RADIO TEST REPORT

Test Report No. : 13385909S-A-R1

Applicant	:	**Panasonic Corporation**
Type of EUT	:	**Car Navigation**
Model Number of EUT	:	**AT2103**
FCC ID	:	**ACJ932AT2103**
Test regulation	:	**FCC Part 15 Subpart C: 2020** ***Bluetooth BR/EDR part**
Test Result	:	**Complied (Refer to SECTION 3.2)**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
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.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by the A2LA accreditation body.
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 13385909S-A. 13385909S-A is replaced with this report.

Date of test: July 16 to August 3, 2020

Representative test engineer:
Shiro Kobayashi
Engineer
Consumer Technology Division

Approved by:
Shinichi Takano
Engineer
Consumer Technology Division

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".

REVISION HISTORY

Original Test Report No.: 13385909S-A

Revision	Test report No.	Date	Page revised	Contents
- (Original)	13385909S-A	September 15, 2020	-	-
1	13385909S-A-R1	October 1, 2020	P.6	Correction of "Radio Specification": from: IEEE802.11ac (80 MHz band) — 5210 MHz, 5755 MHz => to: IEEE802.11ac (80 MHz band) — 5210 MHz, 5775 MHz

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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

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SECTION 1: Customer information

Company Name	:	Panasonic Corporation
Address	:	4261 Ikonobe-cho, Tsuzuki-ku, Yokohama-shi, Kanagawa-ken, 224-8520, Japan
Telephone Number	:	+81-50-3689-7112
Contact Person	:	Takahisa Sakai

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	:	Car Navigation
Model Number	:	AT2103
Serial Number	:	Refer to SECTION 4.2
Rating	:	DC 13.2 V
Receipt Date	:	June 11, 2020
Country of Mass-production	:	Japan, Mexico, Czech Republic
Condition	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	:	No Modification by the test lab.

2.2 Product Description

Model: AT2103 (referred to as the EUT in this report) are a Car Navigation.

There are 2 type for AT2103; Hi type(14 inch Display) and Lo type(9.8 inch Display). The same RF Part and antenna are installed in these models, however antenna gain and antenna arrangement are different.

Radio Specification

	IEEE802.11b	**IEEE802.11g**	**IEEE802.11n (20 MHz band)**	**IEEE802.11n (40 MHz band)**
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	2412 MHz – 2462 MHz, 5180 MHz – 5240 MHz, 5745 MHz – 5825 MHz	5190 MHz, 5230 MHz, 5755 MHz, 5795 MHz
Channel spacing	5 MHz		2.4 GHz band: 5 MHz 5 GHz band: 20 MHz	40 MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)	

	IEEE802.11a	**IEEE802.11ac (20 MHz band)**	**IEEE802.11ac (40 MHz band)**	**IEEE802.11ac (80 MHz band)**
Frequency of operation	5180 MHz – 5240 MHz, 5745 MHz – 5825 MHz	5180 MHz – 5240 MHz, 5745 MHz – 5825 MHz	5190 MHz, 5230 MHz, 5755 MHz, 5795 MHz	5210 MHz, 5775 MHz
Channel spacing	20 MHz		40 MHz	80 MHz
Modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)	OFDM (256QAM,16QAM,QPSK,BPSK)		

	Bluetooth (BR/EDR)	**Bluetooth Low Energy**
Frequency of operation	2402 MHz - 2480 MHz	2402 MHz - 2480 MHz
Channel spacing	1 MHz	2 MHz
Modulation	FHSS, GFSK, π/4DQPSK, 8DPSK	FHSS, GFSK

Antenna type	Inverted F type antenna			
Antenna Gain	Hi type (14 inch Display)	RF0	2.4 GHz WLAN	0.07 dBi
			U-NII-1	2.14 dBi
			U-NII-3	1.00 dBi
		RF1	BT, BT LE	1.01 dBi
			U-NII-1	2.43 dBi
			U-NII-3	2.59 dBi
	Lo type (9.8 inch Display)	RF0	2.4 GHz WLAN	4.04 dBi
			U-NII-1	1.19 dBi
			U-NII-3	2.47 dBi
		RF1	BT, BT LE	2.08 dBi
			U-NII-1	1.00 dBi
			U-NII-3	1.43 dBi
Antenna Connector type	U.FL connector			
Operating Temperature	-30 deg. C to + 65 deg. C			

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C
FCC Part 15 final revised on May 26, 2020 and effective July 27, 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.
* 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	-	N/A *1)	-
	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 a)	Conducted
	ISED: -	**ISED:** RSS-247 5.1 (b)			
20 dB Bandwidth	**FCC:** KDB 558074 D01 15.247 Meas Guidance v05r02	**FCC:** Section15.247(a)(1)		Complied a)	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 b)	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 c)	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 d)	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)	Hi type (14 inch Display) 9.6 dB 844.778 MHz, QP, Hori. Mode: Tx, Hopping Off, 3DH5 2402 MHz Lo type (9.8 inch Display) 10.2 dB 640.004 MHz, QP, Hori. Mode: Tx, Hopping Off DH5 2480 MHz	Complied e) / f)	Conducted/ Radiated (above 30 MHz) *2)
	ISED: RSS-Gen 6.13	**ISED:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10			

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.
*1) The test is not applicable since the EUT does not have AC Mains.
*2) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02 8.5 and 8.6.

a) Refer to APPENDIX 1 (data of 20 dB Bandwidth, 99 %Occupied Bandwidth and Carrier Frequency Separation)
b) Refer to APPENDIX 1 (data of Number of Hopping Frequency)
c) Refer to APPENDIX 1 (data of Dwell time)
d) Refer to APPENDIX 1 (data of Maximum Peak Output Power)
e) Refer to APPENDIX 1 (data of Conducted Spurious Emission)
f) 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)

The EUT provides stable voltage constantly to the RF Part regardless of input voltage.
Instead of a new battery, DC power supply was used for the test. That does not affect the test result, therefore the 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	Complied a)	Conducted
a) Refer to APPENDIX 1 (data of 20 dB 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	No. 4,5,6,8 SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.5 dB	2.6 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.0 dB	3.0 dB	3.0 dB	-
	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	4.9 dB	4.9 dB	4.9 dB	-
	6 GHz-18 GHz	5.5 dB	5.5 dB	5.5 dB	-
	18 GHz-40 GHz	5.4 dB	5.4 dB	5.4 dB	-
Radiated emission (Measurement distance: 1 m)	1 GHz-18 GHz	5.8 dB	5.8 dB	5.8 dB	-
	18 GHz-40 GHz	5.7 dB	5.7 dB	5.7 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	0.98 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	1.75 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.89 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.12 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	1.06 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.24 dB
Spurious emission (Conducted) below 1GHz	0.9 dB
Spurious emission (Conducted) 1 GHz-3 GHz	0.9 dB
Spurious emission (Conducted) 3 GHz-18 GHz	2.9 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.6 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.0 dB
Bandwidth Measurement	0.07 %
Duty cycle and Time Measurement	0.262 %
Temperature	0.95 deg.C.
Voltage	0.83 %

3.5 Test Location

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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)

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
Spurious Emission (Conducted)	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Spurious Emission (Radiated)	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
	Tx (Hopping Off) DH5, 3DH5 with 11ac-20 MIMO 5745 MHz	2402 MHz 2480 MHz
Carrier Frequency Separation	Tx (Hopping On) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
20 dB 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

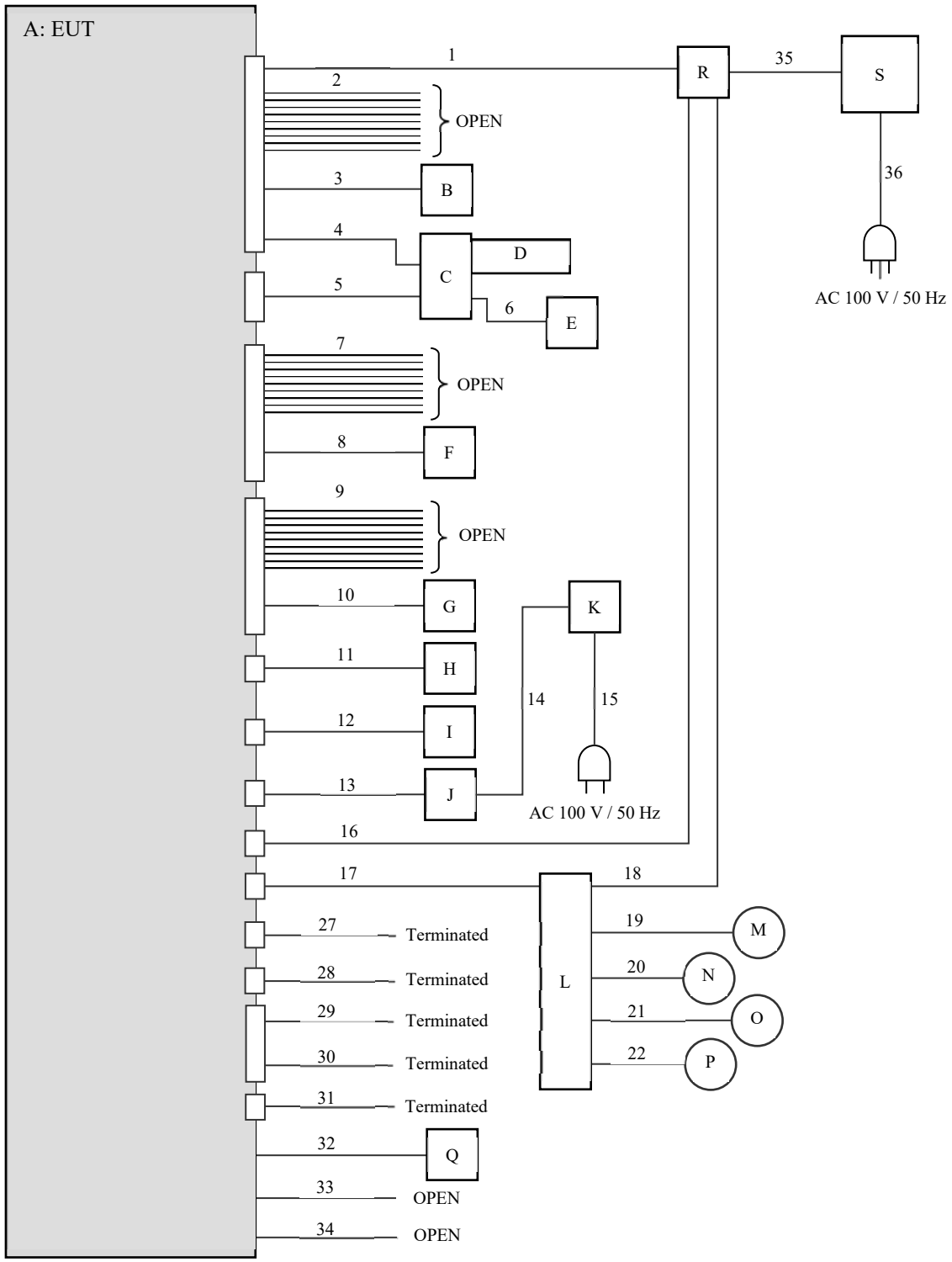
*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload length (except Dwell time test)
*2DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3DH mode (3 Mb/s EDR: 8DPSK) as a representative.
* It is considered 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: Labtool Version: 2.0.0.71
(Date: 2020.05.29, Storage location: EUT memory)

*This setting of software is the worst case.
Any conditions under the normal use do not exceed the condition of setting.
In addition, end users cannot change the settings of the output power of the product.

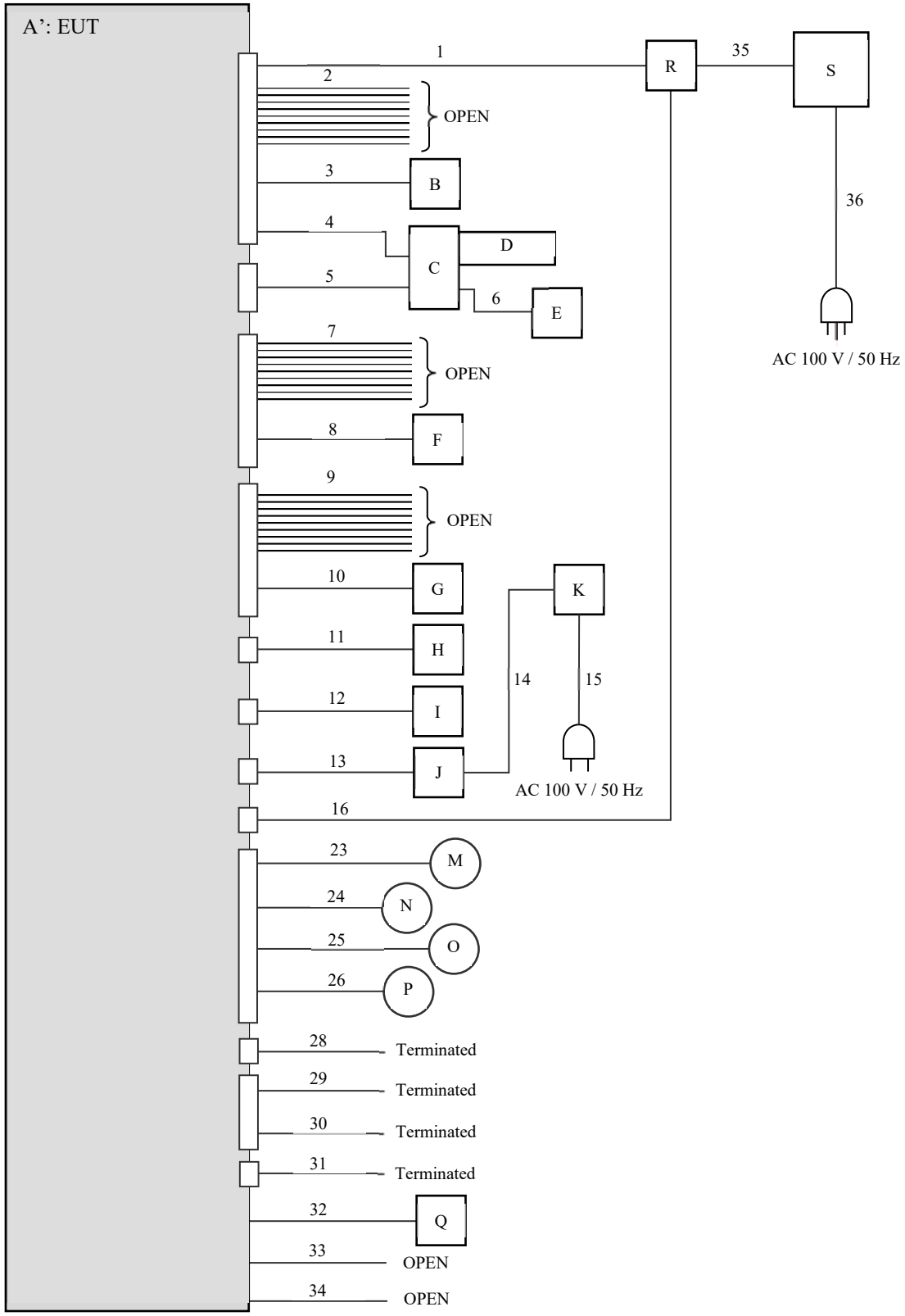
4.2 Configuration and peripherals

< Radiated Emission test for Hi type(14 inch Display) >



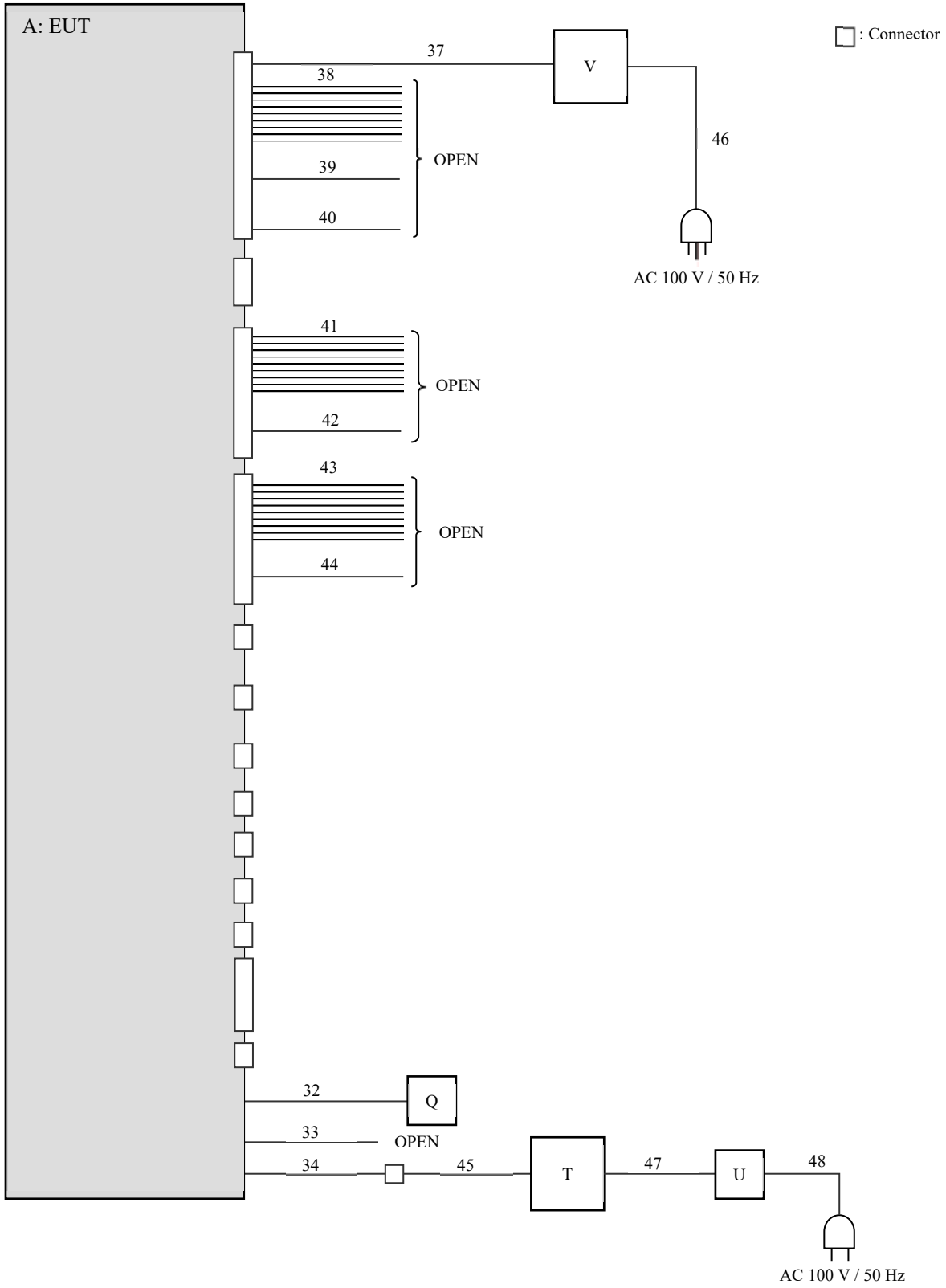
* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

< Radiated Emission test for Lo type(9.8 inch Display) >



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

< Antenna Terminal Conducted test >



Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Car Navigation	AT2103 Hi type (14 inch Display)	500081 *1) 500087 *2)	Panasonic Corporation	EUT
A'	Car Navigation	AT2103 Lo type (9.8 inch Display)	500065 *2)	Panasonic Corporation	EUT
B	Steering Switch	-	1142	Panasonic Corporation	-
C	IF-Box	DEP32-10078	033	Panasonic Corporation	-
D	USB Memory	USM4GU	-	Sony Corporation	-
E	Bluetooth Speaker	SRS-X11	2154715	Sony Corporation	-
F	MIC	GP-SDA3510A	0DC062519	Panasonic Corporation	-
G	MIC	GP-SDA3510A	0DC062856	Panasonic Corporation	-
H	Rear Camera	GP-KDM301RC	92	Panasonic Corporation	-
I	GPS Antenna	ANN-MS	-	U-Blox	-
J	Front Camera Jig	GVIF2OUT_A	1	Panasonic Corporation	-
K	AC Adapter	GF48-US1240	-	GO FORWARD ENTERPRISE CORP.	-
L	MOST AMP	CL-DL47X2AJ Rev.A	513267	Panasonic Corporation	-
M	Speaker	KFC-RS160	-	KENWOOD	-
N	Speaker	KFC-RS160	-	KENWOOD	-
O	Speaker	KFC-RS160	-	KENWOOD	-
P	Speaker	KFC-RS160	-	KENWOOD	-
Q	Jig board	RCarDBG_JTAG2	WR19-4014 *1) WR12-3224 *2)	WESTEK	-
R	Terminal Block	-	-	-	-
S	Power Supply (DC)	PAN35-10A	NA000955	KIKUSUI	-
T	Laptop Computer	7666-77J	LV-B8R1X 08/05	Lenovo	-
U	AC Adapter	42T4422	11S92P1154Z1DXF 1DBFDN	Lenovo	-
V	Power Supply (DC)	PAN35-10A	ML002085	KIKUSUI	-

*1) For Antenna Terminal Conducted test
*2) For Radiated Emission test

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC	2.5 + 0.2	Unshielded	Unshielded	-
2	Signal	2.5	Unshielded	Unshielded	-
3	Signal	2.5 + 0.1	Unshielded	Unshielded	-
4	IF Box Power	2.5 + 0.3	Unshielded	Unshielded	-
5	Signal	2.5	Shielded	Shielded	-
6	USB type C	0.9	Shielded	Shielded	-
7	Signal	2.5	Unshielded	Unshielded	-
8	MIC	2.5 + 0.5	Unshielded	Unshielded	-
9	Signal	2.5	Unshielded	Unshielded	-
10	MIC	2.5 + 0.5	Unshielded	Unshielded	-
11	Rear Camera	3.0 + 0.15	Unshielded	Unshielded	-
12	GPS	3.0 + 0.12	Shielded	Shielded	-
13	Front Camera	10	Shielded	Shielded	-
14	DC	1.6	Unshielded	Unshielded	-
15	AC	1.9	Unshielded	Unshielded	-
16	DC	3.0	Unshielded	Unshielded	-
17	MOST Amp	2.5	Unshielded	Unshielded	-
18	DC	1.0	Unshielded	Unshielded	-
19	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
20	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
21	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
22	Speaker	1.0 + 1.9	Unshielded	Unshielded	-
23	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
24	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
25	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
26	Speaker	3.0 + 1.9	Unshielded	Unshielded	-
27	A2B	3.0	Unshielded	Unshielded	-
28	DCM	3.0	Shielded	Shielded	-
29	FM	2.5	Shielded	Shielded	-
30	FM	2.5	Shielded	Shielded	-
31	Sirius XM	2.5	Shielded	Shielded	-
32	Signal	0.1	Unshielded	Unshielded	*3)
33	Signal	0.2	Unshielded	Unshielded	*3)
34	UART	0.3	Unshielded	Unshielded	*3)
35	DC	2.4	Unshielded	Unshielded	-
36	AC	2.0	Unshielded	Unshielded	-
37	DC	1.0	Unshielded	Unshielded	-
38	Signal	0.2	Unshielded	Unshielded	-
39	Signal	0.2	Unshielded	Unshielded	-
40	IF Box Power	0.2	Unshielded	Unshielded	-
41	Signal	0.2	Unshielded	Unshielded	-
42	MIC	1.0	Unshielded	Unshielded	-
43	Signal	0.2	Unshielded	Unshielded	-
44	MIC	1.0	Unshielded	Unshielded	-
45	UART-USB	1.8	Shielded	Shielded	-
46	AC	2.0	Unshielded	Unshielded	-
47	DC	1.8	Unshielded	Unshielded	-
48	AC	0.9	Unshielded	Unshielded	-

*3) This cable is for testing and is not included with products.

SECTION 5: Radiated Spurious Emission

Test Procedure

[For below 1 GHz]
EUT was placed on a urethane platform of nominal size, 1.0 m by 2.0 m raised 0.8 m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[For above 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 0.7 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.

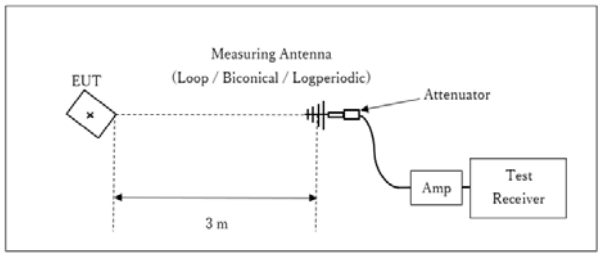
20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9 (ISED) and outside the restricted band of FCC15.205 / Table 6 of RSS-Gen 8.10 (ISED).

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV *1), *2)	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 1/T (T: burst length, refer to Burst rate confirmation sheet) Detector: Peak	RBW: 100 kHz VBW: 300 kHz

*1) Average Power Measurement was performed based on KDB 558074 D01 15.247 Meas Guidance v05r02.
*2) In unwanted emission derived from carrier, 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 1: Test Setup

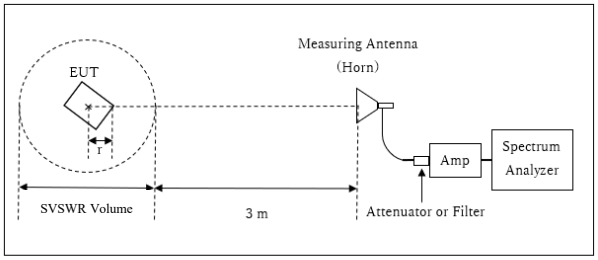
Below 1 GHz



× : Center of turn table

Test Distance: 3 m

1 GHz - 13 GHz



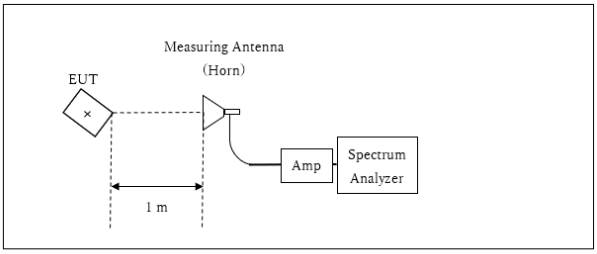
r : Radius of an outer periphery of EUT

× : Center of turn table

Distance Factor: 20 x log (3.83 m / 3.0 m) = 2.13 dB
* Test Distance: (3 + SVSWR Volume /2) - r = 3.83 m

SVSWR Volume : 2.0 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r = 0.17 m

13 GHz - 40 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 0 deg. and 30 deg. of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Worst case:

< Hi type(14 inch Display) >

Antenna polarization	Carrier (Band edge)	Spurious				
		Below 1 GHz	Above 1 GHz			
			1 GHz - 2.8 GHz	2.8 GHz - 13 GHz	13 GHz - 18 GHz	18 GHz - 26.5 GHz
Horizontal	0 deg.	0 deg.	0 deg.	30 deg.	0 deg.	0 deg.
Vertical	0 deg.	0 deg.	0 deg.	30 deg.	0 deg.	0 deg.

