RADIO TEST REPORT

Test Report No. : 11774441H-C-R2

Applicant	:	**Murata Manufacturing Co., Ltd.**
Type of Equipment	:	**Communication Module**
Model No.	:	**1MW**
FCC ID	:	**VPYLB1MW**
Test regulation	:	**FCC Part 15 Subpart E: 2017 (Except for DFS test)**
Test Result	:	**Complied**

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 above regulation.
4. The test results in this 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 NVLAP, NIST, or any agency of the Federal Government.
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. This report is a revised version of 11774441H-C-R1.

Date of test: June 27 to July 20, 2017

Representative test engineer:
Takumi Shimada
Engineer
Consumer Technology Division

Approved by:
Takayuki Shimada
Engineer
Consumer Technology Division

NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address, http://japan.ul.com/resources/emc_accredited/

REVISION HISTORY

Original Test Report No.: 11774441H-C

Revision	Test report No.	Date	Page revised	Contents
- (Original)	11774441H-C	August 29, 2017	-	-
1	11774441H-C-R1	September 19, 2017	P 6	Correction of sentence
1	11774441H-C-R1	September 19, 2017	P 161	Correction of data
2	11774441H-C-R2	October 4, 2017	P 12	Addition of explanatory note

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SECTION 1: Customer information

Company Name	:	Murata Manufacturing Co., Ltd.
Address	:	1-10-1 Higashikotari, Nagaokakyo-shi, Kyoto 617-8555 Japan
Telephone Number	:	+81-75-955-6736
Facsimile Number	:	+81-75-955-6634
Contact Person	:	Motoo Hayashi

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	Communication Module
Model No.	:	1MW
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	VBAT: Min. 3.35 V / Typ. 3.6 V / Max. 4.2 V VIO: 1.8 V / 3.3 V *VIO doesn't influence the RF characteristic.
Receipt Date of Sample	:	June 26, 2017
Country of Mass-production	:	China, Japan
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

2.2 Product Description

Model: 1MW (referred to as the EUT in this report) is a Communication Module.

General Specification

Clock frequency(ies) in the system	:	37.4 MHz (X'tal)

Radio Specification

Radio Type : Transceiver
Power Supply (inner) : DC 3.3V

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

Type of radio	**IEEE802.11b**	**IEEE802.11g/n (20 M band)**	**IEEE802.11a/n/ac (20 M band) *1)**	**IEEE802.11n/ac (40 M band) *1)**	**IEEE802.11ac (80 M band) *1)**
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5720 MHz 5745 MHz - 5825 MHz	5190 MHz - 5230 MHz 5270 MHz - 5310 MHz 5510 MHz - 5710 MHz 5755 MHz - 5795 MHz	5210 MHz 5290 MHz 5530 MHz - 5690 MHz 5775 MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK, 256QAM(IEEE802.11ac only))		
Channel spacing	5 MHz		20 MHz	40 MHz	80 MHz
Antenna type	Monopole pattern antenna				
Antenna Gain	[RF Cable 30 mm] 2.4 GHz: 0 dBi 5 GHz: 1.5dBi [RF Cable 300 mm] 2.4 GHz: -1.3 dBi 5 GHz: -1.8 dBi				

Bluetooth (Ver. 4.2 with EDR function)

	Bluetooth Ver.4.2 with EDR function
Frequency of operation	2402 MHz - 2480 MHz
Type of modulation	BT: FHSS (GFSK, π/4DQPSK, 8DPSK) LE: GFSK
Channel spacing	BT: 1 MHz LE: 2 MHz
Antenna type	Monopole pattern antenna
Antenna Gain	[RF Cable 30 mm] 2.4 GHz: 0 dBi [RF Cable 300 mm] 2.4 GHz: -1.3 dBi

*1) This test report applies to Wireless LAN (5GHz Band).
* WLAN and Bluetooth do not transmit simultaneously.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart E FCC Part 15 final revised on June 14, 2017 and effective July 14, 2017
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart E Unlicensed National Information Infrastructure Devices Section 15.407 General technical requirements

* The revision on August 29, 2017, does not affect the test specification applied to the EUT.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013	**FCC:** 15.407 (b) (6) / 15.207	**QP** 23.2 dB, 26.77173 MHz, N **AV** 18.2 dB, 26.77173 MHz, N	Complied	-
	IC: RSS-Gen 8.8	**IC:** RSS-Gen 8.8			
26 dB Emission Bandwidth	**FCC:** KDB Publication Number 789033	**FCC:** 15.407 (a) (1) (2) (3)	See data	N/A	Conducted
	IC: -	**IC:** -			
Maximum Conducted Output Power	**FCC:** KDB Publication Number 789033	**FCC:** 15.407 (a) (1) (2) (3)		Complied	Conducted
	IC: -	**IC:** RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Maximum Power Spectral Density	**FCC:** KDB Publication Number 789033	**FCC :** 15.407 (a) (1) (2) (3)		Complied	Conducted
	IC: -	**IC:** RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Spurious Emission Restricted Band Edge	**FCC:** ANSI C63.10-2013 KDB Publication Number 789033	**FCC:** 15.407 (b), 15.205 and 15.209	0.5 dB 5460.000 MHz, AV, Hori.	Complied	Conducted (< 30 MHz) / Radiated (> 30 MHz) *1)
	IC: -	**IC:** RSS-247 6.2.1.2 6.2.2.2 6.2.3.2 6.2.4.2			
6 dB Emission Bandwidth	**FCC:** ANSI C63.10-2013	**FCC:** 15.407 (e)	See data	Complied	Conducted
	IC: -	**IC:** RSS-247 6.2.4.1			

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.
* For DFS tests, please see the test report number 11774441H-D-R1 issued by UL Japan, Inc.
*1) Radiated test was selected over 30 MHz based on section FCC 15.407 (b) and KDB 789033 D02 G.3.b).

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

FCC Part 15.31 (e)

The RF Module has its own regulator.
The RF Module is constantly provided voltage (DC 3.3 V) through the regulator regardless of input voltage.
Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique coupling/antenna connector (Connector Type: JSC).
Therefore the equipment complies with the requirement of 15.203.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Band Width	RSS-Gen 6.6	**IC:** -	N/A	N/A	Conducted

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

3.4 Uncertainty

EMI

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor *k*=2.
Ise EMC Lab.

Antenna terminal test	Uncertainty (+/-)
RF output power	1.2 dB
Antenna terminal conducted emission / Power density / Burst power	3.1 dB
Adjacent channel power / Channel power	
Below 3 GHz	1.8 dB
3 GHz to 6 GHz	2.7 dB

Frequency range	Conducted emission using AMN(LISN) (+/-)
0.009 MHz - 0.15 MHz	3.1 dB
0.15 MHz - 30 MHz	2.5 dB

Test distance	Radiated emission (+/-) 9 kHz - 30 MHz
3 m	3.8 dB
10 m	3.6 dB

Polarity	Radiated emission (Below 1 GHz)			
	(3 m*) (+/-)		(10 m*) (+/-)	
	30 MHz - 200 MHz	200 MHz - 1000 MHz	30 MHz - 200 MHz	200 MHz - 1000 MHz
Horizontal	5.0 dB	5.3 dB	5.0 dB	5.0 dB
Vertical	5.2 dB	6.3 dB	5.0 dB	5.0 dB

Radiated emission (Above 1 GHz)				
(3 m*) (+/-)		(1 m*) (+/-)		(10 m*) (+/-)
1 GHz - 6 GHz	6 GHz - 18 GHz	10 GHz - 26.5 GHz	26.5 GHz - 40 GHz	1 GHz - 18 GHz
5.2 dB	5.5 dB	5.5 dB	5.4 dB	5.5 dB

*Measurement distance

Conducted Emission test
The data listed in this test report has enough margin, more than the site margin.

Radiated emission test
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

3.5 Test Location

UL Japan, Inc. Ise EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone: +81 596 24 8999, Facsimile: +81 596 24 8124

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms	Maximum measurement distance
No.1 semi-anechoic chamber	2973C-1	19.2 x 11.2 x 7.7	7.0 x 6.0	No.1 Power source room	10 m
No.2 semi-anechoic chamber	2973C-2	7.5 x 5.8 x 5.2	4.0 x 4.0	-	3 m
No.3 semi-anechoic chamber	2973C-3	12.0 x 8.5 x 5.9	6.8 x 5.75	No.3 Preparation room	3 m
No.3 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.4 semi-anechoic chamber	2973C-4	12.0 x 8.5 x 5.9	6.8 x 5.75	No.4 Preparation room	3 m
No.4 shielded room	-	4.0 x 6.0 x 2.7	N/A	-	-
No.5 semi-anechoic chamber	-	6.0 x 6.0 x 3.9	6.0 x 6.0	-	-
No.6 shielded room	-	4.0 x 4.5 x 2.7	4.0 x 4.5	-	-
No.6 measurement room	-	4.75 x 5.4 x 3.0	4.75 x 4.15	-	-
No.7 shielded room	-	4.7 x 7.5 x 2.7	4.7 x 7.5	-	-
No.8 measurement room	-	3.1 x 5.0 x 2.7	N/A	-	-
No.9 measurement room	-	8.8 x 4.6 x 2.8	2.4 x 2.4	-	-
No.11 measurement room	-	6.2 x 4.7 x 3.0	4.8 x 4.6	-	-

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

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Mode(s)

Test operating mode was determined as follows according to "Section 1 of 6 802.11 a/b/g/n testing - Managing Complex Regulatory Approvals -" of TCB Council Workshop October 2009 and also was judged the necessity of 802.11ac mode by the pre-test.

Mode	Remarks*
IEEE 802.11a (11a)	48 Mbps, PN9
IEEE 802.11n 20MHz BW (11n-20)	MCS 1, PN9
IEEE 802.11ac 20MHz BW (11ac-20)	MCS 1, PN9
IEEE 802.11n 40MHz BW (11n-40)	MCS 2, PN9
IEEE 802.11ac 40MHz BW (11ac-40)	MCS 2, PN9
IEEE 802.11ac 80MHz BW (11ac-80)	MCS 7, PN9
*The worst condition was determined based on the test result of Maximum Conducted Output Power.	
*Power of the EUT was set by the software as follows; Power settings: Refer to the following table Software: MFG Tool Version 7.45.0.0 *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.	

[Power setting]

	Frequency	Power Setting
11a	5180 to 5320MHz (20MHz), 5500 to 5720MHz (20MHz)	13.5
	5745 to 5825MHz (20MHz)	11
11n-20	5180 to 5320MHz (20MHz), 5500 to 5720MHz (20MHz)	15
	5745 to 5825MHz (20MHz)	11
11ac-20	5180 to 5320MHz (20MHz), 5500 to 5720MHz (20MHz)	15
	5745 to 5825MHz (20MHz)	11
11n-40	5190 to 5310MHz (40MHz), 5510 to 5710MHz (40MHz)	12.5
	5755 to 5795MHz (40MHz)	11
11ac-40	5190 to 5310MHz (40MHz), 5510 to 5710MHz (40MHz)	12.5
	5755 to 5795MHz (40MHz)	11
11ac-80	5210 to 5290MHz (80MHz), 5530 to 5690MHz (80MHz)	11
	5775MHz (80MHz)	11

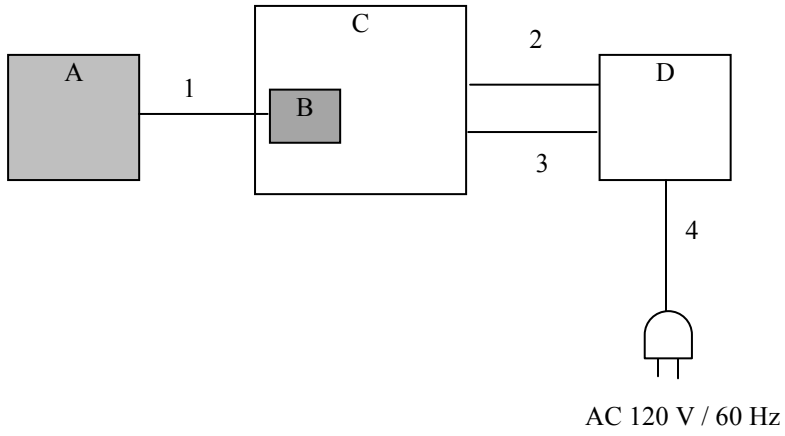
*The details of Operation mode(s)

Test Item	Operating Mode	Tested Frequency			
		Low Band	Middle Band	Additional Band	Upper Band
Conducted emission, Conducted Spurious Emission, Radiated Spurious Emission (Below 1GHz)	11n-20 Tx,*1)	-	5320 MHz	-	-
26dB Emission Bandwidth	11a Tx, 11n-20 Tx, 11ac-20 Tx	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	-
	11n-40 Tx, 11ac-40 Tx	-	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz 5710 MHz	-
	11ac-80 Tx	-	5290 MHz	5530 MHz 5610 MHz 5690 MHz	-
99% Occupied Bandwidth, Maximum Conducted Output Power, Maximum Power Spectral Density	11a Tx, 11n-20 Tx, 11ac-20 Tx	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz 5720 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx, 11ac-40 Tx	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz 5710 MHz	5755 MHz 5795 MHz
	11ac-80 Tx	5210 MHz	5290 MHz	5530 MHz 5610 MHz 5690 MHz	5775 MHz
Radiated Spurious Emission (Above 1GHz)	11a Tx 11n-20 Tx *2)	5180 MHz	5260 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11ac-20 Tx	5180 MHz	5320 MHz	5500 MHz 5700 MHz	5745 MHz 5825 MHz
	11n-40 Tx	5190 MHz	5310 MHz	5510 MHz 5670 MHz	5755 MHz 5795 MHz
	11ac-40 Tx	5190 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
	11ac-80 Tx	5210 MHz	5290 MHz	5530 MHz 5610 MHz	5775 MHz
6dB Bandwidth	11a Tx, 11n-20 Tx, 11ac-20 Tx	-	-	-	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx, 11ac-40 Tx	-	-	-	5755 MHz 5795 MHz
	11ac-80 Tx	-	-	-	5775 MHz

*1) The mode was tested as a representative, because it had the highest power at antenna terminal test.
*2) Since 11a and 11n-20 have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest output power.

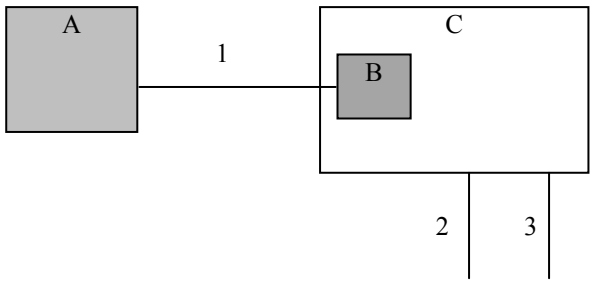
4.2 Configuration and peripherals

For Conducted Emission test



AC 120 V / 60 Hz

For all tests other than Conducted Emission test



DC 3.6 V DC 3.3 V

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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Monopole pattern antenna	Type1KT-30	No.1	Murata Manufacturing Co., Ltd.	EUT *4)
B	Communication Module	1MW	25 *2) 36 *3)	Murata Manufacturing Co., Ltd.	EUT
C	Jig Board	1MW EVB ES1 P2ML5840	-	Murata Manufacturing Co., Ltd.	*5)
D	Regulated DC Power Supply	PW16-5ADP	171116437	TEXIO	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Signal Cable	0.03	Unshielded	Unshielded	*4)
2	DC Cable	0.5 *1) 2.5 *2)	Unshielded	Unshielded	-
3	DC Cable	0.5 *1) 2.5 *2)	Unshielded	Unshielded	-
4	AC Cable	1.00	Unshielded	Unshielded	-

*1) Used for Conducted Emission test
*2) Used for Radiated Emission test
*3) Used for Antenna Terminal Conducted test
*4) Used for all tests except for Antenna Terminal Conducted test
*5) The test was performed with the module that as normal assumed implementation conditions.
The use of a jig does not influence on the test result.

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.
The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

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

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

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Detector	**: QP and CISPR Average**
Measurement range	**: 0.15 MHz - 30 MHz**
Test data	**: APPENDIX**
Test result	**: Pass**

SECTION 6: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

< Below 1GHz >
EUT was placed on a urethane platform of nominal size, 0.5 m by 1.0 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

< Above 1GHz >
EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane.

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

< Below 1GHz >

The result also satisfied with the general limits specified in section 15.209 (a).

< Above 1GHz >

Inside of restricted bands (Section 15.205):

Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

Apply to limit 68.2 dBuV/m, 3 m (-27 dBm e.i.r.p.*) in the Section 15.407 (b) (1) (2) (3).

For W58 Bandedge
-27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge in the section 15.407(b)(4)(i).

Restricted band edge:

Apply to limit in the Section 15.209 (a).
Since this limit is severer than the limit of the inside of restricted bands.

*Electric field strength to e.i.r.p. conversion:

$$E = \frac{1000000\sqrt{30P}}{3} \quad \text{(uV/m)} \qquad :P \text{ is the e.i.r.p. (Watts)}$$

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

Frequency	Below 1 GHz	Above 1 GHz	
Instrument used	Test Receiver	Spectrum Analyzer	
Detector	QP	Peak	Average
IF Bandwidth	BW: 120 kHz	RBW: 1 MHz VBW: 3 MHz	Method AD *1) RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: ≥ 100 traces If duty cycle was less than 98%, a duty factor was added to the results.
Test Distance	3 m	3 m (below 1 GHz), 4 m*2) (1 GHz – 10GHz), 1 m*3) (10 GHz – 40 GHz)	

*1) The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01r04 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E".
*2) Distance Factor: 20 x log (4.0 m/3.0 m) = 2.5 dB
*3) Distance Factor: 20 x log (1.0 m/3.0 m) = -9.5 dB

The noise levels were confirmed at each position of X, Y and Z axes of EUT (Antenna and Module) to see the position of maximum noise, and the test was made at the position that has the maximum noise.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 30 MHz - 40 GHz
Test data : APPENDIX
Test result : Pass

SECTION 7: Antenna Terminal Conducted Tests

Test Procedure

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

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used and Test method
26 dB Bandwidth	Enough to capture the emission	Close to 1 % of EBW	> RBW	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 % to 5 % of OBW	≥ 3 RBW	Auto	Peak	Max Hold	Spectrum Analyzer
6 dB Bandwidth	Enough to capture the emission	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Conducted Output Power	-	-	-	Auto	Average	-	Power Meter (Sensor: 80 MHz BW) (Method PM)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 470 kHz *2)	≥ 3 RBW	Auto	RMS Power Averaging (200 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission*3)	9 kHz – 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz – 30 MHz	9.1 kHz	27 kHz				

* The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01r04 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E".

*1) Peak hold was applied as Worst-case measurement.
*2) KDB 789033 D02 says that RBW is set to be 500 kHz for 5.725 GHz-5.850 GHz, but it is not possible with spectrum analyzer, so RBW Correction Factor (10 log(500 kHz / 470 kHz)) was added to the test result.
*3) In the frequency range below 30 MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was low enough as shown in the chart. (9 kHz-150 kHz: RBW = 200 Hz, 150 kHz-30 MHz: RBW = 9.1 kHz).

The test results and limit are rounded off to two decimals place, so some differences might be observed.

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

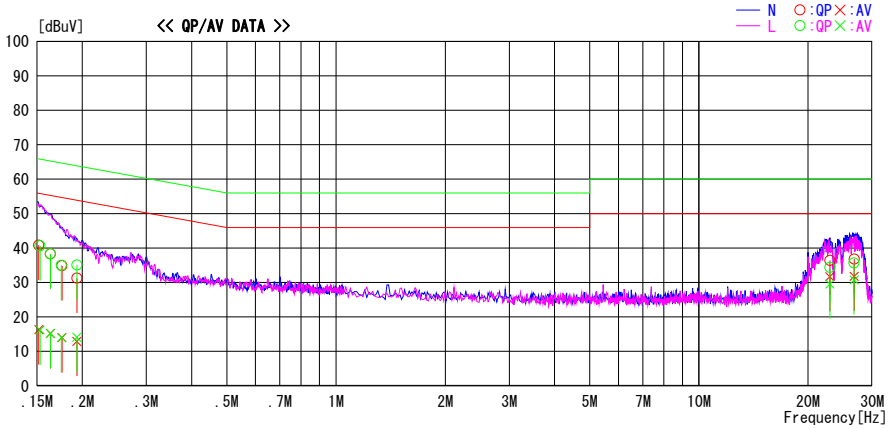
UL Japan, Inc. Ise EMC Lab. No.3 Semi Anechoic Chamber
Date : 2017/07/20

Report No. : 11774441H

Temp./Humi. : 24deg. C / 56% RH
Engineer : Tomoki Matsui

Mode / Remarks : Tx 11n-20 5320MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase	Comment
	QP	AV	Factor	QP	AV	QP	AV	QP	AV		
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
0.15175	27.6	3.1	13.2	40.8	16.3	65.9	55.9	25.1	39.6	N	
0.16342	25.1	2.0	13.2	38.3	15.2	65.3	55.3	27.0	40.1	N	
0.17567	21.7	0.8	13.2	34.9	14.0	64.7	54.7	29.8	40.7	N	
0.19317	18.0	-0.3	13.2	31.2	12.9	63.9	53.9	32.7	41.0	N	
22.95351	21.8	17.1	14.6	36.4	31.7	60.0	50.0	23.6	18.3	N	
26.77173	22.1	17.1	14.7	36.8	31.8	60.0	50.0	23.2	18.2	N	
0.15292	27.4	3.0	13.2	40.6	16.2	65.8	55.8	25.2	39.6	L	
0.16342	25.1	2.0	13.2	38.3	15.2	65.3	55.3	27.0	40.1	L	
0.17508	21.8	0.8	13.2	35.0	14.0	64.7	54.7	29.7	40.7	L	
0.19317	21.9	0.9	13.2	35.1	14.1	63.9	53.9	28.8	39.8	L	
22.94914	19.8	15.0	14.6	34.4	29.6	60.0	50.0	25.6	20.4	L	
26.76773	21.0	16.1	14.7	35.7	30.8	60.0	50.0	24.3	19.2	L	

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

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx

11a

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5180	-	16.928	-
5220	-	16.904	-
5240	-	16.956	-
5260	20.421	16.871	-
5300	20.624	16.948	-
5320	20.577	16.869	-
5500	20.462	16.914	-
5580	20.551	16.900	-
5700	20.237	16.916	-
5720	20.769	16.869	-
5745	-	16.903	-
5785	-	16.931	-
5825	-	16.969	-

11n-20

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5180	-	18.066	-
5220	-	18.010	-
5240	-	18.118	-
5260	21.071	18.088	-
5300	20.916	18.061	-
5320	21.157	18.064	-
5500	20.732	18.058	-
5580	21.107	18.042	-
5700	21.060	18.085	-
5720	21.331	18.049	-
5745	-	18.026	-
5785	-	18.053	-
5825	-	18.004	-

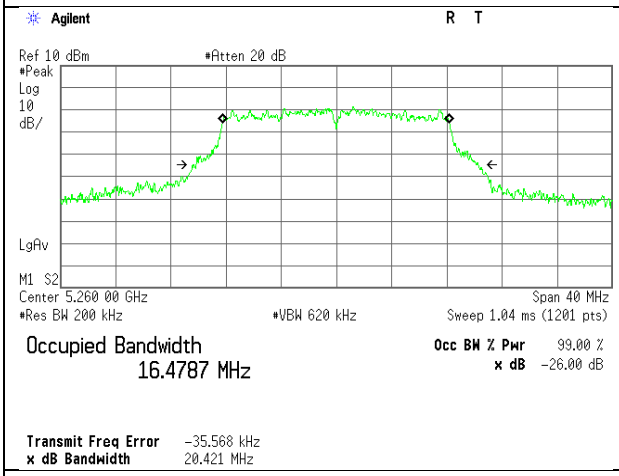
11n-40

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5190	-	36.411	-
5230	-	36.307	-
5270	39.274	36.331	-
5310	39.544	36.311	-
5510	39.066	36.299	-
5550	39.186	36.295	-
5670	39.510	36.467	-
5710	39.275	36.290	-
5755	-	36.307	-
5795	-	36.327	-

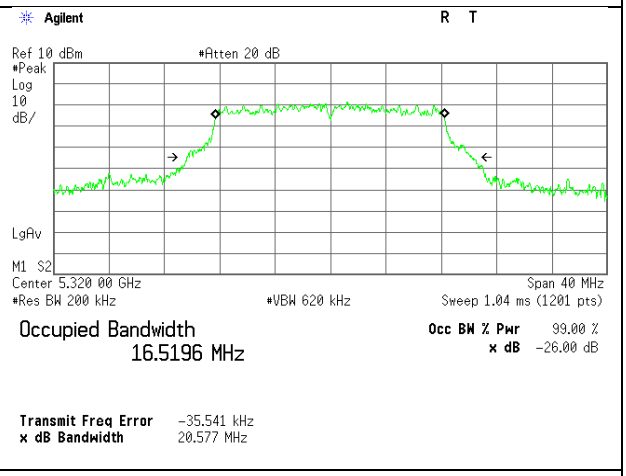
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

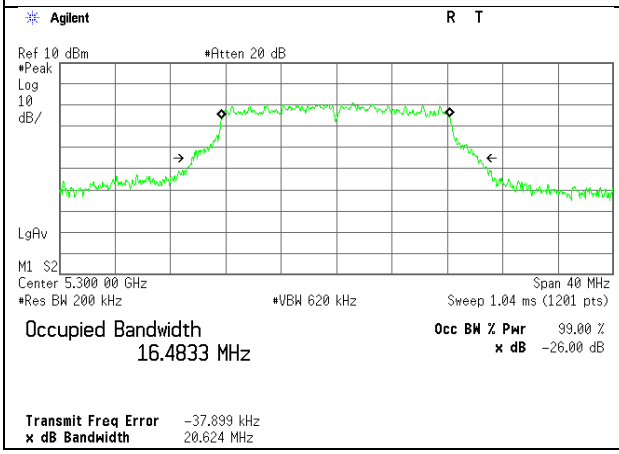
5260 MHz



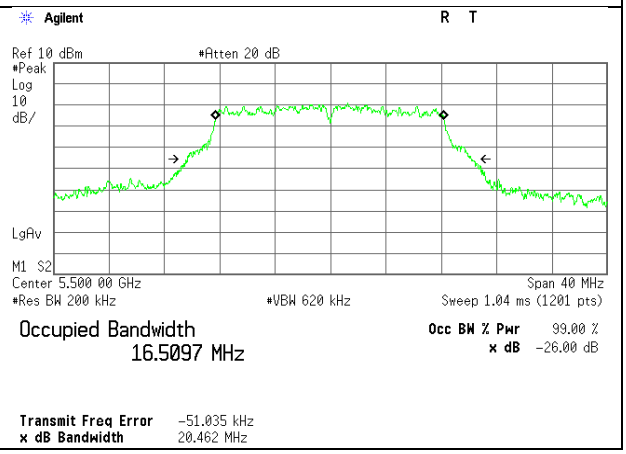
5320 MHz



5300 MHz



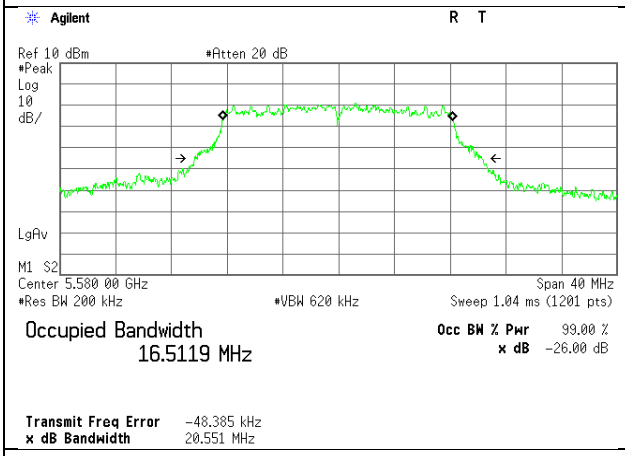
5500 MHz



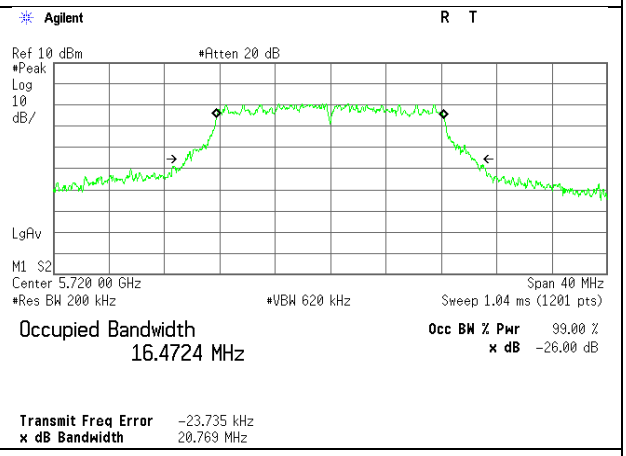
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

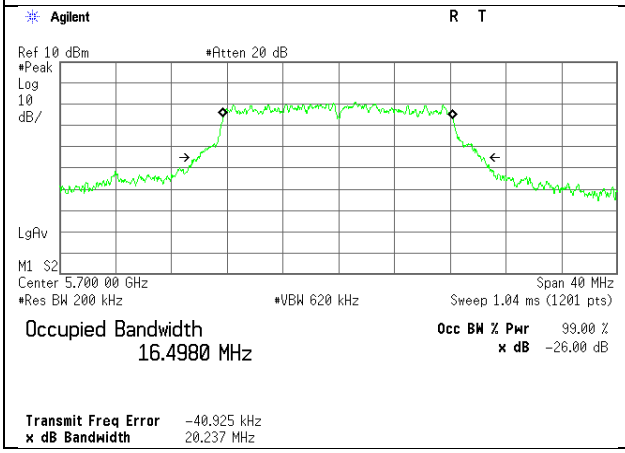
5580 MHz



5720 MHz



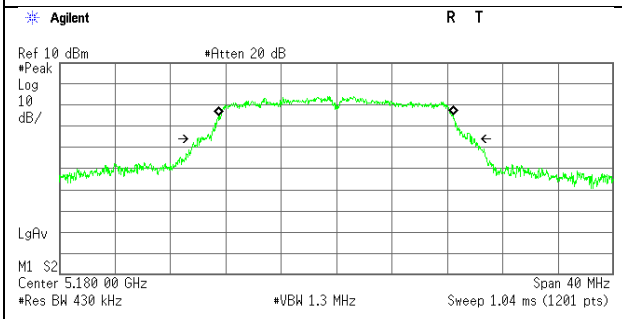
5700 MHz



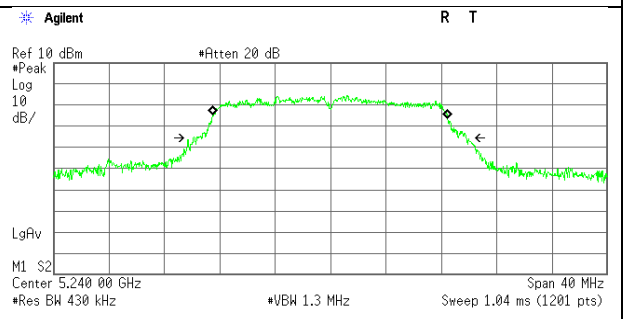
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 3, 2017
Temperature / Humidity	24deg. C / 40 RH
Engineer	Takumi Shimada
Mode	Tx 11a

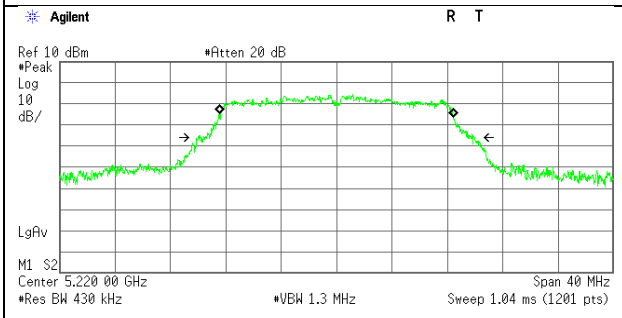
5180 MHz



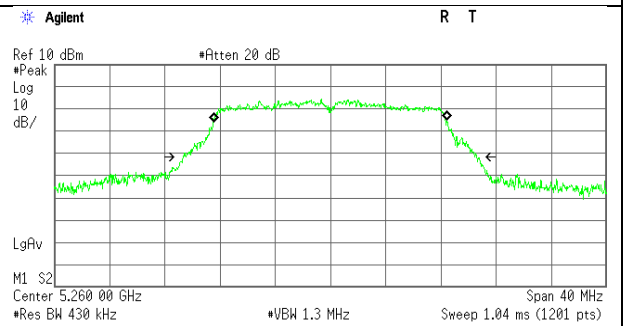
5240 MHz



5220 MHz



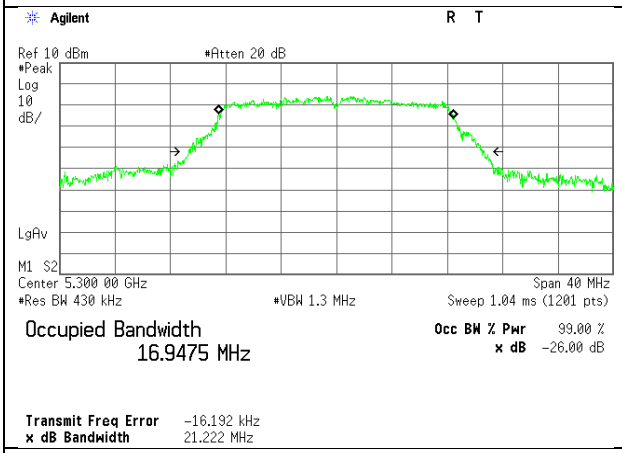
5260 MHz



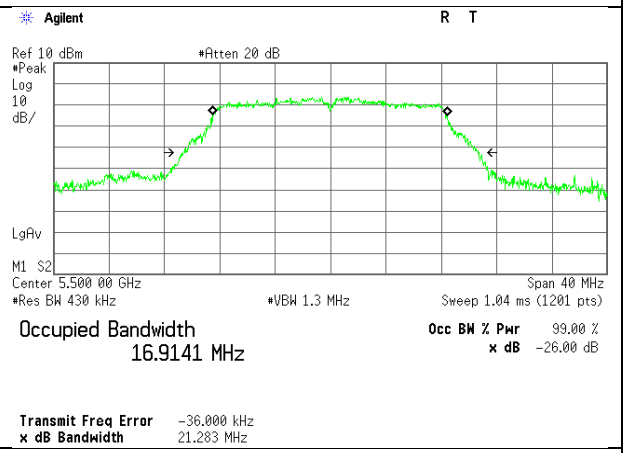
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

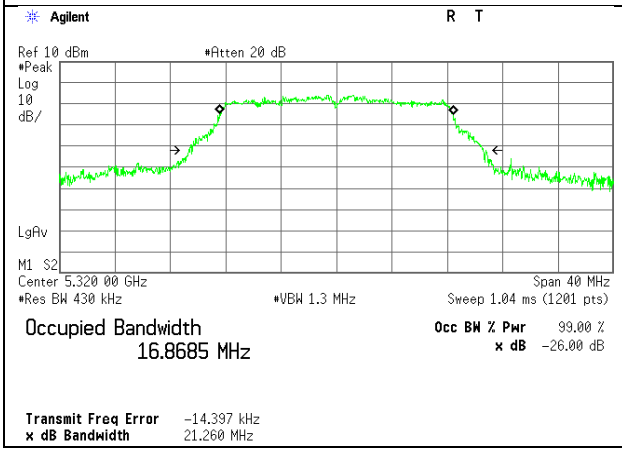
5300 MHz



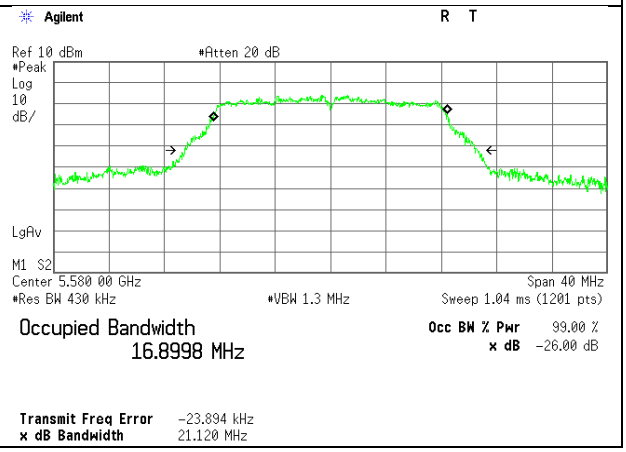
5500 MHz



5320 MHz



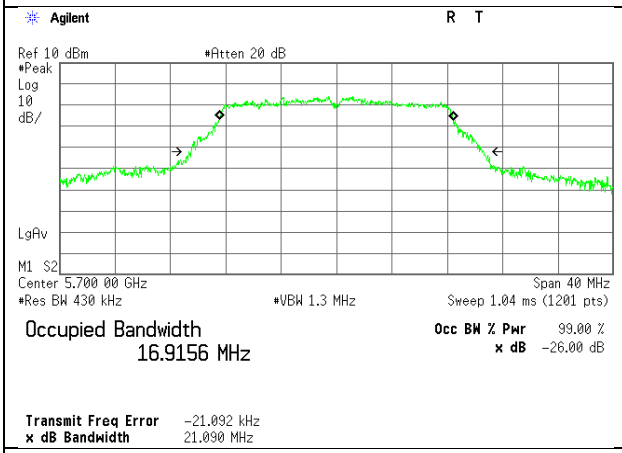
5580 MHz



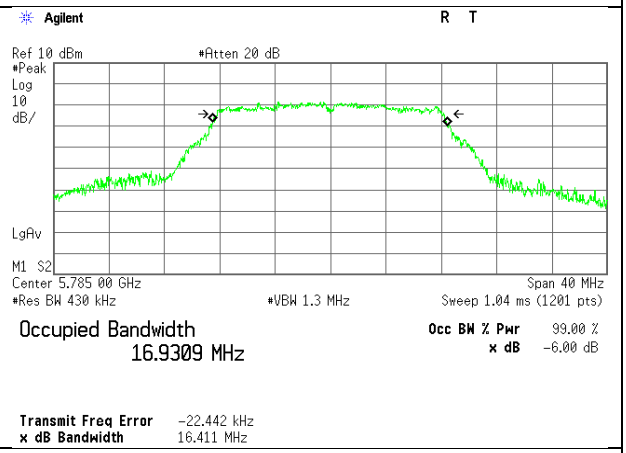
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11a

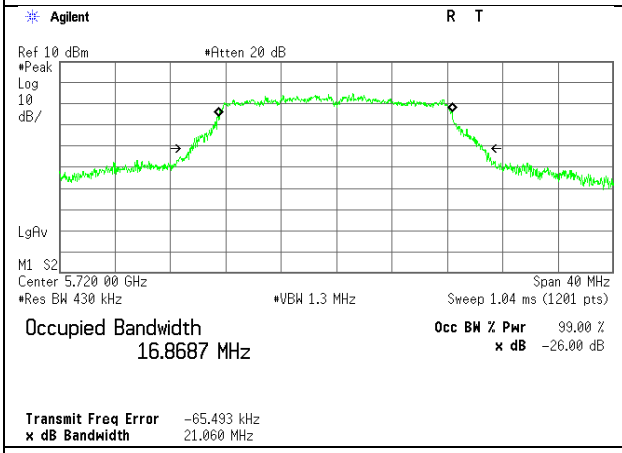
5700 MHz



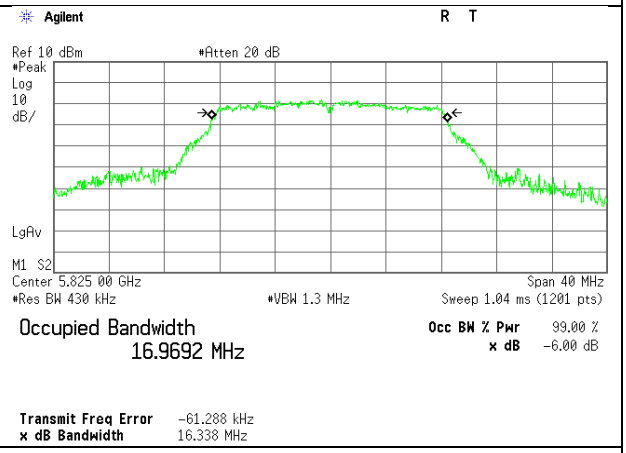
5785 MHz



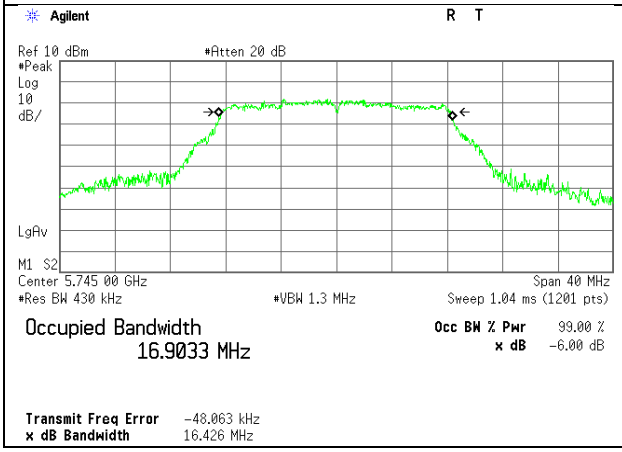
5720 MHz



5825 MHz



5745 MHz



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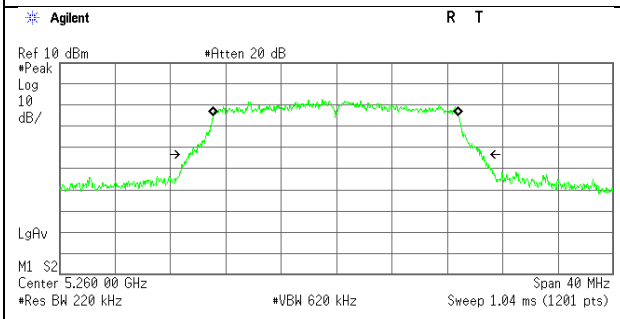
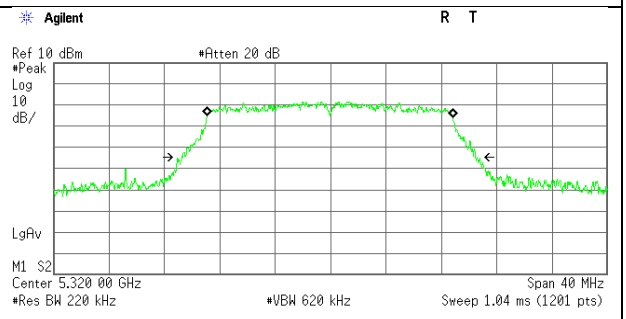
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

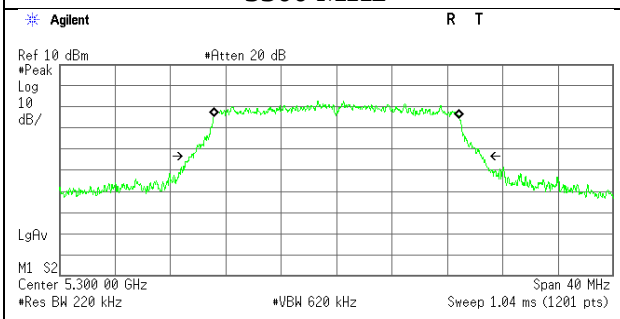
5260 MHz



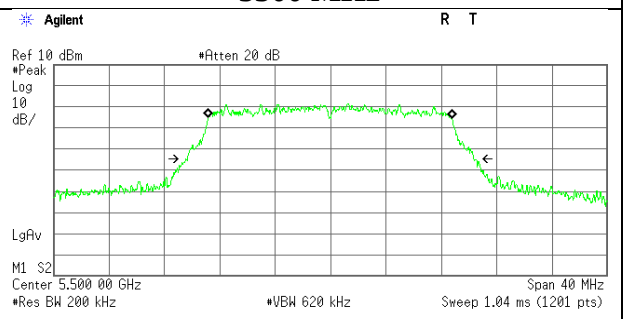
5320 MHz



5300 MHz



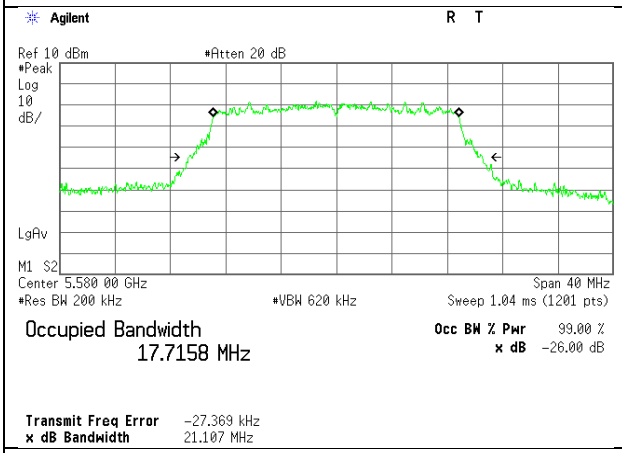
5500 MHz



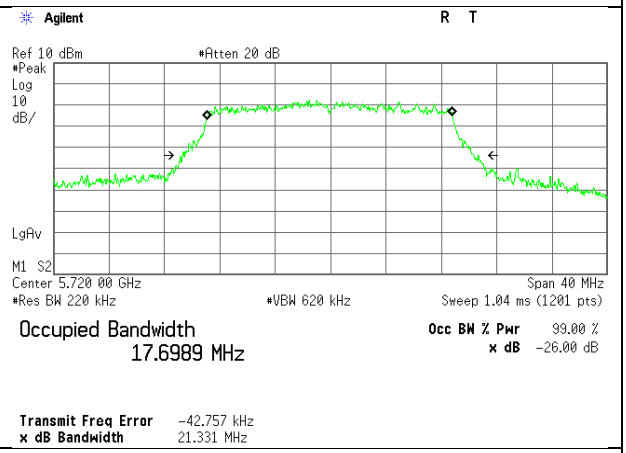
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

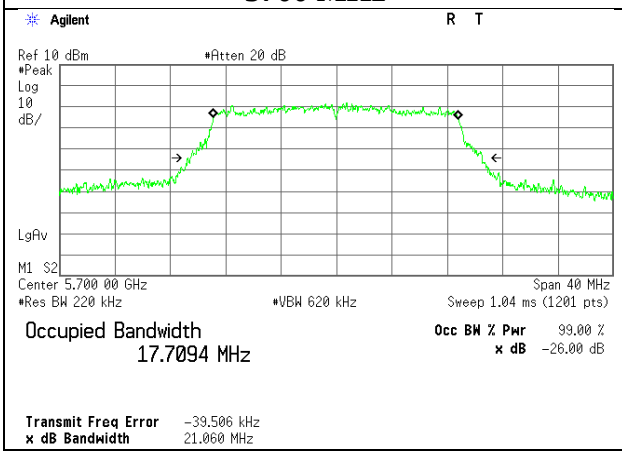
5580 MHz



5720 MHz



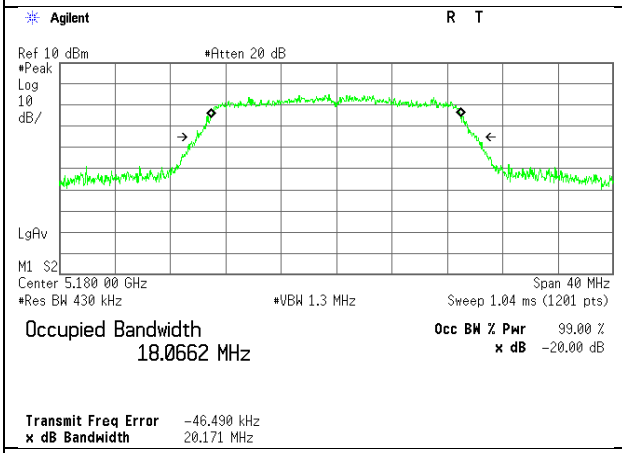
5700 MHz



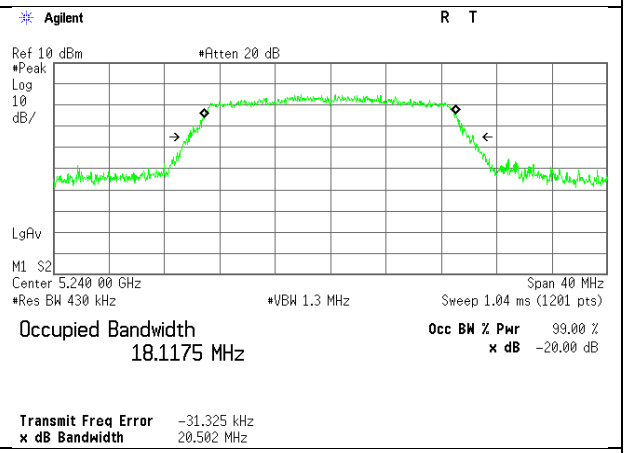
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

