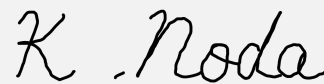


RADIO TEST REPORT

Test Report No. 15655899S-B-R1

Customer	JVCKENWOOD Corporation
Description of EUT	Monitor with receiver
Model Number of EUT	DMX1058XR
FCC ID	IOMJ5304
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	March 11, 2025
Remarks	Bluetooth (BR / EDR) parts

Representative Test EngineerMakoto Hosaka
Engineer**Approved By**Kazuya Noda
Leader

CERTIFICATE 1266.03

- ☐ 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 test results in this test report are traceable to the national or international standards.
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- This test report covers Radio technical requirements.
It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
- The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided by the customer for this report is identified in SECTION 1.
- 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. 15655899S-B

This report is a revised version of 15655899S-B. 15655899S-B is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15655899S-B	February 20, 2025	-
1	15655899S-B-R1	March 11, 2025	P.14 List of Cables Used <For Antenna Terminal Conducted test> No.1 to No.13 From: 0.1 m To: 0.15 m No.13 From: Unshielded To: Shielded

Reference: Abbreviations (Including words undescribed in this report)

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

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SECTION 1: Customer Information

Company Name	JVCKENWOOD Corporation
Address	3-12, Moriya-cho, Kanagawa-ku, Yokohama, Kanagawa, 221-0022 Japan
Telephone Number	+81-45-450-2769
Contact Person	Seigo Tsutsumi

The information provided by the customer is as follows;

- Customer, Description of EUT, Model Number of EUT, FCC ID on the cover and other relevant pages
- Operating/Test Mode(s) (Mode(s)) on all the relevant pages
- SECTION 1: Customer Information
- SECTION 2: Equipment Under Test (EUT) other than the Receipt Date and Test Date
- SECTION 4: Operation of EUT during testing

SECTION 2: Equipment Under Test (EUT)

2.1 Identification of EUT

Description	Monitor with receiver
Model Number	DMX1058XR
Serial Number	Refer to SECTION 4.2
Condition	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	January 15, 2025
Test Date	January 17 to 30, 2025

2.2 Product Description

General Specification

Rating	DC 12 V
Operating temperature	-10 deg. C to +60 deg. C

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.

WLAN (IEEE802.11b/11g/11n-20)

Equipment Type	Transceiver
Frequency of Operation	2412 MHz to 2462 MHz
Type of Modulation	DSSS, OFDM
Antenna Gain ^{a)}	-7.4 dBi

Bluetooth (BR / EDR)

Equipment Type	Transceiver
Frequency of Operation	2402 MHz to 2480 MHz
Type of Modulation	FHSS
Antenna Gain ^{a)}	-16.1 dBi

WLAN (IEEE802.11a/11n-20/11ac-20/11n-40/11ac-40/11ac-80)

Equipment Type	Transceiver	
Frequency of Operation	20 MHz Band	5745 MHz to 5805 MHz
	40 MHz Band	5755 MHz to 5795 MHz
	80 MHz Band	5775 MHz
Type of Modulation	OFDM	
Antenna Gain ^{a)}	ANT0: -9.1 dBi	
	ANT1: -0.8 dBi	

2.3 Valiant models

Model Number	Brand	Difference
DMX1058XR	KENWOOD	Base
DMX1038S	KENWOOD	None Digital Audio output
KW-Z1001W	JVC	Key Volume, None Digital Audio output

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

*The customer has declared that the EUT has complies with FCC Part 15 Subpart B as SDoC.

3.2 Procedures and Results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.10-2013 6. Standard test methods ISED: RSS-Gen 8.8	FCC: Section 15.207 ISED: RSS-Gen 8.8	-	N/A	*1)
Carrier Frequency Separation	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section15.247(a)(1) ISED: RSS-247 5.1 (b)	See data.	Complied	Conducted
20dB Bandwidth	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section15.247(a)(1) ISED: RSS-247 5.1 (a)		Complied	Conducted
Number of Hopping Frequency	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section15.247(a)(1)(iii) ISED: RSS-247 5.1 (d)		Complied	Conducted
Dwell time	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section15.247(a)(1)(iii) ISED: RSS-247 5.1 (d)		Complied	Conducted
Maximum Peak Output Power	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: RSS-Gen 6.12	FCC: Section15.247(b)(1) ISED: RSS-247 5.4 (b)		Complied	Conducted
Spurious Emission & Band Edge Compliance	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: RSS-Gen 6.13	FCC: Section15.247(d) ISED: RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	6.9 dB 442.368 MHz, QP, Horizontal Mode: Tx, DH5 2441 MHz	Complied	Conducted/ Radiated (above 30 MHz) *2)
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) The test is not applicable since the EUT does not have AC Mains. *2) Radiated test was selected over 30 MHz based on section 15.247(d).					

FCC Part 15.31 (e)

This EUT provides the stable voltage constantly to RF Module regardless of input voltage. Instead of a new battery, DC power supply was used for the test. That does not affect the test result, therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.3 Addition to Standard

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
99% 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 $k = 2$.

Item	Frequency range	Uncertainty (+/-)
Conducted Emission (AC Mains) LISN	150 kHz to 30 MHz	3.0 dB
Radiated Emission (Measurement distance: 3 m)	9 kHz to 30 MHz	3.3 dB
	30 MHz to 200 MHz	4.8 dB
	200 MHz to 1 GHz	6.1 dB
	1 GHz to 6 GHz	4.7 dB
	6 GHz to 18 GHz	5.3 dB
	18 GHz to 40 GHz	5.5 dB
Radiated Emission (Measurement distance: 1 m)	1 GHz to 18 GHz	5.6 dB
	18 GHz to 40 GHz	5.8 dB

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)	1.3 dB
Power Measurement above 1 GHz (Peak Detector)	1.5 dB
Spurious Emission (Conducted) below 1 GHz	0.93 dB
Conducted Emissions Power Density Measurement 1 GHz to 3 GHz	0.93 dB
Conducted Emissions Power Density Measurement 3 GHz to 18 GHz	3.0 dB
Spurious Emission (Conducted) 18 GHz to 26.5 GHz	2.8 dB
Spurious Emission (Conducted) 26.5 GHz to 40 GHz	2.3 dB
Bandwidth Measurement	0.012 %
Duty Cycle and Time Measurement	0.27 %
Temperature	2.2 deg.C.
Humidity	3.4 %
Voltage	0.92 %

3.5 Test Location

UL Japan, Inc. Shonan EMC Lab.

1-22-3, Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 Japan

Telephone: +81-463-50-6400

A2LA Certificate Number: 1266.03

(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test room	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber (SAC1)	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber (SAC2)	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber (SAC3)	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber (SAC4)	8.1 x 5.1 x 3.55	8.1 x 5.1	-
Wireless anechoic chamber 1 (WAC1)	9.5 x 6.0 x 5.4	9.5 x 6.0	3 m
Wireless anechoic chamber 2 (WAC2)	9.5 x 6.0 x 5.4	9.5 x 6.0	3 m
No.1 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 Shielded room	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	2.55 x 4.1 x 2.5	-	-
No.2 Measurement room	4.5 x 3.5 x 2.5	-	-
Wireless shielded room 1	3.0 x 4.5 x 2.7	3.0 x 4.5	-
Wireless shielded room 2	3.0 x 4.5 x 2.7	3.0 x 4.5	-

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)

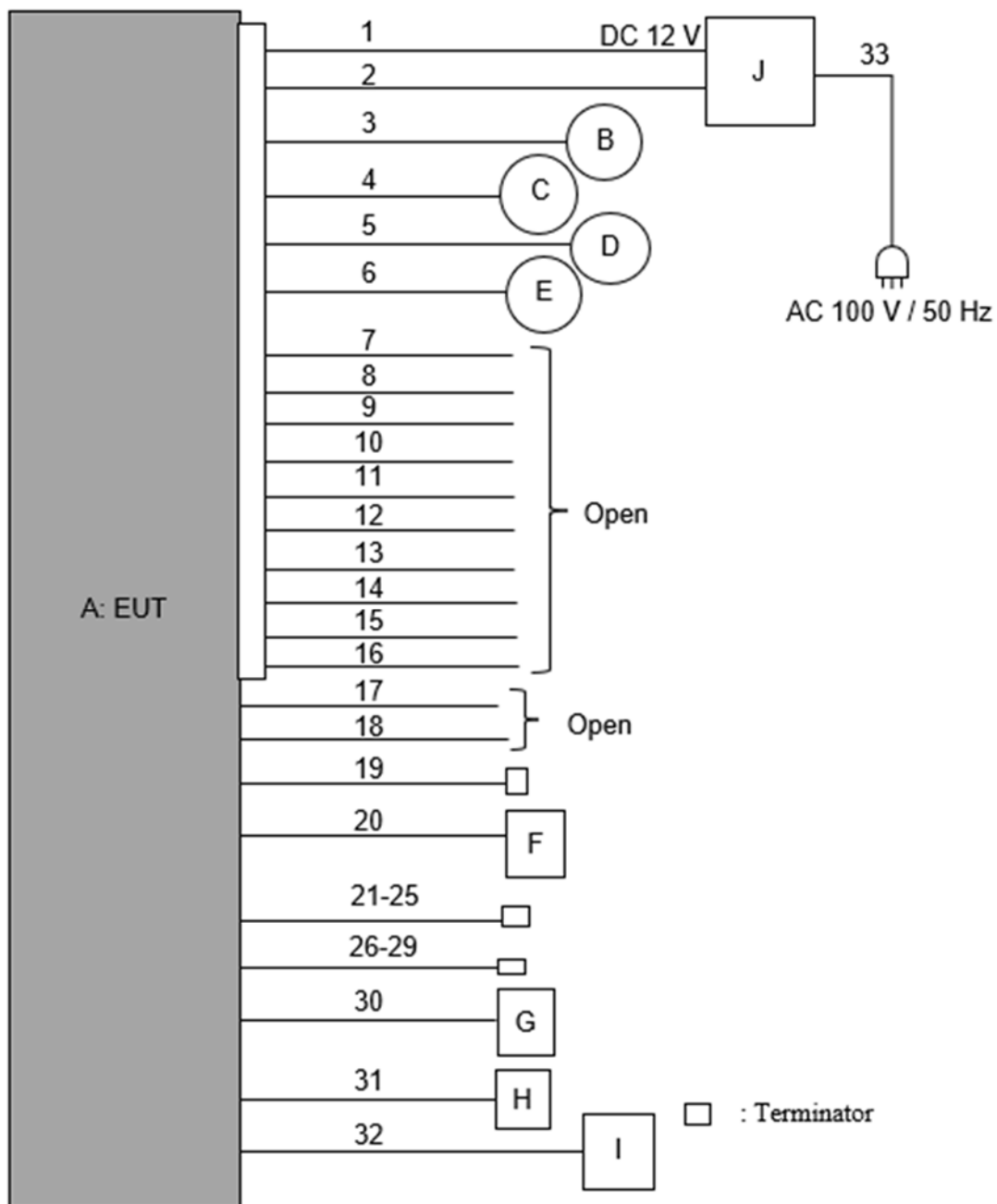
Mode	Remarks*
Bluetooth (BT)	BR / EDR, Payload: PRBS9
*EUT has the power settings by the software as follows; Power Setting: Fixed Software: SoC : Version 0.0.1306.3200 System : Version 0.0.0059.4000 Panel : Version 0.0.0079.4000 (Date: 2025.01.16, Storage location: EUT memory) *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.	

Details of Operating Mode(s)

Test Item	Mode	Hopping	Tested Frequency
Radiated Spurious Emission (Below 1 GHz)	Tx DH5 *1)	Off	2441 MHz
Radiated Spurious Emission (Above 1 GHz), Conducted Spurious Emission	Tx DH5 Tx 3DH5	Off	2402 MHz 2441 MHz 2480 MHz
Radiated Spurious Emission	Tx 3DH5 with 11ac-80 5775 MHz	Off	2402 MHz
Carrier Frequency Separation	Tx DH5 Tx 3DH5	On	2402 MHz 2441 MHz 2480 MHz
20dB Bandwidth	Tx DH5 Tx 3DH5	Off	2402 MHz 2441 MHz 2480 MHz
Number of Hopping Frequency	Tx DH5 Tx 3DH5	On	-
Dwell time	Tx DH1, DH3, DH5 Tx 3DH1, 3DH3, 3DH5	On	-
Maximum Peak Output Power	Tx DH5 Tx 2DH5 Tx 3DH5	Off	2402 MHz 2441 MHz 2480 MHz
Band Edge Compliance (Conducted)	Tx DH5 Tx 3DH5	On ----- Off	2402 MHz 2480 MHz
99% Occupied Bandwidth	Tx DH5 Tx 3DH5	On ----- Off	2402 MHz 2441 MHz 2480 MHz
*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload length (except Dwell time test) *2DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3DH mode (3 Mb/s EDR: 8DPSK) as a representative. *It is considered that the non-tested packet type (e.g. inquiry) can be omitted as it is complied with above all the test items based on Bluetooth Core specification.			
*1) Spurious emissions for frequencies below 1 GHz were limited to the channel that had the highest power during the antenna terminal test, as preliminary testing indicated that changing the operating frequency had no significant impact on the emissions in those frequency bands.			

4.2 Configuration and Peripherals

<For Radiated Emission test>



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

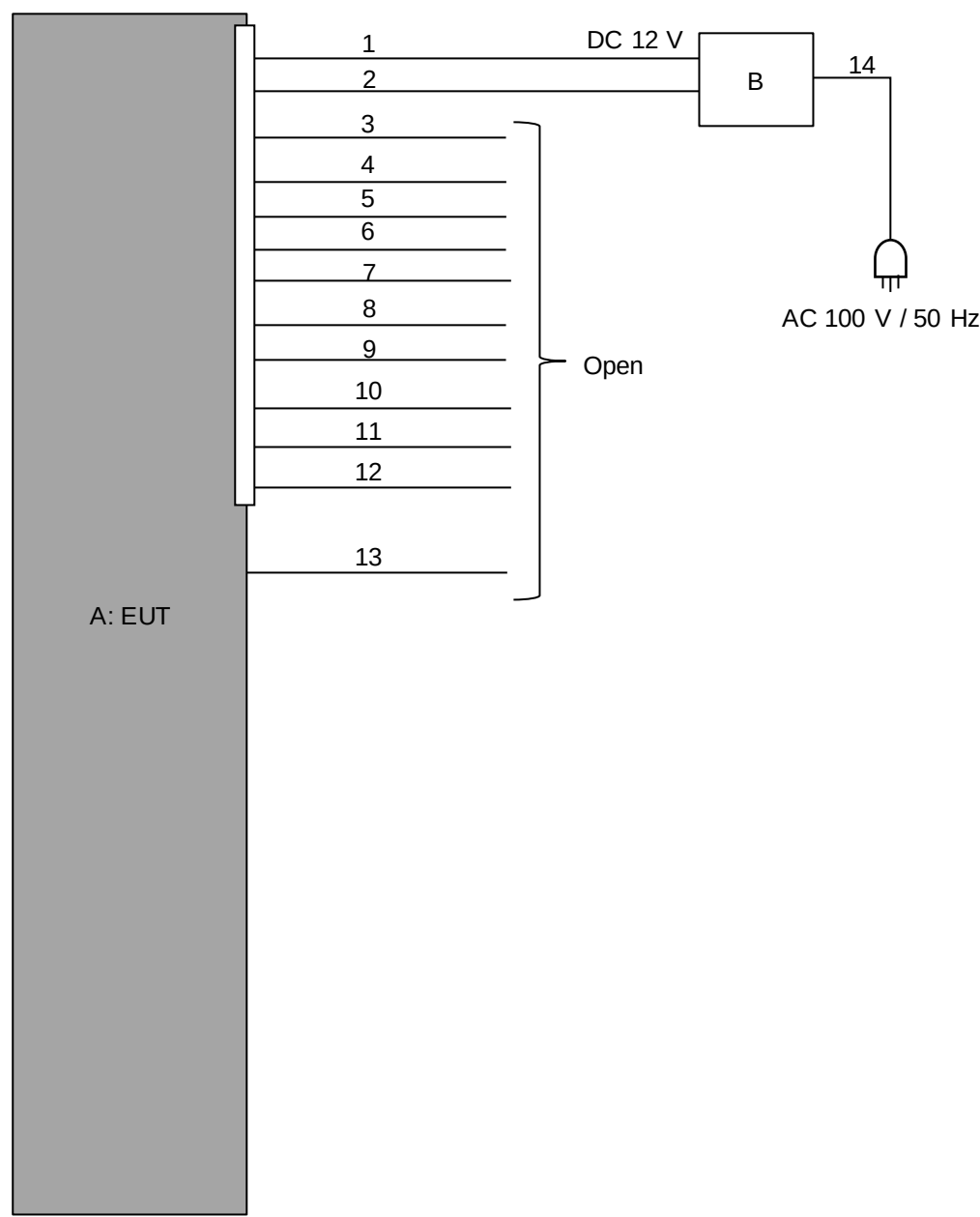
Description of EUT and Support Equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Monitor with Receiver	DMX1058XR	PK-X0014	JVCKENWOOD	EUT
B	Speaker(car)	LV-002	S11014200775	L&V	-
C	Speaker(car)	LV-002	S11014200775	L&V	-
D	Speaker(car)	LV-002	S11014200773	L&V	-
E	Speaker(car)	LV-002	S11014200773	L&V	-
F	Microphone	GD-VHM421C	-	JVCKENWOOD	-
G	GPS ANTENNA	GPA-GS211	-	JVCKENWOOD	-
H	USB Memory	SDCZ810 383	BN22120037344	SanDisk	-
I	iPhone	MQ792J/A	C8PY95XLJC6H	APPLE INC.	-
J	Power Supply (DC)	PAN35-10A	CY003459	Kikusui Electronics Corp.	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC (ACC, B+)	0.2 + 1.4	Unshielded	Unshielded	-
2	DC (GND)	0.2 + 1.4	Unshielded	Unshielded	-
3	Speaker (Front-L) +/-	0.15 + 1.6 + 2.8	Unshielded	Unshielded	-
4	Speaker (Front-R) +/-	0.15 + 1.6 + 2.8	Unshielded	Unshielded	-
5	Speaker (Rear-L) +/-	0.15 + 1.6 + 2.8	Unshielded	Unshielded	-
6	Speaker (Rear-R) +/-	0.15 + 1.6 + 2.8	Unshielded	Unshielded	-
7	ILLUMI	0.15 + 0.9	Unshielded	Unshielded	-
8	ANT Cont	0.15 + 0.9	Unshielded	Unshielded	-
9	P.CONT	0.15 + 0.9	Unshielded	Unshielded	-
10	REMOTE Cont	0.15 + 0.9	Unshielded	Unshielded	-
11	PRK SW	2.0	Unshielded	Unshielded	-
12	REVERSE	2.0	Unshielded	Unshielded	-
13	CAM+	0.15 + 0.9	Unshielded	Unshielded	-
14	CAM-	0.15 + 0.9	Unshielded	Unshielded	-
15	MUTE	0.15 + 0.9	Unshielded	Unshielded	-
16	S.SENS	2.0	Unshielded	Unshielded	-
17	SXM IF	1.0	Shielded	Shielded	-
18	IF	1.0	Unshielded	Unshielded	-
19	FM/AM	0.15 + 1.8	Shielded	Shielded	-
20	Mic	3.0	Unshielded	Unshielded	-
21	Front View Camera	0.15 + 2.1	Shielded	Shielded	-
22	Rear View Camera	0.15 + 1.5	Shielded	Shielded	-
23	3rd View Camera	0.15 + 3.6	Shielded	Shielded	-
24	VIDEO IN	0.15 + 3.6	Shielded	Shielded	-
25	VIDEO OUT	0.2 + 3.6	Shielded	Shielded	-
26	AUDIO IN	0.2 + 3.5	Shielded	Shielded	-
27	AUDIO OUT Front	0.3 + 3.6	Shielded	Shielded	-
28	AUDIO OUT Rear	0.3 + 1.5	Shielded	Shielded	-
29	AUDIO OUT Subwoofer	0.3 + 1.5	Shielded	Shielded	-
30	GPS	3.4	Shielded	Shielded	-
31	USB	1.0	Shielded	Shielded	-
32	HDMI	1.7	Shielded	Shielded	-
33	AC	2.0	Unshielded	Unshielded	-