< Lo type(9.8 inch Display) >

Antenna polarization	Carrier (Band edge)	Spurious				
		Below 1 GHz	Above 1 GHz			
			1 GHz - 2.8 GHz	2.8 GHz - 13 GHz	13 GHz - 18 GHz	18 GHz - 26.5 GHz
Horizontal	0 deg.	0 deg.	0 deg.	30 deg.	0 deg.	0 deg.
Vertical	0 deg.	0 deg.	0 deg.	30 deg.	0 deg.	0 deg.

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 6: Antenna Terminal Conducted Tests

Test Procedure

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

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used
20 dB Bandwidth	3 MHz	30 kHz	100 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak Average *2)	-	Power Meter (Sensor: 160 MHz BW)
Carrier Frequency Separation	3 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Dwell Time	Zero Span	100 kHz, 1 MHz	300 kHz, 3 MHz	As necessary capture the entire dwell time per hopping channel	Peak	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *3) *4)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				
	30 MHz to 25 GHz	100 kHz	300 kHz				
Conducted Spurious Emission Band Edge compliance	10 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer

*1) 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

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

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, Tx, Hopping On

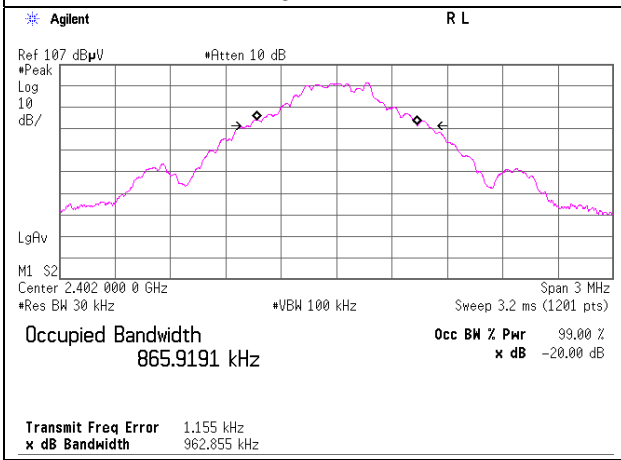
Mode	Freq. [MHz]	20 dB Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.963	865.919	1.000	>= 0.642
DH5	2441.0	0.963	866.164	1.000	>= 0.642
DH5	2480.0	0.979	874.288	1.000	>= 0.653
DH5	Hopping On	-	78656.1	-	-
3DH5	2402.0	1.301	1173.7	1.000	>= 0.868
3DH5	2441.0	1.302	1172.7	1.000	>= 0.868
3DH5	2480.0	1.300	1175.8	1.000	>= 0.867
3DH5	Hopping On	-	78756.9	-	-

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

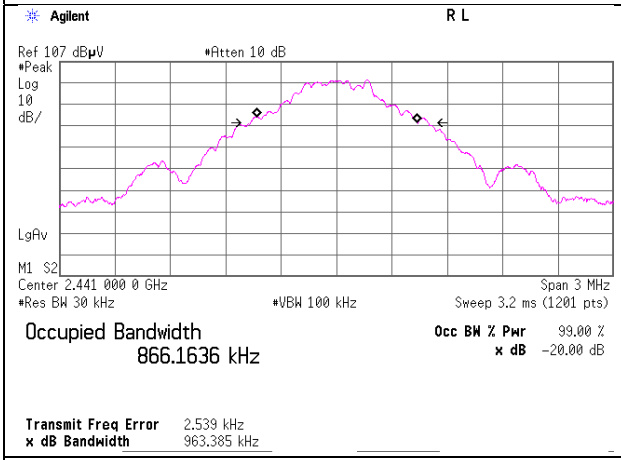
20 dB Bandwidth and 99 % Occupied Bandwidth

DH5

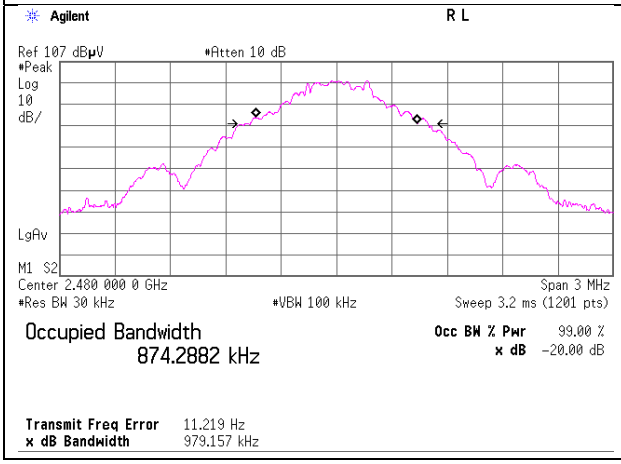
2402 MHz



2441 MHz

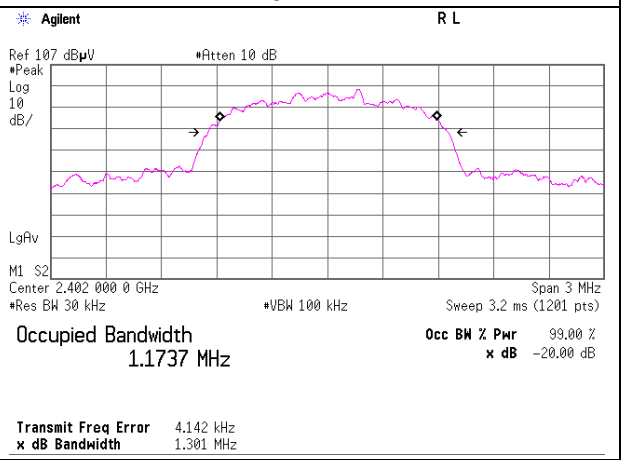


2480 MHz

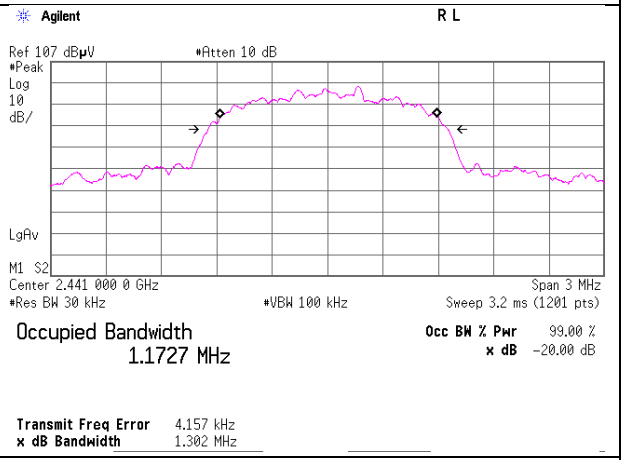


3DH5

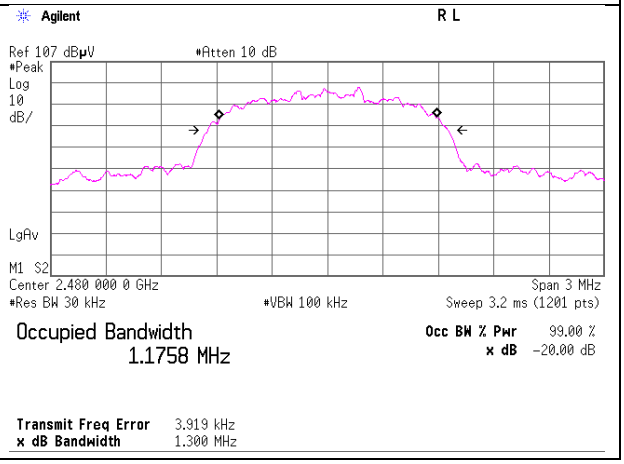
2402 MHz



2441 MHz

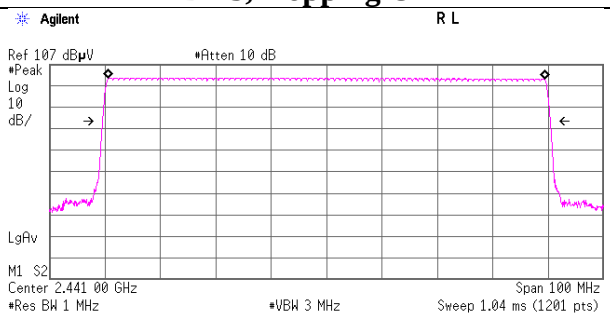


2480 MHz

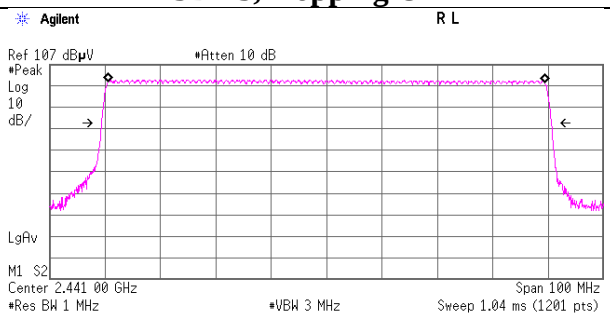


20 dB Bandwidth and 99 % Occupied Bandwidth

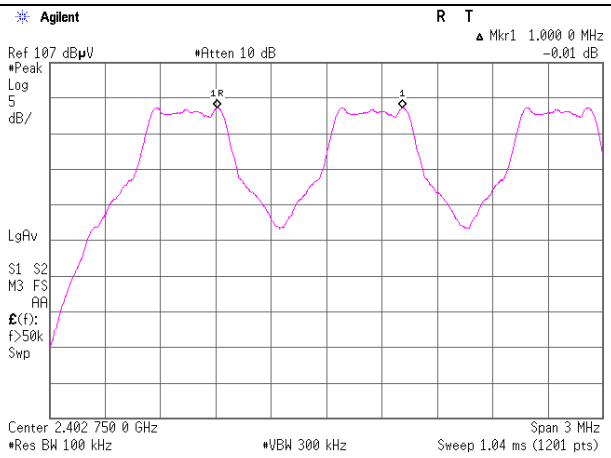
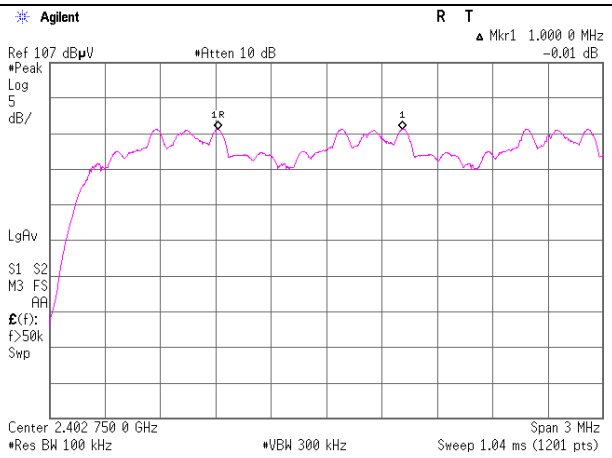
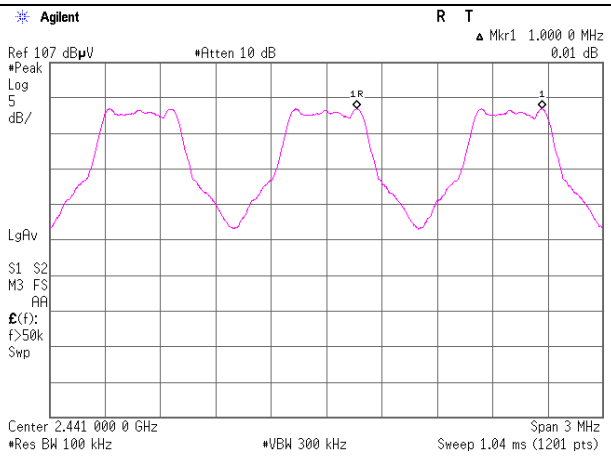
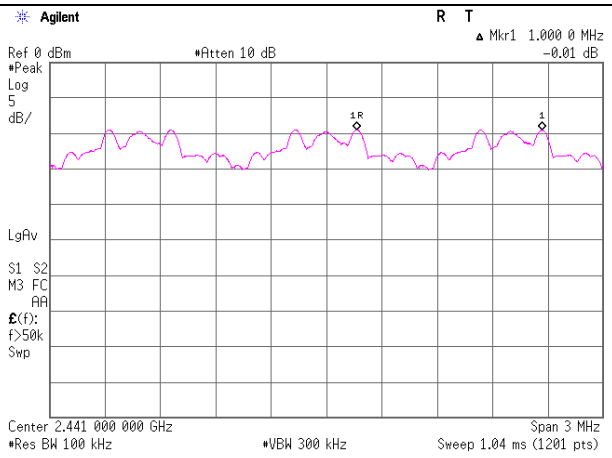
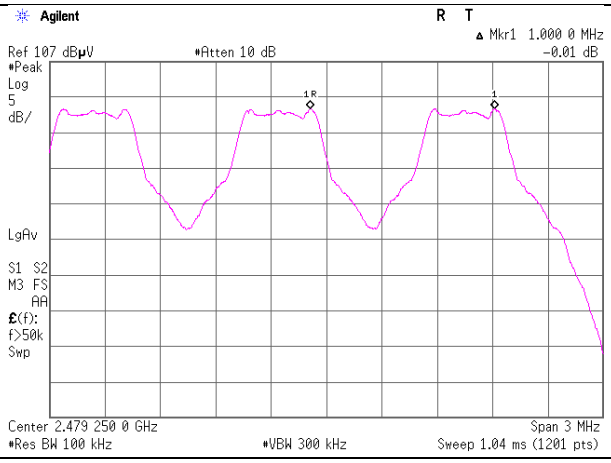
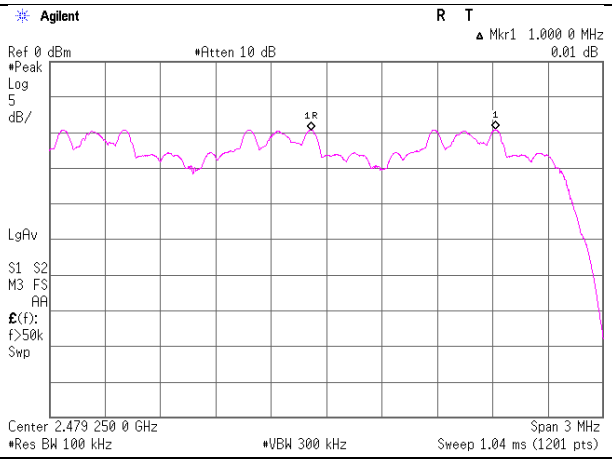
DH5, Hopping On



3DH5, Hopping On



Carrier Frequency Separation

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

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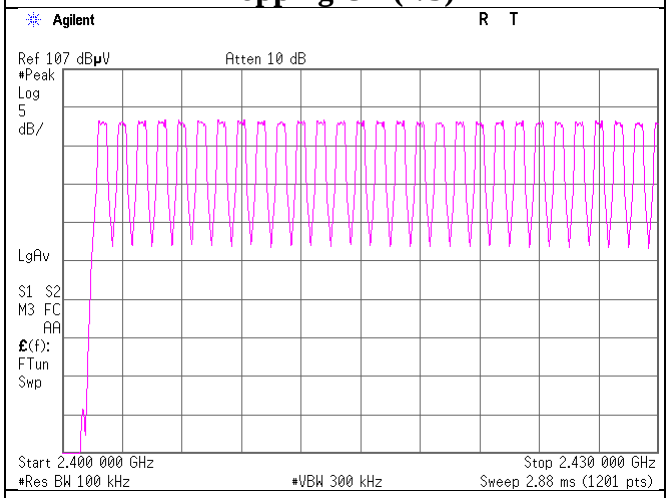
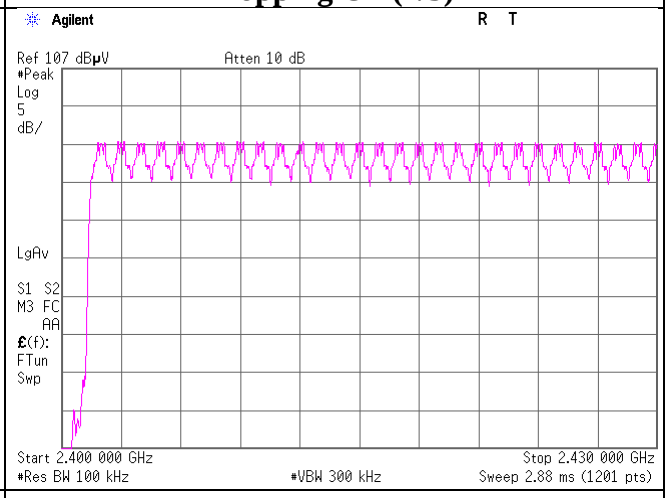
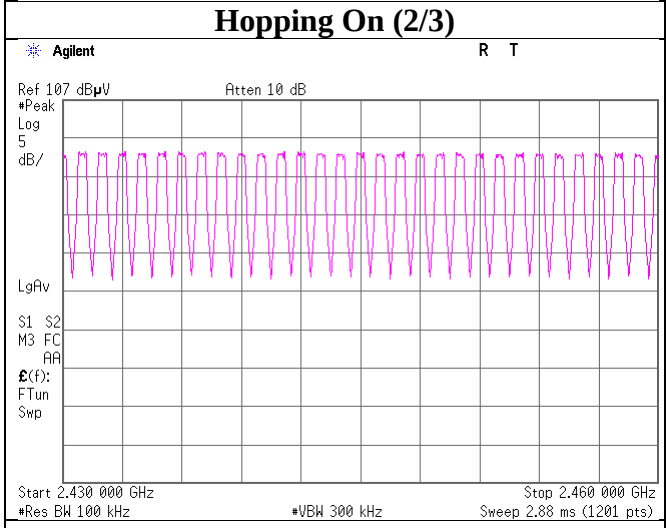
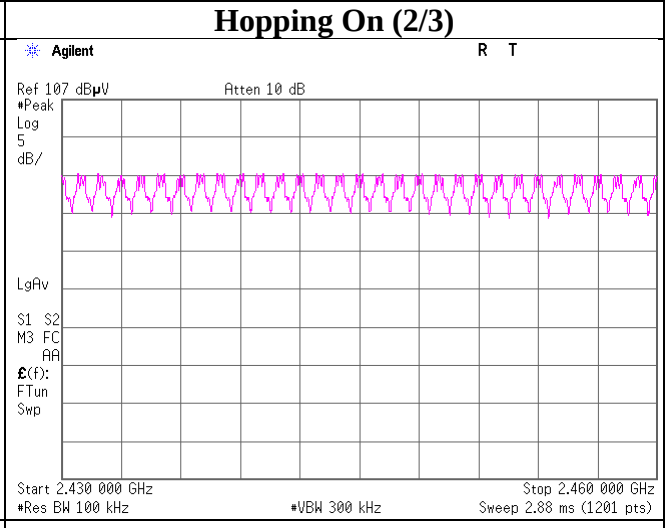
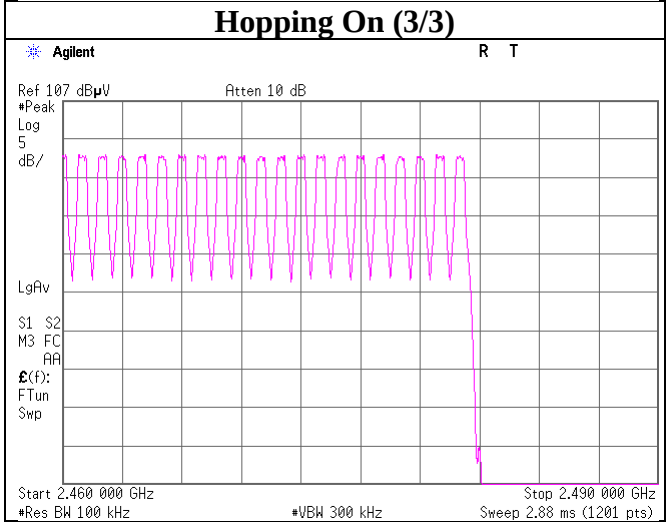
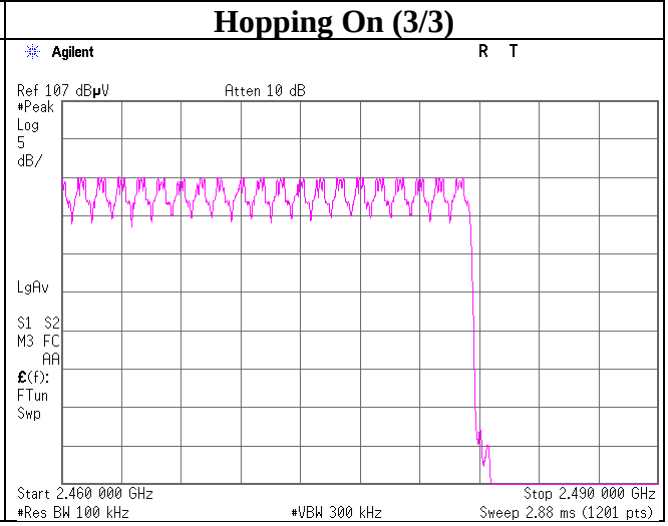
Number of Hopping Frequency

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
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)
	

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Dwell time

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping On

Mode	Number of transmission in a 31.6(79 Hopping x 0.4)				Length of transmission [msec]	Result [msec]	Limit [msec]
DH1	49.2 times /	5 sec. x	31.6 sec. =	311 times	0.393	122	400
DH3	28.4 times /	5 sec. x	31.6 sec. =	180 times	1.648	297	400
DH5	21.6 times /	5 sec. x	31.6 sec. =	137 times	2.896	397	400
3DH1	49.4 times /	5 sec. x	31.6 sec. =	313 times	0.392	123	400
3DH3	28.0 times /	5 sec. x	31.6 sec. =	177 times	1.643	291	400
3DH5	21.4 times /	5 sec. x	31.6 sec. =	136 times	2.894	394	400

Sample Calculation
Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

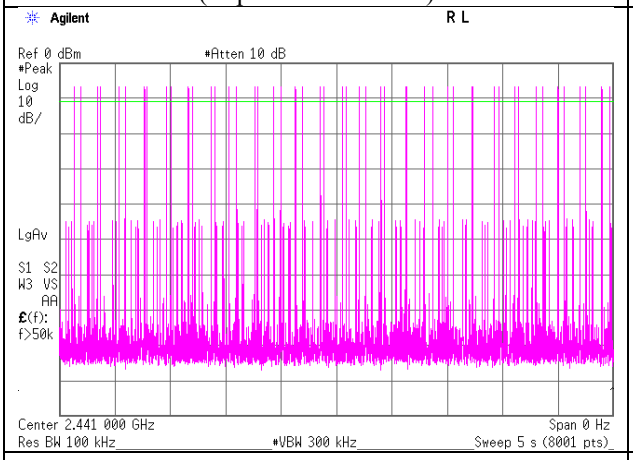
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	48	50	51	48	49	49.2
DH3	30	28	26	28	30	28.4
DH5	21	22	21	23	21	21.6
3DH1	50	49	50	48	50	49.4
3DH3	26	29	29	29	27	28.0
3DH5	22	22	21	22	20	21.4

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

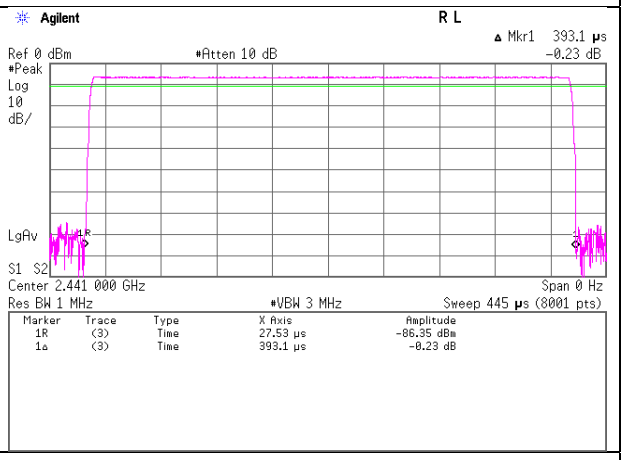
This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in N x 0.4s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless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

Dwell time

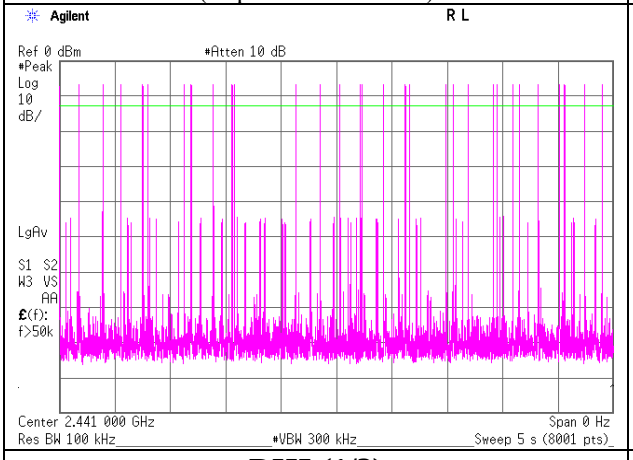
DH1 (1/2)
(Representative chart)



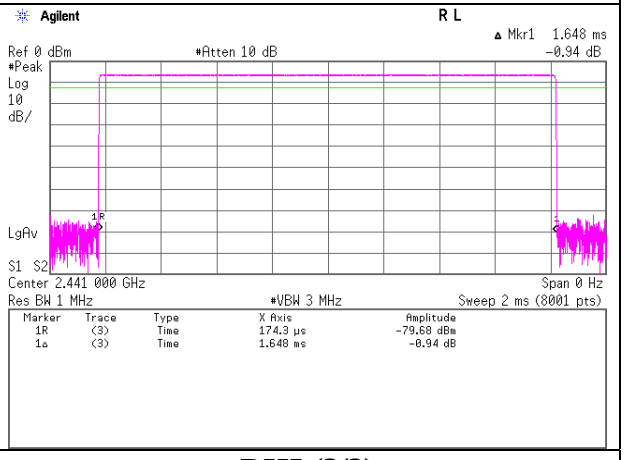
DH1 (2/2)



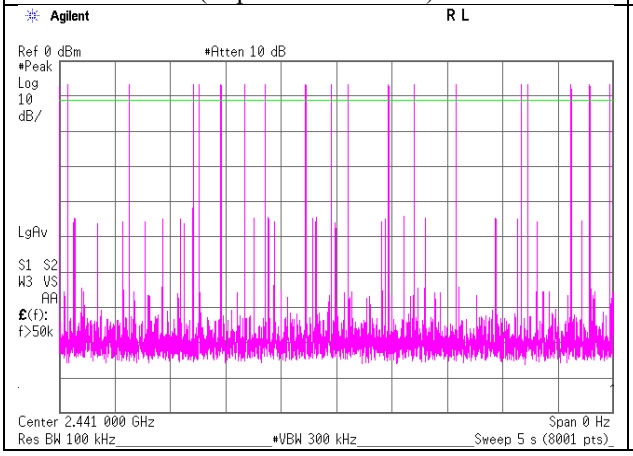
DH3 (1/2)
(Representative chart)



