

RADIO TEST REPORT

Test Report No. 15552694H-A-R2

Customer	KYOCERA Document Solutions Inc.
Description of EUT	RFID Module
Model Number of EUT	2ZVA1462
FCC ID	E522ZVA1462
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	October 8, 2025
Remarks	-

Representative test engineerTakumi Nishida
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.
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REVISION HISTORY

Original Test Report No. 15552694H-A

This report is a revised version of 15552694H-A-R1. 15552694H-A-R1 is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15552694H-A	April 23, 2025	-
1	15552694H-A-R1	September 24, 2025	Correction of the Rating in Clause 2.2; From "AC 200 V to 240 V, 42 A, 50 / 60 Hz AC 208 V, 50 A, 60 Hz" To "RFID Module: DC 3.3 V TASKalfa(HOST): AC 200 V to 240 V, 42 A, 50 / 60 Hz, AC 208 V, 50 A, 60 Hz"
1	15552694H-A-R1	September 24, 2025	Update to the latest version of the Reference Standards in Clause 3.2
1	15552694H-A-R1	September 24, 2025	Correction of the Worst Margin for Conducted Emission test in Clause 3.3; From "3.45 dB, 0.55375 MHz, AV, Phase N" To "0.17 dB, 0.49300 MHz, AV, Phase L"
1	15552694H-A-R1	September 24, 2025	Correction of the operating mode table in Clause 4.1
1	15552694H-A-R1	September 24, 2025	Corrections of the following information in module configuration diagram for Clause 4.2; - AC power supply - Note and *a) - Cable name and length for No.1
2	15552694H-A-R2	October 8, 2025	Deletion of "AC 208 V, 50 A, 60 Hz" from Rating in Clause 2.2
2	15552694H-A-R2	October 8, 2025	Change the note for Frequency Tolerance in Clause 4.1.
2	15552694H-A-R2	October 8, 2025	Corrections of the following information in configuration diagram for Clause 4.2; - Divided into CE and RE&FT (Module (Mode 1)), and Correction of the Core Information - Addition to Item B (Host (Mode 2)) - Addition to Pre-check text regarding worst-case voltage (Host (Mode 2)) - Addition of the note **
2	15552694H-A-R2	October 8, 2025	Addition of Test Procedure for Host(Mode 2) in SECTION 5 and 6.
2	15552694H-A-R2	October 8, 2025	Correction of the following to SECTION 7; - Change the instrument used for Frequency Tolerance - Addition of the note *2)
2	15552694H-A-R2	October 8, 2025	Change the following device from the Test Equipment list in APPENDIX 2; Deletion; - LIMS ID: 142008 (for CE) - LIMS ID: 141277, 141318, 141357, 141464, 141545, 142011, 142230, 198781, 244710 (for RE) Addition; -LIMS ID: 199242 (for RE)

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	KYOCERA Document Solutions Inc.
Address	1-2-28 Tamatsukuri, Chuo-ku, Osaka 540-8585 Japan
Telephone Number	+81-6-6764-3333
Contact Person	Yuki Mori

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	RFID Module
Model Number	2ZVA1462
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	February 10, 2025
Test Date	February 28 to March 18, 2025

2.2 Product Description

General Specification

Rating	RFID Module: DC 3.3 V TASka(fa(HOST): AC 200 V to 240 V, 42 A, 50 / 60 Hz
Operating Temperature	0 deg. C to 50 deg. C

Radio Specification

Equipment Type	Transceiver
Frequency of Operation	13.56 MHz
Type of Modulation	ASK

SECTION 3: Test Summary

3.1 Test Specification

Test Specification	FCC Part 15 Subpart C The latest version on the first day of the testing period
Title	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.225 Operation within the band 13.110-14.010 MHz.

3.2 Reference Standards

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

3.3 Summary of Test Results

Item	Specification	Worst margin	Results	Remarks
Conducted Emission	<FCC> Section 15.207 ----- <ISED> RSS-Gen 8.8	0.17 dB, 0.49300 MHz, AV, Phase L	Complied	-
Electric Field Strength of Fundamental Emission	<FCC> Section 15.225(a) ----- <ISED> RSS-210 B.6 (a)	79.41 dB, 13.56000 MHz, QP, 0 deg.	Complied	Radiated
Spectrum Mask	<FCC> Section 15.225(b)(c) ----- <ISED> RSS-210 B.6 (a)	38.80 dB, 14.01000 MHz, QP, 0 deg.	Complied	Radiated
20 dB Bandwidth	<FCC> Section15.215(c) ----- <ISED> -	See data	Complied	Radiated
Electric Field Strength of Spurious Emission	<FCC> Section 15.209, Section 15.225 (d) ----- <ISED> RSS-210 B.6 (a) RSS-Gen 8.9	5.41 dB 840.772 MHz, Vertical, QP	Complied	Radiated
Frequency Tolerance	<FCC> Section 15.225(e) ----- <ISED> RSS-210 B.6 (b)	See data	Complied	Radiated

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

FCC Part 15.31 (e)

The stable voltage was supplied by the end product which was required to have a power supply regulator. Therefore, the EUT complies with the requirement.
However, the supply voltage was varied and tested at 85 % and 115 % of the nominal rated supply voltage during frequency tolerance test according to Section 15.225(e).

FCC Part 15.203/212 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 15.203/212.

3.4 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99% emission bandwidth	<ISED>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.

3.5 Uncertainty

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

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

Conducted emission

Item	Frequency range	Unit	Calculated Uncertainty (+/-)
AMN (LISN)	0.15 MHz to 30 MHz	dB	3.3

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	5.0
		Vertical	5.0
	200 MHz to 1000 MHz	Horizontal	5.2
		Vertical	6.2
10 m	30 MHz to 200 MHz	Horizontal	5.5
		Vertical	5.4
	200 MHz to 1000 MHz	Horizontal	5.5
		Vertical	5.5

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

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

3.6 Test Location

UL Japan, Inc. Ise EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 Japan
Telephone: +81-596-24-8999

*A2LA Certificate Number: 5107.02 / FCC Test Firm Registration Number: 884919

ISED Lab Company Number: 2973C / CAB identifier: JP0002

Test site	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	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	-	-

* Size of vertical conducting plane (for Conducted Emission test): 2.0 x 3.0 m for No.1, No.2, No.3, No.4, and No.5 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.7 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

The mode is used:

Test mode	Remarks
1) Transmitting mode (Tx) (Module) 2) Transmitting mode (Tx) (Host)	The EUT Transmits and Receives at the same time and there is no receiving mode.
The EUT was operated in a manner similar to typical use during the tests.	
*Power of the EUT was set by the software as follows; Software: <for Module> Test FW (Date: 2025.02.28, Storage location: inside Control Box) <for Host> Test FW Version: S2ZV_1S00.X79.027 (Date: 2025.03.11, Storage location: EUT memory) *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.	
Justification: The system was configured in typical fashion (as a user would normally use it) for testing.	

