RADIO TEST REPORT

Test Report No. : 13456926S-C-R2

Applicant	:	**Nintendo Co., Ltd.**
Type of EUT	:	**Game console**
Model Number of EUT	:	**HEG-001**
FCC ID	:	**BKEHEG001**
Test regulation	:	**FCC Part 15 Subpart C: 2021** ***Bluetooth BR/EDR part**
Test Result	:	**Complied (Refer to SECTION 3)**

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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. Shonan 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 13456926S-C-R1. 13456926S-C-R1 is replaced with this report.

Date of test: August 6, 2020 to February 14, 2021

Representative test engineer: Y. Tanikawara
Yusuke Tanikawara
Engineer

Approved by: A. Hayashi
Akio Hayashi
Manager

CERTIFICATE 1266.03

☐ 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.: 13456926S-C

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13456926S-C	June 9, 2021	-	-
1	13456926S-C-R1	June 24, 2021	5	Rating of Section 2.1 Identification of EUT: From DC 3.8 V (battery) To DC 3.7 V (battery) DC 5 V to DC 15 V (USB type C)
2	13456926S-C-R2	July 6, 2021	1	Addition of Test regulation "*Bluetooth BR/EDR part"
			33,35,36,38,40,41	Addition of remark "Caused by carrier"

Reference: Abbreviations (Including words undescribed in this report)

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

CONTENTS **PAGE**

SECTION 1: Customer information

Company Name	:	Nintendo Co., Ltd.
Address	:	11-1 Hokotate-cho, Kamitoba, Minami-ku, Kyoto 601-8501, Japan
Telephone Number	:	+81 75 662 9600
Facsimile Number	:	+81 75 662 9624
Contact Person	:	Yosuke Ishikawa

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	:	Game console
Model Number	:	HEG-001
Serial Number	:	Refer to SECTION 4.2
Rating	:	DC 3.7 V (battery) DC 5 V to DC 15 V (USB type C)
Receipt Date	:	July 31, 2020
Country of Mass-production	:	China, Vietnam
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: HEG-001 (referred to as the EUT in this report) is a Game console.

Radio Specification

Wireless LAN, Bluetooth (BR / EDR / Low Energy function) part:

Equipment Type	:	Transceiver
Frequency of Operation	:	Wireless LAN part: (2.4 GHz): 2412 MHz – 2472 MHz, (U-NII-1): 5180 MHz – 5240 MHz, (U-NII-2A): 5260 MHz – 5320 MHz, (U-NII-2C): 5500 MHz – 5700 MHz, (U-NII-3): 5745 MHz- 5825 MHz, Bluetooth (BR / EDR / Low Energy) part: 2402 MHz - 2480 MHz
Radio part clock frequency	:	37.4 MHz
Channel spacing	:	Wireless LAN part: (2.4 GHz): 5 MHz, (5 GHz): 20 MHz, Bleutooth part: (BR / EDR): 1 MHZ, (Low Energy): 2 MHz
Type of modulation	:	Wireless LAN part: 2.4 GHz band: DBPSK, DQPSK, CCK, OFDM 5 GHz band: OFDM Bluetooth part: BR: GFSK EDR: π/4DQPSK, 8DPSK Low Energy: GFSK
Antenna type	:	LDS antenna
Antenna connector type	:	(Ant: 0): MHF2, (Ant: 1): MHF2
Antenna Gain	:	2.4 GHz band: (Ant: 0): 0.30 dBi, (Ant: 1): 0.19 dBi 5GHz band: (Ant: 0): 4.04 dBi, (Ant: 1): 2.51 dBi
Power supply (radio part input)	:	DC 1.8 V, DC 3.3 V
Operating Temperature	:	+5 deg. C to +35 deg. C

Remarks: This wireless module consists of 1 chip each of 5 GHz band and 2.4 GHz band.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C FCC Part 15 final revised on May 3, 2021 and effective July 2, 2021 * The revision does not affect the test result conducted before its effective date.
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

* Also the EUT complies with FCC Part 15 Subpart B.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013 6. Standard test methods	**FCC:** Section 15.207	17.8 dB 0.19285 MHz, AV, L1 Mode: Tx DH5 2480 MHz	Complied a)	-
	ISED: RSS-Gen 8.8	**ISED:** RSS-Gen 8.8			
Carrier Frequency Separation	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(1)	See data.	Complied b)	Conducted
	ISED: -	**ISED:** RSS-247 5.1 (b)			
20dB Bandwidth	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(1)		Complied b)	Conducted
	ISED: -	**ISED:** RSS-247 5.1 (a)			
Number of Hopping Frequency	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(1)(iii)		Complied c)	Conducted
	ISED: -	**ISED:** RSS-247 5.1 (d)			
Dwell time	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(1)(iii)		Complied d)	Conducted
	ISED: -	**ISED:** RSS-247 5.1 (d)			
Maximum Peak Output Power	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(b)(1)		Complied e)	Conducted
	ISED: RSS-Gen 6.12	**ISED:** RSS-247 5.4 (b)			
Spurious Emission & Band Edge Compliance	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(d)	5.3 dB	Complied f) / g)	Conducted/ Radiated (above 30 MHz) *1)
	ISED: RSS-Gen 6.13	**ISED:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	249.989 MHz, QP, Hori. Mode: Tx DH5 2441 MHz 249.991 MHz, QP, Hori. Mode: Tx 3DH5 2441 MHz		

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

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

3.3 Addition to standard

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

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.

Shonan EMC Lab.

Item	Frequency range	Uncertainty (+/-)		
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.56dB
Radiated emission	9 kHz-30 MHz	3.0 dB	2.7 dB	2.7 dB
(Measurement distance: 3 m)	30 MHz-200 MHz	4.6 dB	4.6 dB	4.6 dB
	200 MHz-1 GHz	6.0 dB	6.0 dB	6.0 dB
	1 GHz-6 GHz	4.8 dB	4.8 dB	4.8 dB
	6 GHz-18 GHz	5.4 dB	5.4 dB	5.4 dB
	18 GHz-40 GHz	5.3 dB	5.3 dB	5.3 dB
Radiated emission	1 GHz-18 GHz	5.7 dB	5.7 dB	5.7 dB
(Measurement distance: 1 m)	18 GHz-40 GHz	5.6 dB	5.6 dB	5.6 dB

SAC=Semi-Anechoic Chamber

SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	1.4 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	1.6 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.89 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.2 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	0.91 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.2 dB
Spurious emission (Conducted) below 1GHz	0.87 dB
Spurious emission (Conducted) 1 GHz-3 GHz	0.96 dB
Spurious emission (Conducted) 3 GHz-18 GHz	3.0 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.6 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.2 dB
Bandwidth Measurement	0.012 %
Duty cycle and Time Measurement	0.27 %
Temperature_SCH-01	0.95 deg.C.
Humidity_SCH-01	0.83 %
Temperature_SCH-02	2.0 deg.C.
Humidity_SCH-02	6.6 %
Voltage	0.86 %

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, Facsimile: +81 463 50 6401
A2LA Certificate Number: 1266.03
(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
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	-	-

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)

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

Details of Operating Mode(s)

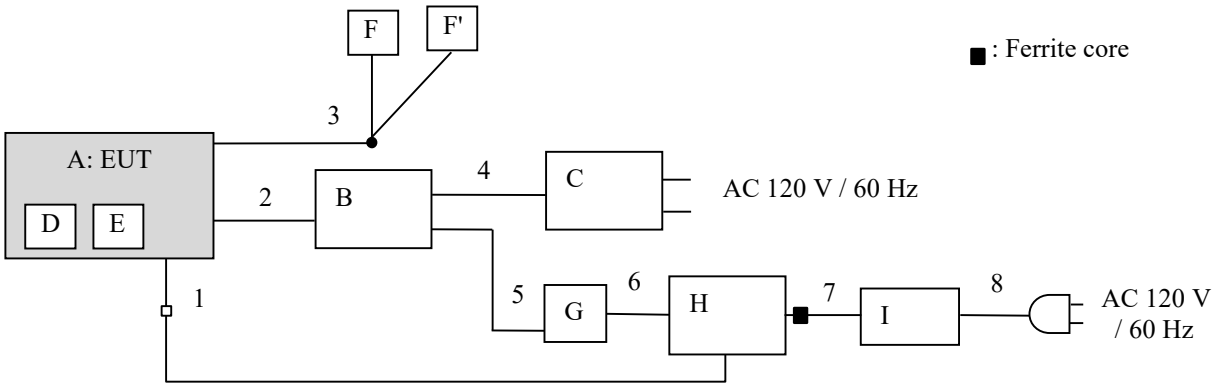
Test Item	Mode	Tested frequency
Conducted Emission, Spurious Emission (Conducted/Radiated)	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Carrier Frequency Separation	Tx (Hopping On) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
20dB Bandwidth	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Number 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: Fixed
Software: BlueTool.exe Version 1.9.6.5
(Date: 2020.10.22, 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

4.2 Configuration and peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.
*As a result of comparing AC 120 V and AC 240 V at pre-check, conducted emission test was performed with AC 120 V of the worst voltage as representative.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Game console	HEG-001	XTW01000001073 *1) XTW01000011188 *2)	Nintendo Co., Ltd.	EUT
B	SDEV Cradle	HAT-003	XZL01000080825 *1) XZL01000079720 *2)	Nintendo Co., Ltd.	-
C	AC Adapter	HAC-002	-	Nintendo Co., Ltd.	-
D	Game Card	HAC-008	DFCAA22L000	Nintendo Co., Ltd.	-
E	Micro SD Card	-	-	Transcend	-
F, F'	Headphone	-	-	Nintendo Co., Ltd.	*2)
G	GIGA Ethernet Adapter	LAN-GTJU3	67L349603587A	Logitec	*1)
		LUA4-U3-AGT	20227871127320	Buffalo	*2)
H	Laptop PC	CF-S10AWNDS	1EKSA54822	Panasonic	*1)
		CF-SV8RDCVS	0BKSC77598	Panasonic	*2)
I	AC Adapter	CF-AA6402A M1	6402AM111143479A	Panasonic	*1)
		CF-AA6532A M1	6532AM119Y36338A	Panasonic	*2)

*1) Used for Antenna Terminal conducted test
*2) Used for Conducted Emission test and Radiated Emission test

List of cables used

No.	Cable Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Signal	0.05 + 1.8	Unshielded	Unshielded	*3)
2	USB	0.4	Shielded	Shielded	-
3	Headphone	0.9	Unshielded	Unshielded	-
4	USB	1.5	Shielded	Shielded	-
5	USB	0.1 *1) 0.15 *2)	Shielded	Shielded	-
6	LAN	1.0	Unshielded	Unshielded	-
7	DC	0.9	Unshielded	Unshielded	-
8	AC	0.8	Unshielded	Unshielded	-

*1) Used for Antenna Terminal conducted test
*2) Used for Conducted Emission test and Radiated Emission test
*3) Cable for test operation during the development, not used for the product.

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.

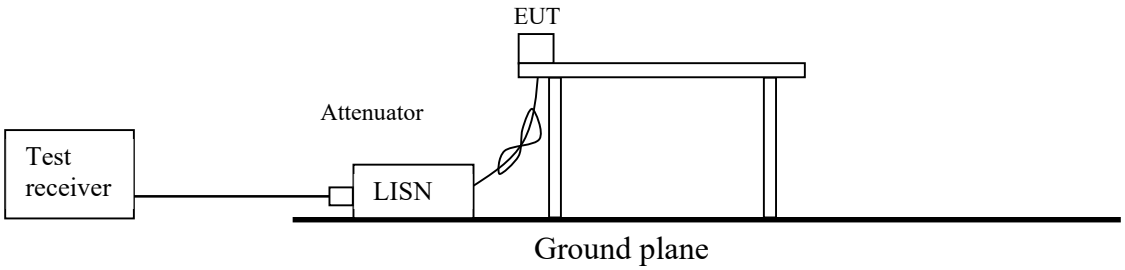
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50 ohm connectors of the LISN (AMN) were resistivity terminated in 50 ohm when not connected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

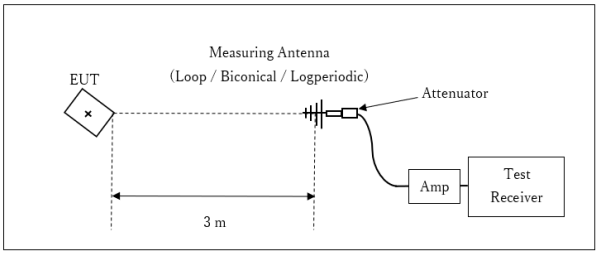
20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9 (ISED) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (ISED).

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: 100 kHz VBW: 300 kHz

*1) Measurement with Average detector was not performed. The limit for Average detector is applied to the measurement value with Peak detector used Duty cycle correction factor (DCCF).

Figure 2: Test Setup

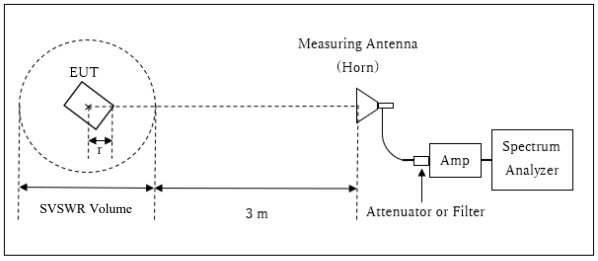
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 10 GHz

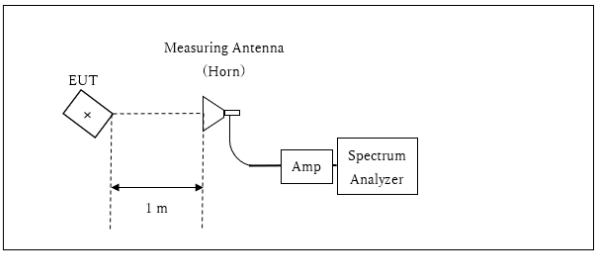


r : Radius of an outer periphery of EUT
× : Center of turn table

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

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

10 GHz - 26.5 GHz



× : Center of turn table

Distance Factor: 20 x log (1.0 m / 3.0 m) = -9.54 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.

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	Z	Y	Z	Z	X	X
Vertical	Z	Y	Z	Y	X	X

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	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	20 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 = 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 Ohmes. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to 45.5 – 51.5 = -6.0 dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

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

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2021/02/14

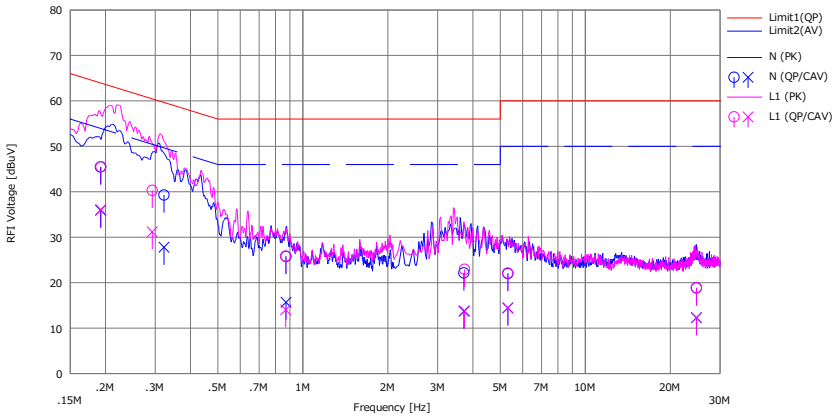
Mode : Tx DH5 2480 MHz

Power : AC 120 V / 60 Hz(AC adapter input)
Temp./Humi. : 25 deg.C / 31 %RH

Remarks : -

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Kenichi Adachi



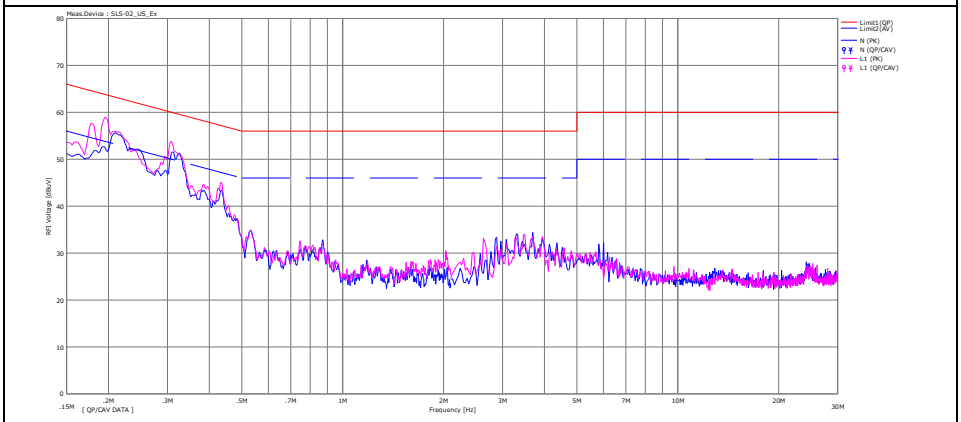
No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		〈QP〉	〈CAV〉		〈QP〉	〈CAV〉	〈QP〉	〈AV〉	〈QP〉	〈AV〉		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.19198	32.88	23.38	12.58	45.46	35.96	63.95	53.95	18.4	17.9	N	
2	0.32218	26.69	15.21	12.59	39.28	27.80	59.65	49.65	20.3	21.8	N	
3	0.87121	13.12	3.03	12.65	25.77	15.68	56.00	46.00	30.2	30.3	N	
4	3.71583	9.22	0.81	12.92	22.14	13.73	56.00	46.00	33.8	32.2	N	
5	5.31946	8.92	1.40	13.07	21.99	14.47	60.00	50.00	38.0	35.5	N	
6	24.75535	4.55	-1.99	14.31	18.86	12.32	60.00	50.00	41.1	37.6	N	
7	0.19285	32.91	23.45	12.58	45.49	36.03	63.91	53.91	18.4	17.8	L1	
8	0.29283	27.70	18.58	12.60	40.30	31.18	60.44	50.44	20.1	19.2	L1	
9	0.86933	13.18	1.36	12.66	25.84	14.02	56.00	46.00	30.1	31.9	L1	
10	3.73714	10.04	0.87	12.90	22.94	13.77	56.00	46.00	33.0	32.2	L1	
11	5.31498	9.09	1.39	13.02	22.11	14.41	60.00	50.00	37.8	35.5	L1	
12	24.75535	4.70	-1.88	14.16	18.86	12.28	60.00	50.00	41.1	37.7	L1	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN)+Cable+ATT)[dB]
LISN(AMN): SLS-02 with Extention cable

