



RADIO TEST REPORT

Test Report No. : 13521383H-B-R1

Applicant : silex technology, Inc.
Type of EUT : Embedded Wireless Module
Model Number of EUT : SX-USBAC
FCC ID : N6C-USBAC
Test regulation : FCC Part 15 Subpart C: 2020
*Bluetooth (BR / EDR) parts
Test Result : Complied (Refer to SECTION 3)

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
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6. This test report covers Radio technical requirements.
It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. The all test items in this test report are conducted by UL Japan, Inc. Ise EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. The information provided from the customer for this report is identified in Section 1.
10. This report is a revised version of 13521383H-B. 13521383H-B is replaced with this report.

Date of test: October 19, 2020 to February 17, 2021

Representative test engineer:

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Engineer
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CERTIFICATE 5107.02

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

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REVISION HISTORY

Original Test Report No.: 13521383H-B

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13521383H-B	November 20, 2020	-	-
1	13521383H-B-R1	April 16, 2021	P.1	Correction of Date of test October 14 to November 4, 2020→ October 19, 2020 to February 17, 2021
1	13521383H-B-R1	April 16, 2021	P.5	Addition of Receipt Date for Simultaneous transmission in Section 2.1.
1	13521383H-B-R1	April 16, 2021	P.10	Addition of Simultaneous transmission in Section 4.1.
1	13521383H-B-R1	April 16, 2021	P.11	Correction of Test voltage in Section 4.2. AC 100 V/ 60 Hz→AC 120 V/ 60 Hz
1	13521383H-B-R1	April 16, 2021	P.11	Addition of Serial number and *3) for Simultaneous transmission in Section 4.2.
1	13521383H-B-R1	April 16, 2021	P.11	Addition of below explanatory note *4) in Section 4.2. *4) Conducted Emission test was performed on this port.
1	13521383H-B-R1	April 16, 2021	P.26	Replacement to new test data for 3DH1 and 3DH3 in APPENDIX 1: Test data (Dwell time)
1	13521383H-B-R1	April 16, 2021	P.28	Replacement to new test data for 3DH1 and 3DH3 in APPENDIX 1: Test data (Dwell time)
1	13521383H-B-R1	April 16, 2021	P.29	Replacement to new test data for 2DH5 in APPENDIX 1: Test data (Maximum Peak Output Power)
1	13521383H-B-R1	April 16, 2021	P.30	Replacement to new test data for 2DH5 in APPENDIX 1: Test data (Average Output Power)
1	13521383H-B-R1	April 16, 2021	P.31	Replacement to new test data for 2DH5 in APPENDIX 1: Test data (Burst Rate Confirmation)
1	13521383H-B-R1	April 16, 2021	P.32	Replacement to new test data in APPENDIX 1: Test data (Burst rate confirmation)
1	13521383H-B-R1	April 16, 2021	P.43, 44	Addition of test data for Simultaneous transmission in APPENDIX 1: Test data (Radiated Spurious Emission)
1	13521383H-B-R1	April 16, 2021	P.55	Addition of Local ID: MAEC-03 to MTR-03 in APPENDIX 2: Test instruments

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Reference: Abbreviations (Including words undescribed in this report)

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

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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
Facsimile Number	:	+81-774-98-3758
Contact Person	:	Yoshinori Nakai

The information provided from the customer is as follows;

- Applicant, Type 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
- SECTION 4: Operation of EUT during testing

* The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT

Type	:	Embedded Wireless Module
Model Number	:	SX-USBAC
Serial Number	:	Refer to SECTION 4.2
Rating	:	Typ: DC 3.3 V (Min: DC 3.14 V to Max: DC 3.46 V)
Receipt Date	:	September 30, 2020 (For All tests except for Simultaneous transmission) February 17, 2021 (For Simultaneous transmission)
Country of Mass-production	:	Japan
Condition	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	:	No Modification by the test lab.

2.2 Product Description

Model: SX-USBAC (referred to as the EUT in this report) is a Embedded Wireless Module.

Radio Specification

Radio Type : Transceiver
Method of Frequency Generation : Synthesizer
Clock frequency (Maximum) : 48 MHz

Specification of Wireless LAN (IEEE802.11b/g/a/n-20/n-40/11ac-20/11ac-40/11ac-80)

	IEEE802.11b	IEEE802.11g/n (20 M band)	IEEE802.11a/n/ac (20 M band)	IEEE802.11n/ac (40 M band)	IEEE802.11ac (80 M band)
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5720 MHz 5745 MHz - 5825 MHz	2422 MHz - 2452 MHz 5190 MHz - 5230 MHz 5270 MHz - 5310 MHz 5510 MHz - 5710 MHz 5755 MHz - 5795 MHz	5210 MHz 5290 MHz 5530 MHz - 5690 MHz 5775 MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	11a/n: OFDM (64QAM, 16QAM, QPSK, BPSK) 11ac: OFDM (64QAM, 16QAM, QPSK, BPSK, 256QAM)		
Channel spacing	5 MHz		20 MHz	40 MHz	80 MHz
Antenna type	PCB antenna				
Antenna Gain	2.4 GHz: 2 dBi 5 GHz: 3 dBi				

Bluetooth (Ver. 5.0 with EDR function)

	Bluetooth *1)
Frequency of operation	2402 MHz - 2480 MHz
Type of modulation	BT: FHSS (GFSK, $\pi/4$ DQPSK, 8DPSK) LE: GFSK
Channel spacing	BT: 1 MHz LE: 2 MHz
Antenna type	PCB antenna
Antenna Gain	2 dBi

*1) *This test report applies to Bluetooth (BR / EDR) part.

*Following channels are not used in Canada.

- 20 MHz Bandwidth (5600 MHz - 5640 MHz)
- 40 MHz Bandwidth (5590 MHz - 5630 MHz)
- 80 MHz Bandwidth (5610 MHz - 5650 MHz)

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C
FCC Part 15 final revised on October 13, 2020

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 revision does not affect the test result conducted before its effective date.

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	6.94 dB 0.44960 MHz, L, AV	Complied a)	-
Carrier Frequency Separation	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section 15.247(a)(1) ISED: RSS-247 5.1 (b)	See data.	Complied b)	Conducted
20dB Bandwidth	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section 15.247(a)(1) ISED: RSS-247 5.1 (a)		Complied b)	Conducted
Number of Hopping Frequency	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section 15.247(a)(1)(iii) ISED: RSS-247 5.1 (d)		Complied c)	Conducted
Dwell time	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: -	FCC: Section 15.247(a)(1)(iii) ISED: RSS-247 5.1 (d)		Complied d)	Conducted
Maximum Peak Output Power	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: RSS-Gen 6.12	FCC: Section 15.247(b)(1) ISED: RSS-247 5.4 (b)		Complied e)	Conducted
Spurious Emission & Band Edge Compliance	FCC: KDB 558074 D01 15.247 Meas Guidance v05r02 ISED: RSS-Gen 6.13	FCC: Section 15.247(d) ISED: RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	5.1 dB 20880.000 MHz, AV, Horizontal.	Complied# f) / g)	Conducted/ Radiated (above 30 MHz) *1)

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.

*1) Radiated test was selected over 30 MHz based on section 15.247(d).

a) Refer to APPENDIX 1 (data of Conducted Emission)

b) Refer to APPENDIX 1 (data of 20dB Bandwidth, 99%Occupied Bandwidth and Carrier Frequency Separation)

c) Refer to APPENDIX 1 (data of Number of Hopping Frequency)

d) Refer to APPENDIX 1 (data of Dwell time)

e) Refer to APPENDIX 1 (data of Maximum Peak Output Power)

f) Refer to APPENDIX 1 (data of Conducted Spurious Emission)

g) Refer to APPENDIX 1 (data of Radiated Spurious Emission)

Symbols:

Complied The data of this test item has enough margin, more than the measurement uncertainty.

Complied# The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.

* In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.

FCC Part 15.31 (e)

This EUT provides stable voltage constantly to RF Module regardless of input voltage.
Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

The antenna is not removable from the EUT.

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

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3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99% Occupied Bandwidth	ISED: RSS-Gen 6.7	ISED: -	N/A	- a)	Conducted
a)b) Refer to APPENDIX 1 (data of 20dB Bandwidth, 99%Occupied Bandwidth and Carrier Frequency Separation)					

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

3.4 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

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

Test Item	Uncertainty (+/-)
20 dB Bandwidth / 99 % Occupied Bandwidth	0.96 %
Maximum Peak Output Power / Average Output Power	1.4 dB
Carrier Frequency Separation	0.42 %
Dwell time / Burst rate	0.10 %
Conducted Spurious Emission	2.6 dB

Conducted emission

using Item	Frequency range	Uncertainty (+/-)
AMN (LISN)	0.009 MHz to 0.15 MHz	3.4 dB
	0.15 MHz to 30 MHz	2.9 dB

Radiated emission

Measurement distance	Frequency range	Uncertainty (+/-)
3 m	9 kHz to 30 MHz	3.3 dB
10 m		3.2 dB
3 m	30 MHz to 200 MHz (Horizontal) (Vertical)	4.8 dB
		5.0 dB
	200 MHz to 1000 MHz (Horizontal) (Vertical)	5.2 dB
		6.3 dB
10 m	30 MHz to 200 MHz (Horizontal) (Vertical)	4.8 dB
		4.8 dB
	200 MHz to 1000 MHz (Horizontal) (Vertical)	5.0 dB
		5.0 dB
3 m	1 GHz to 6 GHz	4.9 dB
	6 GHz to 18 GHz	5.2 dB
1 m	10 GHz to 26.5 GHz	5.5 dB
	26.5 GHz to 40 GHz	5.5 dB
10 m	1 GHz to 18 GHz	5.2 dB

3.5 Test Location

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*A2LA Certificate Number: 5107.02 / FCC Test Firm Registration Number: 199967

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

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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.11 measurement room	6.2 x 4.7 x 3.0	4.8 x 4.6	-	-

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

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

Bluetooth (BT): Transmitting (Tx), Payload: PRBS9

Details of Operating Mode(s)

Test Item	Mode	Tested frequency
Conducted Emission, Spurious Emission (Conducted/Radiated)	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Carrier Frequency Separation	Tx (Hopping On) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
20dB Bandwidth	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Number of Hopping Frequency	Tx (Hopping On) DH5, 3DH5	-
Dwell time	Tx (Hopping On), -DH1, DH3, DH5 -3DH1, 3DH3, 3DH5	-
Maximum Peak Output Power	Tx (Hopping Off) DH5, 2DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Band Edge Compliance (Conducted)	Tx DH5, 3DH5 -Hopping On -Hopping Off	2402 MHz 2480 MHz
99% Occupied Bandwidth	Tx DH5, 3DH5 -Hopping On -Hopping 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. *EUT has the power settings by the software as follows; Power settings: power level 8 Software: HY107890XX (Date: 2020.10.19, 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.		

Simultaneous transmission

(Simultaneously transmits Bluetooth (BR / EDR) and Wireless LAN 5 GHz band on a single antenna.)

Test Item	Mode *1)
Radiated Spurious Emission	Tx (Hopping off) 3DH5, 2480 MHz + 11ac-20, 5300 MHz
*1) The mode was tested as a representative, because it had the highest power at maximum output power test of Wireless LAN 5 GHz band and Bluetooth (BR / EDR). * Wireless LAN 2.4 GHz and Bluetooth do not transmit simultaneously.	

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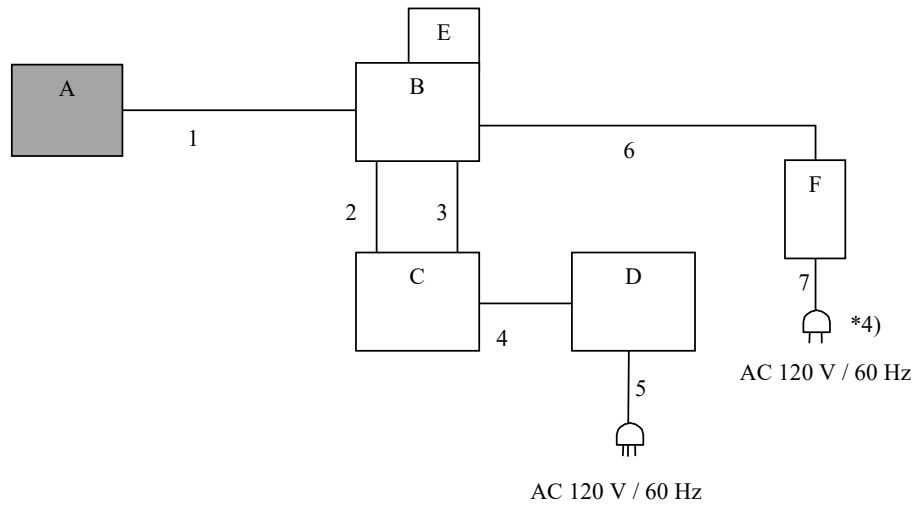
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4.2 Configuration and peripherals



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

*4) Conducted Emission test was performed on this port.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Embedded Wireless Module	SX-USBAC	015B15 *1)	silex technology, Inc.	EUT
			015B0B *2)		
			84253F-01612F *3)		
B	Jig Board	SX07042 *1)	TR18272275 *1)	silex technology, Inc.	-
		SX04847 *2)	TR16345192 *2)		
C	Laptop PC	Latitude 5590	CFSPRH2 *1)	DELL	-
			HSLHST2 *2)		
D	AC Adaptor	LA90PM130	CN-50GT3K-LOC00-8AF-4753-A02 *1)	DELL	-
			CN-50GT3K-LOC00-8AF-4EB6-A02 *2)		
E	SD Card	SD-K08G *1)	1704 WM05716 *1)	TOSHIBA *1)	-
		SDSDUN-008G-J01 *2)	BI1529450177D *2)	SanDisk *2)	
F	AC Adaptor	ATS036T-A050	400-75956 *1)	Sceptre	-
			2832S 07 *2)		

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB Cable	3.0 *1) 1.8 *2)	Shielded	Shielded	-
2	LAN Cable	2.0	Unshielded	Unshielded	-
3	USB Cable	1.9	Shielded	Shielded	-
4	DC Cable	1.8	Unshielded	Unshielded	-
5	AC Cable	0.9	Unshielded	Unshielded	-
6	DC Cable	1.0	Unshielded	Unshielded	-
7	AC Cable	1.8	Unshielded	Unshielded	-

*1) Used for Antenna Terminal Conducted test.

*2) Used for Conducted Emission test and Radiated Emission test.

*3) Used for Simultaneous transmission

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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 aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)

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

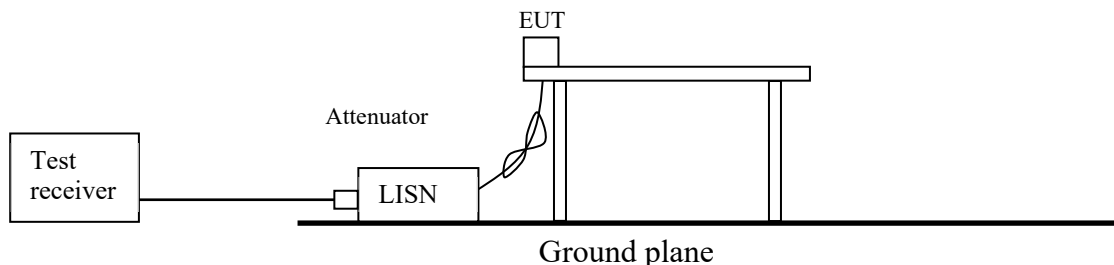
The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber. The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

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 - 30 MHz
Test data	: APPENDIX
Test result	: Pass

Figure 1: Test Setup



SECTION 6: 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.

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.

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 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.

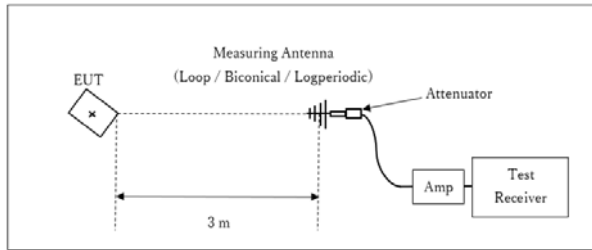
20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9 (ISED) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (ISED).

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV *1)	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: 100 traces Duty factor was added to the results.	RBW: 100 kHz VBW: 300 kHz

*1) Average Power Measurement was performed based on KDB 558074 D01 15.247 Meas Guidance v05r02.

Figure 2: Test Setup

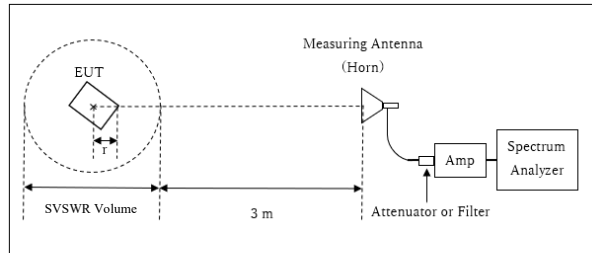
Below 1 GHz



x : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz



r : Radius of an outer periphery of EUT

x : Center of turn table

Distance Factor: $20 \times \log (4.0 \text{ m} / 3.0 \text{ m}) = 2.50 \text{ dB}$

* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 4.0 \text{ m}$

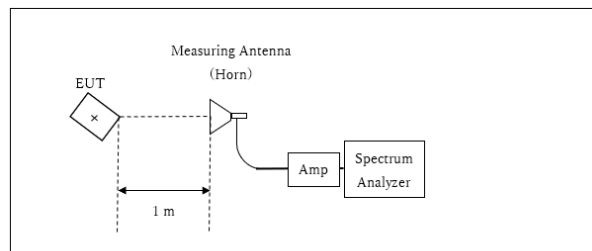
SVSWR Volume : 2.0 m

(SVSWR Volume has been calibrated based on CISPR 16-1-4.)

r = 0.0m

* The test was performed with r = 0.0 m since EUT is small and it was the rather conservative condition.

10 GHz - 26.5 GHz



x : Center of turn table

Distance Factor: $20 \times \log (1.0 \text{ m} / 3.0 \text{ m}) = -9.5 \text{ dB}$

*Test Distance: 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 - 26.5 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
20dB 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: 50MHz BW)
Carrier Frequency Separation	3 MHz	30 kHz	100 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30 MHz	200 kHz	620 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	9.1 kHz	27 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) 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 = 9.1 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.

