RADIO TEST REPORT

Test Report No. : 11334871S-M

Applicant	:	**Nintendo Co., Ltd.**
Type of Equipment	:	**EDEV**
Model No.	:	**HAT-002** (for Wireless LAN (5 GHz bands) part, except DFS tests)
FCC ID	:	**BKEHAT002**
Test regulation	:	**FCC Part 15 Subpart E: 2016**
Test Result	:	**Complied**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
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)

Date of test: August 24 to November 22, 2016

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

RTL02610

REVISION HISTORY

Original Test Report No.: 11334871S-M

Revision	Test report No.	Date	Page revised	Contents
- (Original)	11334871S-M	December 27, 2016	-	-

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SECTION 1: Customer information

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

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

2.1 Identification of E.U.T.

Type of Equipment	:	EDEV
Model No.	:	HAT-002
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.7 V (battery), AC Adapter input: AC 100 – 240 V, 50 / 60 Hz, 1 A, AC Adapter output: DC 5 V – DC 15 V, 2.6 A
Receipt Date of Sample	:	August 2, 2016
Country of Mass-production	:	China
Condition of EUT	:	Production 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: HAT-002 (referred to as the EUT in this report) is a EDEV.

The EUT is intended to be used for software development or events.

General Specification

Clock frequency(ies) in the system	:	37.4 MHz

Radio Specification

Radio Type	:	Transceiver
Frequency of Operation	:	Wireless LAN part: 2412 MHz - 2472 MHz, W52: 5180 MHz -5240 MHz, W53: 5260 MHz -5320 MHz, Bluetooth part: 2402 MHz - 2480 MHz
Modulation	:	Wireless LAN part: 2.4 GHz bands: DBPSK, DQPSK, CCK, OFDM 5 GHz bands: OFDM Bluetooth part: BDR (Baisc Data Rate): GFSK EDR (Enhanced Data Rate): π/4-DQPSK, 8DPSK LE (Low Energy mode): GFSK
Antenna type	:	PCB Antenna (Dipole)
Antenna connector	:	(Ant: 0): MHF 4L, (Ant: 1): MHF II
Antenna Gain	:	2.4 GHz band: -0.70 dBi max (ANT0: Wireless LAN & Bluetooth), -8.38 dBi max (ANT1: Wireless LAN) 5 GHz band: +3.31 dBi max (ANT0: Wireless LAN), -0.96 dBi max (ANT1: Wireless LAN)
Operation temperature	:	+5 deg.C to +35 deg.C

Remarks: This Wireless Module consists of 1 chip each of 5 GHz band and 2.4 GHz band.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart E FCC Part 15 final revised on November 14, 2016 and effective December 14, 2016
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart E Unlicensed National Information Infrastructure Devices Section 15.407 General technical requirements

* The revision on November 14, 2016, does not affect the test specification applied to the EUT.

** The EUT has been tested for compliance with FCC Part 15 Subpart B / ICES-003 Issue 6: 2016.

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	8.6 dB, AV, 0.45898 MHz, N Tx 5260 MHz IEEE 802.11ac-VHT20	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	2.1 dB, AV, 5150.000 MHz, Vertical Tx 5190 MHz IEEE 802.11n-40, SISO	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)			
99 % Occupied Band Width	RSS-Gen 6.6	**IC:** -	N/A	N/A	Conducted

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 11334871S-G 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)

This EUT provides stable voltage (DC 3.3 V) constantly to RF Part regardless of input voltage. Therefore, the EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

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

3.3 Addition to standard

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

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

3.4 Uncertainty

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

Item	Frequency range	Uncertainty (+/-)			
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR	No. 4 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.1 dB	2.1 dB	2.6 dB	2.2 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	2.7 dB	2.7 dB	3.1 dB	-
	30 MHz-200 MHz	4.4 dB	4.4 dB	4.6 dB	-
	200 MHz-1 GHz	5.6 dB	5.5 dB	5.3 dB	-
	1 GHz-13 GHz	5.2 dB	5.2 dB	5.2 dB	-
Radiated emission (Measurement distance: 1 m)	13 GHz-18 GHz	4.9 dB	4.9 dB	4.9 dB	-
	18 GHz-40 GHz	4.9 dB	4.9 dB	4.9 dB	-

SAC=Semi-Anechoic Chamber
SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	0.76 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	0.79 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.74 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.08 dB
Spurious emission (Conducted) below 1GHz	1.5 dB
Spurious emission (Conducted) 1 GHz-3 GHz	1.7 dB
Spurious emission (Conducted) 3 GHz-18 GHz	2.4 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.5 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.5 dB
Bandwidth Measurement	0.66 %
Duty cycle and Time Measurement	0.012 %

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. Shonan EMC Lab.
1-22-3, Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 JAPAN
Telephone: +81 463 50 6400, Facsimile: +81 463 50 6401
JAB Accreditation No. RTL02610

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 shielded room	-	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	-	2.55 x 4.1 x 2.5	-	-

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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

4.1 Operating Mode(s)

*1) 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.

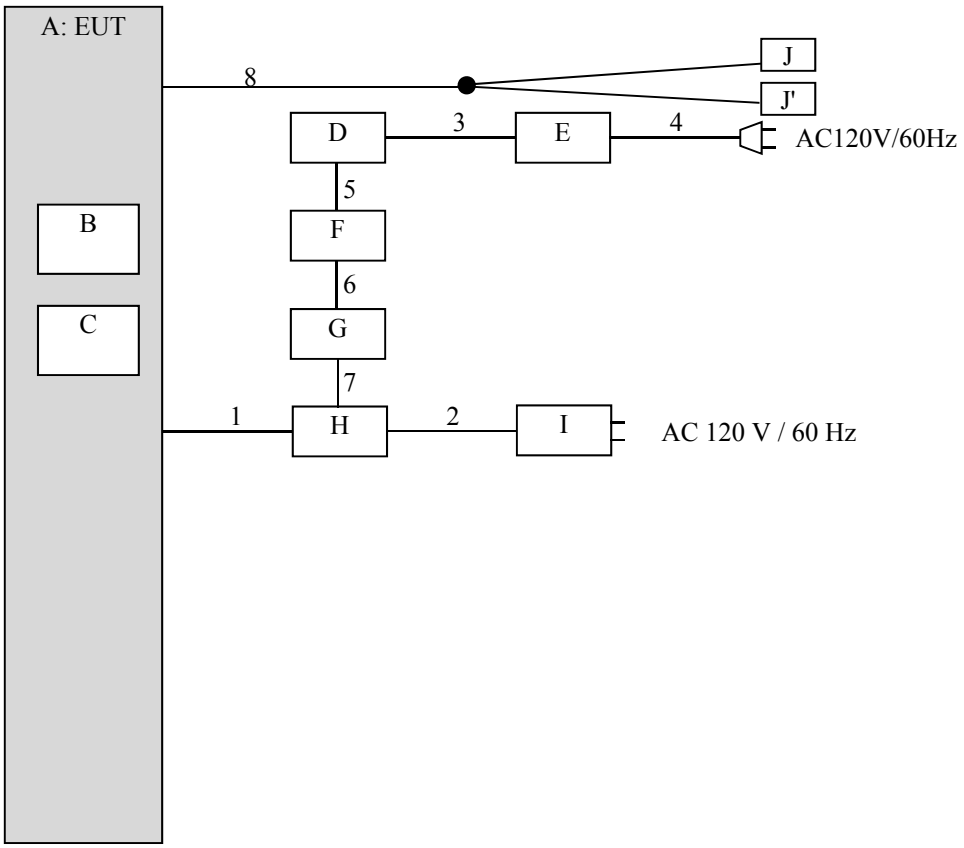
Test item	Mode	Tested frequency	Worst data rate *2)	Antenna *2)
Conducted emission, Radiated emission (below 1 GHz), Out of band emissions (Conducted) *1)	Transmitting (Tx), IEEE 802.11ac VHT20 (11ac-20), SISO	5260 MHz	MCS 3, PN9	0
26 dB Emission Bandwidth, 20 dB Bandwidth, Occupied Bandwidth (99%), Maximum Conducted Output Power, Maximum Power Spectral Density	Transmitting (Tx), IEEE 802.11a (11a)	(Low bands): 5180 MHz, 5220 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5300 MHz, 5320 MHz	48 Mbps, PN9	0
	Transmitting (Tx), IEEE 802.11n HT20 (11n-20), SISO	(Low bands): 5180 MHz, 5220 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5300 MHz, 5320 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11n HT20 (11n-20), MIMO	(Low bands): 5180 MHz, 5220 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5300 MHz, 5320 MHz	MCS11, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11ac VHT20 (11ac-20), SISO	(Low bands): 5180 MHz, 5220 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5300 MHz, 5320 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11ac VHT20 (11ac-20), MIMO	(Low bands): 5180 MHz, 5220 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5300 MHz, 5320 MHz	MCS 3, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11n HT40 (11n-40), SISO	(Low bands): 5190 MHz, 5230 MHz, (Middle bands): 5270 MHz, 5310 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11n HT40 (11n-40), MIMO	(Low bands): 5190 MHz, 5230 MHz, (Middle bands): 5270 MHz, 5310 MHz	MCS11, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11ac VHT40 (11ac-40), SISO	(Low bands): 5190 MHz, 5230 MHz, (Middle bands): 5270 MHz, 5310 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11ac VHT40 (11ac-40), MIMO	(Low bands): 5190 MHz, 5230 MHz, (Middle bands): 5270 MHz, 5310 MHz	MCS 3, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11ac VHT80 (11ac-80), SISO	(Low bands): 5210 MHz (Middle bands): 5290 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11ac VHT80 (11ac-80), MIMO	(Low bands): 5210 MHz (Middle bands): 5290 MHz	MCS 3, PN9	0 & 1
Radiated emission (above 1 GHz) *3)	Transmitting (Tx), IEEE 802.11n HT20 (11n-20), MIMO *4)	(Low bands): 5180 MHz (Middle bands): 5320 MHz	MCS 11, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11ac VHT20 (11ac-20), SISO	(Low bands): 5180 MHz, 5240 MHz, (Middle bands): 5260 MHz, 5320 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11n HT40 (11n-40), MIMO *4)	(Low bands): 5190 MHz (Middle bands): 5310 MHz	MCS 11, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11n HT40 (11n-40), SISO	(Low bands): 5190 MHz, 5230 MHz, (Middle bands): 5310 MHz	MCS 3, PN9	0
	Transmitting (Tx), IEEE 802.11ac VHT80 (11ac-80), MIMO *4)	(Low bands): 5210 MHz, (Middle bands): 5290 MHz	MCS 3, PN9	0 & 1
	Transmitting (Tx), IEEE 802.11ac VHT80 (11ac-80), SISO	(Low bands): 5210 MHz, (Middle bands): 5290 MHz	MCS 3, PN9	0

*Power of the EUT was set by the software as follows;
Power settings: Fixed (refer to power setting (target power) table)
Software: cmd.exe, Ver. 6.3.9600.17415,
*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.
*2) The worst condition was determined based on the test result of Maximum Conducted Output Power.
*3) Since 11a, 11n and 11ac mode have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest radiated carrier power.
*4) This mode wasn't worst, but only band edge of spurious emissions were measured for confirmation.

(Power setting (target power) table)

Bandwidth	Channel frequency	Mode	Rate / MCS mode [dBm]									
20 MHz	5180 MHz – 5240 MHz	11a	6 M	9 M	12 M	18 M	24 M	36 M	48 M	54 M	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5180 MHz – 5240 MHz	11n-20 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5180 MHz – 5240 MHz	11n-20 (MIMO)	MCS 8	MCS 9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	-	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-	-
	5180 MHz – 5240 MHz	11ac-20 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.0	-
	5180 MHz – 5240 MHz	11ac-20 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-
40 MHz	5190 MHz	11n-40 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	-	-
			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	-	-
	5230 MHz		MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5190 MHz	11n-40 (MIMO)	MCS 8	MCS 9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	-	-
			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	-	-
	5230 MHz		MCS 8	MCS 9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	-	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-	-
	5190 MHz	11ac-40 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	5230 MHz		MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.0	13.0
	5190 MHz	11ac-40 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
	5230 MHz		MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
80 MHz	5210 MHz	11ac-80 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	5210 MHz	11ac-80 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
20 MHz	5260 MHz – 5320 MHz	11a	6 M	9 M	12 M	18 M	24 M	36 M	48 M	54 M	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5260 MHz – 5320 MHz	11n-20 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5260 MHz – 5320 MHz	11n-20 (MIMO)	MCS 8	MCS 9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	-	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-	-
	5260 MHz – 5320 MHz	11ac-20 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.0	-
	5260 MHz – 5320 MHz	11ac-20 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-
40 MHz	5270 MHz – 5310 MHz	11n-40 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	-	-
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	-	-
	5270 MHz – 5310 MHz	11n-40 (MIMO)	MCS 8	MCS 9	MCS10	MCS11	MCS12	MCS13	MCS14	MCS15	-	-
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	-	-
	5270 MHz – 5310 MHz	11ac-40 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.5	13.0	13.0
	5270 MHz – 5310 MHz	11ac-40 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5	10.5
80 MHz	5290 MHz	11ac-80 (SISO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
	5290 MHz	11ac-80 (MIMO)	MCS 0	MCS 1	MCS 2	MCS 3	MCS 4	MCS 5	MCS 6	MCS 7	MCS 8	MCS 9
			6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0

4.2 Configuration and peripherals



* 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	EDEV	HAT-002	XAW0150000760 *1) XAW0150000754 *2)	Nintendo	EUT
B	Game Card	HAC-008	001	Nintendo	-
C	Micro SD Memory	RP-SMEB08GJK	UJ3AA005855	Panasonic	-
D	Laptop PC	HP EliteBook 820G1	JPA416GD4K	hp	-
E	AC Adapter	HSTNN-LA35	WCWVT0A1R5SORI	hp	-
F	GIGA Ethernet Adapter	LAN-GTJU3	61L349604916A	Logitec	-
G	Wii LAN ADAPTER	RVL-015	40F407557DB7	Nintendo	-
H	SDEV Cradle	HAT-003	XZL0000000605	Nintendo	-
I	AC Adapter	HAC-002	-	Nintendo	-
J, J'	Headphone	-	-	Nintendo	-

*1) Used for Antenna Terminal conducted test (Type B).
*2) Used for Conducted Emission test and Radiated Emission test (Type B).
*The EUT for final test was selected based on following preliminary test.
- Radiated Emission: Comparison of Type A and Type B on Band Edges, Harmonics and Spurious emission.
- Conducted Emission: Comparison of Type A and Type B on representative mode.
- Antenna Terminal Conducted test: Comparison of Type A and Type B on Output Power

Accessory and model differences
The difference between Type A and Type B is as following table.
The two crystals are compatible and are electrically identical having same radio parameters.

Parts	Manufacturer	
	Type A	Type B
Crystal (X501)	TXC	DAISHINKU

So, for the all tests, the E.U.T. was selected worse type by preliminary tests.

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB	0.4	Shielded	Shielded	-
2	USB	1.8	Shielded	Shielded	-
3	DC	1.8	Unshielded	Unshielded	-
4	AC	0.9	Unshielded	Unshielded	-
5	USB	0.1	Shielded	Shielded	-
6	LAN	0.5	Unshielded	Unshielded	-
7	USB	0.15	Shielded	Shielded	-
8	Headphone	0.5 + 0.3	Shielded	Shielded	-

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The table is made of Styrofoam and covered with polyvinyl chloride. That has very low permittivity.
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 80cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50ohm 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 via AC adapter in a Shielded room.
The EUT via AC adapter 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 1 GHz >
EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.
The table is made of Styrofoam and covered with polyvinyl chloride. That has very low permittivity.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

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

The height of the measuring antenna varied between 1 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 1 GHz >
The result also satisfied with the general limits specified in section 15.209 (a).

< Above 1 GHz >
Inside of restricted bands (Section 15.205):
Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

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:

$$E = \frac{1000000\sqrt{30P}}{3} \text{ (uV/m)}$$:P 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 VB *1) RBW: 1 MHz VBW: 1/T (T: burst length, refer to APPENDIX) Detector: Peak Trace: ≥ 100 traces
Test Distance	3 m	3.9 m*2) (1 GHz – 13 GHz), 1 m*3) (13 GHz – 40 GHz)	

*1) The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01r03 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E (Issued on August 22, 2016)".
*2) Distance Factor: 20 x log (3.9 m/3.0 m) = 2.28 dB
*3) Distance Factor: 20 x log (1.0 m/3.0 m) = -9.54 dB

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

Mode	Antenna polarization	Carrier	Spurious (Below 1 GHz)	Spurious (1 GHz – 6.4 GHz)	Spurious (6.4 GHz - 13 GHz)	Spurious (Above 13 GHz)
SISO	Horizontal	X	Y	X	X	X
	Vertical	Y	Z	Y	Y	X
MIMO	Horizontal	X	-	X	X	X
	Vertical	Y	-	Y	Y	X

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	Enough width to display emission skirts	1 % to 5 % of OBW	≥ 3 RBW	Auto	Peak	Max Hold	Spectrum Analyzer
20 dB Bandwidth	Enough to capture the emission	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: 160 MHz BW) (Method PM-G)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 100 kHz	≥ 3 RBW	Auto	RMS Power Averaging (100 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission*1)	9 kHz – 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz – 30 MHz	10 kHz	30 kHz				

* The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v01r03 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E (Issued on August 22, 2016)".

*1) 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 not detected as shown in the chart. (9 kHz-150 kHz: RBW = 200 Hz, 150 kHz-30 MHz: RBW = 10 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. Shonan EMC Lab. No.3 Shielded Room
Date : 2016/11/14

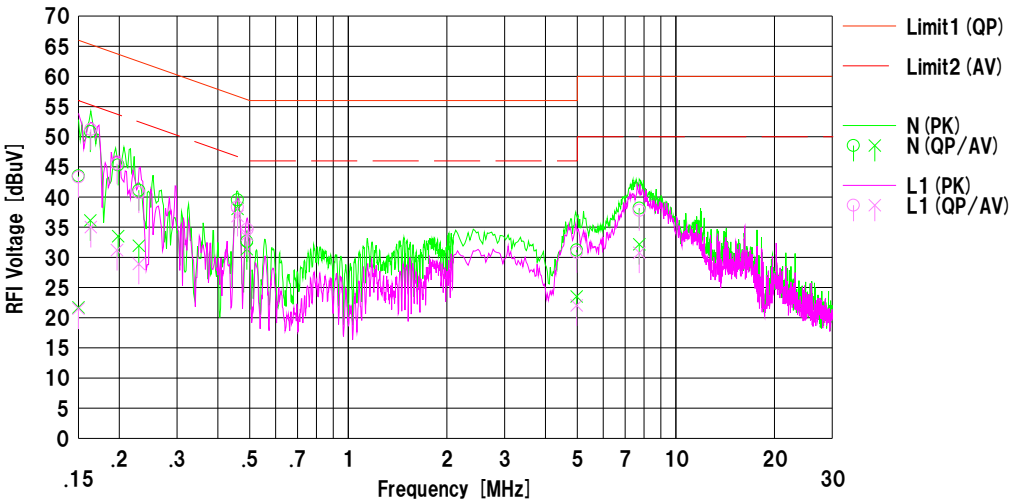
Mode : Tx IEEE802.11ac-VHT20 5260 MHz

Power : AC 120 V / 60 Hz
Temp./Humi. : 23 deg.C / 45 %RH

Remarks : SISO

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Kazutaka Takeyama



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	31.00	9.20	12.51	43.51	21.71	66.00	56.00	22.4	34.2	N	
2	0.16327	38.30	23.60	12.52	50.82	36.12	65.30	55.30	14.4	19.1	N	
3	0.19844	32.80	21.00	12.51	45.31	33.51	63.68	53.68	18.3	20.1	N	
4	0.22960	28.60	19.40	12.53	41.13	31.93	62.46	52.46	21.3	20.5	N	
5	0.45898	27.00	25.50	12.54	39.54	38.04	56.71	46.71	17.1	8.6	N	
6	0.49031	20.10	18.80	12.54	32.64	31.34	56.16	46.16	23.5	14.8	N	
7	4.98000	18.20	10.50	13.03	31.23	23.53	56.00	46.00	24.7	22.4	N	
8	7.73664	24.80	18.80	13.37	38.17	32.17	60.00	50.00	21.8	17.8	N	
9	0.15000	30.80	9.00	12.51	43.31	21.51	66.00	56.00	22.6	34.4	L1	
10	0.16370	38.70	22.50	12.52	51.22	35.02	65.27	55.27	14.0	20.2	L1	
11	0.19680	33.00	18.70	12.51	45.51	31.21	63.74	53.74	18.2	22.5	L1	
12	0.22960	28.20	16.40	12.53	40.73	28.93	62.46	52.46	21.7	23.5	L1	
13	0.45898	25.80	24.30	12.54	38.34	36.84	56.71	46.71	18.3	9.8	L1	
14	0.49160	22.10	21.20	12.54	34.64	33.74	56.14	46.14	21.5	12.4	L1	
15	4.98400	17.80	9.00	13.03	30.83	22.03	56.00	46.00	25.1	23.9	L1	
16	7.73700	24.40	17.40	13.37	37.77	30.77	60.00	50.00	22.2	19.2	L1	

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

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

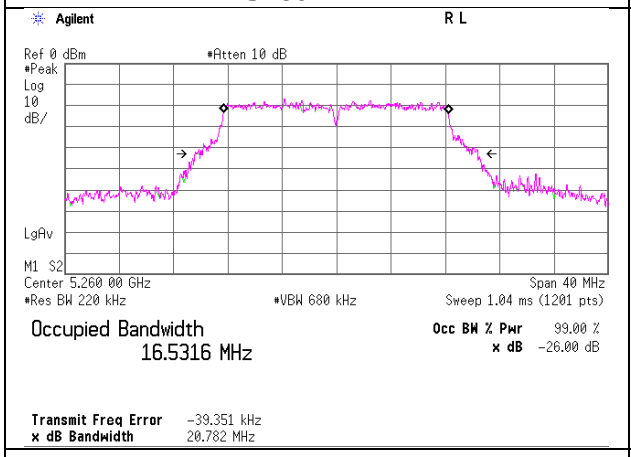
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11a

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5180	-	17.117	-
	5220	-	17.147	-
	5240	-	17.133	-
	5260	20.782	17.082	-
	5300	20.950	17.084	-
	5320	20.919	17.053	-

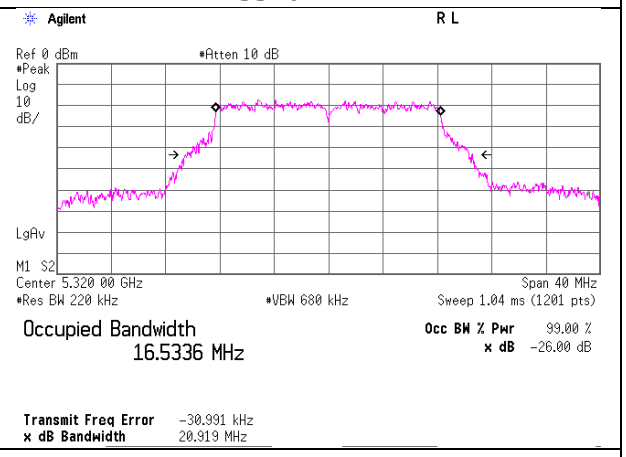
26 dB Emission Bandwidth

Tx 11a, Antenna 0 (worst port)

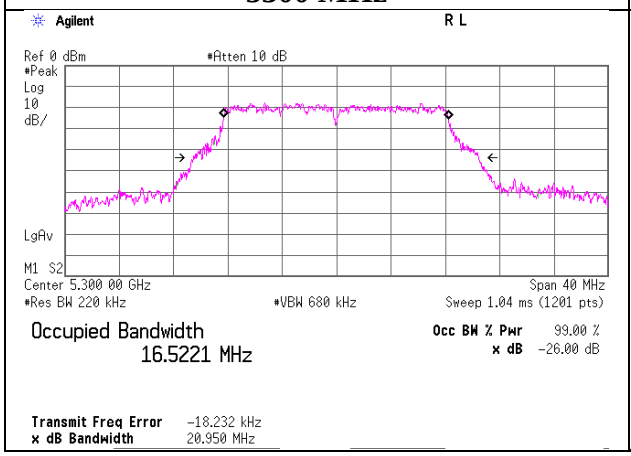
5260 MHz



5320 MHz



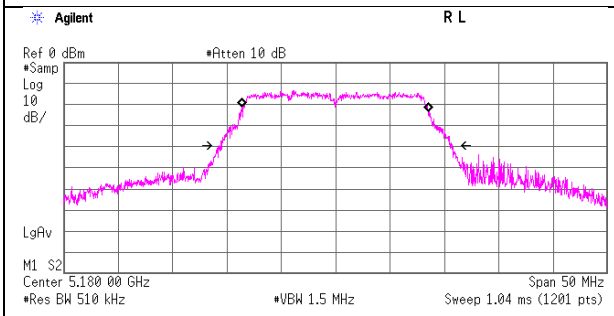
5300 MHz



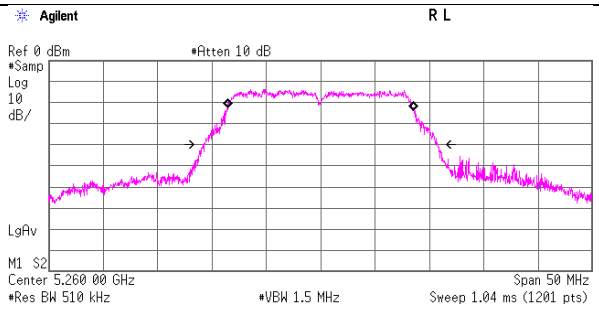
99 % Occupied Bandwidth

Tx 11a, Antenna 0 (worst port)

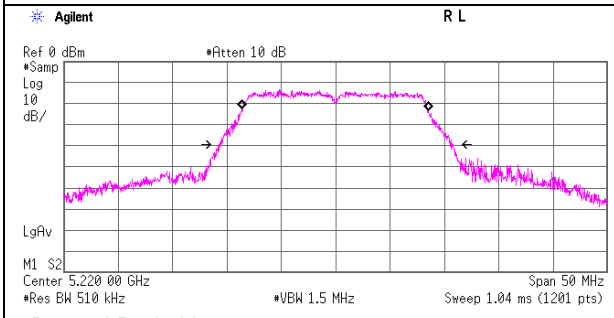
5180 MHz



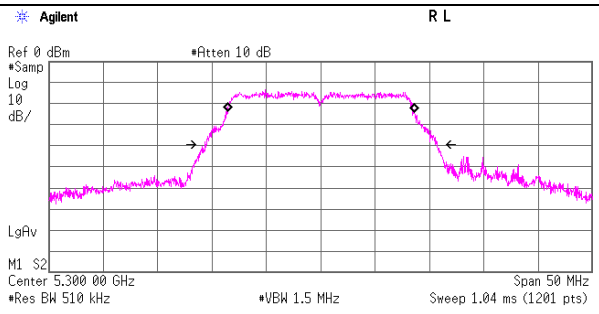
5260 MHz



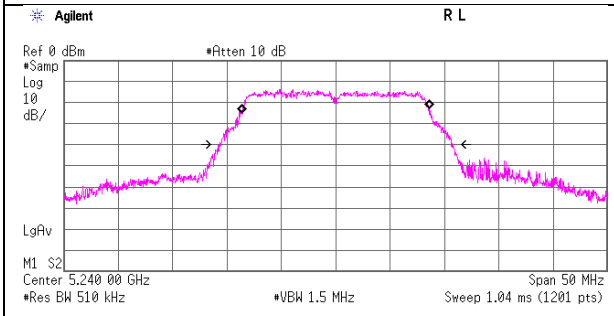
5220 MHz



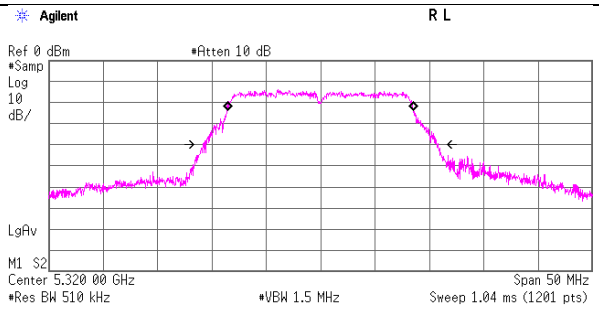
5300 MHz



5240 MHz



5320 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

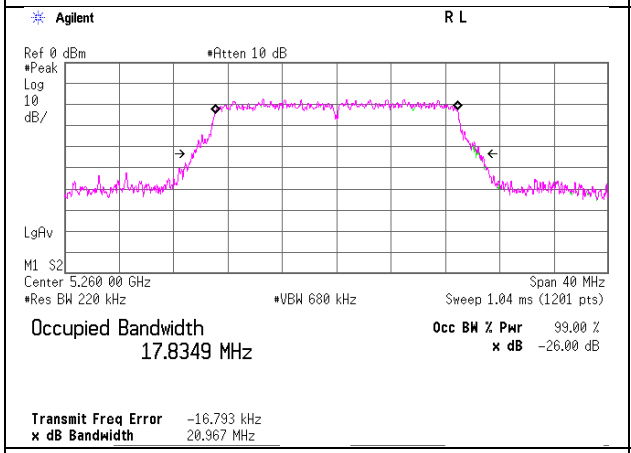
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, SISO

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5180	-	18.195	-
	5220	-	18.182	-
	5240	-	18.229	-
	5260	20.967	18.234	-
	5300	21.112	18.252	-
	5320	21.452	18.195	-

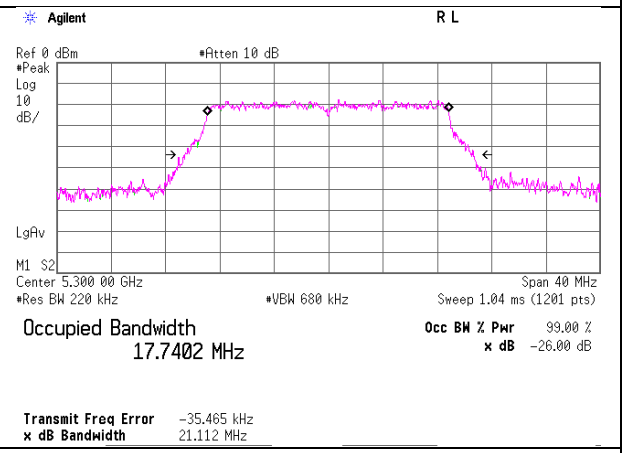
26 dB Emission Bandwidth

Tx 11n-20, SISO, Antenna 0 (worst port)

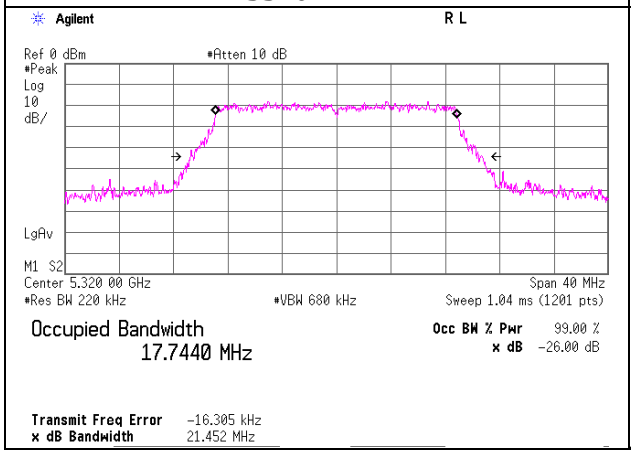
5260 MHz



5300 MHz



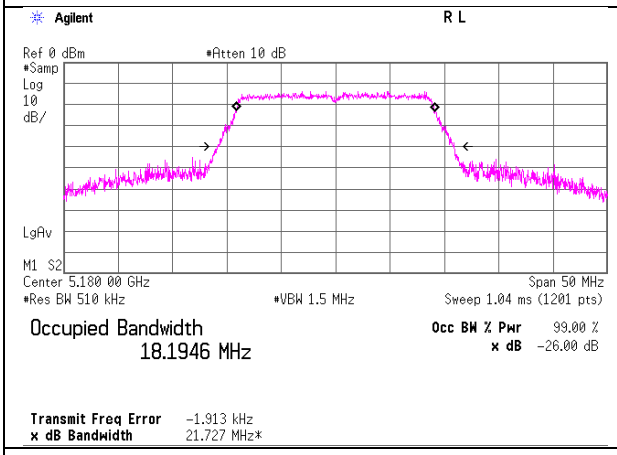
5320 MHz



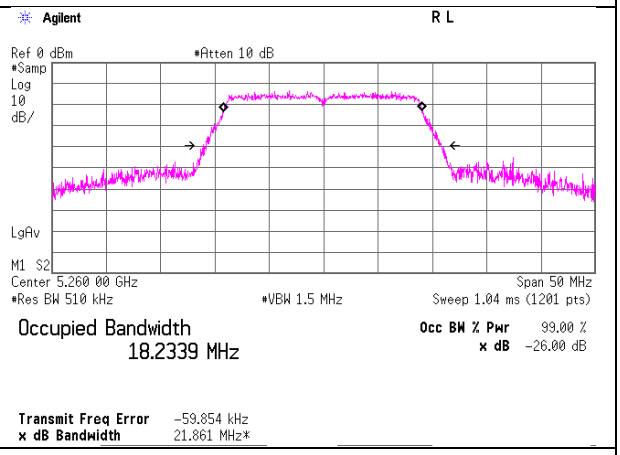
99 % Occupied Bandwidth

Tx 11n-20, SISO, Antenna 0 (worst port)

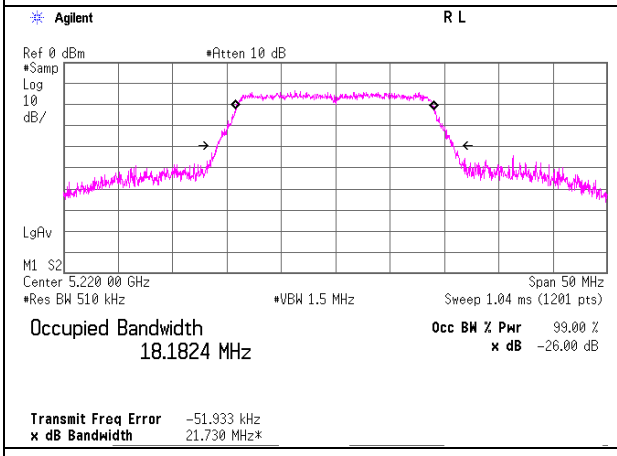
5180 MHz



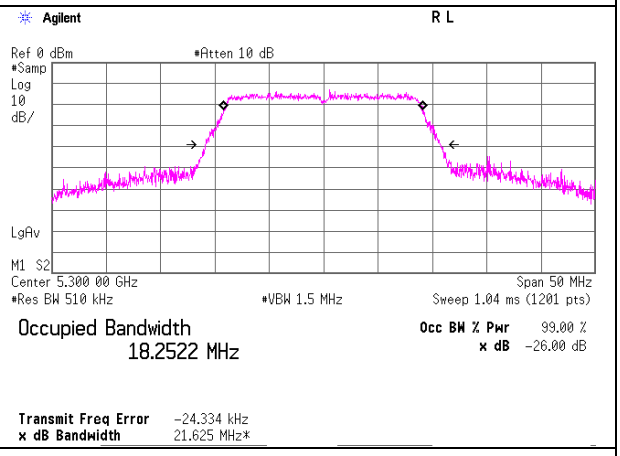
5260 MHz



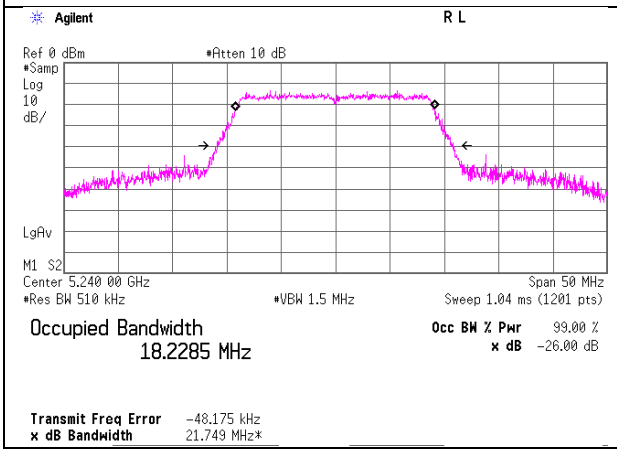
5220 MHz



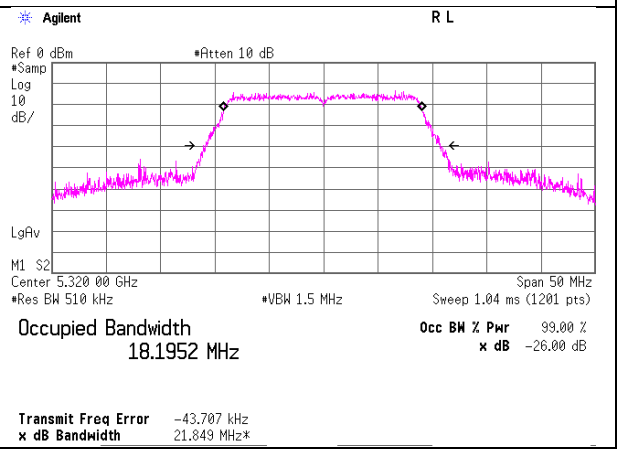
5300 MHz



5240 MHz



5320 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

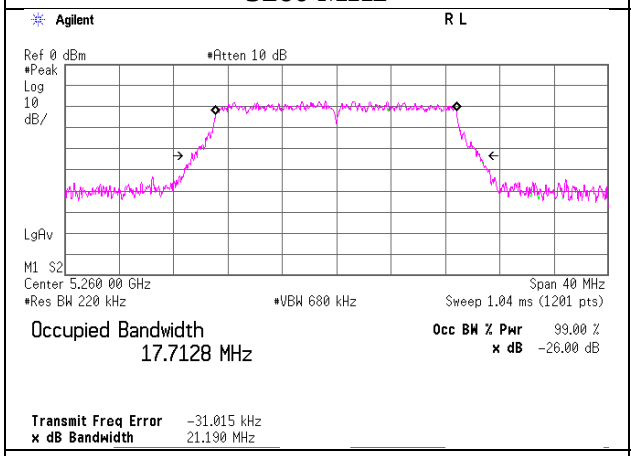
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, SISO

