RADIO TEST REPORT

Test Report No. 15005197H-A-R3

Customer	**Silex Technology, Inc**
Description of EUT	**Embedded Wireless Module**
Model Number of EUT	**SX-SDMAH**
FCC ID	**N6C-SDMAH**
Test Regulation	**FCC Part 15 Subpart C**
Test Result	**Complied**
Issue Date	**January 31, 2024**
Remarks	**-**

Representative Test Engineer	Approved By
Takumi Nishida Engineer	Satofumi Matsuyama Engineer

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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- The laboratory is not responsible for information provided by the customer which can impact the validity of the results.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No.: 15005197H-A

This report is a revised version of 15005197H-A. 15005197H-A is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15005197H-A	December 19, 2023	-
1	15005197H-A-R1	January 15, 2024	SECTION 2.1: Identification of EUT -Correction of test date November 6 to 16, 2023 → November 6, 2023 to January 10, 2024
1	15005197H-A-R1	January 15, 2024	SECTION 2.2: Product Description Radio Specification -Addition of frequency 908.0 MHz (8 MHz bandwidth) in Frequency of Operation.
1	15005197H-A-R1	January 15, 2024	SECTION 4.1: Operating Mode(s) *The Details of Operating Mode(s) -Addition of tested frequency 908.0 MHz (8 MHz bandwidth) for Radiated Spurious Emission, 6dB Bandwidth, Maximum Average Output Power, Power Density and 99% Occupied Bandwidth.
1	15005197H-A-R1	January 15, 2024	APPENDIX 1: Test Data -Addition of test data of 908.0 MHz (8 MHz bandwidth) for Radiated Spurious Emission, 6dB Bandwidth, Maximum Average Output Power, Power Density and 99% Occupied Bandwidth.
2	15005197H-A-R2	January 30, 2024	SECTION 3.2: Procedures and Results -Correction of worst margin. 2.4 dB, 928.0 MHz, PK, Vertical → 2.6 dB, 928.0 MHz, PK, Vertical
2	15005197H-A-R2	January 30, 2024	SECTION 4.2: Configuration and Peripherals Table for Description of EUT and Support Equipment -Correction of model number for Item No. F: ROD Antenna. X9000984-4GDSMB → 9000984-XLPDNB
2	15005197H-A-R2	January 30, 2024	SECTION 6: Radiated Spurious Emission -Deletion of following sentence. 15.35(c) Peak with Duty factor *1) *1) The test was performed that the Spurious evaluation as Peak with Duty factor since the pulse emission which is synchronous the worst duty cycle of IEEE 802.11ah .
2	15005197H-A-R2	January 30, 2024	APPENDIX 1: Test Data Burst rate confirmation -Deletion of Burst rate confirmation (Reference data for Peak with Duty factor).
2	15005197H-A-R2	January 30, 2024	APPENDIX 1: Test Data Radiated Spurious Emission -Replacement of following test data. 926.5 MHz (Channel Bandwidth 1 MHz) 915.0 MHz (Channel Bandwidth 2 MHz) 925.0 MHz (Channel Bandwidth 2 MHz)
2	15005197H-A-R2	January 30, 2024	APPENDIX 2: Test Instruments -Addition of following test instruments for radiated emission test. LIMS ID: 141507, 141902, 141951, 197990
3	15005197H-A-R3	January 31, 2024	SECTION 2.1: Identification of EUT -Correction of test date November 6, 2023 to January 10, 2024 → November 6, 2023 to January 31, 2024
3	15005197H-A-R3	January 31, 2024	APPENDIX 1: Test Data Power Density -Replacement of power density test data for channel Bandwidth 2M, 4M, 8M.

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	Silex Technology, Inc
Address	2-3-1 Hikaridai, Seika-cho, Soraku-gun, Kyoto 619-0237, Japan
Telephone Number	+81-774-98-3878
Contact Person	Yoshinori Nakai

The information provided from 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	Embedded Wireless Module
Model Number	SX-SDMAH
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 2, 2023
Test Date	November 6, 2023 to January 31, 2024

2.2 Product Description

General Specification

Rating	DC 3.3 V, 5.0 V

Radio Specification

This report contains data provided by the customer which can impact the validity of results. UL Japan, Inc. is only responsible for the validity of results after the integration of the data provided by the customer. The data provided by the customer is marked “a)” in the table below.

IEEE802.11ah

Equipment Type	Transceiver
Frequency of Operation	1 MHz: 903.5 MHz to 926.5 MHz 2 MHz: 905.0 MHz to 925.0 MHz 4 MHz: 910.0 MHz to 922.0 MHz 8 MHz: 908.0 MHz, 916.0 MHz
Type of Modulation	OFDM with BPSK, QPSK, 16QAM, 64QAM
Antenna Gain [a)]	3.4 dBi

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 47 CFR Part 15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

3.2 Procedures and Results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013 6. Standard test methods	**FCC:** Section 15.207	13.04 dB, 0.16433 MHz, QP, L	Complied	-
	ISED: RSS-Gen 8.8	**ISED:** RSS-Gen 8.8			
6dB Bandwidth	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section 15.247(a)(2)	See data.	Complied	Conducted
	ISED: -	**ISED:** RSS-247 5.2(a)			
Maximum Peak Output Power	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section 15.247(b)(3)		Complied	Conducted
	ISED: RSS-Gen 6.12	**ISED:** RSS-247 5.4(d)			
Power Density	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section 15.247(e)		Complied	Conducted *1)
	ISED: -	**ISED:** RSS-247 5.2(b)			
Spurious Emission Restricted Band Edges	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(d)	2.6 dB 928.0 MHz, PK, Vertical	Complied	Conducted (below 30 MHz)/ Radiated (above 30 MHz) *2)
	ISED: RSS-Gen 6.13	**ISED:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10			

Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.
* In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.

*1) ANSI C63. 10-2013 6 Standard test methods 11.10.5
*2) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02 8.5 and 8.6.

FCC Part 15.31 (e)
The stable voltage was provided to the EUT during the tests.
Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement
The EUT has an external antenna connector, but it is installed by the professionals.
Therefore, the equipment complies with the antenna requirement of Section 15.203/212.

3.3 Addition to Standard

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
99% Occupied Bandwidth	**ISED:** RSS-Gen 6.7	**ISED:** -	N/A	-	Conducted

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.

Conducted emission

Item	Frequency range	Unit	Calculated Uncertainty (+/-)
AMN (LISN)	0.009 MHz to 0.15 MHz	dB	3.7
	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	dB	4.8
		Vertical	dB	5.0
	200 MHz to 1000 MHz	Horizontal	dB	5.1
		Vertical	dB	6.2
10 m	30 MHz to 200 MHz	Horizontal	dB	4.8
		Vertical	dB	4.8
	200 MHz to 1000 MHz	Horizontal	dB	4.9
		Vertical	dB	5.0
3 m	1 GHz to 6 GHz	Test Receiver	dB	5.1
		Spectrum Analyzer	dB	4.9
	6 GHz to 18 GHz	Test Receiver	dB	5.4
		Spectrum Analyzer	dB	5.2
1 m	10 GHz to 18 GHz	Spectrum analyzer	dB	5.0
	18 GHz to 26.5 GHz	Spectrum analyzer	dB	5.6
	26.5 GHz to 40 GHz	Spectrum analyzer	dB	4.9
0.5 m	26.5 GHz to 40 GHz	Spectrum analyzer	dB	4.9
10 m	1 GHz to 18 GHz	Test Receiver	dB	5.4

Antenna Terminal Conducted

Item	Unit	Calculated Uncertainty (+/-)
Antenna terminated conducted emission / Power density / Burst power	dB	3.47
Adjacent channel power (ACP)	dB	2.28
Bandwidth (OBW)	%	0.96
Time readout (time span upto 100 msec)	%	0.11
Time readout (time span upto 1000 msec)	%	0.11
Time readout (time span upto 60 sec)	%	0.02
Power measurement (Power meter < 8 GHz)	dB	1.46
Power measurement (Call box < 6 GHz)	dB	1.69
Frequency readout (Frequency counter)	ppm	0.67
Frequency readout (Spectrum analyzer frequency readout function)	ppm	2.13
Temperature (constant temperature bath)	deg. C	0.69
Humidity (constant temperature bath)	%RH	2.98
Modulation characteristics	%	6.93
Frequency for mobile	ppm	0.08
Contention-based protocol	dB	2.26

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	-	-

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

3.6 Test Data, Test Instruments, and Test Set Up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

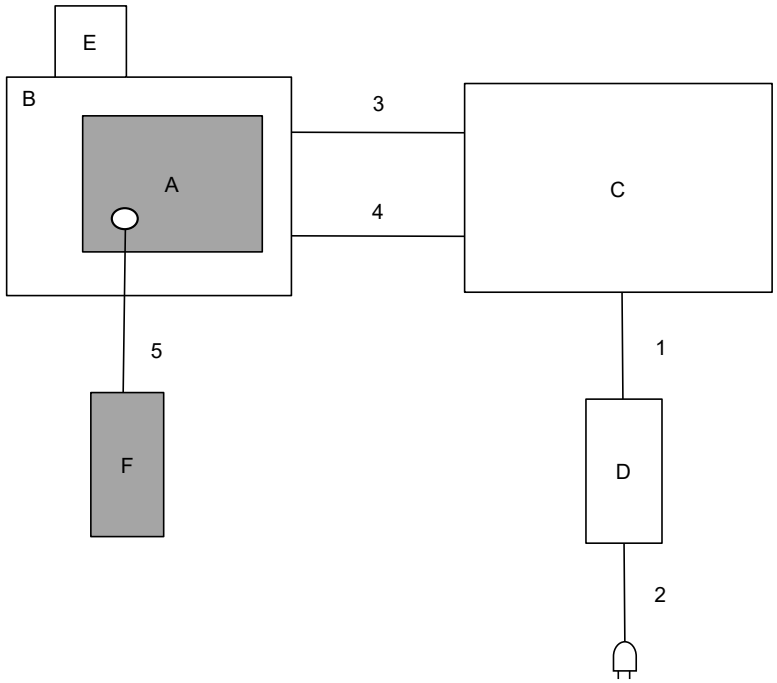
4.1 Operating Mode(s)

Mode	Remarks*
IEEE 802.11ah (11ah) 1 MHz	MCS 10, PN9
IEEE 802.11ah (11ah) 2 MHz	MCS 2, PN9
IEEE 802.11ah (11ah) 4 MHz	MCS 0, PN9
IEEE 802.11ah (11ah) 8 MHz	MCS 0, PN9
*The worst condition was determined based on the test result of Maximum Average Output Power (Low Channel)	
*Power of the EUT was set by the software as follows; Power Setting: 1 MHz Bandwidth 903.5 MHz: 0x67 915.5 MHz: 0x6c 926.5 MHz: 0x6d 2 MHz Bandwidth 905.0 MHz: 0x68 915.0 MHz: 0x6b 925.0 MHz: 0x68 4 MHz Bandwidth 910.0 MHz: 0x6b 914.0 MHz: 0x6b 922.0 MHz: 0x69 8 MHz Bandwidth 908.0 MHz: 0x5c 916.0 MHz: 0x69 Software: RF Tester Version: 1.0.0 (Date: 2023.10.03, Storage location: Driven by connected PC) *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.	

*The Details of Operating Mode(s)

Test Item	Operating Mode	Channel Bandwidth	Tested Frequency
Conducted Emission, Conducted Spurious Emission	Tx 11ah *1)	1 MHz	903.5 MHz
Radiated Spurious Emission, 6dB Bandwidth, Maximum Average Output Power, Power Density, 99% Occupied Bandwidth	Tx 11ah	1 MHz	903.5 MHz 915.5 MHz 926.5 MHz
		2 MHz	905.0 MHz 915.0 MHz 925.0 MHz
		4 MHz	910.0 MHz 914.0 MHz 922.0 MHz
		8 MHz	908.0 MHz 916.0 MHz
*1) The mode was tested as a representative, because it had the highest power at antenna terminal test.			

4.2 Configuration and Peripherals



* Cabling and setup(s) 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	Remarks
A	Embedded Wireless Module	SX-SDMAH	1CBCEC000B94	Silex Technology, Inc	EUT
B	Jig Board	20953-RPI4B	SX08027	Raspberry Pi	-
C	Laptop PC	8265NGW	5CD945C7HB	HP Development Company, L.P.	-
D	AC Adapter	A045R047H	856948-002	HP Development Company, L.P.	-
E	Micro SD card	-	SX08545	BUFFALO Inc.	-
F	ROD Antenna	9000984-XLPDNB	-	Kyocera AVX (Ethertronics)	EUT For CE*, RE*

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC Cable	0.7	Unshielded	Unshielded	-
2	AC Cable	1.0 For CE* 0.7 For Other	Unshielded	Unshielded	-
3	USB Cable	1.0	Shielded	Shielded	-
4	LAN Cable	2.0	Unshielded	Unshielded	-
5	Antenna Cable	0.1	Shielded	Shielded	For CE*, RE*

*CE: Conducted Emission
*RE: Radiated Emission

SECTION 5: Conducted Emission

Test Procedure and Conditions

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 was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm 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.

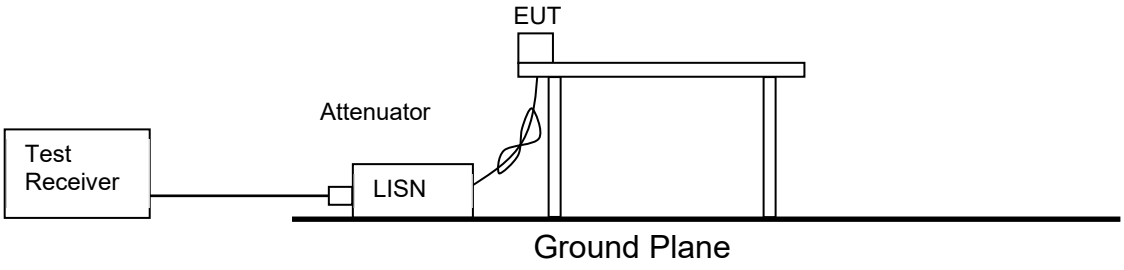
For the tests on EUT with other peripherals (as a whole system)
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50ohm connectors of the LISN (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.

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

Figure 1: Test Setup



SECTION 6: Radiated Spurious Emission

Test Procedure

It was measured based on "8.5 and 8.6 of KDB 558074 D01 15.247 Meas Guidance v05r02".

[For below 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 1.0 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.

[For above 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane. Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

The height of the measuring antenna varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.
The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).
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.

Test Antennas are used as below;

Frequency	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

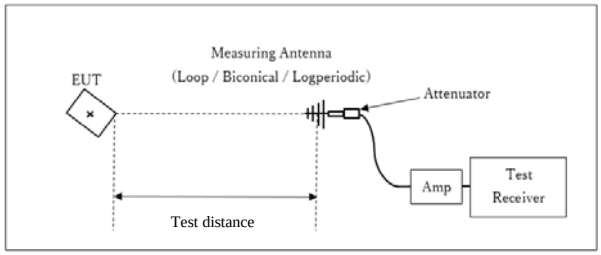
In any 100 kHz bandwidth outside the restricted band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 30 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

30 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9(ISED) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (ISED).

Frequency	Below 1 GHz	Above 1 GHz		30 dBc
Instrument Used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	11.12.2.5.1 RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: 100 traces 11.12.2.5.2 The duty cycle was less than 98% for detected noise, a duty factor was added to the 11.12.2.5.1 results.	RBW: 100 kHz VBW: 300 kHz

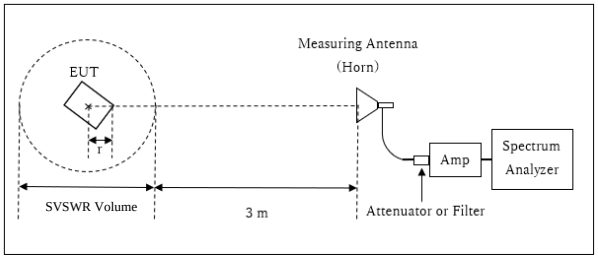
Figure 2: Test Setup

Below 1 GHz



Test Distance: 3 m

1 GHz to 10 GHz



Distance Factor: 20 x log (3.9 m / 3.0 m) = 2.28 dB
* Test Distance: (3 + SVSWR Volume /2) - r = 3.9 m

SVSWR Volume : 2.0 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r = 0.1 m

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 : 30 MHz to 10 GHz
Test Data : APPENDIX
Test Result : Pass

SECTION 7: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument Used
6dB Bandwidth	3 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99% Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Average Output Power	-	-	-	Auto	Average	-	Power Meter (Sensor: 50 MHz BW)
Peak Power Density	1.5 times the 6dB Bandwidth	3 kHz	10 kHz	Auto	Average	100 or 1000 Traces *2)	Spectrum Analyzer *3)
Conducted Spurious Emission *4) *5)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	9.1 kHz	27 kHz				

*1) Peak hold was applied as Worst-case measurement.
*2) This test was performed with 1000 traces for modes with a channel bandwidth of 1 MHz and 100 traces for other modes.
*3) Section 11.10.5 Method AVGPSD-2 of "ANSI C63.10-2013".
*4) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.
(9 kHz - 150 kHz: RBW = 200 Hz, 150 kHz - 30 MHz: RBW = 9.1 kHz)
*5) 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.

The test results and limit are rounded off to two decimals place, so some differences might be observed.
The equipment and cables were not used for factor 0 dB of the data sheets.