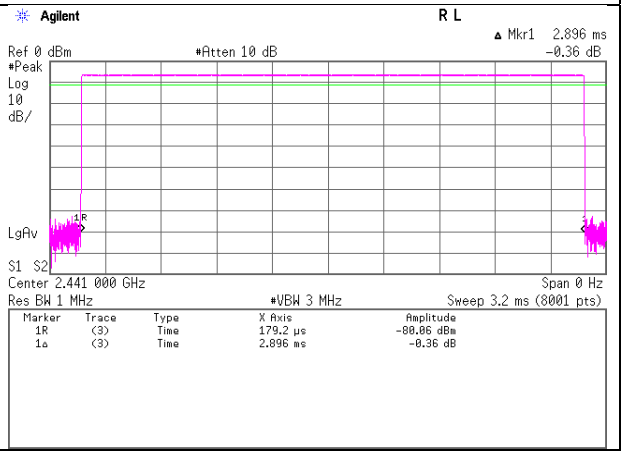
DH3 (2/2)



DH5 (1/2)
(Representative chart)

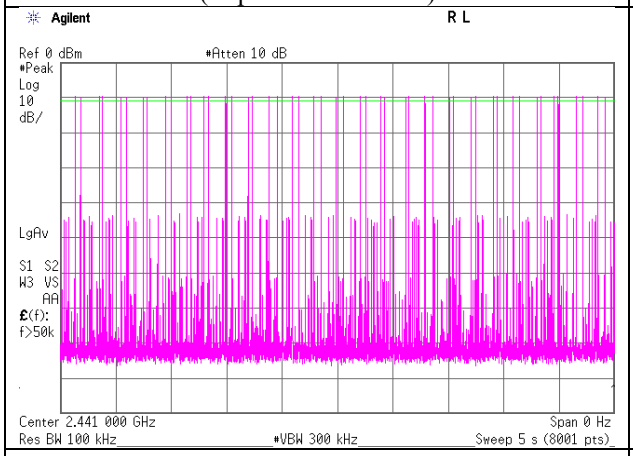


DH5 (2/2)

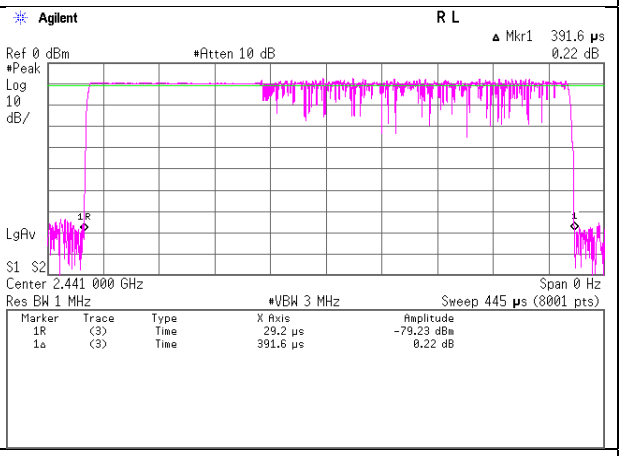


Dwell time

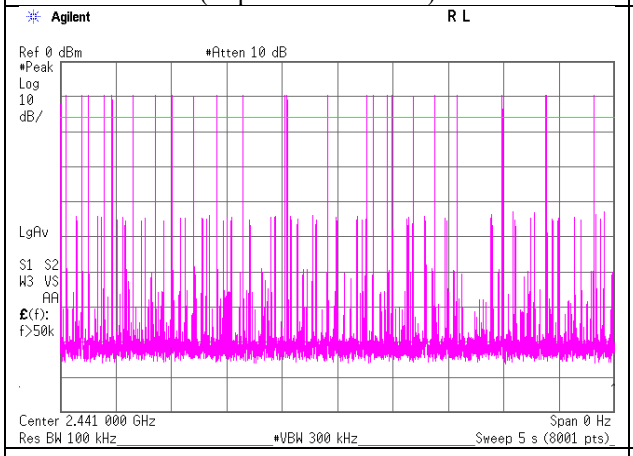
3DH1 (1/2)
(Representative chart)



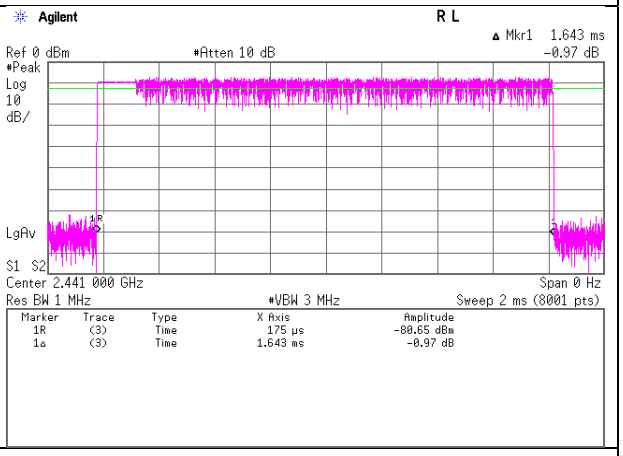
3DH1 (2/2)



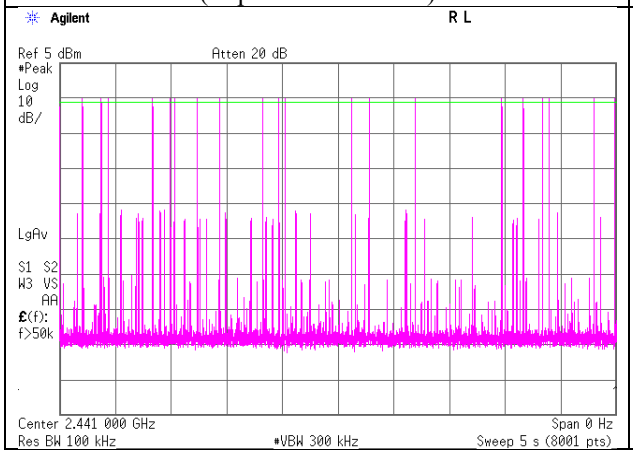
3DH3 (1/2)
(Representative chart)



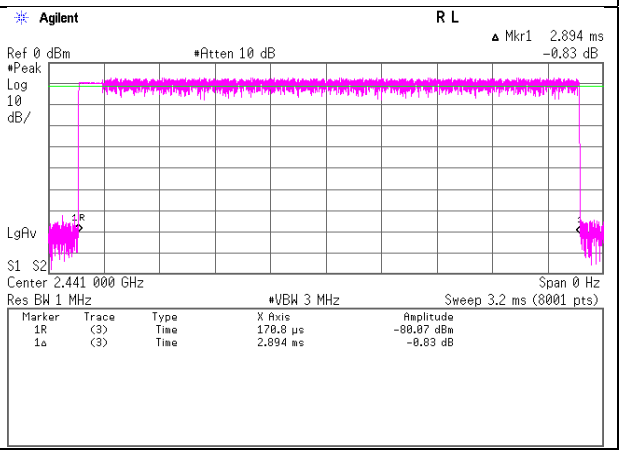
3DH3 (2/2)



3DH5 (1/2)
(Representative chart)



3DH5 (2/2)



Maximum Peak Output Power

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 16, 2020
Temperature / Humidity	24 deg. C / 58 % RH
Engineer	Shiro Kobayashi
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 *1)	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]	[dBi]	[dBm]	[mW]	[dBm]	[mW]	[dB]
DH5	2402.0	-6.23	2.33	9.88	5.98	3.96	20.96	125	14.98	2.08	8.06	6.40	36.02	4000	27.96
DH5	2441.0	-6.31	2.34	9.88	5.91	3.90	20.96	125	15.05	2.08	7.99	6.30	36.02	4000	28.03
DH5	2480.0	-6.47	2.35	9.88	5.76	3.77	20.96	125	15.20	2.08	7.84	6.08	36.02	4000	28.18
2DH5	2402.0	-6.93	2.33	9.88	5.28	3.37	20.96	125	15.68	2.08	7.36	5.45	36.02	4000	28.66
2DH5	2441.0	-7.07	2.34	9.88	5.15	3.27	20.96	125	15.81	2.08	7.23	5.28	36.02	4000	28.79
2DH5	2480.0	-7.17	2.35	9.88	5.06	3.21	20.96	125	15.90	2.08	7.14	5.18	36.02	4000	28.88
3DH5	2402.0	-6.71	2.33	9.88	5.50	3.55	20.96	125	15.46	2.08	7.58	5.73	36.02	4000	28.44
3DH5	2441.0	-6.79	2.34	9.88	5.43	3.49	20.96	125	15.53	2.08	7.51	5.64	36.02	4000	28.51
3DH5	2480.0	-6.92	2.35	9.88	5.31	3.40	20.96	125	15.65	2.08	7.39	5.48	36.02	4000	28.63

*1) Antenna Gain applied the higher of the two models.

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

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

Average Output Power
(Reference data for RF Exposure)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 16, 2020
Temperature / Humidity	24 deg. C / 58 % RH
Engineer	Shiro Kobayashi
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	-7.57	2.33	9.88	4.64	2.91	1.12	5.76	3.77
DH5	2441.0	-7.66	2.34	9.88	4.56	2.86	1.12	5.68	3.70
DH5	2480.0	-7.82	2.35	9.88	4.41	2.76	1.12	5.53	3.57
2DH5	2402.0	-10.67	2.33	9.88	1.54	1.43	1.13	2.67	1.85
2DH5	2441.0	-10.80	2.34	9.88	1.42	1.39	1.13	2.55	1.80
2DH5	2480.0	-10.88	2.35	9.88	1.35	1.36	1.13	2.48	1.77
3DH5	2402.0	-10.66	2.33	9.88	1.55	1.43	1.13	2.68	1.85
3DH5	2441.0	-10.79	2.34	9.88	1.43	1.39	1.13	2.56	1.80
3DH5	2480.0	-10.88	2.35	9.88	1.35	1.36	1.13	2.48	1.77

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

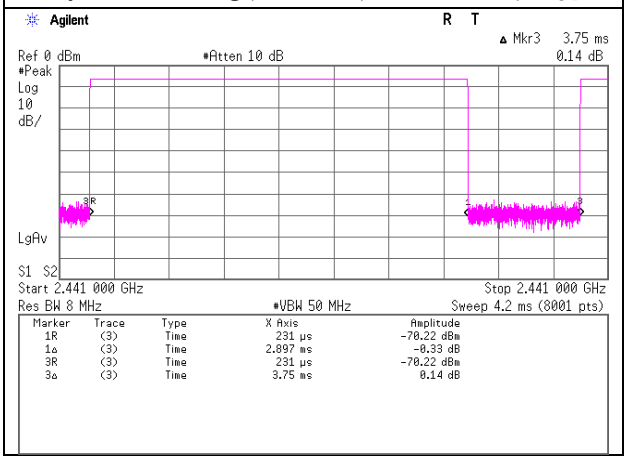
*The equipment and cables were not used for factor 0 dB of the data sheets.

Burst Rate Confirmation

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 16, 2020
Temperature / Humidity	24 deg. C / 58 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off

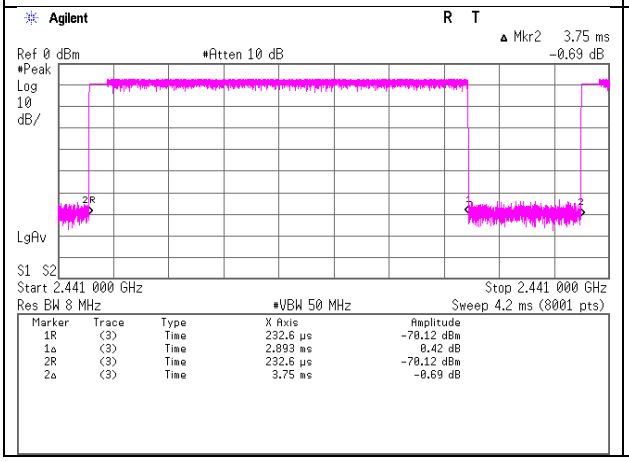
DH5

Tx on / (Tx on + Tx off) =	**0.773**
Tx on / (Tx on + Tx off) * 100 =	**77.3 %**
Duty factor = 10 * log (3.75 / 2.897) =	**1.12 dB**



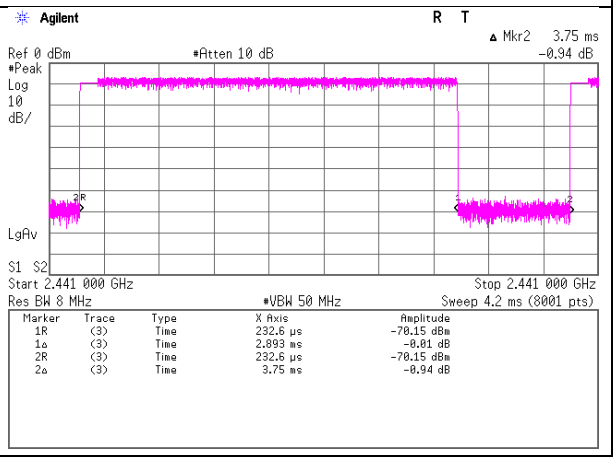
2DH5

Tx on / (Tx on + Tx off) =	**0.771**
Tx on / (Tx on + Tx off) * 100 =	**77.1 %**
Duty factor = 10 * log (3.75 / 2.893) =	**1.13 dB**



3DH5

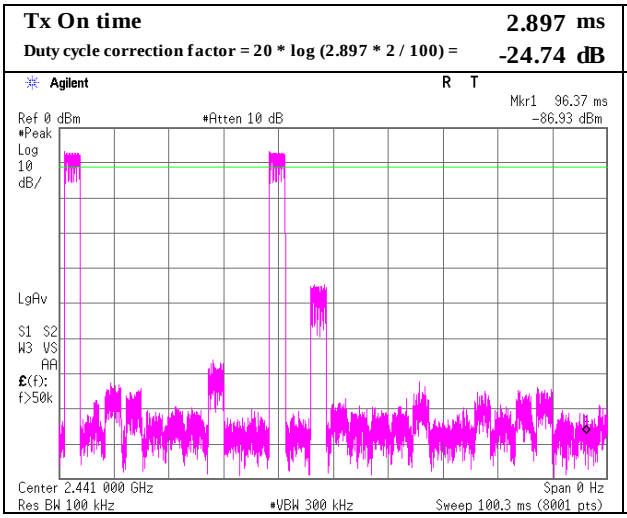
Tx on / (Tx on + Tx off) =	**0.771**
Tx on / (Tx on + Tx off) * 100 =	**77.1 %**
Duty factor = 10 * log (3.75 / 2.893) =	**1.13 dB**



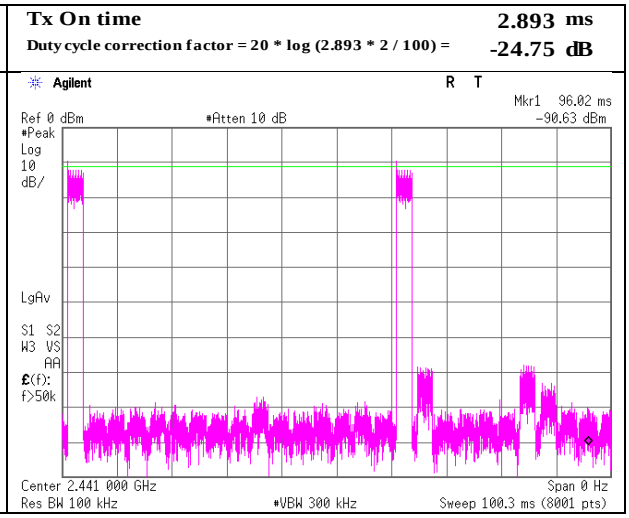
Duty cycle correction factor

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping On

DH5



3DH5



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

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz			
EUT	Hi type (14 inch Display)			

(* 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.	250.251	QP	39.60	11.78	8.26	31.98	0.00	27.66	46.0	18.3	131	166	-
Hori.	387.499	QP	37.00	15.35	8.94	31.93	0.00	29.36	46.0	16.6	100	99	
Hori.	580.178	QP	35.60	18.76	9.73	31.96	0.00	32.13	46.0	13.9	158	234	
Hori.	591.927	QP	35.50	19.14	9.77	31.95	0.00	32.46	46.0	13.5	155	193	
Hori.	774.995	QP	36.70	20.44	10.42	31.70	0.00	35.86	46.0	10.1	133	82	
Hori.	827.458	QP	33.22	21.00	10.59	31.47	0.00	33.34	46.0	12.7	100	218	
Hori.	844.776	QP	35.30	21.30	10.65	31.35	0.00	35.90	46.0	**10.1**	129	33	
Hori.	913.968	QP	30.90	22.13	10.86	30.94	0.00	32.95	46.0	13.1	253	210	
Hori.	2390.000	PK	46.63	28.41	14.23	41.66	2.13	49.74	73.9	24.2	213	354	
Hori.	4804.000	PK	50.91	31.60	6.82	42.92	2.13	48.54	73.9	25.4	132	212	
Hori.	7206.000	PK	55.40	37.60	8.38	43.39	2.13	60.12	73.9	13.8	151	205	
Hori.	9608.000	PK	47.90	38.92	9.53	43.14	2.13	55.34	73.9	18.6	150	0	
Vert.	130.568	QP	35.60	13.92	7.39	32.10	0.00	24.81	43.5	18.7	100	171	
Vert.	913.968	QP	29.50	22.13	10.86	30.94	0.00	31.55	46.0	14.5	100	179	
Vert.	2390.000	PK	46.99	28.41	14.23	41.66	2.13	50.10	73.9	23.8	141	294	
Vert.	4804.000	PK	51.44	31.60	6.82	42.92	2.13	49.07	73.9	24.8	157	183	
Vert.	7206.000	PK	53.76	37.60	8.38	43.39	2.13	58.48	73.9	15.4	151	238	
Vert.	9608.000	PK	47.71	38.92	9.53	43.14	2.13	55.15	73.9	18.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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	46.63	28.41	14.23	41.66	-24.74	2.13	25.00	53.9	28.9	-
Hori.	4804.000	PK	50.91	31.60	6.82	42.92	-24.74	2.13	23.80	53.9	30.1	
Hori.	7206.000	PK	55.40	37.60	8.38	43.39	-24.74	2.13	35.38	53.9	18.5	
Hori.	9608.000	PK	47.90	38.92	9.53	43.14	-24.74	2.13	30.60	53.9	23.3	
Vert.	2390.000	PK	46.99	28.41	14.23	41.66	-24.74	2.13	25.36	53.9	28.5	
Vert.	4804.000	PK	51.44	31.60	6.82	42.92	-24.74	2.13	24.33	53.9	29.6	
Vert.	7206.000	PK	53.76	37.60	8.38	43.39	-24.74	2.13	33.74	53.9	20.2	
Vert.	9608.000	PK	47.71	38.92	9.53	43.14	-24.74	2.13	30.41	53.9	23.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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.

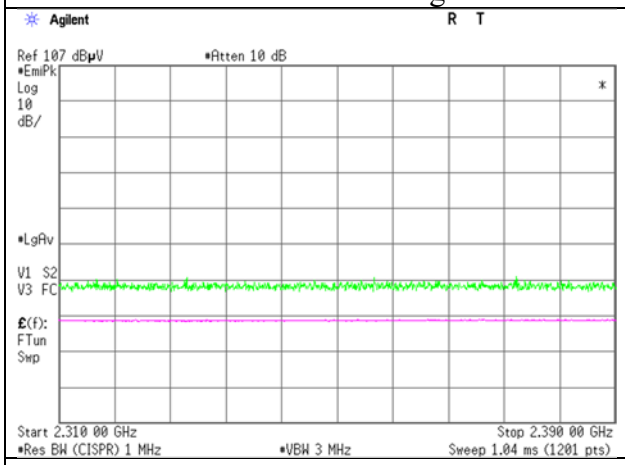
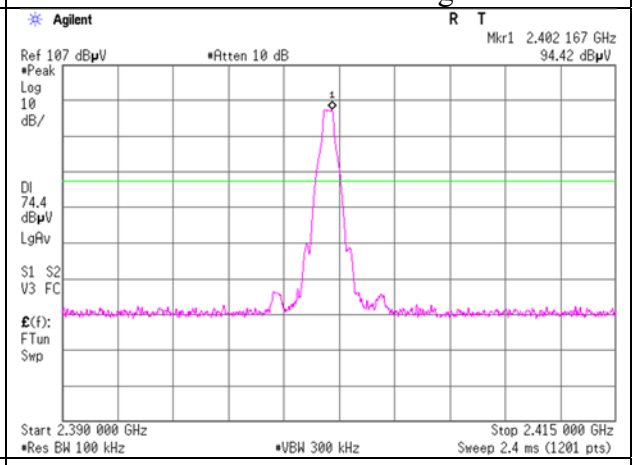
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

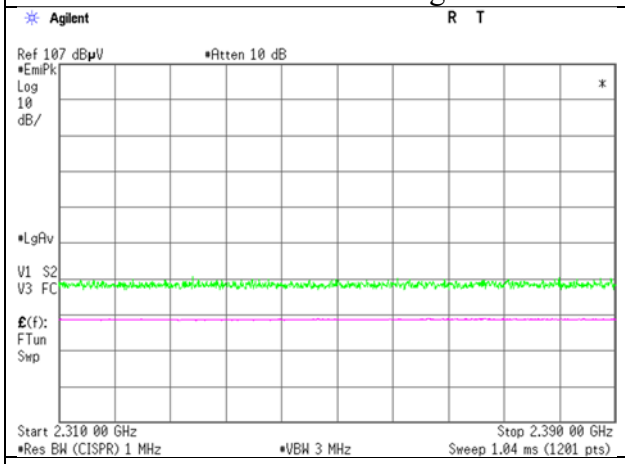
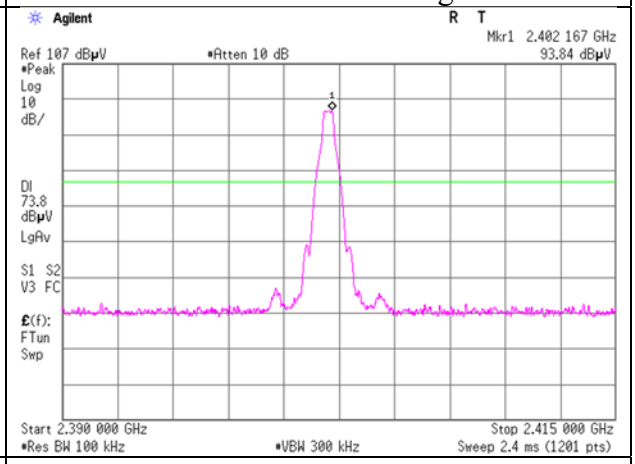
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	94.31	28.38	14.24	41.67	2.13	97.39	-	-	Carrier
Hori.	2399.659	PK	43.79	28.38	14.23	41.67	2.13	46.86	77.39	30.5	
Hori.	2400.000	PK	39.22	28.38	14.23	41.67	2.13	42.29	77.39	35.1	
Vert.	2402.000	PK	93.60	28.38	14.24	41.67	2.13	96.68	-	-	Carrier
Vert.	2399.650	PK	43.16	28.38	14.23	41.67	2.13	46.23	76.68	30.4	
Vert.	2400.000	PK	38.90	28.38	14.23	41.67	2.13	41.97	76.68	34.7	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 18, 2020
Temperature / Humidity	22 deg. C / 72 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping Off, DH5 2402 MHz
EUT	Hi type(14 inch Display)

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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz			
EUT	Hi type(14 inch Display)			

(* 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.	250.275	QP	39.50	11.78	8.26	31.98	0.00	27.56	46.0	18.4	141	169	-
Hori.	387.492	QP	37.10	15.35	8.94	31.93	0.00	29.46	46.0	16.5	100	95	
Hori.	580.114	QP	35.80	18.75	9.73	31.96	0.00	32.32	46.0	13.7	161	231	
Hori.	591.982	QP	35.10	19.14	9.77	31.95	0.00	32.06	46.0	13.9	147	207	
Hori.	774.997	QP	36.80	20.44	10.42	31.70	0.00	35.96	46.0	10.0	133	83	
Hori.	827.575	QP	33.40	21.00	10.59	31.47	0.00	33.52	46.0	12.5	100	220	
Hori.	844.781	QP	35.50	21.30	10.65	31.35	0.00	36.10	46.0	**9.9**	127	32	
Hori.	913.971	QP	30.70	22.13	10.86	30.94	0.00	32.75	46.0	13.3	244	217	
Hori.	4882.000	PK	47.79	31.63	6.87	42.93	2.13	45.49	73.9	28.4	188	286	
Hori.	7323.000	PK	55.17	37.71	8.45	43.49	2.13	59.97	73.9	13.9	185	236	
Hori.	9764.000	PK	47.08	39.19	9.64	42.96	2.13	55.08	73.9	18.8	150	0	
Vert.	130.570	QP	35.90	13.92	7.39	32.10	0.00	25.11	43.5	18.4	100	184	
Vert.	913.971	QP	29.00	22.13	10.86	30.94	0.00	31.05	46.0	15.0	100	177	
Vert.	4882.000	PK	49.28	31.63	6.87	42.93	2.13	46.98	73.9	26.9	178	216	
Vert.	7323.000	PK	52.98	37.71	8.45	43.49	2.13	57.78	73.9	16.1	157	5	
Vert.	9764.000	PK	47.42	39.19	9.64	42.96	2.13	55.42	73.9	18.5	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	4882.000	PK	47.79	31.63	6.87	42.93	-24.74	2.13	20.75	53.9	33.2	-
Hori.	7323.000	PK	55.17	37.71	8.45	43.49	-24.74	2.13	35.23	53.9	18.7	
Hori.	9764.000	PK	47.08	39.19	9.64	42.96	-24.74	2.13	30.34	53.9	23.6	
Vert.	4882.000	PK	49.28	31.63	6.87	42.93	-24.74	2.13	22.24	53.9	31.7	
Vert.	7323.000	PK	52.98	37.71	8.45	43.49	-24.74	2.13	33.04	53.9	20.9	
Vert.	9764.000	PK	47.42	39.19	9.64	42.96	-24.74	2.13	30.68	53.9	23.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz			
EUT	Hi type(14 inch Display)			