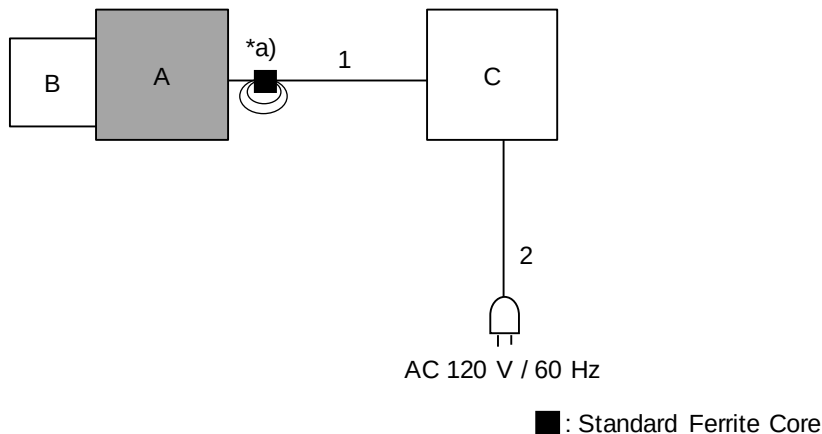
Test Item	Test mode	Remarks
Conducted Emission	1), 2)	Tx Mod on, with Tag*
Electric Field Strength of Fundamental Emission	1), 2)	Tx Mod on, with Tag*
Spectrum Mask	1), 2)	Tx Mod on, with Tag*
20 dB Bandwidth and 99 % Occupied Bandwidth	1)	Tx Mod on, with Tag / without Tag
Electric Field Strength of Spurious Emission	1), 2)	Tx Mod on, with Tag*
Frequency Tolerance	1)	Tx Mod off

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

Frequency Tolerance	
Temperature	-20 deg. C to +50 deg. C: Step 10 deg. C
Voltage	Normal Voltage DC 3.3 V Maximum Voltage DC 3.795 V (DC 3.3 V +15 %) Minimum Voltage DC 2.805 V (DC 3.3 V -15 %)
*The voltage supplied to the module actually was varied, the tolerance and fundamental wave level was evaluated with the module.	

4.2 Configuration and peripherals

Module (Mode 1) for Conducted emission



*a) Standard Ferrite Core 5 cm from Item A, 3 turns

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

* As a result of comparing the supply voltage to module (DC 2.805 V, DC 3.3 V and DC 3.795 V) at pre-check, Conducted emission test was performed with DC 3.795 V of the worst case as representative.

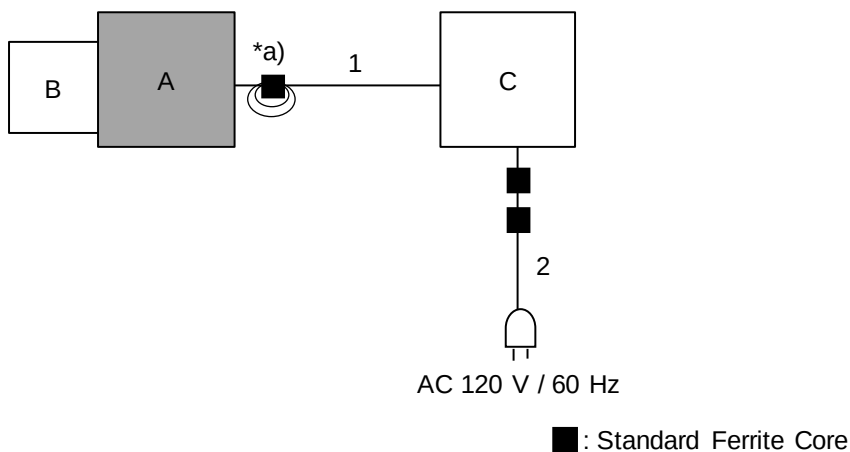
Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	RFID Module	2ZVA1462	A-1462-C	KYOCERA Document Solutions Inc.	EUT
B	Tag	-	-	TOPPAN Edge Inc.	-
C	Control Box	-	-	KYOCERA Document Solutions Inc.	-

List of Cables Used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC and Signal Cable	1.0	Unshielded	Unshielded	-
2	AC Cable	2.6	Unshielded	Unshielded	-

Module (Mode 1) for Radiated emission and Frequency Tolerance



*a) Standard Ferrite Core 5 cm from Item C from Item A, 3 turns

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

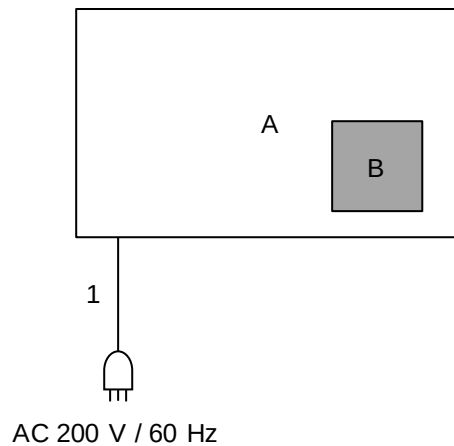
Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	RFID Module	2ZVA1462	A-1462-C	KYOCERA Document Solutions Inc.	EUT
B	Tag	-	-	TOPPAN Edge Inc.	-
C	Control Box	-	-	KYOCERA Document Solutions Inc.	-

List of Cables Used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC and Signal Cable	2.6	Unshielded	Unshielded	-
2	AC Cable	2.6	Unshielded	Unshielded	-

Host (Mode 2)



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

* As a result of comparing AC 200 V and AC 240 V at pre-check, conducted emission test was performed with AC 200 V of the worst voltage as representative.

** Although multiple RFID modules can be installed in the Host device, the Host device does not have simultaneous transmission specifications. Therefore, pre-check was conducted for each RFID module, and testing was performed at the module installed position that resulted in the maximum emission.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	Printer	TASKalfa Pro 55000c	SP2	KYOCERA Document Solutions Inc.	-
B	RFID Module	2ZVA1462	A-1462-C	KYOCERA Document Solutions Inc.	EUT

List of Cables Used

No.	Name	Length (m)	Shield	Connector	Remark
			Cable		
1	AC Cable	9.0	Unshielded	Unshielded	-

