RADIO TEST REPORT

Test Report No. 15735479H-B

Customer	**Panasonic Automotive Systems Co., Ltd.**
Description of EUT	**Wireless Charger**
Model Number of EUT	**AH2302**
FCC ID	**ACJ932AH2302**
Test Regulation	**FCC Part 15 Subpart C**
Test Result	**Complied**
Issue Date	**March 24, 2025**
Remarks	**-**

Representative test engineer	Approved by
Junki Nagatomi Engineer	Akihiko Maeda Leader

CERTIFICATE 5107.02

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☒ There is no testing item of "Non-accreditation".

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REVISION HISTORY

Original Test Report No. 15735479H-B

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15735479H-B	March 24, 2025	-

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

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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	Yasuo Miura

*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	AH2302
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	November 25, 2024
Test Date	December 3 to 18, 2024

2.2 Product Description

General Specification

Rating	DC +9 V to +16 V (Typ: +13.2 V)
Feature of EUT	Use the ACC KEY of the car to turn the Wireless charger power ON/OFF. Charging will begin when you place the portable device (etc. mobile phone) with the charging side facing down. If charging is not occurring, try placing the portable device as close to the center of the charging area as possible.

Radio Specification

Frequency Band	124.6 kHz / 127.8 kHz / 129.5 kHz / 120.4 kHz to 134.3 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> ANSI C63.10:2013 6 Standard test methods <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> ANSI C63.10:2013 6 Standard test methods <ISED> RSS-Gen 6.5, 6.12	<FCC> Section 15.209 <ISED> RSS-210 8.2 RSS-Gen 8.9	15.1 dB 124.6 kHz, 0 deg. Peak with Duty factor	Complied	Radiated
Electric Field Strength of Spurious Emission	<FCC> ANSI C63.10:2013 6 Standard test methods <ISED> RSS-Gen 6.5, 6.6, 6.13	<FCC> Section 15.209 <ISED> RSS-210 8.3 RSS-Gen 8.9	7.0 dB 69.575 MHz, Vertical, QP	Complied	Radiated
-20 dB Bandwidth	<FCC> ANSI C63.10:2013 6 Standard test methods <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
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.

3.4 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 Charging mode (CW+FSK, 124.6 kHz / EPP 15W) *3)	Used for Receiver JIG *1)
2) Normal Charging mode (CW+FSK, 127.8 kHz / EPP 15W) *3)	Used for Receiver JIG *1)
3) Normal Charging mode (CW+FSK, 129.5 kHz / EPP 15W) *3)	Used for Receiver JIG *1)
4) Normal Charging mode (FSK, 120.4 kHz Neg 3 / EPP 15W)	Used for Receiver *2)
5) Normal Charging mode (FSK, 128.6 kHz Pos 0 / EPP 15W)	Used for Receiver *2)
6) Normal Charging mode (FSK, 134.3 kHz Pos 3 / EPP 15W)	Used for Receiver *2)
*Power of the EUT was set by the software as follows; Software: WC4_CV_V0400_2M_release.hex Version: V400 (Date: 2024.09.12, 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.	

*The EUT is able to transmit in the state of Single device. The all tests were compared with single device transmission and charging mode transmission, and the worst case charging mode was tested.

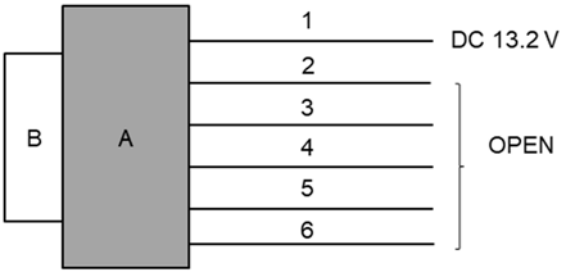
*1) For Mode 1 to 3, after the output level between 5 W and 15 W were compared at pre-check, the test was performed only with 15 W as representative, which had the worst result.

*2) For Mode 4 to 6, after the output level of 8 types of modulation (Neg 0 to 3, Pos 0 to 3) was compared at pre-check, the test was performed with worst case.

*3) The 15 W transmission also outputs CW and FSK transmissions. The frequency listed for the mode is the CW transmission frequency.