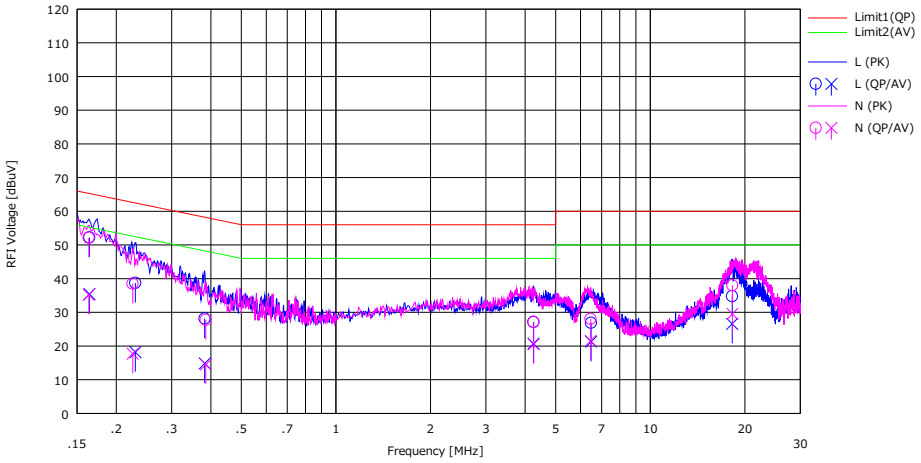
Test Data : APPENDIX
Test Result : Pass

APPENDIX 1: Test Data

Conducted Emission

Test place	Ise EMC Lab. No.3
Date	November 16, 2023
Temperature / Humidity	23 deg. C / 43 % RH
Engineer	Takumi Nishida
Mode	Tx 903.5 MHz (Channel Bandwidth 1 MHz)

Limit : FCC_Part 15 Subpart C(15.207)



No.	Freq.	Reading ⟨QP⟩	Reading ⟨AV⟩	LISN	LOSS	Results ⟨QP⟩	Results ⟨AV⟩	Limit ⟨QP⟩	Limit ⟨AV⟩	Margin ⟨QP⟩	Margin ⟨AV⟩	Phase	Comment
	[MHz]	[dBuV]	[dBuV]	[dB]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.16433	39.00	22.22	0.05	13.15	52.20	35.42	65.24	55.24	13.04	19.82	L	
2	0.22995	25.51	5.00	0.04	13.15	38.70	18.19	62.45	52.45	23.75	34.26	L	
3	0.38205	14.92	1.61	0.05	13.17	28.14	14.83	58.23	48.23	30.09	33.40	L	
4	4.24940	13.60	7.21	0.11	13.41	27.12	20.73	56.00	46.00	28.88	25.27	L	
5	6.48153	13.20	7.65	0.16	13.49	26.85	21.30	60.00	50.00	33.15	28.70	L	
6	18.22534	20.55	12.41	0.39	13.80	34.74	26.60	60.00	50.00	25.26	23.40	L	
7	0.16353	38.93	22.00	0.05	13.15	52.13	35.20	65.28	55.28	13.15	20.08	N	
8	0.22565	25.32	4.55	0.04	13.15	38.51	17.74	62.61	52.61	24.10	34.87	N	
9	0.38545	14.54	1.30	0.04	13.17	27.75	14.51	58.16	48.16	30.41	33.65	N	
10	4.25805	13.54	7.00	0.10	13.41	27.05	20.51	56.00	46.00	28.95	25.49	N	
11	6.46335	14.41	7.91	0.14	13.49	28.04	21.54	60.00	50.00	31.96	28.46	N	
12	18.25386	23.87	15.41	0.33	13.80	38.00	29.54	60.00	50.00	22.00	20.46	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.

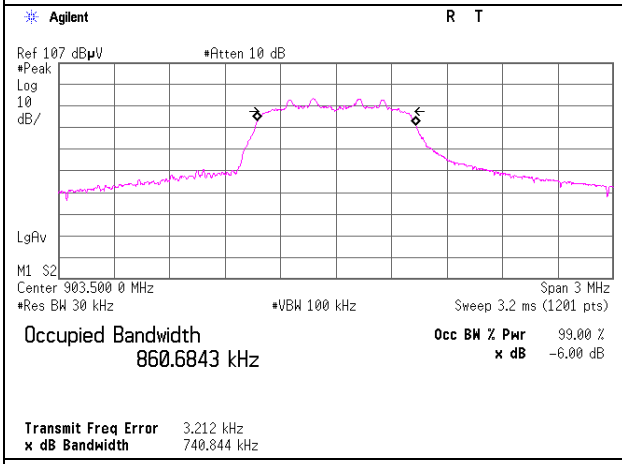
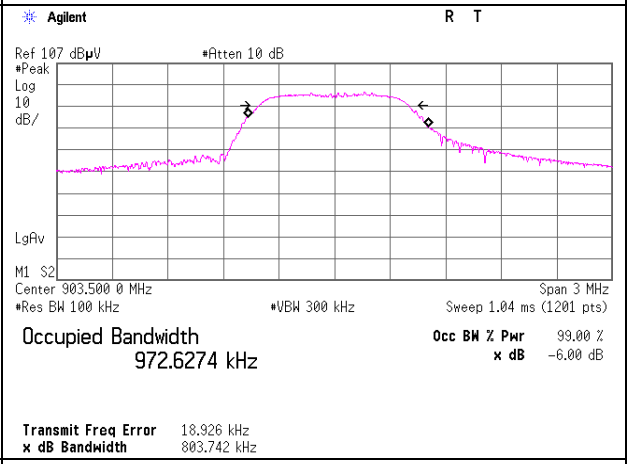
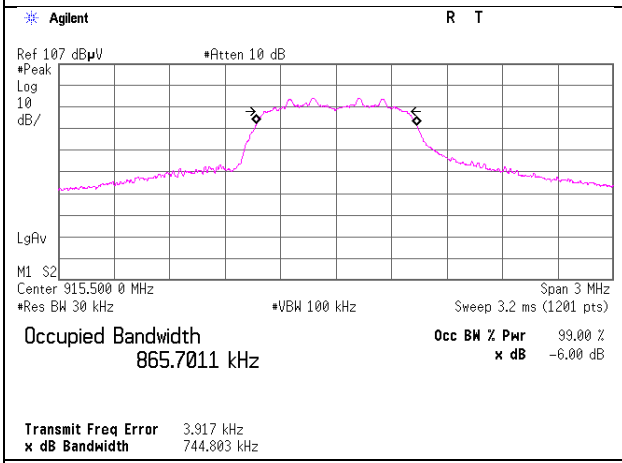
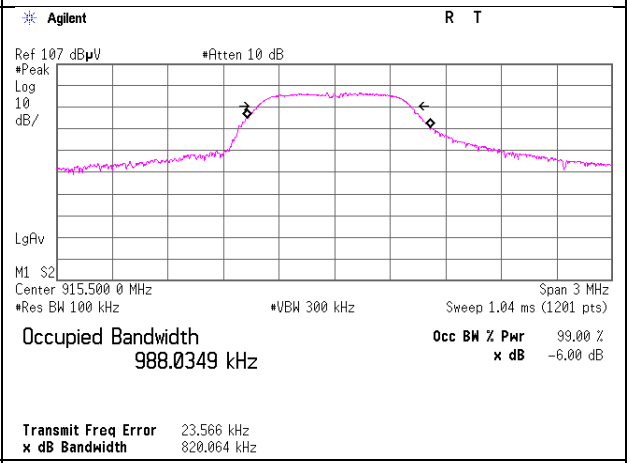
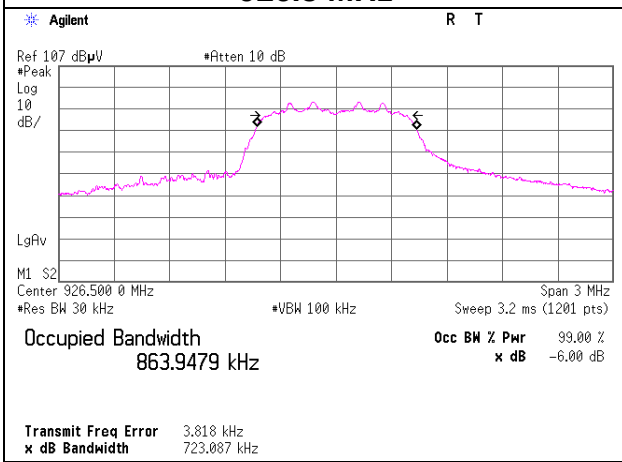
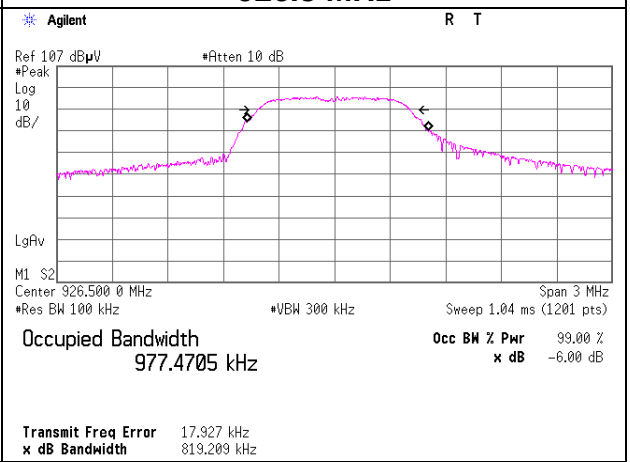
99 % Occupied Bandwidth and 6 dB Bandwidth

Test place	Ise EMC Lab. No.8 Measurement Room	
Date	November 10, 2023	December 25, 2023
Temperature / Humidity	24 deg. C / 59 % RH	21 deg. C / 31 % RH
Engineer	Junya Okuno	Yuichiro Yamazaki
Mode	Tx	

Channel Bandwidth	Frequency [MHz]	99% Occupied Bandwidth [kHz]	6dB Bandwidth [MHz]	Limit for 6dB Bandwidth [MHz]
1 MHz	903.5	860.7	0.804	> 0.5000
	915.5	***865.7***	0.820	> 0.5000
	926.5	863.9	0.819	> 0.5000
2 MHz	905.0	1799.4	1.706	> 0.5000
	915.0	1798.1	1.726	> 0.5000
	925.0	***1801.8***	1.736	> 0.5000
4 MHz	910.0	3675.6	3.574	> 0.5000
	914.0	3663.6	3.605	> 0.5000
	922.0	***3681.5***	3.595	> 0.5000
8 MHz	908.0	**7560.2**	7.454	> 0.5000
	916.0	7559.7	7.527	> 0.5000

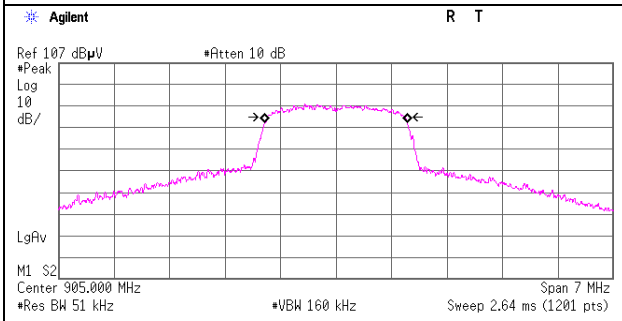
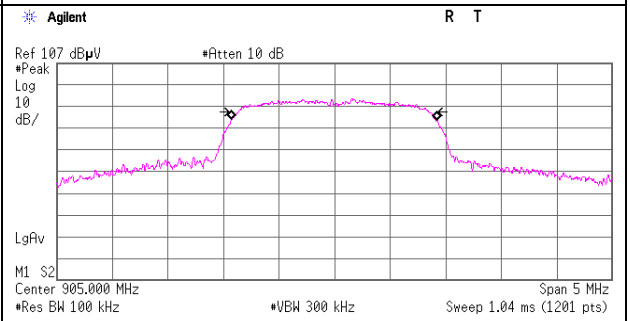
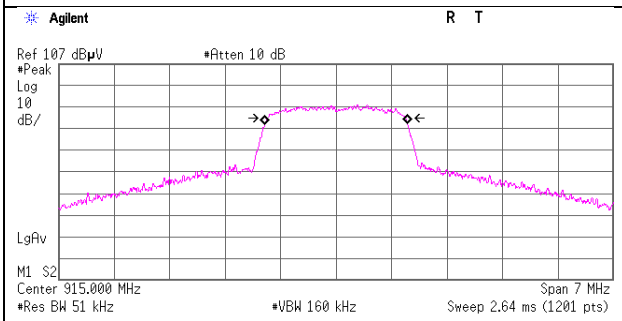
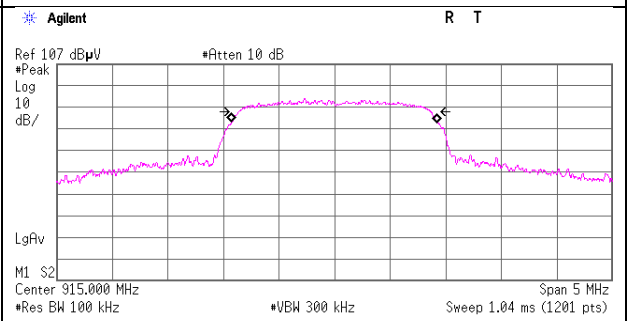
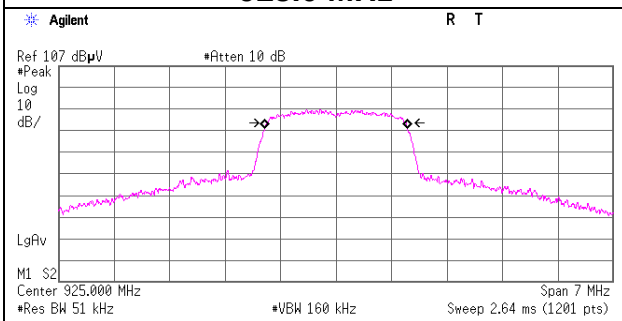
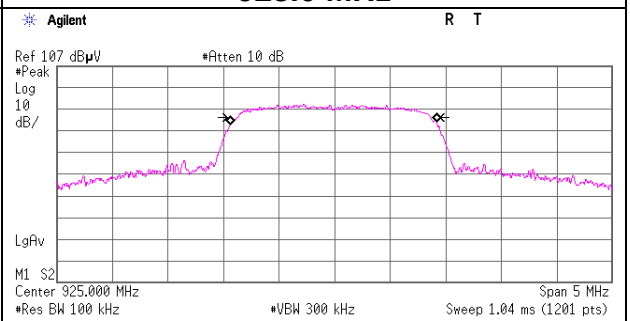
99 % Occupied Bandwidth and 6 dB Bandwidth

Channel Bandwidth 1 MHz

99 % Occupied Bandwidth	6 dB Bandwidth
903.5 MHz	**903.5 MHz**
	
915.5 MHz	**915.5 MHz**
	
926.5 MHz	**926.5 MHz**
	

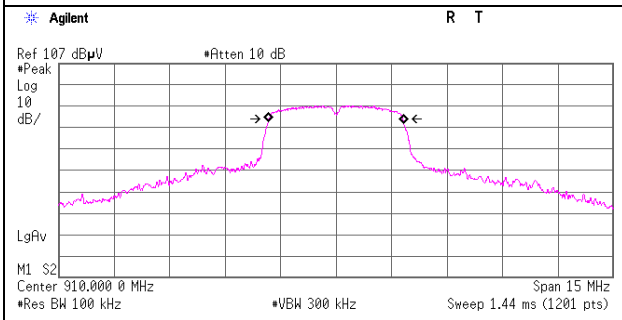
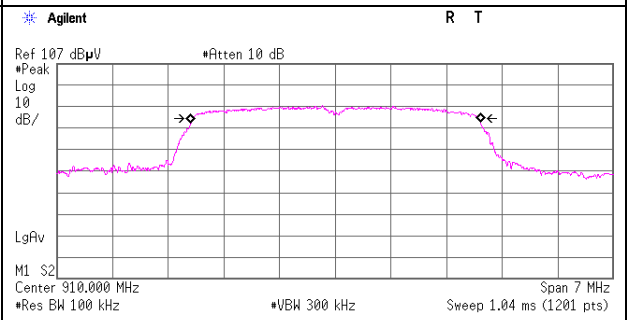
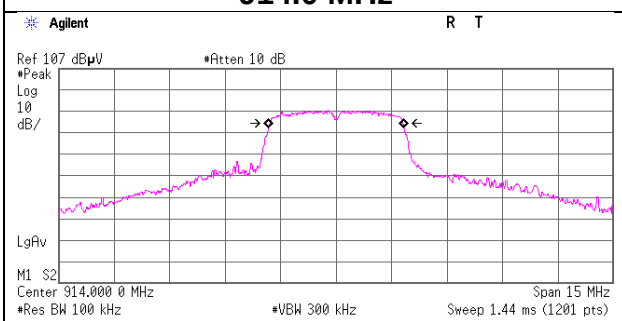
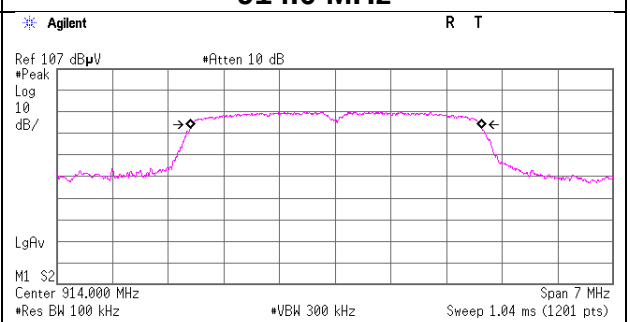
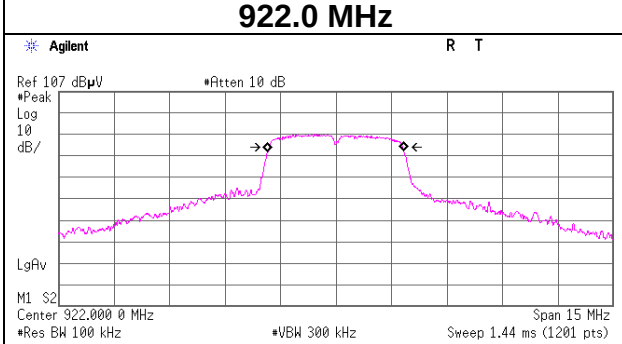
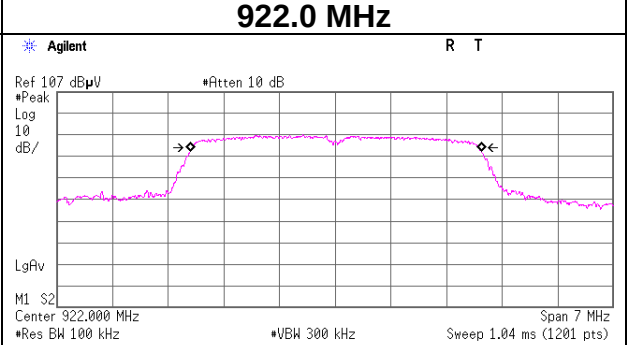
99 % Occupied Bandwidth and 6 dB Bandwidth

