RADIO TEST REPORT

Test Report No. : 10882638S-M

Applicant	:	**Canon Inc.**
Type of Equipment	:	**Wireless Module**
Model No.	:	**ES201**
FCC ID	:	**AZD233**
Test regulation	:	**FCC Part 15 Subpart C: 2015**
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 7 to 28, 2015

Representative test engineer:
S. Takano
Shinichi Takano
Engineer
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Approved by:
T. Imamura
Toyokazu Imamura
Leader
Consumer Technology Division

☒ 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

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REVISION HISTORY

Original Test Report No.: 10882638S-M

Revision	Test report No.	Date	Page revised	Contents
- (Original)	10882638S-M	December 1, 2015	-	-
1	10882638S-M	December 21, 2015	8	Correction of the power setting description

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SECTION 1: Customer information

Company Name	:	Canon Inc.
Address	:	30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501, Japan
Telephone Number	:	+81- 3-3757-6218
Facsimile Number	:	+81- 3-3757-8431
Contact Person	:	Takato Matsuura

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless Module
Model No.	:	ES201
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.3 V
Receipt Date of Sample	:	July 30, 2015
Country of Mass-production	:	Japan
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

2.2 Product Description

Model: ES201 (referred to as the EUT in this report) is a Wireless Module.

General Specification

Clock frequency(ies) in the system	:	37.4 MHz

Radio specification:

Radio Type	:	Transceiver
Antenna type	:	Planar Inverted F Antenna
Antenna Gain	:	2 GHz Band (2400/2450/2500 MHz) : 1.95 dBi 5 GHs Band-1 (5160/5250/5340 MHz) : -1.32 dBi 5 GHs Band-2 (5480/5600/5720 MHz) : 0.3 dBi 5 GHs Band-3 (5725/5785/5845 MHz) : -0.43 dBi

	IEEE802.11b	**IEEE802.11g**	**IEEE802.11n (20 MHz band)**	**IEEE802.11n (40 MHz band)**
Frequency of operation *1)	2412-2462 MHz	2412-2462 MHz	2412-2462 MHz 5180-5320 MHz 5500-5700 MHz 5745-5825 MHz	2422-2452 MHz 5190-5310 MHz 5510-5670 MHz 5755-5795 MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)	
Channel spacing			2.4 GHz band 5 MHz 5 GHz band 20 MHz	2.4 GHz band 5 MHz 5 GHz band 40 MHz
	IEEE802.11a	**IEEE802.11ac (20 MHz band)**	**IEEE802.11ac (40 MHz band)**	**IEEE802.11ac (80 MHz band)**
Frequency of operation *1)	5180-5320 MHz 5500-5700 MHz 5745-5825 MHz	5180-5320 MHz 5500-5700 MHz 5745-5825 MHz	5190-5310 MHz 5510-5670 MHz 5755-5795 MHz	5210 MHz 5290 MHz 5530-5610 MHz 5775 MHz
Type of modulation	OFDM (64QAM, 16QAM, QPSK, BPSK)			
Channel spacing	20 MHz		40 MHz	80 MHz

*1) Refer to the test reports: 10882638S-N and 10882638S-O for FCC 15.407.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C: 2015, final revised on November 23, 2015

Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz

*Some parts are effective on and after December 17, 2015 or December 23, 2015. The revision does not affect the test specification applied to the EUT.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.4-2009 7. AC powerline Conducted Emission measurements **IC:** RSS-Gen 8.8	**FCC:** Section 15.207 **IC:** RSS-Gen 8.8	**AV** 12.7 dB, 24.00064 MHz, L1	Complied	-
6 dB Bandwidth	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r03 **IC:** -	**FCC:** Section 15.247(a)(2) **IC:** RSS-247 5.2(1)	See data.	Complied	Conducted
Maximum Peak Output Power	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r03 **IC:** RSS-Gen 6.12	**FCC:** Section 15.247(b)(3) **IC:** RSS-247 5.4(4)		Complied	Conducted
Power Density	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r03 **IC:** -	**FCC:** Section 15.247(e) **IC:** RSS-247 5.2(2)		Complied	Conducted
Spurious Emission Restricted Band Edges	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r03 **IC:** RSS-Gen 6.13	**FCC:** Section15.247(d) **IC:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	8.3 dB Tx 11b 2412 MHz [Normal Power mode] 9648.000 MHz, AV, Hori. Tx 11n-20 2412 MHz [Normal Power mode] 2390.000 MHz, AV, Hori.	Complied	Conducted (below 30 MHz)/ Radiated (above 30 MHz) *1)

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.
*1) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 DTS Meas Guidance v03r03 12.2.7.

* In case any questions arise about test procedure, ANSI C 63.10:2013 is also referred.
However, there is one deviation from ANSI C 63.10:2013. (ANSI C63.10:2013 is Non-accreditation)
Measurement height is not 1.5 m, but 0.8 m.

FCC 15.31 (e) / 212
The RF Module has its own regulator. The RF Module is constantly provided voltage (DC 1.1 V / 1.8 V) through the regulator regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC 15.203 / 212
The EUT has a U.FL connector. Therefore the equipment complies with the requirement of 15.203.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied 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

EMI

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

Shonan EMC Lab.

Item	Frequency range	Uncertainty (+/-)		
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz - 30 MHz	3.6 dB	3.4 dB	3.4 dB
Radiated emission (Measurement distance: 3 m)	9 kHz - 30 MHz	3.7 dB	3.5 dB	3.5 dB
	30 MHz - 300 MHz	4.9 dB	4.9 dB	4.7 dB
	300 MHz - 1 GHz	5.0 dB	5.0 dB	4.8 dB
	1 GHz - 15 GHz	4.9 dB	4.9 dB	4.9 dB
Radiated emission (Measurement distance: 1 m)	15 GHz - 18 GHz	5.7 dB	5.7 dB	5.7 dB
	18 GHz - 40 GHz	4.5 dB	4.3 dB	4.3 dB

SAC=Semi-Anechoic Chamber

SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz	0.68 dB
Spurious emission (Conducted) below 1 GHz	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
Bandwidth Measurement	0.66 %

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 test report has enough margin, more than the site margin.

3.5 Test Location

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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)

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

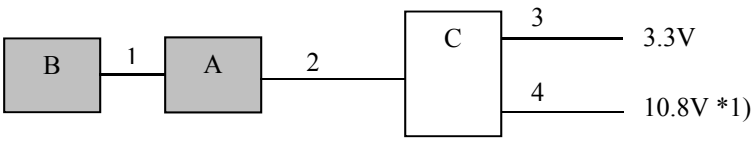
Mode	Remarks*
Transmitting (Tx), IEEE 802.11b (11b)	1 Mbps, PN9
Transmitting (Tx), IEEE 802.11g (11g)	6 Mbps, PN9
Transmitting (Tx), IEEE 802.11n SISO 20 MHz BW (11n-20)	MCS 0, PN9
Transmitting (Tx), IEEE 802.11n SISO 40 MHz BW (11n-40)	MCS 0, PN9
*The worst condition was determined based on the test result of Maximum Peak Output Power (Mid Channel)	
*Power of the EUT was set by the software as follows; Power settings: Normal power mode: 11b = 15, 11g = 12, 11n-20 = 12, 11n-20 = 10 Low power mode: 11b = 11, 11g = 8, 11n-20 = 8, 11n-40 = 8 Software: Tera Term Vesion 4.83 *The actual output power differs from the setting value. *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.	

*The details of Operating mode(s)

Test Item	Operating Mode	Tested frequency
Conducted Emission Spurious Emission (below 1GHz)	Normal power mode : Tx, 11g, Low power mode : Tx, 11n-40	2412 MHz
Spurious Emission	Tx, 11b Tx, 11n-20	2412 MHz 2437 MHz 2462 MHz
	Tx, 11g *1)	2412 MHz 2462 MHz
	Tx, 11n-40	2422 MHz 2437 MHz 2452 MHz
6 dB Bandwidth Maximum Peak Output Power Power Density 99 % Occupied Bandwidth	Tx, 11b, Tx, 11g, Tx, 11n-20	2412 MHz 2437 MHz 2462 MHz
	Tx, 11n-40	2422 MHz 2437 MHz 2452 MHz

*1) These were carried out only in Band edge.

4.2 Configuration and peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.
*1) This is power supply of Jig System for setting Operating Mode. This doesn't be supplied during Radiated Emission Test.

Description of EUT

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless Module	ES201	5I52	Canon	EUT
B	Antenna	Dual Band WLAN Antenna Cable Assembly 2011	001	Canon	EUT
C	Jig System	-	-	Canon	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Antenna	0.02	Unshielded	Unshielded	-
2	Jig	0.1	Unshielded	Unshielded	-
3	DC	1.3	Unshielded	Unshielded	-
4	DC	1.0	Unshielded	Unshielded	-

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 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.

Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN / (AMN) to the input power source.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT via DC power supply in a Shielded room. The EUT via DC power supply was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

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

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

SECTION 6: Radiated Spurious Emission

Test Procedure

It was measured based on "11.0 Emissions in non-restricted frequency bands" of "558074 D01 DTS Meas Guidance v03r03".

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 0.8 m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.
The height of the measuring antenna varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.
The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Test Antennas are used as below;

Frequency	Below 30 MHz	30 MHz to 300 MHz	300 MHz to 1 GHz	Above 1 GHz
Antenna Type	Loop	Biconical	Logperiodic	Horn

In any 100 kHz bandwidth outside the restricted band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

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

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	Peak	Average *2)	Peak
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	Average Power Method: 12.2.5.2 RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (Linear voltage) Trace: 100 traces Duty factor was added to the results.	RBW: 100 kHz VBW: 300kHz
Test Distance	3 m	3 m (below 15 GHz), 1 m *1) (above 15 GHz)		3 m (below 15 GHz), 1 m *1) (above 15 GHz)

*1) Distance Factor: 20 x log (3.0 m / 1.0 m) = 9.5 dB
*2) Average Power Measurement was performed based on 6.0 & 12.2.5 of "KDB 558074 D01 DTS Meas Guidance v03r03"

- 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.

	Frequency / Test / Antenna	Carrier	Spurious			
			30 MHz-1 GHz	1-15 GHz	15-18 GHz	18-26.5 GHz
Module	Horizontal	Y	X	Y	Y	Z
	Vertical	Y	X	Y	Y	Z
Antenna	Horizontal	Y	X	Y	Y	Y
	Vertical	X	X	X	Y	Y

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

Measurement range : **30 MHz - 25 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
6 dB Bandwidth	50 MHz or 100MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Sample	Max Hold	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak/ Average *2)	-	Power Meter (Sensor: 160 MHz BW)
Peak Power Density	1.5 times the 6 dB Bandwidth	3 kHz	9.1 kHz	Auto	Peak	Max Hold	Spectrum Analyzer *3)
Conducted Spurious Emission *4)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				

*1) Peak hold was applied as Worst-case measurement.
*2) Reference data
*3) Section 10.2 Method PKPSD (peak PSD) of "KDB 558074 D01 DTS Meas Guidance v03r03".
*4) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.
(9 kHz - 150 kHz: RBW = 200 Hz, 150 kHz - 30 MHz: RBW = 10 kHz)

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

[Normal Power mode]

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2015/08/28

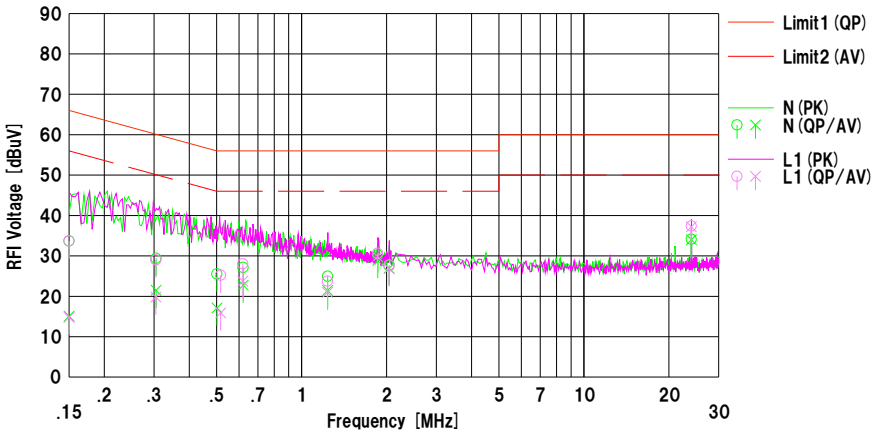
Mode : Tx.11n HT20.2412MHz.Power:12dBm

Power : DC3.3 V
Temp./Humi. : 23 deg.C. / 52 %RH

Remarks : -

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

Engineer : Yosuke Ishikawa



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	0.15001	21.00	2.40	12.68	33.68	15.08	66.00	56.00	32.3	40.9	N	
2	0.30511	16.70	8.80	12.69	29.39	21.49	60.10	50.10	30.7	28.6	N	
3	0.50113	12.80	4.40	12.71	25.51	17.11	56.00	46.00	30.4	28.8	N	
4	0.62085	14.40	10.00	12.73	27.13	22.73	56.00	46.00	28.8	23.2	N	
5	1.23620	12.20	8.70	12.75	24.95	21.45	56.00	46.00	31.0	24.5	N	
6	1.85990	17.40	16.00	12.82	30.22	28.82	56.00	46.00	25.7	17.1	N	
7	2.04232	14.70	14.10	12.83	27.53	26.93	56.00	46.00	28.4	19.0	N	
8	24.00032	20.30	20.20	13.81	34.11	34.01	60.00	50.00	25.8	15.9	N	
9	0.15001	21.00	2.10	12.68	33.68	14.78	66.00	56.00	32.3	41.2	L1	
10	0.30471	16.30	7.10	12.69	28.99	19.79	60.11	50.11	31.1	30.3	L1	
11	0.51672	12.50	3.20	12.71	25.21	15.91	56.00	46.00	30.7	30.0	L1	
12	0.61894	15.30	11.00	12.73	28.03	23.73	56.00	46.00	27.9	22.2	L1	
13	1.23508	11.00	8.20	12.75	23.75	20.95	56.00	46.00	32.2	25.0	L1	
14	1.85770	17.80	17.00	12.82	30.62	29.82	56.00	46.00	25.3	16.1	L1	
15	2.04259	14.90	14.00	12.83	27.73	26.83	56.00	46.00	28.2	19.1	L1	
16	24.00064	23.60	23.40	13.81	37.41	37.21	60.00	50.00	22.5	12.7	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN:SLS-01

Conducted Emission

[Low Power mode]

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2015/08/28

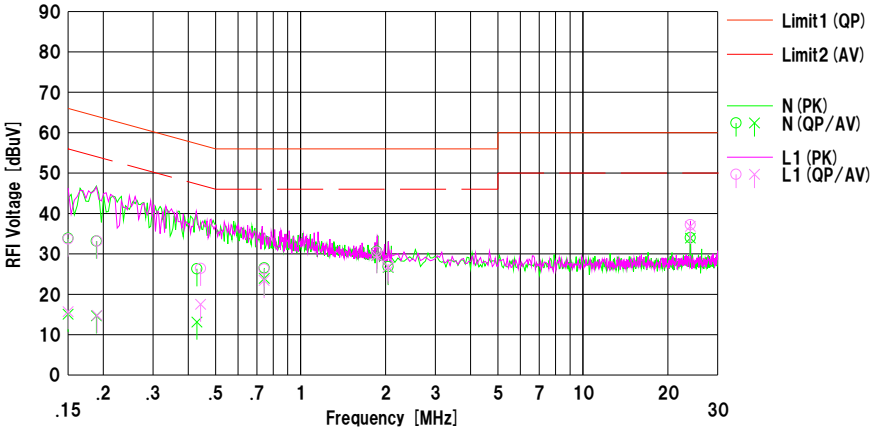
Mode : Tx.11n HT40.2422MHz.Power:8dBm

Power : DC3.3 V
Temp./Humi. : 23 deg.C. / 52 %RH

Remarks : -

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

Engineer : Yosuke Ishikawa



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	0.15001	21.20	2.40	12.68	33.88	15.08	66.00	56.00	32.1	40.9	N	
2	0.18909	20.50	2.00	12.66	33.16	14.66	64.08	54.08	30.9	39.4	N	
3	0.42894	13.60	0.40	12.71	26.31	13.11	57.27	47.27	30.9	34.1	N	
4	0.74359	13.80	11.20	12.73	26.53	23.93	56.00	46.00	29.4	22.0	N	
5	1.86032	17.80	16.80	12.82	30.62	29.62	56.00	46.00	25.3	16.3	N	
6	2.04214	14.00	13.80	12.83	26.83	26.63	56.00	46.00	29.1	19.3	N	
7	24.00015	20.20	20.10	13.81	34.01	33.91	60.00	50.00	25.9	16.0	N	
8	0.15001	21.00	3.00	12.68	33.68	15.68	66.00	56.00	32.3	40.3	L1	
9	0.19010	20.50	2.10	12.66	33.16	14.76	64.03	54.03	30.8	39.2	L1	
10	0.44219	13.70	4.80	12.71	26.41	17.51	57.02	47.02	30.6	29.5	L1	
11	0.74232	13.50	10.70	12.73	26.23	23.43	56.00	46.00	29.7	22.5	L1	
12	1.86018	17.60	16.70	12.82	30.42	29.52	56.00	46.00	25.5	16.4	L1	
13	2.04202	14.70	14.00	12.83	27.53	26.83	56.00	46.00	28.4	19.1	L1	
14	23.99993	23.40	23.00	13.81	37.21	36.81	60.00	50.00	22.7	13.1	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN:SLS-01

6 dB Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

Normal mode

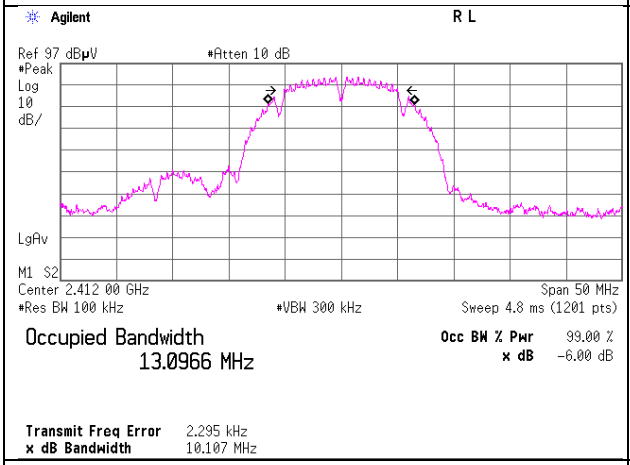
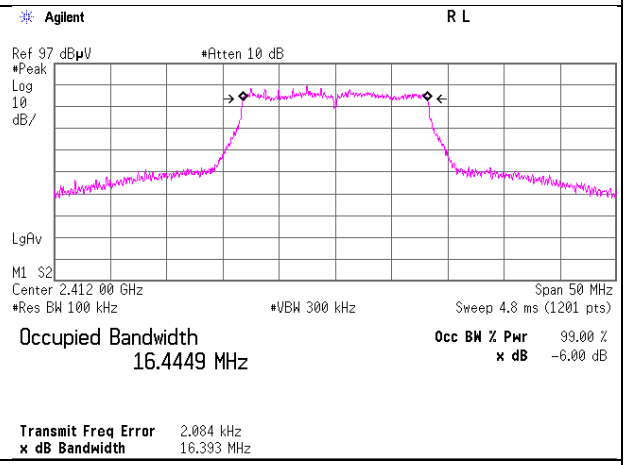
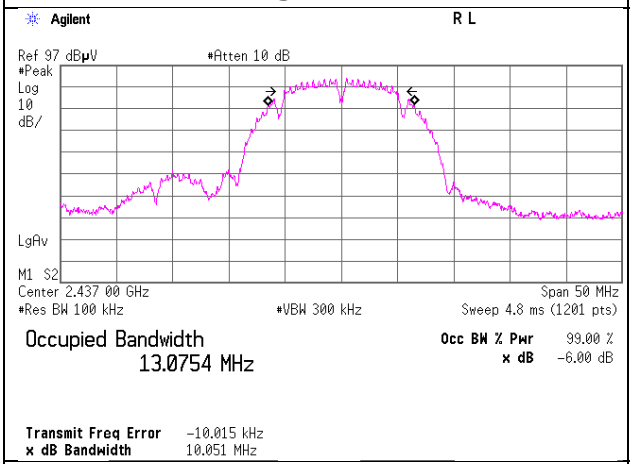
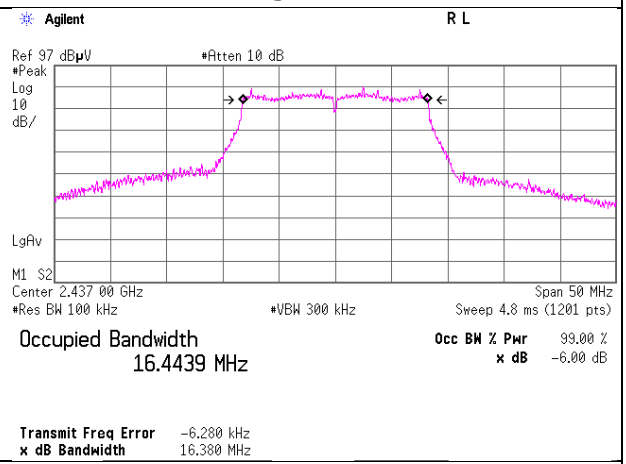
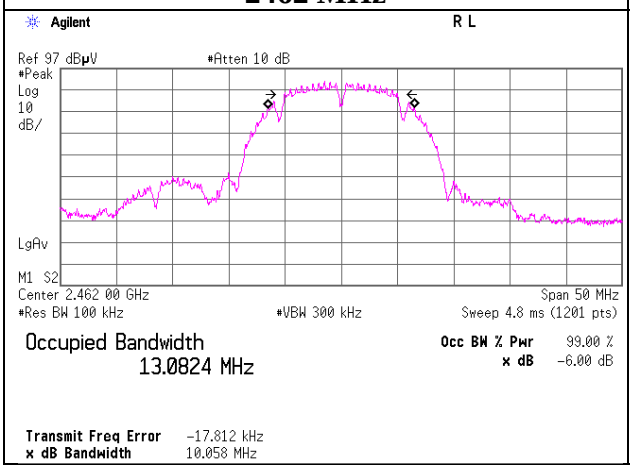
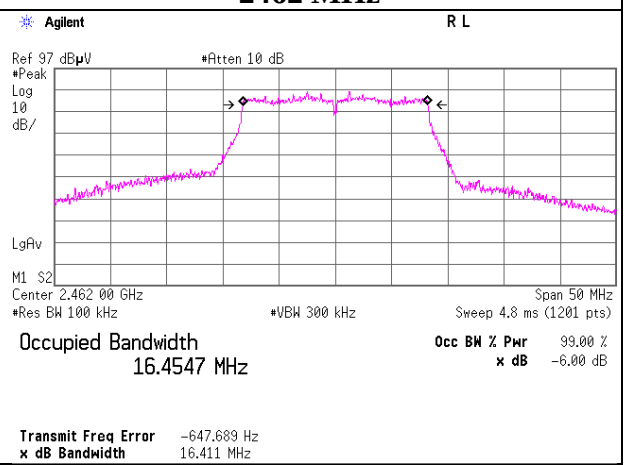
Mode	Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
11b	2412	10.107	> 500
	2437	10.051	> 500
	2462	10.058	> 500
11g	2412	16.393	> 500
	2437	16.380	> 500
	2462	16.411	> 500
11n-20	2412	17.132	> 500
	2437	17.547	> 500
	2462	17.600	> 500
11n-40	2422	35.880	> 500
	2437	35.798	> 500
	2452	36.121	> 500