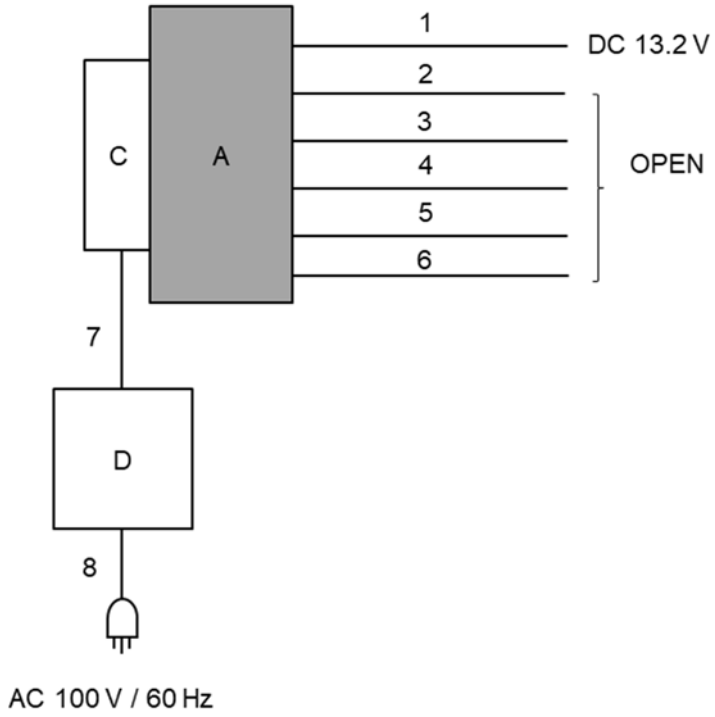
4.2 Configuration and Peripherals

Mode 1 to 3



*A and B communicate and charge via air interface.

Mode 4 to 6



*A and C communicate and charge via air interface.

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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Wireless Charger	AH2302	2S_100	Panasonic Automotive Systems Co., Ltd.	EUT
B	Receiver JIG	GEN5S 15W Load JIG	RS-No.028	Panasonic Automotive Systems Co., Ltd.	-
C	Reference Receiver	TRP#MP1B	1	Nok9	-
D	Qi Reference Tester	LP/MP/FOD	200134-1807	Nok9	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	4.2	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	Signal Cable	2.0	Unshielded	Unshielded	-
7	Communication Cable	0.6	Unshielded	Unshielded	-
8	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 Ohmes. 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., 135 deg., and 180 deg.).
*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

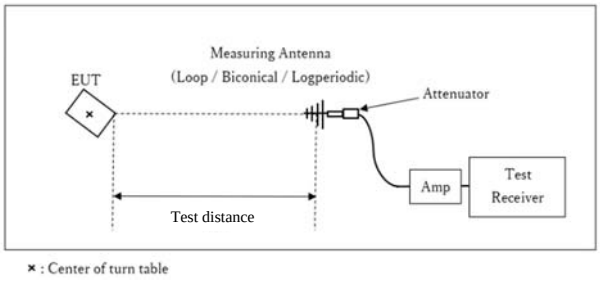
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

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 x log (3 m / 300 m) = -80 dB
*2) Distance Factor: 40 x log (3 m / 30 m) = -40 dB

Figure 1: Test Setup

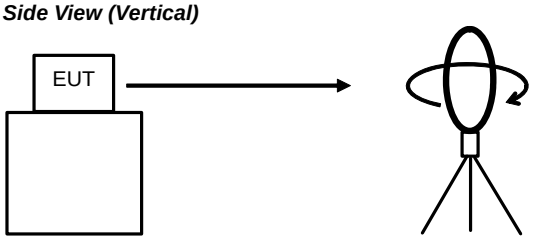
Below 1 GHz



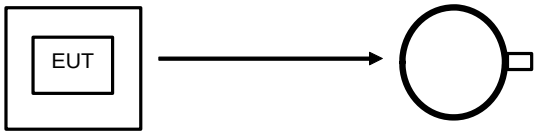
Test Distance: 3 m

Figure 2: Direction of the Loop Antenna

Side View (Vertical)

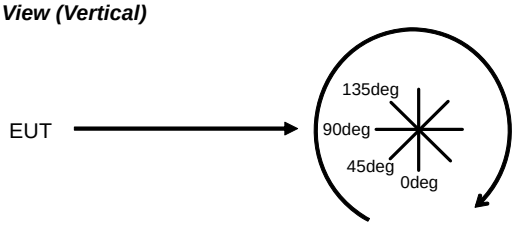


Top View (Horizontal)



Antenna was not rotated.

Top View (Vertical)