Channel Bandwidth 2 MHz

99 % Occupied Bandwidth	6 dB Bandwidth
905.0 MHz	**905.0 MHz**
	
915.0 MHz	**915.0 MHz**
	
925.0 MHz	**925.0 MHz**
	

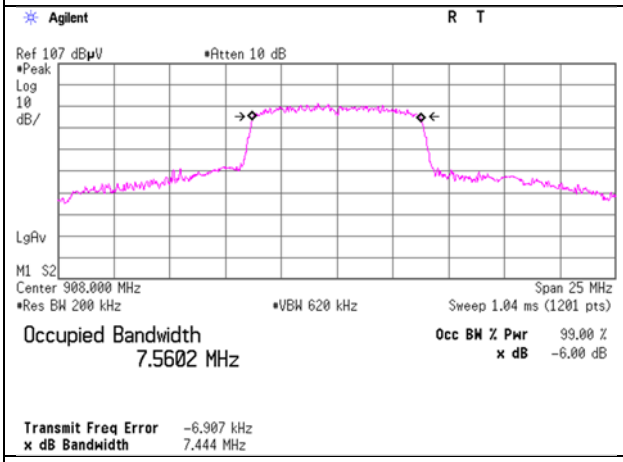
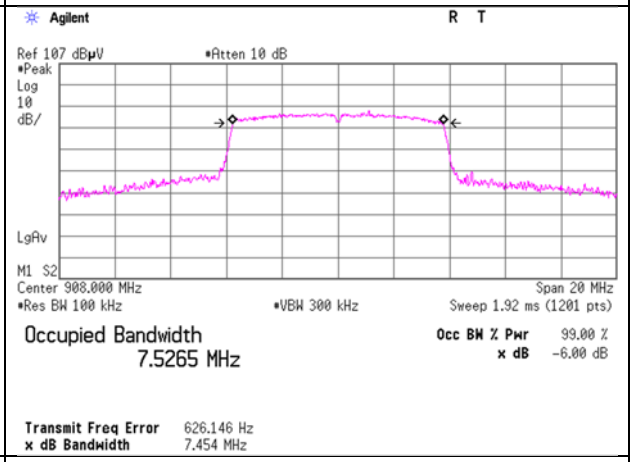
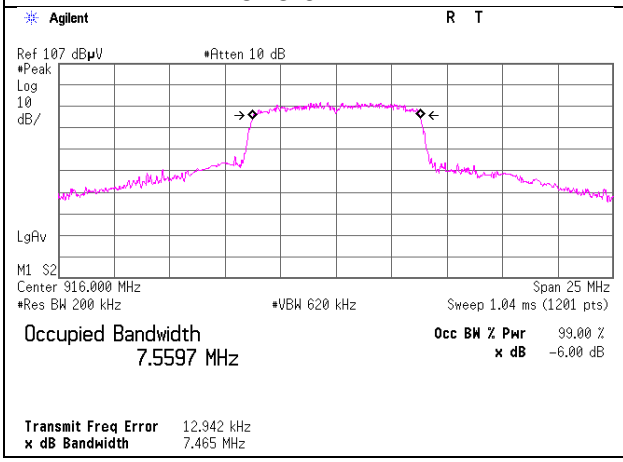
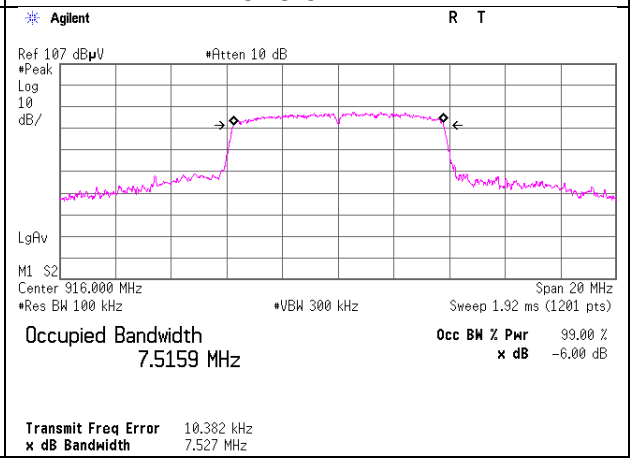
99 % Occupied Bandwidth and 6 dB Bandwidth

Channel Bandwidth 4 MHz

99 % Occupied Bandwidth	6 dB Bandwidth
910.0 MHz	**910.0 MHz**
	
914.0 MHz	**914.0 MHz**
	
922.0 MHz	**922.0 MHz**
	

99 % Occupied Bandwidth and 6 dB Bandwidth

Channel Bandwidth 8 MHz

99 % Occupied Bandwidth	6 dB Bandwidth
908.0 MHz	**908.0 MHz**
	
916.0 MHz	**916.0 MHz**
	

Maximum Average Output Power

Test place	Ise EMC Lab. No.8 Measurement Room
Date	November 8, 2023
Temperature / Humidity	24 deg. C / 68 % RH
Engineer	Junya Okuno
Mode	Tx, Channel Bandwidth 1 MHz

MCS10					Conducted Power					e.i.r.p. for RSS-247					
Freq.	Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin	Antenna Gain	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
903.5	-4.23	0.64	29.75	0.27	***26.43***	***439.54***	30.00	1000	3.57	3.40	***29.83***	***961.61***	36.02	4000	6.19
915.5	-4.34	0.64	29.75	0.27	26.32	428.55	30.00	1000	3.68	3.40	29.72	937.56	36.02	4000	6.30
926.5	-4.30	0.64	29.75	0.27	26.36	432.51	30.00	1000	3.64	3.40	29.76	946.24	36.02	4000	6.26

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss + Duty factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain

915.5MHz

Rate MCS	Reading [dBm]	Remark
10	-4.37	*
0	-4.39	
1	-4.38	
2	-4.39	
3	-5.43	
4	-5.60	
5	-6.48	
6	-8.54	
7	-10.77	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.
Measured value is gating with the on-power.

*Difference between worst rate check data and formal test result is due to the different test condition.

Maximum Average Output Power

Test place	Ise EMC Lab. No.8 Measurement Room
Date	November 8, 2023
Temperature / Humidity	24 deg. C / 68 % RH
Engineer	Junya Okuno
Mode	Tx, Channel Bandwidth 2 MHz

MCS2					Conducted Power					e.i.r.p. for RSS-247					
Freq.	Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin	Antenna Gain	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
905.0	-6.09	0.64	29.75	1.97	26.27	423.64	30.00	1000	3.73	3.40	29.67	926.83	36.02	4000	6.35
915.0	-6.05	0.64	29.75	1.97	***26.31***	***427.56***	30.00	1000	3.69	3.40	***29.71***	***935.41***	36.02	4000	6.31
925.0	-6.27	0.64	29.75	1.97	26.09	406.44	30.00	1000	3.91	3.40	29.49	889.20	36.02	4000	6.53

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss + Duty factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain

915.0MHz

Rate MCS	Reading [dBm]	Remark
0	-4.23	
1	-4.19	
2	-4.15	*
3	-5.69	
4	-5.92	
5	-6.85	
6	-8.89	
7	-10.83	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.
Measured value is gating with the on-power.

*Difference between worst rate check data and formal test result is due to the different test condition.

Maximum Average Output Power

Test place	Ise EMC Lab. No.8 Measurement Room
Date	November 8, 2023
Temperature / Humidity	24 deg. C / 68 % RH
Engineer	Junya Okuno
Mode	Tx, Channel Bandwidth 4 MHz

MCS0					Conducted Power					e.i.r.p. for RSS-247					
Freq.	Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin	Antenna Gain	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
910.0	-5.78	0.64	29.75	1.63	***26.24***	***420.73***	30.00	1000	3.76	3.40	***29.64***	***920.45***	36.02	4000	6.38
914.0	-5.79	0.64	29.75	1.63	26.23	419.76	30.00	1000	3.77	3.40	29.63	918.33	36.02	4000	6.39
922.0	-5.90	0.64	29.75	1.63	26.12	409.26	30.00	1000	3.88	3.40	29.52	895.36	36.02	4000	6.50

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss + Duty factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain

914.0MHz

Rate MCS	Reading [dBm]	Remark
0	-3.39	*
1	-3.44	
2	-3.41	
3	-5.98	
4	-5.94	
5	-7.18	
6	-9.12	
7	-11.13	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.
Measured value is gating with the on-power.

*Difference between worst rate check data and formal test result is due to the different test condition.

Maximum Average Output Power

Test place	Ise EMC Lab. No.8 Measurement Room	
Date	November 6, 2023	January 10, 2024
Temperature / Humidity	24 deg. C / 68 % RH	21 deg. C / 31 % RH
Engineer	Junya Okuno	Tetsuro Yoshida
Mode	Tx, Channel Bandwidth 8 MHz	

MCS0					Conducted Power					e.i.r.p. for RSS-247					
Freq.	Reading	Cable Loss	Atten. Loss	Duty factor	Result		Limit		Margin	Antenna Gain	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
908.0	-10.58	0.63	29.68	2.33	22.06	160.69	30.00	1000	7.94	3.40	25.46	351.56	36.02	4000	10.56
916.0	-6.67	0.64	29.75	2.33	26.05	402.72	30.00	1000	3.95	3.40	29.45	881.05	36.02	4000	6.57

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss + Duty factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain

916.0MHz

Rate MCS	Reading [dBm]	Remark
0	-4.05	*
1	-4.09	
2	-4.11	
3	-5.76	
4	-5.78	
5	-6.87	
6	-8.87	
7	-10.93	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.
Measured value is gating with the on-power.

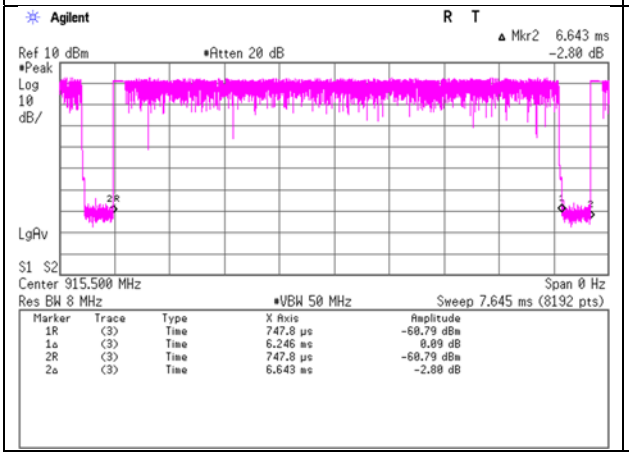
*Difference between worst rate check data and formal test result is due to the different test condition.

Burst rate confirmation

Test place	Ise EMC Lab. No.8 Measurement Room	
Date	November 10, 2023	November 13, 2023
Temperature / Humidity	24 deg. C / 59 % RH	24 deg. C / 31 % RH
Engineer	Junya Okuno	Shousei Hamaguchi
Mode	Tx	

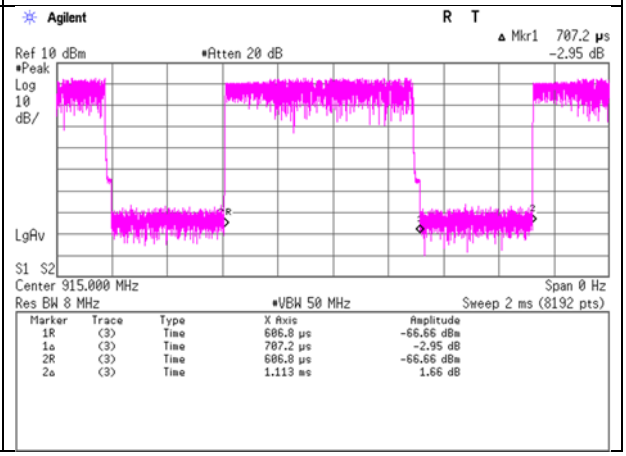
Channel Bandwidth 1MHz, MCS 10

Tx on / (Tx on + Tx off) =	0.940
Tx on / (Tx on + Tx off) * 100 =	94.0 %
Duty factor = 10 * log (6.643 / 6.246) =	0.27 dB



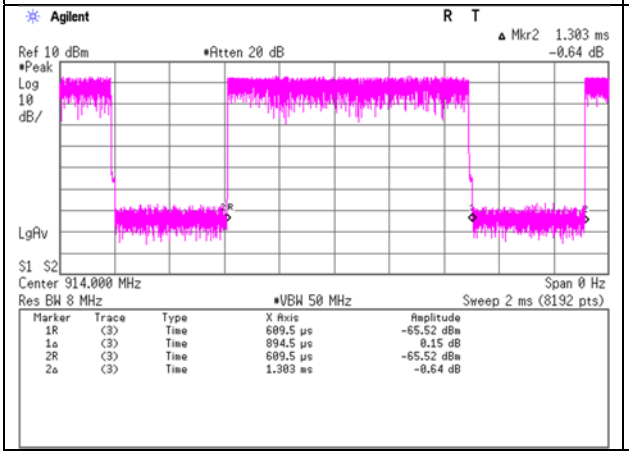
Channel Bandwidth 2MHz, MCS 2

Tx on / (Tx on + Tx off) =	0.635
Tx on / (Tx on + Tx off) * 100 =	63.5 %
Duty factor = 10 * log (1113 / 707.2) =	1.97 dB



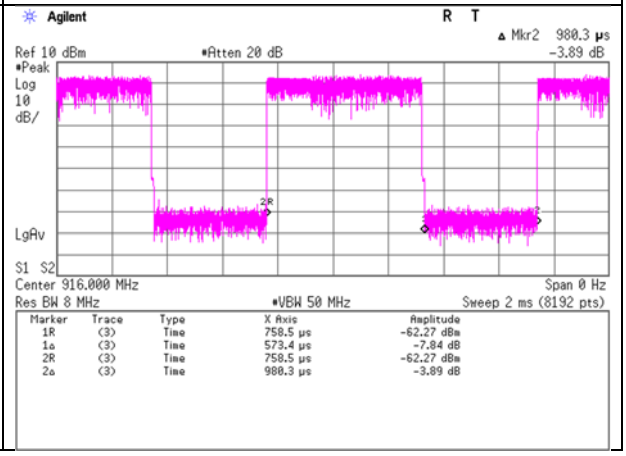
Channel Bandwidth 4MHz, MCS 0

Tx on / (Tx on + Tx off) =	0.687
Tx on / (Tx on + Tx off) * 100 =	68.7 %
Duty factor = 10 * log (1.303 / 0.895) =	1.63 dB



Channel Bandwidth 8MHz, MCS 0

Tx on / (Tx on + Tx off) =	0.585
Tx on / (Tx on + Tx off) * 100 =	58.5 %
Duty factor = 10 * log (0.98 / 0.573) =	2.33 dB



* Since the burst rate is not different between the channels, the data has been obtained on the representative channel.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 13, 2023	November 14, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Tetsuro Yoshida	Tetsuro Yoshida
	(Above 1 GHz)	(Below 1 GHz)
Mode	Tx 903.5 MHz (Channel Bandwidth 1 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.1	-	11.6	9.4	32.0	-	41.1	-	46.0	-	4.9	-	
Hori.	960.0	21.3	-	22.2	13.6	30.5	-	26.6	-	46.0	-	19.4	-	
Hori.	2710.5	45.8	35.7	28.2	5.7	32.3	0.3	47.4	37.6	73.9	53.9	26.5	16.4	
Hori.	3614.0	40.9	34.0	29.0	6.6	31.9	-	44.6	37.7	73.9	53.9	29.3	16.2	Floor noise
Hori.	4517.5	38.4	32.8	30.7	6.5	31.5	-	44.0	38.4	73.9	53.9	29.9	15.5	Floor noise
Hori.	5421.0	40.0	32.2	31.9	6.6	31.4	-	47.1	39.2	73.9	53.9	26.9	14.7	Floor noise
Hori.	6324.5	40.2	33.3	33.7	7.0	31.7	-	49.2	42.2	73.9	53.9	24.7	11.7	Floor noise
Hori.	7228.0	42.3	33.4	36.4	7.1	32.3	-	53.5	44.6	73.9	53.9	20.4	9.3	Floor noise
Hori.	8131.5	42.3	34.0	37.0	7.3	32.6	-	54.1	45.7	73.9	53.9	19.9	8.2	Floor noise
Hori.	9035.0	42.7	33.8	37.1	7.5	32.7	-	54.6	45.7	73.9	53.9	19.3	8.2	Floor noise
Vert.	166.7	45.5	-	15.6	8.7	32.1	-	37.7	-	43.5	-	5.8	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	21.2	-	22.2	13.6	30.5	-	26.5	-	46.0	-	19.5	-	
Vert.	2710.5	47.7	36.0	28.2	5.7	32.3	0.3	49.3	37.8	73.9	53.9	24.7	16.1	
Vert.	3614.0	40.6	33.2	29.0	6.5	31.9	-	44.2	36.8	73.9	53.9	29.7	17.1	Floor noise
Vert.	4517.5	38.1	32.7	30.7	6.5	31.5	-	43.7	38.3	73.9	53.9	30.2	15.6	Floor noise
Vert.	5421.0	40.0	32.0	31.9	6.6	31.4	-	47.0	39.0	73.9	53.9	26.9	14.9	Floor noise
Vert.	6324.5	40.3	32.1	33.7	7.0	31.7	-	49.2	41.1	73.9	53.9	24.7	12.8	Floor noise
Vert.	7228.0	42.2	33.4	36.4	7.1	32.3	-	53.4	44.7	73.9	53.9	20.5	9.2	Floor noise
Vert.	8131.5	42.3	33.8	37.0	7.3	32.6	-	54.0	45.5	73.9	53.9	19.9	8.4	Floor noise
Vert.	9035.0	42.7	33.8	37.1	7.5	32.7	-	54.6	45.7	73.9	53.9	19.3	8.2	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	903.5	93.0	22.3	13.0	0.0	128.2	-	-	Carrier
Hori.	208.3	57.8	11.4	9.0	32.0	46.2	98.2	52.0	
Hori.	291.7	52.4	13.5	9.7	32.0	43.7	98.2	54.6	
Hori.	375.0	44.8	15.0	10.3	32.0	38.2	98.2	60.0	
Hori.	541.7	43.2	17.8	11.3	32.0	40.4	98.2	57.8	
Hori.	902.0	57.1	22.2	13.0	0.0	92.3	98.2	5.9	
Hori.	1807.0	63.1	25.3	5.7	33.1	61.0	98.2	37.2	
Vert.	903.5	90.4	22.3	13.0	0.0	125.6	-	-	Carrier
Vert.	208.3	59.8	11.4	9.0	32.0	48.3	95.6	47.3	
Vert.	291.7	49.5	13.5	9.7	32.0	40.8	95.6	54.8	
Vert.	541.7	46.6	17.8	11.3	32.0	43.8	95.6	51.8	
Vert.	902.0	54.3	22.2	13.0	0.0	89.5	95.6	6.1	
Vert.	1807.0	59.0	25.3	5.7	33.1	56.9	95.6	38.7	