Low Power mode

Mode	Frequency [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
11b	2412	10.103	> 500
	2437	10.108	> 500
	2462	10.091	> 500
11g	2412	16.410	> 500
	2437	16.410	> 500
	2462	16.371	> 500
11n-20	2412	17.571	> 500
	2437	17.186	> 500
	2462	17.397	> 500
11n-40	2422	35.840	> 500
	2437	35.884	> 500
	2452	35.729	> 500

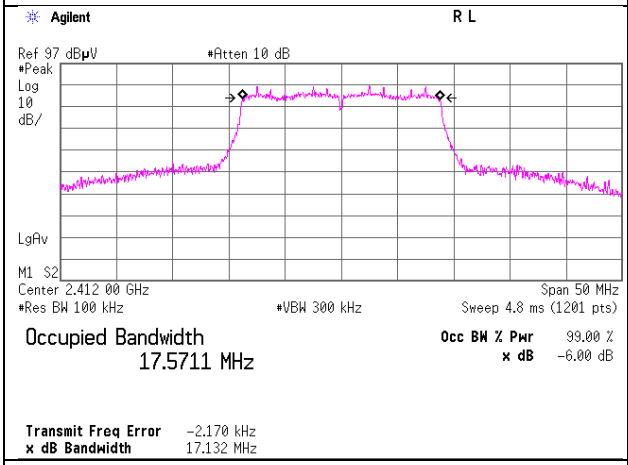
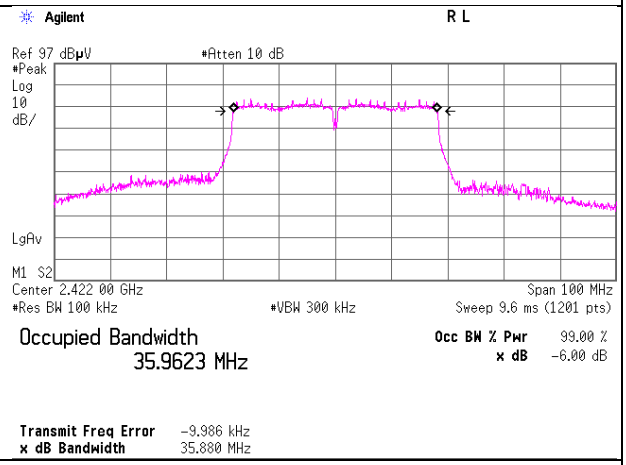
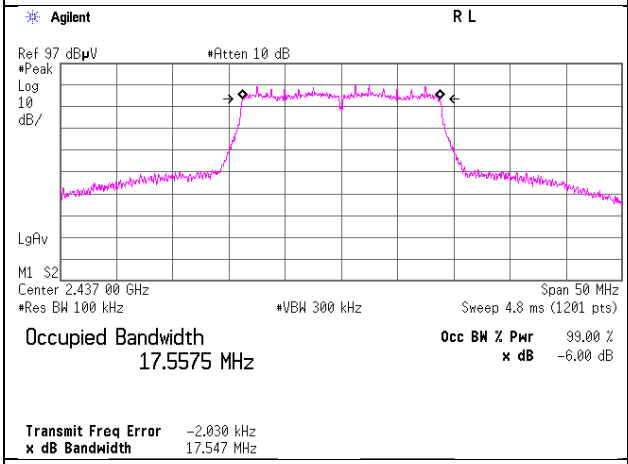
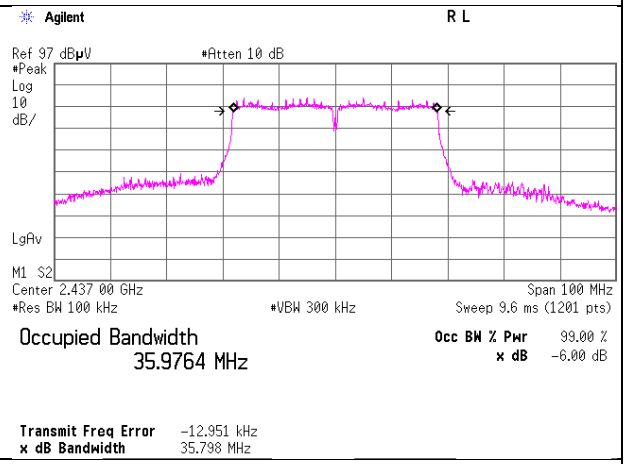
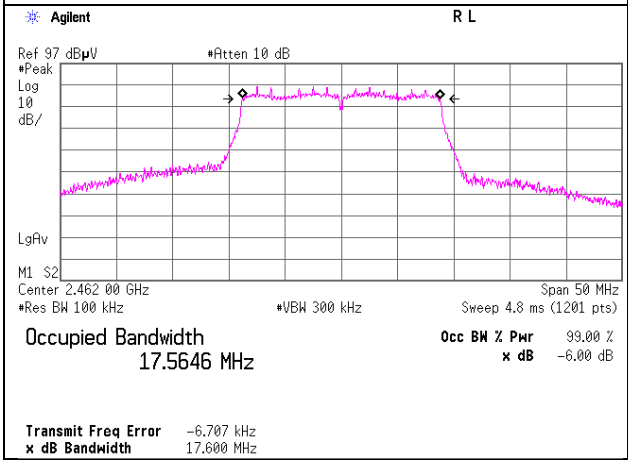
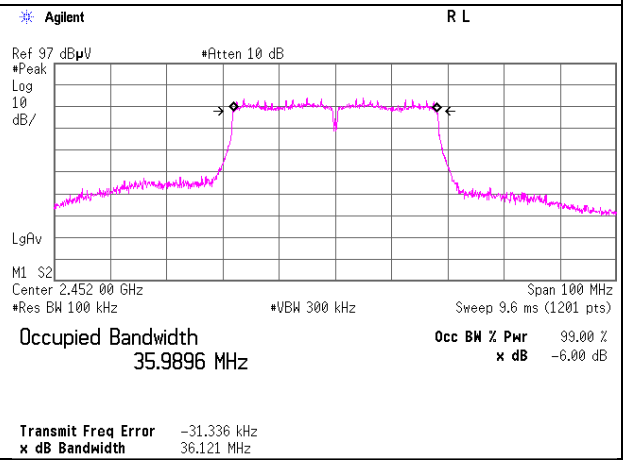
6 dB Bandwidth

[Normal Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

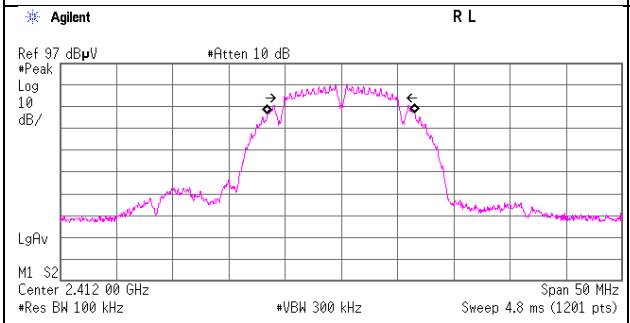
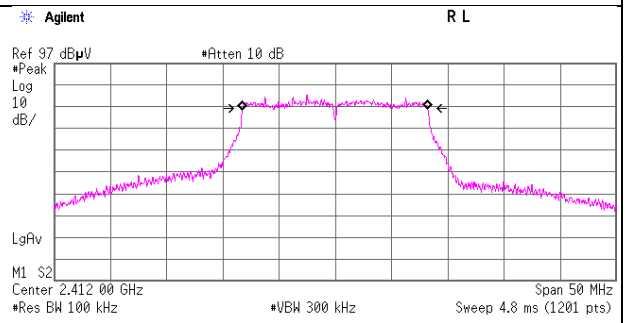
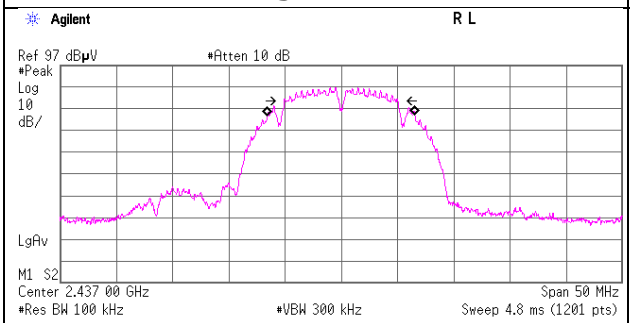
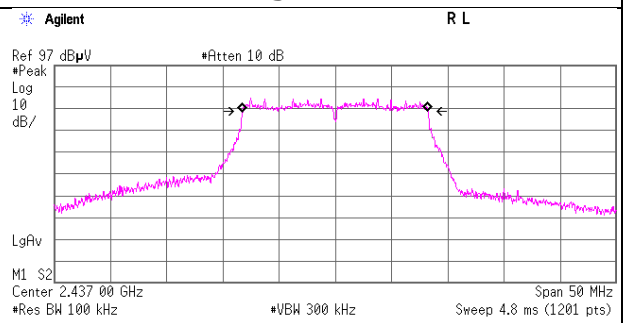
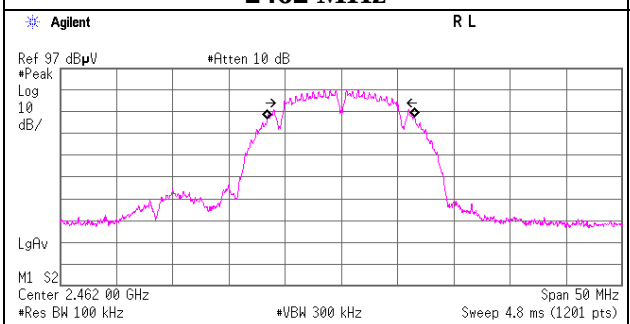
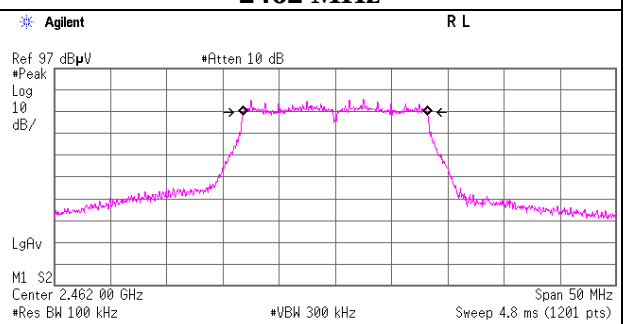
6 dB Bandwidth

[Normal Power mode]

11n-20	11n-40
2412 MHz	**2422 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2452 MHz**
	

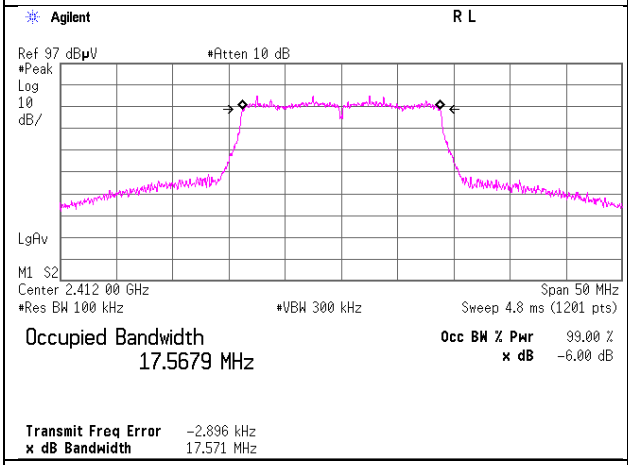
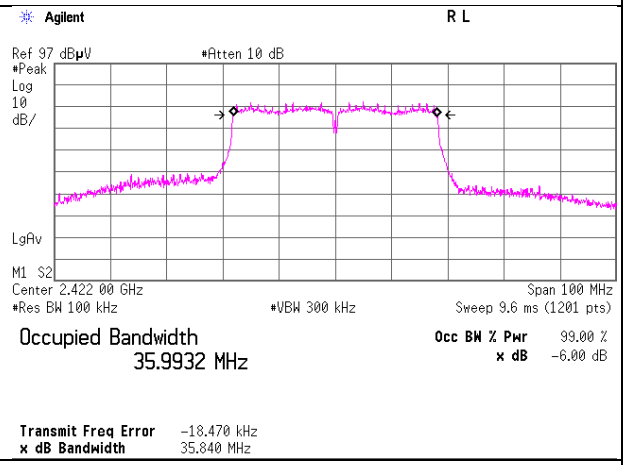
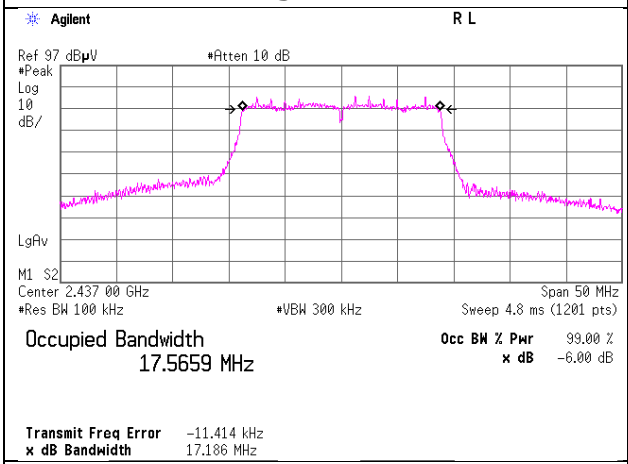
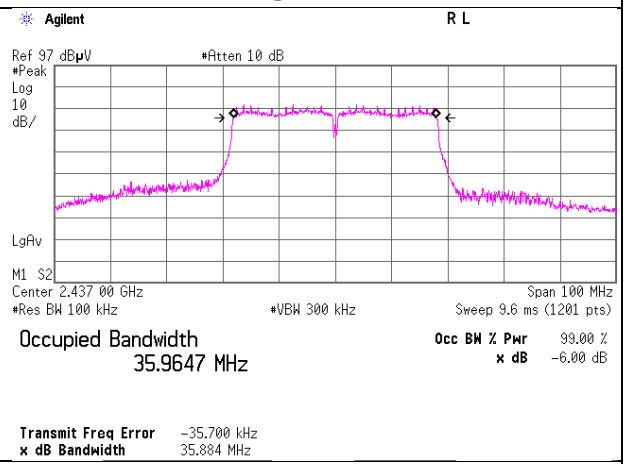
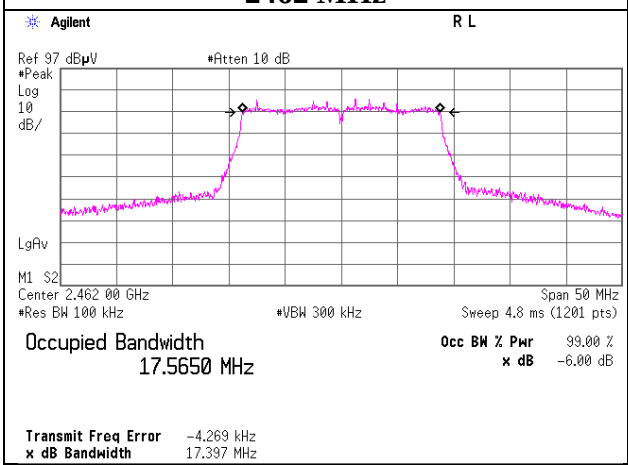
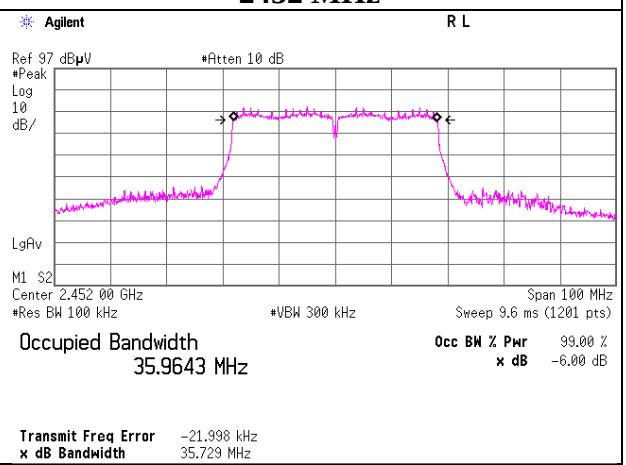
6 dB Bandwidth

[Low Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

6 dB Bandwidth

[Low Power mode]

11n-20	11n-40
2412 MHz	**2422 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2452 MHz**
	

Maximum Peak Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11b

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	6.20	1.89	9.99	18.08	64.27	30.00	1000	11.92
2437	6.14	1.89	10.00	18.03	63.53	30.00	1000	11.97
2462	6.07	1.89	10.00	17.96	62.52	30.00	1000	12.04

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	2.63	1.89	9.99	14.51	28.25	30.00	1000	15.49
2437	2.51	1.89	10.00	14.40	27.54	30.00	1000	15.60
2462	2.44	1.89	10.00	14.33	27.10	30.00	1000	15.67

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

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

Normal Power mode, 2437MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
1	6.14	*
2	6.06	
5.5	5.56	
11	5.48	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11g

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	11.68	1.89	9.99	23.56	226.99	30.00	1000	6.44
2437	11.62	1.89	10.00	23.51	224.39	30.00	1000	6.49
2462	11.48	1.89	10.00	23.37	217.27	30.00	1000	6.63

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	6.64	1.89	9.99	18.52	71.12	30.00	1000	11.48
2437	7.16	1.89	10.00	19.05	80.35	30.00	1000	10.95
2462	7.09	1.89	10.00	18.98	79.07	30.00	1000	11.02

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

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

Normal Power mode, 2437 MHz

Rate	Reading	Remark
[Mbps]	[dBm]	
6	11.62	*
9	11.56	
12	11.00	
18	10.92	
24	10.93	
36	10.78	
48	11.03	
54	10.95	

*: Worst Rate
All comparison were carried out on same frequency and measurement factors.

Maximum Peak Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11n-20

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	11.86	1.89	9.99	23.74	236.59	30.00	1000	6.26
2437	11.70	1.89	10.00	23.59	228.56	30.00	1000	6.41
2462	11.18	1.89	10.00	23.07	202.77	30.00	1000	6.93

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2412	6.53	1.89	9.99	18.41	69.34	30.00	1000	11.59
2437	7.09	1.89	10.00	18.98	79.07	30.00	1000	11.02
2462	6.80	1.89	10.00	18.69	73.96	30.00	1000	11.31

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

*The equipment and cables were not used for factor 0.0 dB of the data sheets.

Normal Power mode, 2437 MHz

MCS Number	Reading [dBm]	Remark
0	11.70	*
1	11.64	
2	11.52	
3	11.69	
4	11.30	
5	11.22	
6	11.57	
7	11.21	

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

Maximum Peak Output Power

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11n-40

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2422	11.29	1.89	10.00	23.18	207.97	30.00	1000	6.82
2437	11.54	1.89	10.00	23.43	220.29	30.00	1000	6.57
2452	11.30	1.89	10.00	23.19	208.45	30.00	1000	6.81

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
2422	9.59	1.89	10.00	21.48	140.60	30.00	1000	8.52
2437	8.89	1.89	10.00	20.78	119.67	30.00	1000	9.22
2452	8.03	1.89	10.00	19.92	98.17	30.00	1000	10.08

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

*The equipment and cables were not used for factor 0.0 dB of the data sheets.