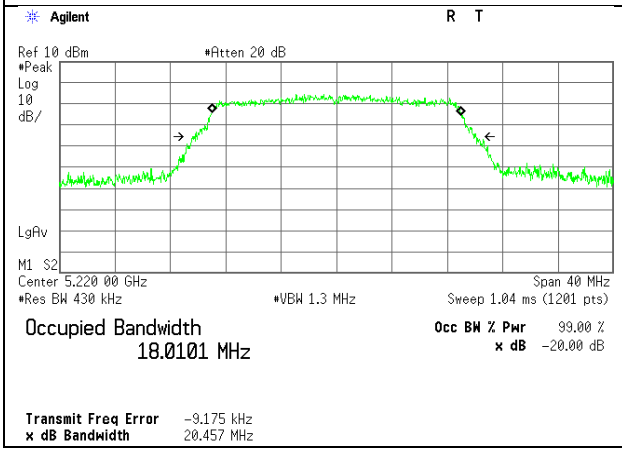
5180 MHz



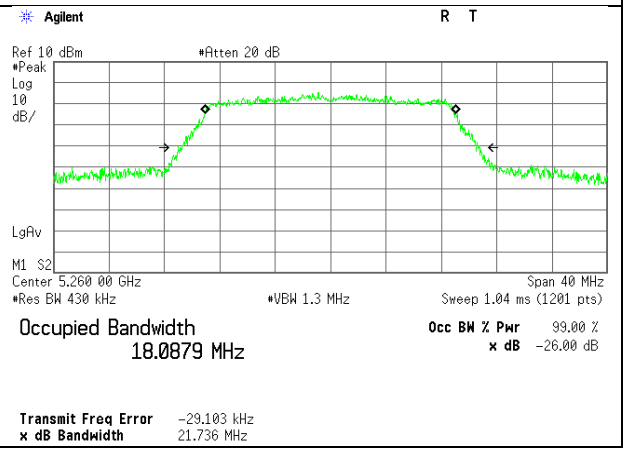
5240 MHz



5220 MHz



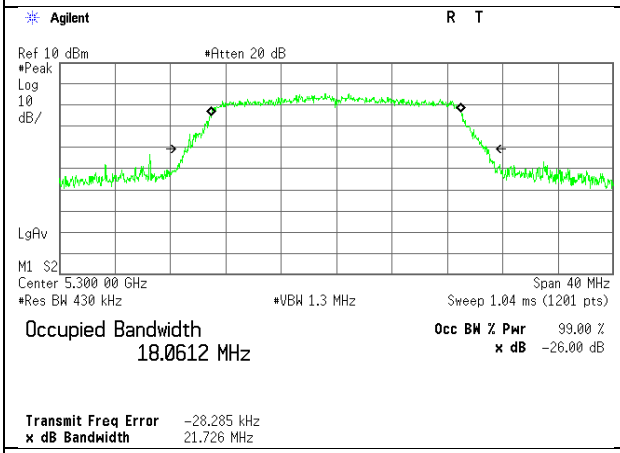
5260 MHz



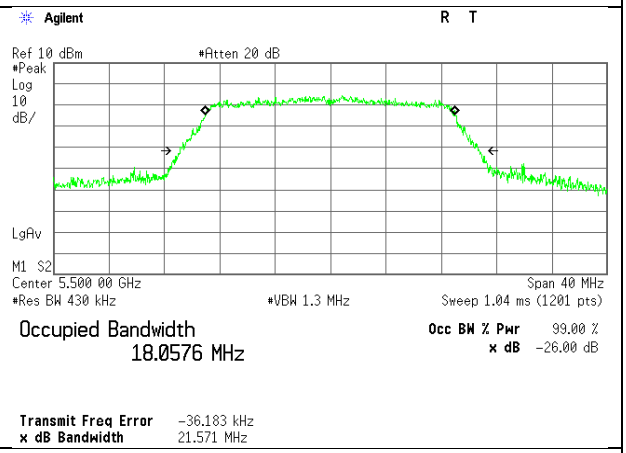
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

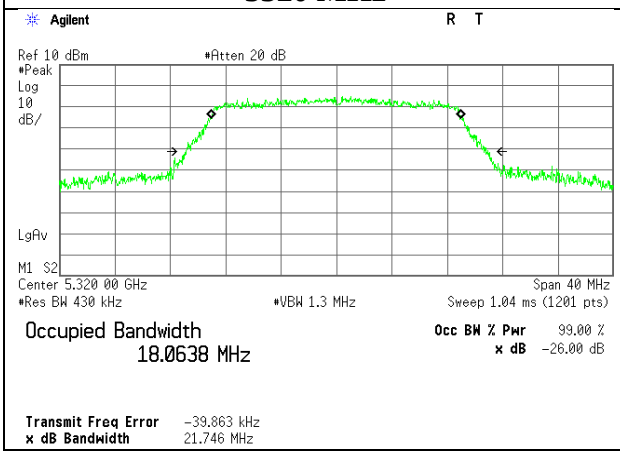
5300 MHz



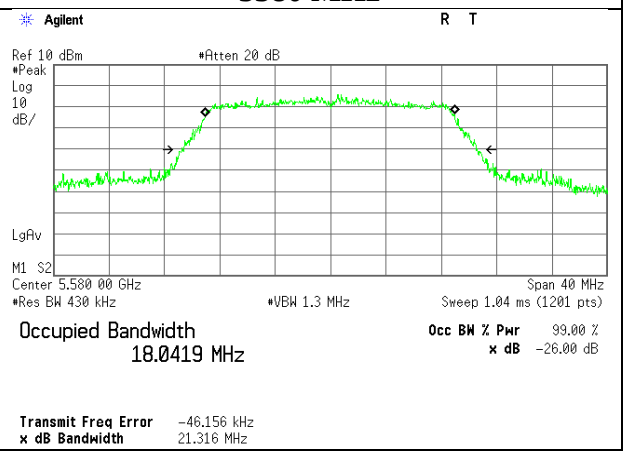
5500 MHz



5320 MHz



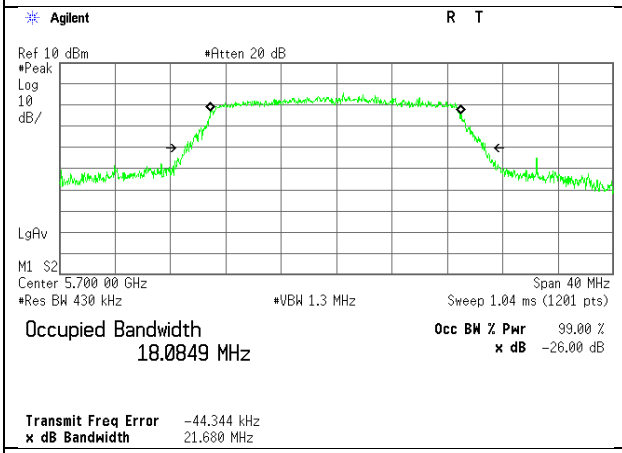
5580 MHz



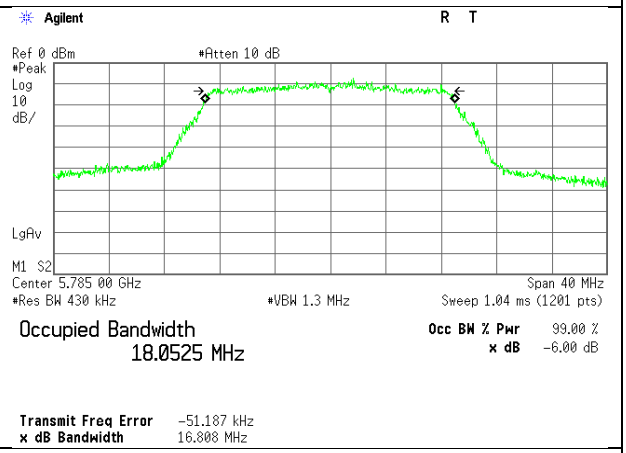
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20

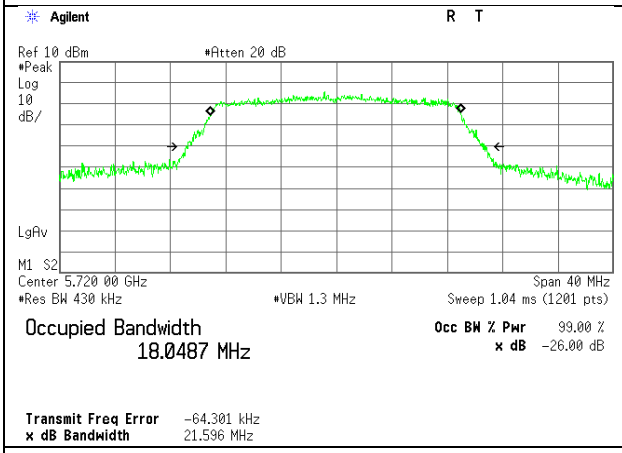
5700 MHz



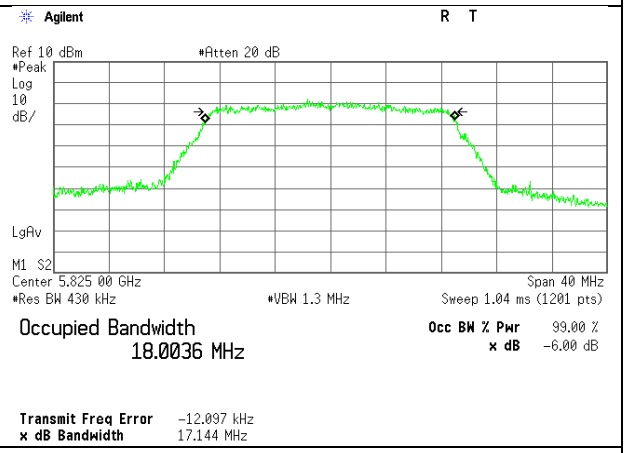
5785 MHz



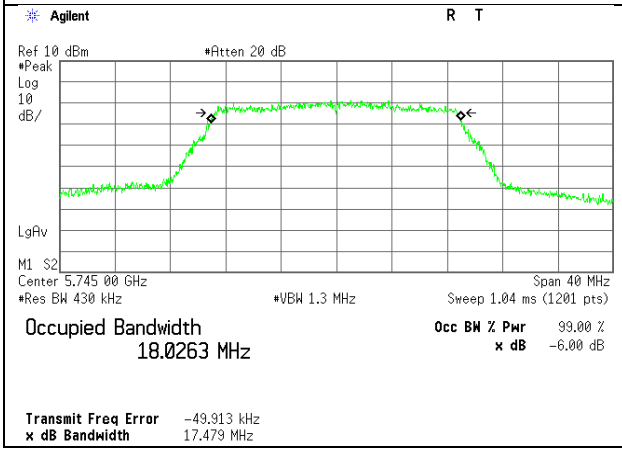
5720 MHz



5825 MHz



5745 MHz



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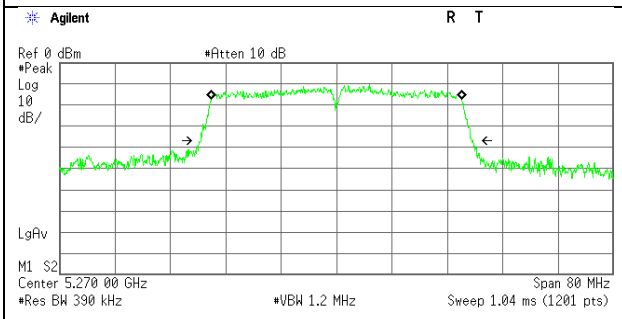
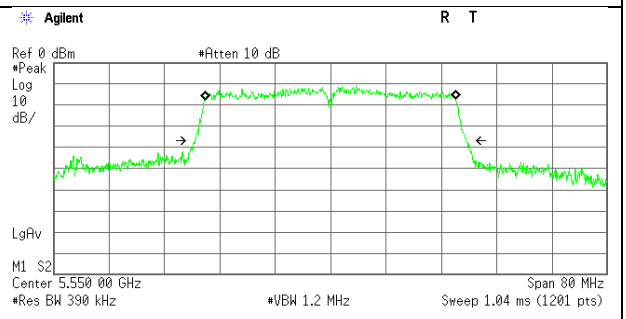
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-40

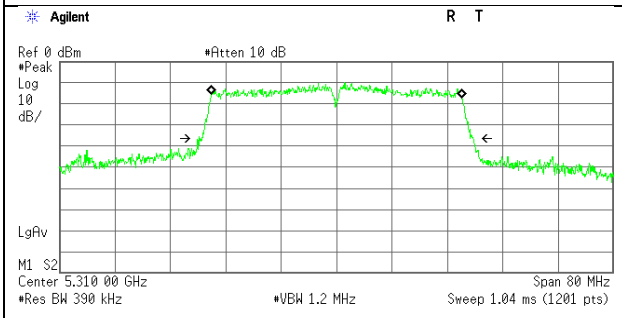
5270 MHz



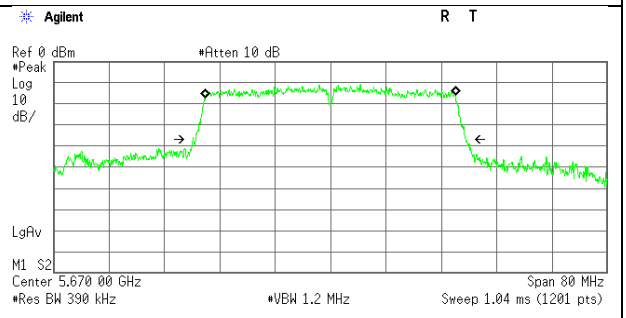
5550 MHz



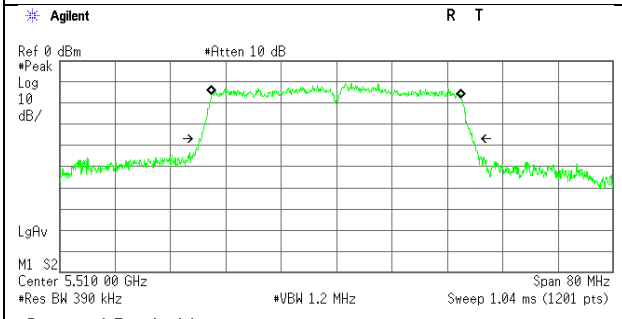
5310MHz



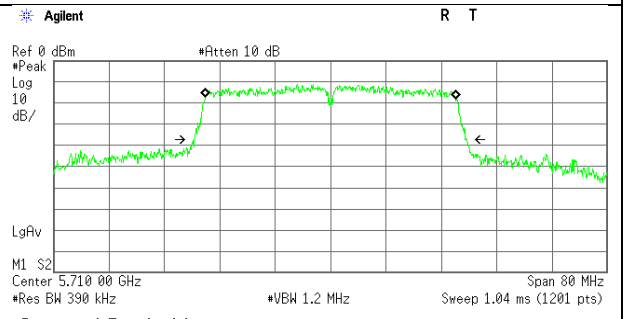
5670 MHz



5510MHz



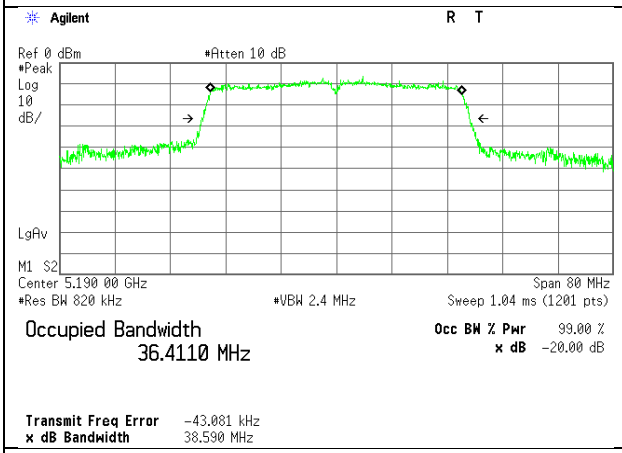
5710 MHz



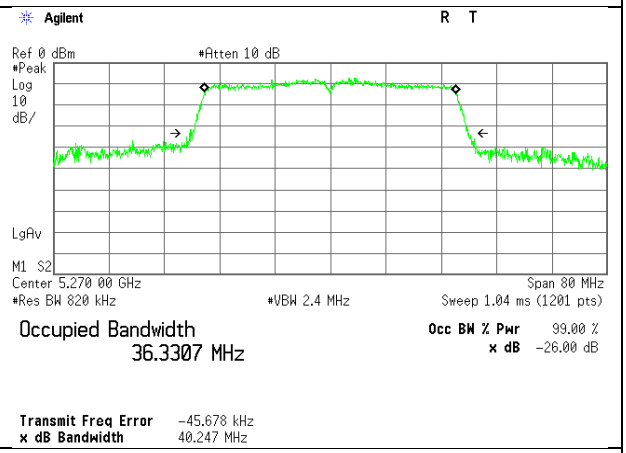
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-40

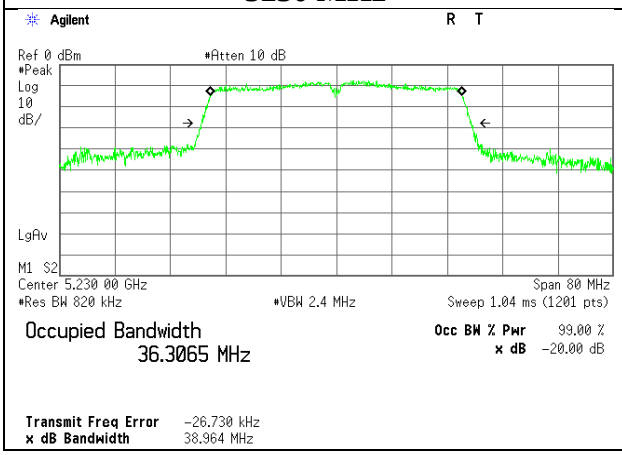
5190 MHz



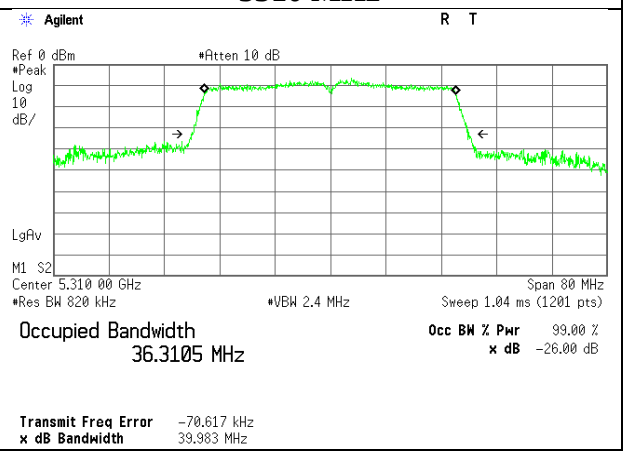
5270 MHz



5230 MHz



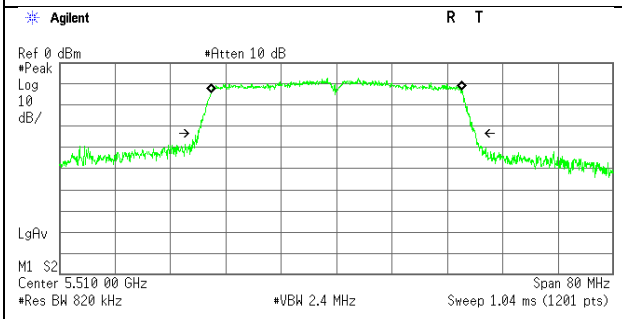
5310 MHz



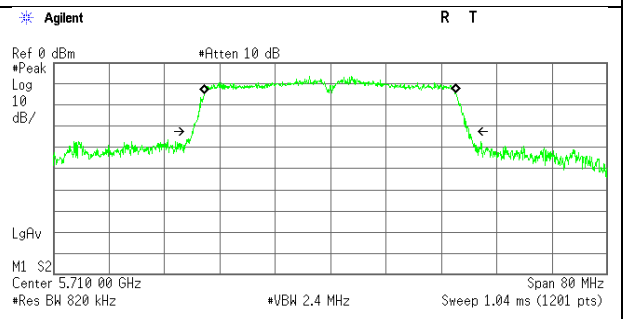
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-40

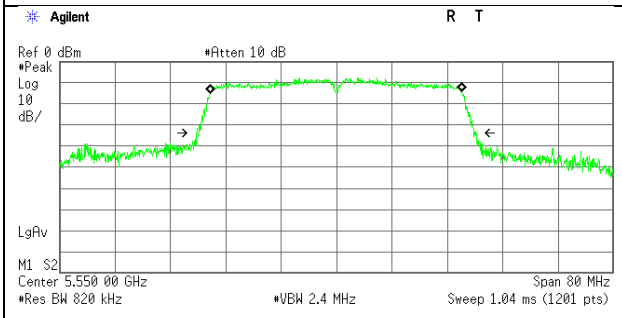
5510 MHz



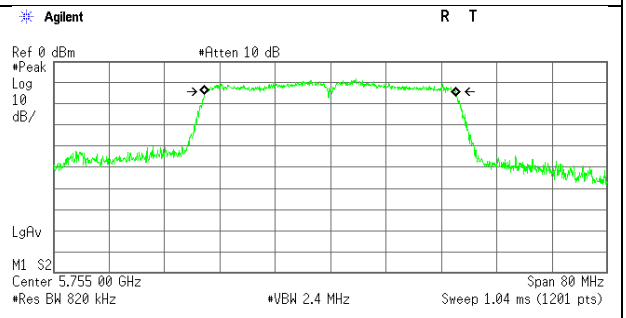
5710 MHz



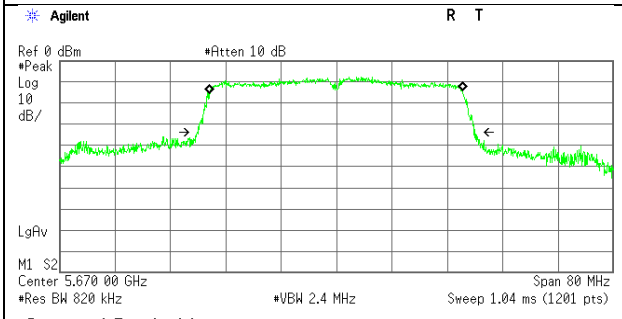
5550 MHz



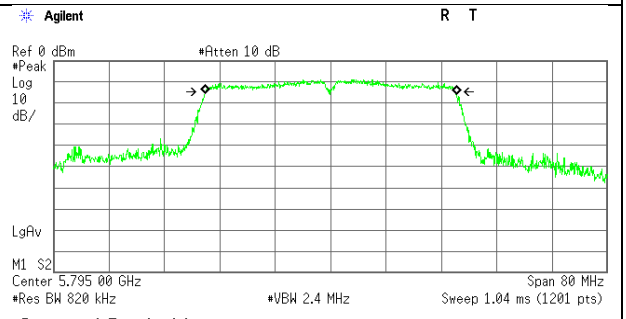
5755 MHz



5670 MHz



5795 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx

11ac-20

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5180	-	18.074	-
5220	-	18.091	-
5240	-	18.052	-
5260	21.143	18.033	-
5300	21.317	18.007	-
5320	21.036	18.054	-
5500	21.171	18.065	-
5580	21.126	18.086	-
5700	21.062	18.111	-
5720	21.043	18.114	-
5745	-	18.079	-
5785	-	18.049	-
5825	-	18.072	-

11ac-40

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5190	-	36.258	-
5230	-	36.341	-
5270	39.274	36.331	-
5310	39.757	36.387	-
5510	39.048	36.278	-
5550	39.282	36.297	-
5670	39.354	36.318	-
5710	39.575	36.259	-
5755	-	36.389	-
5795	-	36.308	-

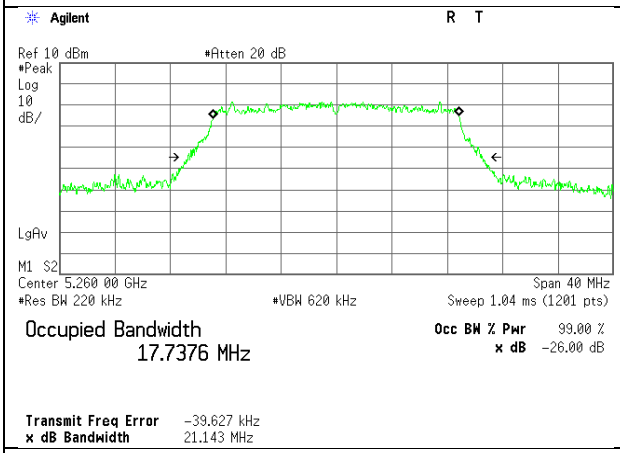
11ac-80

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
5210	-	75.896	-
5290	80.729	75.944	-
5530	80.845	75.849	-
5610	80.609	76.019	-
5690	80.525	75.979	-
5775	-	76.138	-

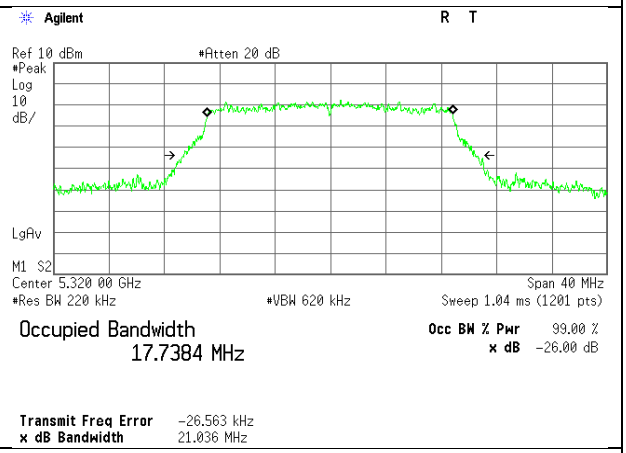
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

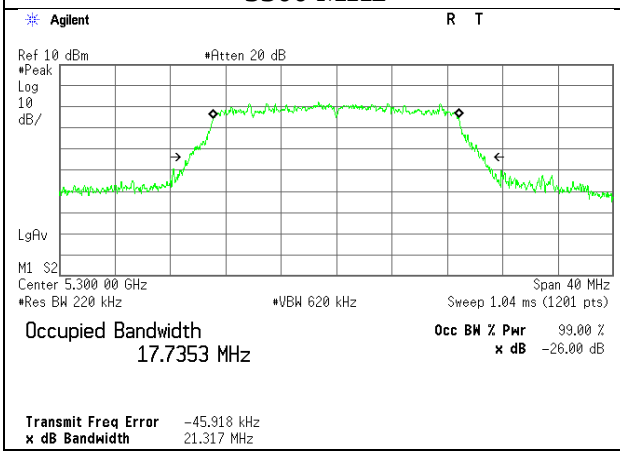
5260 MHz



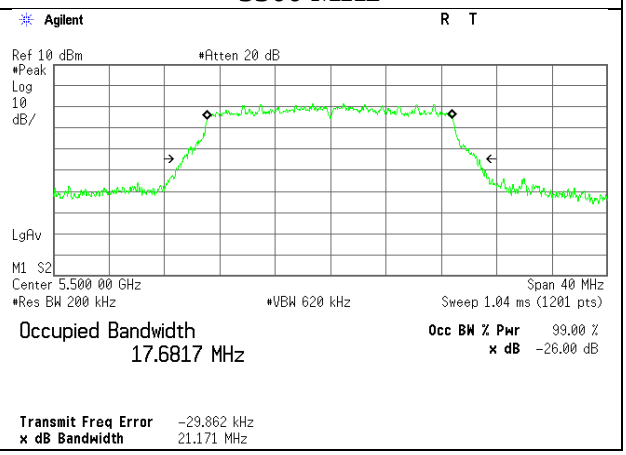
5320 MHz



5300 MHz



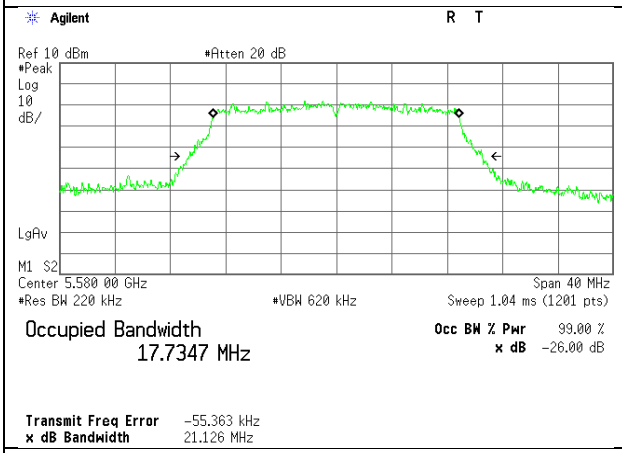
5500 MHz



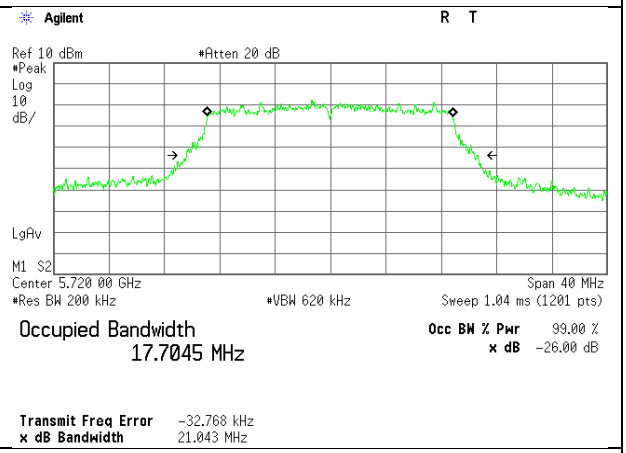
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

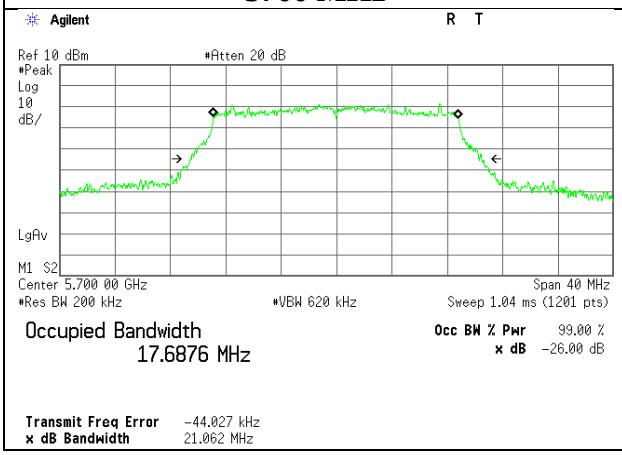
5580 MHz



5720 MHz



5700 MHz



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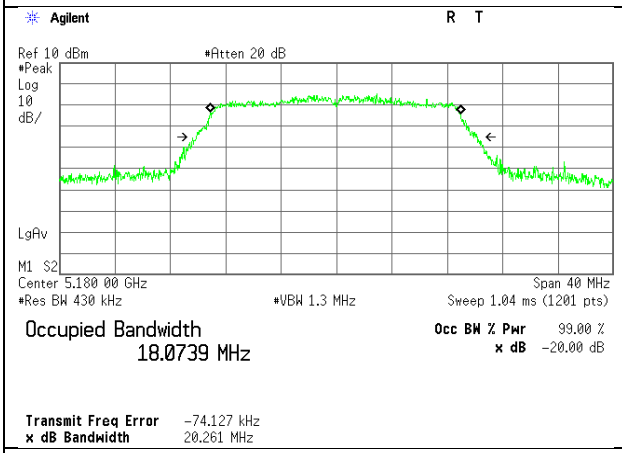
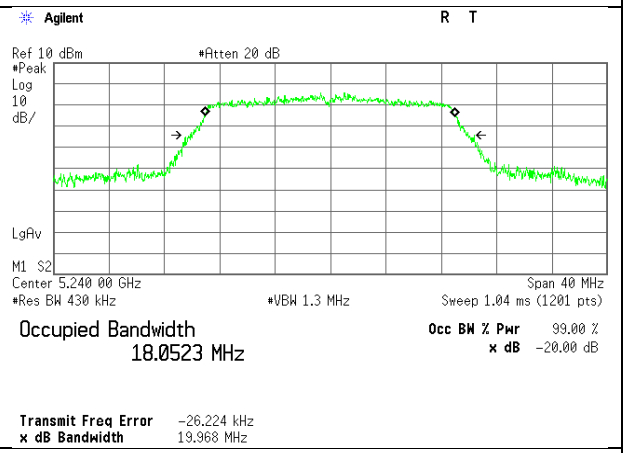
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

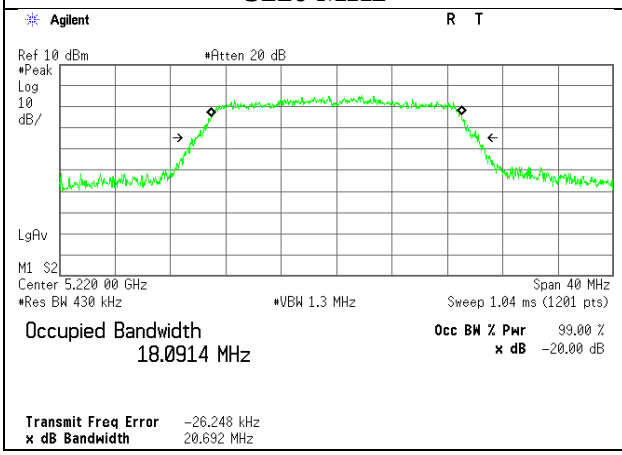
5180 MHz



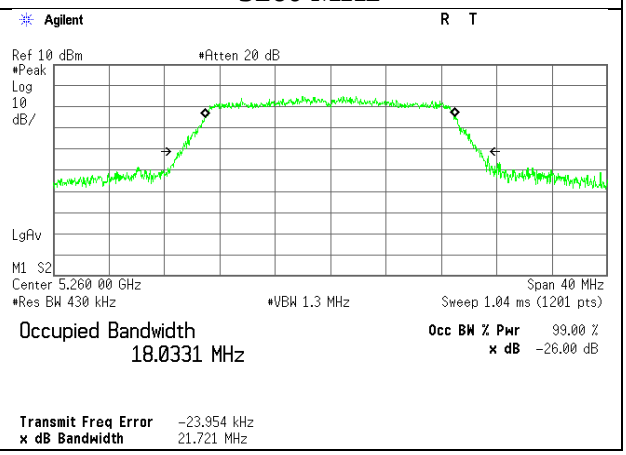
5240 MHz



5220 MHz



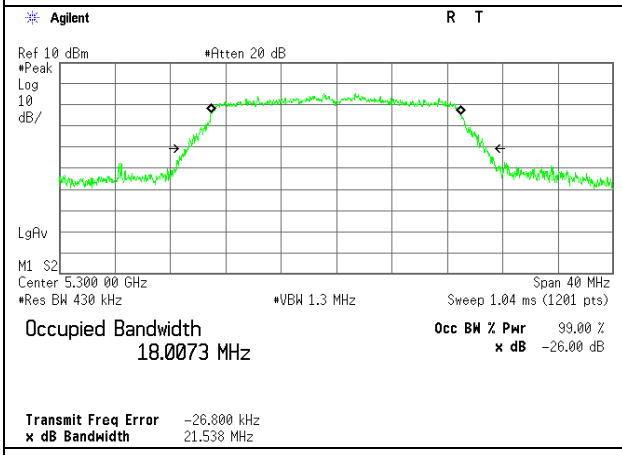
5260 MHz



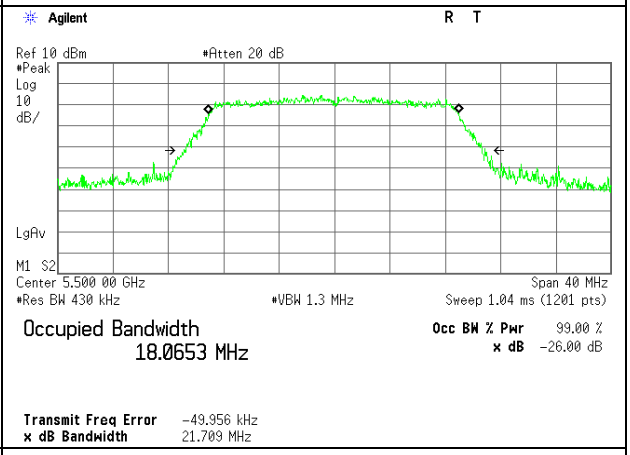
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

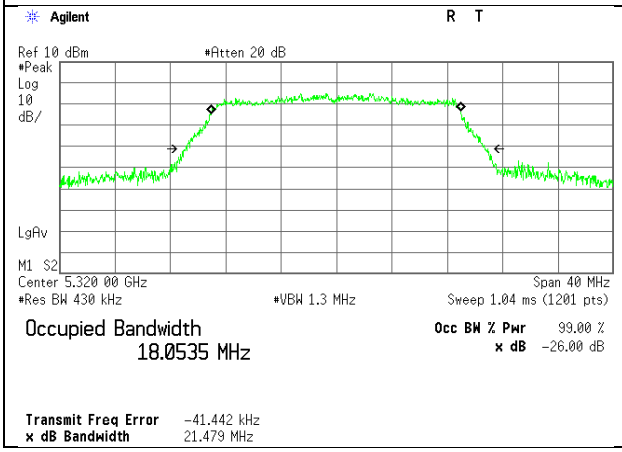
5300 MHz



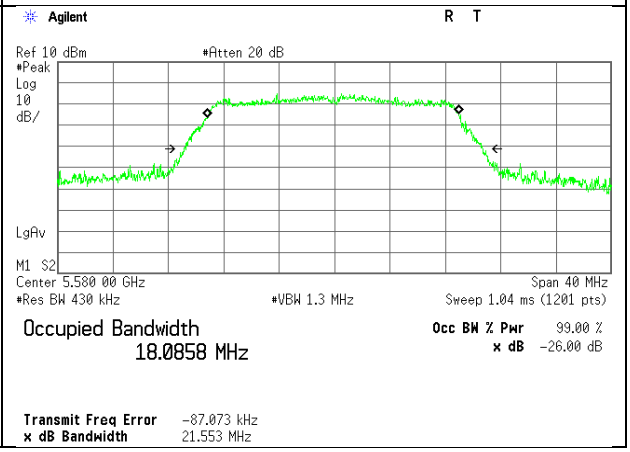
5500 MHz



5320 MHz



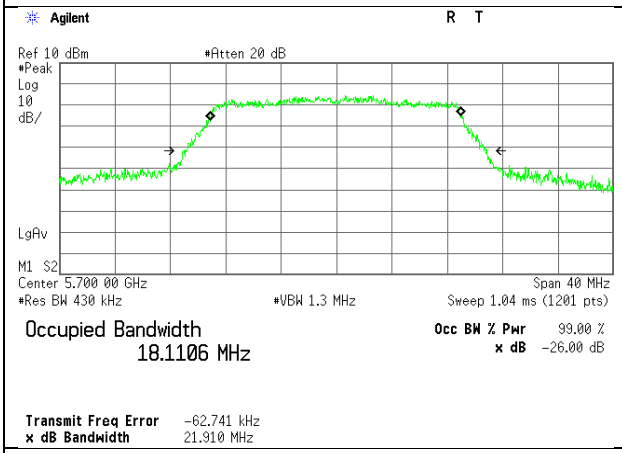
5580 MHz



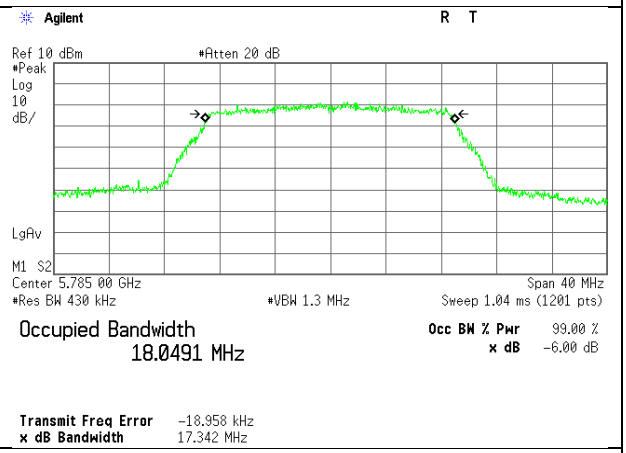
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-20

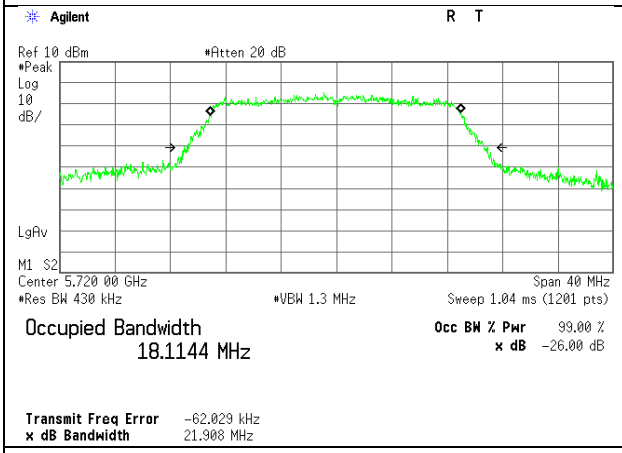
5700 MHz



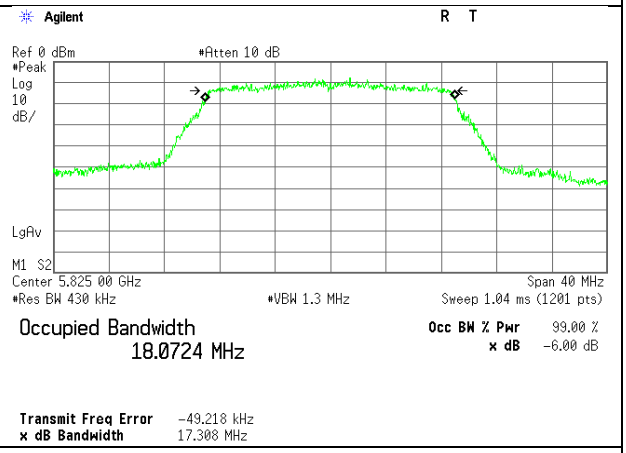
5785 MHz



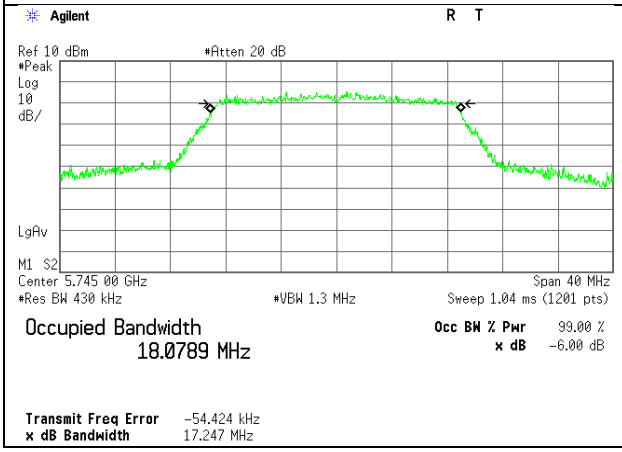
5720 MHz



5825 MHz



5745 MHz



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Telephone : +81 596 24 8999
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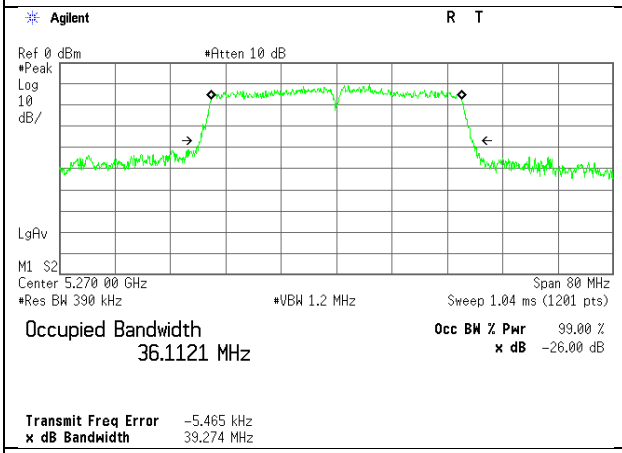
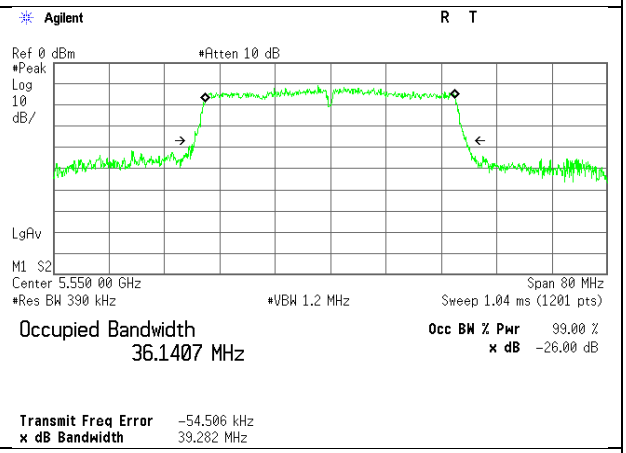
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-40