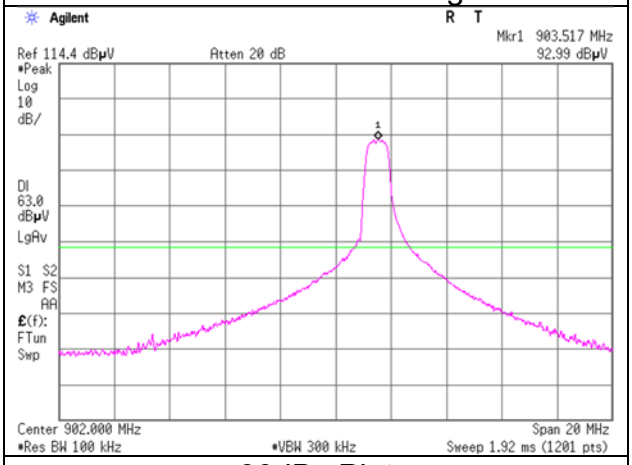
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	November 14, 2023
Temperature / Humidity	21 deg. C / 36 % RH
Engineer	Tetsuro Yoshida
	(Below 1 GHz)
Mode	Tx 903.5 MHz (Channel Bandwidth 1 MHz)

Horizontal

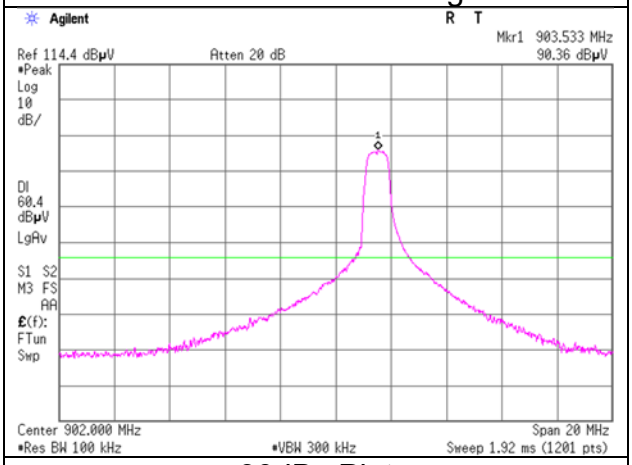
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 13, 2023	November 14, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Tetsuro Yoshida	Tetsuro Yoshida
	(Above 1 GHz)	(Below 1 GHz)
Mode	Tx 915.5 MHz (Channel Bandwidth 1 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.1	-	11.6	9.4	32.0	-	41.1	-	46.0	-	4.9	-	
Hori.	960.0	21.9	-	22.2	13.6	30.5	-	27.2	-	46.0	-	18.8	-	
Hori.	2746.5	45.9	36.8	28.3	5.7	32.3	0.3	47.6	38.8	73.9	53.9	26.3	15.1	
Hori.	3662.0	44.2	35.0	29.1	6.6	31.9	0.3	48.0	39.1	73.9	53.9	25.9	14.8	
Hori.	4577.5	39.6	32.3	30.8	6.5	31.5	-	45.3	38.0	73.9	53.9	28.6	15.9	Floor noise
Hori.	5493.0	40.0	32.1	32.0	6.6	31.4	-	47.2	39.3	73.9	53.9	26.7	14.6	Floor noise
Hori.	6408.5	40.1	33.3	34.1	7.0	31.8	-	49.4	42.6	73.9	53.9	24.5	11.3	Floor noise
Hori.	7324.0	42.5	33.2	36.6	7.1	32.4	-	53.9	44.6	73.9	53.9	20.0	9.3	Floor noise
Hori.	8239.5	43.2	34.0	36.6	7.4	32.6	-	54.6	45.4	73.9	53.9	19.3	8.5	Floor noise
Hori.	9155.0	42.6	33.7	37.5	7.6	32.7	-	54.9	46.0	73.9	53.9	19.1	7.9	Floor noise
Vert.	166.7	45.5	-	15.6	8.7	32.1	-	37.7	-	43.5	-	5.8	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	21.8	-	22.2	13.6	30.5	-	27.1	-	46.0	-	18.9	-	
Vert.	2746.5	44.5	35.6	28.3	5.7	32.3	0.3	46.2	37.6	73.9	53.9	27.7	16.3	
Vert.	3662.0	45.8	36.5	29.1	6.6	31.9	0.3	49.6	40.6	73.9	53.9	24.3	13.3	
Vert.	4577.5	40.0	32.3	30.8	6.5	31.5	-	45.7	38.0	73.9	53.9	28.2	15.9	Floor noise
Vert.	5493.0	40.1	34.3	32.0	6.6	31.4	-	47.3	41.5	73.9	53.9	26.6	12.5	Floor noise
Vert.	6408.5	40.1	33.5	34.1	7.0	31.8	-	49.4	42.8	73.9	53.9	24.5	11.1	Floor noise
Vert.	7324.0	42.6	33.2	36.6	7.1	32.4	-	53.9	44.5	73.9	53.9	20.0	9.4	Floor noise
Vert.	8239.5	43.1	33.9	36.6	7.4	32.6	-	54.5	45.3	73.9	53.9	19.4	8.6	Floor noise
Vert.	9155.0	42.5	33.8	37.5	7.6	32.7	-	54.8	46.1	73.9	53.9	19.1	7.8	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	915.5	94.1	22.2	13.0	0.0	129.3	-	-	Carrier
Hori.	208.3	57.8	11.4	9.0	32.0	46.2	99.3	53.1	
Hori.	291.7	52.5	13.5	9.7	32.0	43.8	99.3	55.6	
Hori.	375.0	44.9	15.0	10.3	32.0	38.3	99.3	61.1	
Hori.	541.7	43.4	17.8	11.3	32.0	40.6	99.3	58.8	
Hori.	1831.0	63.6	25.4	5.7	33.0	61.7	99.3	37.7	
Vert.	915.5	89.8	22.2	13.0	0.0	125.0	-	-	Carrier
Vert.	208.3	59.8	11.4	9.0	32.0	48.2	95.0	46.8	
Vert.	291.7	49.3	13.5	9.7	32.0	40.6	95.0	54.4	
Vert.	541.7	46.5	17.8	11.3	32.0	43.7	95.0	51.3	
Vert.	1831.0	59.0	25.4	5.7	33.0	57.0	95.0	38.0	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.3	No.3	No.3
Date	January 28, 2024	November 14, 2023	January 28, 2024
Temperature / Humidity	20 deg. C / 39 % RH	21 deg. C / 36 % RH	20 deg. C / 39 % RH
Engineer	Tomoya Sone	Tetsuro Yoshida	Tomoya Sone
	(Above 1 GHz)	(Below 1 GHz)	(Below 1 GHz)
Mode	Tx 926.5 MHz (Channel Bandwidth 1 MHz)		

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.1	-	11.6	9.4	32.0	-	41.1	-	46.0	-	4.9	-	
Hori.	960.0	21.4	-	22.2	13.6	30.8	-	26.5	-	46.0	-	19.5	-	
Hori.	2779.5	45.5	35.8	28.3	5.7	32.2	0.3	47.3	37.8	73.9	53.9	26.6	16.1	
Hori.	3706.0	40.2	32.5	29.3	6.7	31.8	-	44.3	36.6	73.9	53.9	29.6	17.3	Floor noise
Hori.	4632.5	40.4	32.6	31.0	6.4	31.5	-	46.4	38.5	73.9	53.9	27.6	15.4	Floor noise
Hori.	5559.0	40.1	32.2	31.7	6.6	31.5	-	46.9	39.0	73.9	53.9	27.0	14.9	Floor noise
Hori.	6485.5	39.9	32.4	33.9	6.9	31.9	-	48.8	41.3	73.9	53.9	25.1	12.6	Floor noise
Hori.	7412.0	41.1	33.4	36.1	7.0	32.4	-	51.9	44.1	73.9	53.9	22.0	9.8	Floor noise
Hori.	8338.5	42.4	34.0	36.1	7.3	32.6	-	53.2	44.8	73.9	53.9	20.7	9.1	Floor noise
Hori.	9265.0	40.9	33.6	38.6	7.6	32.8	-	54.3	46.9	73.9	53.9	19.6	7.0	Floor noise
Vert.	166.7	45.1	-	15.6	8.7	32.1	-	37.3	-	43.5	-	6.2	-	
Vert.	250.0	47.1	-	11.6	9.4	32.0	-	36.1	-	46.0	-	9.9	-	
Vert.	960.0	21.0	-	22.2	13.6	30.8	-	26.1	-	46.0	-	19.9	-	
Vert.	2779.5	46.4	36.6	28.3	5.7	32.2	0.3	48.2	38.7	73.9	53.9	25.7	15.3	
Vert.	3706.0	40.3	32.5	29.3	6.7	31.8	-	44.4	36.6	73.9	53.9	29.5	17.3	Floor noise
Vert.	4632.5	40.1	32.5	31.0	6.4	31.5	-	46.0	38.5	73.9	53.9	27.9	15.5	Floor noise
Vert.	5559.0	40.0	32.3	31.7	6.6	31.5	-	46.8	39.2	73.9	53.9	27.1	14.7	Floor noise
Vert.	6485.5	39.9	32.5	33.9	6.9	31.9	-	48.8	41.4	73.9	53.9	25.1	12.5	Floor noise
Vert.	7412.0	41.0	33.3	36.1	7.0	32.4	-	51.8	44.0	73.9	53.9	22.1	9.9	Floor noise
Vert.	8338.5	42.6	33.9	36.1	7.3	32.6	-	53.3	44.6	73.9	53.9	20.6	9.3	Floor noise
Vert.	9265.0	40.7	33.5	38.6	7.6	32.8	-	54.1	46.9	73.9	53.9	19.8	7.1	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	926.5	92.4	22.0	13.1	0.0	127.5	-	-	Carrier
Hori.	208.3	57.8	11.4	9.0	32.0	46.2	97.5	51.3	
Hori.	291.7	52.4	13.5	9.7	32.0	43.7	97.5	53.9	
Hori.	356.2	87.1	15.1	10.2	32.0	80.5	97.5	17.1	
Hori.	375.0	44.8	15.0	10.3	32.0	38.2	97.5	59.3	
Hori.	541.7	43.2	17.8	11.3	32.0	40.4	97.5	57.1	
Hori.	569.6	83.5	18.3	11.5	32.0	81.4	97.5	16.2	
Hori.	712.2	53.7	20.1	12.3	31.9	54.1	97.5	43.4	
Hori.	784.4	48.9	20.8	12.6	31.5	50.8	97.5	46.7	
Hori.	928.0	59.4	22.0	13.1	0.0	94.5	97.5	3.0	
Hori.	1853.0	58.0	25.3	5.7	33.0	56.0	97.5	41.5	
Vert.	926.5	88.9	22.0	13.1	0.0	123.9	-	-	Carrier
Vert.	208.3	59.7	11.4	9.0	32.0	48.1	93.9	45.9	
Vert.	291.7	49.5	13.5	9.7	32.0	40.8	93.9	53.2	
Vert.	355.4	75.6	15.1	10.2	32.0	69.0	93.9	25.0	
Vert.	541.7	46.7	17.8	11.3	32.0	43.9	93.9	50.1	
Vert.	570.8	84.2	18.4	11.5	32.0	82.1	93.9	11.8	
Vert.	712.0	46.4	20.1	12.3	31.9	46.9	93.9	47.1	
Vert.	784.0	40.9	20.8	12.6	31.5	42.8	93.9	51.1	
Vert.	928.0	56.3	22.0	13.1	0.0	91.4	93.9	2.6	
Vert.	1853.0	54.5	25.3	5.7	33.0	52.5	93.9	41.4	

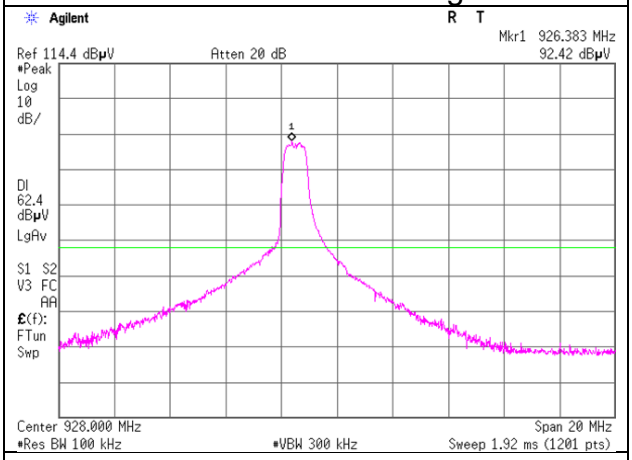
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	January 28, 2024
Temperature / Humidity	20 deg. C / 39 % RH
Engineer	Tomoya Sone
	(Below 1 GHz)
Mode	Tx 926.5 MHz (Channel Bandwidth 1 MHz)

Horizontal

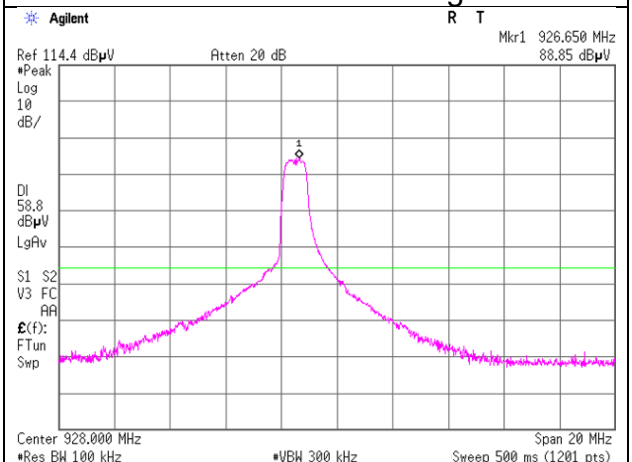
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 14, 2023	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Tetsuro Yoshida	Tetsuro Yoshida
	(Below 1 GHz)	(Above 1 GHz)
Mode	Tx 905.0 MHz (Channel Bandwidth 2 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.3	-	11.6	9.4	32.0	-	41.3	-	46.0	-	4.7	-	
Hori.	960.0	22.4	-	22.2	13.6	30.5	-	27.7	-	46.0	-	18.3	-	
Hori.	2715.0	42.9	33.8	28.2	5.7	32.3	2.0	44.5	37.4	73.9	53.9	29.4	16.5	
Hori.	3620.0	44.2	34.7	29.0	6.6	31.9	2.0	48.0	40.4	73.9	53.9	25.9	13.5	
Hori.	4525.0	39.4	32.9	30.7	6.5	31.5	-	45.0	38.5	73.9	53.9	28.9	15.4	Floor noise
Hori.	5430.0	40.1	32.3	31.9	6.6	31.4	-	47.2	39.3	73.9	53.9	26.7	14.6	Floor noise
Hori.	6335.0	40.4	33.3	33.8	7.0	31.7	-	49.4	42.3	73.9	53.9	24.5	11.6	Floor noise
Hori.	7240.0	42.3	33.5	36.5	7.1	32.3	-	53.6	44.7	73.9	53.9	20.3	9.2	Floor noise
Hori.	8145.0	42.4	34.1	37.0	7.3	32.6	-	54.1	45.8	73.9	53.9	19.8	8.1	Floor noise
Hori.	9050.0	42.6	33.7	37.1	7.5	32.7	-	54.5	45.6	73.9	53.9	19.4	8.3	Floor noise
Vert.	166.7	45.3	-	15.6	8.7	32.1	-	37.5	-	43.5	-	6.0	-	
Vert.	250.0	47.1	-	11.6	9.4	32.0	-	36.1	-	46.0	-	9.9	-	
Vert.	960.0	20.6	-	22.2	13.6	30.5	-	25.9	-	46.0	-	20.1	-	
Vert.	2715.0	44.7	35.1	28.2	5.7	32.3	2.0	46.3	38.7	73.9	53.9	27.6	15.2	
Vert.	3620.0	42.2	34.0	29.0	6.6	31.9	2.0	45.9	39.7	73.9	53.9	28.0	14.2	
Vert.	4525.0	38.1	32.5	30.7	6.5	31.5	-	43.7	38.0	73.9	53.9	30.2	15.9	Floor noise
Vert.	5430.0	40.1	32.0	31.9	6.6	31.4	-	47.1	39.1	73.9	53.9	26.8	14.8	Floor noise
Vert.	6335.0	40.2	32.1	33.8	7.0	31.7	-	49.2	41.0	73.9	53.9	24.7	12.9	Floor noise
Vert.	7240.0	42.3	33.4	36.5	7.1	32.3	-	53.6	44.6	73.9	53.9	20.3	9.3	Floor noise
Vert.	8145.0	42.1	33.8	37.0	7.3	32.6	-	53.8	45.5	73.9	53.9	20.1	8.4	Floor noise
Vert.	9050.0	42.7	33.7	37.1	7.5	32.7	-	54.6	45.6	73.9	53.9	19.3	8.3	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	905.0	90.3	22.3	13.0	0.0	125.5	-	-	Carrier
Hori.	208.3	57.5	11.4	9.0	32.0	45.9	95.5	49.6	
Hori.	291.7	52.1	13.5	9.7	32.0	43.4	95.5	52.2	
Hori.	343.1	66.7	14.9	10.1	32.0	59.8	95.5	35.7	
Hori.	375.0	44.4	15.0	10.3	32.0	37.8	95.5	57.7	
Hori.	541.7	43.2	17.8	11.3	32.0	40.4	95.5	55.1	
Hori.	563.2	63.8	18.0	11.4	32.0	61.3	95.5	34.2	
Hori.	902.0	51.5	22.2	13.0	0.0	86.7	95.5	8.8	
Hori.	1810.0	61.9	25.3	5.7	33.1	59.8	95.5	35.7	
Vert.	905.0	85.9	22.3	13.0	0.0	121.1	-	-	Carrier
Vert.	208.3	59.8	11.4	9.0	32.0	48.2	91.1	42.9	
Vert.	291.7	49.2	13.5	9.7	32.0	40.5	91.1	50.6	
Vert.	343.1	58.7	14.9	10.1	32.0	51.7	91.1	39.4	
Vert.	541.7	46.3	17.8	11.3	32.0	43.5	91.1	47.6	
Vert.	563.5	69.4	18.0	11.5	32.0	66.9	91.1	24.1	
Vert.	902.0	47.5	22.2	13.0	0.0	82.7	91.1	8.4	
Vert.	1810.0	51.6	25.3	5.7	33.1	49.5	91.1	41.6	

