3	40.0	25.7	
Hori.	66.561	QP	22.7	6.6	7.1	28.5	-	7.9	40.0	32.1	Floor Noise
Hori.	69.884	QP	21.8	6.4	7.1	28.5	-	6.8	40.0	33.2	Floor Noise
Hori.	126.396	QP	21.2	13.4	7.6	28.3	-	13.9	43.5	29.6	Floor Noise
Hori.	281.585	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise
Vert.	36.563	QP	22.6	16.1	6.7	28.5	-	16.9	40.0	23.1	
Vert.	64.000	QP	44.7	6.9	7.0	28.5	-	30.1	40.0	9.9	
Vert.	66.526	QP	38.6	6.6	7.1	28.5	-	23.8	40.0	16.2	
Vert.	69.895	QP	33.1	6.4	7.1	28.5	-	18.1	40.0	21.9	
Vert.	126.396	QP	21.6	13.4	7.6	28.3	-	14.3	43.5	29.2	
Vert.	281.585	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12750	PK	92.3	19.5	-74.0	32.2	0.0	5.6	25.4	19.8	Fundamental
0deg	0.25500	PK	49.1	19.6	-74.0	32.2	0.0	-37.5	19.4	56.9	
0deg	0.38250	PK	55.9	19.7	-74.0	32.2	0.0	-30.6	15.9	46.5	

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	0.12750	PK	92.3	19.5	6.0	32.2	-	85.6	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	September 1, 2024
Date	July 16, 2024	23 deg. C / 68 % RH
Temperature / Humidity	23 deg. C / 65 % RH	Hiroki Numata
Engineer	Takumi Nishida	
Mode	Mode 4	

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	0.12030	PK	85.5	19.5	-74.0	32.3	-	-1.3	45.9	47.2	Fundamental
0deg	0.24060	PK	46.4	19.6	-73.9	32.3	-	-40.2	39.9	80.1	
0deg	0.36090	PK	59.8	19.7	-73.9	32.3	-	-26.7	36.4	63.1	
0deg	0.48120	PK	41.2	19.7	-73.9	32.3	-	-45.3	34.0	79.3	
0deg	0.60150	QP	52.5	19.7	-33.8	32.3	-	6.1	32.0	25.9	
0deg	0.72180	QP	34.0	19.7	-33.8	32.3	-	-12.4	30.4	42.8	
0deg	0.84210	QP	46.5	19.7	-33.8	32.3	-	0.1	29.1	29.0	
0deg	0.96240	QP	33.2	19.7	-33.8	32.3	-	-13.2	27.9	41.1	
0deg	1.08270	QP	42.7	19.7	-33.8	32.3	-	-3.7	26.9	30.6	
0deg	1.20300	QP	32.2	19.7	-33.8	32.3	-	-14.2	26.0	40.2	
Hori.	36.668	QP	21.6	16.0	6.7	28.5	-	15.8	40.0	24.2	Floor Noise
Hori.	64.000	QP	29.0	6.9	7.0	28.5	-	14.4	40.0	25.6	
Hori.	66.002	QP	22.2	6.7	7.1	28.5	-	7.5	40.0	32.5	Floor Noise
Hori.	69.517	QP	21.9	6.4	7.1	28.5	-	6.9	40.0	33.1	Floor Noise
Hori.	127.767	QP	21.2	13.6	7.6	28.3	-	14.1	43.5	29.4	Floor Noise
Hori.	281.586	QP	20.5	13.4	8.6	27.7	-	14.8	46.0	31.2	Floor Noise
Vert.	36.668	QP	22.4	16.0	6.7	28.5	-	16.6	40.0	23.4	
Vert.	64.000	QP	45.1	6.9	7.0	28.5	-	30.5	40.0	9.5	
Vert.	66.002	QP	36.5	6.7	7.1	28.5	-	21.8	40.0	18.2	
Vert.	69.517	QP	34.1	6.4	7.1	28.5	-	19.1	40.0	20.9	
Vert.	127.767	QP	21.6	13.6	7.6	28.3	-	14.5	43.5	29.0	
Vert.	281.586	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12030	PK	85.5	19.5	-74.0	32.3	0.0	-1.3	25.9	27.2	Fundamental
0deg	0.24060	PK	46.4	19.6	-73.9	32.3	0.0	-40.2	19.9	60.1	
0deg	0.36090	PK	59.8	19.7	-73.9	32.3	0.0	-26.7	16.4	43.1	
0deg	0.48120	PK	41.2	19.7	-73.9	32.3	0.0	-45.3	14.0	59.3	

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	0.12030	PK	85.5	19.5	6.0	32.3	-	78.7	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	September 1, 2024
Date	July 16, 2024	23 deg. C / 68 % RH
Temperature / Humidity	23 deg. C / 65 % RH	Hiroki Numata
Engineer	Takumi Nishida	
Mode	Mode 5	