(* 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.	250.247	QP	39.40	11.78	8.26	31.98	0.00	27.46	46.0	18.5	130	171	-
Hori.	387.505	QP	37.00	15.36	8.94	31.93	0.00	29.37	46.0	16.6	100	98	
Hori.	580.056	QP	35.70	18.75	9.73	31.96	0.00	32.22	46.0	13.8	161	243	
Hori.	592.045	QP	35.60	19.14	9.77	31.95	0.00	32.56	46.0	13.4	147	208	
Hori.	775.000	QP	36.80	20.44	10.42	31.70	0.00	35.96	46.0	**10.0**	134	84	
Hori.	827.745	QP	32.80	21.00	10.59	31.47	0.00	32.92	46.0	13.1	100	210	
Hori.	839.545	QP	35.40	21.21	10.63	31.39	0.00	35.85	46.0	10.2	100	200	
Hori.	913.973	QP	30.60	22.13	10.86	30.94	0.00	32.65	46.0	13.4	243	217	
Hori.	2483.500	PK	47.40	28.28	14.32	41.69	2.13	50.44	73.9	23.5	213	238	
Hori.	4960.000	PK	49.66	31.79	6.94	42.94	2.13	47.58	73.9	26.3	169	234	
Hori.	7440.000	PK	53.55	37.88	8.52	43.60	2.13	58.48	73.9	15.4	144	97	
Hori.	9920.000	PK	46.62	39.05	9.73	42.78	2.13	54.75	73.9	19.2	150	0	
Vert.	130.575	QP	35.60	13.92	7.39	32.10	0.00	24.81	43.5	18.7	100	183	
Vert.	913.973	QP	29.60	22.13	10.86	30.94	0.00	31.65	46.0	14.4	100	181	
Vert.	2483.500	PK	47.57	28.28	14.32	41.69	2.13	50.61	73.9	23.3	155	265	
Vert.	4960.000	PK	48.29	31.79	6.94	42.94	2.13	46.21	73.9	27.7	145	247	
Vert.	7440.000	PK	52.53	37.88	8.52	43.60	2.13	57.46	73.9	16.4	150	3	
Vert.	9920.000	PK	46.98	39.05	9.73	42.78	2.13	55.11	73.9	18.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	47.40	28.28	14.32	41.69	-24.74	2.13	50.44	53.9	51.0	-
Hori.	4960.000	PK	49.66	31.79	6.94	42.94	-24.74	2.13	22.84	53.9	51.0	
Hori.	7440.000	PK	53.55	37.88	8.52	43.60	-24.74	2.13	33.74	53.9	40.1	
Hori.	9920.000	PK	46.62	39.05	9.73	42.78	-24.74	2.13	30.01	53.9	43.8	
Vert.	2483.500	PK	47.57	28.28	14.32	41.69	-24.74	2.13	50.61	53.9	51.0	
Vert.	4960.000	PK	48.29	31.79	6.94	42.94	-24.74	2.13	21.47	53.9	52.4	
Vert.	7440.000	PK	52.53	37.88	8.52	43.60	-24.74	2.13	32.72	53.9	41.1	
Vert.	9920.000	PK	46.98	39.05	9.73	42.78	-24.74	2.13	30.37	53.9	43.5	

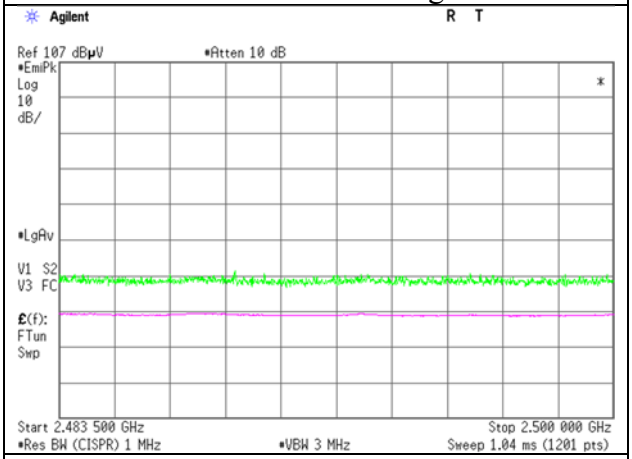
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 18, 2020
Temperature / Humidity	22 deg. C / 72 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping Off, DH5 2480 MHz
EUT	Hi type(14 inch Display)

Horizontal

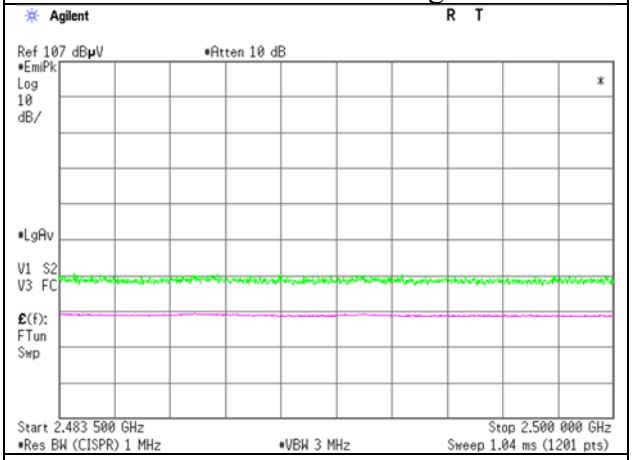
Restricted-band band-edge Plot



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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz			
EUT	Hi type(14 inch Display)			

(* 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.	250.266	QP	39.80	11.78	8.26	31.98	0.00	27.86	46.0	18.1	137	168	-
Hori.	387.502	QP	37.10	15.36	8.94	31.93	0.00	29.47	46.0	16.5	100	95	
Hori.	580.088	QP	36.00	18.75	9.73	31.96	0.00	32.52	46.0	13.5	162	131	
Hori.	591.949	QP	35.80	19.14	9.77	31.95	0.00	32.76	46.0	13.2	148	206	
Hori.	774.999	QP	36.90	20.44	10.42	31.70	0.00	36.06	46.0	9.9	125	81	
Hori.	827.681	QP	33.40	21.00	10.59	31.47	0.00	33.52	46.0	12.5	100	218	
Hori.	844.778	QP	35.80	21.30	10.65	31.35	0.00	36.40	46.0	**9.6**	128	33	
Hori.	913.973	QP	31.20	22.13	10.86	30.94	0.00	33.25	46.0	12.8	254	211	
Hori.	2390.000	PK	47.46	28.41	14.23	41.66	2.13	50.57	73.9	23.3	215	352	
Hori.	4804.000	PK	52.21	31.60	6.82	42.92	2.13	49.84	73.9	24.1	146	221	
Hori.	7206.000	PK	57.77	37.60	8.38	43.39	2.13	62.49	73.9	11.4	152	205	
Hori.	9608.000	PK	47.87	38.92	9.53	43.14	2.13	55.31	73.9	18.6	150	0	
Vert.	130.574	QP	35.70	13.92	7.39	32.10	0.00	24.91	43.5	18.6	100	189	
Vert.	913.973	QP	29.90	22.13	10.86	30.94	0.00	31.95	46.0	14.1	100	178	
Vert.	2390.000	PK	46.77	28.41	14.23	41.66	2.13	49.88	73.9	24.0	158	297	
Vert.	4804.000	PK	51.28	31.60	6.82	42.92	2.13	48.91	73.9	25.0	157	244	
Vert.	7206.000	PK	55.85	37.60	8.38	43.39	2.13	60.57	73.9	13.3	125	340	
Vert.	9608.000	PK	47.69	38.92	9.53	43.14	2.13	55.13	73.9	18.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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	47.46	28.41	14.23	41.66	-24.75	2.13	25.82	53.9	28.1	-
Hori.	4804.000	PK	52.21	31.60	6.82	42.92	-24.75	2.13	25.09	53.9	28.8	
Hori.	7206.000	PK	57.77	37.60	8.38	43.39	-24.75	2.13	37.74	53.9	16.2	
Hori.	9608.000	PK	47.87	38.92	9.53	43.14	-24.75	2.13	30.56	53.9	23.3	
Vert.	2390.000	PK	46.77	28.41	14.23	41.66	-24.75	2.13	25.13	53.9	28.8	
Vert.	4804.000	PK	51.28	31.60	6.82	42.92	-24.75	2.13	24.16	53.9	29.7	
Vert.	7206.000	PK	55.85	37.60	8.38	43.39	-24.75	2.13	35.82	53.9	18.1	
Vert.	9608.000	PK	47.69	38.92	9.53	43.14	-24.75	2.13	30.38	53.9	23.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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.

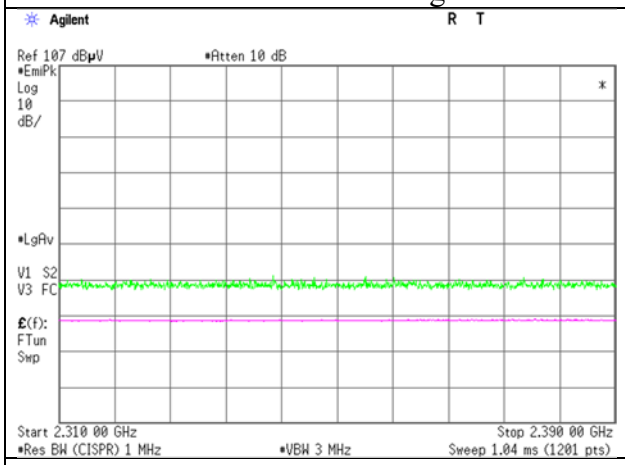
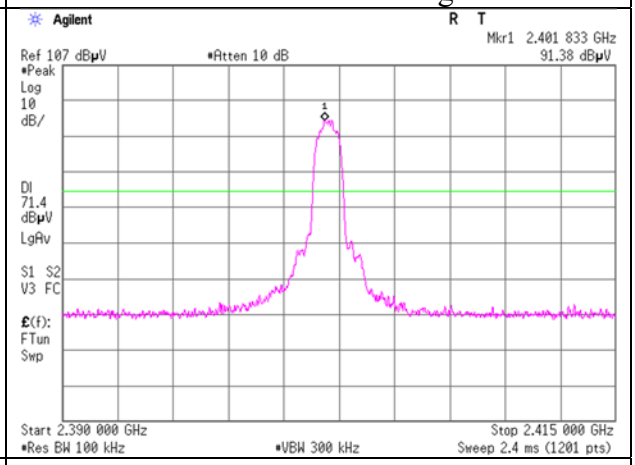
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

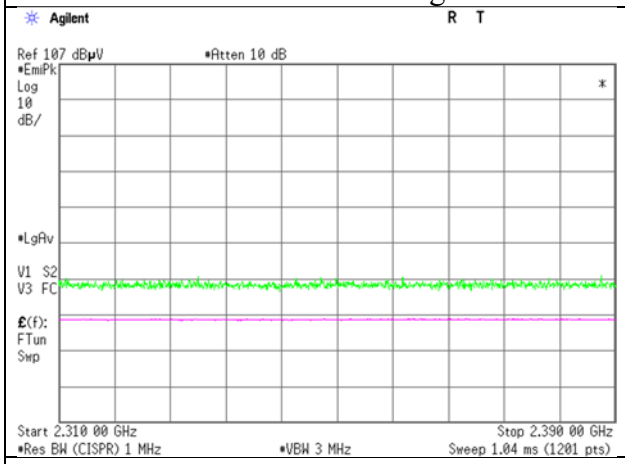
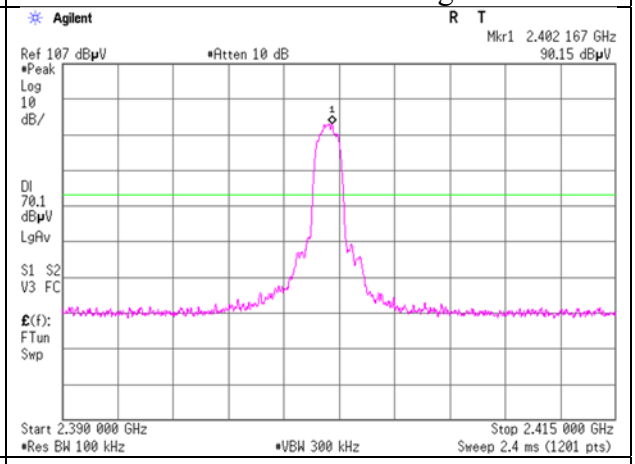
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	91.36	28.38	14.24	41.67	2.13	94.44	-	-	Carrier
Hori.	2400.000	PK	44.17	28.38	14.23	41.67	2.13	47.24	74.44	27.2	
Vert.	2402.000	PK	90.05	28.38	14.24	41.67	2.13	93.13	-	-	Carrier
Vert.	2400.000	PK	43.00	28.38	14.23	41.67	2.13	46.07	73.13	27.0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 18, 2020
Temperature / Humidity	22 deg. C / 72 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping Off, 3DH5 2402 MHz
EUT	Hi type(14 inch Display)

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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz			
EUT	Hi type(14 inch Display)			

(* 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.	250.378	QP	38.80	11.78	8.26	31.98	0.00	26.86	46.0	19.1	136	144	-
Hori.	387.495	QP	36.70	15.35	8.94	31.93	0.00	29.06	46.0	16.9	104	98	
Hori.	580.277	QP	35.90	18.76	9.73	31.96	0.00	32.43	46.0	13.6	144	188	
Hori.	591.979	QP	35.50	19.14	9.77	31.95	0.00	32.46	46.0	13.5	145	202	
Hori.	775.000	QP	37.10	20.44	10.42	31.70	0.00	36.26	46.0	**9.7**	134	84	
Hori.	827.649	QP	32.50	21.00	10.59	31.47	0.00	32.62	46.0	13.4	100	213	
Hori.	844.778	QP	35.50	21.30	10.65	31.35	0.00	36.10	46.0	9.9	127	32	
Hori.	913.972	QP	32.20	22.13	10.86	30.94	0.00	34.25	46.0	11.8	246	212	
Hori.	4882.000	PK	49.37	31.63	6.87	42.93	2.13	47.07	73.9	26.8	168	248	
Hori.	7323.000	PK	57.84	37.71	8.45	43.49	2.13	62.64	73.9	11.3	148	239	
Hori.	9764.000	PK	48.64	39.19	9.64	42.96	2.13	56.64	73.9	17.3	150	0	
Vert.	130.569	QP	35.80	13.92	7.39	32.10	0.00	25.01	43.5	18.5	100	202	
Vert.	913.972	QP	31.80	22.13	10.86	30.94	0.00	33.85	46.0	12.2	100	180	
Vert.	4882.000	PK	48.25	31.63	6.87	42.93	2.13	45.95	73.9	28.0	129	35	
Vert.	7323.000	PK	55.51	37.71	8.45	43.49	2.13	60.31	73.9	13.6	148	3	
Vert.	9764.000	PK	48.18	39.19	9.64	42.96	2.13	56.18	73.9	17.7	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	4882.000	PK	49.37	31.63	6.87	42.93	-24.75	2.13	22.32	53.9	31.6	-
Hori.	7323.000	PK	57.84	37.71	8.45	43.49	-24.75	2.13	37.89	53.9	16.0	
Hori.	9764.000	PK	48.64	39.19	9.64	42.96	-24.75	2.13	31.89	53.9	22.0	
Vert.	4882.000	PK	48.25	31.63	6.87	42.93	-24.75	2.13	21.20	53.9	32.7	
Vert.	7323.000	PK	55.51	37.71	8.45	43.49	-24.75	2.13	35.56	53.9	18.3	
Vert.	9764.000	PK	48.18	39.19	9.64	42.96	-24.75	2.13	31.43	53.9	22.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz			
EUT	Hi type(14 inch Display)			

(* 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.	250.359	QP	38.60	11.78	8.26	31.98	0.00	26.66	46.0	19.3	138	145	-
Hori.	387.498	QP	36.70	15.35	8.94	31.93	0.00	29.06	46.0	16.9	100	93	
Hori.	580.288	QP	35.60	18.76	9.73	31.96	0.00	32.13	46.0	13.9	135	189	
Hori.	592.055	QP	35.50	19.14	9.77	31.95	0.00	32.46	46.0	13.5	156	193	
Hori.	774.999	QP	37.00	20.44	10.42	31.70	0.00	36.16	46.0	**9.8**	123	84	
Hori.	827.606	QP	32.60	21.00	10.59	31.47	0.00	32.72	46.0	13.3	100	230	
Hori.	844.777	QP	35.30	21.30	10.65	31.35	0.00	35.90	46.0	10.1	118	31	
Hori.	913.969	QP	32.30	22.13	10.86	30.94	0.00	34.35	46.0	11.7	225	212	
Hori.	2483.500	PK	49.18	28.28	14.32	41.69	2.13	52.22	73.9	21.7	216	237	
Hori.	4960.000	PK	50.58	31.79	6.94	42.94	2.13	48.50	73.9	25.4	194	240	
Hori.	7440.000	PK	50.89	37.88	8.52	43.60	2.13	55.82	73.9	18.1	152	93	
Hori.	9920.000	PK	48.49	39.05	9.73	42.78	2.13	56.62	73.9	17.3	150	0	
Vert.	130.571	QP	35.80	13.92	7.39	32.10	0.00	25.01	43.5	18.5	100	184	
Vert.	913.969	QP	32.00	22.13	10.86	30.94	0.00	34.05	46.0	12.0	100	179	
Vert.	2483.500	PK	48.58	28.28	14.32	41.69	2.13	51.62	73.9	22.3	156	267	
Vert.	4960.000	PK	49.36	31.79	6.94	42.94	2.13	47.28	73.9	26.6	159	225	
Vert.	7440.000	PK	52.55	37.88	8.52	43.60	2.13	57.48	73.9	16.4	162	7	
Vert.	9920.000	PK	47.40	39.05	9.73	42.78	2.13	55.53	73.9	18.4	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	49.18	28.28	14.32	41.69	-24.75	2.13	27.47	53.9	26.4	-
Hori.	4960.000	PK	50.58	31.79	6.94	42.94	-24.75	2.13	23.75	53.9	30.2	
Hori.	7440.000	PK	50.89	37.88	8.52	43.60	-24.75	2.13	31.07	53.9	22.8	
Hori.	9920.000	PK	48.49	39.05	9.73	42.78	-24.75	2.13	31.87	53.9	22.0	
Vert.	2483.500	PK	48.58	28.28	14.32	41.69	-24.75	2.13	26.87	53.9	27.0	
Vert.	4960.000	PK	49.36	31.79	6.94	42.94	-24.75	2.13	22.53	53.9	31.4	
Vert.	7440.000	PK	52.55	37.88	8.52	43.60	-24.75	2.13	32.73	53.9	21.2	
Vert.	9920.000	PK	47.40	39.05	9.73	42.78	-24.75	2.13	30.78	53.9	23.1	

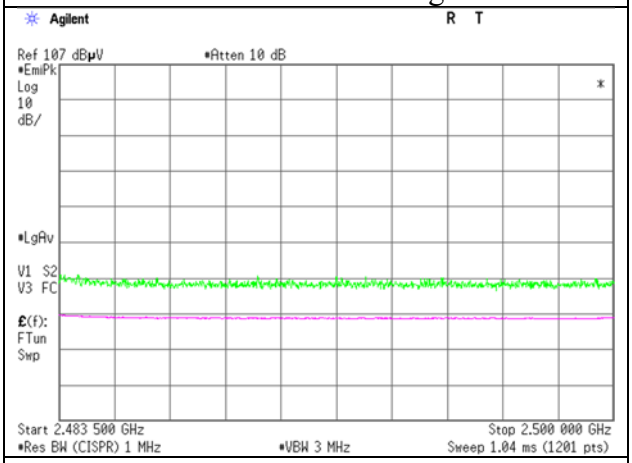
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 18, 2020
Temperature / Humidity	22 deg. C / 72 % RH
Engineer	Kazuya Noda
Mode	Tx, Hopping Off, 3DH5 2480 MHz
EUT	Hi type(14 inch Display)

Horizontal

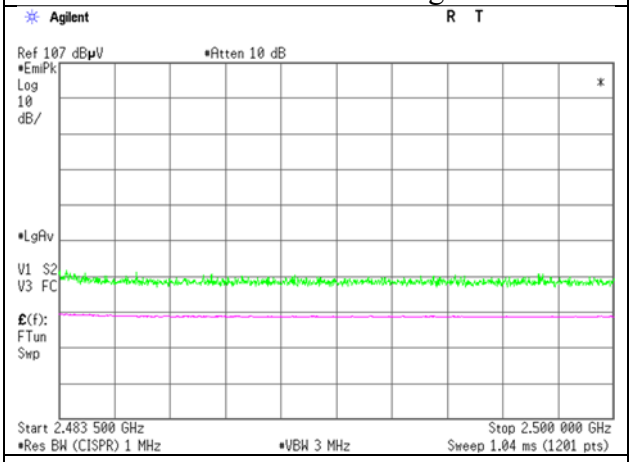
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

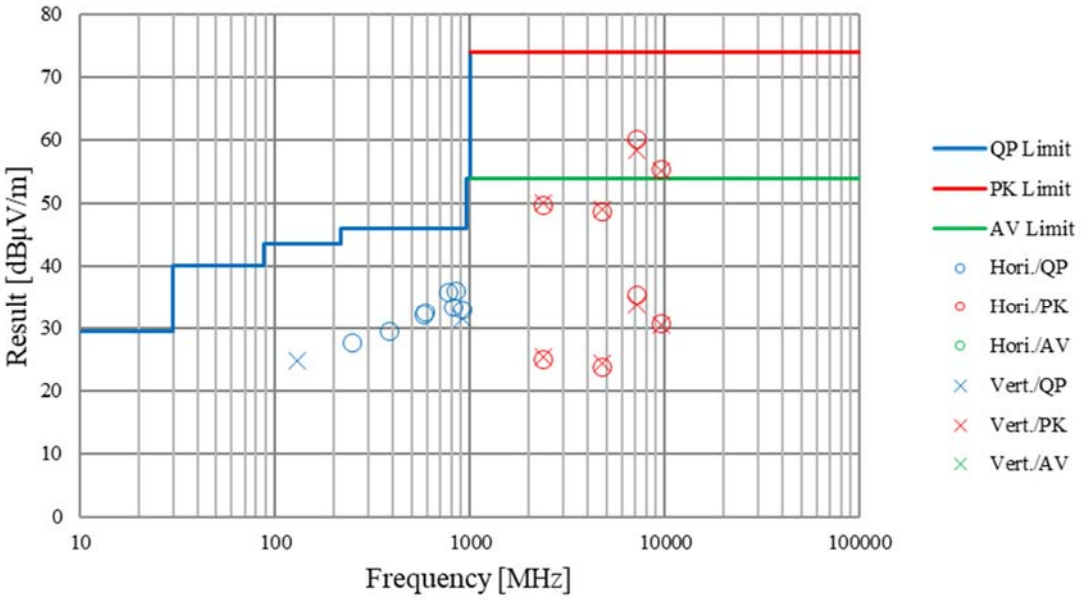


Trace Green : Peak Plot
Trace Purple : Average Plot

* 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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	July 27, 2020	July 18, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	23 deg. C / 62 % RH	22 deg. C / 72 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Toshinori Yamada	Kazuya Noda	Hiromasa Sato	Takahiro Suzuki
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz			
EUT	Hi type(14 inch Display)			



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

Radiated Spurious Emission

Report No.	13385909S-A-R1				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	July 28, 2020	July 21, 2020	July 20, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	25 deg. C / 64 % RH	23 deg. C / 63 % RH	22 deg. C / 62 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Makoto Hosaka (30 MHz - 1 GHz)	Yusuke Tanikawara (1 GHz – 2.8 GHz)	Toshinori Yamada (2.8 GHz - 13 GHz)	Hiromasa Sato (13 GHz - 18 GHz)	Takahiro Suzuki (18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 MIMO 5745 MHz				
EUT	Hi type(14 inch Display)				

(* 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.	580.155	QP	36.30	18.75	9.73	31.96	0.00	32.82	46.0	13.2	154	193	-
Hori.	592.113	QP	36.30	19.14	9.77	31.95	0.00	33.26	46.0	12.7	151	185	
Hori.	640.001	QP	32.70	19.27	9.94	31.95	0.00	29.96	46.0	16.0	154	243	
Hori.	768.923	QP	35.50	20.43	10.40	31.71	0.00	34.62	46.0	11.4	119	199	
Hori.	816.029	QP	33.30	20.84	10.55	31.55	0.00	33.14	46.0	12.9	100	220	
Hori.	827.798	QP	33.50	21.01	10.59	31.47	0.00	33.63	46.0	12.4	100	218	
Hori.	857.287	QP	31.30	21.76	10.69	31.28	0.00	32.47	46.0	13.5	100	203	
Hori.	913.974	QP	32.70	22.13	10.86	30.94	0.00	34.75	46.0	**11.3**	176	134	
Hori.	2390.000	PK	47.48	28.41	14.23	41.66	2.13	50.59	73.9	23.3	292	331	
Hori.	4804.000	PK	52.89	31.60	6.82	42.92	2.13	50.52	73.9	23.4	198	214	
Hori.	7206.000	PK	57.45	37.60	8.38	43.39	2.13	62.17	73.9	11.7	246	211	
Hori.	9608.000	PK	48.22	38.92	9.53	43.14	2.13	55.66	73.9	18.2	150	0	
Vert.	130.575	QP	37.10	13.92	7.39	32.10	0.00	26.31	43.5	17.2	100	175	
Vert.	913.973	QP	29.70	22.13	10.86	30.94	0.00	31.75	46.0	14.3	100	311	
Vert.	2390.000	PK	47.73	28.41	14.23	41.66	2.13	50.84	73.9	23.1	363	131	
Vert.	4804.000	PK	51.82	31.60	6.82	42.92	2.13	49.45	73.9	24.5	127	215	
Vert.	7206.000	PK	55.09	37.60	8.38	43.39	2.13	59.81	73.9	14.1	138	340	
Vert.	9608.000	PK	48.70	38.92	9.53	43.14	2.13	56.14	73.9	17.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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	47.48	28.41	14.23	41.66	-24.74	2.13	25.85	53.9	28.1	-
Hori.	4804.000	PK	52.89	31.60	6.82	42.92	-24.74	2.13	25.78	53.9	28.1	
Hori.	7206.000	PK	57.45	37.60	8.38	43.39	-24.74	2.13	37.43	53.9	16.5	
Hori.	9608.000	PK	48.22	38.92	9.53	43.14	-24.74	2.13	30.92	53.9	23.0	
Vert.	2390.000	PK	47.73	28.41	14.23	41.66	-24.74	2.13	26.10	53.9	27.8	
Vert.	4804.000	PK	51.82	31.60	6.82	42.92	-24.74	2.13	24.71	53.9	29.2	
Vert.	7206.000	PK	55.09	37.60	8.38	43.39	-24.74	2.13	35.07	53.9	18.8	
Vert.	9608.000	PK	48.70	38.92	9.53	43.14	-24.74	2.13	31.40	53.9	22.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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.