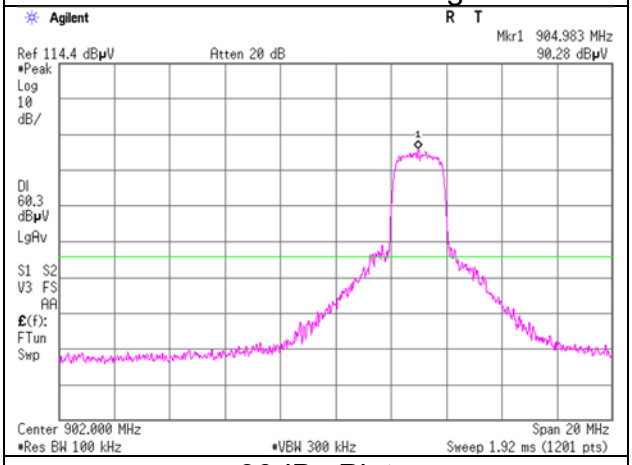
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	November 14, 2023
Temperature / Humidity	21 deg. C / 30 % RH
Engineer	Tetsuro Yoshida
	(Below 1 GHz)
Mode	Tx 905.0 MHz (Channel Bandwidth 2 MHz)

Horizontal

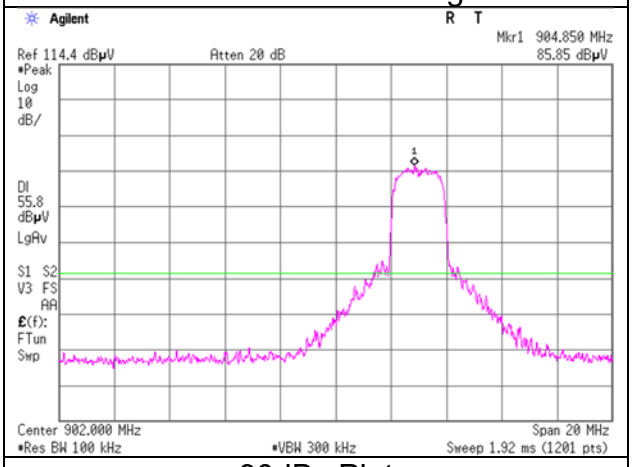
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.3	No.3	No.3
Date	November 14, 2023	January 28, 2024	January 28, 2024
Temperature / Humidity	21 deg. C / 30 % RH	20 deg. C / 39 % RH	20 deg. C / 39 % RH
Engineer	Tetsuro Yoshida	Tomoya Sone	Tomoya Sone
	(Below 1 GHz)	(Above 1 GHz)	(Below 1 GHz)
Mode	Tx 915.0 MHz (Channel Bandwidth 2 MHz)		

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.3	-	11.6	9.4	32.0	-	41.3	-	46.0	-	4.7	-	
Hori.	960.0	20.3	-	22.2	13.6	30.8	-	25.4	-	46.0	-	20.6	-	
Hori.	2745.0	44.7	35.2	28.2	5.7	32.3	2.0	46.3	38.8	73.9	53.9	27.6	15.1	
Hori.	3660.0	40.2	32.2	29.2	6.6	31.9	-	44.1	36.1	73.9	53.9	29.8	17.8	Floor noise
Hori.	4575.0	41.1	32.5	30.9	6.4	31.5	-	46.8	38.3	73.9	53.9	27.1	15.6	Floor noise
Hori.	5490.0	39.8	31.8	31.7	6.6	31.4	-	46.7	38.6	73.9	53.9	27.2	15.3	Floor noise
Hori.	6405.0	41.3	32.7	33.5	6.9	31.8	-	49.9	41.2	73.9	53.9	24.0	12.7	Floor noise
Hori.	7320.0	41.0	33.8	35.9	7.0	32.3	-	51.6	44.4	73.9	53.9	22.3	9.5	Floor noise
Hori.	8235.0	41.6	34.1	36.2	7.3	32.6	-	52.4	44.9	73.9	53.9	21.5	9.0	Floor noise
Hori.	9150.0	41.4	34.3	38.0	7.5	32.7	-	54.3	47.1	73.9	53.9	19.6	6.8	Floor noise
Vert.	166.7	45.5	-	15.6	8.7	32.1	-	37.7	-	43.5	-	5.8	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	20.1	-	22.2	13.6	30.8	-	25.2	-	46.0	-	20.8	-	
Vert.	2745.0	43.2	34.8	28.2	5.7	32.3	2.0	44.9	38.4	73.9	53.9	29.1	15.5	
Vert.	3660.0	40.3	32.4	29.2	6.6	31.9	-	44.3	36.3	73.9	53.9	29.6	17.6	Floor noise
Vert.	4575.0	41.2	32.4	30.9	6.4	31.5	-	47.0	38.2	73.9	53.9	26.9	15.7	Floor noise
Vert.	5490.0	39.9	31.9	31.7	6.6	31.4	-	46.8	38.7	73.9	53.9	27.1	15.2	Floor noise
Vert.	6405.0	41.2	32.6	33.5	6.9	31.8	-	49.7	41.2	73.9	53.9	24.2	12.7	Floor noise
Vert.	7320.0	41.2	33.9	35.9	7.0	32.3	-	51.8	44.5	73.9	53.9	22.1	9.4	Floor noise
Vert.	8235.0	41.5	34.2	36.2	7.3	32.6	-	52.3	45.0	73.9	53.9	21.6	8.9	Floor noise
Vert.	9150.0	41.5	34.4	38.0	7.5	32.7	-	54.4	47.3	73.9	53.9	19.5	6.6	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	915.0	89.0	22.2	13.0	0.0	124.2	-	-	Carrier
Hori.	208.3	57.6	11.4	9.0	32.0	46.1	94.2	48.1	
Hori.	291.7	52.3	13.5	9.7	32.0	43.6	94.2	50.6	
Hori.	348.5	77.0	15.0	10.1	32.0	70.2	94.2	24.0	
Hori.	375.0	44.3	15.0	10.3	32.0	37.7	94.2	56.5	
Hori.	541.7	43.4	17.8	11.3	32.0	40.6	94.2	53.6	
Hori.	566.5	75.1	18.1	11.5	32.0	72.8	94.2	21.4	
Hori.	1830.0	51.8	25.2	5.7	33.0	49.7	94.2	44.5	
Vert.	915.0	85.6	22.2	13.0	0.0	120.8	-	-	Carrier
Vert.	208.3	59.4	11.4	9.0	32.0	47.9	90.8	43.0	
Vert.	291.7	49.6	13.5	9.7	32.0	40.9	90.8	50.0	
Vert.	347.7	71.6	15.0	10.1	32.0	64.7	90.8	26.1	
Vert.	541.7	46.1	17.8	11.3	32.0	43.3	90.8	47.5	
Vert.	567.5	83.0	18.2	11.5	32.0	80.7	90.8	10.1	
Vert.	1830.0	49.2	25.2	5.7	33.0	47.1	90.8	43.7	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.		
Semi Anechoic Chamber	No.3	No.3	No.3
Date	November 14, 2023	January 28, 2024	January 28, 2024
Temperature / Humidity	21 deg. C / 30 % RH	20 deg. C / 39 % RH	20 deg. C / 39 % RH
Engineer	Tetsuro Yoshida	Tomoya Sone	Tomoya Sone
	(Below 1 GHz)	(Above 1 GHz)	(Below 1 GHz)
Mode	Tx 925.0 MHz (Channel Bandwidth 2 MHz)		

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.5	-	11.6	9.4	32.0	-	41.5	-	46.0	-	4.5	-	
Hori.	960.0	21.3	-	22.2	13.6	30.8	-	26.4	-	46.0	-	19.6	-	
Hori.	2775.0	42.9	34.5	28.3	5.7	32.2	2.0	44.7	38.3	73.9	53.9	29.2	15.6	
Hori.	3700.0	41.0	32.7	29.3	6.7	31.8	-	45.1	36.8	73.9	53.9	28.8	17.1	Floor noise
Hori.	4625.0	40.8	32.5	31.0	6.4	31.5	-	46.7	38.3	73.9	53.9	27.3	15.6	Floor noise
Hori.	5550.0	39.7	32.1	31.7	6.6	31.5	-	46.6	38.9	73.9	53.9	27.3	15.0	Floor noise
Hori.	6475.0	41.0	32.9	33.8	6.9	31.8	-	49.9	41.8	73.9	53.9	24.1	12.1	Floor noise
Hori.	7400.0	41.4	33.8	36.1	7.0	32.4	-	52.1	44.5	73.9	53.9	21.8	9.4	Floor noise
Hori.	8325.0	42.0	34.4	36.1	7.3	32.6	-	52.7	45.2	73.9	53.9	21.2	8.7	Floor noise
Hori.	9250.0	40.9	34.1	38.5	7.6	32.8	-	54.2	47.4	73.9	53.9	19.7	6.5	Floor noise
Vert.	166.7	45.3	-	15.6	8.7	32.1	-	37.5	-	43.5	-	6.0	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	20.9	-	22.2	13.6	30.8	-	26.0	-	46.0	-	20.0	-	
Vert.	2775.0	44.3	34.8	28.3	5.7	32.2	2.0	46.1	38.6	73.9	53.9	27.8	15.3	
Vert.	3700.0	41.1	32.6	29.3	6.7	31.8	-	45.2	36.7	73.9	53.9	28.7	17.3	Floor noise
Vert.	4625.0	40.6	32.6	31.0	6.4	31.5	-	46.5	38.5	73.9	53.9	27.4	15.4	Floor noise
Vert.	5550.0	39.9	32.3	31.7	6.6	31.5	-	46.7	39.1	73.9	53.9	27.2	14.8	Floor noise
Vert.	6475.0	41.1	32.7	33.8	6.9	31.8	-	50.0	41.6	73.9	53.9	23.9	12.3	Floor noise
Vert.	7400.0	41.2	34.0	36.1	7.0	32.4	-	51.9	44.7	73.9	53.9	22.0	9.2	Floor noise
Vert.	8325.0	41.8	34.6	36.1	7.3	32.6	-	52.6	45.4	73.9	53.9	21.3	8.6	Floor noise
Vert.	9250.0	40.8	34.2	38.5	7.6	32.8	-	54.1	47.5	73.9	53.9	19.8	6.4	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	925.0	90.0	22.0	13.1	0.0	125.1	-	-	Carrier
Hori.	208.3	57.5	11.4	9.0	32.0	46.0	95.1	49.1	
Hori.	291.7	52.4	13.5	9.7	32.0	43.7	95.1	51.4	
Hori.	355.8	67.0	15.1	10.2	32.0	60.3	95.1	34.8	
Hori.	375.0	44.5	15.0	10.3	32.0	37.9	95.1	57.2	
Hori.	541.7	43.5	17.8	11.3	32.0	40.7	95.1	54.4	
Hori.	568.5	64.9	18.2	11.5	32.0	62.7	95.1	32.4	
Hori.	928.0	50.6	22.0	13.1	0.0	85.7	95.1	9.4	
Hori.	1850.0	52.9	25.3	5.7	33.0	50.9	95.1	44.2	
Vert.	925.0	85.8	22.0	13.1	0.0	120.9	-	-	Carrier
Vert.	208.3	59.5	11.4	9.0	32.0	48.0	90.9	42.9	
Vert.	291.7	49.3	13.5	9.7	32.0	40.6	90.9	50.4	
Vert.	356.2	58.7	15.1	10.2	32.0	52.0	90.9	38.9	
Vert.	541.7	46.2	17.8	11.3	32.0	43.4	90.9	47.5	
Vert.	568.5	70.3	18.2	11.5	32.0	68.1	90.9	22.8	
Vert.	928.0	45.2	22.0	13.1	0.0	80.3	90.9	10.6	
Vert.	1850.0	48.7	25.3	5.7	33.0	46.7	90.9	44.2	

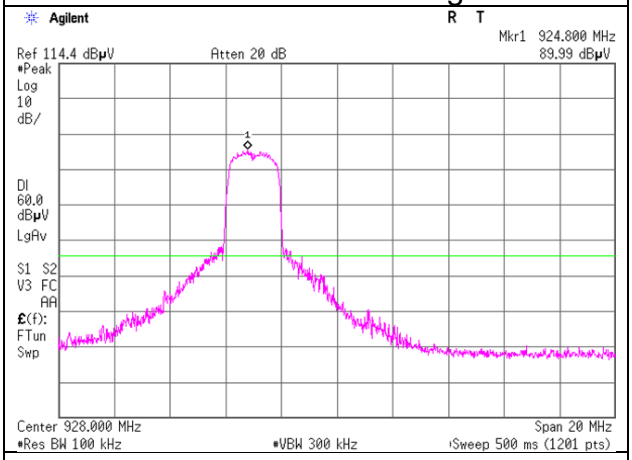
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	January 28, 2024
Temperature / Humidity	20 deg. C / 39 % RH
Engineer	Tomoya Sone
	(Below 1 GHz)
Mode	Tx 925.0 MHz (Channel Bandwidth 2 MHz)

Horizontal

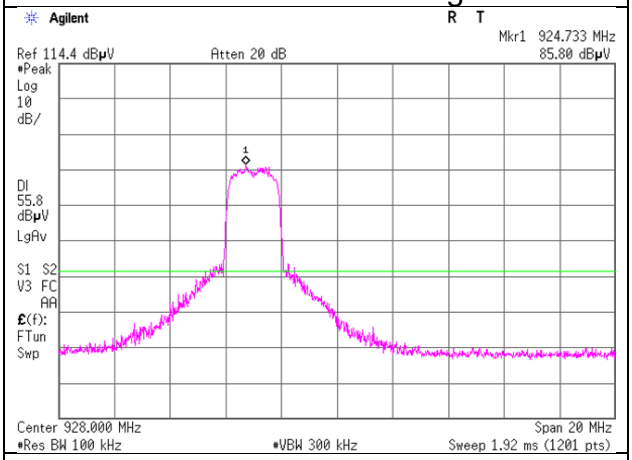
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 15, 2023	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Takumi Nishida	Tetsuro Yoshida
	(Below 1 GHz)	(Above 1 GHz)
Mode	Tx 910.0 MHz (Channel Bandwidth 4 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.3	-	11.6	9.4	32.0	-	41.3	-	46.0	-	4.7	-	
Hori.	960.0	22.9	-	22.2	13.6	30.5	-	28.2	-	46.0	-	17.8	-	
Hori.	2730.0	42.0	33.8	28.2	5.7	32.3	1.6	43.7	37.1	73.9	53.9	30.2	16.8	
Hori.	3640.0	40.9	32.9	29.0	6.6	31.9	-	44.7	36.7	73.9	53.9	29.2	17.2	Floor noise
Hori.	4550.0	38.8	32.7	30.7	6.5	31.5	-	44.4	38.3	73.9	53.9	29.5	15.6	Floor noise
Hori.	5460.0	40.3	32.4	32.0	6.6	31.4	-	47.4	39.5	73.9	53.9	26.5	14.4	Floor noise
Hori.	6370.0	40.2	33.4	33.9	7.0	31.8	-	49.3	42.5	73.9	53.9	24.6	11.4	Floor noise
Hori.	7280.0	42.1	33.5	36.5	7.1	32.3	-	53.4	44.8	73.9	53.9	20.5	9.1	Floor noise
Hori.	8190.0	42.4	34.1	36.8	7.3	32.6	-	53.9	45.6	73.9	53.9	20.0	8.3	Floor noise
Hori.	9100.0	42.7	33.5	37.2	7.5	32.7	-	54.7	45.6	73.9	53.9	19.2	8.3	Floor noise
Vert.	166.7	45.1	-	15.6	8.7	32.1	-	37.3	-	43.5	-	6.2	-	
Vert.	250.0	47.4	-	11.6	9.4	32.0	-	36.4	-	46.0	-	9.6	-	
Vert.	960.0	23.2	-	22.2	13.6	30.5	-	28.5	-	46.0	-	17.5	-	
Vert.	2730.0	43.2	35.0	28.2	5.7	32.3	1.6	44.9	38.3	73.9	53.9	29.0	15.6	
Vert.	3640.0	40.9	33.0	29.0	6.6	31.9	-	44.7	36.8	73.9	53.9	29.3	17.1	Floor noise
Vert.	4550.0	38.7	32.4	30.7	6.5	31.5	-	44.4	38.0	73.9	53.9	29.6	15.9	Floor noise
Vert.	5460.0	40.3	32.2	32.0	6.6	31.4	-	47.4	39.3	73.9	53.9	26.5	14.6	Floor noise
Vert.	6370.0	40.3	32.0	33.9	7.0	31.8	-	49.4	41.1	73.9	53.9	24.5	12.8	Floor noise
Vert.	7280.0	42.4	33.2	36.5	7.1	32.3	-	53.7	44.5	73.9	53.9	20.2	9.4	Floor noise
Vert.	8190.0	42.1	33.8	36.8	7.3	32.6	-	53.6	45.4	73.9	53.9	20.3	8.5	Floor noise
Vert.	9100.0	43.6	33.6	37.2	7.5	32.7	-	55.6	45.6	73.9	53.9	18.3	8.3	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	910.0	87.5	22.2	13.0	0.0	122.8	-	-	Carrier
Hori.	208.3	57.8	11.4	9.0	32.0	46.2	92.8	46.5	
Hori.	291.7	52.5	13.5	9.7	32.0	43.7	92.8	49.0	
Hori.	375.0	44.9	15.0	10.3	32.0	38.3	92.8	54.5	
Hori.	541.7	43.4	17.8	11.3	32.0	40.6	92.8	52.2	
Hori.	625.0	40.6	19.2	11.8	31.9	39.7	92.8	53.1	
Hori.	902.0	42.8	22.2	13.0	0.0	78.0	92.8	14.8	
Hori.	1820.0	56.8	25.3	5.7	33.0	54.8	92.8	38.0	
Vert.	910.0	85.7	22.2	13.0	0.0	120.9	-	-	Carrier
Vert.	208.3	59.7	11.4	9.0	32.0	48.1	90.9	42.8	
Vert.	291.7	49.4	13.5	9.7	32.0	40.7	90.9	50.3	
Vert.	541.7	46.7	17.8	11.3	32.0	43.8	90.9	47.1	
Vert.	625.0	40.3	19.2	11.8	31.9	39.3	90.9	51.6	
Vert.	902.0	41.4	22.2	13.0	0.0	76.6	90.9	14.3	
Vert.	1820.0	48.6	25.3	5.7	33.0	46.5	90.9	44.4	