Normal Power mode, 2437 MHz

MCS Number	Reading [dBm]	Remark
0	11.54	*
1	9.21	
2	10.12	
3	9.59	
4	10.48	
5	9.64	
6	9.64	
7	9.04	

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

Average Output Power
(Reference data for SAR testing)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11b

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	2.83	1.89	9.99	14.71	29.58	0.00	14.71	29.58
2437	2.89	1.89	10.00	14.78	30.06	0.00	14.78	30.06
2462	2.72	1.89	10.00	14.61	28.91	0.00	14.61	28.91

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	-0.71	1.89	9.99	11.17	13.09	0.00	11.17	13.09
2437	-0.77	1.89	10.00	11.12	12.94	0.00	11.12	12.94
2462	-0.87	1.89	10.00	11.02	12.65	0.00	11.02	12.65

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

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

Normal Power mode, 2437 MHz

Mode	Rate	Reading	Duty factor	Burst power	Remarks
	Mbps	[dBm]	[dB]	[dBm]	
11b	1	2.89	0.00	2.89	*
	2	2.83	0.01	2.84	
	5.5	2.24	0.02	2.26	
	11	2.17	0.04	2.21	

* 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 SAR testing)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11g

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	0.55	1.89	9.99	12.43	17.50	0.02	12.45	17.58
2437	0.44	1.89	10.00	12.33	17.10	0.02	12.35	17.18
2462	0.64	1.89	10.00	12.53	17.91	0.02	12.55	17.99

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	-3.50	1.89	9.99	8.38	6.89	0.02	8.40	6.92
2437	-3.78	1.89	10.00	8.11	6.47	0.02	8.13	6.50
2462	-3.87	1.89	10.00	8.02	6.34	0.02	8.04	6.37

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

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

Normal Power mode, 2437 MHz

Mode	Rate	Reading	Duty factor	Burst power	Remarks
	Mbps	[dBm]	[dB]	[dBm]	
11g	6	0.44	0.02	0.46	*
	9	0.38	0.04	0.42	
	12	0.36	0.05	0.41	
	18	0.30	0.07	0.37	
	24	0.27	0.10	0.37	
	36	-0.18	0.15	-0.03	
	48	-0.03	0.19	0.16	
	54	0.24	0.21	0.45	

* 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 SAR testing)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11n-20

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	0.50	1.89	9.99	12.38	17.30	0.03	12.41	17.42
2437	0.50	1.89	10.00	12.39	17.34	0.03	12.42	17.46
2462	0.60	1.89	10.00	12.49	17.74	0.03	12.52	17.86

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2412	-3.54	1.89	9.99	8.34	6.82	0.03	8.37	6.87
2437	-3.50	1.89	10.00	8.39	6.90	0.03	8.42	6.95
2462	-3.60	1.89	10.00	8.29	6.75	0.03	8.32	6.79

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

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

Normal Power mode, 2437 MHz

Mode	Rate MCS	Reading [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
11n-20	0	0.50	0.03	0.53	*
	1	0.32	0.05	0.37	
	2	0.16	0.08	0.24	
	3	0.18	0.10	0.28	
	4	0.27	0.15	0.42	
	5	0.12	0.20	0.32	
	6	0.06	0.22	0.28	
	7	0.26	0.25	0.51	

* 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 SAR testing)

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx 11n-40

Normal Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2422	-1.53	1.89	10.00	10.36	10.86	0.06	10.42	11.02
2437	-1.49	1.89	10.00	10.40	10.96	0.06	10.46	11.12
2452	-1.55	1.89	10.00	10.34	10.81	0.06	10.40	10.96

Low Power mode

Freq.	Reading	Cable Loss	Atten. Loss	Result (Frame power)		Duty factor	Result (Burst power)	
[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
2422	-3.44	1.89	10.00	8.45	7.00	0.06	8.51	7.10
2437	-3.64	1.89	10.00	8.25	6.68	0.06	8.31	6.78
2452	-3.45	1.89	10.00	8.44	6.98	0.06	8.50	7.08

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

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

Normal Power mode, 2437 MHz

Mode	Rate	Reading	Duty factor	Burst power	Remarks
	MCS	[dBm]	[dB]	[dBm]	
11n-40	0	-1.49	0.06	-1.43	*
	1	-1.62	0.11	-1.51	
	2	-1.65	0.16	-1.49	
	3	-1.83	0.20	-1.63	
	4	-1.99	0.29	-1.70	
	5	-1.99	0.36	-1.63	
	6	-2.20	0.40	-1.80	
	7	-2.03	0.43	-1.60	

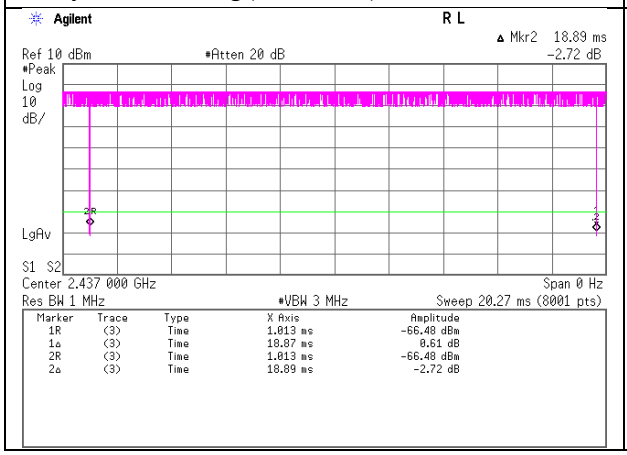
* Worst rate
Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Burst rate confirmation

Test place	Shonan EMC Lab. No.1 Measurement Room
Report No.	10882638S-M
Date	August 7, 2015
Temperature / Humidity	25 deg. C / 46 % RH
Engineer	Yosuke Ishikawa
Mode	Tx

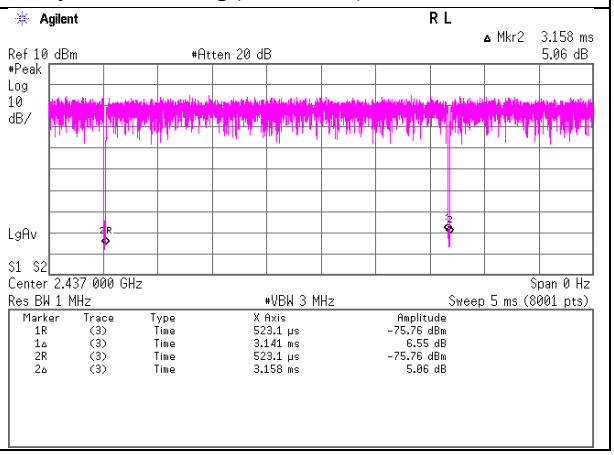
11b 1 Mbps

Tx on / (Tx on + Tx off) =	**0.999**
Tx on / (Tx on + Tx off) * 100 =	**99.9 %**
Duty factor = 10 * log (18.89 / 18.87) =	**0.00 dB**



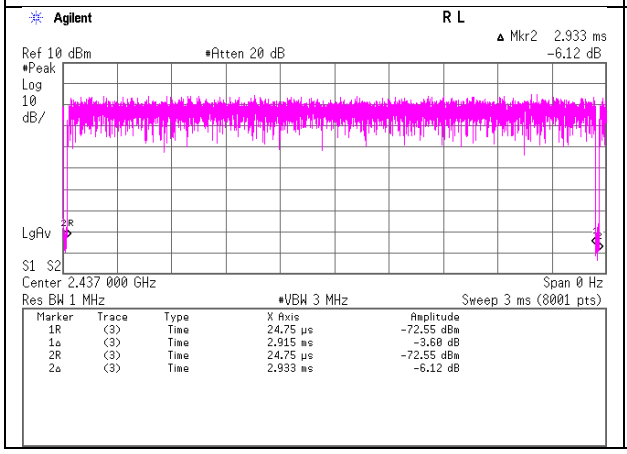
11g 6 Mbps

Tx on / (Tx on + Tx off) =	**0.995**
Tx on / (Tx on + Tx off) * 100 =	**99.5 %**
Duty factor = 10 * log (3.158 / 3.141) =	**0.02 dB**



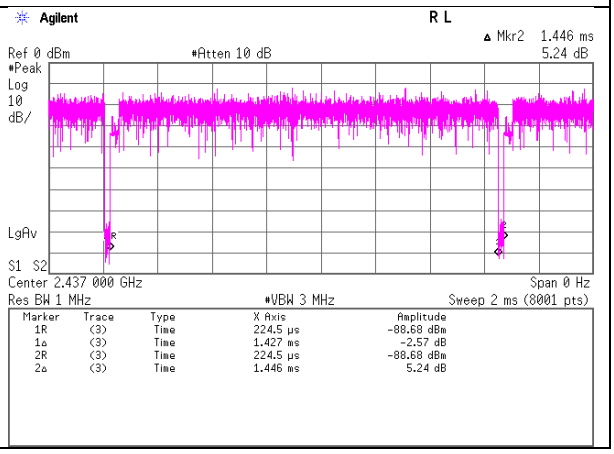
11n-20 MCS 0

Tx on / (Tx on + Tx off) =	**0.994**
Tx on / (Tx on + Tx off) * 100 =	**99.4 %**
Duty factor = 10 * log (2.933 / 2.915) =	**0.03 dB**



11n-40 MCS 0

Tx on / (Tx on + Tx off) =	**0.987**
Tx on / (Tx on + Tx off) * 100 =	**98.7 %**
Duty factor = 10 * log (1.446 / 1.427) =	**0.06 dB**



Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11b 2412 MHz [Normal Power mode]		

(* 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.	2338.850	PK	45.9	26.9	13.6	40.7	2.4	48.1	73.9	25.8	121	304	
Hori.	2390.000	PK	47.5	26.9	13.7	40.7	2.4	49.8	73.9	24.1	121	304	
Hori.	2484.542	PK	48.5	26.9	13.8	40.7	2.4	50.9	73.9	23.0	121	304	
Hori.	4824.000	PK	50.8	31.5	6.2	41.6	2.4	49.3	73.9	24.6	104	318	
Hori.	7236.000	PK	47.3	36.9	7.8	41.2	2.4	53.2	73.9	20.7	104	335	
Hori.	9648.000	PK	46.0	37.7	8.8	40.1	2.4	54.8	73.9	19.1	170	217	
Hori.	19296.000	PK	45.6	40.5	11.5	47.8	-9.5	40.3	73.9	33.6	100	156	
Hori.	2338.850	AV	37.2	26.9	13.6	40.7	2.4	39.4	53.9	14.5	121	304	
Hori.	2390.000	AV	37.8	26.9	13.7	40.7	2.4	40.1	53.9	13.8	121	304	
Hori.	2484.542	AV	37.4	26.9	13.8	40.7	2.4	39.8	53.9	14.1	121	304	
Hori.	4824.000	AV	45.3	31.5	6.2	41.6	2.4	43.8	53.9	10.1	104	318	
Hori.	7236.000	AV	39.2	36.9	7.8	41.2	2.4	45.1	53.9	8.8	104	335	
Hori.	9648.000	AV	36.8	37.7	8.8	40.1	2.4	45.6	53.9	**8.3**	170	217	
Hori.	19296.000	AV	39.0	40.5	11.5	47.8	-9.5	33.7	53.9	20.2	100	156	
Vert.	2390.000	PK	45.3	26.9	13.7	40.7	2.4	47.6	73.9	26.3	188	155	
Vert.	4824.000	PK	49.6	31.5	6.2	41.6	2.4	48.1	73.9	25.8	100	282	
Vert.	7236.000	PK	46.4	36.9	7.8	41.2	2.4	52.3	73.9	21.6	100	0	
Vert.	9648.000	PK	45.2	37.7	8.8	40.1	2.4	54.0	73.9	19.9	100	0	
Vert.	19296.000	PK	46.3	40.5	11.5	47.8	-9.5	41.0	73.9	32.9	100	212	
Vert.	2390.000	AV	37.0	26.9	13.7	40.7	2.4	39.3	53.9	14.6	188	155	
Vert.	4824.000	AV	43.0	31.5	6.2	41.6	2.4	41.5	53.9	12.4	100	282	
Vert.	7236.000	AV	37.3	36.9	7.8	41.2	2.4	43.2	53.9	10.7	100	0	
Vert.	9648.000	AV	35.9	37.7	8.8	40.1	2.4	44.7	53.9	9.2	100	0	
Vert.	19296.000	AV	39.7	40.5	11.5	47.8	-9.5	34.4	53.9	19.5	100	212	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

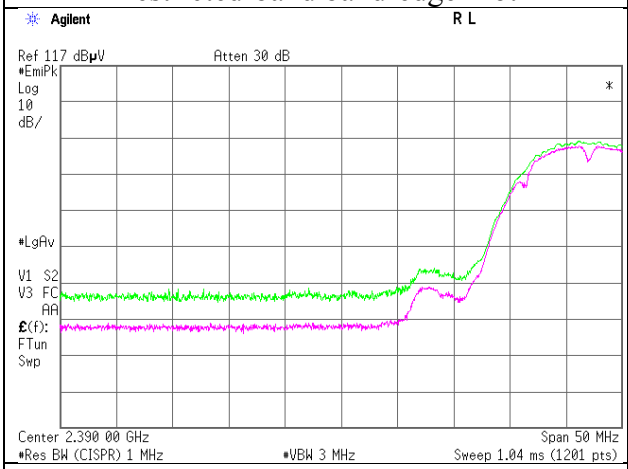
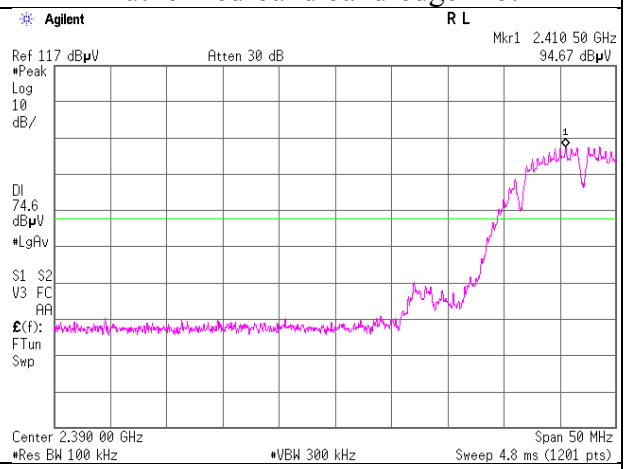
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	94.7	26.9	13.7	40.7	2.4	97.0	-	-	Carrier
Hori.	2397.005	PK	54.9	26.9	13.7	40.7	2.4	57.2	76.9	19.7	
Hori.	2400.000	PK	50.9	26.9	13.7	40.7	2.4	53.2	76.9	23.7	
Vert.	2412.000	PK	90.3	26.9	13.7	40.7	2.4	92.6	-	-	Carrier
Vert.	2397.010	PK	51.9	26.9	13.7	40.7	2.4	54.2	72.6	18.4	
Vert.	2400.000	PK	47.5	26.9	13.7	40.7	2.4	49.8	72.6	22.8	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

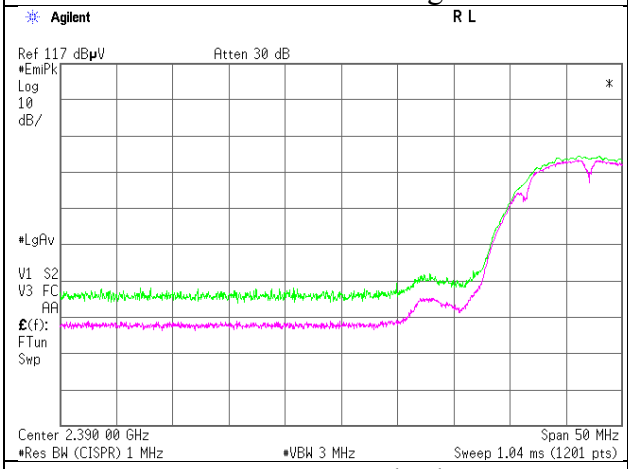
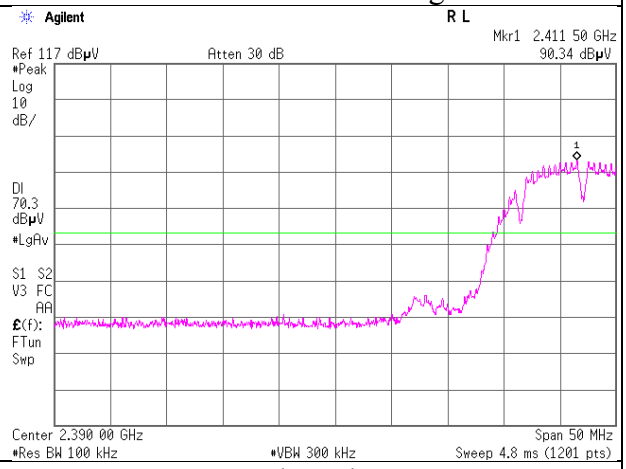
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11b 2412 MHz [Normal Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 13, 2015	August 22, 2015	April 26, 2015
Temperature / Humidity	26 deg. C / 65 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11b 2437 MHz [Normal Power mode]		

(* 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.	4874.000	PK	49.1	31.6	6.3	41.6	2.4	47.8	73.9	26.1	104	270	
Hori.	7311.000	PK	47.8	37.0	7.8	41.3	2.4	53.7	73.9	20.2	100	334	
Hori.	9748.000	PK	44.2	37.8	8.9	40.1	2.4	53.2	73.9	20.7	100	0	
Hori.	19496.000	PK	47.4	40.4	11.6	47.6	-9.5	42.3	73.9	31.6	100	187	
Hori.	4874.000	AV	41.2	31.6	6.3	41.6	2.4	39.9	53.9	14.0	104	270	
Hori.	7311.000	AV	39.1	37.0	7.8	41.3	2.4	45.0	53.9	**8.9**	100	334	
Hori.	9748.000	AV	35.6	37.8	8.9	40.1	2.4	44.6	53.9	9.3	100	0	
Hori.	19496.000	AV	39.9	40.4	11.6	47.6	-9.5	34.8	53.9	19.1	100	187	
Vert.	4874.000	PK	49.2	31.6	6.3	41.6	2.4	47.9	73.9	26.0	100	2	
Vert.	7311.000	PK	47.4	37.0	7.8	41.3	2.4	53.3	73.9	20.6	100	0	
Vert.	9748.000	PK	44.5	37.8	8.9	40.1	2.4	53.5	73.9	20.4	100	0	
Vert.	19496.000	PK	47.2	40.4	11.6	47.6	-9.5	42.1	73.9	31.8	100	185	
Vert.	4874.000	AV	41.8	31.6	6.3	41.6	2.4	40.5	53.9	13.4	100	2	
Vert.	7311.000	AV	37.6	37.0	7.8	41.3	2.4	43.5	53.9	10.4	100	0	
Vert.	9748.000	AV	35.6	37.8	8.9	40.1	2.4	44.6	53.9	9.3	100	0	
Vert.	19496.000	AV	40.8	40.4	11.6	47.6	-9.5	35.7	53.9	18.2	100	185	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)
Mode	Tx 11b 2462 MHz [Normal Power mode]		

(* 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.	2388.467	PK	47.6	26.9	13.7	40.7	2.4	49.9	73.9	24.0	100	309	
Hori.	2483.500	PK	45.7	26.9	13.8	40.7	2.4	48.1	73.9	25.8	100	309	
Hori.	2537.732	PK	45.8	27.0	13.8	40.7	2.4	48.3	73.9	25.6	100	309	
Hori.	4924.000	PK	49.5	31.8	6.4	41.6	2.4	48.5	73.9	25.4	100	300	
Hori.	7386.000	PK	47.0	37.0	7.8	41.3	2.4	52.9	73.9	21.0	100	343	
Hori.	9848.000	PK	44.8	37.9	8.9	40.0	2.4	54.0	73.9	19.9	100	0	
Hori.	19696.000	PK	46.3	40.3	11.7	47.5	-9.5	41.3	73.9	32.6	100	191	
Hori.	20049.970	PK	43.8	40.2	11.8	47.3	-9.5	39.0	73.9	34.9	100	283	
Hori.	2388.467	AV	39.9	26.9	13.7	40.7	2.4	42.2	53.9	11.7	100	309	
Hori.	2483.500	AV	36.1	26.9	13.8	40.7	2.4	38.5	53.9	15.4	100	309	
Hori.	2537.732	AV	37.4	27.0	13.8	40.7	2.4	39.9	53.9	14.0	100	309	
Hori.	4924.000	AV	43.0	31.8	6.4	41.6	2.4	42.0	53.9	11.9	100	300	
Hori.	7386.000	AV	38.5	37.0	7.8	41.3	2.4	44.4	53.9	9.5	100	343	
Hori.	9848.000	AV	35.8	37.9	8.9	40.0	2.4	45.0	53.9	**8.9**	100	0	
Hori.	19696.000	AV	36.6	40.3	11.7	47.5	-9.5	31.6	53.9	22.3	100	191	
Hori.	20049.970	AV	36.8	40.2	11.8	47.3	-9.5	32.0	53.9	21.9	100	283	
Vert.	2388.473	PK	47.0	26.9	13.7	40.7	2.4	49.3	73.9	24.6	122	151	
Vert.	2483.500	PK	45.4	26.9	13.8	40.7	2.4	47.8	73.9	26.1	122	151	
Vert.	4924.000	PK	50.1	31.8	6.4	41.6	2.4	49.1	73.9	24.8	100	277	
Vert.	7386.000	PK	47.0	37.0	7.8	41.3	2.4	52.9	73.9	21.0	100	0	
Vert.	9848.000	PK	44.3	37.9	8.9	40.0	2.4	53.5	73.9	20.4	100	0	
Vert.	19696.000	PK	46.7	40.3	11.7	47.5	-9.5	41.7	73.9	32.2	100	188	
Vert.	20049.970	PK	48.0	40.2	11.8	47.3	-9.5	43.2	73.9	30.7	100	254	
Vert.	2388.473	AV	38.6	26.9	13.7	40.7	2.4	40.9	53.9	13.0	122	151	
Vert.	2483.500	AV	36.2	26.9	13.8	40.7	2.4	38.6	53.9	15.3	122	151	
Vert.	4924.000	AV	43.2	31.8	6.4	41.6	2.4	42.2	53.9	11.7	100	277	
Vert.	7386.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9848.000	AV	35.8	37.9	8.9	40.0	2.4	45.0	53.9	**8.9**	100	0	
Vert.	19696.000	AV	40.1	40.3	11.7	47.5	-9.5	35.1	53.9	18.8	100	188	
Vert.	20049.970	AV	42.9	40.2	11.8	47.3	-9.5	38.1	53.9	15.8	100	254	

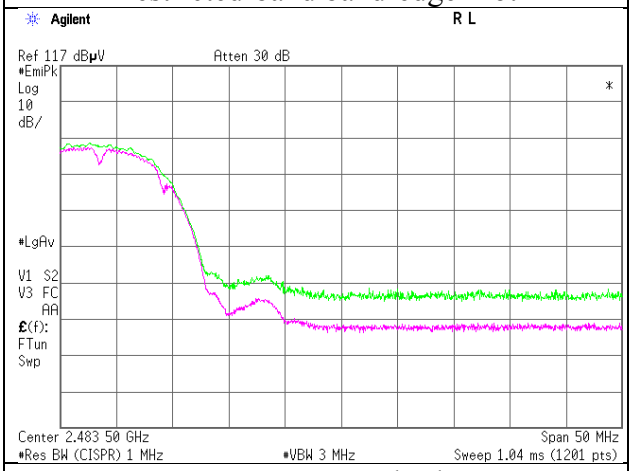
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11b 2462 MHz [Normal Power mode]

Horizontal

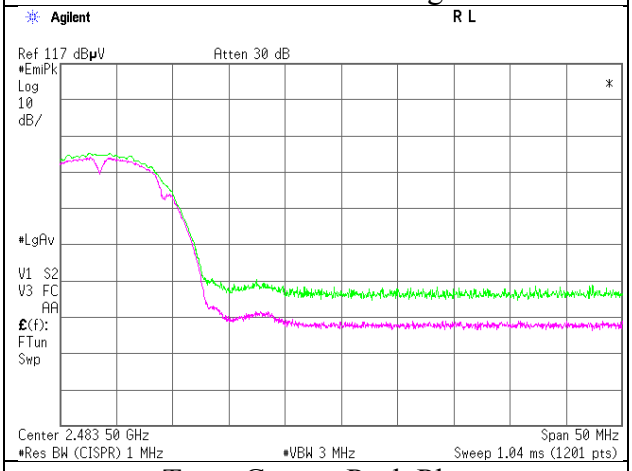
Restricted-band band-edge Plot



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.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2412 MHz [Normal Power mode]

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	57.7	26.9	13.7	40.7	2.4	60.0	73.9	13.9	100	140	
Hori.	2390.000	AV	42.9	26.9	13.7	40.7	2.4	45.2	53.9	**8.7**	100	140	
Vert.	2390.000	PK	52.6	26.9	13.7	40.7	2.4	54.9	73.9	19.0	184	161	
Vert.	2390.000	AV	39.8	26.9	13.7	40.7	2.4	42.1	53.9	11.8	184	161	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	90.3	26.9	13.7	40.7	2.4	92.6	-	-	Carrier
Hori.	2400.000	PK	49.4	26.9	13.7	40.7	2.4	51.7	72.6	20.9	
Vert.	2412.000	PK	86.6	26.9	13.7	40.7	2.4	88.9	-	-	Carrier
Vert.	2400.000	PK	47.0	26.9	13.7	40.7	2.4	49.3	68.9	19.6	

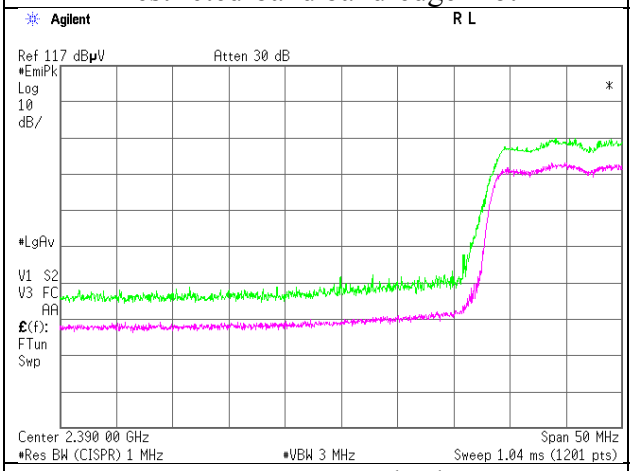
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2412 MHz [Normal Power mode]