SECTION 5: Conducted Emission

Test Procedure and conditions

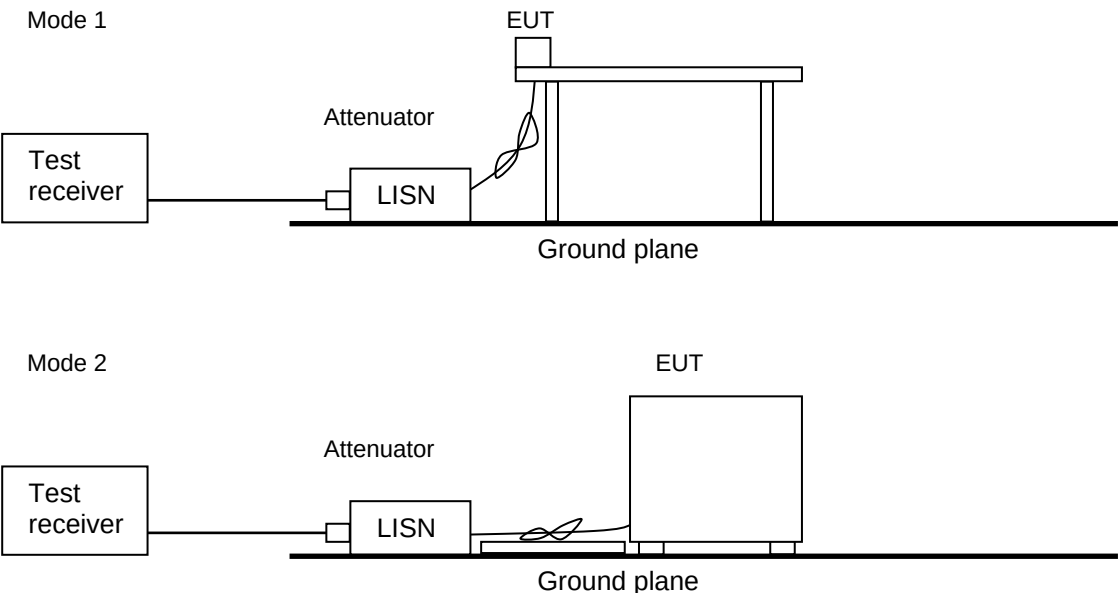
Module (Mode 1)
EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.
The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

Host (Mode 2)
EUT was placed on an insulation of 0.1 m above a horizontal ground plane.
EUT was set up typical spacing for the other equipment. EUT was located 80 cm from LISN/AMN and excess AC cable was bundled in center. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN/AMN to the input power source.

For the tests on EUT with other peripherals (as a whole system)
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50 ohm connectors of the LISN (AMN) were resistivity terminated in 50 ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber.
The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

Figure 1: Test Setup



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

Detector : QP and CISPR AV
Measurement range : 0.15 MHz to 30 MHz
Test data : APPENDIX
Test result : Pass

SECTION 6: Radiated Emission (Fundamental, Spurious Emission and Spectrum Mask)

Test Procedure

Module (Mode 1)

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.

Host (Mode 2)

EUT was placed 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.) and horizontal polarization.

*Refer to Figure 3 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

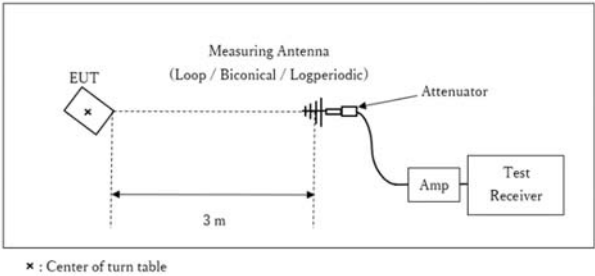
The test was made with the detector (RBW/VBW) in the following table
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

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

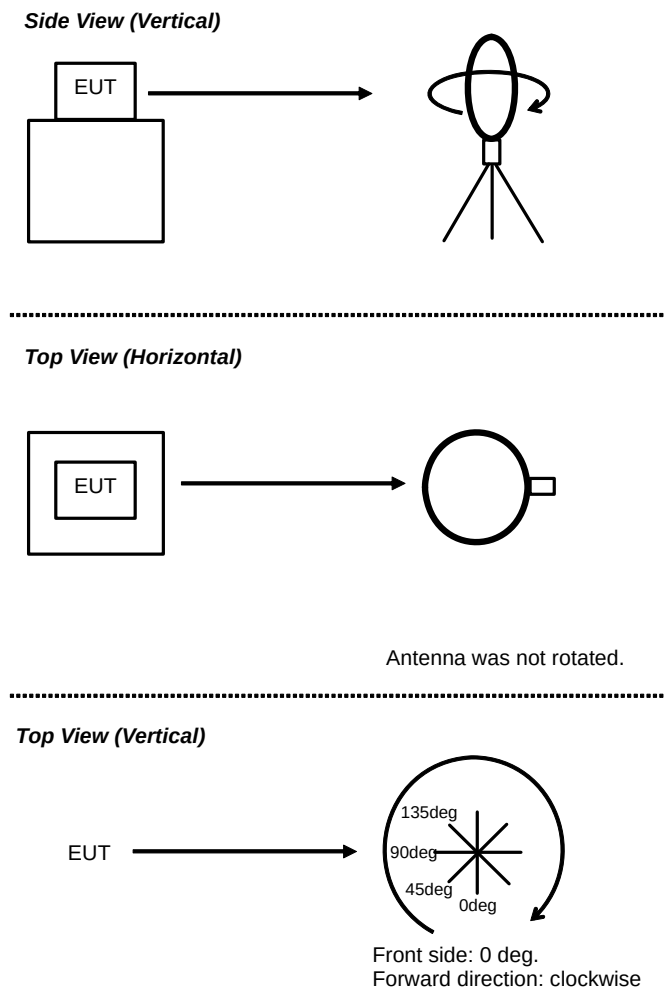
Figure 2: Test Setup

Below 1 GHz



Test Distance: 3 m

Figure 3: Direction of the Loop Antenna



- 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 host was tested in a normal arrangement.

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 7: Other tests

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	100 kHz	3 kHz	10 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
Frequency Tolerance	-	-	-	-	-	-	Spectrum Analyzer *2)
*1) The measurement was performed with Max Hold since the duty cycle was not 100 %.							
*2) The measurement was performed with Marker Frequency Counter Function.							