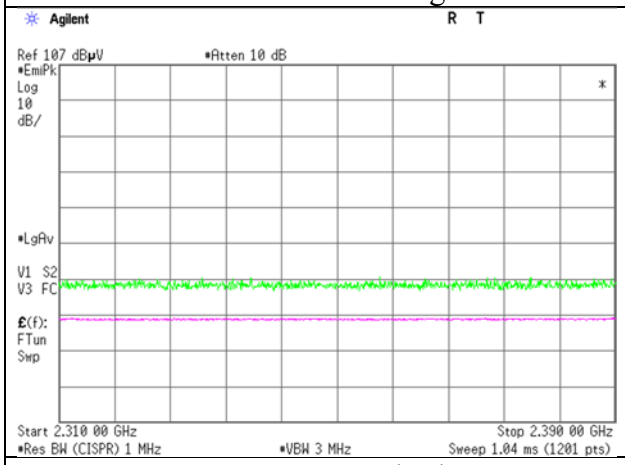
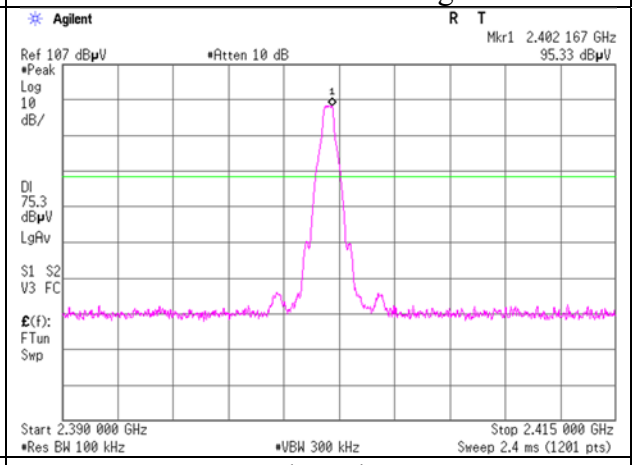
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

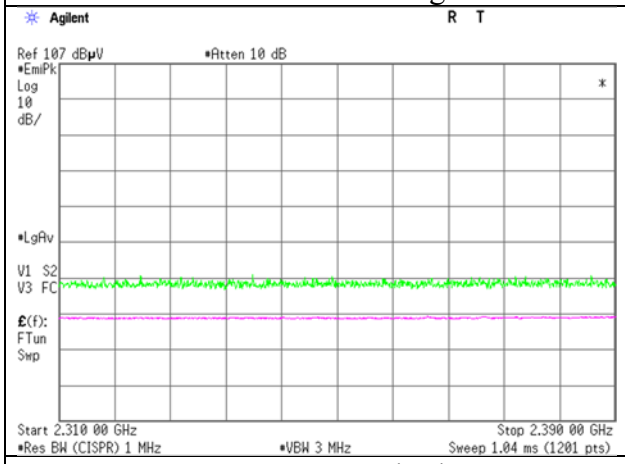
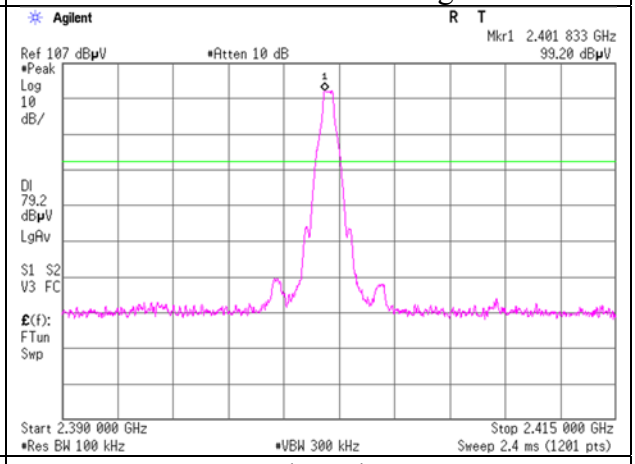
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	95.34	28.38	14.24	41.67	2.13	98.42	-	-	Carrier
Hori.	2399.634	PK	44.16	28.38	14.23	41.67	2.13	47.23	78.42	31.1	
Hori.	2400.000	PK	41.73	28.38	14.23	41.67	2.13	44.80	78.42	33.6	
Vert.	2402.000	PK	99.13	28.38	14.24	41.67	2.13	102.21	-	-	Carrier
Vert.	2399.624	PK	47.09	28.38	14.23	41.67	2.13	50.16	82.21	32.0	
Vert.	2400.000	PK	43.87	28.38	14.23	41.67	2.13	46.94	82.21	35.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 5745 MIMO MHz
EUT	Hi type(14 inch Display)

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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

(* 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.	2483.500	PK	48.58	28.28	14.32	41.69	2.13	51.62	73.9	22.3	284	307	-
Hori.	2487.703	PK	48.61	28.27	14.32	41.70	2.13	51.63	73.9	22.3	284	307	
Vert.	2483.500	PK	48.76	28.28	14.32	41.69	2.13	51.80	73.9	**22.1**	348	134	
Vert.	2487.457	PK	48.75	28.28	14.32	41.70	2.13	51.78	73.9	22.1	348	134	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	48.58	28.28	14.32	41.69	-24.74	2.13	26.88	53.9	27.0	-
Hori.	2487.703	PK	48.61	28.27	14.32	41.70	-24.74	2.13	26.89	53.9	27.0	
Vert.	2483.500	PK	48.76	28.28	14.32	41.69	-24.74	2.13	27.06	53.9	26.8	
Vert.	2487.457	PK	48.75	28.28	14.32	41.70	-24.74	2.13	27.04	53.9	26.9	

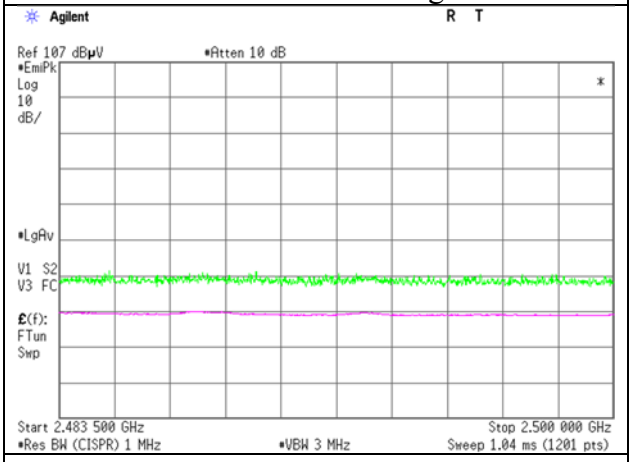
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

Horizontal

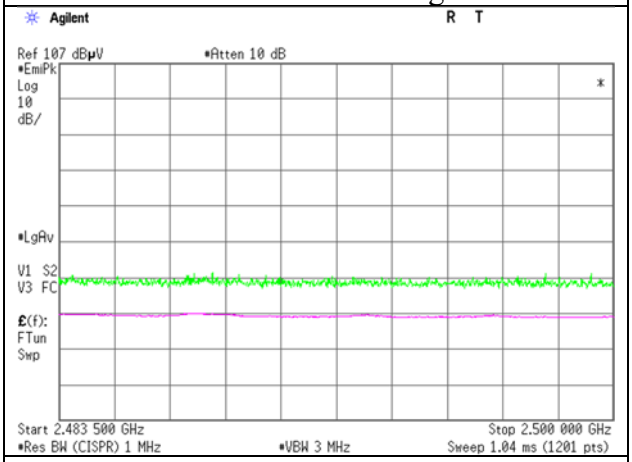
Restricted-band band-edge Plot



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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

(* 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.	2390.000	PK	46.98	28.41	14.23	41.66	2.13	50.09	73.9	23.8	229	76	-
Vert.	2390.000	PK	47.35	28.41	14.23	41.66	2.13	50.46	73.9	**23.4**	148	266	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	46.98	28.41	14.23	41.66	-24.75	2.13	25.34	53.9	28.6	-
Vert.	2390.000	PK	47.35	28.41	14.23	41.66	-24.75	2.13	25.71	53.9	28.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

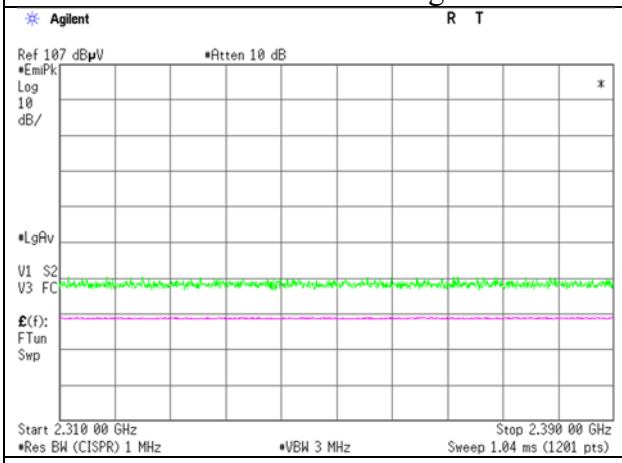
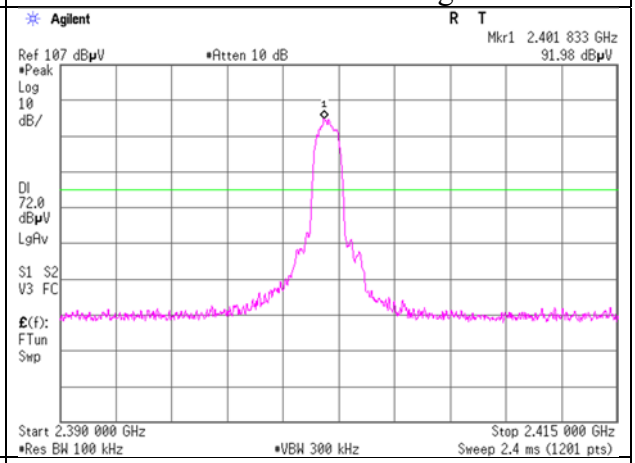
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

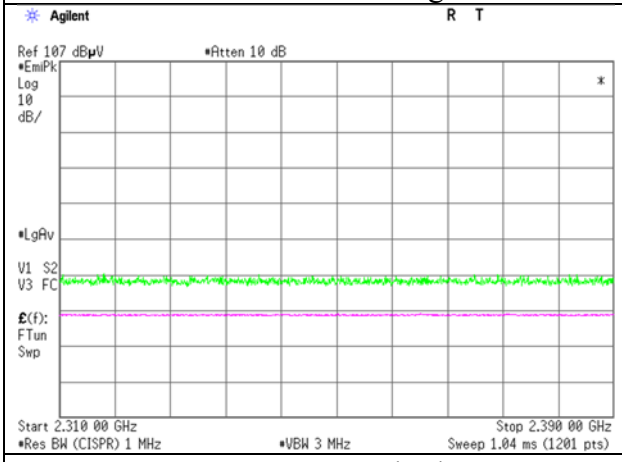
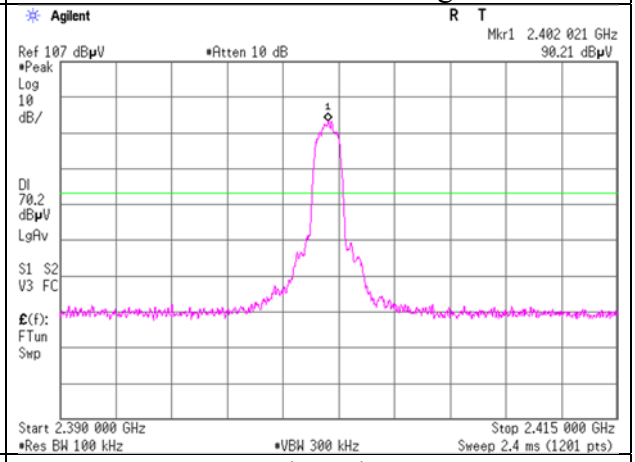
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	91.91	28.38	14.24	41.67	2.13	94.99	-	-	Carrier
Hori.	2400.000	PK	46.74	28.38	14.23	41.67	2.13	49.81	74.99	25.1	
Vert.	2402.000	PK	90.18	28.38	14.24	41.67	2.13	93.26	-	-	Carrier
Vert.	2400.000	PK	44.95	28.38	14.23	41.67	2.13	48.02	73.26	25.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, 3DH5 2402 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

(* 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.	2483.500	PK	49.43	28.28	14.32	41.69	2.13	52.47	73.9	**21.4**	282	299	-
Vert.	2483.500	PK	49.04	28.28	14.32	41.69	2.13	52.08	73.9	21.8	368	61	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	49.43	28.28	14.32	41.69	-24.75	2.13	27.72	53.9	26.2	-
Vert.	2483.500	PK	49.04	28.28	14.32	41.69	-24.75	2.13	27.33	53.9	26.6	

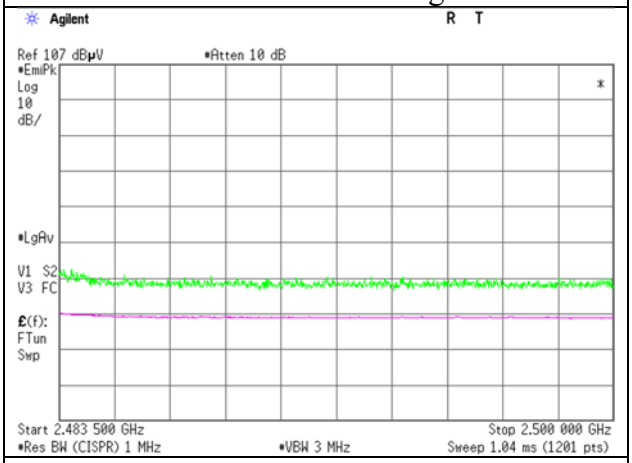
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 21, 2020
Temperature / Humidity	23 deg. C / 63 % RH
Engineer	Yusuke Tanikawara
Mode	Tx, Hopping Off, 3DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Hi type(14 inch Display)

Horizontal

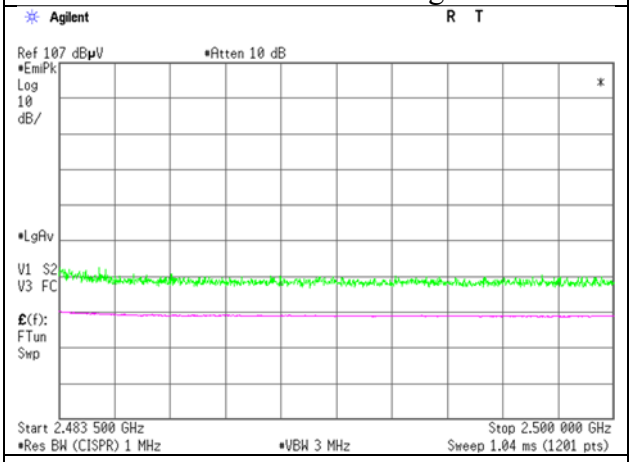
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

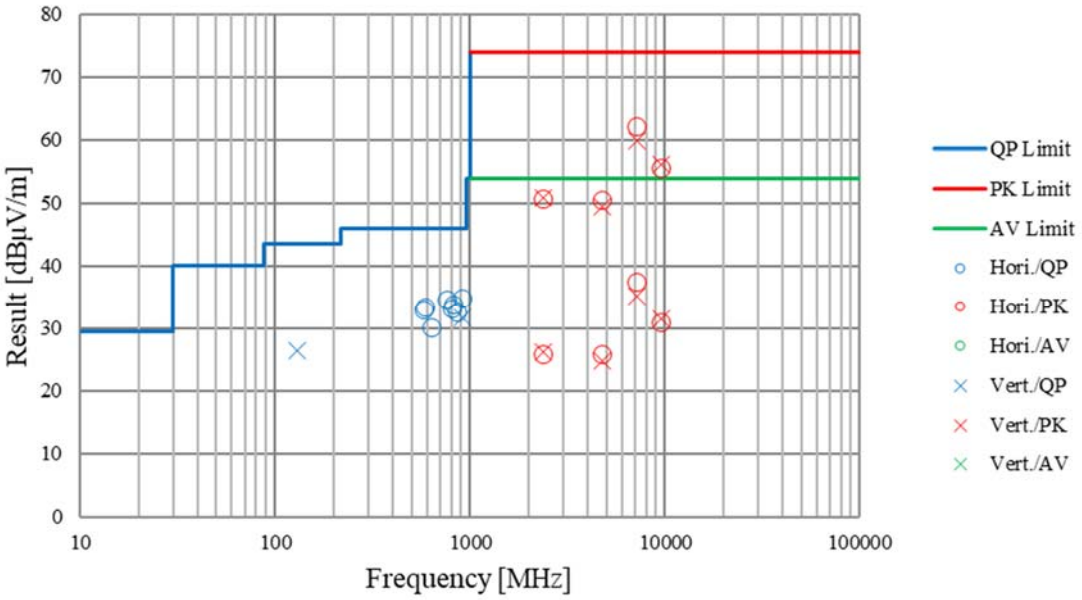


Trace Green : Peak Plot
Trace Purple : Average Plot

* 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.	13385909S-A-R1				
Test place	Shonan EMC Lab.				
Semi Anechoic Chamber	3	3	3	3	3
Date	July 28, 2020	July 21, 2020	July 20, 2020	July 24, 2020	July 26, 2020
Temperature / Humidity	25 deg. C / 64 % RH	23 deg. C / 63 % RH	22 deg. C / 62 % RH	23 deg. C / 60 % RH	23 deg. C / 69 % RH
Engineer	Makoto Hosaka (30 MHz - 1 GHz)	Yusuke Tanikawara (1 GHz – 2.8 GHz)	Toshinori Yamada (2.8 GHz - 13 GHz)	Hiromasa Sato (13 GHz - 18 GHz)	Takahiro Suzuki (18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 MIMO 5745 MHz				
EUT	Hi type(14 inch Display)				



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

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	231.067	QP	38.00	11.36	8.15	32.01	0.00	25.50	46.0	20.5	200	131	-
Hori.	233.987	QP	38.50	11.43	8.17	32.00	0.00	26.10	46.0	19.9	201	113	
Hori.	639.997	QP	31.60	19.27	9.94	31.95	0.00	28.86	46.0	17.1	144	184	
Hori.	652.847	QP	31.50	19.23	9.98	31.94	0.00	28.77	46.0	17.2	129	193	
Hori.	760.946	QP	32.70	20.31	10.38	31.72	0.00	31.67	46.0	14.3	107	193	
Hori.	826.223	QP	28.60	20.98	10.58	31.48	0.00	28.68	46.0	17.3	192	139	
Hori.	2370.907	PK	48.81	28.45	14.20	41.66	2.13	51.93	73.9	22.0	110	307	
Hori.	2390.000	PK	48.25	28.41	14.23	41.66	2.13	51.36	73.9	22.5	110	307	
Hori.	2495.632	PK	49.86	28.27	14.33	41.70	2.13	52.89	73.9	21.0	110	307	
Hori.	2498.442	PK	49.81	28.27	14.33	41.70	2.13	52.84	73.9	21.1	110	307	
Hori.	4804.000	PK	50.96	31.60	6.82	42.92	2.13	48.59	73.9	25.3	201	208	
Hori.	7206.000	PK	57.69	37.60	8.38	43.39	2.13	62.41	73.9	**11.5**	145	215	
Hori.	9608.000	PK	48.70	38.92	9.53	43.14	2.13	56.14	73.9	17.8	150	0	
Vert.	30.584	QP	30.00	18.47	6.46	32.18	0.00	22.75	40.0	17.3	100	198	
Vert.	57.130	QP	42.00	8.89	6.65	32.16	0.00	25.38	40.0	14.6	102	230	
Vert.	195.853	QP	31.60	16.51	7.80	32.05	0.00	23.86	43.5	19.6	100	330	
Vert.	251.848	QP	35.70	11.83	8.27	31.98	0.00	23.82	46.0	22.2	100	29	
Vert.	2370.921	PK	48.43	28.45	14.20	41.66	2.13	51.55	73.9	22.4	214	341	
Vert.	2390.000	PK	47.84	28.41	14.23	41.66	2.13	50.95	73.9	23.0	214	341	
Vert.	2495.572	PK	49.21	28.27	14.33	41.70	2.13	52.24	73.9	21.7	214	341	
Vert.	2498.438	PK	49.26	28.27	14.33	41.70	2.13	52.29	73.9	21.6	214	341	
Vert.	4804.000	PK	49.54	31.60	6.82	42.92	2.13	47.17	73.9	26.7	100	32	
Vert.	7206.000	PK	56.15	37.60	8.38	43.39	2.13	60.87	73.9	13.0	105	358	
Vert.	9608.000	PK	48.53	38.92	9.53	43.14	2.13	55.97	73.9	17.9	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	2370.907	PK	48.81	28.45	14.20	41.66	-24.74	2.13	27.19	53.9	26.7	-
Hori.	2390.000	PK	48.25	28.41	14.23	41.66	-24.74	2.13	26.62	53.9	27.3	
Hori.	2495.632	PK	49.86	28.27	14.33	41.70	-24.74	2.13	28.15	53.9	25.8	
Hori.	2498.442	PK	49.81	28.27	14.33	41.70	-24.74	2.13	28.10	53.9	25.8	
Hori.	4804.000	PK	50.96	31.60	6.82	42.92	-24.74	2.13	23.85	53.9	30.1	
Hori.	7206.000	PK	57.69	37.60	8.38	43.39	-24.74	2.13	37.67	53.9	16.2	
Hori.	9608.000	PK	48.70	38.92	9.53	43.14	-24.74	2.13	31.40	53.9	22.5	
Vert.	2370.921	PK	48.43	28.45	14.20	41.66	-24.74	2.13	26.81	53.9	27.1	
Vert.	2390.000	PK	47.84	28.41	14.23	41.66	-24.74	2.13	26.21	53.9	27.7	
Vert.	2495.572	PK	49.21	28.27	14.33	41.70	-24.74	2.13	27.50	53.9	26.4	
Vert.	2498.438	PK	49.26	28.27	14.33	41.70	-24.74	2.13	27.55	53.9	26.4	
Vert.	4804.000	PK	49.54	31.60	6.82	42.92	-24.74	2.13	22.43	53.9	31.5	
Vert.	7206.000	PK	56.15	37.60	8.38	43.39	-24.74	2.13	36.13	53.9	17.8	
Vert.	9608.000	PK	48.53	38.92	9.53	43.14	-24.74	2.13	31.23	53.9	22.7	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

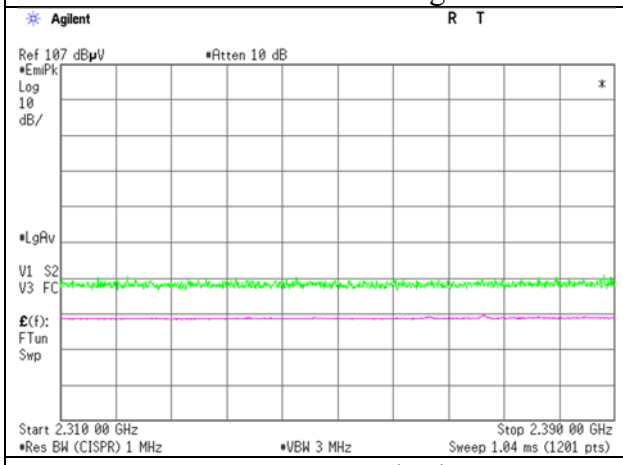
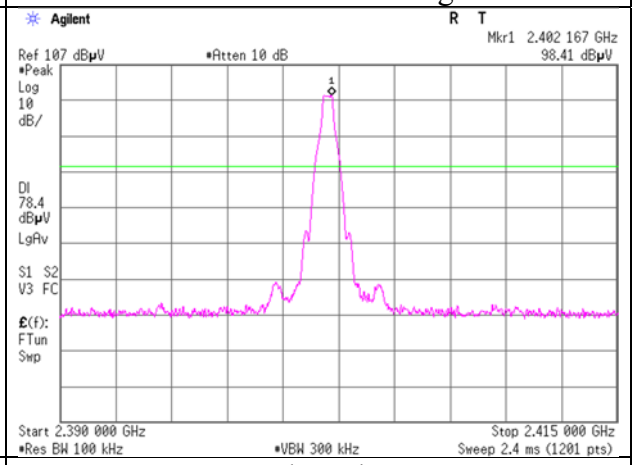
20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

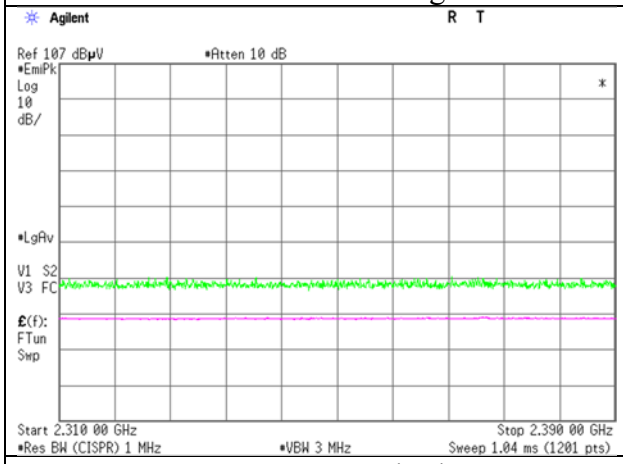
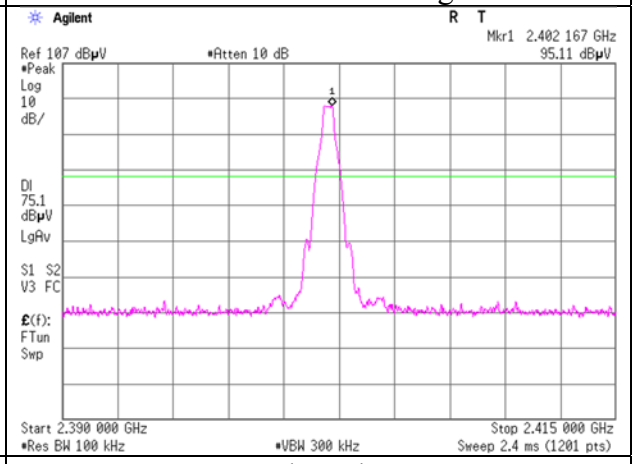
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	98.32	28.38	14.24	41.67	2.13	101.40	-	-	Carrier
Hori.	2399.675	PK	45.55	28.38	14.23	41.67	2.13	48.62	81.40	32.7	
Hori.	2400.000	PK	43.85	28.38	14.23	41.67	2.13	46.92	81.40	34.4	
Vert.	2402.000	PK	94.95	28.38	14.24	41.67	2.13	98.03	-	-	Carrier
Vert.	2399.644	PK	43.50	28.38	14.23	41.67	2.13	46.57	78.03	31.4	
Vert.	2400.000	PK	40.90	28.38	14.23	41.67	2.13	43.97	78.03	34.0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 19, 2020
Temperature / Humidity	23 deg.C / 60 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, DH5 2402 MHz
EUT	Lo type(9.8 inch Display)