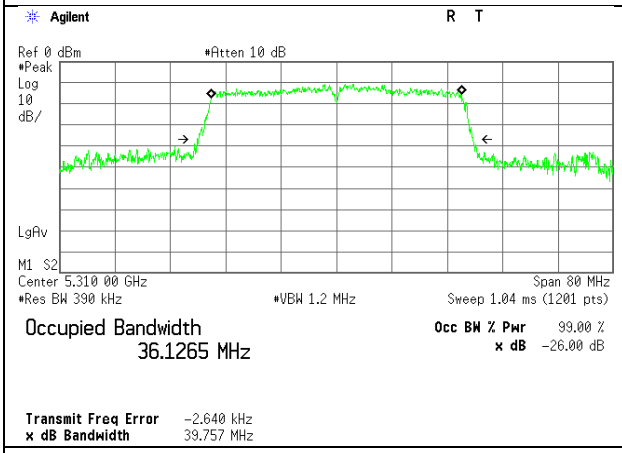
5270MHz



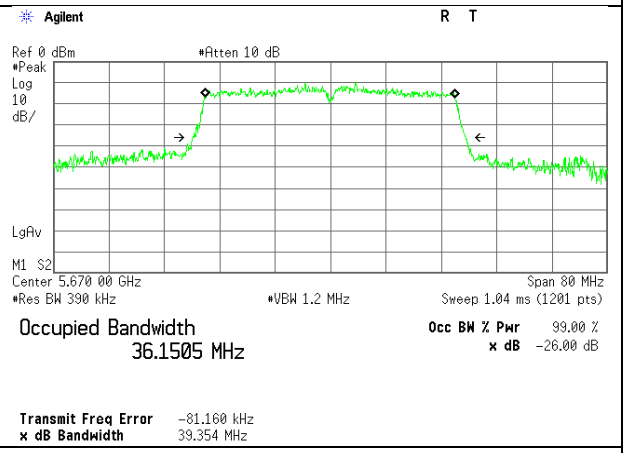
5550 MHz



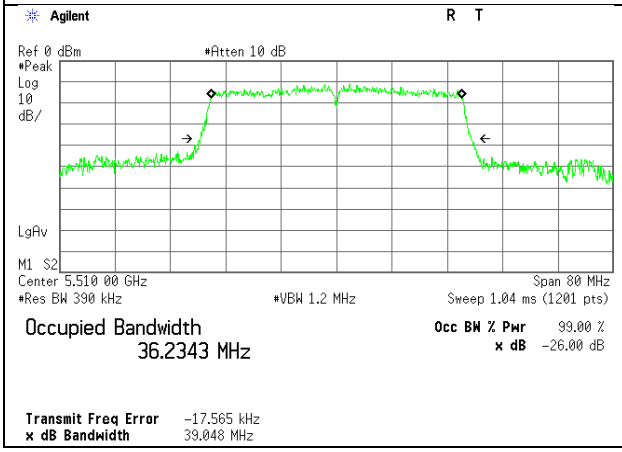
5310MHz



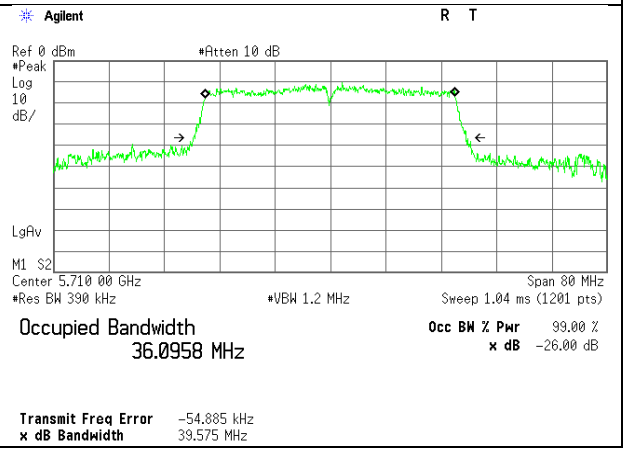
5670 MHz



5510MHz



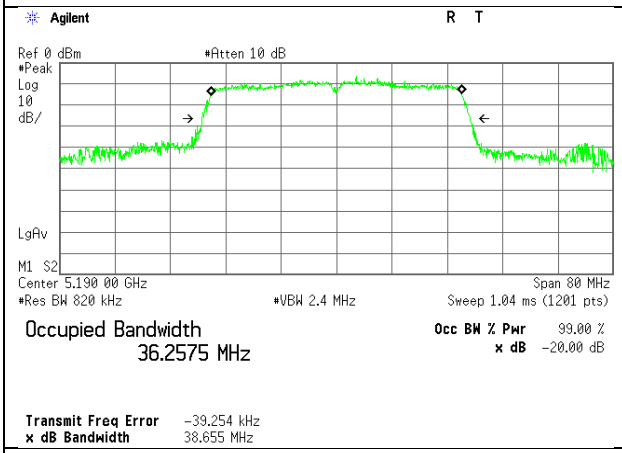
5710 MHz



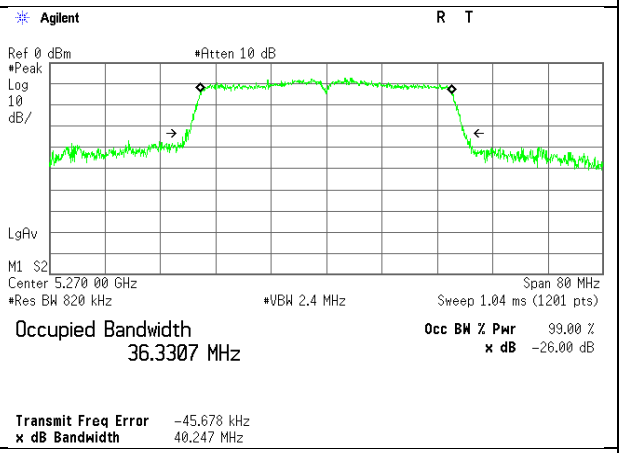
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-40

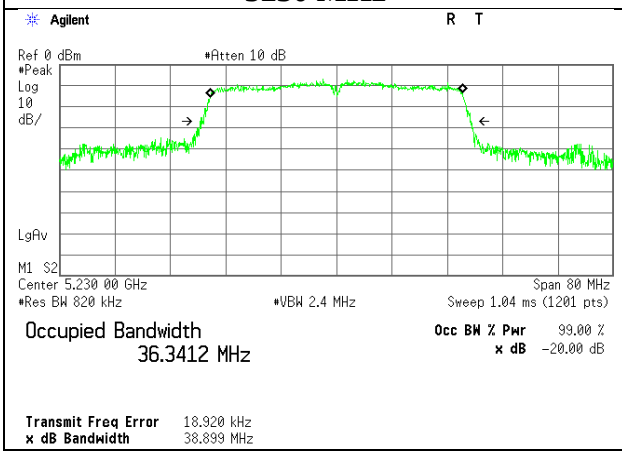
5190 MHz



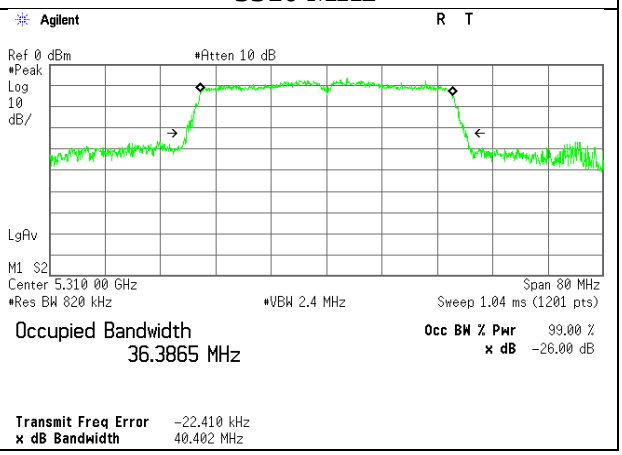
5270 MHz



5230 MHz



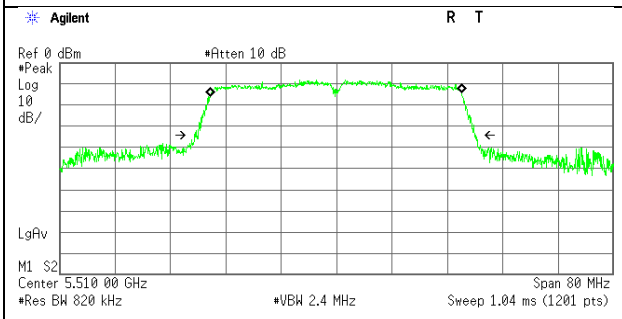
5310 MHz



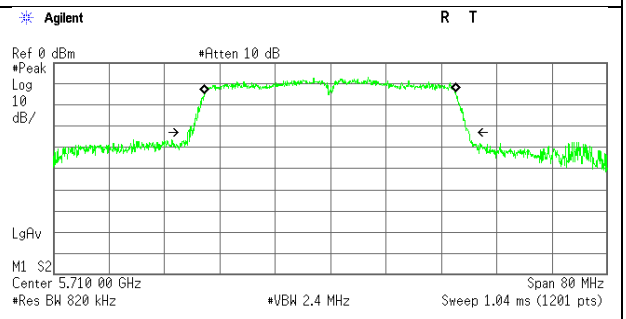
99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-40

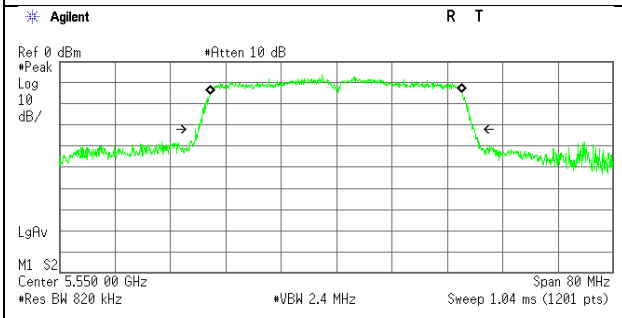
5510 MHz



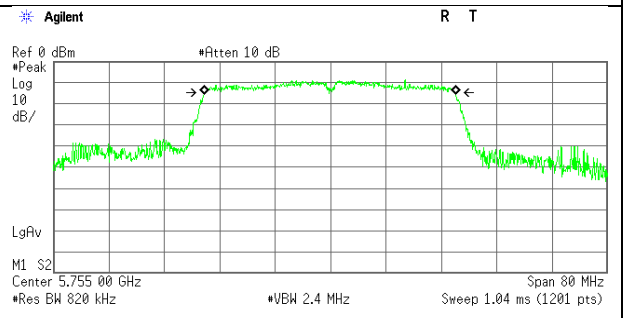
5710 MHz



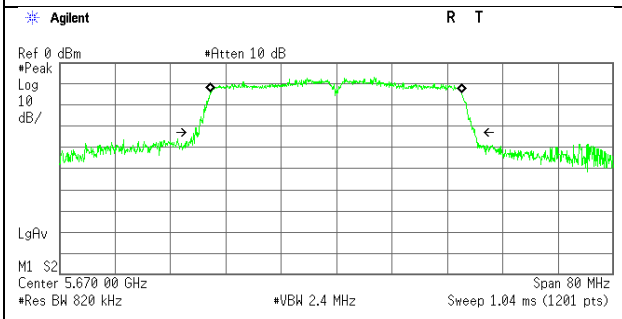
5550 MHz



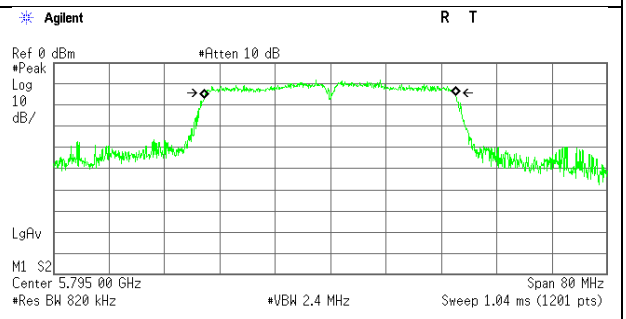
5755 MHz



5670 MHz



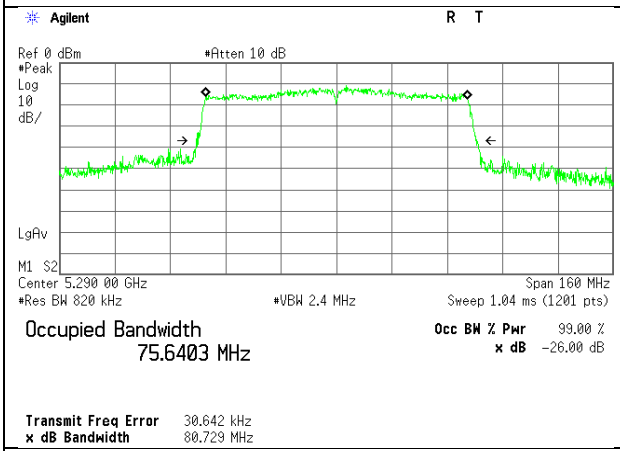
5795 MHz



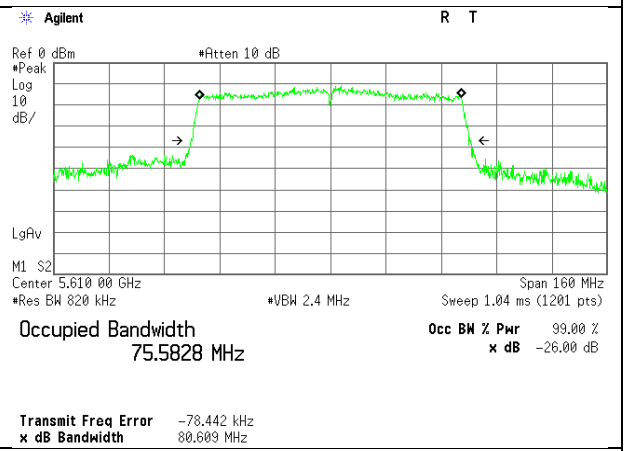
26 dB Emission Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-80

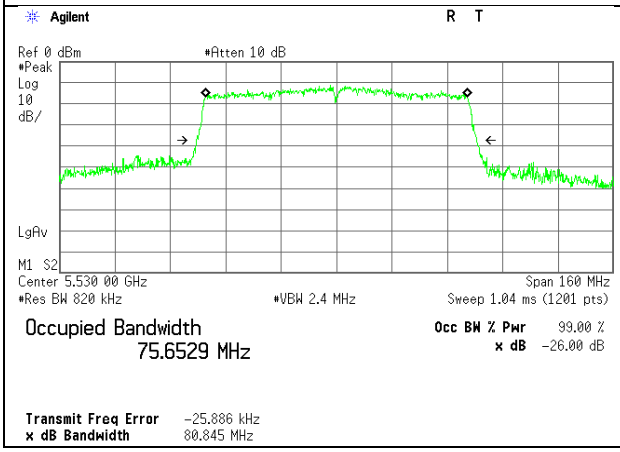
5290MHz



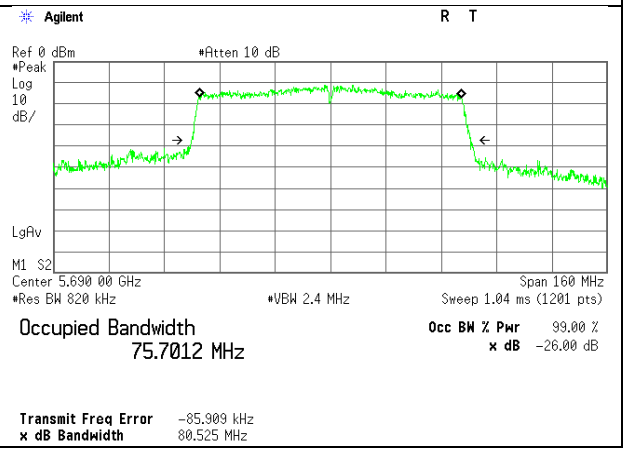
5610 MHz



5530MHz



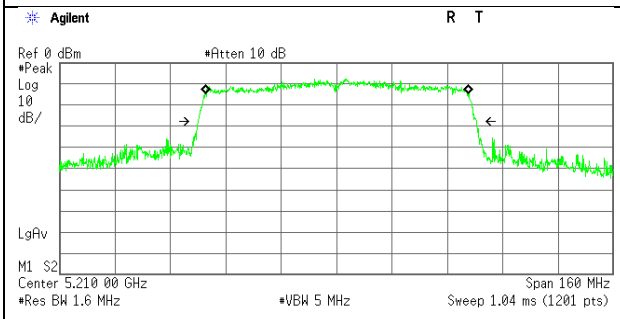
5690 MHz



99 % Occupied Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx 11ac-80

5210 MHz

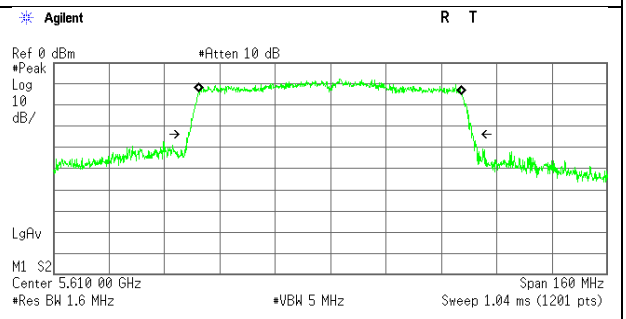


Occupied Bandwidth
75.8957 MHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error 71.027 kHz
x dB Bandwidth 80.215 MHz

5610 MHz

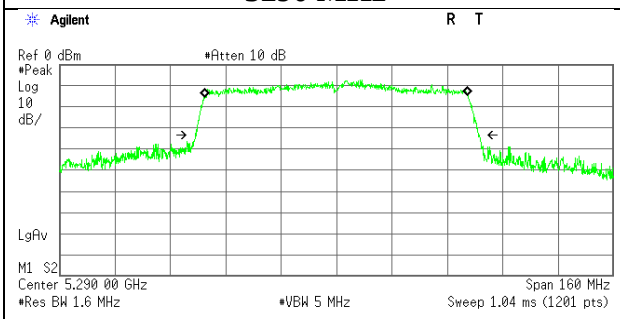


Occupied Bandwidth
76.0187 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -87.462 kHz
x dB Bandwidth 82.110 MHz

5290 MHz

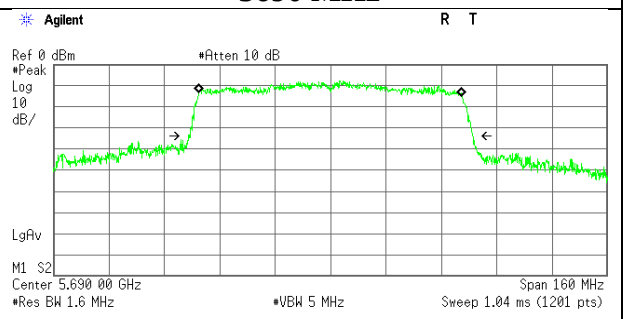


Occupied Bandwidth
75.9437 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -69.096 kHz
x dB Bandwidth 81.744 MHz

5690 MHz

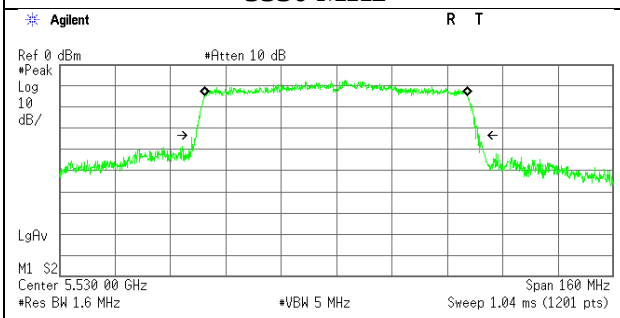


Occupied Bandwidth
75.9792 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -80.561 kHz
x dB Bandwidth 82.077 MHz

5530 MHz

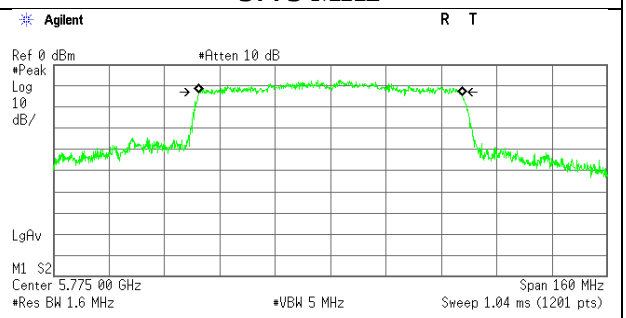


Occupied Bandwidth
75.8493 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -80.484 kHz
x dB Bandwidth 81.609 MHz

5775 MHz



Occupied Bandwidth
76.1381 MHz

Occ BW % Pwr 99.00 %
x dB -6.00 dB

Transmit Freq Error 3.373 kHz
x dB Bandwidth 75.066 MHz

6 dB Bandwidth

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 4, 2017
Temperature / Humidity	24deg. C / 43 % RH
Engineer	Takumi Shimada
Mode	Tx

11a

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5745	16.178	> 500
5785	16.422	> 500
5825	16.132	> 500

11n-20

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5745	16.702	> 500
5785	16.965	> 500
5825	16.609	> 500

11n-40

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5755	35.747	> 500
5795	35.725	> 500

11ac-20

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5745	16.800	> 500
5785	17.417	> 500
5825	17.460	> 500

11ac-40

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5755	35.441	> 500
5795	36.023	> 500

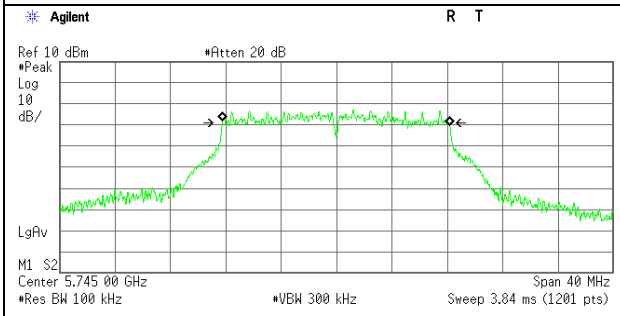
11ac-80

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [kHz]
5775	75.350	> 500

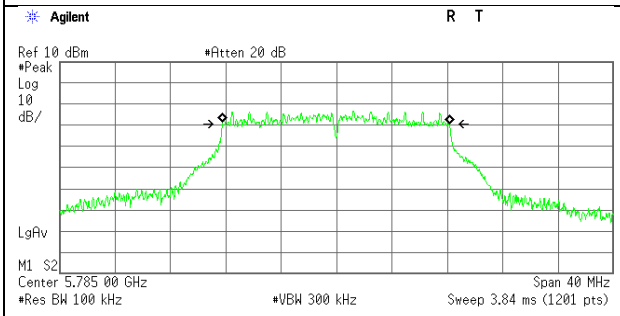
6 dB Bandwidth

11a

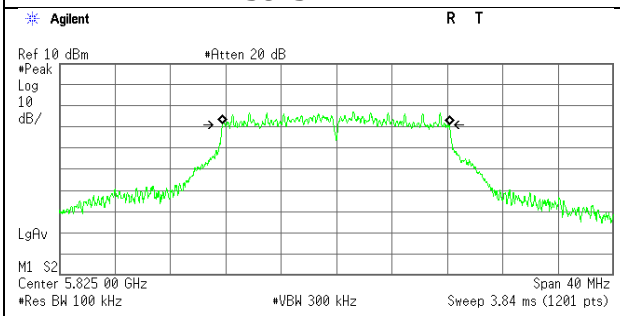
5745 MHz



5785 MHz

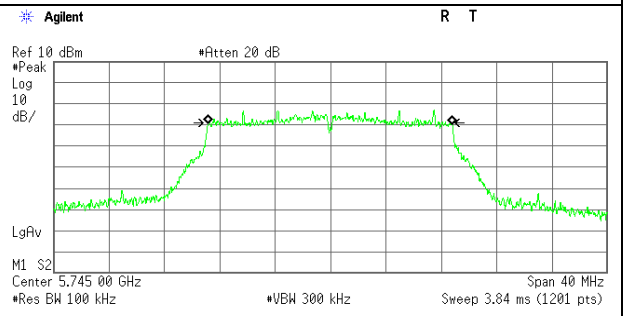


5825 MHz

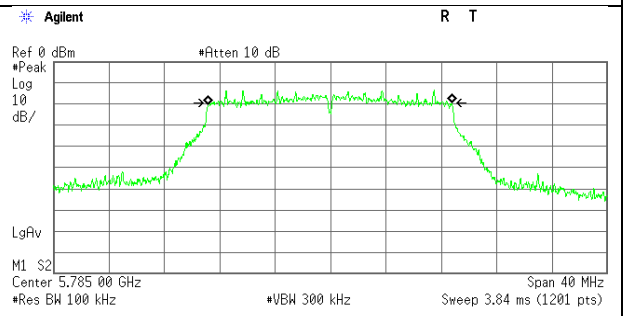


11n-20

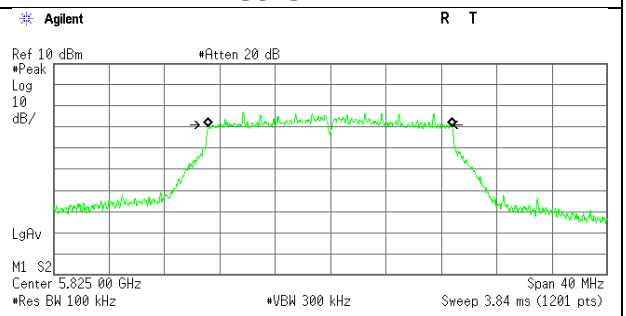
5745 MHz



5785 MHz



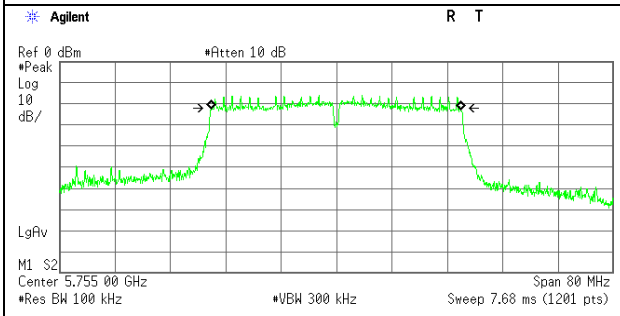
5825 MHz



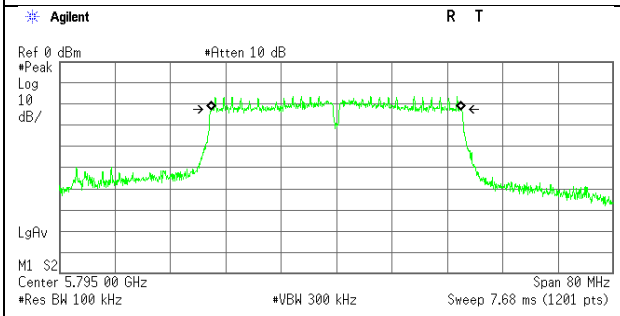
6 dB Bandwidth

11n-40

5755 MHz

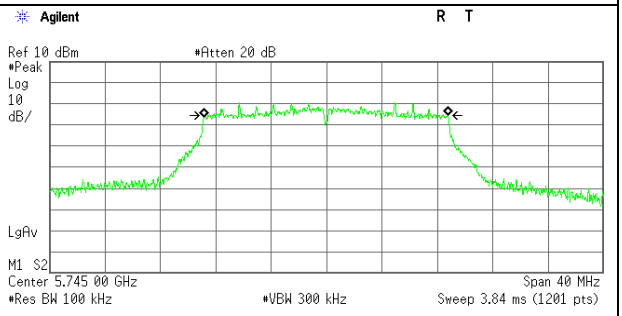


5795 MHz

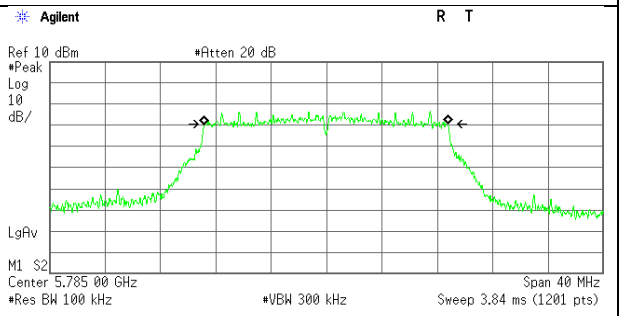


11ac-20

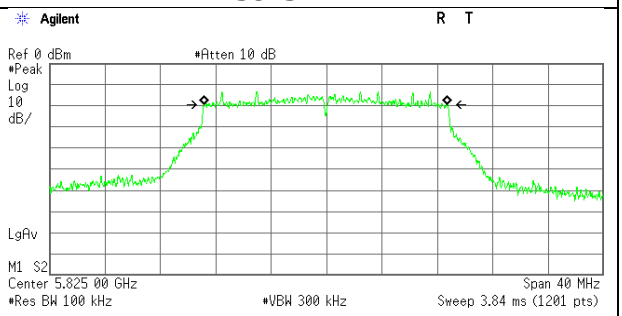
5745 MHz



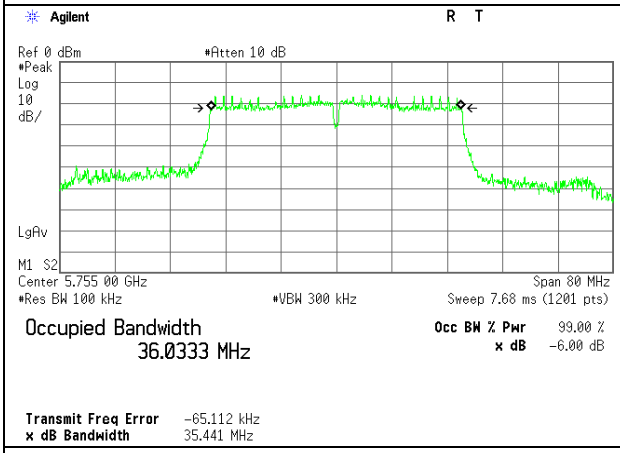
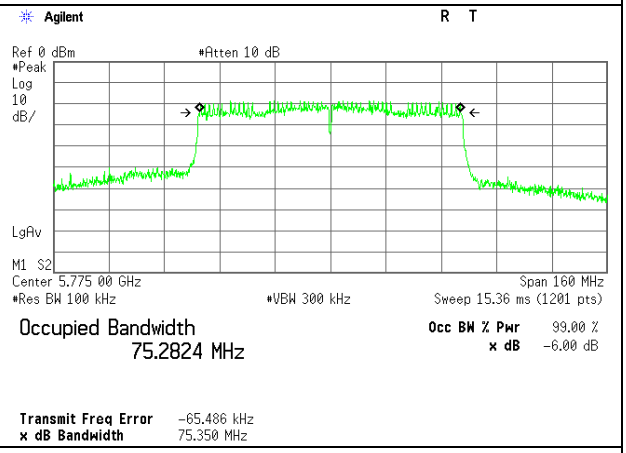
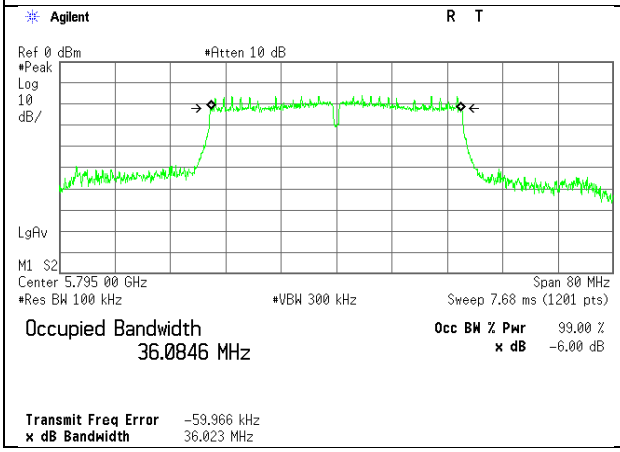
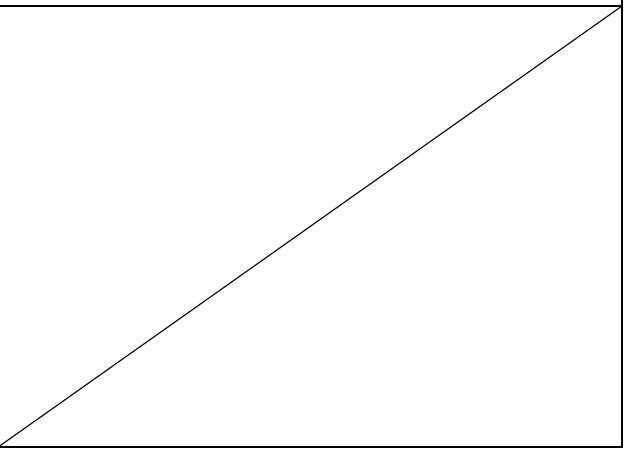
5785 MHz



5825 MHz



6 dB Bandwidth

11ac-40	11ac-80
5775 MHz	**5775 MHz**
	
5795 MHz	
	

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a	

11a Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	1.12	0.80	10.45	0.39	1.5	-	16.928	12.76	18.88	23.97	11.21	14.26	26.67	29.97	15.71
5220	1.35	0.80	10.44	0.39	1.5	-	16.904	12.98	19.86	23.97	10.99	14.48	28.05	29.97	15.49
5240	1.43	0.80	10.44	0.39	1.5	-	16.956	13.06	20.23	23.97	10.91	14.56	28.58	29.97	15.41
5260	1.28	0.80	10.43	0.39	1.5	20.421	16.871	12.90	19.50	23.97	11.07	14.40	27.54	29.97	15.57
5300	1.45	0.80	10.43	0.39	1.5	20.624	16.948	13.07	20.28	23.97	10.90	14.57	28.64	29.97	15.40
5320	1.36	0.80	10.42	0.39	1.5	20.577	16.869	12.97	19.82	23.97	11.00	14.47	27.99	29.97	15.50
5500	1.14	0.80	10.39	0.39	1.5	20.462	16.914	12.72	18.71	23.97	11.25	14.22	26.42	29.97	15.75
5580	1.36	0.80	10.39	0.39	1.5	20.551	16.900	12.94	19.68	23.97	11.03	14.44	27.80	29.97	15.53
5700	1.55	0.80	10.38	0.39	1.5	20.237	16.916	13.12	20.51	23.97	10.85	14.62	28.97	29.97	15.35
5720	1.36	0.80	10.38	0.39	1.5	20.769	16.869	12.93	19.63	23.97	11.04	14.43	27.73	29.97	15.54
5745	-0.75	0.80	10.38	0.39	1.5	-	-	10.82	12.08	30.00	19.18	12.32	17.06	36.00	23.68
5785	-0.80	0.80	10.38	0.39	1.5	-	-	10.77	11.94	30.00	19.23	12.27	16.87	36.00	23.73
5825	-0.91	0.80	10.37	0.39	1.5	-	-	10.65	11.61	30.00	19.35	12.15	16.41	36.00	23.85

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20	

11n-20 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	2.51	0.80	10.45	0.12	1.5	-	18.066	13.88	24.43	23.97	10.09	15.38	34.51	29.97	14.59
5220	2.68	0.80	10.44	0.12	1.5	-	18.010	14.04	25.35	23.97	9.93	15.54	35.81	29.97	14.43
5240	2.87	0.80	10.44	0.12	1.5	-	18.118	14.23	26.49	23.97	9.74	15.73	37.41	29.97	14.24
5260	2.95	0.80	10.43	0.12	1.5	21.071	18.088	14.30	26.92	23.97	9.67	15.80	38.02	29.97	14.17
5300	3.03	0.80	10.43	0.12	1.5	20.916	18.061	14.38	27.42	23.97	9.59	15.88	38.73	29.97	14.09
5320	3.15	0.80	10.42	0.12	1.5	21.157	18.064	14.49	28.12	23.97	9.48	15.99	39.72	29.97	13.98
5500	2.48	0.80	10.39	0.12	1.5	20.732	18.058	13.79	23.93	23.97	10.18	15.29	33.81	29.97	14.68
5580	2.85	0.80	10.39	0.12	1.5	21.107	18.042	14.16	26.06	23.97	9.81	15.66	36.81	29.97	14.31
5700	3.04	0.80	10.38	0.12	1.5	21.060	18.085	14.34	27.16	23.97	9.63	15.84	38.37	29.97	14.13
5720	3.02	0.80	10.38	0.12	1.5	21.331	18.049	14.32	27.04	23.97	9.65	15.82	38.19	29.97	14.15
5745	-0.47	0.80	10.38	0.12	1.5	-	-	10.83	12.11	30.00	19.17	12.33	17.10	36.00	23.67
5785	-0.77	0.80	10.38	0.12	1.5	-	-	10.53	11.30	30.00	19.47	12.03	15.96	36.00	23.97
5825	-0.67	0.80	10.37	0.12	1.5	-	-	10.62	11.53	30.00	19.38	12.12	16.29	36.00	23.88

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40	

11n-40 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5190	-0.36	0.80	10.44	0.33	1.5	-	36.411	11.21	13.21	23.97	12.76	12.71	18.66	29.97	17.26
5230	-0.36	0.80	10.44	0.33	1.5	-	36.307	11.21	13.21	23.97	12.76	12.71	18.66	29.97	17.26
5270	-0.01	0.80	10.43	0.33	1.5	39.274	36.331	11.55	14.29	23.97	12.42	13.05	20.18	29.97	16.92
5310	0.15	0.80	10.42	0.33	1.5	39.544	36.311	11.70	14.79	23.97	12.27	13.20	20.89	29.97	16.77
5510	-0.26	0.80	10.39	0.33	1.5	39.066	36.299	11.26	13.37	23.97	12.71	12.76	18.88	29.97	17.21
5550	-0.18	0.80	10.39	0.33	1.5	39.186	36.295	11.34	13.61	23.97	12.63	12.84	19.23	29.97	17.13
5670	-0.16	0.80	10.38	0.33	1.5	39.510	36.467	11.35	13.65	23.97	12.62	12.85	19.28	29.97	17.12
5710	-0.07	0.80	10.38	0.33	1.5	39.275	36.290	11.44	13.93	23.97	12.53	12.94	19.68	29.97	17.03
5755	-1.29	0.80	10.38	0.33	1.5	-	-	10.22	10.52	30.00	19.78	11.72	14.86	36.00	24.28
5795	-1.21	0.80	10.37	0.33	1.5	-	-	10.29	10.69	30.00	19.71	11.79	15.10	36.00	24.21

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20	

11ac-20 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	2.50	0.80	10.45	0.12	1.5	-	18.074	13.87	24.38	23.97	10.10	15.37	34.43	29.97	14.60
5220	2.65	0.80	10.44	0.12	1.5	-	18.091	14.01	25.18	23.97	9.96	15.51	35.56	29.97	14.46
5240	2.84	0.80	10.44	0.12	1.5	-	18.052	14.20	26.30	23.97	9.77	15.70	37.15	29.97	14.27
5260	2.87	0.80	10.43	0.12	1.5	21.143	18.033	14.22	26.42	23.97	9.75	15.72	37.33	29.97	14.25
5300	2.93	0.80	10.43	0.12	1.5	21.317	18.007	14.28	26.79	23.97	9.69	15.78	37.84	29.97	14.19
5320	3.14	0.80	10.42	0.12	1.5	21.036	18.054	14.48	28.05	23.97	9.49	15.98	39.63	29.97	13.99
5500	2.46	0.80	10.39	0.12	1.5	21.171	18.065	13.77	23.82	23.97	10.20	15.27	33.65	29.97	14.70
5580	2.84	0.80	10.39	0.12	1.5	21.126	18.086	14.15	26.00	23.97	9.82	15.65	36.73	29.97	14.32
5700	2.53	0.80	10.38	0.12	1.5	21.062	18.111	13.83	24.15	23.97	10.14	15.33	34.12	29.97	14.64
5720	2.95	0.80	10.38	0.12	1.5	21.043	18.114	14.25	26.61	23.97	9.72	15.75	37.58	29.97	14.22
5745	-0.48	0.80	10.38	0.12	1.5	-	-	10.82	12.08	30.00	19.18	12.32	17.06	36.00	23.68
5785	-0.78	0.80	10.38	0.12	1.5	-	-	10.52	11.27	30.00	19.48	12.02	15.92	36.00	23.98
5825	-1.01	0.80	10.37	0.12	1.5	-	-	10.28	10.67	30.00	19.72	11.78	15.07	36.00	24.22

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40	

11ac-40 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5190	-0.35	0.80	10.44	0.34	1.5	-	36.258	11.23	13.27	23.97	12.74	12.73	18.75	29.97	17.24
5230	-0.25	0.80	10.44	0.34	1.5	-	36.341	11.33	13.58	23.97	12.64	12.83	19.19	29.97	17.14
5270	0.03	0.80	10.43	0.34	1.5	39.387	36.391	11.60	14.45	23.97	12.37	13.10	20.42	29.97	16.87
5310	0.16	0.80	10.42	0.34	1.5	39.757	36.387	11.72	14.86	23.97	12.25	13.22	20.99	29.97	16.75
5510	-0.25	0.80	10.39	0.34	1.5	39.048	36.278	11.28	13.43	23.97	12.69	12.78	18.97	29.97	17.19
5550	-0.17	0.80	10.39	0.34	1.5	39.282	36.297	11.36	13.68	23.97	12.61	12.86	19.32	29.97	17.11
5670	-0.13	0.80	10.38	0.34	1.5	39.354	36.318	11.39	13.77	23.97	12.58	12.89	19.45	29.97	17.08
5710	-0.06	0.80	10.38	0.34	1.5	39.575	36.259	11.46	14.00	23.97	12.51	12.96	19.77	29.97	17.01
5755	-1.26	0.80	10.38	0.34	1.5	-	-	10.26	10.62	30.00	19.74	11.76	15.00	36.00	24.24
5795	-1.20	0.80	10.37	0.34	1.5	-	-	10.31	10.74	30.00	19.69	11.81	15.17	36.00	24.19

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room	
Report No.	11774441H	
Date	June 28, 2017	July 3, 2017
Temperature / Humidity	24deg. C / 59 % RH	25deg. C / 60 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80	

11ac-80 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Limit	Margin	e.i.r.p. Result		Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5210	-2.21	0.80	10.44	1.07	1.5	-	75.896	10.10	10.23	23.97	13.87	11.60	14.45	29.97	18.37
5290	-2.04	0.80	10.43	1.07	1.5	80.729	75.944	10.26	10.62	23.97	13.71	11.76	15.00	29.97	18.21
5530	-2.11	0.80	10.39	1.07	1.5	80.845	75.849	10.15	10.35	23.97	13.82	11.65	14.62	29.97	18.32
5610	-2.13	0.80	10.39	1.07	1.5	80.609	76.019	10.13	10.30	23.97	13.84	11.63	14.55	29.97	18.34
5690	-2.04	0.80	10.38	1.07	1.5	80.525	75.979	10.21	10.50	30.00	19.79	11.71	14.83	36.00	24.29
5775	-1.70	0.80	10.38	1.07	1.5	-	-	10.55	11.35	30.00	19.45	12.05	16.03	36.00	23.95

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

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	June 27, 2017
Temperature / Humidity	25deg. C / 56 % RH
Engineer	Takafumi Noguchi
Mode	Tx

5180 MHz

Mode	Rate Mbps	Reading [dBm]	Remarks
11a	6	1.43	
	9	1.42	
	12	1.40	
	18	1.43	
	24	1.37	
	36	1.34	
	48	1.51	*
	54	1.45	

* Worst rate

5180 MHz

Mode	MCS Number	Reading [dBm]	Remarks
11n-20	0	2.62	
	1	2.63	*
	2	2.38	
	3	2.49	
	4	2.50	
	5	2.42	
	6	2.48	
	7	2.49	

* Worst rate

5190 MHz

Mode	MCS Number	Reading [dBm]	Remarks
11n-40	0	-0.12	
	1	-0.22	
	2	-0.03	*
	3	-0.06	
	4	-0.10	
	5	-0.12	
	6	-0.06	
	7	-0.11	

* Worst rate

Maximum Conducted Output Power

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	June 27, 2017
Temperature / Humidity	25deg. C / 56 % RH
Engineer	Takafumi Noguchi
Mode	Tx

5180 MHz

Mode	MCS Number	Reading [dBm]	Remarks
11ac-20	0	2.59	
	1	2.62	*
	2	2.37	
	3	2.24	
	4	2.54	
	5	2.34	
	6	2.57	
	7	2.46	
	8	2.38	

* Worst rate

5190 MHz

Mode	MCS Number	Reading [dBm]	Remarks
11ac-40	0	-0.15	
	1	-0.02	
	2	-0.01	*
	3	-0.12	
	4	-0.08	
	5	-0.09	
	6	-0.03	
	7	-0.02	
	8	-0.03	
	9	-0.04	

* Worst rate

5210 MHz

Mode	MCS Number	Reading [dBm]	Remarks
11ac-80	0	-1.33	
	1	-1.32	
	2	-1.34	
	3	-1.39	
	4	-1.24	
	5	-1.20	
	6	-1.22	
	7	-1.14	*
	8	-1.18	
	9	-1.15	

* Worst rate

Average Output Power
(Reference data for RF Exposure)

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

11a 6Mbps

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5180	1.43	0.80	10.45	12.68	18.54	0.05	12.73	18.75
5220	1.51	0.80	10.44	12.75	18.84	0.05	12.80	19.05
5240	1.63	0.80	10.44	12.87	19.36	0.05	12.92	19.59
5260	1.58	0.80	10.43	12.81	19.10	0.05	12.86	19.32
5300	1.66	0.80	10.43	12.89	19.45	0.05	12.94	19.68
5320	1.62	0.80	10.42	12.84	19.23	0.05	12.89	19.45
5500	1.35	0.80	10.39	12.54	17.95	0.05	12.59	18.16
5580	1.47	0.80	10.39	12.66	18.45	0.05	12.71	18.66
5700	1.66	0.80	10.38	12.84	19.23	0.05	12.89	19.45
5720	1.69	0.80	10.38	12.87	19.36	0.05	12.92	19.59
5745	-0.48	0.80	10.38	10.70	11.75	0.05	10.75	11.89
5785	-0.66	0.80	10.38	10.52	11.27	0.05	10.57	11.40
5825	-0.61	0.80	10.37	10.56	11.38	0.05	10.61	11.51

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

The average output power was measured with the lowest order modulation and lowest data rate configuration in each IEEE 802.11 mode based on KDB 248227 D01.

Average Output Power
(Reference data for RF Exposure)

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

11n20 MCS0

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5180	2.43	0.80	10.45	13.68	23.33	0.06	13.74	23.66
5220	2.64	0.80	10.44	13.88	24.43	0.06	13.94	24.77
5240	2.67	0.80	10.44	13.91	24.60	0.06	13.97	24.95
5260	2.58	0.80	10.43	13.81	24.04	0.06	13.87	24.38
5300	2.61	0.80	10.43	13.84	24.21	0.06	13.90	24.55
5320	2.67	0.80	10.42	13.89	24.49	0.06	13.95	24.83
5500	2.39	0.80	10.39	13.58	22.80	0.06	13.64	23.12
5580	2.50	0.80	10.39	13.69	23.39	0.06	13.75	23.71
5700	2.57	0.80	10.38	13.75	23.71	0.06	13.81	24.04
5720	2.59	0.80	10.38	13.77	23.82	0.06	13.83	24.15
5745	-0.80	0.80	10.38	10.38	10.91	0.06	10.44	11.07
5785	-0.98	0.80	10.38	10.20	10.47	0.06	10.26	10.62
5825	-1.06	0.80	10.37	10.11	10.26	0.06	10.17	10.40

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

11n-40 MCS0

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5190	-0.27	0.80	10.44	10.97	12.50	0.12	11.09	12.85
5230	-0.16	0.80	10.44	11.08	12.82	0.12	11.20	13.18
5270	-0.10	0.80	10.43	11.13	12.97	0.12	11.25	13.34
5310	-0.12	0.80	10.42	11.10	12.88	0.12	11.22	13.24
5510	-0.24	0.80	10.39	10.95	12.45	0.12	11.07	12.79
5550	-0.12	0.80	10.39	11.07	12.79	0.12	11.19	13.15
5670	0.02	0.80	10.38	11.20	13.18	0.12	11.32	13.55
5710	-0.01	0.80	10.38	11.17	13.09	0.12	11.29	13.46
5755	-1.09	0.80	10.38	10.09	10.21	0.12	10.21	10.50
5795	-1.20	0.80	10.37	9.97	9.93	0.12	10.09	10.21

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

The average output power was measured with the lowest order modulation and lowest data rate configuration in each IEEE 802.11 mode based on KDB 248227 D01.