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

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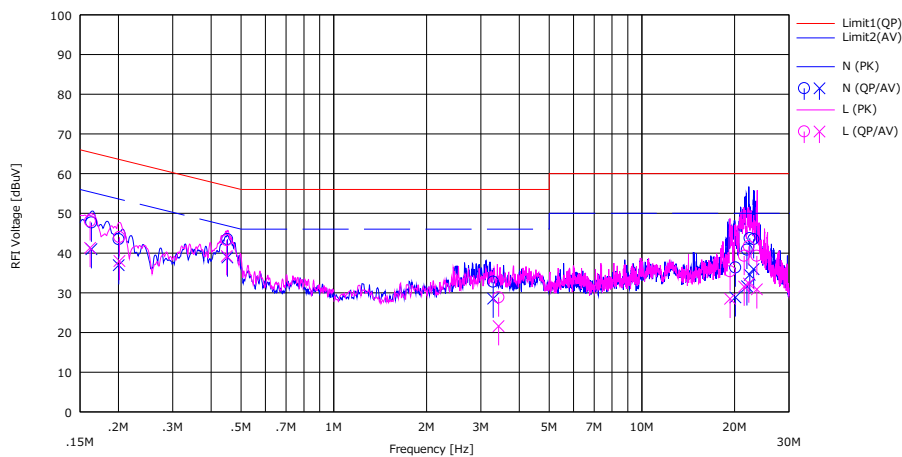
Facsimile : +81 596 24 8124

APPENDIX 1: Test data

Conducted Emission

Report No. 13521383H
Test place Ise EMC Lab. No.4 Semi Anechoic Chamber
Date November 3, 2020
Temperature / Humidity 24 deg. C / 43 % RH
Engineer Junya Okuno
Mode Tx, Hopping Off, DH5, 2480 MHz

Limit : FCC_Part 15 Subpart C(15.207)



No.	Freq. [MHz]	Reading		LISN [dB]	LOSS [dB]	Results		Limit		Margin		Phase	Comment
		(QP) [dBuV]	(AV) [dBuV]			(QP) [dBuV]	(AV) [dBuV]	(QP) [dBuV]	(AV) [dBuV]	(QP) [dB]	(AV) [dB]		
1	0.16342	34.40	27.70	0.07	13.20	47.67	40.97	65.29	55.29	17.62	14.32	N	
2	0.20050	30.20	23.70	0.06	13.21	43.47	36.97	63.59	53.59	20.12	16.62	N	
3	0.45155	30.20	25.60	0.06	13.24	43.50	38.90	56.85	46.85	13.35	7.95	N	
4	3.29072	19.20	15.00	0.11	13.44	32.75	28.55	56.00	46.00	23.25	17.45	N	
5	20.11600	22.00	14.50	0.40	13.93	36.33	28.83	60.00	50.00	23.67	21.17	N	
6	21.93600	26.40	17.20	0.44	13.97	40.81	31.61	60.00	50.00	19.19	18.39	N	
7	22.39300	29.30	20.10	0.45	13.98	43.73	34.53	60.00	50.00	16.27	15.47	N	
8	23.03660	29.00	21.50	0.47	13.99	43.46	35.96	60.00	50.00	16.54	14.04	N	
9	0.16188	34.70	28.00	0.10	13.20	48.00	41.30	65.37	55.37	17.37	14.07	L	
10	0.20145	30.70	24.70	0.10	13.21	44.01	38.01	63.55	53.55	19.54	15.54	L	
11	0.44925	29.90	25.90	0.10	13.24	43.24	39.24	56.89	46.89	13.65	7.65	L	
12	3.42720	15.20	8.00	0.16	13.45	28.81	21.61	56.00	46.00	27.19	24.39	L	
13	19.32800	21.00	14.10	0.47	13.92	35.39	28.49	60.00	50.00	24.61	21.51	L	
14	21.45840	24.80	17.10	0.52	13.96	39.28	31.58	60.00	50.00	20.72	18.42	L	
15	22.23840	27.20	17.80	0.54	13.97	41.71	32.31	60.00	50.00	18.29	17.69	L	
16	23.60480	24.70	16.30	0.58	14.00	39.28	30.88	60.00	50.00	20.72	19.12	L	

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

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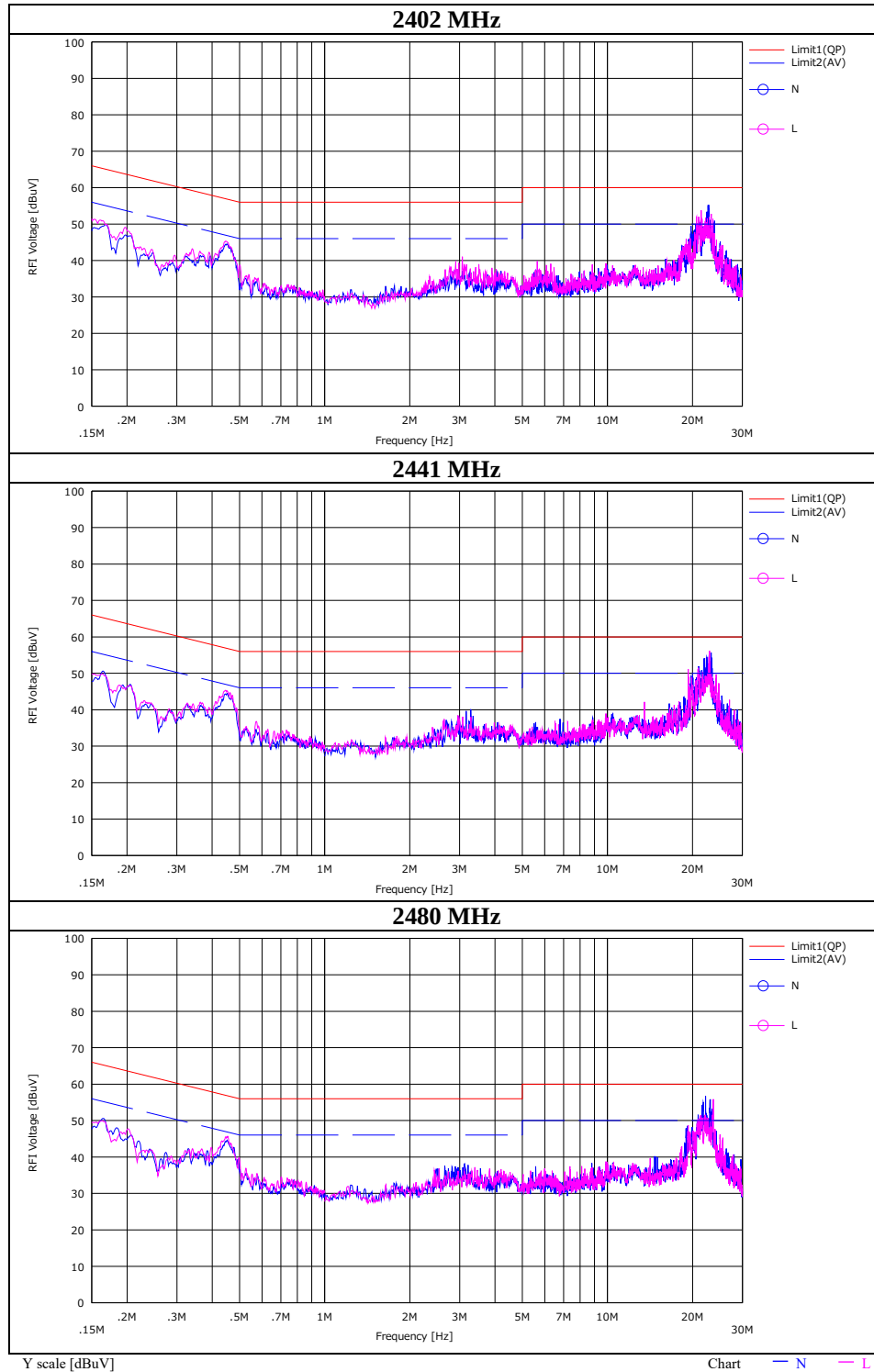
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Conducted Emission

Report No. 13521383H
Test place Ise EMC Lab. No.4 Semi Anechoic Chamber
Date November 3, 2020
Temperature / Humidity 24 deg. C / 43 % RH
Engineer Junya Okuno
Mode Tx, Hopping Off, DH5



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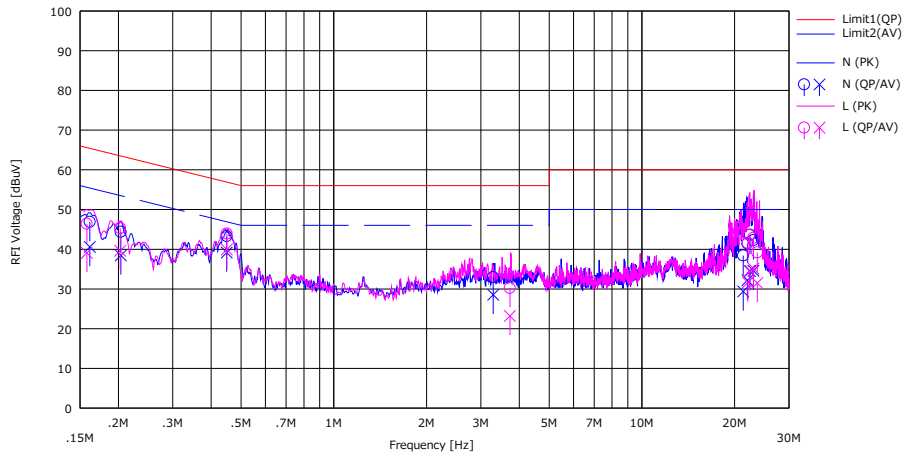
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Facsimile : +81 596 24 8124

Conducted Emission

Report No. 13521383H
Test place Ise EMC Lab. No.4 Semi Anechoic Chamber
Date November 3, 2020
Temperature / Humidity 24 deg. C / 43 % RH
Engineer Junya Okuno
Mode Tx, Hopping Off, 3DH5, 2480MHz

Limit : FCC_Part 15 Subpart C(15.207)



No.	Freq. [MHz]	Reading		LISN	LOSS	Results		Limit		Margin		Phase	Comment
		[QP] [dBuV]	[AV] [dBuV]			[QP] [dBuV]	[AV] [dBuV]	[QP] [dBuV]	[AV] [dBuV]	[QP] [dB]	[AV] [dB]		
1	0.16148	33.60	27.30	0.07	13.20	46.87	40.57	65.39	55.39	18.52	14.82	N	
2	0.20360	31.10	25.20	0.06	13.21	44.37	38.47	63.46	53.46	19.09	14.99	N	
3	0.44940	30.00	25.90	0.06	13.24	43.30	39.20	56.89	46.89	13.59	7.69	N	
4	3.28928	19.40	15.00	0.11	13.44	32.95	28.55	56.00	46.00	23.05	17.45	N	
5	21.32960	24.00	15.00	0.43	13.96	38.39	29.39	60.00	50.00	21.61	20.61	N	
6	22.00220	27.00	17.80	0.44	13.97	41.41	32.21	60.00	50.00	18.59	17.79	N	
7	22.43210	29.20	20.10	0.45	13.98	43.63	34.53	60.00	50.00	16.37	15.47	N	
8	23.02580	27.80	20.10	0.47	13.99	42.26	34.56	60.00	50.00	17.74	15.44	N	
9	0.15794	33.10	25.80	0.10	13.20	46.40	39.10	65.57	55.57	19.17	16.47	L	
10	0.20280	32.00	26.30	0.10	13.21	45.31	39.61	63.50	53.50	18.19	13.89	L	
11	0.44960	30.60	26.60	0.10	13.24	43.94	39.94	56.88	46.88	12.94	6.94	L	
12	3.73036	16.60	9.60	0.16	13.47	30.23	23.23	56.00	46.00	25.77	22.77	L	
13	22.06420	27.10	17.10	0.54	13.97	41.61	31.61	60.00	50.00	18.39	18.39	L	
14	22.31740	29.00	20.00	0.54	13.98	43.52	34.52	60.00	50.00	16.48	15.48	L	
15	23.02500	28.30	20.60	0.56	13.99	42.85	35.15	60.00	50.00	17.15	14.85	L	
16	23.67880	24.60	16.90	0.58	14.00	39.18	31.48	60.00	50.00	20.82	18.52	L	

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

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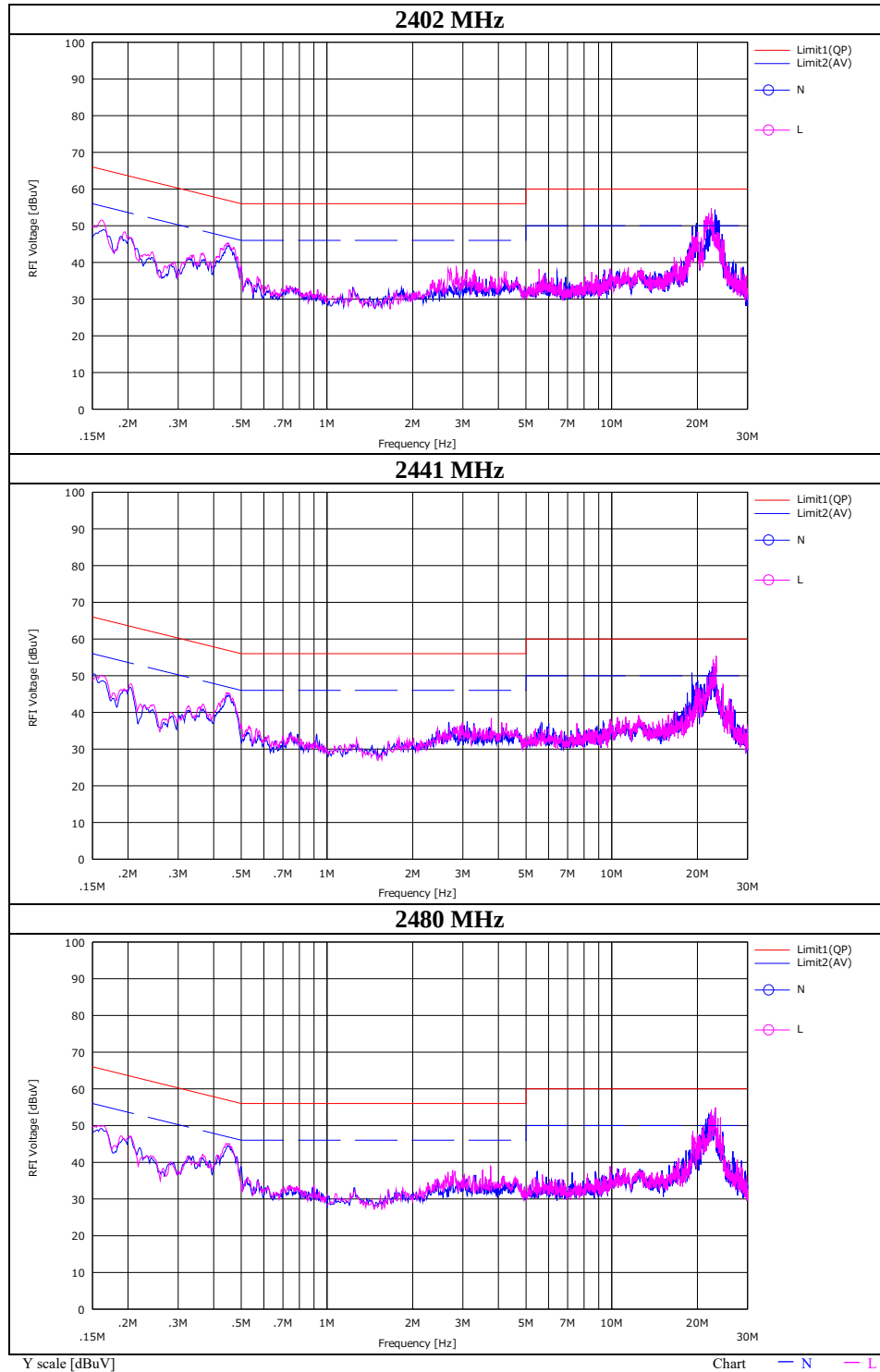
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Conducted Emission

Report No. 13521383H
Test place Ise EMC Lab. No.4 Semi Anechoic Chamber
Date November 3, 2020
Temperature / Humidity 24 deg. C / 43 % RH
Engineer Junya Okuno
Mode Tx, Hopping Off, 3DH5



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

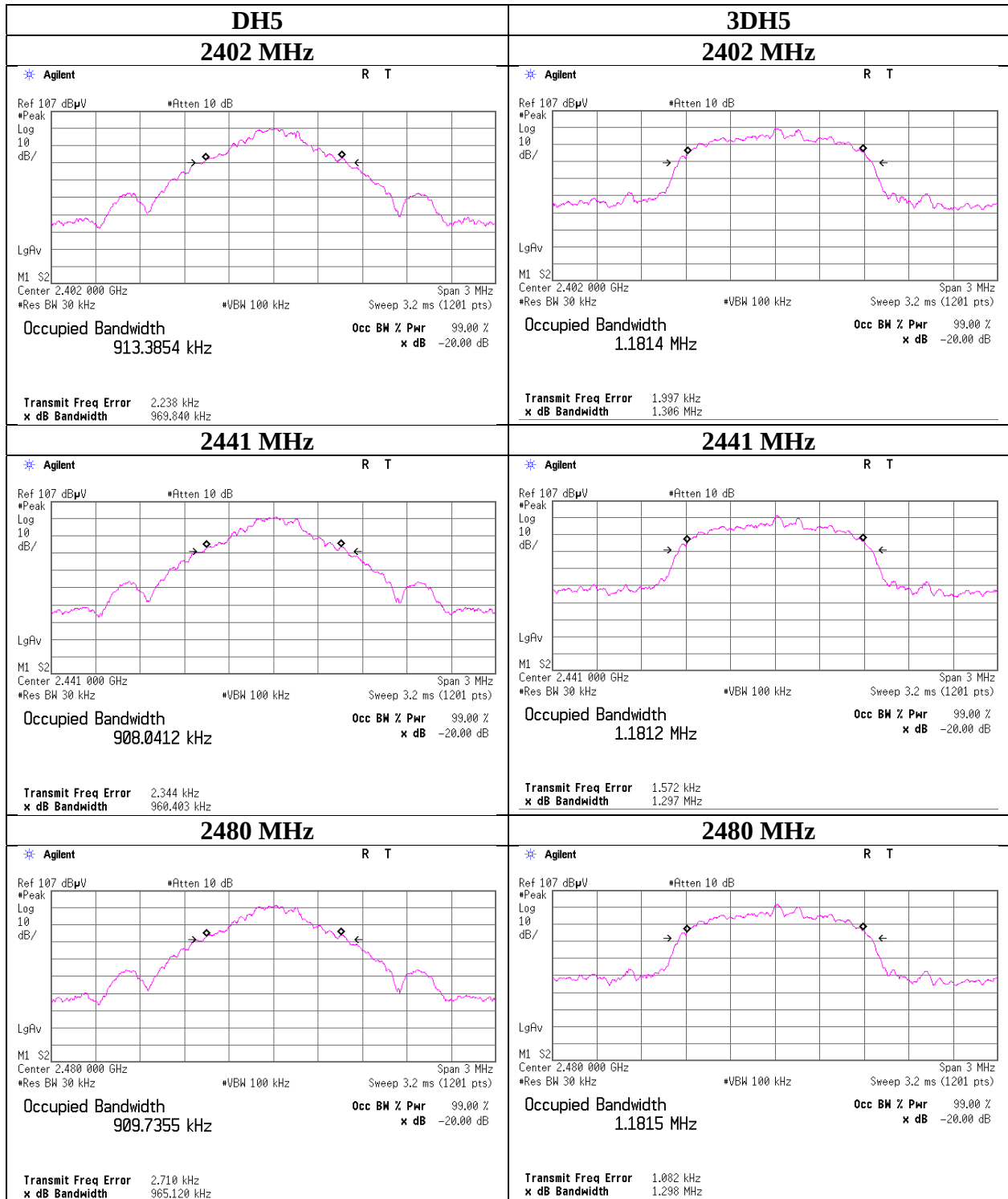
Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, Tx, Hopping On

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	99% Occupied Bandwidth [kHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.970	913.385	1.000	≥ 0.647
DH5	2441.0	0.960	908.041	1.000	≥ 0.640
DH5	2480.0	0.965	909.736	1.000	≥ 0.643
DH5	Hopping On	-	78594.300	-	-
3DH5	2402.0	1.306	1181.400	1.000	≥ 0.871
3DH5	2441.0	1.297	1181.200	1.000	≥ 0.865
3DH5	2480.0	1.298	1181.500	1.000	≥ 0.865
3DH5	Hopping On	-	78654.300	-	-

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

No limit applies to 20dB Bandwidth.