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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	231.095	QP	38.00	11.36	8.15	32.01	0.00	25.50	46.0	20.5	212	139	-
Hori.	640.006	QP	31.80	19.27	9.94	31.95	0.00	29.06	46.0	16.9	172	56	
Hori.	652.849	QP	31.60	19.23	9.98	31.94	0.00	28.87	46.0	17.1	146	205	
Hori.	761.854	QP	33.18	20.32	10.38	31.71	0.00	32.17	46.0	13.8	110	197	
Hori.	821.191	QP	29.40	20.92	10.57	31.51	0.00	29.38	46.0	16.6	107	155	
Hori.	2342.446	PK	50.28	28.50	14.18	41.65	2.13	53.44	73.9	20.4	115	305	
Hori.	2344.581	PK	50.41	28.50	14.18	41.65	2.13	53.57	73.9	20.3	115	305	
Hori.	4882.000	PK	48.47	31.63	6.87	42.93	2.13	46.17	73.9	27.7	198	209	
Hori.	7323.000	PK	55.78	37.71	8.45	43.49	2.13	60.58	73.9	13.3	138	120	
Hori.	9764.000	PK	48.12	39.19	9.64	42.96	2.13	56.12	73.9	17.7	150	0	
Vert.	30.650	QP	27.63	18.45	6.47	32.18	0.00	20.37	40.0	19.6	130	43	
Vert.	57.016	QP	40.76	8.92	6.64	32.16	0.00	24.16	40.0	15.8	129	224	
Vert.	195.850	QP	30.60	16.51	7.80	32.05	0.00	22.86	43.5	20.6	141	329	
Vert.	213.471	QP	33.32	11.25	8.06	32.03	0.00	20.60	43.5	22.9	100	75	
Vert.	640.002	QP	32.86	19.27	9.94	31.95	0.00	30.12	46.0	15.8	122	1	
Vert.	2342.419	PK	49.60	28.50	14.18	41.65	2.13	52.76	73.9	21.1	271	342	
Vert.	2344.590	PK	49.29	28.50	14.18	41.65	2.13	52.45	73.9	21.4	271	342	
Vert.	4882.000	PK	48.30	31.63	6.87	42.93	2.13	46.00	73.9	27.9	100	23	
Vert.	7323.000	PK	54.61	37.71	8.45	43.49	2.13	59.41	73.9	14.4	114	359	
Vert.	9764.000	PK	48.46	39.19	9.64	42.96	2.13	56.46	73.9	17.4	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	2342.446	PK	50.28	28.50	14.18	41.65	-24.74	2.13	28.70	53.9	25.2	-
Hori.	2344.581	PK	50.41	28.50	14.18	41.65	-24.74	2.13	28.83	53.9	25.1	
Hori.	4882.000	PK	48.47	31.63	6.87	42.93	-24.74	2.13	21.43	53.9	32.5	
Hori.	7323.000	PK	55.78	37.71	8.45	43.49	-24.74	2.13	35.84	53.9	18.1	
Hori.	9764.000	PK	48.12	39.19	9.64	42.96	-24.74	2.13	31.38	53.9	22.5	
Vert.	2342.419	PK	49.60	28.50	14.18	41.65	-24.74	2.13	28.02	53.9	25.9	
Vert.	2344.590	PK	49.29	28.50	14.18	41.65	-24.74	2.13	27.71	53.9	26.2	
Vert.	4882.000	PK	48.30	31.63	6.87	42.93	-24.74	2.13	21.26	53.9	32.6	
Vert.	7323.000	PK	54.61	37.71	8.45	43.49	-24.74	2.13	34.67	53.9	19.2	
Vert.	9764.000	PK	48.46	39.19	9.64	42.96	-24.74	2.13	31.72	53.9	22.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	230.803	QP	40.20	11.36	8.15	32.01	0.00	27.70	46.0	18.3	137	148	-
Hori.	233.724	QP	39.30	11.42	8.17	32.00	0.00	26.89	46.0	19.1	185	114	
Hori.	640.004	QP	38.50	19.27	9.94	31.95	0.00	35.76	46.0	10.2	151	191	
Hori.	652.838	QP	31.70	19.23	9.98	31.94	0.00	28.97	46.0	17.0	141	187	
Hori.	760.470	QP	32.60	20.30	10.38	31.72	0.00	31.56	46.0	14.4	100	199	
Hori.	806.225	QP	30.30	20.79	10.51	31.62	0.00	29.98	46.0	16.0	100	138	
Hori.	2378.929	PK	50.93	28.43	14.22	41.66	2.13	54.05	73.9	19.8	231	103	
Hori.	2381.004	PK	51.24	28.43	14.22	41.66	2.13	54.36	73.9	19.5	231	103	
Hori.	2483.500	PK	51.34	28.28	14.32	41.69	2.13	54.38	73.9	19.5	231	103	
Hori.	2487.560	PK	49.78	28.27	14.32	41.70	2.13	52.80	73.9	21.1	231	103	
Hori.	2496.341	PK	50.12	28.27	14.33	41.70	2.13	53.15	73.9	20.7	231	103	
Hori.	4960.000	PK	48.38	31.79	6.94	42.94	2.13	46.30	73.9	27.6	100	154	
Hori.	7440.000	PK	51.63	37.88	8.52	43.60	2.13	56.56	73.9	17.3	161	120	
Hori.	9920.000	PK	48.13	39.05	9.73	42.78	2.13	56.26	73.9	17.6	150	0	
Vert.	30.752	QP	30.00	18.41	6.47	32.18	0.00	22.70	40.0	17.3	100	200	
Vert.	56.957	QP	42.00	8.94	6.65	32.16	0.00	25.43	40.0	14.5	100	229	
Vert.	195.857	QP	30.00	16.51	7.80	32.05	0.00	22.26	43.5	21.2	100	327	
Vert.	760.764	QP	29.30	20.31	10.38	31.72	0.00	28.27	46.0	17.7	100	75	
Vert.	2378.921	PK	49.54	28.43	14.22	41.66	2.13	52.66	73.9	21.2	276	337	
Vert.	2381.014	PK	49.73	28.43	14.22	41.66	2.13	52.85	73.9	21.0	276	337	
Vert.	2483.500	PK	49.02	28.28	14.32	41.69	2.13	52.06	73.9	21.8	276	337	
Vert.	2487.567	PK	48.85	28.27	14.32	41.70	2.13	51.87	73.9	22.0	276	337	
Vert.	4960.000	PK	48.90	31.79	6.94	42.94	2.13	46.82	73.9	27.0	246	243	
Vert.	7440.000	PK	50.94	37.88	8.52	43.60	2.13	55.87	73.9	18.0	182	0	
Vert.	9920.000	PK	47.98	39.05	9.73	42.78	2.13	56.11	73.9	17.7	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	2378.929	PK	50.93	28.43	14.22	41.66	-24.74	2.13	29.31	53.9	24.6	-
Hori.	2381.004	PK	51.24	28.43	14.22	41.66	-24.74	2.13	29.62	53.9	24.3	
Hori.	2483.500	PK	51.34	28.28	14.32	41.69	-24.74	2.13	29.64	53.9	24.3	
Hori.	2487.560	PK	49.78	28.27	14.32	41.70	-24.74	2.13	28.06	53.9	25.8	
Hori.	2496.341	PK	50.12	28.27	14.33	41.70	-24.74	2.13	28.41	53.9	25.5	
Hori.	4960.000	PK	48.38	31.79	6.94	42.94	-24.74	2.13	21.56	53.9	32.3	
Hori.	7440.000	PK	51.63	37.88	8.52	43.60	-24.74	2.13	31.82	53.9	22.1	
Hori.	9920.000	PK	48.13	39.05	9.73	42.78	-24.74	2.13	31.52	53.9	22.4	
Vert.	2378.921	PK	49.54	28.43	14.22	41.66	-24.74	2.13	27.92	53.9	26.0	
Vert.	2381.014	PK	49.73	28.43	14.22	41.66	-24.74	2.13	28.11	53.9	25.8	
Vert.	2483.500	PK	49.02	28.28	14.32	41.69	-24.74	2.13	27.32	53.9	26.6	
Vert.	2487.567	PK	48.85	28.27	14.32	41.70	-24.74	2.13	27.13	53.9	26.8	
Vert.	4960.000	PK	48.90	31.79	6.94	42.94	-24.74	2.13	22.08	53.9	31.8	
Vert.	7440.000	PK	50.94	37.88	8.52	43.60	-24.74	2.13	31.13	53.9	22.8	
Vert.	9920.000	PK	47.98	39.05	9.73	42.78	-24.74	2.13	31.37	53.9	22.5	

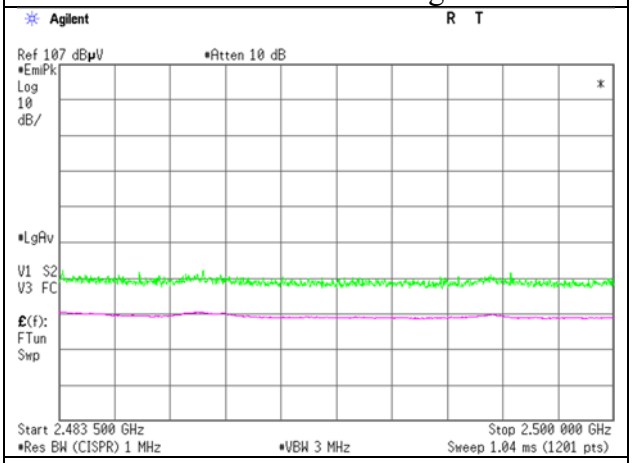
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 19, 2020
Temperature / Humidity	23 deg.C / 60 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, DH5 2480 MHz
EUT	Lo type(9.8 inch Display)

Horizontal

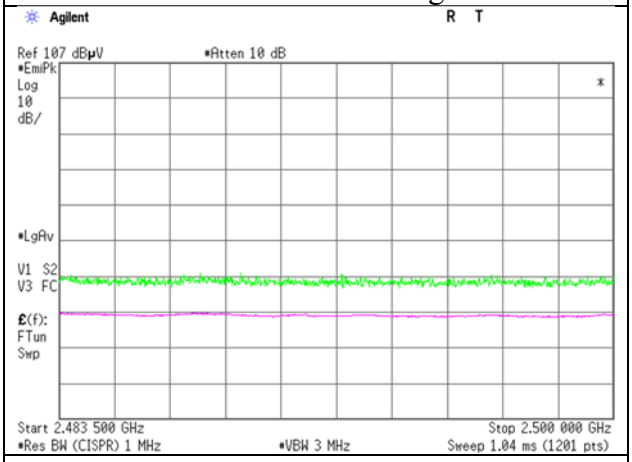
Restricted-band band-edge Plot



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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	195.833	QP	26.10	16.51	7.80	32.05	0.00	18.36	43.5	25.1	250	271	-
Hori.	231.155	QP	37.50	11.36	8.15	32.01	0.00	25.00	46.0	21.0	200	137	
Hori.	480.001	QP	33.50	17.30	9.34	31.93	0.00	28.21	46.0	17.7	100	201	
Hori.	501.985	QP	26.80	17.80	9.42	31.92	0.00	22.10	46.0	23.9	200	327	
Hori.	640.003	QP	32.30	19.27	9.94	31.95	0.00	29.56	46.0	16.4	109	357	
Hori.	652.843	QP	31.50	19.23	9.98	31.94	0.00	28.77	46.0	17.2	132	208	
Hori.	761.850	QP	32.10	20.32	10.38	31.71	0.00	31.09	46.0	14.9	107	196	
Hori.	832.879	QP	25.80	21.10	10.61	31.43	0.00	26.08	46.0	19.9	100	230	
Hori.	2390.000	PK	48.28	28.41	14.23	41.66	2.13	51.39	73.9	22.5	108	305	
Hori.	4804.000	PK	51.16	31.60	6.82	42.92	2.13	48.79	73.9	25.1	176	207	
Hori.	7206.000	PK	54.89	37.60	8.38	43.39	2.13	59.61	73.9	14.2	143	215	
Hori.	9608.000	PK	48.27	38.92	9.53	43.14	2.13	55.71	73.9	18.1	150	0	
Vert.	213.391	QP	34.00	11.25	8.05	32.03	0.00	21.27	43.5	22.2	100	127	
Vert.	640.003	QP	33.40	19.27	9.94	31.95	0.00	30.66	46.0	15.3	109	357	
Vert.	2390.000	PK	48.20	28.41	14.23	41.66	2.13	51.31	73.9	22.5	250	344	
Vert.	4804.000	PK	49.49	31.60	6.82	42.92	2.13	47.12	73.9	26.7	145	209	
Vert.	7206.000	PK	55.57	37.60	8.38	43.39	2.13	60.29	73.9	13.6	105	359	
Vert.	9608.000	PK	48.05	38.92	9.53	43.14	2.13	55.49	73.9	18.4	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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	48.28	28.41	14.23	41.66	-24.75	2.13	26.64	53.9	27.3	-
Hori.	4804.000	PK	51.16	31.60	6.82	42.92	-24.75	2.13	24.04	53.9	29.9	
Hori.	7206.000	PK	54.89	37.60	8.38	43.39	-24.75	2.13	34.86	53.9	19.0	
Hori.	9608.000	PK	48.27	38.92	9.53	43.14	-24.75	2.13	30.96	53.9	22.9	
Vert.	2390.000	PK	48.20	28.41	14.23	41.66	-24.75	2.13	26.56	53.9	27.3	
Vert.	4804.000	PK	49.49	31.60	6.82	42.92	-24.75	2.13	22.37	53.9	31.5	
Vert.	7206.000	PK	55.57	37.60	8.38	43.39	-24.75	2.13	35.54	53.9	18.4	
Vert.	9608.000	PK	48.05	38.92	9.53	43.14	-24.75	2.13	30.74	53.9	23.2	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 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.

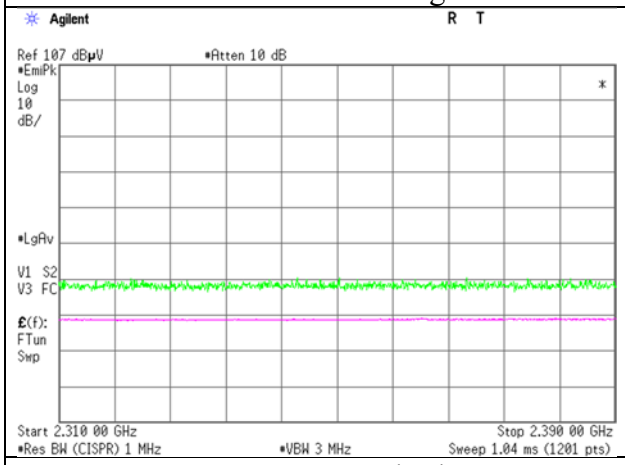
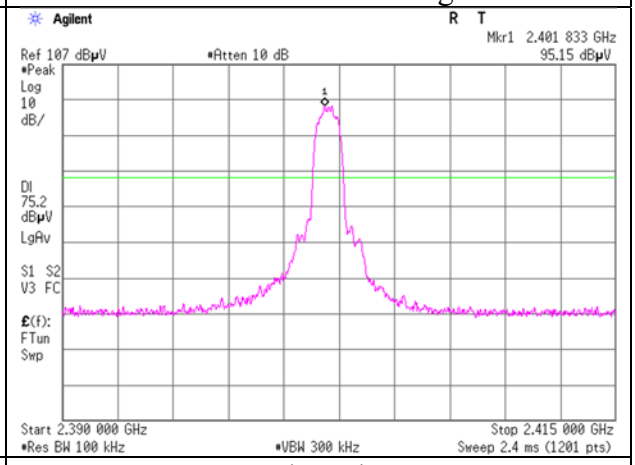
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

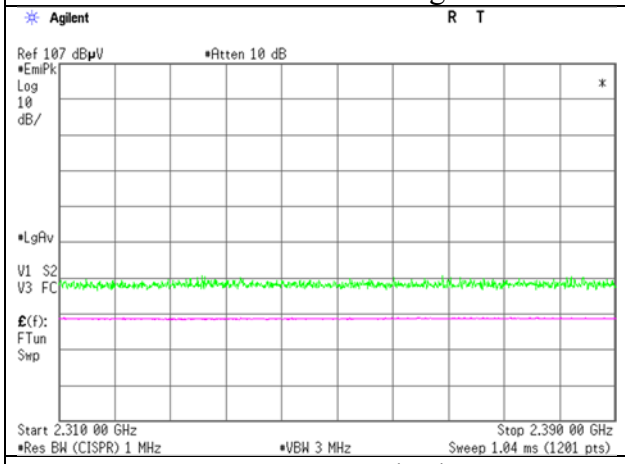
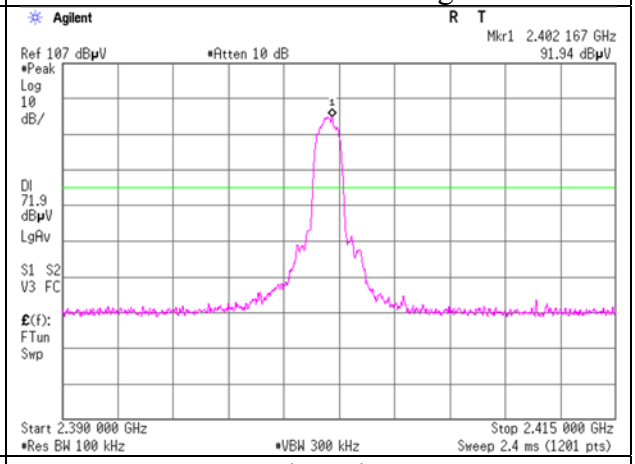
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	95.21	28.38	14.24	41.67	2.13	98.29	-	-	Carrier
Hori.	2400.000	PK	47.83	28.38	14.23	41.67	2.13	50.90	78.29	27.3	
Vert.	2402.000	PK	91.85	28.38	14.24	41.67	2.13	94.93	-	-	Carrier
Vert.	2400.000	PK	44.70	28.38	14.23	41.67	2.13	47.77	74.93	27.1	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log(3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log(1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 19, 2020
Temperature / Humidity	23 deg.C / 60 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, 3DH5 2402 MHz
EUT	Lo type(9.8 inch Display)

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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	195.864	QP	29.30	16.51	7.80	32.05	0.00	21.56	43.5	21.9	182	277	-
Hori.	230.964	QP	37.80	11.36	8.15	32.01	0.00	25.30	46.0	20.7	202	132	
Hori.	233.853	QP	37.50	11.43	8.17	32.00	0.00	25.10	46.0	20.9	179	107	
Hori.	480.012	QP	33.60	17.30	9.34	31.93	0.00	28.31	46.0	17.6	100	188	
Hori.	640.006	QP	33.00	19.27	9.94	31.95	0.00	30.26	46.0	15.7	100	311	
Hori.	652.847	QP	31.80	19.23	9.98	31.94	0.00	29.07	46.0	16.9	139	204	
Hori.	760.778	QP	32.60	20.31	10.38	31.72	0.00	31.57	46.0	14.4	100	198	
Hori.	819.959	QP	30.00	20.90	10.56	31.52	0.00	29.94	46.0	16.0	100	162	
Hori.	4882.000	PK	48.55	31.63	6.87	42.93	2.13	46.25	73.9	27.6	234	207	
Hori.	7323.000	PK	54.43	37.71	8.45	43.49	2.13	59.23	73.9	14.6	137	120	
Hori.	9764.000	PK	48.33	39.19	9.64	42.96	2.13	56.33	73.9	17.5	150	0	
Vert.	213.170	QP	33.60	11.25	8.05	32.03	0.00	20.87	43.5	22.6	100	110	
Vert.	640.003	QP	33.70	19.27	9.94	31.95	0.00	30.96	46.0	15.0	100	359	
Vert.	4882.000	PK	48.47	31.63	6.87	42.93	2.13	46.17	73.9	27.7	224	247	
Vert.	7323.000	PK	53.36	37.71	8.45	43.49	2.13	58.16	73.9	15.7	123	0	
Vert.	9764.000	PK	47.98	39.19	9.64	42.96	2.13	55.98	73.9	17.9	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	4882.000	PK	48.55	31.63	6.87	42.93	-24.75	2.13	21.50	53.9	32.4	-
Hori.	7323.000	PK	54.43	37.71	8.45	43.49	-24.75	2.13	34.48	53.9	19.4	
Hori.	9764.000	PK	48.33	39.19	9.64	42.96	-24.75	2.13	31.58	53.9	22.3	
Vert.	4882.000	PK	48.47	31.63	6.87	42.93	-24.75	2.13	21.42	53.9	32.5	
Vert.	7323.000	PK	53.36	37.71	8.45	43.49	-24.75	2.13	33.41	53.9	20.5	
Vert.	9764.000	PK	47.98	39.19	9.64	42.96	-24.75	2.13	31.23	53.9	22.7	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	230.865	QP	37.70	11.36	8.15	32.01	0.00	25.20	46.0	20.8	200	143	-
Hori.	233.778	QP	37.10	11.43	8.17	32.00	0.00	24.70	46.0	21.3	200	122	
Hori.	640.010	QP	32.70	19.27	9.94	31.95	0.00	29.96	46.0	16.0	100	316	
Hori.	761.186	QP	31.40	20.31	10.38	31.72	0.00	30.37	46.0	15.6	100	190	
Hori.	2483.500	PK	52.79	28.28	14.32	41.69	2.13	55.83	73.9	18.0	232	104	
Hori.	4960.000	PK	48.30	31.79	6.94	42.94	2.13	46.22	73.9	27.6	194	202	
Hori.	7440.000	PK	51.23	37.88	8.52	43.60	2.13	56.16	73.9	17.7	163	120	
Hori.	9920.000	PK	47.85	39.05	9.73	42.78	2.13	55.98	73.9	17.9	150	0	
Vert.	30.697	QP	28.00	18.43	6.47	32.18	0.00	20.72	40.0	19.2	100	359	
Vert.	57.242	QP	41.80	8.86	6.64	32.16	0.00	25.14	40.0	14.8	100	224	
Vert.	195.839	QP	29.40	16.51	7.80	32.05	0.00	21.66	43.5	21.8	100	339	
Vert.	213.268	QP	34.00	11.25	8.05	32.03	0.00	21.27	43.5	22.2	100	92	
Vert.	270.057	QP	28.60	12.88	8.37	31.98	0.00	17.87	46.0	28.1	100	81	
Vert.	640.001	QP	34.20	19.27	9.94	31.95	0.00	31.46	46.0	**14.5**	108	359	
Vert.	652.841	QP	30.30	19.23	9.98	31.94	0.00	27.57	46.0	18.4	223	174	
Vert.	2483.500	PK	50.09	28.28	14.32	41.69	2.13	53.13	73.9	20.7	273	337	
Vert.	4960.000	PK	48.29	31.79	6.94	42.94	2.13	46.21	73.9	27.6	234	233	
Vert.	7440.000	PK	50.12	37.88	8.52	43.60	2.13	55.05	73.9	18.8	172	0	
Vert.	9920.000	PK	47.93	39.05	9.73	42.78	2.13	56.06	73.9	17.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	52.79	28.28	14.32	41.69	-24.75	2.13	31.08	53.9	22.8	-
Hori.	4960.000	PK	48.30	31.79	6.94	42.94	-24.75	2.13	21.47	53.9	32.4	
Hori.	7440.000	PK	51.23	37.88	8.52	43.60	-24.75	2.13	31.41	53.9	22.5	
Hori.	9920.000	PK	47.85	39.05	9.73	42.78	-24.75	2.13	31.23	53.9	22.7	
Vert.	2483.500	PK	50.09	28.28	14.32	41.69	-24.75	2.13	28.38	53.9	25.5	
Vert.	4960.000	PK	48.29	31.79	6.94	42.94	-24.75	2.13	21.46	53.9	32.4	
Vert.	7440.000	PK	50.12	37.88	8.52	43.60	-24.75	2.13	30.30	53.9	23.6	
Vert.	9920.000	PK	47.93	39.05	9.73	42.78	-24.75	2.13	31.31	53.9	22.6	

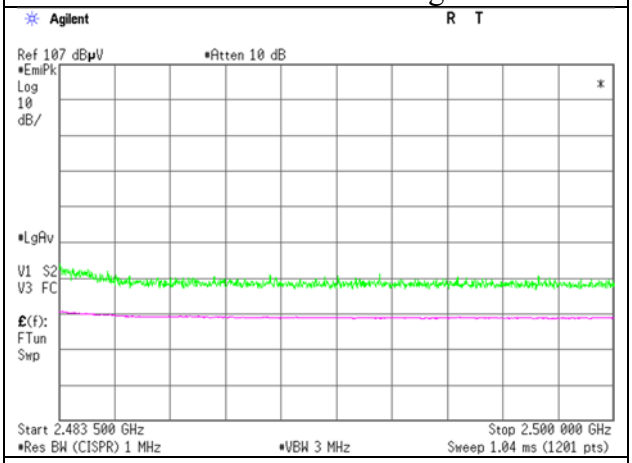
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 19, 2020
Temperature / Humidity	23 deg.C / 60 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, 3DH5 2480 MHz
EUT	Lo type(9.8 inch Display)

Horizontal

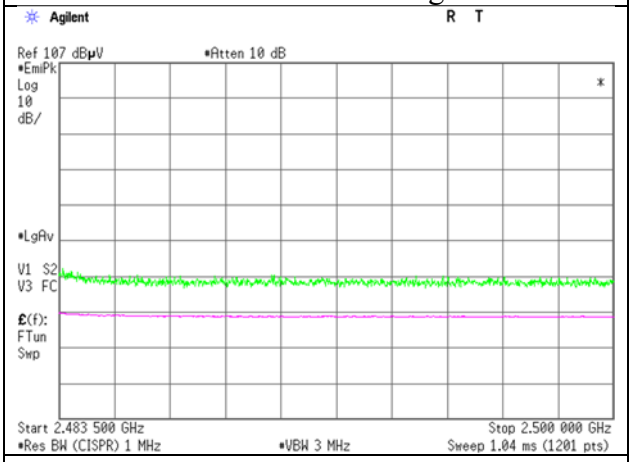
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

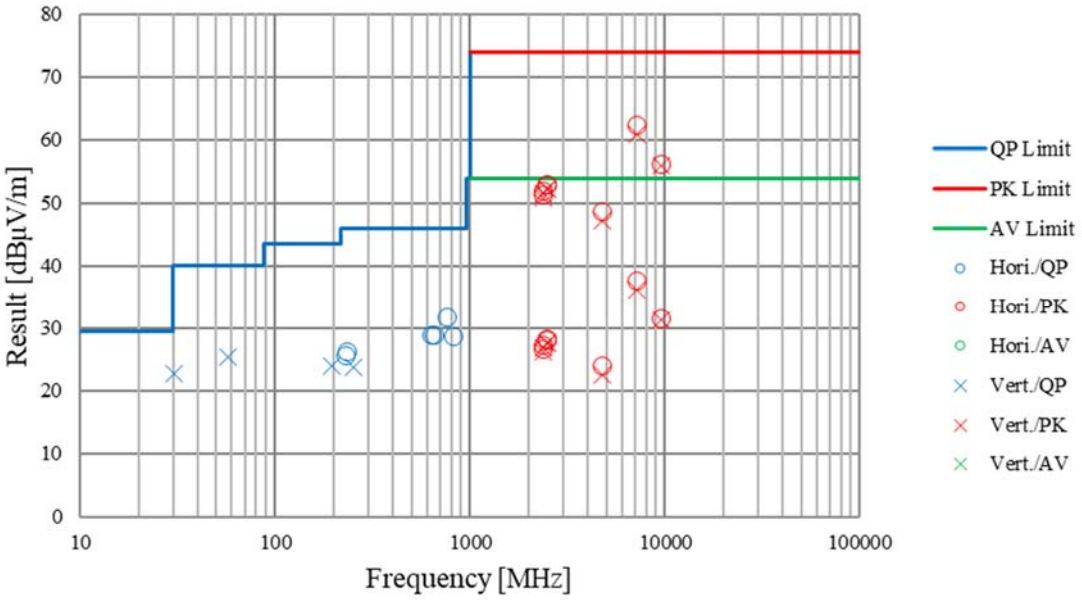


Trace Green : Peak Plot
Trace Purple : Average Plot

* 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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 1, 2020	July 19, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 58 %RH	23 deg.C / 60 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Yusuke Tanikawara	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz			
EUT	Lo type(9.8 inch Display)			