<For Antenna Terminal Conducted test>



Description of EUT and Support Equipment

No.	Item	Model number	Serial number	Manufacturer	Remark
A	Monitor with Receiver	DMX1058XR	PK-X0024	JVCKENWOOD	EUT
B	Power Supply (DC)	PNA16-10A	ER001077	Kikusui Electronics Corp.	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC (ACC, B+)	0.15+0.5	Unshielded	Unshielded	-
2	DC (GND)	0.15+0.5	Unshielded	Unshielded	-
3	Speaker (Front-L) +/-	0.15	Unshielded	Unshielded	-
4	Speaker (Front-R) +/-	0.15	Unshielded	Unshielded	-
5	Speaker (Rear-L) +/-	0.15	Unshielded	Unshielded	-
6	Speaker (Rear-R) +/-	0.15	Unshielded	Unshielded	-
7	ILLUMI	0.15	Unshielded	Unshielded	-
8	ANT Cont	0.15	Unshielded	Unshielded	-
9	Mute	0.15	Unshielded	Unshielded	-
10	REMOTE Cont	0.15	Unshielded	Unshielded	-
11	Reverse	0.15	Unshielded	Unshielded	-
12	P.Cont	0.15	Unshielded	Unshielded	-
13	FM/AM	0.15	Shielded	Shielded	-
14	AC	2.0	Unshielded	Unshielded	-

SECTION 5: Radiated Spurious Emission

Test Procedure

[For below 1 GHz]

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[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

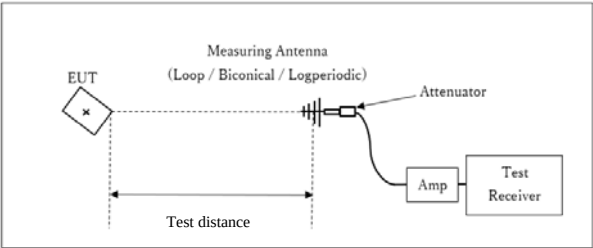
In any 100 kHz bandwidth outside the restricted band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

20 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		20 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	RBW: 1 MHz VBW: 1/T (T: burst length, refer to Burst rate confirmation sheet) Detector: Peak	RBW: 100 kHz VBW: 300 kHz

Figure 2: Test Setup

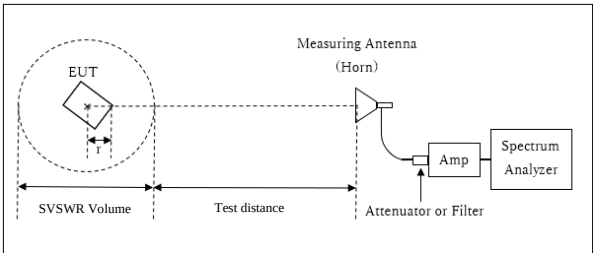
Below 1 GHz



x : Center of turn table

Test Distance: 3 m

1 GHz to 10 GHz

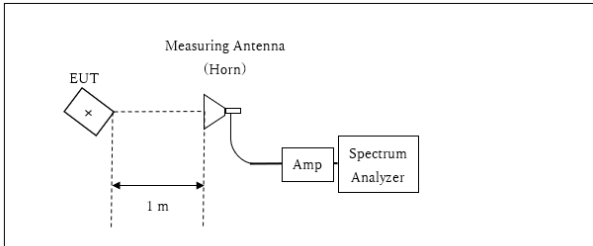


r : Radius of an outer periphery of EUT
x : Center of turn table

Distance Factor: $20 \times \log (3.86 \text{ m}^* / 3.0 \text{ m}) = 2.19 \text{ dB}$
*(Test Distance + SVSWR Volume / 2) - r = 3.86 m

Test Distance: 3 m
SVSWR Volume: 2 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r: 0.14 m

10 GHz to 26.5 GHz



x : Center of turn table

Distance Factor: $20 \times \log (1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$
*Test Distance: 1 m

The carrier level and noise levels were confirmed at each position of 0 deg. and 40 deg. of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Antenna polarization	Carrier	Spurious (30 MHz - 1 GHz)	Spurious (1 GHz - 2.8 GHz)	Spurious (2.8 GHz - 10 GHz)	Spurious (10 GHz - 18 GHz)	Spurious (18 GHz - 26.5 GHz)
Horizontal	0 deg.	0 deg.	40 deg.	40 deg.	0 deg.	0 deg.
Vertical	0 deg.	0 deg.	40 deg.	40 deg.	0 deg.	0 deg.

Test results are rounded off and limit are rounded down, so some differences might be observed.

Measurement Range : 30 MHz to 26.5 GHz
Test Data : APPENDIX
Test Result : Pass

SECTION 6: 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
20 dB Bandwidth	3 MHz	30 kHz	100 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 *1)	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak/Average *2)	-	Power Meter (Sensor: 160 MHz BW)
Carrier Frequency Separation	3 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Dwell Time	Zero Span	100 kHz, 1 MHz	300 kHz, 3 MHz	As necessary capture the entire dwell time per hopping channel	Peak	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *3) *4)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				
	30 MHz to 25 GHz	100 kHz	300 kHz				
Conducted Spurious Emission Band Edge compliance	10 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer

*1) The measurement was performed with Max Hold since the duty cycle was not 100 %. Peak hold was applied as Worst-case measurement.

*2) Reference data

*3) 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 = 10 kHz) *4) The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to 45.5 – 51.5 = -6.0 dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

Test results are rounded off and limit are rounded down, 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

20dB Bandwidth, 99%Occupied Bandwidth and Carrier Frequency Separation

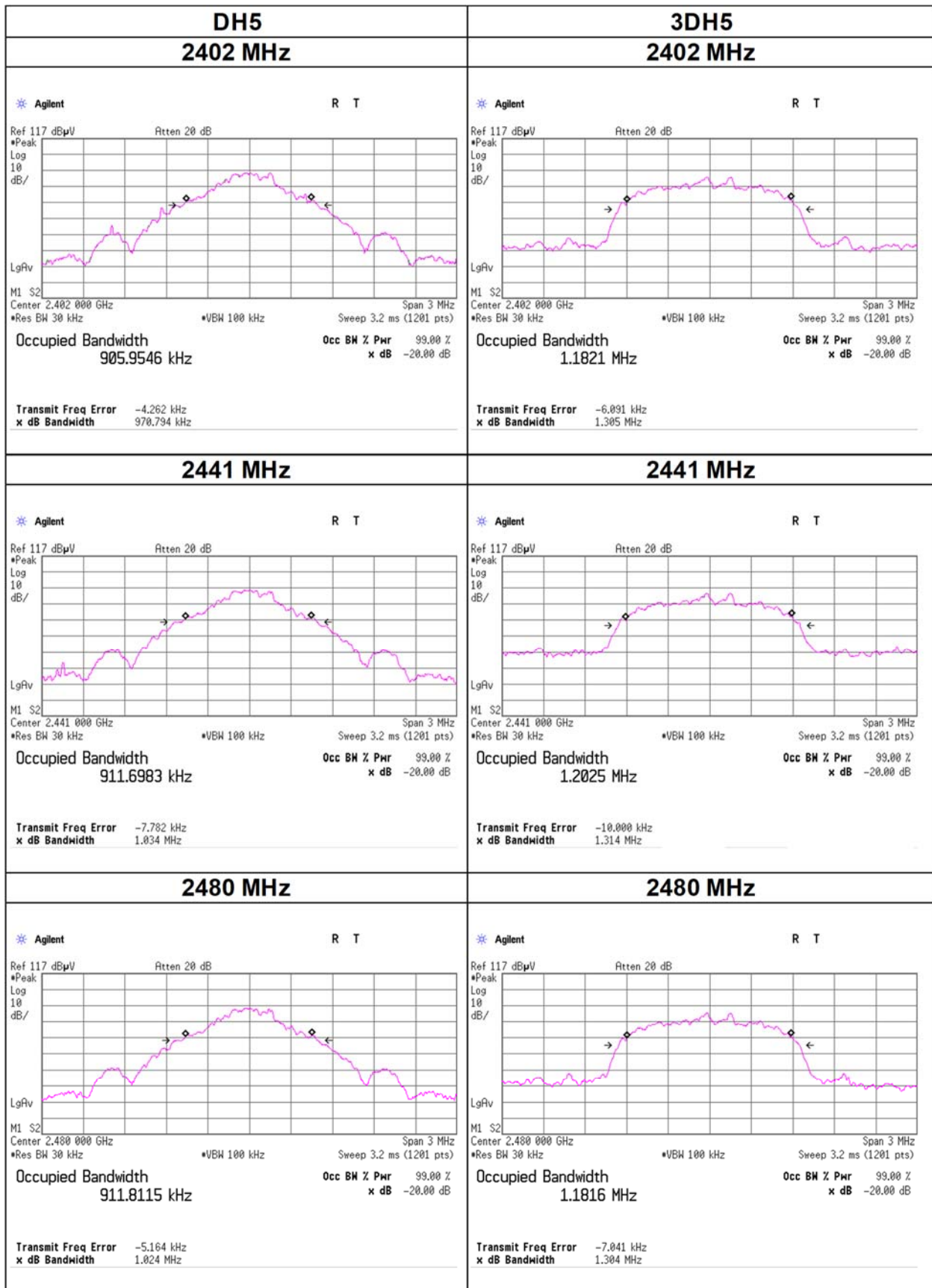
Test place	Shonan EMC Lab. No.5Shielded Room
Date	January 19, 2025
Temperature / Humidity	17 deg. C / 31 % RH
Engineer	Yohsuke Matsuzawa
Mode	Tx, Hopping Off, Tx, Hopping On

Mode	Freq. [MHz]	20 dB Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.971	906.0	1.018	>= 0.647
DH5	2441.0	1.034	911.7	1.010	>= 0.689
DH5	2480.0	1.024	911.8	1.008	>= 0.683
DH5	Hopping On	-	78576.6	-	-
3DH5	2402.0	1.305	1182.1	1.000	>= 0.870
3DH5	2441.0	1.314	1202.5	1.000	>= 0.876
3DH5	2480.0	1.304	1181.6	1.005	>= 0.869
3DH5	Hopping On	-	78624.3	-	-

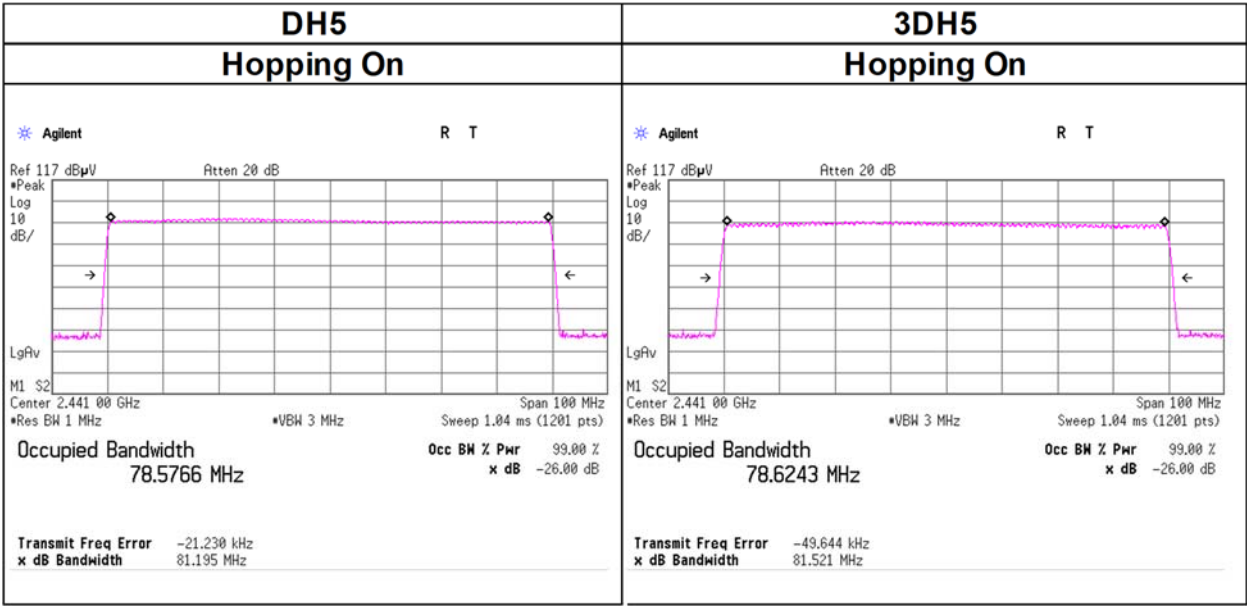
Limit: Two-thirds of 20 dB Bandwidth or 25 kHz (whichever is greater).

No limit applies to 20 dB Bandwidth.