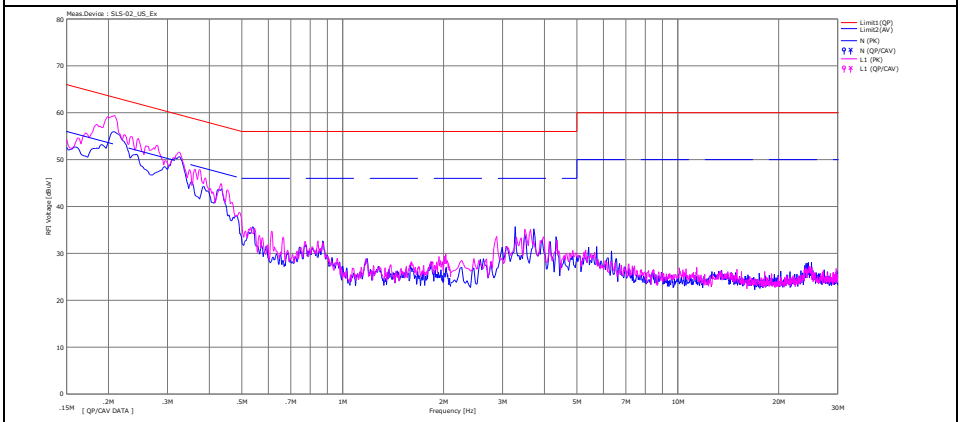
Conducted Emission

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.3 Shielded Room
Date	February 14, 2021
Temperature / Humidity	25 deg. C / 60 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off, DH5

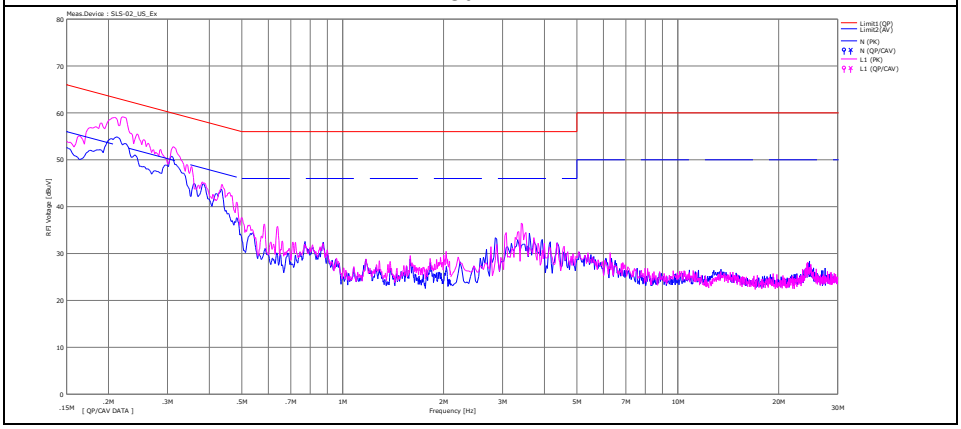
2402 MHz



2441 MHz



2480 MHz



Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2021/02/14

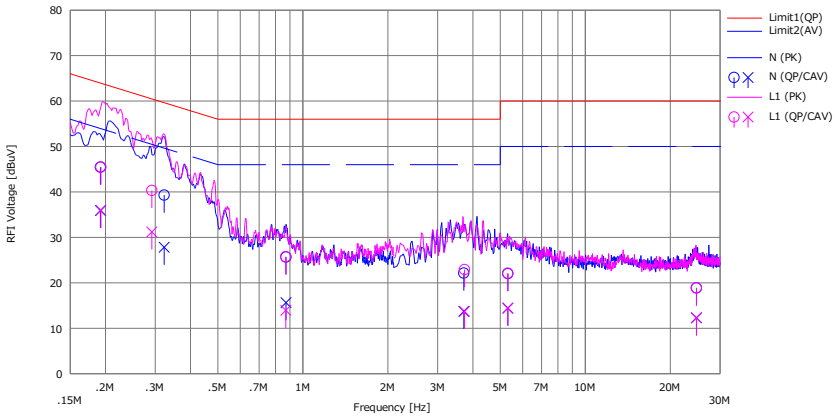
Mode : Tx 3DH5 2480 MHz

Power : AC 120 V / 60 Hz(AC adapter input)
Temp./Humi. : 25 deg.C / 31 %RH

Remarks : -

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Kenichi Adachi



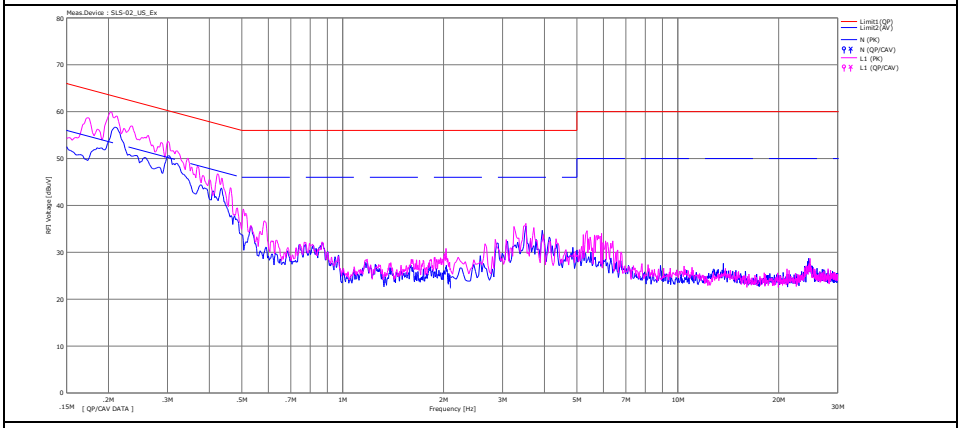
No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		〈QP〉	〈CAV〉		〈QP〉	〈CAV〉	〈QP〉	〈AV〉	〈QP〉	〈AV〉		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.19194	32.87	23.33	12.58	45.45	35.91	63.95	53.95	18.5	18.0	N	
2	0.32282	26.72	15.24	12.59	39.31	27.83	59.63	49.63	20.3	21.8	N	
3	0.87126	13.02	2.99	12.65	25.67	15.64	56.00	46.00	30.3	30.3	N	
4	3.71495	9.23	0.80	12.92	22.15	13.72	56.00	46.00	33.8	32.2	N	
5	5.31891	8.96	1.37	13.07	22.03	14.44	60.00	50.00	37.9	35.5	N	
6	24.75615	4.58	-1.99	14.31	18.89	12.32	60.00	50.00	41.1	37.6	N	
7	0.19270	32.89	23.36	12.58	45.47	35.94	63.92	53.92	18.4	17.9	L1	
8	0.29196	27.72	18.60	12.60	40.32	31.20	60.47	50.47	20.1	19.2	L1	
9	0.87013	13.11	1.27	12.66	25.77	13.93	56.00	46.00	30.2	32.0	L1	
10	3.73451	10.02	0.82	12.90	22.92	13.72	56.00	46.00	33.0	32.2	L1	
11	5.31842	9.08	1.39	13.03	22.11	14.42	60.00	50.00	37.8	35.5	L1	
12	24.75615	4.72	-1.86	14.16	18.88	12.30	60.00	50.00	41.1	37.7	L1	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN)+Cable+ATT)[dB]
LISN(AMN): SLS-02 with Extention cable

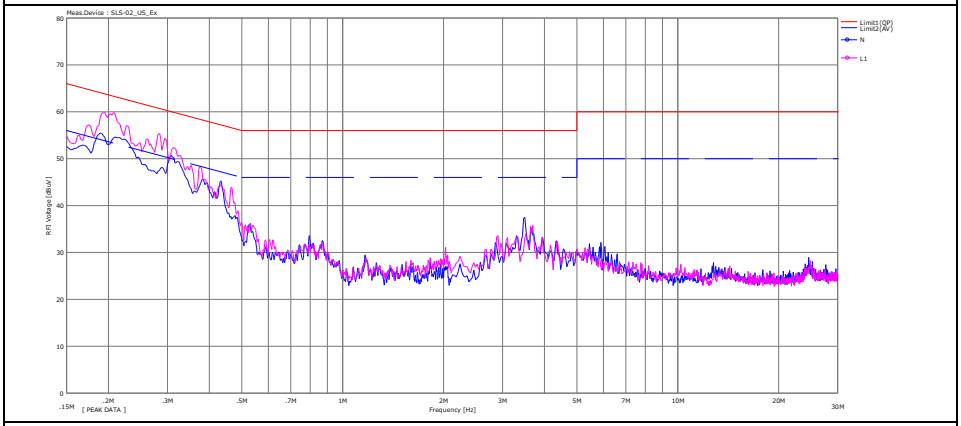
Conducted Emission

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.3 Shielded Room
Date	February 14, 2021
Temperature / Humidity	25 deg. C / 60 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off, 3DH5

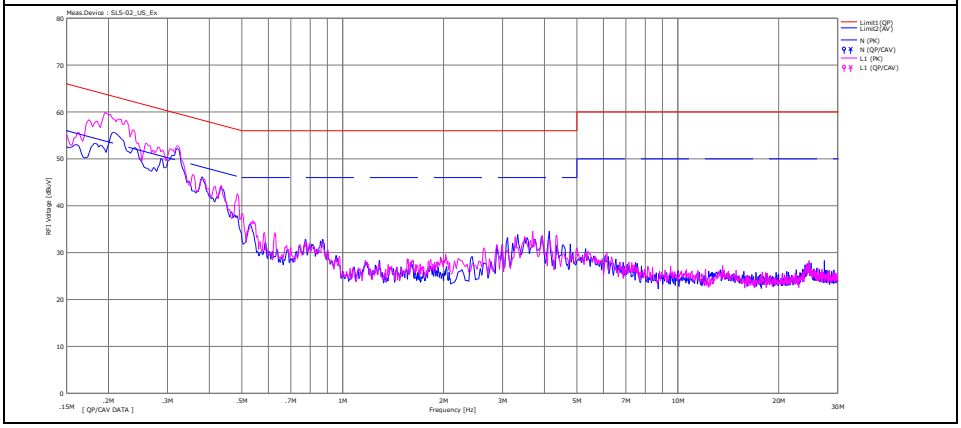
2402 MHz



2441 MHz



2480 MHz



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

Report No.	13456926S-C-R2	
Test place	Shonan EMC Lab. No.1 Measurement Room	
Date	August 18, 2020	August 19, 2020
Temperature / Humidity	24 deg. C / 48 % RH	24 deg. C / 56 % RH
Engineer	Yusuke Tanikawara	Kazuya Noda
Mode	Tx, Hopping Off, Tx, Hopping On	

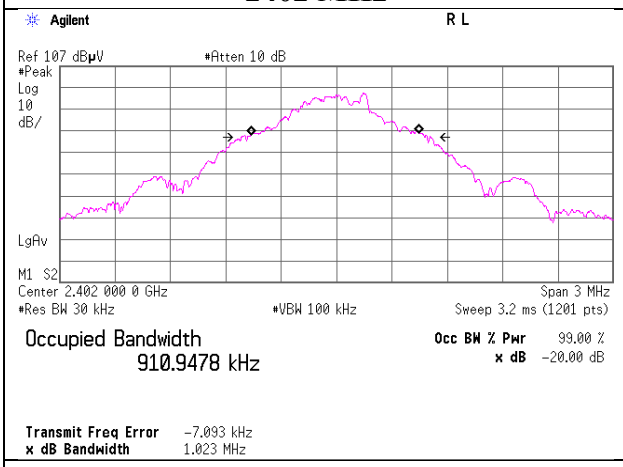
Mode	Freq. [MHz]	20dB Bandwidth [MHz]	99% Occupied Bandwidth [kHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	1.023	910.9	1.000	>= 0.682
DH5	2441.0	0.976	896.4	1.000	>= 0.651
DH5	2480.0	0.998	908.1	1.000	>= 0.666
DH5	Hopping On	-	78611.4	-	-
3DH5	2402.0	1.316	1211.6	1.000	>= 0.877
3DH5	2441.0	1.317	1203.0	1.000	>= 0.878
3DH5	2480.0	1.317	1202.0	1.000	>= 0.878
3DH5	Hopping On	-	78754.4	-	-

Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).
No limit applies to 20dB Bandwidth.

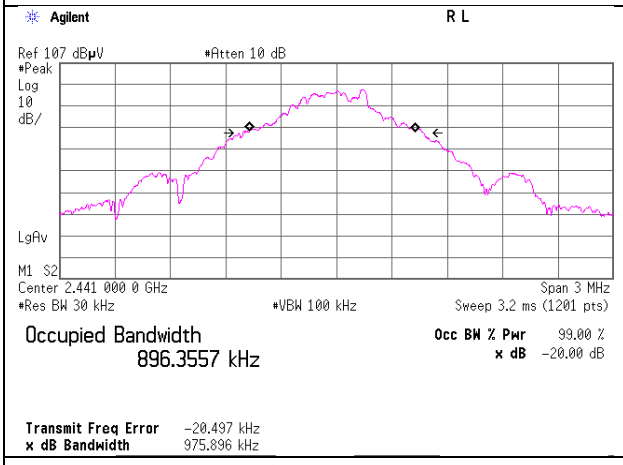
20dB Bandwidth and 99% Occupied Bandwidth