20 dB Bandwidth and 99 % Occupied Bandwidth



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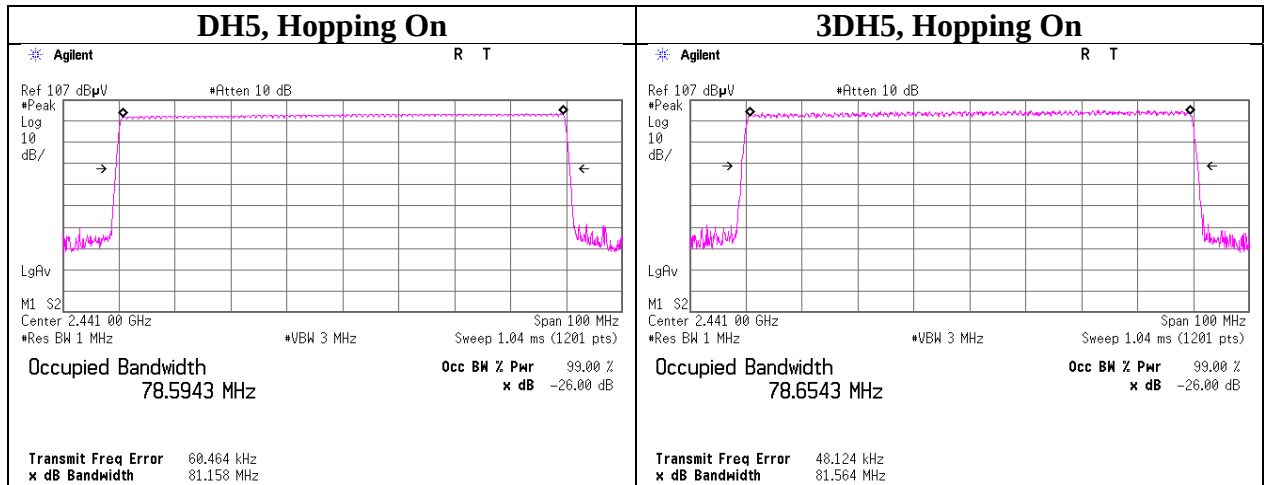
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20 dB Bandwidth and 99 % Occupied Bandwidth



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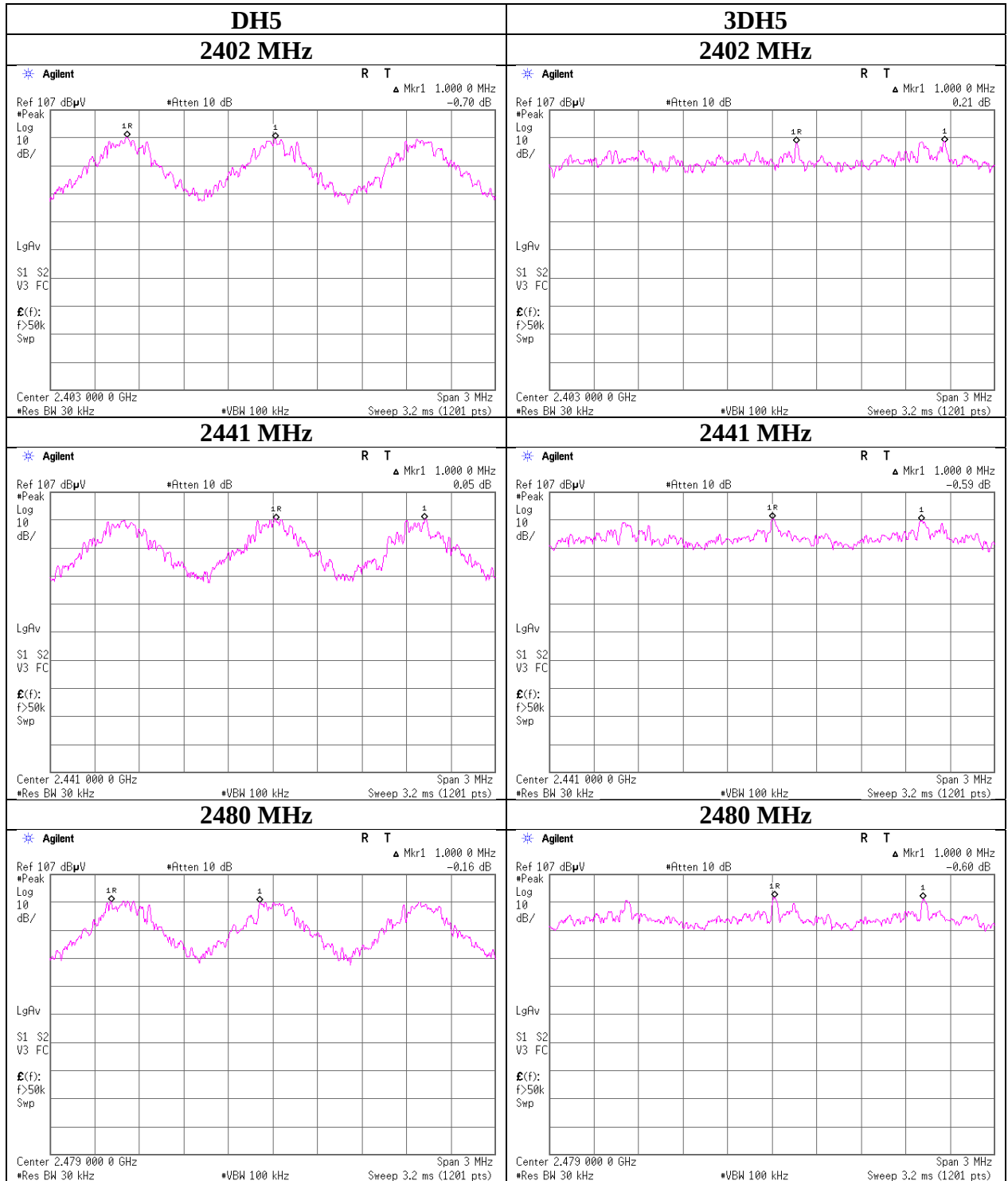
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Carrier Frequency Separation



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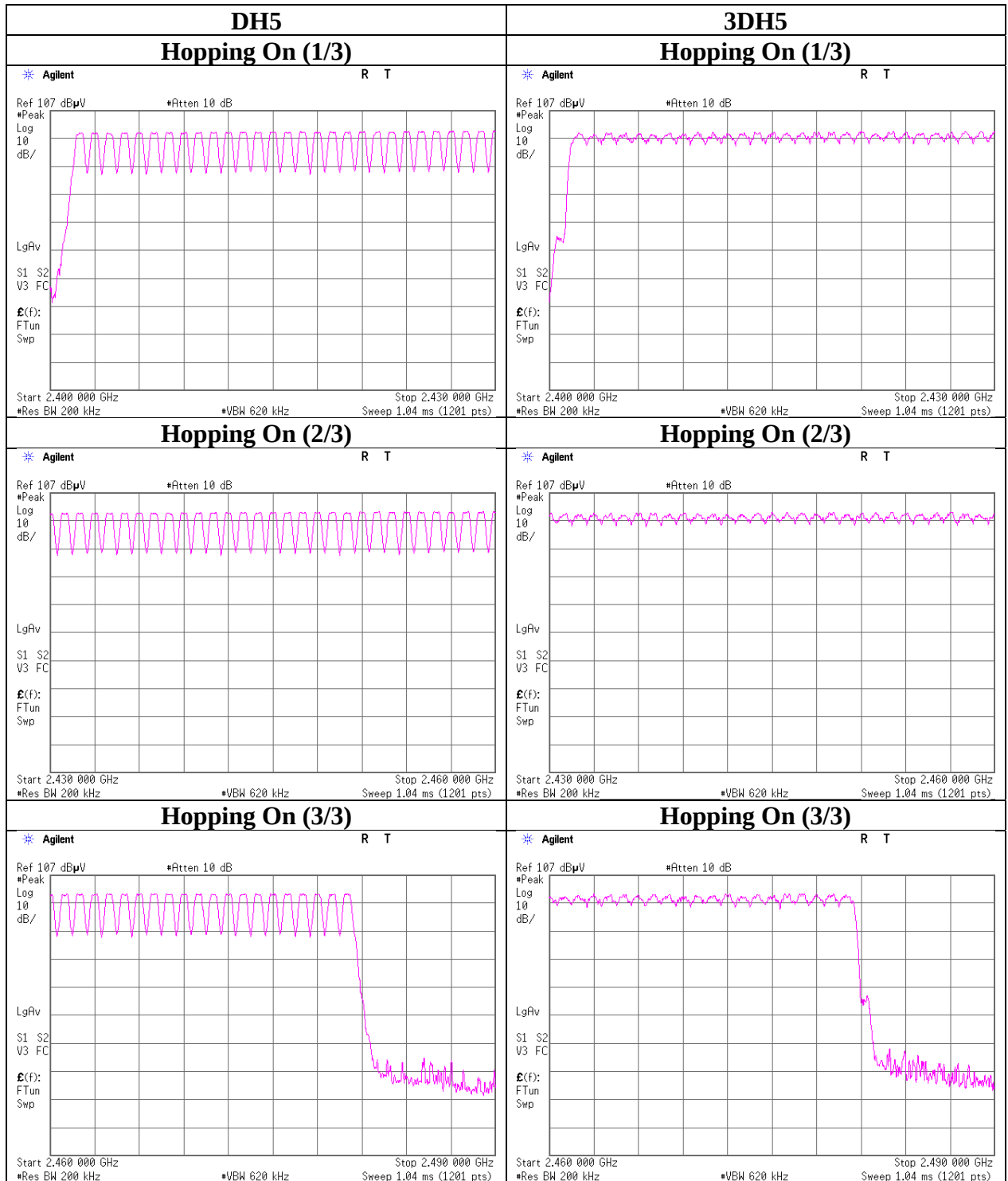
Number of Hopping Frequency

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020
Temperature / Humidity 19 deg. C / 59 % RH
Engineer Hiroyuki Furutaka
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



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Dwell time

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020 December 21, 2020
Temperature / Humidity 19 deg. C / 59 % RH 20 deg. C / 34 % RH
Engineer Hiroyuki Furutaka Hiroyuki Furutaka
(DH1,DH3,DH5,3DH5) (3DH1,3DH3)
Mode Tx, Hopping On

Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8 (32 Hopping x 0.4) second period				Length of transmission [msec]	Result [msec]	Limit [msec]
DH1	50.4 times	/	5 sec. x	31.6 sec. = 319 times	0.374	119	400
DH3	27.6 times	/	5 sec. x	31.6 sec. = 175 times	1.621	284	400
DH5	21.2 times	/	5 sec. x	31.6 sec. = 134 times	2.866	384	400
3DH1	49.6 times	/	5 sec. x	31.6 sec. = 314 times	0.383	120	400
3DH3	25.4 times	/	5 sec. x	31.6 sec. = 161 times	1.621	261	400
3DH5	20.2 times	/	5 sec. x	31.6 sec. = 128 times	2.834	363	400

Sample Calculation

Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

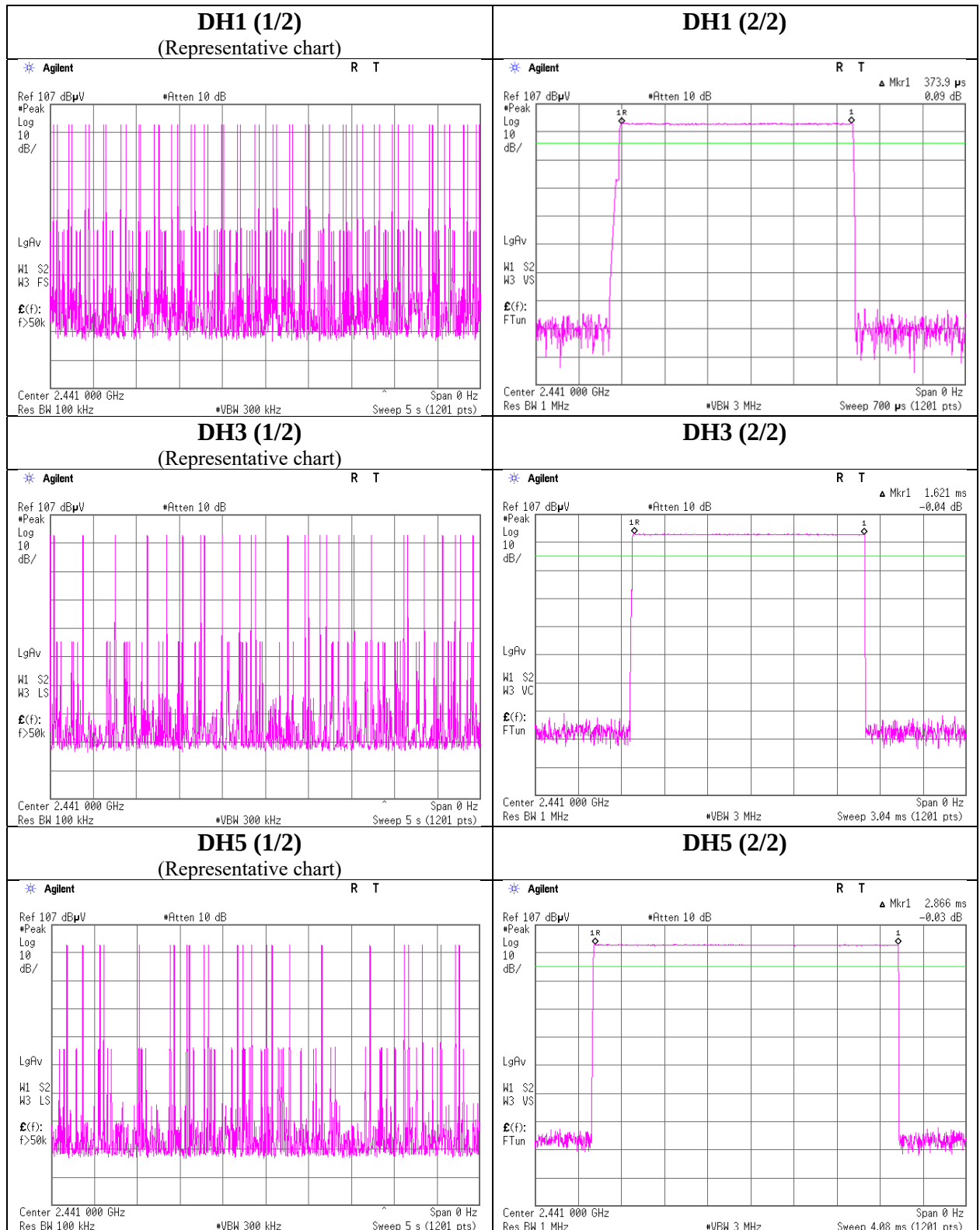
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	50	52	51	49	50	50.4
DH3	26	25	29	29	29	27.6
DH5	18	25	25	18	20	21.2
3DH1	50	49	50	48	51	49.6
3DH3	24	22	30	21	30	25.4
3DH5	19	21	19	22	20	20.2

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 $N \times 0.4s$, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless of packet size. This is confirmed in the test report for $N = 79$.