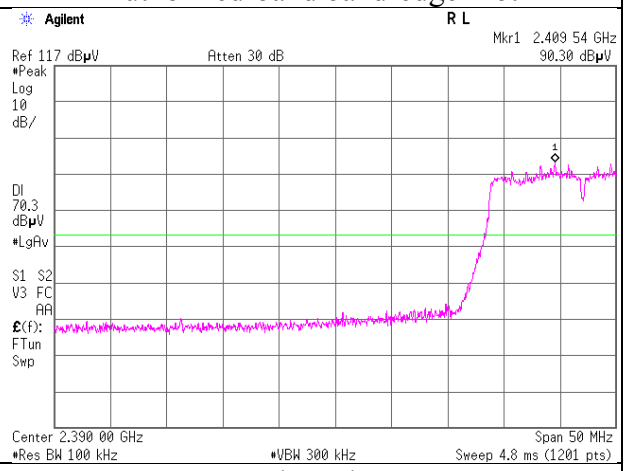
Horizontal

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

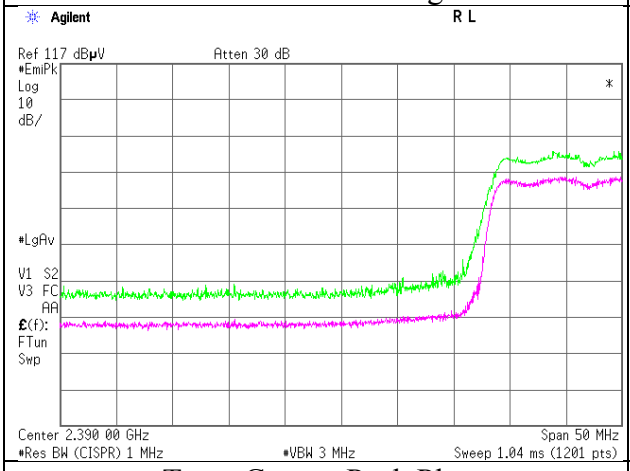
Authorized-band band-edge Plot



20dBc Plot

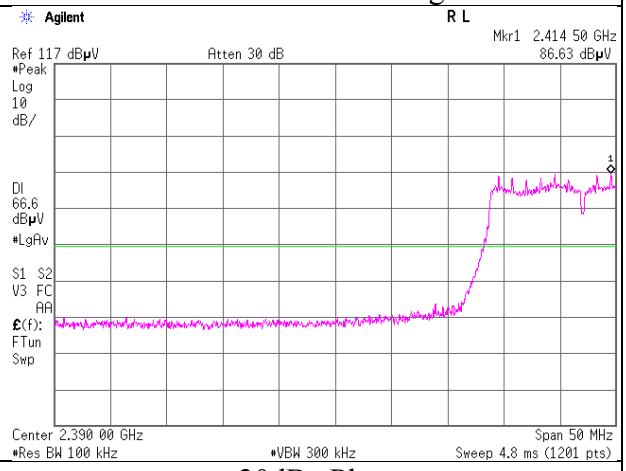
Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Authorized-band band-edge Plot



20dBc Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2462 MHz [Normal Power mode]

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	58.0	26.9	13.8	40.7	2.4	60.4	73.9	13.5	100	310	
Hori.	2483.500	AV	42.5	26.9	13.8	40.7	2.4	44.9	53.9	**9.0**	100	310	
Vert.	2483.500	PK	50.9	26.9	13.8	40.7	2.4	53.3	73.9	20.6	117	151	
Vert.	2483.500	AV	39.0	26.9	13.8	40.7	2.4	41.4	53.9	12.5	117	151	

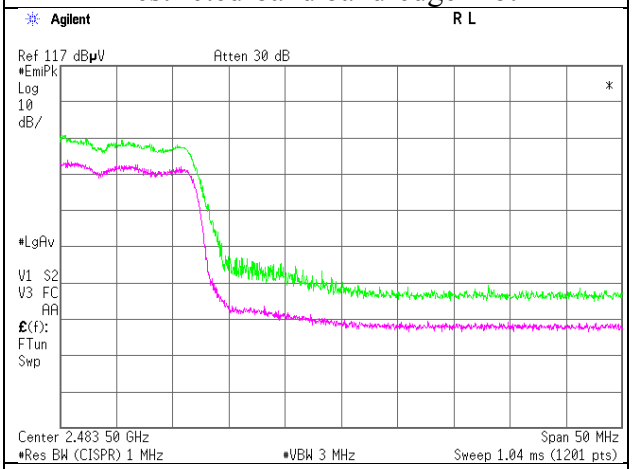
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2462 MHz [Normal Power mode]

Horizontal

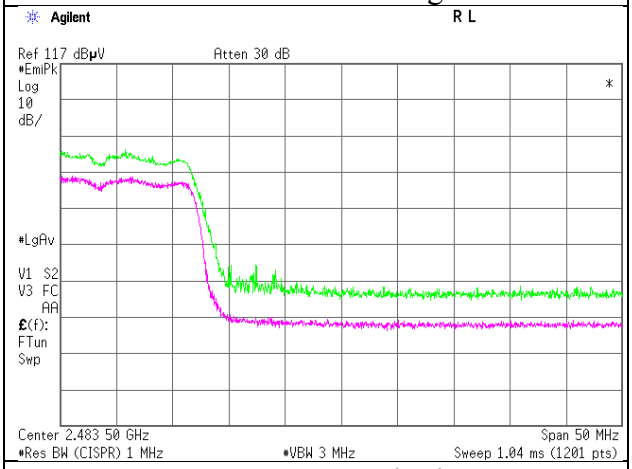
Restricted-band band-edge Plot



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.2, 3 Semi Anechoic Chamber			
Report No.	10882638S-M			
Date	August 14, 2015	August 22, 2015	August 26, 2015	August 28, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH	22 deg. C / 59 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)	Yosuke Ishikawa (30 M-1 GHz, 2SAC)
Mode	Tx 11n-20 2412 MHz [Normal Power mode]			

(* 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.	215.006	QP	22.2	16.6	9.1	31.7	0.0	16.2	43.5	27.3	100	3	
Hori.	346.463	QP	29.8	15.0	6.9	31.6	0.0	20.1	46.0	25.9	100	124	
Hori.	881.555	QP	21.4	22.2	9.6	30.9	0.0	22.3	46.0	23.7	100	52	
Hori.	2390.000	PK	57.8	26.9	13.7	40.7	2.4	60.1	73.9	13.8	100	140	
Hori.	4824.000	PK	47.4	31.5	6.2	41.6	2.4	45.9	73.9	28.0	100	0	
Hori.	7236.000	PK	45.9	36.9	7.8	41.2	2.4	51.8	73.9	22.1	100	0	
Hori.	9648.000	PK	44.2	37.7	8.8	40.1	2.4	53.0	73.9	20.9	100	0	
Hori.	19296.000	PK	44.8	40.5	11.5	47.8	-9.5	39.5	73.9	34.4	100	207	
Hori.	2390.000	AV	43.3	26.9	13.7	40.7	2.4	45.6	53.9	**8.3**	100	140	
Hori.	4824.000	AV	37.6	31.5	6.2	41.6	2.4	36.1	53.9	17.8	100	0	
Hori.	7236.000	AV	37.5	36.9	7.8	41.2	2.4	43.4	53.9	10.5	100	0	
Hori.	9648.000	AV	35.6	37.7	8.8	40.1	2.4	44.4	53.9	9.5	100	0	
Hori.	19296.000	AV	35.7	40.5	11.5	47.8	-9.5	30.4	53.9	23.5	100	207	
Vert.	195.046	QP	22.3	16.3	8.9	31.8	0.0	15.7	43.5	27.8	100	12	
Vert.	349.813	QP	25.9	15.1	6.9	31.6	0.0	16.3	46.0	29.7	100	4	
Vert.	818.545	QP	21.7	21.0	9.3	31.2	0.0	20.8	46.0	25.2	100	347	
Vert.	934.243	QP	20.9	22.6	9.9	30.6	0.0	22.8	46.0	23.2	100	298	
Vert.	2390.000	PK	53.1	26.9	13.7	40.7	2.4	55.4	73.9	18.5	128	149	
Vert.	4824.000	PK	47.3	31.5	6.2	41.6	2.4	45.8	73.9	28.1	100	0	
Vert.	7236.000	PK	47.0	36.9	7.8	41.2	2.4	52.9	73.9	21.0	100	0	
Vert.	9648.000	PK	45.0	37.7	8.8	40.1	2.4	53.8	73.9	20.1	100	0	
Vert.	19296.000	PK	45.0	40.5	11.5	47.8	-9.5	39.7	73.9	34.2	100	193	
Vert.	2390.000	AV	40.0	26.9	13.7	40.7	2.4	42.3	53.9	11.6	128	149	
Vert.	4824.000	AV	37.8	31.5	6.2	41.6	2.4	36.3	53.9	17.6	100	0	
Vert.	7236.000	AV	37.7	36.9	7.8	41.2	2.4	43.6	53.9	10.3	100	0	
Vert.	9648.000	AV	35.7	37.7	8.8	40.1	2.4	44.5	53.9	9.4	100	0	
Vert.	19296.000	AV	36.7	40.5	11.5	47.8	-9.5	31.4	53.9	22.5	100	193	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

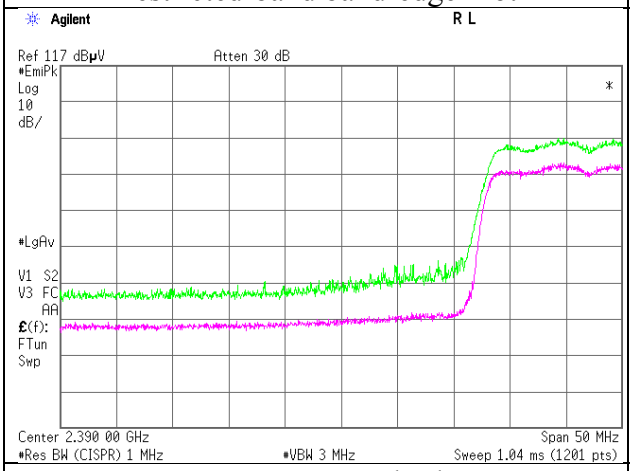
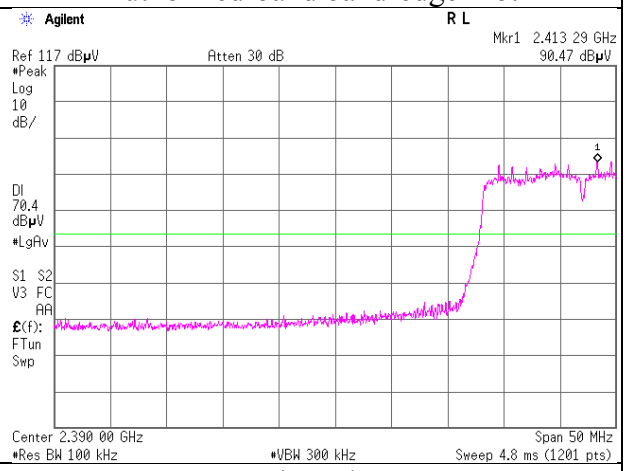
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	90.5	26.9	13.7	40.7	2.4	92.8	-	-	Carrier
Hori.	2400.000	PK	50.5	26.9	13.7	40.7	2.4	52.8	72.7	19.9	
Vert.	2412.000	PK	87.2	26.9	13.7	40.7	2.4	89.5	-	-	Carrier
Vert.	2400.000	PK	47.1	26.9	13.7	40.7	2.4	49.4	69.5	20.1	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

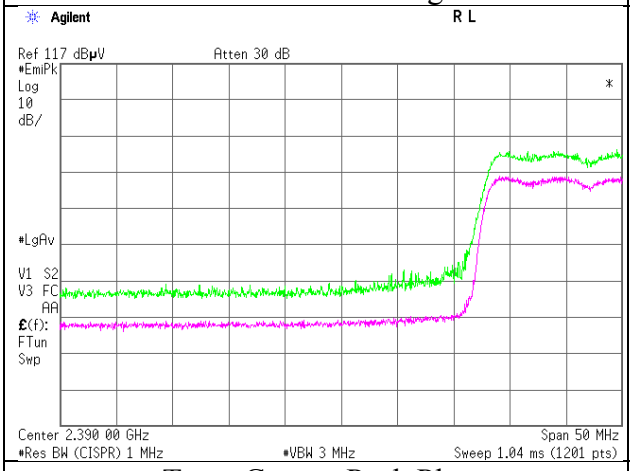
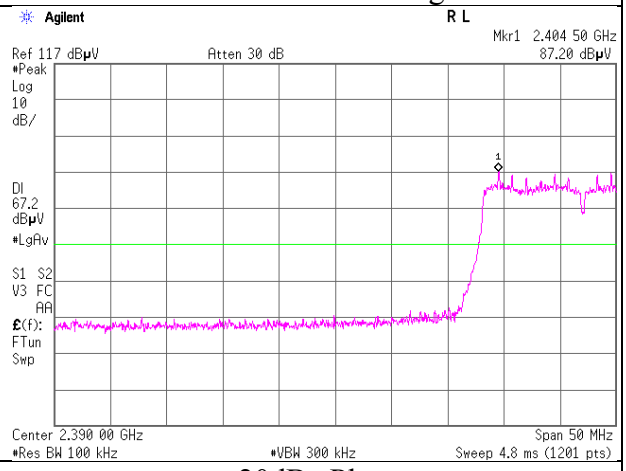
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-20 2412 MHz [Normal Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-20 2437 MHz [Normal Power mode]		

(* 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.	4874.000	PK	45.9	31.6	6.3	41.6	2.4	44.6	73.9	29.3	100	0	
Hori.	7311.000	PK	47.5	37.0	7.8	41.3	2.4	53.4	73.9	20.5	100	0	
Hori.	9748.000	PK	46.0	37.8	8.9	40.1	2.4	55.0	73.9	18.9	100	0	
Hori.	19496.000	PK	46.0	40.4	11.6	47.6	-9.5	40.9	73.9	33.0	100	190	
Hori.	4874.000	AV	37.5	31.6	6.3	41.6	2.4	36.2	53.9	17.7	100	0	
Hori.	7311.000	AV	37.9	37.0	7.8	41.3	2.4	43.8	53.9	10.1	100	0	
Hori.	9748.000	AV	35.7	37.8	8.9	40.1	2.4	44.7	53.9	9.2	100	0	
Hori.	19496.000	AV	38.2	40.4	11.6	47.6	-9.5	33.1	53.9	20.8	100	190	
Vert.	4874.000	PK	47.1	31.6	6.3	41.6	2.4	45.8	73.9	28.1	100	0	
Vert.	7311.000	PK	47.1	37.0	7.8	41.3	2.4	53.0	73.9	20.9	100	0	
Vert.	9748.000	PK	44.8	37.8	8.9	40.1	2.4	53.8	73.9	20.1	100	0	
Vert.	19496.000	PK	46.8	40.4	11.6	47.6	-9.5	41.7	73.9	32.2	100	194	
Vert.	4874.000	AV	37.6	31.6	6.3	41.6	2.4	36.3	53.9	17.6	100	0	
Vert.	7311.000	AV	37.6	37.0	7.8	41.3	2.4	43.5	53.9	10.4	100	0	
Vert.	9748.000	AV	35.8	37.8	8.9	40.1	2.4	44.8	53.9	**9.1**	100	0	
Vert.	19496.000	AV	39.6	40.4	11.6	47.6	-9.5	34.5	53.9	19.4	100	194	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-20 2462 MHz [Normal Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	59.5	26.9	13.8	40.7	2.4	61.9	73.9	12.0	100	310	
Hori.	4924.000	PK	46.8	31.8	6.4	41.6	2.4	45.8	73.9	28.1	100	0	
Hori.	7386.000	PK	47.0	37.0	7.8	41.3	2.4	52.9	73.9	21.0	100	0	
Hori.	9848.000	PK	45.5	37.9	8.9	40.0	2.4	54.7	73.9	19.2	100	0	
Hori.	19696.000	PK	46.6	40.3	11.7	47.5	-9.5	41.6	73.9	32.3	100	190	
Hori.	2483.500	AV	42.5	26.9	13.8	40.7	2.4	44.9	53.9	9.0	100	310	
Hori.	4924.000	AV	37.9	31.8	6.4	41.6	2.4	36.9	53.9	17.0	100	0	
Hori.	7386.000	AV	37.5	37.0	7.8	41.3	2.4	43.4	53.9	10.5	100	0	
Hori.	9848.000	AV	36.1	37.9	8.9	40.0	2.4	45.3	53.9	**8.6**	100	0	
Hori.	19696.000	AV	40.5	40.3	11.7	47.5	-9.5	35.5	53.9	18.4	100	190	
Vert.	2483.500	PK	55.1	26.9	13.8	40.7	2.4	57.5	73.9	16.4	119	151	
Vert.	4924.000	PK	46.9	31.8	6.4	41.6	2.4	45.9	73.9	28.0	100	0	
Vert.	7386.000	PK	46.9	37.0	7.8	41.3	2.4	52.8	73.9	21.1	100	0	
Vert.	9848.000	PK	45.5	37.9	8.9	40.0	2.4	54.7	73.9	19.2	100	0	
Vert.	19696.000	PK	47.2	40.3	11.7	47.5	-9.5	42.2	73.9	31.7	100	187	
Vert.	2483.500	AV	39.2	26.9	13.8	40.7	2.4	41.6	53.9	12.3	119	151	
Vert.	4924.000	AV	37.8	31.8	6.4	41.6	2.4	36.8	53.9	17.1	100	0	
Vert.	7386.000	AV	37.8	37.0	7.8	41.3	2.4	43.7	53.9	10.2	100	0	
Vert.	9848.000	AV	35.8	37.9	8.9	40.0	2.4	45.0	53.9	8.9	100	0	
Vert.	19696.000	AV	41.7	40.3	11.7	47.5	-9.5	36.7	53.9	17.2	100	187	

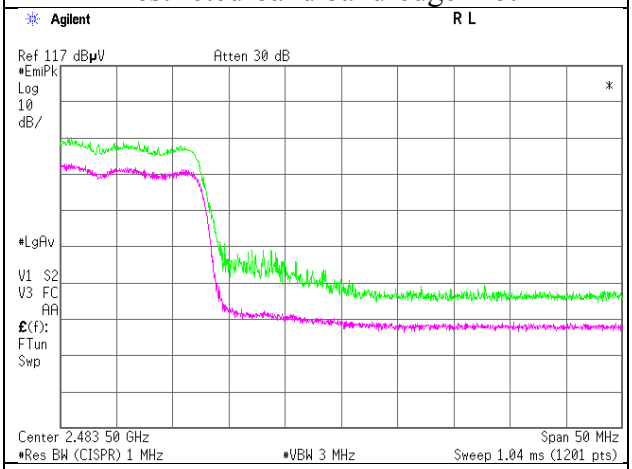
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-20 2462 MHz [Normal Power mode]

Horizontal

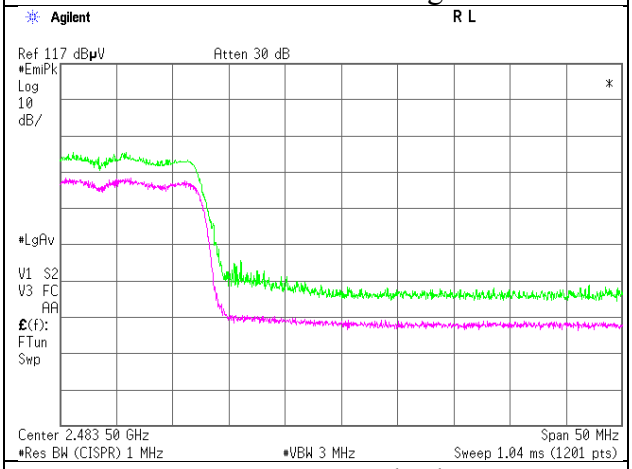
Restricted-band band-edge Plot



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.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-40 2422 MHz [Normal Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	57.0	26.9	13.7	40.7	2.4	59.3	73.9	14.6	100	139	
Hori.	4844.000	PK	46.0	31.5	6.3	41.6	2.4	44.6	73.9	29.3	100	0	
Hori.	7266.000	PK	46.2	36.9	7.8	41.3	2.4	52.0	73.9	21.9	100	0	
Hori.	9688.000	PK	44.5	37.7	8.8	40.1	2.4	53.3	73.9	20.6	100	0	
Hori.	19376.000	PK	44.6	40.4	11.6	47.7	-9.5	39.4	73.9	34.5	100	192	
Hori.	2390.000	AV	40.5	26.9	13.7	40.7	2.4	42.8	53.9	11.1	100	139	
Hori.	4844.000	AV	37.5	31.5	6.3	41.6	2.4	36.1	53.9	17.8	100	0	
Hori.	7266.000	AV	37.5	36.9	7.8	41.3	2.4	43.3	53.9	10.6	100	0	
Hori.	9688.000	AV	35.8	37.7	8.8	40.1	2.4	44.6	53.9	**9.3**	100	0	
Hori.	19376.000	AV	34.9	40.4	11.6	47.7	-9.5	29.7	53.9	24.2	100	192	
Vert.	2390.000	PK	54.7	26.9	13.7	40.7	2.4	57.0	73.9	16.9	184	158	
Vert.	4844.000	PK	46.8	31.5	6.3	41.6	2.4	45.4	73.9	28.5	100	0	
Vert.	7266.000	PK	46.1	36.9	7.8	41.3	2.4	51.9	73.9	22.0	100	0	
Vert.	9688.000	PK	45.7	37.7	8.8	40.1	2.4	54.5	73.9	19.4	100	0	
Vert.	19376.000	PK	45.3	40.4	11.6	47.7	-9.5	40.1	73.9	33.8	100	210	
Vert.	2390.000	AV	40.3	26.9	13.7	40.7	2.4	42.6	53.9	11.3	184	158	
Vert.	4844.000	AV	37.3	31.5	6.3	41.6	2.4	35.9	53.9	18.0	100	0	
Vert.	7266.000	AV	37.2	36.9	7.8	41.3	2.4	43.0	53.9	10.9	100	0	
Vert.	9688.000	AV	35.6	37.7	8.8	40.1	2.4	44.4	53.9	9.5	100	0	
Vert.	19376.000	AV	37.7	40.4	11.6	47.7	-9.5	32.5	53.9	21.4	100	210	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