Average Output Power
(Reference data for RF Exposure)

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

11ac20 MCS0

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5180	2.42	0.80	10.45	13.67	23.28	0.06	13.73	23.60
5220	2.63	0.80	10.44	13.87	24.38	0.06	13.93	24.72
5240	2.62	0.80	10.44	13.86	24.32	0.06	13.92	24.66
5260	2.56	0.80	10.43	13.79	23.93	0.06	13.85	24.27
5300	2.60	0.80	10.43	13.83	24.15	0.06	13.89	24.49
5320	2.66	0.80	10.42	13.88	24.43	0.06	13.94	24.77
5500	2.36	0.80	10.39	13.55	22.65	0.06	13.61	22.96
5580	2.48	0.80	10.39	13.67	23.28	0.06	13.73	23.60
5700	2.56	0.80	10.38	13.74	23.66	0.06	13.80	23.99
5720	2.58	0.80	10.38	13.76	23.77	0.06	13.82	24.10
5745	-0.95	0.80	10.38	10.23	10.54	0.06	10.29	10.69
5785	-0.99	0.80	10.38	10.19	10.45	0.06	10.25	10.59
5825	-1.11	0.80	10.37	10.06	10.14	0.06	10.12	10.28

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

11ac-40 MCS0

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5190	-0.26	0.80	10.44	10.98	12.53	0.13	11.11	12.91
5230	-0.08	0.80	10.44	11.16	13.06	0.13	11.29	13.46
5270	-0.10	0.80	10.43	11.13	12.97	0.13	11.26	13.37
5310	-0.07	0.80	10.42	11.15	13.03	0.13	11.28	13.43
5510	-0.18	0.80	10.39	11.01	12.62	0.13	11.14	13.00
5550	-0.12	0.80	10.39	11.07	12.79	0.13	11.20	13.18
5670	0.07	0.80	10.38	11.25	13.34	0.13	11.38	13.74
5710	0.03	0.80	10.38	11.21	13.21	0.13	11.34	13.61
5755	-1.08	0.80	10.38	10.10	10.23	0.13	10.23	10.54
5795	-1.16	0.80	10.37	10.01	10.02	0.13	10.14	10.33

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

The average output power was measured with the lowest order modulation and lowest data rate configuration in each IEEE 802.11 mode based on KDB 248227 D01.

Average Output Power
(Reference data for RF Exposure)

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

11ac-80 MCS0

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Result (Timed average)		Duty factor	Result (Burst power average)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
5210	-1.46	0.80	10.44	9.78	9.51	0.25	10.03	10.07
5290	-1.40	0.80	10.43	9.83	9.62	0.25	10.08	10.19
5530	-1.45	0.80	10.39	9.74	9.42	0.25	9.99	9.98
5610	-1.37	0.80	10.39	9.82	9.59	0.25	10.07	10.16
5690	-1.31	0.80	10.38	9.87	9.71	0.25	10.12	10.28
5775	-1.01	0.80	10.38	10.17	10.40	0.25	10.42	11.02

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

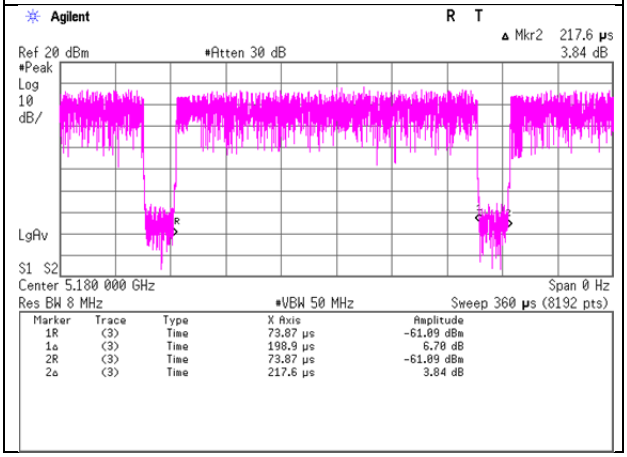
The average output power was measured with the lowest order modulation and lowest data rate configuration in each IEEE 802.11 mode based on KDB 248227 D01.

Burst rate confirmation

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

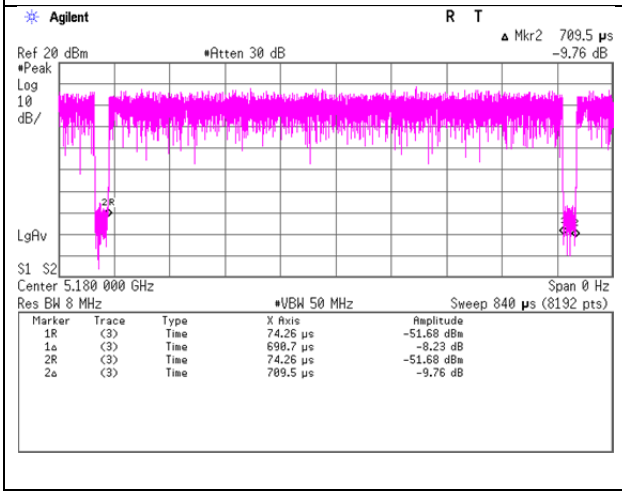
11a 48Mbps

Tx on / (Tx on + Tx off) =	**0.914**
Tx on / (Tx on + Tx off) * 100 =	**91.4 %**
Duty factor = 10 * log (217.6 / 198.9) =	**0.39 dB**



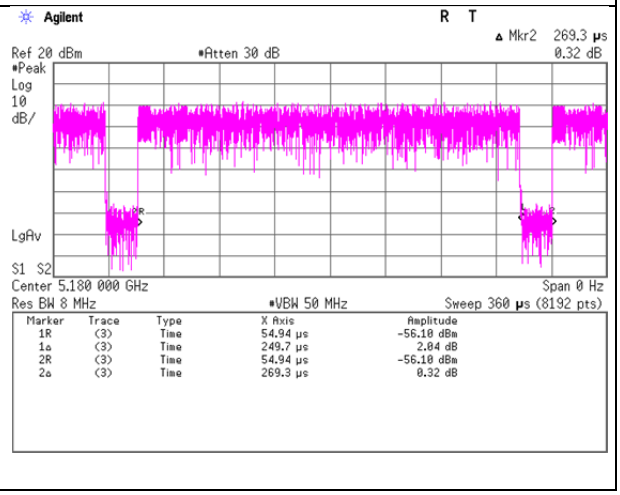
11n-20 MCS1

Tx on / (Tx on + Tx off) =	**0.974**
Tx on / (Tx on + Tx off) * 100 =	**97.4 %**
Duty factor = 10 * log (709.5 / 690.7) =	**0.12 dB**



11n-40 MCS2

Tx on / (Tx on + Tx off) =	**0.927**
Tx on / (Tx on + Tx off) * 100 =	**92.7 %**
Duty factor = 10 * log (269.3 / 249.7) =	**0.33 dB**

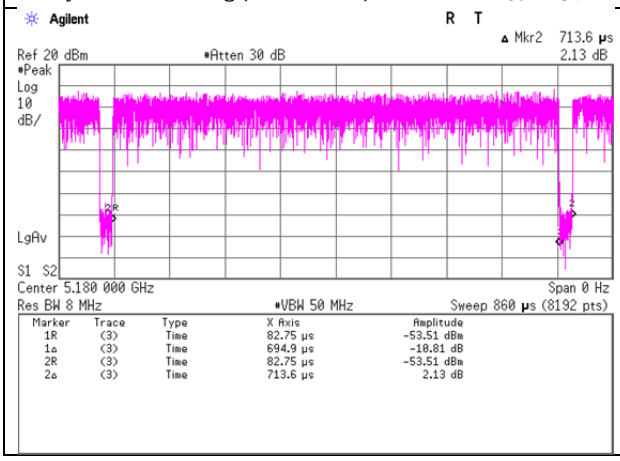


Burst rate confirmation

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

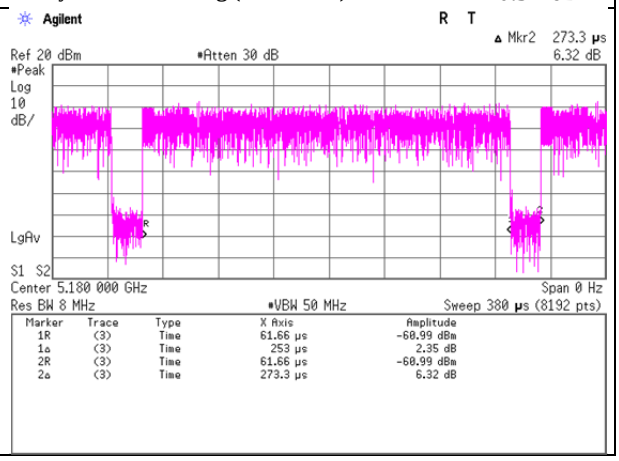
11ac-20 MCS1

Tx on / (Tx on + Tx off) = 0.974
Tx on / (Tx on + Tx off) * 100 = 97.4 %
Duty factor = 10 * log (713.6 / 694.9) = 0.12 dB



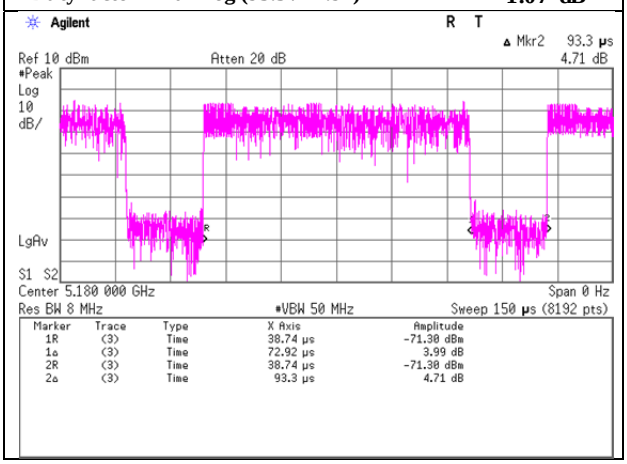
11ac-40 MCS2

Tx on / (Tx on + Tx off) = 0.926
Tx on / (Tx on + Tx off) * 100 = 92.6 %
Duty factor = 10 * log (273.3 / 253) = 0.34 dB



11ac-80 MCS7

Tx on / (Tx on + Tx off) = 0.782
Tx on / (Tx on + Tx off) * 100 = 78.2 %
Duty factor = 10 * log (93.3 / 72.92) = 1.07 dB

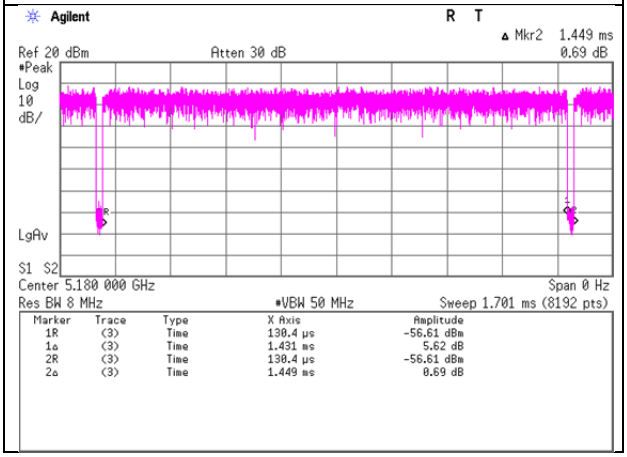


Burst rate confirmation

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

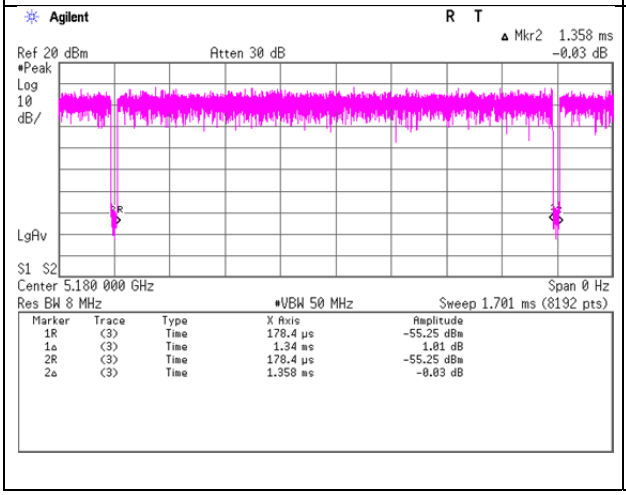
11a 6Mbps

Tx on / (Tx on + Tx off) =	**0.988**
Tx on / (Tx on + Tx off) * 100 =	**98.8 %**
Duty factor = 10 * log (1.449 / 1.431) =	**0.05 dB**



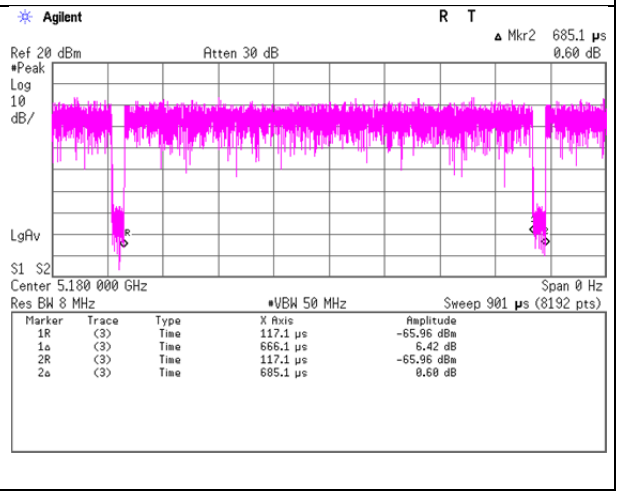
11n-20 MCS0

Tx on / (Tx on + Tx off) =	**0.987**
Tx on / (Tx on + Tx off) * 100 =	**98.7 %**
Duty factor = 10 * log (1.358 / 1.34) =	**0.06 dB**



11n-40 MCS0

Tx on / (Tx on + Tx off) =	**0.972**
Tx on / (Tx on + Tx off) * 100 =	**97.2 %**
Duty factor = 10 * log (685.1 / 666.1) =	**0.12 dB**

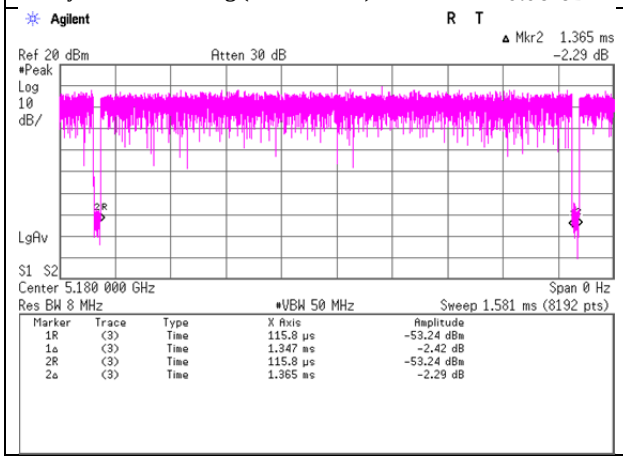


Burst rate confirmation

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 6, 2017
Temperature / Humidity	24deg. C / 47 % RH
Engineer	Yuta Moriya
Mode	Tx

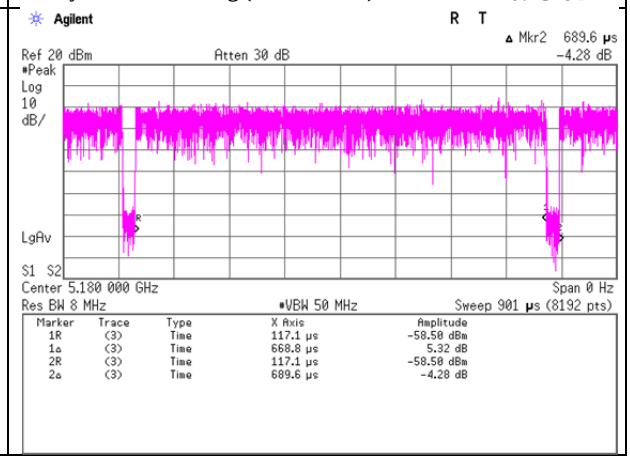
11ac-20 MCS0

Tx on / (Tx on + Tx off) = 0.987
Tx on / (Tx on + Tx off) * 100 = 98.7 %
Duty factor = 10 * log (1.365 / 1.347) = 0.06 dB



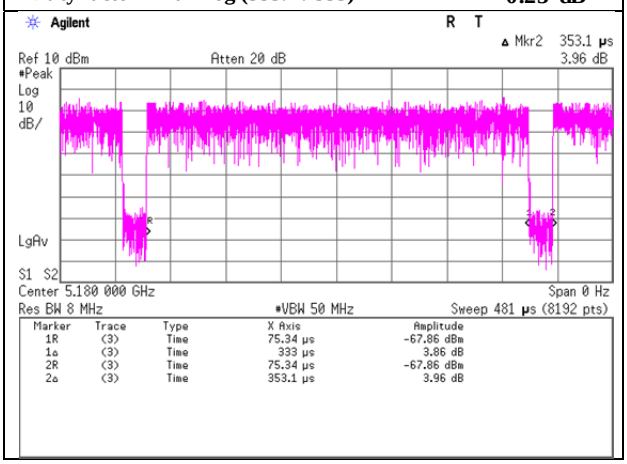
11ac-40 MCS0

Tx on / (Tx on + Tx off) = 0.970
Tx on / (Tx on + Tx off) * 100 = 97.0 %
Duty factor = 10 * log (689.6 / 668.8) = 0.13 dB



11ac-80 MCS0

Tx on / (Tx on + Tx off) = 0.943
Tx on / (Tx on + Tx off) * 100 = 94.3 %
Duty factor = 10 * log (353.1 / 333) = 0.25 dB



Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11a

11a Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5180	-9.53	0.80	10.45	0.39	1.5	0.00	2.11	11.00	8.89	3.61	17.00	13.39
5220	-9.91	0.80	10.44	0.39	1.5	0.00	1.72	11.00	9.28	3.22	17.00	13.78
5240	-9.57	0.80	10.44	0.39	1.5	0.00	2.06	11.00	8.94	3.56	17.00	13.44
5260	-9.73	0.80	10.43	0.39	1.5	0.00	1.89	11.00	9.11	3.39	17.00	13.61
5280	-9.86	0.80	10.43	0.39	1.5	0.00	1.76	11.00	9.24	3.26	17.00	13.74
5300	-9.72	0.80	10.43	0.39	1.5	0.00	1.90	11.00	9.10	3.40	17.00	13.60
5320	-9.93	0.80	10.42	0.39	1.5	0.00	1.69	11.00	9.32	3.19	17.00	13.82
5500	-10.03	0.80	10.39	0.39	1.5	0.00	1.55	11.00	9.45	3.05	17.00	13.95
5580	-10.01	0.80	10.39	0.39	1.5	0.00	1.57	11.00	9.43	3.07	17.00	13.93
5700	-10.19	0.80	10.38	0.39	1.5	0.00	1.38	11.00	9.62	2.88	17.00	14.12
5720	-9.98	0.80	10.38	0.39	1.5	0.00	1.59	11.00	9.41	3.09	17.00	13.91
5745	-12.91	0.80	10.38	0.39	1.5	0.27	-1.07	30.00	31.07	0.43	36.00	35.57
5785	-12.88	0.80	10.38	0.39	1.5	0.27	-1.04	30.00	31.04	0.46	36.00	35.54
5825	-12.71	0.80	10.37	0.39	1.5	0.27	-0.88	30.00	30.88	0.62	36.00	35.38

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-20

11n-20 Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5180	-8.99	0.80	10.45	0.12	1.5	0.00	2.38	11.00	8.62	3.88	17.00	13.12
5220	-8.80	0.80	10.44	0.12	1.5	0.00	2.56	11.00	8.44	4.06	17.00	12.94
5240	-8.81	0.80	10.44	0.12	1.5	0.00	2.55	11.00	8.45	4.05	17.00	12.95
5260	-8.62	0.80	10.43	0.12	1.5	0.00	2.73	11.00	8.27	4.23	17.00	12.77
5280	-8.87	0.80	10.43	0.12	1.5	0.00	2.48	11.00	8.52	3.98	17.00	13.02
5300	-8.80	0.80	10.43	0.12	1.5	0.00	2.55	11.00	8.45	4.05	17.00	12.95
5320	-8.40	0.80	10.42	0.12	1.5	0.00	2.94	11.00	8.06	4.44	17.00	12.56
5500	-8.73	0.80	10.39	0.12	1.5	0.00	2.58	11.00	8.42	4.08	17.00	12.92
5580	-9.08	0.80	10.39	0.12	1.5	0.00	2.24	11.00	8.77	3.74	17.00	13.27
5700	-9.27	0.80	10.38	0.12	1.5	0.00	2.03	11.00	8.97	3.53	17.00	13.47
5720	-8.99	0.80	10.38	0.12	1.5	0.00	2.31	11.00	8.69	3.81	17.00	13.19
5745	-15.39	0.80	10.38	0.12	1.5	0.27	-3.82	30.00	33.82	-2.32	36.00	38.32
5785	-15.70	0.80	10.38	0.12	1.5	0.27	-4.14	30.00	34.14	-2.64	36.00	38.64
5825	-15.46	0.80	10.37	0.12	1.5	0.27	-3.90	30.00	33.90	-2.40	36.00	38.40

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40

11n-40 Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5190	-14.67	0.80	10.44	0.33	1.5	0.00	-3.10	11.00	14.10	-1.60	17.00	18.60
5230	-14.60	0.80	10.00	0.33	1.5	0.00	-3.47	11.00	14.47	-1.97	17.00	18.97
5270	-14.45	0.80	10.44	0.33	1.5	0.00	-2.88	11.00	13.88	-1.38	17.00	18.38
5310	-14.49	0.80	10.43	0.33	1.5	0.00	-2.93	11.00	13.93	-1.43	17.00	18.43
5510	-14.99	0.80	10.39	0.33	1.5	0.00	-3.47	11.00	14.47	-1.97	17.00	18.97
5550	-14.65	0.80	10.39	0.33	1.5	0.00	-3.13	11.00	14.13	-1.63	17.00	18.63
5670	-14.59	0.80	10.38	0.33	1.5	0.00	-3.08	11.00	14.08	-1.58	17.00	18.58
5710	-14.48	0.80	10.38	0.33	1.5	0.00	-2.97	11.00	13.97	-1.47	17.00	18.47
5755	-18.73	0.80	10.38	0.33	1.5	0.27	-6.95	30.00	36.95	-5.45	36.00	41.45
5795	-18.78	0.80	10.00	0.33	1.5	0.27	-7.38	30.00	37.38	-5.88	36.00	41.88

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-20

11ac-20 Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5180	-8.78	0.80	10.45	0.12	1.5	0.00	2.59	11.00	8.41	4.09	17.00	12.91
5220	-8.98	0.80	10.44	0.12	1.5	0.00	2.38	11.00	8.62	3.88	17.00	13.12
5240	-8.78	0.80	10.44	0.12	1.5	0.00	2.59	11.00	8.42	4.09	17.00	12.92
5260	-8.81	0.80	10.43	0.12	1.5	0.00	2.54	11.00	8.46	4.04	17.00	12.96
5280	-8.73	0.80	10.43	0.12	1.5	0.00	2.63	11.00	8.38	4.13	17.00	12.88
5300	-8.63	0.80	10.43	0.12	1.5	0.00	2.72	11.00	8.28	4.22	17.00	12.78
5320	-8.84	0.80	10.42	0.12	1.5	0.00	2.50	11.00	8.50	4.00	17.00	13.00
5500	-9.13	0.80	10.39	0.12	1.5	0.00	2.18	11.00	8.82	3.68	17.00	13.32
5580	-9.21	0.80	10.39	0.12	1.5	0.00	2.10	11.00	8.90	3.60	17.00	13.40
5700	-9.17	0.80	10.38	0.12	1.5	0.00	2.13	11.00	8.87	3.63	17.00	13.37
5720	-8.84	0.80	10.38	0.12	1.5	0.00	2.46	11.00	8.54	3.96	17.00	13.04
5745	-15.48	0.80	10.38	0.12	1.5	0.27	-3.91	30.00	33.91	-2.41	36.00	38.41
5785	-15.59	0.80	10.38	0.12	1.5	0.27	-4.02	30.00	34.02	-2.52	36.00	38.52
5825	-15.53	0.80	10.37	0.12	1.5	0.27	-3.97	30.00	33.97	-2.47	36.00	38.47

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-40

11ac-40 Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5190	-14.87	0.80	10.44	0.34	1.5	0.00	-3.29	11.00	14.29	-1.79	17.00	18.79
5230	-14.81	0.80	10.00	0.34	1.5	0.00	-3.67	11.00	14.67	-2.17	17.00	19.17
5270	-14.54	0.80	10.44	0.34	1.5	0.00	-2.96	11.00	13.96	-1.46	17.00	18.46
5310	-14.59	0.80	10.43	0.34	1.5	0.00	-3.02	11.00	14.02	-1.52	17.00	18.52
5510	-14.66	0.80	10.39	0.34	1.5	0.00	-3.13	11.00	14.13	-1.63	17.00	18.63
5550	-14.66	0.80	10.39	0.34	1.5	0.00	-3.13	11.00	14.13	-1.63	17.00	18.63
5670	-14.59	0.80	10.38	0.34	1.5	0.00	-3.07	11.00	14.07	-1.57	17.00	18.57
5710	-14.34	0.80	10.38	0.34	1.5	0.00	-2.82	11.00	13.82	-1.32	17.00	18.32
5755	-18.84	0.80	10.38	0.34	1.5	0.27	-7.05	30.00	37.05	-5.55	36.00	41.55
5795	-18.84	0.80	10.00	0.34	1.5	0.27	-7.43	30.00	37.43	-5.93	36.00	41.93

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-80

11ac-80 Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5210	-19.02	0.80	10.44	1.07	1.5	0.00	-6.71	11.00	17.71	-5.21	17.00	22.21
5290	-19.26	0.80	10.43	1.07	1.5	0.00	-6.96	11.00	17.96	-5.46	17.00	22.46
5530	-19.40	0.80	10.39	1.07	1.5	0.00	-7.14	11.00	18.14	-5.64	17.00	22.64
5610	-19.35	0.80	10.39	1.07	1.5	0.00	-7.09	11.00	18.09	-5.59	17.00	22.59
5690	-19.35	0.80	10.38	1.07	1.5	0.00	-7.10	11.00	18.10	-5.60	17.00	22.60
5775	-21.88	0.80	10.38	1.07	1.5	0.27	-9.36	30.00	39.36	-7.86	36.00	43.86

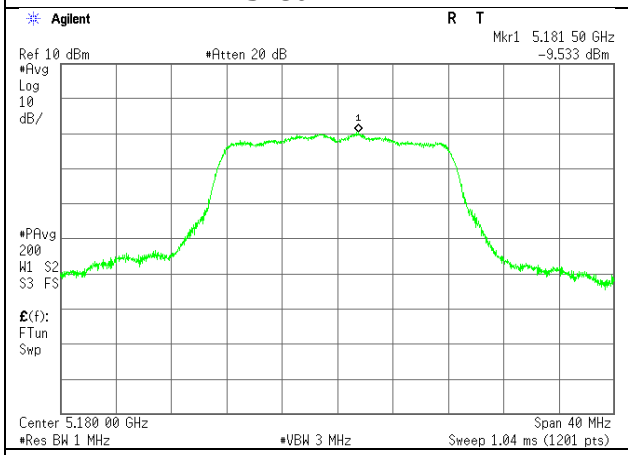
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

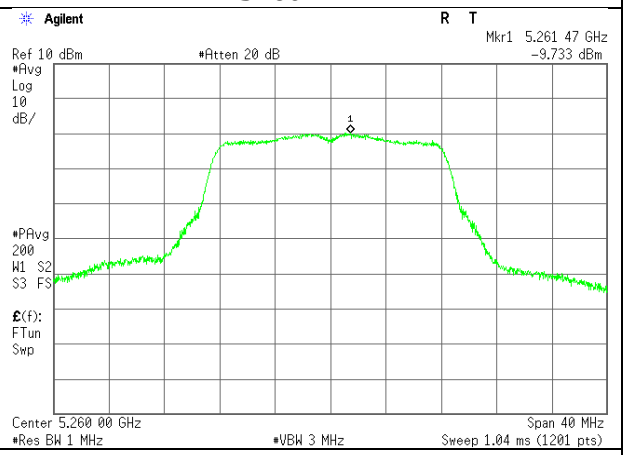
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11a

11a

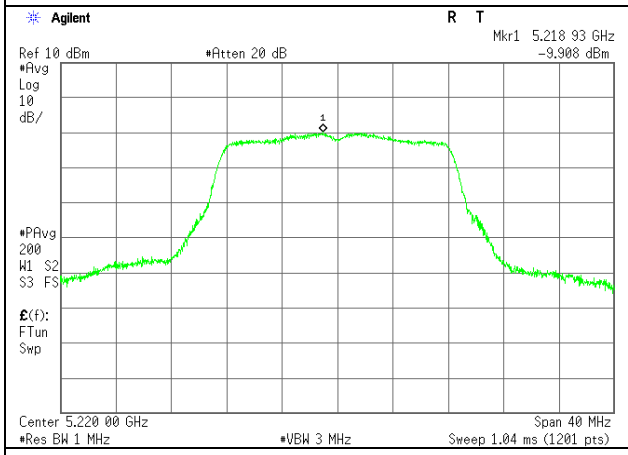
5180 MHz



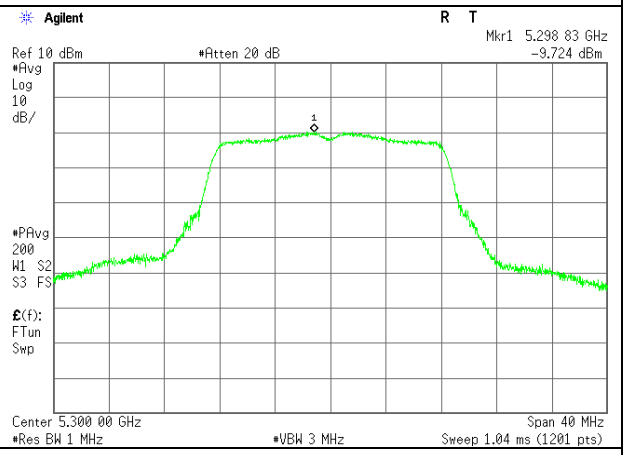
5260 MHz



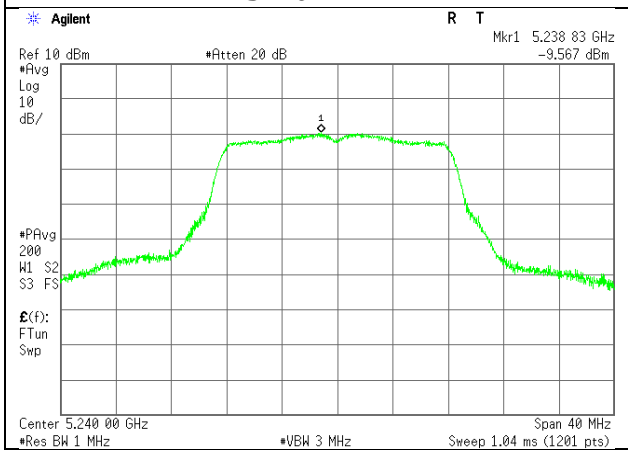
5220 MHz



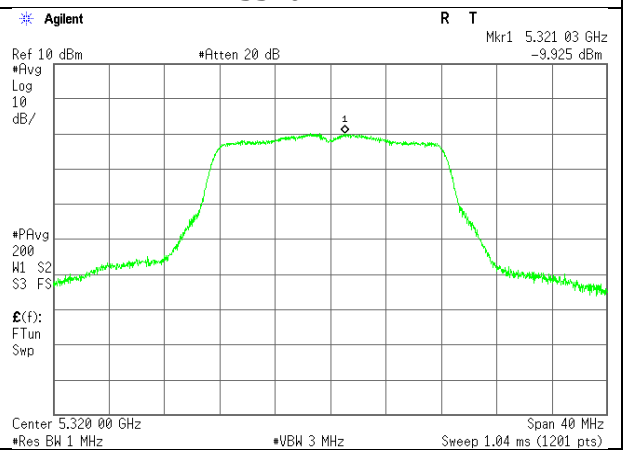
5300 MHz



5240 MHz



5320 MHz

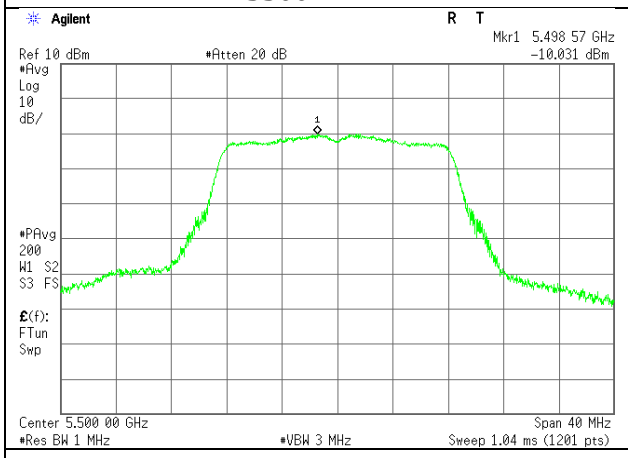


Maximum Power Spectral Density

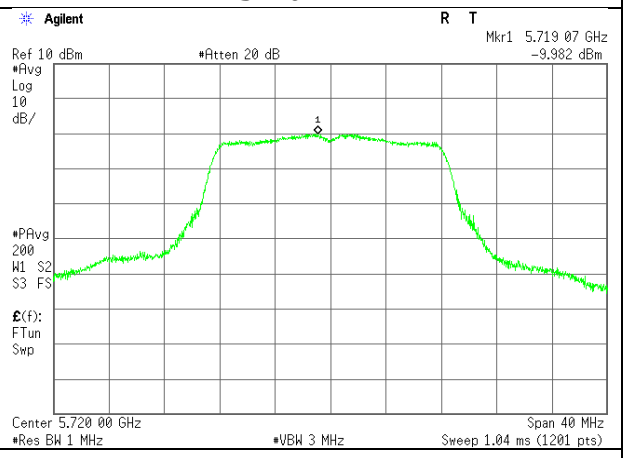
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11a

11a

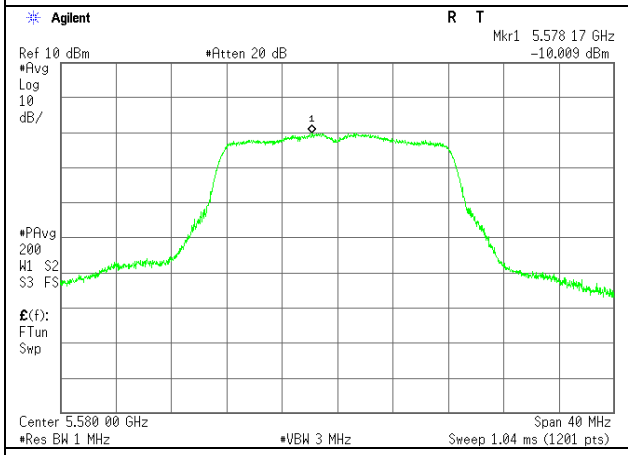
5500 MHz



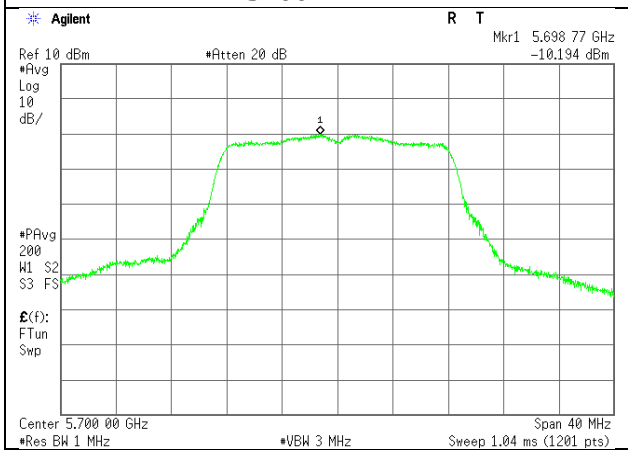
5720 MHz



5580 MHz



5700 MHz

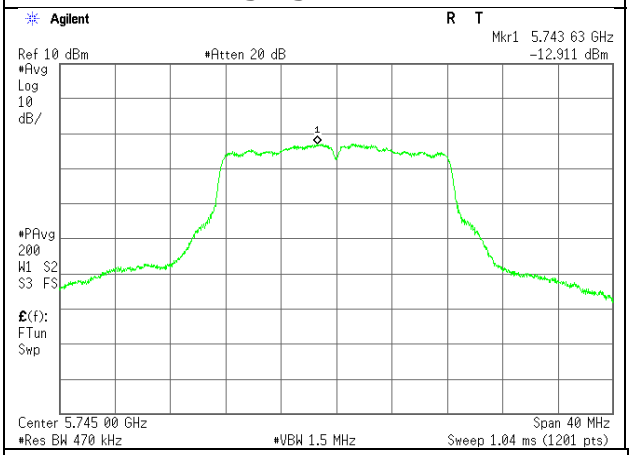


Maximum Power Spectral Density

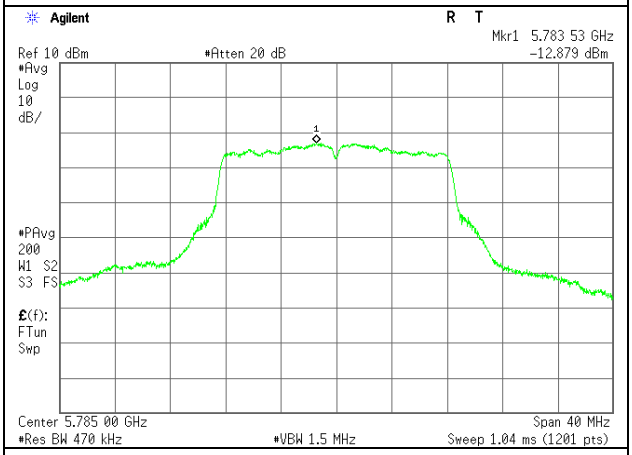
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11a

11a

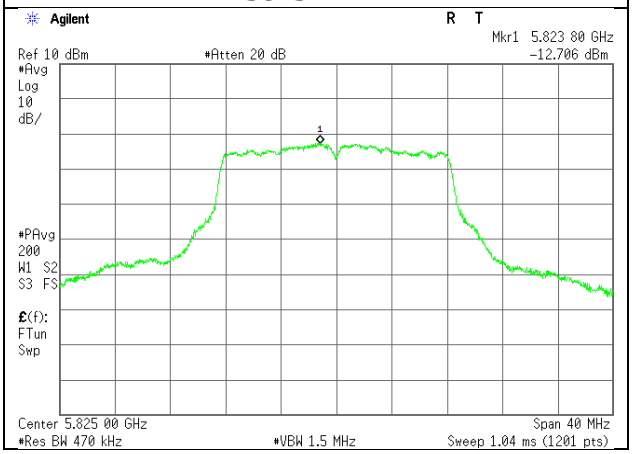
5745 MHz



5785 MHz



5825 MHz

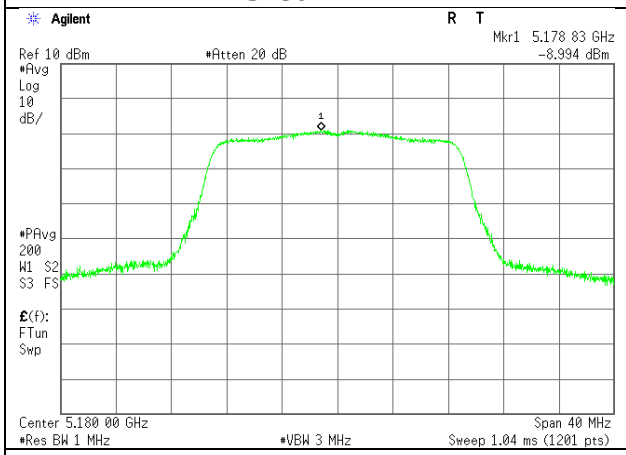


Maximum Power Spectral Density

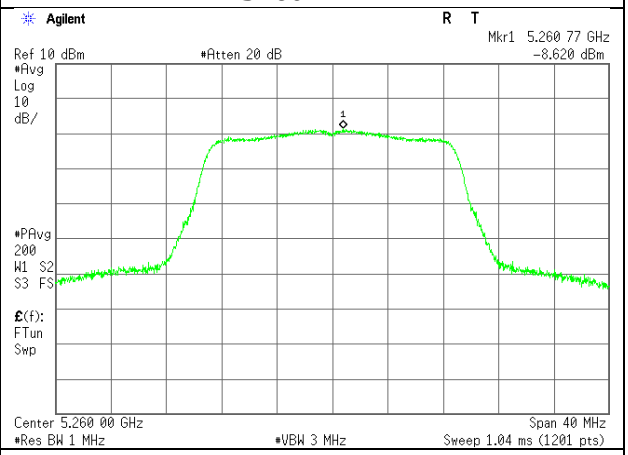
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-20

11n-20

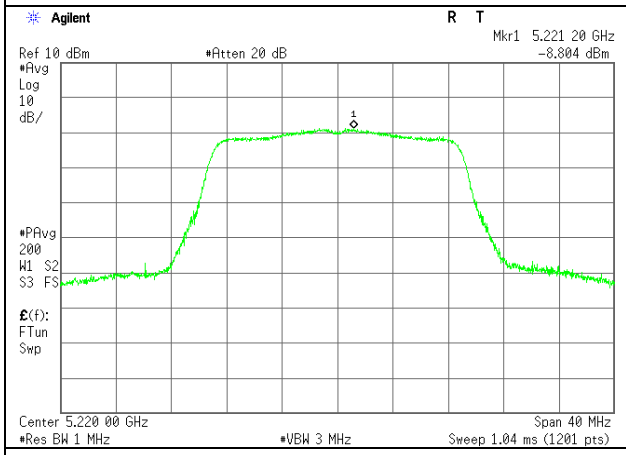
5180 MHz



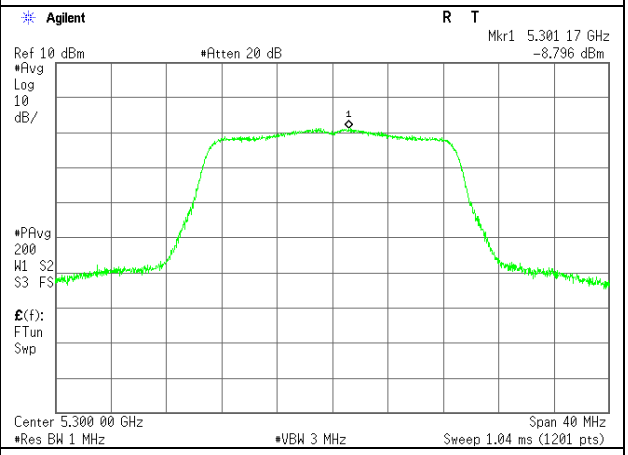
5260 MHz



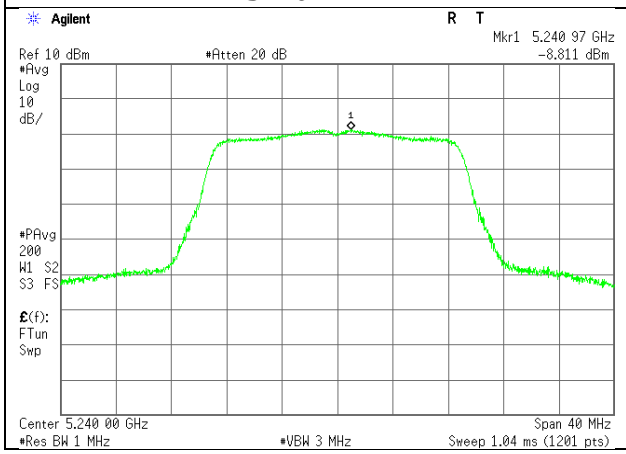
5220 MHz



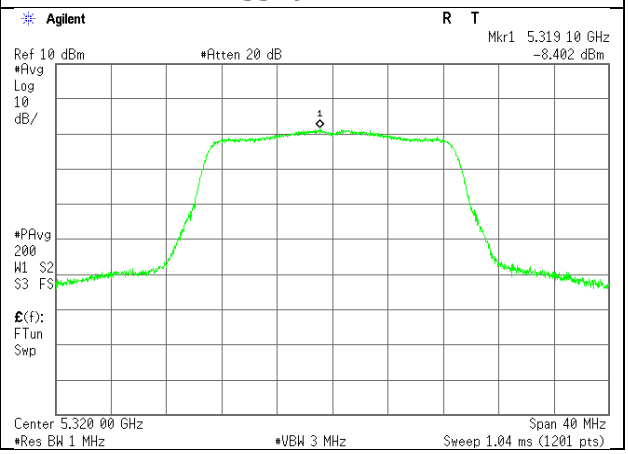
5300 MHz



5240 MHz



5320 MHz

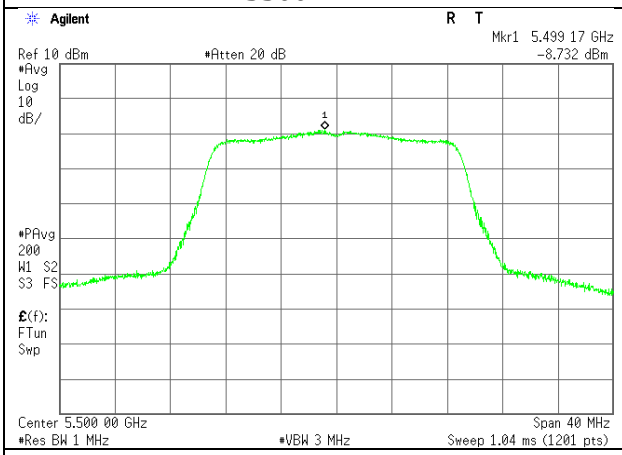


Maximum Power Spectral Density

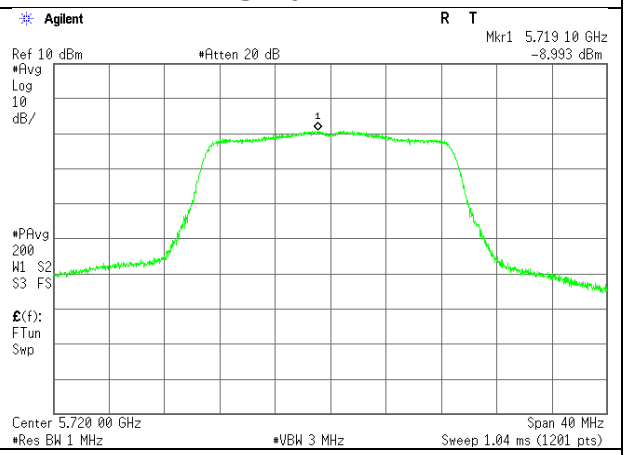
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-20