Dwell time



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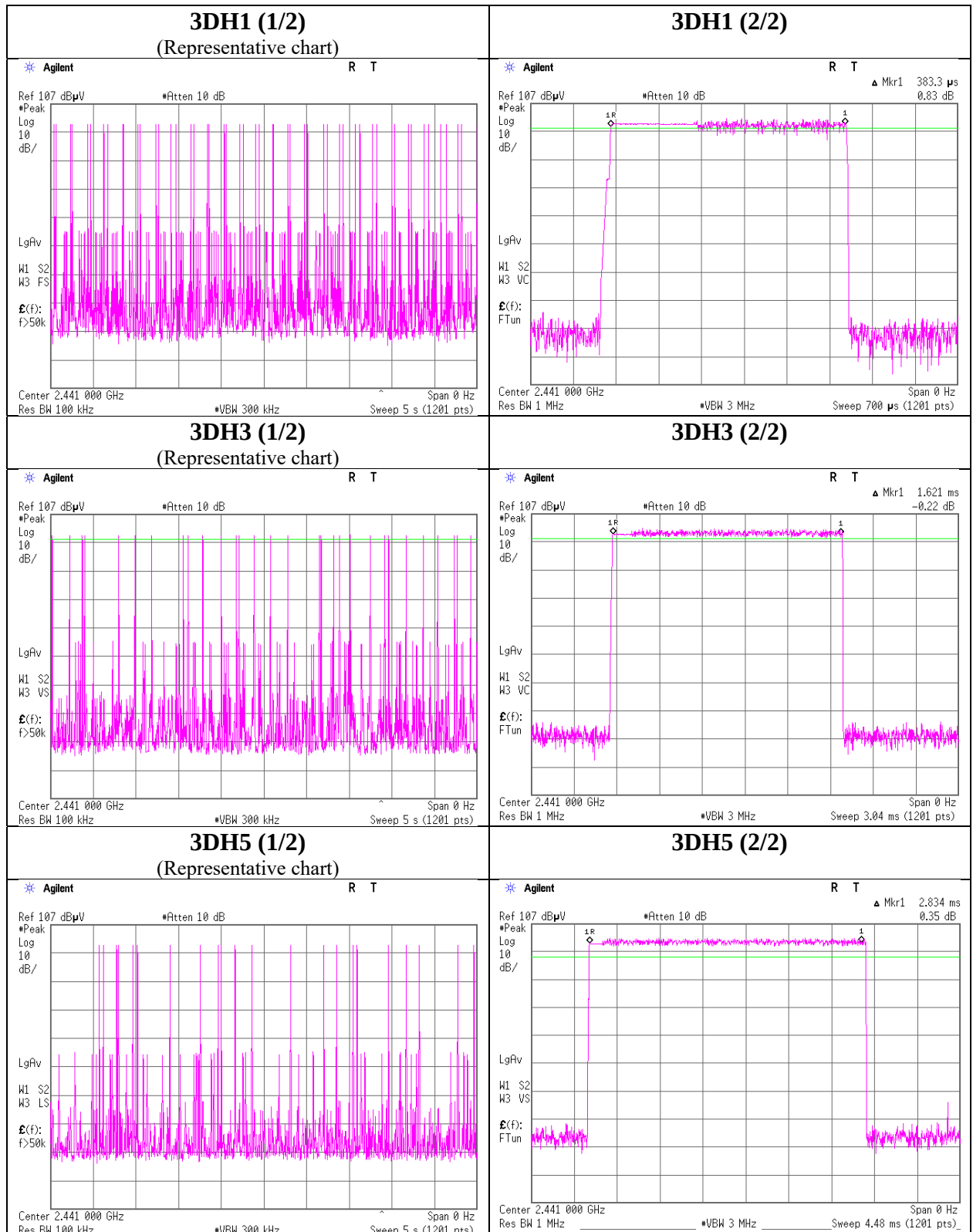
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Dwell time



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Maximum Peak Output Power

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020 December 21, 2020
Temperature / Humidity 19 deg. C / 59 % RH 20 deg. C / 34 % RH
Engineer Hiroyuki Furutaka Hiroyuki Furutaka
(DH5,3DH5) (2DH5)
Mode Tx, Hopping Off

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	2402.0	-7.91	1.00	10.10	3.19	2.08	20.96	125	17.77	2.00	5.19	3.30	36.02	4000	30.83
DH5	2441.0	-7.11	1.00	10.10	3.99	2.51	20.96	125	16.97	2.00	5.99	3.97	36.02	4000	30.03
DH5	2480.0	-6.73	1.00	10.10	4.37	2.74	20.96	125	16.59	2.00	6.37	4.34	36.02	4000	29.65
2DH5	2402.0	-7.33	1.00	10.10	3.77	2.38	20.96	125	17.19	2.00	5.77	3.78	36.02	4000	30.25
2DH5	2441.0	-6.81	1.00	10.10	4.29	2.69	20.96	125	16.67	2.00	6.29	4.26	36.02	4000	29.73
2DH5	2480.0	-6.48	1.00	10.10	4.62	2.90	20.96	125	16.34	2.00	6.62	4.59	36.02	4000	29.40
3DH5	2402.0	-5.46	1.00	10.10	5.64	3.66	20.96	125	15.32	2.00	7.64	5.81	36.02	4000	28.38
3DH5	2441.0	-4.70	1.00	10.10	6.40	4.37	20.96	125	14.56	2.00	8.40	6.92	36.02	4000	27.62
3DH5	2480.0	-4.31	1.00	10.10	6.79	4.78	20.96	125	14.17	2.00	8.79	7.57	36.02	4000	27.23

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: 20ch) 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 20dB BW without 2/3 relaxation, 125mW power limit was applied to it.

Average Output Power
(Reference data for RF Exposure / SAR testing)

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020 December 21, 2020
Temperature / Humidity 19 deg. C / 59 % RH 20 deg. C / 34 % RH
Engineer Hiroyuki Furutaka Hiroyuki Furutaka
(DH5,3DH5) (2DH5)
Mode Tx, Hopping Off

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	2402.0	-9.32	1.00	10.10	1.78	1.51	1.11	2.89	1.95
DH5	2441.0	-8.52	1.00	10.10	2.58	1.81	1.11	3.69	2.34
DH5	2480.0	-8.11	1.00	10.10	2.99	1.99	1.11	4.10	2.57
2DH5	2402.0	-11.25	1.00	10.10	-0.15	0.97	1.10	0.95	1.24
2DH5	2441.0	-10.65	1.00	10.10	0.45	1.11	1.10	1.55	1.43
2DH5	2480.0	-10.34	1.00	10.10	0.76	1.19	1.10	1.86	1.53
3DH5	2402.0	-9.77	1.00	10.10	1.33	1.36	1.10	2.43	1.75
3DH5	2441.0	-8.96	1.00	10.10	2.14	1.64	1.10	3.24	2.11
3DH5	2480.0	-8.56	1.00	10.10	2.54	1.79	1.10	3.64	2.31

Sample Calculation:

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

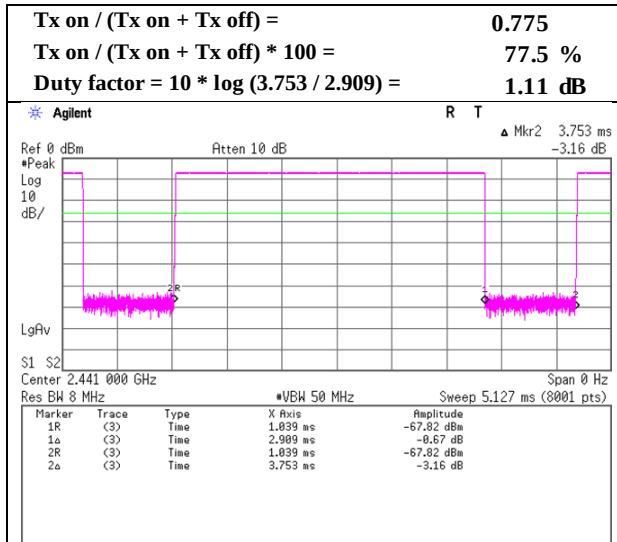
Result (Burst power average) = Time average + Duty factor

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

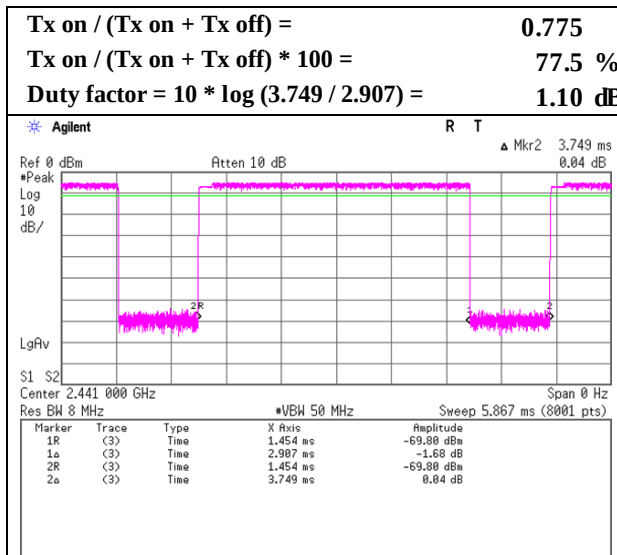
Burst Rate Confirmation

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020 December 21, 2020
Temperature / Humidity 19 deg. C / 59 % RH 20 deg. C / 34 % RH
Engineer Hiroyuki Furutaka Hiroyuki Furutaka
(DH5,3DH5) (2DH5)
Mode Tx, Hopping Off

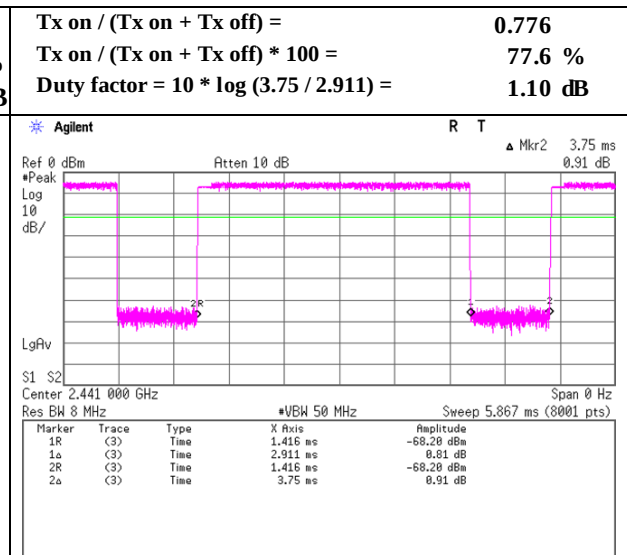
DH5



2DH5



3DH5

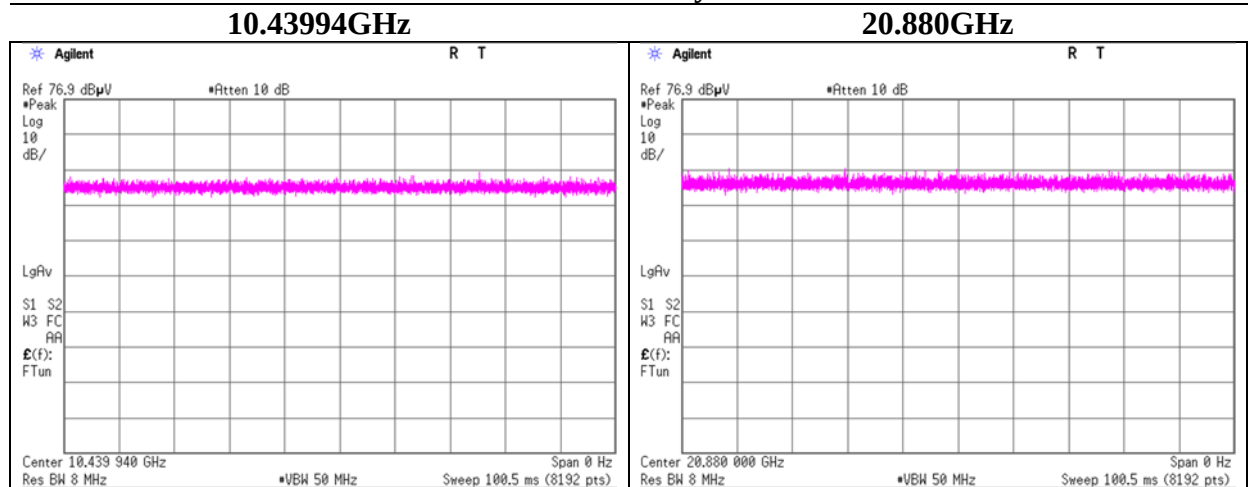


Burst Rate Confirmation
(for Radiated Spurious Emission)

Report No. 13521383H
Test place Ise EMC Lab.
Semi Anechoic Chamber No.4
Date December 16, 2020
Temperature / Humidity 23 deg. C / 33 % RH
Engineer Junya Okuno
(10 GHz – 26.5 GHz)
Mode Tx, Hopping Off, DH5 and 3DH5

DH5 / 3DH5

100 % Duty



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Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz -10 GHz)	(10 GHz - 18 GHz)	(18 GHz – 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.2	18.4	7.2	32.0	-	17.8	40.0	22.2	
Hori.	75.000	QP	28.1	6.4	7.8	32.0	-	10.3	40.0	29.7	
Hori.	190.789	QP	23.5	16.3	8.9	31.8	-	16.8	43.5	26.7	
Hori.	246.498	QP	31.0	11.7	9.4	31.8	-	20.3	46.0	25.7	
Hori.	276.036	QP	28.7	13.2	9.6	31.8	-	19.7	46.0	26.3	
Hori.	305.100	QP	31.2	13.7	9.8	31.8	-	22.9	46.0	23.1	
Hori.	2390.000	PK	44.3	27.8	5.5	31.8	-	45.8	73.9	28.1	
Hori.	4804.000	PK	41.5	31.6	7.7	31.2	-	49.6	73.9	24.3	Floor noise
Hori.	7206.000	PK	41.5	36.5	8.9	32.4	-	54.5	73.9	19.4	Floor noise
Hori.	9608.000	PK	41.2	38.0	9.6	32.6	-	56.3	73.9	17.7	Floor noise
Hori.	10439.960	PK	45.3	40.0	-2.2	33.0	-	50.2	73.9	23.8	
Hori.	20880.000	PK	49.5	38.1	-2.0	33.0	-	52.6	73.9	21.3	
Hori.	2390.000	AV	33.8	27.8	5.5	31.8	1.1	36.4	53.9	17.5	*1)
Hori.	4804.000	AV	30.4	31.6	7.7	31.2	-	38.5	53.9	15.4	Floor noise
Hori.	7206.000	AV	32.0	36.5	8.9	32.4	-	45.0	53.9	8.9	Floor noise
Hori.	9608.000	AV	30.8	38.0	9.6	32.6	-	45.8	53.9	8.1	Floor noise
Hori.	10439.960	AV	38.2	40.0	-2.2	33.0	-	43.1	53.9	10.8	
Hori.	20880.000	AV	45.5	38.1	-2.0	33.0	-	48.5	53.9	5.4	
Vert.	75.000	QP	46.8	6.4	7.8	32.0	-	29.0	40.0	11.0	
Vert.	80.510	QP	39.4	6.9	7.9	32.0	-	22.2	40.0	17.8	
Vert.	105.810	QP	37.4	11.0	8.1	31.9	-	24.7	43.5	18.8	
Vert.	134.940	QP	38.9	14.0	8.4	31.9	-	29.5	43.5	14.0	
Vert.	187.441	QP	34.5	16.2	8.9	31.8	-	27.8	43.5	15.8	
Vert.	305.100	QP	38.2	13.7	9.8	31.8	-	29.9	46.0	16.1	
Vert.	2390.000	PK	44.0	27.8	5.5	31.8	-	45.5	73.9	28.4	
Vert.	4804.000	PK	40.7	31.6	7.7	31.2	-	48.8	73.9	25.1	Floor noise
Vert.	7206.000	PK	41.7	36.5	8.9	32.4	-	54.7	73.9	19.2	Floor noise
Vert.	9608.000	PK	41.2	38.0	9.6	32.6	-	56.2	73.9	17.7	Floor noise
Vert.	10439.960	PK	44.5	40.0	-2.2	33.0	-	49.4	73.9	24.5	
Vert.	20880.000	PK	49.3	38.1	-2.0	33.0	-	52.4	73.9	21.5	
Vert.	2390.000	AV	34.1	27.8	5.5	31.8	1.1	36.7	53.9	17.2	*1)
Vert.	4804.000	AV	30.2	31.6	7.7	31.2	-	38.3	53.9	15.6	Floor noise
Vert.	7206.000	AV	31.8	36.5	8.9	32.4	-	44.9	53.9	9.0	Floor noise
Vert.	9608.000	AV	31.2	38.0	9.6	32.6	-	46.3	53.9	7.6	Floor noise
Vert.	10439.960	AV	38.0	40.0	-2.2	33.0	-	42.9	53.9	11.0	
Vert.	20880.000	AV	44.8	38.1	-2.0	33.0	-	47.9	53.9	6.0	

Result = 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).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

*1) Not Out of Band emission(Leakage Power)

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	96.3	27.8	5.5	31.8	97.8	-	-	Carrier
Hori.	2400.000	PK	40.0	27.8	5.5	31.8	41.5	77.8	36.3	
Vert.	2402.000	PK	96.6	27.8	5.5	31.8	98.1	-	-	Carrier
Vert.	2400.000	PK	39.7	27.8	5.5	31.8	41.2	78.1	37.0	

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

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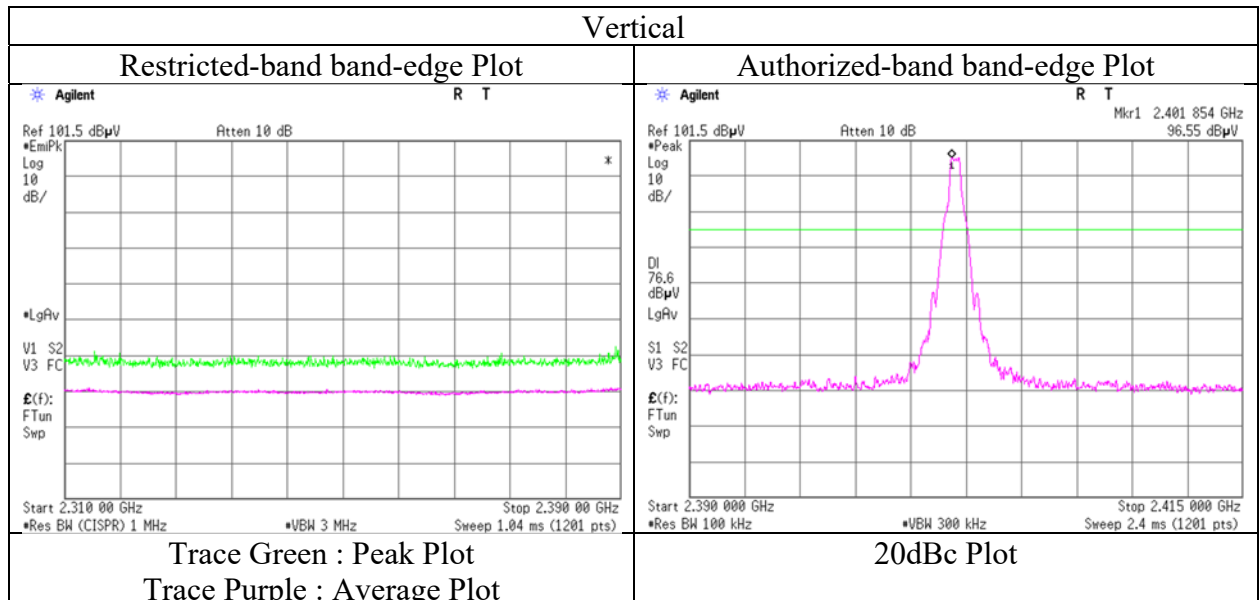
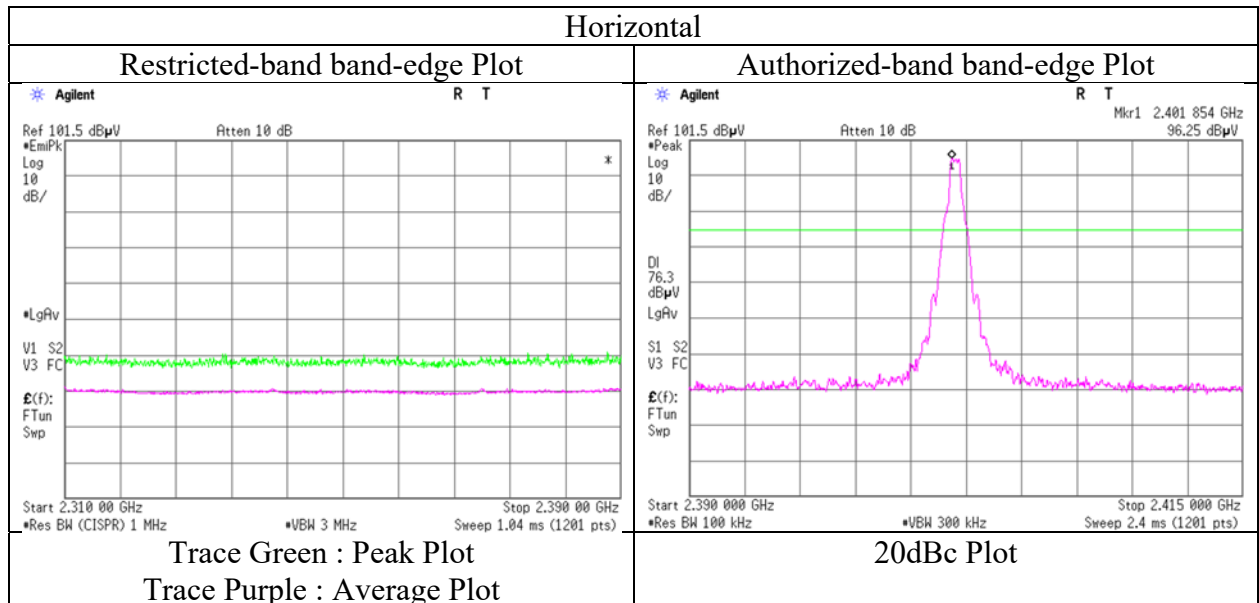
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Facsimile : +81 596 24 8124

Radiated Spurious Emission (Reference Plot for band-edge)

Report No.	13521383H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	October 25, 2020
Temperature / Humidity	20 deg. C / 46 % RH
Engineer	Takeshi Hiyaji
	(1 GHz -10 GHz)
Mode	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 was shown in tabular data.