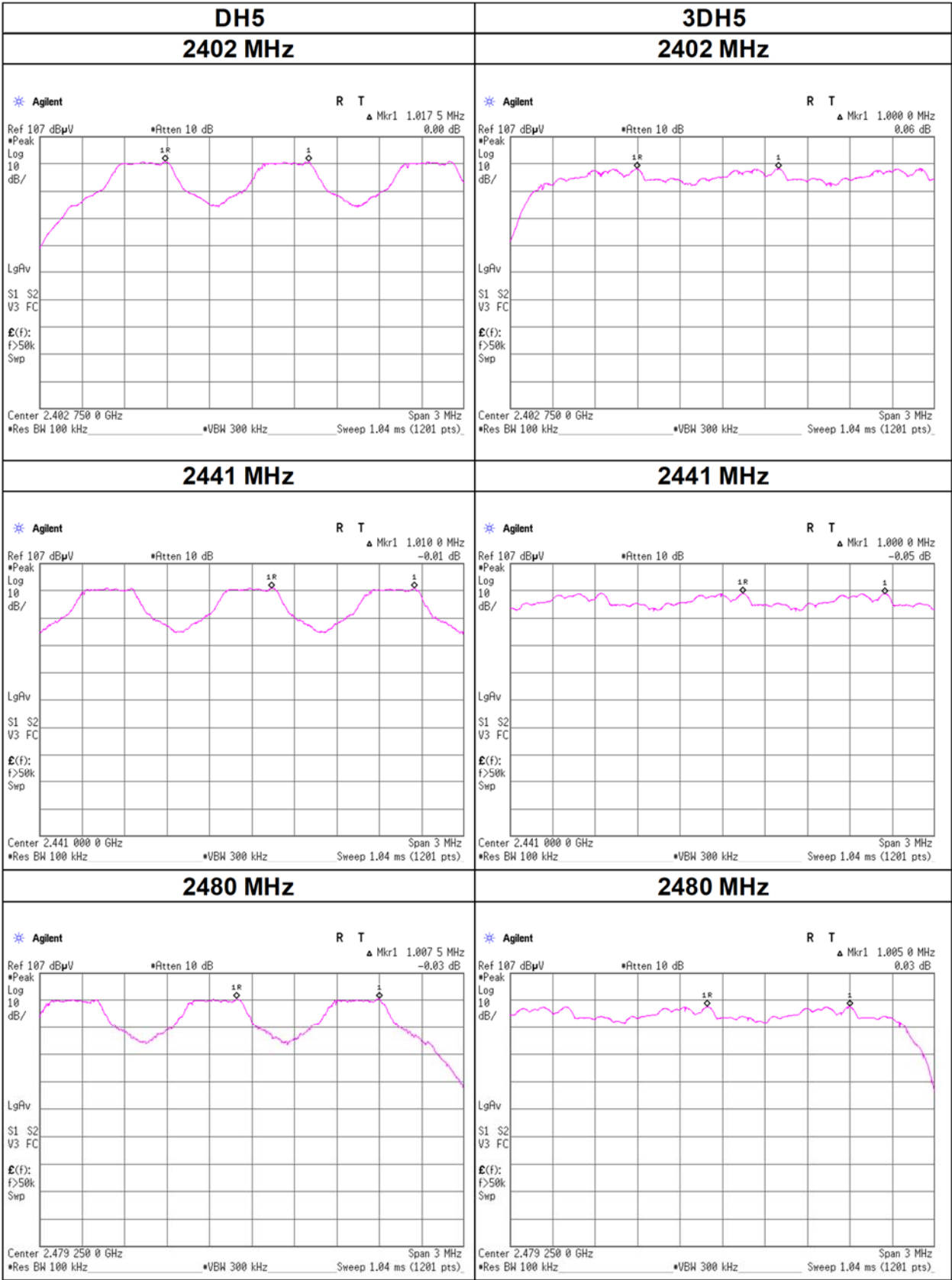
20dB Bandwidth and 99% Occupied Bandwidth



20dB Bandwidth and 99% Occupied Bandwidth



Carrier Frequency Separation



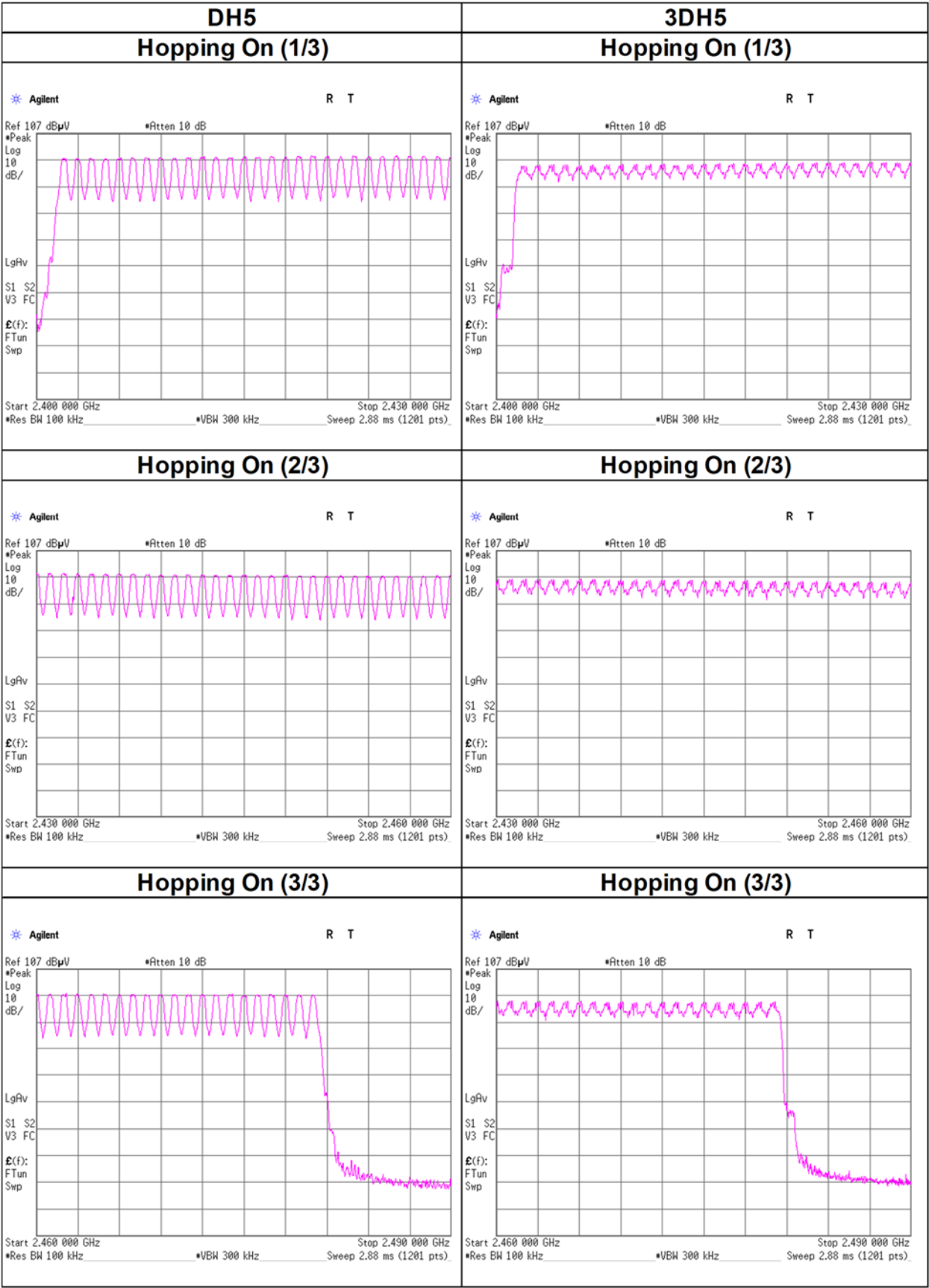
Number of Hopping Frequency

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping On

Mode	Number of channel [channels]	Limit [channels]
DH5	79	>= 15
3DH5	79	>= 15

Test was not performed at AFH mode whose number of hopping channel is
20 channels because this Bluetooth radio is in compliance of Bluetooth Specification.

Number of Hopping Frequency



Dwell time

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping On

Mode	Number of transmission in a 31.6 (79 Hopping x 0.4)				Length of transmission [ms]	Result [ms]	Limit [ms]
DH1	51.0 times	/	5 s	x 31.6 s = 323 times	0.401	129	400
DH3	26.8 times	/	5 s	x 31.6 s = 170 times	1.659	282	400
DH5	16.6 times	/	5 s	x 31.6 s = 105 times	2.905	305	400
3DH1	50.6 times	/	5 s	x 31.6 s = 320 times	0.407	130	400
3DH3	27.0 times	/	5 s	x 31.6 s = 171 times	1.658	284	400
3DH5	16.6 times	/	5 s	x 31.6 s = 105 times	2.909	305	400

Sample Calculation

Result = Number of transmission x Length of transmission

*Average data of 5 tests.

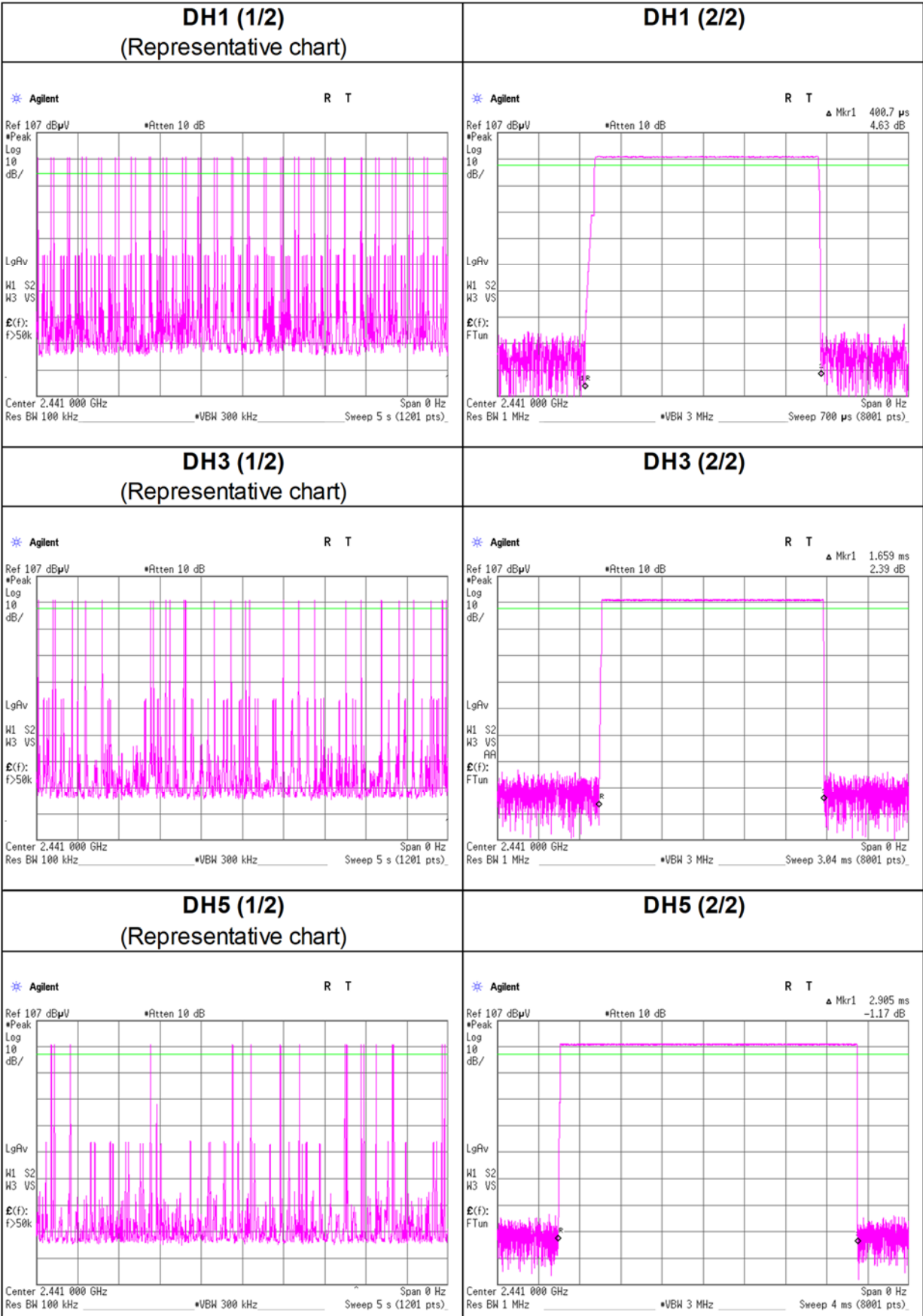
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	51	51	52	50	51	51
DH3	27	28	26	26	27	26.8
DH5	17	16	17	16	17	16.6
3DH1	50	51	51	50	51	50.6
3DH3	26	27	27	28	27	27
3DH5	16	16	16	18	17	16.6

Sample Calculation

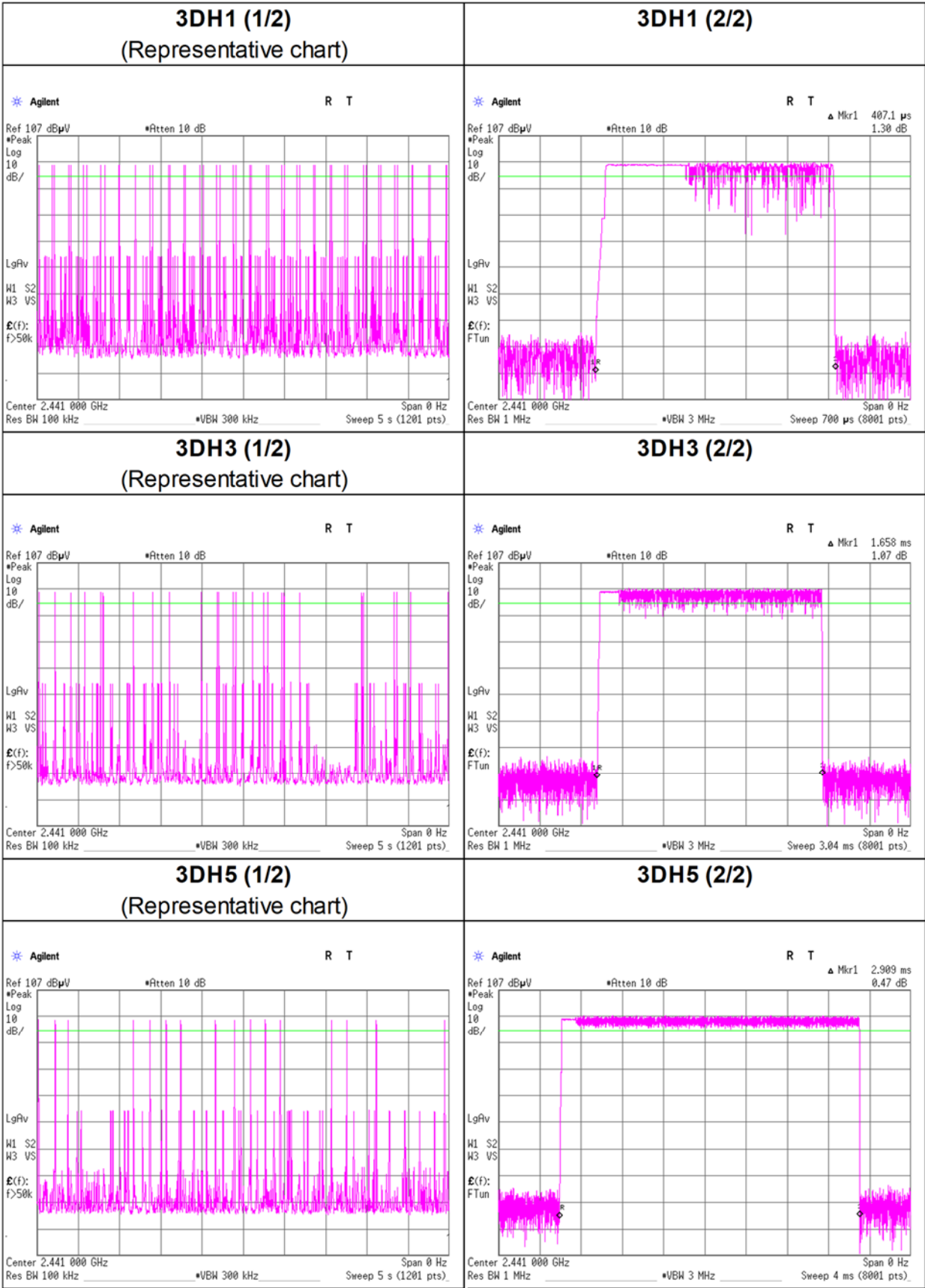
Average = Summation (Sampling 1 to 5) / 5

This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in $N \times 0.4$ s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4 s regardless of packet size. This is confirmed in the test report for $N = 79$.

Dwell time



Dwell time



Maximum Peak Output Power

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Miku Ikudome
Mode Tx, Hopping Off

Maximum peak output power

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Conducted Power					e.i.r.p. for RSS-247					
					Result		Limit		Margin [dB]	Antenna Gain [dBi]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]			[dBm]	[mW]	[dBm]	[mW]	
DH5	2402	-9.25	2.25	9.63	2.63	1.83	20.97	125	18.34	-16.10	-13.47	0.04	36.02	4000	49.49
DH5	2441	-9.06	2.26	9.64	2.84	1.92	20.97	125	18.13	-16.10	-13.26	0.05	36.02	4000	49.28
DH5	2480	-9.41	2.27	9.64	2.50	1.78	20.97	125	18.47	-16.10	-13.60	0.04	36.02	4000	49.62
2DH5	2402	-10.08	2.25	9.63	1.80	1.51	20.97	125	19.17	-16.10	-14.30	0.04	36.02	4000	50.32
2DH5	2441	-9.71	2.26	9.64	2.19	1.66	20.97	125	18.78	-16.10	-13.91	0.04	36.02	4000	49.93
2DH5	2480	-10.33	2.27	9.64	1.58	1.44	20.97	125	19.39	-16.10	-14.52	0.04	36.02	4000	50.54
3DH5	2402	-9.71	2.25	9.63	2.17	1.65	20.97	125	18.80	-16.10	-13.93	0.04	36.02	4000	49.95
3DH5	2441	-9.41	2.26	9.64	2.49	1.77	20.97	125	18.48	-16.10	-13.61	0.04	36.02	4000	49.63
3DH5	2480	-9.43	2.27	9.64	2.48	1.77	20.97	125	18.49	-16.10	-13.62	0.04	36.02	4000	49.64

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Test was not performed at AFH mode, because the decrease of number of channel (min: 20 ch) at AFH mode does not influence on the output power and bandwidth of the EUT.
As this device had AFH mode and frequency separation could not meet the requirement of over 20 dB BW without 2/3 relaxation, 125 mW power limit was applied to it.