DH5

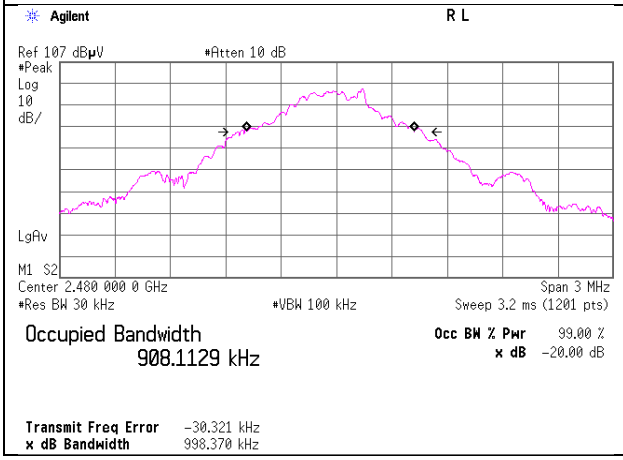
2402 MHz



2441 MHz

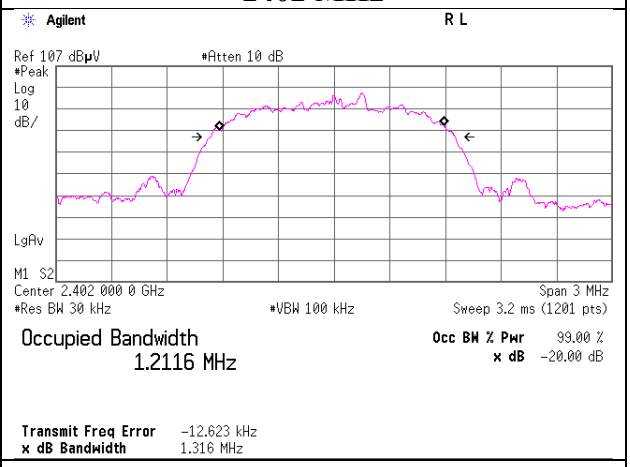


2480 MHz

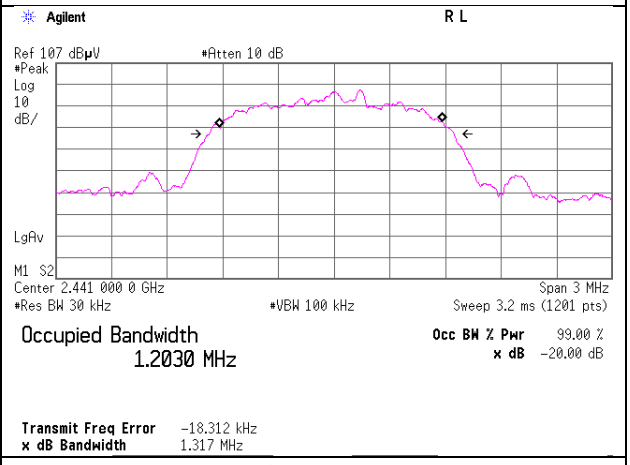


3DH5

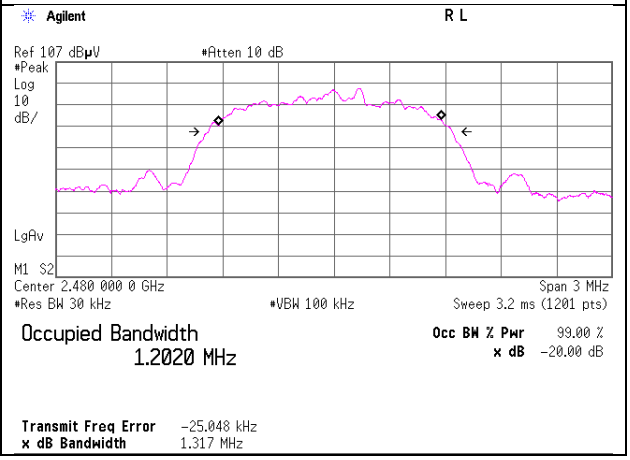
2402 MHz



2441 MHz

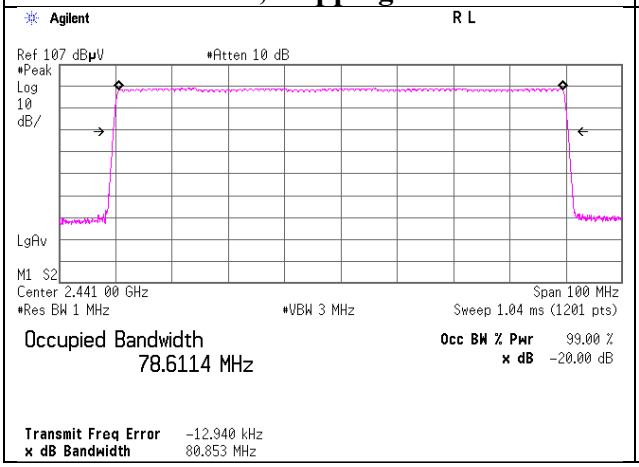


2480 MHz

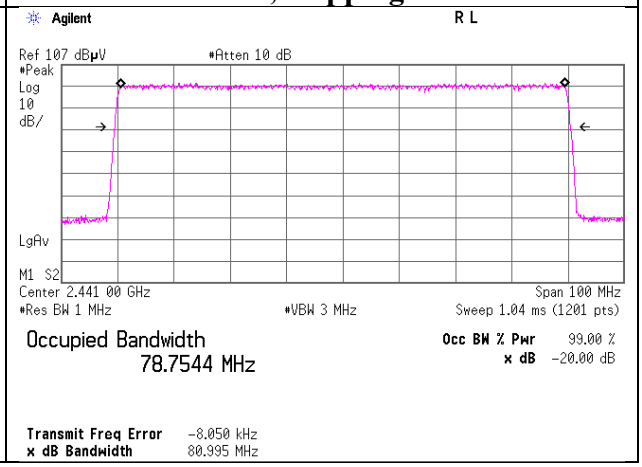


20dB Bandwidth and 99% Occupied Bandwidth

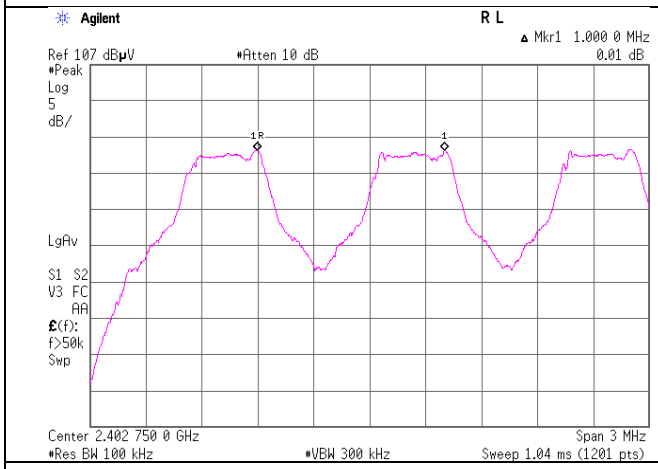
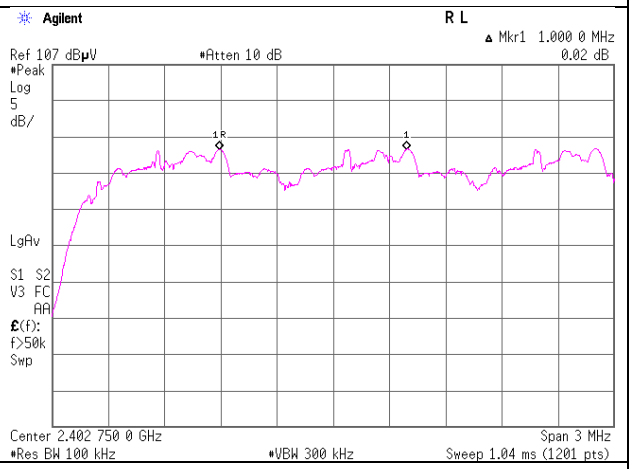
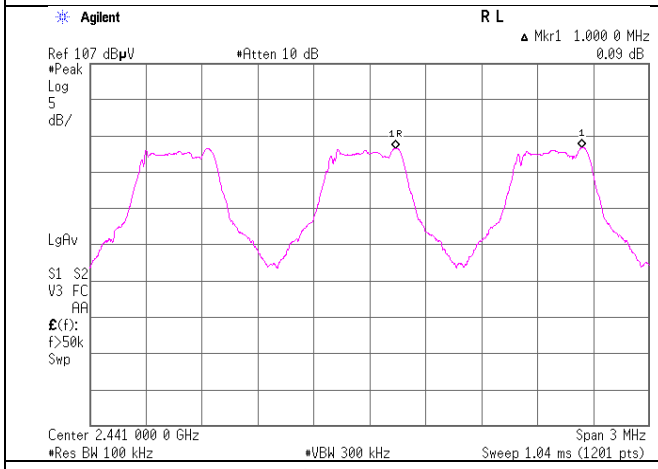
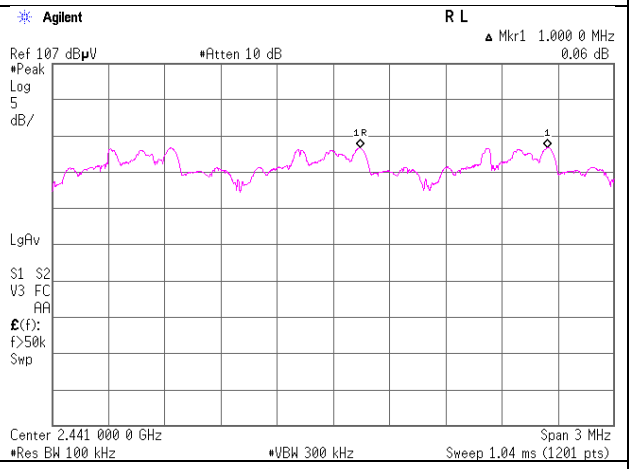
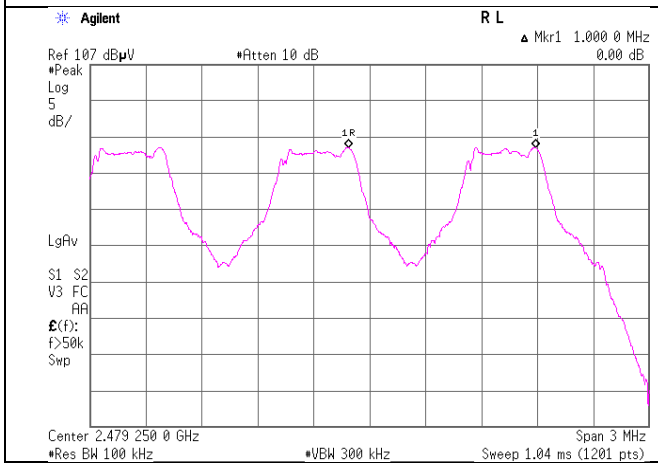
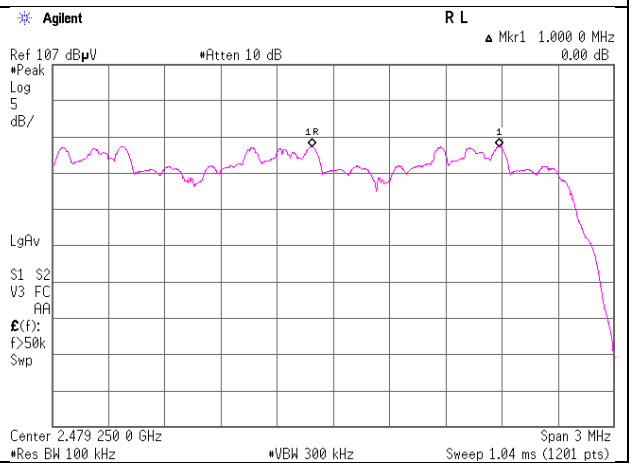
DH5, Hopping On



3DH5, Hopping On



Carrier Frequency Separation

DH5	3DH5
2402 MHz	2402 MHz
	
2441 MHz	2441 MHz
	
2480 MHz	2480 MHz
	

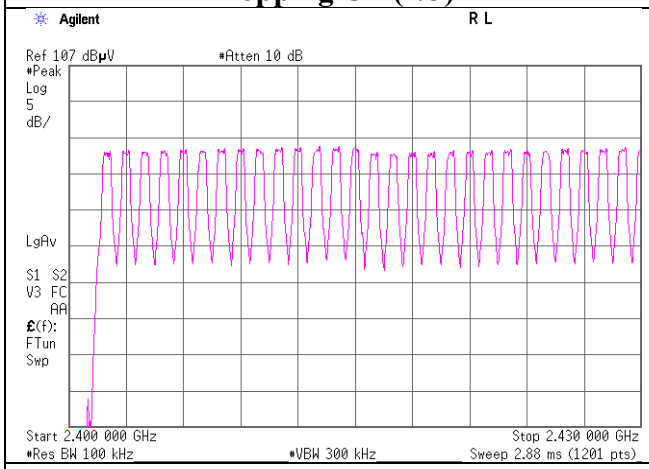
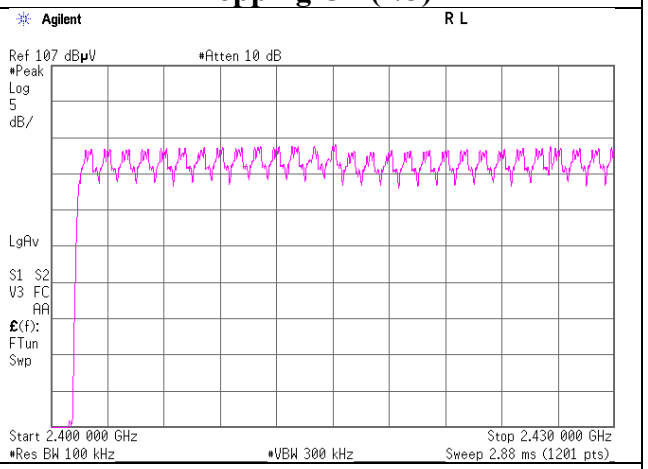
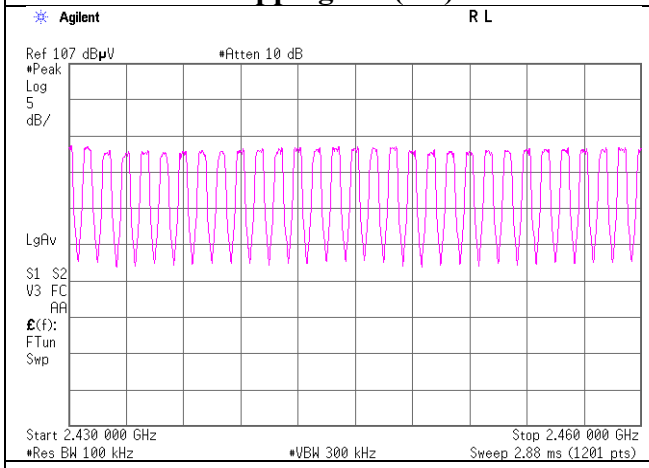
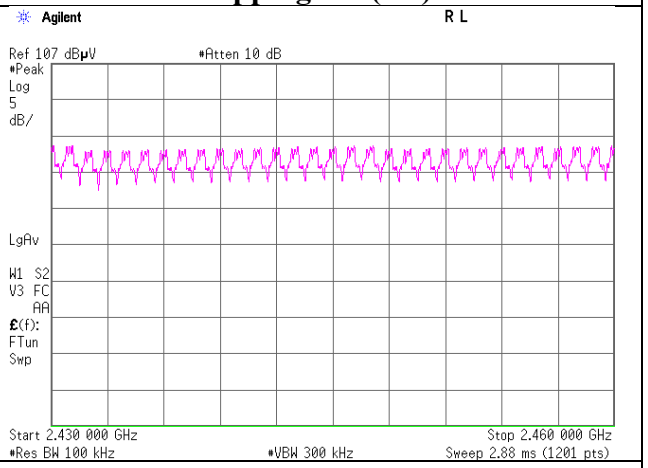
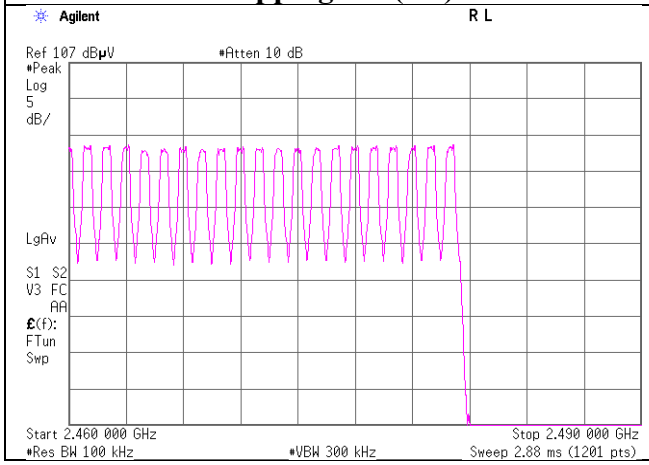
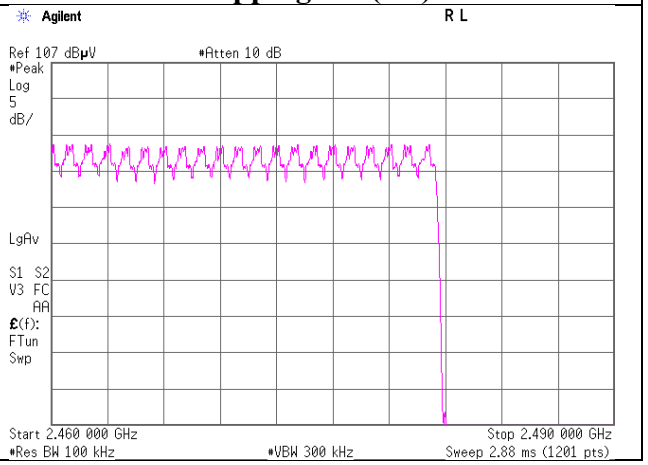
Number of Hopping Frequency

Report No.	13456926S	
Test place	Shonan EMC Lab. No.1 Measurement Room	
Date	August 18, 2020	August 19, 2020
Temperature / Humidity	24 deg. C / 48 % RH	24 deg. C / 56 % RH
Engineer	Yusuke Tanikawara	Kazuya Noda
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

DH5	3DH5
Hopping On (1/3)	**Hopping On (1/3)**
	
Hopping On (2/3)	**Hopping On (2/3)**
	
Hopping On (3/3)	**Hopping On (3/3)**
	

Dwell time

Report No.	13456926S-C-R2	
Test place	Shonan EMC Lab. No.1 Measurement Room	
Date	August 18, 2020	August 19, 2020
Temperature / Humidity	24 deg. C / 48 % RH	24 deg. C / 56 % RH
Engineer	Yusuke Tanikawara	Kazuya Noda
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	52.4 times / 5 sec. x 31.6 sec. = 332 times	0.421	140	400
DH3	29.0 times / 5 sec. x 31.6 sec. = 184 times	1.679	309	400
DH5	20.6 times / 5 sec. x 31.6 sec. = 131 times	2.928	384	400
3DH1	50.2 times / 5 sec. x 31.6 sec. = 318 times	0.429	136	400
3DH3	24.8 times / 5 sec. x 31.6 sec. = 157 times	1.684	264	400
3DH5	20.2 times / 5 sec. x 31.6 sec. = 128 times	2.938	376	400

Sample Calculation
Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

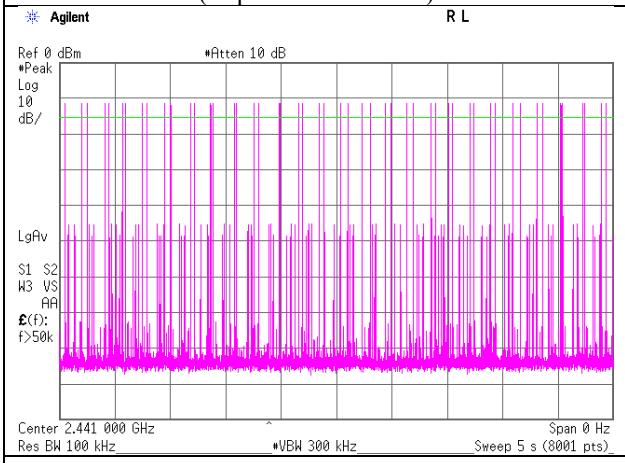
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	52	52	52	52	54	52.4
DH3	29	25	31	31	29	29.0
DH5	17	23	21	20	22	20.6
3DH1	50	50	51	49	51	50.2
3DH3	26	25	25	25	23	24.8
3DH5	21	18	22	19	21	20.2