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5180	-	18.213	-
	5220	-	18.259	-
	5240	-	18.309	-
	5260	21.190	18.246	-
	5300	21.151	18.293	-
	5320	21.146	18.231	-

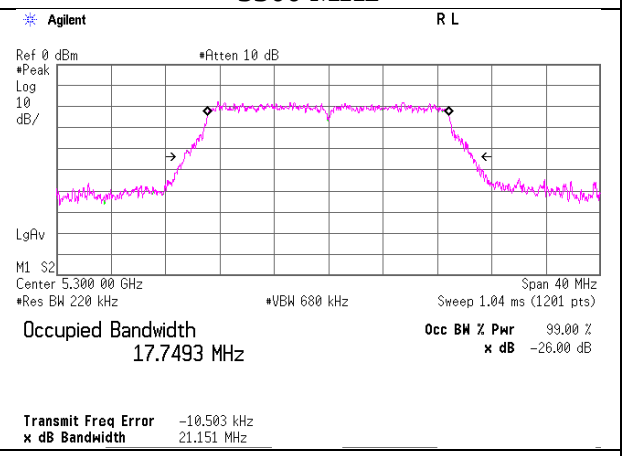
26 dB Emission Bandwidth

Tx 11ac-20, SISO, Antenna 0 (worst port)

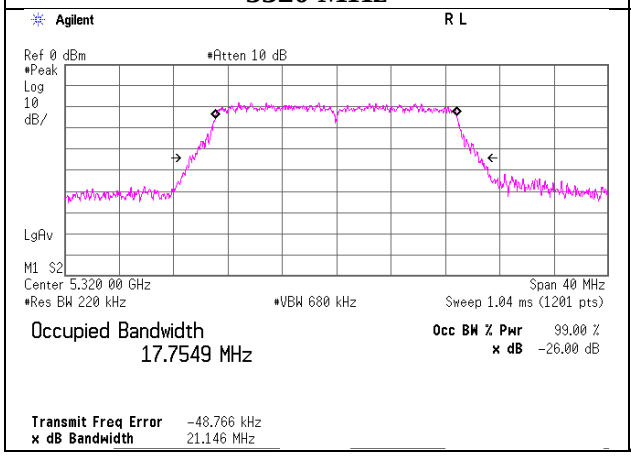
5260 MHz



5300 MHz



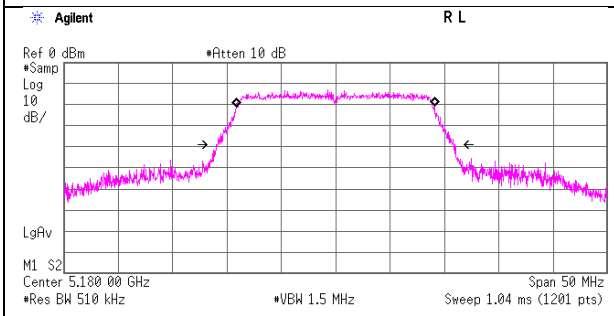
5320 MHz



99 % Occupied Bandwidth

Tx 11ac-20, SISO, Antenna 0 (worst port)

5180 MHz

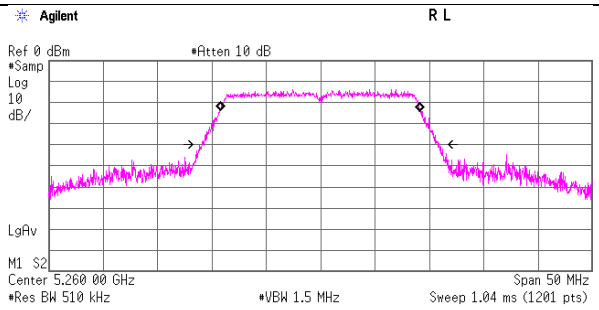


Occupied Bandwidth
18.2132 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -22.069 kHz
x dB Bandwidth 21.963 MHz*

5260 MHz

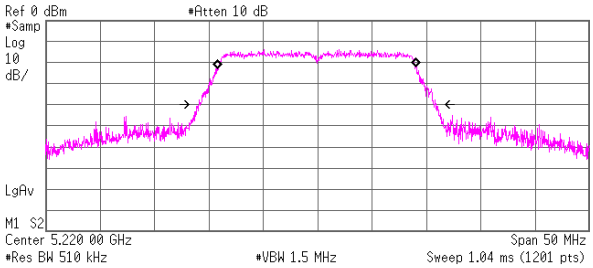


Occupied Bandwidth
18.2462 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -50.585 kHz
x dB Bandwidth 21.807 MHz*

5220 MHz

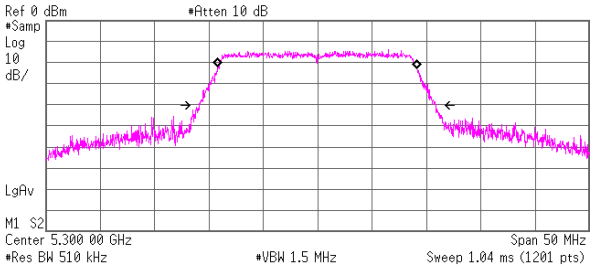


Occupied Bandwidth
18.2586 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -70.398 kHz
x dB Bandwidth 21.807 MHz*

5300 MHz

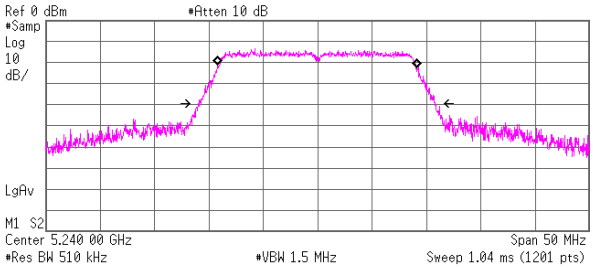


Occupied Bandwidth
18.2925 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -29.834 kHz
x dB Bandwidth 21.763 MHz*

5240 MHz

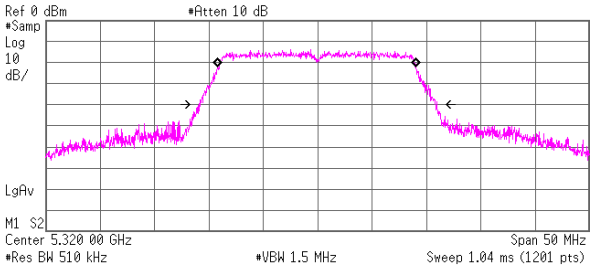


Occupied Bandwidth
18.3094 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -36.720 kHz
x dB Bandwidth 21.745 MHz*

5320 MHz



Occupied Bandwidth
18.2311 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -65.409 kHz
x dB Bandwidth 21.903 MHz*

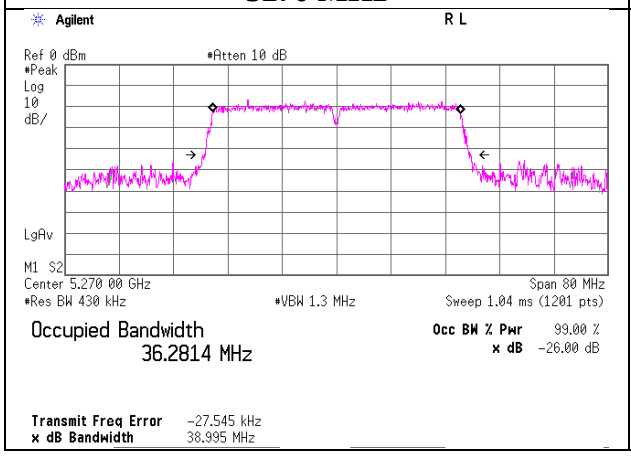
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, SISO

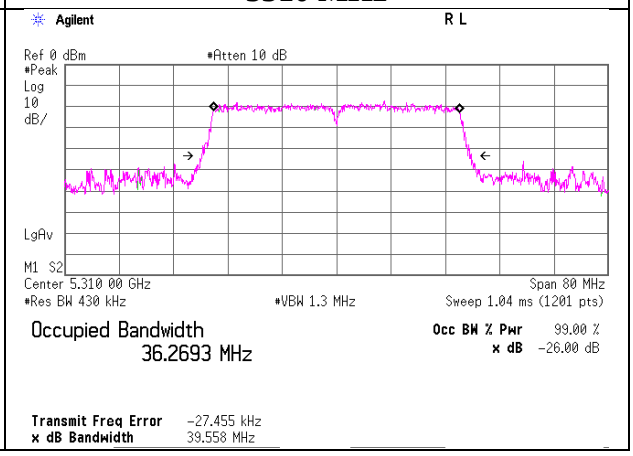
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5190	-	36.639	-
	-	-	-	-
	5230	-	36.620	-
	5270	38.995	36.729	-
	-	-	-	-
	5310	39.558	36.685	-

26 dB Emission Bandwidth
Tx 11n-40, SISO, Antenna 0 (worst port)

5270 MHz



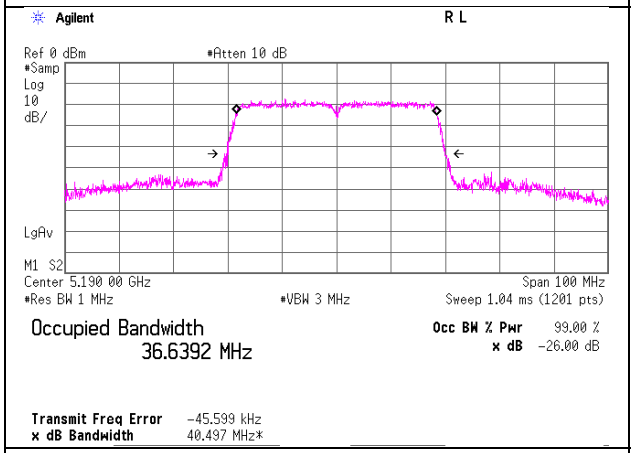
5310 MHz



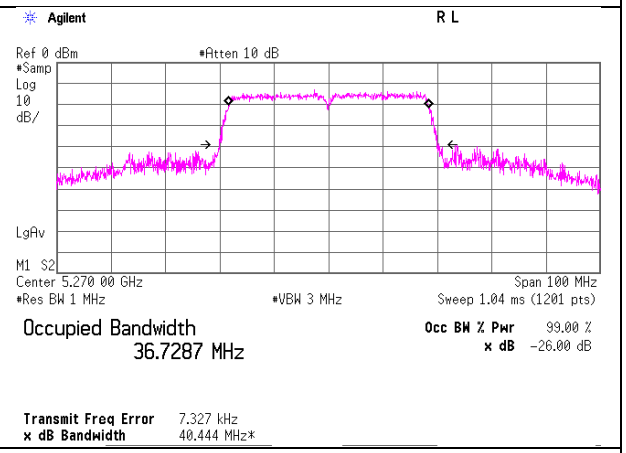
99 % Occupied Bandwidth

Tx 11n-40, SISO, Antenna 0 (worst port)

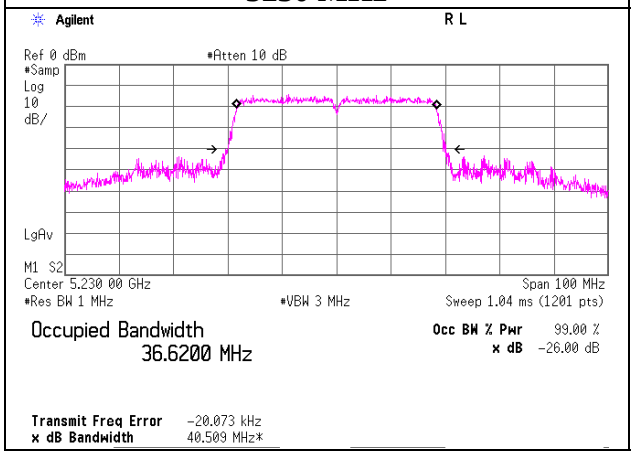
5190 MHz



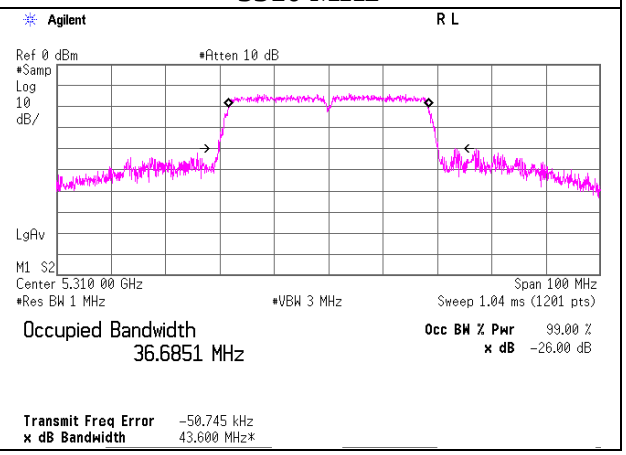
5270 MHz



5230 MHz



5310 MHz



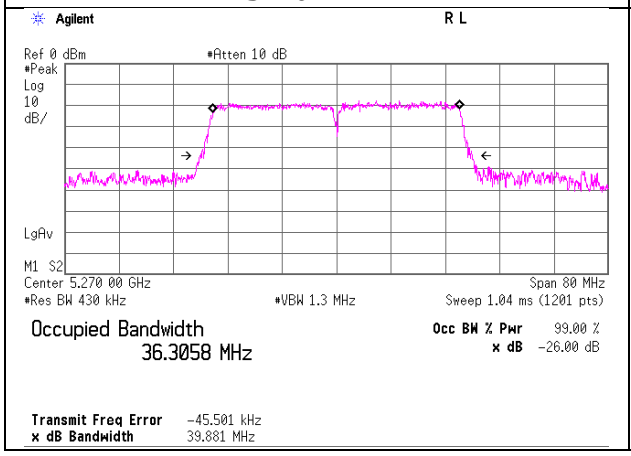
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, SISO

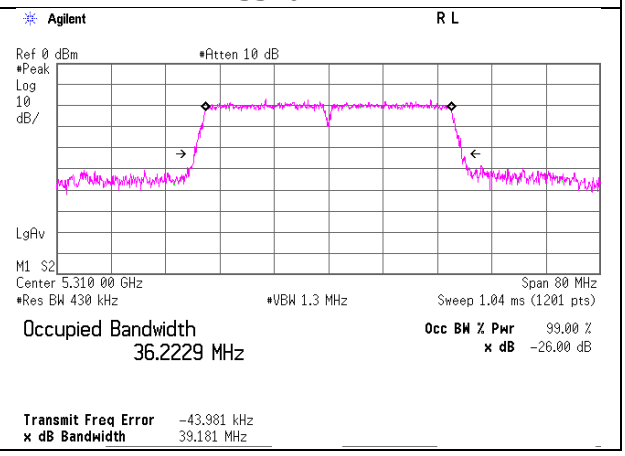
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5190	-	36.494	-
	-	-	-	-
	5230	-	36.632	-
	5270	39.881	36.629	-
	-	-	-	-
	5310	39.181	36.578	-

26 dB Emission Bandwidth
Tx 11ac-40, SISO, Antenna 0 (worst port)

5270 MHz



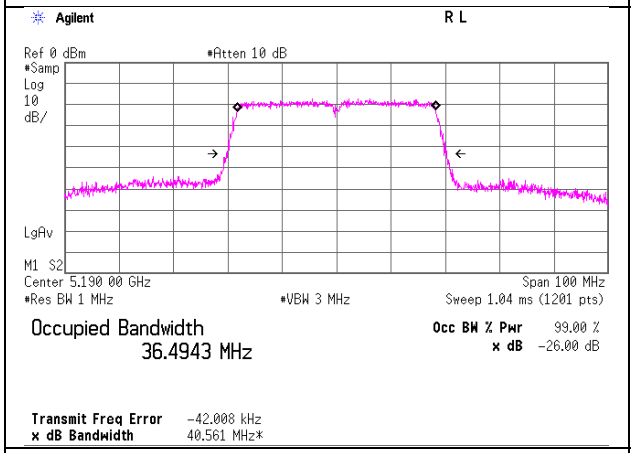
5310 MHz



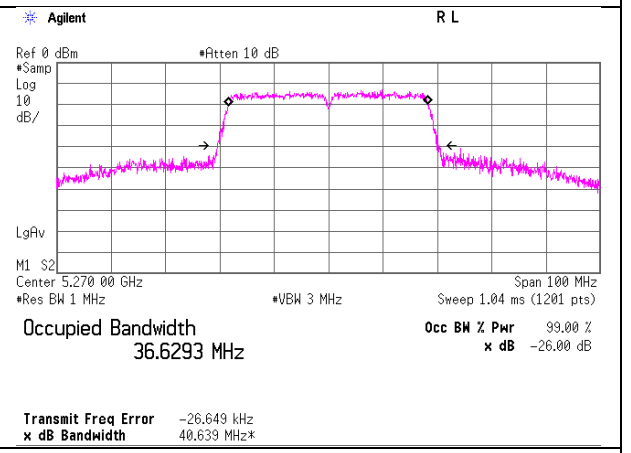
99 % Occupied Bandwidth

Tx 11ac-40, SISO, Antenna 0 (worst port)

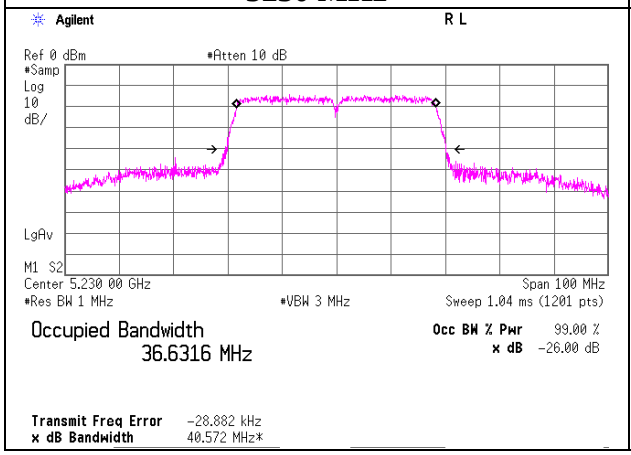
5190 MHz



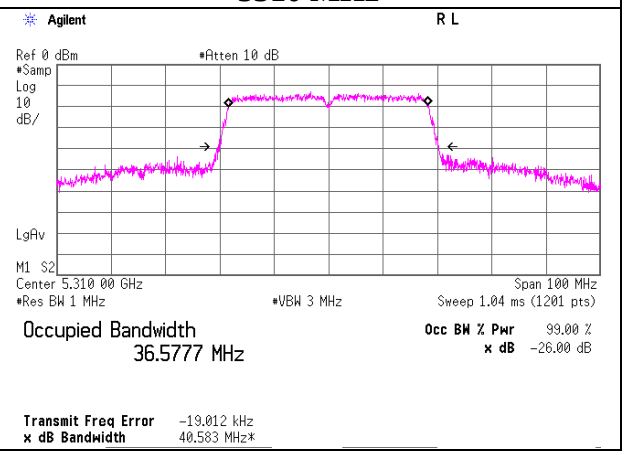
5270 MHz



5230 MHz



5310 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, SISO

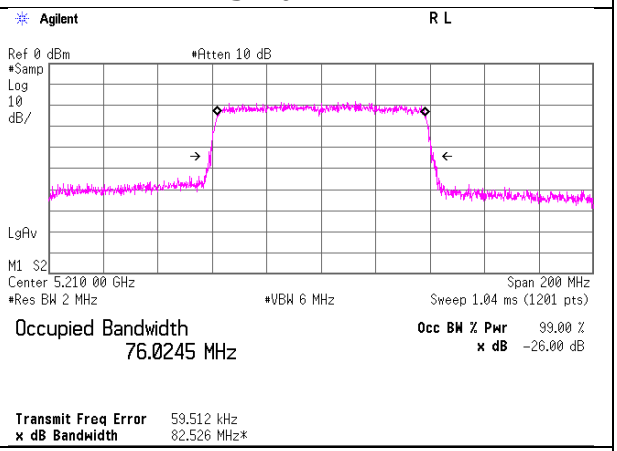
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5210	-	76.025	-
	-	-	-	-
	-	-	-	-
	5290	80.060	76.231	-
	-	-	-	-
	-	-	-	-

Tx 11ac-80, SISO, Antenna 0 (worst port)

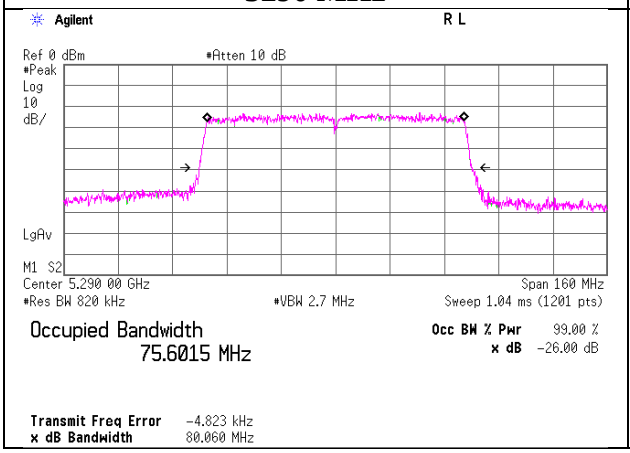
(26 dB Emission Bandwidth)

(99 % Occupied bandwidth)

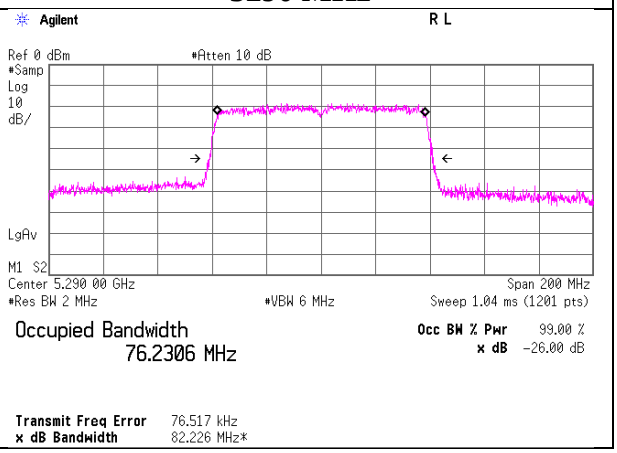
5210 MHz



5290 MHz



5290 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

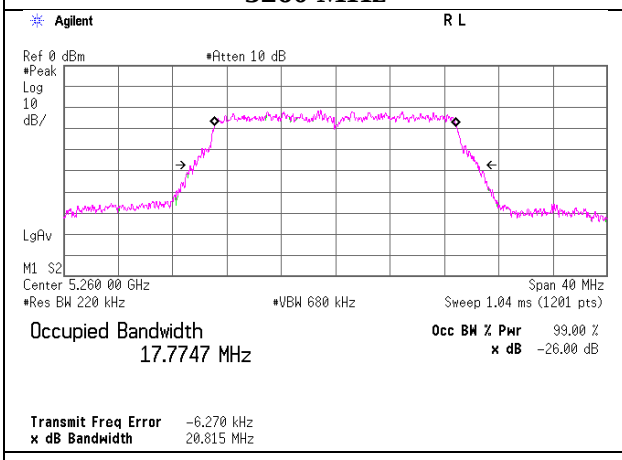
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, MIMO

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5180	-	18.115	-
	5220	-	18.169	-
	5240	-	18.142	-
	5260	20.815	18.187	-
	5300	21.184	18.139	-
	5320	20.858	18.175	-

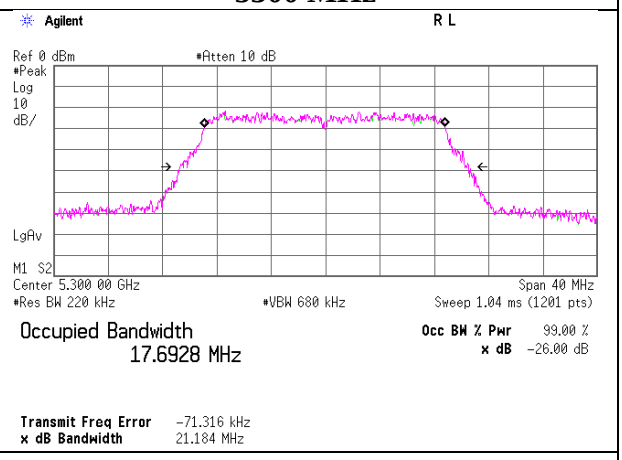
26 dB Emission Bandwidth

Tx 11n-20, MIMO, Antenna 0 (worst port)

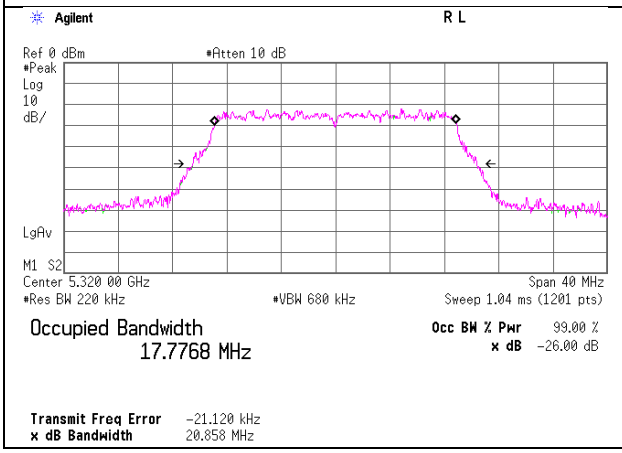
5260 MHz



5300 MHz



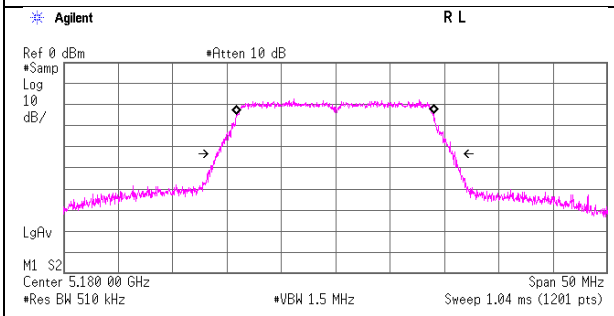
5320 MHz



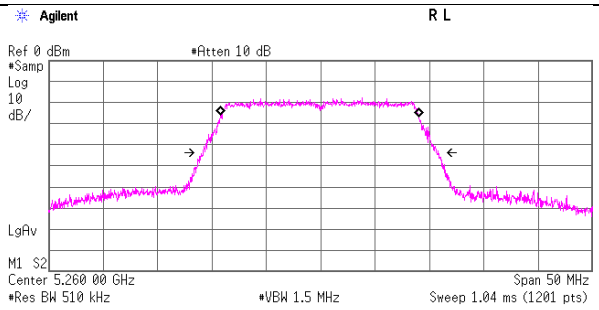
99 % Occupied Bandwidth

Tx 11n-20, MIMO, Antenna 0 (worst port)

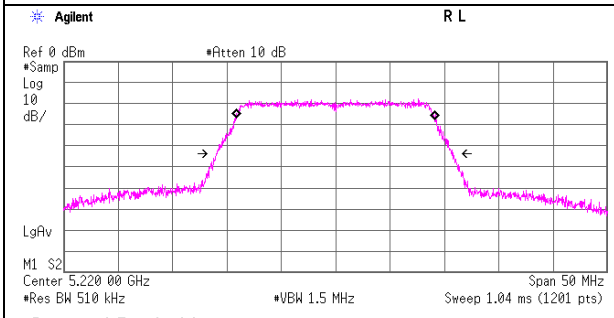
5180 MHz



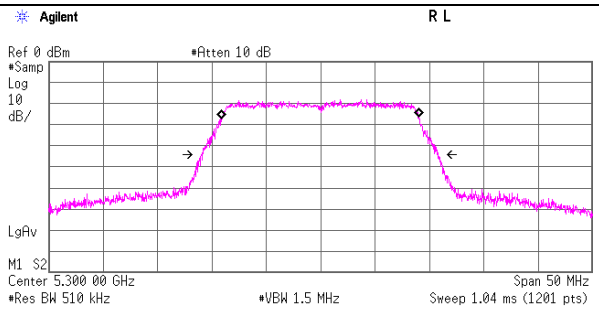
5260 MHz



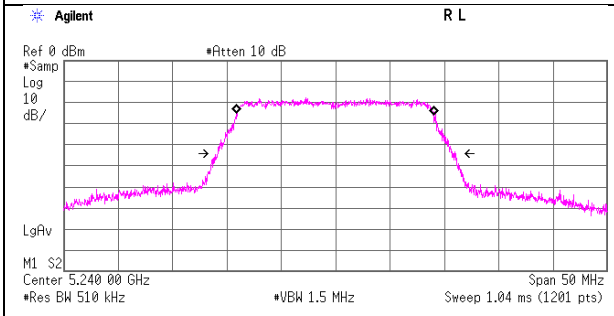
5220 MHz



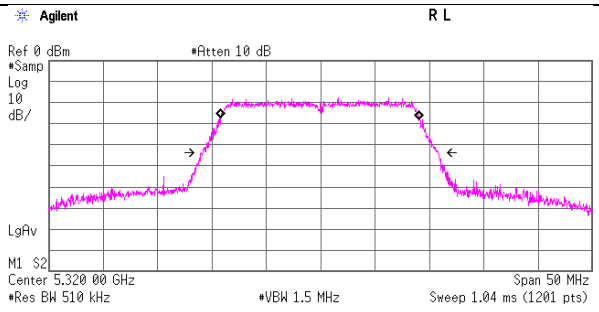
5300 MHz



5240 MHz



5320 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

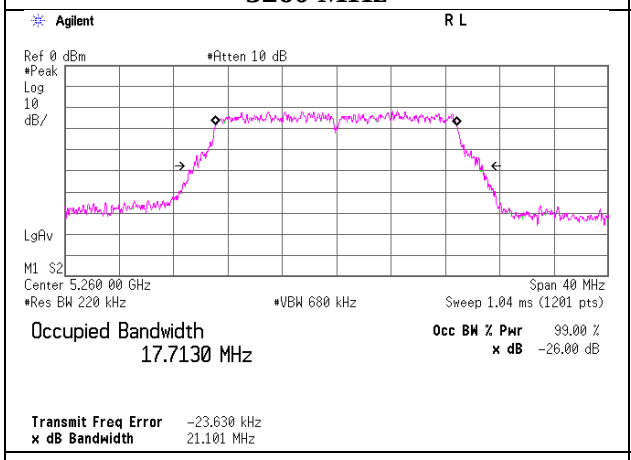
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, MIMO

Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5180	-	18.128	-
	5220	-	18.195	-
	5240	-	18.165	-
	5260	21.101	18.157	-
	5300	21.177	18.257	-
	5320	21.202	18.093	-

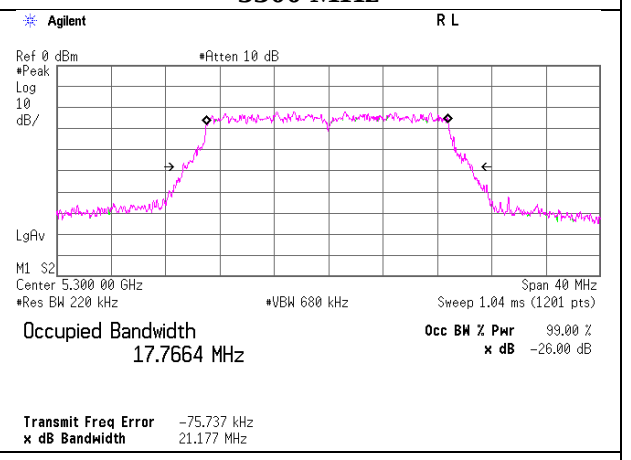
26 dB Emission Bandwidth

Tx 11ac-20, MIMO, Antenna 0 (worst port)

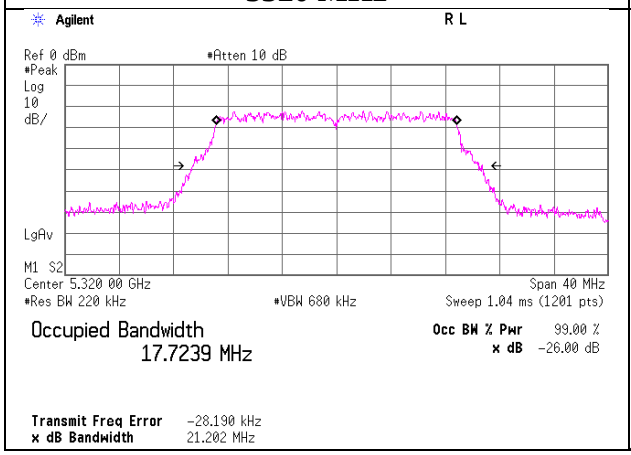
5260 MHz



5300 MHz



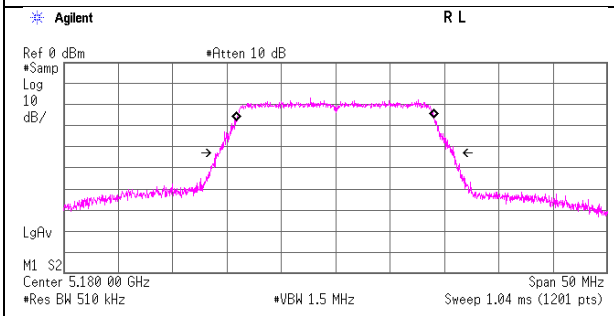
5320 MHz



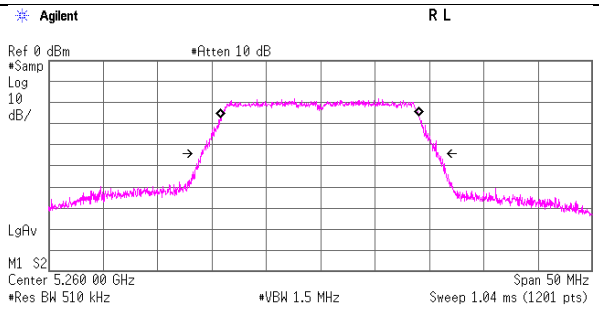
99 % Occupied Bandwidth

Tx 11ac-20, MIMO, Antenna 0 (worst port)