Front side: 0 deg.
Forward direction: clockwise

- 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	Enough width to display emission skirts	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	Enough width to display emission skirts	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)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.1	No.4
Date	December 17, 2024	December 18, 2024
Temperature / Humidity	20 deg. C / 40 % RH	21 deg. C / 45 % RH
Engineer	Junki Nagatomi	Yuta Moriya
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	0.12460	PK	82.7	19.2	-74.0	32.3	-	-4.4	45.6	50.0	Fundamental
0deg	0.24920	PK	51.4	19.4	-74.0	32.3	-	-35.5	39.6	75.1	
0deg	0.37380	PK	50.9	19.5	-73.9	32.3	-	-35.8	36.1	71.9	
0deg	0.49840	QP	37.5	19.5	-33.9	32.3	-	-9.2	33.7	42.9	
0deg	0.62300	QP	36.4	19.5	-33.9	32.3	-	-10.3	31.7	42.0	
0deg	0.74760	QP	49.0	19.5	-33.9	32.3	-	2.3	30.1	27.8	
0deg	0.87220	QP	33.6	19.5	-33.8	32.3	-	-13.0	28.8	41.8	
0deg	0.99680	QP	33.2	19.5	-33.8	32.3	-	-13.4	27.6	41.0	
0deg	1.12140	QP	32.1	19.5	-33.8	32.3	-	-14.5	26.6	41.1	
0deg	1.24600	QP	32.1	19.6	-33.8	32.3	-	-14.4	25.6	40.0	
Hori.	43.942	QP	26.4	13.4	7.0	38.9	-	7.9	40.0	32.1	
Hori.	51.762	QP	26.8	10.5	7.1	38.9	-	5.5	40.0	34.5	
Hori.	64.682	QP	26.7	6.8	7.3	38.9	-	1.9	40.0	38.1	
Hori.	141.332	QP	26.6	14.6	8.1	39.0	-	10.3	43.5	33.2	
Hori.	164.237	QP	29.2	15.6	8.3	39.0	-	14.1	43.5	29.4	
Hori.	240.006	QP	35.2	11.8	8.9	38.9	-	17.0	46.0	29.0	
Vert.	42.012	QP	40.6	14.1	7.0	38.9	-	22.8	40.0	17.2	
Vert.	55.450	QP	45.4	9.3	7.2	38.9	-	23.0	40.0	***17.0***	
Vert.	64.929	QP	40.1	6.8	7.3	38.9	-	15.3	40.0	24.7	
Vert.	135.321	QP	41.6	14.2	8.0	39.0	-	24.8	43.5	18.7	
Vert.	164.317	QP	33.2	15.6	8.3	39.0	-	18.1	43.5	25.4	
Vert.	240.000	QP	36.2	11.8	8.9	38.9	-	18.0	46.0	28.0	

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

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	0.12460	PK	82.7	19.2	-74.0	32.3	0.0	-4.4	25.6	30.0	Fundamental
0deg	0.24920	PK	51.4	19.4	-74.0	32.3	0.0	-35.5	19.6	55.1	
0deg	0.37380	PK	50.9	19.5	-73.9	32.3	0.0	-35.8	16.1	51.9	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + D.Factor) - Gain(Amprifier) + 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	0.12460	PK	82.7	19.2	6.0	32.3	-	75.6	-	-	Fundamental

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

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.	
Semi Anechoic Chamber	No.1	No.4
Date	December 17, 2024	December 18, 2024
Temperature / Humidity	20 deg. C / 40 % RH	21 deg. C / 45 % RH
Engineer	Junki Nagatomi	Yuta Moriya
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	0.12780	PK	82.7	19.2	-74.0	32.3	-	-4.4	45.4	49.8	Fundamental
0deg	0.25560	PK	51.4	19.5	-74.0	32.3	-	-35.4	39.4	74.8	
0deg	0.38340	PK	50.8	19.5	-73.9	32.3	-	-35.9	35.9	71.8	
0deg	0.51120	QP	36.7	19.5	-33.9	32.3	-	-10.0	33.4	43.4	
0deg	0.63900	QP	40.0	19.5	-33.9	32.3	-	-6.7	31.5	38.2	
0deg	0.76680	QP	52.2	19.5	-33.9	32.3	-	5.5	29.9	24.4	
0deg	0.89460	QP	36.3	19.5	-33.8	32.3	-	-10.3	28.5	38.8	
0deg	1.02240	QP	32.9	19.5	-33.8	32.3	-	-13.7	27.4	41.1	
0deg	1.15020	QP	34.6	19.5	-33.8	32.3	-	-12.0	26.3	38.3	
0deg	1.27800	QP	32.4	19.6	-33.8	32.3	-	-14.1	25.4	39.5	
Hori.	43.944	QP	27.0	13.4	7.0	38.9	-	8.5	40.0	31.5	
Hori.	54.819	QP	27.1	9.5	7.2	38.9	-	4.9	40.0	35.1	
Hori.	65.020	QP	26.9	6.8	7.3	38.9	-	2.1	40.0	37.9	
Hori.	88.822	QP	26.9	8.3	7.6	38.9	-	3.9	43.5	39.6	
Hori.	136.093	QP	27.0	14.2	8.0	39.0	-	10.2	43.5	33.3	
Hori.	239.988	QP	34.5	11.8	8.9	38.9	-	16.3	46.0	29.7	
Vert.	43.999	QP	43.5	13.4	7.0	38.9	-	25.0	40.0	***15.0***	
Vert.	55.009	QP	46.9	9.4	7.2	38.9	-	24.6	40.0	15.4	
Vert.	65.010	QP	40.9	6.8	7.3	38.9	-	16.1	40.0	23.9	
Vert.	89.009	QP	42.5	8.4	7.6	38.9	-	19.6	43.5	23.9	
Vert.	135.990	QP	40.8	14.2	8.0	39.0	-	24.0	43.5	19.5	
Vert.	239.998	QP	34.9	11.8	8.9	38.9	-	16.7	46.0	29.3	

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

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	0.12780	PK	82.7	19.2	-74.0	32.3	0.0	-4.4	25.4	29.8	Fundamental
0deg	0.25560	PK	51.4	19.5	-74.0	32.3	0.0	-35.4	19.4	54.8	
0deg	0.38340	PK	50.8	19.5	-73.9	32.3	0.0	-35.9	15.9	51.8	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + D.Factor) - Gain(Amprifier) + 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	0.12780	PK	82.7	19.2	6.0	32.3	-	75.6	-	-	Fundamental