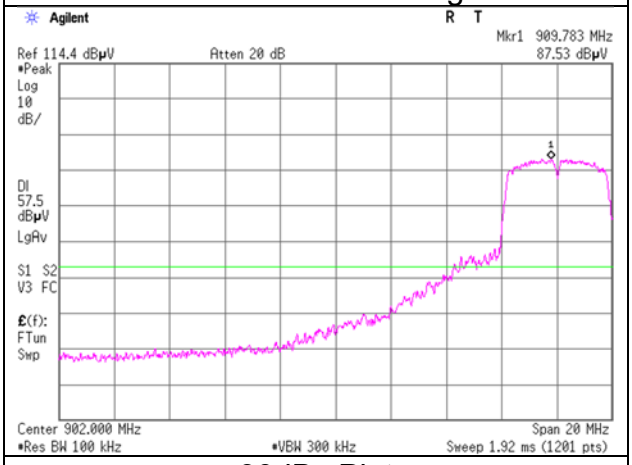
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH
Engineer	Takumi Nishida
	(Below 1 GHz)
Mode	Tx 910.0 MHz (Channel Bandwidth 4 MHz)

Horizontal

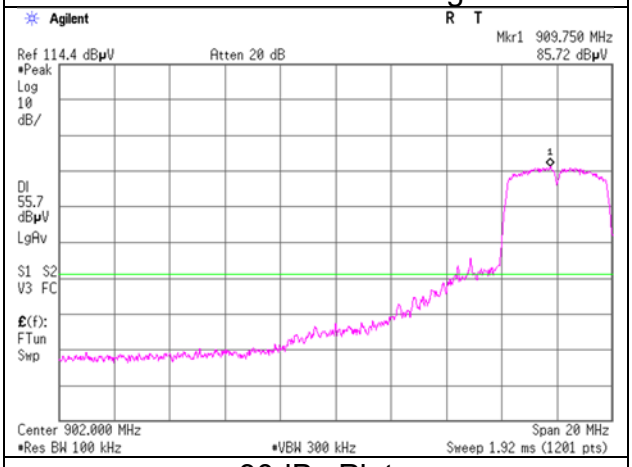
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 15, 2023	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Takumi Nishida	Tetsuro Yoshida
	(Below 1 GHz)	(Above 1 GHz)
Mode	Tx 914.0 MHz (Channel Bandwidth 4 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.5	-	11.6	9.4	32.0	-	41.5	-	46.0	-	4.5	-	
Hori.	960.0	22.8	-	22.2	13.6	30.5	-	28.1	-	46.0	-	17.9	-	
Hori.	2742.0	43.4	33.5	28.3	5.7	32.3	1.6	45.2	36.8	73.9	53.9	28.7	17.1	
Hori.	3656.0	40.3	32.1	29.1	6.6	31.9	-	44.2	35.9	73.9	53.9	29.8	18.0	Floor noise
Hori.	4570.0	38.7	32.0	30.8	6.5	31.5	-	44.4	37.6	73.9	53.9	29.5	16.3	Floor noise
Hori.	5484.0	40.0	32.1	32.0	6.6	31.4	-	47.2	39.3	73.9	53.9	26.7	14.6	Floor noise
Hori.	6398.0	40.6	33.4	34.0	7.0	31.8	-	49.8	42.6	73.9	53.9	24.1	11.3	Floor noise
Hori.	7312.0	42.3	33.7	36.6	7.1	32.3	-	53.7	45.0	73.9	53.9	20.3	8.9	Floor noise
Hori.	8226.0	42.1	33.0	36.7	7.4	32.6	-	53.5	44.4	73.9	53.9	20.4	9.5	Floor noise
Hori.	9140.0	42.3	33.8	37.4	7.6	32.7	-	54.6	46.0	73.9	53.9	19.3	7.9	Floor noise
Vert.	166.7	45.3	-	15.6	8.7	32.1	-	37.5	-	43.5	-	6.0	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	23.3	-	22.2	13.6	30.5	-	28.6	-	46.0	-	17.4	-	
Vert.	2742.0	43.2	34.1	28.3	5.7	32.3	1.6	44.9	37.4	73.9	53.9	29.0	16.5	
Vert.	3656.0	40.1	31.8	29.1	6.6	31.9	-	43.9	35.6	73.9	53.9	30.0	18.3	Floor noise
Vert.	4570.0	38.4	32.4	30.8	6.5	31.5	-	44.1	38.1	73.9	53.9	29.8	15.8	Floor noise
Vert.	5484.0	40.3	32.2	32.0	6.6	31.4	-	47.5	39.4	73.9	53.9	26.4	14.5	Floor noise
Vert.	6398.0	40.3	32.1	34.0	7.0	31.8	-	49.5	41.3	73.9	53.9	24.4	12.6	Floor noise
Vert.	7312.0	42.5	33.4	36.6	7.1	32.3	-	53.8	44.8	73.9	53.9	20.1	9.1	Floor noise
Vert.	8226.0	42.2	32.9	36.7	7.4	32.6	-	53.6	44.3	73.9	53.9	20.3	9.6	Floor noise
Vert.	9140.0	42.6	33.8	37.4	7.6	32.7	-	54.8	46.0	73.9	53.9	19.1	7.9	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	914.0	87.7	22.2	13.0	0.0	122.9	-	-	Carrier
Hori.	208.3	57.7	11.4	9.0	32.0	46.2	92.9	46.8	
Hori.	291.7	55.7	13.5	9.7	32.0	46.9	92.9	46.0	
Hori.	375.0	44.8	15.0	10.3	32.0	38.2	92.9	54.7	
Hori.	541.7	43.6	17.8	11.3	32.0	40.7	92.9	52.2	
Hori.	565.9	53.4	18.1	11.5	32.0	51.0	92.9	41.9	
Hori.	1828.0	57.5	25.4	5.7	33.0	55.5	92.9	37.4	
Vert.	914.0	85.5	22.2	13.0	0.0	120.8	-	-	Carrier
Vert.	208.3	59.9	11.4	9.0	32.0	48.3	90.8	42.4	
Vert.	291.7	52.8	13.5	9.7	32.0	44.0	90.8	46.7	
Vert.	541.7	46.7	17.8	11.3	32.0	43.9	90.8	46.9	
Vert.	565.9	45.8	18.1	11.5	32.0	43.4	90.8	47.3	
Vert.	1828.0	49.4	25.4	5.7	33.0	47.4	90.8	43.4	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)

*Above noise was synchronized with carrier frequency.

Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 15, 2023	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Takumi Nishida	Tetsuro Yoshida
	(Below 1 GHz)	(Above 1 GHz)
Mode	Tx 922.0 MHz (Channel Bandwidth 4 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.5	-	11.6	9.4	32.0	-	41.5	-	46.0	-	4.5	-	
Hori.	960.0	23.3	-	22.2	13.6	30.5	-	28.6	-	46.0	-	17.4	-	
Hori.	2766.0	42.8	33.9	28.4	5.7	32.2	1.6	44.7	37.4	73.9	53.9	29.2	16.5	
Hori.	3688.0	40.2	32.1	29.1	6.7	31.8	-	44.1	36.0	73.9	53.9	29.8	17.9	Floor noise
Hori.	4610.0	38.8	31.9	30.9	6.4	31.5	-	44.6	37.7	73.9	53.9	29.4	16.2	Floor noise
Hori.	5532.0	40.0	32.2	32.1	6.6	31.4	-	47.2	39.5	73.9	53.9	26.7	14.5	Floor noise
Hori.	6454.0	40.4	33.3	34.3	7.0	31.8	-	49.9	42.8	73.9	53.9	24.0	11.1	Floor noise
Hori.	7376.0	42.4	33.5	36.7	7.2	32.4	-	53.9	45.0	73.9	53.9	20.0	8.9	Floor noise
Hori.	8298.0	42.3	33.1	36.5	7.4	32.6	-	53.5	44.3	73.9	53.9	20.4	9.6	Floor noise
Hori.	9220.0	42.2	33.7	37.7	7.6	32.8	-	54.7	46.2	73.9	53.9	19.2	7.7	Floor noise
Vert.	166.7	45.3	-	15.6	8.7	32.1	-	37.5	-	43.5	-	6.0	-	
Vert.	250.0	47.3	-	11.6	9.4	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	23.1	-	22.2	13.6	30.5	-	28.4	-	46.0	-	17.6	-	
Vert.	2766.0	43.3	34.2	28.4	5.7	32.2	1.6	45.1	37.7	73.9	53.9	28.8	16.2	
Vert.	3688.0	40.2	31.7	29.1	6.7	31.8	-	44.1	35.6	73.9	53.9	29.8	18.3	Floor noise
Vert.	4610.0	38.6	32.4	30.9	6.4	31.5	-	44.4	38.2	73.9	53.9	29.5	15.7	Floor noise
Vert.	5532.0	40.4	32.4	32.1	6.6	31.4	-	47.7	39.7	73.9	53.9	26.2	14.3	Floor noise
Vert.	6454.0	40.3	32.3	34.3	7.0	31.8	-	49.7	41.8	73.9	53.9	24.2	12.1	Floor noise
Vert.	7376.0	42.4	33.5	36.7	7.2	32.4	-	53.9	45.0	73.9	53.9	20.0	8.9	Floor noise
Vert.	8298.0	42.1	32.9	36.5	7.4	32.6	-	53.3	44.2	73.9	53.9	20.6	9.7	Floor noise
Vert.	9220.0	42.5	33.9	37.7	7.6	32.8	-	55.0	46.5	73.9	53.9	18.9	7.4	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	922.0	86.7	22.1	13.1	0.0	121.8	-	-	Carrier
Hori.	208.3	57.5	11.4	9.0	32.0	46.0	91.8	45.8	
Hori.	291.7	55.9	13.5	9.7	32.0	47.1	91.8	44.7	
Hori.	355.8	57.0	15.1	10.2	32.0	50.3	91.8	41.5	
Hori.	375.0	44.5	15.0	10.3	32.0	37.9	91.8	53.9	
Hori.	541.7	43.5	17.8	11.3	32.0	40.7	91.8	51.1	
Hori.	568.5	54.9	18.2	11.5	32.0	52.7	91.8	39.1	
Hori.	928.0	45.6	22.0	13.1	0.0	80.7	91.8	11.1	
Hori.	1844.0	52.5	25.4	5.7	33.0	50.6	91.8	41.2	
Vert.	922.0	84.6	22.1	13.1	0.0	119.8	-	-	Carrier
Vert.	208.3	59.5	11.4	9.0	32.0	48.0	89.8	41.8	
Vert.	291.7	50.2	13.5	9.7	32.0	41.5	89.8	48.3	
Vert.	356.2	48.7	15.1	10.2	32.0	42.0	89.8	47.7	
Vert.	541.7	46.2	17.8	11.3	32.0	43.4	89.8	46.4	
Vert.	568.5	60.3	18.2	11.5	32.0	58.1	89.8	31.7	
Vert.	928.0	43.5	22.0	13.1	0.0	78.6	89.8	11.2	
Vert.	1844.0	50.7	25.4	5.7	33.0	48.8	89.8	41.0	

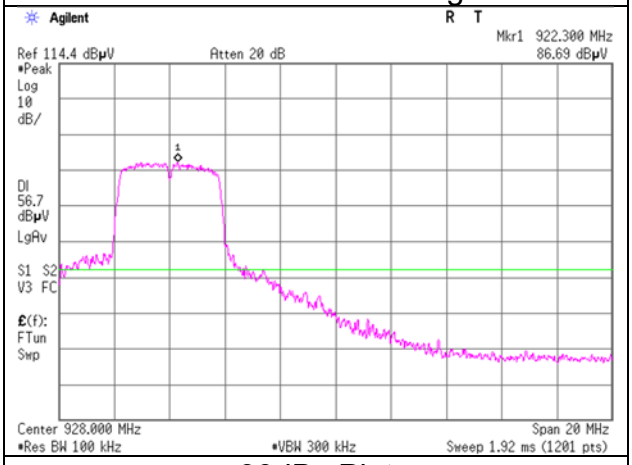
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH
Engineer	Takumi Nishida
	(Below 1 GHz)
Mode	Tx 922.0 MHz (Channel Bandwidth 4 MHz)

Horizontal

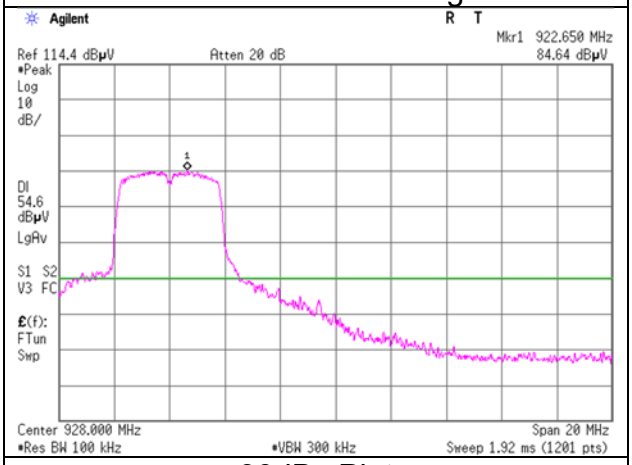
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	January 9, 2024
Temperature / Humidity	22 deg. C / 34 % RH
Engineer	Takeshi Hiyaji
Mode	Tx 908.0 MHz (Channel Bandwidth 8 MHz)

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	51.6	31.8	-	10.6	7.3	32.1	-	17.6	-	40.0	-	22.4	-	
Hori.	86.1	36.8	-	7.9	7.7	32.1	-	20.3	-	40.0	-	19.7	-	
Hori.	125.0	44.7	-	13.4	8.1	32.0	-	34.1	-	43.5	-	9.4	-	
Hori.	166.7	43.7	-	15.7	8.4	32.0	-	35.8	-	43.5	-	7.7	-	
Hori.	250.0	52.0	-	11.8	9.2	32.0	-	41.0	-	46.0	-	5.0	-	
Hori.	333.3	45.5	-	14.7	9.7	32.0	-	37.9	-	46.0	-	8.1	-	
Hori.	960.0	36.4	-	22.3	12.5	30.8	-	40.4	-	46.0	-	5.6	-	
Hori.	1816.0	49.4	36.7	25.3	5.7	32.5	2.3	47.9	37.5	73.9	53.9	26.0	16.4	
Hori.	2724.0	41.3	32.3	28.2	5.7	31.6	2.3	43.6	36.9	73.9	53.9	30.3	17.0	
Hori.	3632.0	40.5	32.7	29.0	6.5	31.2	2.3	44.8	39.3	73.9	53.9	29.1	14.6	
Hori.	4540.0	40.5	32.1	30.7	6.5	30.9	2.3	46.7	40.6	73.9	53.9	27.2	13.3	
Hori.	5448.0	41.1	31.7	31.9	6.6	30.9	2.3	48.7	41.7	73.9	53.9	25.2	12.3	
Hori.	6356.0	41.0	32.2	33.9	7.0	31.4	2.3	50.4	44.0	73.9	53.9	23.5	9.9	
Hori.	7264.0	41.1	33.5	36.5	7.1	32.1	2.3	52.6	47.3	73.9	53.9	21.3	6.6	
Hori.	8172.0	41.9	33.5	36.9	7.3	32.4	2.3	53.7	47.7	73.9	53.9	20.2	6.2	
Hori.	9080.0	41.9	33.1	37.2	7.5	32.0	2.3	54.6	48.1	73.9	53.9	19.3	5.8	
Vert.	51.6	41.2	-	10.6	7.3	32.1	-	27.0	-	40.0	-	13.0	-	
Vert.	86.1	49.3	-	7.9	7.7	32.1	-	32.9	-	40.0	-	7.2	-	
Vert.	125.0	45.5	-	13.4	8.1	32.0	-	34.9	-	43.5	-	8.6	-	
Vert.	166.7	44.0	-	15.7	8.4	32.0	-	36.1	-	43.5	-	7.4	-	
Vert.	250.0	48.1	-	11.8	9.2	32.0	-	37.0	-	46.0	-	9.0	-	
Vert.	333.3	43.9	-	14.7	9.7	32.0	-	36.3	-	46.0	-	9.7	-	
Vert.	960.0	35.7	-	22.3	12.5	30.8	-	39.8	-	46.0	-	6.2	-	
Vert.	1816.0	43.7	36.2	25.3	5.7	32.5	2.3	42.2	37.0	73.9	53.9	31.7	16.9	
Vert.	2724.0	42.6	33.9	28.2	5.7	31.6	2.3	44.9	38.5	73.9	53.9	29.0	15.4	
Vert.	3632.0	39.1	32.6	29.0	6.5	31.2	2.3	43.4	39.2	73.9	53.9	30.5	14.7	
Vert.	4540.0	40.9	32.2	30.7	6.5	30.9	2.3	47.1	40.8	73.9	53.9	26.8	13.1	
Vert.	5448.0	39.6	31.5	31.9	6.6	30.9	2.3	47.2	41.4	73.9	53.9	26.7	12.5	
Vert.	6356.0	40.6	32.4	33.9	7.0	31.4	2.3	50.0	44.1	73.9	53.9	23.9	9.8	
Vert.	7264.0	41.1	33.8	36.5	7.1	32.1	2.3	52.6	47.7	73.9	53.9	21.3	6.2	
Vert.	8172.0	41.4	33.3	36.9	7.3	32.4	2.3	53.2	47.5	73.9	53.9	20.7	6.4	
Vert.	9080.0	41.9	33.1	37.2	7.5	32.0	2.3	54.6	48.2	73.9	53.9	19.3	5.7	