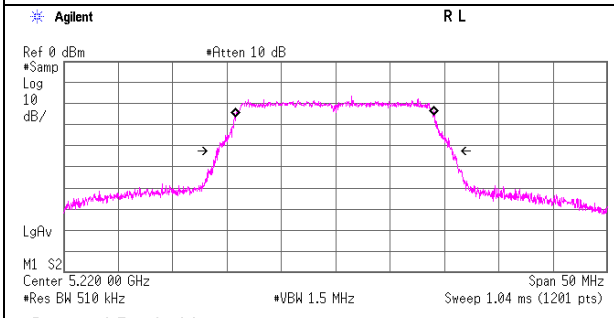
5180 MHz



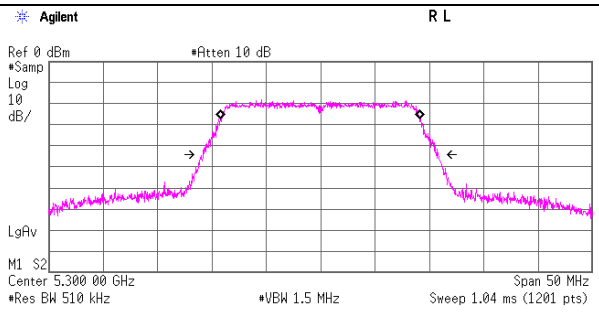
5260 MHz



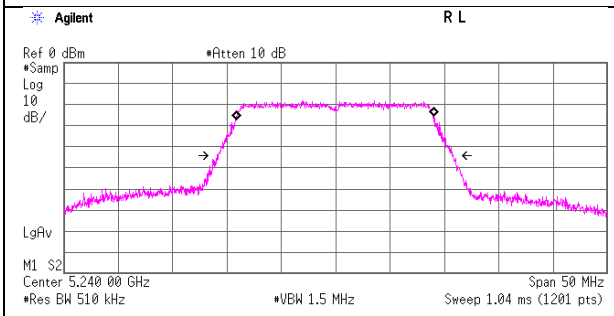
5220 MHz



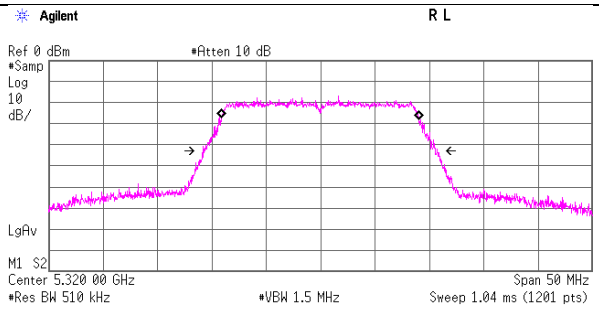
5300 MHz



5240 MHz



5320 MHz



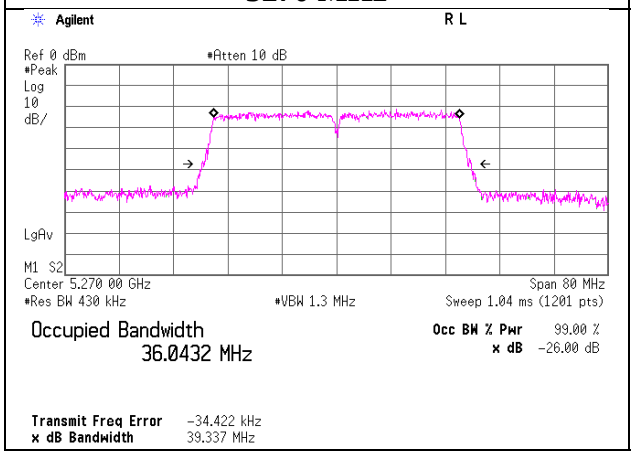
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, MIMO

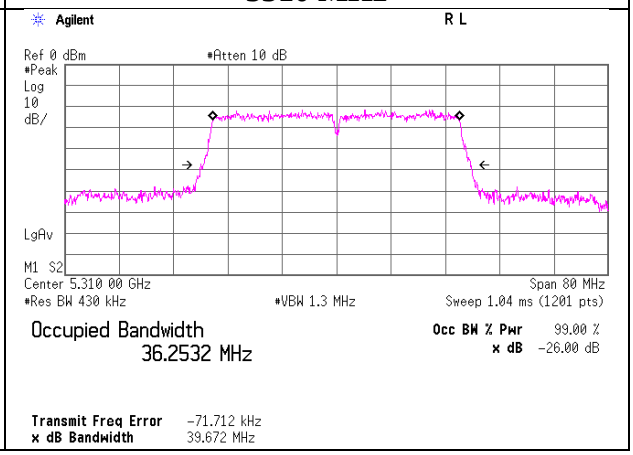
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5190	-	36.475	-
	-	-	-	-
	5230	-	36.554	-
	5270	39.337	36.477	-
	-	-	-	-
	5310	39.672	36.477	-

26 dB Emission Bandwidth
Tx 11n-40, MIMO, Antenna 0 (worst port)

5270 MHz



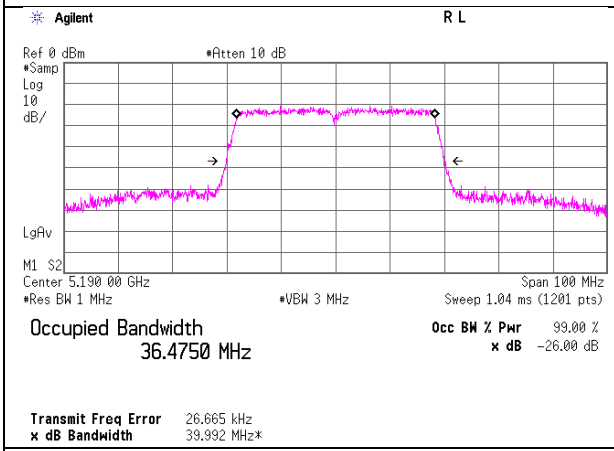
5310 MHz



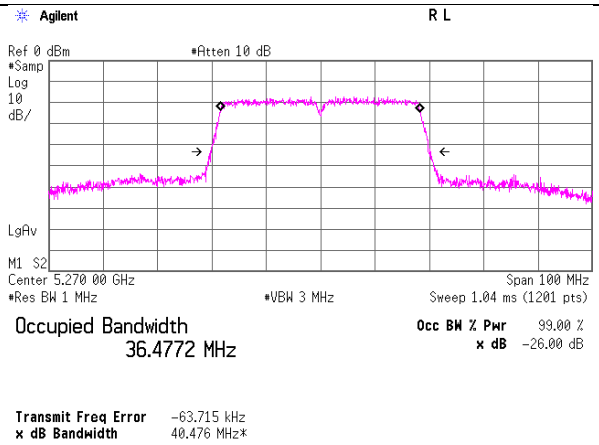
99 % Occupied Bandwidth

Tx 11n-40, MIMO, Antenna 0 (worst port)

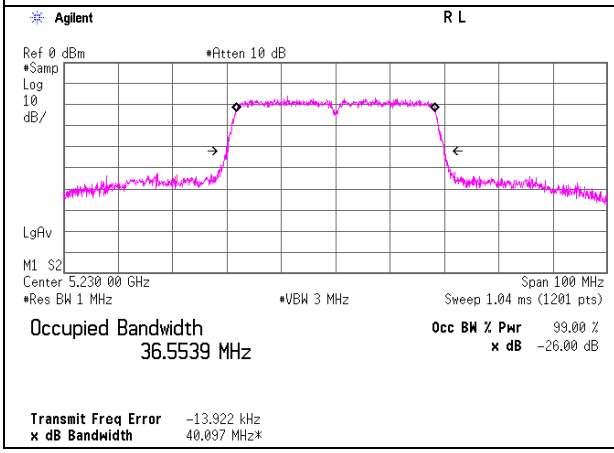
5190 MHz



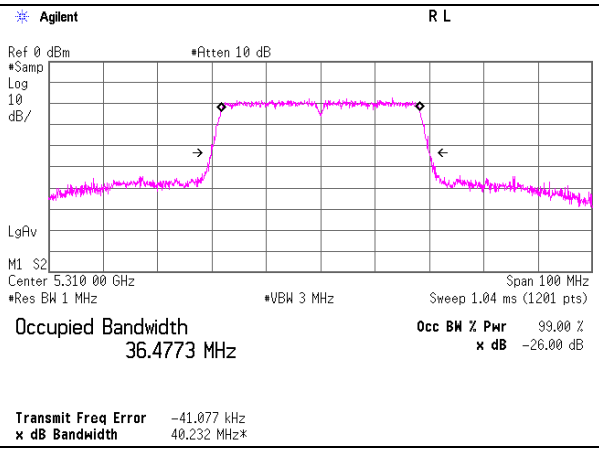
5270 MHz



5230 MHz



5310 MHz



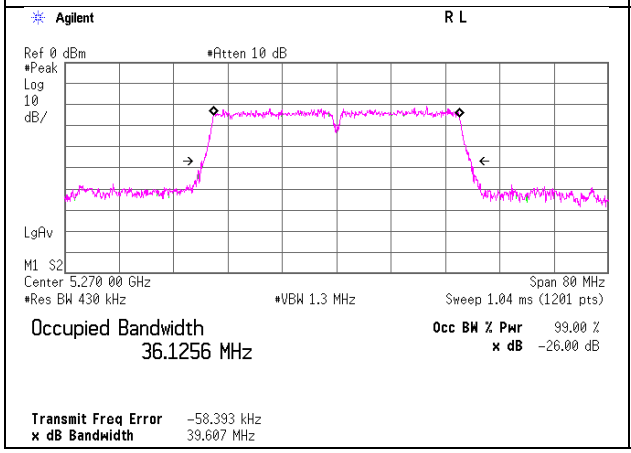
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, MIMO

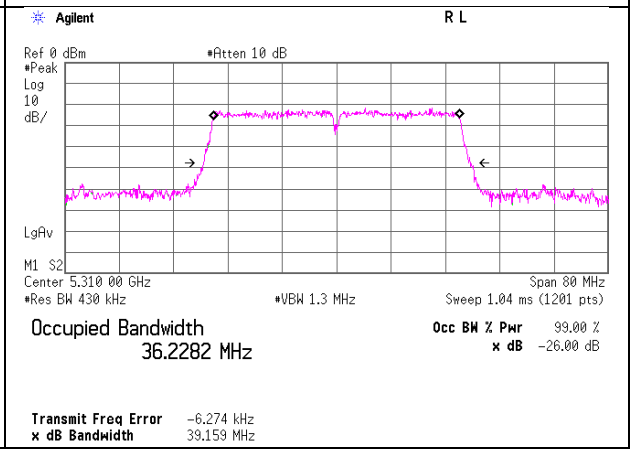
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5190	-	36.450	-
	-	-	-	-
	5230	-	36.511	-
	5270	39.607	36.491	-
	-	-	-	-
	5310	39.159	36.480	-

26 dB Emission Bandwidth
Tx 11ac-40, MIMO, Antenna 0 (worst port)

5270 MHz



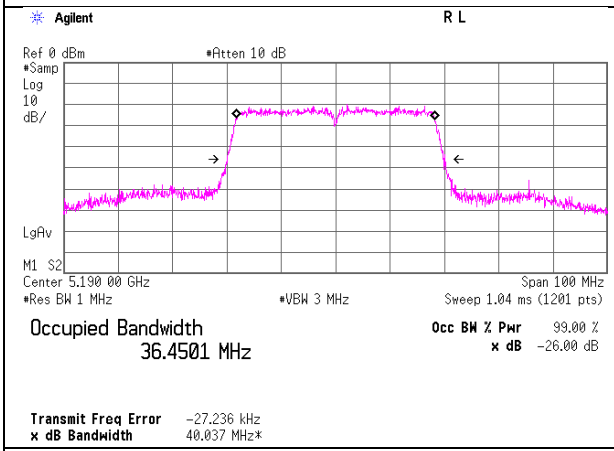
5310 MHz



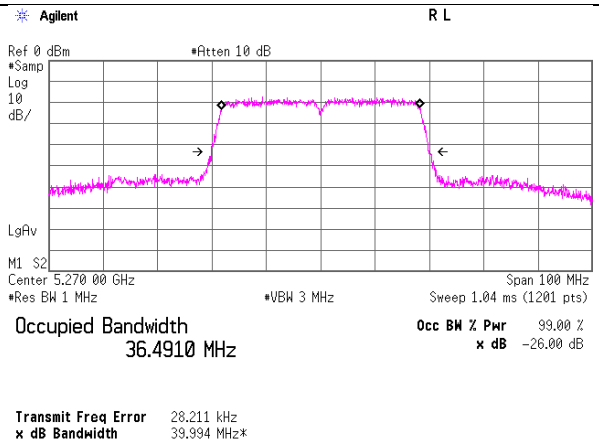
99 % Occupied Bandwidth

Tx 11ac-40, MIMO, Antenna 0 (worst port)

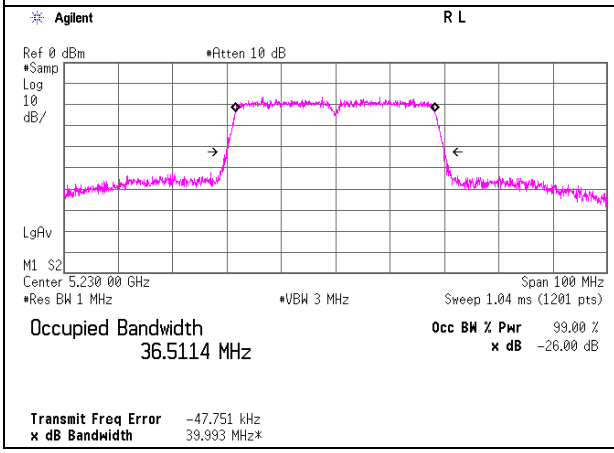
5190 MHz



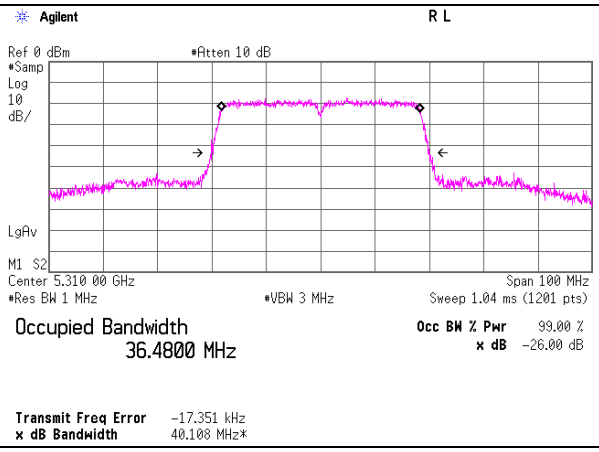
5270 MHz



5230 MHz



5310 MHz



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, MIMO

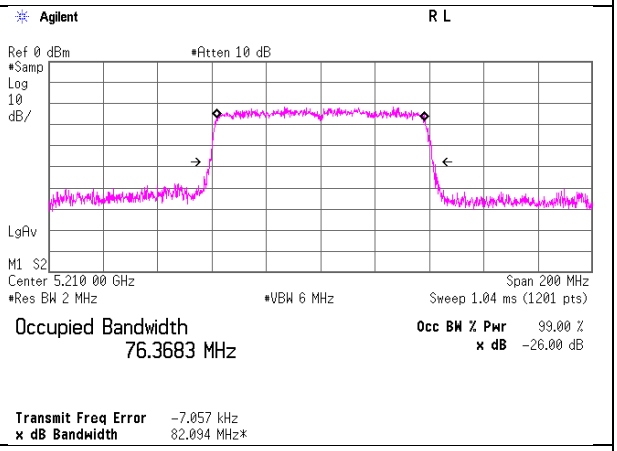
Antenna	Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [MHz]	Limit [MHz]
Antenna 0 (worst port)	5210	-	76.368	-
	-	-	-	-
	-	-	-	-
	5290	80.369	76.253	-
	-	-	-	-
	-	-	-	-

Tx 11ac-80, MIMO, Antenna 0 (worst port)

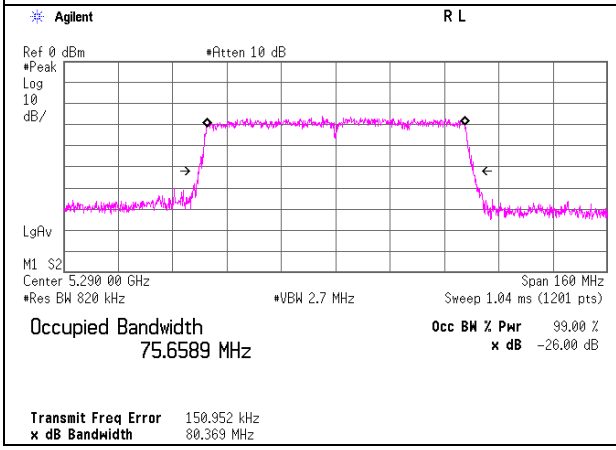
(26 dB Emission Bandwidth)

(99 % Occupied bandwidth)

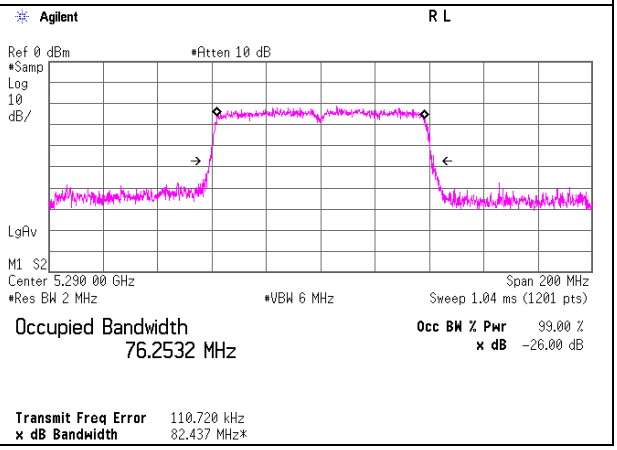
5210 MHz



5290 MHz



5290 MHz



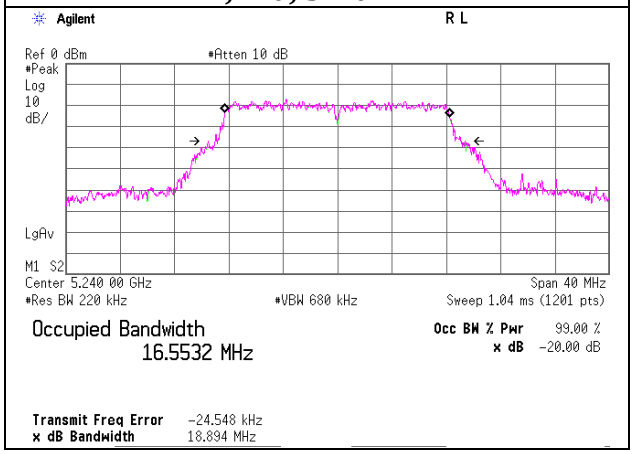
20 dB Bandwidth

Test place	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 21, 2016	November 22, 2016
Temperature / Humidity	24 deg. C / 49 % RH	24 deg. C / 47 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx	

Antenna	Mode	Tested Frequency [MHz]	20 dB Emission Bandwidth [MHz]
Antenna 0 (worst port)	11a	5240	18.894
	11n-20, SISO	5240	19.873
	11n-20, MIMO	5240	19.499
	11ac-20, SISO	5240	19.775
	11ac-20, MIMO	5240	19.598
	11n-40, SISO	5230	38.433
	11n-40, MIMO	5230	38.323
	11ac-40, SISO	5230	38.486
	11ac-40, MIMO	5230	38.222
	11ac-80, SISO	5210	78.876
	11ac-80, MIMO	5210	78.999

Antenna 0 (worst port)

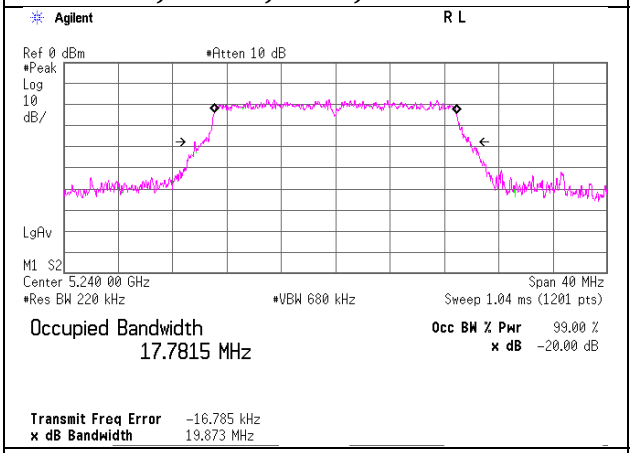
Tx, 11a, 5240 MHz



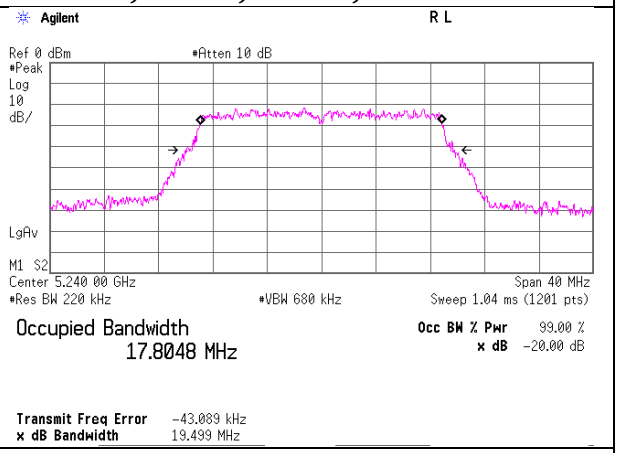
20 dB Bandwidth

Antenna 0 (worst port)

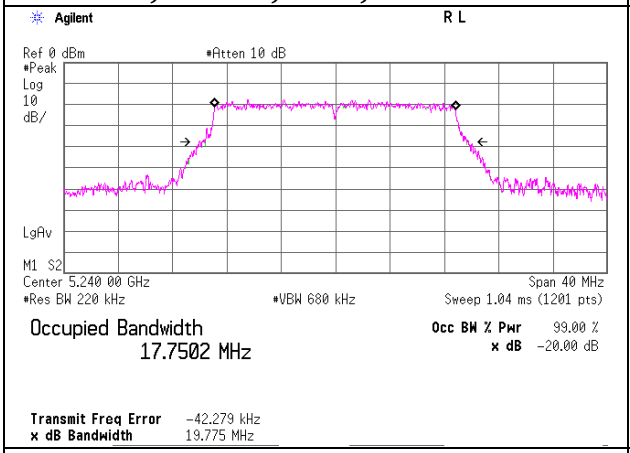
Tx, 11n-20, SISO, 5240 MHz



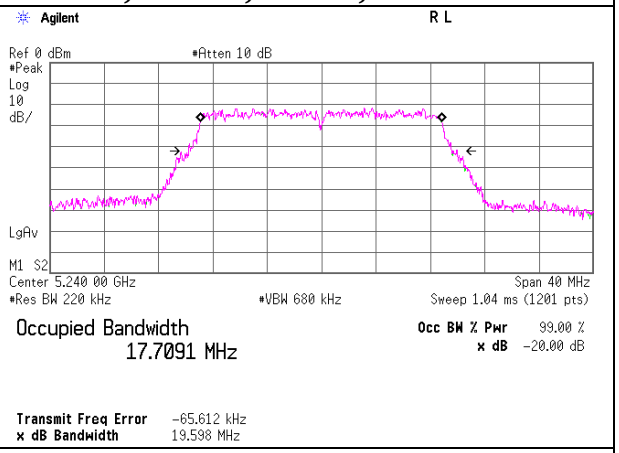
Tx, 11n-20, MIMO, 5240 MHz



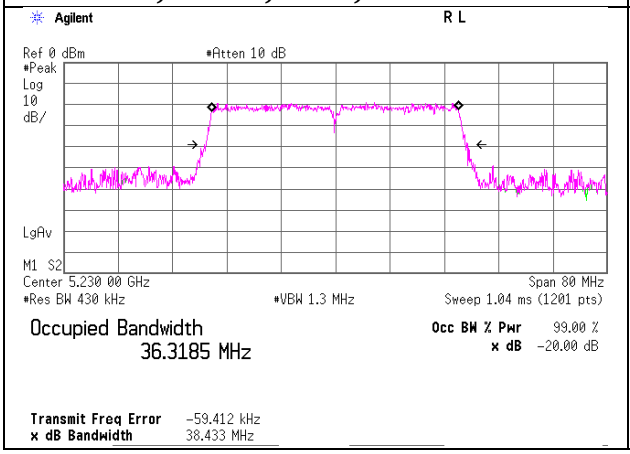
Tx, 11ac-20, SISO, 5240 MHz



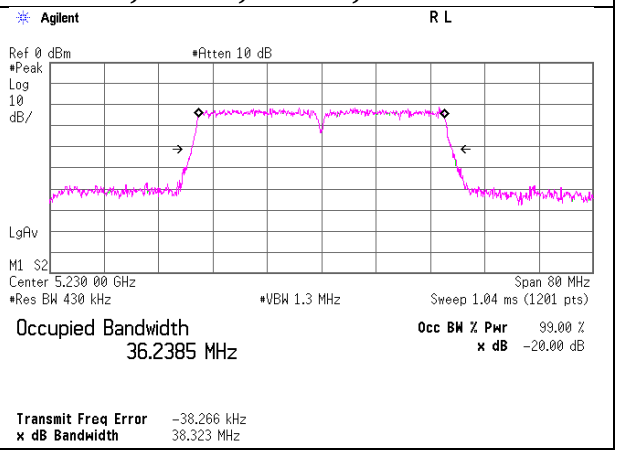
Tx, 11ac-20, MIMO, 5240 MHz



Tx, 11n-40, SISO, 5230 MHz



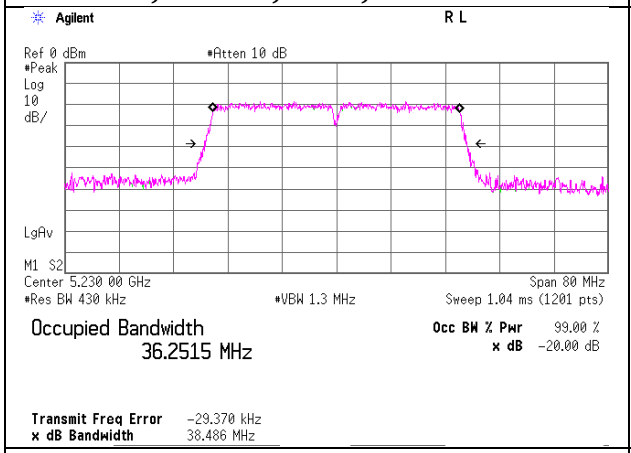
Tx, 11n-40, MIMO, 5230 MHz



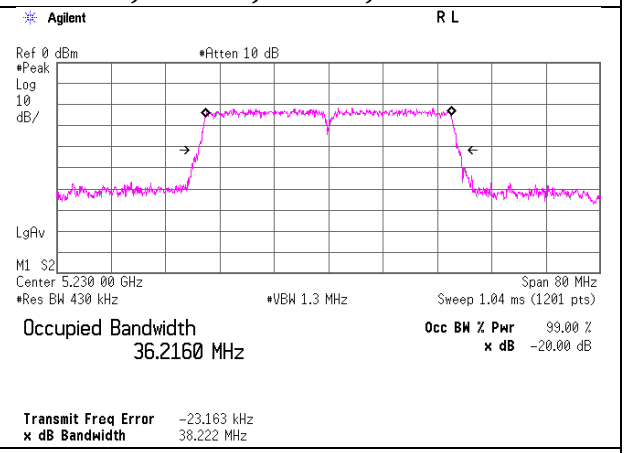
20 dB Bandwidth

Antenna 0 (worst port)

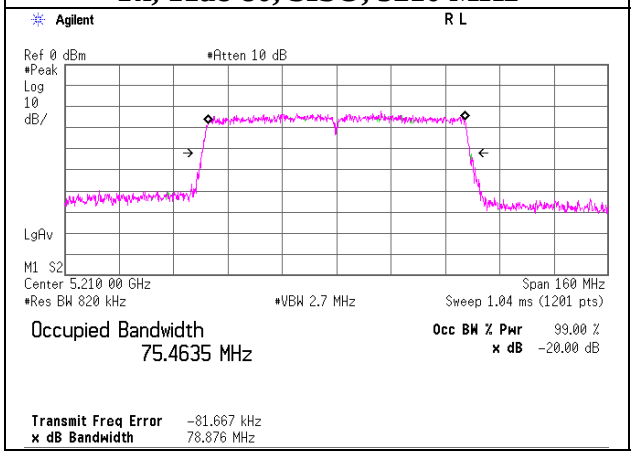
Tx, 11ac-40, SISO, 5230 MHz



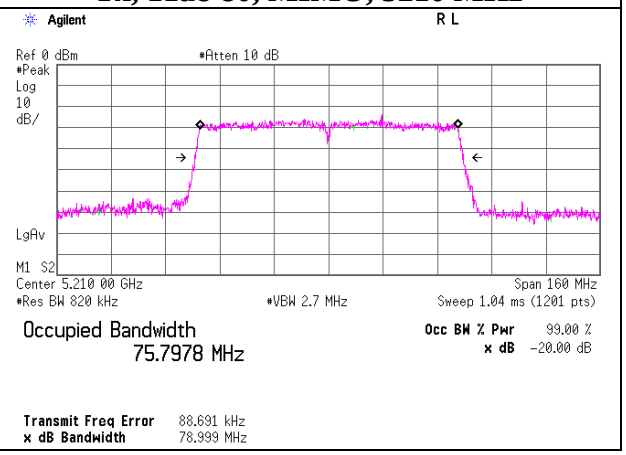
Tx, 11ac-40, MIMO, 5230 MHz



Tx, 11ac-80, SISO, 5210 MHz



Tx, 11ac-80, MIMO, 5210 MHz



Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 7, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11a, 48 Mbps	

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	-10.08	2.00	20.06	1.72	3.31	-	17.117	13.70	23.47	23.97	10.27	17.01	50.29	29.97	12.96
5220	-10.16	2.00	20.05	1.72	3.31	-	17.147	13.61	22.98	23.97	10.36	16.92	49.25	29.97	13.05
5240	-10.21	2.00	20.05	1.72	3.31	-	17.133	13.56	22.72	23.97	10.41	16.87	48.69	29.97	13.10
5260	-9.60	2.01	20.05	1.72	3.31	20.782	17.082	14.18	26.21	23.97	9.79	17.49	56.16	29.97	12.48
5300	-9.72	2.01	20.04	1.72	3.31	20.950	17.084	14.05	25.44	23.97	9.92	17.36	54.51	29.97	12.61
5320	-9.74	2.01	20.04	1.72	3.31	20.919	17.053	14.03	25.32	23.97	9.94	17.34	54.25	29.97	12.63

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

TPC on (Low power mode)
Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5260	-13.24	2.01	20.05	1.72	3.31	20.782	17.082	10.54	11.34	23.97	13.43	13.85	24.29	29.97	16.12
5300	-13.26	2.01	20.04	1.72	3.31	20.950	17.084	10.51	11.26	23.97	13.46	13.82	24.12	29.97	16.15
5320	-13.39	2.01	20.04	1.72	3.31	20.919	17.053	10.38	10.93	23.97	13.59	13.69	23.41	29.97	16.28

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 9, 2016	November 16, 2016
Temperature / Humidity	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11n-20, SISO, MCS 3	

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5180	-8.94	2.00	20.06	1.02	3.31	-	18.195	14.14	25.94	23.97	9.83	17.45	55.59	29.97	12.52
5220	-8.92	2.00	20.05	1.02	3.31	-	18.182	14.15	26.00	23.97	9.82	17.46	55.72	29.97	12.51
5240	-9.10	2.00	20.05	1.02	3.31	-	18.229	13.97	24.95	23.97	10.00	17.28	53.46	29.97	12.69
5260	-8.94	2.01	20.05	1.02	3.31	20.967	18.234	14.14	25.94	23.97	9.83	17.45	55.59	29.97	12.52
5300	-8.99	2.01	20.04	1.02	3.31	21.112	18.252	14.08	25.59	23.97	9.89	17.39	54.83	29.97	12.58
5320	-8.97	2.01	20.04	1.02	3.31	21.452	18.195	14.10	25.70	23.97	9.87	17.41	55.08	29.97	12.56

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

TPC on (Low power mode)
Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5260	-12.38	2.01	20.05	1.02	3.31	20.967	18.234	10.70	11.74	23.97	13.27	14.01	25.17	29.97	15.96
5300	-12.44	2.01	20.04	1.02	3.31	21.112	18.252	10.63	11.56	23.97	13.34	13.94	24.77	29.97	16.03
5320	-12.42	2.01	20.04	1.02	3.31	21.452	18.195	10.65	11.61	23.97	13.32	13.96	24.88	29.97	16.01

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	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 9, 2016
Temperature / Humidity	25 deg. C / 34 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, SISO, MCS 3

Antenna 0 (worst)

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	-8.89	2.00	20.06	1.00	3.31	-	18.213	14.17	26.10	23.97	9.80	17.48	55.94	29.97	12.49
5220	-8.91	2.00	20.05	1.00	3.31	-	18.259	14.14	25.92	23.97	9.83	17.45	55.55	29.97	12.52
5240	-9.14	2.00	20.05	1.00	3.31	-	18.309	13.91	24.59	23.97	10.06	17.22	52.69	29.97	12.75
5260	-8.37	2.01	20.05	1.00	3.31	21.190	18.246	14.69	29.42	23.97	9.28	18.00	63.05	29.97	11.97
5300	-8.42	2.01	20.04	1.00	3.31	21.151	18.293	14.63	29.02	23.97	9.34	17.94	62.19	29.97	12.03
5320	-8.48	2.01	20.04	1.00	3.31	21.146	18.231	14.57	28.62	23.97	9.40	17.88	61.33	29.97	12.09

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

TPC on (Low power mode)
Antenna 0 (worst)

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]
5260	-12.49	2.01	20.05	1.00	3.31	21.190	18.246	10.57	11.39	23.97	13.40	13.88	24.42	29.97	16.09
5300	-12.54	2.01	20.04	1.00	3.31	21.151	18.293	10.51	11.24	23.97	13.46	13.82	24.08	29.97	16.15
5320	-12.58	2.01	20.04	1.00	3.31	21.146	18.231	10.47	11.14	23.97	13.50	13.78	23.86	29.97	16.19

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 7, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11n-40, SISO, MCS 3	

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5190	-13.67	2.00	20.06	1.70	3.31	-	36.639	10.09	10.22	23.97	13.88	13.40	21.89	29.97	16.57
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-10.67	2.00	20.05	1.70	3.31	-	36.620	13.08	20.34	23.97	10.89	16.39	43.58	29.97	13.58
5270	-9.96	2.01	20.05	1.70	3.31	38.995	36.729	13.80	24.00	23.97	10.17	17.11	51.44	29.97	12.86
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-9.94	2.01	20.04	1.70	3.31	39.558	36.685	13.81	24.06	23.97	10.16	17.12	51.55	29.97	12.85

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

TPC on (Low power mode)

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5270	-13.44	2.01	20.05	1.70	3.31	38.995	36.729	10.32	10.77	23.97	13.65	13.63	23.08	29.97	16.34
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-13.32	2.01	20.04	1.70	3.31	39.558	36.685	10.43	11.05	23.97	13.54	13.74	23.67	29.97	16.23

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 7, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11ac-40, SISO, MCS 3	

Antenna 0 (worst)

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	-13.64	2.00	20.06	1.70	3.31	-	36.494	10.12	10.27	23.97	13.85	13.43	22.01	29.97	16.54
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-10.66	2.00	20.05	1.70	3.31	-	36.632	13.09	20.35	23.97	10.88	16.40	43.61	29.97	13.57
5270	-10.00	2.01	20.05	1.70	3.31	39.881	36.629	13.76	23.75	23.97	10.21	17.07	50.89	29.97	12.90
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-9.90	2.01	20.04	1.70	3.31	39.181	36.578	13.85	24.25	23.97	10.12	17.16	51.95	29.97	12.81

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

TPC on (Low power mode)
Antenna 0 (worst)

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]
5270	-13.36	2.01	20.05	1.70	3.31	39.881	36.629	10.40	10.96	23.97	13.57	13.71	23.48	29.97	16.26
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-13.28	2.01	20.04	1.70	3.31	39.181	36.578	10.47	11.13	23.97	13.50	13.78	23.86	29.97	16.19

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 7, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11ac-80, SISO MCS 3	

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5210	-15.68	2.00	20.05	2.63	3.31	-	76.025	9.00	7.95	23.97	14.97	12.31	17.03	29.97	17.66
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290	-15.62	2.01	20.05	2.63	3.31	80.060	76.231	9.07	8.08	23.97	14.90	12.38	17.31	29.97	17.59
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

TPC on (Low power mode)

Antenna 0 (worst)

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5290	-19.14	2.01	20.05	2.63	3.31	80.060	76.231	5.55	3.59	23.97	18.42	8.86	7.70	29.97	21.11
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 9, 2016	November 16, 2016
Temperature / Humidity	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11n-20, MIMO, MCS 11	

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5180	-	18.115	13.21	12.81	26.02	14.15	23.97	9.82	28.31	10.27	38.58	15.86	29.97	14.11
5220	-	18.169	12.79	11.76	24.55	13.90	23.97	10.07	27.42	9.43	36.84	15.66	29.97	14.31
5240	-	18.142	12.53	12.20	24.73	13.93	23.97	10.04	26.85	9.78	36.63	15.64	29.97	14.33
5260	20.815	18.187	12.65	13.53	26.18	14.18	23.97	9.79	27.10	10.85	37.95	15.79	29.97	14.18
5300	21.184	18.139	12.94	13.26	26.20	14.18	23.97	9.79	27.73	10.63	38.36	15.84	29.97	14.13
5320	20.858	18.175	12.68	13.01	25.69	14.10	23.97	9.87	27.16	10.43	37.60	15.75	29.97	14.22

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5180	1.65	-12.50	2.00	20.06	3.31	11.21	14.52	-12.52	1.88	20.06	-0.96	11.07	10.11
5220	1.65	-12.63	2.00	20.05	3.31	11.07	14.38	-12.88	1.88	20.05	-0.96	10.70	9.74
5240	1.65	-12.72	2.00	20.05	3.31	10.98	14.29	-12.72	1.88	20.05	-0.96	10.86	9.90
5260	1.65	-12.69	2.01	20.05	3.31	11.02	14.33	-12.28	1.89	20.05	-0.96	11.31	10.35
5300	1.65	-12.58	2.01	20.04	3.31	11.12	14.43	-12.36	1.89	20.04	-0.96	11.22	10.26
5320	1.65	-12.67	2.01	20.04	3.31	11.03	14.34	-12.44	1.89	20.04	-0.96	11.14	10.18