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	0.12700	PK	87.1	19.5	-74.0	32.3	-	0.3	45.5	45.2	Fundamental
0deg	0.25400	PK	47.2	19.6	-73.9	32.3	-	-39.4	39.5	78.9	
0deg	0.38100	PK	60.9	19.7	-73.9	32.3	-	-25.6	36.0	61.6	
0deg	0.50800	QP	35.3	19.7	-33.9	32.3	-	-11.2	33.5	44.7	
0deg	0.63500	QP	53.7	19.7	-33.8	32.3	-	7.3	31.5	24.2	
0deg	0.76200	QP	32.7	19.7	-33.8	32.3	-	-13.7	29.9	43.6	
0deg	0.88900	QP	47.2	19.7	-33.8	32.3	-	0.8	28.6	27.8	
0deg	1.01600	QP	32.1	19.7	-33.8	32.3	-	-14.3	27.4	41.7	
0deg	1.14300	QP	43.1	19.7	-33.8	32.3	-	-3.3	26.4	29.7	
0deg	1.27000	QP	31.7	19.7	-33.8	32.3	-	-14.7	25.5	40.2	
Hori.	36.647	QP	21.6	0.0	0.0	0.0	-	21.6	40.0	18.4	Floor Noise
Hori.	64.000	QP	29.3	6.9	7.0	28.5	-	14.7	40.0	25.3	
Hori.	65.548	QP	22.3	6.7	7.1	28.5	-	7.6	40.0	32.4	Floor Noise
Hori.	69.012	QP	21.9	6.4	7.1	28.5	-	6.9	40.0	33.1	Floor Noise
Hori.	127.743	QP	21.2	13.6	7.6	28.3	-	14.1	43.5	29.4	Floor Noise
Hori.	281.586	QP	20.5	13.4	8.6	27.7	-	14.8	46.0	31.2	Floor Noise
Vert.	36.647	QP	22.4	16.0	6.7	28.5	-	16.6	40.0	23.4	
Vert.	64.000	QP	45.6	6.9	7.0	28.5	-	31.0	40.0	9.0	
Vert.	65.548	QP	36.8	6.7	7.1	28.5	-	22.1	40.0	17.9	
Vert.	69.012	QP	34.4	6.4	7.1	28.5	-	19.4	40.0	20.6	
Vert.	127.743	QP	21.5	13.6	7.6	28.3	-	14.4	43.5	29.1	
Vert.	281.586	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12700	PK	87.1	19.5	-74.0	32.3	0.0	0.3	25.5	25.2	Fundamental
0deg	0.25400	PK	47.2	19.6	-73.9	32.3	0.0	-39.4	19.5	58.9	
0deg	0.38100	PK	60.9	19.7	-73.9	32.3	0.0	-25.6	16.0	41.6	

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	0.12700	PK	87.1	19.5	6.0	32.3	-	80.3	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	September 1, 2024
Date	July 16, 2024	23 deg. C / 68 % RH
Temperature / Humidity	23 deg. C / 65 % RH	Hiroki Numata
Engineer	Takumi Nishida	
Mode	Mode 6	

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	0.12750	PK	92.1	19.5	-74.0	32.3	-	5.3	45.4	40.1	Fundamental
0deg	0.25500	PK	48.4	19.6	-73.9	32.3	-	-38.2	39.4	77.6	
0deg	0.38250	PK	58.8	19.7	-73.9	32.3	-	-27.7	35.9	63.6	
0deg	0.51000	QP	34.8	19.7	-33.9	32.3	-	-11.7	33.5	45.2	
0deg	0.63750	QP	54.4	19.7	-33.8	32.3	-	8.0	31.5	23.5	
0deg	0.76500	QP	33.2	19.7	-33.8	32.3	-	-13.2	29.9	43.1	
0deg	0.89250	QP	48.4	19.7	-33.8	32.3	-	2.0	28.6	26.6	
0deg	1.02000	QP	32.2	19.7	-33.8	32.3	-	-14.2	27.4	41.6	
0deg	1.14750	QP	44.3	19.7	-33.8	32.3	-	-2.1	26.4	28.5	
0deg	1.27500	QP	31.9	19.7	-33.8	32.3	-	-14.5	25.4	39.9	
Hori.	36.647	QP	21.6	16.0	6.7	28.5	-	15.8	40.0	24.2	Floor Noise
Hori.	64.000	QP	29.1	6.9	7.0	28.5	-	14.5	40.0	25.5	
Hori.	65.548	QP	22.3	6.7	7.1	28.5	-	7.6	40.0	32.4	Floor Noise
Hori.	69.012	QP	21.9	6.4	7.1	28.5	-	6.9	40.0	33.1	Floor Noise
Hori.	127.743	QP	21.2	13.6	7.6	28.3	-	14.1	43.5	29.4	Floor Noise
Hori.	281.586	QP	20.5	13.4	8.6	27.7	-	14.8	46.0	31.2	Floor Noise
Vert.	36.647	QP	22.4	16.0	6.7	28.5	-	16.6	40.0	23.4	
Vert.	64.000	QP	45.4	6.9	7.0	28.5	-	30.8	40.0	9.2	
Vert.	65.548	QP	36.4	6.7	7.1	28.5	-	21.7	40.0	18.3	
Vert.	69.012	QP	34.3	6.4	7.1	28.5	-	19.3	40.0	20.7	
Vert.	127.743	QP	21.3	13.6	7.6	28.3	-	14.2	43.5	29.3	
Vert.	281.586	QP	20.3	13.4	8.6	27.7	-	14.6	46.0	31.4	Floor Noise

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	0.12750	PK	92.1	19.5	-74.0	32.3	0.0	5.3	25.4	20.1	Fundamental
0deg	0.25500	PK	48.4	19.6	-73.9	32.3	0.0	-38.2	19.4	57.6	
0deg	0.38250	PK	58.8	19.7	-73.9	32.3	0.0	-27.7	15.9	43.6	

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	0.12750	PK	92.1	19.5	6.0	32.3	-	85.3	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 16, 2024
Temperature / Humidity	23 deg. C / 65 % RH	22 deg. C / 60 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 8	