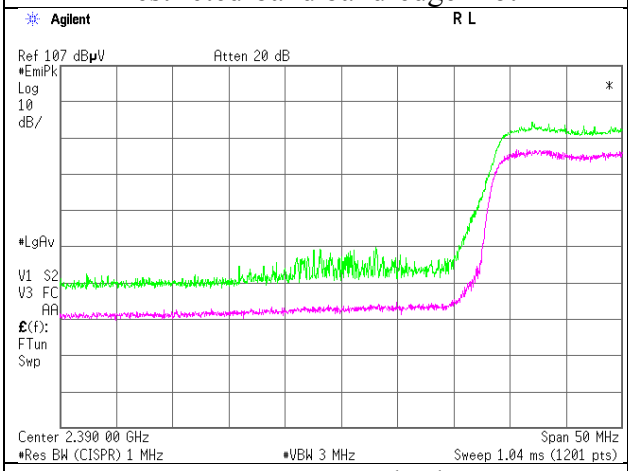
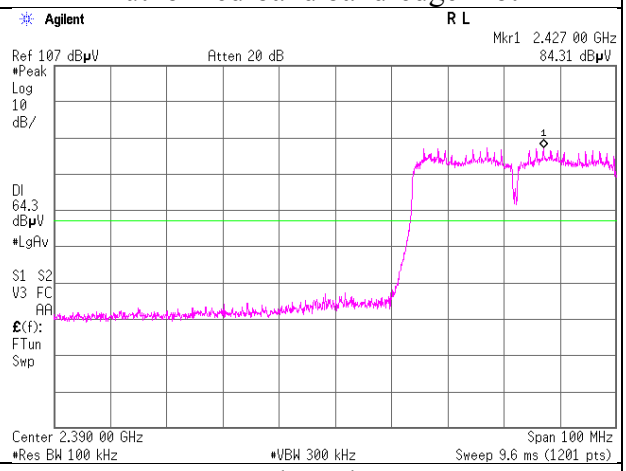
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2422.000	PK	84.3	26.9	13.7	40.7	2.4	86.6	-	-	Carrier
Hori.	2400.000	PK	44.2	26.9	13.7	40.7	2.4	46.5	66.6	20.1	
Vert.	2422.000	PK	79.8	26.9	13.7	40.7	2.4	82.1	-	-	Carrier
Vert.	2400.000	PK	43.4	26.9	13.7	40.7	2.4	45.7	62.1	16.4	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

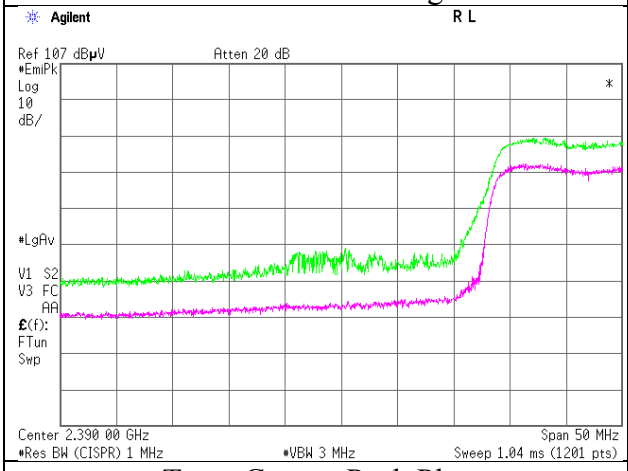
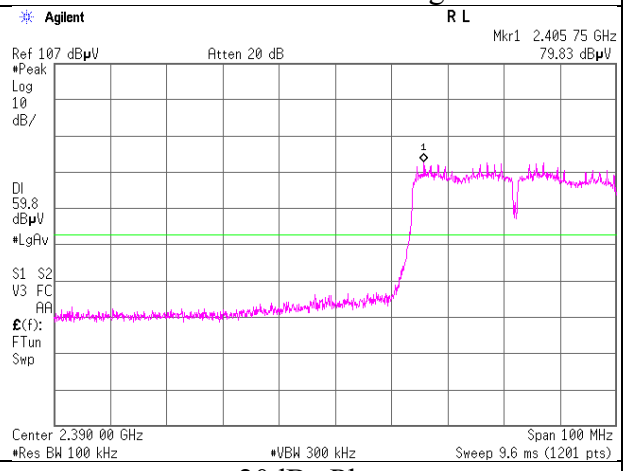
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-40 2422 MHz [Normal Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-40 2437 MHz [Normal Power mode]		

(* 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.	4874.000	PK	46.6	31.6	6.3	41.6	2.4	45.3	73.9	28.6	100	0	
Hori.	7311.000	PK	46.8	37.0	7.8	41.3	2.4	52.7	73.9	21.2	100	0	
Hori.	9748.000	PK	45.5	37.8	8.9	40.1	2.4	54.5	73.9	19.4	100	0	
Hori.	19496.000	PK	45.4	40.4	11.6	47.6	-9.5	40.3	73.9	33.6	100	187	
Hori.	4874.000	AV	37.3	31.6	6.3	41.6	2.4	36.0	53.9	17.9	100	0	
Hori.	7311.000	AV	37.8	37.0	7.8	41.3	2.4	43.7	53.9	10.2	100	0	
Hori.	9748.000	AV	35.7	37.8	8.9	40.1	2.4	44.7	53.9	9.2	100	0	
Hori.	19496.000	AV	38.1	40.4	11.6	47.6	-9.5	33.0	53.9	20.9	100	187	
Vert.	4874.000	PK	47.7	31.6	6.3	41.6	2.4	46.4	73.9	27.5	100	0	
Vert.	7311.000	PK	47.3	37.0	7.8	41.3	2.4	53.2	73.9	20.7	100	0	
Vert.	9748.000	PK	45.5	37.8	8.9	40.1	2.4	54.5	73.9	19.4	100	0	
Vert.	19496.000	PK	46.8	40.4	11.6	47.6	-9.5	41.7	73.9	32.2	100	190	
Vert.	4874.000	AV	37.5	31.6	6.3	41.6	2.4	36.2	53.9	17.7	100	0	
Vert.	7311.000	AV	37.8	37.0	7.8	41.3	2.4	43.7	53.9	10.2	100	0	
Vert.	9748.000	AV	36.3	37.8	8.9	40.1	2.4	45.3	53.9	**8.6**	100	0	
Vert.	19496.000	AV	40.1	40.4	11.6	47.6	-9.5	35.0	53.9	18.9	100	190	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 26, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-40 2452 MHz [Normal Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	60.2	26.9	13.8	40.7	2.4	62.6	73.9	11.3	100	311	
Hori.	4904.000	PK	47.7	31.7	6.3	41.6	2.4	46.5	73.9	27.4	100	0	
Hori.	7356.000	PK	46.9	37.0	7.8	41.3	2.4	52.8	73.9	21.1	100	0	
Hori.	9808.000	PK	45.2	37.9	8.9	40.1	2.4	54.3	73.9	19.6	100	0	
Hori.	19616.000	PK	45.6	40.4	11.6	47.6	-9.5	40.5	73.9	33.4	100	205	
Hori.	2483.500	AV	42.7	26.9	13.8	40.7	2.4	45.1	53.9	8.8	100	311	
Hori.	4904.000	AV	37.9	31.7	6.3	41.6	2.4	36.7	53.9	17.2	100	0	
Hori.	7356.000	AV	37.6	37.0	7.8	41.3	2.4	43.5	53.9	10.4	100	0	
Hori.	9808.000	AV	36.2	37.9	8.9	40.1	2.4	45.3	53.9	**8.6**	100	0	
Hori.	19616.000	AV	36.6	40.4	11.6	47.6	-9.5	31.5	53.9	22.4	100	205	
Vert.	2483.500	PK	54.7	26.9	13.8	40.7	2.4	57.1	73.9	16.8	112	171	
Vert.	4904.000	PK	47.5	31.7	6.3	41.6	2.4	46.3	73.9	27.6	100	0	
Vert.	7356.000	PK	46.7	37.0	7.8	41.3	2.4	52.6	73.9	21.3	100	0	
Vert.	9808.000	PK	45.3	37.9	8.9	40.1	2.4	54.4	73.9	19.5	100	0	
Vert.	19616.000	PK	46.9	40.4	11.6	47.6	-9.5	41.8	73.9	32.1	100	182	
Vert.	2483.500	AV	38.0	26.9	13.8	40.7	2.4	40.4	53.9	13.5	112	171	
Vert.	4904.000	AV	38.0	31.7	6.3	41.6	2.4	36.8	53.9	17.1	100	0	
Vert.	7356.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9808.000	AV	36.1	37.9	8.9	40.1	2.4	45.2	53.9	8.7	100	0	
Vert.	19616.000	AV	40.8	40.4	11.6	47.6	-9.5	35.7	53.9	18.2	100	182	

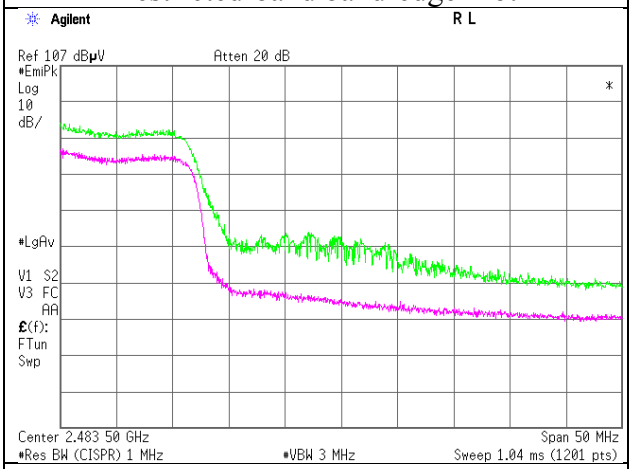
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-40 2452 MHz [Normal Power mode]

Horizontal

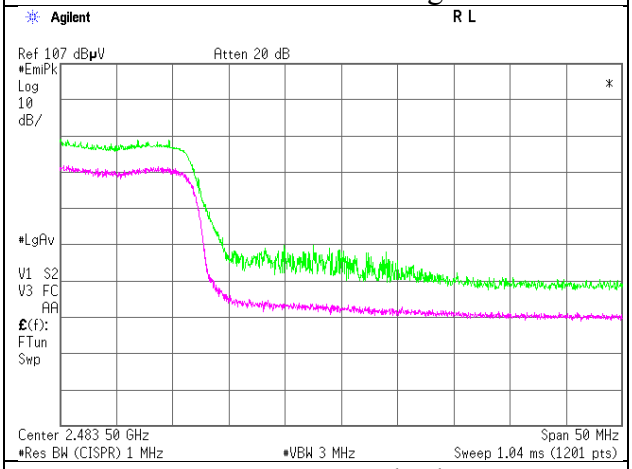
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

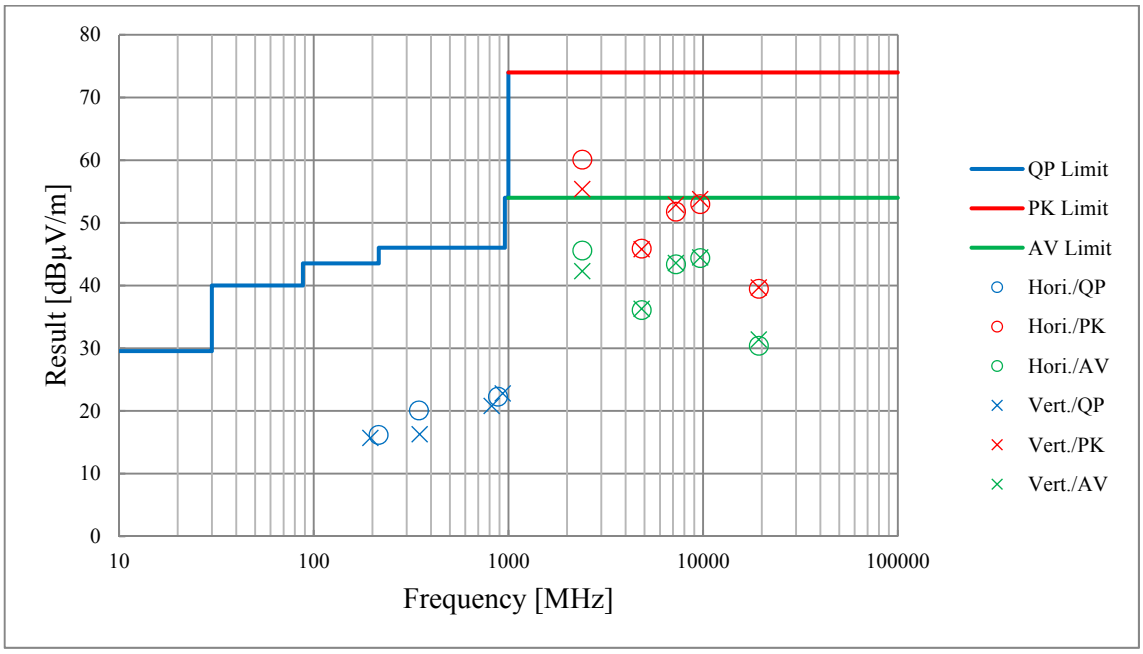


Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber			
Report No.	10882638S-M			
Date	August 14, 2015	August 22, 2015	August 26, 2015	August 28, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	21 deg. C / 57 % RH	22 deg. C / 59 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)	Yosuke Ishikawa (30 M-1 GHz, 2SAC)
Mode	Tx 11n-20 2412 MHz [Normal Power mode]			



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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11b 2412 MHz [Low Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	46.8	26.9	13.7	40.7	2.4	49.1	73.9	24.8	100	140	
Hori.	4824.000	PK	48.7	31.5	6.2	41.6	2.4	47.2	73.9	26.7	102	318	
Hori.	7236.000	PK	46.6	36.9	7.8	41.2	2.4	52.5	73.9	21.4	100	337	
Hori.	9648.000	PK	45.0	37.7	8.8	40.1	2.4	53.8	73.9	20.1	100	0	
Hori.	19296.000	PK	48.9	40.5	11.5	47.8	-9.5	43.6	73.9	30.3	100	142	
Hori.	2390.000	AV	36.5	26.9	13.7	40.7	2.4	38.8	53.9	15.1	100	140	
Hori.	4824.000	AV	39.7	31.5	6.2	41.6	2.4	38.2	53.9	15.7	102	318	
Hori.	7236.000	AV	37.8	36.9	7.8	41.2	2.4	43.7	53.9	10.2	100	337	
Hori.	9648.000	AV	35.8	37.7	8.8	40.1	2.4	44.6	53.9	**9.3**	100	0	
Hori.	19296.000	AV	36.2	40.5	11.5	47.8	-9.5	30.9	53.9	23.0	100	142	
Vert.	2390.000	PK	45.8	26.9	13.7	40.7	2.4	48.1	73.9	25.8	179	159	
Vert.	4824.000	PK	48.0	31.5	6.2	41.6	2.4	46.5	73.9	27.4	100	266	
Vert.	7236.000	PK	45.7	36.9	7.8	41.2	2.4	51.6	73.9	22.3	100	0	
Vert.	9648.000	PK	45.0	37.7	8.8	40.1	2.4	53.8	73.9	20.1	100	0	
Vert.	19296.000	PK	48.9	40.5	11.5	47.8	-9.5	43.6	73.9	30.3	104	126	
Vert.	2390.000	AV	36.4	26.9	13.7	40.7	2.4	38.7	53.9	15.2	179	159	
Vert.	4824.000	AV	38.6	31.5	6.2	41.6	2.4	37.1	53.9	16.8	100	266	
Vert.	7236.000	AV	37.5	36.9	7.8	41.2	2.4	43.4	53.9	10.5	100	0	
Vert.	9648.000	AV	35.8	37.7	8.8	40.1	2.4	44.6	53.9	**9.3**	100	0	
Vert.	19296.000	AV	37.4	40.5	11.5	47.8	-9.5	32.1	53.9	21.8	104	126	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

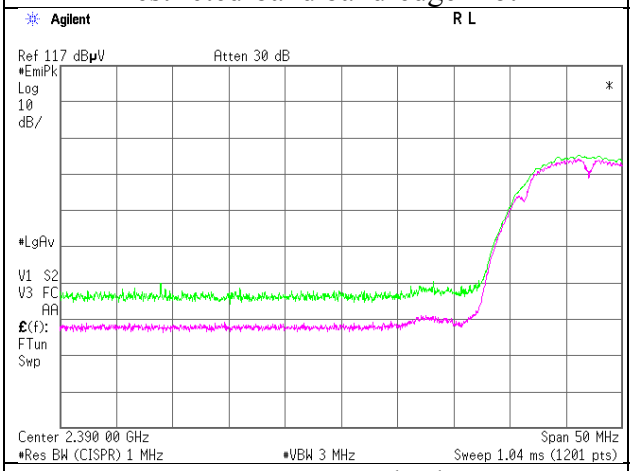
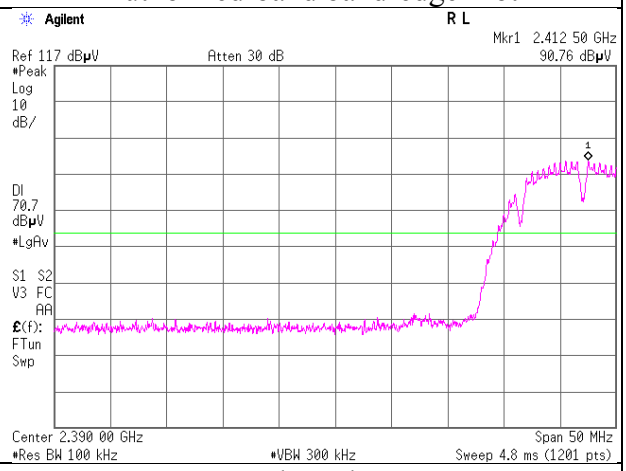
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	90.8	26.9	13.7	40.7	2.4	93.1	-	-	Carrier
Hori.	2397.010	PK	46.0	26.9	13.7	40.7	2.4	48.3	73.0	24.7	
Hori.	2400.000	PK	42.0	26.9	13.7	40.7	2.4	44.3	73.0	28.7	
Vert.	2412.000	PK	85.7	26.9	13.7	40.7	2.4	88.0	-	-	Carrier
Vert.	2397.024	PK	43.7	26.9	13.7	40.7	2.4	46.0	68.0	22.0	
Vert.	2400.000	PK	39.8	26.9	13.7	40.7	2.4	42.1	68.0	25.9	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

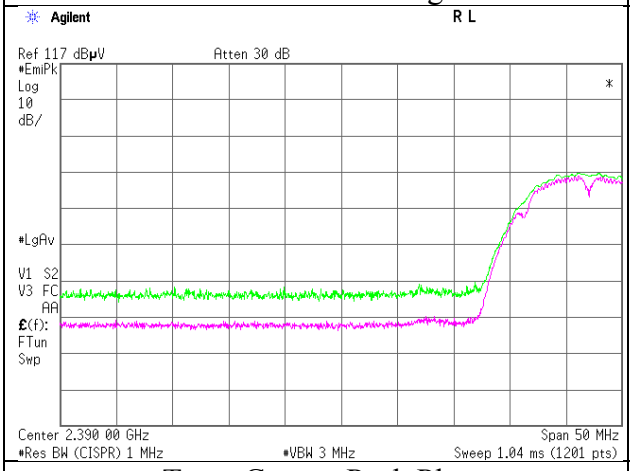
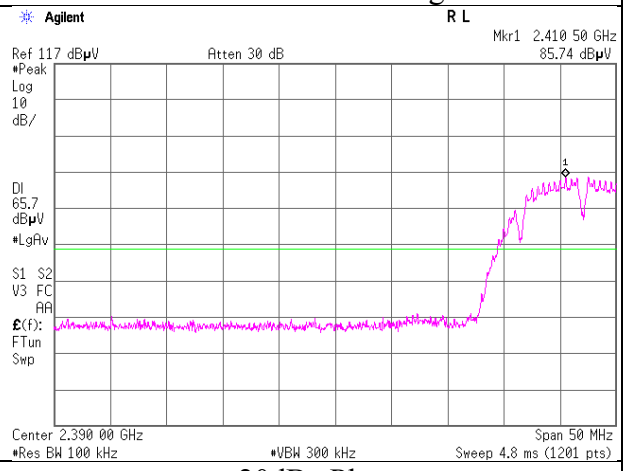
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11b 2412 MHz [Low Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11b 2437 MHz [Low Power mode]		

(* 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.	4874.000	PK	47.6	31.6	6.3	41.6	2.4	46.3	73.9	27.6	100	272	
Hori.	7311.000	PK	47.2	37.0	7.8	41.3	2.4	53.1	73.9	20.8	100	331	
Hori.	9748.000	PK	47.2	37.8	8.9	40.1	2.4	56.2	73.9	17.7	100	0	
Hori.	19496.000	PK	48.9	40.4	11.6	47.6	-9.5	43.8	73.9	30.1	105	128	
Hori.	4874.000	AV	37.8	31.6	6.3	41.6	2.4	36.5	53.9	17.4	100	272	
Hori.	7311.000	AV	38.3	37.0	7.8	41.3	2.4	44.2	53.9	9.7	100	331	
Hori.	9748.000	AV	35.7	37.8	8.9	40.1	2.4	44.7	53.9	9.2	100	0	
Hori.	19496.000	AV	38.3	40.4	11.6	47.6	-9.5	33.2	53.9	20.7	105	128	
Vert.	4874.000	PK	47.7	31.6	6.3	41.6	2.4	46.4	73.9	27.5	100	263	
Vert.	7311.000	PK	47.2	37.0	7.8	41.3	2.4	53.1	73.9	20.8	100	0	
Vert.	9748.000	PK	45.6	37.8	8.9	40.1	2.4	54.6	73.9	19.3	100	0	
Vert.	19496.000	PK	49.6	40.4	11.6	47.6	-9.5	44.5	73.9	29.4	100	130	
Vert.	4874.000	AV	37.8	31.6	6.3	41.6	2.4	36.5	53.9	17.4	100	263	
Vert.	7311.000	AV	37.9	37.0	7.8	41.3	2.4	43.8	53.9	10.1	100	0	
Vert.	9748.000	AV	35.8	37.8	8.9	40.1	2.4	44.8	53.9	**9.1**	100	0	
Vert.	19496.000	AV	39.6	40.4	11.6	47.6	-9.5	34.5	53.9	19.4	100	130	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 14, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	26 deg. C / 62 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11b 2462 MHz [Low Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	45.3	26.9	13.8	40.7	2.4	47.7	73.9	26.2	100	311	
Hori.	4924.000	PK	48.5	31.8	6.4	41.6	2.4	47.5	73.9	26.4	100	291	
Hori.	7386.000	PK	46.9	37.0	7.8	41.3	2.4	52.8	73.9	21.1	100	0	
Hori.	9848.000	PK	45.0	37.9	8.9	40.0	2.4	54.2	73.9	19.7	100	0	
Hori.	19696.000	PK	48.8	40.3	11.7	47.5	-9.5	43.8	73.9	30.1	103	125	
Hori.	2483.500	AV	36.0	26.9	13.8	40.7	2.4	38.4	53.9	15.5	100	311	
Hori.	4924.000	AV	40.4	31.8	6.4	41.6	2.4	39.4	53.9	14.5	100	291	
Hori.	7386.000	AV	38.1	37.0	7.8	41.3	2.4	44.0	53.9	9.9	100	0	
Hori.	9848.000	AV	35.9	37.9	8.9	40.0	2.4	45.1	53.9	**8.8**	100	0	
Hori.	19696.000	AV	38.0	40.3	11.7	47.5	-9.5	33.0	53.9	20.9	103	125	
Vert.	2483.500	PK	45.1	26.9	13.8	40.7	2.4	47.5	73.9	26.4	123	152	
Vert.	4924.000	PK	49.2	31.8	6.4	41.6	2.4	48.2	73.9	25.7	100	279	
Vert.	7386.000	PK	46.4	37.0	7.8	41.3	2.4	52.3	73.9	21.6	100	0	
Vert.	9848.000	PK	44.8	37.9	8.9	40.0	2.4	54.0	73.9	19.9	100	0	
Vert.	19696.000	PK	50.0	40.3	11.7	47.5	-9.5	45.0	73.9	28.9	105	133	
Vert.	2483.500	AV	36.1	26.9	13.8	40.7	2.4	38.5	53.9	15.4	123	152	
Vert.	4924.000	AV	40.7	31.8	6.4	41.6	2.4	39.7	53.9	14.2	100	279	
Vert.	7386.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9848.000	AV	35.8	37.9	8.9	40.0	2.4	45.0	53.9	8.9	100	0	
Vert.	19696.000	AV	40.0	40.3	11.7	47.5	-9.5	35.0	53.9	18.9	105	133	