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

TPC on (Low power mode)

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5260	20.815	18.187	6.50	6.37	12.88	11.10	23.97	12.87	13.93	5.11	19.04	12.80	29.97	17.17
5300	21.184	18.139	6.37	6.23	12.60	11.00	23.97	12.97	13.65	4.99	18.64	12.70	29.97	17.27
5320	20.858	18.175	6.08	6.05	12.13	10.84	23.97	13.13	13.03	4.85	17.88	12.52	29.97	17.45

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5260	1.65	-15.58	2.01	20.05	3.31	8.13	11.44	-15.55	1.89	20.05	-0.96	8.04	7.08
5300	1.65	-15.66	2.01	20.04	3.31	8.04	11.35	-15.64	1.89	20.04	-0.96	7.94	6.98
5320	1.65	-15.86	2.01	20.04	3.31	7.84	11.15	-15.77	1.89	20.04	-0.96	7.81	6.85

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 9, 2016	November 16, 2016
Temperature / Humidity	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11ac-20, MIMO, MCS 3	

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5180	-	18.128	13.24	12.66	25.90	14.13	23.97	9.84	28.38	10.15	38.53	15.86	29.97	14.11
5220	-	18.195	13.12	12.54	25.66	14.09	23.97	9.88	28.12	10.06	38.17	15.82	29.97	14.15
5240	-	18.165	13.18	12.72	25.90	14.13	23.97	9.84	28.25	10.20	38.44	15.85	29.97	14.12
5260	21.101	18.157	9.62	13.53	23.15	13.65	23.97	10.32	20.61	10.85	31.46	14.98	29.97	14.99
5300	21.177	18.257	9.35	13.16	22.52	13.53	23.97	10.44	20.04	10.55	30.60	14.86	29.97	15.11
5320	21.202	18.093	9.14	13.04	22.18	13.46	23.97	10.51	19.59	10.46	30.05	14.78	29.97	15.19

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5180	1.64	-12.48	2.00	20.06	3.31	11.22	14.53	-12.56	1.88	20.06	-0.96	11.02	10.06
5220	1.64	-12.51	2.00	20.05	3.31	11.18	14.49	-12.59	1.88	20.05	-0.96	10.98	10.02
5240	1.64	-12.49	2.00	20.05	3.31	11.20	14.51	-12.53	1.88	20.05	-0.96	11.04	10.08
5260	1.64	-13.87	2.01	20.05	3.31	9.83	13.14	-12.27	1.89	20.05	-0.96	11.31	10.35
5300	1.64	-13.98	2.01	20.04	3.31	9.71	13.02	-12.38	1.89	20.04	-0.96	11.19	10.23
5320	1.64	-14.08	2.01	20.04	3.31	9.61	12.92	-12.42	1.89	20.04	-0.96	11.15	10.19

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

TPC on (Low power mode)

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5260	21.101	18.157	4.85	6.46	11.32	10.54	23.97	13.43	10.40	5.18	15.58	11.93	29.97	18.04
5300	21.177	18.257	4.71	6.19	10.90	10.37	23.97	13.60	10.09	4.96	15.05	11.78	29.97	18.19
5320	21.202	18.093	4.58	6.12	10.70	10.29	23.97	13.68	9.82	4.90	14.72	11.68	29.97	18.29

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5260	1.64	-16.84	2.01	20.05	3.31	6.86	10.17	-15.48	1.89	20.05	-0.96	8.10	7.14
5300	1.64	-16.96	2.01	20.04	3.31	6.73	10.04	-15.66	1.89	20.04	-0.96	7.91	6.95
5320	1.64	-17.08	2.01	20.04	3.31	6.61	9.92	-15.71	1.89	20.04	-0.96	7.86	6.90

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 15, 2016	November 16, 2016
Temperature / Humidity	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11n-40, MIMO, MCS 11	

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5190	-	36.475	4.98	4.79	9.77	9.90	23.97	14.07	10.67	3.84	14.51	11.62	29.97	18.35
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-	36.554	12.25	11.84	24.09	13.82	23.97	10.15	26.24	9.49	35.74	15.53	29.97	14.44
5270	39.337	36.477	12.62	12.92	25.54	14.07	23.97	9.90	27.04	10.36	37.40	15.73	29.97	14.24
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.672	36.477	12.11	12.34	24.45	13.88	23.97	10.09	25.94	9.89	35.84	15.54	29.97	14.43

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5190	2.50	-17.59	2.00	20.06	3.31	6.97	10.28	-17.64	1.88	20.06	-0.96	6.80	5.84
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	2.50	-13.67	2.00	20.05	3.31	10.88	14.19	-13.70	1.88	20.05	-0.96	10.73	9.77
5270	2.50	-13.55	2.01	20.05	3.31	11.01	14.32	-13.33	1.89	20.05	-0.96	11.11	10.15
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.50	-13.72	2.01	20.04	3.31	10.83	14.14	-13.52	1.89	20.04	-0.96	10.91	9.95

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

TPC on (Low power mode)

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5270	39.337	36.477	6.05	6.20	12.25	10.88	23.97	13.09	12.97	4.97	17.94	12.54	29.97	17.43
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.672	36.477	5.86	6.02	11.88	10.75	23.97	13.22	12.56	4.82	17.38	12.40	29.97	17.57

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5270	2.50	-16.74	2.01	20.05	3.31	7.82	11.13	-16.52	1.89	20.05	-0.96	7.92	6.96
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.50	-16.87	2.01	20.04	3.31	7.68	10.99	-16.64	1.89	20.04	-0.96	7.79	6.83

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	Shonan EMC Lab. No.1 Measurement Room	
Report No.	11334871S-M	
Date	November 15, 2016	November 16, 2016
Temperature / Humidity	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi
Mode	Tx 11ac-40, MIMO, MCS 3	

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5190	-	36.450	5.02	4.77	9.79	9.91	23.97	14.06	10.76	3.82	14.59	11.64	29.97	18.33
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-	36.511	11.35	11.68	23.03	13.62	23.97	10.35	24.32	9.36	33.68	15.27	29.97	14.70
5270	39.607	36.491	11.97	12.86	24.83	13.95	23.97	10.02	25.64	10.31	35.96	15.56	29.97	14.41
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.159	36.480	11.48	12.51	24.00	13.80	23.97	10.17	24.60	10.03	34.64	15.40	29.97	14.57

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5190	2.44	-17.49	2.00	20.06	3.31	7.01	10.32	-17.60	1.88	20.06	-0.96	6.78	5.82
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	2.44	-13.94	2.00	20.05	3.31	10.55	13.86	-13.70	1.88	20.05	-0.96	10.67	9.71
5270	2.44	-13.72	2.01	20.05	3.31	10.78	14.09	-13.29	1.89	20.05	-0.96	11.09	10.13
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.44	-13.89	2.01	20.04	3.31	10.60	13.91	-13.40	1.89	20.04	-0.96	10.97	10.01

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

TPC on (Low power mode)

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5270	39.607	36.491	5.45	5.81	11.26	10.51	23.97	13.46	11.67	4.66	16.33	12.13	29.97	17.84
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	39.159	36.480	5.28	5.50	10.78	10.33	23.97	13.64	11.32	4.41	15.73	11.97	29.97	18.00

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5270	2.44	-17.14	2.01	20.05	3.31	7.36	10.67	-16.74	1.89	20.05	-0.96	7.64	6.68
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.44	-17.26	2.01	20.04	3.31	7.23	10.54	-16.97	1.89	20.04	-0.96	7.40	6.44

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	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 16, 2016
Temperature / Humidity	24 deg. C / 40 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, MIMO, MCS 3

Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5210	-	76.368	3.78	3.73	7.51	8.76	23.97	15.21	8.11	2.99	11.10	10.45	29.97	19.52
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290	80.369	76.253	4.68	4.18	8.86	9.47	23.97	14.50	10.02	3.35	13.38	11.26	29.97	18.71
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5210	3.23	-19.50	2.00	20.05	3.31	5.78	9.09	-19.45	1.88	20.05	-0.96	5.71	4.75
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290	3.23	-18.59	2.01	20.05	3.31	6.70	10.01	-18.96	1.89	20.05	-0.96	6.21	5.25
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

TPC on (Low power mode)
Antenna 0+1

Applied limit: 15.407, mobile and portable client device

Tested Frequency [MHz]	26 dB EBW (B for FCC) [MHz]	99% OBW (B for IC) [MHz]	Conducted power Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]	e.i.r.p. Antenna 1 [mW]	Antenna 2 [mW]	Antenna Sum [mW]	Result [dBm]	Limit [dBm]	Margin [dB]
5290	80.369	76.253	2.26	2.12	4.38	6.41	23.97	17.56	4.84	1.70	6.54	8.16	29.97	21.81
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

		Antenna: 0						Antenna: 1					
Tested Frequency [MHz]	Duty Factor [dB]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Antenna Gain [dBi]	Result Cond. Power [dBm]	Result e.i.r.p. [dBm]
5290	3.23	-21.75	2.01	20.05	3.31	3.54	6.85	-21.91	1.89	20.05	-0.96	3.26	2.30
-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5220 MHz

Mode	data rate	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0	1						0	1		
	[Mbps]	[dBm]	[dBm]					[dB]	[dBm]	[dBm]		
11a	6	**-9.05**	-10.06	-	-	-	-	0.28	-8.77	-9.78	-	* timed average worst
	9	-9.15	-10.34	-	-	-	-	0.41	-8.74	-9.93	-	
	12	-9.23	-10.35	-	-	-	-	0.54	-8.69	-9.81	-	
	18	-9.45	-10.55	-	-	-	-	0.78	-8.67	-9.77	-	
	24	-9.55	-10.62	-	-	-	-	1.00	-8.55	-9.62	-	
	36	-9.89	-10.66	-	-	-	-	1.38	-8.51	-9.28	-	
	48	-10.16	-10.74	-	-	-	-	1.72	**-8.44**	-9.02	-	* burst power worst
	54	-10.33	-10.86	-	-	-	-	1.85	-8.48	-9.01	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5220 MHz

Mode	MCS number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0	1						0	1		
		[dBm]	[dBm]					[dB]	[dBm]	[dBm]		
11n-20 SISO	0	**-8.74**	-9.74	-	-	-	-	0.30	-8.44	-9.44	-	* timed average worst
	1	-8.80	-9.98	-	-	-	-	0.56	-8.24	-9.42	-	
	2	-9.04	-10.23	-	-	-	-	0.81	-8.23	-9.42	-	
	3	-8.92	-10.02	-	-	-	-	1.02	**-7.90**	-9.00	-	* burst power worst
	4	-9.36	-10.61	-	-	-	-	1.38	-7.98	-9.23	-	
	5	-9.78	-10.74	-	-	-	-	1.70	-8.08	-9.04	-	
	6	-9.88	-10.98	-	-	-	-	1.81	-8.07	-9.17	-	
	7	-10.03	-11.10	-	-	-	-	1.95	-8.08	-9.15	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5220 MHz

Mode	MCS number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]					[dB]	0 [dBm]	1 [dBm]		
11ac-20 SISO	0	**-8.52**	-9.62	-	-	-	-	0.30	-8.22	-9.32	-	* timed average worst
	1	-8.72	-9.88	-	-	-	-	0.57	-8.15	-9.31	-	
	2	-8.90	-10.05	-	-	-	-	0.80	-8.10	-9.25	-	
	3	-8.91	-9.97	-	-	-	-	1.00	**-7.91**	-8.97	-	* burst power worst
	4	-9.34	-10.45	-	-	-	-	1.35	-7.99	-9.10	-	
	5	-9.72	-10.82	-	-	-	-	1.67	-8.05	-9.15	-	
	6	-9.70	-10.85	-	-	-	-	1.78	-7.92	-9.07	-	
	7	-9.91	-11.02	-	-	-	-	1.92	-7.99	-9.10	-	
	8	-10.60	-12.00	-	-	-	-	2.11	-8.49	-9.89	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5230 MHz

Mode	MCS number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]					[dB]	0 [dBm]	1 [dBm]		
11n-40 SISO	0	**-9.62**	-10.96	-	-	-	-	0.58	-9.04	-10.38	-	* timed average worst
	1	-10.16	-11.41	-	-	-	-	1.03	-9.13	-10.38	-	
	2	-10.55	-11.84	-	-	-	-	1.42	-9.13	-10.42	-	
	3	-10.67	-11.89	-	-	-	-	1.70	**-8.97**	-10.19	-	* burst power worst
	4	-11.31	-12.59	-	-	-	-	2.04	-9.27	-10.55	-	
	5	-11.66	-12.95	-	-	-	-	2.59	-9.07	-10.36	-	
	6	-11.87	-13.05	-	-	-	-	2.69	-9.18	-10.36	-	
	7	-12.08	-13.16	-	-	-	-	2.88	-9.20	-10.28	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5190 MHz

Mode	MCS number	Reading (timed average) Antenna 0 [dBm]	1 [dBm]					Duty factor [dB]	Burst power Antenna 0 [dBm]	1 [dBm]		Remarks
11ac-40 SISO	0	**-12.62**	-13.74	-	-	-	-	0.58	-12.04	-13.16	-	* timed average worst
	1	-13.15	-14.40	-	-	-	-	1.04	-12.11	-13.36	-	
	2	-13.61	-14.70	-	-	-	-	1.38	-12.23	-13.32	-	
	3	-13.64	-14.79	-	-	-	-	1.70	**-11.94**	-13.09	-	* burst power worst
	4	-14.18	-15.53	-	-	-	-	2.15	-12.03	-13.38	-	
	5	-14.65	-15.93	-	-	-	-	2.53	-12.12	-13.40	-	
	6	-14.84	-16.02	-	-	-	-	2.58	-12.26	-13.44	-	
	7	-14.97	-16.16	-	-	-	-	2.80	-12.17	-13.36	-	
	8	-15.05	-16.15	-	-	-	-	2.90	-12.15	-13.25	-	
	9	-15.27	-16.44	-	-	-	-	3.15	-12.12	-13.29	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5230 MHz

Mode	MCS number	Reading (timed average) Antenna 0 [dBm]	1 [dBm]					Duty factor [dB]	Burst power Antenna 0 [dBm]	1 [dBm]		Remarks
11ac-40 SISO	0	**-9.69**	-10.70	-	-	-	-	0.58	-9.11	-10.12	-	* timed average worst
	1	-10.15	-11.40	-	-	-	-	1.04	-9.11	-10.36	-	
	2	-10.61	-11.80	-	-	-	-	1.38	-9.23	-10.42	-	
	3	-10.66	-11.89	-	-	-	-	1.70	**-8.96**	-10.19	-	* burst power worst
	4	-11.23	-12.53	-	-	-	-	2.15	-9.08	-10.38	-	
	5	-11.65	-12.89	-	-	-	-	2.53	-9.12	-10.36	-	
	6	-11.80	-13.08	-	-	-	-	2.58	-9.22	-10.50	-	
	7	-11.97	-13.16	-	-	-	-	2.80	-9.17	-10.36	-	
	8	-12.55	-13.15	-	-	-	-	2.90	-9.65	-10.25	-	
	9	-12.77	-13.14	-	-	-	-	3.15	-9.62	-9.99	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5210 MHz

Mode	MCS number	Reading (timed average) Antenna 0 [dBm]	1 [dBm]					Duty factor [dB]	Burst power Antenna 0 [dBm]	1 [dBm]		Remarks
11ac-80 SISO	0	**-14.69**	-15.07	-	-	-	-	1.07	-13.62	-14.00	-	* timed average worst
	1	-15.35	-15.79	-	-	-	-	1.78	-13.57	-14.01	-	
	2	-15.85	-16.41	-	-	-	-	2.25	-13.60	-14.16	-	
	3	-15.68	-16.31	-	-	-	-	2.63	**-13.05**	-13.68	-	* burst power worst
	4	-16.20	-16.70	-	-	-	-	3.06	-13.14	-13.64	-	
	5	-16.59	-17.24	-	-	-	-	3.52	-13.07	-13.72	-	
	6	-16.66	-17.17	-	-	-	-	3.48	-13.18	-13.69	-	
	7	-16.85	-17.45	-	-	-	-	3.58	-13.27	-13.87	-	
	8	-16.91	-17.41	-	-	-	-	3.74	-13.17	-13.67	-	
	9	-17.07	-17.76	-	-	-	-	3.67	-13.40	-14.09	-	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5220 MHz

Mode	MCS Number	Reading (timed average) Antenna 0 [dBm]	1 [dBm]	0 [mW]	1 [mW]	0 + 1 [mW]	0 + 1 [dBm]	Duty factor [dB]	Burst power Antenna 0 [dBm]	1 [dBm]	0 + 1 [dBm]	Remarks
11n-20 MIMO	8	**-11.75**	-11.89	0.067	0.065	0.132	-8.81	0.56	-	-	-8.25	* timed average worst
	9	-12.05	-12.44	0.062	0.057	0.119	-9.23	1.01	-	-	-8.22	
	10	-12.67	-12.81	0.054	0.052	0.106	-9.73	1.36	-	-	-8.37	
	11	-12.63	-12.88	0.055	0.052	0.106	-9.74	1.65	-	-	**-8.09**	* burst power worst
	12	-13.16	-13.43	0.048	0.045	0.094	-10.28	2.11	-	-	-8.17	
	13	-13.52	-13.73	0.044	0.042	0.087	-10.61	2.46	-	-	-8.15	
	14	-13.61	-13.89	0.044	0.041	0.084	-10.74	2.59	-	-	-8.15	
	15	-13.73	-14.02	0.042	0.040	0.082	-10.86	2.69	-	-	-8.17	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5220 MHz

Mode	MCS Number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]	0 [mW]	1 [mW]	0 + 1 [mW]	0 + 1 [dBm]	[dB]	0 [dBm]	1 [dBm]	0 + 1 [dBm]	
11ac-20 MIMO	0	-11.91	**-11.81**	0.064	0.066	0.130	-8.85	0.56	-	-	-8.29	* timed average worst
	1	-11.96	-12.32	0.064	0.059	0.122	-9.13	1.00	-	-	-8.13	
	2	-12.53	-12.68	0.056	0.054	0.110	-9.59	1.35	-	-	-8.25	
	3	-12.51	-12.59	0.056	0.055	0.111	-9.54	1.64	-	-	**-7.90**	* burst power worst
	4	-12.99	-13.08	0.050	0.049	0.099	-10.02	2.07	-	-	-7.96	
	5	-13.35	-13.41	0.046	0.046	0.092	-10.37	2.43	-	-	-7.94	
	6	-13.43	-13.64	0.045	0.043	0.089	-10.52	2.53	-	-	-8.00	
	7	-13.72	-13.67	0.042	0.043	0.085	-10.68	2.66	-	-	-8.03	
	8	-13.79	-14.01	0.042	0.040	0.082	-10.89	2.88	-	-	-8.01	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5230 MHz

Mode	MCS Number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]	0 [mW]	1 [mW]	0 + 1 [mW]	0 + 1 [dBm]	[dB]	0 [dBm]	1 [dBm]	0 + 1 [dBm]	
11n-40 MIMO	8	-12.27	**-12.18**	0.059	0.061	0.120	-9.21	1.02	-	-	-8.19	* timed average worst
	9	-13.01	-12.86	0.050	0.052	0.102	-9.92	1.67	-	-	-8.25	
	10	-13.50	-13.63	0.045	0.043	0.088	-10.55	2.10	-	-	-8.45	
	11	-13.67	-13.70	0.043	0.043	0.086	-10.67	2.50	-	-	**-8.17**	* burst power worst
	12	-14.24	-14.19	0.038	0.038	0.076	-11.20	2.94	-	-	-8.26	
	13	-14.54	-14.51	0.035	0.035	0.071	-11.51	3.33	-	-	-8.18	
	14	-14.68	-14.66	0.034	0.034	0.068	-11.66	3.43	-	-	-8.23	
	15	-14.78	-14.74	0.033	0.034	0.067	-11.75	3.57	-	-	-8.18	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

5230 MHz

Mode	MCS Number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]	0 [mW]	1 [mW]	0 + 1 [mW]	0 + 1 [dBm]	[dB]	0 [dBm]	1 [dBm]	0 + 1 [dBm]	
11ac-40 MIMO	0	**-12.55**	-12.72	0.056	0.053	0.109	-9.62	1.02	-	-	-8.60	* timed average worst
	1	-13.18	-13.22	0.048	0.048	0.096	-10.19	1.66	-	-	-8.53	
	2	-13.68	-13.82	0.043	0.041	0.084	-10.74	2.09	-	-	-8.65	
	3	-13.94	-13.70	0.040	0.043	0.083	-10.81	2.44	-	-	**-8.37**	* burst power worst
	4	-14.40	-14.39	0.036	0.036	0.073	-11.38	2.85	-	-	-8.53	
	5	-14.84	-14.69	0.033	0.034	0.067	-11.75	3.22	-	-	-8.53	
	6	-14.97	-14.79	0.032	0.033	0.065	-11.87	3.35	-	-	-8.52	
	7	-15.01	-15.08	0.032	0.031	0.063	-12.03	3.46	-	-	-8.57	
	8	-15.19	-15.01	0.030	0.032	0.062	-12.09	3.55	-	-	-8.54	
	9	-15.24	-15.41	0.030	0.029	0.059	-12.31	3.71	-	-	-8.60	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

5210 MHz

Mode	MCS Number	Reading (timed average) Antenna						Duty factor	Burst power Antenna			Remarks
		0 [dBm]	1 [dBm]	0 [mW]	1 [mW]	0 + 1 [mW]	0 + 1 [dBm]	[dB]	0 [dBm]	1 [dBm]	0 + 1 [dBm]	
11ac-80 MIMO	0	**-18.05**	-18.23	0.016	0.015	0.031	-15.13	1.75	-	-	-13.38	* timed average worst
	1	-19.11	-18.98	0.012	0.013	0.025	-16.03	2.51	-	-	-13.52	
	2	-19.52	-19.50	0.011	0.011	0.022	-16.50	2.94	-	-	-13.56	
	3	-19.50	-19.45	0.011	0.011	0.023	-16.46	3.23	-	-	**-13.23**	* burst power worst
	4	-19.85	-19.86	0.010	0.010	0.021	-16.84	3.59	-	-	-13.25	
	5	-20.13	-20.11	0.010	0.010	0.019	-17.11	3.86	-	-	-13.25	
	6	-20.16	-20.36	0.010	0.009	0.019	-17.25	3.87	-	-	-13.38	
	7	-20.28	-20.54	0.009	0.009	0.018	-17.40	4.01	-	-	-13.39	
	8	-20.29	-20.57	0.009	0.009	0.018	-17.42	4.02	-	-	-13.40	
	9	-20.47	-20.55	0.009	0.009	0.018	-17.50	4.19	-	-	-13.31	

* Worst rate

Sample Calculation:

Burst power = Reading (timed average) + Duty factor

All comparison were carried out on same frequency and measurement factors.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11a, 6 Mbps)

Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5180	-8.96	2.00	20.06	13.10	20.42
5220	-9.05	2.00	20.05	13.00	19.95
5240	-9.19	2.00	20.05	12.86	19.32
5260	-8.46	2.01	20.05	13.60	22.91
5300	-8.44	2.01	20.04	13.61	22.96
5320	-8.55	2.01	20.04	13.50	22.39

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

The test was performed with condition that obtained the maximum Timed average power in pre-check.

(Tx, 11n-20, MCS 0)

Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5180	-9.12	2.00	20.06	12.94	19.68
5220	-8.74	2.00	20.05	13.31	21.43
5240	-8.61	2.00	20.05	13.44	22.08
5260	-8.44	2.01	20.05	13.62	23.01
5300	-8.41	2.01	20.04	13.64	23.12
5320	-8.56	2.01	20.04	13.49	22.34

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

The test was performed with condition that obtained the maximum Timed average power in pre-check.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11ac-20, MCS 0)
Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5180	-8.36	2.00	20.06	13.70	23.44
5220	-8.52	2.00	20.05	13.53	22.54
5240	-8.56	2.00	20.05	13.49	22.34
5260	-7.92	2.01	20.05	14.14	25.94
5300	-7.98	2.01	20.04	14.07	25.53
5320	-8.02	2.01	20.04	14.03	25.29

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

The test was performed with condition that obtained the maximum Timed average power in pre-check.

(Tx, 11n-40, MCS 0)
Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5190	-12.67	2.00	20.06	9.39	8.69
-	-	-	-	-	-
5230	-9.62	2.00	20.05	12.43	17.50
5270	-8.88	2.01	20.05	13.18	20.80
-	-	-	-	-	-
5310	-8.82	2.01	20.04	13.23	21.04

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

The test was performed with condition that obtained the maximum Timed average power in pre-check.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11ac-40, MCS 0)

Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5190	-12.62	2.00	20.06	9.44	8.79
-	-	-	-	-	-
5230	-9.69	2.00	20.05	12.36	17.22
5270	-8.90	2.01	20.05	13.16	20.70
-	-	-	-	-	-
5310	-8.81	2.01	20.04	13.24	21.09

Sample Calculation:

Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

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

The test was performed with condition that obtained the maximum Timed average power in pre-check.

(Tx, 11ac-80, MCS 0)

Antenna: 0

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	[mW]
5210	-14.69	2.00	20.05	7.36	5.45
-	-	-	-	-	-
-	-	-	-	-	-
5290	-14.54	2.01	20.05	7.52	5.65
-	-	-	-	-	-
-	-	-	-	-	-

Sample Calculation:

Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

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

The test was performed with condition that obtained the maximum Timed average power in pre-check.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11n-20, MIMO, MCS 8)

	Antenna: 0				Antenna: 1				Antenna: 0 + 1			
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Result (Timed average) Antenna 1 [mW]	Antenna 2 [mW]	Sum 1+2 [mW]	[dBm]
5180	-11.68	2.00	20.06	10.38	-11.77	1.88	20.06	10.17	10.91	10.41	21.32	13.29
5220	-11.55	2.00	20.05	10.50	-11.69	1.88	20.05	10.24	11.22	10.58	21.80	13.38
5240	-11.66	2.00	20.05	10.39	-11.75	1.88	20.05	10.18	10.94	10.43	21.37	13.30
5260	-11.54	2.01	20.05	10.52	-11.37	1.89	20.05	10.57	11.27	11.41	22.68	13.56
5300	-11.58	2.01	20.04	10.47	-11.40	1.89	20.04	10.53	11.14	11.31	22.45	13.51
5320	-11.64	2.01	20.04	10.41	-11.52	1.89	20.04	10.41	10.99	11.00	21.99	13.42

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

(Tx, 11ac-20, MIMO, MCS 0)

	Antenna: 0				Antenna: 1				Antenna: 0 + 1			
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Result (Timed average) Antenna 1 [mW]	Antenna 2 [mW]	Sum 1+2 [mW]	[dBm]
5180	-11.71	2.00	20.06	10.35	-11.62	1.88	20.06	10.32	10.84	10.77	21.61	13.35
5220	-11.91	2.00	20.05	10.14	-11.81	1.88	20.05	10.12	10.33	10.29	20.62	13.14
5240	-11.93	2.00	20.05	10.12	-11.83	1.88	20.05	10.10	10.28	10.24	20.52	13.12
5260	-13.01	2.01	20.05	9.05	-11.54	1.89	20.05	10.40	8.04	10.97	19.01	12.79
5300	-13.12	2.01	20.04	8.93	-11.64	1.89	20.04	10.29	7.82	10.70	18.52	12.68
5320	-13.24	2.01	20.04	8.81	-11.78	1.89	20.04	10.15	7.60	10.36	17.96	12.54

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11n-40, MIMO, MCS 8)

	Antenna: 0				Antenna: 1				Antenna: 0 + 1			
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Result (Timed average) Antenna 1 [mW]	Antenna 2 [mW]	Sum 1+2 [mW]	[dBm]
5190	-16.35	2.00	20.06	5.71	-16.44	1.88	20.06	5.50	3.72	3.55	7.28	8.62
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-12.27	2.00	20.05	9.78	-12.18	1.88	20.05	9.75	9.51	9.45	18.96	12.78
5270	-12.11	2.01	20.05	9.95	-11.94	1.89	20.05	10.00	9.89	10.01	19.89	12.99
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-12.34	2.01	20.04	9.71	-12.12	1.89	20.04	9.81	9.35	9.58	18.93	12.77

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

(Tx, 11ac-40, MIMO, MCS 0)

	Antenna: 0				Antenna: 1				Antenna: 0 + 1			
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Result (Timed average) Antenna 1 [mW]	Antenna 2 [mW]	Sum 1+2 [mW]	[dBm]
5190	-16.25	2.00	20.06	5.81	-16.28	1.88	20.06	5.66	3.81	3.68	7.50	8.75
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-12.55	2.00	20.05	9.50	-12.72	1.88	20.05	9.21	8.91	8.34	17.26	12.37
5270	-12.68	2.01	20.05	9.38	-12.06	1.89	20.05	9.88	8.67	9.74	18.41	12.65
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-12.77	2.01	20.04	9.28	-12.15	1.89	20.04	9.78	8.47	9.51	17.99	12.55

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

Average Output Power
(Reference data for RF Exposure)

Test place	Shonan EMC Lab. No.1 Measurement Room			
Report No.	11334871S-M			
Date	November 7, 2016	November 9, 2016	November 15, 2016	November 16, 2016
Temperature / Humidity	26 deg. C / 35 % RH	25 deg. C / 34 % RH	25 deg. C / 34 % RH	24 deg. C / 40 % RH
Engineer	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi	Kenichi Adachi
Mode	Tx			

(Tx, 11ac-80, MIMO, MCS 0)

	Antenna: 0				Antenna: 1				Antenna: 0 + 1			
Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Timed average) [dBm]	Result (Timed average) Antenna 1 [mW]	Antenna 2 [mW]	Sum 1+2 [mW]	[dBm]
5210	-18.05	2.00	20.05	4.00	-18.23	1.88	20.05	3.70	2.51	2.35	4.86	6.86
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
5290	-17.54	2.01	20.05	4.52	-17.86	1.89	20.05	4.08	2.83	2.56	5.39	7.32
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

Sample Calculation:
Result (Timed average) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss
*The equipment and cables were not used for factor 0 dB of the data sheets.

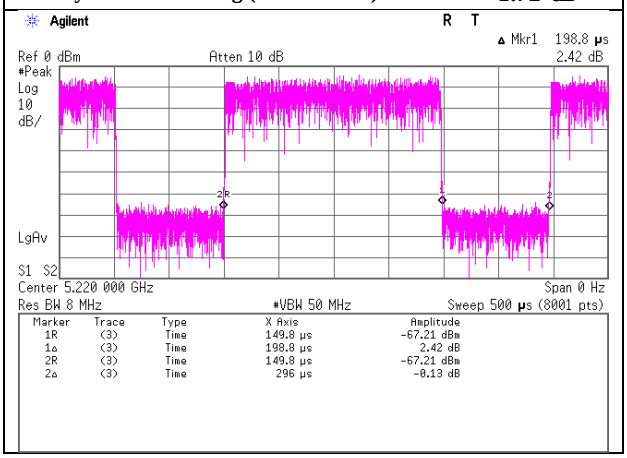
Burst rate confirmation

(for Maximum Conducted Output Power)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	26 deg. C / 36 % RH
Engineer	Shinichi Takano
Mode	Tx

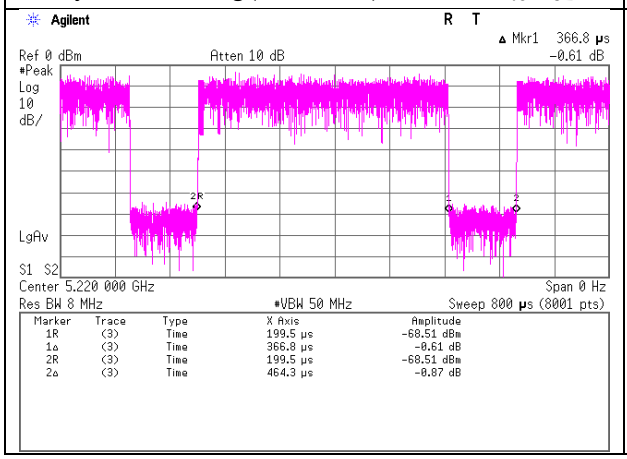
11a, 48 Mbps

Tx on / (Tx on + Tx off) =	0.672
Tx on / (Tx on + Tx off) * 100 =	67.2 %
Duty factor = 10 * log (0.296 / 0.199) =	1.72 dB



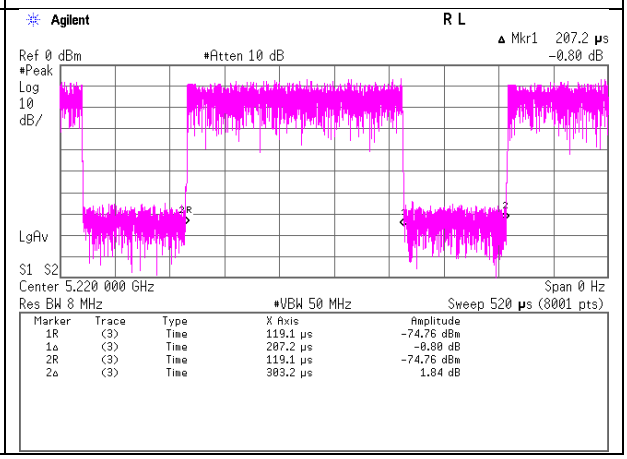
11n-20, SISO, MCS 3

Tx on / (Tx on + Tx off) =	0.790
Tx on / (Tx on + Tx off) * 100 =	79.0 %
Duty factor = 10 * log (0.464 / 0.367) =	1.02 dB



11n-20, MIMO MCS 11

Tx on / (Tx on + Tx off) =	0.683
Tx on / (Tx on + Tx off) * 100 =	68.3 %
Duty factor = 10 * log (0.303 / 0.207) =	1.65 dB



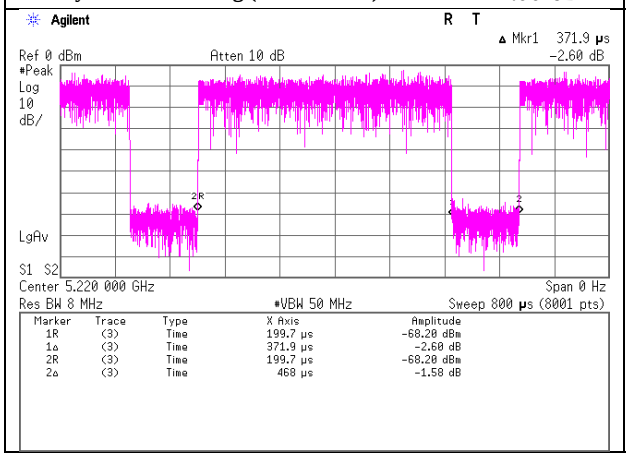
Burst rate confirmation

(for Maximum Conducted Output Power)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	26 deg. C / 36 % RH
Engineer	Shinichi Takano
Mode	Tx

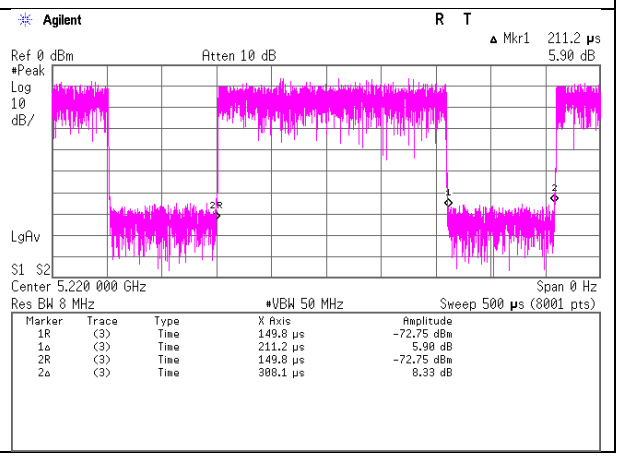
11ac-20, SISO, MCS 3

Tx on / (Tx on + Tx off) =	0.795
Tx on / (Tx on + Tx off) * 100 =	79.5 %
Duty factor = 10 * log (0.468 / 0.372) =	1.00 dB



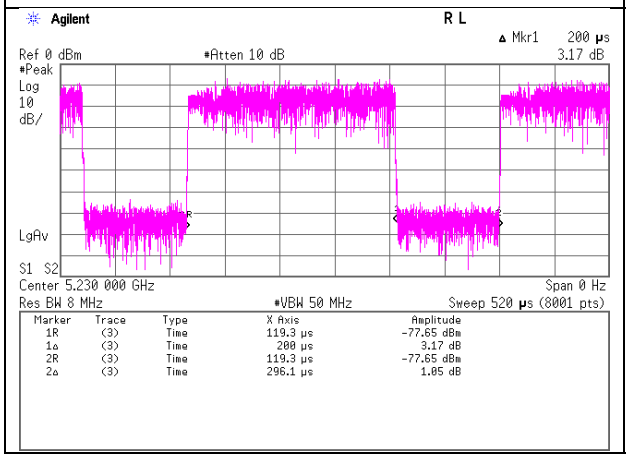
11ac-20, MIMO, MCS 3

Tx on / (Tx on + Tx off) =	0.685
Tx on / (Tx on + Tx off) * 100 =	68.5 %
Duty factor = 10 * log (0.308 / 0.211) =	1.64 dB