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

Radiated Spurious Emission

Report No.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 3, 2020	July 20, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 56 %RH	22 deg.C / 62 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Shiro Kobayashi	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz - 1 GHz)	(1 GHz - 13 GHz)	(13 GHz - 18 GHz)	(18 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 MIMO 5745 MHz			
EUT	Lo type(9.8 inch Display)			

(* 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.	233.966	QP	40.30	11.43	8.17	32.00	0.00	27.90	46.0	18.1	190	222	-
Hori.	480.005	QP	31.60	17.30	9.34	31.93	0.00	26.31	46.0	19.6	100	197	
Hori.	640.006	QP	31.70	19.27	9.94	31.95	0.00	28.96	46.0	17.0	143	172	
Hori.	652.844	QP	32.80	19.23	9.98	31.94	0.00	30.07	46.0	15.9	140	191	
Hori.	725.286	QP	30.70	20.05	10.25	31.81	0.00	29.19	46.0	16.8	100	172	
Hori.	772.549	QP	31.10	20.42	10.41	31.70	0.00	30.23	46.0	15.7	100	190	
Hori.	832.179	QP	28.10	21.08	10.61	31.44	0.00	28.35	46.0	17.6	100	166	
Hori.	2370.865	PK	48.13	28.45	14.20	41.66	2.13	51.25	73.9	22.6	114	306	
Hori.	2390.000	PK	48.38	28.41	14.23	41.66	2.13	51.49	73.9	22.4	114	306	
Hori.	2495.698	PK	50.69	28.27	14.33	41.70	2.13	53.72	73.9	20.1	114	306	
Hori.	2498.483	PK	50.29	28.27	14.33	41.70	2.13	53.32	73.9	20.5	114	306	
Hori.	4804.000	PK	52.62	31.60	6.82	42.92	2.13	50.25	73.9	23.6	100	111	
Hori.	7206.000	PK	58.59	37.60	8.38	43.39	2.13	63.31	73.9	**10.5**	139	121	
Hori.	9608.000	PK	48.70	38.92	9.53	43.14	2.13	56.14	73.9	17.7	150	0	
Vert.	30.630	QP	28.30	18.45	6.47	32.18	0.00	21.04	40.0	18.9	100	51	
Vert.	68.154	QP	40.60	6.81	6.65	32.15	0.00	21.91	40.0	18.0	100	207	
Vert.	195.850	QP	32.30	16.51	7.80	32.05	0.00	24.56	43.5	18.9	100	1	
Vert.	2370.856	PK	47.27	28.45	14.20	41.66	2.13	50.39	73.9	23.5	185	115	
Vert.	2390.000	PK	48.16	28.41	14.23	41.66	2.13	51.27	73.9	22.6	185	115	
Vert.	2495.444	PK	48.42	28.27	14.33	41.70	2.13	51.45	73.9	22.4	185	115	
Vert.	2498.495	PK	48.29	28.27	14.33	41.70	2.13	51.32	73.9	22.5	185	115	
Vert.	4804.000	PK	51.31	31.60	6.82	42.92	2.13	48.94	73.9	24.9	210	289	
Vert.	7206.000	PK	57.87	37.60	8.38	43.39	2.13	62.59	73.9	11.3	105	0	
Vert.	9608.000	PK	48.62	38.92	9.53	43.14	2.13	56.06	73.9	17.8	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.	2370.865	PK	48.13	28.45	14.20	41.66	-24.74	2.13	26.51	73.9	47.3	-
Hori.	2390.000	PK	48.38	28.41	14.23	41.66	-24.74	2.13	26.75	73.9	47.1	
Hori.	2495.698	PK	50.69	28.27	14.33	41.70	-24.74	2.13	28.98	73.9	44.9	
Hori.	2498.483	PK	50.29	28.27	14.33	41.70	-24.74	2.13	28.58	73.9	45.3	
Hori.	4804.000	PK	52.62	31.60	6.82	42.92	-24.74	2.13	25.51	73.9	48.3	
Hori.	7206.000	PK	58.59	37.60	8.38	43.39	-24.74	2.13	38.57	73.9	35.3	
Hori.	9608.000	PK	48.70	38.92	9.53	43.14	-24.74	2.13	31.40	73.9	42.5	
Vert.	2370.856	PK	47.27	28.45	14.20	41.66	-24.74	2.13	25.65	73.9	48.2	
Vert.	2390.000	PK	48.16	28.41	14.23	41.66	-24.74	2.13	26.53	73.9	47.3	
Vert.	2495.444	PK	48.42	28.27	14.33	41.70	-24.74	2.13	26.71	73.9	47.1	
Vert.	2498.495	PK	48.29	28.27	14.33	41.70	-24.74	2.13	26.58	73.9	47.3	
Vert.	4804.000	PK	51.31	31.60	6.82	42.92	-24.74	2.13	24.20	73.9	49.7	
Vert.	7206.000	PK	57.87	37.60	8.38	43.39	-24.74	2.13	37.85	73.9	36.0	
Vert.	9608.000	PK	48.62	38.92	9.53	43.14	-24.74	2.13	31.32	73.9	42.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Dwell(time)factor + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Dwell (time) factor refer to "Dwell time factor Calculation chart" sheet.

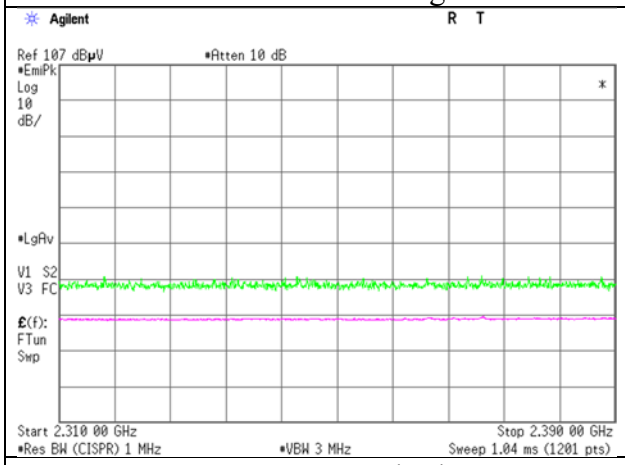
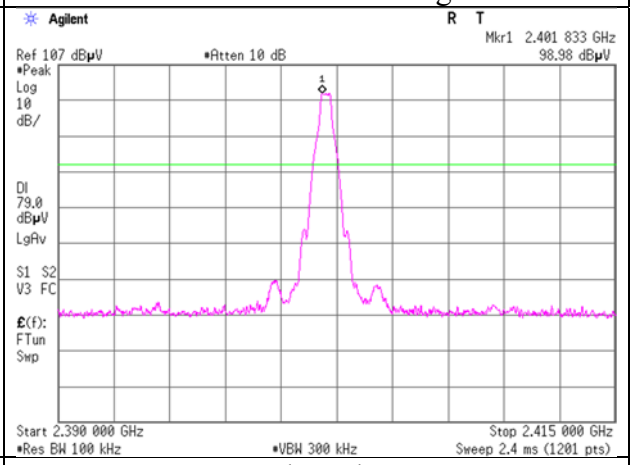
20 dBc Data Sheet (RBW 100 kHz, VBW 300 kHz)

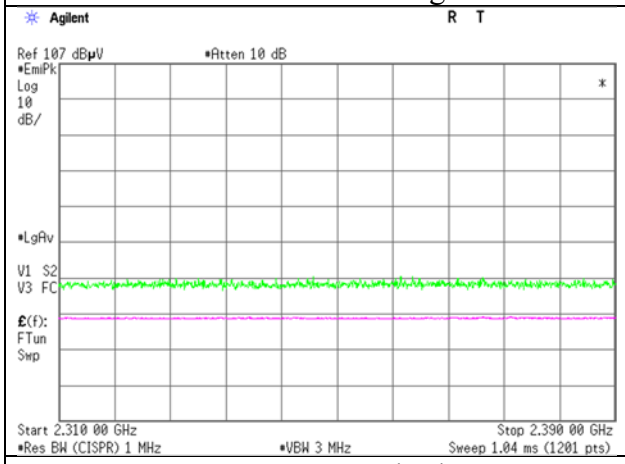
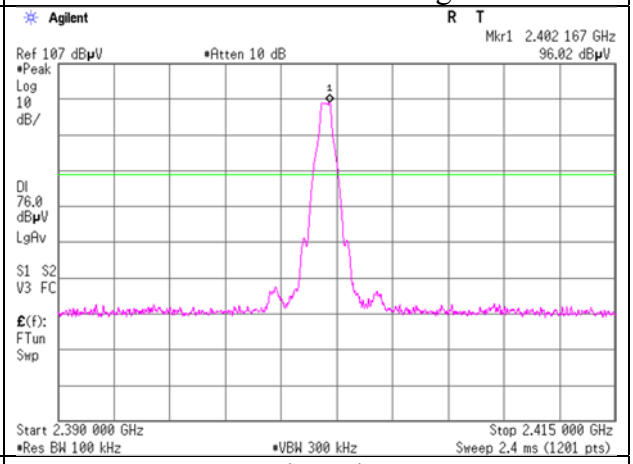
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	98.81	28.38	14.24	41.67	2.13	101.89	-	-	Carrier
Hori.	2399.750	PK	46.85	28.38	14.23	41.67	2.13	49.92	81.89	31.9	
Hori.	2400.000	PK	43.91	28.38	14.23	41.67	2.13	46.98	81.89	34.9	
Vert.	2402.000	PK	95.93	28.38	14.24	41.67	2.13	99.01	-	-	Carrier
Vert.	2399.667	PK	44.86	28.38	14.23	41.67	2.13	47.93	79.01	31.0	
Vert.	2400.000	PK	41.46	28.38	14.23	41.67	2.13	44.53	79.01	34.4	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

(* 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.	2483.500	PK	50.85	28.28	14.32	41.69	2.13	53.89	73.9	**20.0**	110	305	-
Hori.	2487.580	PK	50.13	28.27	14.32	41.70	2.13	53.15	73.9	20.7	110	305	
Hori.	2496.357	PK	50.12	28.27	14.33	41.70	2.13	53.15	73.9	20.7	110	305	
Vert.	2483.500	PK	48.12	28.28	14.32	41.69	2.13	51.16	73.9	22.7	250	337	
Vert.	2487.542	PK	48.20	28.27	14.32	41.70	2.13	51.22	73.9	22.6	250	337	
Vert.	2496.376	PK	48.08	28.27	14.33	41.70	2.13	51.11	73.9	22.7	250	337	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	50.85	28.28	14.32	41.69	-24.74	2.13	29.15	53.9	24.8	-
Hori.	2487.580	PK	50.13	28.27	14.32	41.70	-24.74	2.13	28.41	53.9	25.5	
Hori.	2496.357	PK	50.12	28.27	14.33	41.70	-24.74	2.13	28.41	53.9	25.5	
Vert.	2483.500	PK	48.12	28.28	14.32	41.69	-24.74	2.13	26.42	53.9	27.5	
Vert.	2487.542	PK	48.20	28.27	14.32	41.70	-24.74	2.13	26.48	53.9	27.4	
Vert.	2496.376	PK	48.08	28.27	14.33	41.70	-24.74	2.13	26.37	53.9	27.5	

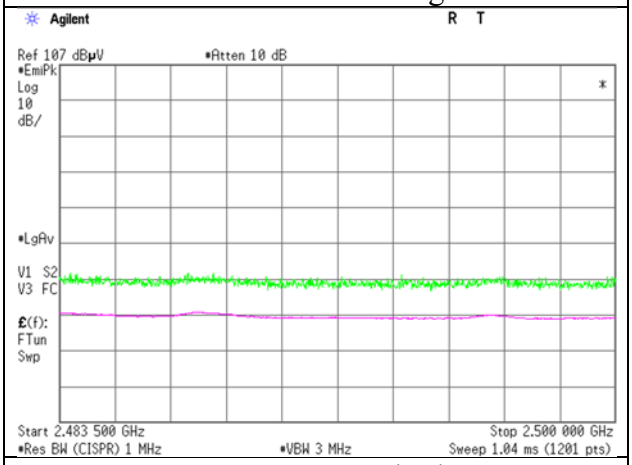
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

Horizontal

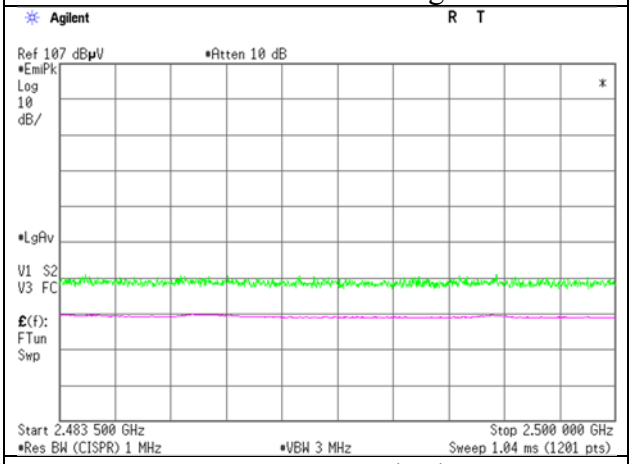
Restricted-band band-edge Plot



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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

(* 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.	2390.000	PK	48.42	28.41	14.23	41.66	2.13	51.53	73.9	**22.3**	110	309	-
Vert.	2390.000	PK	47.66	28.41	14.23	41.66	2.13	50.77	73.9	23.1	104	209	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	48.42	28.41	14.23	41.66	-24.75	2.13	26.78	53.9	27.1	-
Vert.	2390.000	PK	47.66	28.41	14.23	41.66	-24.75	2.13	26.02	53.9	27.9	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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.

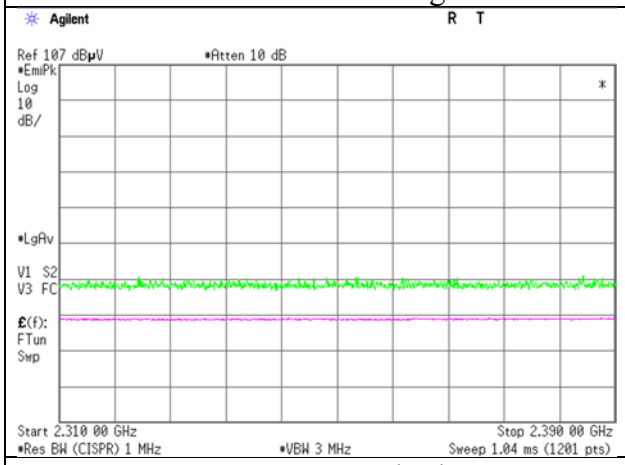
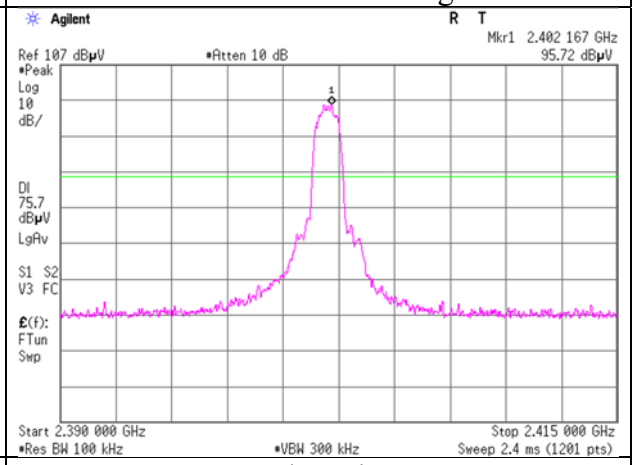
20 dBc Data Sheet **(RBW 100 kHz, VBW 300 kHz)**

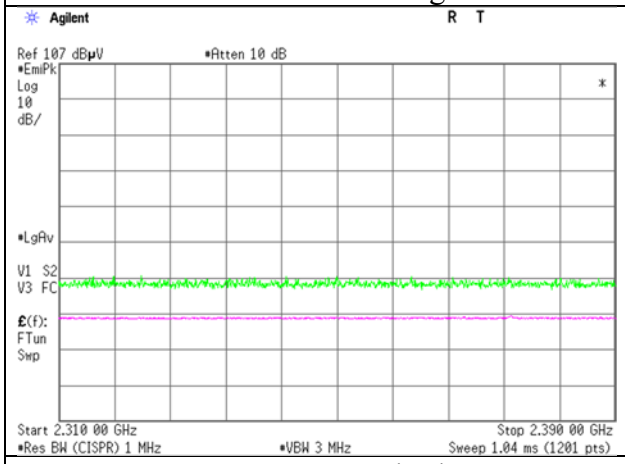
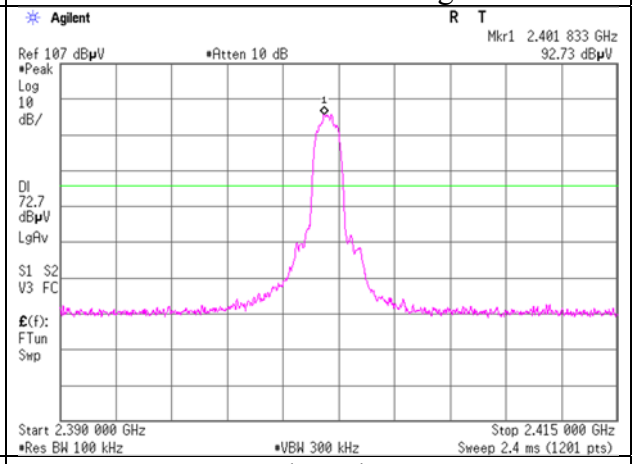
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	95.73	28.38	14.24	41.67	2.13	98.81	-	-	Carrier
Hori.	2400.000	PK	48.32	28.38	14.23	41.67	2.13	51.39	78.81	27.4	
Vert.	2402.000	PK	92.72	28.38	14.24	41.67	2.13	95.80	-	-	Carrier
Vert.	2400.000	PK	45.26	28.38	14.23	41.67	2.13	48.33	75.80	27.4	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, 3DH5 2402 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

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.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
	(1 GHz - 2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

(* 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.	2483.500	PK	52.21	28.28	14.32	41.69	2.13	55.25	73.9	**18.6**	123	303	-
Vert.	2483.500	PK	49.92	28.28	14.32	41.69	2.13	52.96	73.9	20.9	249	337	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 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	52.21	28.28	14.32	41.69	-24.75	2.13	30.50	53.9	23.4	-
Vert.	2483.500	PK	49.92	28.28	14.32	41.69	-24.75	2.13	28.21	53.9	25.7	

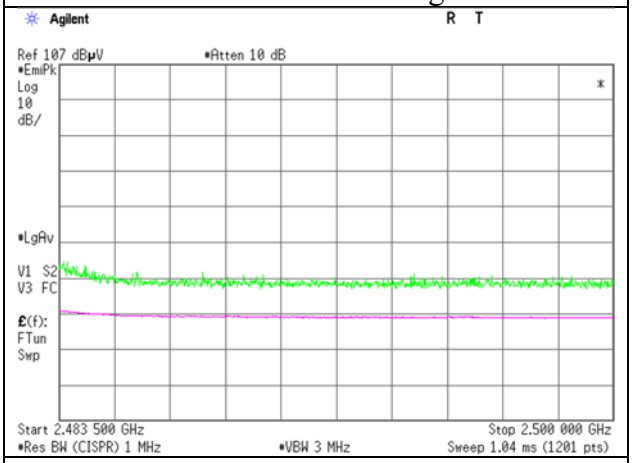
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + DCCF + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.83 m / 3.0 m) = 2.13 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB
Duty cycle correction factor (DCCF) refer to "Duty cycle correction factor" sheet.

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	13385909S-A-R1
Test place	Shonan EMC Lab.
Semi Anechoic Chamber	3
Date	July 20, 2020
Temperature / Humidity	22 deg.C / 62 %RH
Engineer	Toshinori Yamada
Mode	Tx, Hopping Off, 3DH5 2480 MHz with 11ac-20 MIMO 5745 MHz
EUT	Lo type(9.8 inch Display)

Horizontal

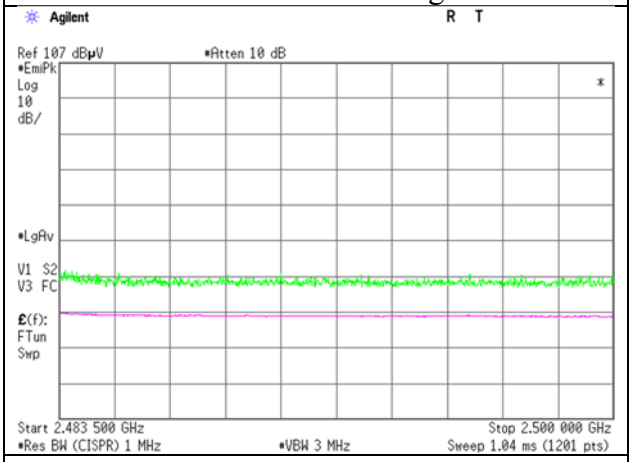
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

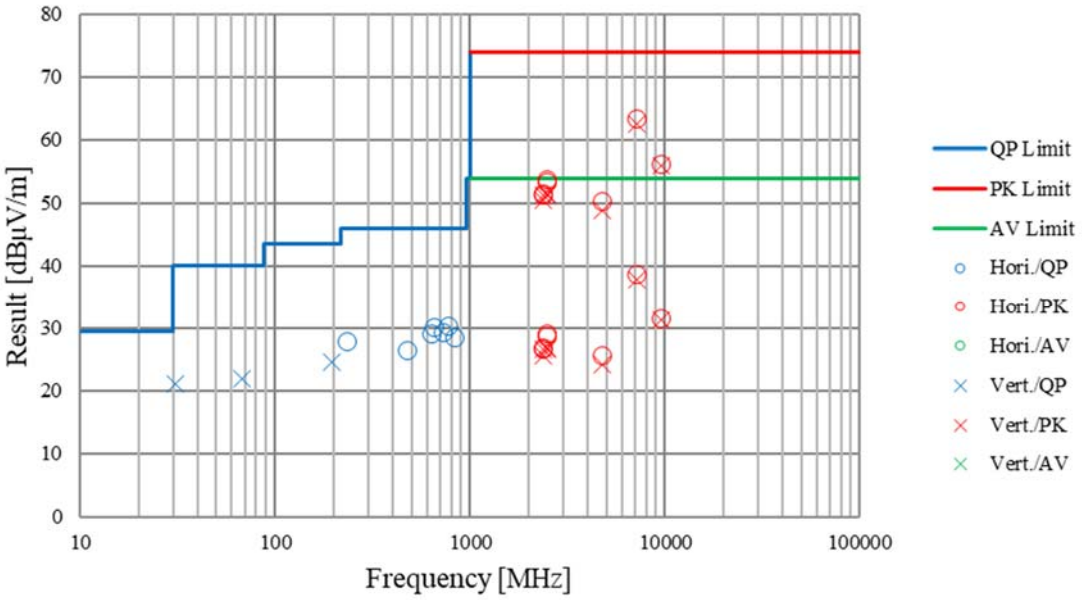


Trace Green : Peak Plot
Trace Purple : Average Plot

* 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.	13385909S-A-R1			
Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	3	3	3	3
Date	August 3, 2020	July 20, 2020	July 23, 2020	July 23, 2020
Temperature / Humidity	23 deg.C / 56 %RH	22 deg.C / 62 %RH	24 deg.C / 61 %RH	22 deg.C / 63 %RH
Engineer	Shiro Kobayashi	Toshinori Yamada	Hiromasa Sato	Toshinori Yamada
	(30 MHz – 1 GHz)	(1 GHz – 13 GHz)	(13 GHz – 18 GHz)	(18 GHz – 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz with 11ac-20 MIMO 5745 MHz			
EUT	Lo type(9.8 inch Display)			



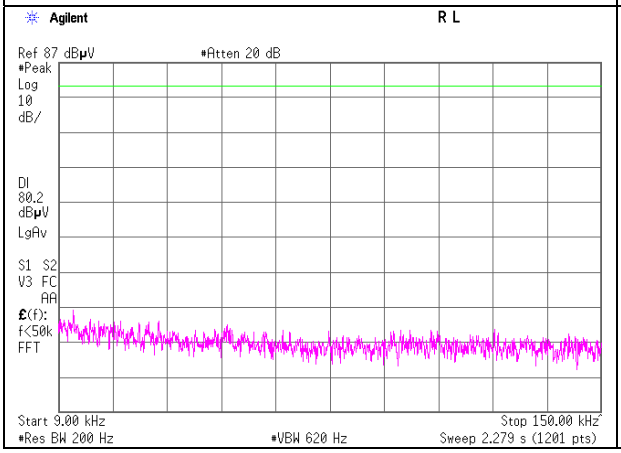
*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

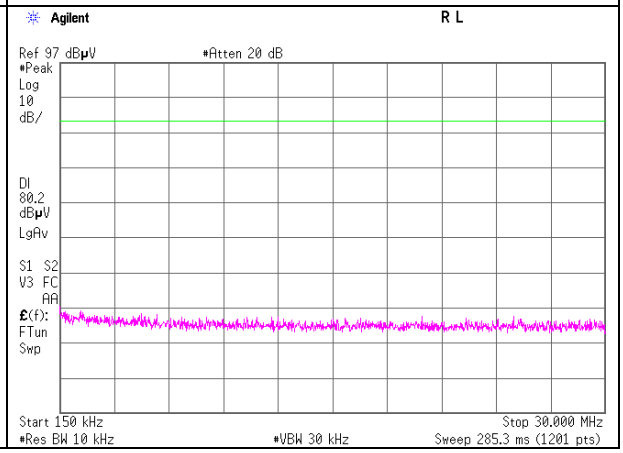
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, DH5

2402 MHz

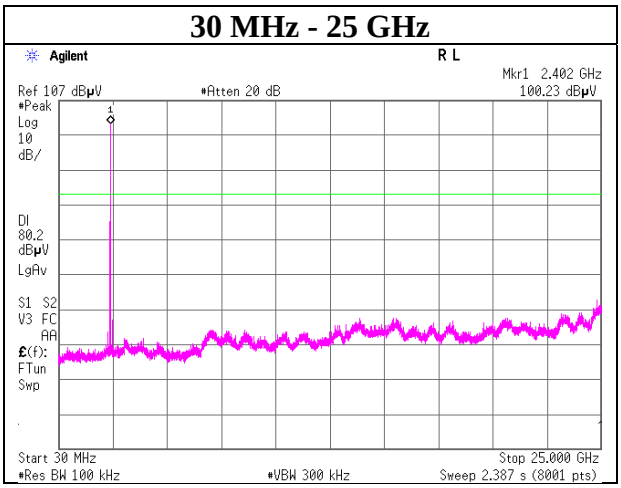
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