Average power (Reference data for RF Exposure)

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Time average)		Duty factor [dB]	Result (Burst power average)	
					[dBm]	[mW]		[dBm]	[mW]
DH5	2402	-10.74	2.25	9.63	1.14	1.30	1.11	2.25	1.68
DH5	2441	-10.50	2.26	9.64	1.40	1.38	1.11	2.51	1.78
DH5	2480	-10.95	2.27	9.64	0.96	1.25	1.11	2.07	1.61
2DH5	2402	-13.75	2.25	9.63	-1.87	0.65	1.10	-0.77	0.84
2DH5	2441	-12.96	2.26	9.64	-1.06	0.78	1.10	0.04	1.01
2DH5	2480	-14.23	2.27	9.64	-2.32	0.59	1.10	-1.22	0.76
3DH5	2402	-13.70	2.25	9.63	-1.82	0.66	1.10	-0.72	0.85
3DH5	2441	-12.93	2.26	9.64	-1.03	0.79	1.10	0.07	1.02
3DH5	2480	-12.95	2.27	9.64	-1.04	0.79	1.10	0.06	1.01

Sample Calculation:

Result (Time average) = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

Result (Burst power average) = Result (Time average) + Duty factor

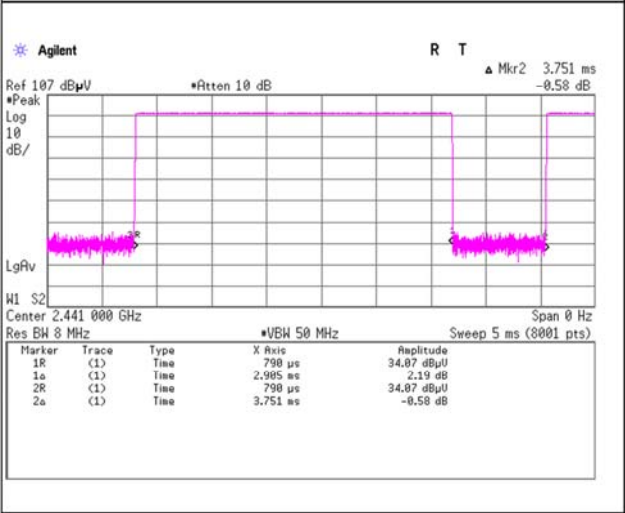
*The equipment and cables were not used for factor 0 dB of the data sheets.

Burst Rate Confirmation

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off

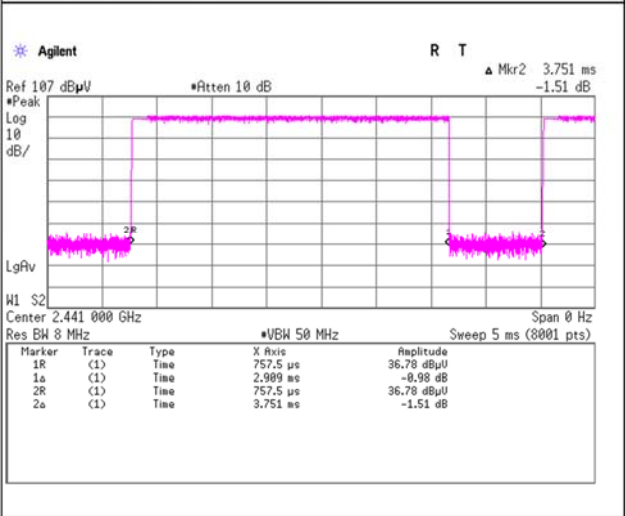
DH5

Tx on / (Tx on + Tx off) = **0.774**
Tx on / (Tx on + Tx off) * 100 = **77.4 %**
Duty factor = 10 * log (3.751 / 2.905) : **1.11 dB**
VBW: 1 / on time = 344.23 Hz < **500 Hz**



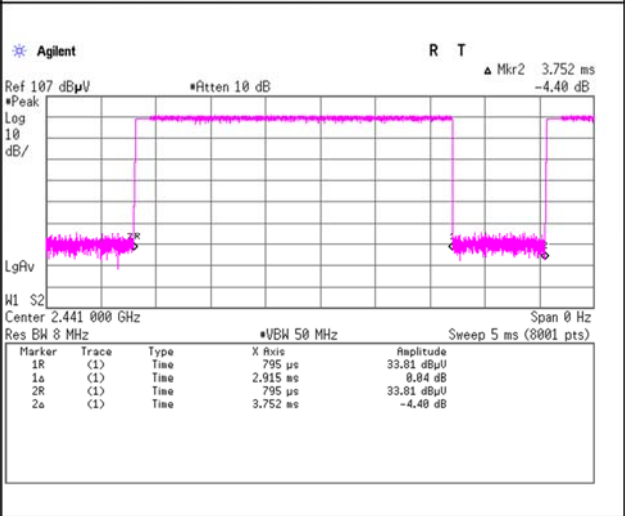
2DH5

Tx on / (Tx on + Tx off) = **0.776**
Tx on / (Tx on + Tx off) * 100 = **77.6 %**
Duty factor = 10 * log (3.751 / 2.909) : **1.10 dB**
VBW: 1 / on time = 343.79 Hz < **500 Hz**



3DH5

Tx on / (Tx on + Tx off) = **0.777**
Tx on / (Tx on + Tx off) * 100 = **77.7 %**
Duty factor = 10 * log (3.752 / 2.915) : **1.10 dB**
VBW: 1 / on time = 343.05 Hz < **500 Hz**



Radiated Spurious Emission

Test place	Shonan EMC Lab.	
Semi Anechoic Chamber	WAC1	WAC1
Date	January 17, 2025	January 19, 2025
Temperature / Humidity	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Kouki Yamada	Yohsuke Matsuzawa
	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz	

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	2390.000	PK	46.84	27.85	-28.00	-	2.19	48.88	73.9	25.0	238	284	-
Hori.	4804.000	PK	46.41	31.97	-35.33	-	2.19	45.24	73.9	28.6	150	0	Floor Noise
Hori.	7206.000	PK	46.25	36.23	-34.02	-	2.19	50.65	73.9	23.2	150	0	Floor Noise
Hori.	9608.000	PK	45.20	37.93	-31.46	-	2.19	53.86	73.9	20.0	150	0	Floor Noise
Hori.	2390.000	AV	32.64	27.85	-28.00	-	2.19	34.68	53.9	19.2	238	284	VBW : 500 Hz
Hori.	4804.000	AV	32.27	31.97	-35.33	-	2.19	31.10	53.9	22.8	150	0	VBW : 500 Hz, Floor Noise
Hori.	7206.000	AV	32.22	36.23	-34.02	-	2.19	36.62	53.9	17.2	150	0	VBW : 500 Hz, Floor Noise
Hori.	9608.000	AV	30.99	37.93	-31.46	-	2.19	39.65	53.9	14.2	150	0	VBW : 500 Hz, Floor Noise
Vert.	2390.000	PK	46.67	27.85	-28.00	-	2.19	48.71	73.9	25.1	153	224	-
Vert.	4804.000	PK	46.62	31.97	-35.33	-	2.19	45.45	73.9	28.4	150	0	Floor Noise
Vert.	7206.000	PK	46.31	36.23	-34.02	-	2.19	50.71	73.9	23.1	150	0	Floor Noise
Vert.	9608.000	PK	45.24	37.93	-31.46	-	2.19	53.90	73.9	20.0	150	0	Floor Noise
Vert.	2390.000	AV	32.68	27.85	-28.00	-	2.19	34.72	53.9	19.1	153	224	VBW : 500 Hz
Vert.	4804.000	AV	32.31	31.97	-35.33	-	2.19	31.14	53.9	22.7	150	0	VBW : 500 Hz, Floor Noise
Vert.	7206.000	AV	32.15	36.23	-34.02	-	2.19	36.55	53.9	17.3	150	0	VBW : 500 Hz, Floor Noise
Vert.	9608.000	AV	30.79	37.93	-31.46	-	2.19	39.45	53.9	14.4	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86 [m] / 3.0 [m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00 [m] / 3.0 [m]) = -9.54 [dB]$

20 dBc Data Sheet

(RBW 100 kHz, VBW 300 kHz)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.000	PK	74.45	27.89	-27.99	-	2.19	76.54	-	-	Carrier
Hori.	2400.000	PK	38.54	27.89	-27.99	-	2.19	40.63	56.5	15.8	-
Vert.	2402.000	PK	78.07	27.89	-27.99	-	2.19	80.16	-	-	Carrier
Vert.	2400.000	PK	37.85	27.89	-27.99	-	2.19	39.94	60.1	20.1	-

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

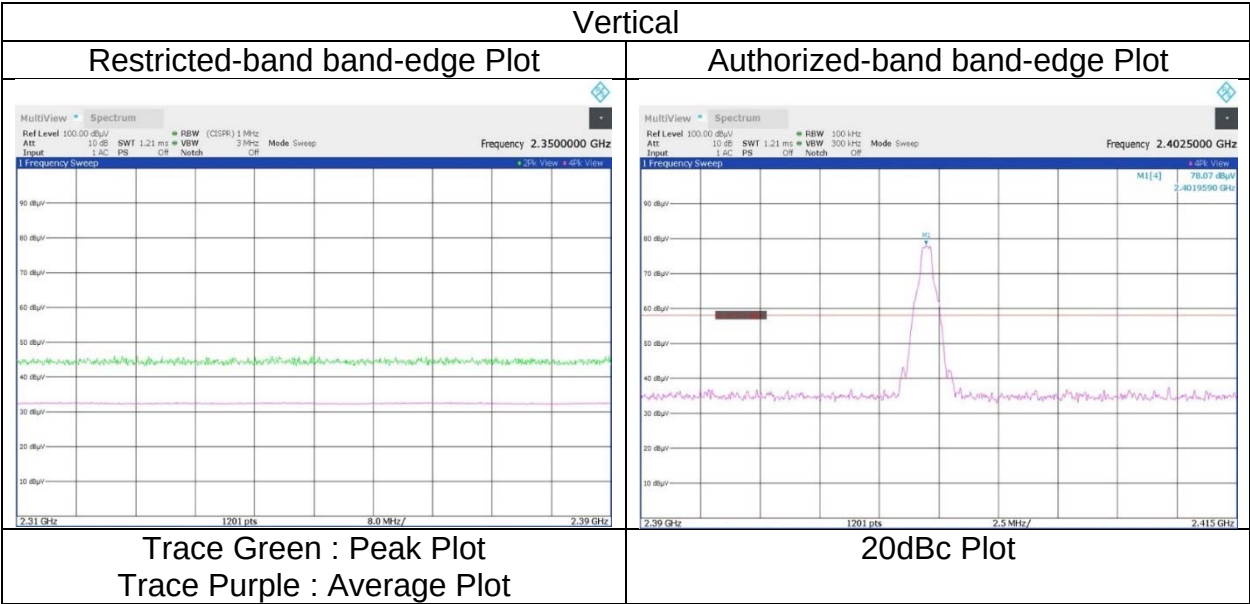
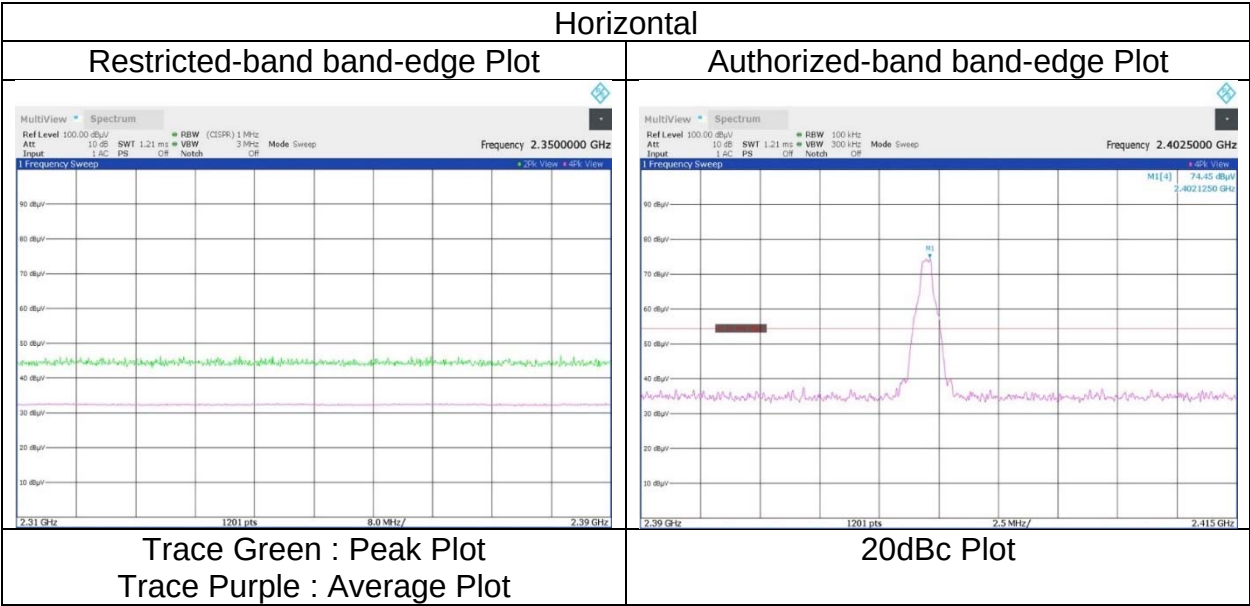
Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86 [m] / 3.0 [m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00 [m] / 3.0 [m]) = -9.54 [dB]$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
WAC1
January 17, 2025
21 deg. C / 36 % RH
Kouki Yamada
Tx, Hopping Off, DH5 2402 MHz



* 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	Shonan EMC Lab.		
Semi Anechoic Chamber	WAC1	WAC1	WAC1
Date	January 30, 2025	January 17, 2025	January 19, 2025
Temperature / Humidity	20 deg. C / 25 % RH	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Makoto Hosaka (30 MHz to 1 GHz)	Kouki Yamada (1 GHz to 10 GHz)	Yohsuke Matsuzawa (10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz		

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Fac. [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	215.438	QP	40.30	11.08	7.23	27.95	0.00	30.66	43.5	12.8	160	288	-
Hori.	294.912	QP	41.80	13.59	7.48	27.76	0.00	35.11	46.0	10.8	167	113	-
Hori.	358.949	QP	42.60	15.04	7.68	28.09	0.00	37.23	46.0	8.7	109	80	-
Hori.	393.215	QP	41.60	15.52	7.77	28.37	0.00	36.52	46.0	9.4	100	202	-
Hori.	400.005	QP	40.30	15.74	7.80	28.42	0.00	35.42	46.0	10.5	100	68	-
Hori.	442.368	QP	43.50	16.31	7.91	28.65	0.00	39.07	46.0	6.9	100	263	-
Hori.	933.011	QP	33.80	21.87	8.89	28.14	0.00	36.42	46.0	9.5	102	207	-
Hori.	4882.000	PK	46.95	32.34	-35.41	-	2.19	46.07	73.9	27.8	150	0	Floor Noise
Hori.	7323.000	PK	46.33	36.63	-33.85	-	2.19	51.30	73.9	22.6	150	0	Floor Noise
Hori.	9764.000	PK	44.51	37.93	-31.32	-	2.19	53.31	73.9	20.5	150	0	Floor Noise
Hori.	4882.000	AV	32.43	32.34	-35.41	-	2.19	31.55	53.9	22.3	150	0	VBW : 500 Hz, Floor Noise
Hori.	7323.000	AV	32.28	36.63	-33.85	-	2.19	37.25	53.9	16.6	150	0	VBW : 500 Hz, Floor Noise
Hori.	9764.000	AV	30.26	37.93	-31.32	-	2.19	39.06	53.9	14.8	150	0	VBW : 500 Hz, Floor Noise
Vert.	30.583	QP	33.80	13.57	6.19	28.67	0.00	24.89	40.0	15.1	100	66	-
Vert.	358.696	QP	37.30	15.04	7.67	28.09	0.00	31.92	46.0	14.0	150	141	-
Vert.	393.215	QP	39.00	15.52	7.77	28.37	0.00	33.92	46.0	12.0	152	196	-
Vert.	442.368	QP	38.80	16.31	7.91	28.65	0.00	34.37	46.0	11.6	142	40	-
Vert.	840.004	QP	33.70	21.22	8.78	28.42	0.00	35.28	46.0	10.7	100	316	-
Vert.	867.111	QP	29.80	21.99	8.81	28.35	0.00	32.25	46.0	13.7	150	306	-
Vert.	4882.000	PK	46.68	32.34	-35.41	-	2.19	45.80	73.9	28.1	150	0	Floor Noise
Vert.	7323.000	PK	46.36	36.63	-33.85	-	2.19	51.33	73.9	22.5	150	0	Floor Noise
Vert.	9764.000	PK	45.00	37.93	-31.32	-	2.19	53.80	73.9	20.1	150	0	Floor Noise
Vert.	4882.000	AV	32.37	32.34	-35.41	-	2.19	31.49	53.9	22.4	150	0	VBW : 500 Hz, Floor Noise
Vert.	7323.000	AV	32.23	36.63	-33.85	-	2.19	37.20	53.9	16.7	150	0	VBW : 500 Hz, Floor Noise
Vert.	9764.000	AV	30.38	37.93	-31.32	-	2.19	39.18	53.9	14.7	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54 [dB]$

Radiated Spurious Emission

Test place	Shonan EMC Lab.	
Semi Anechoic Chamber	WAC1	WAC1
Date	January 17, 2025	January 19, 2025
Temperature / Humidity	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Kouki Yamada	Yohsuke Matsuzawa
	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz	