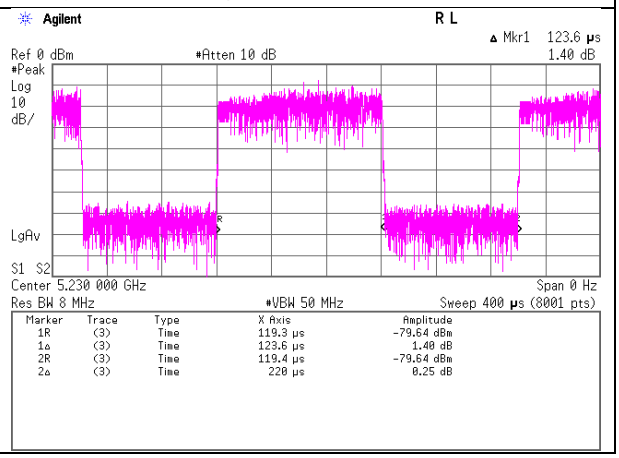
11n-40, SISO, MCS 3

Tx on / (Tx on + Tx off) =	0.676
Tx on / (Tx on + Tx off) * 100 =	67.6 %
Duty factor = 10 * log (0.296 / 0.2) =	1.70 dB



11n-40, MIMO MCS 11

Tx on / (Tx on + Tx off) =	0.562
Tx on / (Tx on + Tx off) * 100 =	56.2 %
Duty factor = 10 * log (0.22 / 0.124) =	2.50 dB



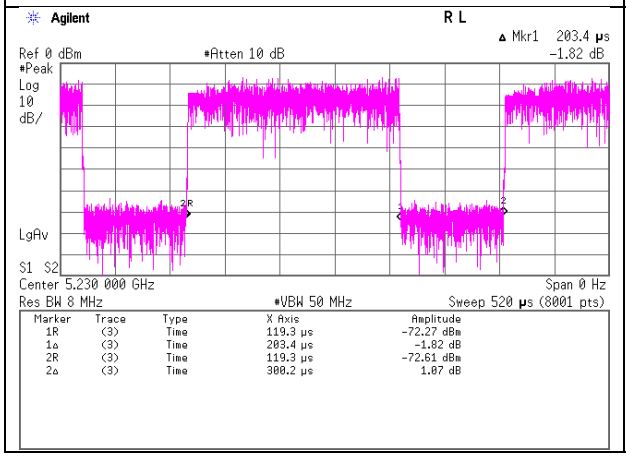
Burst rate confirmation

(for Maximum Conducted Output Power)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	26 deg. C / 36 % RH
Engineer	Shinichi Takano
Mode	Tx

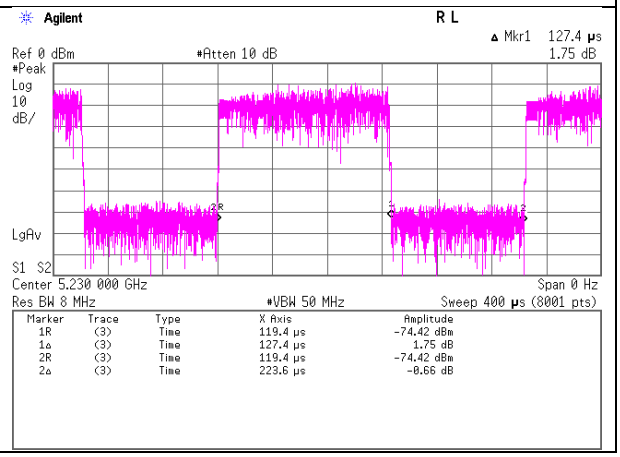
11ac-40, SISO, MCS 3

Tx on / (Tx on + Tx off) =	0.678
Tx on / (Tx on + Tx off) * 100 =	67.8 %
Duty factor = 10 * log (0.3 / 0.203) =	1.70 dB



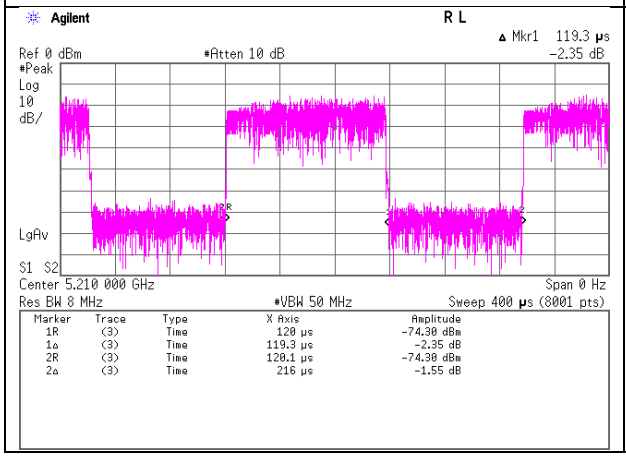
11ac-40, MIMO, MCS 3

Tx on / (Tx on + Tx off) =	0.570
Tx on / (Tx on + Tx off) * 100 =	57.0 %
Duty factor = 10 * log (0.224 / 0.127) =	2.44 dB



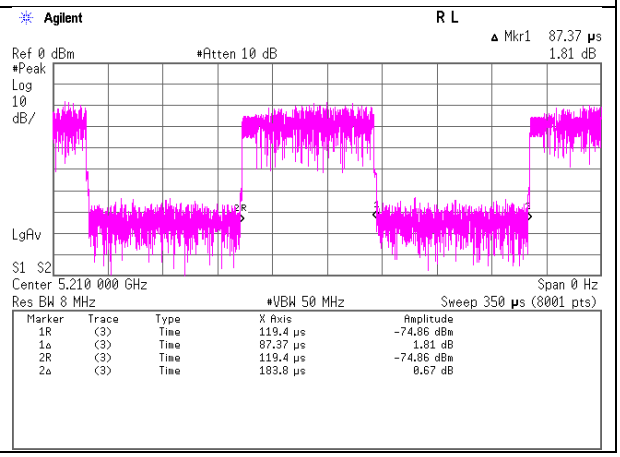
11ac-80, SISO, MCS 3

Tx on / (Tx on + Tx off) =	0.552
Tx on / (Tx on + Tx off) * 100 =	55.2 %
Duty factor = 10 * log (0.216 / 0.12) =	2.63 dB



11ac-80, MIMO, MCS 3

Tx on / (Tx on + Tx off) =	0.475
Tx on / (Tx on + Tx off) * 100 =	47.5 %
Duty factor = 10 * log (0.184 / 0.087) =	3.23 dB



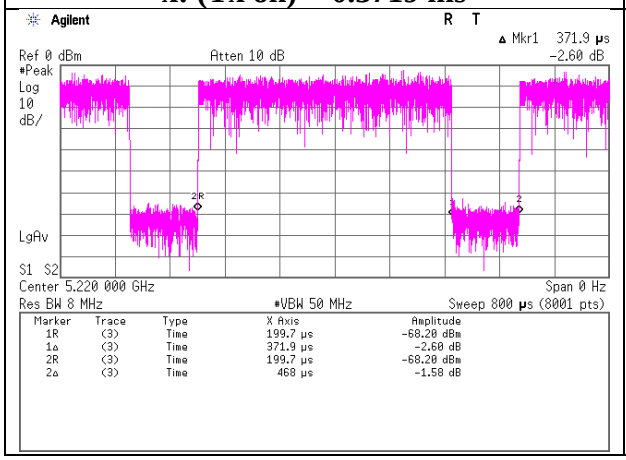
Burst rate confirmation

(for Spurious emissions)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	26 deg. C / 36 % RH
Engineer	Shinichi Takano
Mode	Tx

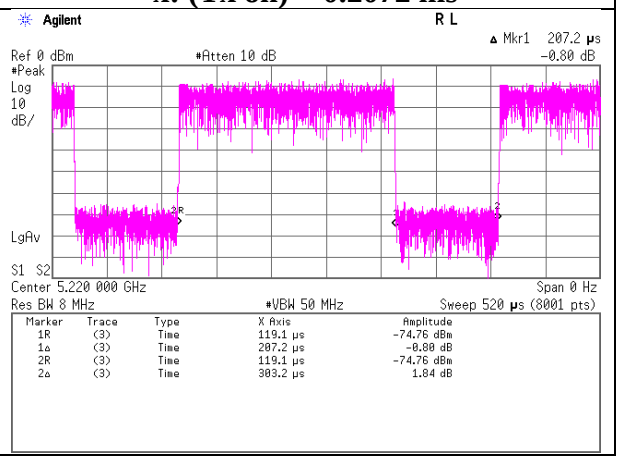
11ac-20, SISO, MCS 3

VBW: 1/x = 2700 Hz (2689 Hz)
x: (Tx on) = 0.3719 ms



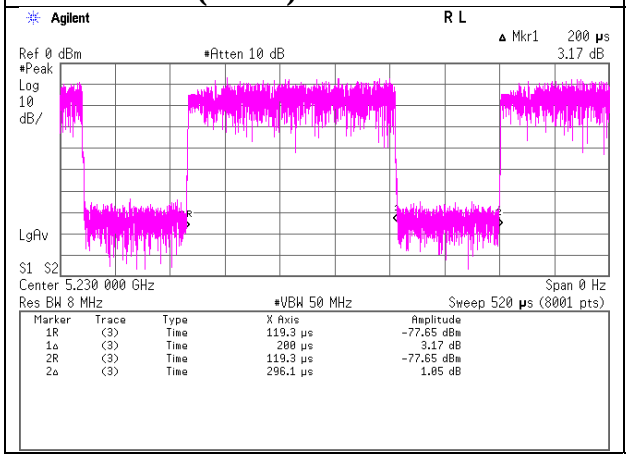
11n-20, MIMO MCS 11

VBW: 1/x = 5100 Hz (4826 Hz)
x: (Tx on) = 0.2072 ms



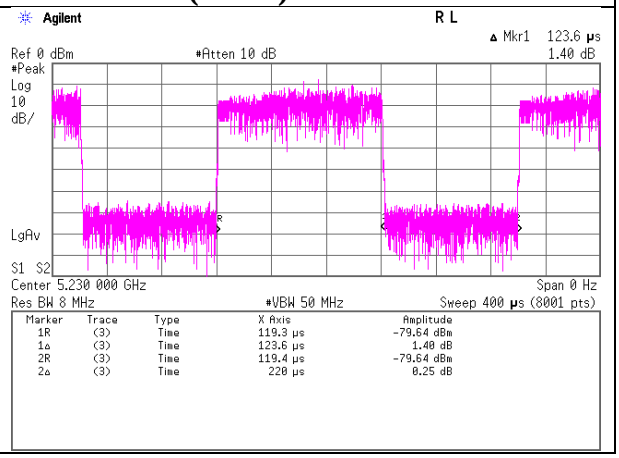
11n-40, SISO, MCS 3

VBW: 1/x = 5100 Hz (5000 Hz)
x: (Tx on) = 0.2000 ms



11n-40, MIMO MCS 11

VBW: 1/x = 8100 Hz (8091 Hz)
x: (Tx on) = 0.1236 ms



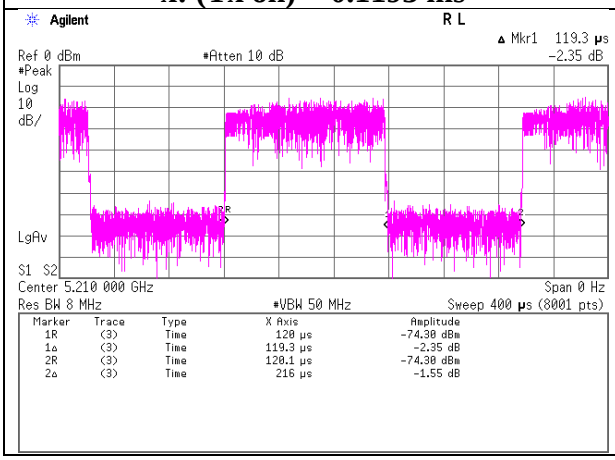
Burst rate confirmation

(for Spurious emissions)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	26 deg. C / 36 % RH
Engineer	Shinichi Takano
Mode	Tx

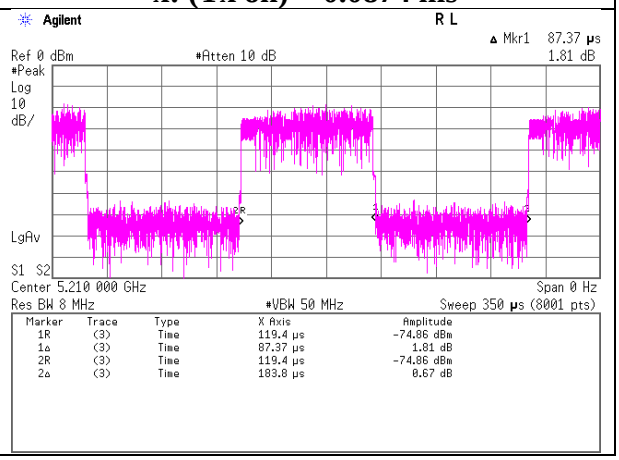
11ac-80, SISO, MCS 3

VBW: 1/x = 8400 Hz (8382 Hz)
x: (Tx on) = 0.1193 ms



11ac-80, MIMO, MCS 3

VBW: 1/x = 12000 Hz (11442 Hz)
x: (Tx on) = 0.0874 ms



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11a

(Tx, 11a)

Antenna: 0

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	-19.12	2.00	20.06	1.72	3.31	0.00	4.66	11.00	6.34	7.97	17.00	9.03
5220	-19.50	2.00	20.05	1.72	3.31	0.00	4.28	11.00	6.72	7.59	17.00	9.41
5240	-19.62	2.00	20.05	1.72	3.31	0.00	4.16	11.00	6.84	7.47	17.00	9.53
5260	-19.28	2.01	20.05	1.72	3.31	0.00	4.50	11.00	6.50	7.81	17.00	9.19
5300	-19.06	2.01	20.04	1.72	3.31	0.00	4.72	11.00	6.28	8.03	17.00	8.97
5320	-18.75	2.01	20.04	1.72	3.31	0.00	5.03	11.00	5.97	8.34	17.00	8.66

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

(Tx, 11n-20, SISO)

Antenna: 0

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	-19.15	2.00	20.06	1.02	3.31	0.00	3.93	11.00	7.07	7.24	17.00	9.76
5220	-19.11	2.00	20.05	1.02	3.31	0.00	3.96	11.00	7.04	7.27	17.00	9.73
5240	-19.15	2.00	20.05	1.02	3.31	0.00	3.92	11.00	7.08	7.23	17.00	9.77
5260	-18.90	2.01	20.05	1.02	3.31	0.00	4.18	11.00	6.82	7.49	17.00	9.51
5300	-18.92	2.01	20.04	1.02	3.31	0.00	4.15	11.00	6.85	7.46	17.00	9.54
5320	-19.13	2.01	20.04	1.02	3.31	0.00	3.93	11.00	7.07	7.24	17.00	9.76

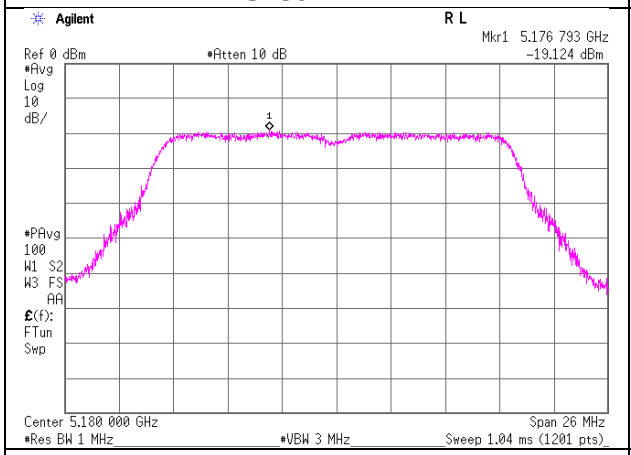
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

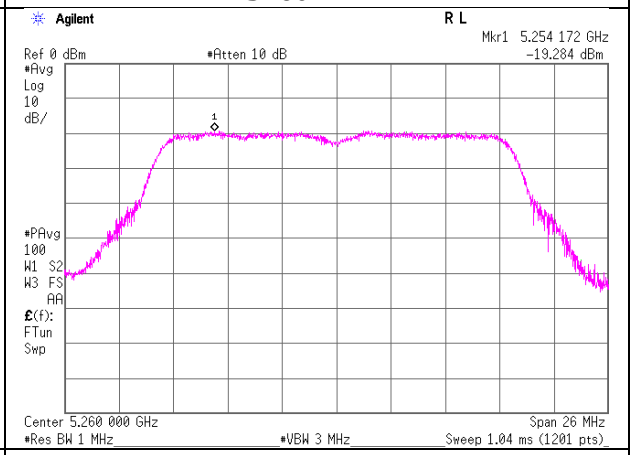
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11a

Antenna 0 (worst)

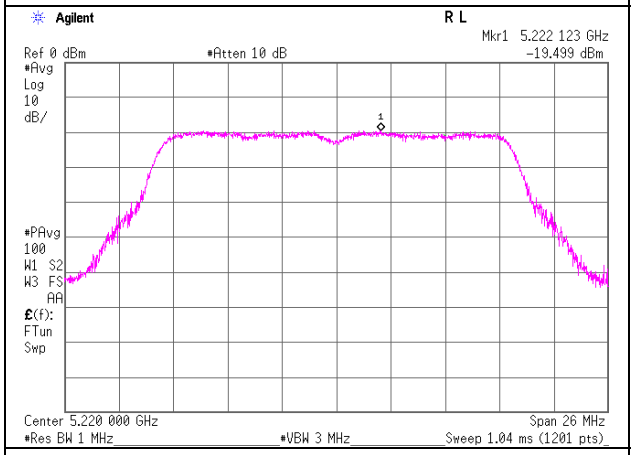
5180 MHz



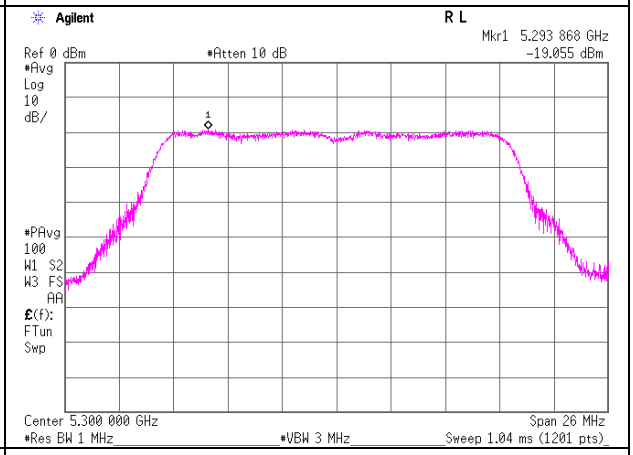
5260 MHz



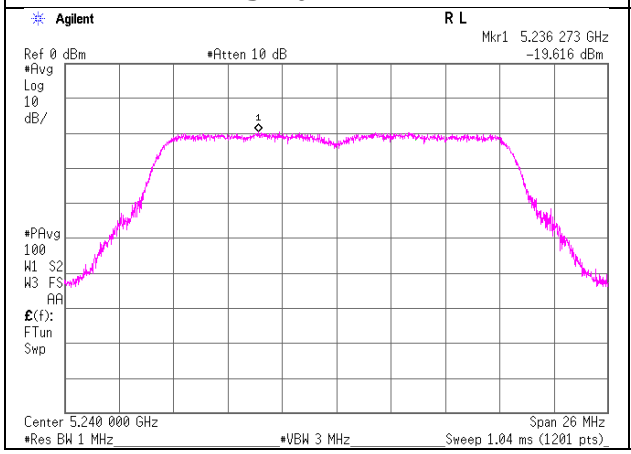
5220 MHz



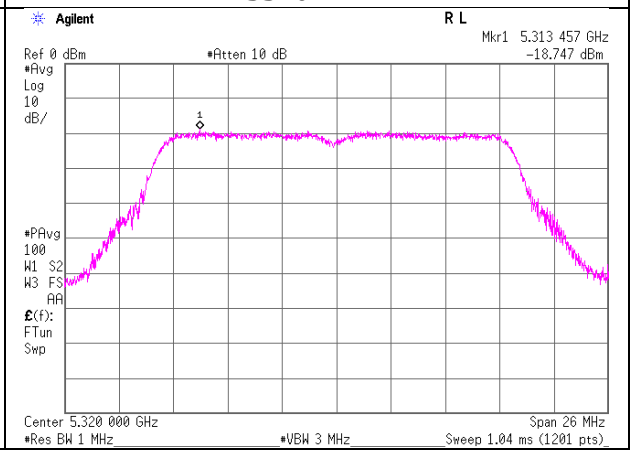
5300 MHz



5240 MHz



5320 MHz

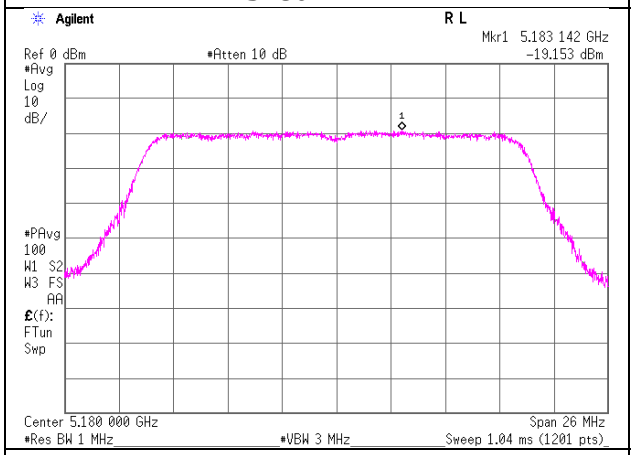


Maximum Power Spectral Density

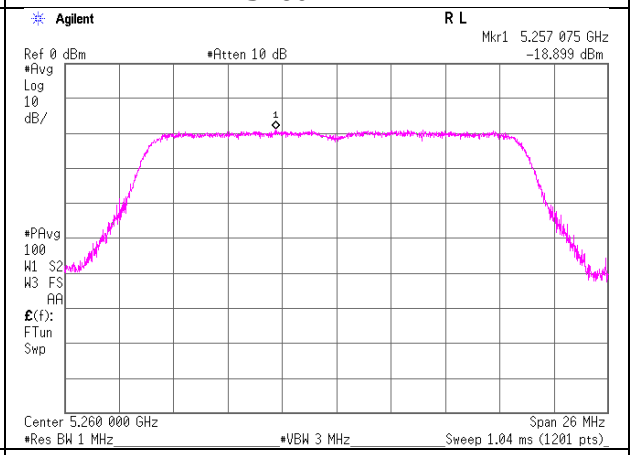
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, SISO

Antenna 0 (worst)

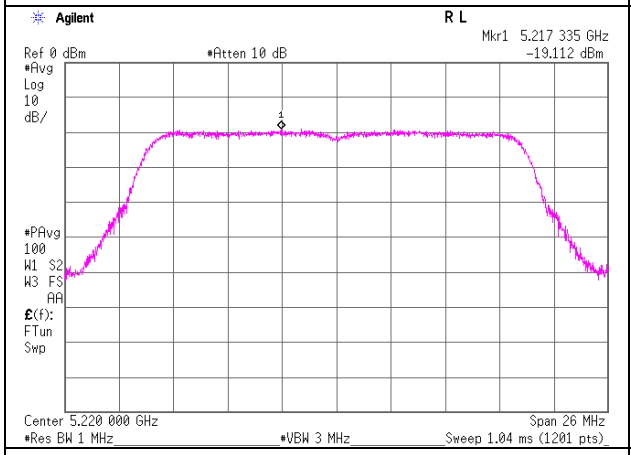
5180 MHz



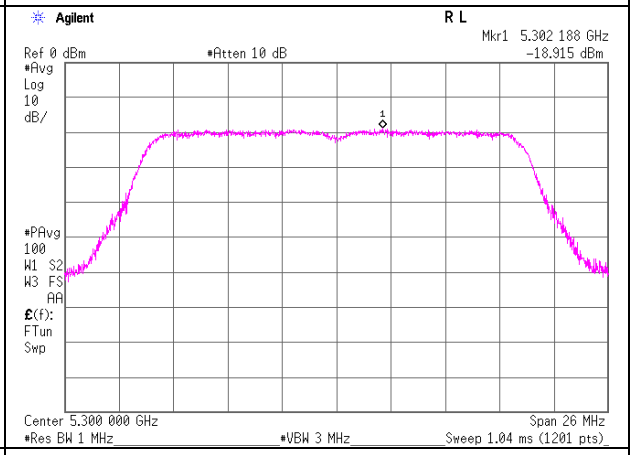
5260 MHz



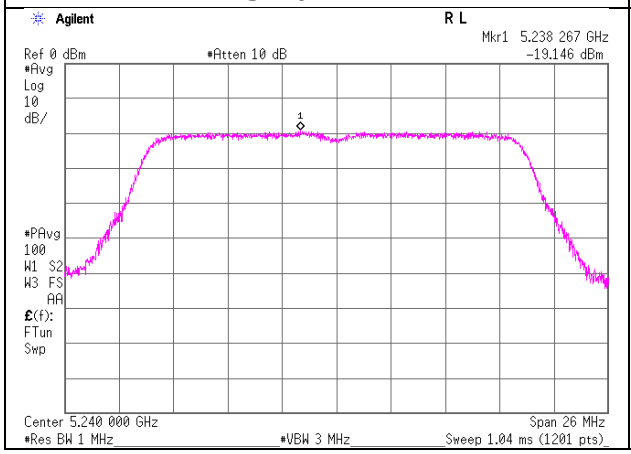
5220 MHz



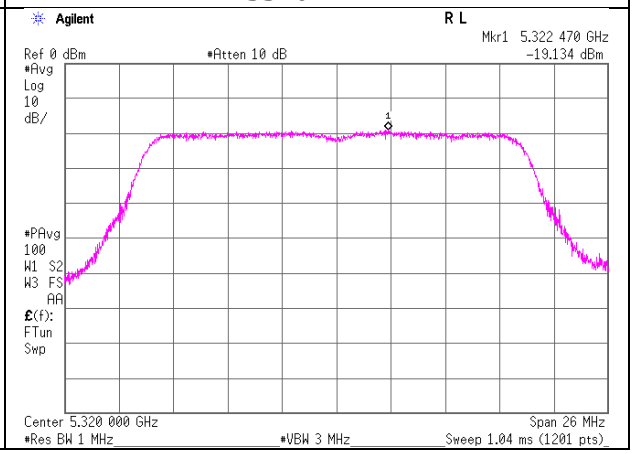
5300 MHz



5240 MHz



5320 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, SISO

(Tx, 11ac-20, SISO)

Antenna: 0 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	-19.00	2.00	20.06	1.00	3.31	0.00	4.06	11.00	6.94	7.37	17.00	9.63
5220	-19.01	2.00	20.05	1.00	3.31	0.00	4.04	11.00	6.96	7.35	17.00	9.65
5240	-19.25	2.00	20.05	1.00	3.31	0.00	3.80	11.00	7.20	7.11	17.00	9.89
5260	-18.22	2.01	20.05	1.00	3.31	0.00	4.84	11.00	6.16	8.15	17.00	8.85
5300	-18.35	2.01	20.04	1.00	3.31	0.00	4.70	11.00	6.30	8.01	17.00	8.99
5320	-18.32	2.01	20.04	1.00	3.31	0.00	4.73	11.00	6.27	8.04	17.00	8.96

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

(Tx, 11n-40, SISO)

Antenna: 0 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	-26.52	2.00	20.06	1.70	3.31	0.00	-2.76	11.00	13.76	0.55	17.00	16.45
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-23.38	2.00	20.05	1.70	3.31	0.00	0.37	11.00	10.63	3.68	17.00	13.32
5270	-22.77	2.01	20.05	1.70	3.31	0.00	0.99	11.00	10.01	4.30	17.00	12.70
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-22.97	2.01	20.04	1.70	3.31	0.00	0.78	11.00	10.22	4.09	17.00	12.91

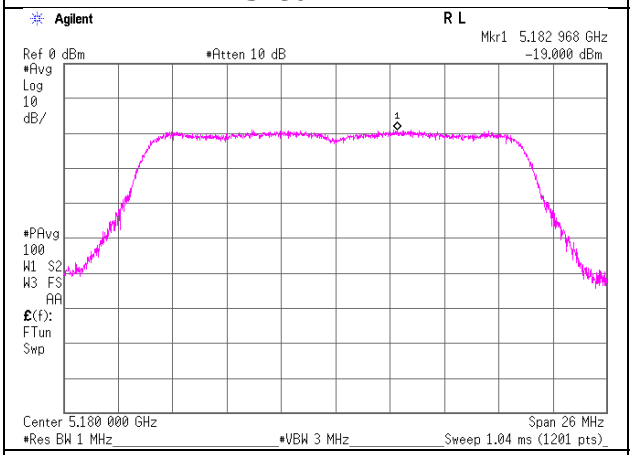
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

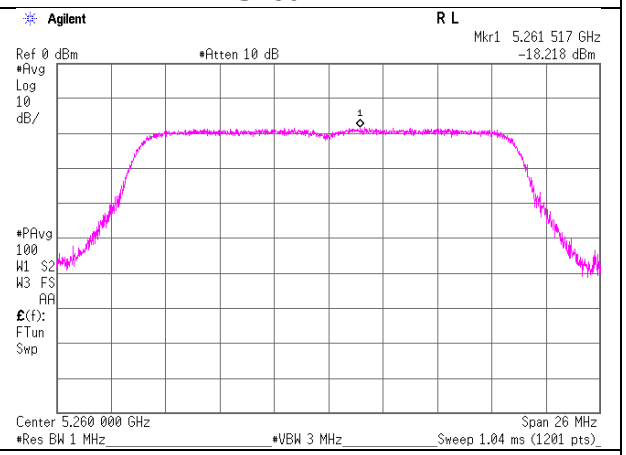
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, SISO

Antenna 0 (worst)

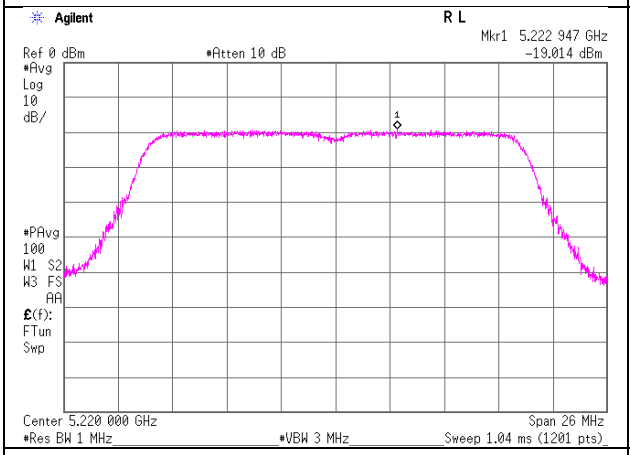
5180 MHz



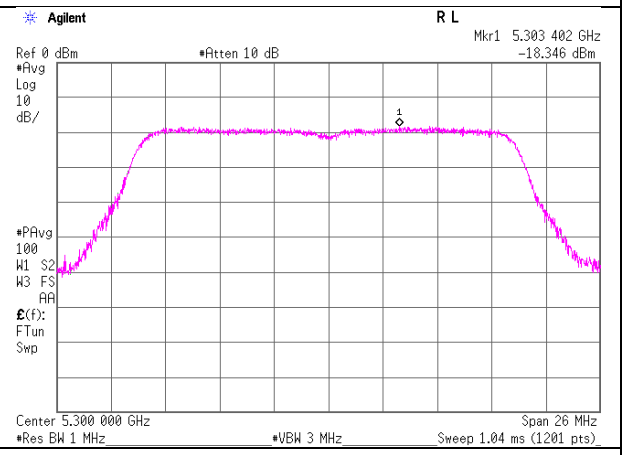
5260 MHz



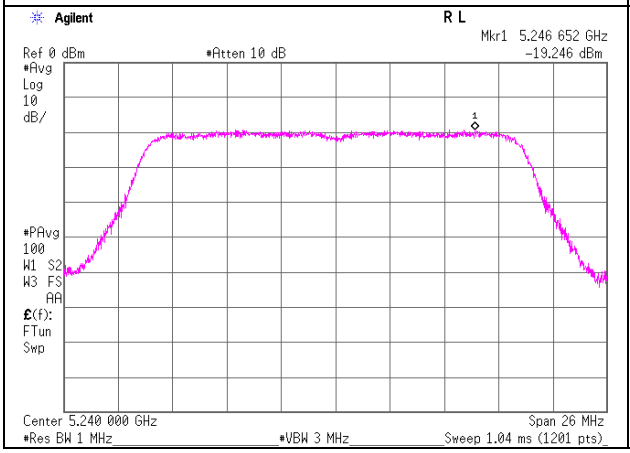
5220 MHz



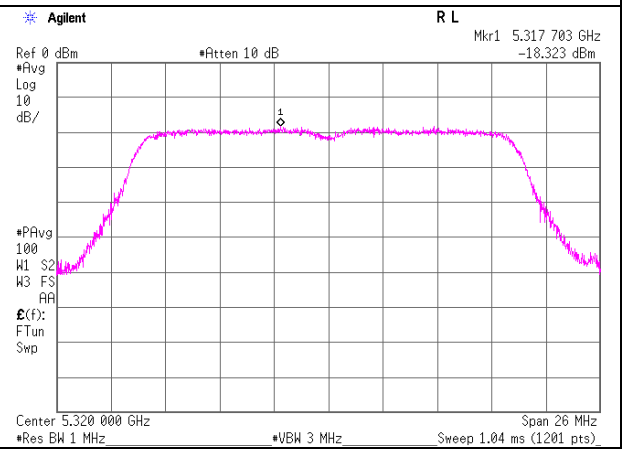
5300 MHz



5240 MHz



5320 MHz

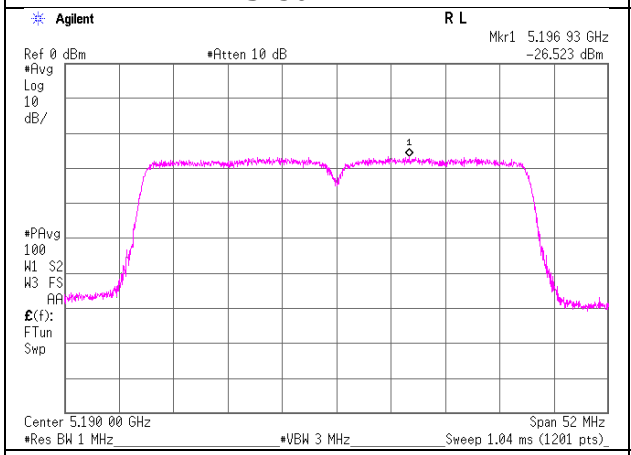


Maximum Power Spectral Density

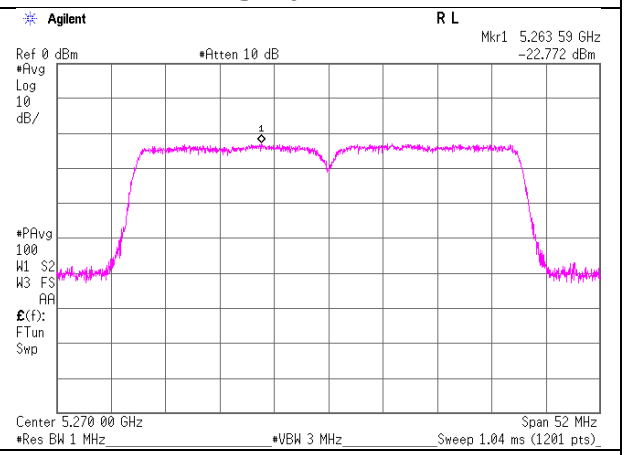
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, SISO

Antenna 0 (worst)