Sample Calculation
Average = Summation (Sampling 1 to 5) / 5

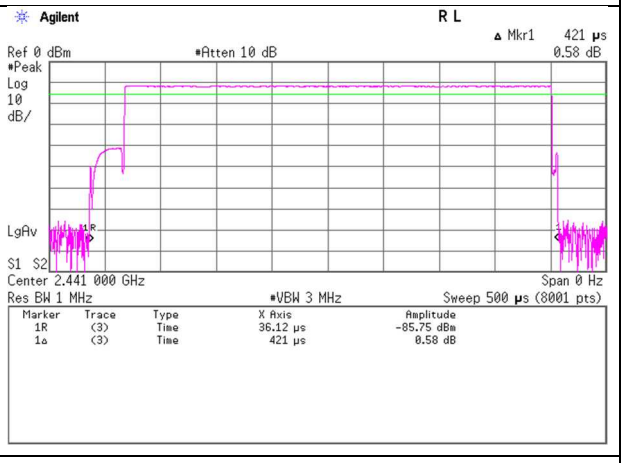
This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in N x 0.4s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless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

Dwell time

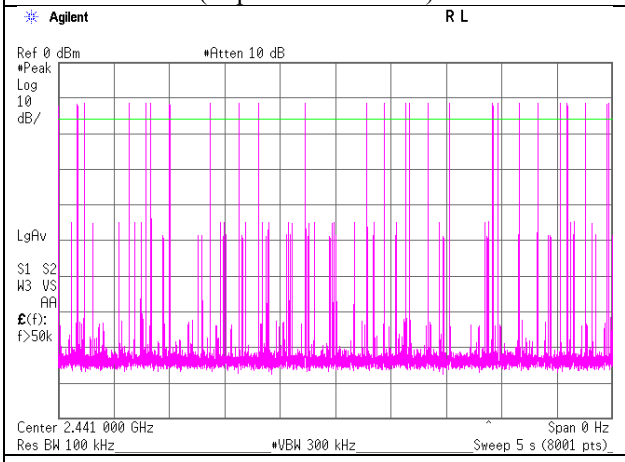
DH1 (1/2)
(Representative chart)



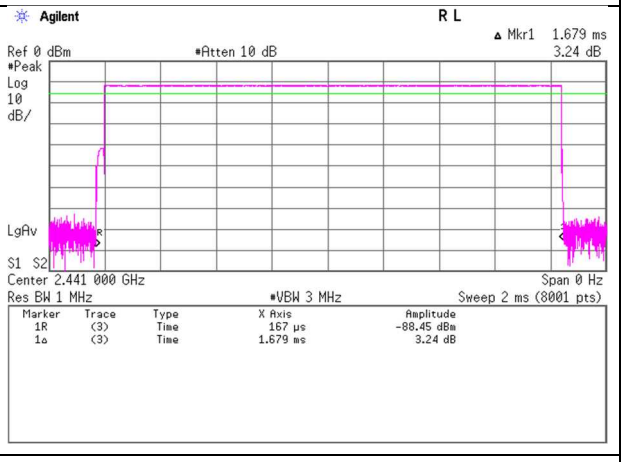
DH1 (2/2)



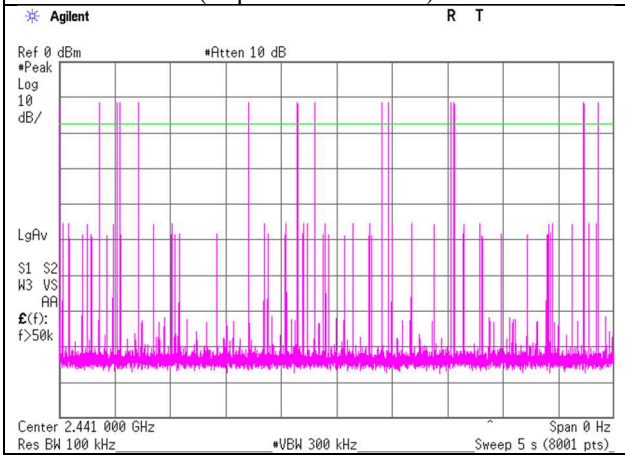
DH3 (1/2)
(Representative chart)



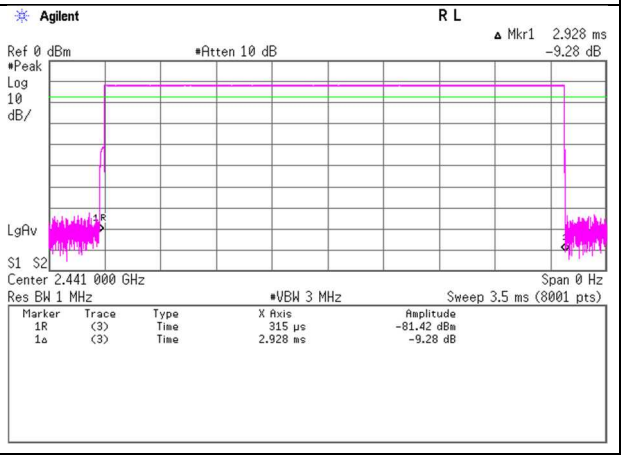
DH3 (2/2)



DH5 (1/2)
(Representative chart)

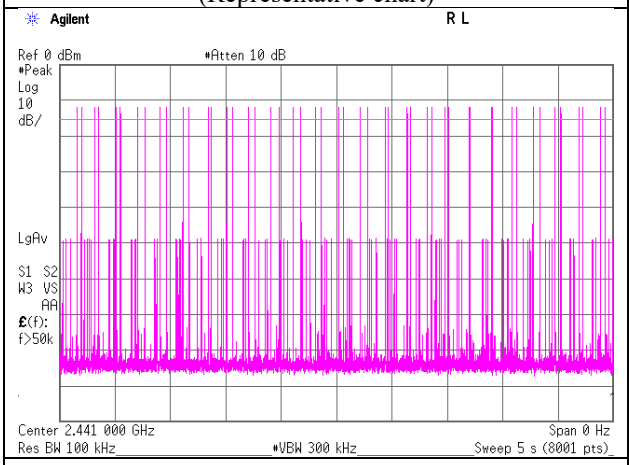


DH5 (2/2)

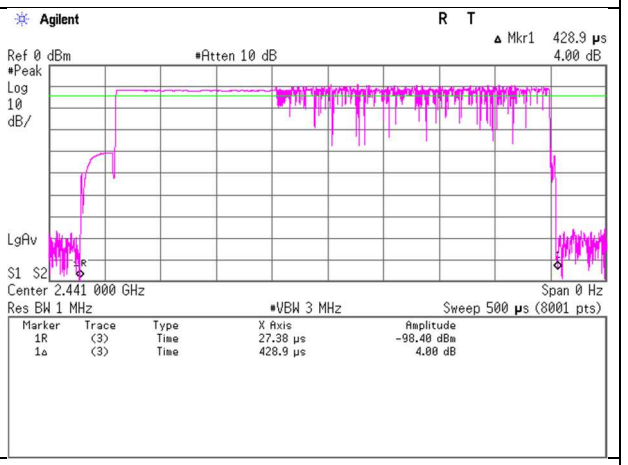


Dwell time

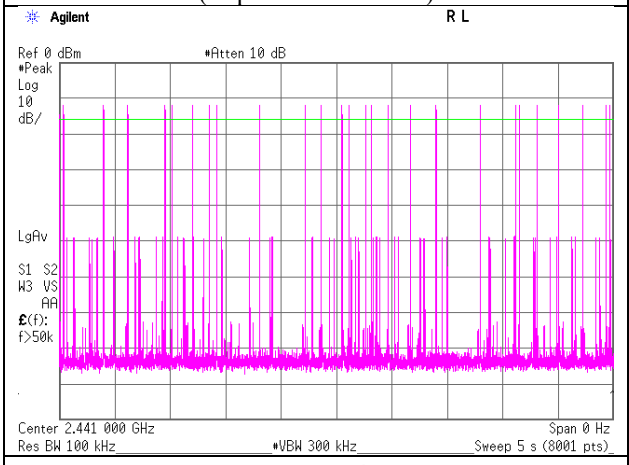
3DH1 (1/2)
(Representative chart)



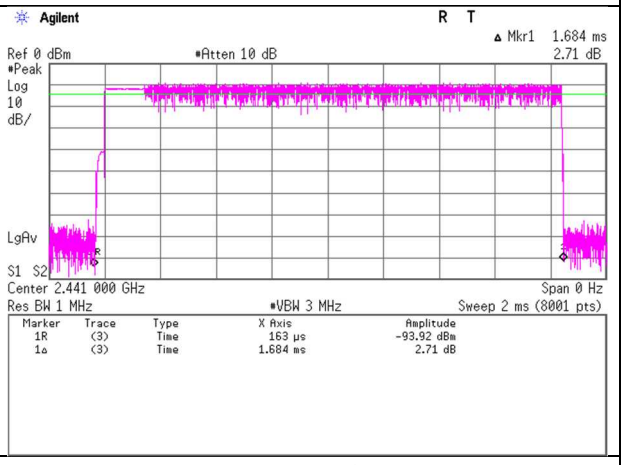
3DH1 (2/2)



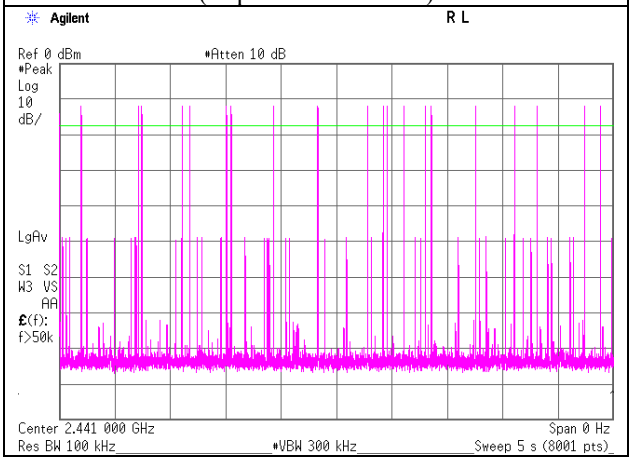
3DH3 (1/2)
(Representative chart)



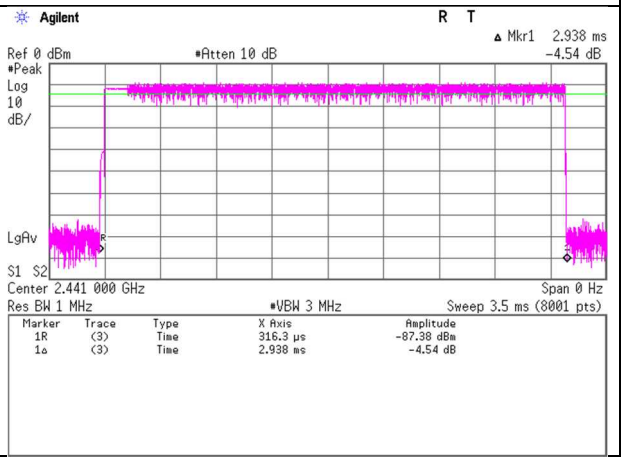
3DH3 (2/2)



3DH5 (1/2)
(Representative chart)



3DH5 (2/2)



Maximum Peak Output Power

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 6, 2020
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off

					Conducted Power					e.i.r.p. for RSS-247					
Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin	Antenna Gain	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
DH5	2402.0	-11.04	1.66	9.88	0.50	1.12	20.96	125	20.46	0.30	0.80	1.20	36.02	4000	35.22
DH5	2441.0	-10.76	1.66	9.89	0.79	1.20	20.96	125	20.17	0.30	1.09	1.29	36.02	4000	34.93
DH5	2480.0	-10.57	1.67	9.89	0.99	1.26	20.96	125	19.97	0.30	1.29	1.35	36.02	4000	34.73
2DH5	2402.0	-8.52	1.66	9.88	3.02	2.00	20.96	125	17.94	0.30	3.32	2.15	36.02	4000	32.70
2DH5	2441.0	-8.40	1.66	9.89	3.15	2.07	20.96	125	17.81	0.30	3.45	2.21	36.02	4000	32.57
2DH5	2480.0	-8.10	1.67	9.89	3.46	2.22	20.96	125	17.50	0.30	3.76	2.38	36.02	4000	32.26
3DH5	2402.0	-8.20	1.66	9.88	3.34	2.16	20.96	125	17.62	0.30	3.64	2.31	36.02	4000	32.38
3DH5	2441.0	-8.15	1.66	9.89	3.40	2.19	20.96	125	17.56	0.30	3.70	2.34	36.02	4000	32.32
3DH5	2480.0	-7.85	1.67	9.89	3.71	2.35	20.96	125	17.25	0.30	4.01	2.52	36.02	4000	32.01

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 SAR testing)

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 6, 2020
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result (Time average)		Duty factor	Result (Burst power average)	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
DH5	2402.0	-12.76	1.66	9.88	-1.22	0.76	1.08	-0.14	0.97
DH5	2441.0	-12.49	1.66	9.89	-0.94	0.81	1.08	0.14	1.03
DH5	2480.0	-12.29	1.67	9.89	-0.73	0.85	1.08	0.35	1.08
2DH5	2402.0	-12.51	1.66	9.88	-0.97	0.80	1.07	0.10	1.02
2DH5	2441.0	-12.45	1.66	9.89	-0.90	0.81	1.07	0.17	1.04
2DH5	2480.0	-12.17	1.67	9.89	-0.61	0.87	1.07	0.46	1.11
3DH5	2402.0	-12.50	1.66	9.88	-0.96	0.80	1.07	0.11	1.03
3DH5	2441.0	-12.45	1.66	9.89	-0.90	0.81	1.07	0.17	1.04
3DH5	2480.0	-12.17	1.67	9.89	-0.61	0.87	1.07	0.46	1.11

Sample Calculation:
Result (Time average) = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss
Result (Burst power average) = Time average + Duty factor

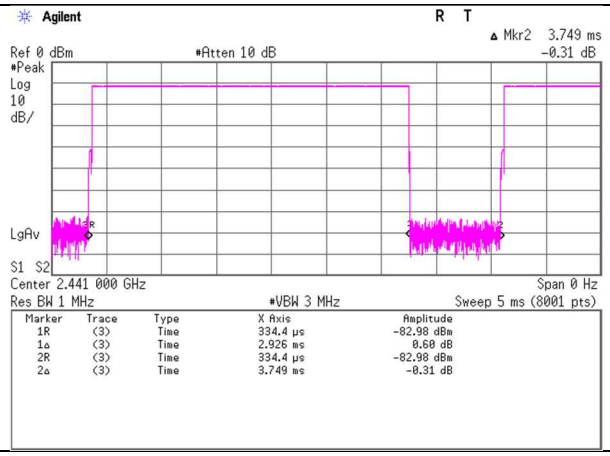
*The equipment and cables were not used for factor 0 dB of the data sheets.

Burst Rate Confirmation

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 6, 2020
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off

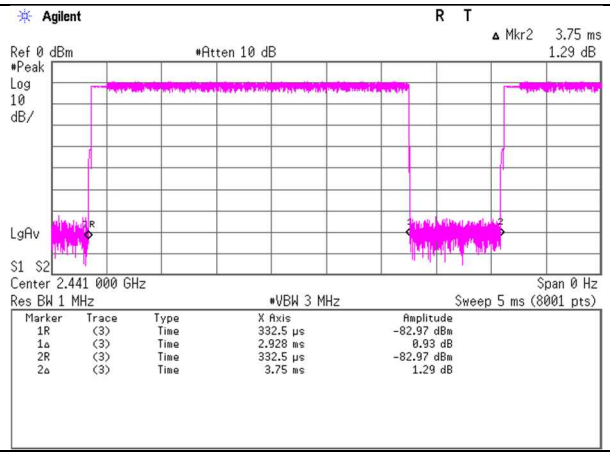
DH5

Tx on / (Tx on + Tx off) =	**0.780**
Tx on / (Tx on + Tx off) * 100 =	**78.0 %**
Duty factor = 10 * log (3.749 / 2.926) =	**1.08 dB**
VBW : 1/On time=341.76 Hz <	**360 Hz**



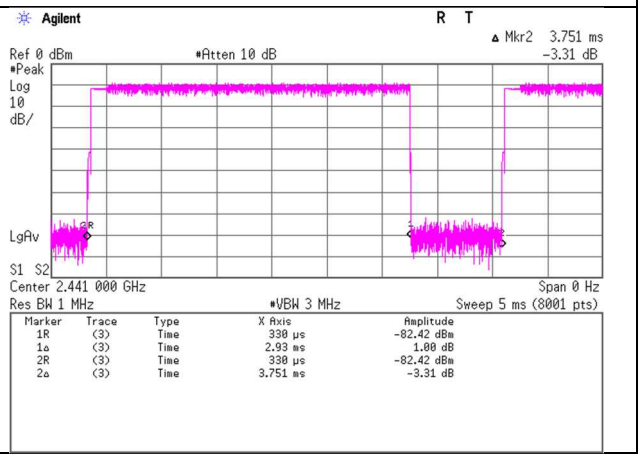
2DH5

Tx on / (Tx on + Tx off) =	**0.781**
Tx on / (Tx on + Tx off) * 100 =	**78.1 %**
Duty factor = 10 * log (3.75 / 2.928) =	**1.07 dB**
VBW : 1/On time=341.53 Hz <	**360 Hz**



3DH5

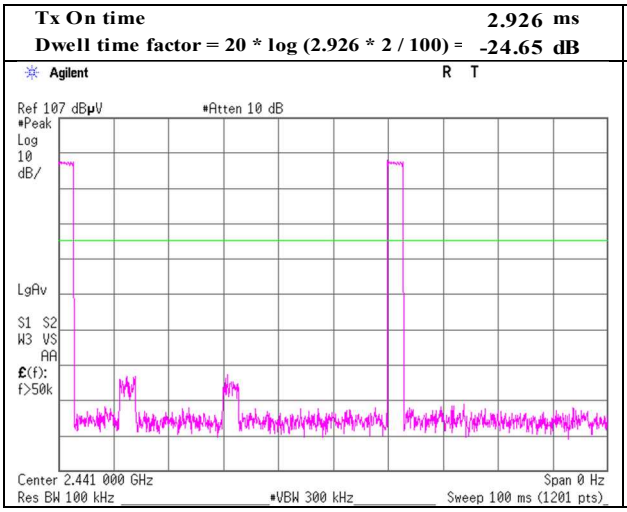
Tx on / (Tx on + Tx off) =	**0.781**
Tx on / (Tx on + Tx off) * 100 =	**78.1 %**
Duty factor = 10 * log (3.751 / 2.93) =	**1.07 dB**
VBW : 1/On time=341.30 Hz <	**360 Hz**