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

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.	
Semi Anechoic Chamber	No.1	No.4
Date	December 17, 2024	December 18, 2024
Temperature / Humidity	20 deg. C / 40 % RH	21 deg. C / 45 % RH
Engineer	Junki Nagatomi	Yuta Moriya
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	0.12950	PK	82.7	19.2	-74.0	32.3	-	-4.4	45.3	49.7	Fundamental
0deg	0.25900	PK	50.9	19.5	-74.0	32.3	-	-35.9	39.3	75.2	
0deg	0.38850	PK	50.1	19.5	-73.9	32.3	-	-36.6	35.8	72.4	
0deg	0.51800	QP	36.9	19.5	-33.9	32.3	-	-9.8	33.3	43.1	
0deg	0.64750	QP	41.3	19.5	-33.9	32.3	-	-5.4	31.4	36.8	
0deg	0.77700	QP	49.0	19.5	-33.9	32.3	-	2.3	29.8	27.5	
0deg	0.90650	QP	33.2	19.5	-33.8	32.3	-	-13.4	28.4	41.8	
0deg	1.03600	QP	32.7	19.5	-33.8	32.3	-	-13.9	27.3	41.2	
0deg	1.16550	QP	32.1	19.5	-33.8	32.3	-	-14.5	26.2	40.7	
0deg	1.29500	QP	32.6	19.6	-33.8	32.3	-	-13.9	25.3	39.2	
Hori.	39.352	QP	28.8	15.1	7.0	38.9	-	12.0	40.0	28.0	
Hori.	49.154	QP	30.1	11.5	7.1	38.9	-	9.8	40.0	30.2	
Hori.	65.022	QP	26.7	6.8	7.3	38.9	-	1.9	40.0	38.1	
Hori.	88.831	QP	26.7	8.3	7.6	38.9	-	3.7	43.5	39.8	
Hori.	136.077	QP	27.2	14.2	8.0	39.0	-	10.4	43.5	33.1	
Hori.	240.005	QP	33.8	11.8	8.9	38.9	-	15.6	46.0	30.4	
Vert.	43.997	QP	42.0	13.4	7.0	38.9	-	23.5	40.0	***16.5***	
Vert.	56.017	QP	45.9	9.1	7.2	38.9	-	23.3	40.0	16.7	
Vert.	64.680	QP	38.2	6.8	7.3	38.9	-	13.4	40.0	26.6	
Vert.	89.009	QP	42.0	8.4	7.6	38.9	-	19.1	43.5	24.4	
Vert.	136.000	QP	41.7	14.2	8.0	39.0	-	24.9	43.5	18.6	
Vert.	239.975	QP	34.1	11.8	8.9	38.9	-	15.9	46.0	30.1	

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

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	0.12950	PK	82.7	19.2	-74.0	32.3	0.0	-4.4	25.3	29.7	Fundamental
0deg	0.25900	PK	50.9	19.5	-74.0	32.3	0.0	-35.9	19.3	55.2	
0deg	0.38850	PK	50.1	19.5	-73.9	32.3	0.0	-36.6	15.8	52.4	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + D.Factor) - Gain(Amprifier) + 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	0.12950	PK	82.7	19.2	6.0	32.3	-	75.6	-	-	Fundamental

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

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.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
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	0.12460	PK	97.6	19.2	-74.0	32.3	-	10.5	45.6	35.1	Fundamental
0deg	0.24920	PK	47.9	19.4	-64.2	32.3	-	-29.2	39.6	68.8	
0deg	0.37380	PK	56.4	19.5	-64.3	32.3	-	-20.7	36.1	56.8	
0deg	0.49840	QP	32.0	19.5	-24.3	32.3	-	-5.1	33.7	38.8	
0deg	0.62300	QP	47.2	19.5	-24.2	32.3	-	10.2	31.7	21.5	
0deg	0.74760	QP	40.4	19.5	-24.2	32.3	-	3.4	30.1	26.7	
0deg	0.87220	QP	41.2	19.5	-24.2	32.3	-	4.2	28.8	24.6	
0deg	0.99680	QP	24.0	19.5	-24.2	32.3	-	-13.0	27.6	40.6	
0deg	1.12140	QP	37.1	19.5	-24.2	32.3	-	0.1	26.6	26.5	
0deg	1.24600	QP	23.3	19.6	-24.2	32.3	-	-13.6	25.6	39.2	
Hori.	32.300	QP	31.3	17.7	7.3	38.9	-	17.4	40.0	22.6	
Hori.	95.398	QP	39.3	9.3	8.4	38.9	-	18.1	43.5	25.4	
Hori.	112.822	QP	42.7	11.8	8.6	39.0	-	24.1	43.5	19.4	
Hori.	121.286	QP	44.8	12.8	8.7	39.0	-	27.3	43.5	16.2	
Hori.	187.910	QP	38.0	16.3	9.4	39.0	-	24.7	43.5	18.8	
Hori.	290.000	QP	44.9	13.6	10.4	38.8	-	30.1	46.0	15.9	
Vert.	32.300	QP	41.6	17.7	7.3	38.9	-	27.7	40.0	***12.3***	
Vert.	95.398	QP	44.8	9.3	8.4	38.9	-	23.6	43.5	19.9	
Vert.	112.822	QP	42.0	11.8	8.6	39.0	-	23.4	43.5	20.1	
Vert.	121.286	QP	44.7	12.8	8.7	39.0	-	27.2	43.5	16.3	
Vert.	187.910	QP	37.6	16.3	9.4	39.0	-	24.3	43.5	19.2	
Vert.	290.000	QP	41.8	13.6	10.4	38.8	-	27.0	46.0	19.0	