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	0.11940	PK	102.3	19.5	-74.0	32.2	-	15.6	46.0	30.4	Fundamental
0deg	0.23880	PK	58.9	19.6	-74.0	32.2	-	-27.7	40.0	67.7	
0deg	0.35820	PK	69.7	19.7	-74.0	32.2	-	-16.8	36.5	53.3	
0deg	0.47760	PK	41.7	19.7	-73.9	32.2	-	-44.7	34.0	78.7	
0deg	0.59700	QP	61.2	19.7	-33.9	32.2	-	14.8	32.1	17.3	
0deg	0.71640	QP	32.9	19.7	-33.9	32.2	-	-13.5	30.5	44.0	
0deg	0.83580	QP	55.5	19.7	-33.9	32.2	-	9.1	29.1	20.0	
0deg	0.95520	QP	32.1	19.7	-33.9	32.2	-	-14.3	28.0	42.3	
0deg	1.07460	QP	51.0	19.7	-33.9	32.2	-	4.6	26.9	22.3	
0deg	1.19400	QP	31.7	19.7	-33.8	32.2	-	-14.6	26.0	40.6	
Hori.	30.565	QP	23.3	18.4	6.6	28.6	-	19.7	40.0	20.3	Floor Noise
Hori.	39.294	QP	24.7	15.0	6.8	28.5	-	18.0	40.0	22.0	
Hori.	69.320	QP	24.2	6.4	7.1	28.5	-	9.2	40.0	30.8	Floor Noise
Hori.	82.210	QP	22.0	7.1	7.2	28.5	-	7.8	40.0	32.2	Floor Noise
Hori.	109.657	QP	22.6	11.6	7.4	28.4	-	13.2	43.5	30.3	Floor Noise
Hori.	290.000	QP	38.2	13.5	8.7	27.7	-	32.7	46.0	13.3	
Vert.	30.565	QP	28.7	18.4	6.6	28.6	-	25.1	40.0	14.9	
Vert.	39.294	QP	32.4	15.0	6.8	28.5	-	25.7	40.0	14.3	
Vert.	69.320	QP	39.1	6.4	7.1	28.5	-	24.1	40.0	15.9	
Vert.	82.210	QP	29.3	7.1	7.2	28.5	-	15.1	40.0	24.9	
Vert.	109.657	QP	34.6	11.6	7.4	28.4	-	25.2	43.5	18.3	
Vert.	290.000	QP	32.6	13.5	8.7	27.7	-	27.1	46.0	18.9	Floor Noise

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	0.11940	PK	102.3	19.5	-74.0	32.2	0.0	15.6	26.0	10.4	Fundamental
0deg	0.23880	PK	58.9	19.6	-74.0	32.2	0.0	-27.7	20.0	47.7	
0deg	0.35820	PK	69.7	19.7	-74.0	32.2	0.0	-16.8	16.5	33.3	
0deg	0.47760	PK	41.7	19.7	-73.9	32.2	0.0	-44.7	14.0	58.7	

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	0.11940	PK	102.3	19.5	6.0	32.2	-	95.6	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 16, 2024
Temperature / Humidity	23 deg. C / 65 % RH	22 deg. C / 60 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 11	

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	0.12600	PK	100.2	19.5	-74.0	32.2	-	13.5	45.5	32.0	Fundamental
0deg	0.25200	PK	56.9	19.6	-74.0	32.2	-	-29.7	39.5	69.2	
0deg	0.37800	PK	70.5	19.7	-74.0	32.2	-	-16.0	36.0	52.0	
0deg	0.50400	QP	40.8	19.7	-33.9	32.2	-	-5.6	33.6	39.2	
0deg	0.63000	QP	60.4	19.7	-33.9	32.2	-	14.0	31.6	17.6	
0deg	0.75600	QP	36.1	19.7	-33.9	32.2	-	-10.3	30.0	40.3	
0deg	0.88200	QP	53.6	19.7	-33.9	32.2	-	7.2	28.7	21.5	
0deg	1.00800	QP	35.3	19.7	-33.9	32.2	-	-11.1	27.5	38.6	
0deg	1.13400	QP	49.5	19.7	-33.9	32.2	-	3.1	26.5	23.4	
0deg	1.26000	QP	33.3	19.7	-33.8	32.2	-	-13.0	25.5	38.5	
Hori.	30.440	QP	22.7	18.5	6.6	28.6	-	19.2	40.0	20.8	Floor Noise
Hori.	39.545	QP	23.6	14.9	6.8	28.5	-	16.8	40.0	23.2	
Hori.	67.961	QP	27.4	6.5	7.1	28.5	-	12.5	40.0	27.5	Floor Noise
Hori.	81.769	QP	22.1	7.0	7.2	28.5	-	7.8	40.0	32.2	Floor Noise
Hori.	109.865	QP	22.6	11.6	7.4	28.4	-	13.2	43.5	30.3	Floor Noise
Hori.	290.000	QP	38.3	13.5	8.7	27.7	-	32.8	46.0	13.2	
Vert.	30.440	QP	30.2	18.5	6.6	28.6	-	26.7	40.0	13.3	
Vert.	39.545	QP	32.1	14.9	6.8	28.5	-	25.3	40.0	14.7	
Vert.	67.961	QP	41.9	6.5	7.1	28.5	-	27.0	40.0	13.0	
Vert.	81.769	QP	26.4	7.0	7.2	28.5	-	12.1	40.0	27.9	
Vert.	109.865	QP	40.5	11.6	7.4	28.4	-	31.1	43.5	12.4	
Vert.	290.000	QP	33.3	13.5	8.7	27.7	-	27.8	46.0	18.2	Floor Noise

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	0.12600	PK	100.2	19.5	-74.0	32.2	0.0	13.5	25.5	12.0	Fundamental
0deg	0.25200	PK	56.9	19.6	-74.0	32.2	0.0	-29.7	19.5	49.2	
0deg	0.37800	PK	70.5	19.7	-74.0	32.2	0.0	-16.0	16.0	32.0	

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	0.12600	PK	100.2	19.5	6.0	32.2	-	93.5	-	-	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).