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Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.2	18.4	7.2	32.0	-	17.8	40.0	22.2	
Hori.	75.000	QP	27.9	6.4	7.8	32.0	-	10.1	40.0	29.9	
Hori.	190.789	QP	23.4	16.3	8.9	31.8	-	16.7	43.5	26.8	
Hori.	246.500	QP	31.0	11.7	9.4	31.8	-	20.3	46.0	25.7	
Hori.	276.036	QP	28.8	13.2	9.6	31.8	-	19.8	46.0	26.2	
Hori.	305.100	QP	31.4	13.7	9.8	31.8	-	23.1	46.0	22.9	
Hori.	4882.000	PK	40.7	31.6	7.7	31.2	-	48.8	73.9	25.1	Floor noise
Hori.	7323.000	PK	42.0	36.6	8.9	32.4	-	55.1	73.9	18.8	Floor noise
Hori.	9764.000	PK	41.3	38.5	9.6	32.7	-	56.7	73.9	17.2	Floor noise
Hori.	10439.980	PK	45.3	40.0	-2.2	33.0	-	50.2	73.9	23.7	
Hori.	20880.000	PK	49.7	38.1	-2.0	33.0	-	52.8	73.9	21.1	
Hori.	4882.000	AV	31.9	31.6	7.7	31.2	-	40.0	53.9	13.9	Floor noise
Hori.	7323.000	AV	32.6	36.6	8.9	32.4	-	45.7	53.9	8.2	Floor noise
Hori.	9764.000	AV	31.9	38.5	9.6	32.7	-	47.3	53.9	6.6	Floor noise
Hori.	10439.980	AV	38.1	40.0	-2.2	33.0	-	43.0	53.9	10.9	
Hori.	20880.000	AV	45.7	38.1	-2.0	33.0	-	48.8	53.9	5.1	
Vert.	75.000	QP	46.4	6.4	7.8	32.0	-	28.6	40.0	11.4	
Vert.	81.612	QP	39.3	7.0	7.9	32.0	-	22.2	40.0	17.8	
Vert.	105.810	QP	37.3	11.0	8.1	31.9	-	24.6	43.5	18.9	
Vert.	134.951	QP	38.8	14.0	8.4	31.9	-	29.4	43.5	14.1	
Vert.	187.441	QP	34.7	16.2	8.9	31.8	-	28.0	43.5	15.6	
Vert.	305.100	QP	38.4	13.7	9.8	31.8	-	30.1	46.0	15.9	
Vert.	4882.000	PK	41.0	31.6	7.7	31.2	-	49.1	73.9	24.8	Floor noise
Vert.	7323.000	PK	41.7	36.6	8.9	32.4	-	54.8	73.9	19.1	Floor noise
Vert.	9764.000	PK	41.6	38.5	9.6	32.7	-	57.0	73.9	16.9	Floor noise
Vert.	10439.980	PK	44.4	40.0	-2.2	33.0	-	49.3	73.9	24.6	
Vert.	20880.000	PK	49.4	38.1	-2.0	33.0	-	52.5	73.9	21.4	
Vert.	4882.000	AV	31.6	31.6	7.7	31.2	-	39.7	53.9	14.2	Floor noise
Vert.	7323.000	AV	32.0	36.6	8.9	32.4	-	45.1	53.9	8.8	Floor noise
Vert.	9764.000	AV	31.8	38.5	9.6	32.7	-	47.3	53.9	6.6	Floor noise
Vert.	10439.980	AV	38.0	40.0	-2.2	33.0	-	42.9	53.9	11.0	
Vert.	20880.000	AV	44.9	38.1	-2.0	33.0	-	48.0	53.9	5.9	

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

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

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.3	18.4	7.2	32.0	-	17.9	40.0	22.1	
Hori.	75.000	QP	27.9	6.4	7.8	32.0	-	10.1	40.0	29.9	
Hori.	190.789	QP	23.4	16.3	8.9	31.8	-	16.7	43.5	26.8	
Hori.	246.500	QP	31.0	11.7	9.4	31.8	-	20.3	46.0	25.7	
Hori.	276.036	QP	28.5	13.2	9.6	31.8	-	19.5	46.0	26.5	
Hori.	305.100	QP	31.3	13.7	9.8	31.8	-	23.0	46.0	23.0	
Hori.	2483.500	PK	46.5	27.7	5.6	31.8	-	48.0	73.9	25.9	
Hori.	4960.000	PK	41.4	31.6	7.7	31.2	-	49.6	73.9	24.4	Floor noise
Hori.	7440.000	PK	42.5	36.7	8.9	32.5	-	55.6	73.9	18.3	Floor noise
Hori.	9920.000	PK	41.8	38.6	9.7	32.7	-	57.3	73.9	16.6	Floor noise
Hori.	10440.010	PK	45.1	40.0	-2.2	33.0	-	49.9	73.9	24.0	
Hori.	20880.000	PK	49.6	38.1	-2.0	33.0	-	52.6	73.9	21.3	
Hori.	2483.500	AV	34.9	27.7	5.6	31.8	1.1	37.4	53.9	16.5	*1)
Hori.	4960.000	AV	31.6	31.6	7.7	31.2	-	39.7	53.9	14.2	Floor noise
Hori.	7440.000	AV	32.1	36.7	8.9	32.5	-	45.2	53.9	8.7	Floor noise
Hori.	9920.000	AV	31.2	38.6	9.7	32.7	-	46.8	53.9	7.1	Floor noise
Hori.	10440.010	AV	38.7	40.0	-2.2	33.0	-	43.6	53.9	10.3	
Hori.	20880.000	AV	45.5	38.1	-2.0	33.0	-	48.6	53.9	5.3	
Vert.	75.000	QP	46.0	6.4	7.8	32.0	-	28.2	40.0	11.8	
Vert.	80.510	QP	39.2	6.9	7.9	32.0	-	22.0	40.0	18.0	
Vert.	105.810	QP	37.3	11.0	8.1	31.9	-	24.6	43.5	18.9	
Vert.	134.952	QP	39.1	14.0	8.4	31.9	-	29.7	43.5	13.8	
Vert.	187.440	QP	34.6	16.2	8.9	31.8	-	27.9	43.5	15.7	
Vert.	305.100	QP	38.8	13.7	9.8	31.8	-	30.5	46.0	15.5	
Vert.	2483.500	PK	46.1	27.7	5.6	31.8	-	47.6	73.9	26.4	
Vert.	4960.000	PK	41.4	31.6	7.7	31.2	-	49.5	73.9	24.4	Floor noise
Vert.	7440.000	PK	42.9	36.7	8.9	32.5	-	56.1	73.9	17.8	Floor noise
Vert.	9920.000	PK	41.8	38.6	9.7	32.7	-	57.4	73.9	16.5	Floor noise
Vert.	10440.010	PK	44.8	40.0	-2.2	33.0	-	49.7	73.9	24.2	
Vert.	20880.000	PK	49.4	38.1	-2.0	33.0	-	52.5	73.9	21.4	
Vert.	2483.500	AV	34.6	27.7	5.6	31.8	1.1	37.2	53.9	16.8	*1)
Vert.	4960.000	AV	31.5	31.6	7.7	31.2	-	39.6	53.9	14.3	Floor noise
Vert.	7440.000	AV	31.7	36.7	8.9	32.5	-	44.8	53.9	9.1	Floor noise
Vert.	9920.000	AV	31.5	38.6	9.7	32.7	-	47.0	53.9	6.9	Floor noise
Vert.	10440.010	AV	38.5	40.0	-2.2	33.0	-	43.4	53.9	10.6	
Vert.	20880.000	AV	44.8	38.1	-2.0	33.0	-	47.9	53.9	6.1	

Result = 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).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

*1) Not Out of Band emission(Leakage Power)

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Ise EMC Lab.

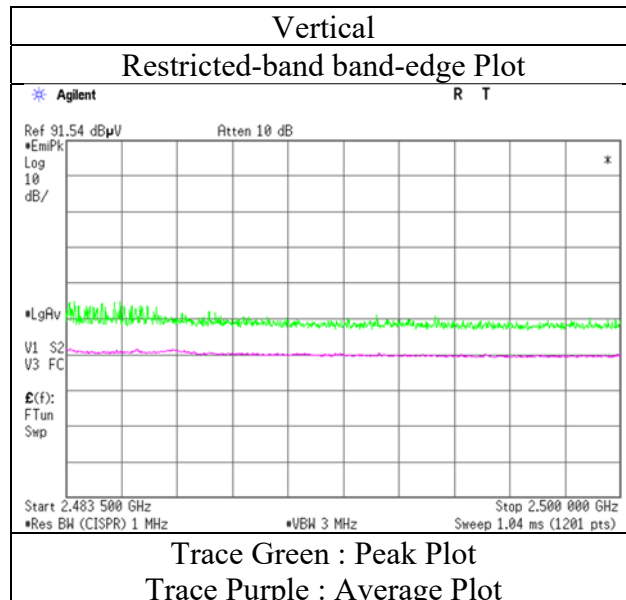
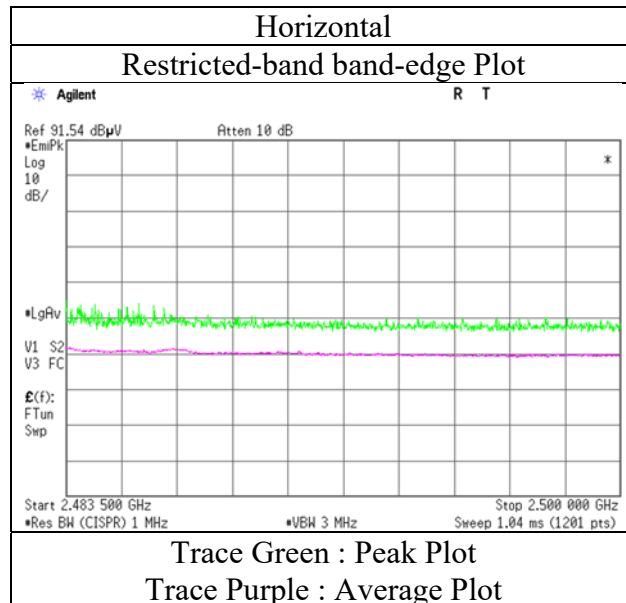
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

Radiated Spurious Emission (Reference Plot for band-edge)

Report No.	13521383H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	October 25, 2020
Temperature / Humidity	20 deg. C / 46 % RH
Engineer	Takeshi Hiyaji (1 GHz -10 GHz)
Mode	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.

UL Japan, Inc.

Ise EMC Lab.

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Facsimile : +81 596 24 8124

Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.2	18.4	7.2	32.0	-	17.8	40.0	22.2	
Hori.	75.000	QP	28.2	6.4	7.8	32.0	-	10.4	40.0	29.6	
Hori.	190.789	QP	23.6	16.3	8.9	31.8	-	16.9	43.5	26.6	
Hori.	246.500	QP	31.2	11.7	9.4	31.8	-	20.5	46.0	25.5	
Hori.	276.050	QP	28.9	13.2	9.6	31.8	-	19.9	46.0	26.1	
Hori.	305.100	QP	31.0	13.7	9.8	31.8	-	22.7	46.0	23.3	
Hori.	2390.000	PK	44.4	27.8	5.5	31.8	-	45.9	73.9	28.0	
Hori.	4804.000	PK	40.4	31.6	7.7	31.2	-	48.5	73.9	25.4	Floor noise
Hori.	7206.000	PK	41.3	36.5	8.9	32.4	-	54.3	73.9	19.6	Floor noise
Hori.	9608.000	PK	41.4	38.0	9.6	32.6	-	56.4	73.9	17.5	Floor noise
Hori.	10440.110	PK	44.8	40.0	-2.2	33.0	-	49.7	73.9	24.2	
Hori.	20880.000	PK	49.8	38.1	-2.0	33.0	-	52.9	73.9	21.0	
Hori.	2390.000	AV	33.8	27.8	5.5	31.8	1.1	36.4	53.9	17.5	*1)
Hori.	4804.000	AV	30.3	31.6	7.7	31.2	-	38.4	53.9	15.5	Floor noise
Hori.	7206.000	AV	31.7	36.5	8.9	32.4	-	44.8	53.9	9.1	Floor noise
Hori.	9608.000	AV	30.8	38.0	9.6	32.6	-	45.9	53.9	8.0	Floor noise
Hori.	10440.110	AV	38.2	40.0	-2.2	33.0	-	43.1	53.9	10.8	
Hori.	20880.000	AV	45.7	38.1	-2.0	33.0	-	48.8	53.9	5.2	
Vert.	75.000	QP	46.7	6.4	7.8	32.0	-	28.9	40.0	11.1	
Vert.	80.510	QP	39.5	6.9	7.9	32.0	-	22.3	40.0	17.7	
Vert.	105.810	QP	37.6	11.0	8.1	31.9	-	24.9	43.5	18.6	
Vert.	134.946	QP	39.0	14.0	8.4	31.9	-	29.6	43.5	13.9	
Vert.	187.433	QP	34.8	16.2	8.9	31.8	-	28.1	43.5	15.5	
Vert.	305.100	QP	39.0	13.7	9.8	31.8	-	30.7	46.0	15.3	
Vert.	2390.000	PK	44.0	27.8	5.5	31.8	-	45.5	73.9	28.4	
Vert.	4804.000	PK	40.9	31.6	7.7	31.2	-	48.9	73.9	25.0	Floor noise
Vert.	7206.000	PK	41.7	36.5	8.9	32.4	-	54.7	73.9	19.2	Floor noise
Vert.	9608.000	PK	41.3	38.0	9.6	32.6	-	56.4	73.9	17.5	Floor noise
Vert.	10440.110	PK	44.5	40.0	-2.2	33.0	-	49.4	73.9	24.6	
Vert.	20880.000	PK	49.4	38.1	-2.0	33.0	-	52.5	73.9	21.4	
Vert.	2390.000	AV	34.6	27.8	5.5	31.8	1.1	37.2	53.9	16.7	*1)
Vert.	4804.000	AV	30.6	31.6	7.7	31.2	-	38.7	53.9	15.2	Floor noise
Vert.	7206.000	AV	31.8	36.5	8.9	32.4	-	44.8	53.9	9.1	Floor noise
Vert.	9608.000	AV	31.4	38.0	9.6	32.6	-	46.4	53.9	7.5	Floor noise
Vert.	10440.110	AV	38.5	40.0	-2.2	33.0	-	43.4	53.9	10.5	
Vert.	20880.000	AV	44.9	38.1	-2.0	33.0	-	47.9	53.9	6.0	

Result = 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).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

*1) Not Out of Band emission(Leakage Power)

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	95.3	27.8	5.5	31.8	96.8	-	-	Carrier
Hori.	2400.000	PK	37.0	27.8	5.5	31.8	38.5	76.8	38.3	
Vert.	2402.000	PK	95.3	27.8	5.5	31.8	96.8	-	-	Carrier
Vert.	2400.000	PK	37.1	27.8	5.5	31.8	38.6	76.8	38.2	

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

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Ise EMC Lab.