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

30dBc Data Sheet

Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	908.0	81.2	22.1	12.3	0.0	115.6	-	-	Carrier
Hori.	208.3	57.2	11.3	8.8	32.0	45.3	85.6	40.3	
Hori.	291.8	57.9	13.6	9.5	32.0	48.9	85.6	36.7	
Hori.	375.0	45.9	15.1	10.0	32.1	38.9	85.6	46.7	
Hori.	541.7	48.6	17.7	11.0	32.2	45.0	85.6	40.6	
Hori.	563.9	48.2	18.1	11.1	32.2	45.2	85.6	40.4	
Hori.	625.0	40.4	19.4	11.4	32.3	38.8	85.6	46.8	
Hori.	901.9	48.2	22.0	12.3	0.0	82.5	85.6	3.1	
Hori.	902.0	47.7	22.0	12.3	0.0	82.0	85.6	3.6	
Vert.	908.0	81.1	22.1	12.3	0.0	115.4	-	-	Carrier
Vert.	208.3	56.0	11.3	8.8	32.0	44.1	85.4	41.3	
Vert.	291.8	59.0	13.6	9.5	32.0	50.1	85.4	35.3	
Vert.	375.0	43.6	15.1	10.0	32.1	36.6	85.4	48.8	
Vert.	541.7	48.2	17.7	11.0	32.2	44.7	85.4	40.7	
Vert.	563.9	43.7	18.1	11.1	32.2	40.7	85.4	44.7	
Vert.	625.0	41.8	19.4	11.4	32.3	40.3	85.4	45.1	
Vert.	901.6	46.9	22.0	12.3	0.0	81.2	85.4	4.2	
Vert.	902.0	47.9	22.0	12.3	0.0	82.2	85.4	3.2	

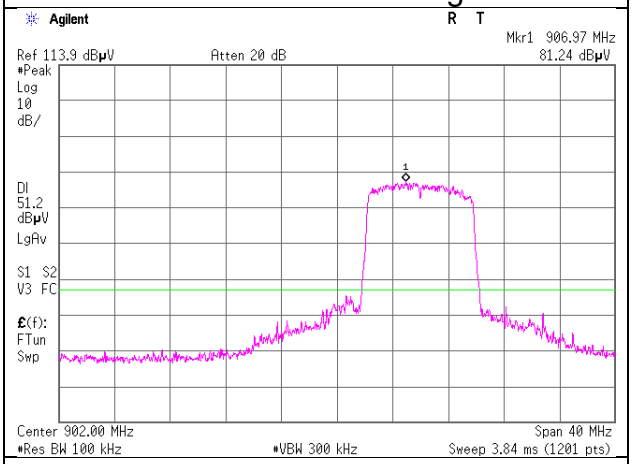
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	January 9, 2024
Temperature / Humidity	22 deg. C / 34 % RH
Engineer	Takeshi Hiyaji
Mode	Tx 908.0 MHz (Channel Bandwidth 8 MHz)

Horizontal

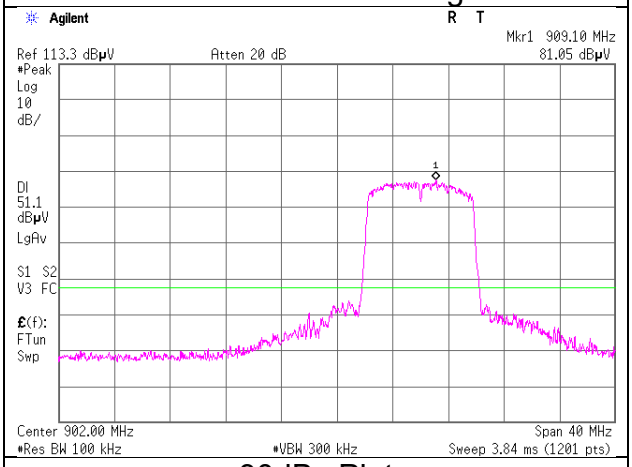
Authorized-band band-edge Plot



30dBc Plot

Vertical

Authorized-band band-edge Plot



30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 15, 2023	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Takumi Nishida	Tetsuro Yoshida
	(Below 1 GHz)	(Above 1 GHz)
Mode	Tx 916.0 MHz (Channel Bandwidth 8 MHz)	

Polarity [Hori/Vert]	Frequency [MHz]	Reading (QP / PK) [dBuV]	Reading (AV) [dBuV]	Ant. Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result (QP / PK) [dBuV/m]	Result (AV) [dBuV/m]	Limit (QP / PK) [dBuV/m]	Limit (AV) [dBuV/m]	Margin (QP / PK) [dB]	Margin (AV) [dB]	Remark
Hori.	250.0	52.3	-	11.6	9.4	32.0	-	41.3	-	46.0	-	4.7	-	
Hori.	960.0	23.1	-	22.2	13.6	30.5	-	28.4	-	46.0	-	17.6	-	
Hori.	2748.0	42.5	33.5	28.3	5.7	32.3	2.3	44.2	37.5	73.9	53.9	29.7	16.4	
Hori.	3664.0	40.2	32.2	29.1	6.6	31.9	-	44.1	36.0	73.9	53.9	29.8	17.9	Floor noise
Hori.	4580.0	38.8	32.0	30.8	6.5	31.5	-	44.5	37.7	73.9	53.9	29.4	16.2	Floor noise
Hori.	5496.0	40.0	32.3	32.0	6.6	31.4	-	47.2	39.5	73.9	53.9	26.7	14.5	Floor noise
Hori.	6412.0	40.5	33.5	34.1	7.0	31.8	-	49.7	42.8	73.9	53.9	24.2	11.1	Floor noise
Hori.	7328.0	42.4	33.7	36.6	7.1	32.4	-	53.8	45.0	73.9	53.9	20.1	8.9	Floor noise
Hori.	8244.0	42.3	33.0	36.6	7.4	32.6	-	53.7	44.4	73.9	53.9	20.2	9.5	Floor noise
Hori.	9160.0	42.3	33.8	37.5	7.6	32.7	-	54.6	46.1	73.9	53.9	19.3	7.8	Floor noise
Vert.	166.7	44.5	-	15.6	8.7	32.1	-	36.7	-	43.5	-	6.8	-	
Vert.	250.0	47.6	-	11.6	9.4	32.0	-	36.6	-	46.0	-	9.4	-	
Vert.	960.0	23.0	-	22.2	13.6	30.5	-	28.3	-	46.0	-	17.7	-	
Vert.	2748.0	43.3	34.0	28.3	5.7	32.3	2.3	45.1	38.0	73.9	53.9	28.9	15.9	
Vert.	3664.0	40.2	31.7	29.1	6.6	31.9	-	44.1	35.5	73.9	53.9	29.9	18.4	Floor noise
Vert.	4580.0	38.5	32.4	30.8	6.5	31.5	-	44.2	38.1	73.9	53.9	29.7	15.8	Floor noise
Vert.	5496.0	40.5	32.4	32.0	6.6	31.4	-	47.7	39.6	73.9	53.9	26.2	14.3	Floor noise
Vert.	6412.0	40.4	32.2	34.1	7.0	31.8	-	49.7	41.5	73.9	53.9	24.2	12.4	Floor noise
Vert.	7328.0	42.3	33.3	36.6	7.1	32.4	-	53.7	44.6	73.9	53.9	20.2	9.3	Floor noise
Vert.	8244.0	42.1	32.9	36.6	7.4	32.6	-	53.5	44.3	73.9	53.9	20.4	9.6	Floor noise
Vert.	9160.0	42.5	33.5	37.5	7.6	32.7	-	54.8	45.8	73.9	53.9	19.1	8.1	Floor noise

Result (QP / PK) = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
Result (AV)= Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).
*QP detector was used up to 1GHz.

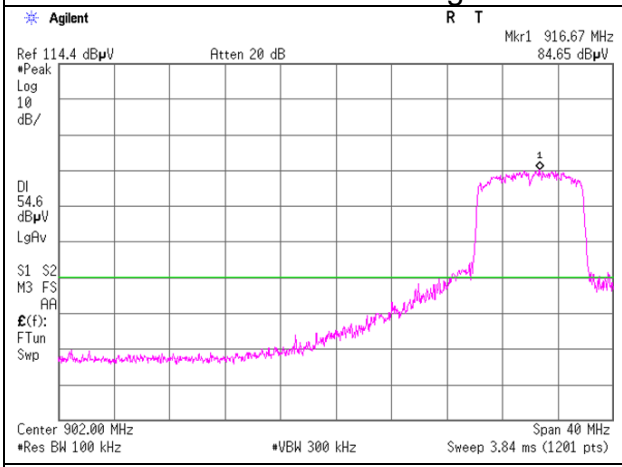
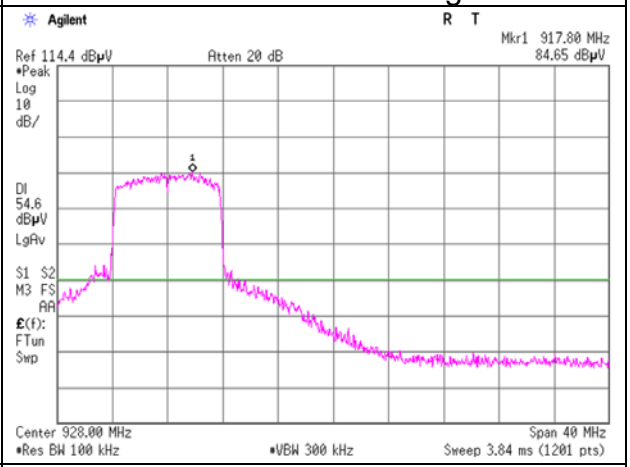
30dBc Data Sheet

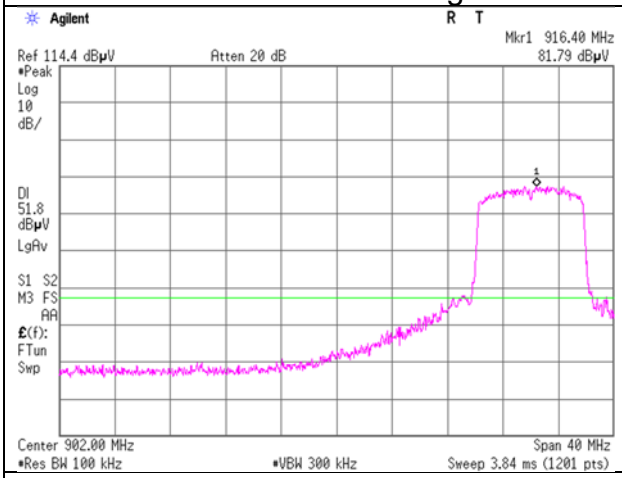
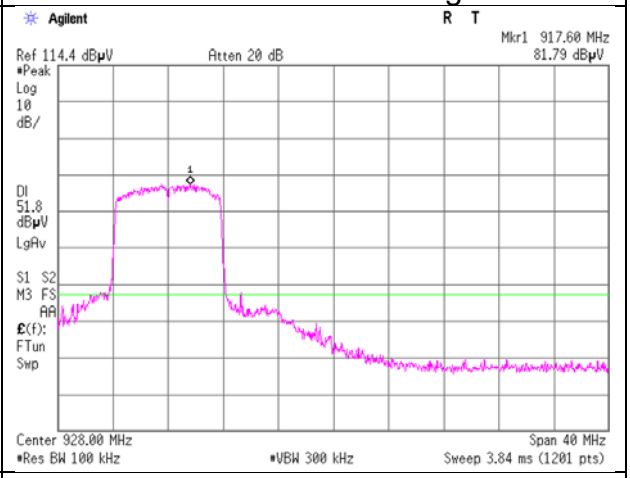
Polarity [Hori/Vert]	Frequency [MHz]	Reading (PK) [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	916.0	84.7	22.2	13.0	0.0	119.8	-	-	Carrier
Hori.	208.3	57.3	11.4	9.0	32.0	45.8	89.8	44.1	
Hori.	291.7	55.7	13.5	9.7	32.0	46.9	89.8	42.9	
Hori.	375.0	44.4	15.0	10.3	32.0	37.8	89.8	52.1	
Hori.	541.7	44.2	17.8	11.3	32.0	41.4	89.8	48.5	
Hori.	568.5	50.2	18.2	11.5	32.0	48.0	89.8	41.9	
Hori.	902.0	42.2	22.2	13.0	0.0	77.4	89.8	12.4	
Hori.	928.0	44.0	22.0	13.1	0.0	79.1	89.8	10.8	
Hori.	1832.0	53.9	25.4	5.7	33.0	51.9	89.8	37.9	
Vert.	916.0	81.8	22.2	13.0	0.0	117.0	-	-	Carrier
Vert.	208.3	59.3	11.4	9.0	32.0	47.8	87.0	39.2	
Vert.	291.7	53.2	13.5	9.7	32.0	44.5	87.0	42.5	
Vert.	541.7	46.5	17.8	11.3	32.0	43.7	87.0	43.3	
Vert.	568.5	45.7	18.2	11.5	32.0	43.4	87.0	43.6	
Vert.	902.0	38.3	22.2	13.0	0.0	73.5	87.0	13.5	
Vert.	928.0	43.5	22.0	13.1	0.0	78.6	87.0	8.4	
Vert.	1832.0	48.7	25.4	5.7	33.0	46.7	87.0	40.3	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amprifier)
*Above noise was synchronized with carrier frequency.
Distance factor: 1 GHz - 10 GHz 20log (3.9 m / 3.0 m) = 2.28 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.3
Date	November 15, 2023
Temperature / Humidity	21 deg. C / 30 % RH
Engineer	Takumi Nishida
	(Below 1 GHz)
Mode	Tx 916.0 MHz (Channel Bandwidth 8 MHz)

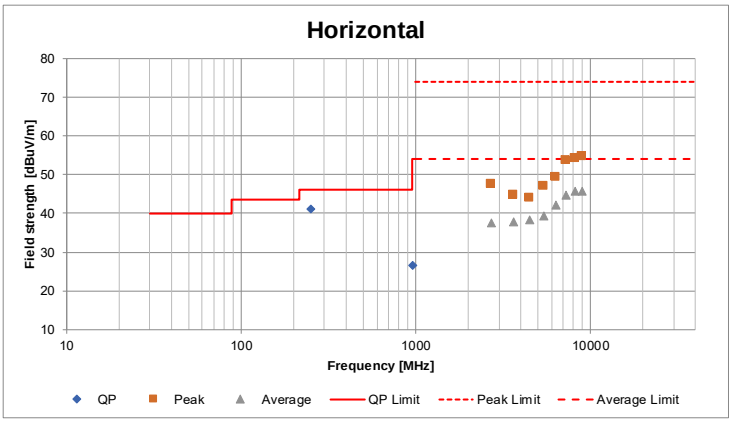
Horizontal	Horizontal
Authorized-band band-edge Plot	Authorized-band band-edge Plot
	
30dBc Plot	30dBc Plot

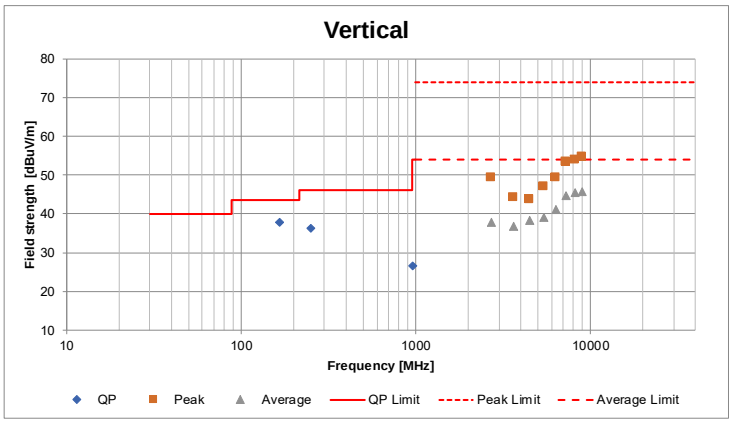
Vertical	Vertical
Authorized-band band-edge Plot	Authorized-band band-edge Plot
	
30dBc Plot	30dBc Plot

* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Radiated Spurious Emission
(Plot data, Worst case mode for Maximum Peak Output Power)

Test place	Ise EMC Lab.	
Semi Anechoic Chamber	No.3	No.3
Date	November 13, 2023	November 14, 2023
Temperature / Humidity	21 deg. C / 30 % RH	21 deg. C / 36 % RH
Engineer	Tetsuro Yoshida	Tetsuro Yoshida
	(Above 1 GHz)	(Below 1 GHz)
Mode	Tx 903.5 MHz (Channel Bandwidth 1 MHz)	



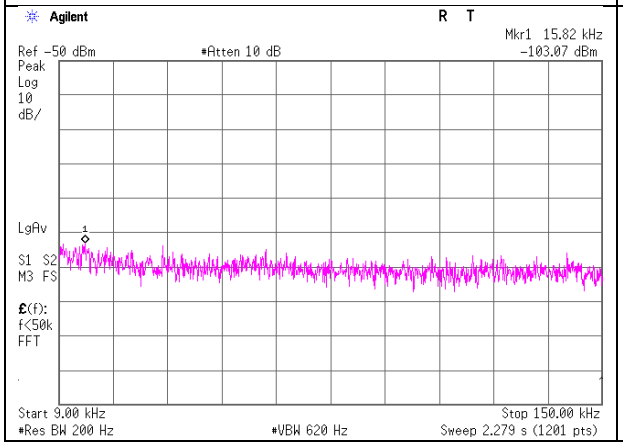


*These plots data contain sufficient number to show the trend of characteristic features for EUT.