11n-20

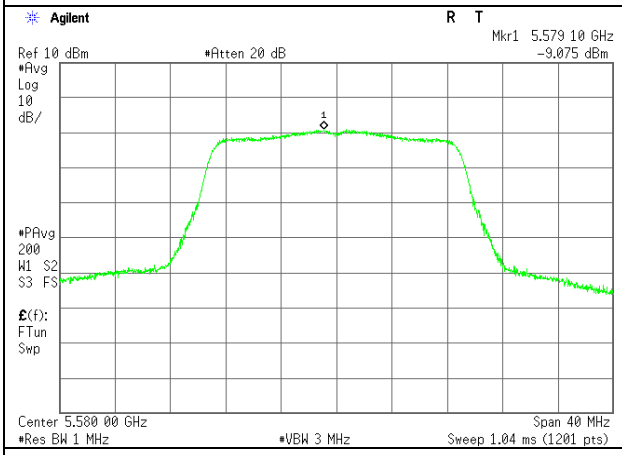
5500 MHz



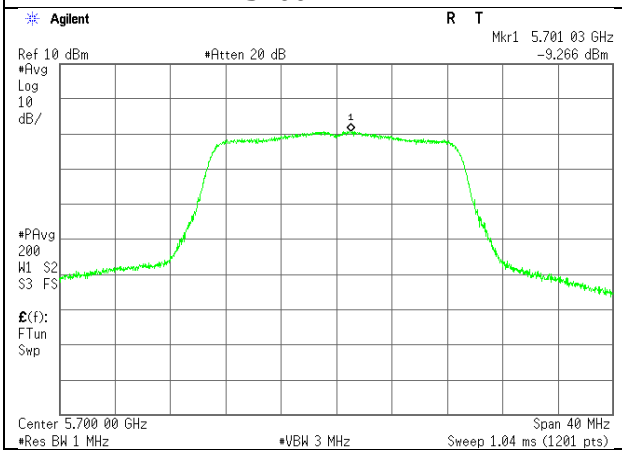
5720 MHz



5580 MHz



5700 MHz

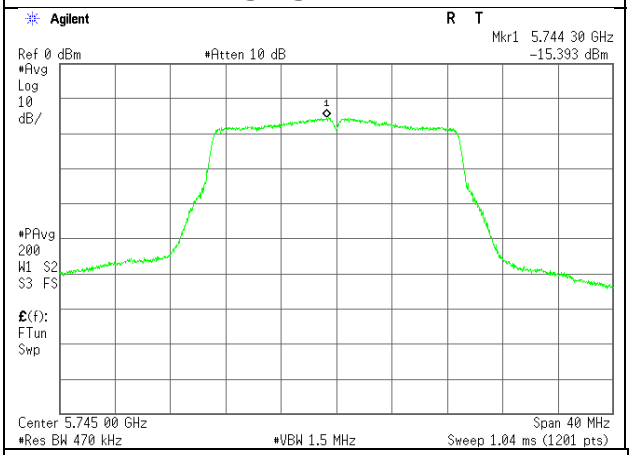


Maximum Power Spectral Density

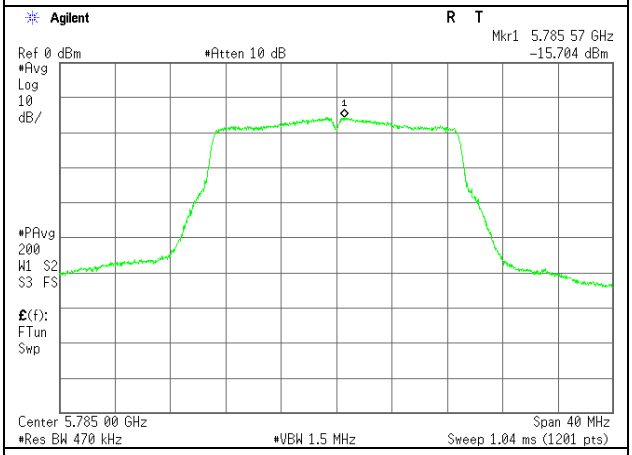
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-20

11n-20

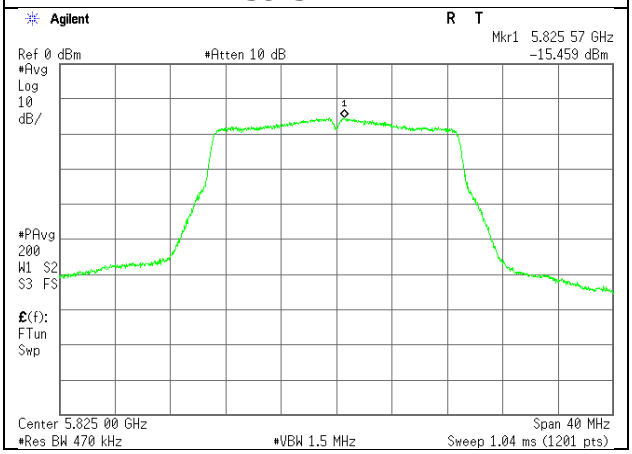
5745 MHz



5785 MHz



5825 MHz

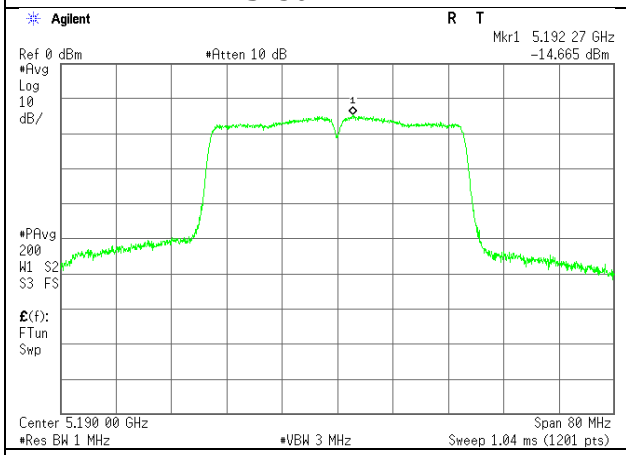


Maximum Power Spectral Density

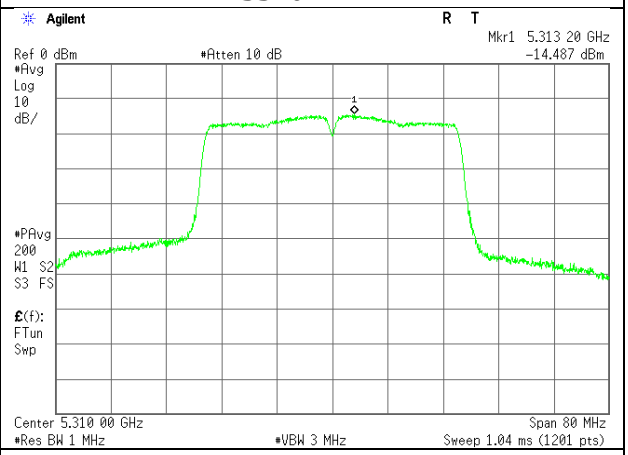
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40

11n-40

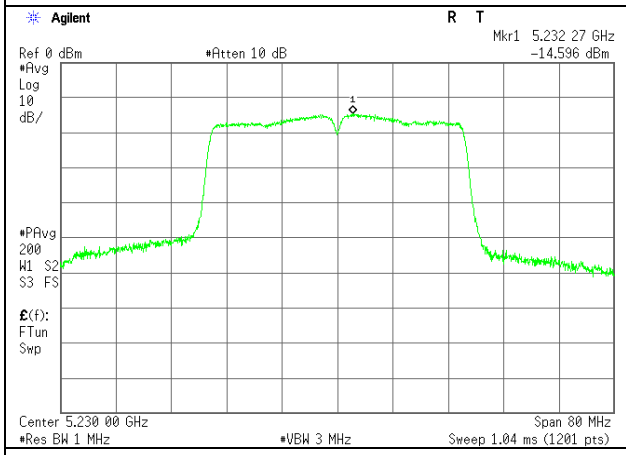
5190 MHz



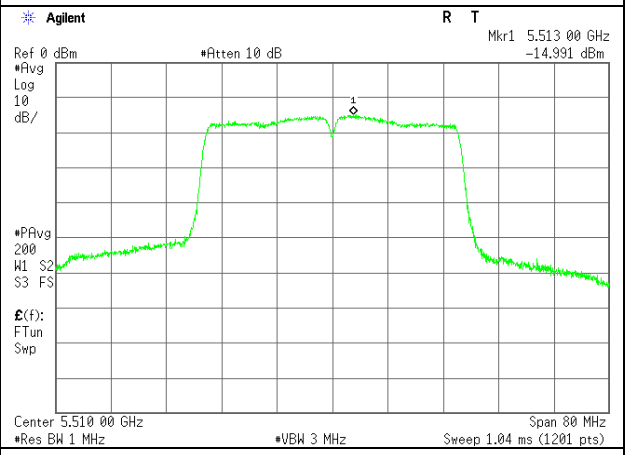
5310 MHz



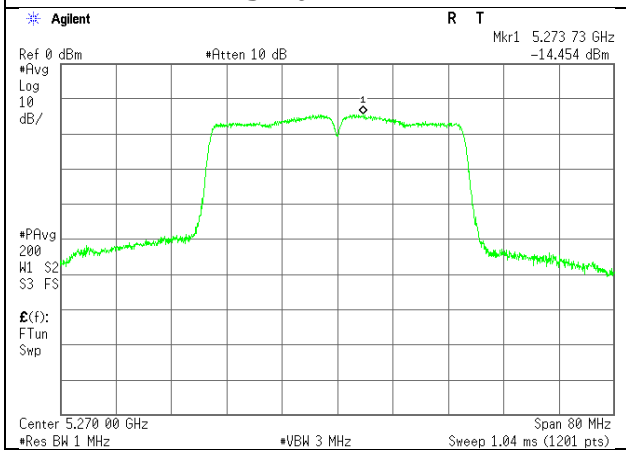
5230 MHz



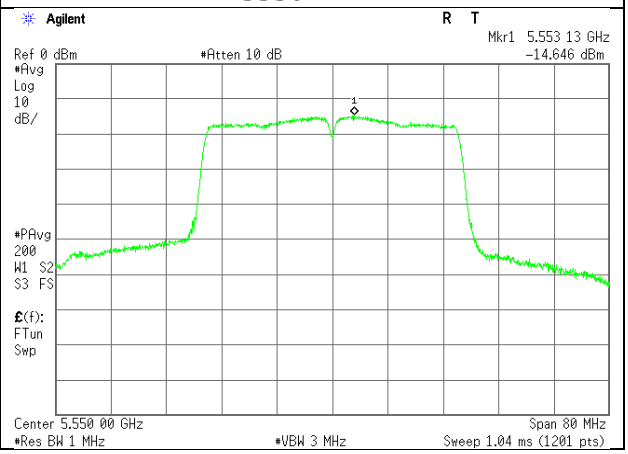
5510 MHz



5270 MHz



5550 MHz

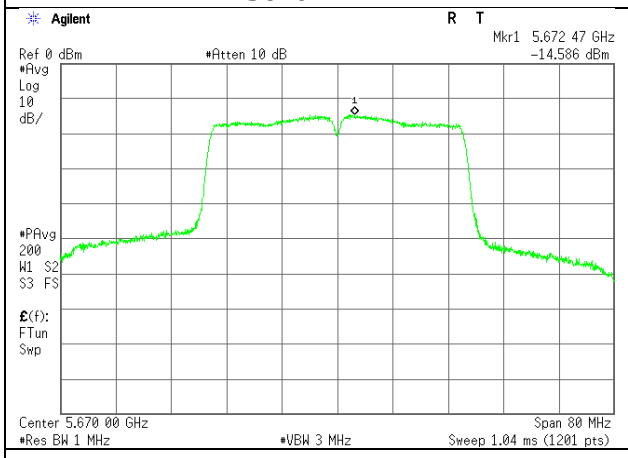


Maximum Power Spectral Density

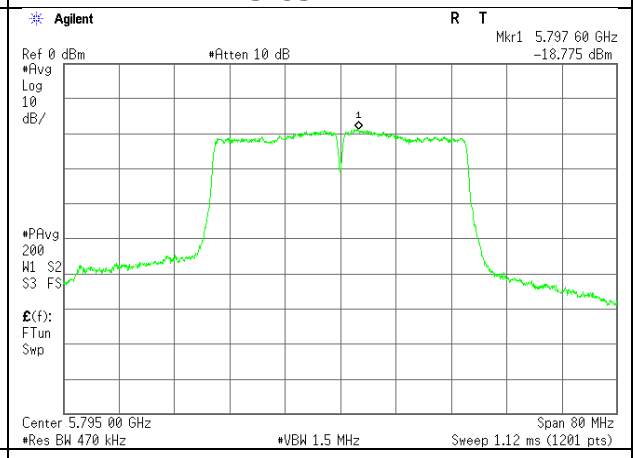
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40

11n-40

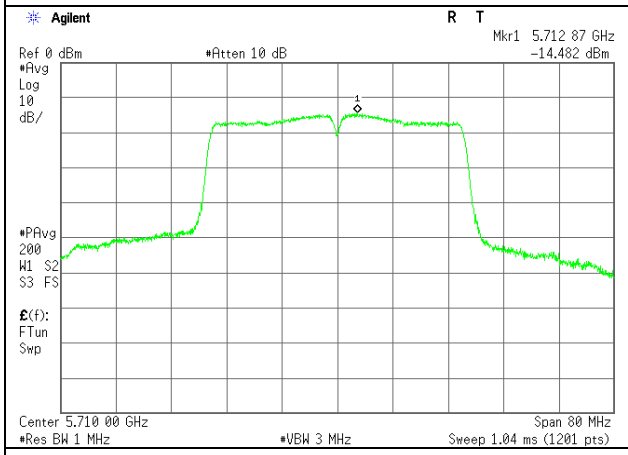
5670 MHz



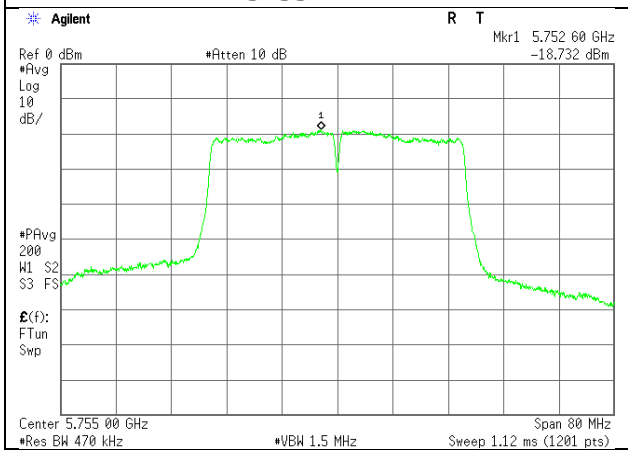
5795 MHz



5710 MHz



5755 MHz

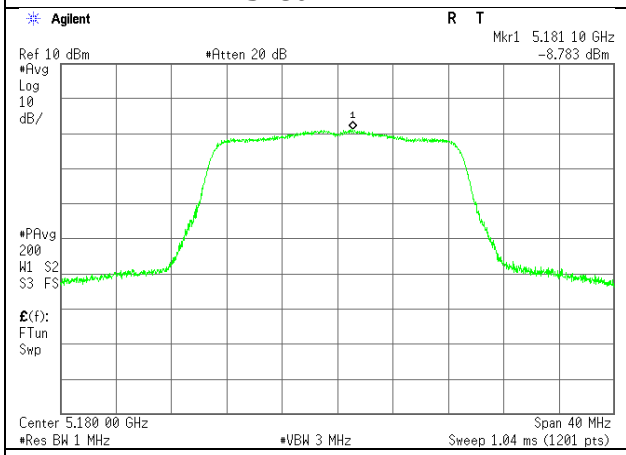


Maximum Power Spectral Density

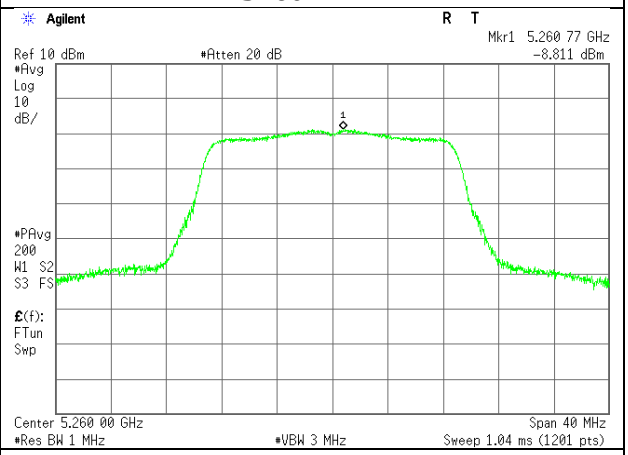
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-20

11ac-20

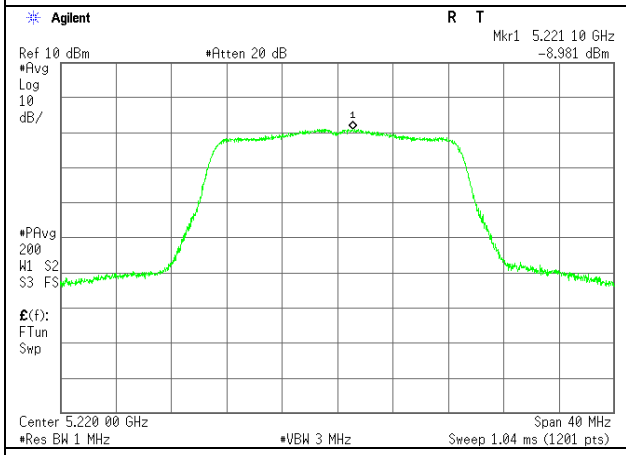
5180 MHz



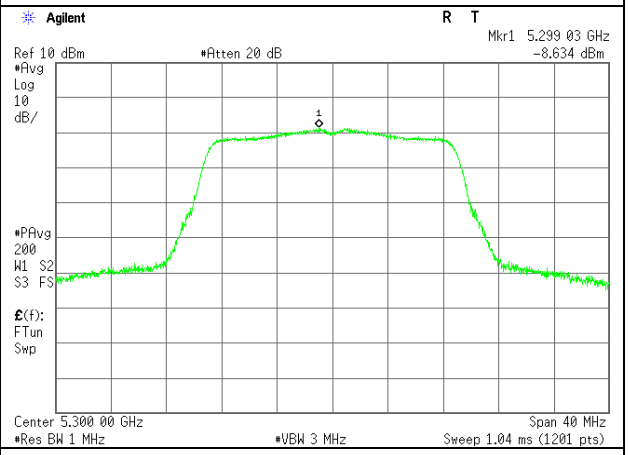
5260 MHz



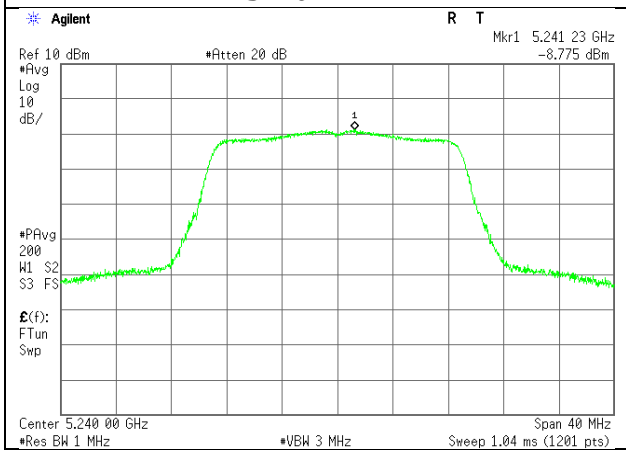
5220 MHz



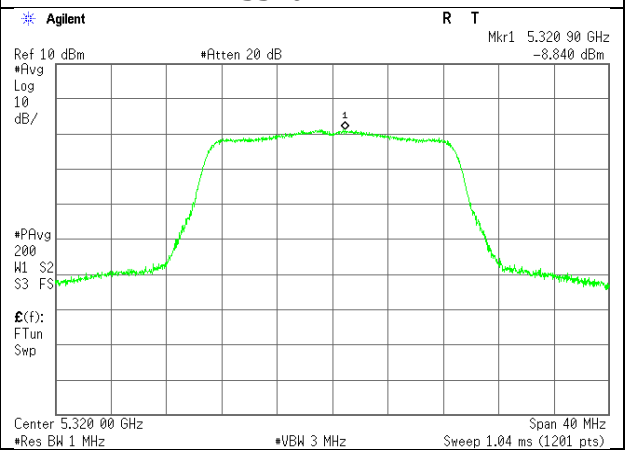
5300 MHz



5240 MHz



5320 MHz

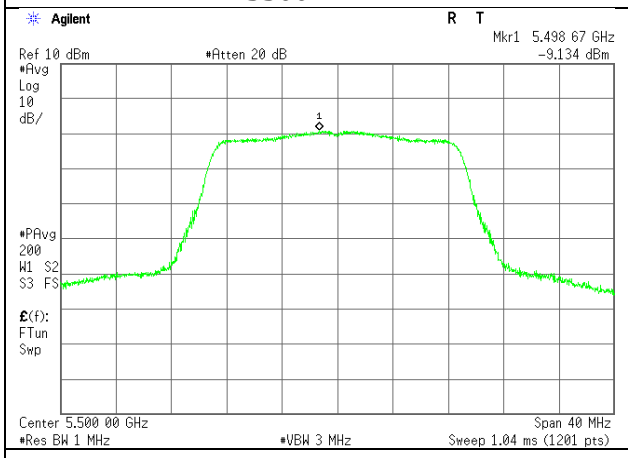


Maximum Power Spectral Density

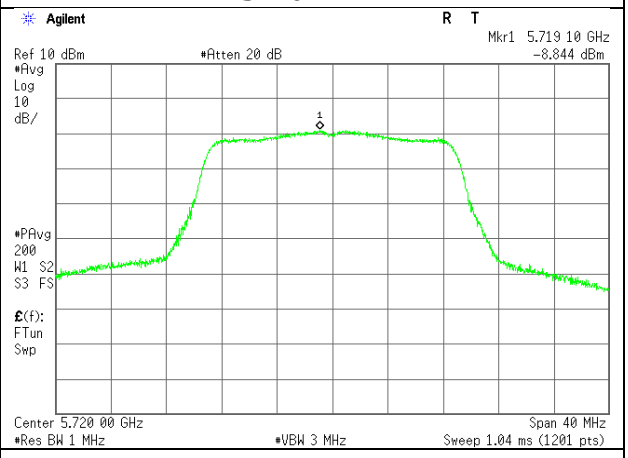
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-20

11ac-20

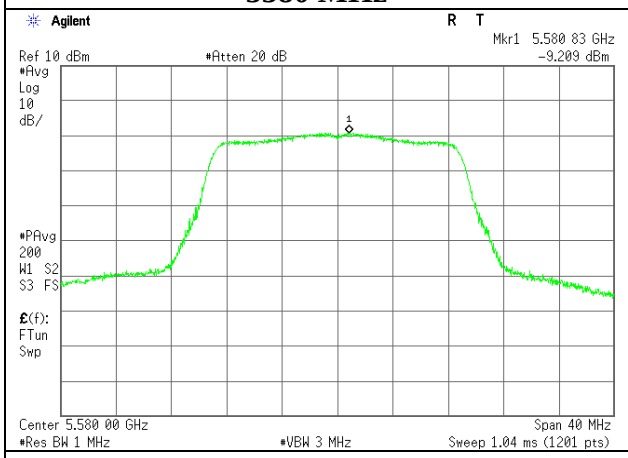
5500 MHz



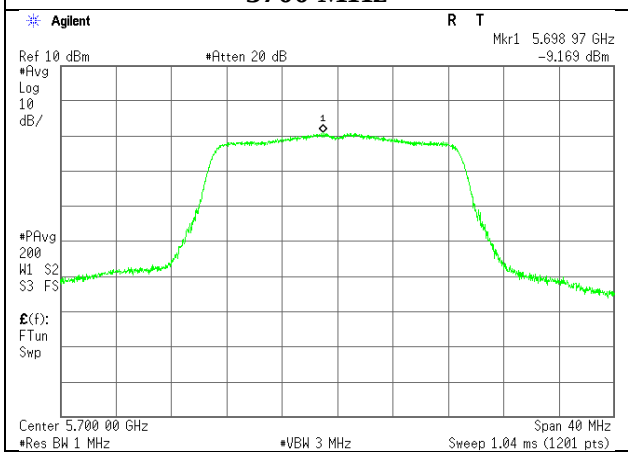
5720 MHz



5580 MHz



5700 MHz

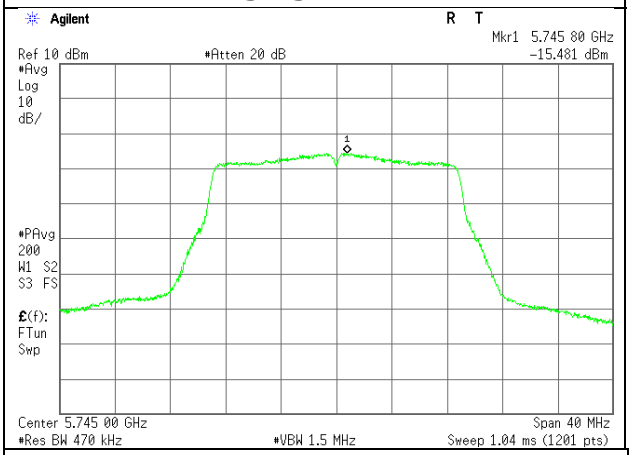


Maximum Power Spectral Density

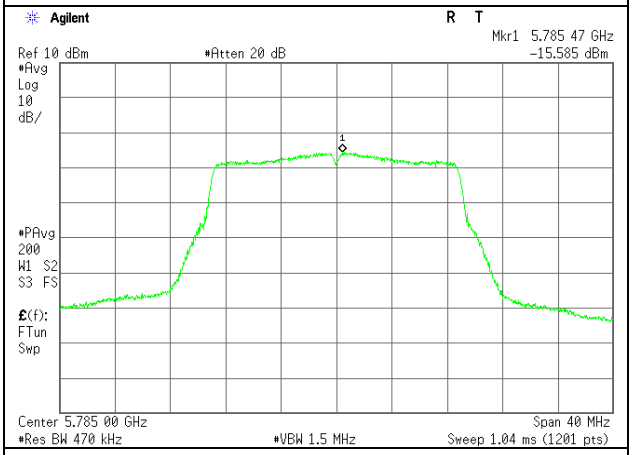
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-20

11ac-20

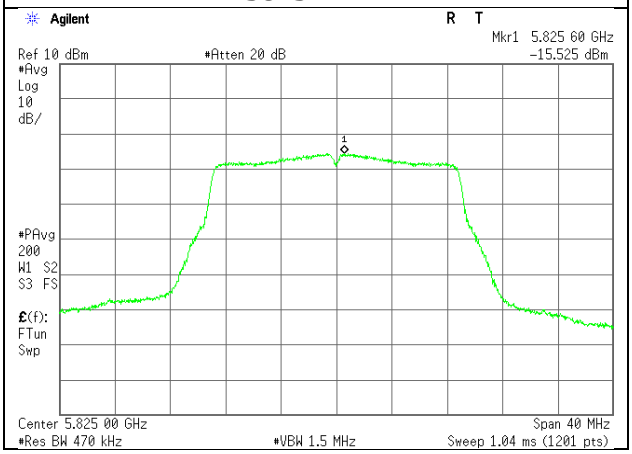
5745 MHz



5785 MHz



5825 MHz

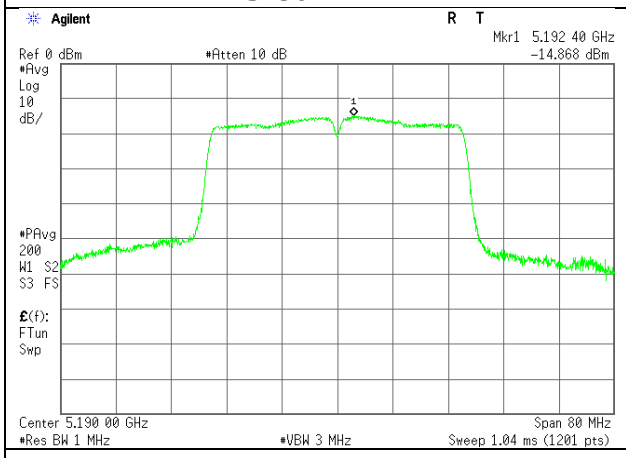


Maximum Power Spectral Density

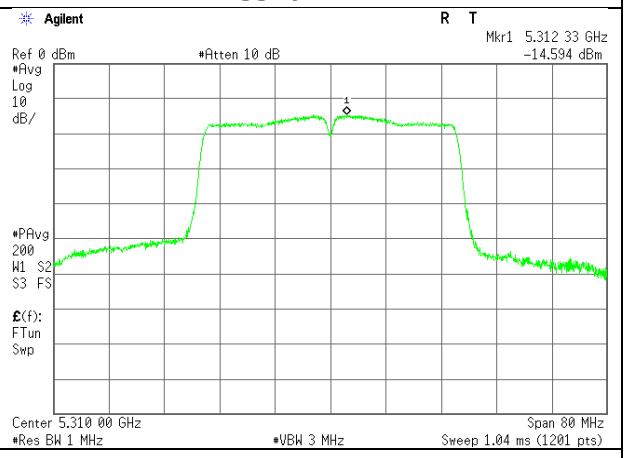
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-40

11ac-40

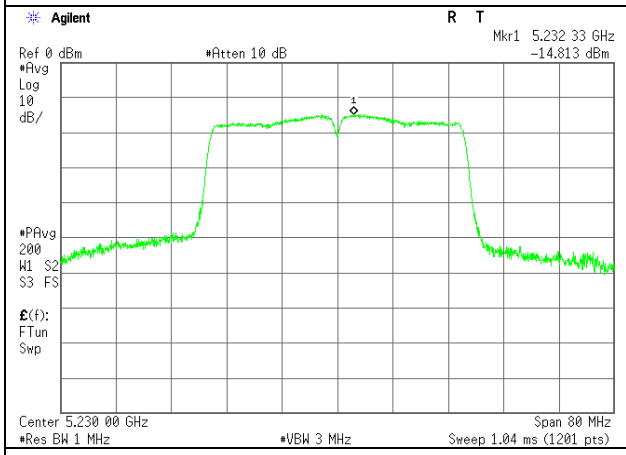
5190 MHz



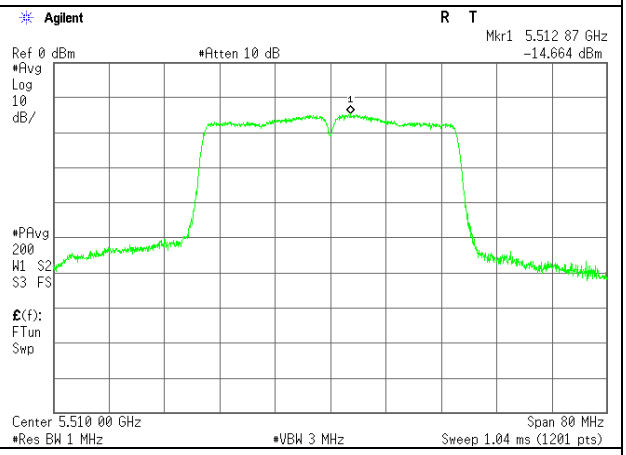
5310 MHz



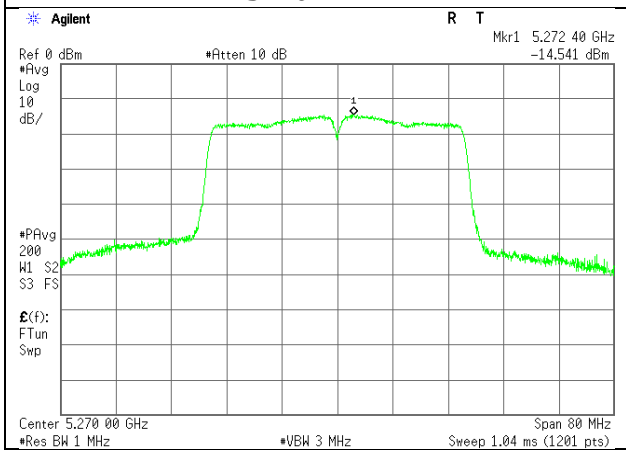
5230 MHz



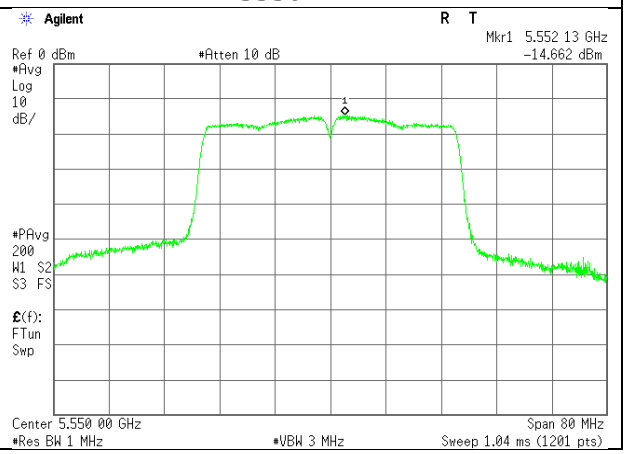
5510 MHz



5270 MHz



5550 MHz

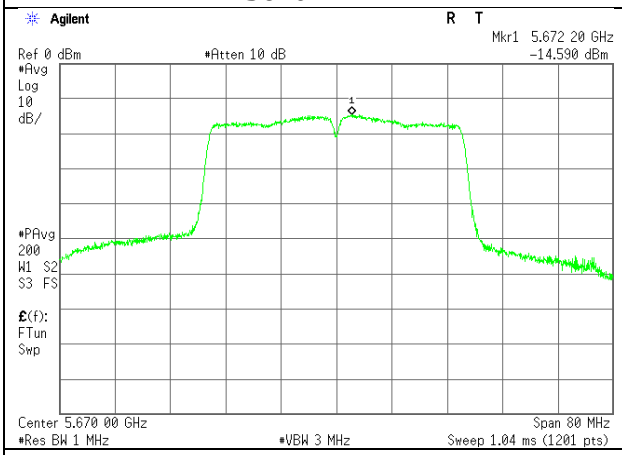


Maximum Power Spectral Density

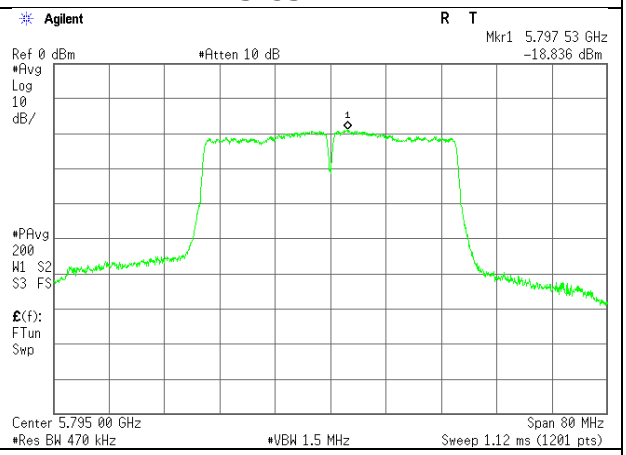
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-40

11ac-40

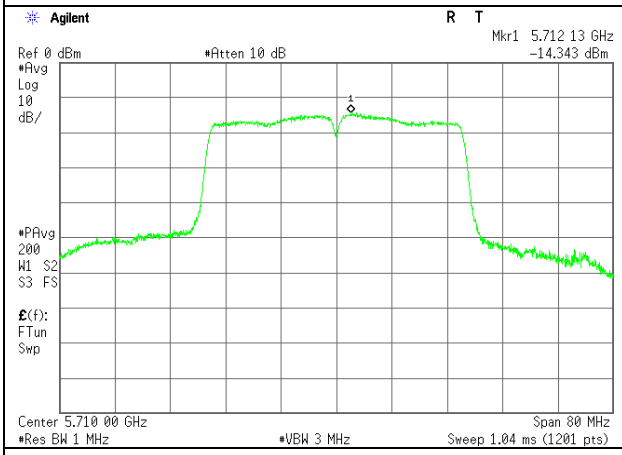
5670 MHz



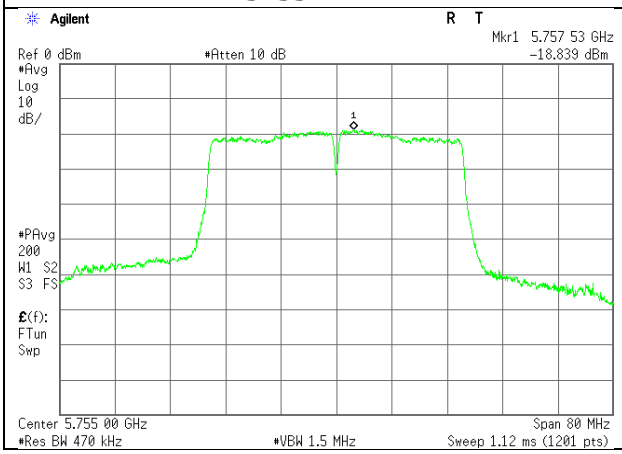
5795 MHz



5710 MHz



5755 MHz

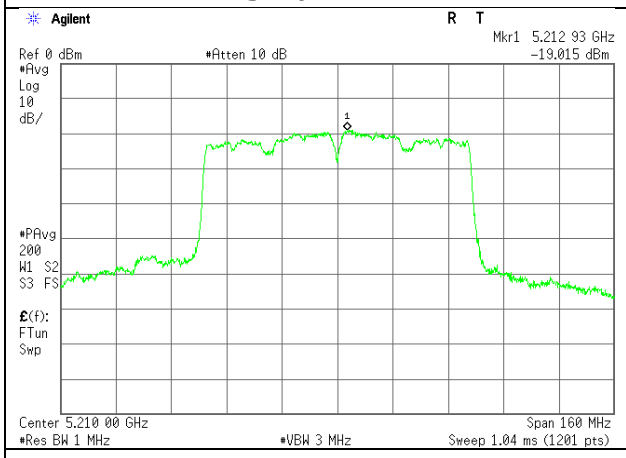


Maximum Power Spectral Density

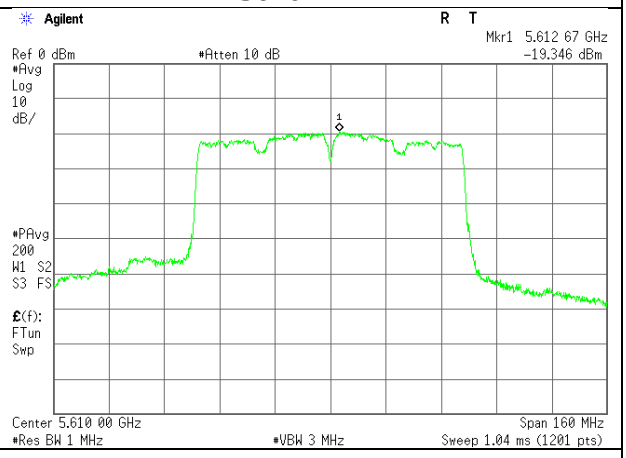
Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11ac-80

11ac-80

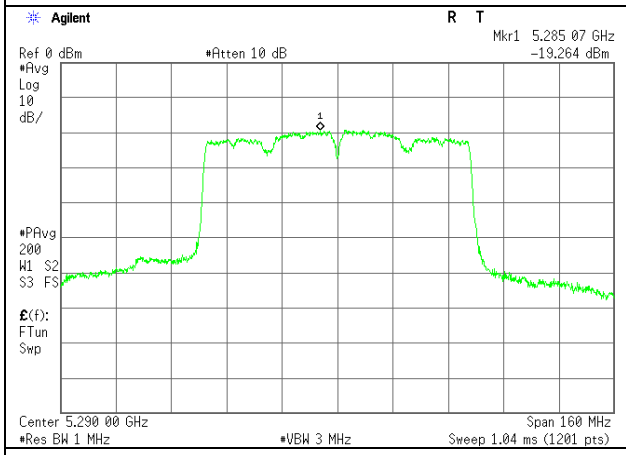
5210 MHz



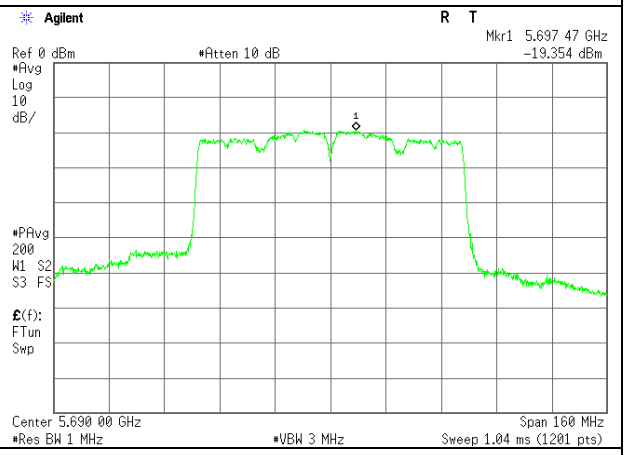
5610 MHz



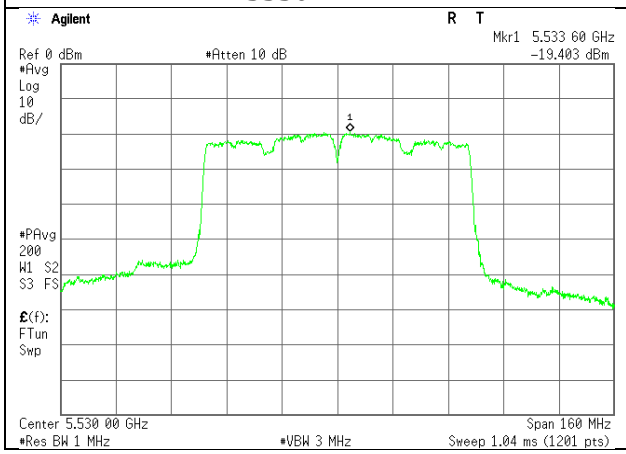
5290 MHz



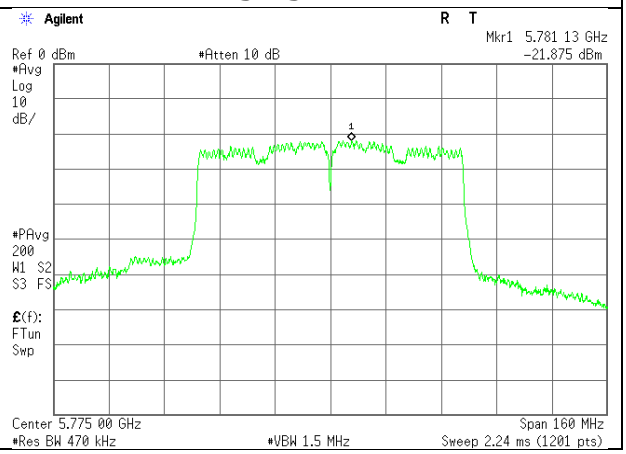
5690 MHz



5530 MHz



5775 MHz



Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5180 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	55.3	31.6	6.5	31.2	-	62.2	73.9	11.7	
Hori	10360.000	PK	42.6	39.5	-2.5	34.3	-	45.3	73.9	28.6	Floor noise
Hori	15540.000	PK	43.9	40.2	-0.9	33.0	-	50.2	73.9	23.7	Floor noise
Hori	20720.000	PK	45.9	39.6	-1.8	32.7	-	51.0	73.9	22.9	Floor noise
Hori	5150.000	AV	41.3	31.6	6.5	31.2	0.4	48.6	53.9	5.3	*1)
Hori	10360.000	AV	34.0	39.5	-2.5	34.3	-	36.7	53.9	17.2	Floor noise
Hori	15540.000	AV	34.4	40.2	-0.9	33.0	-	40.7	53.9	13.2	Floor noise
Hori	20720.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise
Vert	5150.000	PK	54.7	31.6	6.5	31.2	-	61.6	73.9	12.3	
Vert	10360.000	PK	42.6	39.5	-2.5	34.3	-	45.3	73.9	28.6	Floor noise
Vert	15540.000	PK	43.9	40.2	-0.9	33.0	-	50.2	73.9	23.7	Floor noise
Vert	20720.000	PK	45.9	39.6	-1.8	32.7	-	51.0	73.9	22.9	Floor noise
Vert	5150.000	AV	40.9	31.6	6.5	31.2	0.4	48.2	53.9	5.7	*1)
Vert	10360.000	AV	34.0	39.5	-2.5	34.3	-	36.7	53.9	17.2	Floor noise
Vert	15540.000	AV	34.4	40.2	-0.9	33.0	-	40.7	53.9	13.2	Floor noise
Vert	20720.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

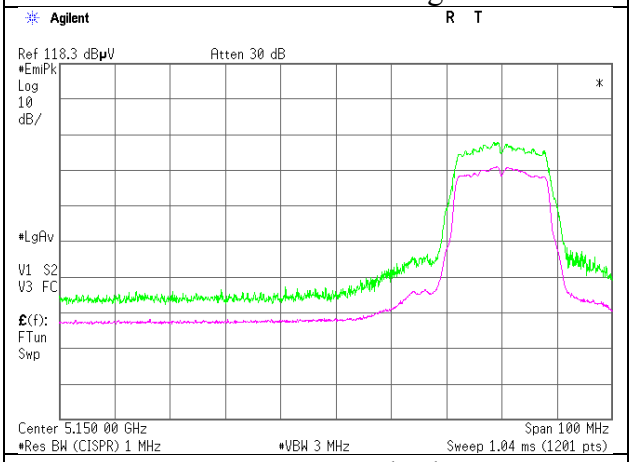
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5180 MHz	

Horizontal

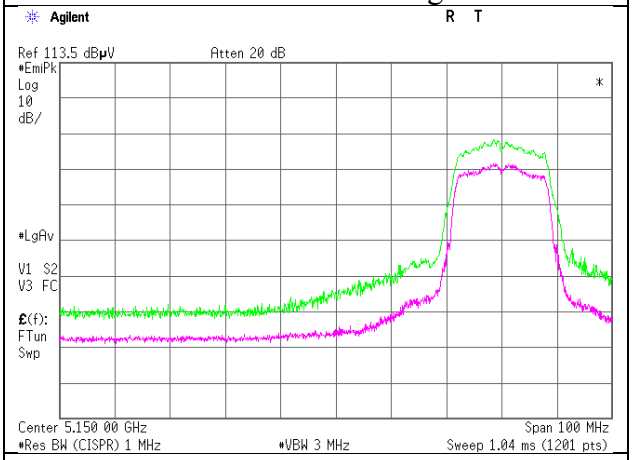
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5260 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	10520.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Hori	15780.000	PK	43.9	39.5	-1.0	33.1	-	49.3	73.9	24.6	Floor noise
Hori	21040.000	PK	45.6	39.6	-1.7	32.7	-	50.8	73.9	23.1	Floor noise
Hori	10520.000	AV	34.3	40.0	-2.5	34.1	-	37.7	53.9	16.2	Floor noise
Hori	15780.000	AV	35.0	39.5	-1.0	33.1	-	40.4	53.9	13.5	Floor noise
Hori	21040.000	AV	37.0	39.6	-1.7	32.7	-	42.2	53.9	11.7	Floor noise
Vert	10520.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Vert	15780.000	PK	43.9	39.5	-1.0	33.1	-	49.3	73.9	24.6	Floor noise
Vert	21040.000	PK	45.6	39.6	-1.7	32.7	-	50.8	73.9	23.1	Floor noise
Vert	10520.000	AV	34.3	40.0	-2.5	34.1	-	37.7	53.9	16.2	Floor noise
Vert	15780.000	AV	35.0	39.5	-1.0	33.1	-	40.4	53.9	13.5	Floor noise
Vert	21040.000	AV	37.0	39.6	-1.7	32.7	-	42.2	53.9	11.7	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5320 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	56.8	31.6	6.6	31.2	-	63.8	73.9	10.1	
Hori	10640.000	PK	42.7	40.2	-2.3	34.0	-	46.6	73.9	27.3	Floor noise
Hori	15960.000	PK	43.9	39.0	-0.9	33.2	-	48.8	73.9	25.1	Floor noise
Hori	21280.000	PK	45.0	39.6	-1.6	32.6	-	50.4	73.9	23.5	Floor noise
Hori	5350.000	AV	42.4	31.6	6.6	31.2	0.4	49.8	53.9	4.1	*1)
Hori	10640.000	AV	33.9	40.2	-2.3	34.0	-	37.8	53.9	16.1	Floor noise
Hori	15960.000	AV	35.6	39.0	-0.9	33.2	-	40.5	53.9	13.4	Floor noise
Hori	21280.000	AV	36.8	39.6	-1.6	32.6	-	42.2	53.9	11.7	Floor noise
Vert	5350.000	PK	55.2	31.6	6.6	31.2	-	62.2	73.9	11.7	
Vert	10640.000	PK	42.7	40.2	-2.3	34.0	-	46.6	73.9	27.3	Floor noise
Vert	15960.000	PK	43.9	39.0	-0.9	33.2	-	48.8	73.9	25.1	Floor noise
Vert	21280.000	PK	45.0	39.6	-1.6	32.6	-	50.4	73.9	23.5	Floor noise
Vert	5350.000	AV	41.4	31.6	6.6	31.2	0.4	48.8	53.9	5.1	*1)
Vert	10640.000	AV	33.9	40.2	-2.3	34.0	-	37.8	53.9	16.1	Floor noise
Vert	15960.000	AV	35.6	39.0	-0.9	33.2	-	40.5	53.9	13.4	Floor noise
Vert	21280.000	AV	36.8	39.6	-1.6	32.6	-	42.2	53.9	11.7	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