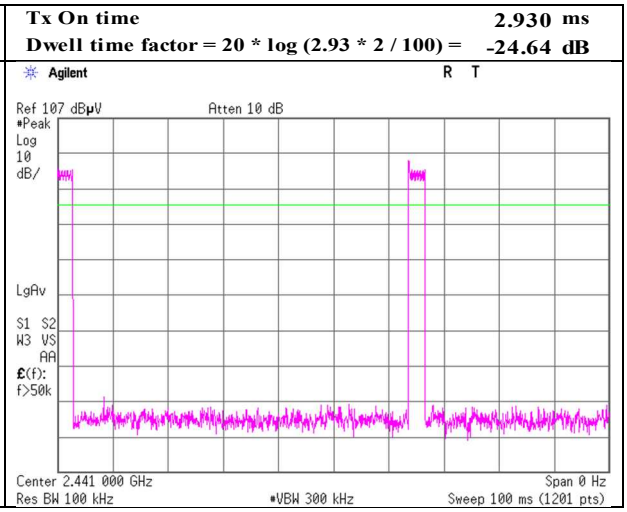
Duty cycle correction factor

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 6, 2020
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping On

DH5



3DH5



As for Tx On time, refer to “Burst Rate Confirmation”

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	124.995	QP	41.39	13.52	7.29	32.11	0.00	30.09	43.5	13.4	320	359	-
Hori.	249.995	QP	51.86	11.77	8.26	31.99	0.00	39.90	46.0	**6.1**	164	260	-
Hori.	303.144	QP	41.54	13.55	8.55	31.96	0.00	31.68	46.0	14.3	100	296	-
Hori.	374.996	QP	39.59	15.11	8.89	31.93	0.00	31.66	46.0	14.3	100	301	-
Hori.	2390.000	PK	47.65	28.41	14.22	41.66	2.28	50.90	73.9	23.0	391	245	-
Hori.	3202.635	PK	51.02	29.22	6.03	41.98	2.28	46.57	73.9	27.3	168	62	-
Hori.	4804.000	PK	62.76	31.60	6.82	42.92	2.28	60.54	73.9	13.3	154	133	-
Hori.	7206.000	PK	49.86	37.60	8.40	43.39	2.28	54.75	73.9	19.1	150	0	-
Hori.	9608.000	PK	49.44	38.92	9.55	43.14	2.28	57.05	73.9	16.8	150	0	-
Vert.	50.003	QP	35.75	11.18	6.78	32.16	0.00	21.55	40.0	18.4	100	147	-
Vert.	85.599	QP	40.84	7.28	7.58	32.15	0.00	23.55	40.0	16.4	100	156	-
Vert.	125.000	QP	42.50	13.53	7.30	32.11	0.00	31.22	43.5	12.2	100	248	-
Vert.	250.004	QP	41.48	11.77	8.26	31.99	0.00	29.52	46.0	16.4	100	69	-
Vert.	499.991	QP	34.27	17.77	9.41	31.92	0.00	29.53	46.0	16.4	133	318	-
Vert.	924.401	QP	30.75	22.12	10.90	30.85	0.00	32.92	46.0	13.0	138	31	-
Vert.	2390.000	PK	47.90	28.41	14.22	41.66	2.28	51.15	73.9	22.7	233	203	-
Vert.	3202.704	PK	50.68	29.22	6.03	41.98	2.28	46.23	73.9	27.6	127	197	-
Vert.	4804.000	PK	63.59	31.60	6.82	42.92	2.28	61.37	73.9	12.5	125	257	-
Vert.	7206.000	PK	49.53	37.60	8.40	43.39	2.28	54.42	73.9	19.4	150	0	-
Vert.	9608.000	PK	50.39	38.92	9.55	43.14	2.28	58.00	73.9	15.9	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	PK	47.65	28.41	14.22	41.66	-24.65	2.28	26.25	53.9	27.6	*1)
Hori.	3202.635	PK	51.02	29.22	6.03	41.98	-24.65	2.28	21.92	53.9	31.9	*2)
Hori.	4804.000	PK	62.76	31.60	6.82	42.92	-24.65	2.28	35.89	53.9	18.0	-
Hori.	7206.000	PK	49.86	37.60	8.40	43.39	-24.65	2.28	30.10	53.9	23.8	-
Hori.	9608.000	PK	49.44	38.92	9.55	43.14	-24.65	2.28	32.40	53.9	21.5	-
Vert.	2390.000	PK	47.90	28.41	14.22	41.66	-24.65	2.28	26.50	53.9	27.4	*1)
Vert.	3202.704	PK	50.68	29.22	6.03	41.98	-24.65	2.28	21.58	53.9	32.3	*2)
Vert.	4804.000	PK	63.59	31.60	6.82	42.92	-24.65	2.28	36.72	53.9	17.1	-
Vert.	7206.000	PK	49.53	37.60	8.40	43.39	-24.65	2.28	29.77	53.9	24.1	-
Vert.	9608.000	PK	50.39	38.92	9.55	43.14	-24.65	2.28	33.35	53.9	20.5	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Not out of band emission (Leakage Power)
*2) Caused by carrier

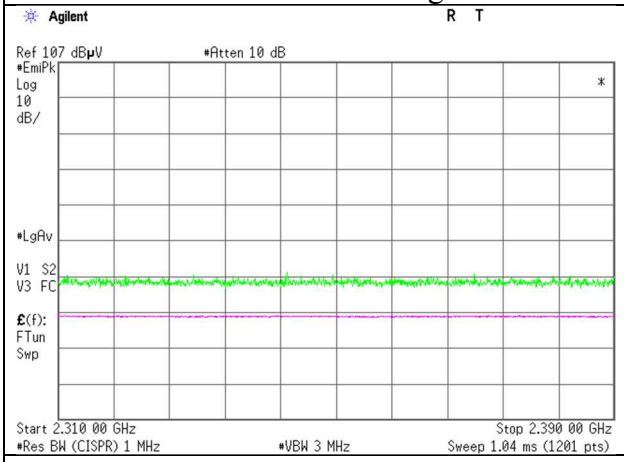
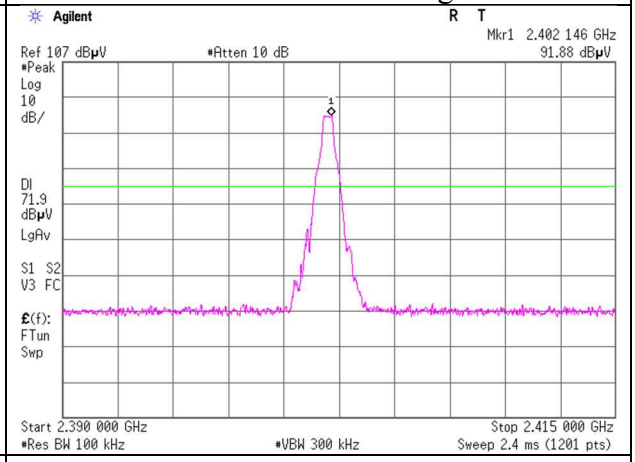
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

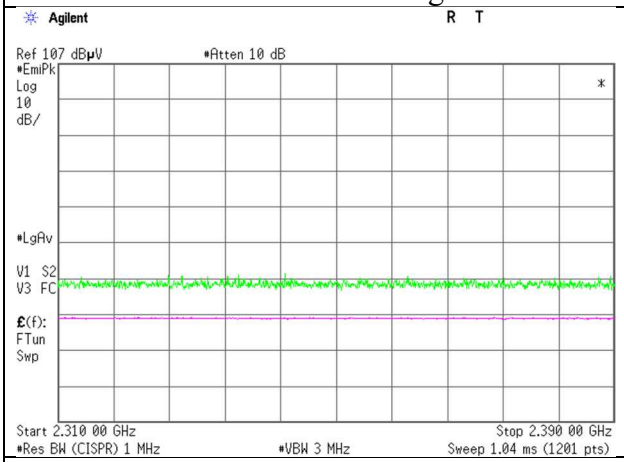
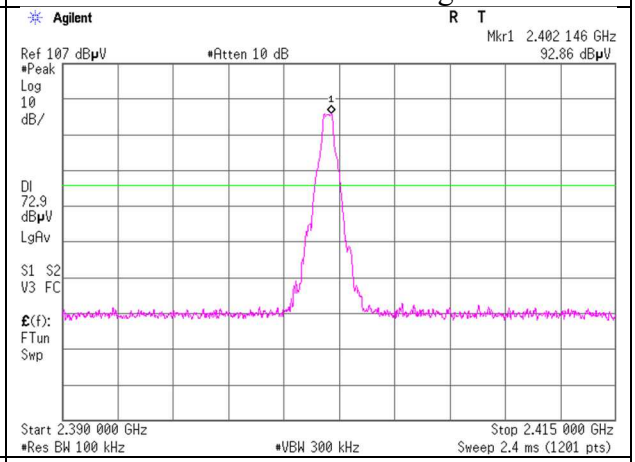
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	92.34	28.38	14.23	41.67	2.28	95.56	-	-	Carrier
Hori.	2400.000	PK	39.43	28.38	14.22	41.67	2.28	42.64	75.5	32.8	-
Vert.	2402.000	PK	92.66	28.38	14.23	41.67	2.28	95.88	-	-	Carrier
Vert.	2400.000	PK	39.60	28.38	14.22	41.67	2.28	42.81	75.8	32.9	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	December 23, 2020
Temperature / Humidity	22 deg.C, 33 %RH
Engineer	Yusuke Tanikawara (1 GHz -2.8 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz

Horizontal	
Restricted-band band-edge Plot	Authorized-band band-edge Plot
	
Trace Green : Peak Plot Trace Purple : Average Plot	20dBc Plot

Vertical	
Restricted-band band-edge Plot	Authorized-band band-edge Plot
	
Trace Green : Peak Plot Trace Purple : Average Plot	20dBc Plot

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

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -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 Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	124.991	QP	41.65	13.52	7.29	32.11	0.00	30.35	43.5	13.1	360	0	-
Hori.	249.989	QP	52.63	11.77	8.26	31.99	0.00	40.67	46.0	**5.3**	147	245	-
Hori.	303.060	QP	41.61	13.55	8.55	31.96	0.00	31.75	46.0	14.2	120	304	-
Hori.	374.992	QP	40.35	15.11	8.89	31.93	0.00	32.42	46.0	13.5	100	308	-
Hori.	3254.664	PK	50.77	29.00	6.07	42.01	2.28	46.11	73.9	27.7	243	213	-
Hori.	4882.000	PK	60.94	31.63	6.87	42.93	2.28	58.79	73.9	15.1	122	248	-
Hori.	7323.000	PK	48.75	37.71	8.47	43.49	2.28	53.72	73.9	20.1	150	0	-
Hori.	9764.000	PK	50.26	39.19	9.65	42.96	2.28	58.42	73.9	15.4	150	0	-
Vert.	50.023	QP	35.70	11.17	6.78	32.16	0.00	21.49	40.0	18.5	100	146	-
Vert.	85.507	QP	41.08	7.26	7.58	32.15	0.00	23.77	40.0	16.2	113	149	-
Vert.	124.996	QP	42.54	13.52	7.29	32.11	0.00	31.24	43.5	12.2	100	280	-
Vert.	249.993	QP	43.33	11.77	8.26	31.99	0.00	31.37	46.0	14.6	100	43	-
Vert.	499.992	QP	34.56	17.77	9.41	31.92	0.00	29.82	46.0	16.1	121	310	-
Vert.	924.517	QP	30.53	22.11	10.90	30.85	0.00	32.69	46.0	13.3	139	38	-
Vert.	3254.554	PK	50.66	29.00	6.07	42.01	2.28	46.00	73.9	27.9	122	203	-
Vert.	4882.000	PK	61.58	31.63	6.87	42.93	2.28	59.43	73.9	14.4	109	289	-
Vert.	7323.000	PK	48.64	37.71	8.47	43.49	2.28	53.61	73.9	20.2	150	0	-
Vert.	9764.000	PK	49.71	39.19	9.65	42.96	2.28	57.87	73.9	16.0	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3254.664	PK	50.77	29.00	6.07	42.01	-24.65	2.28	21.46	53.9	32.4	*1)
Hori.	4882.000	PK	60.94	31.63	6.87	42.93	-24.65	2.28	34.14	53.9	19.7	-
Hori.	7323.000	PK	48.75	37.71	8.47	43.49	-24.65	2.28	29.07	53.9	24.8	-
Hori.	9764.000	PK	50.26	39.19	9.65	42.96	-24.65	2.28	33.77	53.9	20.1	-
Vert.	3254.554	PK	50.66	29.00	6.07	42.01	-24.65	2.28	21.35	53.9	32.5	*1)
Vert.	4882.000	PK	61.58	31.63	6.87	42.93	-24.65	2.28	34.78	53.9	19.1	-
Vert.	7323.000	PK	48.64	37.71	8.47	43.49	-24.65	2.28	28.96	53.9	24.9	-
Vert.	9764.000	PK	49.71	39.19	9.65	42.96	-24.65	2.28	33.22	53.9	20.6	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Caused by carrier

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	124.995	QP	41.57	13.52	7.29	32.11	0.00	30.27	43.5	13.2	348	0	-
Hori.	249.999	QP	52.19	11.77	8.26	31.99	0.00	40.23	46.0	**5.7**	133	256	-
Hori.	303.061	QP	41.71	13.55	8.55	31.96	0.00	31.85	46.0	14.1	137	300	-
Hori.	374.998	QP	40.75	15.11	8.89	31.93	0.00	32.82	46.0	13.1	100	320	-
Hori.	2483.500	PK	47.63	28.28	14.31	41.69	2.28	50.81	73.9	23.0	398	237	-
Hori.	3306.172	PK	50.75	28.79	6.07	42.05	2.28	45.84	73.9	28.0	155	192	-
Hori.	4960.000	PK	57.66	31.79	6.94	42.94	2.28	55.73	73.9	18.1	106	243	-
Hori.	7440.000	PK	49.12	37.88	8.54	43.60	2.28	54.22	73.9	19.6	150	0	-
Hori.	9920.000	PK	48.21	39.05	9.73	42.78	2.28	56.49	73.9	17.4	150	0	-
Vert.	50.006	QP	35.78	11.18	6.78	32.16	0.00	21.58	40.0	18.4	100	153	-
Vert.	85.663	QP	40.98	7.30	7.58	32.15	0.00	23.71	40.0	16.2	134	153	-
Vert.	124.999	QP	42.12	13.52	7.29	32.11	0.00	30.82	43.5	12.6	100	284	-
Vert.	249.992	QP	42.87	11.77	8.26	31.99	0.00	30.91	46.0	15.0	100	33	-
Vert.	499.991	QP	34.65	17.77	9.41	31.92	0.00	29.91	46.0	16.0	126	316	-
Vert.	924.313	QP	30.71	22.12	10.90	30.85	0.00	32.88	46.0	13.1	140	36	-
Vert.	2483.500	PK	47.32	28.28	14.31	41.69	2.28	50.50	73.9	23.4	364	159	-
Vert.	3306.704	PK	51.38	28.79	6.07	42.05	2.28	46.47	73.9	27.4	238	202	-
Vert.	4960.000	PK	57.21	31.79	6.94	42.94	2.28	55.28	73.9	18.6	128	300	-
Vert.	7440.000	PK	48.20	37.88	8.54	43.60	2.28	53.30	73.9	20.6	150	0	-
Vert.	9920.000	PK	47.82	39.05	9.73	42.78	2.28	56.10	73.9	17.8	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	PK	47.63	28.28	14.31	41.69	-24.65	2.28	26.16	53.9	27.7	*1)
Hori.	3306.172	PK	50.75	28.79	6.07	42.05	-24.65	2.28	21.19	53.9	32.7	*2)
Hori.	4960.000	PK	57.66	31.79	6.94	42.94	-24.65	2.28	31.08	53.9	22.8	-
Hori.	7440.000	PK	49.12	37.88	8.54	43.60	-24.65	2.28	29.57	53.9	24.3	-
Hori.	9920.000	PK	48.21	39.05	9.73	42.78	-24.65	2.28	31.84	53.9	22.0	-
Vert.	2483.500	PK	47.32	28.28	14.31	41.69	-24.65	2.28	25.85	53.9	28.0	*1)
Vert.	3306.704	PK	51.38	28.79	6.07	42.05	-24.65	2.28	21.82	53.9	32.0	*2)
Vert.	4960.000	PK	57.21	31.79	6.94	42.94	-24.65	2.28	30.63	53.9	23.2	-
Vert.	7440.000	PK	48.20	37.88	8.54	43.60	-24.65	2.28	28.65	53.9	25.2	-
Vert.	9920.000	PK	47.82	39.05	9.73	42.78	-24.65	2.28	31.45	53.9	22.4	-