Radiated Emission (Fundamental and Spurious Emission)

Test place	Ise EMC Lab.	No.2
Semi Anechoic Chamber	No.2	No.2
Date	July 16, 2024	July 16, 2024
Temperature / Humidity	23 deg. C / 65 % RH	22 deg. C / 60 % RH
Engineer	Takumi Nishida	Junki Nagatomi
Mode	Mode 14	

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	0.12650	PK	100.3	19.5	-74.0	32.2	-	13.6	45.5	31.9	Fundamental
0deg	0.25300	PK	57.2	19.6	-74.0	32.2	-	-29.4	39.5	68.9	
0deg	0.37950	PK	70.9	19.7	-74.0	32.2	-	-15.6	36.0	51.6	
0deg	0.50600	QP	39.4	19.7	-33.9	32.2	-	-7.0	33.5	40.5	
0deg	0.63250	QP	61.0	19.7	-33.9	32.2	-	14.6	31.6	17.0	
0deg	0.75900	QP	36.1	19.7	-33.9	32.2	-	-10.3	30.0	40.3	
0deg	0.88550	QP	54.2	19.7	-33.9	32.2	-	7.8	28.6	20.8	
0deg	1.01200	QP	34.9	19.7	-33.9	32.2	-	-11.5	27.5	39.0	
0deg	1.13850	QP	49.4	19.7	-33.9	32.2	-	3.0	26.4	23.4	
0deg	1.26500	QP	33.6	19.7	-33.8	32.2	-	-12.7	25.5	38.2	
Hori.	30.926	QP	22.9	18.3	6.6	28.6	-	19.2	40.0	20.8	Floor Noise
Hori.	39.014	QP	23.5	15.1	6.8	28.5	-	16.9	40.0	23.1	
Hori.	68.052	QP	27.6	6.5	7.1	28.5	-	12.7	40.0	27.3	Floor Noise
Hori.	81.021	QP	22.3	7.0	7.2	28.5	-	8.0	40.0	32.0	Floor Noise
Hori.	109.336	QP	22.8	11.5	7.4	28.4	-	13.3	43.5	30.2	Floor Noise
Hori.	290.000	QP	38.3	13.5	8.7	27.7	-	32.8	46.0	13.2	
Vert.	30.926	QP	30.2	18.3	6.6	28.6	-	26.5	40.0	13.5	
Vert.	39.014	QP	32.2	15.1	6.8	28.5	-	25.6	40.0	14.4	
Vert.	68.052	QP	41.5	6.5	7.1	28.5	-	26.6	40.0	13.4	
Vert.	81.021	QP	26.2	7.0	7.2	28.5	-	11.9	40.0	28.1	
Vert.	109.336	QP	40.0	11.5	7.4	28.4	-	30.5	43.5	13.0	
Vert.	290.000	QP	33.5	13.5	8.7	27.7	-	28.0	46.0	18.0	Floor Noise

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	0.12650	PK	100.3	19.5	-74.0	32.2	0.0	13.6	25.5	11.9	Fundamental
0deg	0.25300	PK	57.2	19.6	-74.0	32.2	0.0	-29.4	19.5	48.9	
0deg	0.37950	PK	70.9	19.7	-74.0	32.2	0.0	-15.6	16.0	31.6	

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	0.12650	PK	100.3	19.5	6.0	32.2	-	93.6	-	-	Fundamental

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

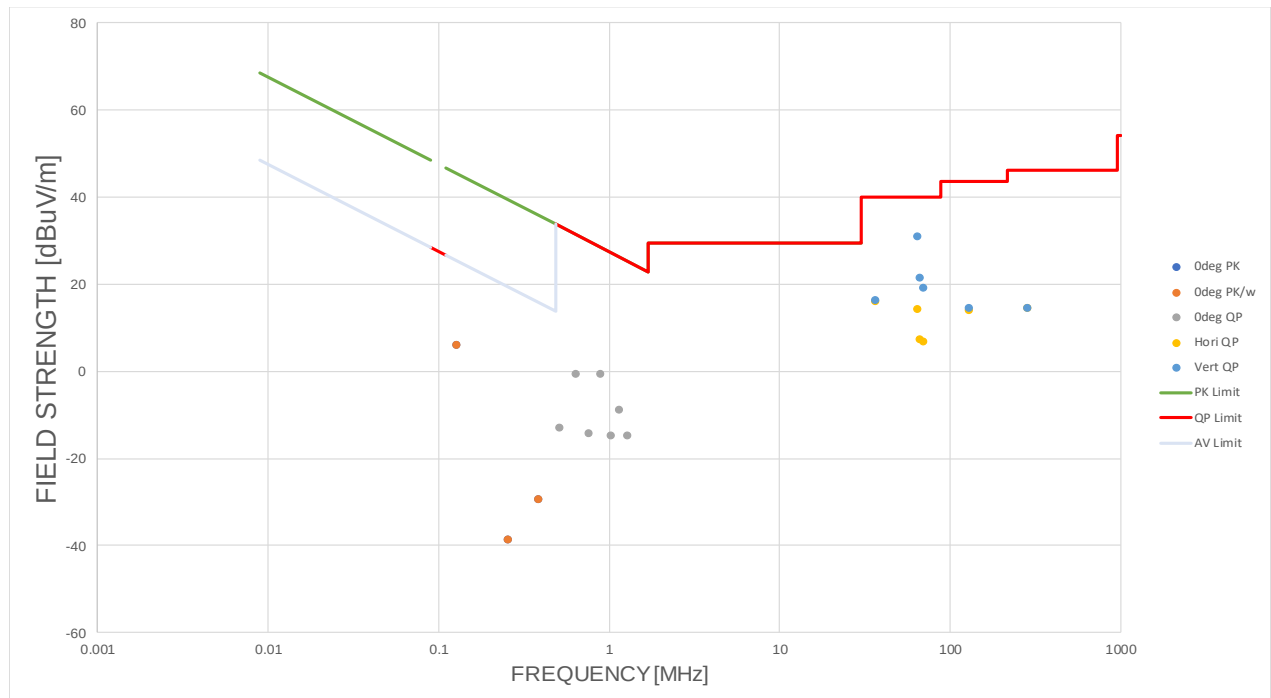
If Gain 0.0dB shown in the above table, pre-amplifier was not used to avoid the influence of carrier power. The pre-amplifier used for carrier frequency measurement was not saturated.
Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