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

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	0.12460	PK	97.6	19.2	-74.0	32.3	0.0	10.5	25.6	15.1	Fundamental
0deg	0.24920	PK	47.9	19.4	-64.2	32.3	0.0	-29.2	19.6	48.8	
0deg	0.37380	PK	56.4	19.5	-64.3	32.3	0.0	-20.7	16.1	36.8	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amprifier) + 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	0.12460	PK	97.6	19.2	6.0	32.3	-	90.5	-	-	Fundamental

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

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.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
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	0.12780	PK	97.3	19.2	-74.0	32.3	-	10.2	45.4	35.2	Fundamental
0deg	0.25560	PK	48.2	19.5	-64.2	32.3	-	-28.8	39.4	68.2	
0deg	0.38340	PK	57.7	19.5	-64.3	32.3	-	-19.4	35.9	55.3	
0deg	0.51120	QP	32.0	19.5	-24.3	32.3	-	-5.1	33.4	38.5	
0deg	0.63900	QP	48.3	19.5	-24.2	32.3	-	11.3	31.5	20.2	
0deg	0.76680	QP	43.4	19.5	-24.2	32.3	-	6.4	29.9	23.5	
0deg	0.89460	QP	42.2	19.5	-24.2	32.3	-	5.2	28.5	23.3	
0deg	1.02240	QP	24.6	19.5	-24.2	32.3	-	-12.4	27.4	39.8	
0deg	1.15020	QP	38.0	19.5	-24.2	32.3	-	1.0	26.3	25.3	
0deg	1.27800	QP	24.2	19.6	-24.2	32.3	-	-12.7	25.4	38.1	
Hori.	32.301	QP	30.4	17.7	7.3	38.9	-	16.5	40.0	23.5	
Hori.	69.575	QP	56.7	6.4	8.0	38.9	-	32.2	40.0	7.8	
Hori.	95.420	QP	37.1	9.3	8.4	38.9	-	15.9	43.5	27.6	
Hori.	122.520	QP	44.8	12.9	8.7	39.0	-	27.4	43.5	16.1	
Hori.	187.780	QP	38.5	16.3	9.4	39.0	-	25.2	43.5	18.3	
Hori.	290.000	QP	40.7	13.6	10.4	38.8	-	25.9	46.0	20.1	
Vert.	32.280	QP	40.4	17.7	7.3	38.9	-	26.5	40.0	13.5	
Vert.	69.575	QP	57.5	6.4	8.0	38.9	-	33.0	40.0	***7.0***	
Vert.	95.420	QP	44.1	9.3	8.4	38.9	-	22.9	43.5	20.6	
Vert.	122.520	QP	41.8	12.9	8.7	39.0	-	24.4	43.5	19.1	
Vert.	187.780	QP	37.8	16.3	9.4	39.0	-	24.5	43.5	19.0	
Vert.	290.000	QP	41.1	13.6	10.4	38.8	-	26.3	46.0	19.7	

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

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	0.12780	PK	97.3	19.2	-74.0	32.3	0.0	10.2	25.4	15.2	Fundamental
0deg	0.25560	PK	48.2	19.5	-64.2	32.3	0.0	-28.8	19.4	48.2	
0deg	0.38340	PK	57.7	19.5	-64.3	32.3	0.0	-19.4	15.9	35.3	

Result = Reading + Ant Factor + Loss (Cable + Attenuator + Filter + D.Factor) - Gain(Amprifier) + 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	0.12780	PK	97.3	19.2	6.0	32.3	-	90.2	-	-	Fundamental