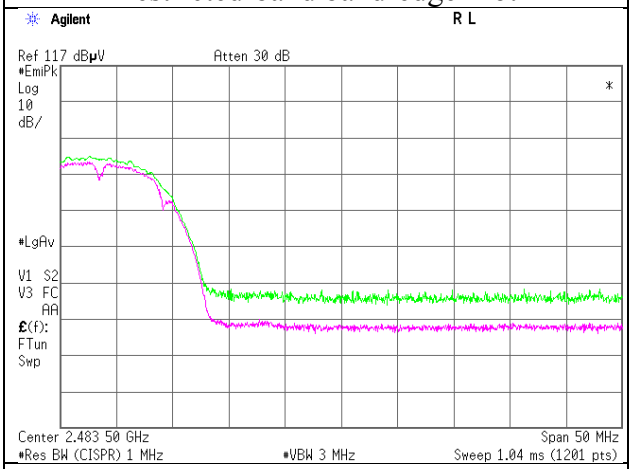
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11b 2462 MHz [Low Power mode]

Horizontal

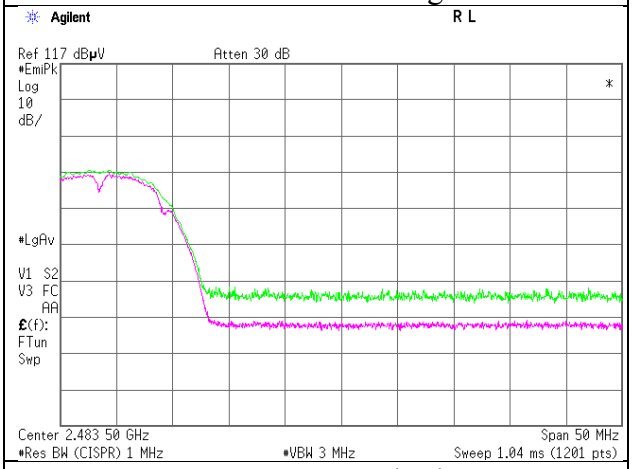
Restricted-band band-edge Plot



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.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2412 MHz [Low Power mode]

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	48.3	26.9	13.7	40.7	2.4	50.6	73.9	23.3	100	138	
Hori.	2390.000	AV	39.0	26.9	13.7	40.7	2.4	41.3	53.9	**12.6**	100	138	
Vert.	2390.000	PK	46.6	26.9	13.7	40.7	2.4	48.9	73.9	25.0	183	158	
Vert.	2390.000	AV	36.8	26.9	13.7	40.7	2.4	39.1	53.9	14.8	183	158	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

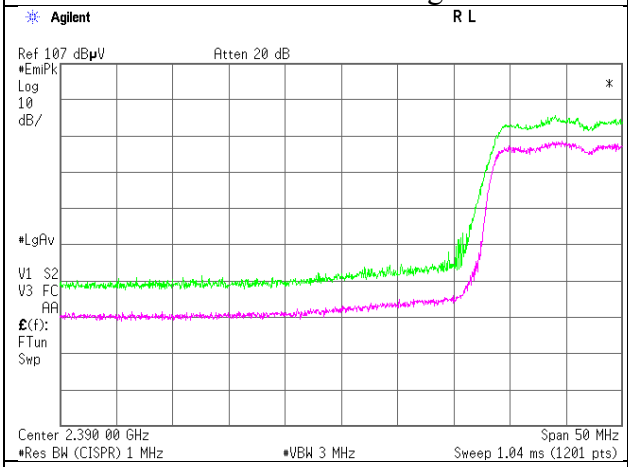
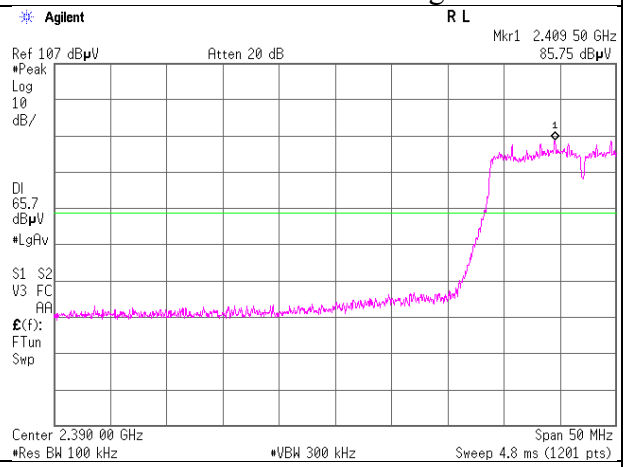
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	85.8	26.9	13.7	40.7	2.4	88.1	-	-	Carrier
Hori.	2400.000	PK	44.4	26.9	13.7	40.7	2.4	46.7	68.0	21.3	
Vert.	2412.000	PK	81.0	26.9	13.7	40.7	2.4	83.3	-	-	Carrier
Vert.	2400.000	PK	39.7	26.9	13.7	40.7	2.4	42.0	63.3	21.3	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

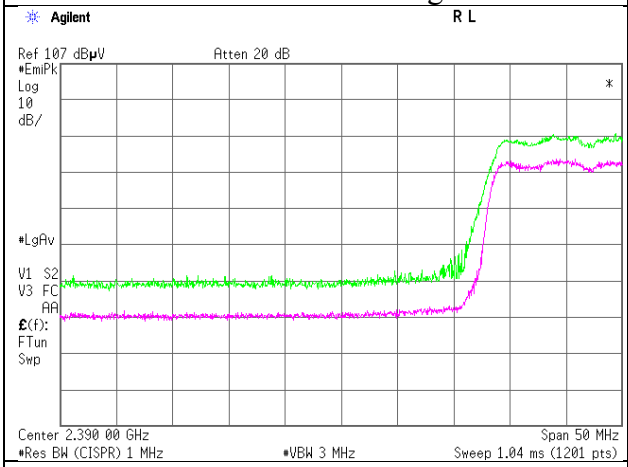
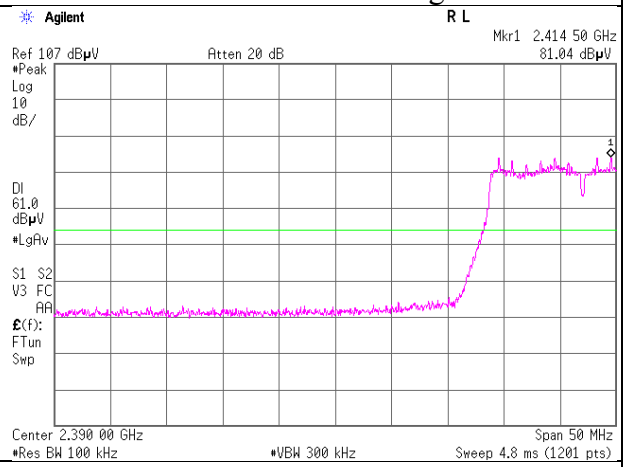
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2412 MHz [Low Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2462 MHz [Low Power mode]

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	51.0	26.9	13.8	40.7	2.4	53.4	73.9	20.5	100	311	
Hori.	2483.500	AV	39.7	26.9	13.8	40.7	2.4	42.1	53.9	**11.8**	100	311	
Vert.	2483.500	PK	47.8	26.9	13.8	40.7	2.4	50.2	73.9	23.7	124	151	
Vert.	2483.500	AV	36.5	26.9	13.8	40.7	2.4	38.9	53.9	15.0	124	151	

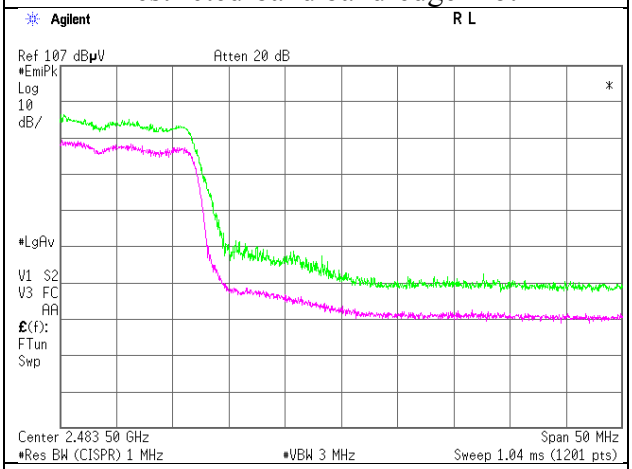
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 14, 2015
Temperature / Humidity	26 deg. C / 62 % RH
Engineer	Shinichi Takano
Mode	Tx 11g 2462 MHz [Low Power mode]

Horizontal

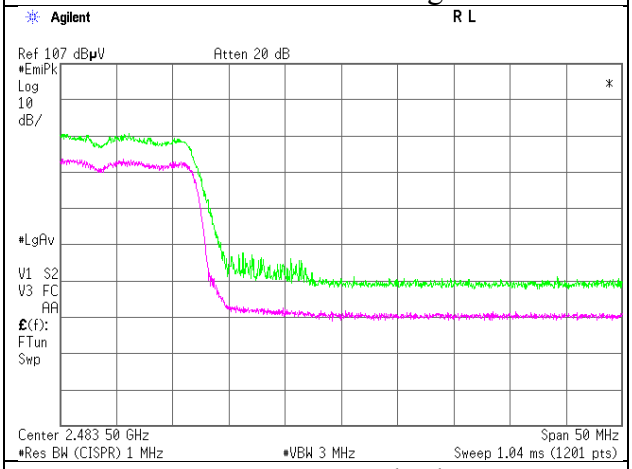
Restricted-band band-edge Plot



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.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 15, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-20 2412 MHz [Low Power mode]		

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

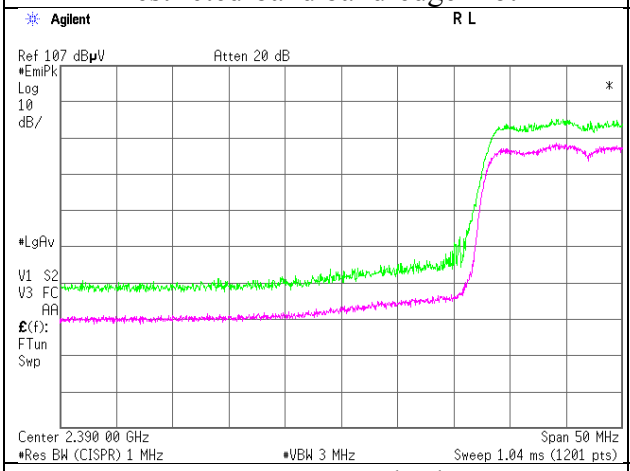
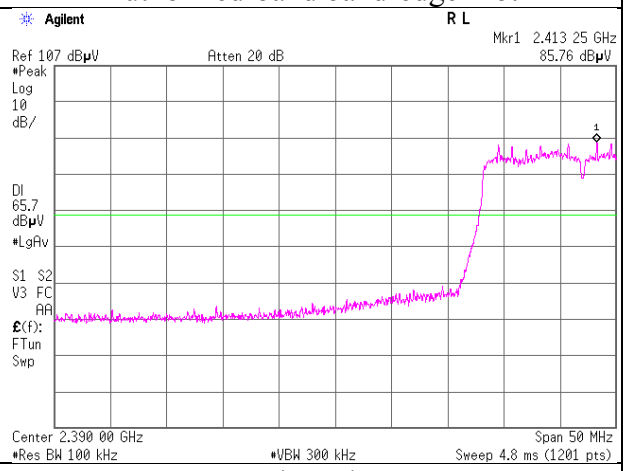
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	50.1	26.9	13.7	40.7	2.4	52.4	73.9	21.5	100	138	
Hori.	4824.000	PK	47.1	31.5	6.2	41.6	2.4	45.6	73.9	28.3	100	0	
Hori.	7236.000	PK	46.3	36.9	7.8	41.2	2.4	52.2	73.9	21.7	100	0	
Hori.	9648.000	PK	44.7	37.7	8.8	40.1	2.4	53.5	73.9	20.4	100	0	
Hori.	19296.000	PK	48.2	40.5	11.5	47.8	-9.5	42.9	73.9	31.0	102	136	
Hori.	2390.000	AV	39.6	26.9	13.7	40.7	2.4	41.9	53.9	12.0	100	138	
Hori.	4824.000	AV	37.0	31.5	6.2	41.6	2.4	35.5	53.9	18.4	100	0	
Hori.	7236.000	AV	37.1	36.9	7.8	41.2	2.4	43.0	53.9	10.9	100	0	
Hori.	9648.000	AV	35.7	37.7	8.8	40.1	2.4	44.5	53.9	**9.4**	100	0	
Hori.	19296.000	AV	36.8	40.5	11.5	47.8	-9.5	31.5	53.9	22.4	102	136	
Vert.	2390.000	PK	48.3	26.9	13.7	40.7	2.4	50.6	73.9	23.3	180	160	
Vert.	4824.000	PK	46.0	31.5	6.2	41.6	2.4	44.5	73.9	29.4	100	0	
Vert.	7236.000	PK	46.1	36.9	7.8	41.2	2.4	52.0	73.9	21.9	100	0	
Vert.	9648.000	PK	44.9	37.7	8.8	40.1	2.4	53.7	73.9	20.2	100	0	
Vert.	19296.000	PK	49.1	40.5	11.5	47.8	-9.5	43.8	73.9	30.1	107	129	
Vert.	2390.000	AV	37.5	26.9	13.7	40.7	2.4	39.8	53.9	14.1	180	160	
Vert.	4824.000	AV	37.4	31.5	6.2	41.6	2.4	35.9	53.9	18.0	100	0	
Vert.	7236.000	AV	36.9	36.9	7.8	41.2	2.4	42.8	53.9	11.1	100	0	
Vert.	9648.000	AV	35.7	37.7	8.8	40.1	2.4	44.5	53.9	**9.4**	100	0	
Vert.	19296.000	AV	39.0	40.5	11.5	47.8	-9.5	33.7	53.9	20.2	107	129	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

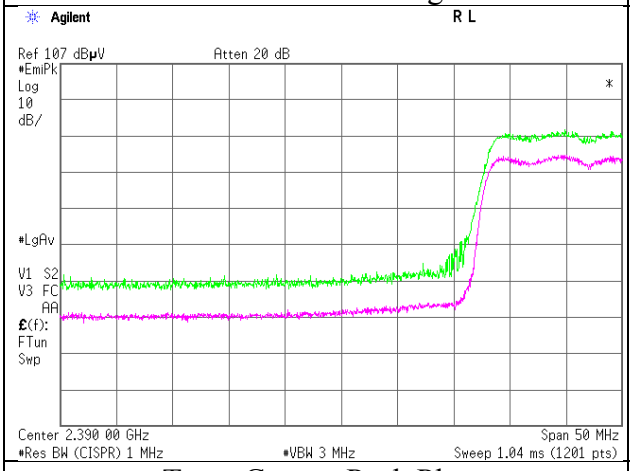
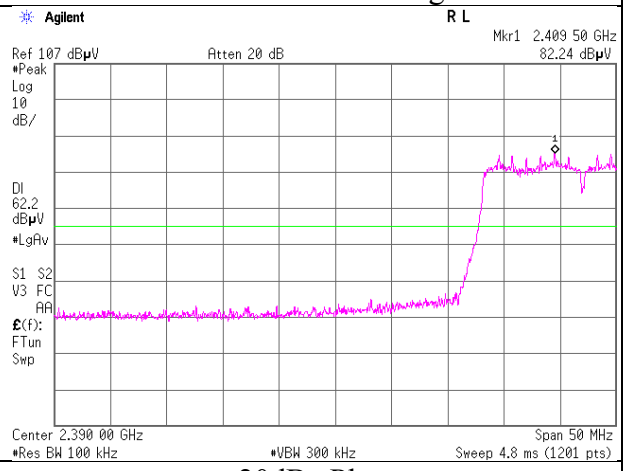
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 15, 2015
Temperature / Humidity	25 deg. C / 59 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-20 2412 MHz [Low Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 15, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-20 2437 MHz [Low Power mode]		

(* 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.	4874.000	PK	46.9	31.6	6.3	41.6	2.4	45.6	73.9	28.3	100	0	
Hori.	7311.000	PK	46.5	37.0	7.8	41.3	2.4	52.4	73.9	21.5	100	0	
Hori.	9748.000	PK	45.3	37.8	8.9	40.1	2.4	54.3	73.9	19.6	100	0	
Hori.	19496.000	PK	49.0	40.4	11.6	47.6	-9.5	43.9	73.9	30.0	112	130	
Hori.	4874.000	AV	37.1	31.6	6.3	41.6	2.4	35.8	53.9	18.1	100	0	
Hori.	7311.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Hori.	9748.000	AV	36.2	37.8	8.9	40.1	2.4	45.2	53.9	**8.7**	100	0	
Hori.	19496.000	AV	38.0	40.4	11.6	47.6	-9.5	32.9	53.9	21.0	112	130	
Vert.	4874.000	PK	46.1	31.6	6.3	41.6	2.4	44.8	73.9	29.1	100	0	
Vert.	7311.000	PK	48.0	37.0	7.8	41.3	2.4	53.9	73.9	20.0	100	0	
Vert.	9748.000	PK	46.2	37.8	8.9	40.1	2.4	55.2	73.9	18.7	100	0	
Vert.	19496.000	PK	49.9	40.4	11.6	47.6	-9.5	44.8	73.9	29.1	109	170	
Vert.	4874.000	AV	37.0	31.6	6.3	41.6	2.4	35.7	53.9	18.2	100	0	
Vert.	7311.000	AV	37.5	37.0	7.8	41.3	2.4	43.4	53.9	10.5	100	0	
Vert.	9748.000	AV	36.0	37.8	8.9	40.1	2.4	45.0	53.9	8.9	100	0	
Vert.	19496.000	AV	41.0	40.4	11.6	47.6	-9.5	35.9	53.9	18.0	109	170	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 15, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)
Mode	Tx 11n-20 2462 MHz [Low Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	52.6	26.9	13.8	40.7	2.4	55.0	73.9	18.9	100	309	
Hori.	4924.000	PK	47.1	31.8	6.4	41.6	2.4	46.1	73.9	27.8	100	0	
Hori.	7386.000	PK	46.8	37.0	7.8	41.3	2.4	52.7	73.9	21.2	100	0	
Hori.	9848.000	PK	45.4	37.9	8.9	40.0	2.4	54.6	73.9	19.3	100	0	
Hori.	19496.000	PK	49.0	40.4	11.6	47.6	-9.5	43.9	73.9	30.0	112	130	
Hori.	2483.500	AV	38.5	26.9	13.8	40.7	2.4	40.9	53.9	13.0	100	309	
Hori.	4924.000	AV	37.8	31.8	6.4	41.6	2.4	36.8	53.9	17.1	100	0	
Hori.	7386.000	AV	37.5	37.0	7.8	41.3	2.4	43.4	53.9	10.5	100	0	
Hori.	9848.000	AV	36.1	37.9	8.9	40.0	2.4	45.3	53.9	**8.6**	100	0	
Hori.	19496.000	AV	38.0	40.4	11.6	47.6	-9.5	32.9	53.9	21.0	112	130	
Vert.	2483.500	PK	46.4	26.9	13.8	40.7	2.4	48.8	73.9	25.1	118	150	
Vert.	4924.000	PK	46.3	31.8	6.4	41.6	2.4	45.3	73.9	28.6	100	0	
Vert.	7386.000	PK	47.1	37.0	7.8	41.3	2.4	53.0	73.9	20.9	100	0	
Vert.	9848.000	PK	46.1	37.9	8.9	40.0	2.4	55.3	73.9	18.6	100	0	
Vert.	19496.000	PK	49.9	40.4	11.6	47.6	-9.5	44.8	73.9	29.1	109	170	
Vert.	2483.500	AV	36.0	26.9	13.8	40.7	2.4	38.4	53.9	15.5	118	150	
Vert.	4924.000	AV	37.2	31.8	6.4	41.6	2.4	36.2	53.9	17.7	100	0	
Vert.	7386.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9848.000	AV	35.9	37.9	8.9	40.0	2.4	45.1	53.9	8.8	100	0	
Vert.	19496.000	AV	41.0	40.4	11.6	47.6	-9.5	35.9	53.9	18.0	109	170	

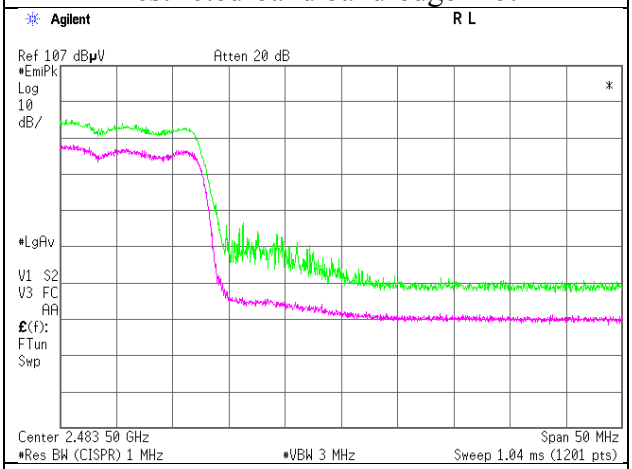
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 15, 2015
Temperature / Humidity	25 deg. C / 59 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-20 2462 MHz [Low Power mode]

Horizontal

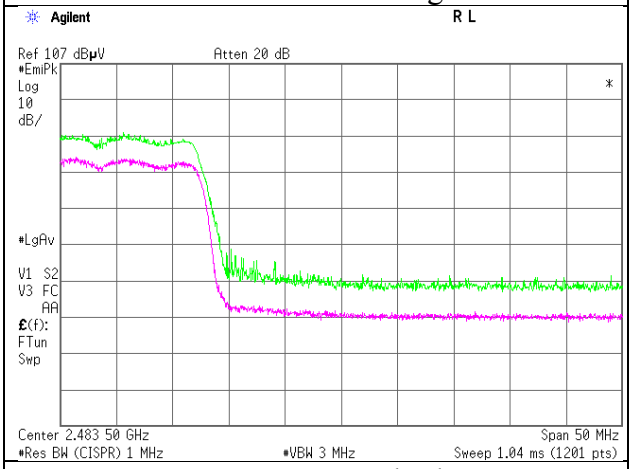
Restricted-band band-edge Plot



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.2, 3 Semi Anechoic Chamber			
Report No.	10882638S-M			
Date	August 15, 2015	August 22, 2015	August 27, 2015	August 28, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH	22 deg. C / 59 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa	Yosuke Ishikawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)	(30 M-1 GHz, 2SAC)
Mode	Tx 11n-40 2422 MHz [Low Power mode]			