Test data : APPENDIX
Test result : Pass

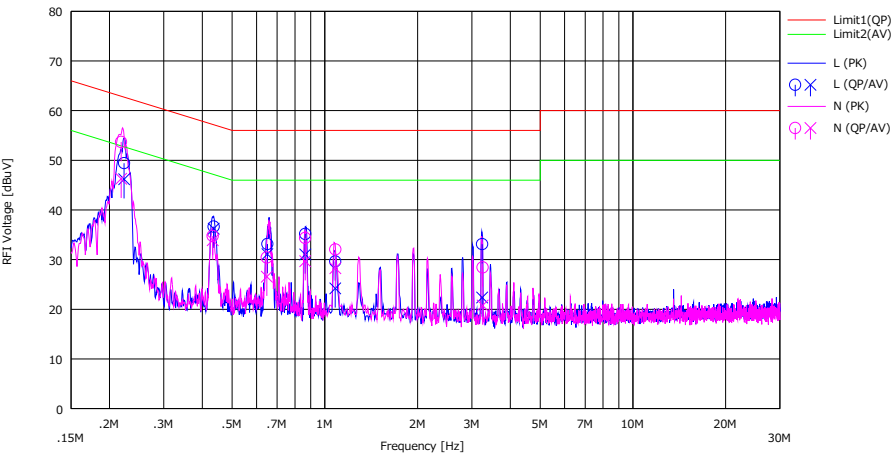
APPENDIX 1: Test data

Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.3
February 28, 2025
24 deg. C / 43 % RH
Takumi Nishida
Mode 1 Tx Mod on, with Tag

Limit : FCC_Part 15 Subpart C(15.207)



No.	Freq. [MHz]	Reading		USN	LOSS	Results		Limit		Margin		Phase	Comment
		[dBP]	[dBA]			[dBP]	[dBA]	[dBP]	[dBA]	[dBP]	[dBA]		
1	0.22310	36.34	33.10	0.06	13.02	49.42	46.18	62.70	52.70	13.28	6.52	L	
2	0.43560	23.54	23.13	0.06	13.04	36.64	36.23	57.15	47.15	20.51	10.92	L	
3	0.65115	20.00	17.98	0.07	13.06	33.13	31.11	56.00	46.00	22.87	14.89	L	
4	0.86400	22.00	17.89	0.08	13.08	35.16	31.05	56.00	46.00	20.84	14.95	L	
5	1.08100	16.44	11.00	0.09	13.10	29.63	24.19	56.00	46.00	26.37	21.81	L	
6	3.24200	19.76	9.00	0.12	13.23	33.11	22.35	56.00	46.00	22.89	23.65	L	
7	0.21821	40.60	33.21	0.05	13.02	53.67	46.28	62.89	52.89	9.22	6.61	N	
8	0.43271	21.66	20.81	0.05	13.04	34.75	33.90	57.20	47.20	22.45	13.30	N	
9	0.64823	17.31	13.44	0.05	13.06	30.42	26.55	56.00	46.00	25.58	19.45	N	
10	0.86345	21.22	16.56	0.05	13.08	34.35	29.69	56.00	46.00	21.65	16.31	N	
11	1.08203	18.90	15.11	0.05	13.10	32.05	28.26	56.00	46.00	23.95	17.74	N	
12	3.25210	15.12	7.45	0.08	13.23	28.43	20.76	56.00	46.00	27.57	25.24	N	

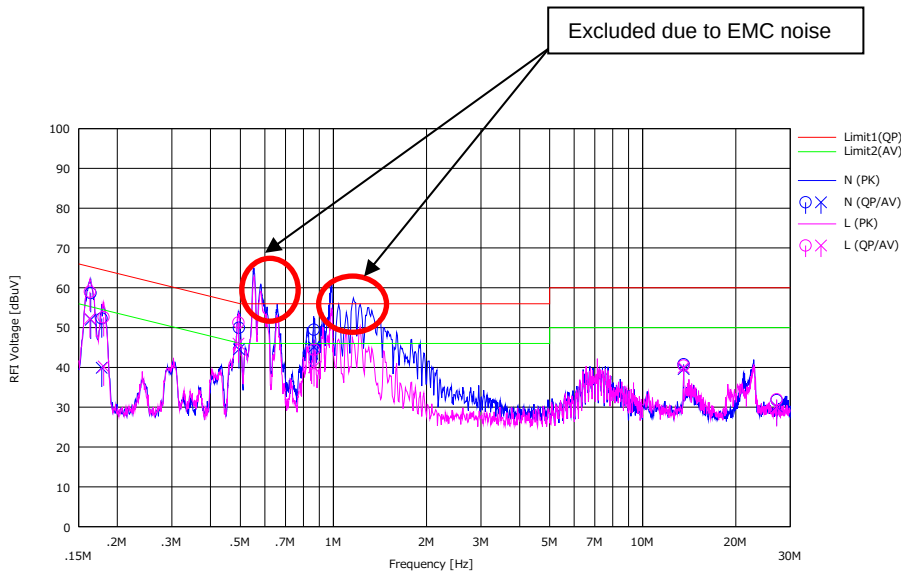
CHART: WITH FACTOR Peak hold data. CALCULATION : RESULT = READING + LISN + LOSS (CABLE + ATT)
Except for the above table: adequate margin data below the limits.

Conducted Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
Large chamber
March 18, 2025
22 deg. C / 47 % RH
Hiroki Numata
Mode 2 Tx Mod on, with Tag

Limit : FCC_Part 15 Subpart C(15.207)



No.	Freq. [MHz]	Reading		LISN	LOSS	Results		Limit		Margin		Phase	Comment
		(QP) [dBuV]	(AV) [dBuV]			(QP) [dBuV]	(AV) [dBuV]	(QP) [dBuV]	(AV) [dBuV]	(QP) [dB]	(AV) [dB]		
1	0.16400	45.60	38.90	0.05	13.03	58.68	51.98	65.26	55.26	6.58	3.28	N	
2	0.17800	39.20	26.80	0.05	13.04	52.29	39.89	64.58	54.58	12.29	14.69	N	
3	0.49475	36.80	31.40	0.05	13.09	49.94	44.54	56.09	46.09	6.15	1.55	N	
4	0.86389	36.30	31.90	0.05	13.13	49.48	45.08	56.00	46.00	6.52	0.92	N	
5	13.56000	26.80	25.60	0.32	13.66	40.78	39.58	60.00	50.00	19.22	10.42	N	
6	27.12000	17.30	15.70	0.52	13.96	31.78	30.18	60.00	50.00	28.22	19.82	N	
7	0.16313	45.90	39.20	0.06	13.03	58.99	52.29	65.30	55.30	6.31	3.01	L	
8	0.18063	39.50	27.10	0.06	13.04	52.60	40.20	64.46	54.46	11.86	14.26	L	
9	0.49300	38.10	32.80	0.06	13.09	51.25	45.95	56.12	46.12	4.87	0.17	L	
10	0.86500	31.20	26.80	0.08	13.13	44.41	40.01	56.00	46.00	11.59	5.99	L	
11	13.56000	26.40	25.90	0.38	13.66	40.44	39.94	60.00	50.00	19.56	10.06	L	
12	27.12000	17.40	15.40	0.62	13.96	31.98	29.98	60.00	50.00	28.02	20.02	L	

CHART: WITH FACTOR Peak hold data. CALCULATION : RESULT = READING + LISN + LOSS (CABLE + ATT)
Except for the above table: adequate margin data below the limits.