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

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.2
July 16, 2024
23 deg. C / 65 % RH
Takumi Nishida
Mode 2

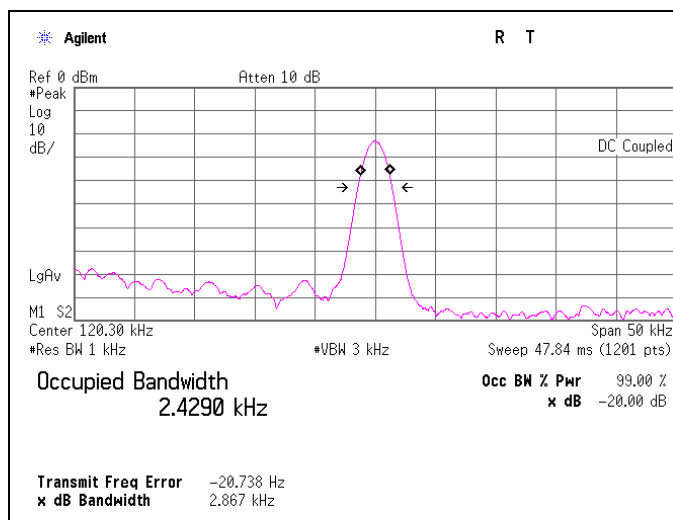
No.2
July 18, 2024
23 deg. C / 48 % RH
Junki Nagatomi



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	May 7, 2025
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Junki Nagatomi
Mode	Mode 1

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
2.867	2.4290

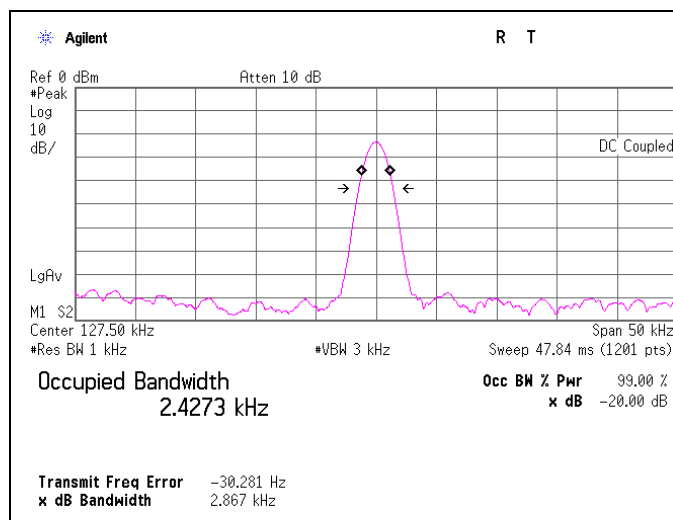


Since the transmitter signal is CW-like it is impractical to use a RBW setting of 1 - 5 % of the emission bandwidth since the emission bandwidth will be proportional to the RBW.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	May 7, 2025
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Junki Nagatomi
Mode	Mode 2

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
2.867	2.4273

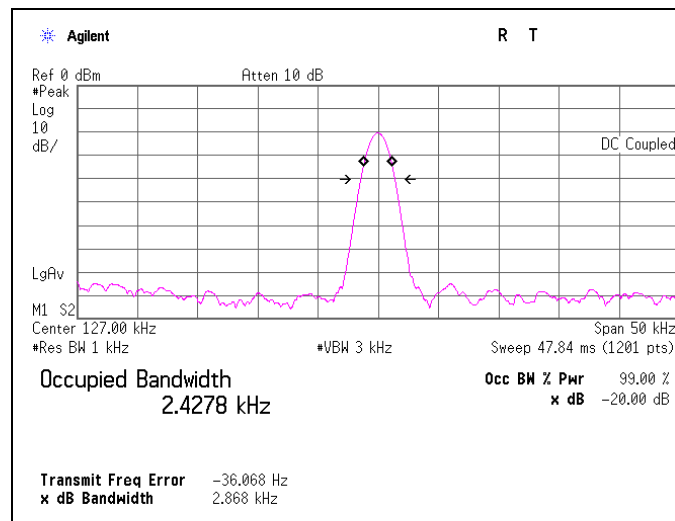


Since the transmitter signal is CW-like it is impractical to use a RBW setting of 1 - 5 % of the emission bandwidth since the emission bandwidth will be proportional to the RBW.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	May 7, 2025
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Junki Nagatomi
Mode	Mode 3

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
2.868	2.4278

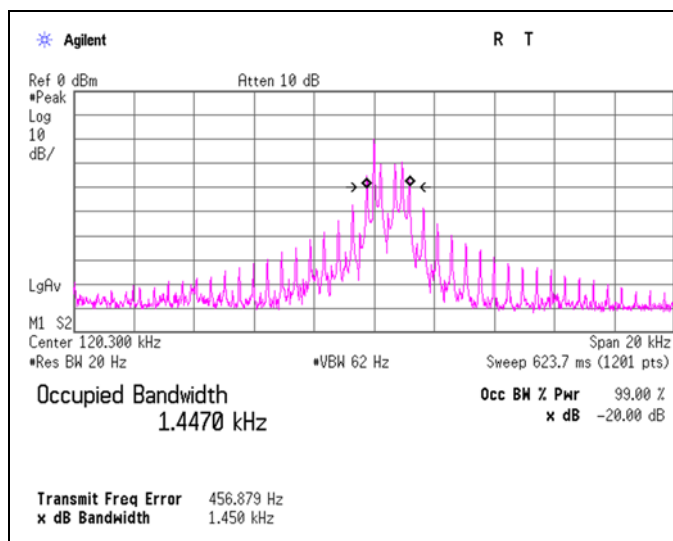


Since the transmitter signal is CW-like it is impractical to use a RBW setting of 1 - 5 % of the emission bandwidth since the emission bandwidth will be proportional to the RBW.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 1, 2024
Temperature / Humidity	23 deg. C / 68 % RH
Engineer	Hiroki Numata
Mode	Mode 4