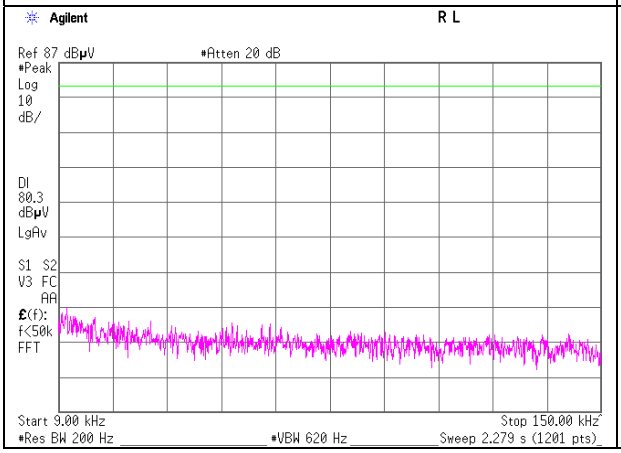


Conducted Spurious Emission

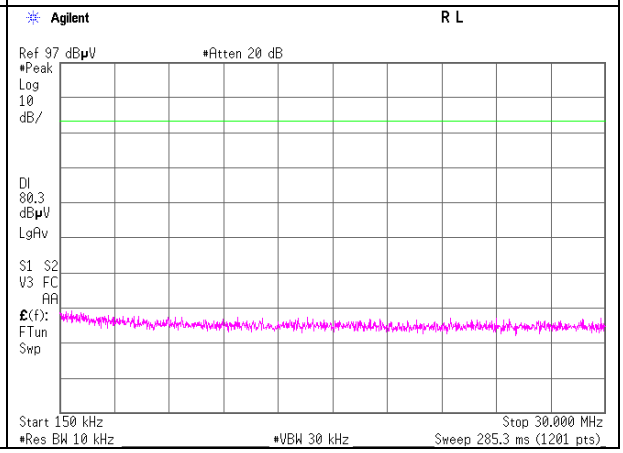
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, DH5

2441 MHz

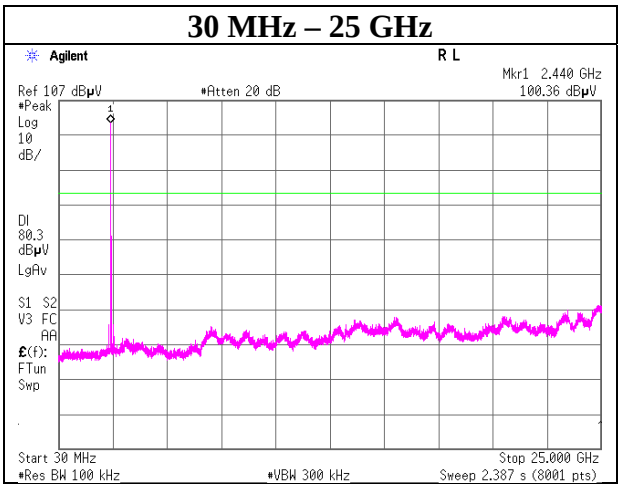
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

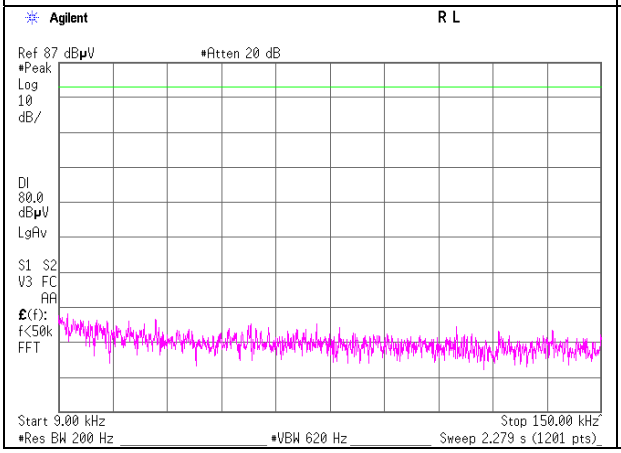


Conducted Spurious Emission

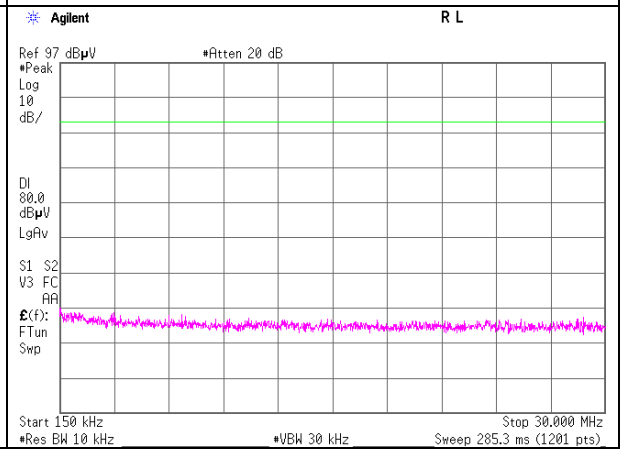
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, DH5

2480 MHz

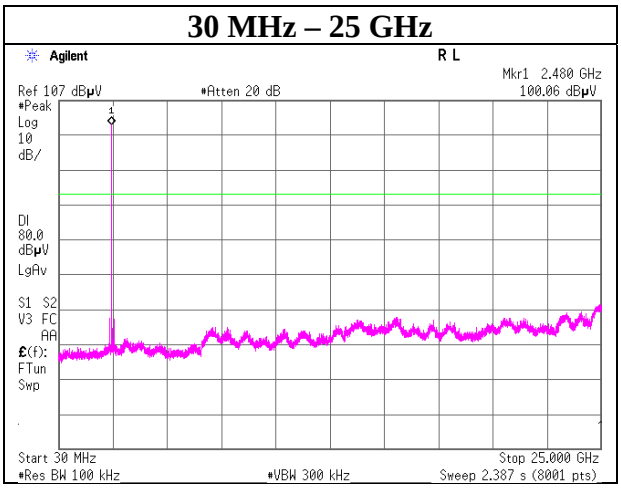
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

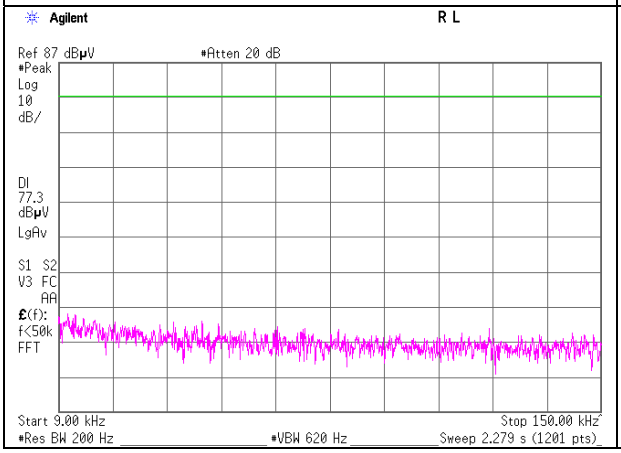


Conducted Spurious Emission

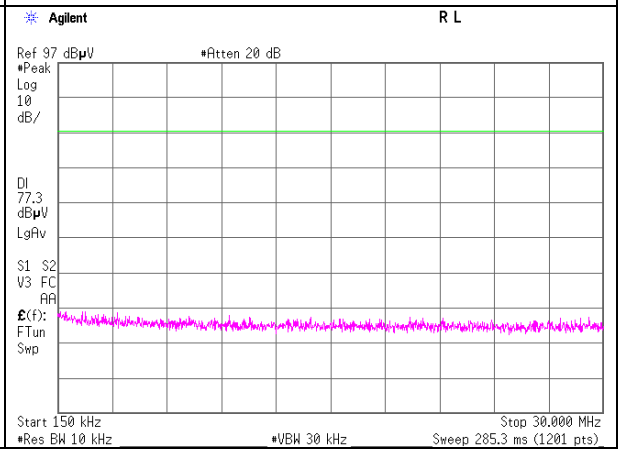
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping On, 3DH5

2402 MHz

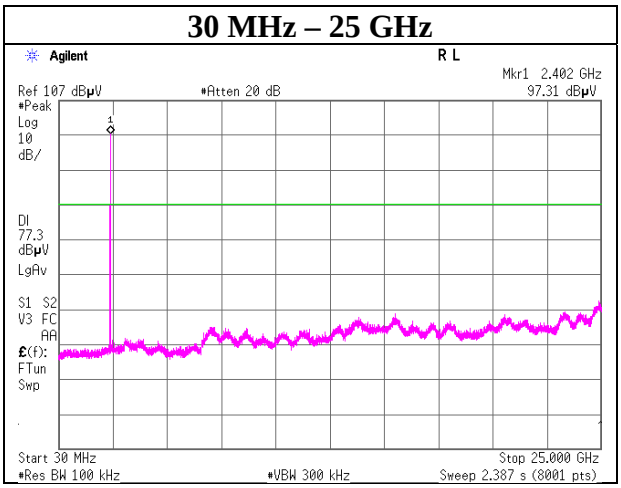
9 kHz – 150 kHz



150 kHz – 30 MHz



30 MHz – 25 GHz

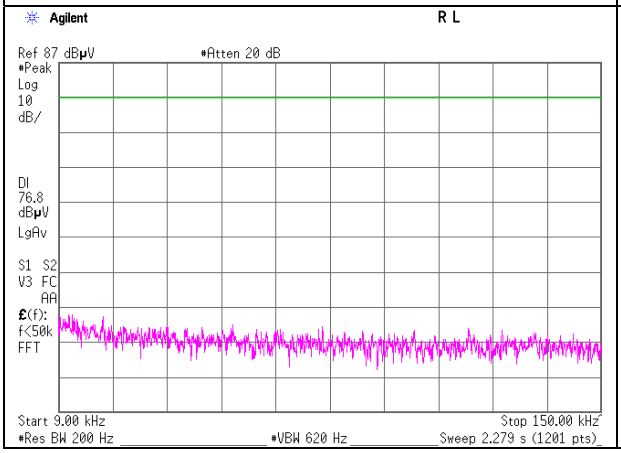


Conducted Spurious Emission

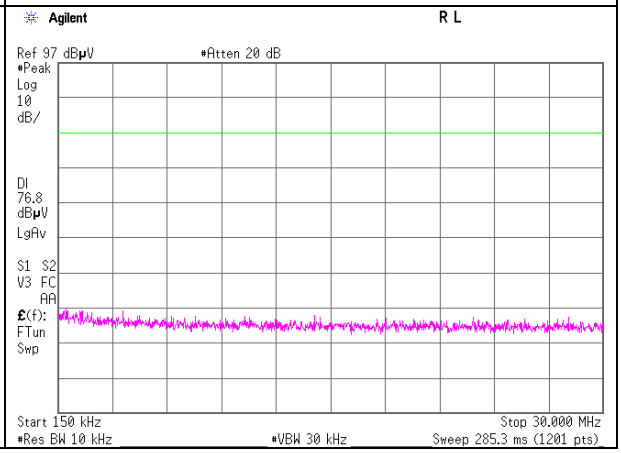
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, 3DH5

2441 MHz

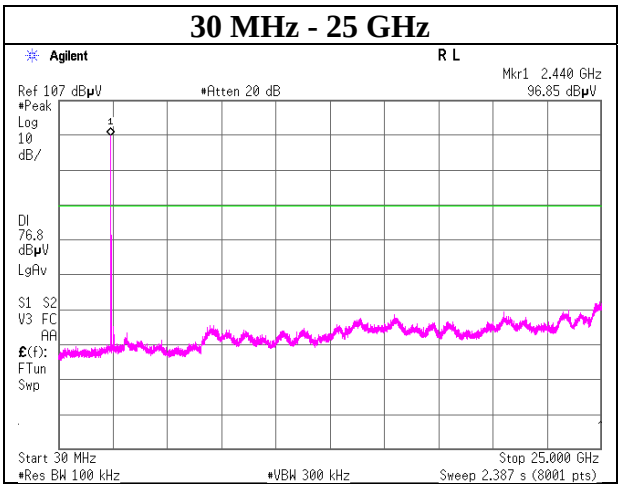
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

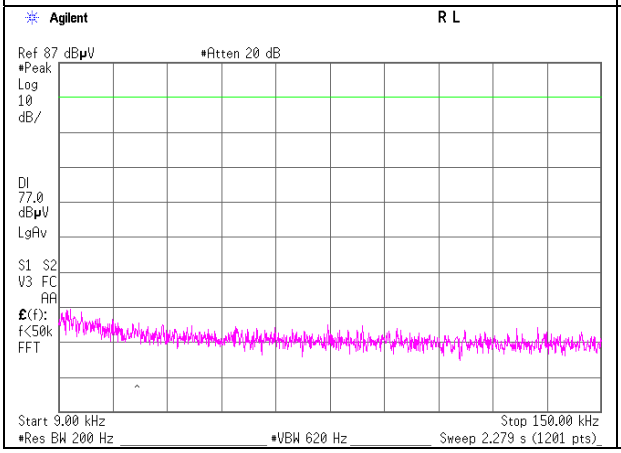


Conducted Spurious Emission

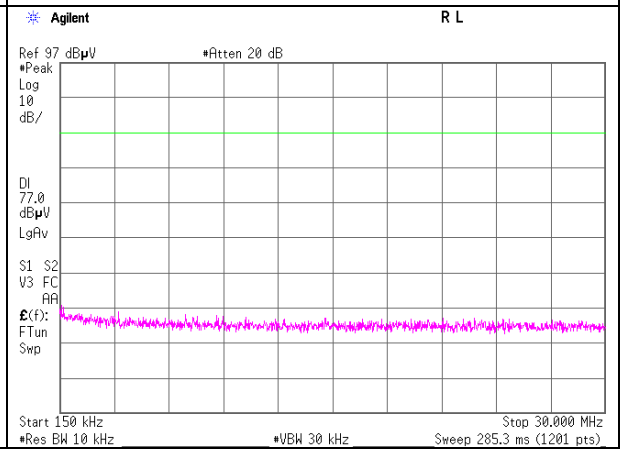
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx, Hopping Off, 3DH5

2480 MHz

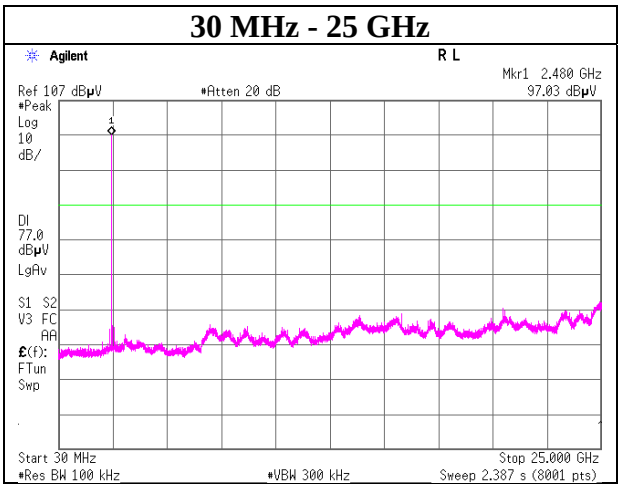
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

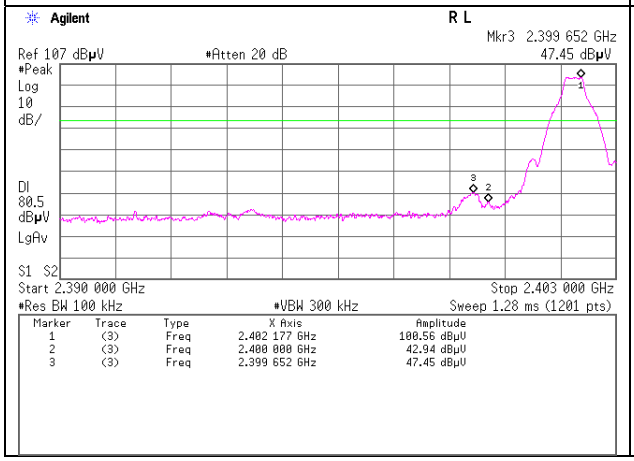


Conducted Emission Band Edge compliance

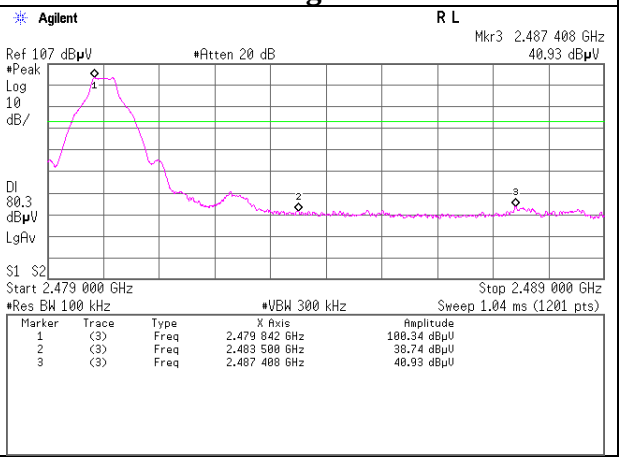
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx DH5

Hopping Off

Low

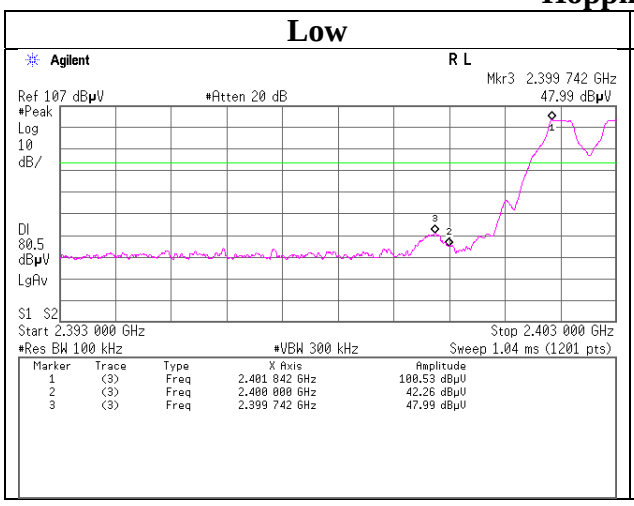


High

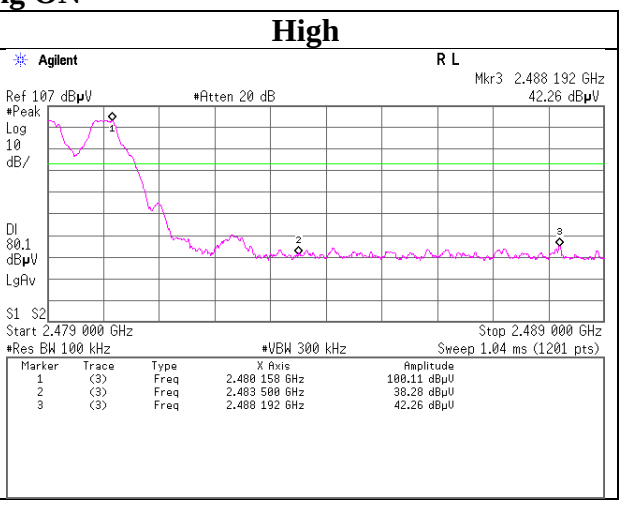


Hopping ON

Low



High

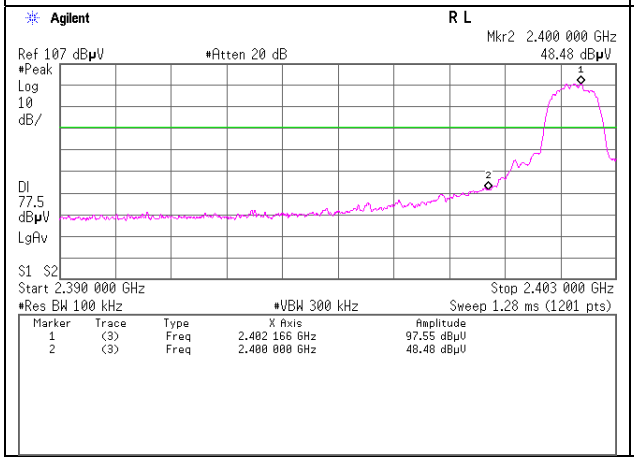


Conducted Emission Band Edge compliance

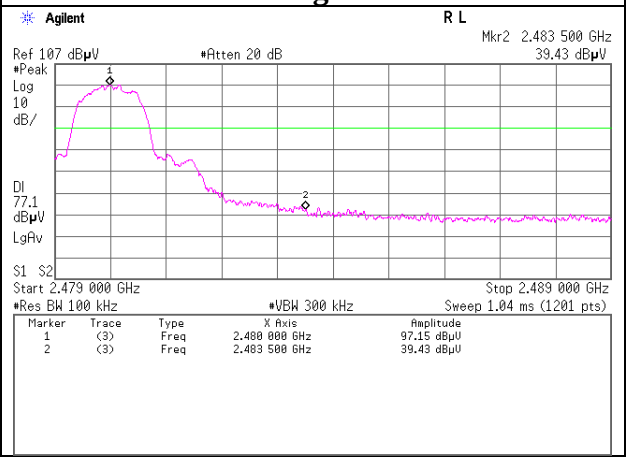
Report No.	13385909S-A-R1
Test place	Shonan EMC Lab. No.5 Shielded Room
Date	July 17, 2020
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx 3DH5

Hopping Off

Low

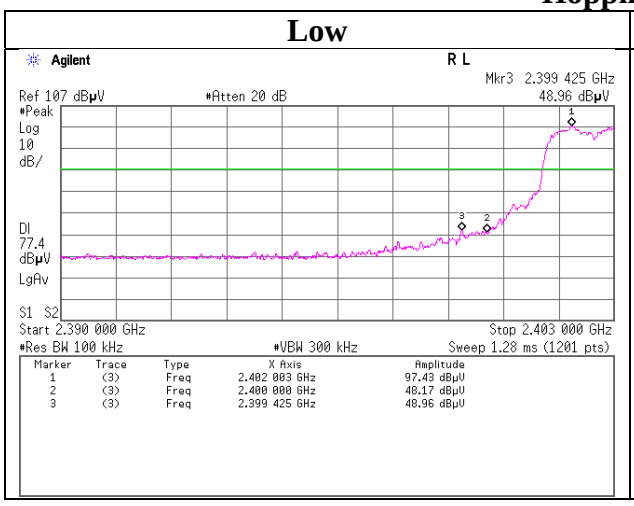


High

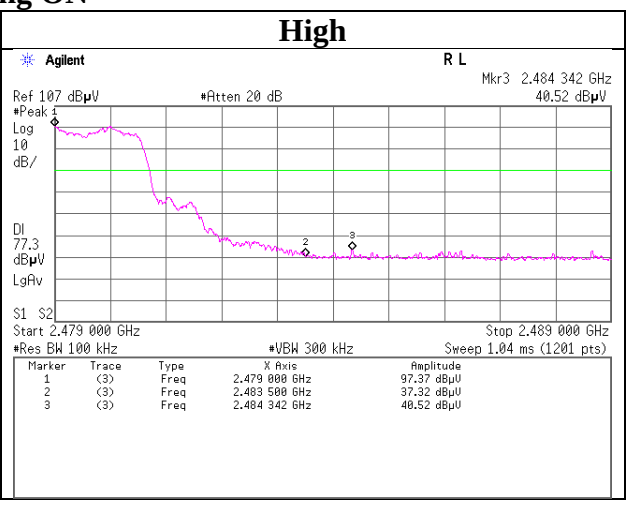


Hopping ON

Low



High



APPENDIX 2: Test instruments

Test equipment (1/2)

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
AT	KTS-07	145111	Digital Tester	SANWA	PC500	7019232	2019/10/01	12
AT	SAT10-16	160494	Attenuator	Weinschel Corp.	54A-10	83420	2019/12/12	12
AT	SCC-G66	196947	Coaxial Cable	HUBER+SUNER	SUCOFLEX 102	803478/2	2020/03/10	12
AT	SOS-19	175823	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/19	12
AT	SPM-07	146247	Power Meter	Keysight Technologies Inc	8990B	MY5100272	2020/05/27	12
AT	SPSS-05	146311	Power sensor	Keysight Technologies Inc	N1923A	MY5349008	2020/05/27	12
AT,RE	KSA-08	145089	Spectrum Analyzer	Keysight Technologies Inc	E4446A	MY46180525	2019/11/05	12
RE	COTS-SEMI-5	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-
RE	KJM-02	146432	Measure	TAJIMA	GL19-55	-	-	-
RE	SAEC-03(NSA)	145565	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	2020/04/12	12
RE	SAEC-03(SVSWR)	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2020/05/11	12
RE	SAF-03	145126	Pre Amplifier	SONOMA	310N	290213	2020/02/19	12
RE	SAF-04	145127	Pre Amplifier	Toyo Corporation	TPA0118-36	2072554	2020/06/02	12
RE	SAF-06	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	1440491	2020/02/20	12
RE	SAF-08	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2020/03/03	12
RE	SAT10-05	145136	Attenuator(above 1GHz)	Keysight Technologies Inc	8493C-010	74864	2019/11/06	12
RE	SAT10-06	145137	Attenuator	Keysight Technologies Inc	8493C-010	74865	2019/11/06	12
RE	SAT6-13	167094	Attenuator	JFW	50HF-006N	-	2020/02/21	12
RE	SBA-03	145023	Biconical Antenna	Schwarzbeck Mess - Elektronik	BBA9106	91032666	2020/05/17	12

Test equipment (2/2)

Test Name	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
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)	2020/04/12	12
RE	SCC-G15	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2020/03/04	12
RE	SCC-G40	166491	Coaxial Cable	Junkosha	MWX221-01000NFSNMS/B	1612S005	2020/01/08	12
RE	SCC-G43	156380	Coaxial Cable	HUBER+SUNER	SUCOFLEX_104_E	SN MY 13406/4E	2020/06/04	12
RE	SCC-G44	168300	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800375/4A	2019/11/11	12
RE	SCC-G57	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2020/05/12	12
RE	SCC-G58	183047	Coaxial Cable	HUBER+SUNER	SUCOFLEX 104	800287/4A	2020/06/04	12
RE	SFL-02	145301	Highpass Filter	MICRO-TRONICS	HPM50111	51	2019/11/06	12
RE	SHA-03	145501	Horn Antenna	Schwarzbeck Mess - Elektronik	BBHA9120D	9120D-739	2020/06/15	12
RE	SHA-04	145512	Horn Antenna	ETS LINDGREN	3160-09	00094868	2020/06/15	12
RE	SLA-07	145529	Logperiodic Antenna	Schwarzbeck Mess - Elektronik	VUSLP9111B	196	2020/05/17	12
RE	SOS-23	191840	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2019/12/12	12
RE	SSA-02	145800	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250106	2020/04/16	12
RE	SSA-03	145801	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY48250152	2019/08/08	12
RE	STR-08	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2019/11/22	12
RE	STS-03	146210	Digital Hitester	Hioki	3805-50	80997823	2019/10/01	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: **RE: Radiated Emission test**
AT: Antenna Terminal Conducted test