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	2483.500	PK	47.19	27.96	-27.94	-	2.19	49.40	73.9	24.5	312	191	-
Hori.	4960.000	PK	46.68	32.62	-35.50	-	2.19	45.99	73.9	27.9	150	0	Floor Noise
Hori.	7440.000	PK	46.14	36.69	-33.66	-	2.19	51.36	73.9	22.5	150	0	Floor Noise
Hori.	9920.000	PK	44.46	37.93	-31.18	-	2.19	53.40	73.9	20.5	150	0	Floor Noise
Hori.	2483.500	AV	32.67	27.96	-27.94	-	2.19	34.88	53.9	19.0	312	191	VBW : 500 Hz
Hori.	4960.000	AV	32.56	32.62	-35.50	-	2.19	31.87	53.9	22.0	150	0	VBW : 500 Hz, Floor Noise
Hori.	7440.000	AV	31.96	36.69	-33.66	-	2.19	37.18	53.9	16.7	150	0	VBW : 500 Hz, Floor Noise
Hori.	9920.000	AV	29.99	37.93	-31.18	-	2.19	38.93	53.9	14.9	150	0	VBW : 500 Hz, Floor Noise
Vert.	2483.500	PK	46.65	27.96	-27.94	-	2.19	48.86	73.9	25.0	146	217	-
Vert.	4960.000	PK	46.59	32.62	-35.50	-	2.19	45.90	73.9	28.0	150	0	Floor Noise
Vert.	7440.000	PK	46.05	36.69	-33.66	-	2.19	51.27	73.9	22.6	150	0	Floor Noise
Vert.	9920.000	PK	44.51	37.93	-31.18	-	2.19	53.45	73.9	20.4	150	0	Floor Noise
Vert.	2483.500	AV	32.69	27.96	-27.94	-	2.19	34.90	53.9	19.0	146	217	VBW : 500 Hz
Vert.	4960.000	AV	32.47	32.62	-35.50	-	2.19	31.78	53.9	22.1	150	0	VBW : 500 Hz, Floor Noise
Vert.	7440.000	AV	32.05	36.69	-33.66	-	2.19	37.27	53.9	16.6	150	0	VBW : 500 Hz, Floor Noise
Vert.	9920.000	AV	29.97	37.93	-31.18	-	2.19	38.91	53.9	14.9	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

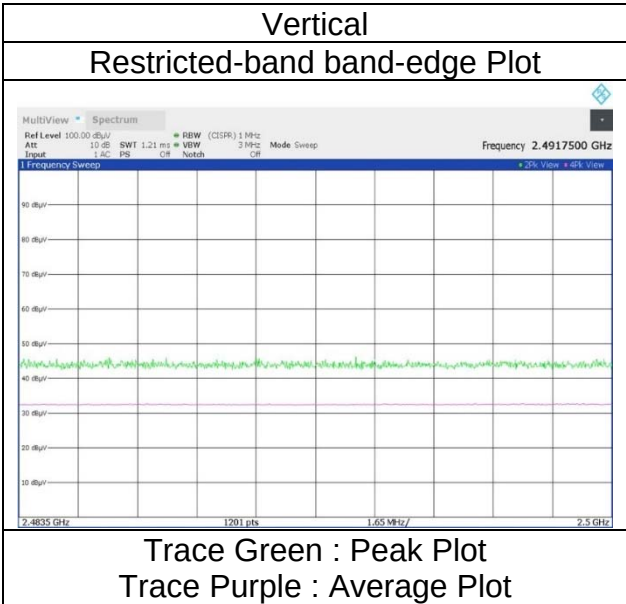
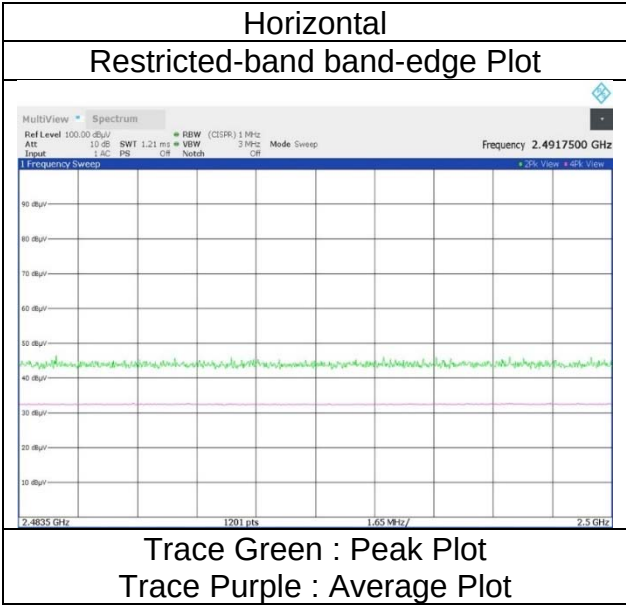
Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54 [dB]$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
WAC1
January 17, 2025
21 deg. C / 36 % RH
Kouki Yamada
Tx, Hopping Off, DH5 2480 MHz



* 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 Shonan EMC Lab.
Semi Anechoic Chamber WAC1
Date January 17, 2025 January 19, 2025
Temperature / Humidity 21 deg. C / 36 % RH 23 deg. C / 38 % RH
Engineer Kouki Yamada Yohsuke Matsuzawa
(1 GHz to 10 GHz) (10 GHz to 26.5 GHz)
Mode Tx, Hopping Off, 3DH5 2402 MHz

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	2390.000	PK	46.57	27.85	-28.00	-	2.19	48.61	73.9	25.2	240	284	-
Hori.	4804.000	PK	46.18	31.97	-35.33	-	2.19	45.01	73.9	28.8	150	0	Floor Noise
Hori.	7206.000	PK	46.04	36.23	-34.02	-	2.19	50.44	73.9	23.4	150	0	Floor Noise
Hori.	9608.000	PK	44.94	37.93	-31.46	-	2.19	53.60	73.9	20.3	150	0	Floor Noise
Hori.	2390.000	AV	32.93	27.85	-28.00	-	2.19	34.97	53.9	18.9	240	284	VBW : 500 Hz
Hori.	4804.000	AV	32.38	31.97	-35.33	-	2.19	31.21	53.9	22.6	150	0	VBW : 500 Hz, Floor Noise
Hori.	7206.000	AV	32.30	36.23	-34.02	-	2.19	36.70	53.9	17.2	150	0	VBW : 500 Hz, Floor Noise
Hori.	9608.000	AV	30.84	37.93	-31.46	-	2.19	39.50	53.9	14.4	150	0	VBW : 500 Hz, Floor Noise
Vert.	2390.000	PK	46.82	27.85	-28.00	-	2.19	48.86	73.9	25.0	152	225	-
Vert.	4804.000	PK	46.16	31.97	-35.33	-	2.19	44.99	73.9	28.9	150	0	Floor Noise
Vert.	7206.000	PK	45.70	36.23	-34.02	-	2.19	50.10	73.9	23.8	150	0	Floor Noise
Vert.	9608.000	PK	44.68	37.93	-31.46	-	2.19	53.34	73.9	20.5	150	0	Floor Noise
Vert.	2390.000	AV	32.68	27.85	-28.00	-	2.19	34.72	53.9	19.1	152	225	VBW : 500 Hz
Vert.	4804.000	AV	32.05	31.97	-35.33	-	2.19	30.88	53.9	23.0	150	0	VBW : 500 Hz, Floor Noise
Vert.	7206.000	AV	31.98	36.23	-34.02	-	2.19	36.38	53.9	17.5	150	0	VBW : 500 Hz, Floor Noise
Vert.	9608.000	AV	30.58	37.93	-31.46	-	2.19	39.24	53.9	14.6	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m] / 3.0[m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00[m] / 3.0[m]) = -9.54 [dB]$

20 dBc Data Sheet

(RBW 100 kHz, VBW 300 kHz)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.000	PK	70.54	27.89	-27.99	-	2.19	72.63	-	-	Carrier
Hori.	2400.000	PK	37.72	27.89	-27.99	-	2.19	39.81	52.6	12.7	-
Vert.	2402.000	PK	76.15	27.89	-27.99	-	2.19	78.24	-	-	Carrier
Vert.	2400.000	PK	37.86	27.89	-27.99	-	2.19	39.95	58.2	18.2	-

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

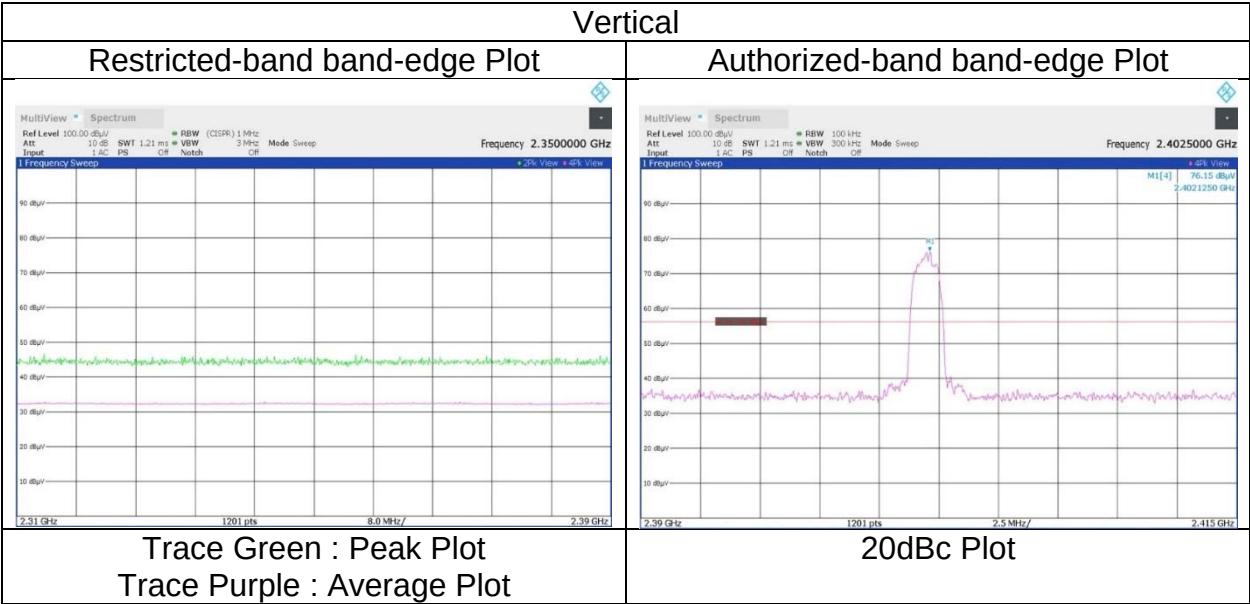
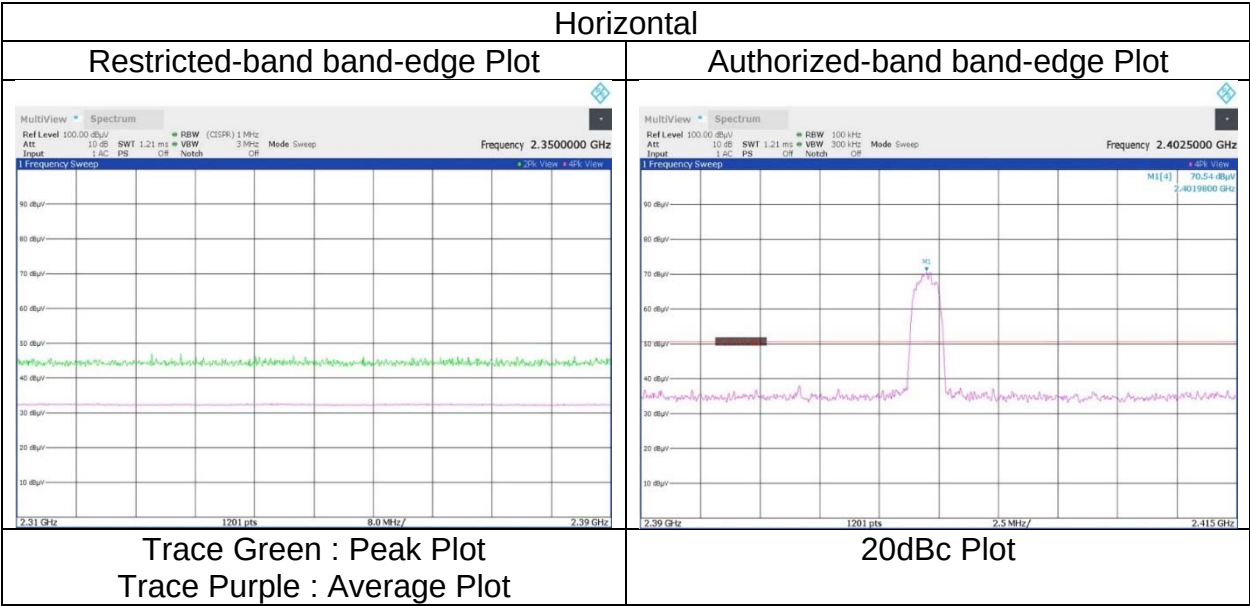
Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m] / 3.0[m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00[m] / 3.0[m]) = -9.54 [dB]$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
WAC1
January 17, 2025
21 deg. C / 36 % RH
Kouki Yamada
Tx, Hopping Off, 3DH5 2402 MHz



* 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	Shonan EMC Lab.	
Semi Anechoic Chamber	WAC1	WAC1
Date	January 17, 2025	January 19, 2025
Temperature / Humidity	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Kouki Yamada	Yohsuke Matsuzawa
	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz	

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	Fac. [dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	4882.000	PK	46.91	32.34	-35.41	-	2.19	46.03	73.9	27.8	150	0	Floor Noise
Hori.	7323.000	PK	46.16	36.63	-33.85	-	2.19	51.13	73.9	22.7	150	0	Floor Noise
Hori.	9764.000	PK	44.59	37.93	-31.32	-	2.19	53.39	73.9	20.5	150	0	Floor Noise
Hori.	4882.000	AV	32.35	32.34	-35.41	-	2.19	31.47	53.9	22.4	150	0	VBW : 500 Hz, Floor Noise
Hori.	7323.000	AV	32.06	36.63	-33.85	-	2.19	37.03	53.9	16.8	150	0	VBW : 500 Hz, Floor Noise
Hori.	9764.000	AV	30.42	37.93	-31.32	-	2.19	39.22	53.9	14.6	150	0	VBW : 500 Hz, Floor Noise
Vert.	4882.000	PK	46.42	32.34	-35.41	-	2.19	45.54	73.9	28.3	150	0	Floor Noise
Vert.	7323.000	PK	46.58	36.63	-33.85	-	2.19	51.55	73.9	22.3	150	0	Floor Noise
Vert.	9764.000	PK	44.33	37.93	-31.32	-	2.19	53.13	73.9	20.7	150	0	Floor Noise
Vert.	4882.000	AV	32.36	32.34	-35.41	-	2.19	31.48	53.9	22.4	150	0	VBW : 500 Hz, Floor Noise
Vert.	7323.000	AV	32.11	36.63	-33.85	-	2.19	37.08	53.9	16.8	150	0	VBW : 500 Hz, Floor Noise
Vert.	9764.000	AV	30.30	37.93	-31.32	-	2.19	39.10	53.9	14.8	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19[dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54[dB]$

Radiated Spurious Emission

Test place	Shonan EMC Lab.	
Semi Anechoic Chamber	WAC1	WAC1
Date	January 17, 2025	January 19, 2025
Temperature / Humidity	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Kouki Yamada	Yohsuke Matsuzawa
	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz	

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	2483.500	PK	46.63	27.96	-27.94	-	2.19	48.84	73.9	25.0	121	188	-
Hori.	4960.000	PK	46.66	32.62	-35.50	-	2.19	45.97	73.9	27.9	150	0	Floor Noise
Hori.	7440.000	PK	46.74	36.69	-33.66	-	2.19	51.96	73.9	21.9	150	0	Floor Noise
Hori.	9920.000	PK	44.21	37.93	-31.18	-	2.19	53.15	73.9	20.7	150	0	Floor Noise
Hori.	2483.500	AV	32.62	27.96	-27.94	-	2.19	34.83	53.9	19.0	121	188	VBW : 500 Hz
Hori.	4960.000	AV	32.42	32.62	-35.50	-	2.19	31.73	53.9	22.1	150	0	VBW : 500 Hz, Floor Noise
Hori.	7440.000	AV	32.07	36.69	-33.66	-	2.19	37.29	53.9	16.6	150	0	VBW : 500 Hz, Floor Noise
Hori.	9920.000	AV	30.41	37.93	-31.18	-	2.19	39.35	53.9	14.5	150	0	VBW : 500 Hz, Floor Noise
Vert.	2483.500	PK	46.58	27.96	-27.94	-	2.19	48.79	73.9	25.1	145	218	-
Vert.	4960.000	PK	46.77	32.62	-35.50	-	2.19	46.08	73.9	27.8	150	0	Floor Noise
Vert.	7440.000	PK	46.45	36.69	-33.66	-	2.19	51.67	73.9	22.2	150	0	Floor Noise
Vert.	9920.000	PK	43.74	37.93	-31.18	-	2.19	52.68	73.9	21.2	150	0	Floor Noise
Vert.	2483.500	AV	32.04	27.96	-27.94	-	2.19	34.25	53.9	19.6	145	218	VBW : 500 Hz
Vert.	4960.000	AV	32.44	32.62	-35.50	-	2.19	31.75	53.9	22.1	150	0	VBW : 500 Hz, Floor Noise
Vert.	7440.000	AV	31.98	36.69	-33.66	-	2.19	37.20	53.9	16.7	150	0	VBW : 500 Hz, Floor Noise
Vert.	9920.000	AV	30.09	37.93	-31.18	-	2.19	39.03	53.9	14.8	150	0	VBW : 500 Hz, Floor Noise

Result = Reading + Ant.Fac. + Loss (Cable + (Atten or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