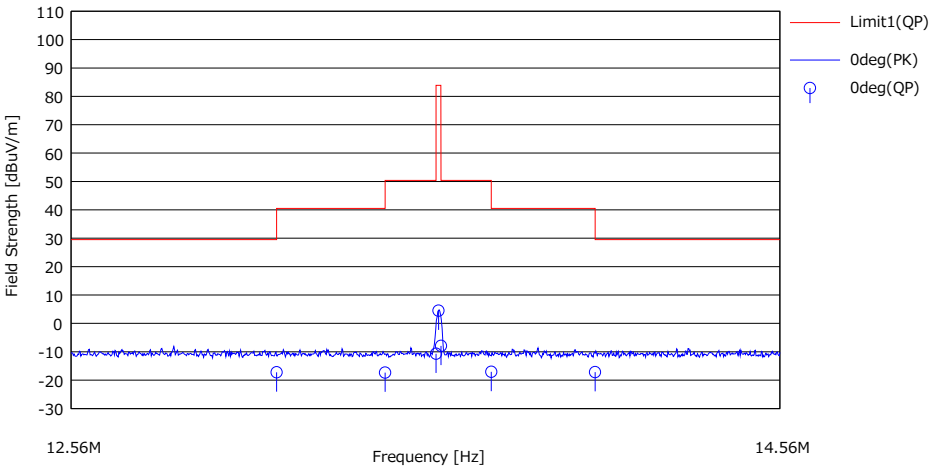
*Regarding the limitations on conducted emissions, this product is a Class A device under FCC15 Subpart B, so Section 15.107(b) Class A for EMC noise and Section 15.207 for radio noise apply.

Fundamental Emission and Spectrum Mask

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.3
February 28, 2025
24 deg. C / 43 % RH
Takumi Nishida
Mode 1 Tx Mod on, with Tag

Limit : FCC15.225(a), 9-90kHz:PK, 110-490kHz:PK, other:QP



No.	Freq. [MHz]	Reading [QP]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [QP]	Limit [QP]	Margin [QP]	Antenna [deg]	Table [deg]	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]			
1	13.11000	29.60	18.83	-33.44	32.23	-17.24	29.50	46.74	Odeg	0	
2	13.41000	29.52	18.78	-33.43	32.23	-17.36	40.50	57.86	Odeg	125	
3	13.55300	36.23	18.76	-33.43	32.23	-10.67	50.40	61.07	Odeg	125	
4	13.56000	51.39	18.76	-33.43	32.23	4.49	83.90	79.41	Odeg	125	
5	13.56700	38.96	18.76	-33.43	32.23	-7.94	50.40	58.34	Odeg	125	
6	13.71000	29.81	18.74	-33.42	32.23	-17.10	40.50	57.60	Odeg	125	
7	14.01000	29.77	18.69	-33.41	32.23	-17.18	29.50	46.68	Odeg	125	

RESULT = READING + ANT FACTOR + LOSS (CABLE + Attenuator + Distance Factor*) - GAIN(AMP))
*) Distance Factor: 40 x log (3 m / 30 m) = -40 dB

Result of the fundamental Emission at 3 m without Distance factor

QP												
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	
90	13.56000	QP	50.99	18.76	6.57	32.23	-	44.09	-	-	Fundamental	
90	13.56000	QP	49.00	18.76	6.57	32.23	-	42.10	-	-	- 2.805V(3.3V - 15%)	
90	13.56000	QP	51.39	18.76	6.57	32.23	-	44.49	-	-	- 3.795V(3.3V + 15%)	

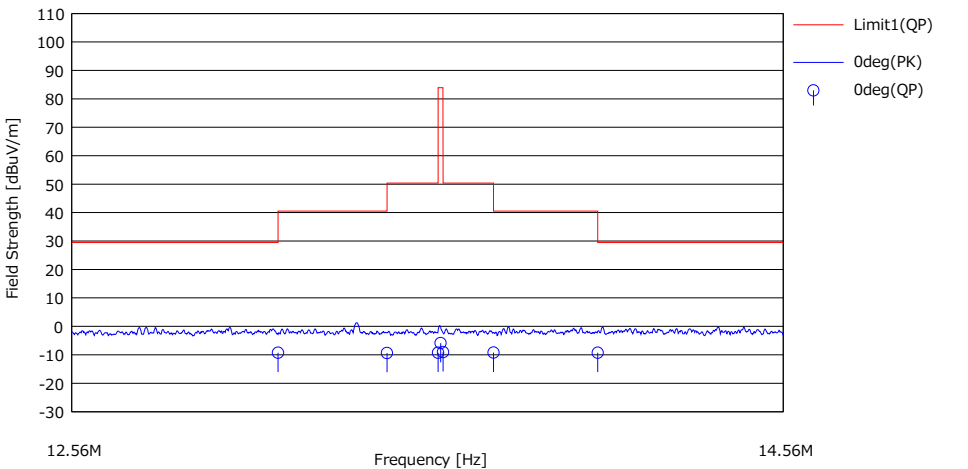
Result = Reading + Ant Factor + Loss (Cable+Attenuator) - Gain(Amplifier)

Fundamental Emission and Spectrum Mask

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
Large chamber
March 18, 2025
22 deg. C / 47 % RH
Hiroki Numata
Mode 2 Tx Mod on, with Tag

Limit : FCC15.225(a), 9-90kHz:PK, 110-490kHz:PK, other:QP



No.	Freq. [MHz]	Reading [QP]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [QP]	Limit [QP]	Margin [QP]	Antenna	Table	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]		[deg]	
1	13.11 000	36.70	20.27	-33.24	33.04	-9.31	29.50	38.81	Odeg	234	
2	13.41 000	36.60	20.30	-33.23	33.04	-9.37	40.50	49.87	Odeg	234	
3	13.55 300	36.70	20.31	-33.23	33.04	-9.26	50.40	59.66	Odeg	234	
4	13.56 000	40.10	20.31	-33.23	33.04	-5.86	83.90	89.76	Odeg	234	
5	13.56 700	36.90	20.31	-33.23	33.04	-9.06	50.40	59.46	Odeg	234	
6	13.71 000	36.70	20.32	-33.22	33.04	-9.24	40.50	49.74	Odeg	234	
7	14.01 000	36.60	20.35	-33.21	33.04	-9.30	29.50	38.80	Odeg	234	

RESULT = READING + ANT FACTOR + LOSS (CABLE + Attenuator + Distance Factor*) - GAIN(AMP))
*) Distance Factor: 40 x log (3 m / 30 m) = -40 dB

Result of the fundamental Emission at 3 m without Distance factor

QP											
Ant Deg [deg]	Frequency	Detector	Reading	Ant Factor	Loss	Gain	Duty Factor	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
0	13.56000	QP	40.10	20.31	6.77	33.04	-	34.14	-	-	Fundamental

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

Spurious Emission

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	February 28, 2025
Temperature / Humidity	24 deg. C / 43 % RH
Engineer	Takumi Nishida
Mode	Mode 1 Tx Mod on, with Tag