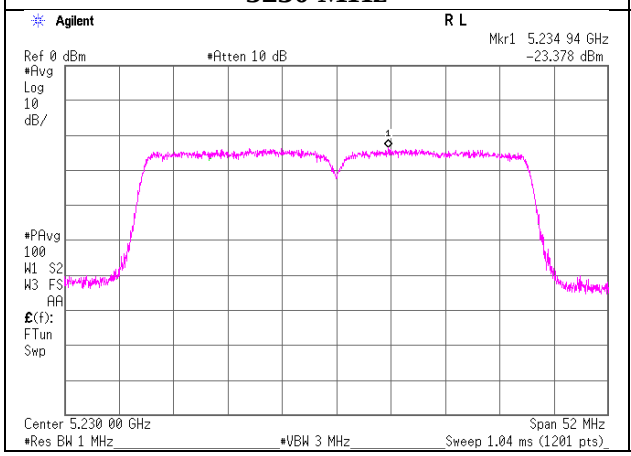
5190 MHz



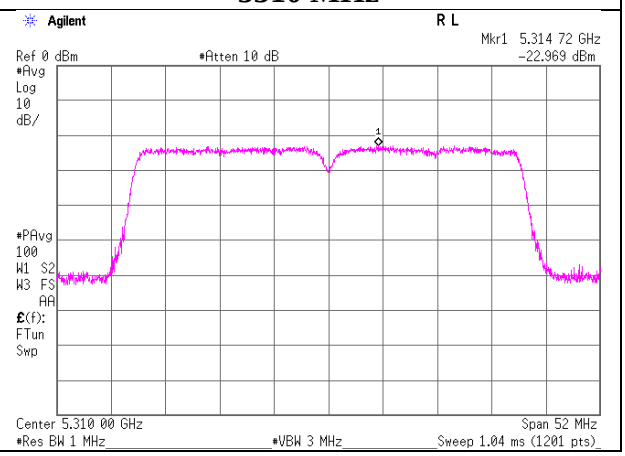
5270 MHz



5230 MHz



5310 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx

(Tx, 11ac-40, SISO)

Antenna: 0

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	-25.93	2.00	20.06	1.70	3.31	0.00	-2.17	11.00	13.17	1.14	17.00	15.86
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	-23.44	2.00	20.05	1.70	3.31	0.00	0.31	11.00	10.69	3.62	17.00	13.38
5270	-22.36	2.01	20.05	1.70	3.31	0.00	1.40	11.00	9.60	4.71	17.00	12.29
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	-22.51	2.01	20.04	1.70	3.31	0.00	1.24	11.00	9.76	4.55	17.00	12.45

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

(Tx, 11ac-80, SISO)

Antenna: 0

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	-31.41	2.00	20.05	2.63	3.31	0.00	-6.73	11.00	17.73	-3.42	17.00	20.42
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
5290	-31.60	2.01	20.05	2.63	3.31	0.00	-6.91	11.00	17.91	-3.60	17.00	20.60
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

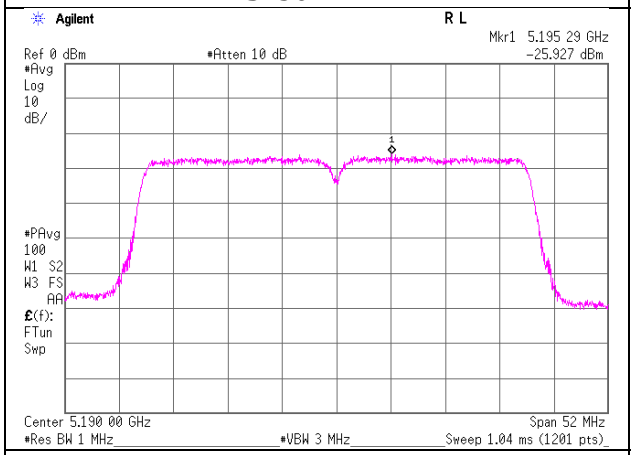
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

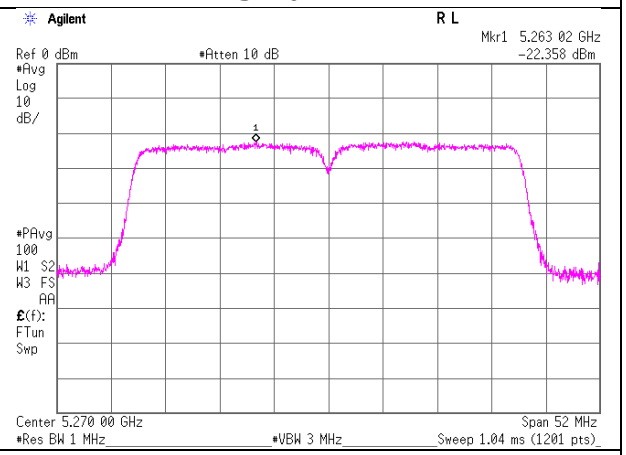
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, SISO

Antenna 0 (worst)

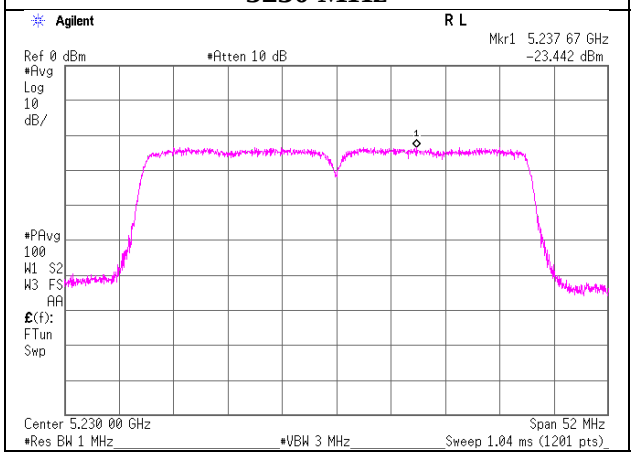
5190 MHz



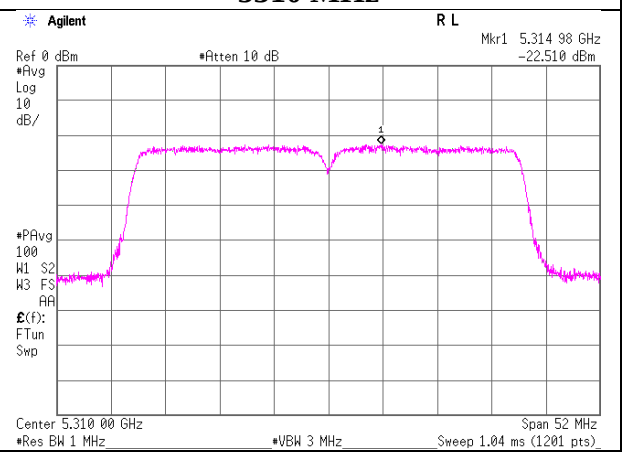
5270 MHz



5230 MHz



5310 MHz

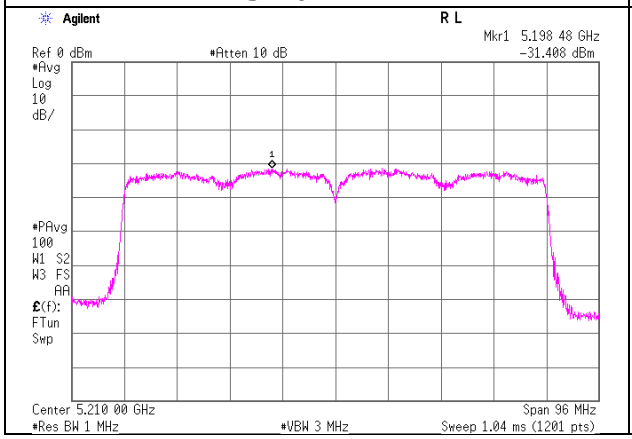


Maximum Power Spectral Density

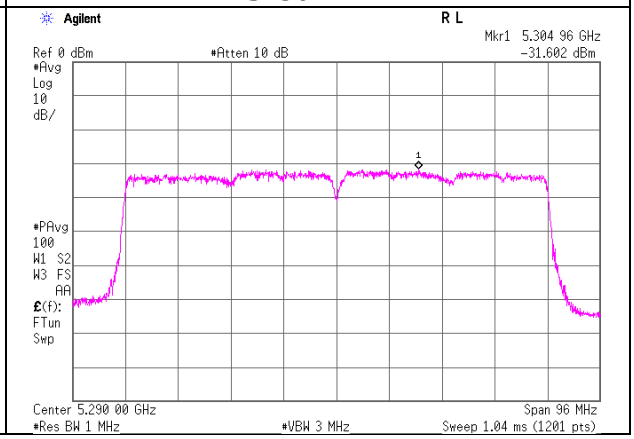
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, SISO

Antenna 0 (worst)

5210 MHz



5290 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, MIMO

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	1.00	0.94	1.95	2.90	11.00	8.10	2.15	0.76	2.91	4.64	17.00	12.36
5220	1.04	0.98	2.02	3.06	11.00	7.94	2.23	0.79	3.02	4.79	17.00	12.21
5240	1.02	0.97	1.98	2.98	11.00	8.02	2.18	0.78	2.95	4.70	17.00	12.30
5260	0.98	0.98	1.96	2.91	11.00	8.09	2.10	0.78	2.88	4.60	17.00	12.40
5300	0.97	0.94	1.91	2.81	11.00	8.19	2.07	0.75	2.83	4.52	17.00	12.48
5320	0.85	0.89	1.74	2.41	11.00	8.59	1.82	0.71	2.54	4.04	17.00	12.96

			Antenna: 0						Antenna: 1					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result		PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result	
							Cond.	e.i.r.p.					Cond.	e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5180	1.65	0.00	-23.69	2.00	20.06	3.31	0.02	3.33	-23.84	1.88	20.06	-0.96	-0.25	-1.21
5220	1.65	0.00	-23.53	2.00	20.05	3.31	0.17	3.48	-23.67	1.88	20.05	-0.96	-0.08	-1.04
5240	1.65	0.00	-23.63	2.00	20.05	3.31	0.07	3.38	-23.73	1.88	20.05	-0.96	-0.14	-1.10
5260	1.65	0.00	-23.80	2.01	20.05	3.31	-0.09	3.22	-23.70	1.89	20.05	-0.96	-0.11	-1.07
5300	1.65	0.00	-23.84	2.01	20.04	3.31	-0.14	3.17	-23.85	1.89	20.04	-0.96	-0.27	-1.23
5320	1.65	0.00	-24.40	2.01	20.04	3.31	-0.70	2.61	-24.09	1.89	20.04	-0.96	-0.51	-1.47

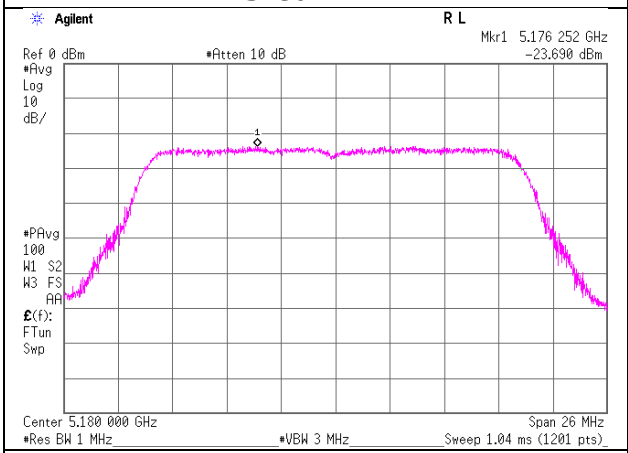
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

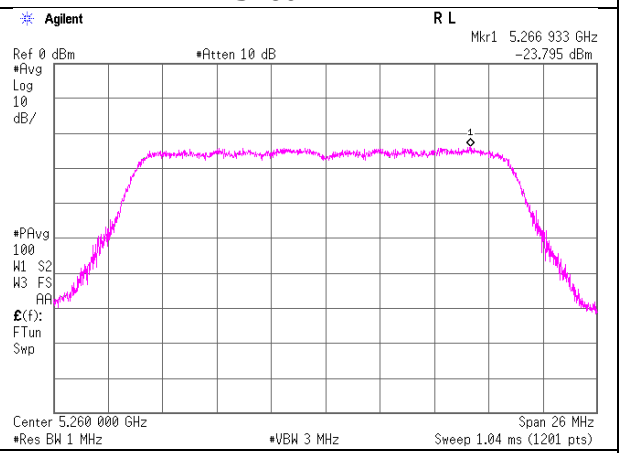
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, MIMO

Antenna 0

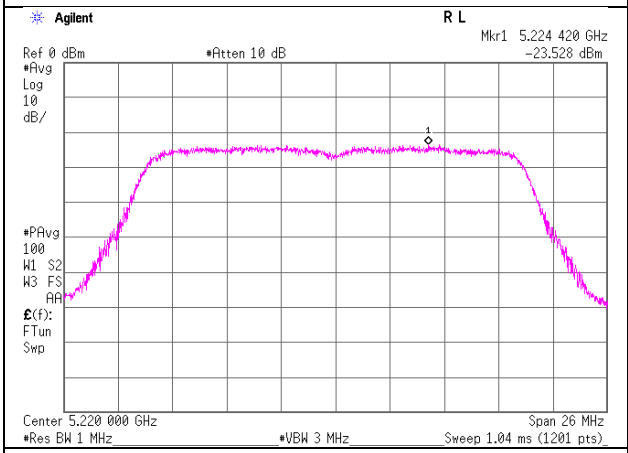
5180 MHz



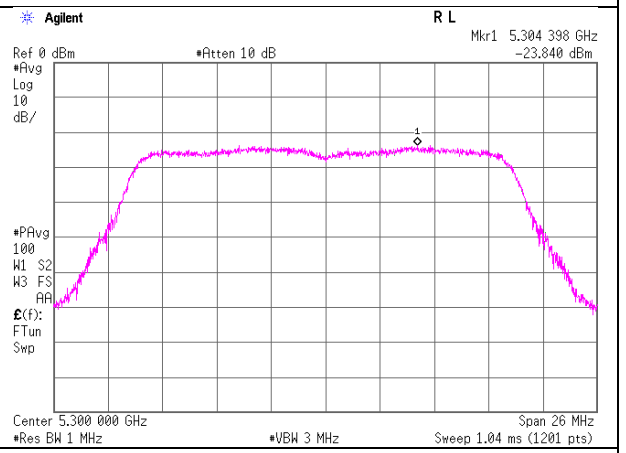
5260 MHz



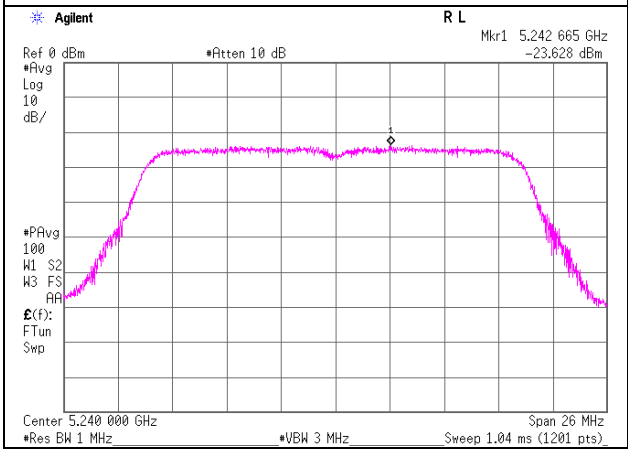
5220 MHz



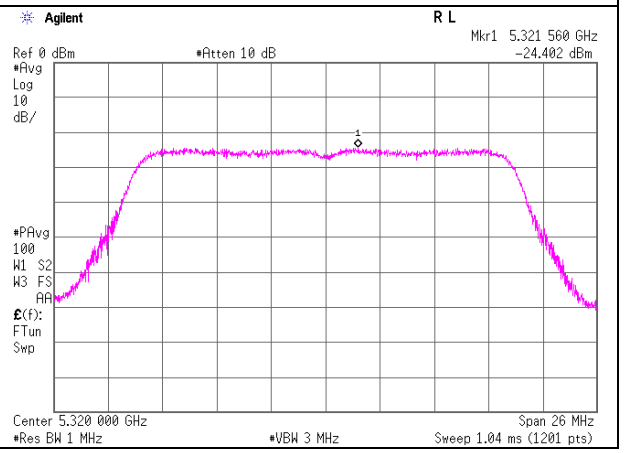
5300 MHz



5240 MHz



5320 MHz

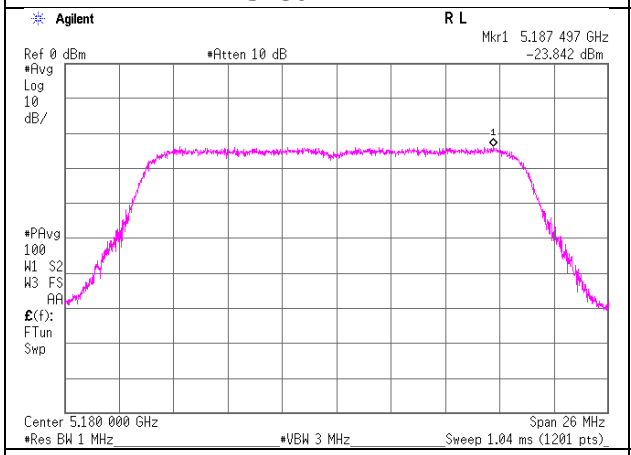


Maximum Power Spectral Densityh

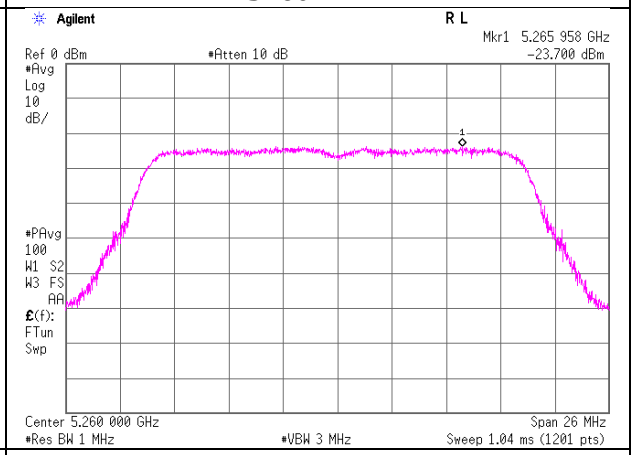
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-20, MIMO

Antenna 1

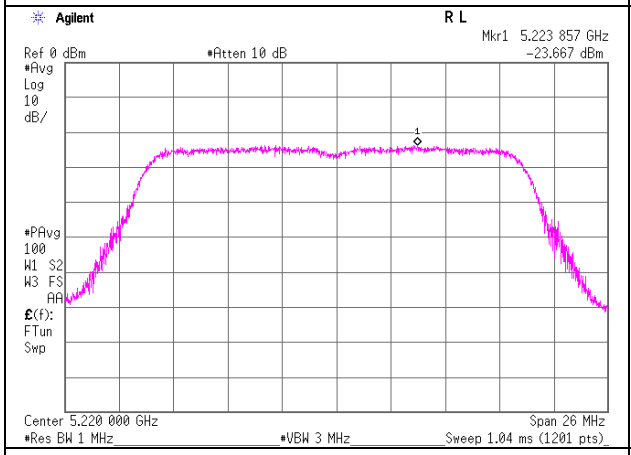
5180 MHz



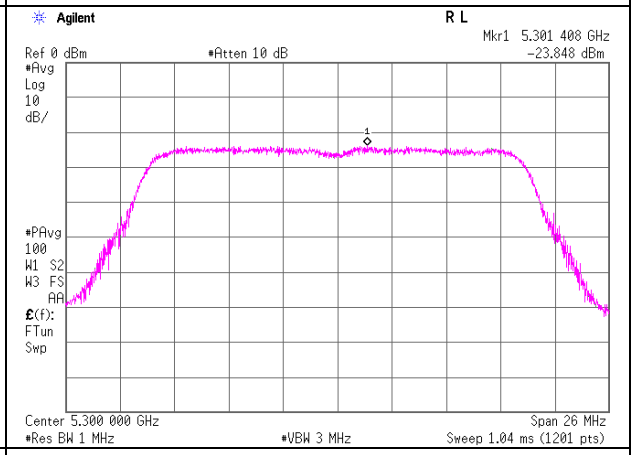
5260 MHz



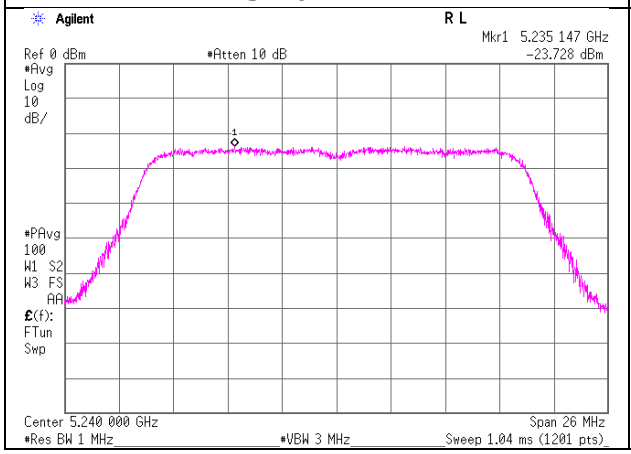
5220 MHz



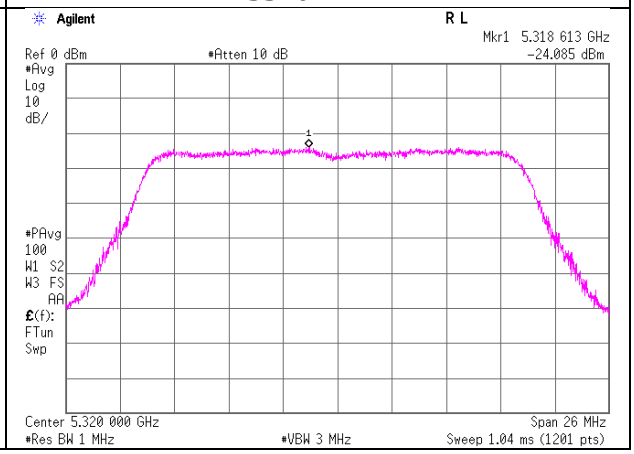
5300 MHz



5240 MHz



5320 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, MIMO

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	1.02	0.92	1.95	2.90	11.00	8.10	2.19	0.74	2.94	4.68	17.00	12.32
5220	1.02	0.93	1.96	2.91	11.00	8.09	2.19	0.75	2.94	4.68	17.00	12.32
5240	1.02	0.96	1.98	2.96	11.00	8.04	2.18	0.77	2.95	4.69	17.00	12.31
5260	0.95	0.98	1.93	2.85	11.00	8.15	2.03	0.79	2.82	4.50	17.00	12.50
5300	0.93	0.96	1.89	2.77	11.00	8.23	1.99	0.77	2.76	4.41	17.00	12.59
5320	0.86	0.96	1.82	2.61	11.00	8.39	1.84	0.77	2.61	4.17	17.00	12.83

			Antenna: 0						**Antenna: 1**					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5180	1.64	0.00	-23.60	2.00	20.06	3.31	0.10	3.41	-23.93	1.88	20.06	-0.96	-0.34	-1.30
5220	1.64	0.00	-23.60	2.00	20.05	3.31	0.09	3.40	-23.87	1.88	20.05	-0.96	-0.29	-1.25
5240	1.64	0.00	-23.62	2.00	20.05	3.31	0.07	3.38	-23.75	1.88	20.05	-0.96	-0.18	-1.14
5260	1.64	0.00	-23.93	2.01	20.05	3.31	-0.23	3.08	-23.67	1.89	20.05	-0.96	-0.09	-1.05
5300	1.64	0.00	-24.02	2.01	20.04	3.31	-0.33	2.98	-23.74	1.89	20.04	-0.96	-0.16	-1.12
5320	1.64	0.00	-24.34	2.01	20.04	3.31	-0.65	2.66	-23.74	1.89	20.04	-0.96	-0.17	-1.13

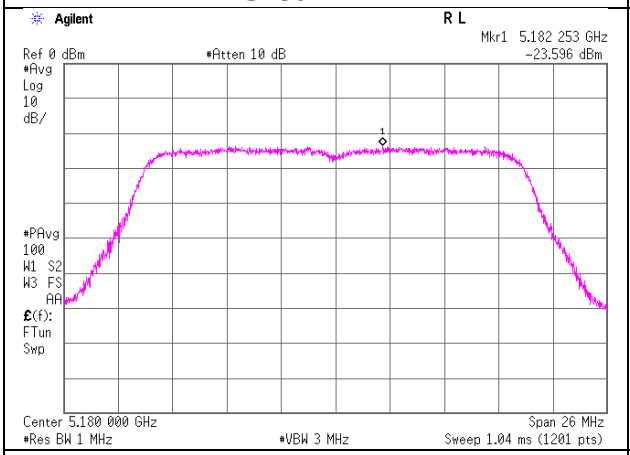
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

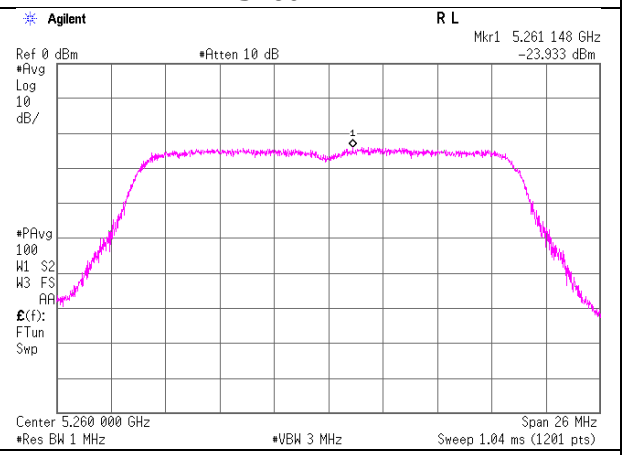
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, MIMO

Antenna 0

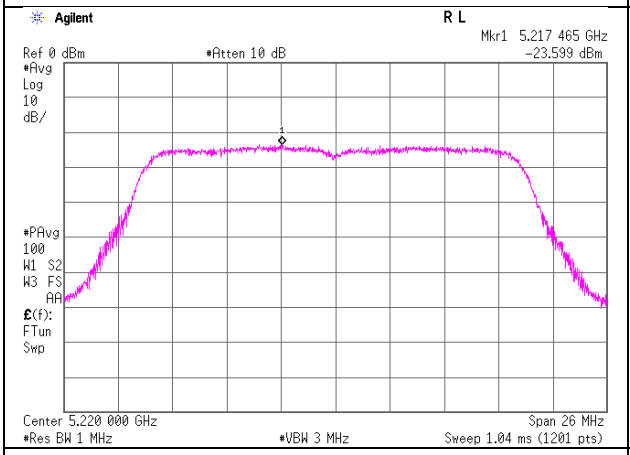
5180 MHz



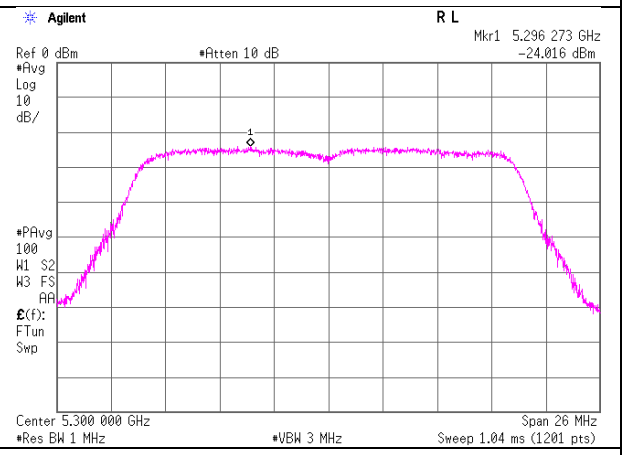
5260 MHz



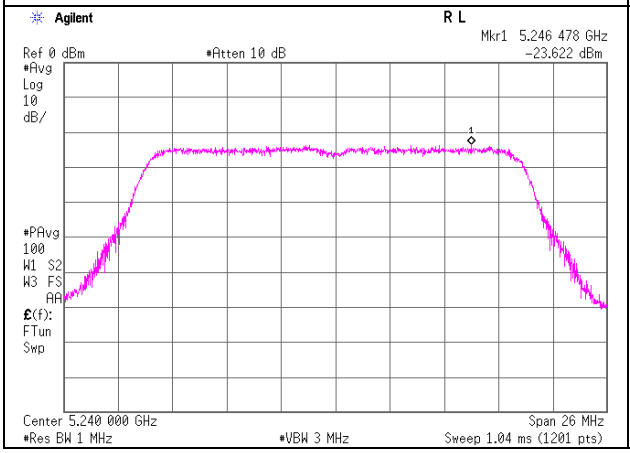
5220 MHz



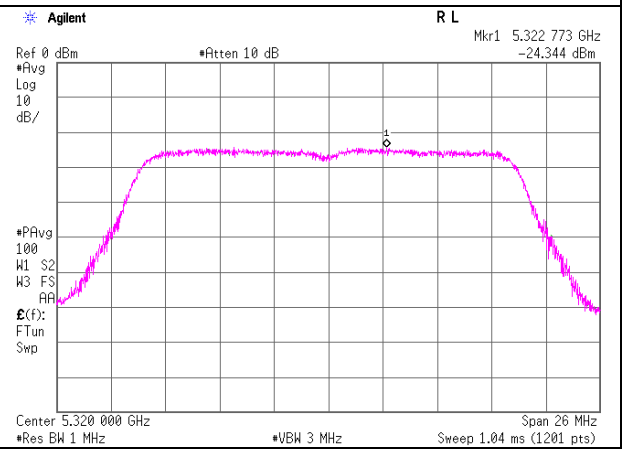
5300 MHz



5240 MHz



5320 MHz

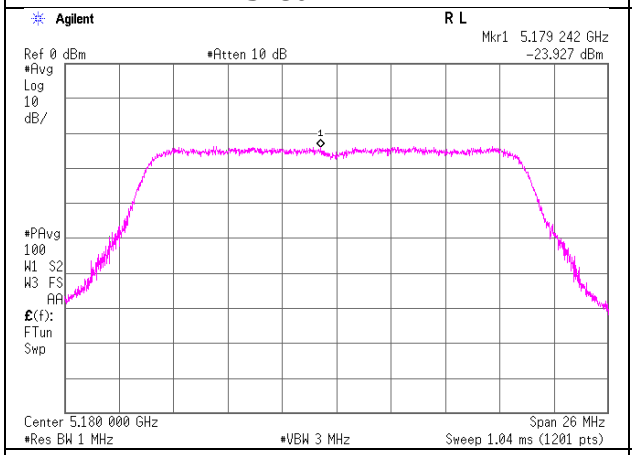


Maximum Power Spectral Density

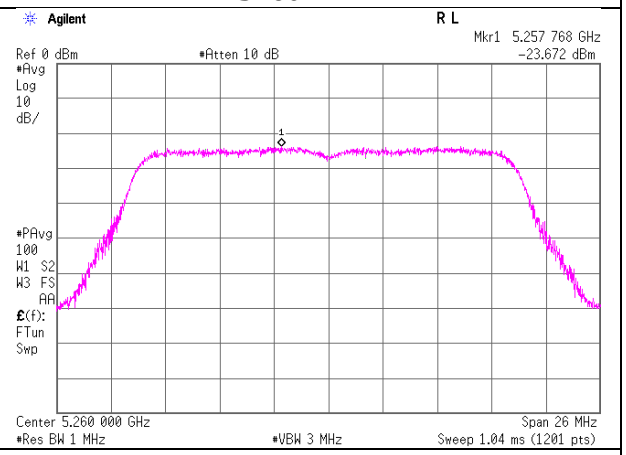
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, MIMO

Antenna 1

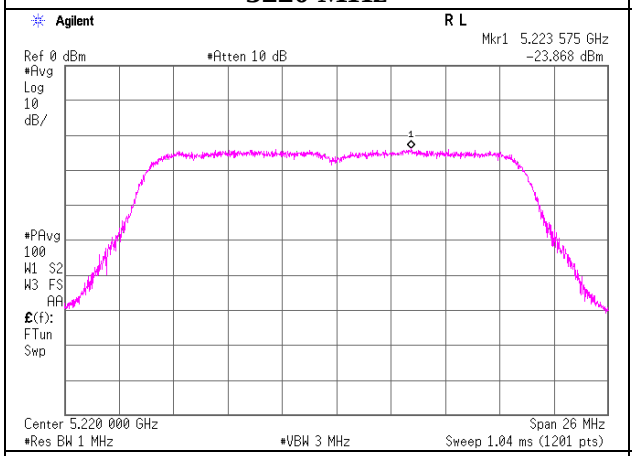
5180 MHz



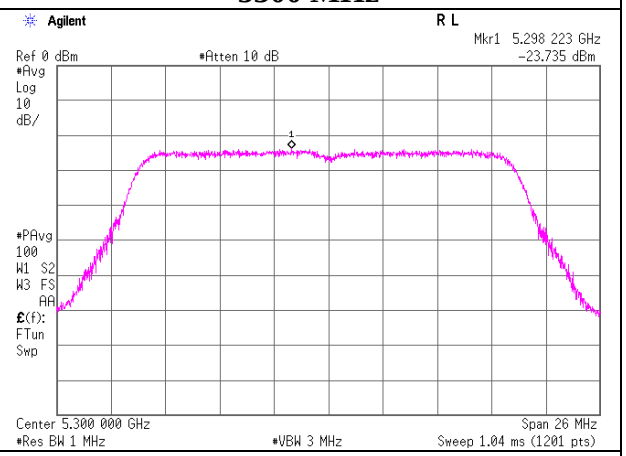
5260 MHz



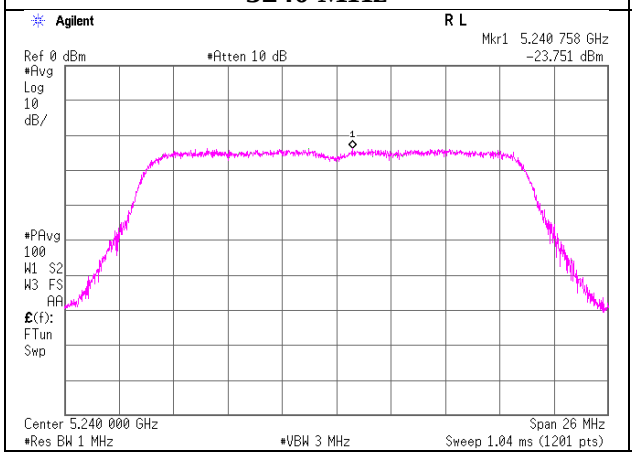
5220 MHz



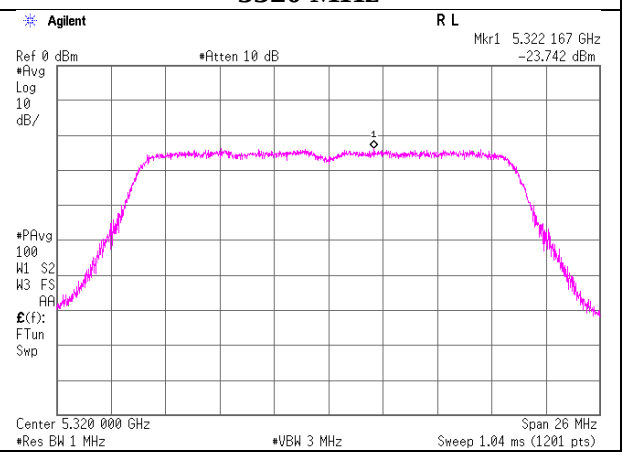
5300 MHz



5240 MHz



5320 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, MIMO

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	0.27	0.24	0.51	-2.96	11.00	13.96	0.57	0.19	0.76	-1.18	17.00	18.18
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	0.62	0.62	1.24	0.93	11.00	10.07	1.33	0.50	1.83	2.62	17.00	14.38
5270	0.57	0.65	1.23	0.88	11.00	10.12	1.23	0.52	1.75	2.43	17.00	14.57
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	0.58	0.54	1.12	0.48	11.00	10.52	1.24	0.43	1.67	2.22	17.00	14.78

			Antenna: 0						**Antenna: 1**					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result		PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result	
							Cond.	e.i.r.p.					Cond.	e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5190	2.50	0.00	-30.31	2.00	20.06	3.31	-5.75	-2.44	-30.65	1.88	20.06	-0.96	-6.21	-7.17
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	2.50	0.00	-26.61	2.00	20.05	3.31	-2.06	1.25	-26.52	1.88	20.05	-0.96	-2.09	-3.05
5270	2.50	0.00	-26.99	2.01	20.05	3.31	-2.43	0.88	-26.29	1.89	20.05	-0.96	-1.85	-2.81
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.50	0.00	-26.94	2.01	20.04	3.31	-2.39	0.92	-27.11	1.89	20.04	-0.96	-2.68	-3.64

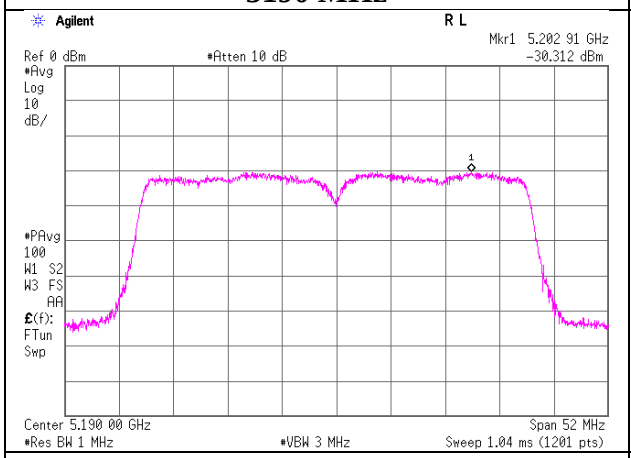
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