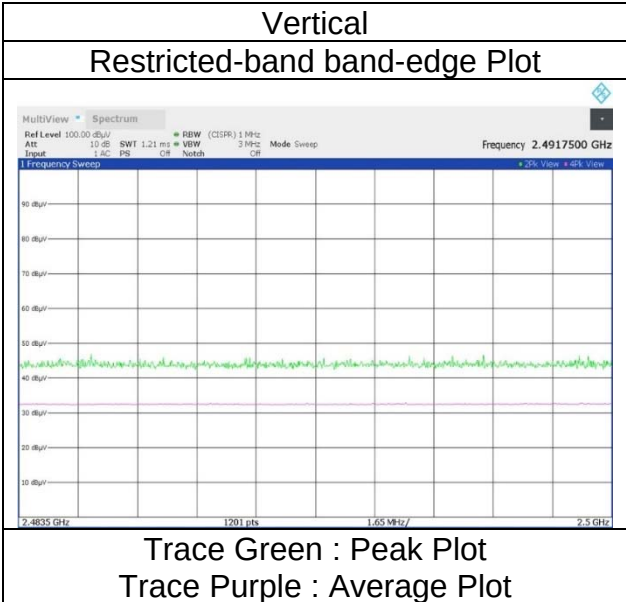
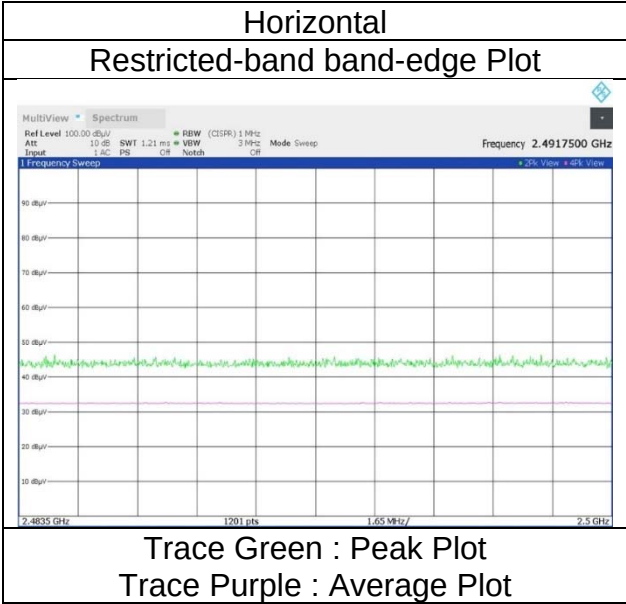
Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19 [dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54 [dB]$

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

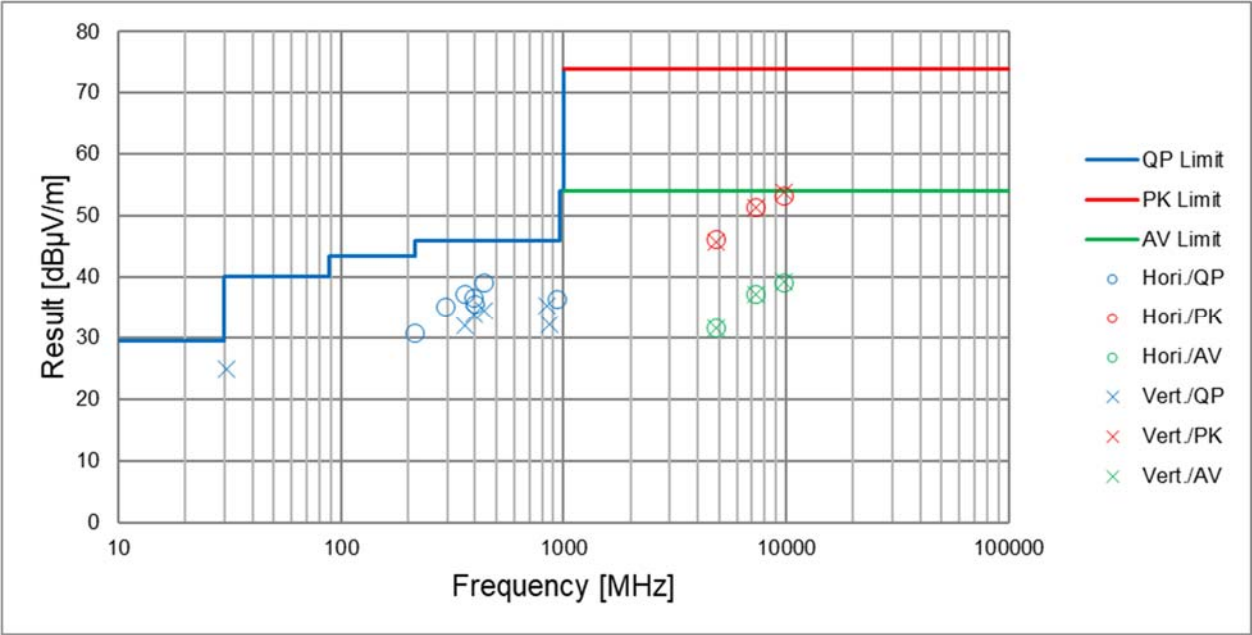
Shonan EMC Lab.
WAC1
January 17, 2025
21 deg. C / 36 % RH
Kouki Yamada
Tx, Hopping Off, 3DH5 2480 MHz



* 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
(Plot data, Worst case mode for Maximum Peak Output Power)

Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	WAC1	WAC1	WAC1
Date	January 30, 2025	January 17, 2025	January 19, 2025
Temperature / Humidity	20 deg. C / 25 % RH	21 deg. C / 36 % RH	23 deg. C / 38 % RH
Engineer	Makoto Hosaka	Kouki Yamada	Yohsuke Matsuzawa
	(30 MHz to 1 GHz)	(1 GHz to 10 GHz)	(10 GHz to 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz		



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

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber WAC1 WAC1 WAC1
Date January 30, 2025 January 28, 2025 January 27, 2025
Temperature / Humidity 20 deg. C / 25 % RH 21 deg. C / 32 % RH 21 deg. C / 32 % RH
Engineer Makoto Hosaka Takayuki Kobayashi Makoto Hosaka
(30 MHz to 1 GHz) (1 GHz to 18 GHz) (18 GHz to 26.5 GHz)
Mode Tx, Hopping Off, 3DH5 2402 MHz with 11ac-80 5775 MHz

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Height	Angle	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	Fac. [dB]	[dBuV/m]	[dBuV/m]	[dB]	[cm]	[deg.]	
Hori.	215.438	QP	39.80	11.08	7.23	27.95	0.00	30.16	43.5	13.3	160	288	-
Hori.	294.912	QP	41.80	13.59	7.48	27.76	0.00	35.11	46.0	10.8	159	113	-
Hori.	358.699	QP	42.10	15.04	7.67	28.09	0.00	36.72	46.0	9.2	109	80	-
Hori.	393.215	QP	42.20	15.52	7.77	28.37	0.00	37.12	46.0	8.8	100	72	-
Hori.	400.005	QP	40.30	15.74	7.80	28.42	0.00	35.42	46.0	10.5	100	68	-
Hori.	442.368	QP	42.70	16.31	7.91	28.65	0.00	38.27	46.0	7.7	100	266	-
Hori.	933.011	QP	33.60	21.87	8.89	28.14	0.00	36.22	46.0	9.7	102	207	-
Hori.	2390.000	PK	47.48	27.85	-29.14	-	2.19	48.38	73.9	25.5	107	247	-
Hori.	4804.000	PK	48.35	31.97	-28.21	-	2.19	54.30	73.9	19.6	150	0	Floor Noise
Hori.	7206.000	PK	48.24	36.23	-36.00	-	2.19	50.66	73.9	23.2	150	0	Floor Noise
Hori.	9608.000	PK	47.44	37.93	-34.16	-	2.19	53.40	73.9	20.5	150	0	Floor Noise
Hori.	2390.000	AV	33.83	27.85	-29.14	-	2.19	34.73	53.9	19.1	107	247	VBW : 500 Hz
Hori.	4804.000	AV	34.35	31.97	-28.21	-	2.19	40.30	53.9	13.6	150	0	Floor noise, VBW : 500 Hz
Hori.	7206.000	AV	34.47	36.23	-36.00	-	2.19	36.89	53.9	17.0	150	0	Floor noise, VBW : 500 Hz
Hori.	9608.000	AV	33.80	37.93	-34.16	-	2.19	39.76	53.9	14.1	150	0	Floor noise, VBW : 500 Hz
Vert.	30.577	QP	33.50	13.57	6.19	28.67	0.00	24.59	40.0	15.4	100	66	-
Vert.	358.696	QP	37.10	15.04	7.67	28.09	0.00	31.72	46.0	14.2	150	161	-
Vert.	393.215	QP	39.00	15.52	7.77	28.37	0.00	33.92	46.0	12.0	152	196	-
Vert.	442.368	QP	36.50	16.31	7.91	28.65	0.00	32.07	46.0	13.9	100	101	-
Vert.	840.004	QP	32.40	21.22	8.78	28.42	0.00	33.98	46.0	12.0	100	316	-
Vert.	867.111	QP	29.70	21.99	8.81	28.35	0.00	32.15	46.0	13.8	182	331	-
Vert.	2390.000	PK	48.27	27.85	-29.14	-	2.19	49.17	73.9	24.7	143	224	-
Vert.	4804.000	PK	48.33	31.97	-28.21	-	2.19	54.28	73.9	19.6	150	0	Floor Noise
Vert.	7206.000	PK	48.24	36.23	-36.00	-	2.19	50.66	73.9	23.2	150	0	Floor Noise
Vert.	9608.000	PK	47.80	37.93	-34.16	-	2.19	53.76	73.9	20.1	150	0	Floor Noise
Vert.	2390.000	AV	33.94	27.85	-29.14	-	2.19	34.84	53.9	19.0	143	224	VBW : 500 Hz
Vert.	4804.000	AV	34.32	31.97	-28.21	-	2.19	40.27	53.9	13.6	150	0	Floor noise, VBW : 500 Hz
Vert.	7206.000	AV	34.32	36.23	-36.00	-	2.19	36.74	53.9	17.1	150	0	Floor noise, VBW : 500 Hz
Vert.	9608.000	AV	33.66	37.93	-34.16	-	2.19	39.62	53.9	14.2	150	0	Floor noise, VBW : 500 Hz

Result = Reading + Ant.Fac. + Loss (Cable + (Attenu or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19[dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54[dB]$

20 dBc Data Sheet

(RBW 100 kHz, VBW 300 kHz)

Polarity	Frequency	Detector	Reading	Ant.Fac.	Loss	Gain	Distance	Result	Limit	Margin	Remark
	[MHz]		[dBuV]	[dB/m]	[dB]	[dB]	Fac. [dB]	[dBuV/m]	[dBuV/m]	[dB]	
Hori.	2402.000	PK	73.80	27.89	-29.13	-	2.19	74.75	-	-	Carrier
Hori.	2400.000	PK	39.45	27.89	-29.13	-	2.19	40.40	54.7	14.3	-
Vert.	2402.000	PK	74.49	27.89	-29.13	-	2.19	75.44	-	-	Carrier
Vert.	2400.000	PK	39.48	27.89	-29.13	-	2.19	40.43	55.4	14.9	-

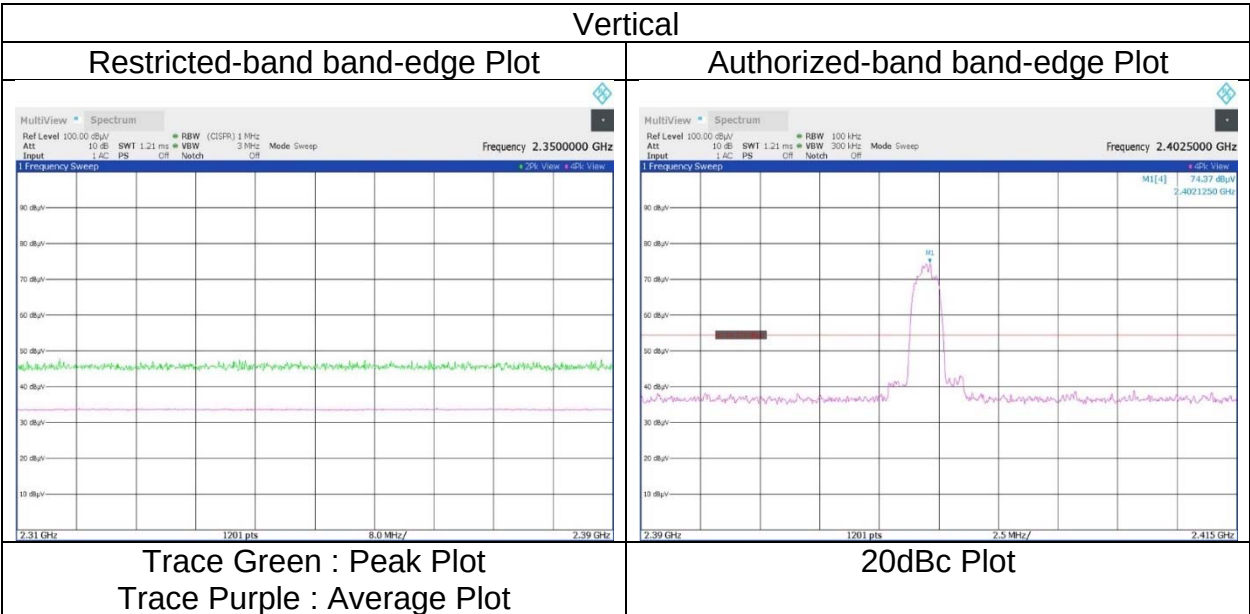
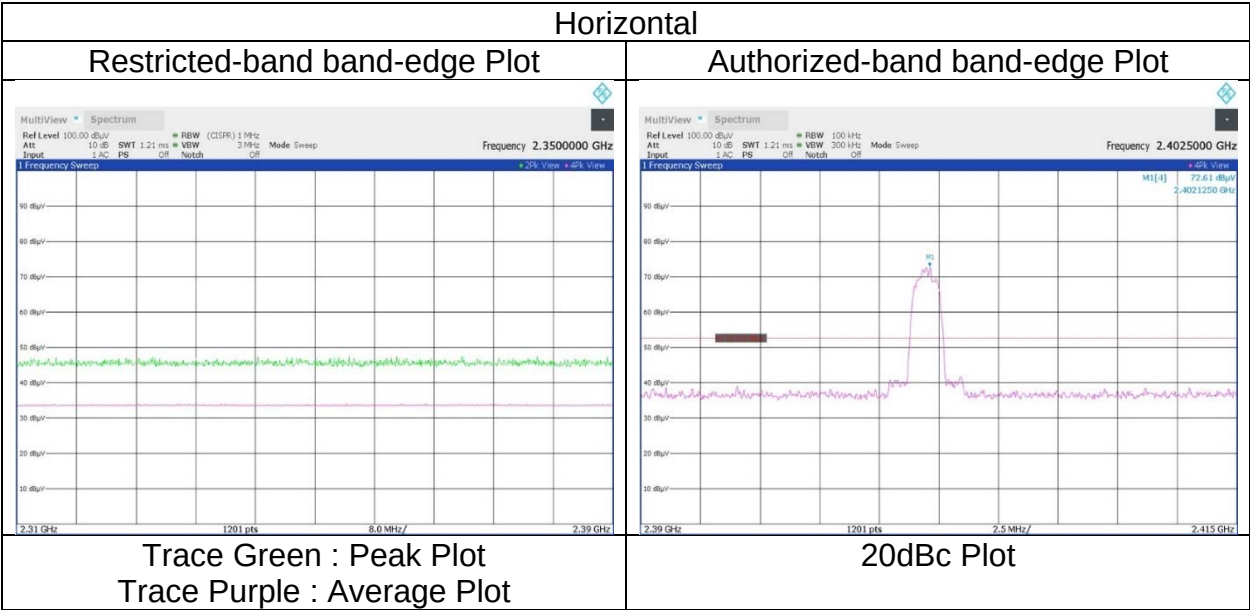
Result = Reading + Ant.Fac. + Loss (Cable + (Attenu or Filter)(below 18 GHz) - Gain(Amp) (1 GHz to 18 GHz)) - Gain(Amp) (only below 1 GHz & above 18 GHz) + Distance Fac.