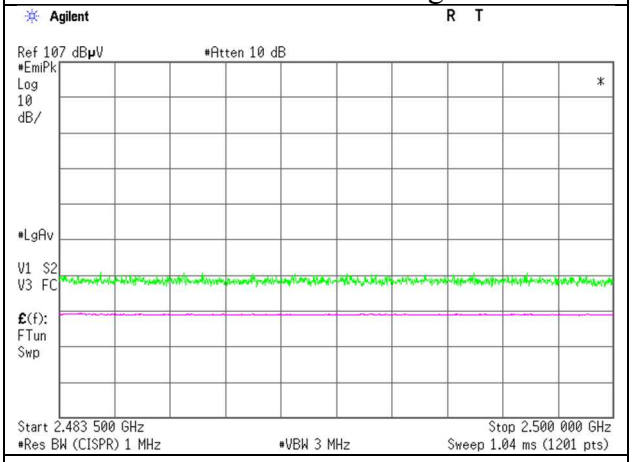
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Not out of band emission (Leakage Power)
*2) Caused by carrier

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	December 23, 2020
Temperature / Humidity	22 deg.C, 33 %RH
Engineer	Yusuke Tanikawara (1 GHz -2.8 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz

Horizontal

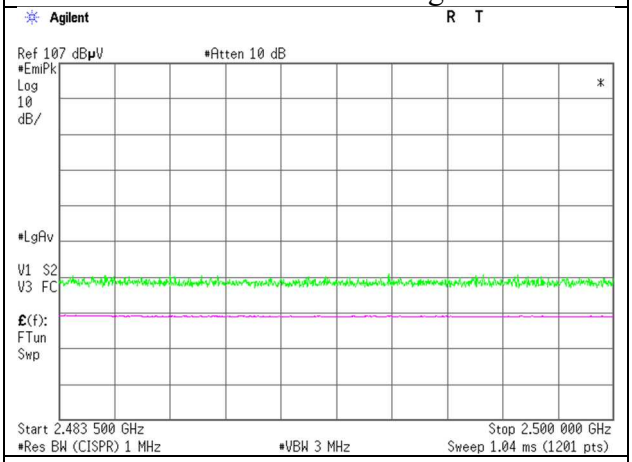
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	124.992	QP	41.11	13.52	7.29	32.11	0.00	29.81	43.5	13.6	362	359	-
Hori.	250.000	QP	51.90	11.77	8.26	31.99	0.00	39.94	46.0	**6.0**	134	244	-
Hori.	299.809	QP	42.12	13.50	8.53	31.96	0.00	32.19	46.0	13.8	122	291	-
Hori.	374.990	QP	39.78	15.11	8.89	31.93	0.00	31.85	46.0	14.1	100	248	-
Hori.	2390.000	PK	47.56	28.41	14.22	41.66	2.28	50.81	73.9	23.0	394	240	-
Hori.	3202.645	PK	50.92	29.22	6.03	41.98	2.28	46.47	73.9	27.4	162	59	-
Hori.	4804.000	PK	65.98	31.60	6.82	42.92	2.28	63.76	73.9	10.1	152	128	-
Hori.	7206.000	PK	49.60	37.60	8.40	43.39	2.28	54.49	73.9	19.4	150	0	-
Hori.	9608.000	PK	50.59	38.92	9.55	43.14	2.28	58.20	73.9	15.7	150	0	-
Vert.	50.697	QP	35.50	10.93	6.78	32.16	0.00	21.05	40.0	18.9	100	110	-
Vert.	85.630	QP	40.62	7.29	7.58	32.15	0.00	23.34	40.0	16.6	138	131	-
Vert.	124.998	QP	42.75	13.52	7.29	32.11	0.00	31.45	43.5	12.0	100	266	-
Vert.	249.998	QP	43.80	11.77	8.26	31.99	0.00	31.84	46.0	14.1	100	31	-
Vert.	499.986	QP	34.28	17.77	9.41	31.92	0.00	29.54	46.0	16.4	121	317	-
Vert.	924.298	QP	30.50	22.12	10.90	30.85	0.00	32.67	46.0	13.3	138	36	-
Vert.	2390.000	PK	47.21	28.41	14.22	41.66	2.28	50.46	73.9	23.4	233	204	-
Vert.	3202.672	PK	51.57	29.22	6.03	41.98	2.28	47.12	73.9	26.7	149	231	-
Vert.	4804.000	PK	67.11	31.60	6.82	42.92	2.28	64.89	73.9	9.0	147	280	-
Vert.	7206.000	PK	49.84	37.60	8.40	43.39	2.28	54.73	73.9	19.1	150	0	-
Vert.	9608.000	PK	51.02	38.92	9.55	43.14	2.28	58.63	73.9	15.2	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2390.000	PK	47.56	28.41	14.22	41.66	-24.64	2.28	26.17	53.9	27.7	*1)
Hori.	3202.645	PK	50.92	29.22	6.03	41.98	-24.64	2.28	21.83	53.9	32.0	*2)
Hori.	4804.000	PK	65.98	31.60	6.82	42.92	-24.64	2.28	39.12	53.9	14.7	-
Hori.	7206.000	PK	49.60	37.60	8.40	43.39	-24.64	2.28	29.85	53.9	24.0	-
Hori.	9608.000	PK	50.59	38.92	9.55	43.14	-24.64	2.28	33.56	53.9	20.3	-
Vert.	2390.000	PK	47.21	28.41	14.22	41.66	-24.64	2.28	25.82	53.9	28.0	*1)
Vert.	3202.672	PK	51.57	29.22	6.03	41.98	-24.64	2.28	22.48	53.9	31.4	*2)
Vert.	4804.000	PK	67.11	31.60	6.82	42.92	-24.64	2.28	40.25	53.9	13.6	-
Vert.	7206.000	PK	49.84	37.60	8.40	43.39	-24.64	2.28	30.09	53.9	23.8	-
Vert.	9608.000	PK	51.02	38.92	9.55	43.14	-24.64	2.28	33.99	53.9	19.9	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Not out of band emission (Leakage Power)
*2) Caused by carrier

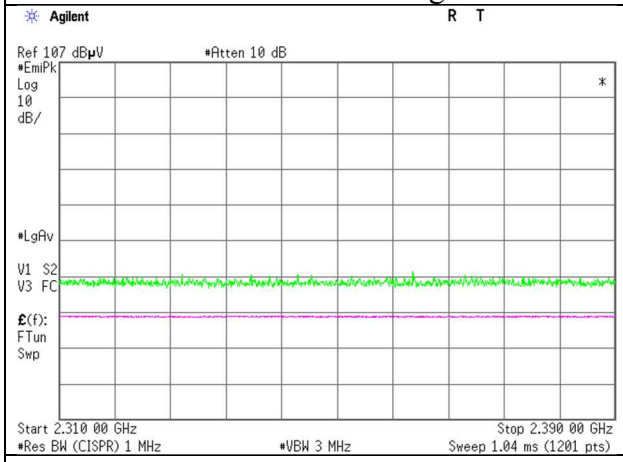
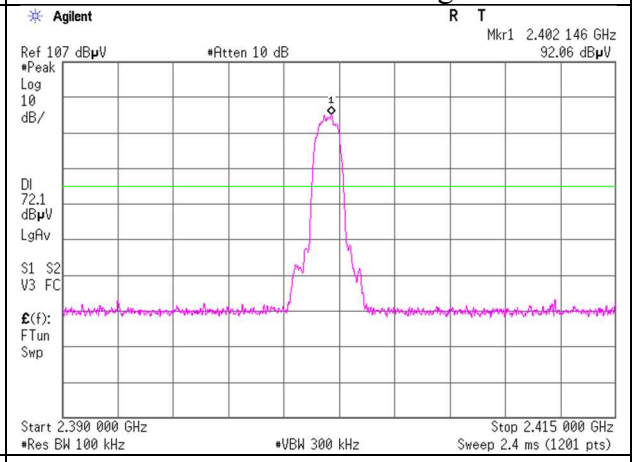
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

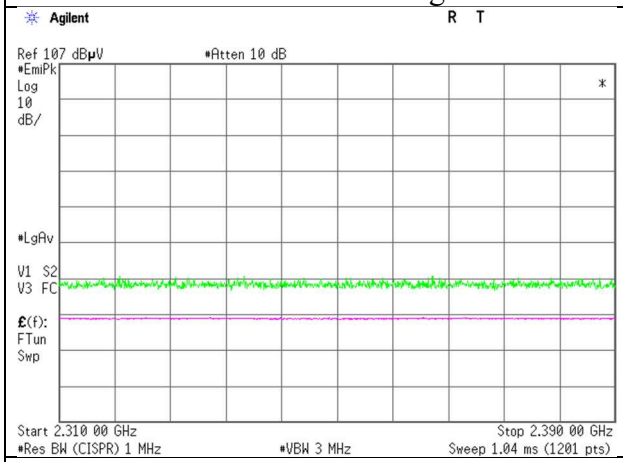
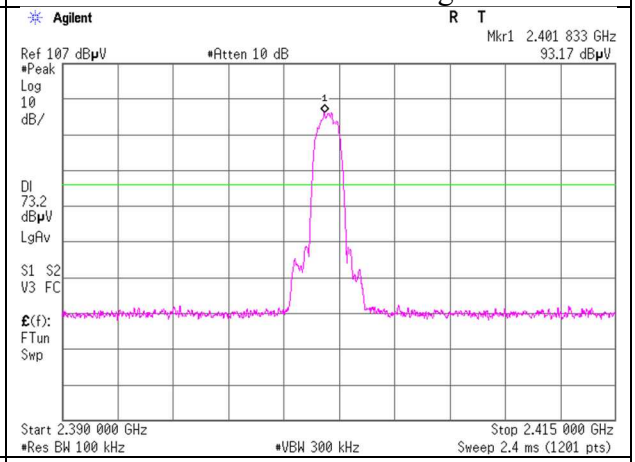
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	91.97	28.38	14.23	41.67	2.28	95.19	-	-	Carrier
Hori.	2400.000	PK	39.23	28.38	14.22	41.67	2.28	42.44	75.1	32.6	-
Vert.	2402.000	PK	92.86	28.38	14.23	41.67	2.28	96.08	-	-	Carrier
Vert.	2400.000	PK	39.04	28.38	14.22	41.67	2.28	42.25	76.0	33.7	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	December 23, 2020
Temperature / Humidity	22 deg.C, 33 %RH
Engineer	Yusuke Tanikawara (1 GHz -2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz

Horizontal	
Restricted-band band-edge Plot	Authorized-band band-edge Plot
	
Trace Green : Peak Plot Trace Purple : Average Plot	20dBc Plot

Vertical	
Restricted-band band-edge Plot	Authorized-band band-edge Plot
	
Trace Green : Peak Plot Trace Purple : Average Plot	20dBc Plot

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

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	124.989	QP	41.15	13.52	7.29	32.11	0.00	29.85	43.5	13.6	360	359	-
Hori.	249.991	QP	52.60	11.77	8.26	31.99	0.00	40.64	46.0	**5.3**	144	256	-
Hori.	299.838	QP	42.65	13.50	8.53	31.96	0.00	32.72	46.0	13.2	123	297	-
Hori.	374.987	QP	39.30	15.11	8.89	31.93	0.00	31.37	46.0	14.6	100	247	-
Hori.	3254.652	PK	51.09	29.00	6.07	42.01	2.28	46.43	73.9	27.4	196	210	-
Hori.	4882.000	PK	64.06	31.63	6.87	42.93	2.28	61.91	73.9	11.9	115	139	-
Hori.	7323.000	PK	49.52	37.71	8.47	43.49	2.28	54.49	73.9	19.4	150	0	-
Hori.	9764.000	PK	49.03	39.19	9.65	42.96	2.28	57.19	73.9	16.7	150	0	-
Vert.	49.987	QP	35.30	11.19	6.78	32.16	0.00	21.11	40.0	18.8	100	152	-
Vert.	85.607	QP	40.76	7.28	7.58	32.15	0.00	23.47	40.0	16.5	144	135	-
Vert.	124.988	QP	42.15	13.52	7.29	32.11	0.00	30.85	43.5	12.6	100	282	-
Vert.	249.992	QP	43.60	11.77	8.26	31.99	0.00	31.64	46.0	14.3	100	34	-
Vert.	499.994	QP	35.33	17.77	9.41	31.92	0.00	30.59	46.0	15.4	119	311	-
Vert.	924.613	QP	31.26	22.11	10.90	30.85	0.00	33.42	46.0	12.5	144	40	-
Vert.	3254.670	PK	51.34	29.00	6.07	42.01	2.28	46.68	73.9	27.2	194	186	-
Vert.	4882.000	PK	63.74	31.63	6.87	42.93	2.28	61.59	73.9	12.3	167	259	-
Vert.	7323.000	PK	48.38	37.71	8.47	43.49	2.28	53.35	73.9	20.5	150	0	-
Vert.	9764.000	PK	48.65	39.19	9.65	42.96	2.28	56.81	73.9	17.0	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	3254.652	PK	51.09	29.00	6.07	42.01	-24.64	2.28	21.79	53.9	32.1	*1)
Hori.	4882.000	PK	64.06	31.63	6.87	42.93	-24.64	2.28	37.27	53.9	16.6	-
Hori.	7323.000	PK	49.52	37.71	8.47	43.49	-24.64	2.28	29.85	53.9	24.0	-
Hori.	9764.000	PK	49.03	39.19	9.65	42.96	-24.64	2.28	32.55	53.9	21.3	-
Vert.	3254.670	PK	51.34	29.00	6.07	42.01	-24.64	2.28	22.04	53.9	31.8	*1)
Vert.	4882.000	PK	63.74	31.63	6.87	42.93	-24.64	2.28	36.95	53.9	16.9	-
Vert.	7323.000	PK	48.38	37.71	8.47	43.49	-24.64	2.28	28.71	53.9	25.1	-
Vert.	9764.000	PK	48.65	39.19	9.65	42.96	-24.64	2.28	32.17	53.9	21.7	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Caused by carrier

Radiated Spurious Emission

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	125.010	QP	41.88	13.53	7.30	32.11	0.00	30.60	43.5	12.9	323	363	-
Hori.	249.895	QP	51.81	11.77	8.26	31.99	0.00	39.85	46.0	**6.1**	100	274	-
Hori.	299.004	QP	42.57	13.49	8.52	31.96	0.00	32.62	46.0	13.3	100	322	-
Hori.	374.992	QP	41.45	15.11	8.89	31.93	0.00	33.52	46.0	12.4	100	313	-
Hori.	2483.500	PK	47.26	28.28	14.31	41.69	2.28	50.44	73.9	23.4	362	232	-
Hori.	3306.612	PK	50.58	28.79	6.07	42.05	2.28	45.67	73.9	28.2	102	159	-
Hori.	4960.000	PK	60.16	31.79	6.94	42.94	2.28	58.23	73.9	15.6	106	247	-
Hori.	7440.000	PK	48.74	37.88	8.54	43.60	2.28	53.84	73.9	20.0	150	0	-
Hori.	9920.000	PK	48.10	39.05	9.73	42.78	2.28	56.38	73.9	17.5	150	0	-
Vert.	51.852	QP	35.15	10.55	6.76	32.16	0.00	20.30	40.0	19.7	100	154	-
Vert.	85.615	QP	40.50	7.29	7.58	32.15	0.00	23.22	40.0	16.7	130	140	-
Vert.	124.989	QP	41.60	13.52	7.29	32.11	0.00	30.30	43.5	13.2	100	291	-
Vert.	249.998	QP	43.26	11.77	8.26	31.99	0.00	31.30	46.0	14.7	100	29	-
Vert.	499.997	QP	32.25	17.77	9.41	31.92	0.00	27.51	46.0	18.4	133	315	-
Vert.	924.595	QP	30.89	22.11	10.90	30.85	0.00	33.05	46.0	12.9	144	47	-
Vert.	2483.500	PK	47.09	28.28	14.31	41.69	2.28	50.27	73.9	23.6	326	158	-
Vert.	3306.664	PK	51.60	28.79	6.07	42.05	2.28	46.69	73.9	27.2	256	195	-
Vert.	4960.000	PK	59.90	31.79	6.94	42.94	2.28	57.97	73.9	15.9	105	297	-
Vert.	7440.000	PK	48.19	37.88	8.54	43.60	2.28	53.29	73.9	20.6	150	0	-
Vert.	9920.000	PK	48.18	39.05	9.73	42.78	2.28	56.46	73.9	17.4	150	0	-

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Peak measurement value with Duty cycle correction factor (DCCF)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	DCCF [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2483.500	PK	47.26	28.28	14.31	41.69	-24.64	2.28	25.80	53.9	28.1	*1)
Hori.	3306.612	PK	50.58	28.79	6.07	42.05	-24.64	2.28	21.03	53.9	32.8	*2)
Hori.	4960.000	PK	60.16	31.79	6.94	42.94	-24.64	2.28	33.59	53.9	20.3	-
Hori.	7440.000	PK	48.74	37.88	8.54	43.60	-24.64	2.28	29.20	53.9	24.7	-
Hori.	9920.000	PK	48.10	39.05	9.73	42.78	-24.64	2.28	31.74	53.9	22.1	-
Vert.	2483.500	PK	47.09	28.28	14.31	41.69	-24.64	2.28	25.63	53.9	28.2	*1)
Vert.	3306.664	PK	51.60	28.79	6.07	42.05	-24.64	2.28	22.05	53.9	31.8	*2)
Vert.	4960.000	PK	59.90	31.79	6.94	42.94	-24.64	2.28	33.33	53.9	20.5	-
Vert.	7440.000	PK	48.19	37.88	8.54	43.60	-24.64	2.28	28.65	53.9	25.2	-
Vert.	9920.000	PK	48.18	39.05	9.73	42.78	-24.64	2.28	31.82	53.9	22.0	-