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	27.120	QP	29.00	19.78	-33.09	32.21	-	-16.52	29.5	46.02	Floor Noise
Hori.	108.488	QP	40.12	11.51	8.01	32.13	-	27.51	43.5	16.01	
Hori.	135.604	QP	34.21	14.19	8.29	32.11	-	24.58	43.5	18.94	
Hori.	203.397	QP	31.45	11.64	8.93	32.05	-	19.97	43.5	23.55	
Hori.	678.096	QP	40.21	19.58	11.92	32.05	-	39.66	46.0	6.36	
Hori.	691.602	QP	37.34	19.61	11.99	32.05	-	36.89	46.0	9.13	
Hori.	840.772	QP	33.10	21.35	12.72	31.26	-	35.91	46.0	10.11	
Vert.	108.488	QP	44.43	11.51	8.01	32.13	-	31.82	43.5	11.70	
Vert.	135.604	QP	38.00	14.19	8.29	32.11	-	28.37	43.5	15.15	
Vert.	203.397	QP	42.20	11.64	8.93	32.05	-	30.72	43.5	12.80	
Vert.	678.096	QP	35.10	19.58	11.92	32.05	-	34.55	46.0	11.47	
Vert.	691.602	QP	35.29	19.61	11.99	32.05	-	34.84	46.0	11.18	
Vert.	840.772	QP	37.80	21.35	12.72	31.26	-	40.61	46.0	5.41	

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

Spurious Emission

Test place	Ise EMC Lab.
Semi Anechoic Chamber	Large chamber
Date	March 18, 2025
Temperature / Humidity	22 deg. C / 47 % RH
Engineer	Hiroki Numata
Mode	Mode 2 Tx Mod on, with Tag

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	27.120	QP	34.90	20.96	-32.88	33.03	-	-10.05	29.5	39.55	Floor Noise
Hori.	61.563	QP	17.60	9.08	7.72	33.02	-	1.38	30.0	28.62	
Hori.	79.346	QP	22.70	8.89	7.97	33.01	-	6.55	30.0	23.45	
Hori.	149.329	QP	23.10	11.90	8.74	32.99	-	10.75	30.0	19.25	
Hori.	331.990	QP	20.70	13.80	10.14	33.02	-	11.62	37.0	25.38	
Hori.	458.205	QP	17.80	16.63	10.92	33.09	-	12.26	37.0	24.74	
Hori.	600.000	QP	23.30	18.71	11.64	33.12	-	20.53	37.0	16.47	
Vert.	39.867	QP	21.80	11.48	7.36	33.03	-	7.61	30.0	22.39	
Vert.	81.271	QP	23.10	8.96	7.99	33.01	-	7.04	30.0	22.96	
Vert.	100.200	QP	20.70	9.70	8.23	33.00	-	5.63	30.0	24.37	
Vert.	331.990	QP	20.70	13.80	10.14	33.02	-	11.62	37.0	25.38	
Vert.	458.205	QP	17.70	16.63	10.92	33.09	-	12.16	37.0	24.84	
Vert.	600.000	QP	23.40	18.71	11.64	33.12	-	20.63	37.0	16.37	

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

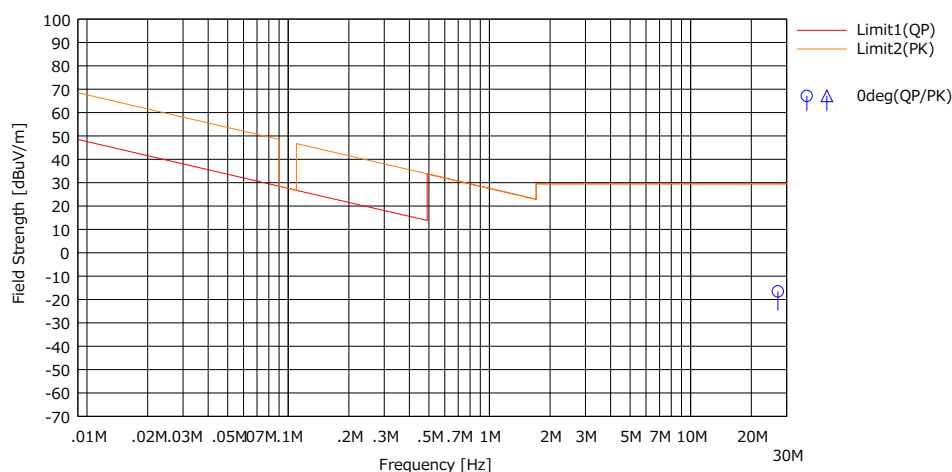
Radiated Spurious Emission (Plot data, Worst case for Spurious Emission)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	February 28, 2025
Temperature / Humidity	24 deg. C / 43 % RH
Engineer	Takumi Nishida
Mode	Mode 1 Tx Mod on, with Tag

(below 30MHz)

Limit : FCC15.209(a), 9-90kHz:PK, 110-490kHz:PK, other:QP

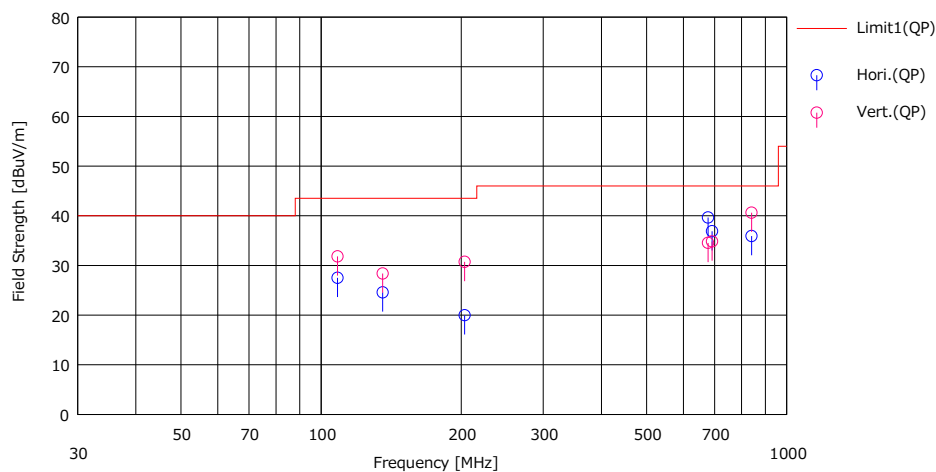
Limit : FCC15.209(a), 9-90kHz:PK, 110-490kHz:PK, other:QP



* Data above 490 kHz were measured using a QP detector.