Distance Fac. : 1 GHz to 10 GHz : $20\log(3.86[m]/3.0[m]) = 2.19[dB]$

10 GHz to 40 GHz : $20\log(1.00[m]/3.0[m]) = -9.54[dB]$

**Radiated Spurious Emission
(Reference Plot for band-edge)**

Test place	Shonan EMC Lab.
Semi Anechoic Chamber	WAC1
Date	January 28, 2025
Temperature / Humidity	21 deg. C / 32 % RH
Engineer	Takayuki Kobayashi
Mode	Tx, Hopping Off, 3DH5 2402 MHz with 11ac-80 5775 MHz

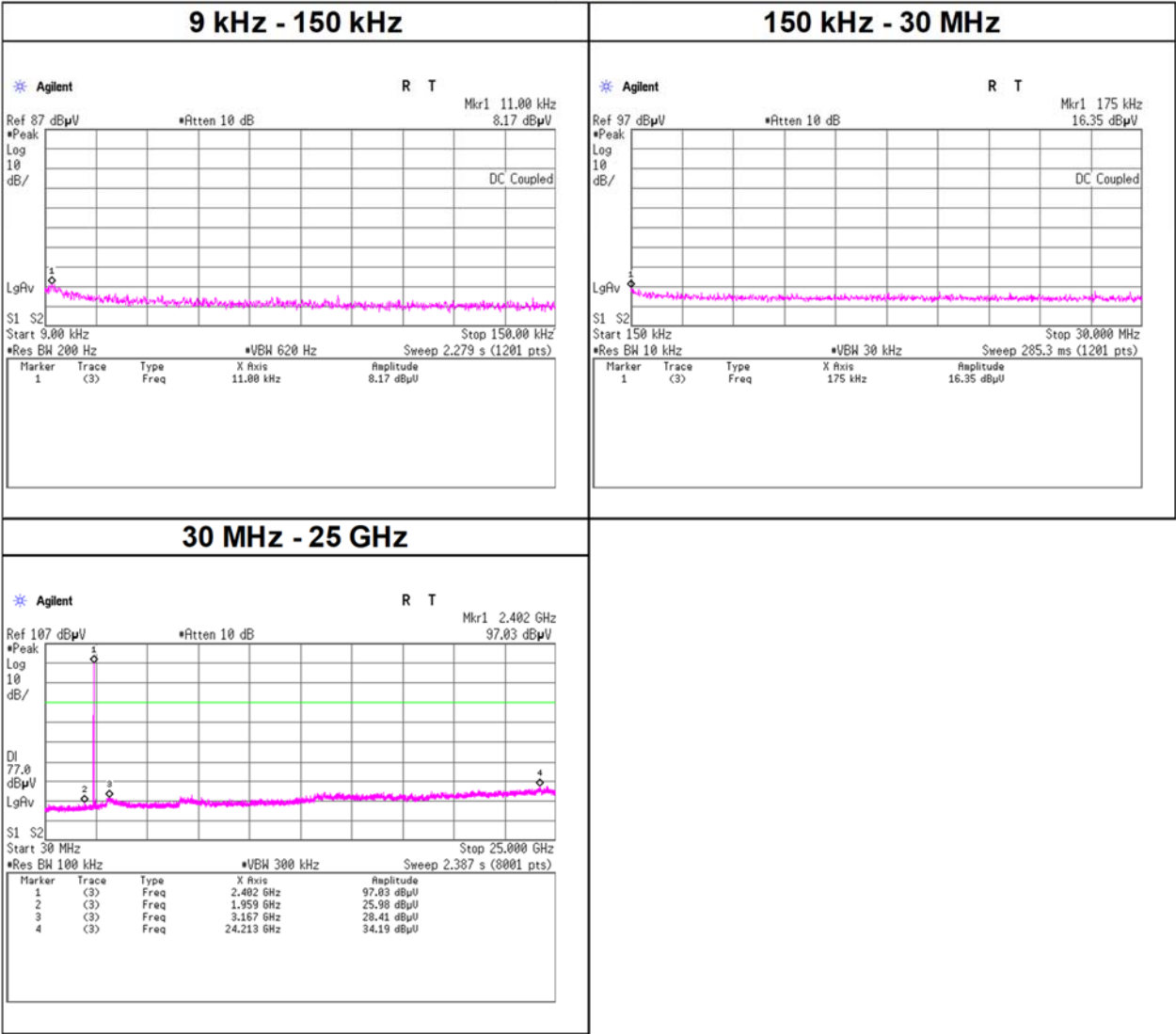


* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge and authorized band edge were shown in tabular data.

Conducted Spurious Emission

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off, DH5

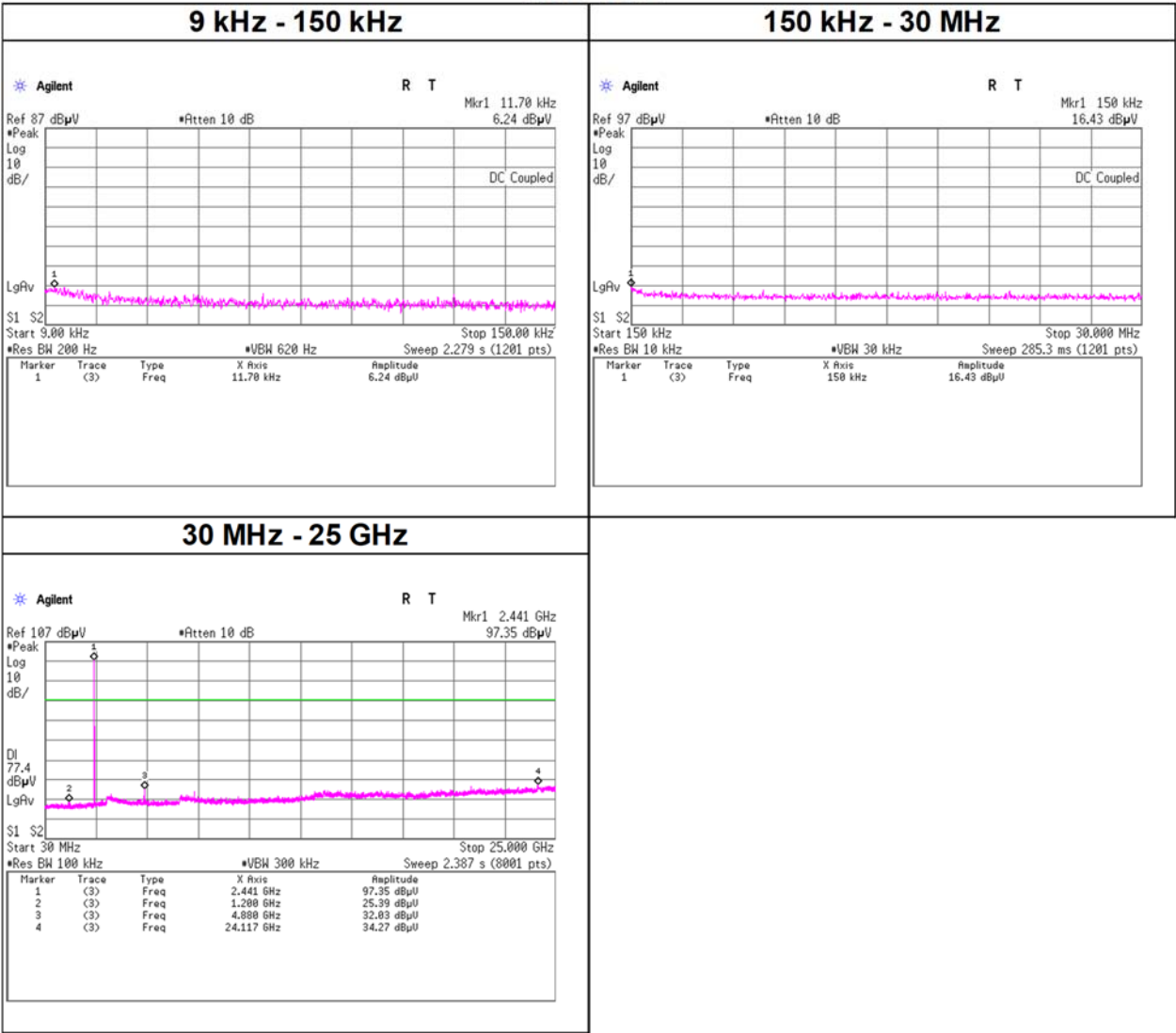
2402 MHz



Conducted Spurious Emission

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off, DH5

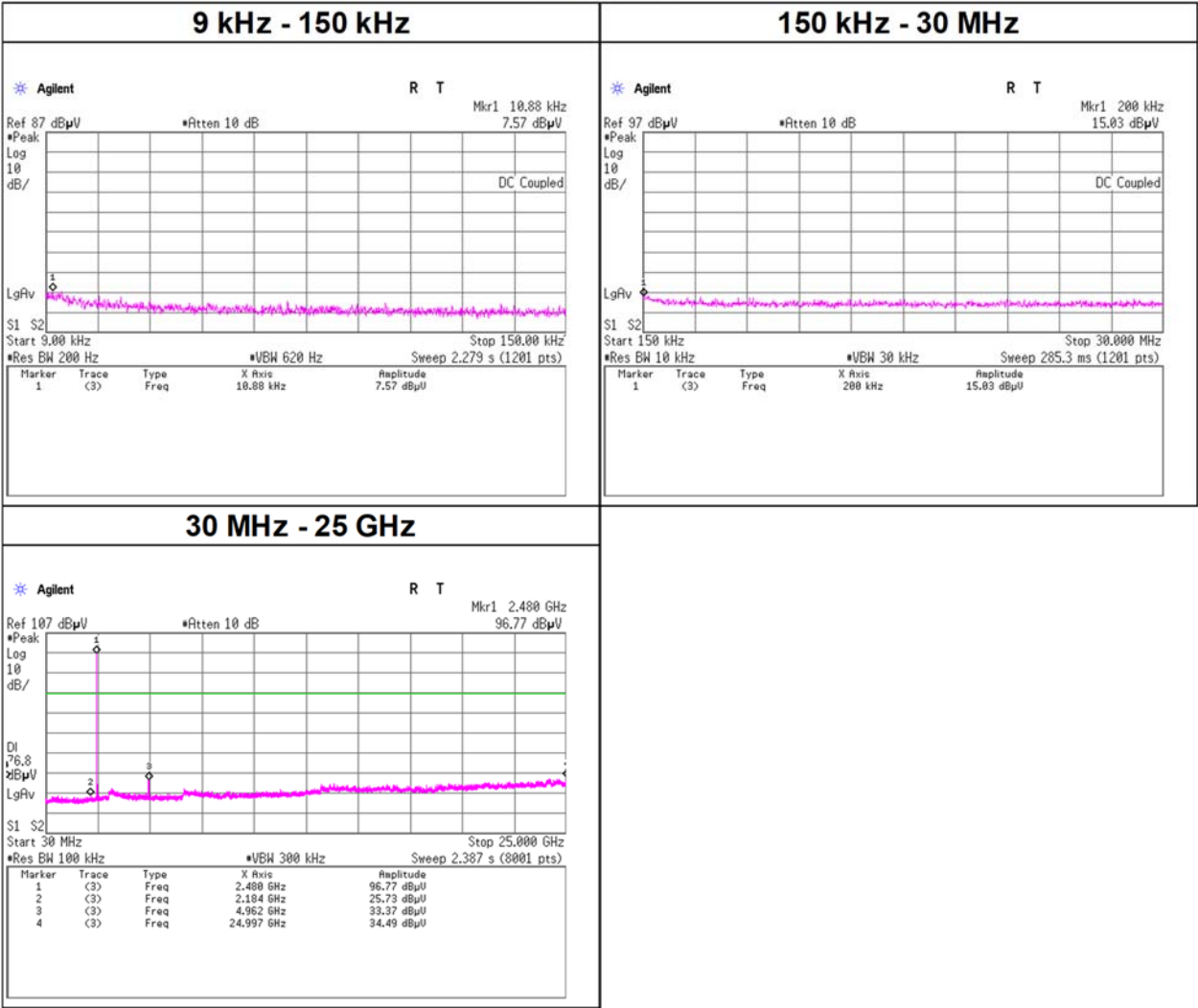
2441 MHz



Conducted Spurious Emission

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off, DH5

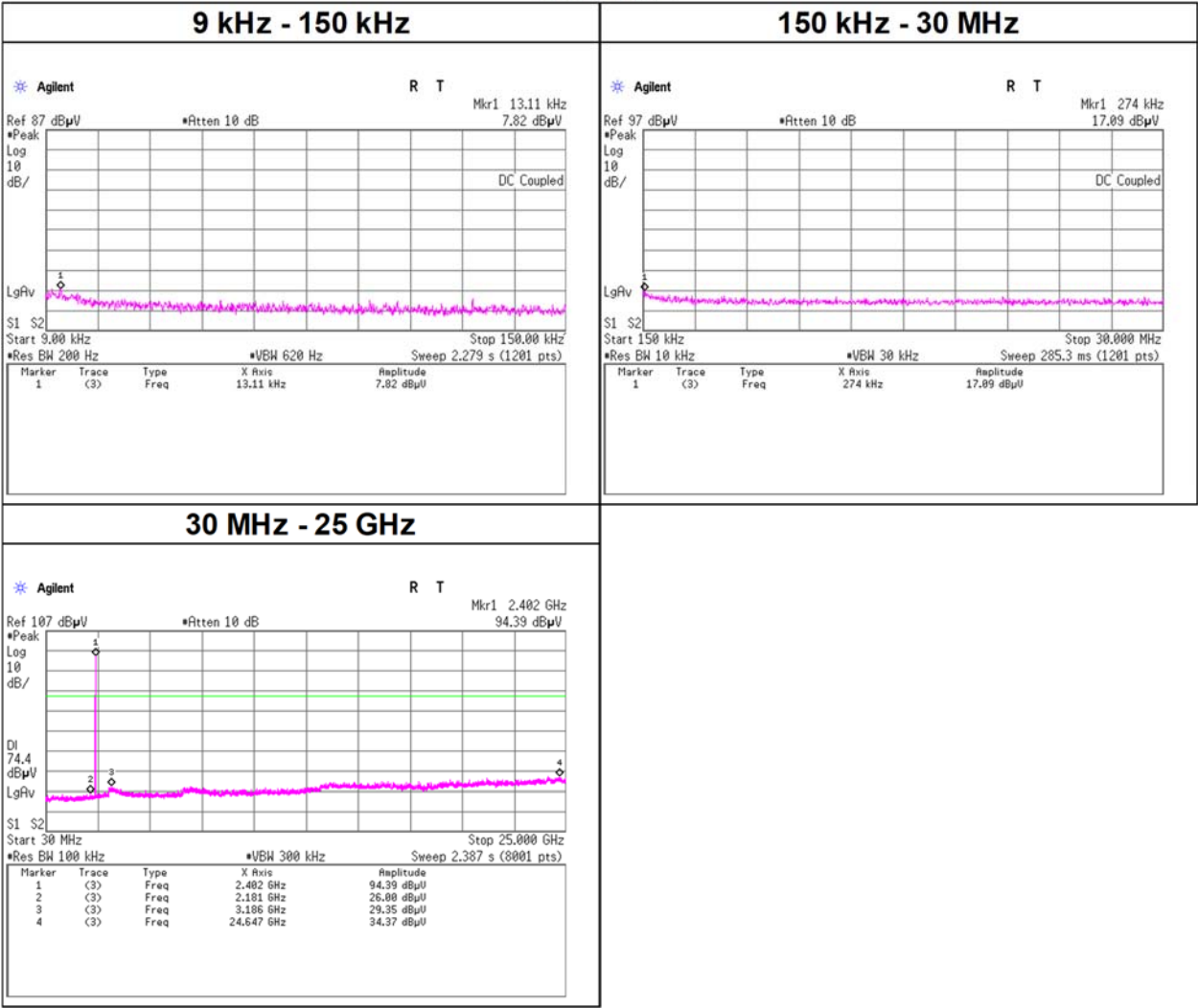
2480 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5Shielded Room
Date	January 19, 2025
Temperature / Humidity	17 deg. C / 31 % RH
Engineer	Yohsuke Matsuzawa
Mode	Tx, Hopping Off, 3DH5