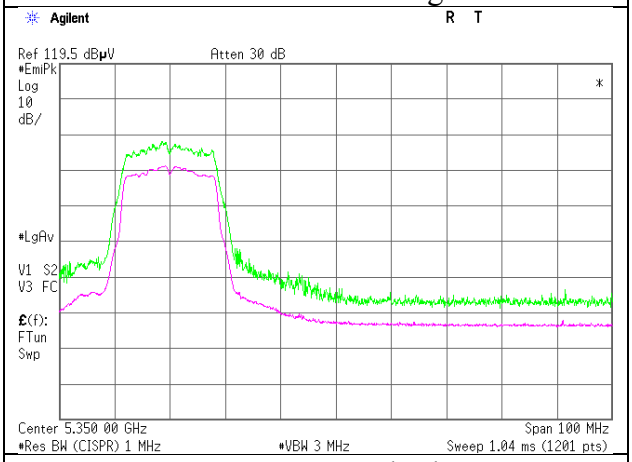
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5320 MHz	

Horizontal

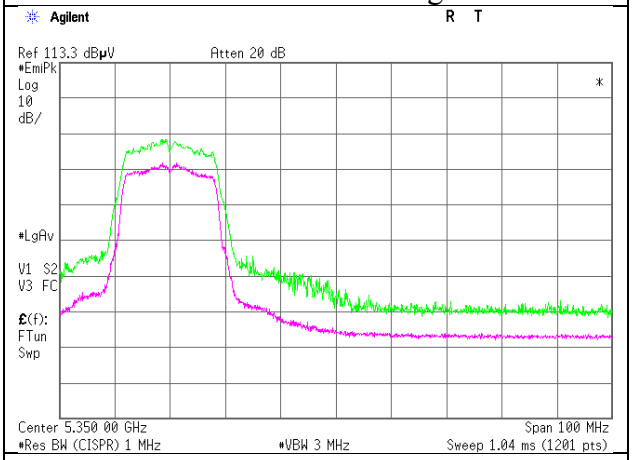
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5500 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	51.8	31.7	6.6	31.3	-	58.8	73.9	15.1	
Hori	5470.000	PK	56.9	31.7	6.6	31.3	-	63.9	73.9	10.0	
Hori	11000.000	PK	41.8	40.9	-2.2	33.8	-	46.7	73.9	27.2	Floor noise
Hori	16500.000	PK	44.7	40.3	-0.9	32.9	-	51.2	73.9	22.7	Floor noise
Hori	22000.000	PK	44.5	39.3	-1.3	32.3	-	50.2	73.9	23.7	Floor noise
Hori	5460.000	AV	39.9	31.7	6.6	31.3	0.4	47.3	53.9	6.6	*1)
Hori	5470.000	AV	42.7	31.7	6.6	31.3	0.4	50.1	53.9	3.8	*1)
Hori	11000.000	AV	33.3	40.9	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Hori	16500.000	AV	36.1	40.3	-0.9	32.9	-	42.6	53.9	11.3	Floor noise
Hori	22000.000	AV	36.4	39.3	-1.3	32.3	-	42.1	53.9	11.8	Floor noise
Vert	5460.000	PK	47.7	31.7	6.6	31.3	-	54.7	73.9	19.2	
Vert	5470.000	PK	52.6	31.7	6.6	31.3	-	59.6	73.9	14.3	
Vert	11000.000	PK	41.8	40.9	-2.2	33.8	-	46.7	73.9	27.2	Floor noise
Vert	16500.000	PK	44.7	40.3	-0.9	32.9	-	51.2	73.9	22.7	Floor noise
Vert	22000.000	PK	44.5	39.3	-1.3	32.3	-	50.2	73.9	23.7	Floor noise
Vert	5460.000	AV	36.5	31.7	6.6	31.3	0.4	43.9	53.9	10.0	*1)
Vert	5470.000	AV	39.5	31.7	6.6	31.3	0.4	46.9	53.9	7.0	*1)
Vert	11000.000	AV	33.3	40.9	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Vert	16500.000	AV	36.1	40.3	-0.9	32.9	-	42.6	53.9	11.3	Floor noise
Vert	22000.000	AV	36.4	39.3	-1.3	32.3	-	42.1	53.9	11.8	Floor noise

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

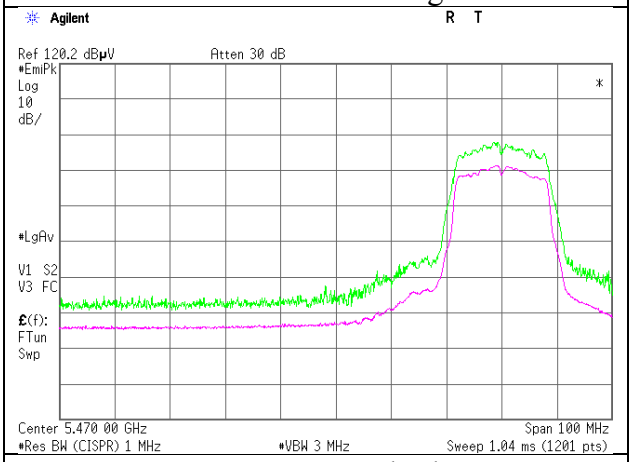
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5500 MHz	

Horizontal

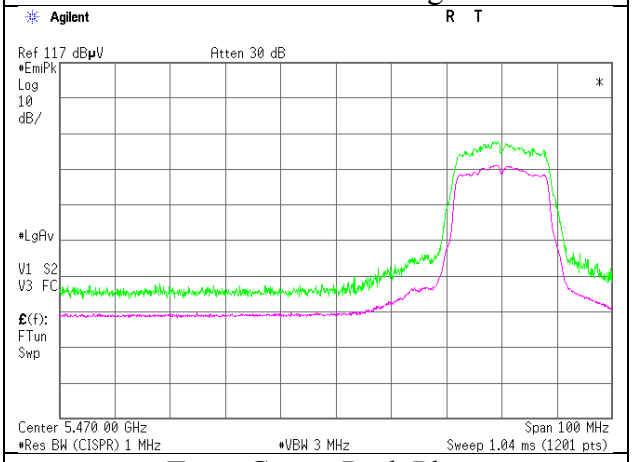
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11a 5580 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11160.000	PK	43.5	40.5	-2.2	33.7	-	48.1	73.9	25.8	Floor noise
Hori	16740.000	PK	43.6	40.9	-0.7	32.8	-	51.0	73.9	22.9	Floor noise
Hori	22320.000	PK	44.3	39.8	-1.2	31.9	-	51.0	73.9	22.9	Floor noise
Hori	11160.000	AV	34.4	40.5	-2.2	33.7	-	39.0	53.9	14.9	Floor noise
Hori	16740.000	AV	35.2	40.9	-0.7	32.8	-	42.6	53.9	11.3	Floor noise
Hori	22320.000	AV	36.0	39.8	-1.2	31.9	-	42.7	53.9	11.2	Floor noise
Vert	11160.000	PK	43.5	40.5	-2.2	33.7	-	48.1	73.9	25.8	Floor noise
Vert	16740.000	PK	43.6	40.9	-0.7	32.8	-	51.0	73.9	22.9	Floor noise
Vert	22320.000	PK	44.3	39.8	-1.2	31.9	-	51.0	73.9	22.9	Floor noise
Vert	11160.000	AV	34.4	40.5	-2.2	33.7	-	39.0	53.9	14.9	Floor noise
Vert	16740.000	AV	35.2	40.9	-0.7	32.8	-	42.6	53.9	11.3	Floor noise
Vert	22320.000	AV	36.0	39.8	-1.2	31.9	-	42.7	53.9	11.2	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5700 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	60.2	32.2	6.7	31.3	-	67.8	73.9	6.1	
Hori	11400.000	PK	43.5	40.1	-1.9	33.7	-	48.0	73.9	25.9	Floor noise
Hori	17100.000	PK	44.0	42.1	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Hori	22800.000	PK	45.3	40.4	-1.2	31.5	-	53.0	73.9	20.9	Floor noise
Hori	5725.000	AV	45.3	32.2	6.7	31.3	0.4	53.3	53.9	0.6	*1),*2)
Hori	11400.000	AV	34.2	40.1	-1.9	33.7	-	38.7	53.9	15.2	Floor noise
Hori	17100.000	AV	35.6	42.1	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Hori	22800.000	AV	35.8	40.4	-1.2	31.5	-	43.5	53.9	10.4	Floor noise
Vert	5725.000	PK	56.8	32.2	6.7	31.3	-	64.4	73.9	9.5	
Vert	11400.000	PK	43.5	40.1	-1.9	33.7	-	48.0	73.9	25.9	Floor noise
Vert	17100.000	PK	44.0	42.1	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Vert	22800.000	PK	45.3	40.4	-1.2	31.5	-	53.0	73.9	20.9	Floor noise
Vert	5725.000	AV	39.8	32.2	6.7	31.3	0.4	47.8	53.9	6.1	*1),*2)
Vert	11400.000	AV	34.2	40.1	-1.9	33.7	-	38.7	53.9	15.2	Floor noise
Vert	17100.000	AV	35.6	42.1	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Vert	22800.000	AV	35.8	40.4	-1.2	31.5	-	43.5	53.9	10.4	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

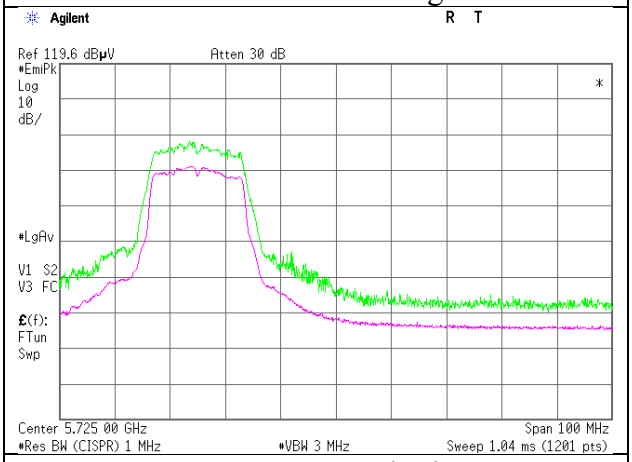
*1) Not Out of Band emission(Leakage Power)
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5700 MHz	

Horizontal

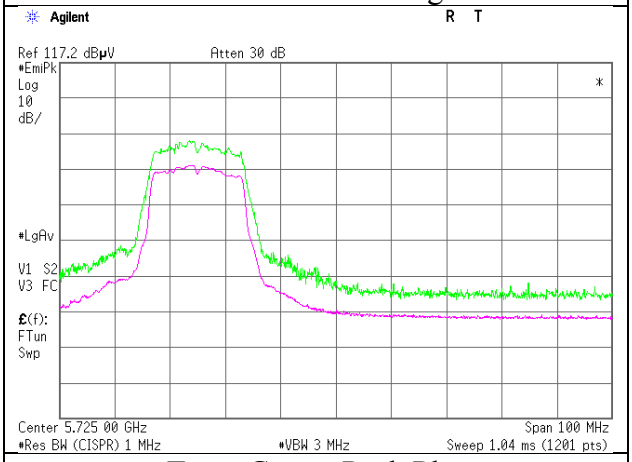
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5745 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	42.2	32.0	6.7	31.3	-	49.6	68.2	18.6	
Hori	5700.000	PK	46.3	32.1	6.7	31.3	-	53.8	105.2	51.4	
Hori	5715.000	PK	54.1	32.2	6.7	31.3	-	61.7	109.4	47.7	
Hori	5720.000	PK	57.3	32.2	6.7	31.3	-	64.9	110.8	45.9	
Hori	5725.000	PK	59.4	32.2	6.7	31.3	-	67.0	122.2	55.2	
Hori	11490.000	PK	41.8	39.9	-1.9	33.7	-	46.1	73.9	27.8	Floor noise
Hori	17235.000	PK	43.4	42.8	-0.6	32.6	-	53.0	73.9	20.9	Floor noise
Hori	22980.000	PK	44.3	40.7	-1.2	31.3	-	52.5	73.9	21.4	Floor noise
Hori	11490.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Hori	17235.000	AV	34.9	42.8	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Hori	22980.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise
Vert	5650.000	PK	41.5	32.0	6.7	31.3	-	48.9	68.2	19.3	
Vert	5700.000	PK	44.5	32.1	6.7	31.3	-	52.0	105.2	53.2	
Vert	5715.000	PK	50.5	32.2	6.7	31.3	-	58.1	109.4	51.3	
Vert	5720.000	PK	53.6	32.2	6.7	31.3	-	61.2	110.8	49.6	
Vert	5725.000	PK	56.2	32.2	6.7	31.3	-	63.8	122.2	58.4	
Vert	11490.000	PK	41.8	39.9	-1.9	33.7	-	46.1	73.9	27.8	Floor noise
Vert	17235.000	PK	43.4	42.8	-0.6	32.6	-	53.0	73.9	20.9	Floor noise
Vert	22980.000	PK	44.3	40.7	-1.2	31.3	-	52.5	73.9	21.4	Floor noise
Vert	11490.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Vert	17235.000	AV	34.9	42.8	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Vert	22980.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise

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

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

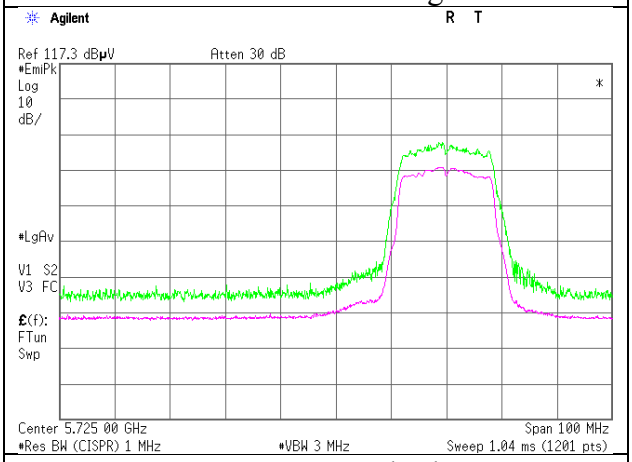
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5745 MHz	

Horizontal

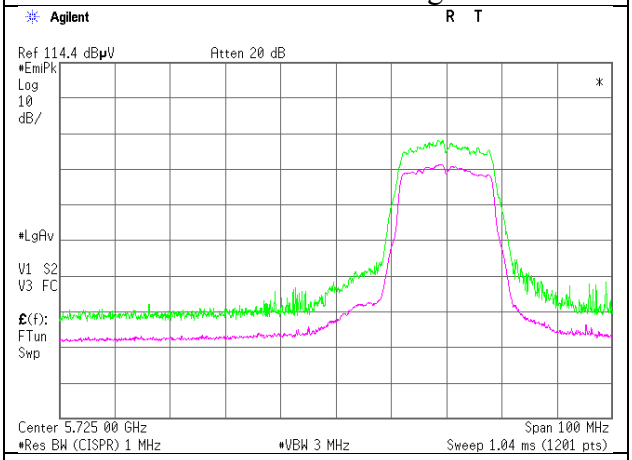
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5785 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11570.000	PK	41.6	39.8	-1.9	33.7	-	45.8	73.9	28.1	Floor noise
Hori	17355.000	PK	43.1	43.4	-0.6	32.6	-	53.3	73.9	20.6	Floor noise
Hori	23140.000	PK	44.1	40.6	-1.2	31.3	-	52.2	73.9	21.7	Floor noise
Hori	11570.000	AV	33.4	39.8	-1.9	33.7	-	37.6	53.9	16.3	Floor noise
Hori	17355.000	AV	35.2	43.4	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Hori	23140.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise
Vert	11570.000	PK	41.6	39.8	-1.9	33.7	-	45.8	73.9	28.1	Floor noise
Vert	17355.000	PK	43.1	43.4	-0.6	32.6	-	53.3	73.9	20.6	Floor noise
Vert	23140.000	PK	44.1	40.6	-1.2	31.3	-	52.2	73.9	21.7	Floor noise
Vert	11570.000	AV	33.4	39.8	-1.9	33.7	-	37.6	53.9	16.3	Floor noise
Vert	17355.000	AV	35.2	43.4	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Vert	23140.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11a 5825 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	57.9	32.5	6.8	31.4	-	65.8	122.2	56.4	
Hori	5855.000	PK	55.4	32.5	6.8	31.4	-	63.3	110.8	47.5	
Hori	5860.000	PK	50.7	32.5	6.8	31.4	-	58.6	109.4	50.8	
Hori	5875.000	PK	44.3	32.5	6.8	31.4	-	52.2	105.2	53.0	
Hori	5925.000	PK	41.8	32.6	6.8	31.4	-	49.8	68.2	18.4	
Hori	11650.000	PK	41.7	39.6	-1.7	33.7	-	45.9	73.9	28.0	Floor noise
Hori	17475.000	PK	43.3	44.1	-0.4	32.5	-	54.5	73.9	19.4	Floor noise
Hori	23300.000	PK	44.5	40.5	-1.1	31.3	-	52.6	73.9	21.3	Floor noise
Hori	11650.000	AV	33.8	39.6	-1.7	33.7	-	38.0	53.9	15.9	Floor noise
Hori	17475.000	AV	35.1	44.1	-0.4	32.5	-	46.3	53.9	7.6	Floor noise
Hori	23300.000	AV	35.9	40.5	-1.1	31.3	-	44.0	53.9	9.9	Floor noise
Vert	5850.000	PK	54.3	32.5	6.8	31.4	-	62.2	122.2	60.0	
Vert	5855.000	PK	51.4	32.5	6.8	31.4	-	59.3	110.8	51.5	
Vert	5860.000	PK	47.3	32.5	6.8	31.4	-	55.2	109.4	54.2	
Vert	5875.000	PK	42.4	32.5	6.8	31.4	-	50.3	105.2	54.9	
Vert	5925.000	PK	40.6	32.6	6.8	31.4	-	48.6	68.2	19.6	
Vert	11650.000	PK	41.7	39.6	-1.7	33.7	-	45.9	73.9	28.0	Floor noise
Vert	17475.000	PK	43.3	44.1	-0.4	32.5	-	54.5	73.9	19.4	Floor noise
Vert	23300.000	PK	44.5	40.5	-1.1	31.3	-	52.6	73.9	21.3	Floor noise
Vert	11650.000	AV	33.8	39.6	-1.7	33.7	-	38.0	53.9	15.9	Floor noise
Vert	17475.000	AV	35.1	44.1	-0.4	32.5	-	46.3	53.9	7.6	Floor noise
Vert	23300.000	AV	35.9	40.5	-1.1	31.3	-	44.0	53.9	9.9	Floor noise

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

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

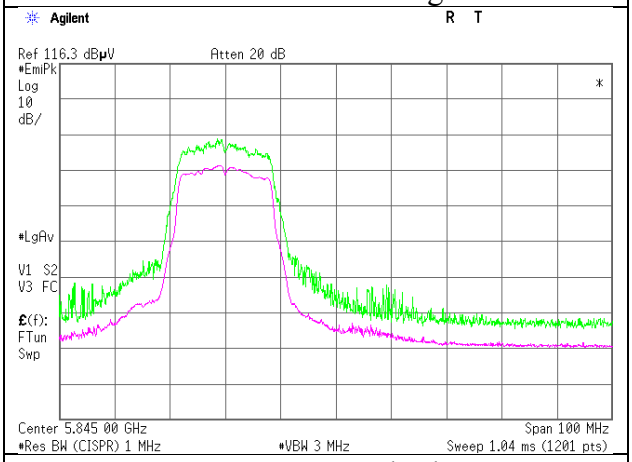
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11a 5825 MHz	

Horizontal

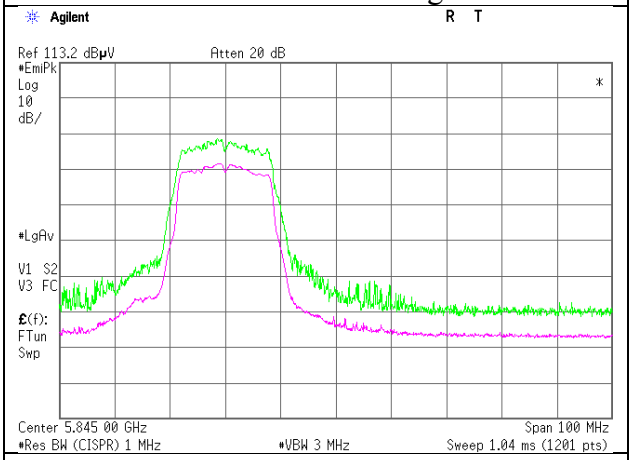
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5180 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	57.8	31.6	6.5	31.2	-	64.7	73.9	9.2	
Hori	10360.000	PK	42.6	39.5	-2.5	34.3	-	45.3	73.9	28.6	Floor noise
Hori	15540.000	PK	43.9	40.2	-0.9	33.0	-	50.2	73.9	23.7	Floor noise
Hori	20720.000	PK	45.9	39.6	-1.8	32.7	-	51.0	73.9	22.9	Floor noise
Hori	5150.000	AV	44.0	31.6	6.5	31.2	0.1	51.0	53.9	2.9	*1)
Hori	10360.000	AV	34.0	39.5	-2.5	34.3	-	36.7	53.9	17.2	Floor noise
Hori	15540.000	AV	34.4	40.2	-0.9	33.0	-	40.7	53.9	13.2	Floor noise
Hori	20720.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise
Vert	5150.000	PK	57.1	31.6	6.5	31.2	-	64.0	73.9	9.9	
Vert	10360.000	PK	42.6	39.5	-2.5	34.3	-	45.3	73.9	28.6	Floor noise
Vert	15540.000	PK	43.9	40.2	-0.9	33.0	-	50.2	73.9	23.7	Floor noise
Vert	20720.000	PK	45.9	39.6	-1.8	32.7	-	51.0	73.9	22.9	Floor noise
Vert	5150.000	AV	43.1	31.6	6.5	31.2	0.1	50.1	53.9	3.8	*1)
Vert	10360.000	AV	34.0	39.5	-2.5	34.3	-	36.7	53.9	17.2	Floor noise
Vert	15540.000	AV	34.4	40.2	-0.9	33.0	-	40.7	53.9	13.2	Floor noise
Vert	20720.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise

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

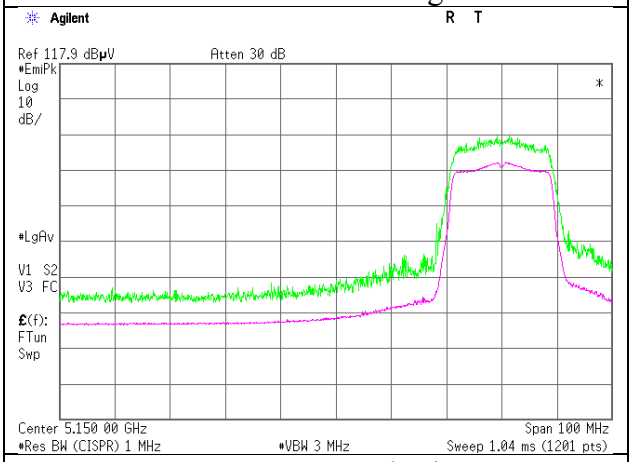
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5180 MHz	

Horizontal

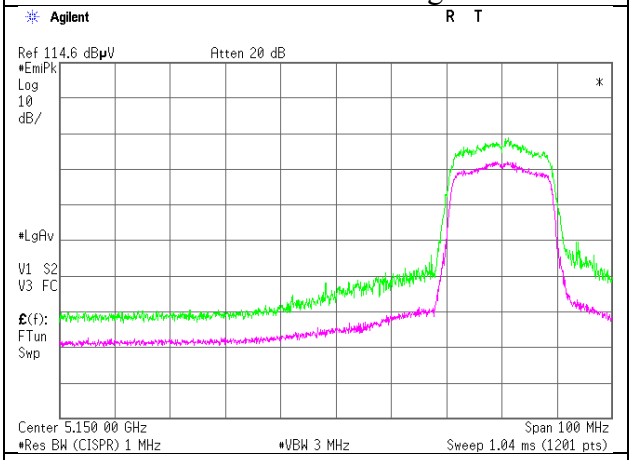
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5260 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	10520.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Hori	15780.000	PK	43.9	39.5	-1.0	33.1	-	49.3	73.9	24.6	Floor noise
Hori	21040.000	PK	45.6	39.6	-1.7	32.7	-	50.8	73.9	23.1	Floor noise
Hori	10520.000	AV	34.3	40.0	-2.5	34.1	-	37.7	53.9	16.2	Floor noise
Hori	15780.000	AV	35.0	39.5	-1.0	33.1	-	40.4	53.9	13.5	Floor noise
Hori	21040.000	AV	37.0	39.6	-1.7	32.7	-	42.2	53.9	11.7	Floor noise
Vert	10520.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Vert	15780.000	PK	43.9	39.5	-1.0	33.1	-	49.3	73.9	24.6	Floor noise
Vert	21040.000	PK	45.6	39.6	-1.7	32.7	-	50.8	73.9	23.1	Floor noise
Vert	10520.000	AV	34.3	40.0	-2.5	34.1	-	37.7	53.9	16.2	Floor noise
Vert	15780.000	AV	35.0	39.5	-1.0	33.1	-	40.4	53.9	13.5	Floor noise
Vert	21040.000	AV	37.0	39.6	-1.7	32.7	-	42.2	53.9	11.7	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.				
Report No.	11774441H				
Semi Anechoic Chamber	No.4	No.4	No.2	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 15, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	23 deg. C / 65 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Takumi Shimada	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(30 MHz -1000 MHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5320 MHz				

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	40.000	QP	24.6	14.1	6.8	28.2	-	17.3	40.0	22.7	Floor noise
Hori	100.000	QP	25.8	10.1	7.4	28.0	-	15.3	43.5	28.2	Floor noise
Hori	150.000	QP	23.9	14.8	7.8	27.8	-	18.7	43.5	24.8	Floor noise
Hori	300.000	QP	23.0	13.4	8.8	27.2	-	18.0	46.0	28.0	Floor noise
Hori	500.000	QP	23.6	17.7	9.8	28.1	-	23.0	46.0	23.0	Floor noise
Hori	700.000	QP	22.9	19.8	10.5	27.6	-	25.6	46.0	20.4	Floor noise
Hori	5350.000	PK	58.3	31.6	6.6	31.2	-	65.3	73.9	8.6	
Hori	10640.000	PK	42.7	40.2	-2.3	34.0	-	46.6	73.9	27.3	Floor noise
Hori	15960.000	PK	43.9	39.0	-0.9	33.2	-	48.8	73.9	25.1	Floor noise
Hori	21280.000	PK	45.0	39.6	-1.6	32.6	-	50.4	73.9	23.5	Floor noise
Hori	5350.000	AV	45.0	31.6	6.6	31.2	0.1	52.1	53.9	1.8	*1)
Hori	10640.000	AV	33.9	40.2	-2.3	34.0	-	37.8	53.9	16.1	Floor noise
Hori	15960.000	AV	35.6	39.0	-0.9	33.2	-	40.5	53.9	13.4	Floor noise
Hori	21280.000	AV	36.8	39.6	-1.6	32.6	-	42.2	53.9	11.7	Floor noise
Vert	40.000	QP	24.6	14.1	6.8	28.2	-	17.3	40.0	22.7	Floor noise
Vert	100.000	QP	24.5	10.1	7.4	28.0	-	14.0	43.5	29.5	Floor noise
Vert	150.000	QP	23.9	14.8	7.8	27.8	-	18.7	43.5	24.8	Floor noise
Vert	300.000	QP	23.1	13.4	8.8	27.2	-	18.1	46.0	27.9	Floor noise
Vert	500.000	QP	23.6	17.7	9.8	28.1	-	23.0	46.0	23.0	Floor noise
Vert	700.000	QP	22.9	19.8	10.5	27.6	-	25.6	46.0	20.4	Floor noise
Vert	5350.000	PK	57.2	31.6	6.6	31.2	-	64.2	73.9	9.7	
Vert	10640.000	PK	42.7	40.2	-2.3	34.0	-	46.6	73.9	27.3	Floor noise
Vert	15960.000	PK	43.9	39.0	-0.9	33.2	-	48.8	73.9	25.1	Floor noise
Vert	21280.000	PK	45.0	39.6	-1.6	32.6	-	50.4	73.9	23.5	Floor noise
Vert	5350.000	AV	42.3	31.6	6.6	31.2	0.1	49.4	53.9	4.5	*1)
Vert	10640.000	AV	33.9	40.2	-2.3	34.0	-	37.8	53.9	16.1	Floor noise
Vert	15960.000	AV	35.6	39.0	-0.9	33.2	-	40.5	53.9	13.4	Floor noise
Vert	21280.000	AV	36.8	39.6	-1.6	32.6	-	42.2	53.9	11.7	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

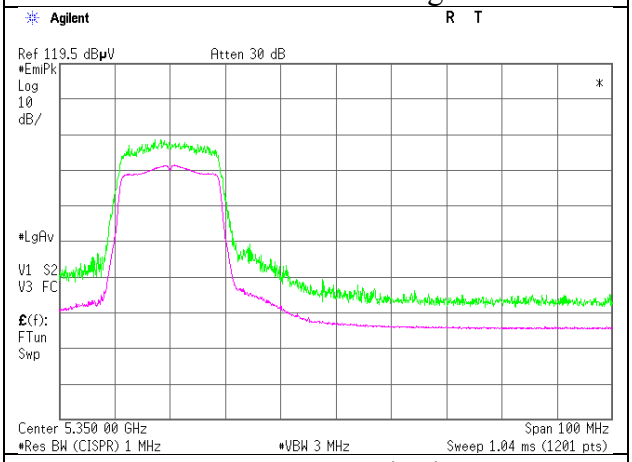
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5320 MHz	

Horizontal

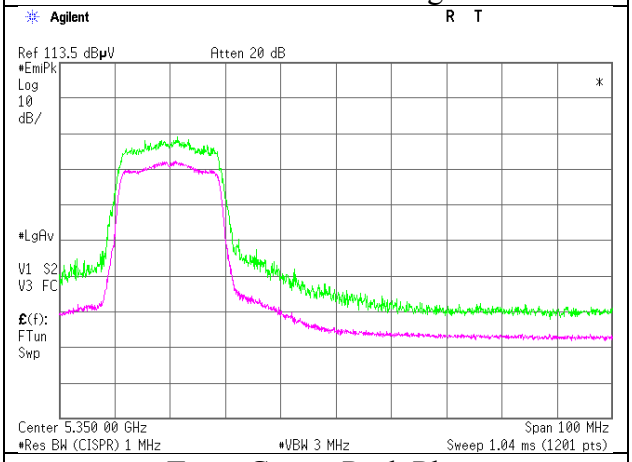
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5500 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	53.8	31.7	6.6	31.3	-	60.8	73.9	13.1	
Hori	5470.000	PK	61.4	31.7	6.6	31.3	-	68.4	73.9	5.5	
Hori	11000.000	PK	41.8	40.9	-2.2	33.8	-	46.7	73.9	27.2	Floor noise
Hori	16500.000	PK	44.7	40.3	-0.9	32.9	-	51.2	73.9	22.7	Floor noise
Hori	22000.000	PK	44.5	39.3	-1.3	32.3	-	50.2	73.9	23.7	Floor noise
Hori	5460.000	AV	41.5	31.7	6.6	31.3	0.1	48.6	53.9	5.3	*1)
Hori	5470.000	AV	43.1	31.7	6.6	31.3	0.1	50.2	53.9	3.7	*1),*2)
Hori	11000.000	AV	33.3	40.9	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Hori	16500.000	AV	36.1	40.3	-0.9	32.9	-	42.6	53.9	11.3	Floor noise
Hori	22000.000	AV	36.4	39.3	-1.3	32.3	-	42.1	53.9	11.8	Floor noise
Vert	5460.000	PK	49.6	31.7	6.6	31.3	-	56.6	73.9	17.3	
Vert	5470.000	PK	56.0	31.7	6.6	31.3	-	63.0	73.9	10.9	
Vert	11000.000	PK	41.8	40.9	-2.2	33.8	-	46.7	73.9	27.2	Floor noise
Vert	16500.000	PK	44.7	40.3	-0.9	32.9	-	51.2	73.9	22.7	Floor noise
Vert	22000.000	PK	44.5	39.3	-1.3	32.3	-	50.2	73.9	23.7	Floor noise
Vert	5460.000	AV	38.2	31.7	6.6	31.3	0.1	45.3	53.9	8.6	*1)
Vert	5470.000	AV	39.8	31.7	6.6	31.3	0.1	46.9	53.9	7.0	*1),*2)
Vert	11000.000	AV	33.3	40.9	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Vert	16500.000	AV	36.1	40.3	-0.9	32.9	-	42.6	53.9	11.3	Floor noise
Vert	22000.000	AV	36.4	39.3	-1.3	32.3	-	42.1	53.9	11.8	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

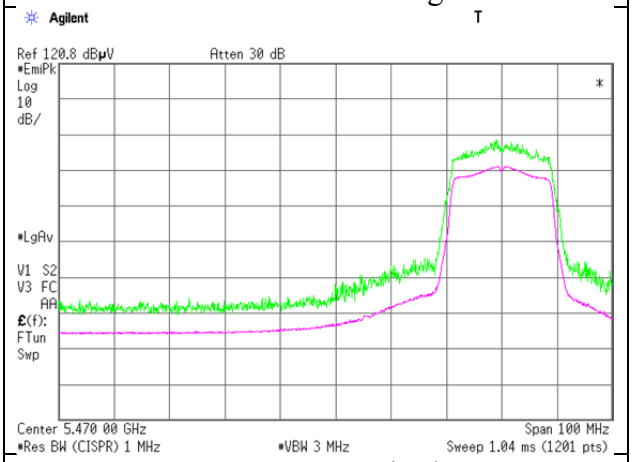
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5500 MHz	

Horizontal

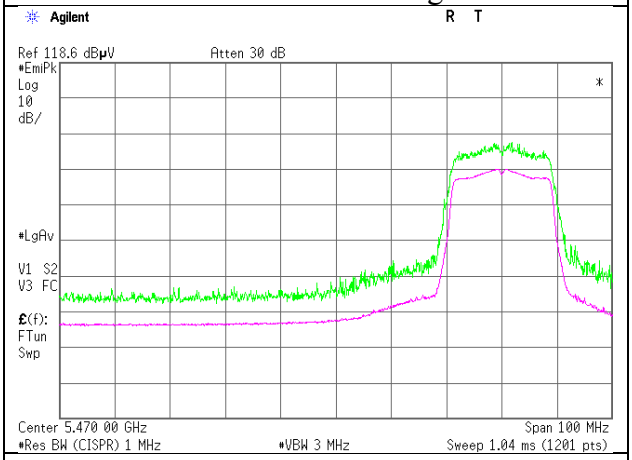
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5580 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11160.000	PK	43.5	40.5	-2.2	33.7	-	48.1	73.9	25.8	Floor noise
Hori	16740.000	PK	43.6	40.9	-0.7	32.8	-	51.0	73.9	22.9	Floor noise
Hori	22320.000	PK	44.3	39.8	-1.2	31.9	-	51.0	73.9	22.9	Floor noise
Hori	11160.000	AV	34.4	40.5	-2.2	33.7	-	39.0	53.9	14.9	Floor noise
Hori	16740.000	AV	35.2	40.9	-0.7	32.8	-	42.6	53.9	11.3	Floor noise
Hori	22320.000	AV	36.0	39.8	-1.2	31.9	-	42.7	53.9	11.2	Floor noise
Vert	11160.000	PK	43.5	40.5	-2.2	33.7	-	48.1	73.9	25.8	Floor noise
Vert	16740.000	PK	43.6	40.9	-0.7	32.8	-	51.0	73.9	22.9	Floor noise
Vert	22320.000	PK	44.3	39.8	-1.2	31.9	-	51.0	73.9	22.9	Floor noise
Vert	11160.000	AV	34.4	40.5	-2.2	33.7	-	39.0	53.9	14.9	Floor noise
Vert	16740.000	AV	35.2	40.9	-0.7	32.8	-	42.6	53.9	11.3	Floor noise
Vert	22320.000	AV	36.0	39.8	-1.2	31.9	-	42.7	53.9	11.2	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5700 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	61.1	32.2	6.7	31.3	-	68.7	73.9	5.2	
Hori	11400.000	PK	43.5	40.1	-1.9	33.7	-	48.0	73.9	25.9	Floor noise
Hori	17100.000	PK	44.0	42.1	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Hori	22800.000	PK	45.3	40.4	-1.2	31.5	-	53.0	73.9	20.9	Floor noise
Hori	5725.000	AV	43.4	32.2	6.7	31.3	0.1	51.1	53.9	2.8	*1),*2)
Hori	11400.000	AV	34.2	40.1	-1.9	33.7	-	38.7	53.9	15.2	Floor noise
Hori	17100.000	AV	35.6	42.1	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Hori	22800.000	AV	35.8	40.4	-1.2	31.5	-	43.5	53.9	10.4	Floor noise
Vert	5725.000	PK	57.9	32.2	6.7	31.3	-	65.5	73.9	8.4	
Vert	11400.000	PK	43.5	40.1	-1.9	33.7	-	48.0	73.9	25.9	Floor noise
Vert	17100.000	PK	44.0	42.1	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Vert	22800.000	PK	45.3	40.4	-1.2	31.5	-	53.0	73.9	20.9	Floor noise
Vert	5725.000	AV	39.8	32.2	6.7	31.3	0.1	47.5	53.9	6.4	*1),*2)
Vert	11400.000	AV	34.2	40.1	-1.9	33.7	-	38.7	53.9	15.2	Floor noise
Vert	17100.000	AV	35.6	42.1	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Vert	22800.000	AV	35.8	40.4	-1.2	31.5	-	43.5	53.9	10.4	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

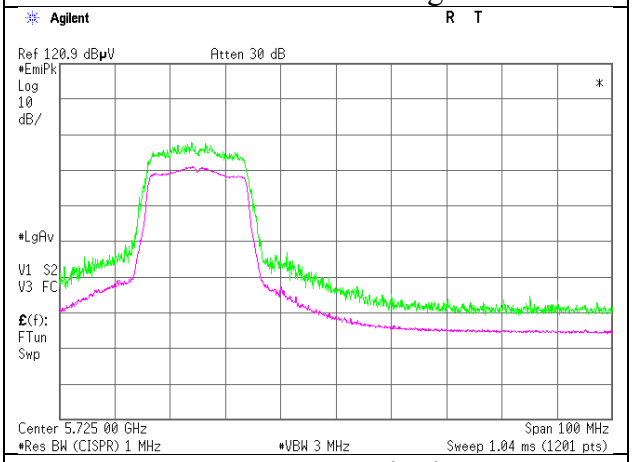
*1) Not Out of Band emission(Leakage Power)
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5700 MHz	

Horizontal

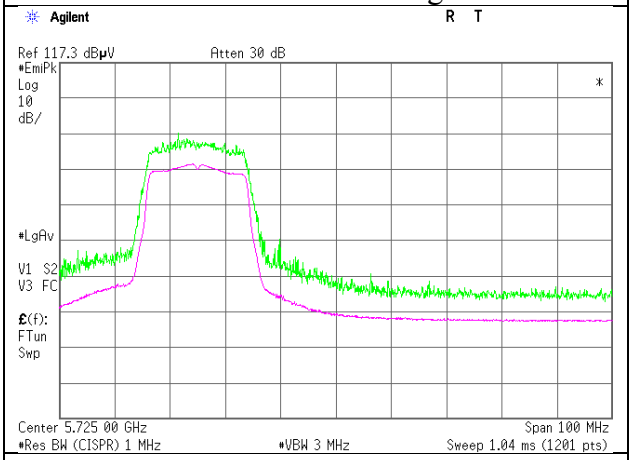
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5745 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	42.2	32.0	6.7	31.3	-	49.6	68.2	18.6	
Hori	5700.000	PK	44.0	32.1	6.7	31.3	-	51.5	105.2	53.7	
Hori	5715.000	PK	52.0	32.2	6.7	31.3	-	59.6	109.4	49.8	
Hori	5720.000	PK	56.5	32.2	6.7	31.3	-	64.1	110.8	46.7	
Hori	5725.000	PK	59.6	32.2	6.7	31.3	-	67.2	122.2	55.0	
Hori	11490.000	PK	41.8	39.9	-1.9	33.7	-	46.1	73.9	27.8	Floor noise
Hori	17235.000	PK	43.4	42.8	-0.6	32.6	-	53.0	73.9	20.9	Floor noise
Hori	22980.000	PK	44.3	40.7	-1.2	31.3	-	52.5	73.9	21.4	Floor noise
Hori	11490.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Hori	17235.000	AV	34.9	42.8	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Hori	22980.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise
Vert	5650.000	PK	41.8	32.0	6.7	31.3	-	49.2	68.2	19.0	
Vert	5700.000	PK	43.2	32.1	6.7	31.3	-	50.7	105.2	54.5	
Vert	5715.000	PK	47.4	32.2	6.7	31.3	-	55.0	109.4	54.4	
Vert	5720.000	PK	53.4	32.2	6.7	31.3	-	61.0	110.8	49.8	
Vert	5725.000	PK	56.3	32.2	6.7	31.3	-	63.9	122.2	58.3	
Vert	11490.000	PK	41.8	39.9	-1.9	33.7	-	46.1	73.9	27.8	Floor noise
Vert	17235.000	PK	43.4	42.8	-0.6	32.6	-	53.0	73.9	20.9	Floor noise
Vert	22980.000	PK	44.3	40.7	-1.2	31.3	-	52.5	73.9	21.4	Floor noise
Vert	11490.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Vert	17235.000	AV	34.9	42.8	-0.6	32.6	-	44.5	53.9	9.4	Floor noise
Vert	22980.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise

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

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

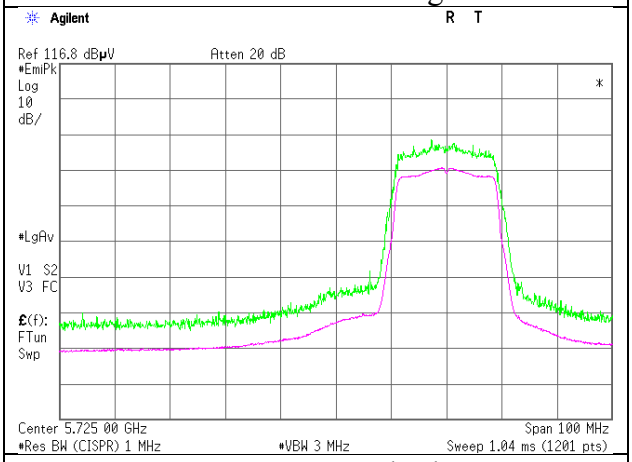
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5745 MHz	

Horizontal

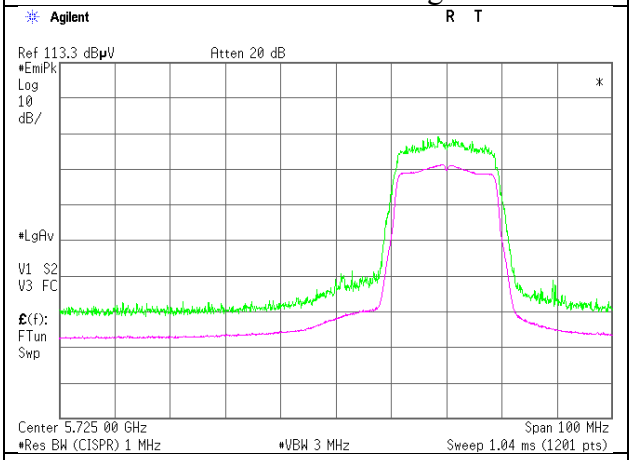
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5785 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11570.000	PK	41.6	39.8	-1.9	33.7	-	45.8	73.9	28.1	Floor noise
Hori	17355.000	PK	43.1	43.4	-0.6	32.6	-	53.3	73.9	20.6	Floor noise
Hori	23140.000	PK	44.1	40.6	-1.2	31.3	-	52.2	73.9	21.7	Floor noise
Hori	11570.000	AV	33.4	39.8	-1.9	33.7	-	37.6	53.9	16.3	Floor noise
Hori	17355.000	AV	35.2	43.4	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Hori	23140.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise
Vert	11570.000	PK	41.6	39.8	-1.9	33.7	-	45.8	73.9	28.1	Floor noise
Vert	17355.000	PK	43.1	43.4	-0.6	32.6	-	53.3	73.9	20.6	Floor noise
Vert	23140.000	PK	44.1	40.6	-1.2	31.3	-	52.2	73.9	21.7	Floor noise
Vert	11570.000	AV	33.4	39.8	-1.9	33.7	-	37.6	53.9	16.3	Floor noise
Vert	17355.000	AV	35.2	43.4	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Vert	23140.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5825 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	56.9	32.5	6.8	31.4	-	64.8	122.2	57.4	
Hori	5855.000	PK	54.3	32.5	6.8	31.4	-	62.2	110.8	48.6	
Hori	5860.000	PK	48.7	32.5	6.8	31.4	-	56.6	109.4	52.8	
Hori	5875.000	PK	43.7	32.5	6.8	31.4	-	51.6	105.2	53.6	
Hori	5925.000	PK	42.3	32.6	6.8	31.4	-	50.3	68.2	17.9	
Hori	11650.000	PK	41.7	39.6	-1.7	33.7	-	45.9	73.9	28.0	Floor noise
Hori	17475.000	PK	43.3	44.1	-0.4	32.5	-	54.5	73.9	19.4	Floor noise
Hori	23300.000	PK	44.5	40.5	-1.1	31.3	-	52.6	73.9	21.3	Floor noise
Hori	11650.000	AV	33.8	39.6	-1.7	33.7	-	38.0	53.9	15.9	Floor noise
Hori	17475.000	AV	35.1	44.1	-0.4	32.5	-	46.3	53.9	7.6	Floor noise
Hori	23300.000	AV	35.9	40.5	-1.1	31.3	-	44.0	53.9	9.9	Floor noise
Vert	5850.000	PK	54.9	32.5	6.8	31.4	-	62.8	122.2	59.4	
Vert	5855.000	PK	53.5	32.5	6.8	31.4	-	61.4	110.8	49.4	
Vert	5860.000	PK	44.3	32.5	6.8	31.4	-	52.2	109.4	57.2	
Vert	5875.000	PK	42.1	32.5	6.8	31.4	-	50.0	105.2	55.2	
Vert	5925.000	PK	40.8	32.6	6.8	31.4	-	48.8	68.2	19.4	
Vert	11650.000	PK	41.7	39.6	-1.7	33.7	-	45.9	73.9	28.0	Floor noise
Vert	17475.000	PK	43.3	44.1	-0.4	32.5	-	54.5	73.9	19.4	Floor noise
Vert	23300.000	PK	44.5	40.5	-1.1	31.3	-	52.6	73.9	21.3	Floor noise
Vert	11650.000	AV	33.8	39.6	-1.7	33.7	-	38.0	53.9	15.9	Floor noise
Vert	17475.000	AV	35.1	44.1	-0.4	32.5	-	46.3	53.9	7.6	Floor noise
Vert	23300.000	AV	35.9	40.5	-1.1	31.3	-	44.0	53.9	9.9	Floor noise