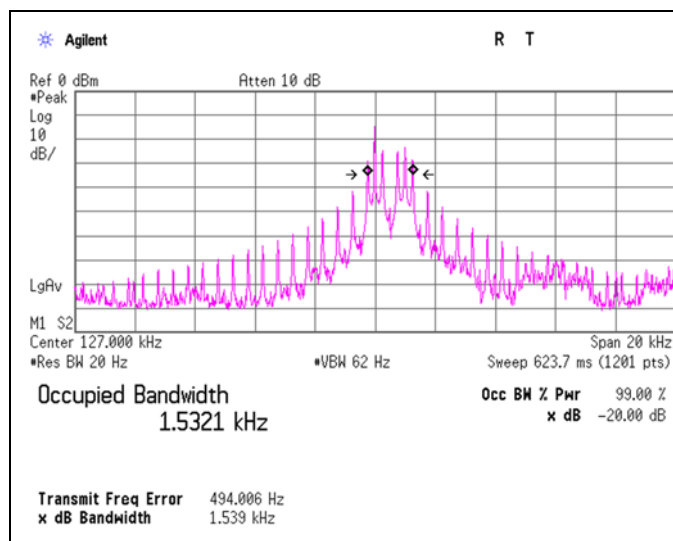
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.450	1.447



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 1, 2024
Temperature / Humidity	23 deg. C / 68 % RH
Engineer	Hiroki Numata
Mode	Mode 5

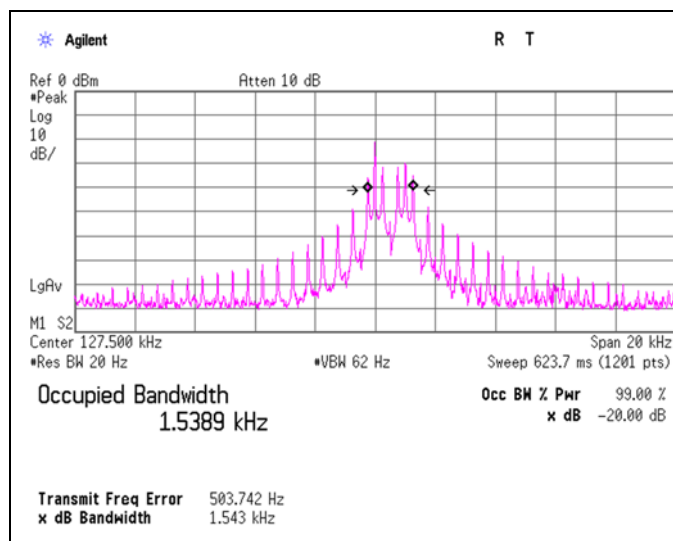
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.5390	1.5321



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	September 1, 2024
Temperature / Humidity	23 deg. C / 68 % RH
Engineer	Hiroki Numata
Mode	Mode 6

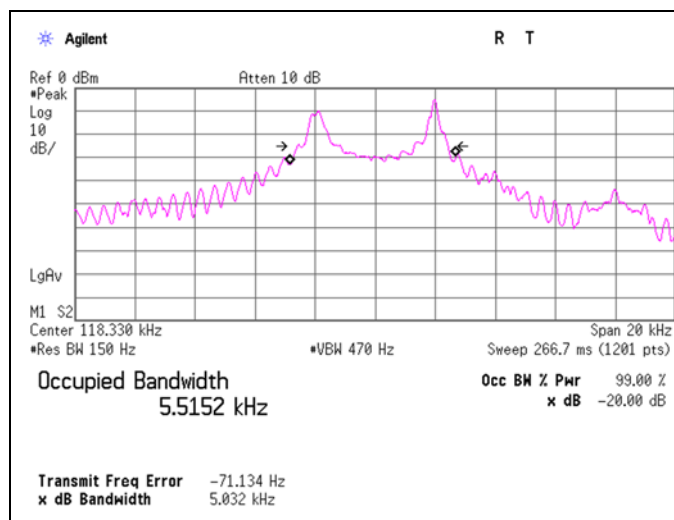
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.5430	1.5389



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 7

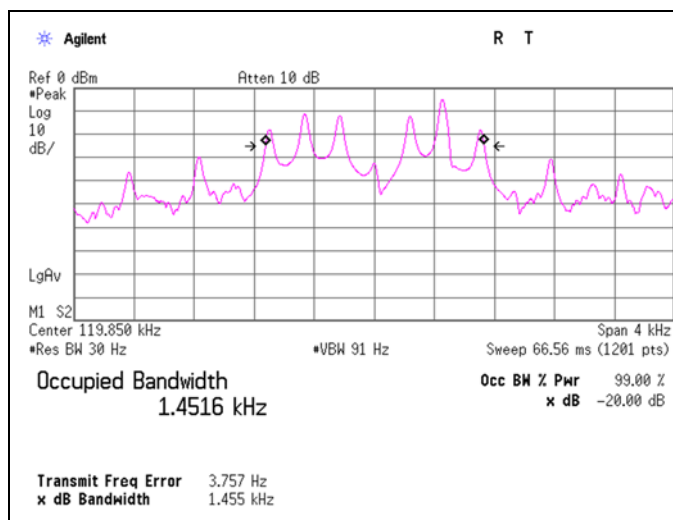
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.032	5.5152