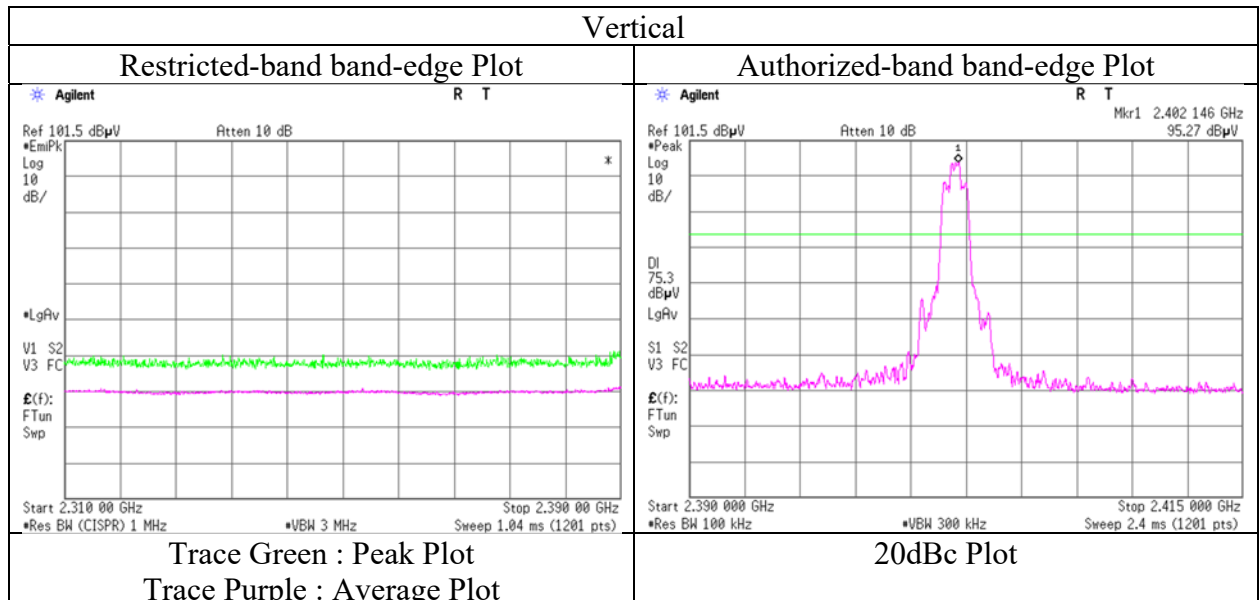
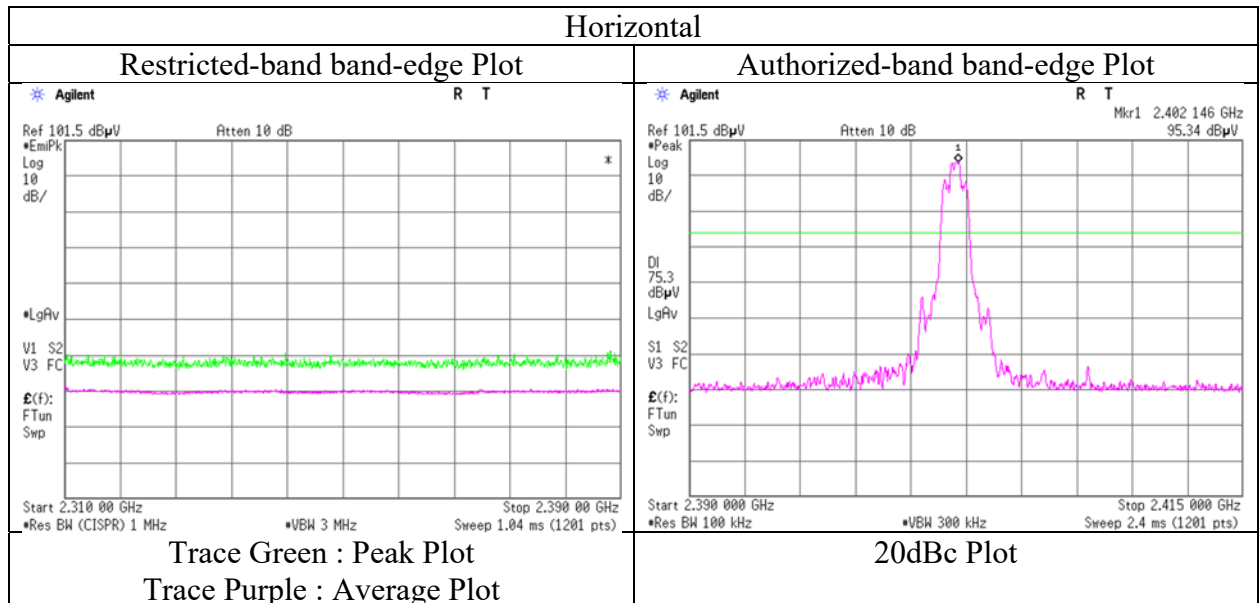
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Radiated Spurious Emission (Reference Plot for band-edge)

Report No.	13521383H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	October 25, 2020
Temperature / Humidity	20 deg. C / 46 % RH
Engineer	Takeshi Hiyaji
	(1 GHz -10 GHz)
Mode	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 was shown in tabular data.

UL Japan, Inc.

Ise EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.2	18.4	7.2	32.0	-	17.8	40.0	22.2	
Hori.	75.000	QP	27.9	6.4	7.8	32.0	-	10.1	40.0	29.9	
Hori.	190.789	QP	23.3	16.3	8.9	31.8	-	16.6	43.5	26.9	
Hori.	246.500	QP	30.8	11.7	9.4	31.8	-	20.1	46.0	25.9	
Hori.	276.030	QP	28.8	13.2	9.6	31.8	-	19.8	46.0	26.2	
Hori.	305.100	QP	31.0	13.7	9.8	31.8	-	22.7	46.0	23.3	
Hori.	4882.000	PK	41.1	31.6	7.7	31.2	-	49.2	73.9	24.7	Floor noise
Hori.	7323.000	PK	41.8	36.6	8.9	32.4	-	54.9	73.9	19.1	Floor noise
Hori.	9764.000	PK	41.5	38.5	9.6	32.7	-	56.9	73.9	17.0	Floor noise
Hori.	10439.980	PK	44.7	40.0	-2.2	33.0	-	49.5	73.9	24.4	
Hori.	20880.000	PK	49.7	38.1	-2.0	33.0	-	52.8	73.9	21.1	
Hori.	4882.000	AV	31.7	31.6	7.7	31.2	-	39.8	53.9	14.1	Floor noise
Hori.	7323.000	AV	31.9	36.6	8.9	32.4	-	45.0	53.9	8.9	Floor noise
Hori.	9764.000	AV	31.6	38.5	9.6	32.7	-	47.0	53.9	6.9	Floor noise
Hori.	10439.980	AV	38.1	40.0	-2.2	33.0	-	43.0	53.9	10.9	
Hori.	20880.000	AV	45.5	38.1	-2.0	33.0	-	48.6	53.9	5.3	
Vert.	75.000	QP	46.2	6.4	7.8	32.0	-	28.4	40.0	11.6	
Vert.	80.510	QP	39.5	6.9	7.9	32.0	-	22.3	40.0	17.7	
Vert.	105.810	QP	37.6	11.0	8.1	31.9	-	24.9	43.5	18.6	
Vert.	134.940	QP	38.7	14.0	8.4	31.9	-	29.3	43.5	14.2	
Vert.	187.441	QP	34.5	16.2	8.9	31.8	-	27.8	43.5	15.8	
Vert.	305.100	QP	38.6	13.7	9.8	31.8	-	30.3	46.0	15.7	
Vert.	4882.000	PK	41.2	31.6	7.7	31.2	-	49.3	73.9	24.6	Floor noise
Vert.	7323.000	PK	41.7	36.6	8.9	32.4	-	54.8	73.9	19.1	Floor noise
Vert.	9764.000	PK	41.3	38.5	9.6	32.7	-	56.7	73.9	17.2	Floor noise
Vert.	10439.980	PK	44.5	40.0	-2.2	33.0	-	49.4	73.9	24.5	
Vert.	20880.000	PK	49.6	38.1	-2.0	33.0	-	52.7	73.9	21.2	
Vert.	4882.000	AV	31.2	31.6	7.7	31.2	-	39.2	53.9	14.7	Floor noise
Vert.	7323.000	AV	31.9	36.6	8.9	32.4	-	45.0	53.9	8.9	Floor noise
Vert.	9764.000	AV	31.6	38.5	9.6	32.7	-	47.0	53.9	6.9	Floor noise
Vert.	10439.980	AV	38.2	40.0	-2.2	33.0	-	43.1	53.9	10.8	
Vert.	20880.000	AV	44.9	38.1	-2.0	33.0	-	47.9	53.9	6.0	

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

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

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	30.000	QP	24.2	18.4	7.2	32.0	-	17.8	40.0	22.2	
Hori.	75.000	QP	27.8	6.4	7.8	32.0	-	10.0	40.0	30.0	
Hori.	190.789	QP	23.4	16.3	8.9	31.8	-	16.7	43.5	26.8	
Hori.	246.500	QP	31.0	11.7	9.4	31.8	-	20.3	46.0	25.7	
Hori.	276.050	QP	28.9	13.2	9.6	31.8	-	19.9	46.0	26.1	
Hori.	305.100	QP	31.3	13.7	9.8	31.8	-	23.0	46.0	23.0	
Hori.	2483.500	PK	49.2	27.7	5.6	31.8	-	50.6	73.9	23.3	
Hori.	4960.000	PK	41.5	31.6	7.7	31.2	-	49.6	73.9	24.3	Floor noise
Hori.	7440.000	PK	42.4	36.7	8.9	32.5	-	55.5	73.9	18.4	Floor noise
Hori.	9920.000	PK	41.6	38.6	9.7	32.7	-	57.1	73.9	16.8	Floor noise
Hori.	10439.960	PK	44.7	40.0	-2.2	33.0	-	49.6	73.9	24.3	
Hori.	20880.000	PK	49.8	38.1	-2.0	33.0	-	52.9	73.9	21.1	
Hori.	2483.500	AV	35.5	27.7	5.6	31.8	1.1	38.1	53.9	15.8	*1)
Hori.	4960.000	AV	31.8	31.6	7.7	31.2	-	39.9	53.9	14.0	Floor noise
Hori.	7440.000	AV	32.2	36.7	8.9	32.5	-	45.3	53.9	8.6	Floor noise
Hori.	9920.000	AV	31.1	38.6	9.7	32.7	-	46.6	53.9	7.3	Floor noise
Hori.	10439.960	AV	38.1	40.0	-2.2	33.0	-	43.0	53.9	10.9	
Hori.	20880.000	AV	45.5	38.1	-2.0	33.0	-	48.6	53.9	5.3	
Vert.	75.000	QP	47.0	6.4	7.8	32.0	-	29.2	40.0	10.8	
Vert.	80.510	QP	39.6	6.9	7.9	32.0	-	22.4	40.0	17.6	
Vert.	105.810	QP	38.1	11.0	8.1	31.9	-	25.4	43.5	18.1	
Vert.	134.940	QP	39.0	14.0	8.4	31.9	-	29.6	43.5	13.9	
Vert.	187.452	QP	34.5	16.2	8.9	31.8	-	27.8	43.5	15.8	
Vert.	305.100	QP	38.8	13.7	9.8	31.8	-	30.5	46.0	15.5	
Vert.	2483.500	PK	47.7	27.7	5.6	31.8	-	49.1	73.9	24.8	
Vert.	4960.000	PK	41.2	31.6	7.7	31.2	-	49.4	73.9	24.6	Floor noise
Vert.	7440.000	PK	42.7	36.7	8.9	32.5	-	55.8	73.9	18.1	Floor noise
Vert.	9920.000	PK	41.7	38.6	9.7	32.7	-	57.2	73.9	16.7	Floor noise
Vert.	10439.960	PK	44.8	40.0	-2.2	33.0	-	49.7	73.9	24.2	
Vert.	20880.000	PK	49.3	38.1	-2.0	33.0	-	52.4	73.9	21.5	
Vert.	2483.500	AV	35.6	27.7	5.6	31.8	1.1	38.1	53.9	15.8	*1)
Vert.	4960.000	AV	30.8	31.6	7.7	31.2	-	38.9	53.9	15.0	Floor noise
Vert.	7440.000	AV	31.3	36.7	8.9	32.5	-	44.4	53.9	9.5	Floor noise
Vert.	9920.000	AV	30.7	38.6	9.7	32.7	-	46.2	53.9	7.7	Floor noise
Vert.	10439.960	AV	38.3	40.0	-2.2	33.0	-	43.2	53.9	10.7	
Vert.	20880.000	AV	44.8	38.1	-2.0	33.0	-	47.9	53.9	6.0	

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

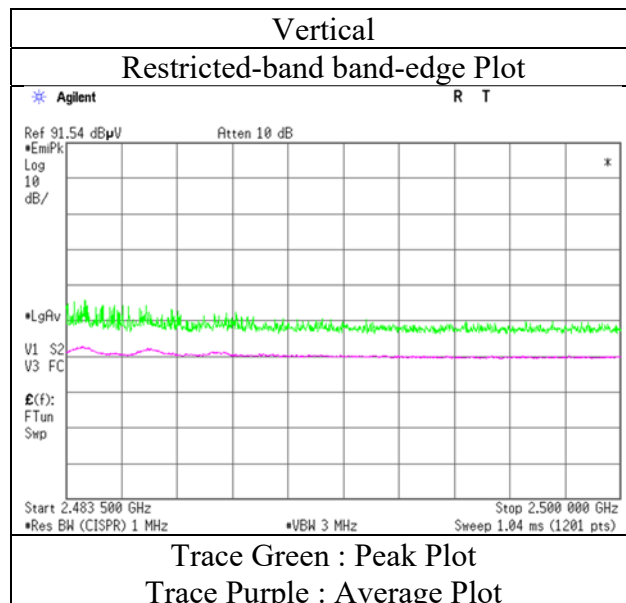
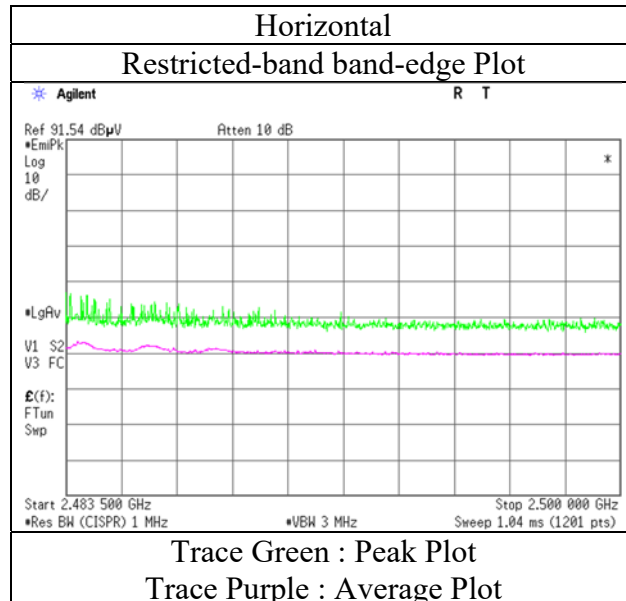
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.0 m / 3.0 m) = 2.5 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission (Reference Plot for band-edge)

Report No.	13521383H
Test place	Ise EMC Lab.
Semi Anechoic Chamber	No.4
Date	October 25, 2020
Temperature / Humidity	20 deg. C / 46 % RH
Engineer	Takeshi Hiyaji
	(1 GHz -10 GHz)
Mode	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.

UL Japan, Inc.

Ise EMC Lab.

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Radiated Spurious Emission

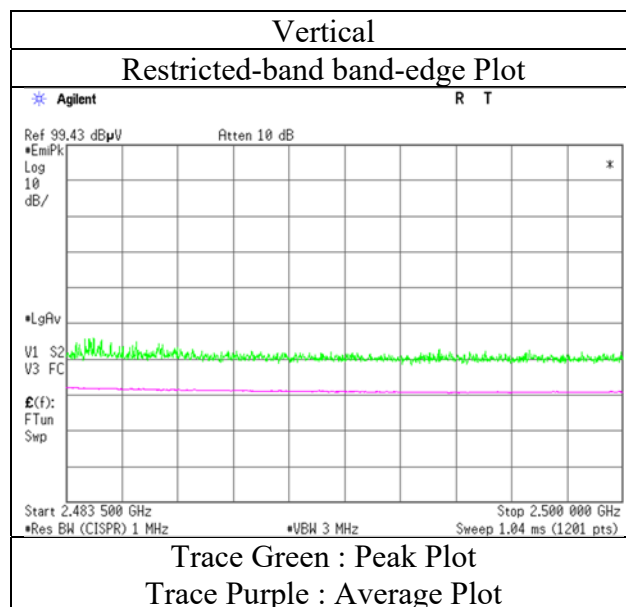
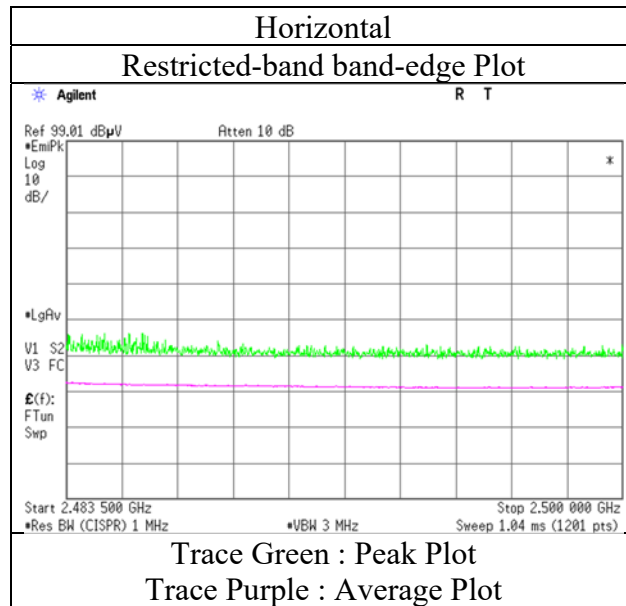
Report No.
Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Ise EMC Lab.
No.3
February 17, 2021
23 deg. C / 39 % RH
Akihiko Maeda
Tx 3DH5, 2480 MHz + 11ac-20, 5300 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	48.180	QP	22.5	11.9	7.6	32.2	-	9.7	40.0	30.3	
Hori.	107.091	QP	32.1	11.1	8.4	32.2	-	19.4	43.5	24.1	
Hori.	134.605	QP	33.0	14.3	8.7	32.2	-	23.8	43.5	19.7	
Hori.	193.322	QP	23.6	16.7	9.3	32.1	-	17.5	43.5	26.0	
Hori.	275.467	QP	35.7	13.2	10.0	32.0	-	26.8	46.0	19.2	
Hori.	423.046	QP	30.8	16.0	11.0	32.0	-	25.8	46.0	20.2	
Hori.	2483.500	PK	47.1	27.3	5.0	32.7	-	46.8	73.9	27.1	
Hori.	4960.000	PK	44.0	31.5	6.8	31.6	-	50.7	73.9	23.2	
Hori.	7440.000	PK	43.3	36.3	7.6	32.7	-	54.5	73.9	19.4	Floor noise
Hori.	9920.000	PK	42.3	38.8	8.3	33.5	-	56.0	73.9	18.0	Floor noise
Hori.	2483.500	AV	34.5	27.3	5.0	32.7	1.1	35.3	53.9	18.6	*1)
Hori.	4960.000	AV	35.9	31.5	6.8	31.6	1.1	43.7	53.9	10.2	
Hori.	7440.000	AV	34.3	36.3	7.6	32.7	-	45.5	53.9	8.4	Floor noise
Hori.	9920.000	AV	34.0	38.8	8.3	33.5	-	47.7	53.9	6.3	Floor noise
Vert.	50.354	QP	33.0	11.0	7.6	32.2	-	19.4	40.0	20.6	
Vert.	106.931	QP	44.7	11.1	8.4	32.2	-	32.0	43.5	11.6	
Vert.	134.083	QP	37.8	14.2	8.7	32.2	-	28.5	43.5	15.0	
Vert.	193.322	QP	24.7	16.7	9.3	32.1	-	18.6	43.5	24.9	
Vert.	275.027	QP	31.3	13.2	10.0	32.0	-	22.4	46.0	23.6	
Vert.	423.046	QP	34.2	16.0	11.0	32.0	-	29.2	46.0	16.8	
Vert.	2483.500	PK	47.2	27.3	5.0	32.7	-	46.9	73.9	27.0	
Vert.	4960.000	PK	47.2	31.5	6.8	31.6	-	53.9	73.9	20.0	
Vert.	7440.000	PK	43.3	36.3	7.6	32.7	-	54.5	73.9	19.4	Floor noise
Vert.	9920.000	PK	42.3	38.8	8.3	33.5	-	56.0	73.9	18.0	Floor noise
Vert.	2483.500	AV	34.6	27.3	5.0	32.7	1.1	35.4	53.9	18.5	*1)
Vert.	4960.000	AV	39.1	31.5	6.8	31.6	1.1	46.9	53.9	7.0	
Vert.	7440.000	AV	34.3	36.3	7.6	32.7	-	45.5	53.9	8.4	Floor noise
Vert.	9920.000	AV	34.0	38.8	8.3	33.5	-	47.7	53.9	6.3	Floor noise

Radiated Spurious Emission (Reference Plot for band-edge)

Report No.	Ise EMC Lab.
Test place	No.3
Semi Anechoic Chamber	February 17, 2021
Date	23 deg. C / 39 % RH
Temperature / Humidity	Akihiko Maeda
Engineer	Tx 3DH5, 2480 MHz + 11ac-20, 5300 MHz
Mode	



* 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.