(above 30MHz)

Limit : FCC15.209 3 m, below 1 GHz:QP, above 1 GHz:AV/PK



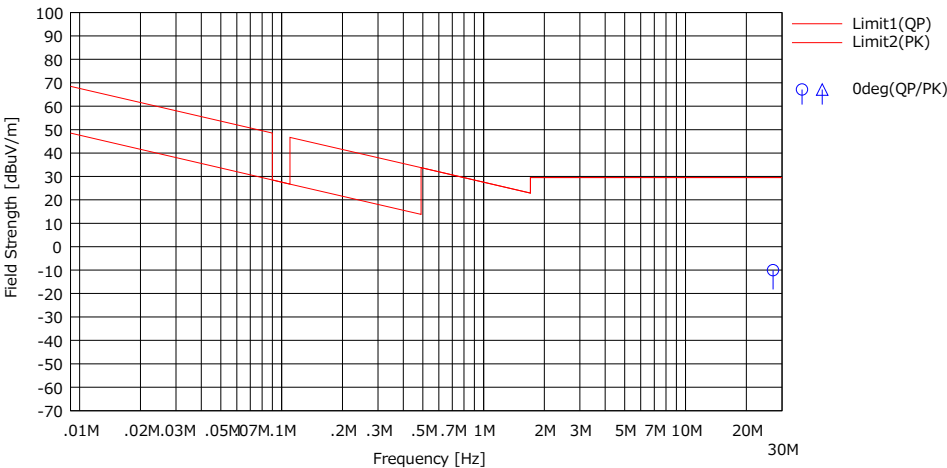
*These plots data contain sufficient number to show the trend of characteristic features for EUT.

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

Test place	Ise EMC Lab.
Semi Anechoic Chamber	Large chamber
Date	March 18, 2025
Temperature / Humidity	22 deg. C / 47 % RH
Engineer	Hiroki Numata
Mode	Mode 2 Tx Mod on, with Tag

(below 30MHz)

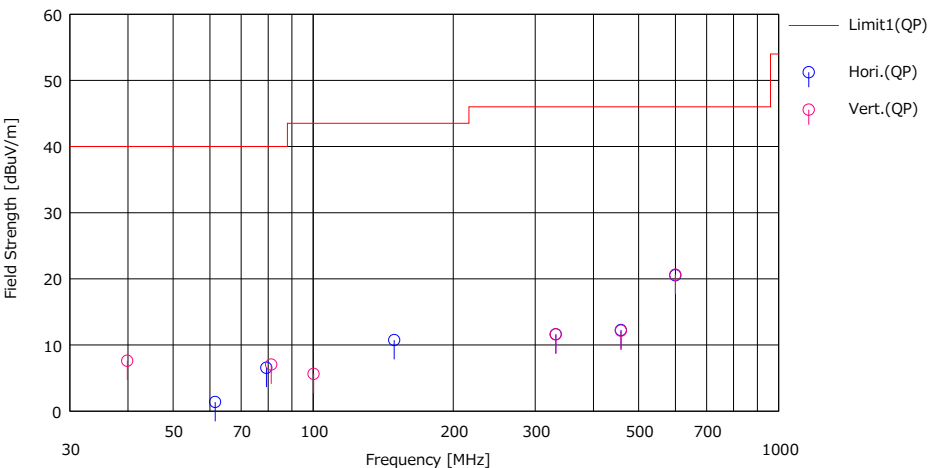
Limit : FCC15.209(a), 9-90kHz:PK, 110-490kHz:PK, other:QP



* Data above 490 kHz were measured using a QP detector.

(above 30MHz)

Limit : FCC15.209 3 m, below 1 GHz:QP, above 1 GHz:AV/PK



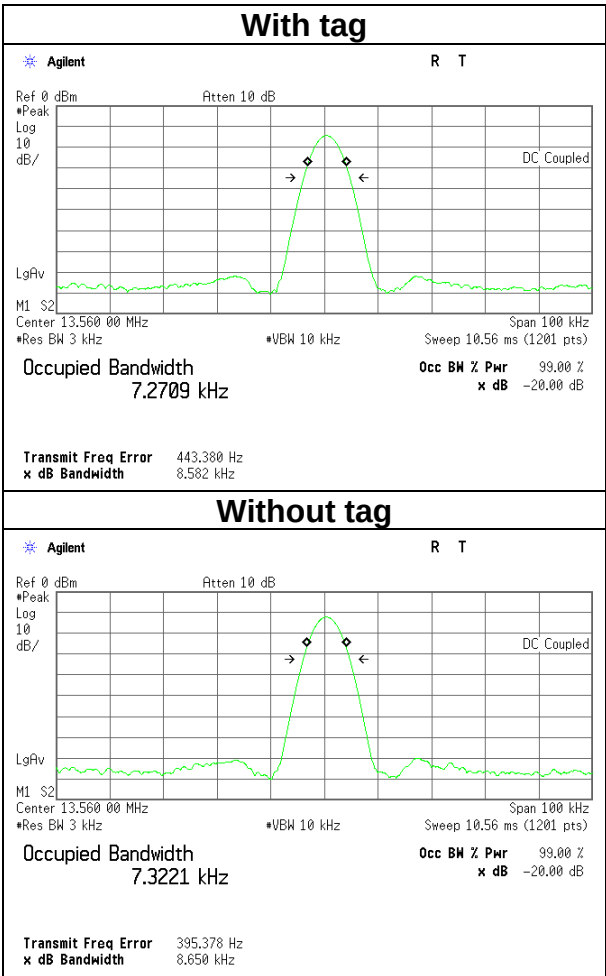
*These plots data contain sufficient number to show the trend of characteristic features for EUT.

20 dB Bandwidth and 99% Occupied Bandwidth

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.3
February 28, 2025
24 deg. C / 43 % RH
Takumi Nishida
Mode 1 Tx Mod on, with Tag / without Tag

FREQ [MHz]	Mode	20dB Bandwidth [kHz]	99% Occupied Bandwidth [kHz]
13.56	With Tag	8.582	7.2709
	Without Tag	8.650	7.3221



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.

Frequency Tolerance

Test place Ise EMC Lab.
Semi Anechoic Chamber No.8
Date March 13, 2025
Temperature / Humidity 22 deg. C / 47 % RH
Engineer Hiroyuki Furutaka
Mode Mode 1 Tx Mod off