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

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

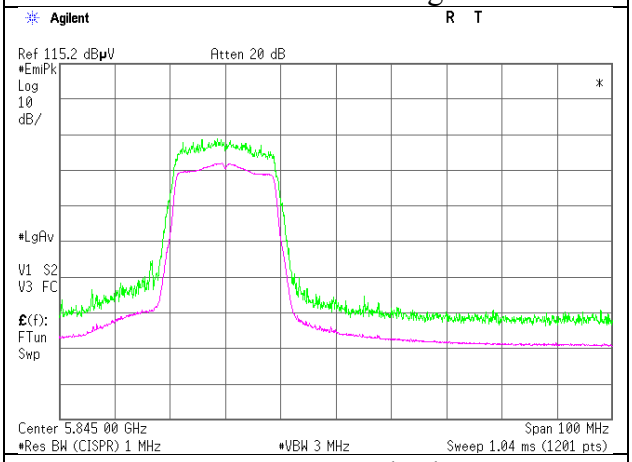
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-20 5825 MHz	

Horizontal

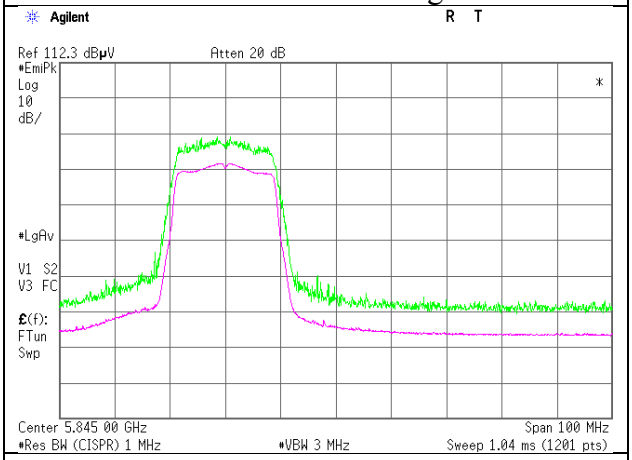
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11ac-20 5180 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	57.1	31.6	6.5	31.2	-	64.0	73.9	9.9	
Hori	5150.000	AV	43.9	31.6	6.5	31.2	0.1	50.9	53.9	3.0	*1)
Vert	5150.000	PK	52.4	31.6	6.5	31.2	-	59.3	73.9	14.6	
Vert	5150.000	AV	40.3	31.6	6.5	31.2	0.1	47.3	53.9	6.6	*1)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

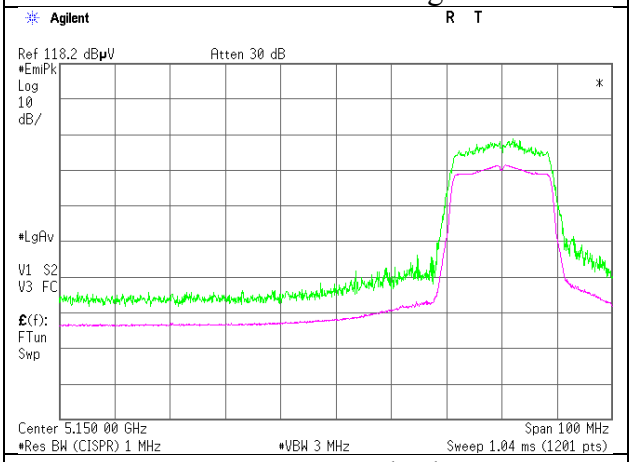
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5180 MHz	

Horizontal

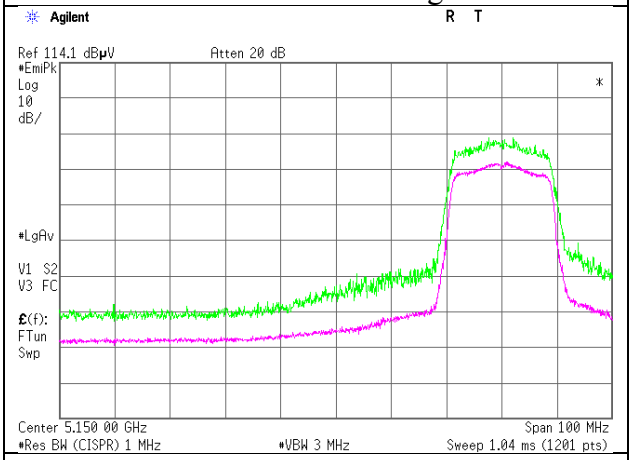
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11ac-20 5320 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	57.3	31.6	6.6	31.2	-	64.3	73.9	9.6	
Hori	5350.000	AV	44.5	31.6	6.6	31.2	0.1	51.6	53.9	2.3	*1)
Vert	5350.000	PK	55.1	31.6	6.6	31.2	-	62.1	73.9	11.8	
Vert	5350.000	AV	42.6	31.6	6.6	31.2	0.1	49.7	53.9	4.2	*1)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

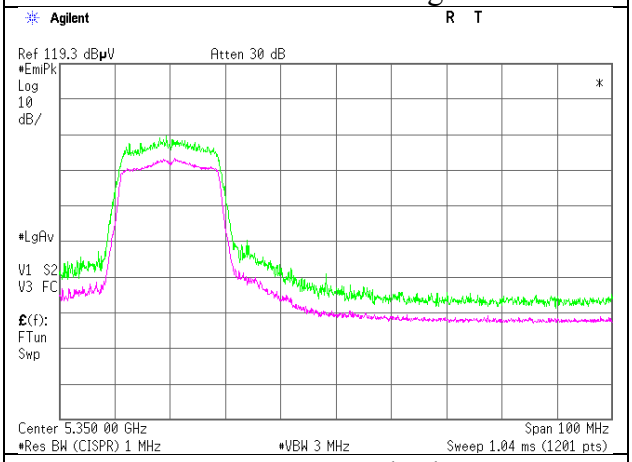
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5320 MHz	

Horizontal

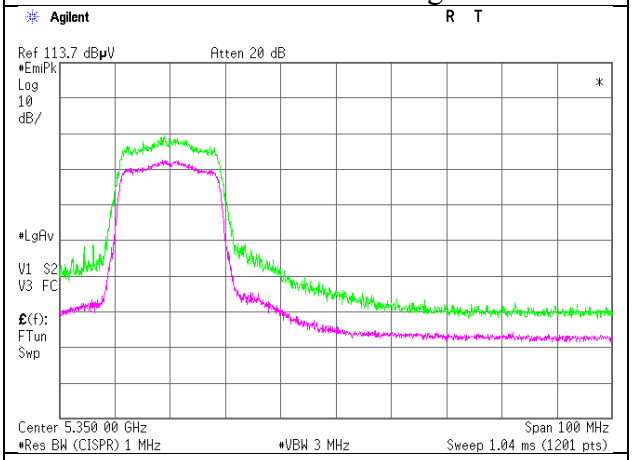
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11ac-20 5500 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	52.9	31.7	6.6	31.3	-	59.9	73.9	14.0	
Hori	5470.000	PK	62.0	31.7	6.6	31.3	-	69.0	73.9	4.9	
Hori	5460.000	AV	41.2	31.7	6.6	31.3	0.1	48.3	53.9	5.6	*1)
Hori	5470.000	AV	43.0	31.7	6.6	31.3	0.1	50.1	53.9	3.8	*1),*2)
Vert	5460.000	PK	50.3	31.7	6.6	31.3	-	57.3	73.9	16.6	
Vert	5470.000	PK	58.7	31.7	6.6	31.3	-	65.7	73.9	8.2	
Vert	5460.000	AV	38.9	31.7	6.6	31.3	0.1	46.0	53.9	7.9	*1)
Vert	5470.000	AV	40.0	31.7	6.6	31.3	0.1	47.1	53.9	6.8	*1),*2)

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

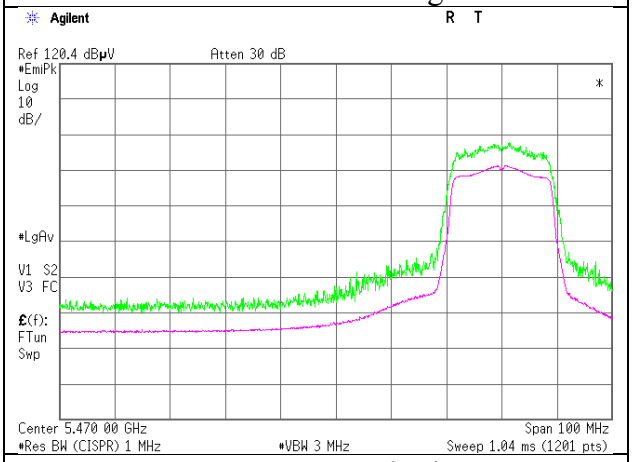
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5500 MHz	

Horizontal

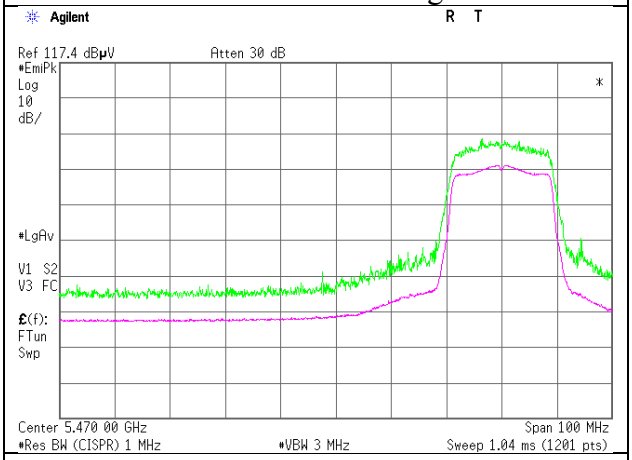
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11ac-20 5700 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	61.0	32.2	6.7	31.3	-	68.6	73.9	5.3	
Hori	5725.000	AV	43.7	32.2	6.7	31.3	0.1	51.4	53.9	2.5	*1),*2)
Vert	5725.000	PK	57.8	32.2	6.7	31.3	-	65.4	73.9	8.5	
Vert	5725.000	AV	41.2	32.2	6.7	31.3	0.1	48.9	53.9	5.0	*1),*2)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

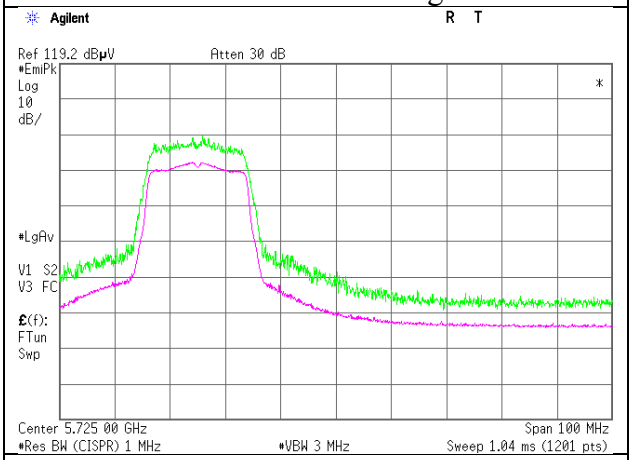
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5700 MHz	

Horizontal

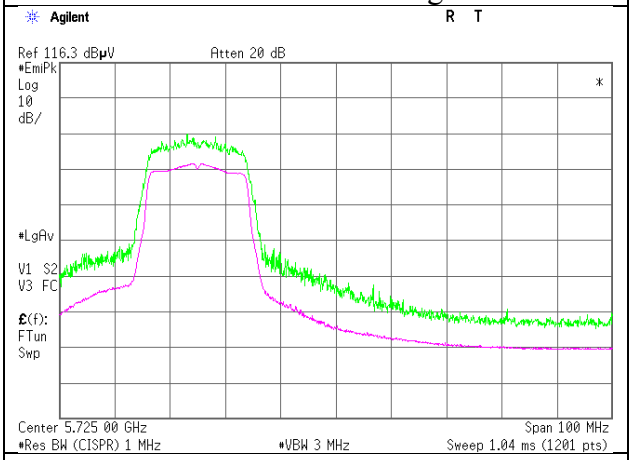
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11ac-20 5745 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	42.0	32.0	6.7	31.3	-	49.4	68.2	18.8	
Hori	5700.000	PK	44.0	32.1	6.7	31.3	-	51.5	105.2	53.7	
Hori	5715.000	PK	51.9	32.2	6.7	31.3	-	59.5	109.4	49.9	
Hori	5720.000	PK	53.5	32.2	6.7	31.3	-	61.1	110.8	49.7	
Hori	5725.000	PK	58.5	32.2	6.7	31.3	-	66.1	122.2	56.1	
Vert	5650.000	PK	41.7	32.0	6.7	31.3	-	49.1	68.2	19.1	
Vert	5700.000	PK	43.3	32.1	6.7	31.3	-	50.8	105.2	54.4	
Vert	5715.000	PK	46.7	32.2	6.7	31.3	-	54.3	109.4	55.1	
Vert	5720.000	PK	48.4	32.2	6.7	31.3	-	56.0	110.8	54.8	
Vert	5725.000	PK	53.7	32.2	6.7	31.3	-	61.3	122.2	60.9	

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

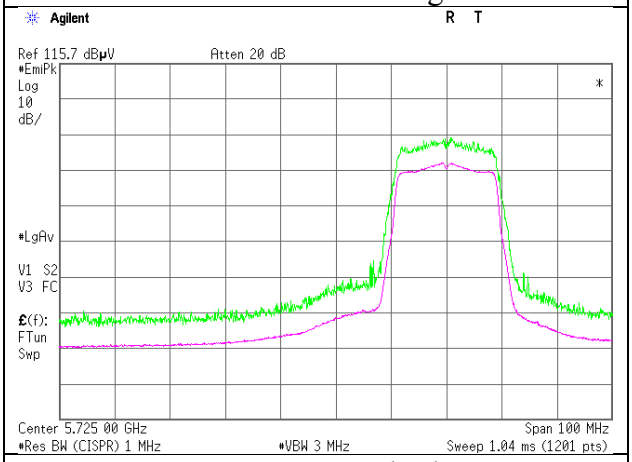
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5745 MHz	

Horizontal

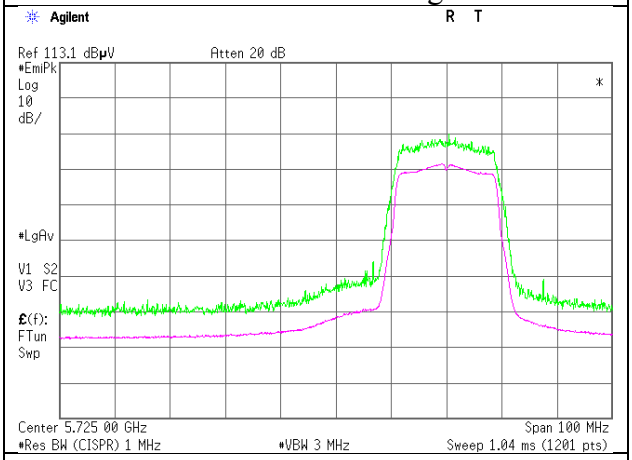
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)
Mode	Tx 11ac-20 5825 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	53.5	32.5	6.8	31.4	-	61.4	122.2	60.8	
Hori	5855.000	PK	52.7	32.5	6.8	31.4	-	60.6	110.8	50.2	
Hori	5860.000	PK	51.2	32.5	6.8	31.4	-	59.1	109.4	50.3	
Hori	5875.000	PK	43.3	32.5	6.8	31.4	-	51.2	105.2	54.0	
Hori	5925.000	PK	41.5	32.6	6.8	31.4	-	49.5	68.2	18.7	
Vert	5850.000	PK	51.0	32.5	6.8	31.4	-	58.9	122.2	63.3	
Vert	5855.000	PK	48.9	32.5	6.8	31.4	-	56.8	110.8	54.0	
Vert	5860.000	PK	47.3	32.5	6.8	31.4	-	55.2	109.4	54.2	
Vert	5875.000	PK	42.0	32.5	6.8	31.4	-	49.9	105.2	55.3	
Vert	5925.000	PK	41.5	32.6	6.8	31.4	-	49.5	68.2	18.7	

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

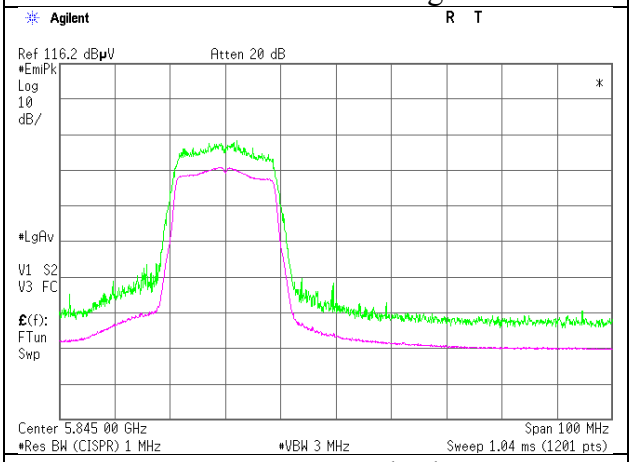
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-20 5825 MHz	

Horizontal

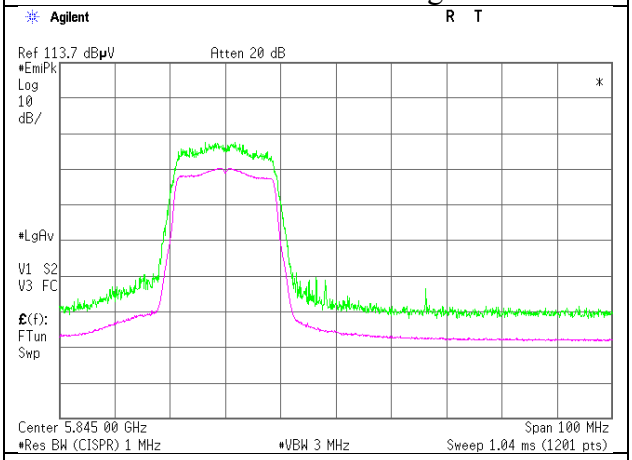
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11n-40 5190 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	58.0	31.6	6.5	31.2	-	64.9	73.9	9.0	
Hori	5150.000	AV	45.2	31.6	6.5	31.2	0.3	52.4	53.9	1.5	*1)
Vert	5150.000	PK	55.9	31.6	6.5	31.2	-	62.8	73.9	11.1	
Vert	5150.000	AV	43.8	31.6	6.5	31.2	0.3	51.0	53.9	2.9	*1)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

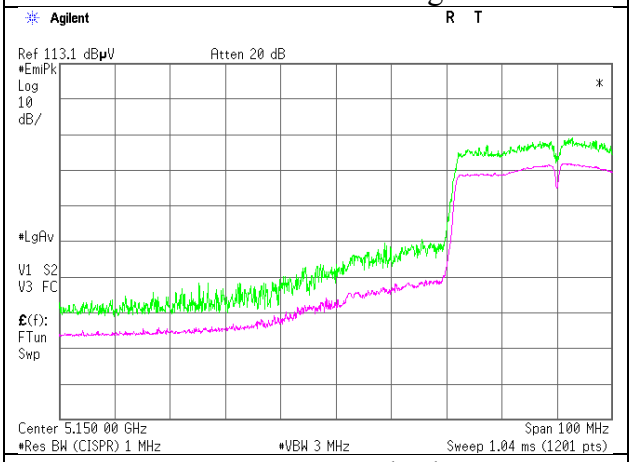
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5190 MHz	

Horizontal

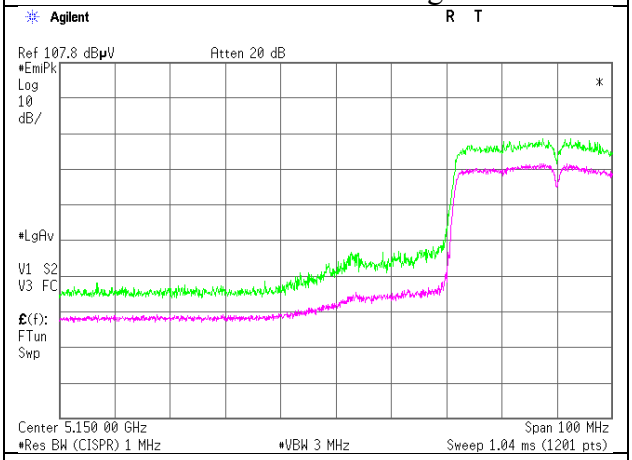
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11n-40 5310 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	56.8	31.6	6.6	31.2	-	63.8	73.9	10.1	
Hori	5350.000	AV	43.7	31.6	6.6	31.2	0.3	51.0	53.9	2.9	*1)
Vert	5350.000	PK	54.7	31.6	6.6	31.2	-	61.7	73.9	12.2	
Vert	5350.000	AV	41.6	31.6	6.6	31.2	0.3	48.9	53.9	5.0	*1)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

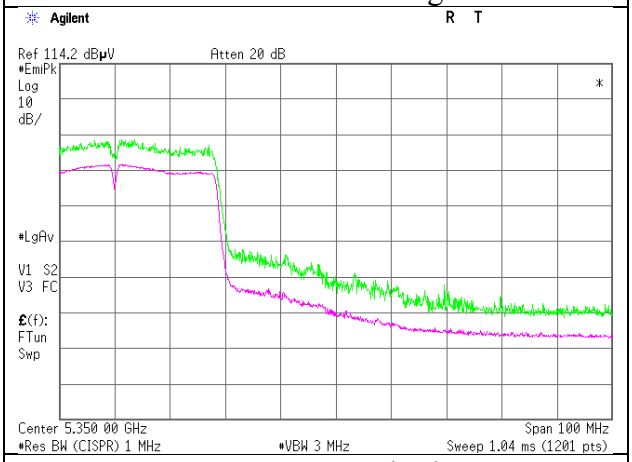
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5310 MHz	

Horizontal

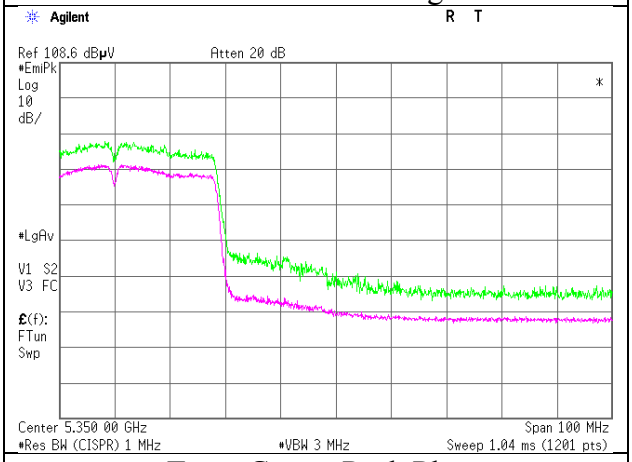
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11n-40 5510 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	55.1	31.7	6.6	31.3	-	62.1	73.9	11.8	
Hori	5470.000	PK	58.9	31.7	6.6	31.3	-	65.9	73.9	8.0	
Hori	5460.000	AV	41.1	31.7	6.6	31.3	0.3	48.4	53.9	5.5	*1)
Hori	5470.000	AV	45.3	31.7	6.6	31.3	0.3	52.6	53.9	1.3	*1),*2)
Vert	5460.000	PK	52.0	31.7	6.6	31.3	-	59.0	73.9	14.9	
Vert	5470.000	PK	55.6	31.7	6.6	31.3	-	62.6	73.9	11.3	
Vert	5460.000	AV	38.5	31.7	6.6	31.3	0.3	45.8	53.9	8.1	*1)
Vert	5470.000	AV	42.1	31.7	6.6	31.3	0.3	49.4	53.9	4.5	*1),*2)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

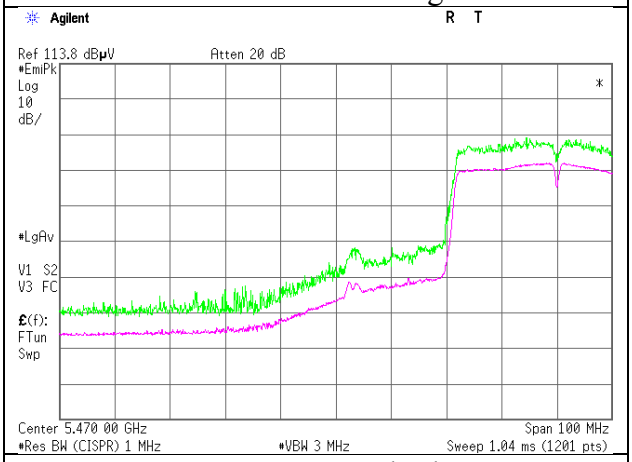
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5510 MHz	

Horizontal

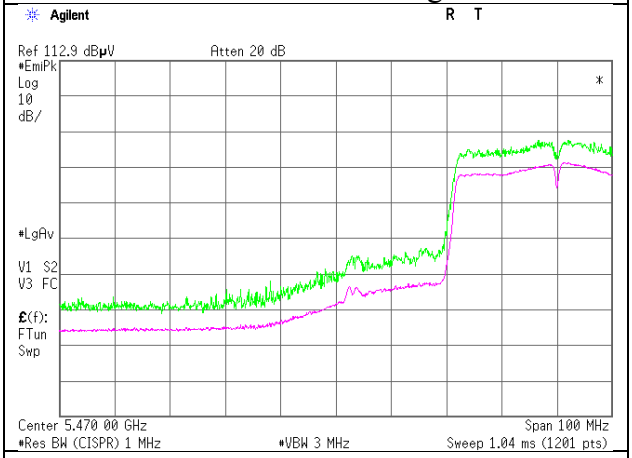
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11n-40 5670 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	53.5	32.2	6.7	31.3	-	61.1	73.9	12.8	
Hori	5725.000	AV	39.4	32.2	6.7	31.3	0.3	47.3	53.9	6.6	*1)
Vert	5725.000	PK	50.5	32.2	6.7	31.3	-	58.1	73.9	15.8	
Vert	5725.000	AV	37.2	32.2	6.7	31.3	0.3	45.1	53.9	8.8	*1)

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

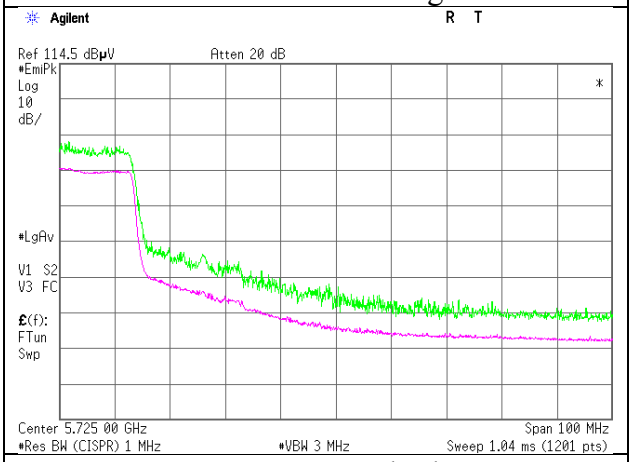
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5670 MHz	

Horizontal

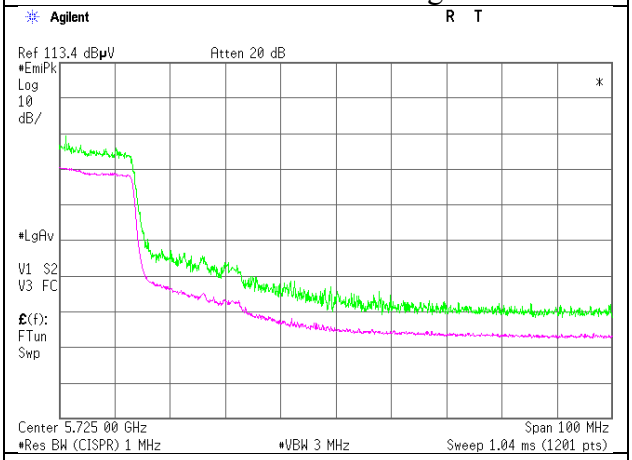
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)
Mode	Tx 11n-40 5755 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	42.3	32.0	6.7	31.3	-	49.7	68.2	18.5	
Hori	5700.000	PK	51.4	32.1	6.7	31.3	-	58.9	105.2	46.3	
Hori	5715.000	PK	57.0	32.2	6.7	31.3	-	64.6	109.4	44.8	
Hori	5718.442	PK	60.8	32.2	6.7	31.3	-	68.4	110.4	42.0	
Hori	5720.000	PK	59.0	32.2	6.7	31.3	-	66.6	110.8	44.2	
Hori	5725.000	PK	61.1	32.2	6.7	31.3	-	68.7	122.2	53.5	
Vert	5650.000	PK	41.4	32.0	6.7	31.3	-	48.8	68.2	19.4	
Vert	5700.000	PK	48.4	32.1	6.7	31.3	-	55.9	105.2	49.3	
Vert	5715.000	PK	53.5	32.2	6.7	31.3	-	61.1	109.4	48.3	
Vert	5718.442	PK	56.9	32.2	6.7	31.3	-	64.5	110.4	45.9	
Vert	5720.000	PK	55.6	32.2	6.7	31.3	-	63.2	110.8	47.6	
Vert	5725.000	PK	57.8	32.2	6.7	31.3	-	65.4	122.2	56.8	

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

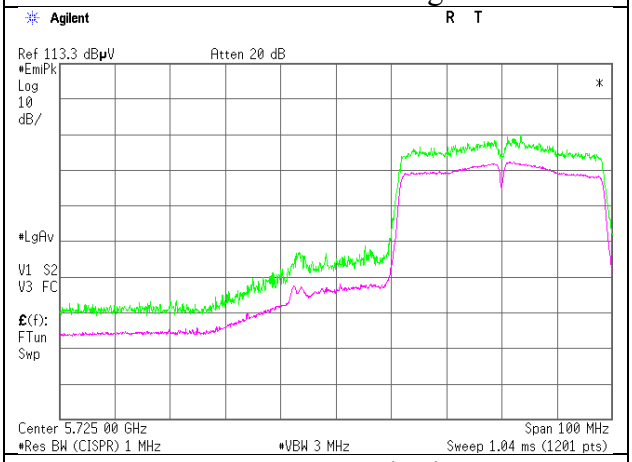
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5755 MHz	

Horizontal

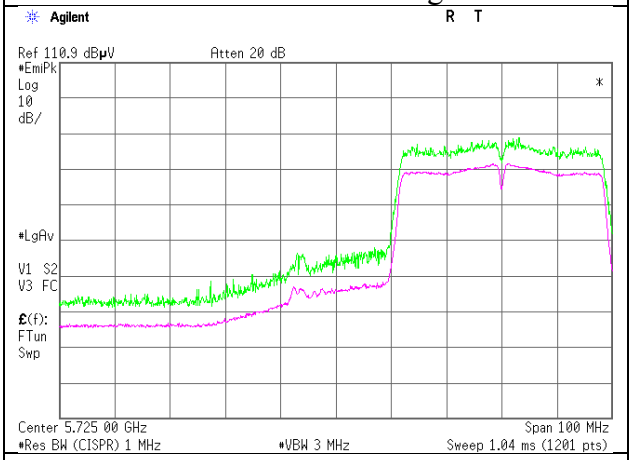
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)
Mode	Tx 11n-40 5795 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	49.7	32.5	6.8	31.4	-	57.6	122.2	64.6	
Hori	5855.000	PK	48.6	32.5	6.8	31.4	-	56.5	110.8	54.3	
Hori	5860.000	PK	47.7	32.5	6.8	31.4	-	55.6	109.4	53.8	
Hori	5875.000	PK	44.4	32.5	6.8	31.4	-	52.3	105.2	52.9	
Hori	5925.000	PK	42.1	32.6	6.8	31.4	-	50.1	68.2	18.1	
Vert	5850.000	PK	47.1	32.5	6.8	31.4	-	55.0	122.2	67.2	
Vert	5855.000	PK	46.3	32.5	6.8	31.4	-	54.2	110.8	56.6	
Vert	5860.000	PK	45.7	32.5	6.8	31.4	-	53.6	109.4	55.8	
Vert	5875.000	PK	41.9	32.5	6.8	31.4	-	49.8	105.2	55.4	
Vert	5925.000	PK	40.8	32.6	6.8	31.4	-	48.8	68.2	19.4	

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

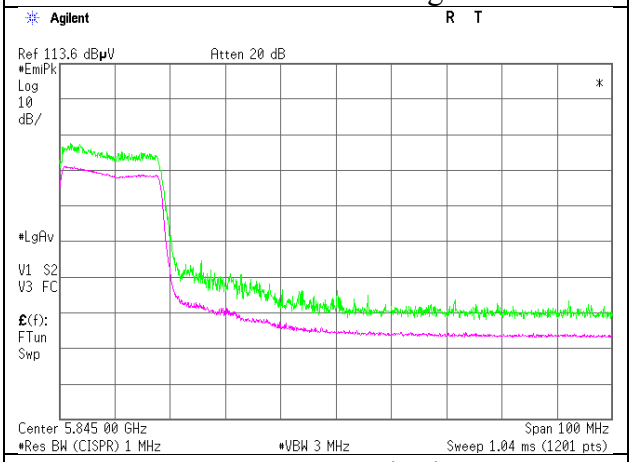
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11n-40 5795 MHz	

Horizontal

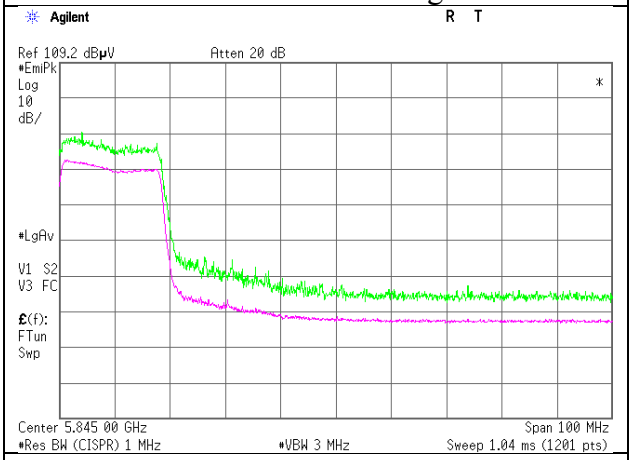
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5190 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	58.3	31.6	6.5	31.2	-	65.2	73.9	8.7	
Hori	10380.000	PK	42.7	39.5	-2.5	34.3	-	45.4	73.9	28.5	Floor noise
Hori	15570.000	PK	43.2	40.2	-0.9	33.0	-	49.5	73.9	24.4	Floor noise
Hori	20760.000	PK	44.7	39.6	-1.8	32.7	-	49.8	73.9	24.1	Floor noise
Hori	5150.000	AV	45.2	31.6	6.5	31.2	0.3	52.4	53.9	1.5	*1)
Hori	10380.000	AV	34.2	39.5	-2.5	34.3	-	36.9	53.9	17.0	Floor noise
Hori	15570.000	AV	34.9	40.2	-0.9	33.0	-	41.2	53.9	12.7	Floor noise
Hori	20760.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise
Vert	5150.000	PK	57.6	31.6	6.5	31.2	-	64.5	73.9	9.4	
Vert	10380.000	PK	42.7	39.5	-2.5	34.3	-	45.4	73.9	28.5	Floor noise
Vert	15570.000	PK	43.2	40.2	-0.9	33.0	-	49.5	73.9	24.4	Floor noise
Vert	20760.000	PK	44.7	39.6	-1.8	32.7	-	49.8	73.9	24.1	Floor noise
Vert	5150.000	AV	44.7	31.6	6.5	31.2	0.3	51.9	53.9	2.0	*1)
Vert	10380.000	AV	34.2	39.5	-2.5	34.3	-	36.9	53.9	17.0	Floor noise
Vert	15570.000	AV	34.9	40.2	-0.9	33.0	-	41.2	53.9	12.7	Floor noise
Vert	20760.000	AV	36.6	39.6	-1.8	32.7	-	41.7	53.9	12.2	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

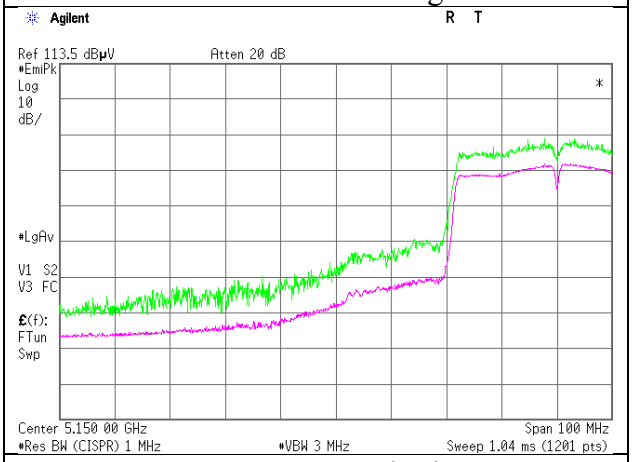
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5190 MHz	

Horizontal

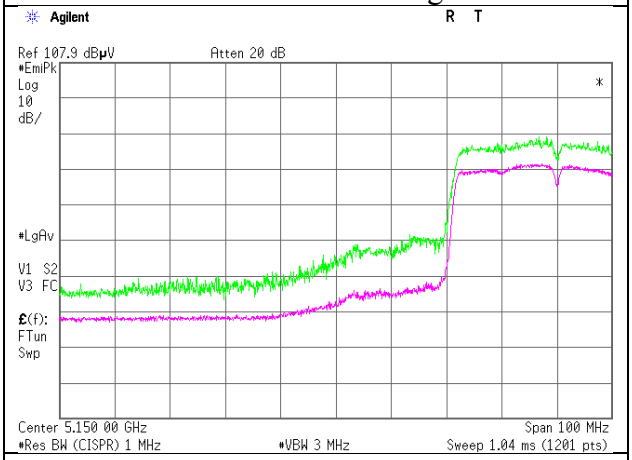
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5270 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	10540.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Hori	15810.000	PK	43.5	39.5	-1.0	33.1	-	48.9	73.9	25.0	Floor noise
Hori	21080.000	PK	45.5	39.6	-1.7	32.6	-	50.8	73.9	23.1	Floor noise
Hori	10540.000	AV	34.4	40.0	-2.5	34.1	-	37.8	53.9	16.1	Floor noise
Hori	15810.000	AV	35.2	39.5	-1.0	33.1	-	40.6	53.9	13.3	Floor noise
Hori	21080.000	AV	37.1	39.6	-1.7	32.6	-	42.4	53.9	11.5	Floor noise
Vert	10540.000	PK	43.2	40.0	-2.5	34.1	-	46.6	73.9	27.3	Floor noise
Vert	15810.000	PK	43.5	39.5	-1.0	33.1	-	48.9	73.9	25.0	Floor noise
Vert	21080.000	PK	45.5	39.6	-1.7	32.6	-	50.8	73.9	23.1	Floor noise
Vert	10540.000	AV	34.4	40.0	-2.5	34.1	-	37.8	53.9	16.1	Floor noise
Vert	15810.000	AV	35.2	39.5	-1.0	33.1	-	40.6	53.9	13.3	Floor noise
Vert	21080.000	AV	37.1	39.6	-1.7	32.6	-	42.4	53.9	11.5	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5310 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	55.7	31.6	6.6	31.2	-	62.7	73.9	11.2	
Hori	10620.000	PK	42.3	40.2	-2.3	34.1	-	46.1	73.9	27.8	Floor noise
Hori	15930.000	PK	44.1	39.1	-1.0	33.2	-	49.0	73.9	24.9	Floor noise
Hori	21240.000	PK	45.4	39.6	-1.6	32.6	-	50.8	73.9	23.1	Floor noise
Hori	5350.000	AV	44.7	31.6	6.6	31.2	0.3	52.0	53.9	1.9	*1)
Hori	10620.000	AV	33.7	40.2	-2.3	34.1	-	37.5	53.9	16.4	Floor noise
Hori	15930.000	AV	35.9	39.1	-1.0	33.2	-	40.8	53.9	13.1	Floor noise
Hori	21240.000	AV	36.6	39.6	-1.6	32.6	-	42.0	53.9	11.9	Floor noise
Vert	5350.000	PK	54.0	31.6	6.6	31.2	-	61.0	73.9	12.9	
Vert	10620.000	PK	42.3	40.2	-2.3	34.1	-	46.1	73.9	27.8	Floor noise
Vert	15930.000	PK	44.1	39.1	-1.0	33.2	-	49.0	73.9	24.9	Floor noise
Vert	21240.000	PK	45.4	39.6	-1.6	32.6	-	50.8	73.9	23.1	Floor noise
Vert	5350.000	AV	43.1	31.6	6.6	31.2	0.3	50.4	53.9	3.5	*1)
Vert	10620.000	AV	33.7	40.2	-2.3	34.1	-	37.5	53.9	16.4	Floor noise
Vert	15930.000	AV	35.9	39.1	-1.0	33.2	-	40.8	53.9	13.1	Floor noise
Vert	21240.000	AV	36.6	39.6	-1.6	32.6	-	42.0	53.9	11.9	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

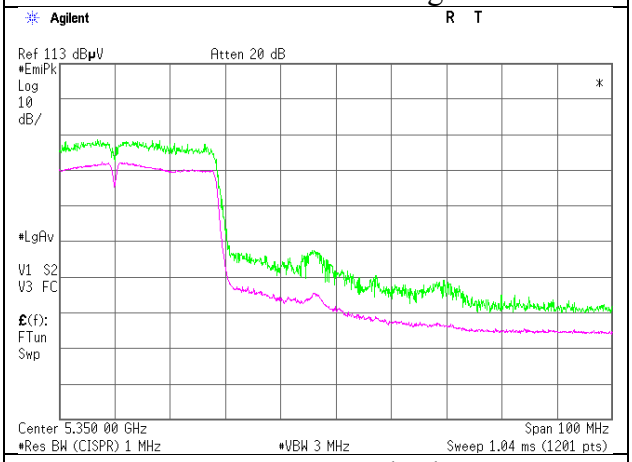
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5310 MHz	

Horizontal

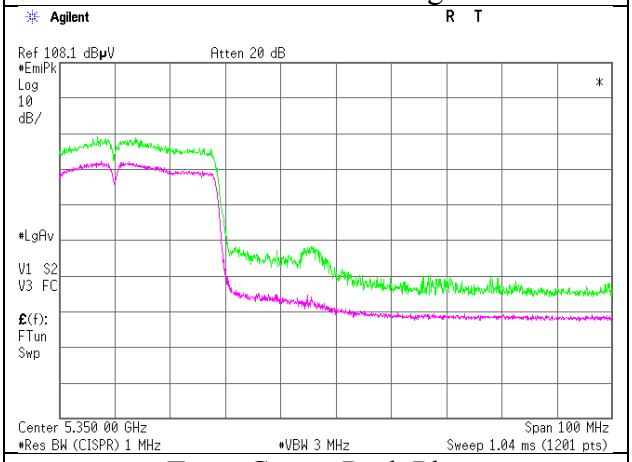
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5510 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	55.0	31.7	6.6	31.3	-	62.0	73.9	11.9	
Hori	5470.000	PK	59.0	31.7	6.6	31.3	-	66.0	73.9	7.9	
Hori	11020.000	PK	42.5	40.8	-2.2	33.8	-	47.3	73.9	26.6	Floor noise
Hori	16530.000	PK	44.9	40.3	-0.8	32.9	-	51.5	73.9	22.4	Floor noise
Hori	22040.000	PK	44.0	39.4	-1.3	32.2	-	49.9	73.9	24.0	Floor noise
Hori	5460.000	AV	41.3	31.7	6.6	31.3	0.3	48.6	53.9	5.3	*1)
Hori	5470.000	AV	45.4	31.7	6.6	31.3	0.3	52.7	53.9	1.2	*1),*2)
Hori	11020.000	AV	33.7	40.8	-2.2	33.8	-	38.5	53.9	15.4	Floor noise
Hori	16530.000	AV	35.8	40.3	-0.8	32.9	-	42.4	53.9	11.5	Floor noise
Hori	22040.000	AV	36.0	39.4	-1.3	32.2	-	41.9	53.9	12.0	Floor noise
Vert	5460.000	PK	52.7	31.7	6.6	31.3	-	59.7	73.9	14.2	
Vert	5470.000	PK	57.0	31.7	6.6	31.3	-	64.0	73.9	9.9	
Vert	11020.000	PK	42.5	40.8	-2.2	33.8	-	47.3	73.9	26.6	Floor noise
Vert	16530.000	PK	44.9	40.3	-0.8	32.9	-	51.5	73.9	22.4	Floor noise
Vert	22040.000	PK	44.0	39.4	-1.3	32.2	-	49.9	73.9	24.0	Floor noise
Vert	5460.000	AV	39.8	31.7	6.6	31.3	0.3	47.1	53.9	6.8	*1)
Vert	5470.000	AV	42.5	31.7	6.6	31.3	0.3	49.8	53.9	4.1	*1),*2)
Vert	11020.000	AV	33.7	40.8	-2.2	33.8	-	38.5	53.9	15.4	Floor noise
Vert	16530.000	AV	35.8	40.3	-0.8	32.9	-	42.4	53.9	11.5	Floor noise
Vert	22040.000	AV	36.0	39.4	-1.3	32.2	-	41.9	53.9	12.0	Floor noise

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

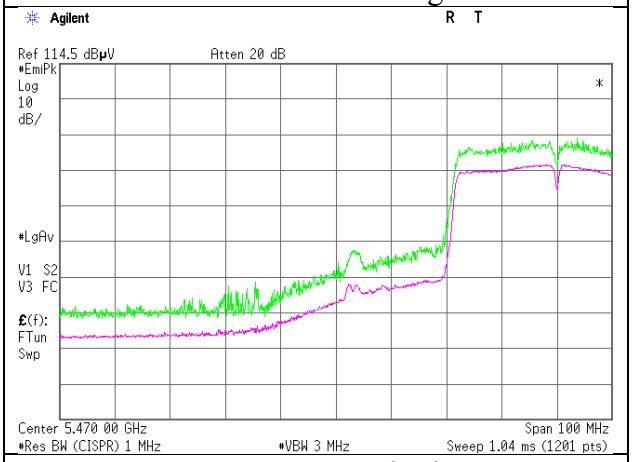
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5510 MHz	