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 8

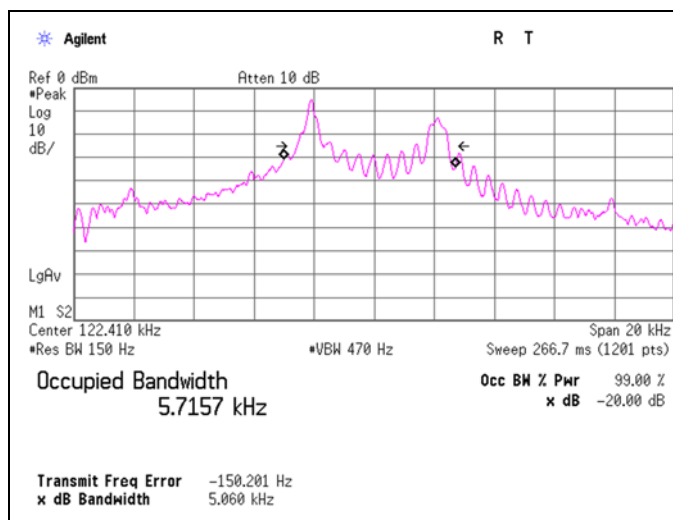
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.455	1.4516



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 9

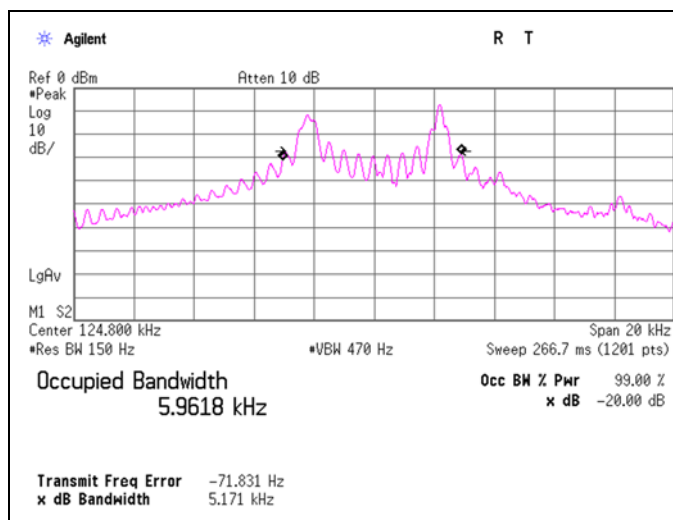
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.060	5.7157



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 10

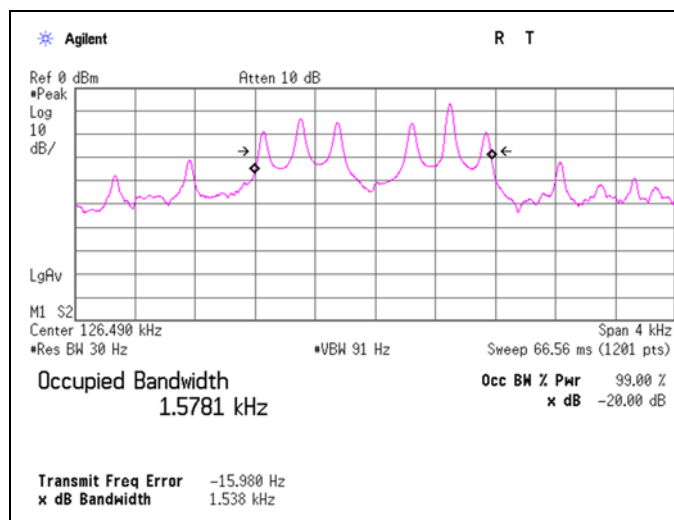
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.171	5.9618



-20 dB Bandwidth / 99 % emission bandwidth

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date July 18, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Junki Nagatomi
Mode Mode 11

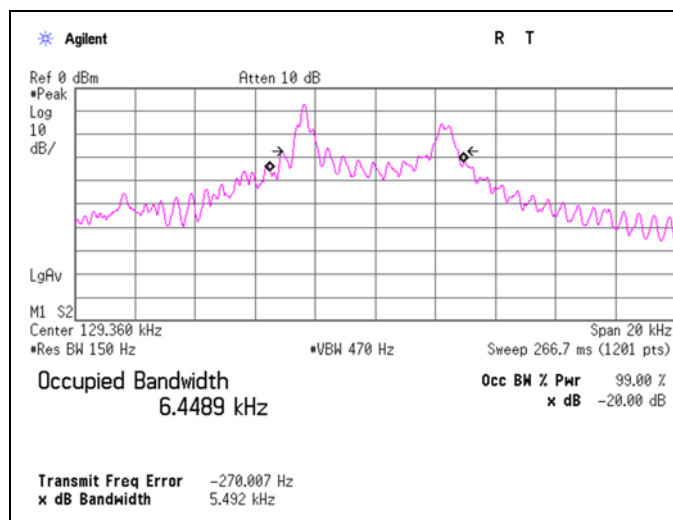
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.538	1.5781