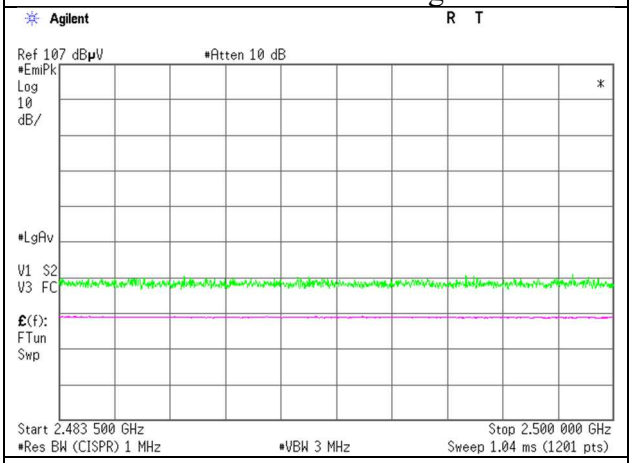
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + DCCF + Distance factor
Distance factor : 1 GHz - 10 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.
*1) Not out of band emission (Leakage Power)
*2) Caused by carrier

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13456926S-C-R2
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	December 23, 2020
Temperature / Humidity	22 deg.C, 33 %RH
Engineer	Yusuke Tanikawara (1 GHz -2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz

Horizontal

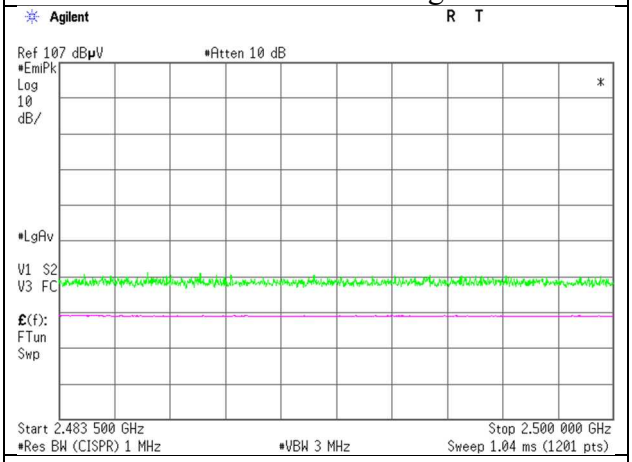
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

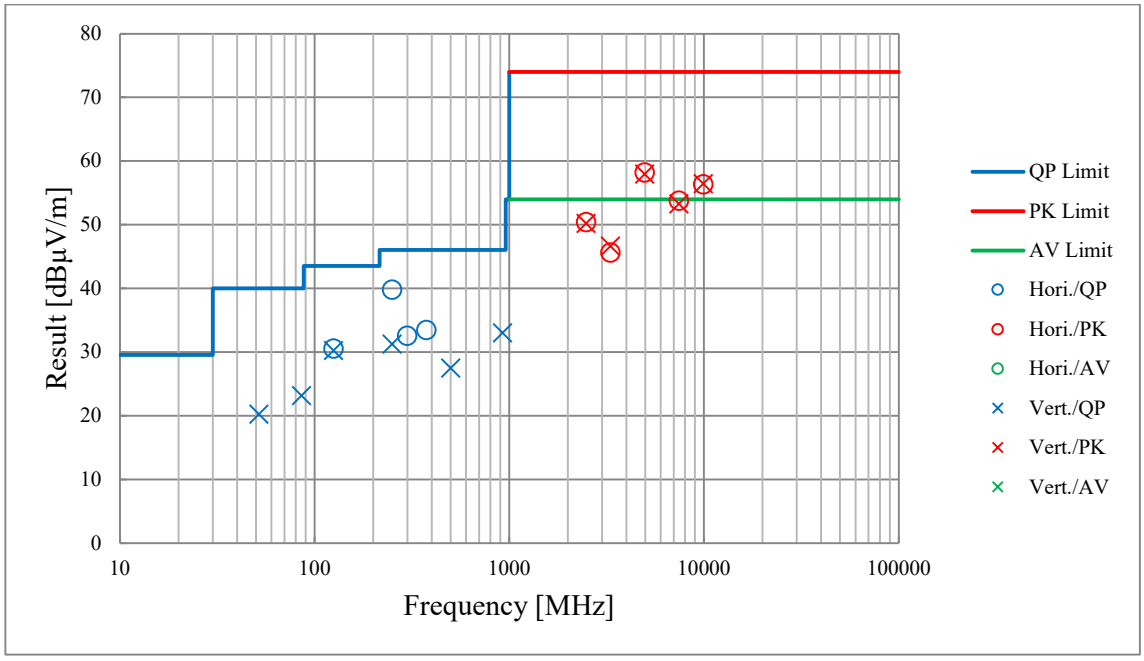


Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

Report No.	13456926S-C-R2				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	February 12, 2021	December 23, 2020	December 24, 2020	December 25, 2020	January 5, 2021
Temperature / Humidity	21 deg.C, 31 %RH	22 deg.C, 33 %RH	24 deg.C, 34 %RH	25 deg.C, 26 %RH	20 deg.C, 33 %RH
Engineer	Takahiro Kawakami	Yusuke Tanikawara	Takahiro Kawakami	Takahiro Kawakami	Yusuke Tanikawara
	(30 MHz -1 GHz)	(1 GHz -2.8 GHz)	(2.8 GHz -10 GHz)	(10 GHz -18 GHz)	(18 GHz -26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz				



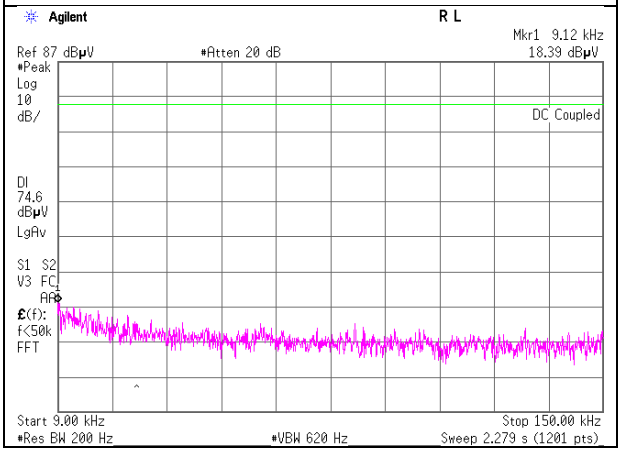
*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

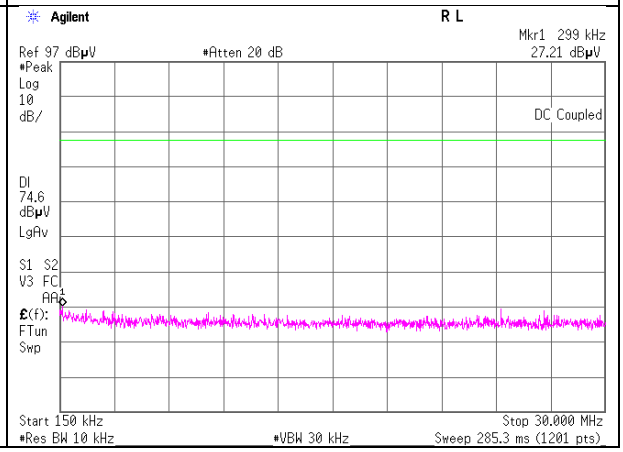
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 18, 2020
Temperature / Humidity	24 deg. C / 48 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, DH5

2402 MHz

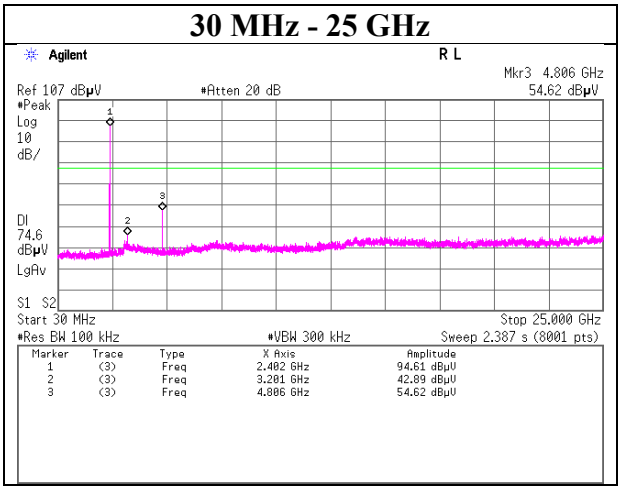
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

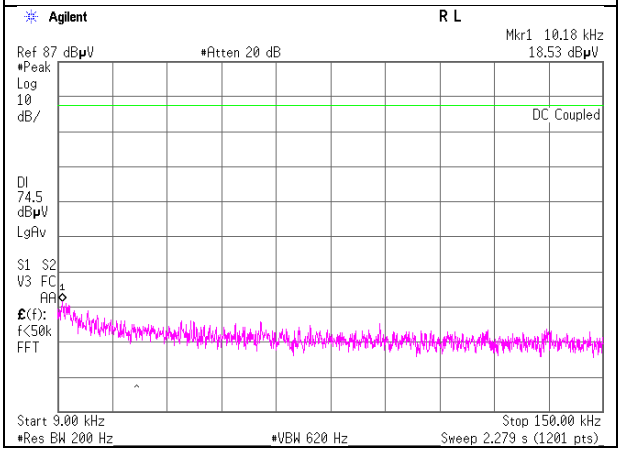


Conducted Spurious Emission

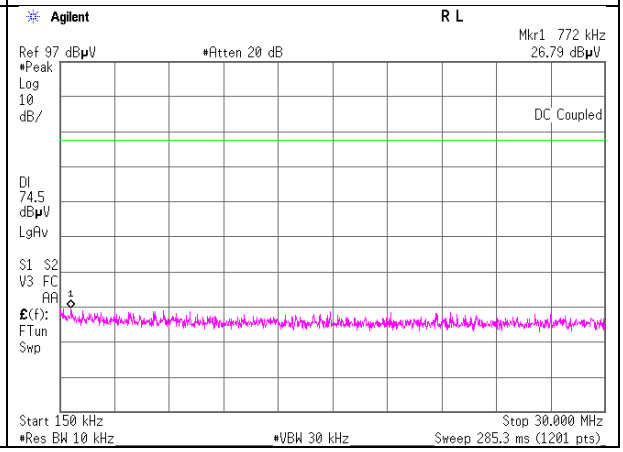
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 18, 2020
Temperature / Humidity	24 deg. C / 48 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, DH5

2441 MHz

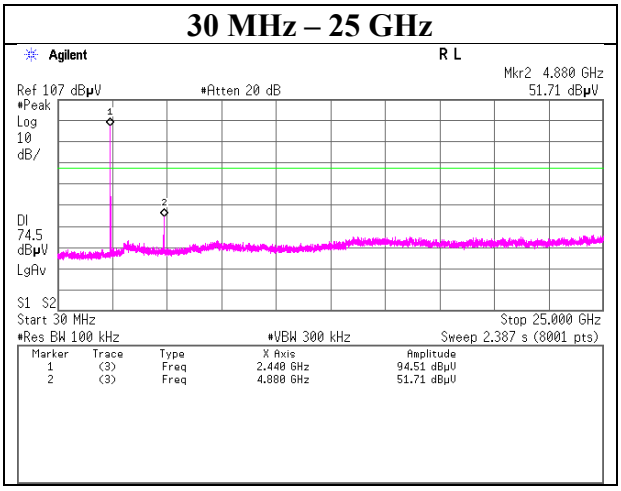
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

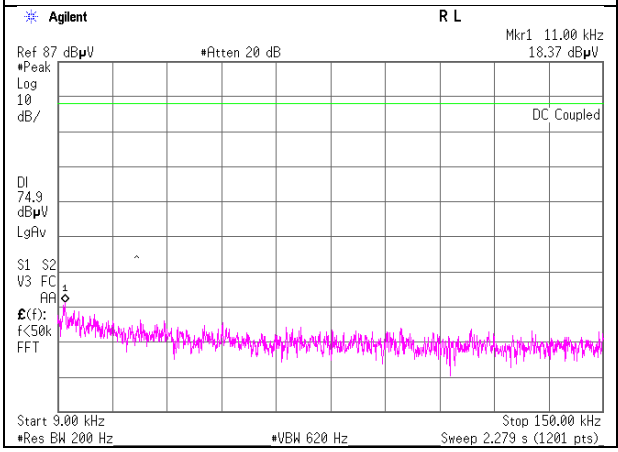


Conducted Spurious Emission

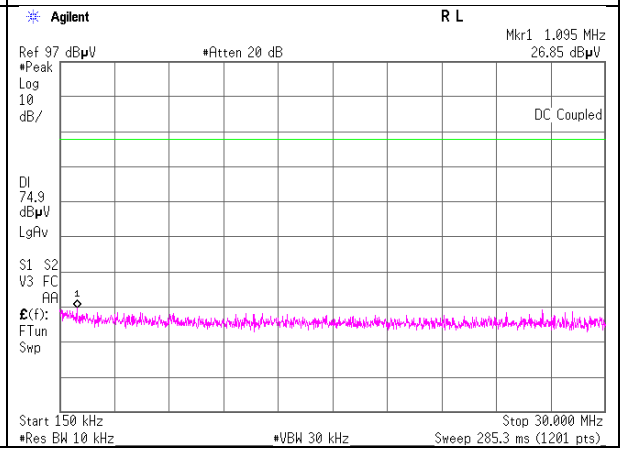
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 18, 2020
Temperature / Humidity	24 deg. C / 48 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, DH5

2480 MHz

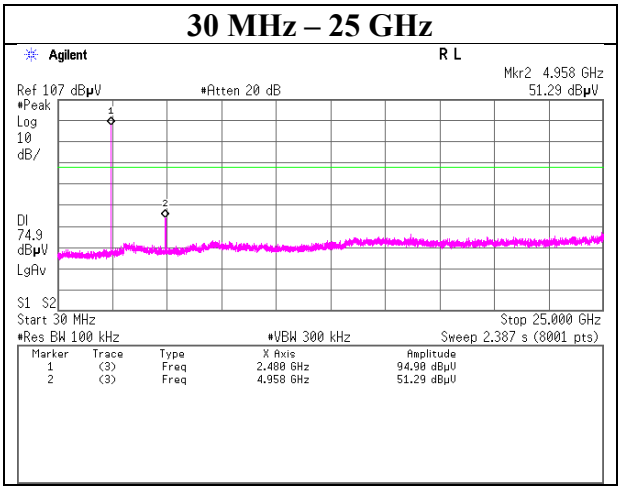
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

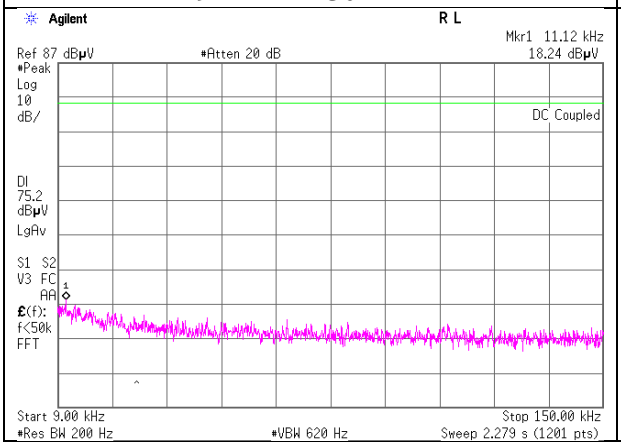


Conducted Spurious Emission

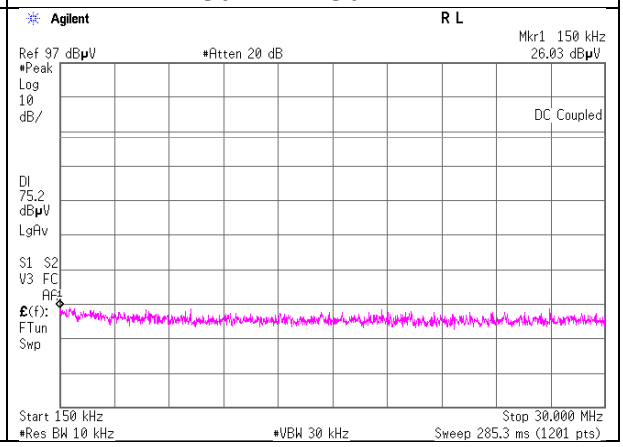
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 19, 2020
Temperature / Humidity	24 deg. C / 56 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping On, 3DH5

2402 MHz

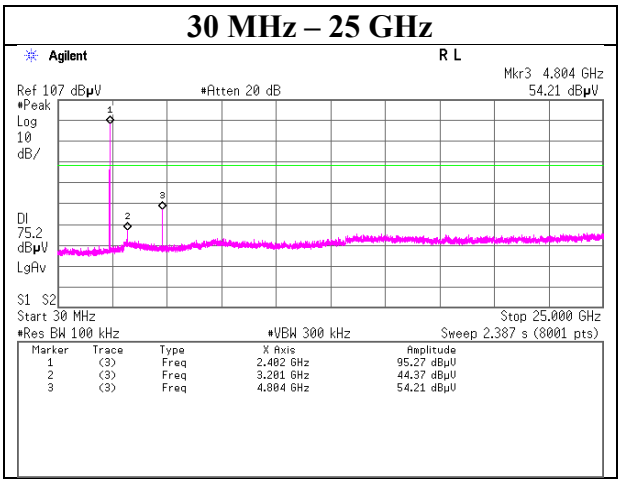
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