Test condition		Tested timing	Measured frequency [MHz]	Frequency error [MHz]	Result		Limit [+/- %]
Temp. [deg. C]	Voltage [V]				[%]	[ppm]	
50	3.3	Power on	13.560235	0.000235	0.00173	17.3	0.01
		+ 2 min.	13.560233	0.000233	0.00172	17.2	0.01
		+ 5 min.	13.560232	0.000232	0.00171	17.1	0.01
		+ 10 min.	13.560231	0.000231	0.00170	17.0	0.01
40	3.3	Power on	13.560293	0.000293	0.00216	21.6	0.01
		+ 2 min.	13.560290	0.000290	0.00214	21.4	0.01
		+ 5 min.	13.560289	0.000289	0.00213	21.3	0.01
		+ 10 min.	13.560290	0.000290	0.00214	21.4	0.01
30	3.3	Power on	13.560351	0.000351	0.00259	25.9	0.01
		+ 2 min.	13.560349	0.000349	0.00257	25.7	0.01
		+ 5 min.	13.560348	0.000348	0.00257	25.7	0.01
		+ 10 min.	13.560349	0.000349	0.00257	25.7	0.01
20	3.3	Power on	13.560389	0.000389	0.00287	28.7	0.01
		+ 2 min.	13.560389	0.000389	0.00287	28.7	0.01
		+ 5 min.	13.560389	0.000389	0.00287	28.7	0.01
		+ 10 min.	13.560390	0.000390	0.00288	28.8	0.01
20	2.805 (3.3V -15%)	Power on	13.560349	0.000349	0.00257	25.7	0.01
		+ 2 min.	13.560352	0.000352	0.00260	26.0	0.01
		+ 5 min.	13.560354	0.000354	0.00261	26.1	0.01
		+ 10 min.	13.560354	0.000354	0.00261	26.1	0.01
20	3.795 (3.3V +15%)	Power on	13.560413	0.000413	0.00305	30.5	0.01
		+ 2 min.	13.560411	0.000411	0.00303	30.3	0.01
		+ 5 min.	13.560409	0.000409	0.00302	30.2	0.01
		+ 10 min.	13.560409	0.000409	0.00302	30.2	0.01
10	3.3	Power on	13.560453	0.000453	0.00334	33.4	0.01
		+ 2 min.	13.560452	0.000452	0.00333	33.3	0.01
		+ 5 min.	13.560452	0.000452	0.00333	33.3	0.01
		+ 10 min.	13.560452	0.000452	0.00333	33.3	0.01
0	3.3	Power on	13.560480	0.000480	0.00354	35.4	0.01
		+ 2 min.	13.560480	0.000480	0.00354	35.4	0.01
		+ 5 min.	13.560479	0.000479	0.00353	35.3	0.01
		+ 10 min.	13.560489	0.000489	0.00361	36.1	0.01
-10	3.3	Power on	13.560485	0.000485	0.00358	35.8	0.01
		+ 2 min.	13.560486	0.000486	0.00358	35.8	0.01
		+ 5 min.	13.560485	0.000485	0.00358	35.8	0.01
		+ 10 min.	13.560484	0.000484	0.00357	35.7	0.01
-20	3.3	Power on	13.560483	0.000483	0.00356	35.6	0.01
		+ 2 min.	13.560471	0.000471	0.00347	34.7	0.01
		+ 5 min.	13.560465	0.000465	0.00343	34.3	0.01
		+ 10 min.	13.560462	0.000462	0.00341	34.1	0.01

Calculation formula: Frequency error = Measured frequency - Tested frequency
Result [%] = Frequency error / Tested frequency * 100

Tested frequency: 13.56 MHz
Limit (+/-): 0.01 % (+/- 100ppm)

*The test was begun from 50 deg. C and the temperature was lowered each 10 deg. C.

APPENDIX 2: Test instruments

Test Equipment (1/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
CE	141290	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	12/10/2024	12
CE	141323	Coaxial cable	UL-ISE	-	-	09/13/2024	12
CE	141357	LISN(AMN)	Schwarzbeck Mess-Elektronik OHG	NSLK8127	8127-729	07/09/2024	12
CE	141532	DIGITAL HiTESTER	HIOKI E. E. CORPORATION	3805	051201197	01/16/2025	12
CE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	06/05/2024	12
CE	142183	Measure	KOMELON	KMC-36	-	10/21/2024	12
CE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
CE	198469	EMI Test Receiver	Rohde & Schwarz	ESR3	102673	02/03/2025	12
CE	199065	Measure	SHINWA	80814	001	-	-
CE	199067	Digital Multimeter	SANWA	PC7000	19105100121	06/11/2024	12
CE	199212	Microwave Cable	Huber+Suhner	S04272B/ RFM-E721/ Sucofeed/SF106	-	11/08/2024	12
CE	221241	Thermo-Hygrometer	Mother tool	MHB-382SD	55534	07/14/2024	12
CE	244709	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202103	01/19/2025	12
RE	141216	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM14/ sucoform141-PE/ 421-010/ RFM-E321(SW)	- /00640	07/06/2024	12
RE	141266	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-191	08/23/2024	12
RE	141323	Coaxial cable	UL-ISE	-	-	09/13/2024	12
RE	141393	Microwave Cable	Junkosha	MWX221	1604S254(1 m) / 1608S088(5 m)	07/06/2024	12
RE	141424	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+BBA9106	1915	03/15/2024	12
RE	141425	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+BBA9106	VHA 91031302	08/23/2024	12
RE	141532	DIGITAL HiTESTER	HIOKI E. E. CORPORATION	3805	051201197	01/16/2025	12
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/14/2025	12
RE	141902	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187105	05/30/2024	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	06/05/2024	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	05/17/2024	12
RE	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	12/11/2023	24
RE	142183	Measure	KOMELON	KMC-36	-	10/21/2024	12
RE	142314	Attenuator	Pasternack Enterprises	PE7390-6	D/C 1504	06/06/2024	12
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	198469	EMI Test Receiver	Rohde & Schwarz	ESR3	102673	02/03/2025	12

Test Equipment (2/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	199050	Attenuator(6dB)	Anritsu Corporation	BW-N6W5+	1926	11/05/2024	12
RE	199065	Measure	SHINWA	80814	001	-	-
RE	199067	Digital Multimeter	SANWA	PC7000	19105100121	06/11/2024	12
RE	199211	Microwave Cable	Huber+Suhner	S04272B/ RFM-E721/RG223/ Sucofeed/SF106	-	11/08/2024	12
RE	199242	Semi-Anechoic Chamber	Riken Environmental System	Large Chamber	1	03/28/2025	24
RE	199476	Biconical antenna	Schwarzbeck Mess-Elektronik OHG	VHBB9124+ BBA9106	01410	06/05/2024	12
RE	199477	Logperiodic antenna	Schwarzbeck Mess-Elektronik OHG	VULP9118A	00831	06/05/2024	12
RE	221241	Thermo-Hygrometer	Mother tool	MHB-382SD	55534	07/14/2024	12
RE	244709	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202103	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
FT	141430	Temperature and Humidity Chamber	Espec	PL-1KT	14007630	10/27/2024	12
FT	141557	DIGITAL HiTESTER	HIOKI E. E. CORPORATION	3805	070900530	01/15/2025	12
FT	141855	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187750	11/14/2024	12
FT	142645	Loop Antenna	UL-ISE	-	-	-	-
FT	244711	Thermo-Hygrometer	HIOKI E. E. CORPORATION	LR5001	231202105	01/19/2025	12

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

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

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

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

Test item:

CE: Conducted Emission

RE: Radiated Emission

FT: Frequency Tolerance