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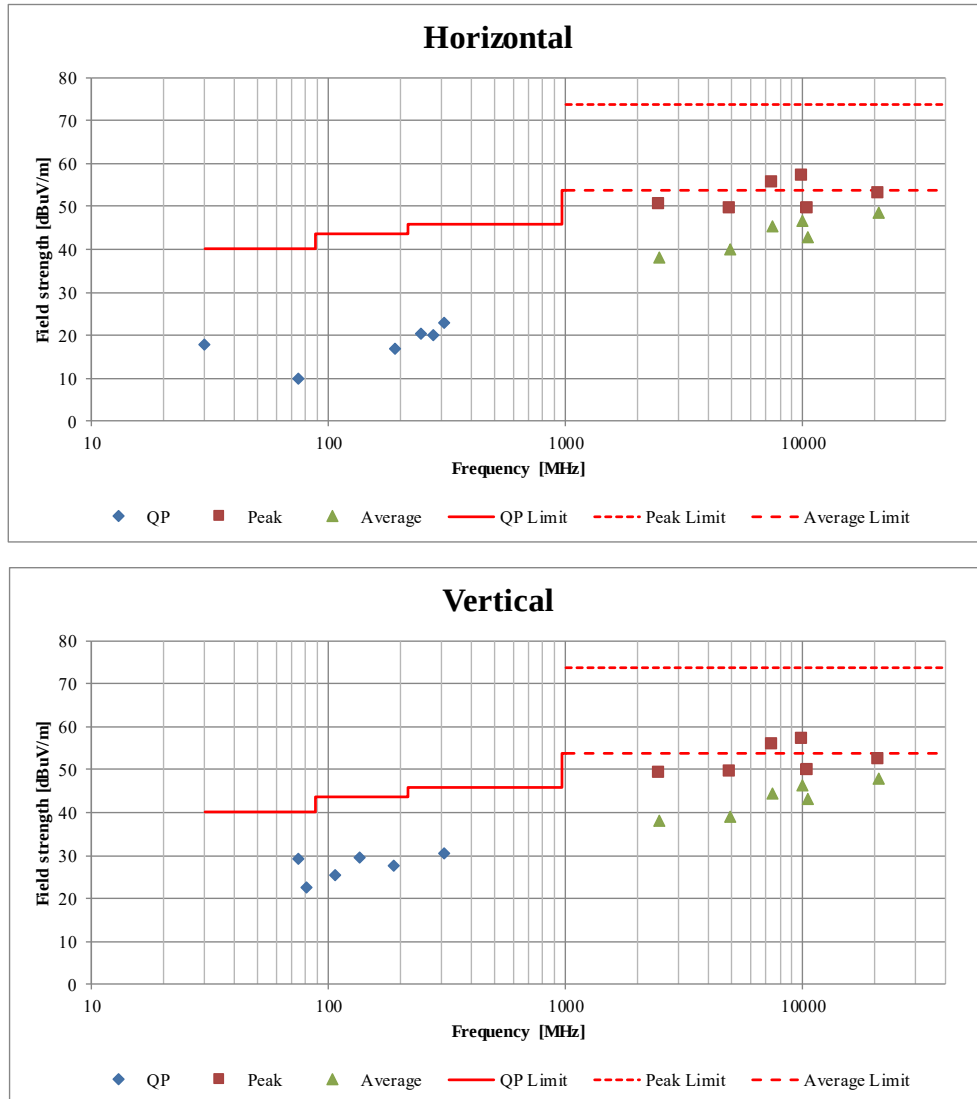
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Radiated Spurious Emission (Plot data, Worst case)

Report No.	13521383H			
Test place	Ise EMC Lab.			
Semi Anechoic Chamber	No.4	No.4	No.4	No.4
Date	October 25, 2020	October 29, 2020	November 1, 2020	November 3, 2020
Temperature / Humidity	20 deg. C / 46 % RH	22 deg. C / 42 % RH	22 deg. C / 45 % RH	20 deg. C / 40 % RH
Engineer	Takeshi Hiyaji	Junki Nagatomi	Junya Okuno	Junya Okuno
	(1 GHz - 10 GHz)	(10 GHz - 18 GHz)	(18 GHz - 26.5 GHz)	(Below 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz			



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

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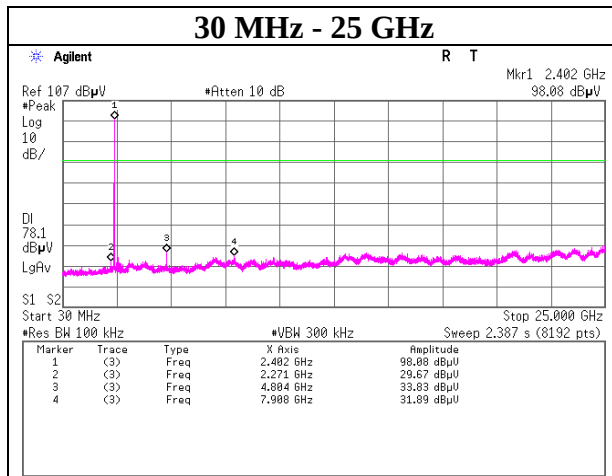
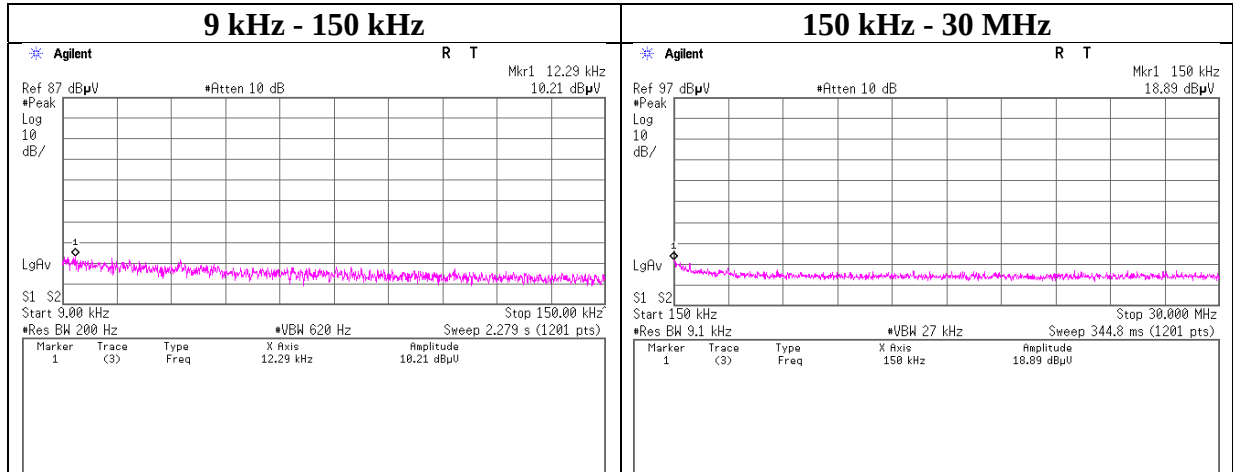
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Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, DH5

2402 MHz



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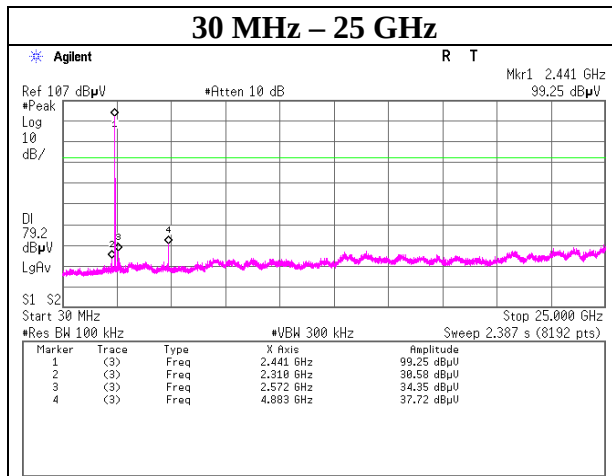
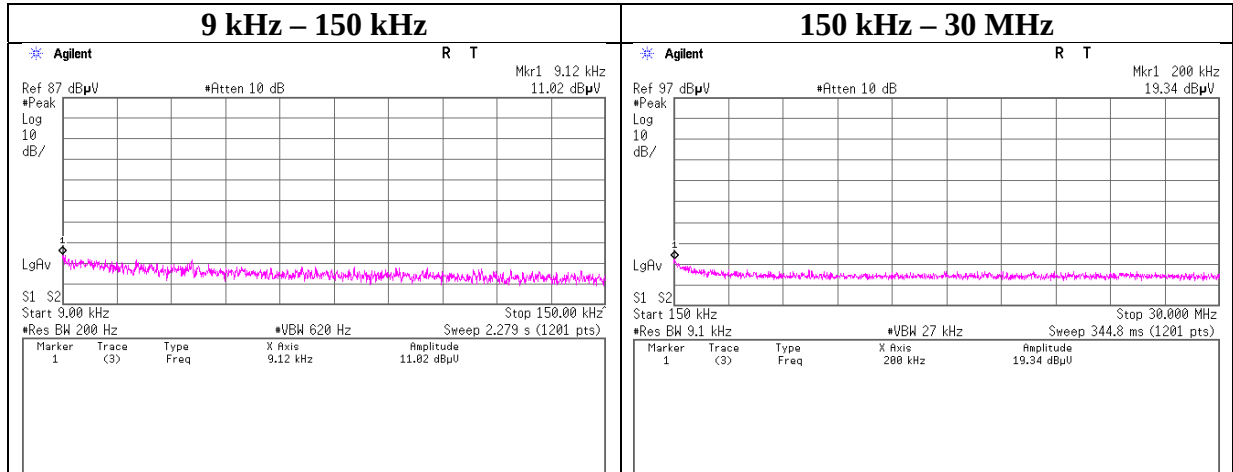
Telephone : +81 596 24 8999

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Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, DH5

2441 MHz



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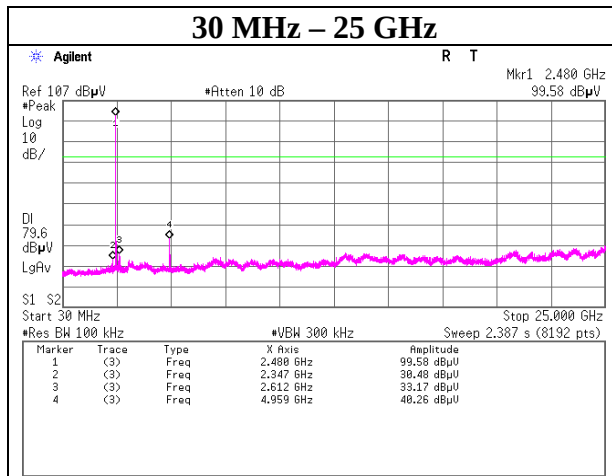
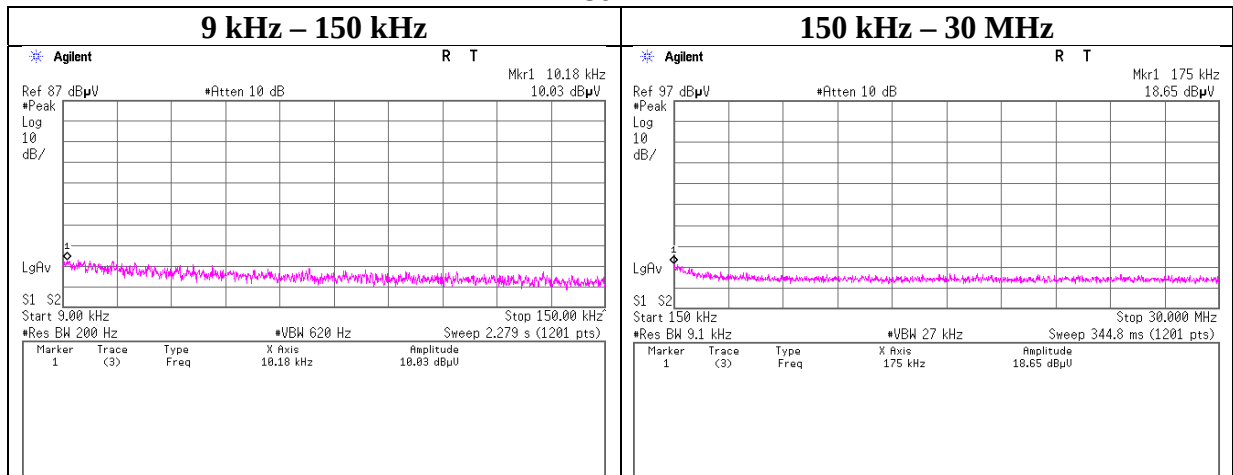
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Facsimile : +81 596 24 8124

Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, DH5

2480 MHz



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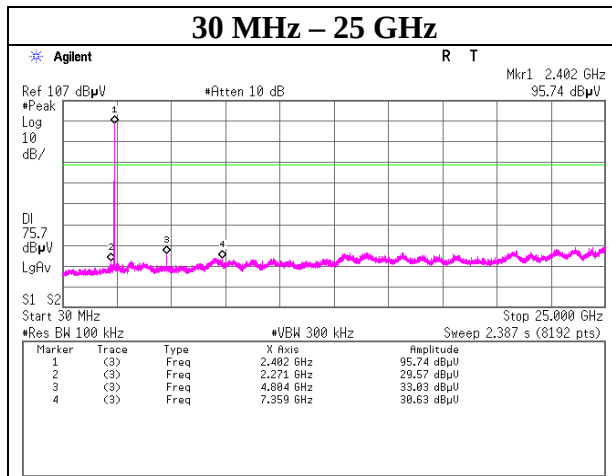
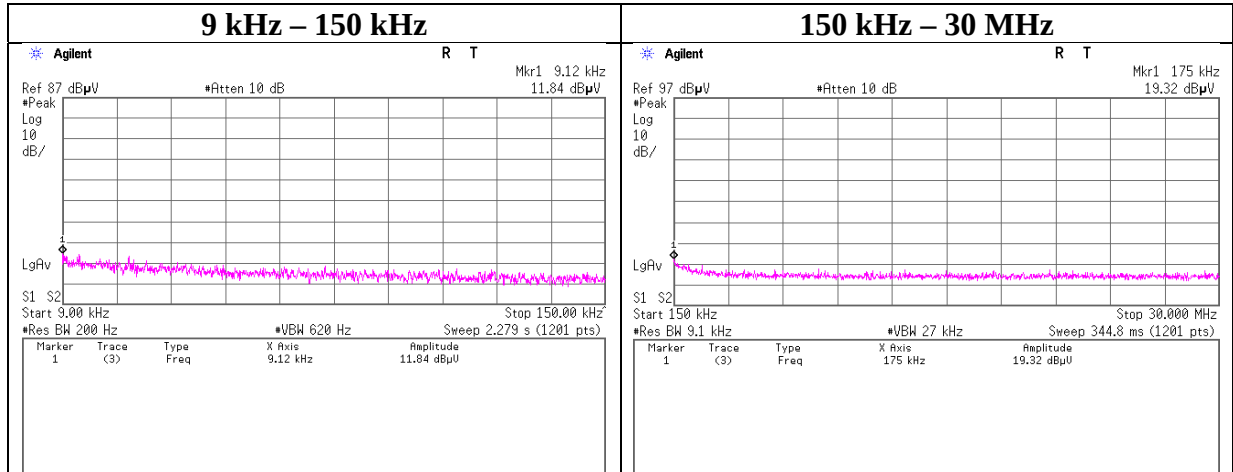
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Facsimile : +81 596 24 8124

Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, 3DH5

2402 MHz



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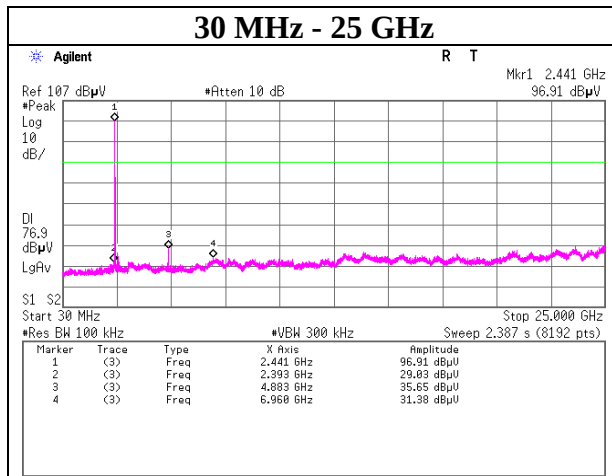
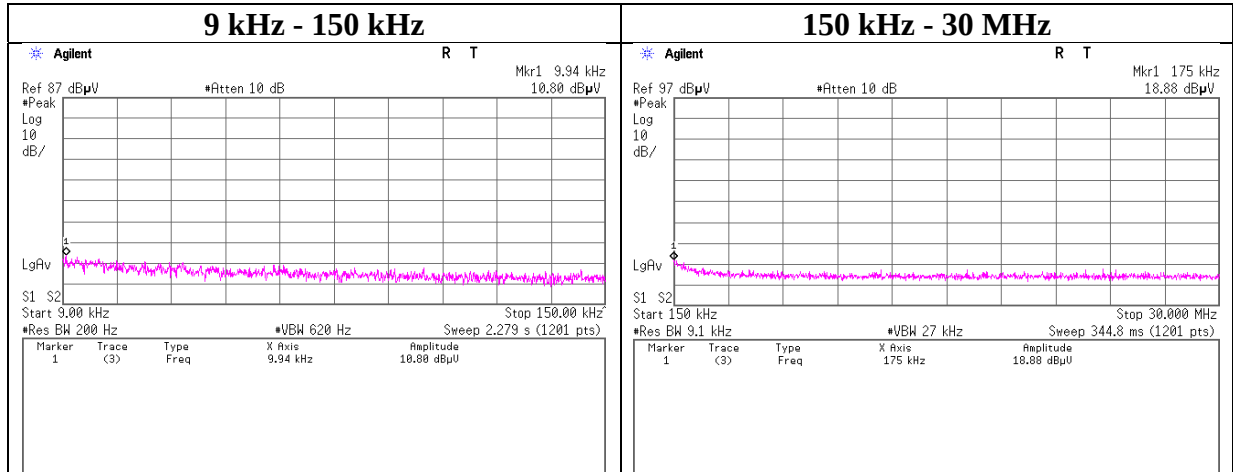
Telephone : +81 596 24 8999