Horizontal

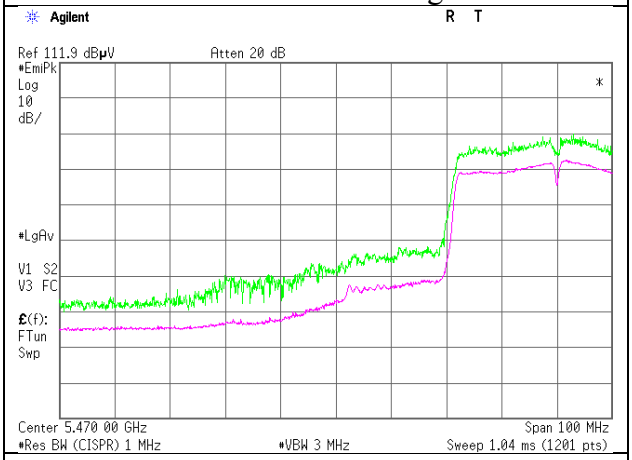
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5550 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11100.000	PK	42.2	40.7	-2.2	33.8	-	46.9	73.9	27.0	Floor noise
Hori	16650.000	PK	44.6	40.6	-0.7	32.8	-	51.7	73.9	22.2	Floor noise
Hori	22200.000	PK	44.8	39.6	-1.3	32.1	-	51.0	73.9	22.9	Floor noise
Hori	11100.000	AV	33.5	40.7	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Hori	16650.000	AV	35.6	40.6	-0.7	32.8	-	42.7	53.9	11.2	Floor noise
Hori	22200.000	AV	36.3	39.6	-1.3	32.1	-	42.5	53.9	11.4	Floor noise
Vert	11100.000	PK	42.2	40.7	-2.2	33.8	-	46.9	73.9	27.0	Floor noise
Vert	16650.000	PK	44.6	40.6	-0.7	32.8	-	51.7	73.9	22.2	Floor noise
Vert	22200.000	PK	44.8	39.6	-1.3	32.1	-	51.0	73.9	22.9	Floor noise
Vert	11100.000	AV	33.5	40.7	-2.2	33.8	-	38.2	53.9	15.7	Floor noise
Vert	16650.000	AV	35.6	40.6	-0.7	32.8	-	42.7	53.9	11.2	Floor noise
Vert	22200.000	AV	36.3	39.6	-1.3	32.1	-	42.5	53.9	11.4	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5670 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	54.7	32.2	6.7	31.3	-	62.3	73.9	11.6	
Hori	11340.000	PK	43.7	40.2	-2.0	33.7	-	48.2	73.9	25.7	Floor noise
Hori	17010.000	PK	43.4	41.6	-0.6	32.6	-	51.8	73.9	22.1	Floor noise
Hori	22680.000	PK	43.5	40.3	-1.2	31.6	-	51.0	73.9	22.9	Floor noise
Hori	5725.000	AV	41.1	32.2	6.7	31.3	0.3	49.0	53.9	4.9	*1)
Hori	11340.000	AV	34.3	40.2	-2.0	33.7	-	38.8	53.9	15.1	Floor noise
Hori	17010.000	AV	35.1	41.6	-0.6	32.6	-	43.5	53.9	10.4	Floor noise
Hori	22680.000	AV	36.0	40.3	-1.2	31.6	-	43.5	53.9	10.4	Floor noise
Vert	5725.000	PK	51.8	32.2	6.7	31.3	-	59.4	73.9	14.5	
Vert	11340.000	PK	43.7	40.2	-2.0	33.7	-	48.2	73.9	25.7	Floor noise
Vert	17010.000	PK	43.4	41.6	-0.6	32.6	-	51.8	73.9	22.1	Floor noise
Vert	22680.000	PK	43.5	40.3	-1.2	31.6	-	51.0	73.9	22.9	Floor noise
Vert	5725.000	AV	37.7	32.2	6.7	31.3	0.3	45.6	53.9	8.3	*1)
Vert	11340.000	AV	34.3	40.2	-2.0	33.7	-	38.8	53.9	15.1	Floor noise
Vert	17010.000	AV	35.1	41.6	-0.6	32.6	-	43.5	53.9	10.4	Floor noise
Vert	22680.000	AV	36.0	40.3	-1.2	31.6	-	43.5	53.9	10.4	Floor noise

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

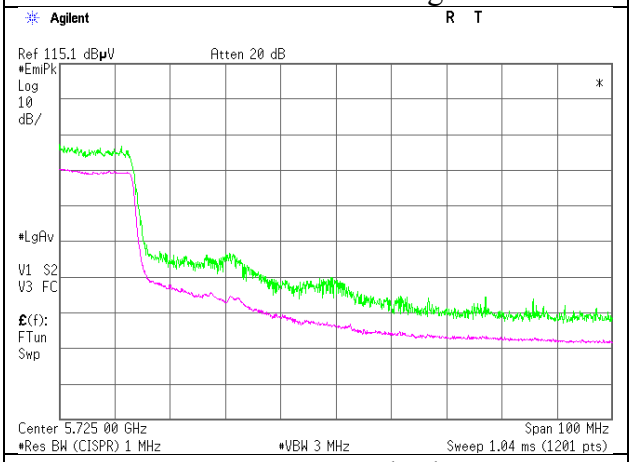
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5670 MHz	

Horizontal

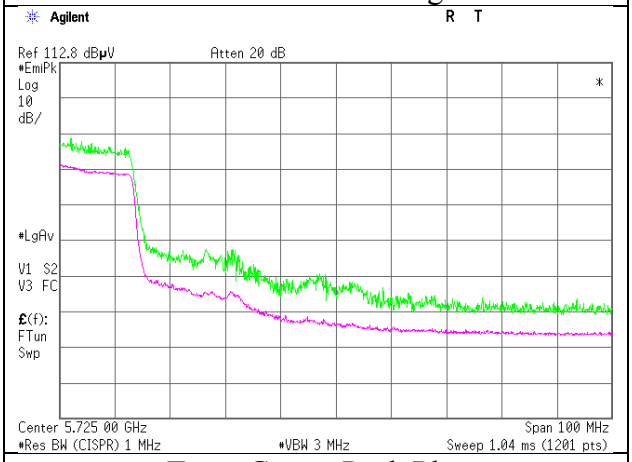
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5755 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	42.2	32.0	6.7	31.3	-	49.6	68.2	18.6	
Hori	5700.000	PK	52.1	32.1	6.7	31.3	-	59.6	105.2	45.6	
Hori	5715.000	PK	58.1	32.2	6.7	31.3	-	65.7	109.4	43.7	
Hori	5717.412	PK	59.1	32.2	6.7	31.3	-	66.7	110.1	43.4	
Hori	5720.000	PK	59.9	32.2	6.7	31.3	-	67.5	110.8	43.3	
Hori	5725.000	PK	61.1	32.2	6.7	31.3	-	68.7	122.2	53.5	
Hori	11510.000	PK	43.3	39.9	-1.9	33.7	-	47.6	73.9	26.3	Floor noise
Hori	17265.000	PK	43.1	43.0	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Hori	23020.000	PK	44.1	40.7	-1.2	31.3	-	52.3	73.9	21.6	Floor noise
Hori	11510.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Hori	17265.000	AV	35.2	43.0	-0.6	32.6	-	45.0	53.9	8.9	Floor noise
Hori	23020.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise
Vert	5650.000	PK	40.9	32.0	6.7	31.3	-	48.3	68.2	19.9	
Vert	5700.000	PK	48.2	32.1	6.7	31.3	-	55.7	105.2	49.5	
Vert	5715.000	PK	51.8	32.2	6.7	31.3	-	59.4	109.4	50.0	
Vert	5717.412	PK	54.1	32.2	6.7	31.3	-	61.7	110.1	48.4	
Vert	5720.000	PK	55.0	32.2	6.7	31.3	-	62.6	110.8	48.2	
Vert	5725.000	PK	57.2	32.2	6.7	31.3	-	64.8	122.2	57.4	
Vert	11510.000	PK	43.3	39.9	-1.9	33.7	-	47.6	73.9	26.3	Floor noise
Vert	17265.000	PK	43.1	43.0	-0.6	32.6	-	52.9	73.9	21.0	Floor noise
Vert	23020.000	PK	44.1	40.7	-1.2	31.3	-	52.3	73.9	21.6	Floor noise
Vert	11510.000	AV	33.4	39.9	-1.9	33.7	-	37.7	53.9	16.2	Floor noise
Vert	17265.000	AV	35.2	43.0	-0.6	32.6	-	45.0	53.9	8.9	Floor noise
Vert	23020.000	AV	35.9	40.7	-1.2	31.3	-	44.1	53.9	9.8	Floor noise

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

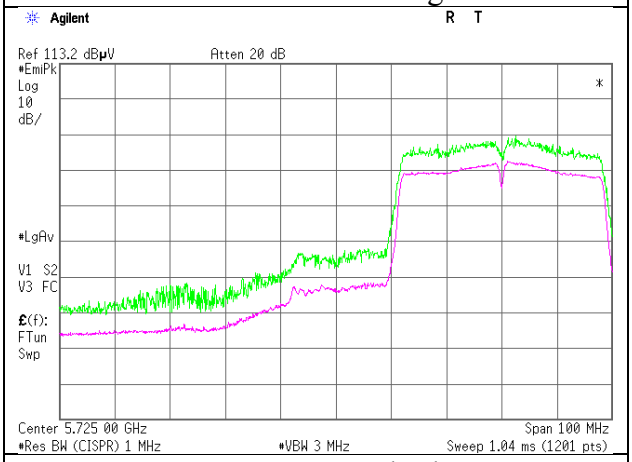
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5755 MHz	

Horizontal

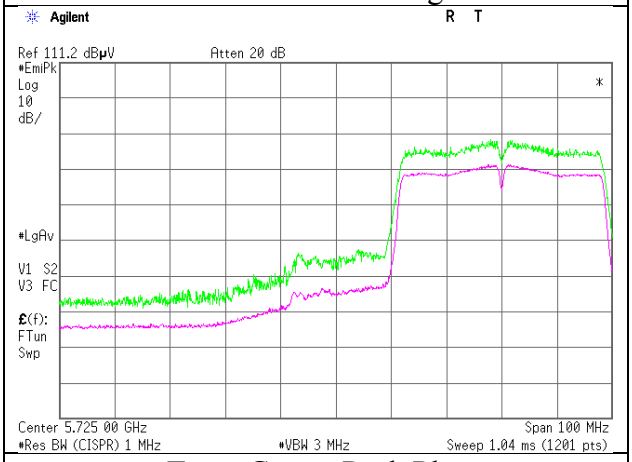
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-40 5795 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	50.2	32.5	6.8	31.4	-	58.1	122.2	64.1	
Hori	5855.000	PK	50.2	32.5	6.8	31.4	-	58.1	110.8	52.7	
Hori	5860.000	PK	47.5	32.5	6.8	31.4	-	55.4	109.4	54.0	
Hori	5875.000	PK	44.8	32.5	6.8	31.4	-	52.7	105.2	52.5	
Hori	5925.000	PK	42.5	32.6	6.8	31.4	-	50.5	68.2	17.7	
Hori	11590.000	PK	41.8	39.7	-1.9	33.7	-	45.9	73.9	28.0	Floor noise
Hori	17385.000	PK	42.9	43.6	-0.4	32.5	-	53.6	73.9	20.3	Floor noise
Hori	23180.000	PK	44.2	40.6	-1.2	31.3	-	52.3	73.9	21.6	Floor noise
Hori	11590.000	AV	33.4	39.7	-1.9	33.7	-	37.5	53.9	16.4	Floor noise
Hori	17385.000	AV	35.3	43.6	-0.4	32.5	-	46.0	53.9	7.9	Floor noise
Hori	23180.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise
Vert	5850.000	PK	47.3	32.5	6.8	31.4	-	55.2	122.2	67.0	
Vert	5855.000	PK	46.3	32.5	6.8	31.4	-	54.2	110.8	56.6	
Vert	5860.000	PK	44.8	32.5	6.8	31.4	-	52.7	109.4	56.7	
Vert	5875.000	PK	43.4	32.5	6.8	31.4	-	51.3	105.2	53.9	
Vert	5925.000	PK	40.8	32.6	6.8	31.4	-	48.8	68.2	19.4	
Vert	11590.000	PK	41.8	39.7	-1.9	33.7	-	45.9	73.9	28.0	Floor noise
Vert	17385.000	PK	42.9	43.6	-0.4	32.5	-	53.6	73.9	20.3	Floor noise
Vert	23180.000	PK	44.2	40.6	-1.2	31.3	-	52.3	73.9	21.6	Floor noise
Vert	11590.000	AV	33.4	39.7	-1.9	33.7	-	37.5	53.9	16.4	Floor noise
Vert	17385.000	AV	35.3	43.6	-0.4	32.5	-	46.0	53.9	7.9	Floor noise
Vert	23180.000	AV	35.9	40.6	-1.2	31.3	-	44.0	53.9	9.9	Floor noise

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

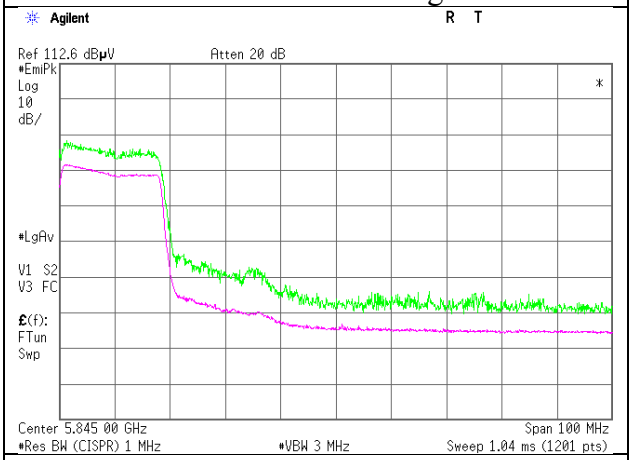
Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-40 5795 MHz	

Horizontal

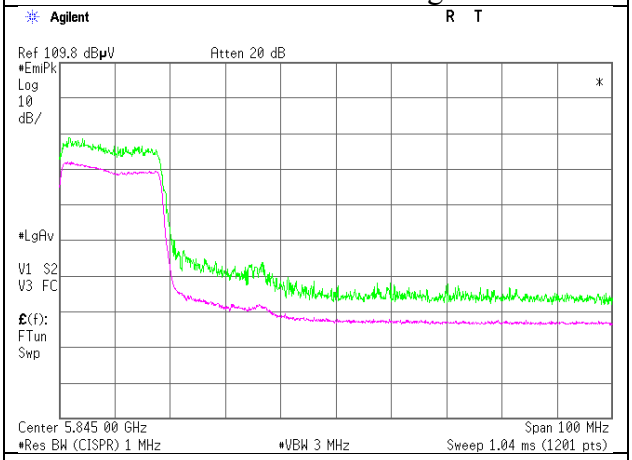
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi (1 GHz - 10 GHz)	Takumi Shimada (1 GHz - 10 GHz)	Tomoki Matsui (10 GHz - 26.5 GHz)	Masafumi Niwa (26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5210 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5150.000	PK	57.1	31.6	6.5	31.2	-	64.0	73.9	9.9	
Hori	10420.000	PK	42.4	39.7	-2.5	34.2	-	45.4	73.9	28.5	Floor noise
Hori	15630.000	PK	43.2	40.0	-0.9	33.0	-	49.3	73.9	24.6	Floor noise
Hori	20840.000	PK	45.2	39.6	-1.8	32.7	-	50.3	73.9	23.6	Floor noise
Hori	5150.000	AV	44.1	31.6	6.5	31.2	1.1	52.1	53.9	1.8	*1)
Hori	10420.000	AV	33.5	39.7	-2.5	34.2	-	36.5	53.9	17.4	Floor noise
Hori	15630.000	AV	34.5	40.0	-0.9	33.0	-	40.6	53.9	13.3	Floor noise
Hori	20840.000	AV	36.8	39.6	-1.8	32.7	-	41.9	53.9	12.0	Floor noise
Vert	5150.000	PK	55.8	31.6	6.5	31.2	-	62.7	73.9	11.2	
Vert	10420.000	PK	42.4	39.7	-2.5	34.2	-	45.4	73.9	28.5	Floor noise
Vert	15630.000	PK	43.2	40.0	-0.9	33.0	-	49.3	73.9	24.6	Floor noise
Vert	20840.000	PK	45.2	39.6	-1.8	32.7	-	50.3	73.9	23.6	Floor noise
Vert	5150.000	AV	43.7	31.6	6.5	31.2	1.1	51.7	53.9	2.2	*1)
Vert	10420.000	AV	33.5	39.7	-2.5	34.2	-	36.5	53.9	17.4	Floor noise
Vert	15630.000	AV	34.5	40.0	-0.9	33.0	-	40.6	53.9	13.3	Floor noise
Vert	20840.000	AV	36.8	39.6	-1.8	32.7	-	41.9	53.9	12.0	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

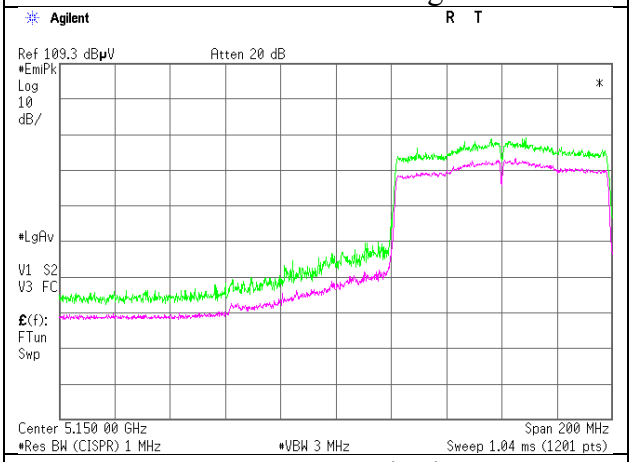
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80 5210 MHz	

Horizontal

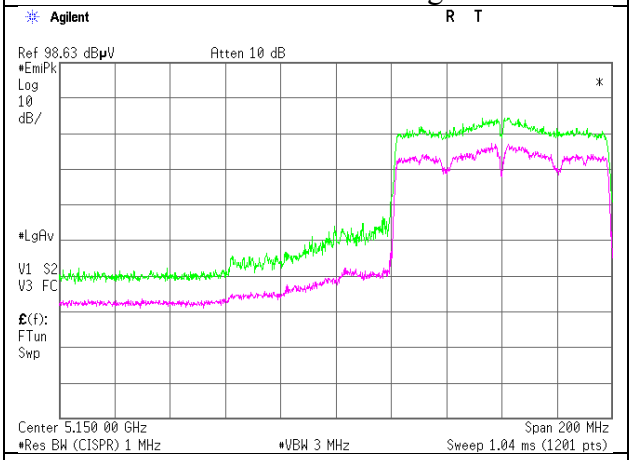
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5290 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	52.6	31.6	6.6	31.2	-	59.6	73.9	14.3	
Hori	10580.000	PK	42.6	40.1	-2.4	34.1	-	46.2	73.9	27.7	Floor noise
Hori	15870.000	PK	43.3	39.3	-1.0	33.2	-	48.4	73.9	25.5	Floor noise
Hori	21160.000	PK	45.7	39.6	-1.6	32.6	-	51.1	73.9	22.8	Floor noise
Hori	5350.000	AV	40.8	31.6	6.6	31.2	1.1	48.9	53.9	5.0	*1)
Hori	10580.000	AV	33.8	40.1	-2.4	34.1	-	37.4	53.9	16.5	Floor noise
Hori	15870.000	AV	35.2	39.3	-1.0	33.2	-	40.3	53.9	13.6	Floor noise
Hori	21160.000	AV	37.0	39.6	-1.6	32.6	-	42.4	53.9	11.5	Floor noise
Vert	5350.000	PK	51.9	31.6	6.6	31.2	-	58.9	73.9	15.0	
Vert	10580.000	PK	42.6	40.1	-2.4	34.1	-	46.2	73.9	27.7	Floor noise
Vert	15870.000	PK	43.3	39.3	-1.0	33.2	-	48.4	73.9	25.5	Floor noise
Vert	21160.000	PK	45.7	39.6	-1.6	32.6	-	51.1	73.9	22.8	Floor noise
Vert	5350.000	AV	38.5	31.6	6.6	31.2	1.1	46.6	53.9	7.3	*1)
Vert	10580.000	AV	33.8	40.1	-2.4	34.1	-	37.4	53.9	16.5	Floor noise
Vert	15870.000	AV	35.2	39.3	-1.0	33.2	-	40.3	53.9	13.6	Floor noise
Vert	21160.000	AV	37.0	39.6	-1.6	32.6	-	42.4	53.9	11.5	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

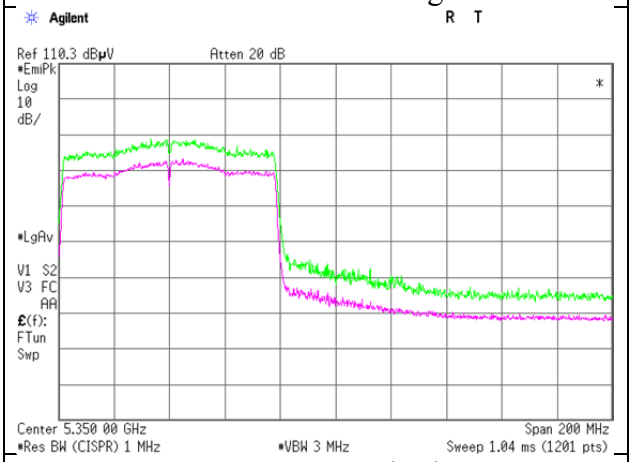
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80 5290 MHz	

Horizontal

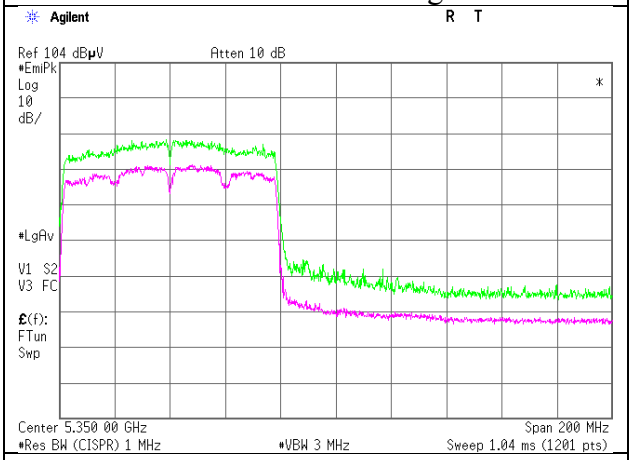
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5530 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	55.9	31.7	6.6	31.3	-	62.9	73.9	11.0	
Hori	5470.000	PK	57.1	31.7	6.6	31.3	-	64.1	73.9	9.8	
Hori	11060.000	PK	42.2	40.7	-2.2	33.8	-	46.9	73.9	27.0	Floor noise
Hori	16590.000	PK	44.9	40.5	-0.7	32.9	-	51.8	73.9	22.1	Floor noise
Hori	22120.000	PK	44.7	39.5	-1.3	32.2	-	50.7	73.9	23.2	Floor noise
Hori	5460.000	AV	45.3	31.7	6.6	31.3	1.1	53.4	53.9	0.5	*1)
Hori	5470.000	AV	44.9	31.7	6.6	31.3	1.1	53.0	53.9	0.9	*1),*2)
Hori	11060.000	AV	33.8	40.7	-2.2	33.8	-	38.5	53.9	15.4	Floor noise
Hori	16590.000	AV	35.6	40.5	-0.7	32.9	-	42.5	53.9	11.4	Floor noise
Hori	22120.000	AV	36.2	39.5	-1.3	32.2	-	42.2	53.9	11.7	Floor noise
Vert	5460.000	PK	52.7	31.7	6.6	31.3	-	59.7	73.9	14.2	
Vert	5470.000	PK	54.1	31.7	6.6	31.3	-	61.1	73.9	12.8	
Vert	11060.000	PK	42.2	40.7	-2.2	33.8	-	46.9	73.9	27.0	Floor noise
Vert	16590.000	PK	44.9	40.5	-0.7	32.9	-	51.8	73.9	22.1	Floor noise
Vert	22120.000	PK	44.7	39.5	-1.3	32.2	-	50.7	73.9	23.2	Floor noise
Vert	5460.000	AV	42.4	31.7	6.6	31.3	1.1	50.5	53.9	3.4	*1)
Vert	5470.000	AV	41.7	31.7	6.6	31.3	1.1	49.8	53.9	4.1	*1),*2)
Vert	11060.000	AV	33.8	40.7	-2.2	33.8	-	38.5	53.9	15.4	Floor noise
Vert	16590.000	AV	35.6	40.5	-0.7	32.9	-	42.5	53.9	11.4	Floor noise
Vert	22120.000	AV	36.2	39.5	-1.3	32.2	-	42.2	53.9	11.7	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

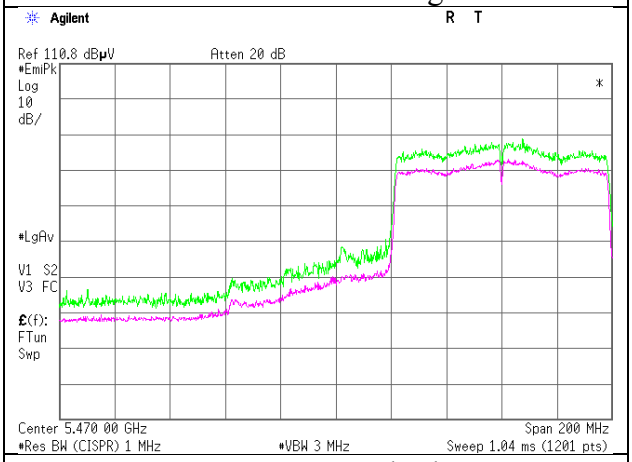
*2) Integration method

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80 5530 MHz	

Horizontal

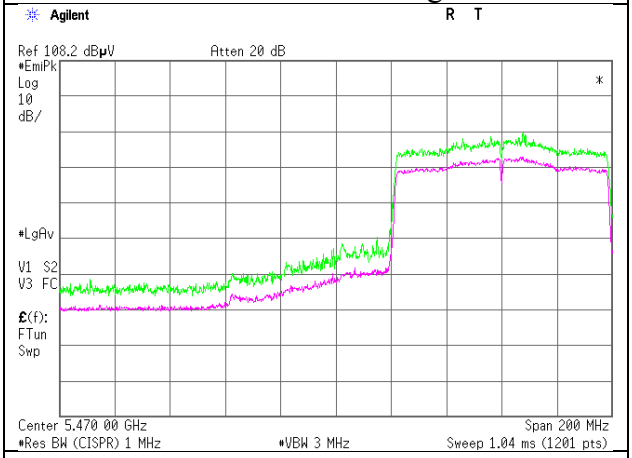
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5610 MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	46.0	32.2	6.7	31.3	-	53.6	73.9	20.3	
Hori	11220.000	PK	42.5	40.4	-2.1	33.7	-	47.1	73.9	26.8	Floor noise
Hori	16830.000	PK	43.6	41.1	-0.7	32.7	-	51.3	73.9	22.6	Floor noise
Hori	22440.000	PK	44.5	39.9	-1.2	31.8	-	51.4	73.9	22.5	Floor noise
Hori	5725.000	AV	35.2	32.2	6.7	31.3	1.1	43.9	53.9	10.0	*1)
Hori	11220.000	AV	34.1	40.4	-2.1	33.7	-	38.7	53.9	15.2	Floor noise
Hori	16830.000	AV	35.3	41.1	-0.7	32.7	-	43.0	53.9	10.9	Floor noise
Hori	22440.000	AV	36.2	39.9	-1.2	31.8	-	43.1	53.9	10.8	Floor noise
Vert	5725.000	PK	43.4	32.2	6.7	31.3	-	51.0	73.9	22.9	
Vert	11220.000	PK	42.5	40.4	-2.1	33.7	-	47.1	73.9	26.8	Floor noise
Vert	16830.000	PK	43.6	41.1	-0.7	32.7	-	51.3	73.9	22.6	Floor noise
Vert	22440.000	PK	44.5	39.9	-1.2	31.8	-	51.4	73.9	22.5	Floor noise
Vert	5725.000	AV	33.9	32.2	6.7	31.3	1.1	42.6	53.9	11.3	*1)
Vert	11220.000	AV	34.1	40.4	-2.1	33.7	-	38.7	53.9	15.2	Floor noise
Vert	16830.000	AV	35.3	41.1	-0.7	32.7	-	43.0	53.9	10.9	Floor noise
Vert	22440.000	AV	36.2	39.9	-1.2	31.8	-	43.1	53.9	10.8	Floor noise

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

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

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

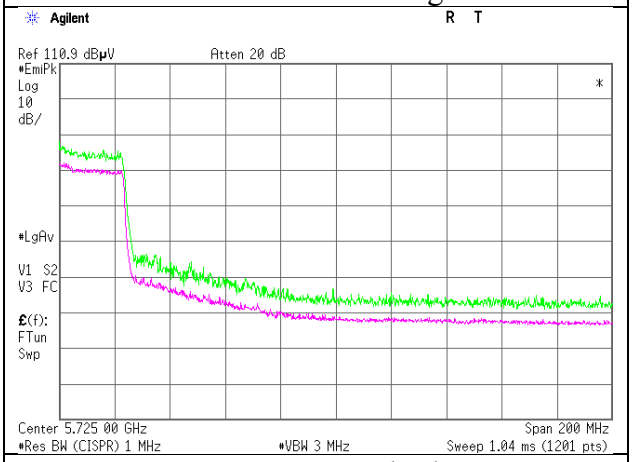
*1) Not Out of Band emission(Leakage Power)

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80 5610 MHz	

Horizontal

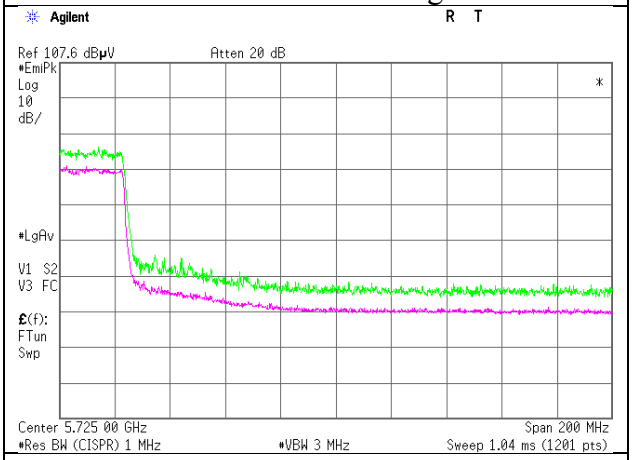
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Ise EMC Lab.			
Report No.	11774441H			
Semi Anechoic Chamber	No.4	No.4	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11ac-80 5775 MHz			

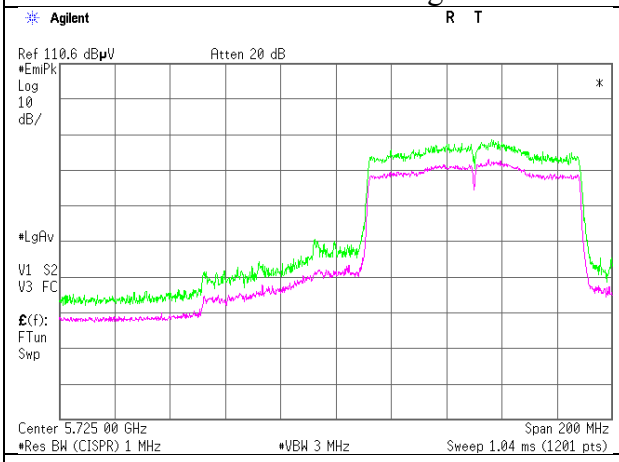
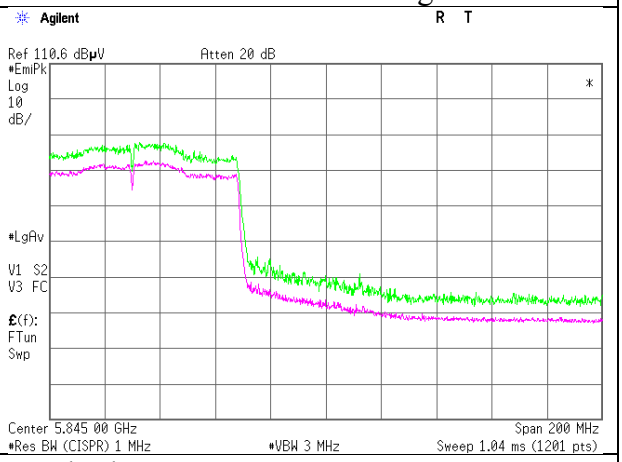
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	46.4	32.0	6.7	31.3	-	53.8	68.2	14.4	
Hori	5700.000	PK	56.4	32.1	6.7	31.3	-	63.9	105.2	41.3	
Hori	5715.000	PK	58.8	32.2	6.7	31.3	-	66.4	109.4	43.0	
Hori	5717.218	PK	61.5	32.2	6.7	31.3	-	69.1	110.0	40.9	
Hori	5720.000	PK	60.6	32.2	6.7	31.3	-	68.2	110.8	42.6	
Hori	5725.000	PK	62.1	32.2	6.7	31.3	-	69.7	122.2	52.5	
Hori	5850.000	PK	52.5	32.5	6.8	31.4	-	60.4	122.2	61.8	
Hori	5855.000	PK	51.2	32.5	6.8	31.4	-	59.1	110.8	51.7	
Hori	5860.000	PK	49.1	32.5	6.8	31.4	-	57.0	109.4	52.4	
Hori	5875.000	PK	47.5	32.5	6.8	31.4	-	55.4	105.2	49.8	
Hori	5925.000	PK	43.3	32.6	6.8	31.4	-	51.3	68.2	16.9	
Hori	11550.000	PK	41.5	39.8	-1.9	33.7	-	45.7	73.9	28.2	Floor noise
Hori	17325.000	PK	43.6	43.3	-0.6	32.6	-	53.7	73.9	20.2	Floor noise
Hori	23100.000	PK	44.3	40.6	-1.2	31.3	-	52.4	73.9	21.5	Floor noise
Hori	11550.000	AV	33.0	39.8	-1.9	33.7	-	37.2	53.9	16.7	Floor noise
Hori	17325.000	AV	35.3	43.3	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Hori	23100.000	AV	36.0	40.6	-1.2	31.3	-	44.1	53.9	9.8	Floor noise
Vert	5650.000	PK	44.6	32.0	6.7	31.3	-	52.0	68.2	16.2	
Vert	5700.000	PK	52.9	32.1	6.7	31.3	-	60.4	105.2	44.8	
Vert	5715.000	PK	55.0	32.2	6.7	31.3	-	62.6	109.4	46.8	
Vert	5717.218	PK	57.4	32.2	6.7	31.3	-	65.0	110.0	45.0	
Vert	5720.000	PK	57.1	32.2	6.7	31.3	-	64.7	110.8	46.1	
Vert	5725.000	PK	58.2	32.2	6.7	31.3	-	65.8	122.2	56.4	
Vert	5850.000	PK	49.0	32.5	6.8	31.4	-	56.9	122.2	65.3	
Vert	5855.000	PK	47.5	32.5	6.8	31.4	-	55.4	110.8	55.4	
Vert	5860.000	PK	46.9	32.5	6.8	31.4	-	54.8	109.4	54.6	
Vert	5875.000	PK	44.4	32.5	6.8	31.4	-	52.3	105.2	52.9	
Vert	5925.000	PK	42.2	32.6	6.8	31.4	-	50.2	68.2	18.0	
Vert	11550.000	PK	41.5	39.8	-1.9	33.7	-	45.7	73.9	28.2	Floor noise
Vert	17325.000	PK	43.6	43.3	-0.6	32.6	-	53.7	73.9	20.2	Floor noise
Vert	23100.000	PK	44.3	40.6	-1.2	31.3	-	52.4	73.9	21.5	Floor noise
Vert	11550.000	AV	33.0	39.8	-1.9	33.7	-	37.2	53.9	16.7	Floor noise
Vert	17325.000	AV	35.3	43.3	-0.6	32.6	-	45.4	53.9	8.5	Floor noise
Vert	23100.000	AV	36.0	40.6	-1.2	31.3	-	44.1	53.9	9.8	Floor noise

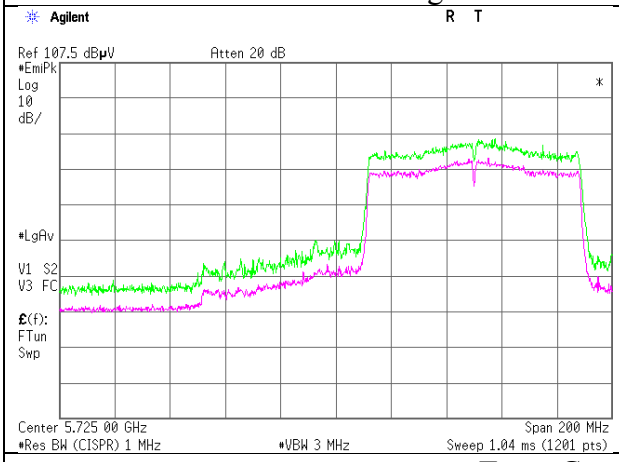
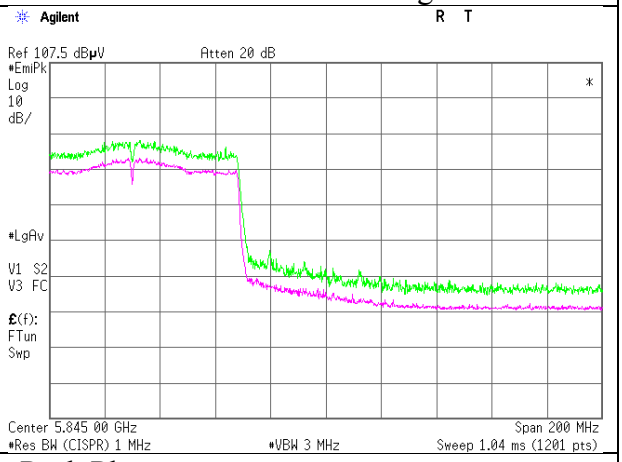
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4 m / 3.0 m) = 2.5 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11774441H	
Date	July 1, 2017	July 2, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH
Engineer	Takafumi Noguchi	Takumi Shimada
Mode	Tx 11ac-80 5775 MHz	

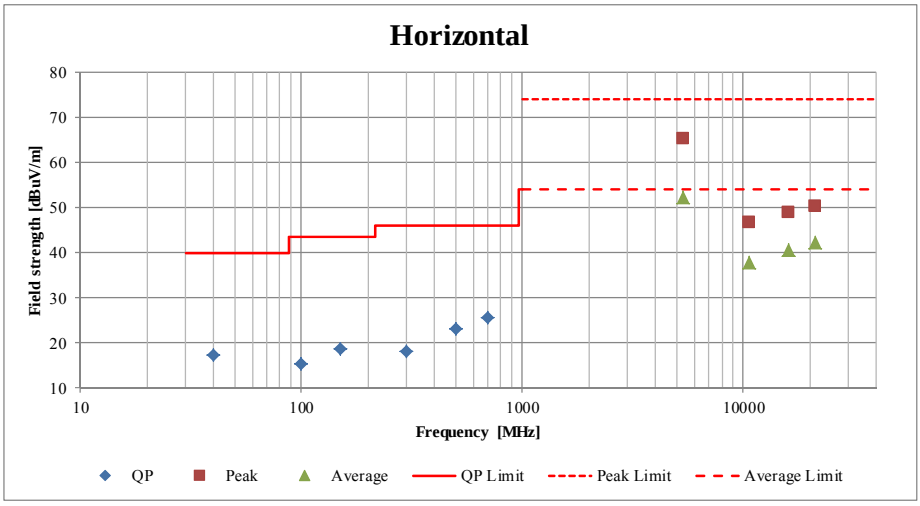
Horizontal	Horizontal
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	

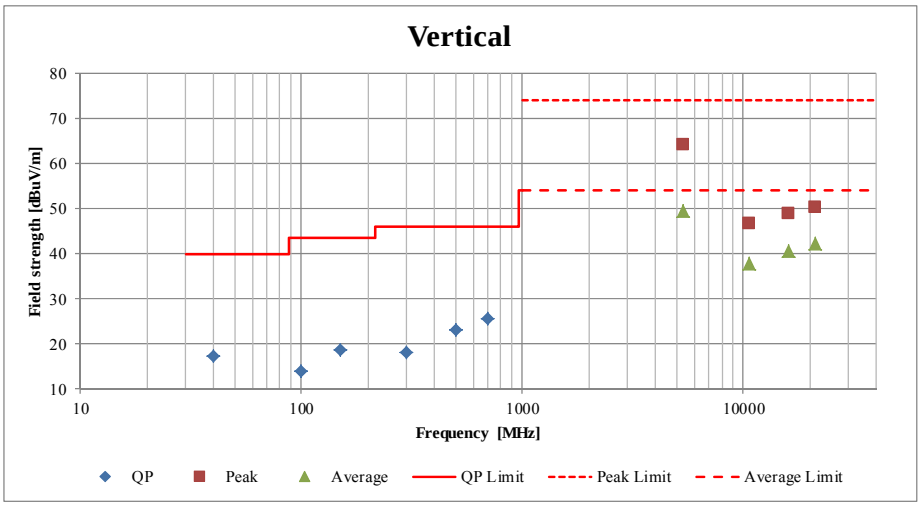
Vertical	Vertical
Restricted-band band-edge Plot	Restricted-band band-edge Plot
	
Trace Green: Peak Plot Trace Purple: Average Plot	

* Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Ise EMC Lab.				
Report No.	11774441H				
Semi Anechoic Chamber	No.4	No.4	No.2	No.2	No.2
Date	July 1, 2017	July 2, 2017	July 13, 2017	July 15, 2017	July 13, 2017
Temperature / Humidity	22 deg. C / 72 % RH	22 deg. C / 63 % RH	21 deg. C / 62 % RH	23 deg. C / 65 % RH	21 deg. C / 57 % RH
Engineer	Takafumi Noguchi	Takumi Shimada	Tomoki Matsui	Takumi Shimada	Masafumi Niwa
	(1 GHz - 10 GHz)	(1 GHz - 10 GHz)	(10 GHz - 26.5 GHz)	(30 MHz -1000 MHz)	(26.5 GHz - 40 GHz)
Mode	Tx 11n-20 5320 MHz				



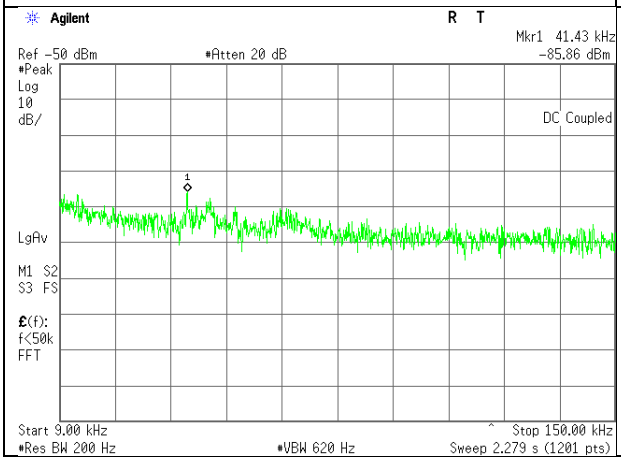


*These plots data contains sufficient number to show the trend of characteristic features for EUT.

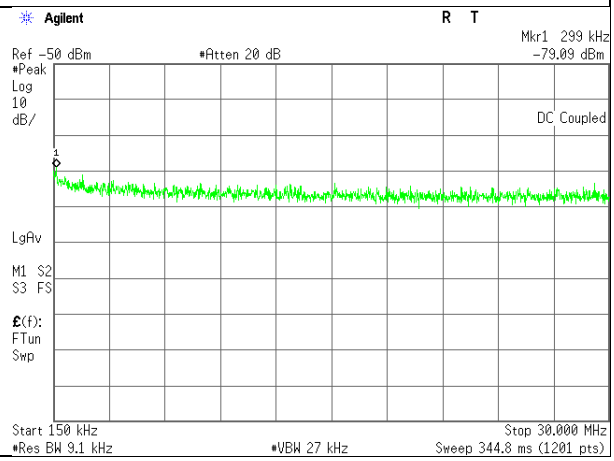
Conducted Spurious Emission

Test place	Ise EMC Lab. No.11 Measurement Room
Report No.	11774441H
Date	July 5, 2017
Temperature / Humidity	25deg. C / 62 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-20 5320 MHz

9 kHz-150 kHz



150 kHz-30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain* [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
41.43	-85.9	0.80	9.8	2.0	1	-73.2	300	6.0	-12.0	35.2	47.2	
299.00	-79.1	0.81	9.8	2.0	1	-66.4	300	6.0	-5.2	18.0	23.2	

E [dBuV/m] = EIRP [dBm] - 20 log (Distance [m]) + Ground bounce [dB] + 104.8 [dBuV/m]

EIRP[dBm] = Reading [dBm] + Cable loss [dB] + Attenuator Loss [dB] + Antenna gain [dBi] + 10 * log (N)

N: Number of output

*2.0 dBi was applied to the test result based on KDB 558074 since antenna gain was less than 2.0 dBi.

APPENDIX 2: Test instruments

Test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2016/10/19 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	1501	RE	2017/01/20 * 12
MJM-26	Measure	KOMELON	KMC-36	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2016/08/17 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2016/09/28 * 12
MCC-141	Microwave Cable	Junkosha	MWX221	1305S002R(1m) / 1405S146(5m)	RE	2017/06/23 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	00650	RE	2016/10/21 * 12
MMM-10	DIGITAL HiTESTER	Hioki	3805	051201148	RE	2017/01/19 * 12
MSA-15	Spectrum Analyzer	Agilent	E4440A	MY46187105	AT	2016/10/13 * 12
MCC-174	Microwave Cable	Junkosha	MWX221	1409S497	AT	2017/03/13 * 12
MAT-56	Attenuator(10dB)	Suhner	6810.19.A	-	AT	2016/12/14 * 12
MPM-16	Power Meter	Agilent	8990B	MY51000271	AT	2017/04/28 * 12
MPSE-22	Power sensor	Agilent	N1923A	MY54070003	AT	2017/04/28 * 12
MMM-17	DIGIITAL HiTESTER	Hioki	3805	070900530	AT	2017/01/19 * 12
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	AT	2016/12/13 * 12
MCC-64	Coaxial Cable	UL Japan	-	-	AT	2017/03/24 * 12
MAT-10	Attenuator(10dB)	Weinschel Corp	2	BL1173	AT	2016/11/28 * 12
MAEC-02	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2016/08/02 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2016/12/13 * 12
MJM-14	Measure	KOMELON	KMC-36	-	RE	-
MSA-14	Spectrum Analyzer	Agilent	E4440A	MY48250080	RE	2016/10/14 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2017/02/24 * 12
MCC-216	Microwave Cable	Junkosha	MWX221	1604S253(1 m) / 1608S087(5 m)	RE	2016/08/29 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2017/01/16 * 12
MHA-02	Horn Antenna 18-26.5GHz	EMCO	3160-09	1265	RE	2017/02/24 * 12
MMM-01	Digital Tester	Fluke	FLUKE 26-3	78030611	RE	2016/08/23 * 12
MHF-16	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCA	7001	RE	2016/09/19 * 12
MCC-176	Microwave Cable	Junkosha	MMX221-00500D MSDMS	1502S303	RE	2017/03/13 * 12
MBA-08	Biconical Antenna	Schwarzbeck	VHA9103B	08031	RE	2016/09/29 * 12
MLA-21	Logperiodic Antenna(200-1000MHz)	Schwarzbeck	VUSLP9111B	911B-190	RE	2017/01/05 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2016/11/28 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2017/02/24 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2016/09/13 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	RE	2016/10/21 * 12
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	CE	2016/10/20 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	1301	CE	2017/01/20 * 12
MJM-16	Measure	KOMELON	KMC-36	-	CE	-

Test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MHA-29	Horn Antenna 26.5-40GHz	ETS LINDGREN	3160-10	00152399	RE	2016/09/28 * 12
MPA-22	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-33-8P / AMF-4F-2600400-33-8P	1871355 /1871328	RE	2016/09/06 * 12
MCC-55	Microwave Cable	Suhner	SUCOFLEX101	2874(1m) / 2877(5m)	RE	2017/03/02 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	CE	2017/05/29 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	CE	2016/09/15 * 12
MLS-23	LISN(AMN)	Schwarzbeck	NSLK8127	8127-729	CE(EUT)	2016/07/07 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2017/07/12 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2016/12/24 * 12
MMM-08	DIGITAL HiTESTER	Hioki	3805	051201197	CE	2017/01/19 * 12

The expiration date of the calibration is the end of the expired month.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

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

Test Item: **CE: Conducted Emission**
RE: Radiated Emission
AT: Antenna Terminal Conducted test