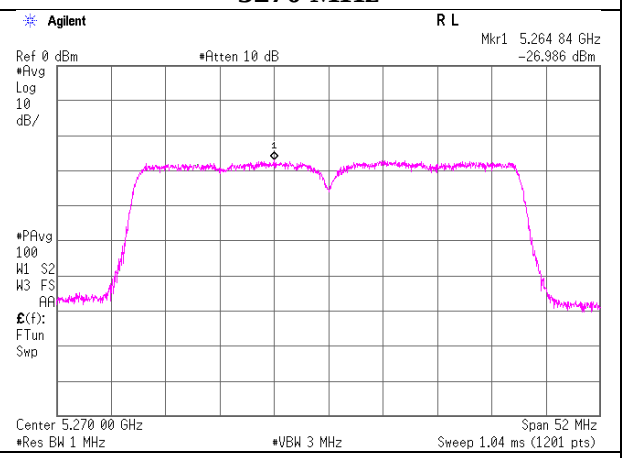
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, MIMO

Antenna 0

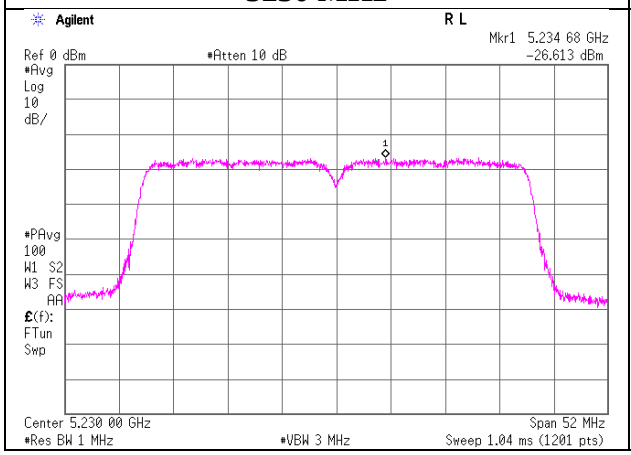
5190 MHz



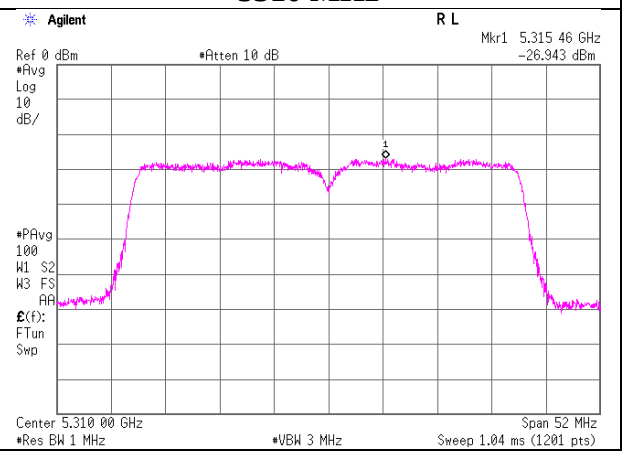
5270 MHz



5230 MHz



5310 MHz

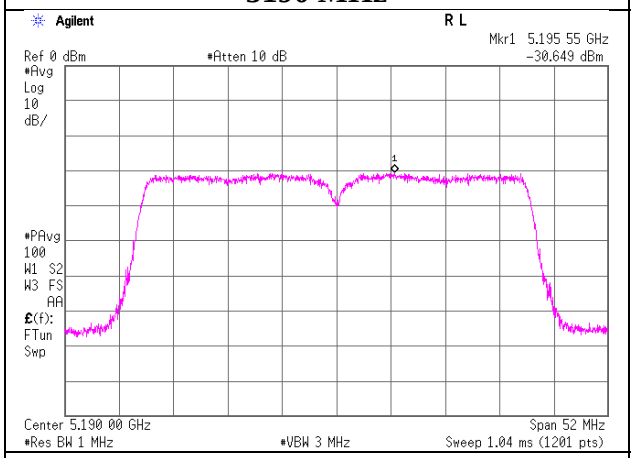


Maximum Power Spectral Density

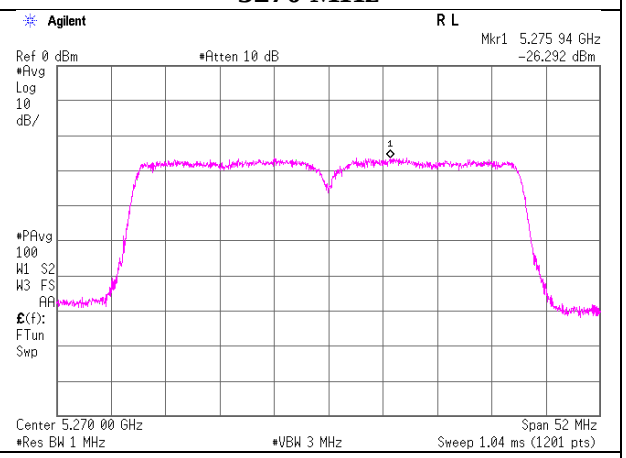
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11n-40, MIMO

Antenna 1

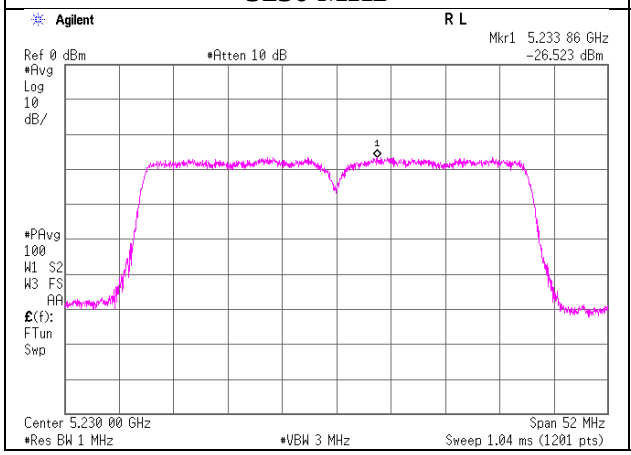
5190 MHz



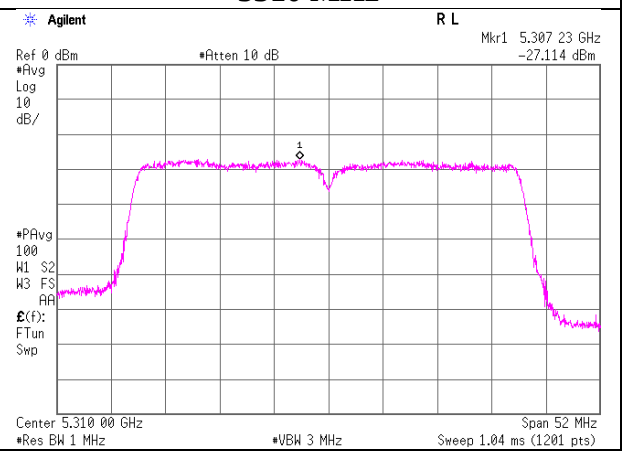
5270 MHz



5230 MHz



5310 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, MIMO

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	0.26	0.25	0.51	-2.91	11.00	13.91	0.56	0.20	0.76	-1.19	17.00	18.19
-	-	-	-	-	-	-	-	-	-	-	-	-
5230	0.62	0.68	1.30	1.14	11.00	9.86	1.34	0.54	1.88	2.74	17.00	14.26
5270	0.58	0.60	1.17	0.69	11.00	10.31	1.23	0.48	1.71	2.34	17.00	14.66
-	-	-	-	-	-	-	-	-	-	-	-	-
5310	0.62	0.56	1.17	0.70	11.00	10.30	1.32	0.45	1.77	2.47	17.00	14.53

			Antenna: 0						Antenna: 1					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5190	2.44	0.00	-30.34	2.00	20.06	3.31	-5.84	-2.53	-30.38	1.88	20.06	-0.96	-6.00	-6.96
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5230	2.44	0.00	-26.54	2.00	20.05	3.31	-2.05	1.26	-26.07	1.88	20.05	-0.96	-1.69	-2.65
5270	2.44	0.00	-26.90	2.01	20.05	3.31	-2.40	0.91	-26.62	1.89	20.05	-0.96	-2.23	-3.19
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5310	2.44	0.00	-26.60	2.01	20.04	3.31	-2.11	1.20	-26.90	1.89	20.04	-0.96	-2.53	-3.49

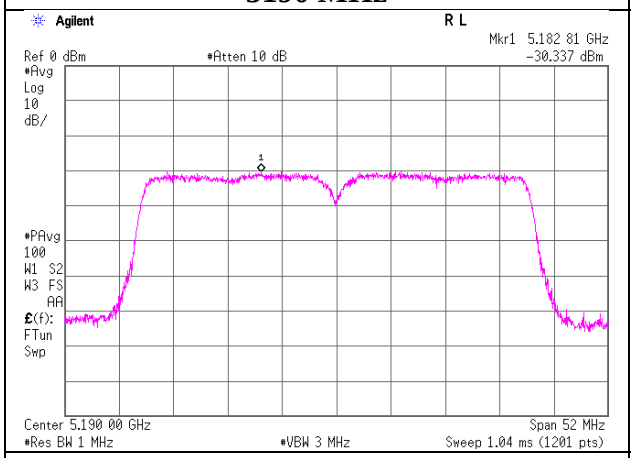
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

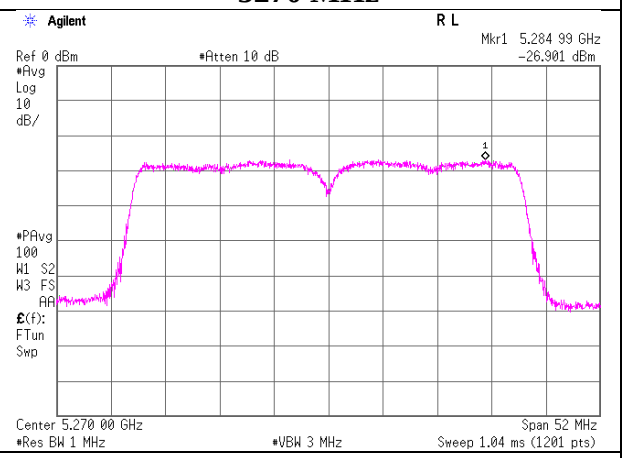
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, MIMO

Antenna 0

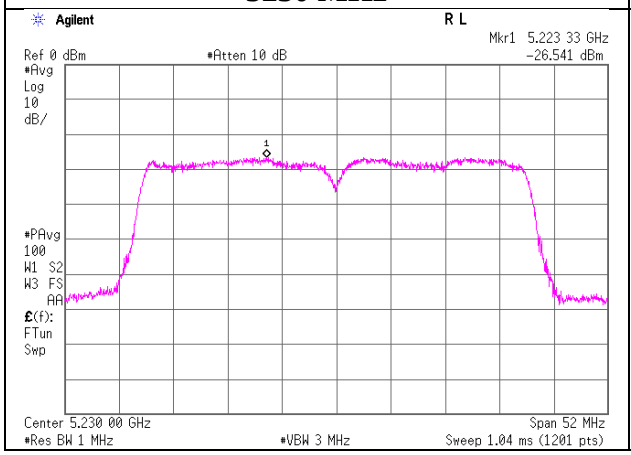
5190 MHz



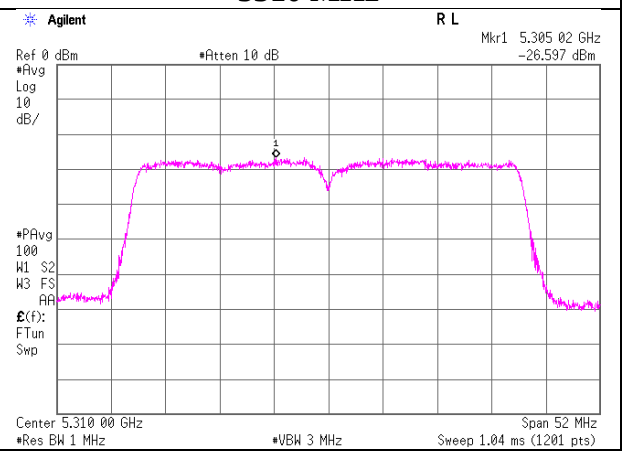
5270 MHz



5230 MHz



5310 MHz

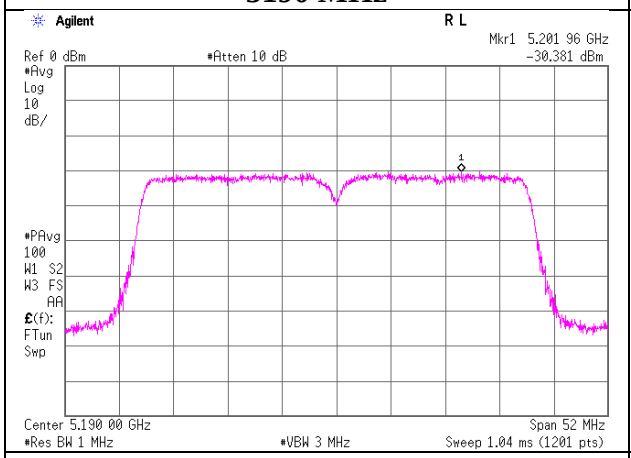


Maximum Power Spectral Density

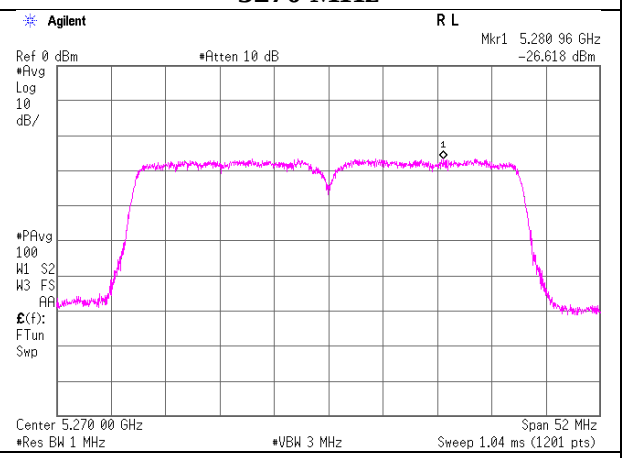
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-40, MIMO

Antenna 1

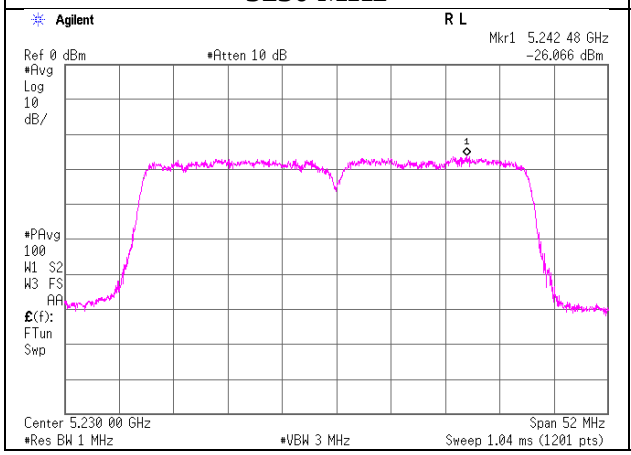
5190 MHz



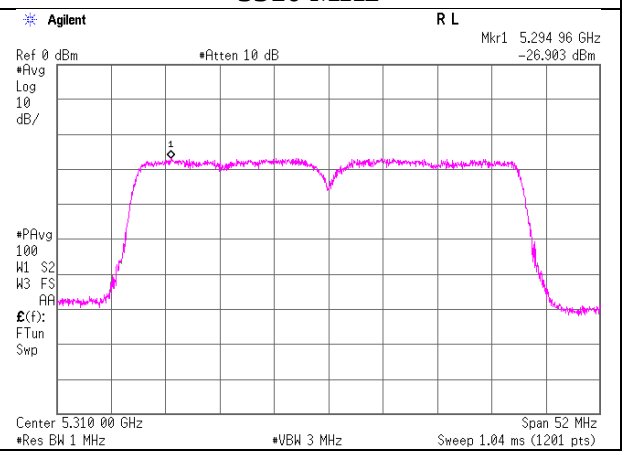
5270 MHz



5230 MHz



5310 MHz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, MIMO

Antenna: 0 + 1

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD (Conducted)						PSD (e.i.r.p.)					
	Antenna			Result	Limit	Margin	Antenna			Result	Limit	Margin
	1	2	Sum				1	2	Sum			
[MHz]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[mW/MHz]	[mW/MHz]	[mW/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]
5210	0.10	0.10	0.21	-6.88	11.00	17.88	0.22	0.08	0.30	-5.16	17.00	22.16
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
5290	0.10	0.10	0.20	-6.97	11.00	17.97	0.22	0.08	0.30	-5.25	17.00	22.25
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-

			Antenna: 0						Antenna: 1					
Tested Frequency	Duty Factor	RBW Correction Factor	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.	PSD Reading	Cable Loss	Atten. Loss	Antenna Gain	PSD Result Cond.	PSD Result e.i.r.p.
[MHz]	[dB]	[dB]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]	[dBm/MHz]	[dB]	[dB]	[dBi]	[dBm/MHz]	[dBm/MHz]
5210	3.23	0.00	-35.08	2.00	20.05	3.31	-9.80	-6.49	-35.14	1.88	20.05	-0.96	-9.98	-10.94
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5290	3.23	0.00	-35.18	2.01	20.05	3.31	-9.89	-6.58	-35.25	1.89	20.05	-0.96	-10.08	-11.04
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

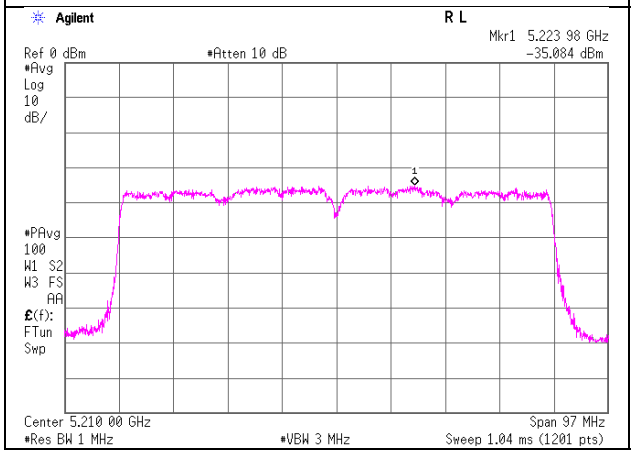
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Maximum Power Spectral Density

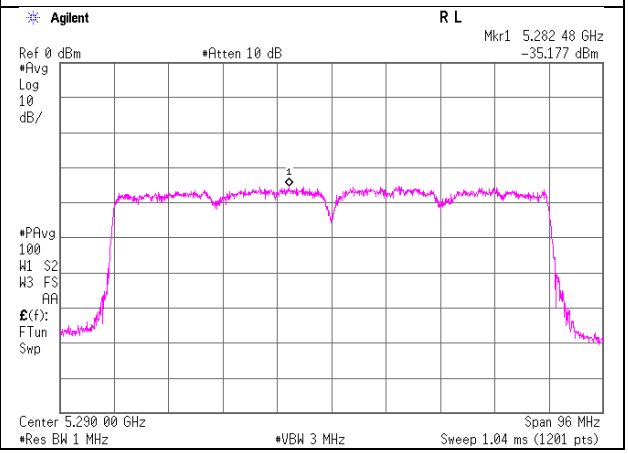
Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 22, 2016
Temperature / Humidity	24 deg. C / 47 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-80, MIMO

Antenna 0

5210 MHz

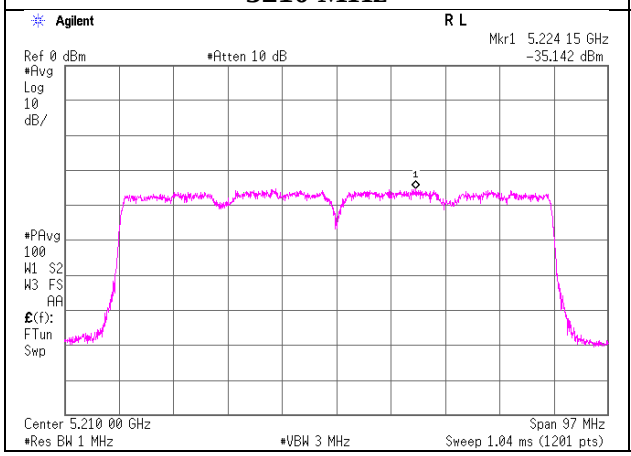


5290 MHz

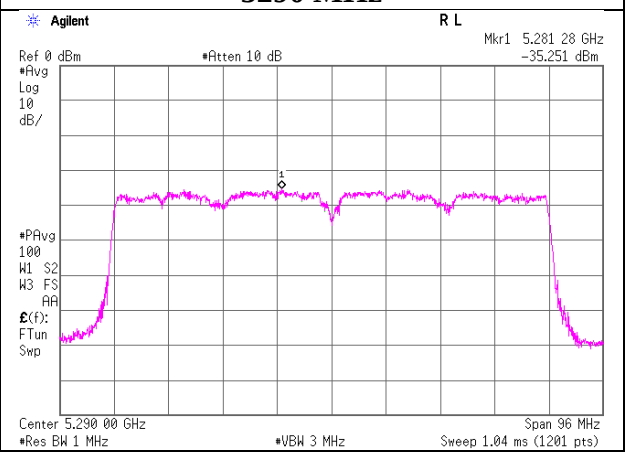


Antenna 1

5210 MHz



5290 MHz



Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 30, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	22 deg. C / 70 % RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)	Shinichi Takano (6.5 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11ac-20 , SISO,5180 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	53.60	31.70	15.67	41.02	2.28	62.23	73.90	11.6	172	166	
Hori.	15540.000	PK	48.34	39.24	10.64	40.23	-9.54	48.45	73.90	25.4	155	217	
Hori.	5150.000	AV	40.16	31.70	15.67	41.02	2.28	48.79	53.90	5.1	172	166	AV:VBW2.7kHz
Hori.	15540.000	AV	38.77	39.24	10.64	40.23	-9.54	38.88	53.90	15.0	155	217	AV:VBW2.7kHz
Vert.	5150.000	PK	53.15	31.70	15.67	41.02	2.28	61.78	73.90	12.1	138	155	
Vert.	15540.000	PK	48.15	39.24	10.64	40.23	-9.54	48.26	73.90	25.6	157	226	
Vert.	5150.000	AV	39.07	31.70	15.67	41.02	2.28	47.70	53.90	6.2	138	155	AV:VBW2.7kHz
Vert.	15540.000	AV	38.36	39.24	10.64	40.23	-9.54	38.47	53.90	15.4	157	226	AV:VBW2.7kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10360.000	PK	46.18	39.61	8.21	40.37	2.28	55.91	-39.29	-27.00	12.3	150	0	
Vert.	10360.000	PK	46.20	39.61	8.21	40.37	2.28	55.93	-39.27	-27.00	12.3	150	0	

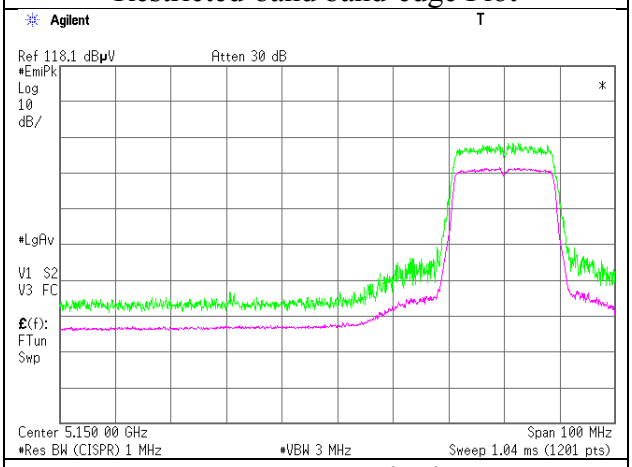
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22deg. C / 70 % RH
Engineer	Makoto Hosaka
Mode	Tx 11ac-20 , SISO, 5180 MHz

Horizontal

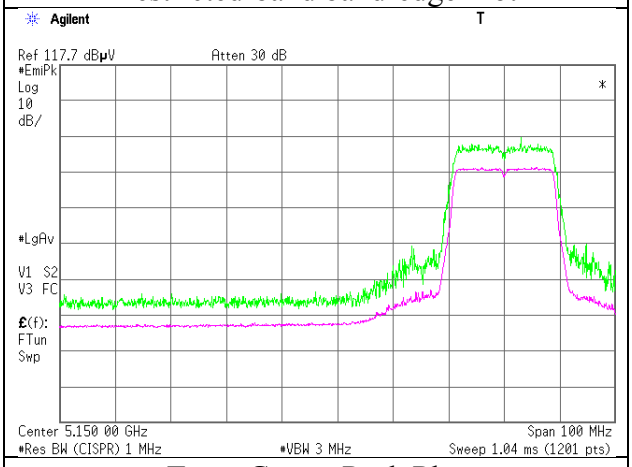
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 30, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	22 deg. C / 70 % RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)	Shinichi Takano (6.5 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11ac-20 , SISO,5240 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15720.000	PK	48.07	38.58	10.73	40.09	-9.54	47.75	73.90	26.1	156	218	
Hori.	15720.000	AV	37.74	38.58	10.73	40.09	-9.54	37.42	53.90	**16.4**	156	218	VBW:2.7kHz
Vert.	15720.000	PK	47.85	38.58	10.73	40.09	-9.54	47.53	73.90	26.3	158	229	
Vert.	15720.000	AV	37.81	38.58	10.73	40.09	-9.54	37.49	53.90	**16.4**	158	229	VBW:2.7kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10480.000	PK	45.94	39.84	8.19	40.40	2.28	55.85	-39.35	-27.00	**12.4**	150	0	
Vert.	10480.000	PK	45.56	39.84	8.19	40.40	2.28	55.47	-39.73	-27.00	12.7	150	0	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	11334871S-M			
Date	August 30, 2016	October 28, 2016	November 11, 2016	November 10, 2016
Temperature / Humidity	22 deg. C / 70 % RH	26deg. C / 32 % RH	23deg. C / 40 % RH	23deg. C / 35 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)	Shinichi Takano (6.5 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)	Shinichi Takano (30 MHz-1 GHz)
Mode	Tx 11ac-20 , SISO,5260 MHz			

(below 1GHz and above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	98.415	QP	47.19	9.70	7.54	32.14	0.00	32.29	43.50	11.2	302	45	
Hori.	125.001	QP	50.17	13.21	7.45	32.12	0.00	38.71	43.50	4.7	146	337	
Hori.	215.998	QP	48.76	11.72	8.22	32.03	0.00	36.67	43.50	6.8	149	262	
Hori.	412.016	QP	48.42	15.82	9.22	31.95	0.00	41.51	46.00	4.4	224	64	
Hori.	596.395	QP	43.22	18.92	9.98	31.92	0.00	40.20	46.00	5.8	137	16	
Hori.	625.096	QP	44.28	19.15	10.09	31.93	0.00	41.59	46.00	4.4	137	274	
Hori.	15780.000	PK	47.97	38.37	10.77	40.05	-9.54	47.52	73.90	26.3	153	216	
Hori.	15780.000	AV	37.54	38.37	10.77	40.05	-9.54	37.09	53.90	16.8	153	216	AV:VBW2.7kHz
Vert.	36.143	QP	41.52	15.55	6.74	32.18	0.00	31.63	40.00	8.3	100	118	
Vert.	419.794	QP	48.53	15.97	9.25	31.95	0.00	41.80	46.00	**4.2**	127	159	
Vert.	600.307	QP	39.43	18.97	10.00	31.91	0.00	36.49	46.00	9.5	100	174	
Vert.	625.102	QP	42.71	19.15	10.09	31.93	0.00	40.02	46.00	5.9	100	185	
Vert.	15780.000	PK	47.96	38.37	10.77	40.05	-9.54	47.51	73.90	26.3	150	230	
Vert.	15780.000	AV	37.48	38.37	10.77	40.05	-9.54	37.03	53.90	16.8	150	230	AV:VBW2.7kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10520.000	PK	46.37	39.89	8.20	40.41	2.28	56.33	-38.87	-27.00	**11.9**	150	0	
Vert.	10520.000	PK	45.43	39.89	8.20	40.41	2.28	55.39	-39.81	-27.00	12.8	150	0	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 30, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	22 deg. C / 70 % RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)	Shinichi Takano (6.5 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11ac-20 , SISO,5320 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.83	31.94	15.89	40.84	2.28	61.10	73.90	12.8	163	168	
Hori.	10640.000	PK	45.81	39.93	8.34	40.50	2.28	55.86	73.90	18.0	150	0	
Hori.	15960.000	PK	47.39	37.71	10.86	39.91	-9.54	46.51	73.90	27.3	156	145	
Hori.	5350.000	AV	39.03	31.94	15.89	40.84	2.28	48.30	53.90	**5.6**	163	168	VBW:2.7kHz
Hori.	10640.000	AV	35.74	39.93	8.34	40.50	2.28	45.79	53.90	8.1	150	0	VBW:2.7kHz
Hori.	15960.000	AV	36.82	37.71	10.86	39.91	-9.54	35.94	53.90	17.9	156	145	VBW:2.7kHz
Vert.	5350.000	PK	50.91	31.94	15.89	40.84	2.28	60.18	73.90	13.7	123	151	
Vert.	10640.000	PK	46.22	39.93	8.34	40.50	2.28	56.27	73.90	17.6	159	133	
Vert.	15960.000	PK	49.82	37.71	10.86	39.91	-9.54	48.94	73.90	24.9	152	232	
Vert.	5350.000	AV	38.23	31.94	15.89	40.84	2.28	47.50	53.90	6.4	123	151	VBW:2.7kHz
Vert.	10640.000	AV	36.09	39.93	8.34	40.50	2.28	46.14	53.90	7.7	159	133	VBW:2.7kHz
Vert.	15960.000	AV	37.75	37.71	10.86	39.91	-9.54	36.87	53.90	17.0	152	232	VBW:2.7kHz

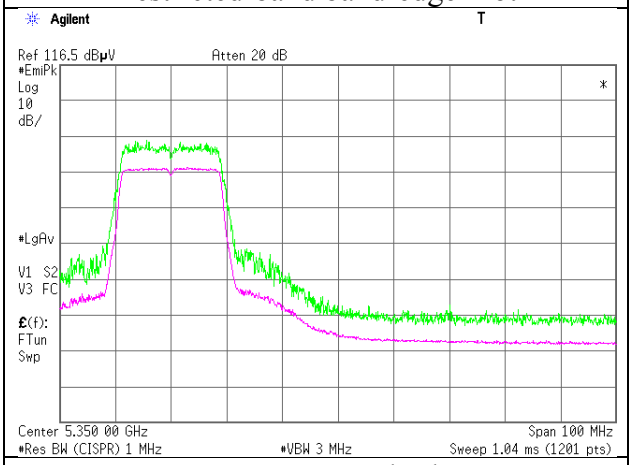
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22 deg. C / 70 % RH
Engineer	Makoto Hosaka
Mode	Tx 11ac-20 , SISO,5320 MHz

Horizontal

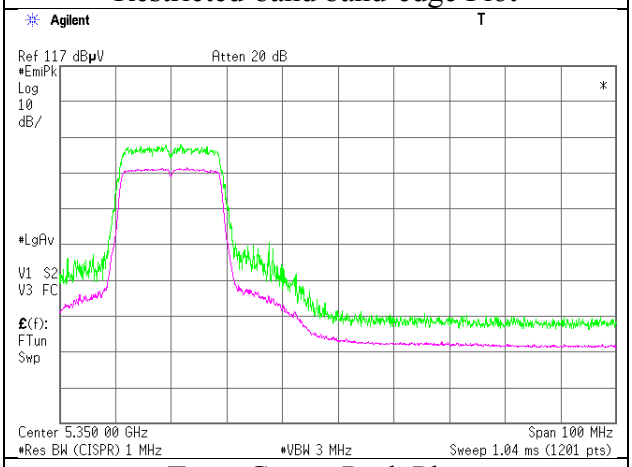
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22 deg. C / 70 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)
Mode	Tx 11n-20 , MIMO,5180 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	50.52	31.70	15.67	41.02	2.28	59.15	73.90	14.7	159	163	
Hori.	5150.000	AV	38.91	31.70	15.67	41.02	2.28	47.54	53.90	**6.3**	159	163	VBW:5.1kHz
Vert.	5150.000	PK	49.04	31.70	15.67	41.02	2.28	57.67	73.90	16.2	148	155	
Vert.	5150.000	AV	38.52	31.70	15.67	41.02	2.28	47.15	53.90	6.7	148	155	VBW:5.1kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor

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

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

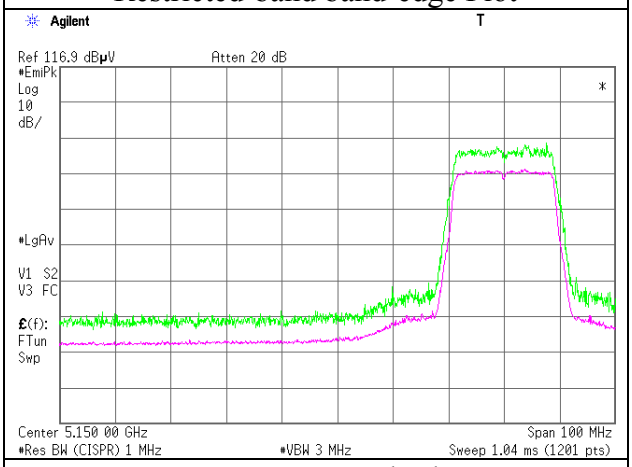
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22 deg. C / 70 % RH
Engineer	Makoto Hosaka
Mode	Tx 11n-20 , MIMO,5180 MHz

Horizontal

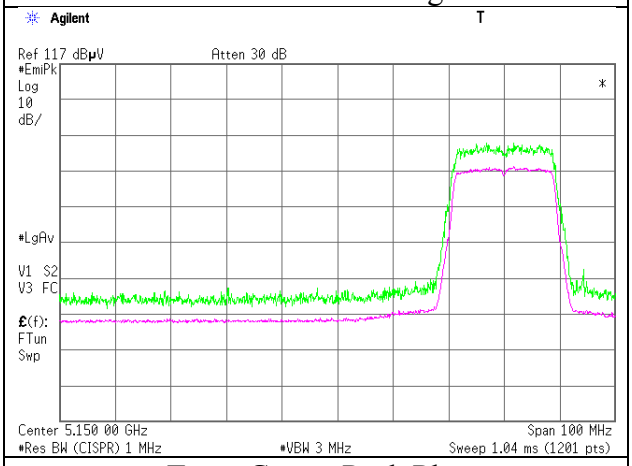
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22 deg. C / 70 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)
Mode	Tx 11n-20 , MIMO,5320 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	49.20	31.94	15.89	40.84	2.28	58.47	73.90	15.4	166	167	
Hori.	5350.000	AV	38.06	31.94	15.89	40.84	2.28	47.33	53.90	**6.5**	166	167	VBW:5.1kHz
Vert.	5350.000	PK	49.29	31.94	15.89	40.84	2.28	58.56	73.90	15.3	123	156	
Vert.	5350.000	AV	38.00	31.94	15.89	40.84	2.28	47.27	53.90	6.6	123	156	VBW:5.1kHz

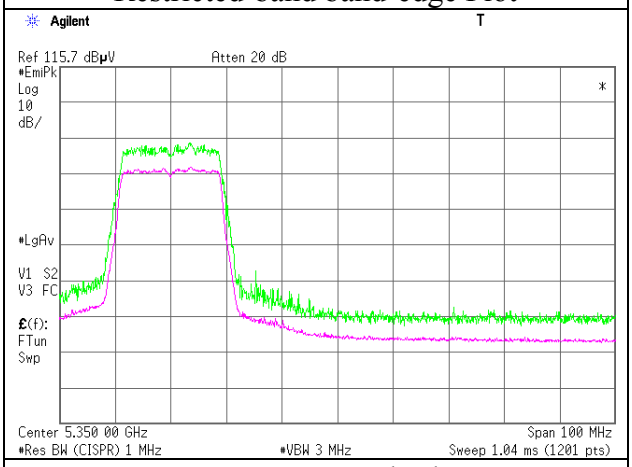
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 30, 2016
Temperature / Humidity	22 deg. C / 70 % RH
Engineer	Makoto Hosaka
Mode	Tx 11n-20 , MIMO,5320 MHz