(* 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.	198.507	QP	22.4	16.4	8.9	31.8	0.0	15.9	43.5	27.6	100	62	
Hori.	346.430	QP	29.7	15.0	6.9	31.6	0.0	20.0	46.0	26.0	100	120	
Hori.	877.575	QP	21.3	22.1	9.6	30.9	0.0	22.1	46.0	23.9	100	344	
Hori.	932.519	QP	20.9	22.6	9.9	30.6	0.0	22.8	46.0	23.2	100	5	
Hori.	2390.000	PK	53.7	26.9	13.7	40.7	2.4	56.0	73.9	17.9	177	139	
Hori.	4844.000	PK	46.9	31.5	6.3	41.6	2.4	45.5	73.9	28.4	100	0	
Hori.	7266.000	PK	46.8	36.9	7.8	41.3	2.4	52.6	73.9	21.3	100	0	
Hori.	9688.000	PK	45.6	37.7	8.8	40.1	2.4	54.4	73.9	19.5	100	0	
Hori.	19376.000	PK	48.6	40.4	11.6	47.7	-9.5	43.4	73.9	30.5	112	112	
Hori.	2390.000	AV	39.8	26.9	13.7	40.7	2.4	42.1	53.9	11.8	177	139	
Hori.	4844.000	AV	37.1	31.5	6.3	41.6	2.4	35.7	53.9	18.2	100	0	
Hori.	7266.000	AV	36.9	36.9	7.8	41.3	2.4	42.7	53.9	11.2	100	0	
Hori.	9688.000	AV	36.3	37.7	8.8	40.1	2.4	45.1	53.9	**8.8**	100	0	
Hori.	19376.000	AV	37.5	40.4	11.6	47.7	-9.5	32.3	53.9	21.6	112	112	
Vert.	208.034	QP	22.4	16.5	9.0	31.8	0.0	16.1	43.5	27.4	100	327	
Vert.	350.276	QP	25.9	15.1	6.9	31.6	0.0	16.3	46.0	29.7	100	3	
Vert.	917.949	QP	21.2	22.5	9.8	30.7	0.0	22.8	46.0	23.2	100	12	
Vert.	2390.000	PK	53.3	26.9	13.7	40.7	2.4	55.6	73.9	18.3	183	160	
Vert.	4844.000	PK	46.5	31.5	6.3	41.6	2.4	45.1	73.9	28.8	100	0	
Vert.	7266.000	PK	46.2	36.9	7.8	41.3	2.4	52.0	73.9	21.9	100	0	
Vert.	9688.000	PK	46.1	37.7	8.8	40.1	2.4	54.9	73.9	19.0	100	0	
Vert.	19376.000	PK	50.0	40.4	11.6	47.7	-9.5	44.8	73.9	29.1	115	170	
Vert.	2390.000	AV	38.2	26.9	13.7	40.7	2.4	40.5	53.9	13.4	183	160	
Vert.	4844.000	AV	37.4	31.5	6.3	41.6	2.4	36.0	53.9	17.9	100	0	
Vert.	7266.000	AV	37.1	36.9	7.8	41.3	2.4	42.9	53.9	11.0	100	0	
Vert.	9688.000	AV	36.1	37.7	8.8	40.1	2.4	44.9	53.9	9.0	100	0	
Vert.	19376.000	AV	39.6	40.4	11.6	47.7	-9.5	34.4	53.9	19.5	115	170	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

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

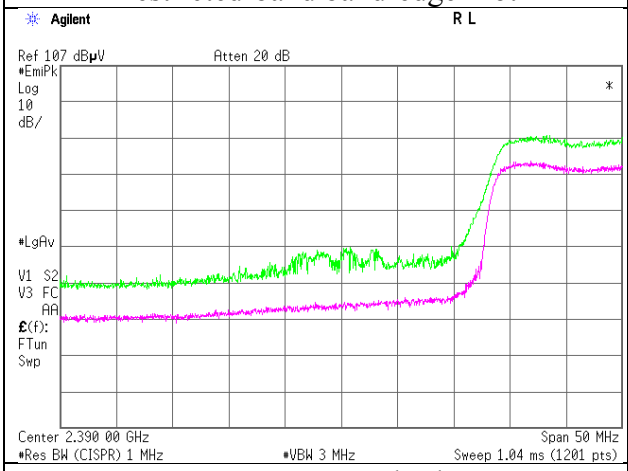
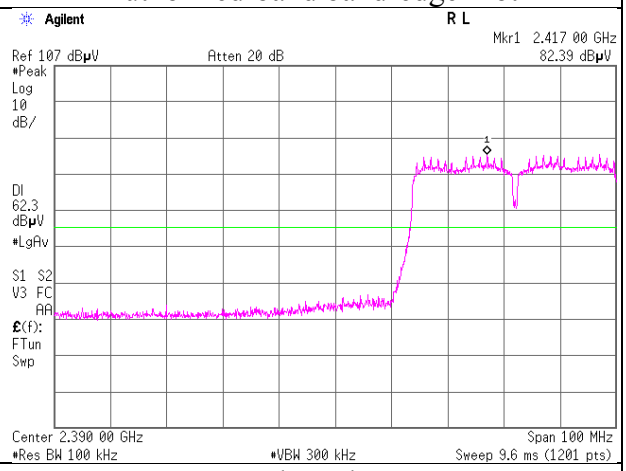
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2422.000	PK	82.4	26.9	13.7	40.7	2.4	84.7	-	-	Carrier
Hori.	2400.000	PK	43.1	26.9	13.7	40.7	2.4	45.4	64.7	19.3	
Vert.	2422.000	PK	77.8	26.9	13.7	40.7	2.4	80.1	-	-	Carrier
Vert.	2400.000	PK	39.8	26.9	13.7	40.7	2.4	42.1	60.1	18.0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

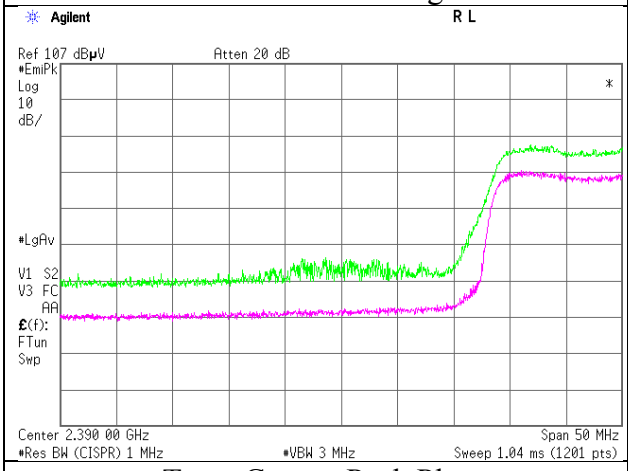
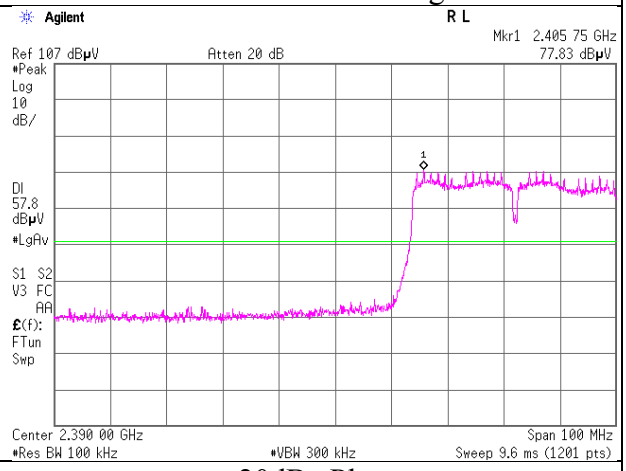
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 15, 2015
Temperature / Humidity	25 deg. C / 59 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-40 2422 MHz [Low Power mode]

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 15, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano	Wataru Kojima	Hikaru Shirasawa
	(1-15 GHz, 2SAC)	(15-18 GHz, 3SAC)	(18-25 GHz, 2SAC)
Mode	Tx 11n-40 2437 MHz [Low Power mode]		

(* 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.	4874.000	PK	47.0	31.6	6.3	41.6	2.4	45.7	73.9	28.2	100	0	
Hori.	7311.000	PK	46.8	37.0	7.8	41.3	2.4	52.7	73.9	21.2	100	0	
Hori.	9748.000	PK	46.0	37.8	8.9	40.1	2.4	55.0	73.9	18.9	100	0	
Hori.	19496.000	PK	49.2	40.4	11.6	47.6	-9.5	44.1	73.9	29.8	109	128	
Hori.	4874.000	AV	37.0	31.6	6.3	41.6	2.4	35.7	53.9	18.2	100	0	
Hori.	7311.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Hori.	9748.000	AV	36.0	37.8	8.9	40.1	2.4	45.0	53.9	8.9	100	0	
Hori.	19496.000	AV	38.5	40.4	11.6	47.6	-9.5	33.4	53.9	20.5	109	128	
Vert.	4874.000	PK	46.1	31.6	6.3	41.6	2.4	44.8	73.9	29.1	100	0	
Vert.	7311.000	PK	46.5	37.0	7.8	41.3	2.4	52.4	73.9	21.5	100	0	
Vert.	9748.000	PK	45.6	37.8	8.9	40.1	2.4	54.6	73.9	19.3	100	0	
Vert.	19496.000	PK	49.6	40.4	11.6	47.6	-9.5	44.5	73.9	29.4	111	167	
Vert.	4874.000	AV	36.8	31.6	6.3	41.6	2.4	35.5	53.9	18.4	100	0	
Vert.	7311.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9748.000	AV	36.3	37.8	8.9	40.1	2.4	45.3	53.9	**8.6**	100	0	
Vert.	19496.000	AV	40.8	40.4	11.6	47.6	-9.5	35.7	53.9	18.2	111	167	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber		
Report No.	10882638S-M		
Date	August 15, 2015	August 22, 2015	August 27, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)
Mode	Tx 11n-40 2452 MHz [Low Power mode]		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	55.6	26.9	13.8	40.7	2.4	58.0	73.9	15.9	100	309	
Hori.	4904.000	PK	46.2	31.7	6.3	41.6	2.4	45.0	73.9	28.9	100	0	
Hori.	7356.000	PK	46.8	37.0	7.8	41.3	2.4	52.7	73.9	21.2	100	0	
Hori.	9808.000	PK	46.7	37.9	8.9	40.1	2.4	55.8	73.9	18.1	100	0	
Hori.	19616.000	PK	48.9	40.4	11.6	47.6	-9.5	43.8	73.9	30.1	111	116	
Hori.	2483.500	AV	39.1	26.9	13.8	40.7	2.4	41.5	53.9	12.4	100	309	
Hori.	4904.000	AV	37.6	31.7	6.3	41.6	2.4	36.4	53.9	17.5	100	0	
Hori.	7356.000	AV	37.4	37.0	7.8	41.3	2.4	43.3	53.9	10.6	100	0	
Hori.	9808.000	AV	36.1	37.9	8.9	40.1	2.4	45.2	53.9	**8.7**	100	0	
Hori.	19616.000	AV	38.5	40.4	11.6	47.6	-9.5	33.4	53.9	20.5	111	116	
Vert.	2483.500	PK	52.6	26.9	13.8	40.7	2.4	55.0	73.9	18.9	120	154	
Vert.	4904.000	PK	46.6	31.7	6.3	41.6	2.4	45.4	73.9	28.5	100	0	
Vert.	7356.000	PK	46.4	37.0	7.8	41.3	2.4	52.3	73.9	21.6	100	0	
Vert.	9808.000	PK	45.9	37.9	8.9	40.1	2.4	55.0	73.9	18.9	100	0	
Vert.	19616.000	PK	50.9	40.4	11.6	47.6	-9.5	45.8	73.9	28.1	110	170	
Vert.	2483.500	AV	38.0	26.9	13.8	40.7	2.4	40.4	53.9	13.5	120	154	
Vert.	4904.000	AV	37.4	31.7	6.3	41.6	2.4	36.2	53.9	17.7	100	0	
Vert.	7356.000	AV	37.7	37.0	7.8	41.3	2.4	43.6	53.9	10.3	100	0	
Vert.	9808.000	AV	36.1	37.9	8.9	40.1	2.4	45.2	53.9	**8.7**	100	0	
Vert.	19616.000	AV	43.3	40.4	11.6	47.6	-9.5	38.2	53.9	15.7	110	170	

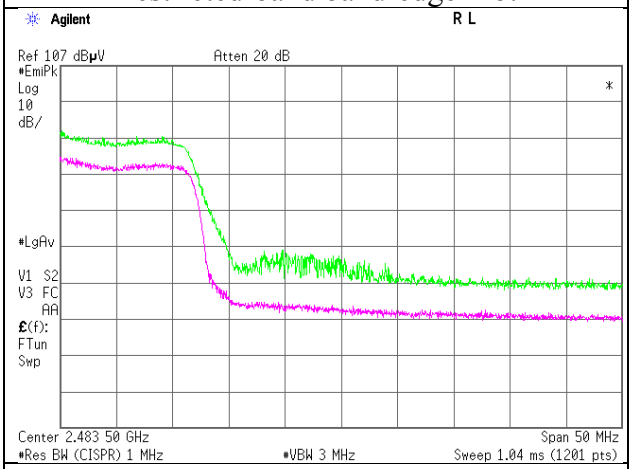
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 15 GHz : 20log (3.95 m / 3.0 m) = 2.4 dB
15 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 Semi Anechoic Chamber
Report No.	10882638S-M
Date	August 15, 2015
Temperature / Humidity	25 deg. C / 59 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-40 2452 MHz [Low Power mode]

Horizontal

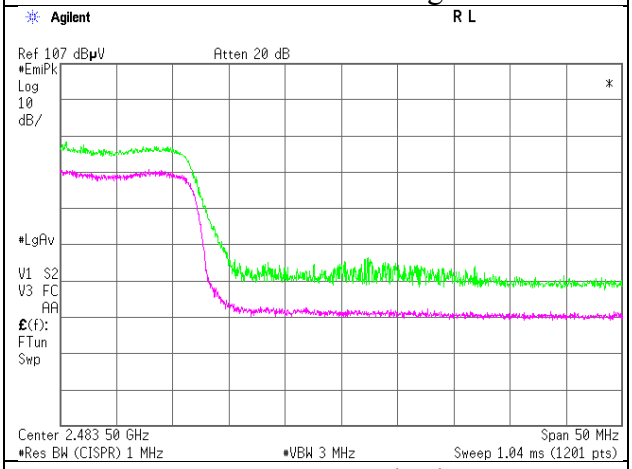
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

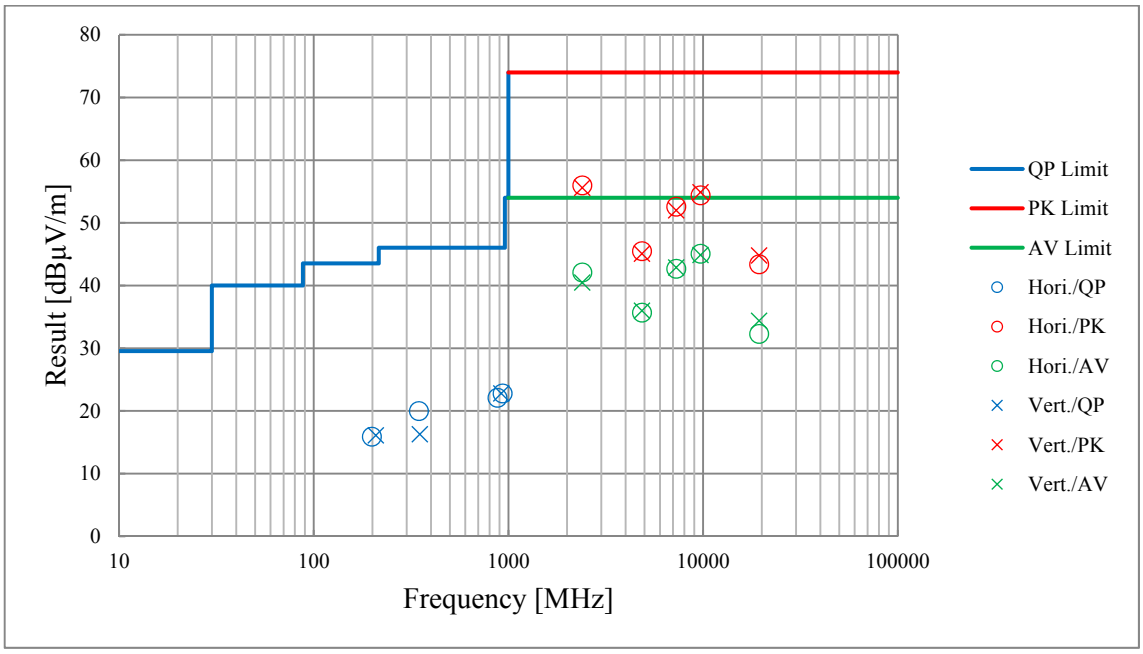


Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.2, 3 Semi Anechoic Chamber			
Report No.	10882638S-M			
Date	August 15, 2015	August 22, 2015	August 27, 2015	August 28, 2015
Temperature / Humidity	25 deg. C / 59 % RH	23 deg. C / 51 % RH	25 deg. C / 50 % RH	22 deg. C / 59 % RH
Engineer	Shinichi Takano (1-15 GHz, 2SAC)	Wataru Kojima (15-18 GHz, 3SAC)	Hikaru Shirasawa (18-25 GHz, 2SAC)	Yosuke Ishikawa (30 M-1 GHz, 2SAC)
Mode	Tx 11n-40 2422 MHz [Low Power mode]			



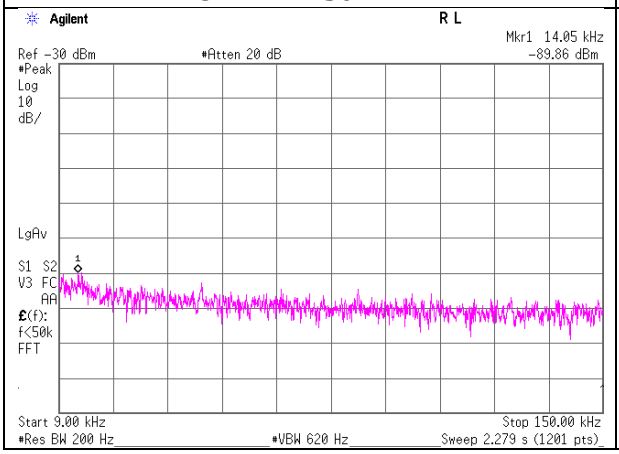
*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

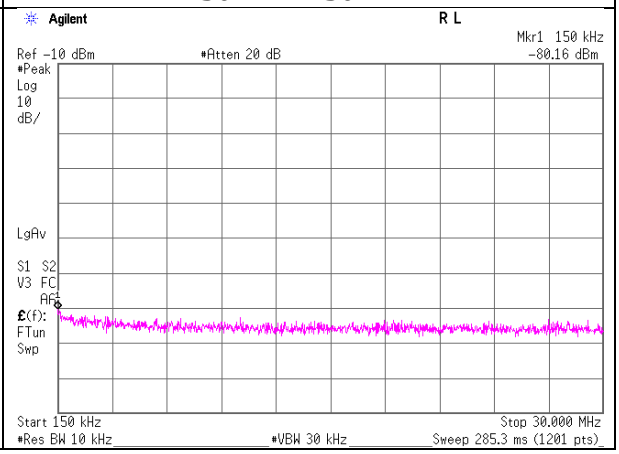
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-20 2412 MHz

[Normal Power mode]

9 kHz - 150 kHz



150 kHz - 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenator Loss [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
14.05	-90.0	20.14	9.9	2.0	1	-57.9	300	6.0	3.3	44.6	41.3	
150.00	-80.2	20.15	9.9	2.0	1	-48.1	300	6.0	13.1	24.0	10.9	

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

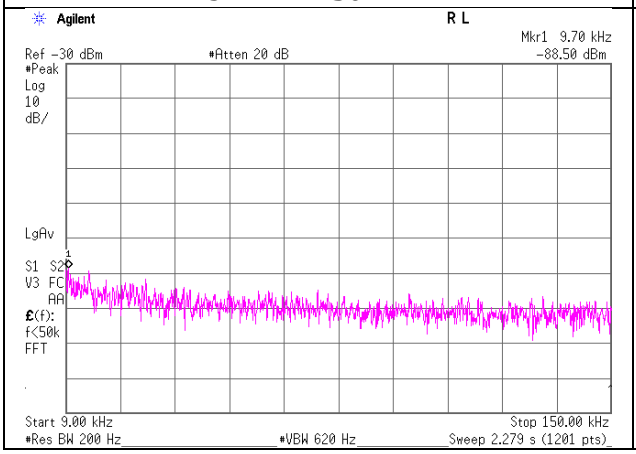
EIRP = Reading + Cable Loss + Attenator Loss + Antenna Gain + 10 * log (N)

Conducted Spurious Emission

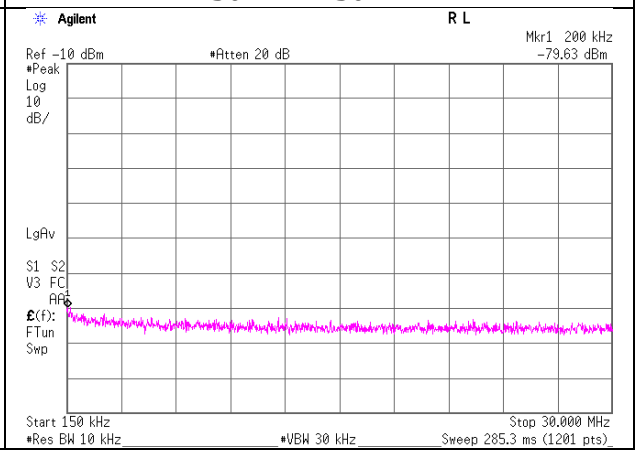
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx 11n-40 2422 MHz

[Low Power mode]

9 kHz - 150 kHz



150 kHz - 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenator Loss [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
9.70	-88.5	20.14	9.9	2.0	1	-56.5	300	6.0	4.8	47.8	43.0	
200.00	-79.6	20.15	9.9	2.0	1	-47.6	300	6.0	13.7	21.5	7.8	

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

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

Power Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

[Normal Power mode]

11b

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-30.24	1.89	20.20	-8.15	8.00	16.15
2437	-30.49	1.89	20.20	-8.40	8.00	16.40
2462	-30.20	1.89	20.20	-8.11	8.00	16.11