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 12

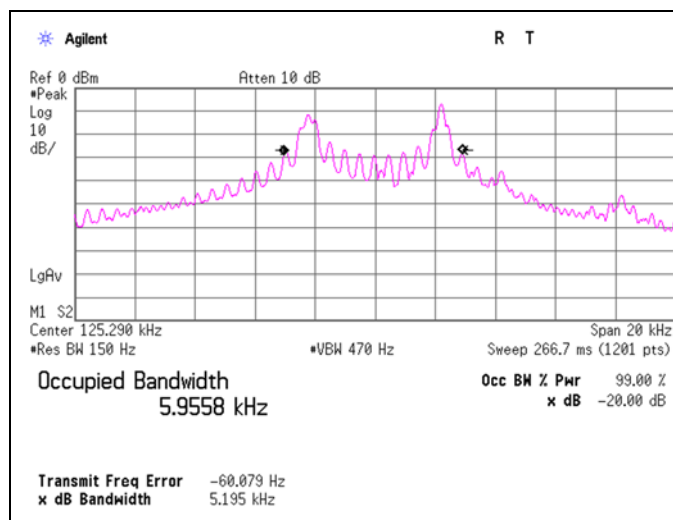
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.492	6.4489



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 13

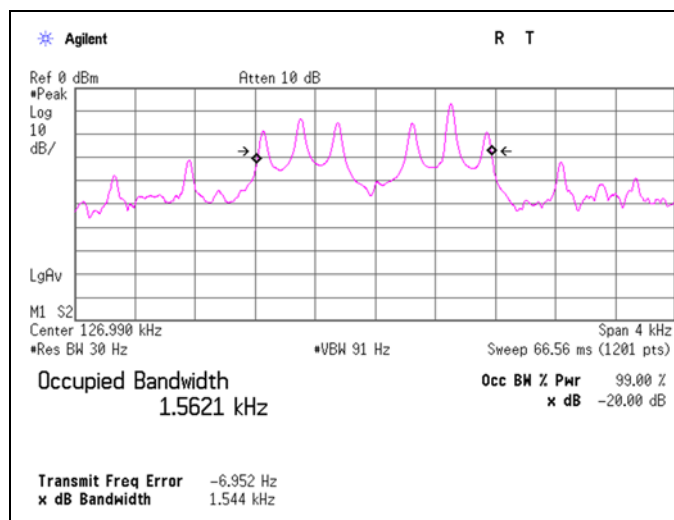
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.195	5.9558



-20 dB Bandwidth / 99 % emission bandwidth

Test place Ise EMC Lab.
Semi Anechoic Chamber No.2
Date July 18, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Junki Nagatomi
Mode Mode 14

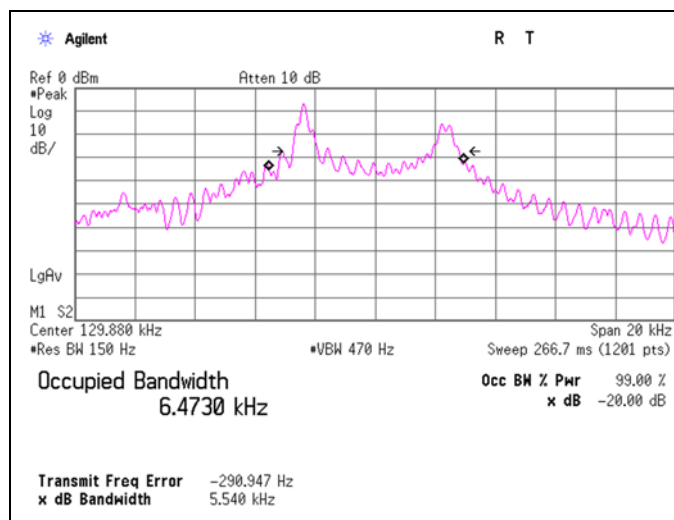
-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.544	1.5621



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.2
Date	July 18, 2024
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Junki Nagatomi
Mode	Mode 15

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.540	6.4730



APPENDIX 2: Test instruments

Test Equipment (Tested on July 16 to September 1, 2024)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141213	Attenuator(6dB)	Weinschel Corp	2	BK7971	11/16/2023	12
RE	141266	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-191	08/23/2024	12
RE	141317	Coaxial Cable	UL Japan	-	-	09/12/2023	12
RE	141427	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103B+BBA9106	08031	07/30/2024	12
RE	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	08/06/2024	12
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/17/2024	12
RE	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	04/04/2024	12
RE	141594	Pre Amplifier	Keysight Technologies Inc	8447D	2944A10150	02/17/2024	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	05/17/2024	12
RE	141978	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY46180899	05/09/2024	12
RE	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	12/12/2023	24
RE	142152	Loop Antenna	Rohde & Schwarz	HFH2-Z2	836553/009	10/17/2023	12
RE	142228	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	159670	Coaxial Cable	UL Japan	-	-	11/21/2023	12
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	220646	Attenuator	Huber+Suhner	6806 N-50-1	-	03/12/2024	12
RE	244707	Thermo-Hygrometer	HIOKI E.E. CORPORATION	LR5001	231202102	01/25/2024	12

Test Equipment (Tested on May 7, 2025)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141222	Coaxial Cable	Fujikura,HP,Mini-Circuits,Fujikura	3D-2W(12m)/ 5D-2W(5m)/ 5D-2W(0.8m)/ 5D-2W(1m)	-	02/14/2025	12
RE	141331	Attenuator(6dB)	TME	UFA-01	-	02/19/2025	12
RE	141542	Digital Tester	Fluke Corporation	FLUKE 26-3	78030611	08/06/2024	12
RE	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	04/02/2025	12
RE	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	01/30/2025	12
RE	142004	AC2_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	12/12/2023	24
RE	142228	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	207745	Coaxial Cable	UL-ISE	-	-	03/19/2025	12
RE	244707	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202102	01/19/2025	12
RE	252514	Active Loop Antenna	Schwarzbeck Mess-Elektronik OHG	FMZB 1519-60 D	1519-60 D-067	09/26/2024	12

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

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

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

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

Test item:

RE: Radiated Emission