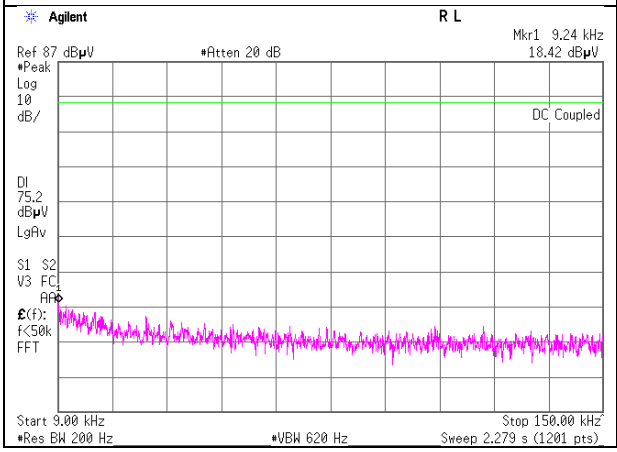


Conducted Spurious Emission

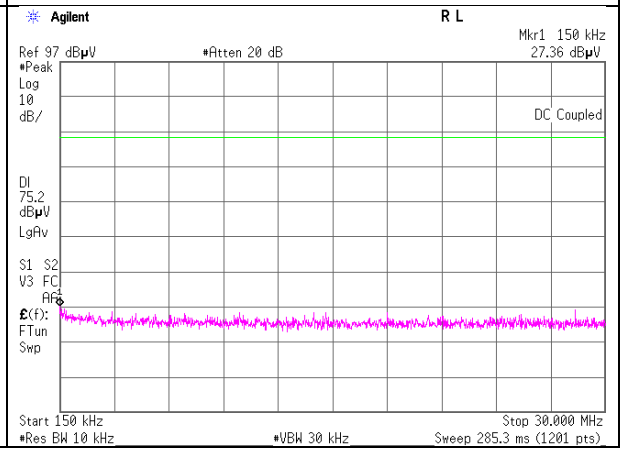
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 19, 2020
Temperature / Humidity	24 deg. C / 56 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping On, 3DH5

2441 MHz

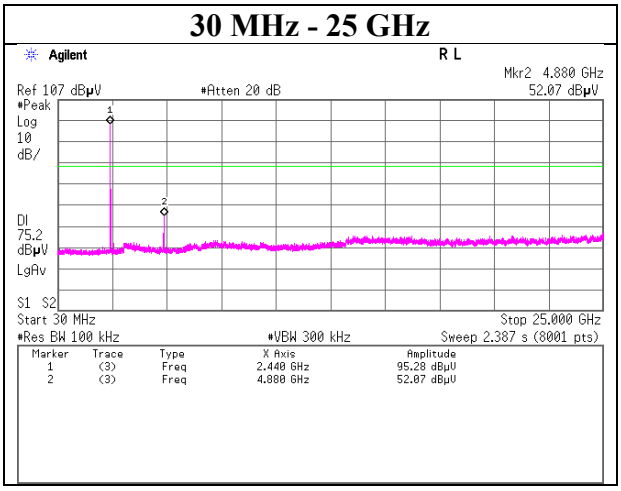
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

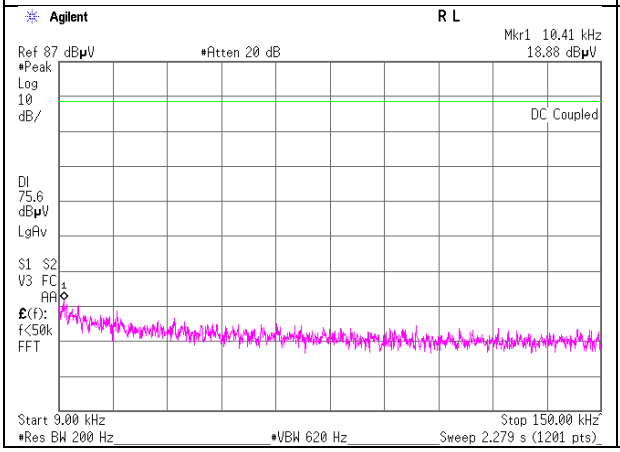


Conducted Spurious Emission

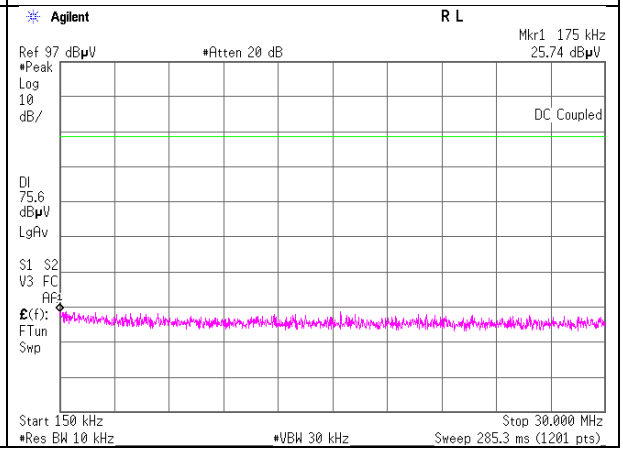
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 19, 2020
Temperature / Humidity	24 deg. C / 56 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping On, 3DH5

2480 MHz

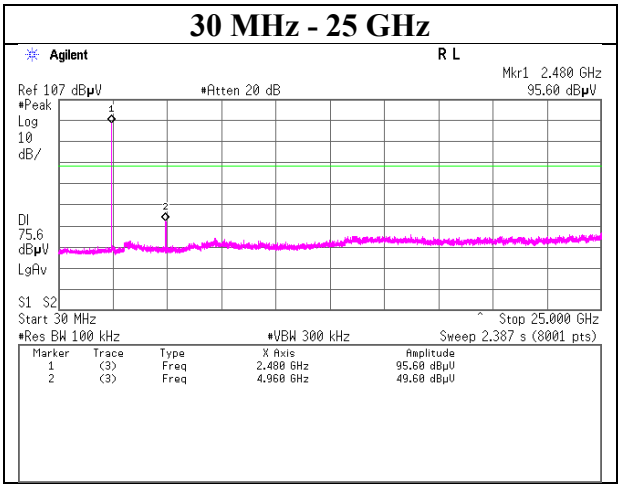
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

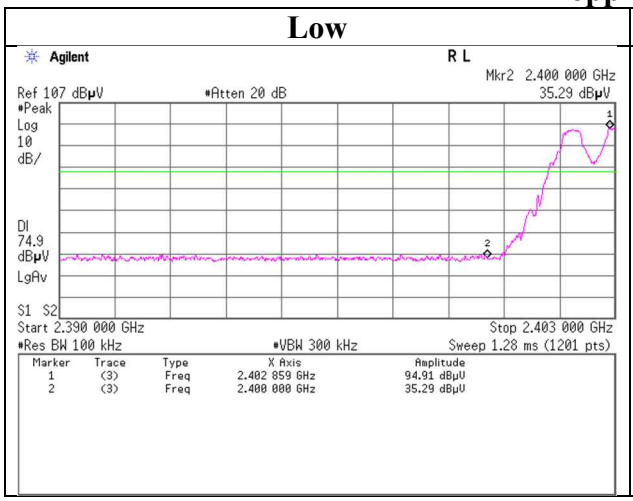


Conducted Emission Band Edge compliance

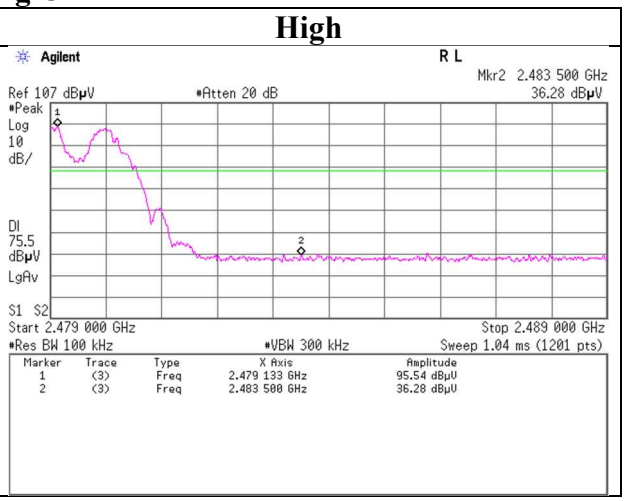
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 18, 2020
Temperature / Humidity	24 deg. C / 48 % RH
Engineer	Yusuke Tanikawara
Mode	Tx DH5

Hopping On

Low

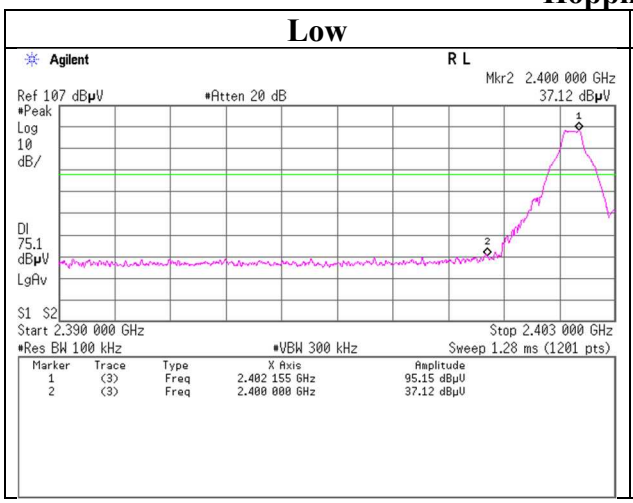


High

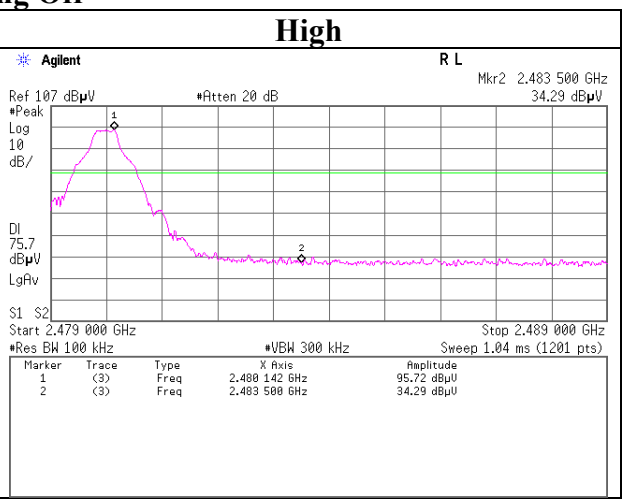


Hopping Off

Low



High

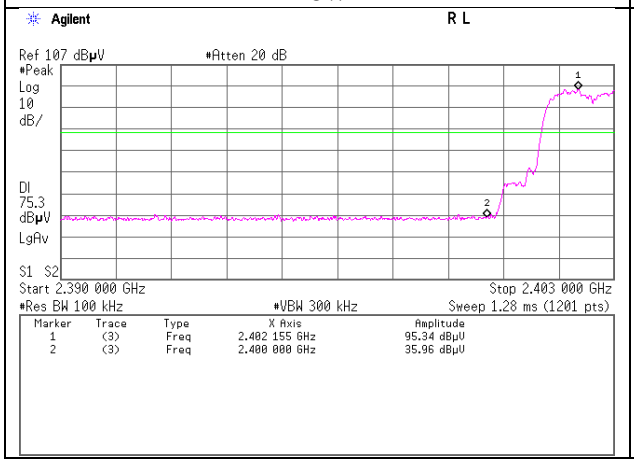


Conducted Emission Band Edge compliance

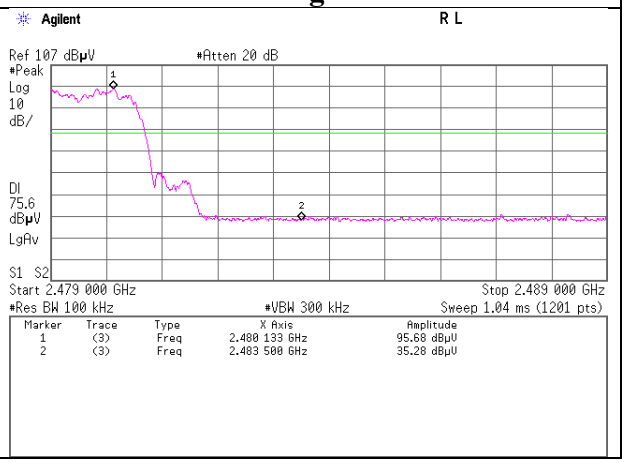
Report No.	13456926S-C-R2
Test place	Shonan EMC Lab. No.1 Measurement Room
Date	August 19, 2020
Temperature / Humidity	24 deg. C / 56 % RH
Engineer	Kazuya Noda
Mode	Tx 3DH5

Hopping On

Low

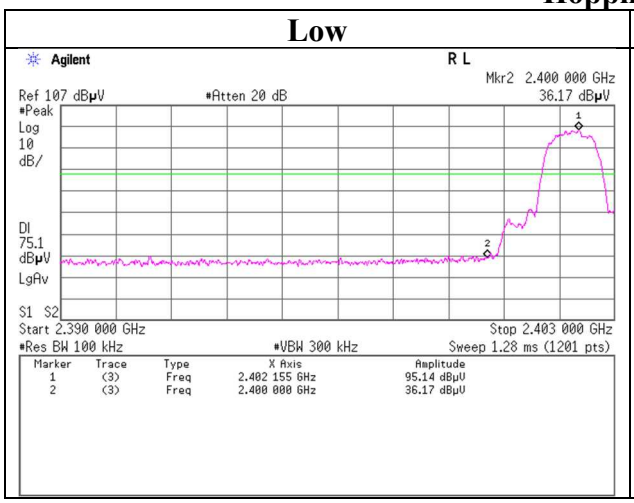


High

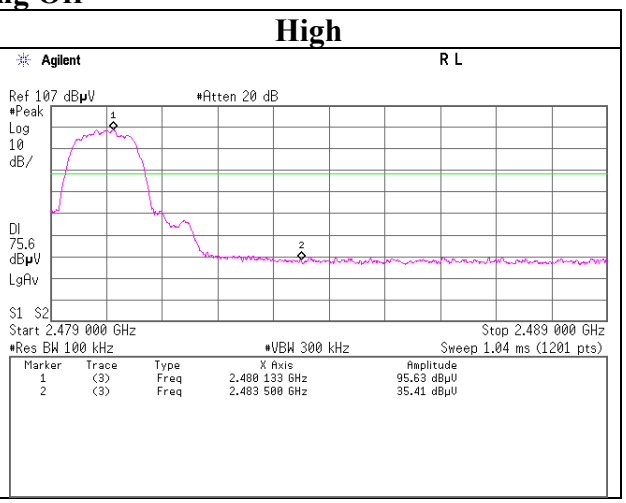


Hopping Off

Low



High



APPENDIX 2: Test instruments

Test equipment (1/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	KTS-08	145095	Digital Tester	SANWA	PC500	7019224	2021/04/26	12
AT	SAT10-12	151609	Attenuator	Weinschel Corp.	54A-10	81601	2021/03/01	12
AT	SCC-G64	196945	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803414/2	2021/03/01	12
AT	SOS-13	146321	Humidity Indicator	CUSTOM. Inc	CTH-202	Q.C.17	-	-
AT	SPM-13	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2021/01/25	12
AT	SPSS-06	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2021/01/25	12
AT	SRENT-09	150461	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186392	2021/02/22	12
AT	STM-G9	171616	Terminator	Weinschel - API Technologies Corp	M1459A	89025	2021/05/18	12
CE	SCC-C9/C10/SRSE-03	145036	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	2021/04/12	12
CE	SLS-02	145539	LISN	Rohde & Schwarz	ENV216	100512	2021/02/24	12
CE	SLS-05	145542	LISN	Rohde & Schwarz	ENV216	100516	2021/02/12	12
CE	SOS-24	191841	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2020/10/01	12
CE	STM-02	145746	Terminator	TME	CT-01 BP	-	2020/12/07	12
RE	SAEC-03(NSA)	145565	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	2021/04/27	12
RE	SAEC-03(SVSWR)	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2021/05/21	12
RE	SAF-03	145126	Pre Amplifier	SONOMA	310N	290213	2021/02/10	12
RE	SAF-06	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	1440491	2021/02/08	12
RE	SAF-08	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2021/03/01	12
RE	SAT6-13	167094	Attenuator	JFW	50HF-006N	-	2021/02/10	12
RE	SBA-03	145023	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	BBA9106	91032666	2021/05/15	12
RE	SCC-C1/C2/C3/C4/C5/C10/SRSE-03	145171	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	2021/04/12	12
RE	SCC-G15	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2021/03/01	12
RE	SCC-G40	166491	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S005	2021/01/19	12
RE	SCC-G43	156380	Coaxial Cable	Huber+Suhner	SUCOFLEX_104_E	SN MY 13406/4E	2021/05/17	12
RE	SCC-G57	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2021/05/18	12
RE	SCC-G58	183047	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	800287/4A	2021/05/17	12
RE	SCC-G70	200010	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	575618/4	2020/07/07	12
RE	SFL-02	145301	Highpass Filter	MICRO-TRONICS	HPM50111	51	2020/10/05	12
RE	SHA-03	145501	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	9120D-739	2020/06/15	12
RE	SHA-04	145512	Horn Antenna	ETS-Lindgren	3160-09	00094868	2020/06/15	12
RE	SHA-10	194685	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	711	2021/03/03	12
RE	SLA-07	145529	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	196	2021/05/15	12
RE	SSA-02	145800	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250106	2021/04/13	12

Test equipment (2/2)

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE, CE	STR-08	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2020/12/02	12
RE,CE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE,CE	KJM-02	146432	Measure	TAJIMA	GL19-55	-	-	-
RE,CE	SOS-23	191840	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2020/09/28	12
RE,CE	STS-03	146210	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997823	2020/10/19	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