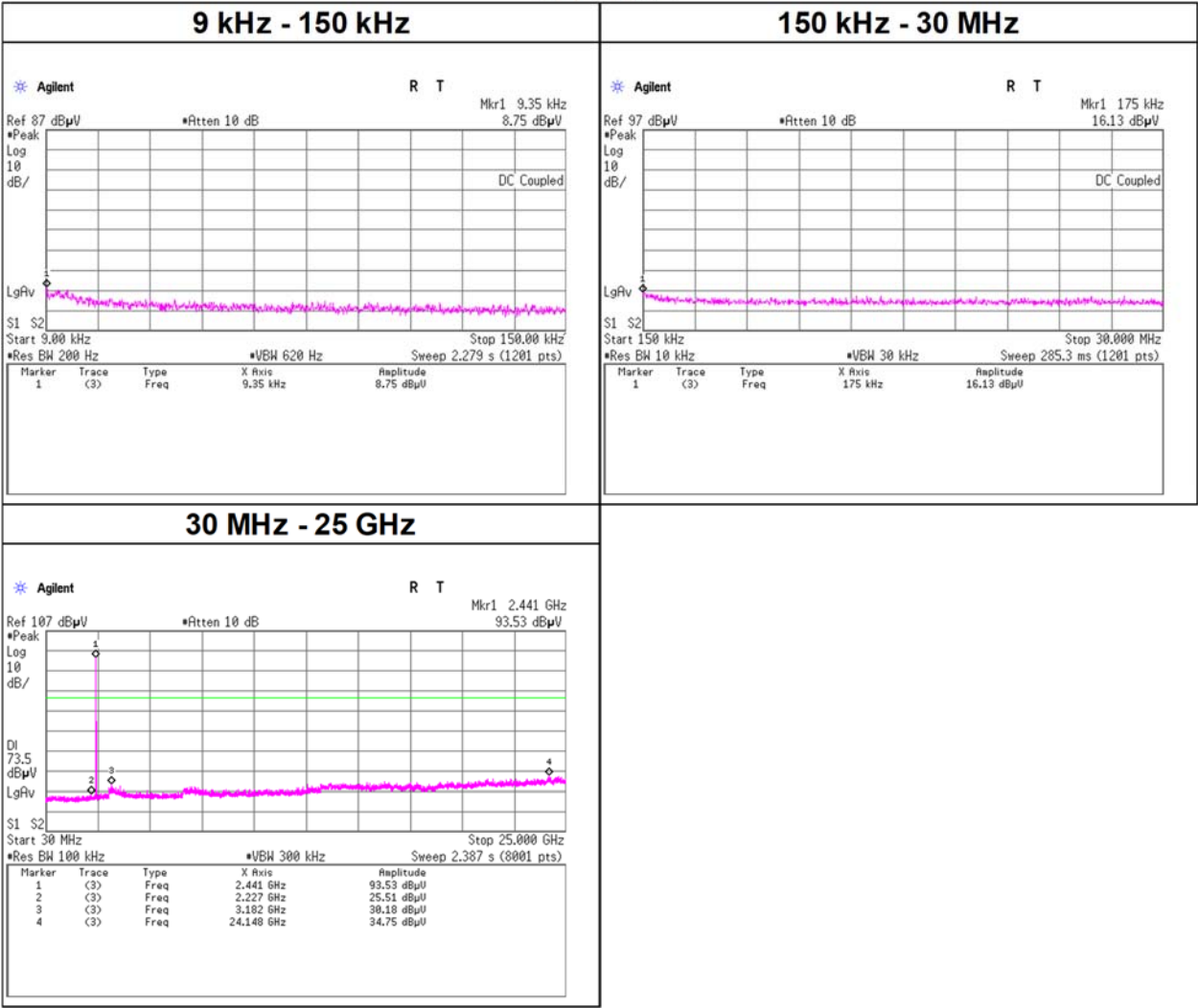
2402 MHz



Conducted Spurious Emission

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off, 3DH5

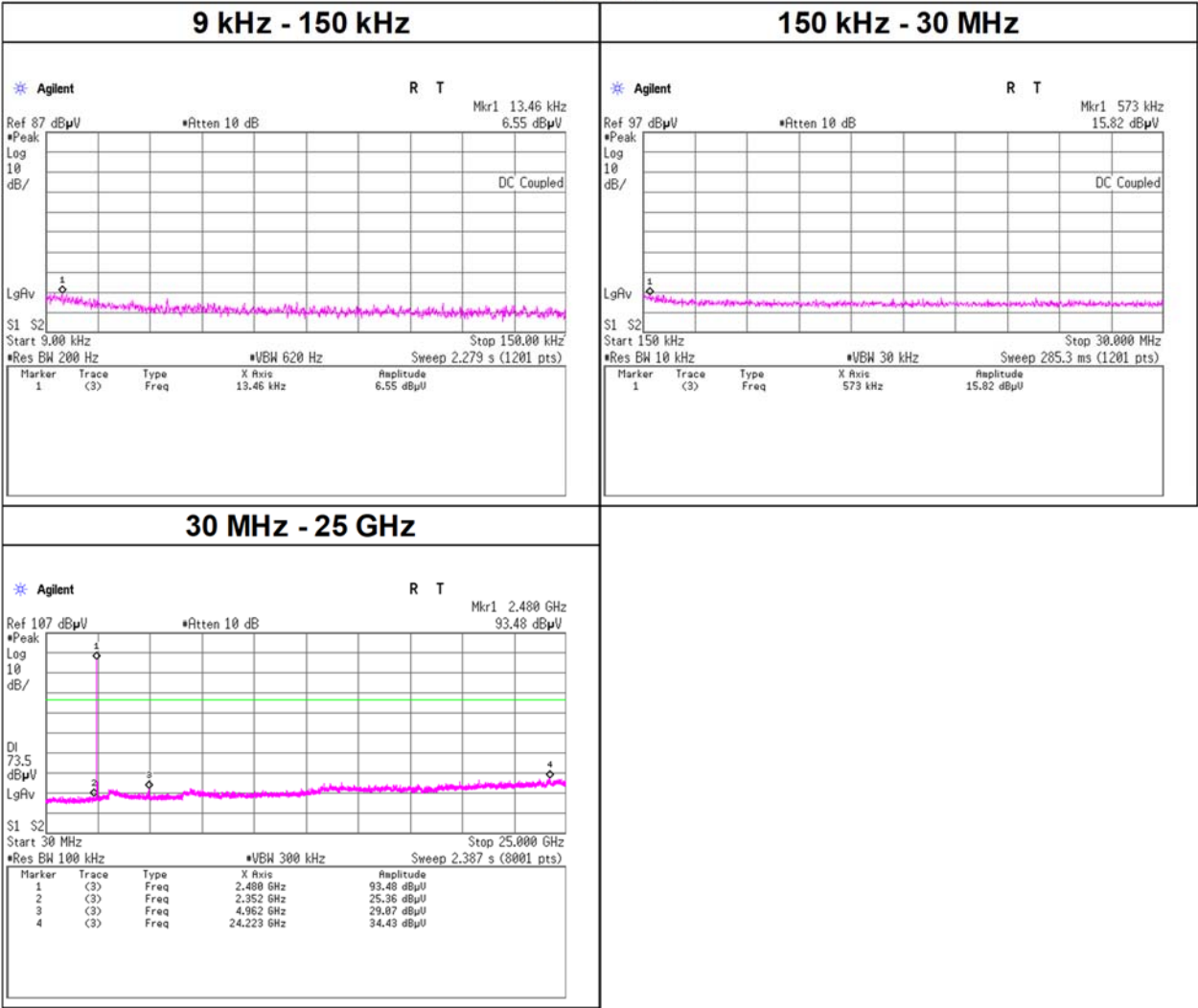
2441 MHz



Conducted Spurious Emission

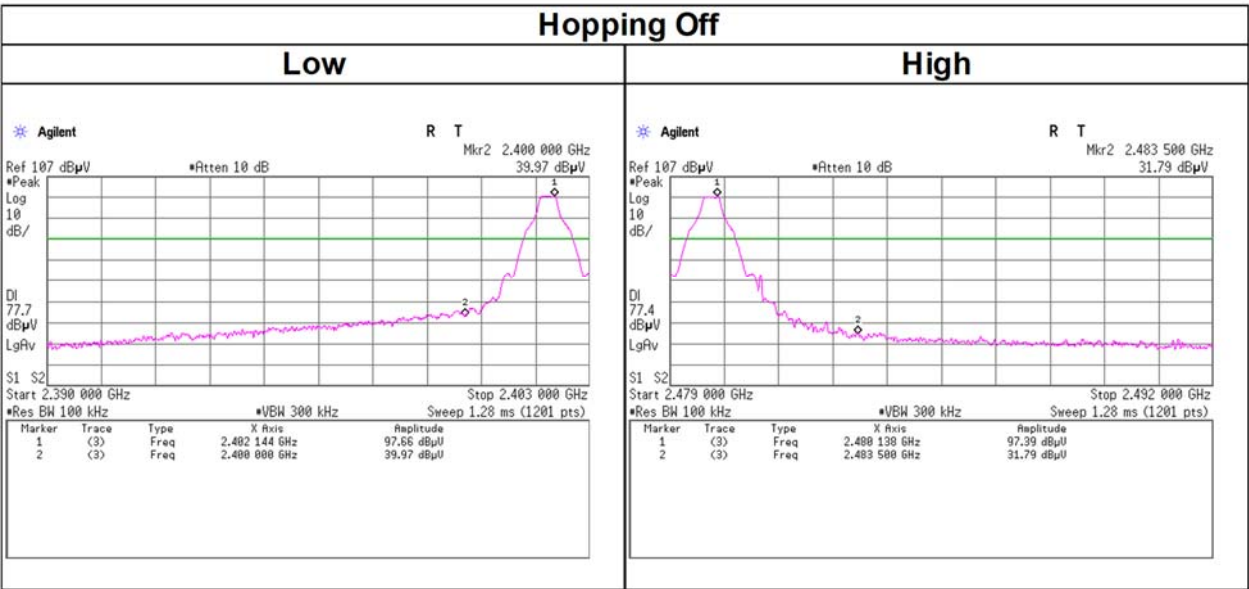
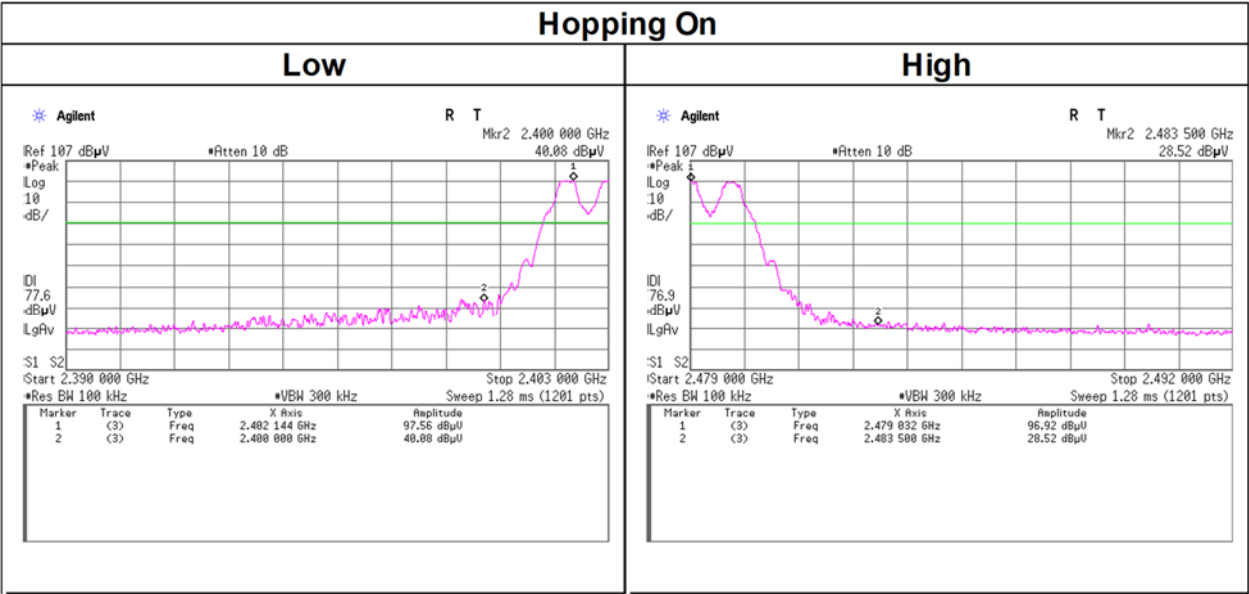
Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx, Hopping Off, 3DH5

2480 MHz



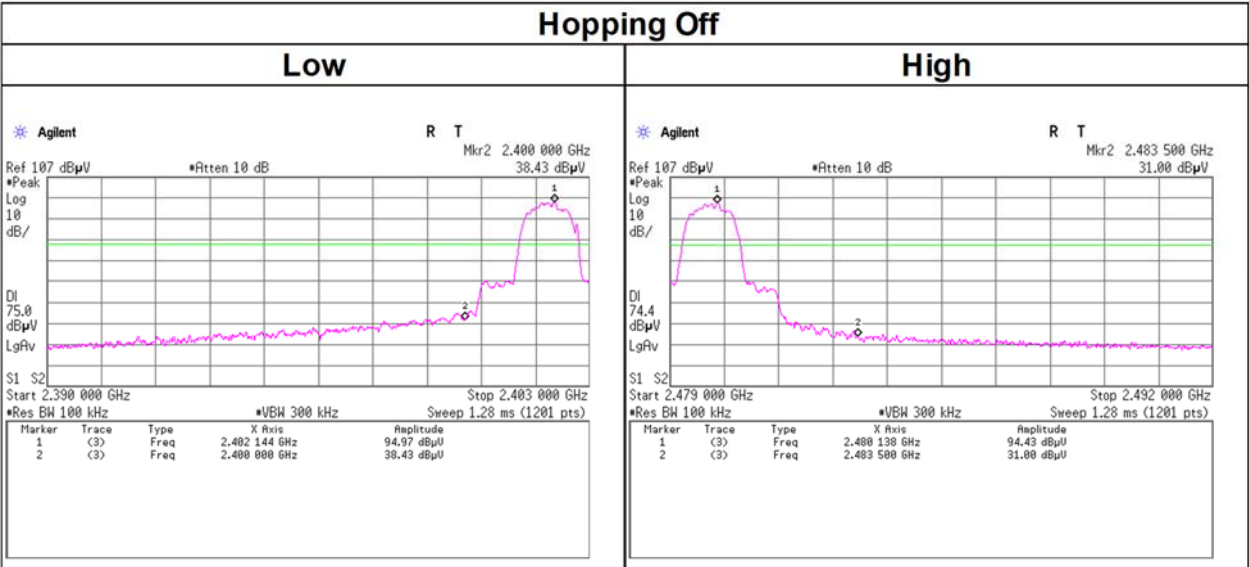
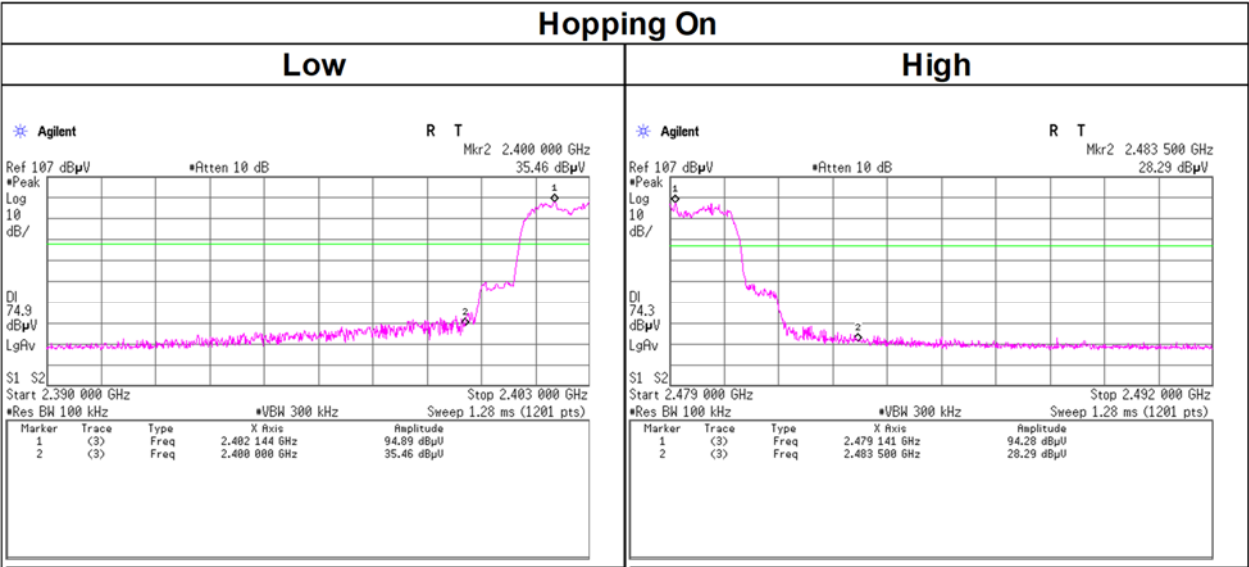
Conducted Emission Band Edge compliance

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx DH5



Conducted Emission Band Edge compliance

Test place Shonan EMC Lab. No.5Shielded Room
Date January 19, 2025
Temperature / Humidity 17 deg. C / 31 % RH
Engineer Yohsuke Matsuzawa
Mode Tx 3DH5



APPENDIX 2: Test Instruments

Test Equipment (1/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	145132	Attenuator	Weinschel Corp.	54A-10	W5692	2024/10/10	12
AT	242068	Attenuator	Weinschel Corp.	54A-10	120524	2024/11/06	12
AT	196947	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803478/2	2024/03/07	12
AT	196949	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803480/2	2024/03/07	12
AT	146212	Digital Hister	HIOKI E.E. CORPORATION	3805-50	80997828	2024/09/24	12
AT	146247	Power Meter	Keysight Technologies Inc	8990B	MY51000272	2024/05/14	12
AT	146310	Power sensor	Keysight Technologies Inc	N1923A	MY5326009	2024/05/14	12
AT	235604	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY45300743	2024/05/23	12
AT	204923	Terminator	Weinschel - API Technologies Corp	M1459A	110101	2024/02/14	12
AT	175822	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2024/08/11	12
RE	199784	Attenuator	JFW	50HF-006N	-	2024/06/14	12
RE	239786	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHBB 9124+BBA9106	01895	2024/08/10	12
RE	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2024/08/21	12
RE	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2024/03/05	12
RE	236708	Coaxial Cable	Hayashi-Repic co., Ltd.	NMS079B-GL310C-SMS117B-2m	47256-02-03	2024/05/09	12
RE	236710	Coaxial Cable	Hayashi-Repic co., Ltd.	KMS020B-GL140sE-KMS020B-7.0m	47256-03-01	2024/05/09	12
RE	236723	Coaxial Cable	Hayashi-Repic co., Ltd.	SF106(HUBER+SUHNER)/LMR400UF/GL310C/GL310C	2000429/47753-1/47256-01-03/47256-01-01	2024/05/09	12
RE	239643	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	2306S021	2024/08/20	12
RE	243209	Coaxial Cable	Hayashi-Repic co., Ltd.	SMS13-13A26-NFS13-1.0m	49190-01-01	2024/12/05	12
RE	243687	Coaxial Cable	Hayashi-Repic co., Ltd.	NMS079B-GL310C-NMS079B-6.0m	49373-01-01	2024/12/05	12
RE	235639	DIGITAL MULTIMETER	HIOKI E.E. CORPORATION	DT4261	230313156	2024/05/29	12
RE	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
RE	145512	Horn Antenna	ETS-Lindgren	3160-09	00094868	2024/06/20	12
RE	236686	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	787	2024/04/19	12
RE	236769	Horn Antenna	AINFO Inc.	LB-8180-NF	2030013000111	2024/04/19	12
RE	145527	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	193	2024/04/10	12
RE	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2024/08/21	12
RE	145130	Pre Amplifier	Agilent Technologies	8447D	2944A09965	2024/07/10	12
RE	237784	RF RELAY MATRIX with preamplifier	TSJ (Techno Science Japan)	RFM-E221261R	07795	2024/11/12	12
RE	236212	Semi-Anechoic Chamber	TDK	SWAC-01(NSA)	1	2024/05/09	12

Test Equipment (2/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	236616	Semi-Anechoic Chamber	TDK	SWAC-01(SVSWR)	1	2024/06/04	12
RE	207280	Tape Measure	ASKUL	-	-	-	-
RE	235267	Test Receiver	Rohde & Schwarz	ESW44	103018	2024/03/05	12
RE	235735	Thermo-Hygrometer	CUSTOM. Inc	CTH-230	-	2024/04/28	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

RE: Radiated Emission