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

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.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
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	0.12950	PK	95.0	19.2	-74.0	32.3	-	7.9	45.3	37.4	Fundamental
0deg	0.25900	PK	47.8	19.5	-64.2	32.3	-	-29.2	39.3	68.5	
0deg	0.38850	PK	57.3	19.5	-64.3	32.3	-	-19.8	35.8	55.6	
0deg	0.51800	QP	30.7	19.5	-24.3	32.3	-	-6.4	33.3	39.7	
0deg	0.64750	QP	47.0	19.5	-24.2	32.3	-	10.0	31.4	21.4	
0deg	0.77700	QP	42.3	19.5	-24.2	32.3	-	5.3	29.8	24.5	
0deg	0.90650	QP	40.5	19.5	-24.2	32.3	-	3.5	28.4	24.9	
0deg	1.03600	QP	23.6	19.5	-24.2	32.3	-	-13.4	27.3	40.7	
0deg	1.16550	QP	36.5	19.5	-24.2	32.3	-	-0.5	26.2	26.7	
0deg	1.29500	QP	25.0	19.6	-24.2	32.3	-	-11.9	25.3	37.2	
Hori.	32.994	QP	29.4	17.4	7.3	38.9	-	15.2	40.0	24.8	
Hori.	95.362	QP	39.7	9.3	8.4	38.9	-	18.5	43.5	25.0	
Hori.	112.806	QP	42.4	11.8	8.6	39.0	-	23.8	43.5	19.7	
Hori.	121.662	QP	44.6	12.8	8.7	39.0	-	27.1	43.5	16.4	
Hori.	187.893	QP	37.8	16.3	9.4	39.0	-	24.5	43.5	19.0	
Hori.	290.000	QP	44.5	13.6	10.4	38.8	-	29.7	46.0	16.3	
Vert.	32.994	QP	43.5	17.4	7.3	38.9	-	29.3	40.0	***10.7***	
Vert.	95.362	QP	44.0	9.3	8.4	38.9	-	22.8	43.5	20.7	
Vert.	112.806	QP	41.4	11.8	8.6	39.0	-	22.8	43.5	20.7	
Vert.	121.662	QP	43.9	12.8	8.7	39.0	-	26.4	43.5	17.1	
Vert.	187.893	QP	38.1	16.3	9.4	39.0	-	24.8	43.5	18.7	
Vert.	290.000	QP	41.9	13.6	10.4	38.8	-	27.1	46.0	18.9	

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

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	0.12950	PK	95.0	19.2	-74.0	32.3	0.0	7.9	25.3	17.4	Fundamental
0deg	0.25900	PK	47.8	19.5	-64.2	32.3	0.0	-29.2	19.3	48.5	
0deg	0.38850	PK	57.3	19.5	-64.3	32.3	0.0	-19.8	15.8	35.6	

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

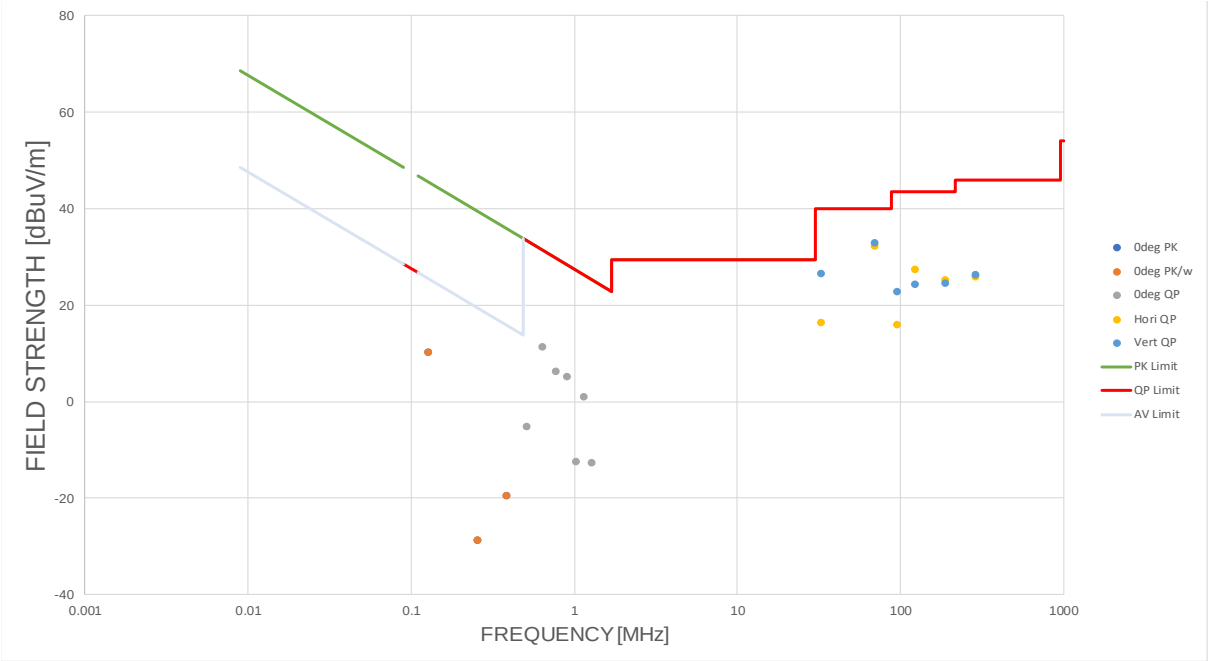
Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0deg	0.12950	PK	95.0	19.2	6.0	32.3	-	87.9	-	-	Fundamental

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

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)