Horizontal

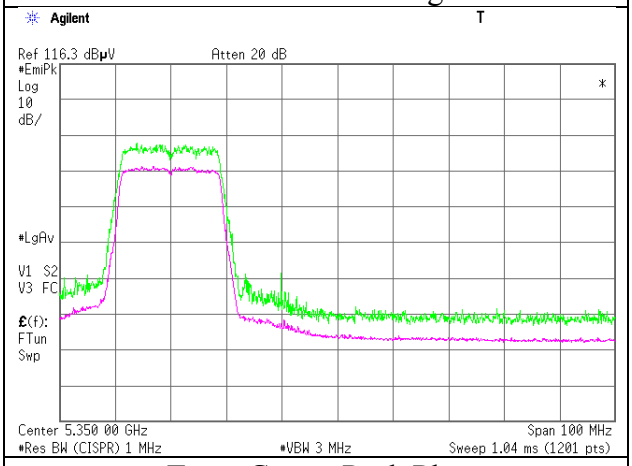
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 24, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	23 deg. C / 53% RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Hikaru Shirasawa (1 GHz-13 GHz)	Shinichi Takano (13GHz-18 GHz)	Shinichi Takano (18GHz-40 GHz)
Mode	Tx 11n-40 , SISO,5190 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	52.47	32.29	15.67	41.02	2.28	61.69	73.90	12.2	146	175	
Hori.	15570.000	PK	47.04	39.13	10.65	40.21	-9.54	47.07	73.90	26.8	150	0	
Hori.	5150.000	AV	40.63	32.29	15.67	41.02	2.28	49.85	53.90	4.0	146	175	VBW:5.1kHz
Hori.	15570.000	AV	37.60	39.13	10.65	40.21	-9.54	37.63	53.90	16.2	150	0	VBW:5.1kHz
Vert.	5150.000	PK	54.96	32.29	15.67	41.02	2.28	64.18	73.90	9.7	103	130	
Vert.	15570.000	PK	46.39	39.13	10.65	40.21	-9.54	46.42	73.90	27.4	150	0	
Vert.	5150.000	AV	42.56	32.29	15.67	41.02	2.28	51.78	53.90	**2.1**	103	130	VBW:5.1kHz
Vert.	15570.000	AV	37.05	39.13	10.65	40.21	-9.54	37.08	53.90	16.8	150	0	VBW:5.1kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10380.000	PK	47.06	39.10	8.21	40.37	2.28	56.28	-38.92	-27.00	**11.9**	150	359	
Vert.	10380.000	PK	46.87	39.10	8.21	40.37	2.28	56.09	-39.11	-27.00	12.1	150	0	

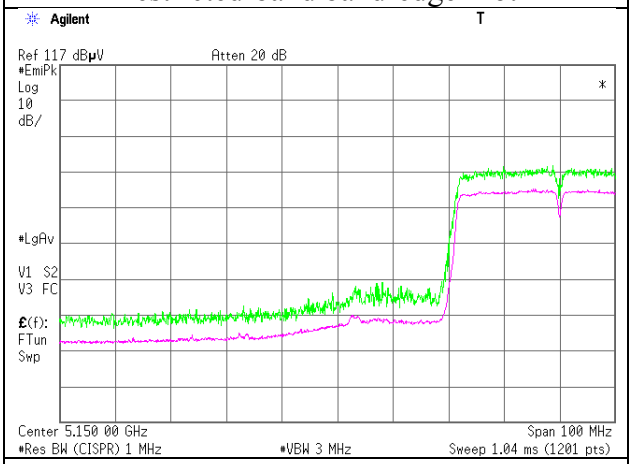
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11n-40 , SISO,5190 MHz

Horizontal

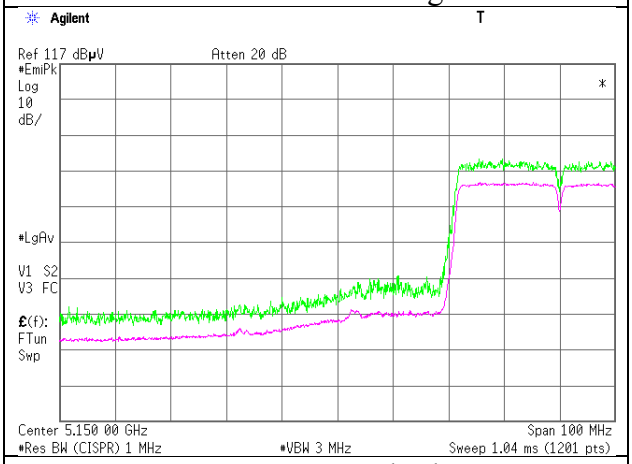
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11334871S-M	
Date	October 28, 2016	November 11, 2016
Temperature / Humidity	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Shinichi Takano (1 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11n-40 , SISO,5230 MHz	

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	15690.000	PK	46.70	38.69	10.72	40.12	-9.54	46.45	73.90	27.4	150	0	
Hori.	15690.000	AV	37.23	38.69	10.72	40.12	-9.54	36.98	53.90	16.9	150	0	VBW:5.1kHz
Vert.	15690.000	PK	46.19	38.69	10.72	40.12	-9.54	45.94	73.90	27.9	150	0	
Vert.	15690.000	AV	37.35	38.69	10.72	40.12	-9.54	37.10	53.90	**16.8**	150	0	VBW:5.1kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10460.000	PK	45.38	39.80	8.20	40.39	2.28	55.27	-39.93	-27.00	12.9	150	0	
Vert.	10460.000	PK	45.82	39.80	8.20	40.39	2.28	55.71	-39.49	-27.00	**12.5**	150	0	

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 24, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	23 deg. C / 53% RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Hikaru Shirasawa (1 GHz-13 GHz)	Shinichi Takano (13 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11n-40 , SISO,5310 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	58.53	32.25	15.89	40.84	2.28	68.11	73.90	5.7	110	163	
Hori.	10620.000	PK	46.57	39.60	8.32	40.48	2.28	56.29	73.90	17.6	150	359	
Hori.	15930.000	PK	46.74	37.82	10.85	39.93	-9.54	45.94	73.90	27.9	155	147	
Hori.	5350.000	AV	41.07	32.25	15.89	40.84	2.28	50.65	53.90	3.2	110	163	VBW:5.1kHz
Hori.	10620.000	AV	35.48	39.60	8.32	40.48	2.28	45.20	53.90	8.7	150	359	VBW:5.1kHz
Hori.	15930.000	AV	36.68	37.82	10.85	39.93	-9.54	35.88	53.90	18.0	155	147	VBW:5.1kHz
Vert.	5350.000	PK	60.32	32.25	15.89	40.84	2.28	69.90	73.90	4.0	152	123	
Vert.	10620.000	PK	47.01	39.60	8.32	40.48	2.28	56.73	73.90	17.1	150	0	
Vert.	15930.000	PK	46.60	37.82	10.85	39.93	-9.54	45.80	73.90	28.1	152	233	
Vert.	5350.000	AV	42.00	32.25	15.89	40.84	2.28	51.58	53.90	**2.3**	152	123	VBW:5.1kHz
Vert.	10620.000	AV	35.19	39.60	8.32	40.48	2.28	44.91	53.90	8.9	150	0	VBW:5.1kHz
Vert.	15930.000	AV	36.99	37.82	10.85	39.93	-9.54	36.19	53.90	17.7	152	233	VBW:5.1kHz

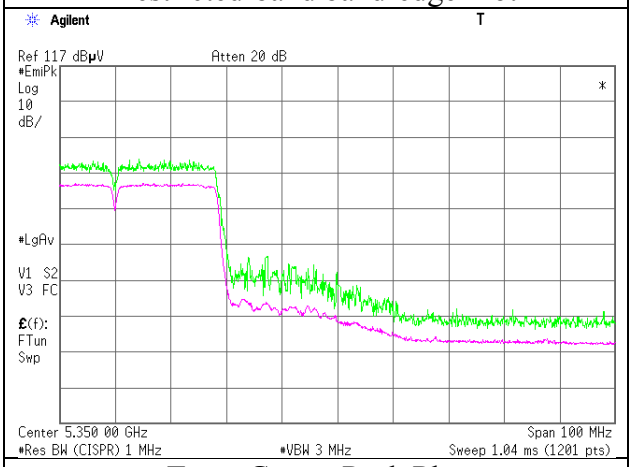
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11n-40 , SISO,5310 MHz

Horizontal

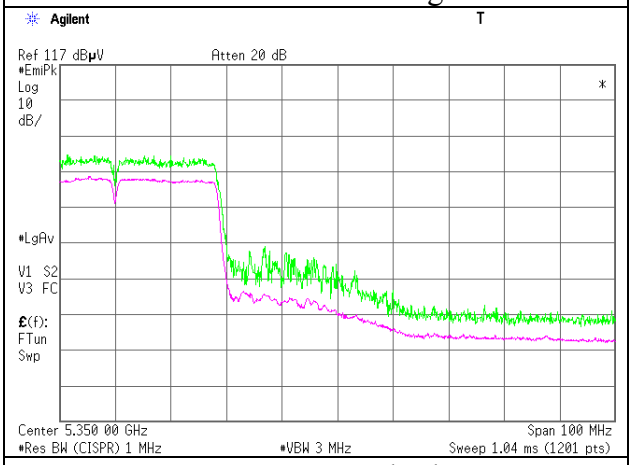
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa (1 GHz-6.5 GHz,)
Mode	Tx 11n-40, MIMO, 5190 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	51.06	32.29	15.67	41.02	2.28	60.28	73.90	13.6	166	172	
Hori.	5150.000	AV	38.93	32.29	15.67	41.02	2.28	48.15	53.90	**5.7**	166	172	VBW:8.1kHz
Vert.	5150.000	PK	49.62	32.29	15.67	41.02	2.28	58.84	73.90	15.0	125	148	
Vert.	5150.000	AV	37.33	32.29	15.67	41.02	2.28	46.55	53.90	7.3	125	148	VBW:8.1kHz

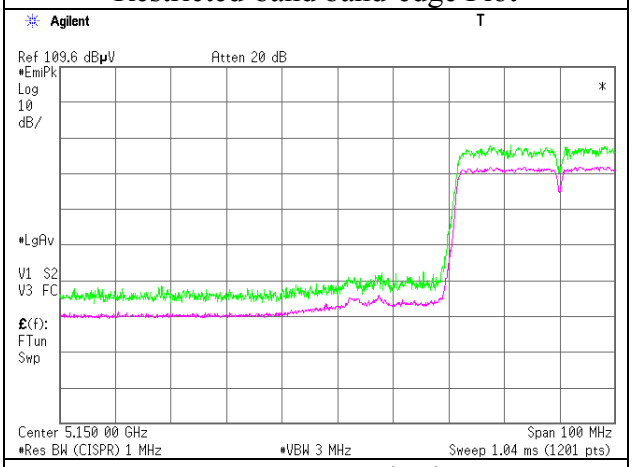
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11n-40, MIMO, 5190 MHz

Horizontal

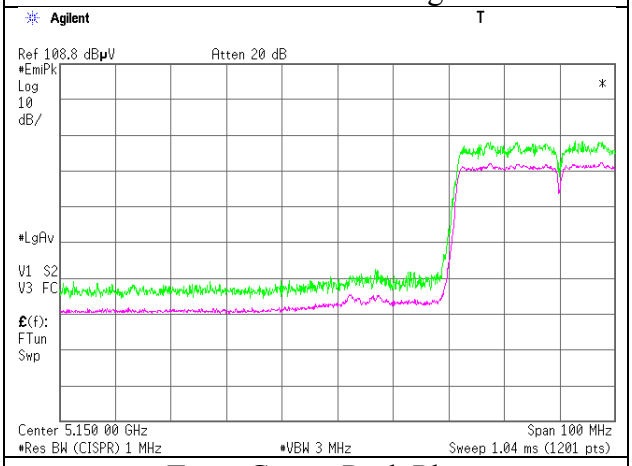
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa (1 GHz-6.5 GHz)
Mode	Tx 11n-40, MIMO, 5310 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	51.74	32.25	15.89	40.84	2.28	61.32	73.90	12.5	172	171	
Hori.	5350.000	AV	37.47	32.25	15.89	40.84	2.28	47.05	53.90	6.8	172	171	VBW:8.1kHz
Vert.	5350.000	PK	54.07	32.25	15.89	40.84	2.28	63.65	73.90	10.2	144	121	
Vert.	5350.000	AV	38.13	32.25	15.89	40.84	2.28	47.71	53.90	**6.1**	144	121	VBW:8.1kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor

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

*The 4th harmonic was not seen so the result was its base noise level.

Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB

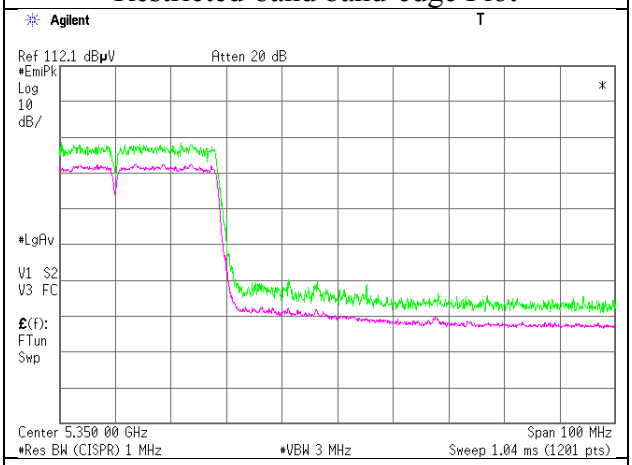
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11n-40, MIMO, 5310 MHz

Horizontal

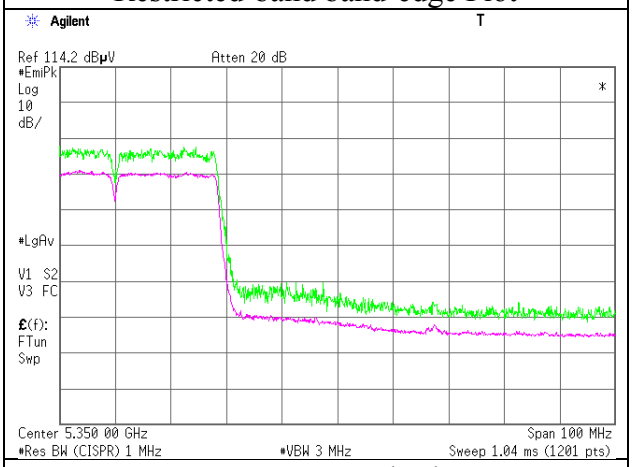
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 24, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	23 deg. C / 53% RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Hikaru Shirasawa (1 GHz-13GHz)	Shinichi Takano (13GHz-18GHz)	Shinichi Takano (18GHz-40GHz)
Mode	Tx 11ac-80, SISO, 5210 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	53.28	32.29	15.67	41.02	2.28	62.50	73.90	11.4	156	172	
Hori.	15630.000	PK	47.17	38.91	10.69	40.16	-9.54	47.07	73.90	26.8	150	0	
Hori.	5150.000	AV	42.41	32.29	15.67	41.02	2.28	51.63	53.90	**2.2**	156	172	VBW:8.4kHz
Hori.	15630.000	AV	38.40	38.91	10.69	40.16	-9.54	38.30	53.90	15.6	150	0	VBW:8.4kHz
Vert.	5150.000	PK	52.08	32.29	15.67	41.02	2.28	61.30	73.90	12.6	102	129	
Vert.	15630.000	PK	46.52	38.91	10.69	40.16	-9.54	46.42	73.90	27.4	150	0	
Vert.	5150.000	AV	42.19	32.29	15.67	41.02	2.28	51.41	53.90	2.4	102	129	VBW:8.4kHz
Vert.	15630.000	AV	37.88	38.91	10.69	40.16	-9.54	37.78	53.90	16.1	150	0	VBW:8.4kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10420.000	PK	45.97	39.18	8.20	40.38	2.28	55.25	-39.95	-27.00	**13.0**	150	359	
Vert.	10420.000	PK	45.51	39.18	8.20	40.38	2.28	54.79	-40.41	-27.00	13.4	150	0	

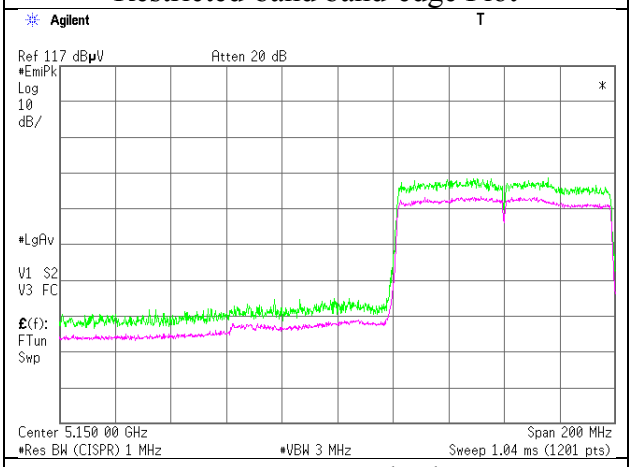
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG （({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11ac-80, SISO, 5210 MHz

Horizontal

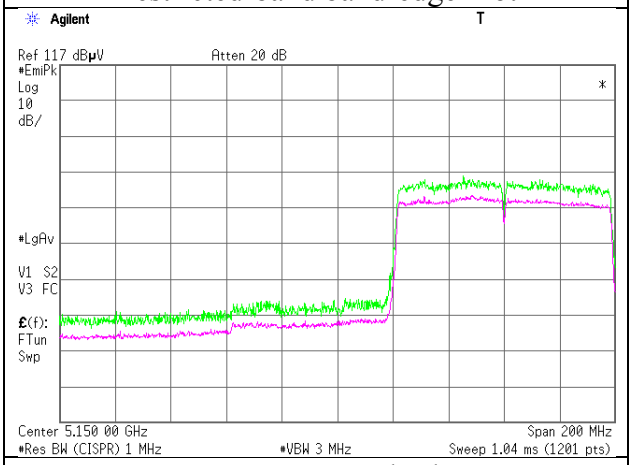
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11334871S-M		
Date	August 24, 2016	October 28, 2016	November 11, 2016
Temperature / Humidity	23 deg. C / 53% RH	26deg. C / 32 % RH	23deg. C / 40 % RH
Engineer	Hikaru Shirasawa (1 GHz-13 GHz)	Shinichi Takano (13 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)
Mode	Tx 11ac-80, SISO, 5290 MHz		

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	48.25	32.25	15.89	40.84	2.28	57.83	73.90	16.0	162	172	
Hori.	15870.000	PK	45.60	38.04	10.81	39.98	-9.54	44.93	73.90	28.9	150	0	
Hori.	5350.000	AV	37.71	32.25	15.89	40.84	2.28	47.29	53.90	**6.6**	162	172	VBW:8.4kHz
Hori.	15870.000	AV	36.88	38.04	10.81	39.98	-9.54	36.21	53.90	17.6	150	0	VBW:8.4kHz
Vert.	5350.000	PK	47.60	32.25	15.89	40.84	2.28	57.18	73.90	16.7	106	130	
Vert.	15870.000	PK	46.17	38.04	10.81	39.98	-9.54	45.50	73.90	28.4	150	0	
Vert.	5350.000	AV	37.65	32.25	15.89	40.84	2.28	47.23	53.90	**6.6**	106	130	VBW:8.4kHz
Vert.	15870.000	AV	36.84	38.04	10.81	39.98	-9.54	36.17	53.90	17.7	150	0	VBW:8.4kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1GHz Outside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	10580.000	PK	47.32	39.51	8.27	40.45	2.28	56.93	-38.27	-27.00	**11.3**	150	359	
Vert.	10580.000	PK	46.54	39.51	8.27	40.45	2.28	56.15	-39.05	-27.00	12.1	150	0	

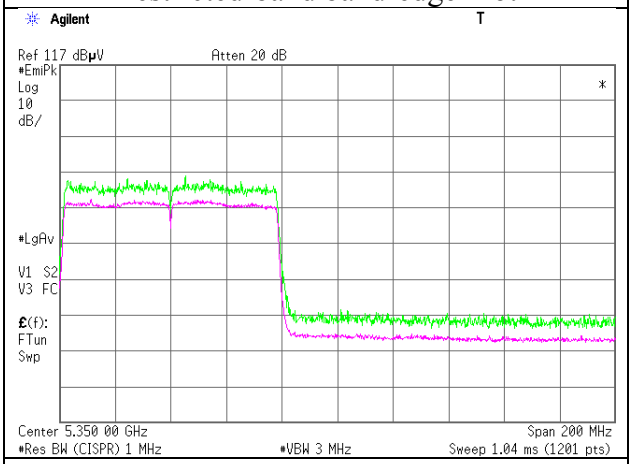
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Resrult(EIRP[dBm])=10*LOG（({ 10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance:3[m]) ^ 2 } / 30) *10^3)
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11ac-80, SISO, 5290 MHz

Horizontal

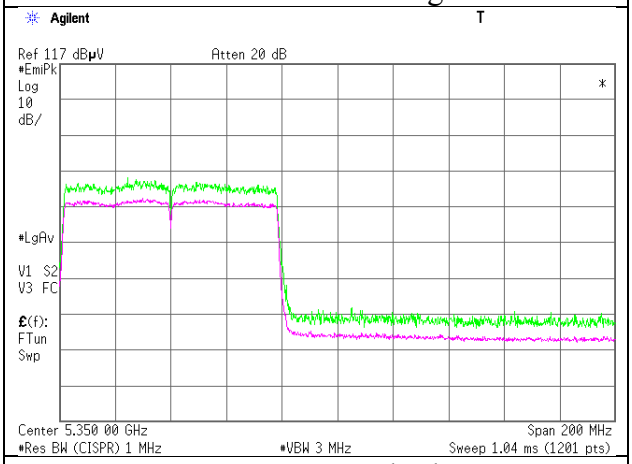
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa (1 GHz-6.5 GHz)
Mode	Tx 11ac-80, MIMO, 5210 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5150.000	PK	49.73	32.29	15.67	41.02	2.28	58.95	73.90	14.9	169	172	
Hori.	5150.000	AV	39.37	32.29	15.67	41.02	2.28	48.59	53.90	**5.3**	169	172	VBW:12kHz
Vert.	5150.000	PK	49.58	32.29	15.67	41.02	2.28	58.80	73.90	15.1	106	131	
Vert.	5150.000	AV	39.25	32.29	15.67	41.02	2.28	48.47	53.90	5.4	106	131	VBW:12kHz

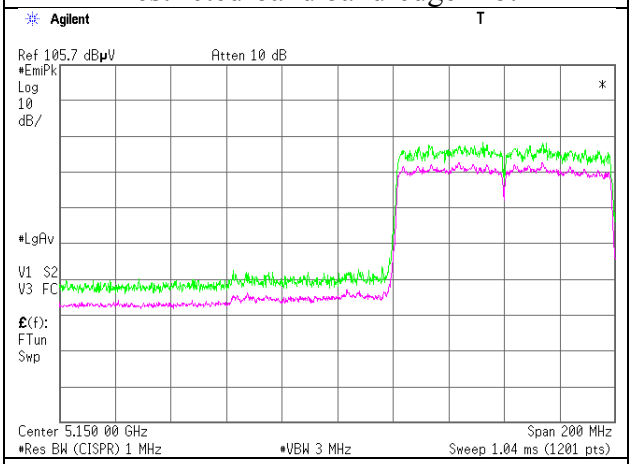
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11ac-80, MIMO, 5210 MHz

Horizontal

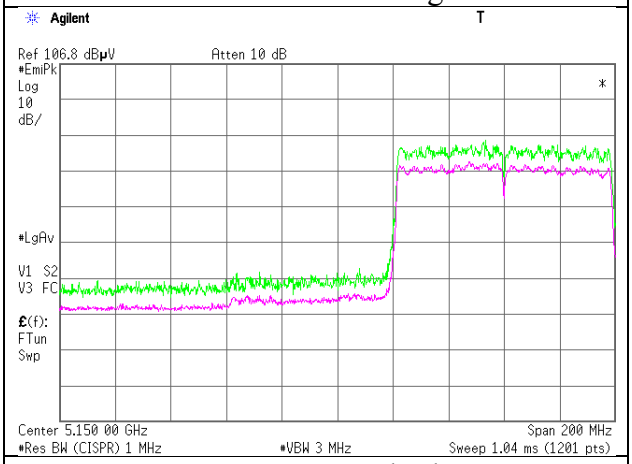
Restricted-band band-edge Plot



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	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa (1 GHz-6.5 GHz)
Mode	Tx 11ac-80, MIMO, 5290 MHz

(above 1GHz Inside of the restricted band)

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5350.000	PK	47.70	32.25	15.89	40.84	2.28	57.28	73.90	16.6	162	172	
Hori.	5350.000	AV	36.68	32.25	15.89	40.84	2.28	46.26	53.90	7.6	162	172	VBW:12kHz
Vert.	5350.000	PK	46.79	32.25	15.89	40.84	2.28	56.37	73.90	17.5	104	131	
Vert.	5350.000	AV	36.75	32.25	15.89	40.84	2.28	46.33	53.90	**7.5**	104	131	VBW:12kHz

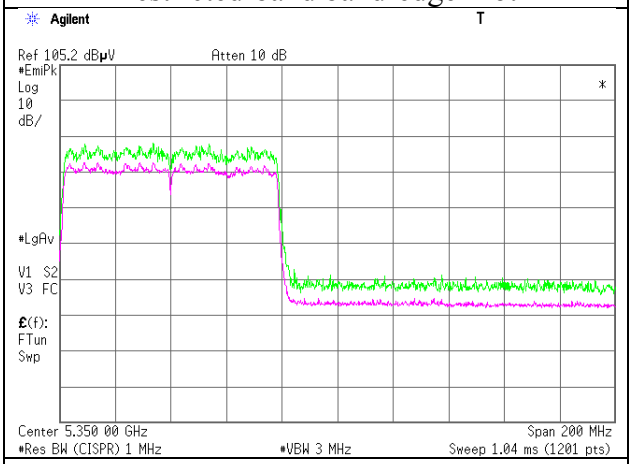
Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).
*The 4th harmonic was not seen so the result was its base noise level.
Distance factor : 1 GHz - 13 GHz : 20log (3.90 m / 3.0 m) = 2.28 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11334871S-M
Date	August 24, 2016
Temperature / Humidity	23 deg. C / 53% RH
Engineer	Hikaru Shirasawa
Mode	Tx 11ac-80, MIMO, 5290 MHz

Horizontal

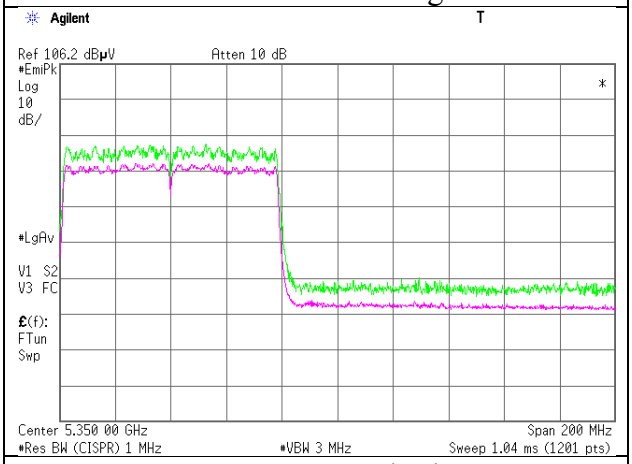
Restricted-band band-edge Plot



Trace Green: Peak Plot
Trace Purple: Average Plot

Vertical

Restricted-band band-edge Plot

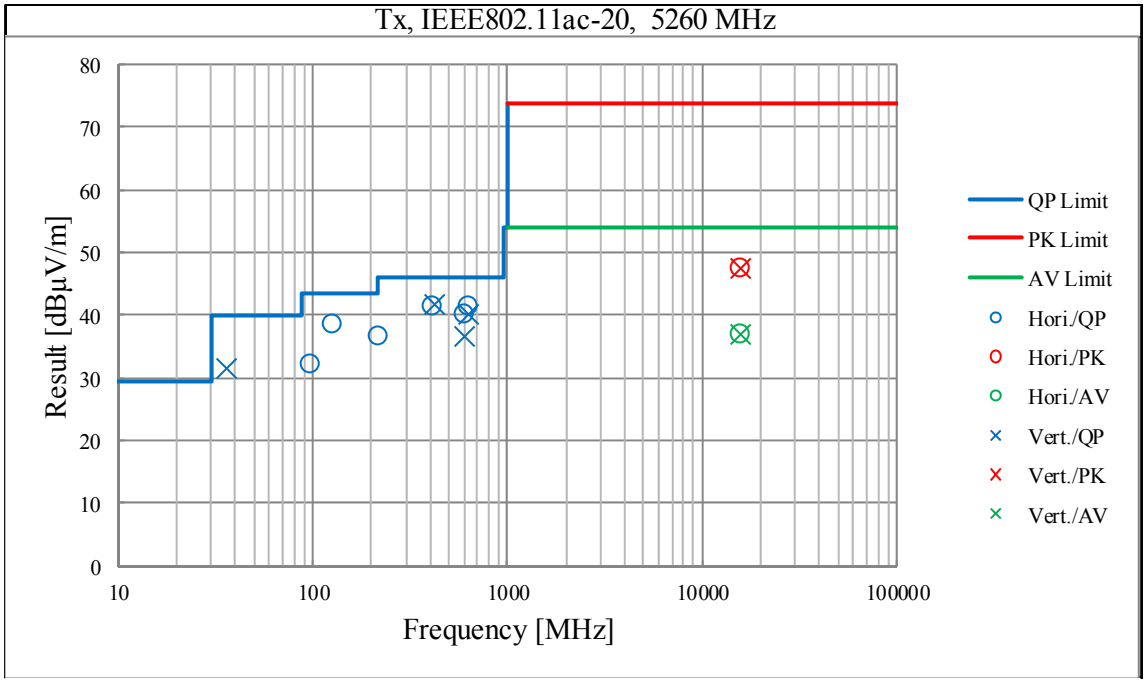


Trace Green: Peak Plot
Trace Purple: Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	11334871S-M			
Date	August 30, 2016	October 28, 2016	November 11, 2016	November 10, 2016
Temperature / Humidity	22 deg. C / 70 % RH	26deg. C / 32 % RH	23deg. C / 40 % RH	23deg. C / 35 % RH
Engineer	Makoto Hosaka (1 GHz-6.5 GHz)	Shinichi Takano (6.5 GHz-18 GHz)	Shinichi Takano (18 GHz-40 GHz)	Shinichi Takano (30 MHz-1 GHz)
Mode	Tx 11ac-20 , SISO,5260 MHz			

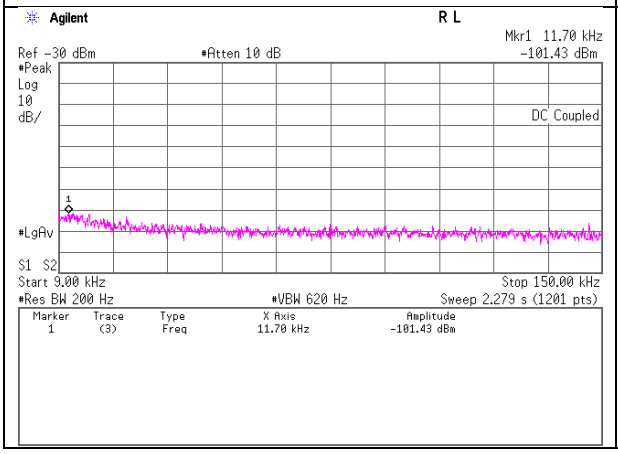


*These plots data contains sufficient number to show the trend of characteristic features for EUT.

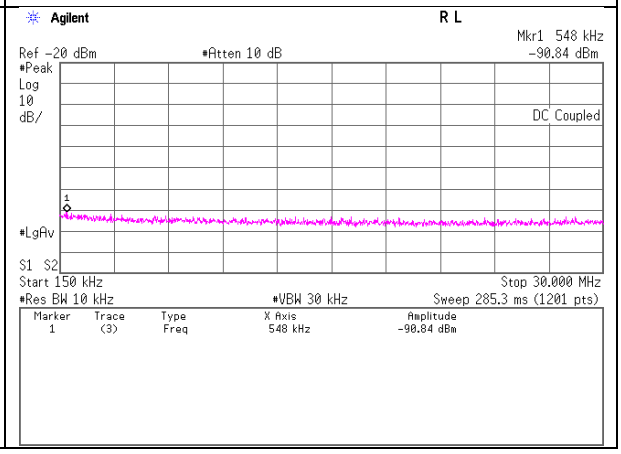
Conducted Spurious Emission

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	11334871S-M
Date	November 21, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Kenichi Adachi
Mode	Tx 11ac-20, SISO, 5260 MHz

9 kHz-150 kHz



150 kHz-30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenator [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
11.700	-101.4	2.01	20.04	3.31	2	-73.06	300	6.00	-11.80	46.20	58.00	
548.000	-90.8	2.01	20.04	3.31	2	-62.47	30	6.00	18.79	32.80	14.01	

E = EIRP - 20*log(D) + Ground bounce + 104.8 [dBuV/m]

EIRP = Reading + Cable Loss + Attenator + Antenna Gain + 10*log(N)

*) No detect noise signal was in frequency range from 9 kHz to 30 MHz.

APPENDIX 2: Test instruments

Test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2016/10/12 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE, RFI,MF)	-	RE,CE	-
STS-03	Digital Hitester	Hioki	3805-50	080997823	RE	2016/10/17 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2016/07/15 * 12
SRENT-08	Spectrum Analyzer	Agilent	E4448A	MY50180019	RE	2016/10/24 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2016/03/15 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2016/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2016/03/08 * 12
SHA-06	Horn Antenna	ETS LINDGREN	3160-10	LM3459	RE	2016/03/24 * 12
SAF-10	Pre Amplifier	TOYO Corporation	HAP26-40W	00000010	RE	2016/03/23 * 12
SCC-G19	Coaxial Cable	Suhner	SUCOFLEX 102A	1188/2A	RE	2016/03/08 * 12
SCC-G33	Coaxial Cable	Junkosha	MWX241-01000KM SKMS	-	RE	2016/04/18 * 12
SCC-C9/C10/SRS E-03	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4 906	-/0901-271(RF Selector)	CE	2016/04/22 * 12
SLS-05	LISN	Rohde & Schwarz	ENV216	100516	CE	2016/02/09 * 12
SAT3-07	Attenuator	JFW	50HF-003N	-	CE	2016/09/23 * 12
SOS-06	Humidity Indicator	A&D	AD-5681	4062118	CE	2015/12/07 * 12
STM-05	Terminator	TME	CT-01 BP	-	CE	2015/12/18 * 12
STR-06	Test Receiver	Rohde & Schwarz	ESCI	101259	CE	2016/03/28 * 12
SFL-03	Highpass Filter	MICRO-TRONICS	HPM50112	028	RE	2016/11/29 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2016/06/23 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2016/05/11 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2016/08/22 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2016/10/12 * 12
SRENT-09	Spectrum Analyzer	Agilent	E4440A	MY46186392	RE	2016/11/01 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE,CE	-
SAEC-03(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	RE	2016/07/25 * 12
STS-03	Digital Hitester	Hioki	3805-50	080997823	RE	2016/10/17 * 12
KAT10-S2	Attenuator	Agilent	8490D 010	06036	RE	2016/11/07 * 12
SAF-05	Pre Amplifier	TOYO Corporation	TPA0118-36	1440490	RE	2016/02/10 * 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

Tested date:
- Conducted emission test : November 14, 2016
- Radiated emissions test : August 24 to November 11, 2016
- Antenna Terminal Conducted test : August 24 to November 22, 2016

Test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SRENT-05	Spectrum Analyzer	KEYSIGHT	E4440A	MY46187752	AT	2016/11/04 * 12
SCC-G32	Coaxial Cable	Junkosha	MWX241-02000KM SKMS	OCT-09-13-005	AT	2016/11/07 * 12
SAT20-07	Attenuator	Weinschel Corp.	54A-20	31484	AT	2016/04/18 * 12
SOS-13	Humidity Indicator	Custom	CTH-202	Q.C.17	AT	2015/12/07 * 12
KTS-08	Digital Tester	SANWA	PC500	7019224	AT	2016/03/15 * 12
SPM-07	Power Meter	Agilent	8990B	MY5100272	AT	2016/04/04 * 12
SPSS-04	Power sensor	Agilent	N1923A	MY5326009	AT	2016/04/04 * 12
STM-G5	Terminator	Weinschel	M1459A	U6594	AT	2016/07/27 * 12
SCC-G31	Coaxial Cable	Junkosha	MWX241-01000KM SKMS	OCT-08-13-046	AT	2016/04/18 * 12
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2016/03/22 * 12
SCC-G06	Coaxial Cable	Junkosha	J12J102207-00	MAY-23-16-091	RE	2016/06/14 * 12
SCC-G21	Coaxial Cable	Suhner	SUCOFLEX 104	296169/4	RE	2016/05/11 * 12
SHA-01	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-725	RE	2016/08/09 * 12
SOS-01	Humidity Indicator	A&D	AD-5681	4062555	RE	2016/10/12 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2016/03/23 * 12
KJM-09	Measure	KOMELON	KMC-36	-	RE	-
SAEC-01(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-01(SVSWR)	1	RE	2016/07/24 * 12
STS-01	Digital Hitester	Hioki	3805-50	080997812	RE	2016/10/17 * 12
SAT10-06	Attenuator	Agilent	8493C-010	74865	RE	2016/11/07 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	3008A01268	RE	2016/04/22 * 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

Tested date:
- Conducted emission test : November 14, 2016
- Radiated emissions test : August 24 to November 11, 2016
- Antenna Terminal Conducted test : August 24 to November 22, 2016