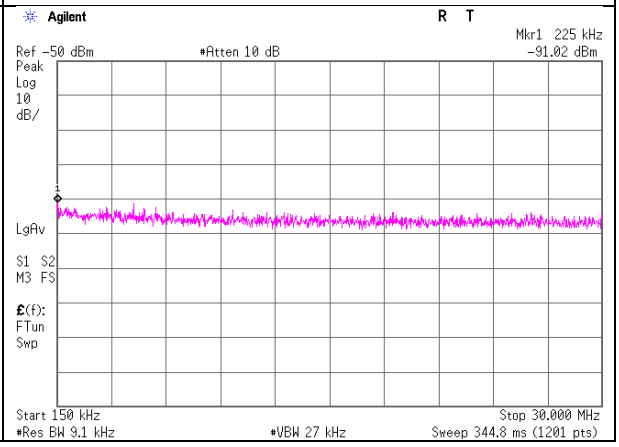
Conducted Spurious Emission

Test place	Ise EMC Lab. No.7 Shielded Room
Date	November 13, 2023
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Shousei Hamaguchi
Mode	Tx 903.5 MHz (Channel Bandwidth 1 MHz)

9 kHz to 150 kHz



150 kHz to 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator Loss [dB]	Antenna Gain [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
15.82	-103.1	0.00	39.4	3.4	1	-60.3	300	6.0	1.0	43.6	42.6	
225.00	-91.0	0.00	39.4	3.4	1	-48.3	300	6.0	13.0	20.5	7.5	

E [dBuV/m] = EIRP [dBm] - 20 log (Distance [m]) + Ground bounce [dB] + 104.8 [dBuV/m]
EIRP[dBm] = Reading [dBm] + Cable loss [dB] + Attenuator Loss [dB] + Antenna gain [dBi] + 10 * log (N)
N: Number of output

Power Density

Test place	Ise EMC Lab. No.8 Measurement Room	
Date	November 10, 2023	January 31, 2024
Temperature / Humidity	24 deg. C / 59 % RH	22 deg. C / 43 % RH
Engineer	Junya Okuno	Tetsuro Yoshida
Mode	Tx	

Channel Bandwidth 1MHz

Freq. [MHz]	Reading [dBm / 3 kHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm / 3 kHz]	Limit [dBm / 3 kHz]	Margin [dB]
903.5	-33.38	0.64	39.67	0.27	7.20	8.00	0.80
915.5	-32.83	0.64	39.68	0.27	***7.76***	8.00	0.24
926.5	-33.72	0.64	39.68	0.27	6.87	8.00	1.13

Channel Bandwidth 2MHz

Freq. [MHz]	Reading [dBm / 3 kHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm / 3 kHz]	Limit [dBm / 3 kHz]	Margin [dB]
905.0	-37.62	0.63	39.65	1.97	4.63	8.00	3.37
915.0	-37.06	0.63	39.65	1.97	***5.19***	8.00	2.81
925.0	-38.06	0.63	39.65	1.97	4.19	8.00	3.81

Channel Bandwidth 4MHz

Freq. [MHz]	Reading [dBm / 3 kHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm / 3 kHz]	Limit [dBm / 3 kHz]	Margin [dB]
910.0	-39.49	0.63	39.65	1.63	***2.42***	8.00	5.58
914.0	-39.71	0.63	39.65	1.63	2.20	8.00	5.80
922.0	-40.49	0.63	39.65	1.63	1.42	8.00	6.58

Channel Bandwidth 8MHz

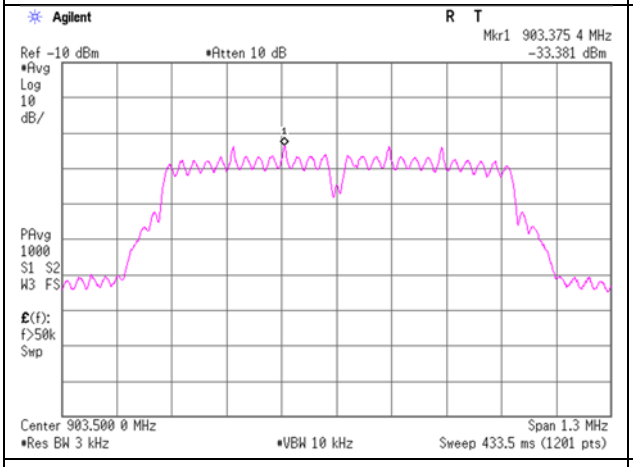
Freq. [MHz]	Reading [dBm / 3 kHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty factor [dB]	Result [dBm / 3 kHz]	Limit [dBm / 3 kHz]	Margin [dB]
908.0	-46.84	0.63	39.65	2.33	-4.23	8.00	12.23
916.0	-42.13	0.63	39.65	2.33	**0.48**	8.00	7.52

Sample Calculation:
Result = Reading + Cable Loss + Attenuator Loss + Duty factor

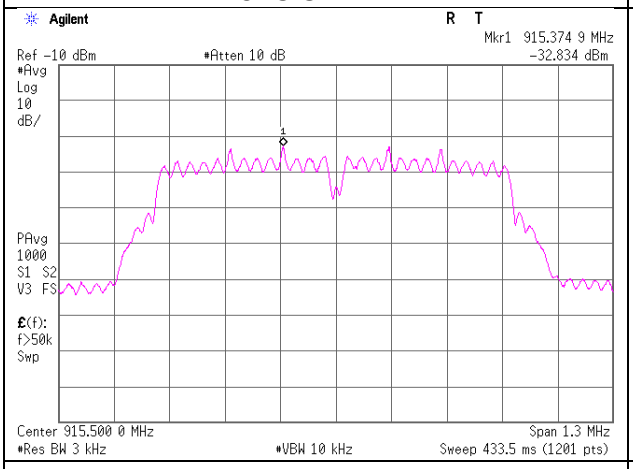
Power Density

Channel Bandwidth 1 MHz

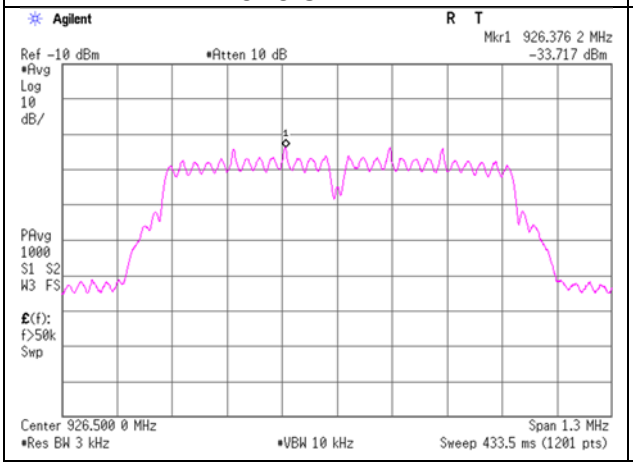
903.5 MHz



915.5 MHz

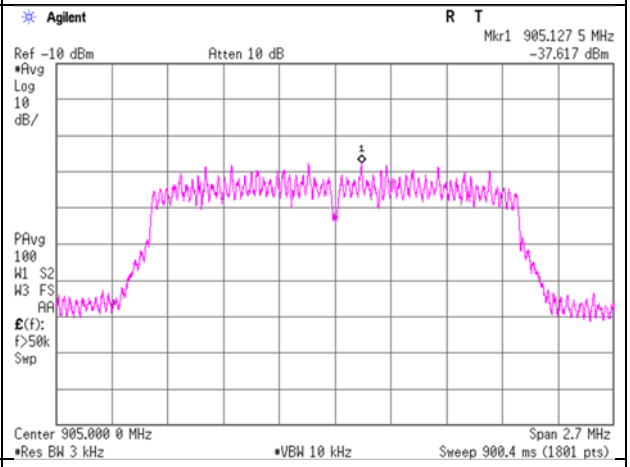


926.5 MHz

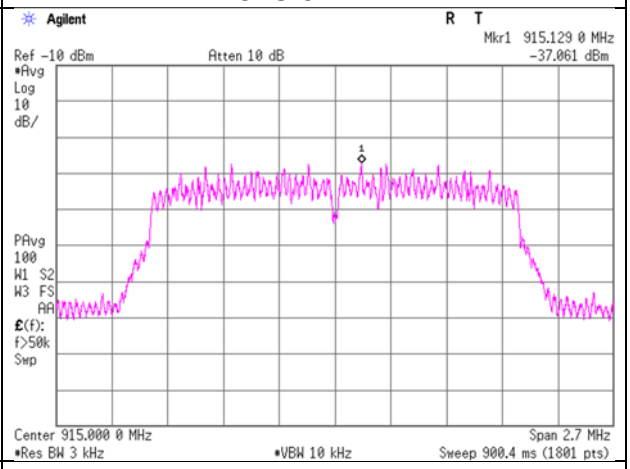


Channel Bandwidth 2 MHz

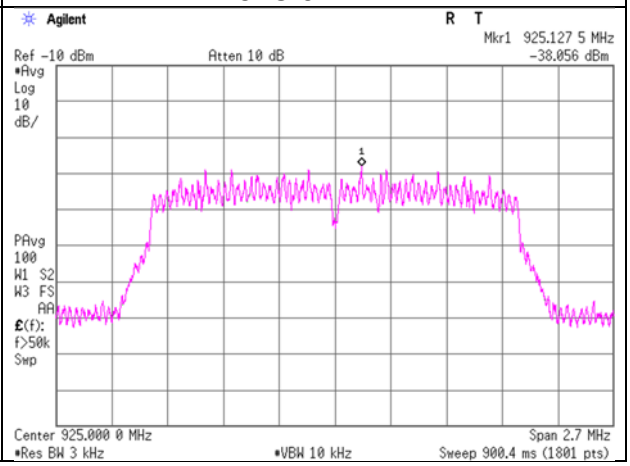
905.0 MHz



915.0 MHz



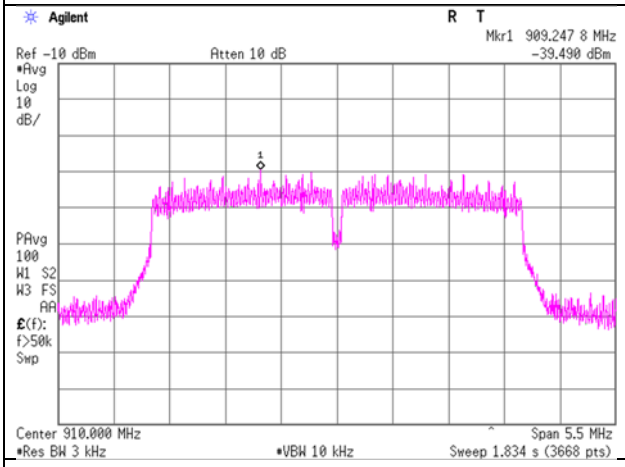
925.0 MHz



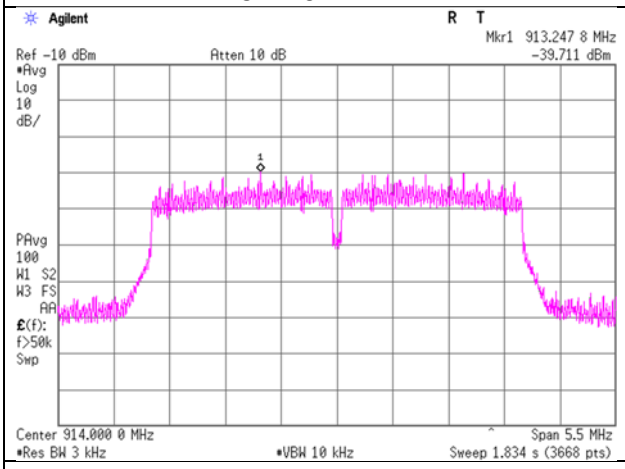
Power Density

Channel Bandwidth 4 MHz

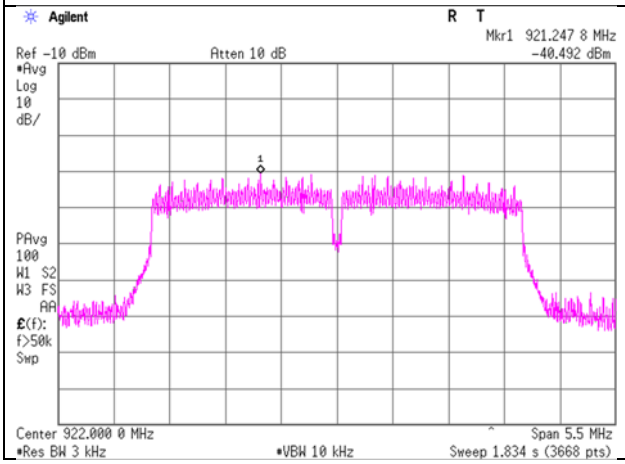
910.0 MHz



914.0 MHz

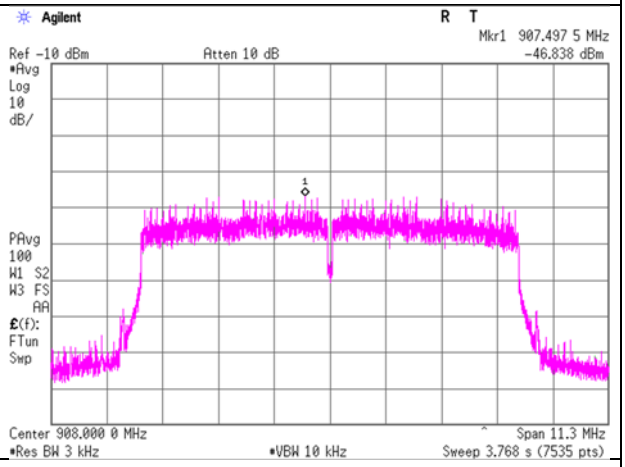


922.0 MHz

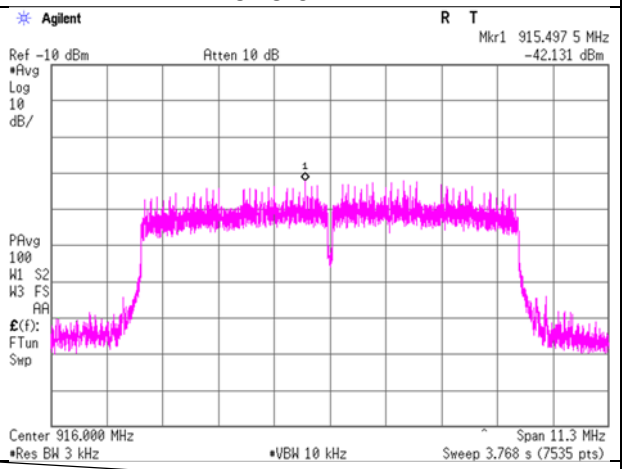


Channel Bandwidth 8 MHz

908.0 MHz



916.0 MHz



APPENDIX 2: Test Instruments

Test Equipment (1/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	141156	Attenuator(10dB)	Weinschel Corp	2	BL1173	11/17/2023	12
AT	141170	Attenuator(40dB)	Weinschel Corp	MODEL 1	BF1940	12/06/2023	12
AT	141171	Attenuator(20dB)_ DC-1GHz_N	Weinschel Corp	MODEL 1	BG0143	12/06/2023	12
AT	141244	Attenuator(10dB)	Weinschel - API Technologies Corp	WA8-10-34	A198	02/01/2023	12
AT	141287	Microwave Cable	RS Pro	R-132G7210200CD	-	02/02/2023	12
AT	141360	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	70900532	01/18/2023	12
AT	141391	Microwave Cable	RS Pro	R-132G7210200CD	-	04/10/2023	12
AT	141557	DIGIITAL HiTESTER	HIOKI E.E. CORPORATION	3805	70900530	01/18/2023	12
AT	141567	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0008	01/13/2023	12
AT	141572	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	3401	01/13/2023	12
AT	141809	Power Meter	Anritsu Corporation	ML2495A	825002	05/26/2023	12
AT	141830	Power sensor	Anritsu Corporation	MA2411B	738285	05/26/2023	12
AT	141885	Spectrum Analyzer	Keysight Technologies Inc	E4448A	US44300523	11/29/2023	12
AT	141901	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY48250080	01/16/2023	12
AT	141978	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY46180899	03/06/2023	12
AT	195231	Microwave Cable	Huber+Suhner	SF102D/11PC24/11PC24/ 1000mm	537062/126E	02/15/2023	12
CE	141216	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM14/ sucoform141-PE/ 421-010/RFM-E321(SW)	-/00640	07/25/2023	12
CE	141357	LISN(AMN)	Schwarzbeck Mess-Elektronik OHG	NSLK8127	8127-729	07/05/2023	12
CE	141532	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	51201197	01/17/2023	12
CE	141554	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	1301	01/13/2023	12
CE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	05/17/2023	12
CE	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	12/11/2023	24
CE	142183	Measure	KOMELON	KMC-36	-	10/20/2023	12
CE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
CE	223864	Attenuator	JFW	50FP-013-H2	1843	11/17/2023	12
RE	141226	Microwave Cable	Junkosha	MMX221-00500DMSDMS	1502S304	03/03/2023	12
RE	141266	Logperiodic Antenna(200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-191	08/10/2023	12
RE	141267	Logperiodic Antenna (200-1000MHz)	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	9111B-192	09/21/2023	12
RE	141323	Coaxial cable	UL Japan	-	-	09/10/2023	12
RE	141331	Attenuator(6dB)	TME	UFA-01	-	02/01/2023	12
RE	141397	Coaxial Cable	UL Japan	-	-	11/22/2023	12
RE	141402	High pass Filter 1.4-5.0GHz	Mini-Circuits	VHF-1320	10411	08/01/2023	12
RE	141403	High Pass Filter 1.22-4.60GHz	Mini-Circuits	VHF-1200	10435	08/02/2023	12
RE	141404	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	05/29/2023	12
RE	141425	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103+BBA9106	VHA 91031302	08/10/2023	12
RE	141427	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHA9103B+BBA9106	08031	07/11/2023	12

Test Equipment (2/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	141507	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	258	11/20/2023	12
RE	141508	Horn Antenna 1-18GHz	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	557	05/17/2023	12
RE	141532	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	51201197	01/17/2023	12
RE	141545	DIGITAL HiTESTER	HIOKI E.E. CORPORATION	3805	51201148	01/18/2023	12
RE	141554	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	1301	01/13/2023	12
RE	141562	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0010	01/13/2023	12
RE	141580	MicroWave System Amplifier	Keysight Technologies Inc	83017A	MY39500779	03/08/2023	12
RE	141581	MicroWave System Amplifier	Keysight Technologies Inc	83017A	00650	10/05/2023	12
RE	141582	Pre Amplifier	SONOMA INSTRUMENT	310	260834	02/07/2023	12
RE	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	04/05/2023	12
RE	141902	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46187105	05/23/2023	12
RE	141903	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186390	01/16/2023	12
RE	141949	Test Receiver	Rohde & Schwarz	ESCI	100767	05/17/2023	12
RE	141951	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	04/10/2023	12
RE	142008	AC3_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	12/11/2023	24
RE	142011	AC4_Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	12/13/2023	24
RE	142013	AC3_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	10/18/2023	12
RE	142017	AC4_Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	10/11/2023	12
RE	142183	Measure	KOMELON	KMC-36	-	10/20/2023	12
RE	142230	Measure, Tape, Steel	KOMELON	KMC-36	-	-	-
RE	142314	Attenuator	Pasternack Enterprises	PE7390-6	D/C 1504	06/23/2023	12
RE	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	192072	Band Rejection Filter(902-928MHz)	Wakoh Communication Industrial Co., Ltd.	WFR-481	19122541	03/07/2023	12
RE	197990	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHBB 9124 + BBA 9106	01365	11/29/2023	12
RE	234602	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000M,5000M	537063/126E / 537074/126E	03/16/2023	12
RE	240023	Microwave Cable	Huber+Suhner	SF126E/11PC35/11PC35/1000MM,5000MM	537060/126E / 537075/126E	09/08/2023	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:

AT: Antenna Terminal Conducted test
CE: Conducted Emission
RE: Radiated Emission