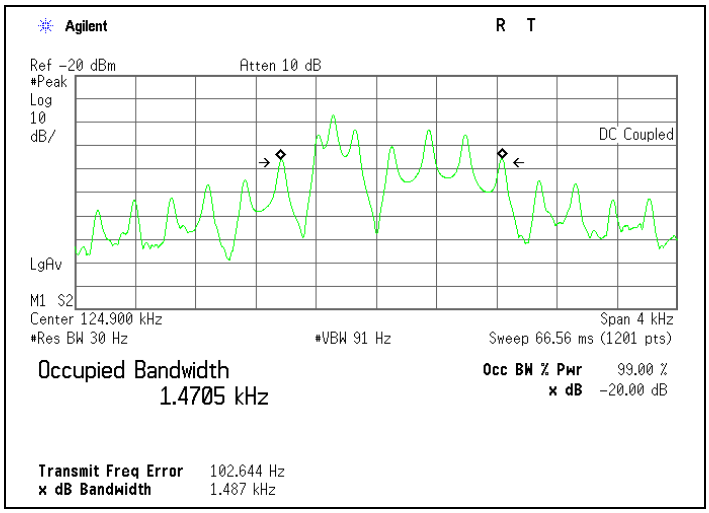
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
Mode	Mode 5



-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Measurement Room	No.6
Date	December 9, 2024
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
Mode	Mode 1

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.487	1.4705

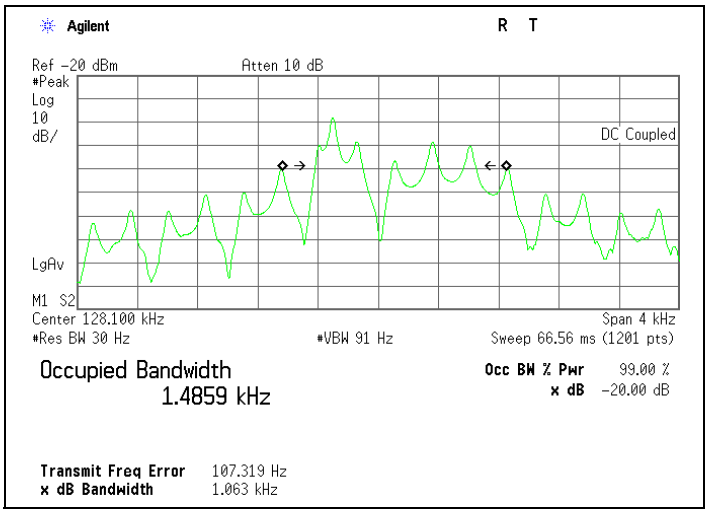


* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Measurement Room	No.6
Date	December 9, 2024
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
Mode	Mode 2

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.063	1.4859

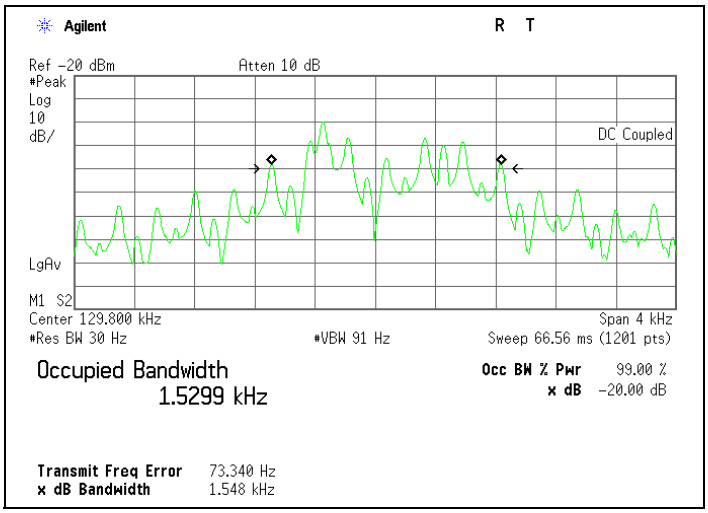


* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Measurement Room	No.6
Date	December 9, 2024
Temperature / Humidity	22 deg. C / 45 % RH
Engineer	Tetsuro Yoshida
Mode	Mode 3