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Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, 3DH5

2441 MHz



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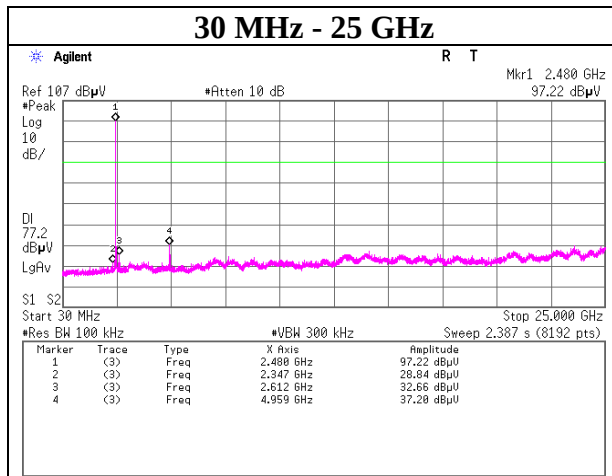
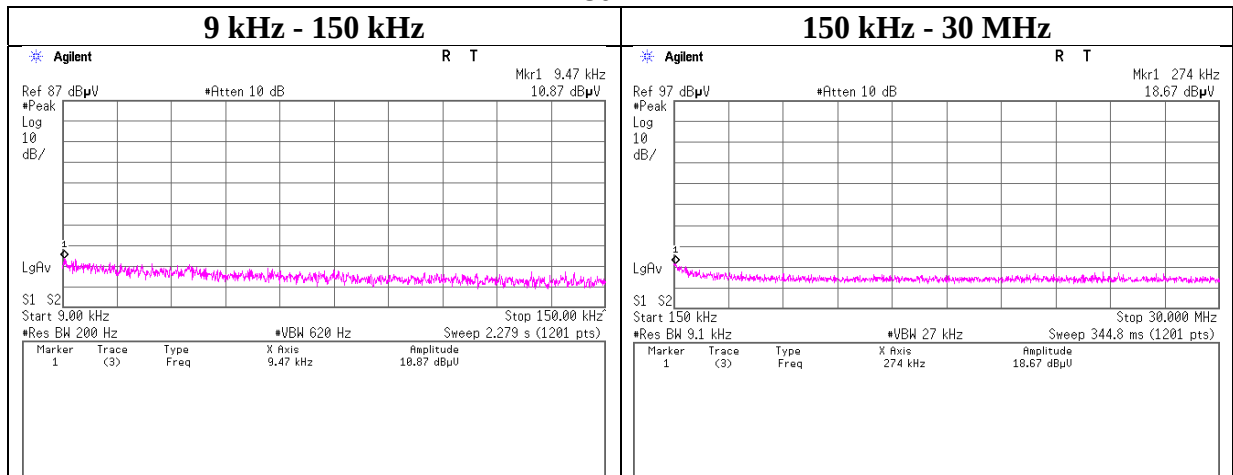
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Facsimile : +81 596 24 8124

Conducted Spurious Emission

Report No.	13521383H
Test place	Ise EMC Lab. No.6 Measurement Room
Date	October 19, 2020
Temperature / Humidity	19 deg. C / 59 % RH
Engineer	Hiroyuki Furutaka
Mode	Tx, Hopping Off, 3DH5

2480 MHz



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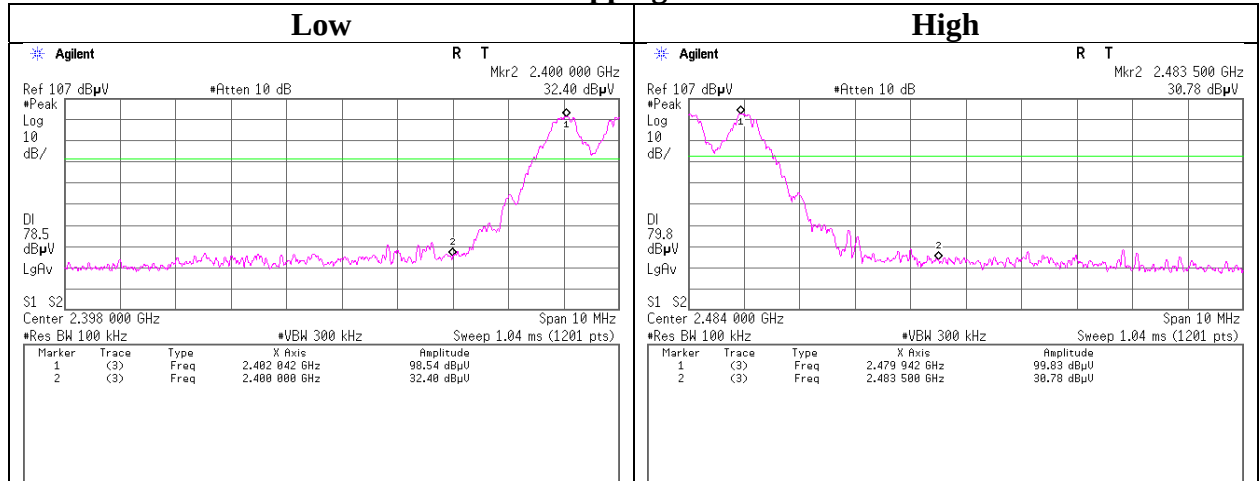
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

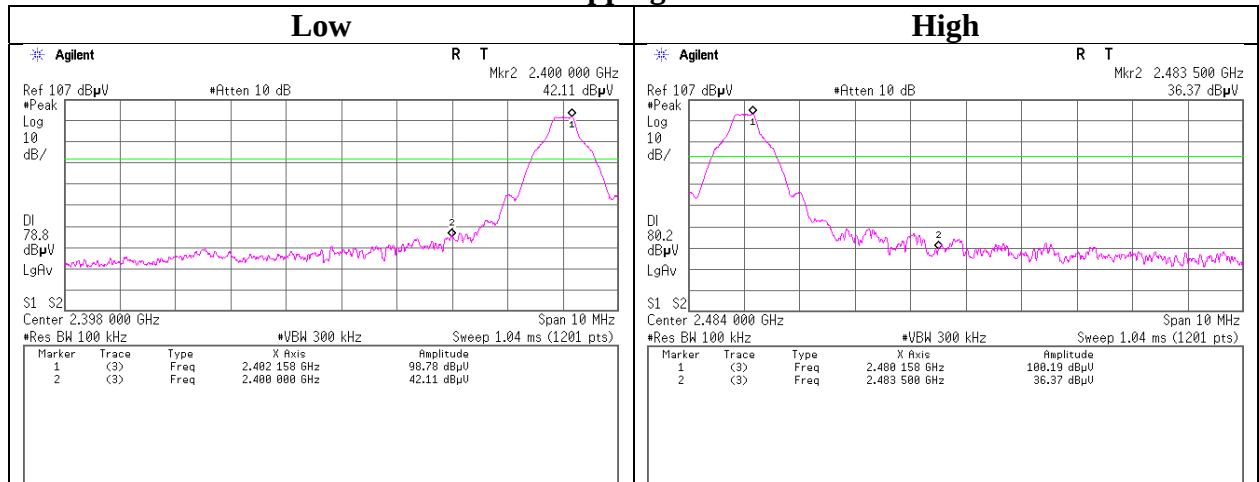
Conducted Emission Band Edge compliance

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020
Temperature / Humidity 19 deg. C / 59 % RH
Engineer Hiroyuki Furutaka
Mode Tx DH5

Hopping On



Hopping Off



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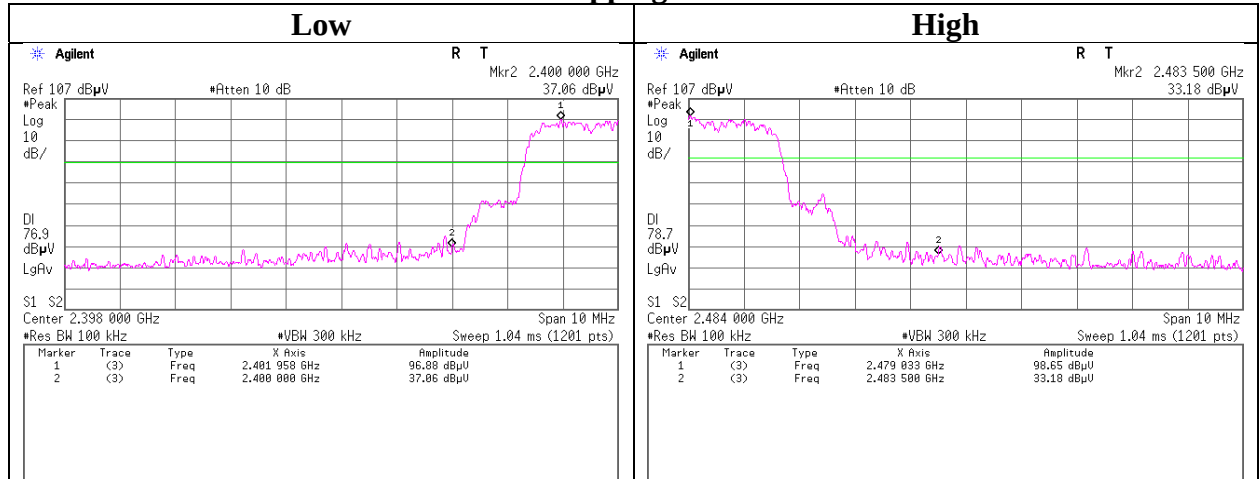
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

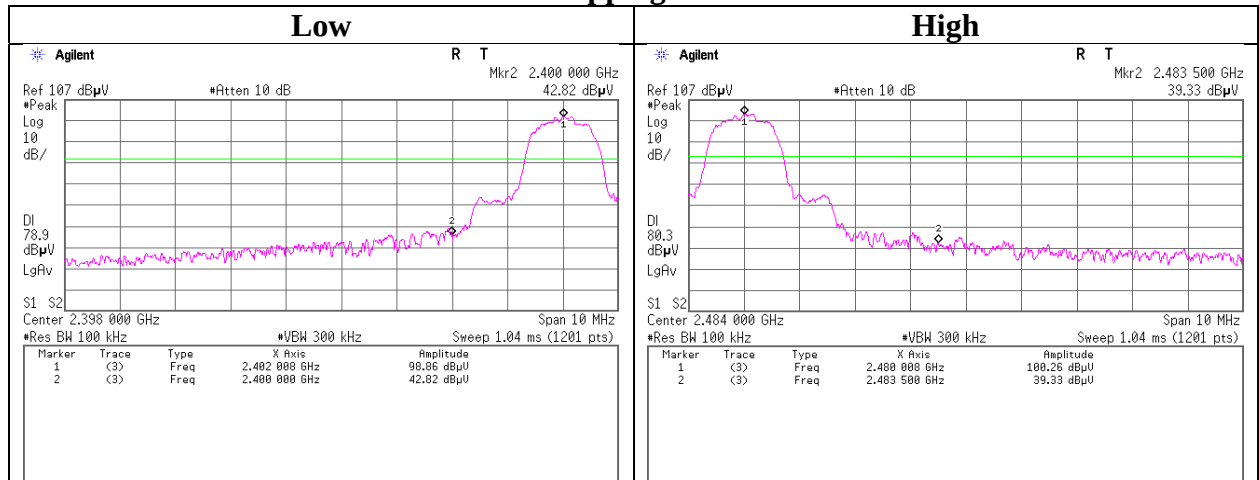
Conducted Emission Band Edge compliance

Report No. 13521383H
Test place Ise EMC Lab. No.6 Measurement Room
Date October 19, 2020
Temperature / Humidity 19 deg. C / 59 % RH
Engineer Hiroyuki Furutaka
Mode Tx 3DH5

Hopping On



Hopping Off



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APPENDIX 2: Test instruments

Test equipment (1/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	MSA-04	141885	Spectrum Analyzer	Keysight Technologies Inc	E4448A	US44300523	2019/11/21	12
AT	MSA-03	141884	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY44020357	2020/03/04	12
AT	MAT-23	141361	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	2020/04/21	12
AT	MPM-16	141812	Power Meter	Keysight Technologies Inc	8990B	MY51000271	2020/08/20	12
AT	MPSE-23	141835	Power sensor	Keysight Technologies Inc	N1923A	MY54070004	2020/08/20	12
AT	MOS-24	90289	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0005	2020/01/07	12
AT	MMM-12	141547	DIGITAL HiTESTER	Hioki	3805	60500120	2020/02/03	12
AT	MJM-24	142225	Measure	ASKUL	-	-	-	-
RE	MMM-10	141545	DIGITAL HiTESTER	Hioki	3805	51201148	2020/01/06	12
RE	MJM-29	142230	Measure	KOMELON	KMC-36	-	-	-
RE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	MAEC-04-SVSWR	142017	AC4 Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	2019/04/04	24
RE	MHA-21	141508	Horn Antenna 1-18GHz	Schwarzbeck Mess - Elektronik	BBHA9120D	557	2020/05/22	12
RE	MCC-246	199563	Microwave Cable	HUBER+SUNER	SF126E/11PC35/11PC35/1000M,5000M	537061/126E / 537072/126E	2020/06/11	12
RE	MHF-26	141296	High Pass Filter 3.5-18.0GHz	UL Japan	HPF SELECTOR	002	2020/09/23	12
RE	MOS-15	141562	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0010	2020/01/07	12
RE	MSA-03	141884	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY44020357	2020/03/04	12
RE	MAEC-04	142011	AC4 Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	2020/05/25	24
RE	MPA-12	141581	MicroWave System Amplifier	Keysight Technologies Inc	83017A	00650	2020/10/19	12
RE	MCC-141	141412	Microwave Cable	Junkosha	MWX221	1305S002R(1m) / 1405S146(5m)	-	-
RE	MHA-17	141506	Horn Antenna 15-40GHz	Schwarzbeck Mess - Elektronik	BBHA9170	BBHA9170307	2020/07/16	12
RE	MAT-34	141331	Attenuator(6dB)	TME	UFA-01	-	2020/02/05	12
RE	MBA-05	141425	Biconical Antenna	Schwarzbeck Mess - Elektronik	VHA9103+BBA9106	VHA 91031302	2020/08/31	12
RE	MCC-50	141397	Coaxial Cable	UL Japan	-	-	2020/11/06	12
RE	MLA-23	141267	Logperiodic Antenna(200-1000MHz)	Schwarzbeck Mess - Elektronik	VUSLP9111B	9111B-192	2020/09/02	12
RE	MPA-14	141583	Pre Amplifier	SONOMA INSTRUMENT	310	260833	2020/02/18	12
CE	MSA-03	141884	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY44020357	2020/03/04	12
CE	MTR-03	141942	Test Receiver	Rohde & Schwarz	ESCI	100300	2020/08/18	12
CE	MAEC-04	142011	AC4 Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	2020/05/25	24
CE	MOS-15	141562	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	0010	2020/01/07	12
CE	MMM-10	141545	DIGITAL HiTESTER	Hioki	3805	51201148	2020/01/06	12
CE	MJM-29	142230	Measure	KOMELON	KMC-36	-	-	-
CE	COTS-MEMI-02	178648	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
CE	MLS-23	141357	LISN(AMN)	Schwarzbeck Mess - Elektronik	NSLK8127	8127-729	2020/07/22	12
CE	MLS-24	141358	LISN(AMN)	Schwarzbeck Mess - Elektronik	NSLK8127	8127-730	2020/07/22	12
CE	MAT-67	141248	Attenuator	JFW Industries, Inc.	50FP-013H2 N	-	2019/12/02	12

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Test equipment (2/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
CE	MCC-113	141217	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W/SFM141/421-010/sucoform141-PE/RFM-E121(SW)	-/04178	2020/06/18	12
CE	MTA-54	141936	Terminator	TME	CT-01BP	-	2019/12/02	12
RE	MAEC-03	142008	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	05/22/2020	24
RE	MAEC-03-SVSWR	142013	Semi Anechoic Chamber(SVSWR)	TDK	Semi Anechoic Chamber 3m	DA-10005	04/08/2019	24
RE	MOS-13	141554	Thermo-Hygrometer	CUSTOM	CTH-180	1301	01/15/2021	12
RE	MMM-08	141532	DIGITAL HiTESTER	HIOKI	3805	51201197	01/07/2021	12
RE	MJM-16	142183	Measure	KOMELON	KMC-36	-	-	-
RE	MSA-10	141899	Spectrum Analyzer	AGILENT	E4448A	MY46180655	08/04/2020	12
RE	MPA-11	141580	MicroWave System Amplifier	AGILENT	83017A	MY39500779	03/24/2020	12
RE	MHA-20	141507	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	10/01/2020	12
RE	MCC-231	177964	Microwave Cable	Junkosha INC.	MMX221	1901S329(1m)/1902S579(5m)	03/02/2020	12
RE	MHF-06	141404	High Pass Filter 3.5-24GHz	TOKIMEC	TF323DCA	601	05/25/2020	12
RE	MHF-22	141293	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	602	01/14/2021	12
RE	MHA-16	141513	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	05/21/2020	12
RE	MBA-03	141424	Biconical Antenna	Schwarzbeck	BBA9106	1915	08/13/2020	12
RE	MLA-22	141266	Logperiodic Antenna(200-1000MHz)	Schwarzbeck	VUSLP9111B	911B-191	08/13/2020	12
RE	MAT-07	141203	Attenuator(6dB)	Weinschel Corp	2	BK7970	11/13/2020	12
RE	MCC-51	141323	Coaxial cable	UL Japan	-	-	07/06/2020	12
RE	MPA-13	141582	Pre Amplifier	SONOMA INSTRUMENT	11/5/1900	260834	02/03/2021	12
RE	MTR-03	141942	Test Receiver	Rohde & Schwarz	ESCI	100300	08/18/2020	12

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

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

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

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

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

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