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.548	1.5299

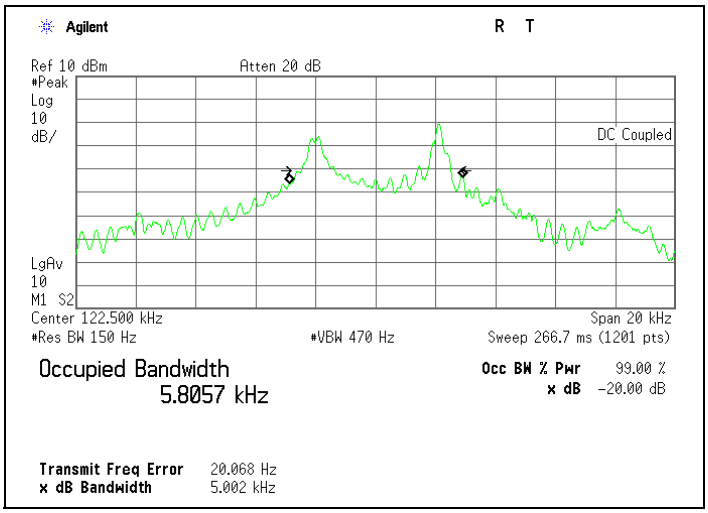


* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
Mode	Mode 4

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.002	5.8057

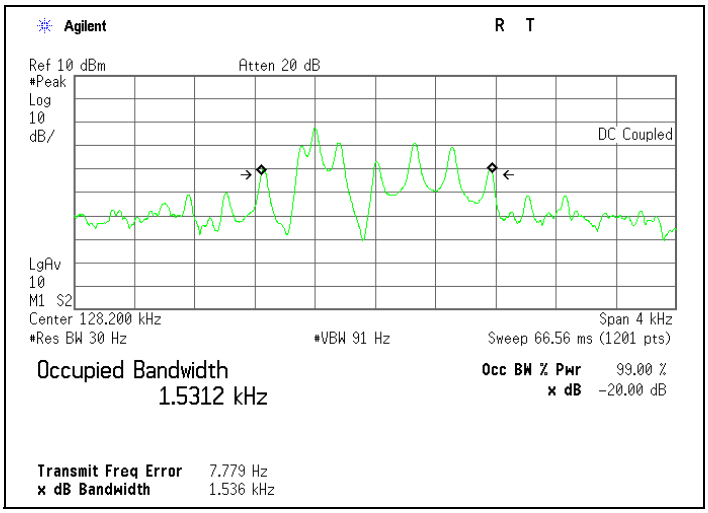


* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
Mode	Mode 5

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
1.536	1.5312

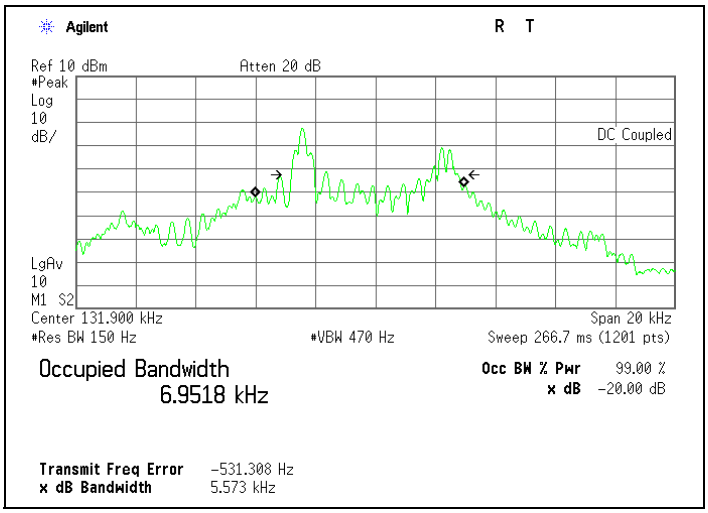


* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

-20 dB Bandwidth / 99 % emission bandwidth

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.1
Date	December 3, 2024
Temperature / Humidity	20 deg. C / 40 % RH
Engineer	Junki Nagatomi
Mode	Mode 6

-20 dB Bandwidth [kHz]	99 % emission bandwidth [kHz]
5.573	6.9518



* The setting center frequency is difference from the mode frequency to set enough width to display emission skirts.

APPENDIX 2: Test instruments

Test Equipment

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141198	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+ BBA9106	2513	07/10/2024	12
RE	141213	Attenuator(6dB)	Weinschel Corp	2	BK7971	11/11/2024	12
RE	141215	Coaxial Cable	Fujikura/Suhner/TSJ	5D-2W/3D-2W/ RG400u/ RFM-E421(SW)	-/01068 (Switcher)	06/24/2024	12
RE	141266	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-191	08/23/2024	12
RE	141267	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-192	09/18/2024	12
RE	141295	High Pass Filter 0.15-30MHz	Rohde & Schwarz	EZ-25/3	100041	02/14/2024	12
RE	141350	Coaxial Cable	Suhner/storm/Agilent/TSJ	-	-	03/05/2024	12
RE	141397	Coaxial Cable	UL-ISE_EMC	-	-	11/29/2024	12
RE	141425	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+ BBA9106	VHA 91031302	08/23/2024	12
RE	141530	Digital Tester	Fluke Corporation	FLUKE 26-3	78030621	02/01/2024	12
RE	141545	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	51201148	02/01/2024	12
RE	141568	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	2901	01/10/2024	12
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/17/2024	12
RE	141585	Pre Amplifier	L3 Narda-MITEQ	MLA-10K01-B01-35	1237616	02/17/2024	12
RE	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	01/26/2024	12
RE	141950	EMI Test Receiver	Rohde & Schwarz	ESU26	100412	11/28/2024	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	05/17/2024	12
RE	141998	AC1_Semi Anechoic Chamber (NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	12/06/2023	24
RE	142011	AC4_Semi Anechoic Chamber (NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	12/13/2023	24
RE	142226	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	142230	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	146613	Loop Antenna	Rohde & Schwarz	HFH2-Z2	842906/011	09/02/2024	12
RE	159670	Coaxial Cable	UL-ISE	-	-	11/11/2024	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	244710	Thermo-Hygrometer	HIOKI E.E. CORPORATION	LR5001	231202104	01/25/2024	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