11g

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-35.47	1.89	20.20	-13.38	8.00	21.38
2437	-34.29	1.89	20.20	-12.20	8.00	20.20
2462	-35.23	1.89	20.20	-13.14	8.00	21.14

11n-20

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-34.72	1.89	20.20	-12.63	8.00	20.63
2437	-34.40	1.89	20.20	-12.31	8.00	20.31
2462	-34.45	1.89	20.20	-12.36	8.00	20.36

11n-40

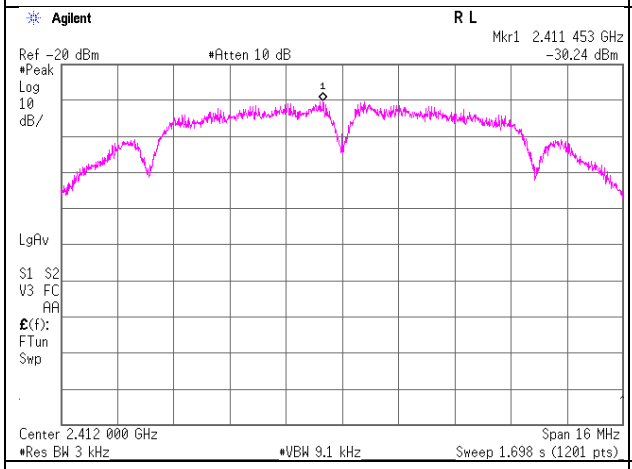
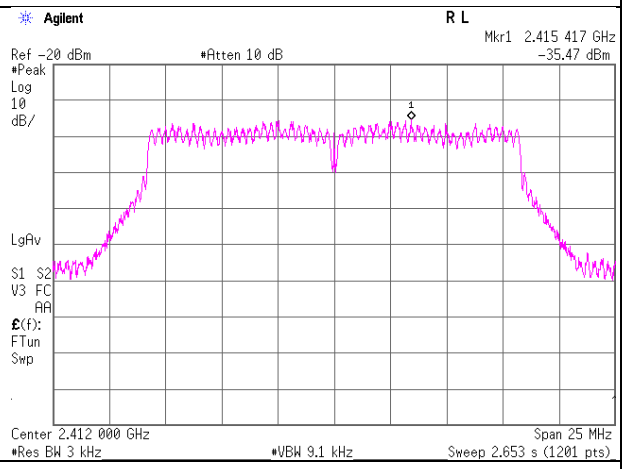
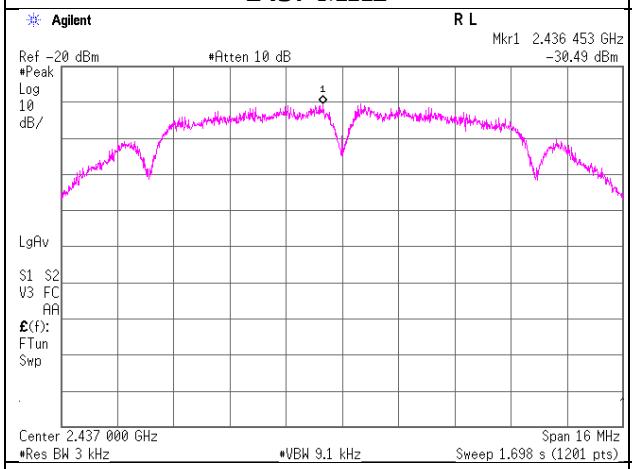
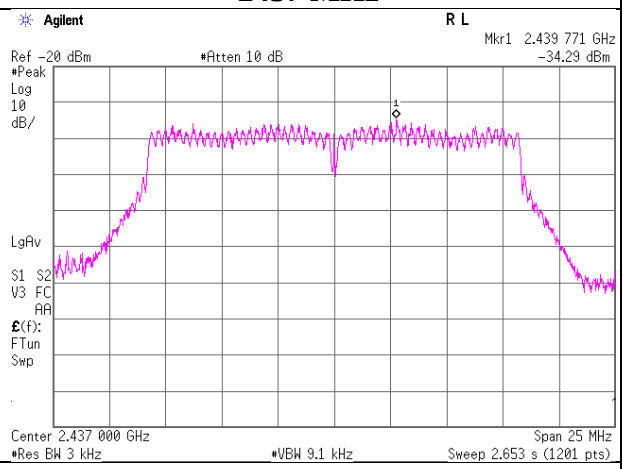
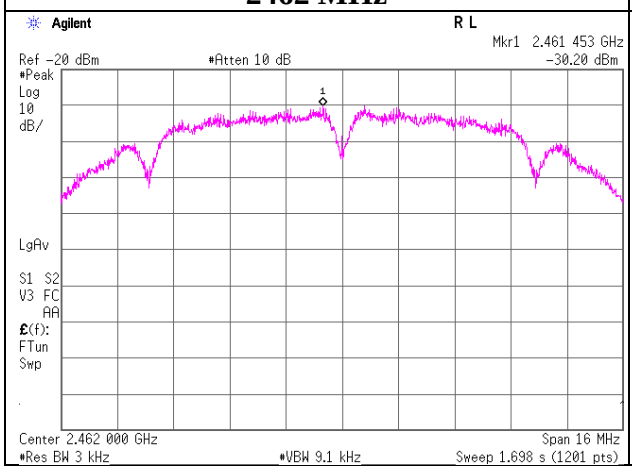
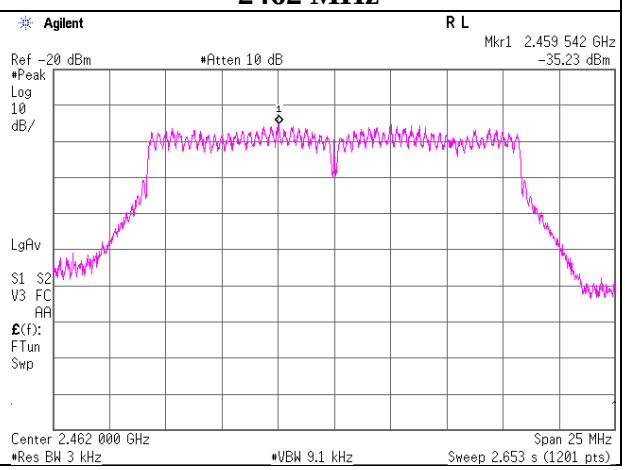
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2422	-39.89	1.89	20.20	-17.80	8.00	25.80
2437	-40.02	1.89	20.20	-17.93	8.00	25.93
2452	-40.10	1.89	20.20	-18.01	8.00	26.01

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator

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

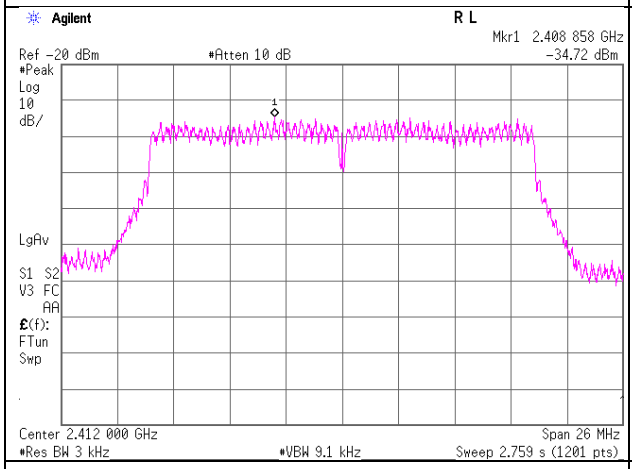
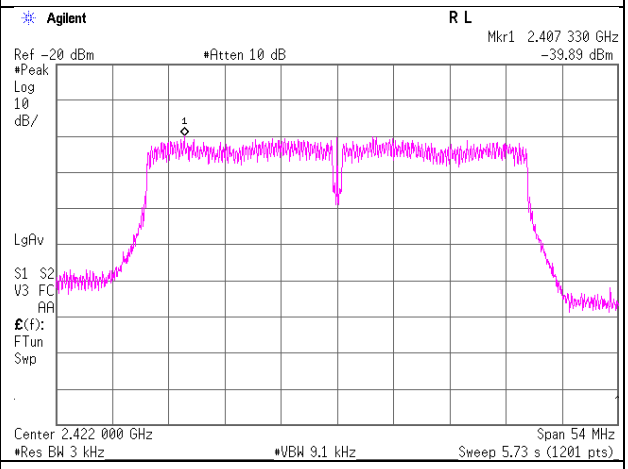
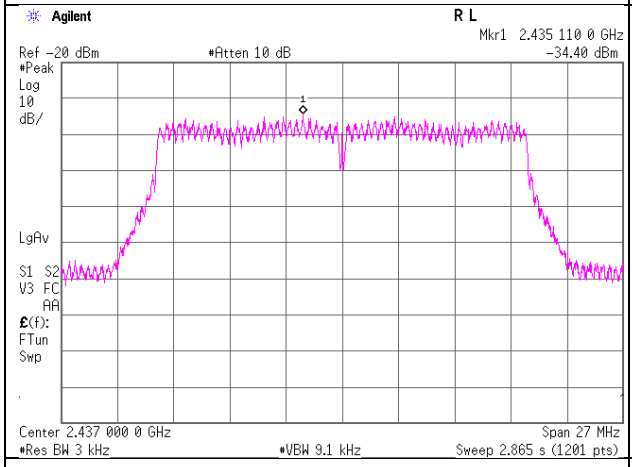
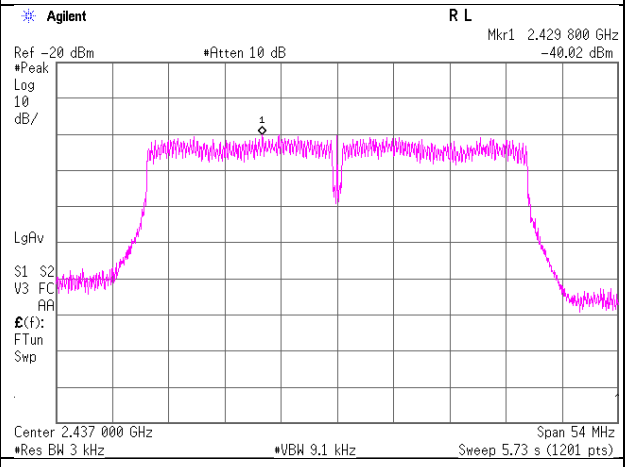
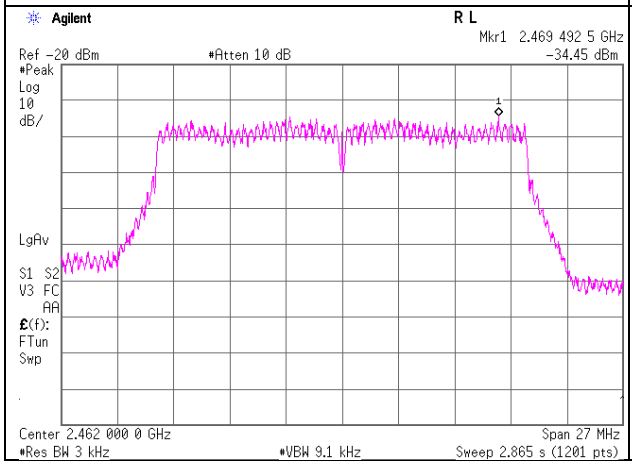
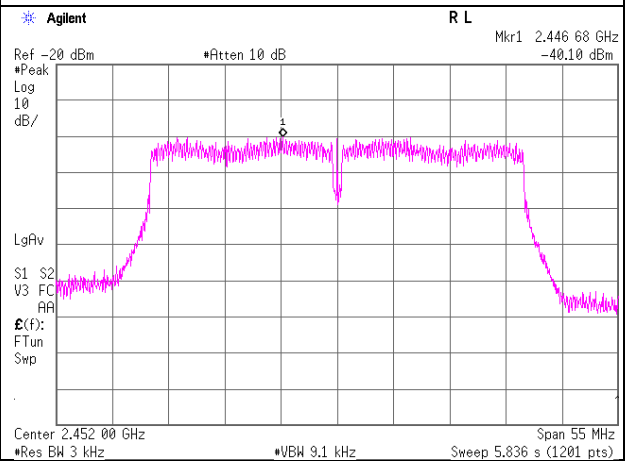
Power Density

[Normal Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

Power Density

[Normal Power mode]

11n-20	11n-40
2412 MHz	**2422 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2452 MHz**
	

Power Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

[Low Power mode]

11b

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-34.31	1.89	20.20	-12.22	8.00	20.22
2437	-33.85	1.89	20.20	-11.76	8.00	19.76
2462	-33.86	1.89	20.20	-11.77	8.00	19.77

11g

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-39.33	1.89	20.20	-17.24	8.00	25.24
2437	-39.78	1.89	20.20	-17.69	8.00	25.69
2462	-39.12	1.89	20.20	-17.03	8.00	25.03

11n-20

Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2412	-39.26	1.89	20.20	-17.17	8.00	25.17
2437	-39.23	1.89	20.20	-17.14	8.00	25.14
2462	-38.48	1.89	20.20	-16.39	8.00	24.39

11n-40

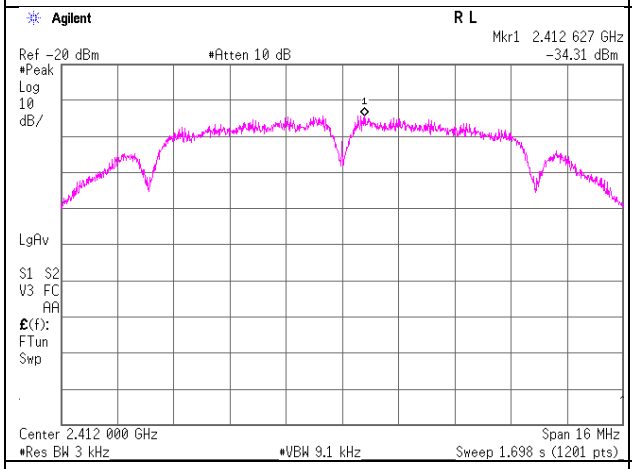
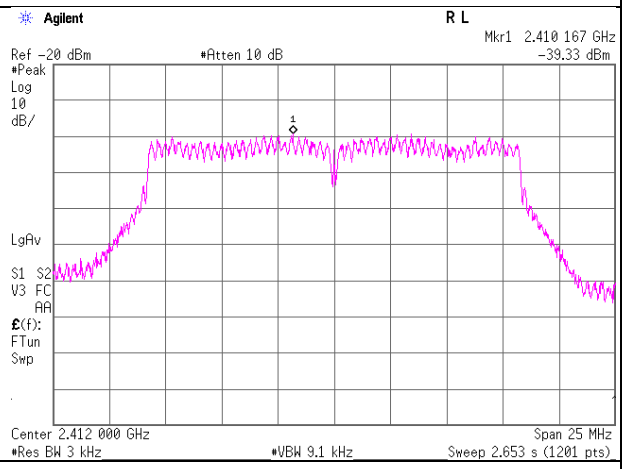
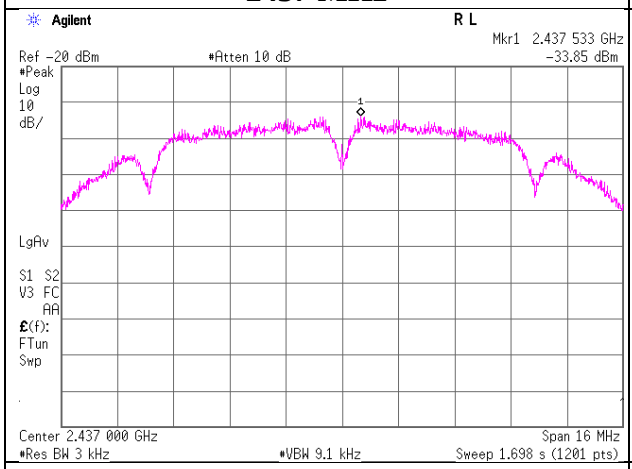
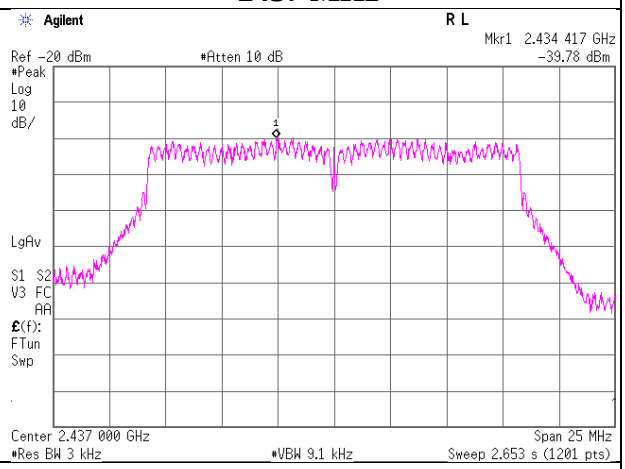
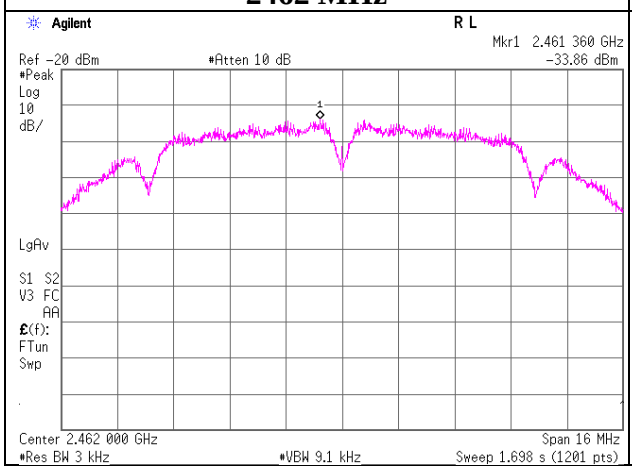
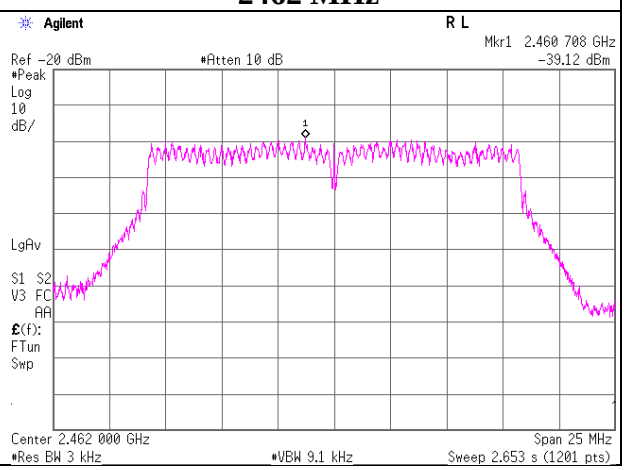
Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
2422	-40.30	1.89	20.20	-18.21	8.00	26.21
2437	-40.68	1.89	20.20	-18.59	8.00	26.59
2452	-40.90	1.89	20.20	-18.81	8.00	26.81

Sample Calculation:
Result = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator

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

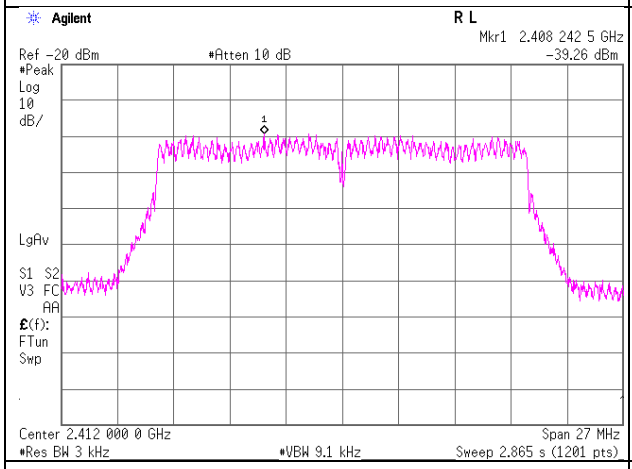
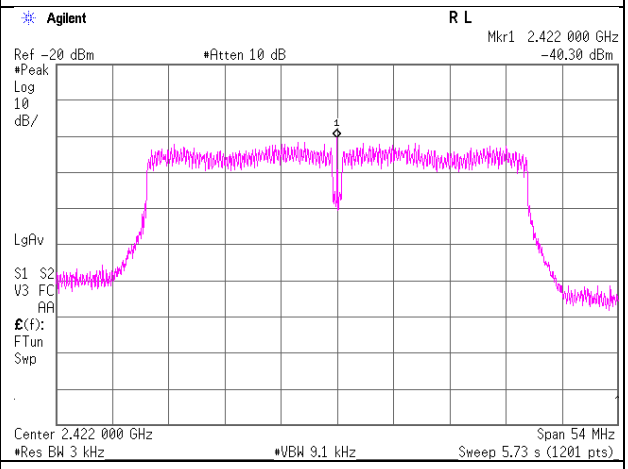
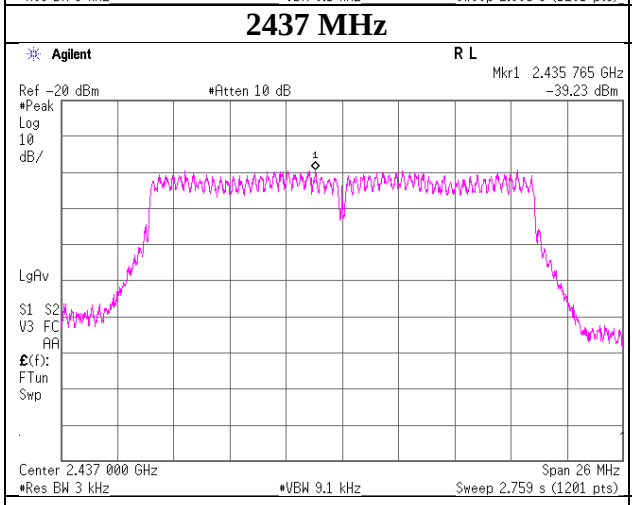
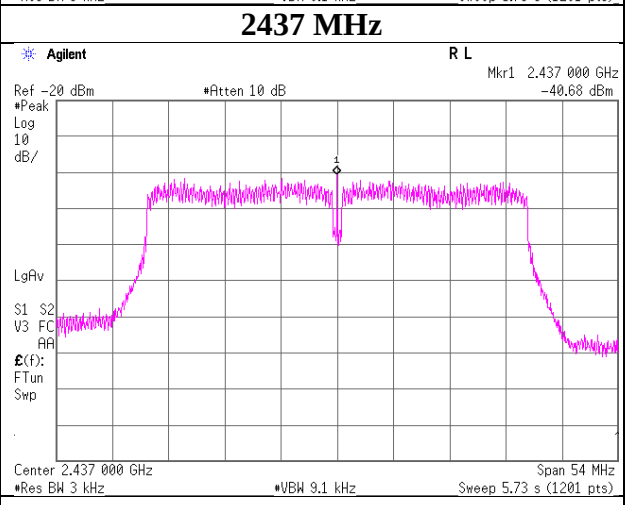
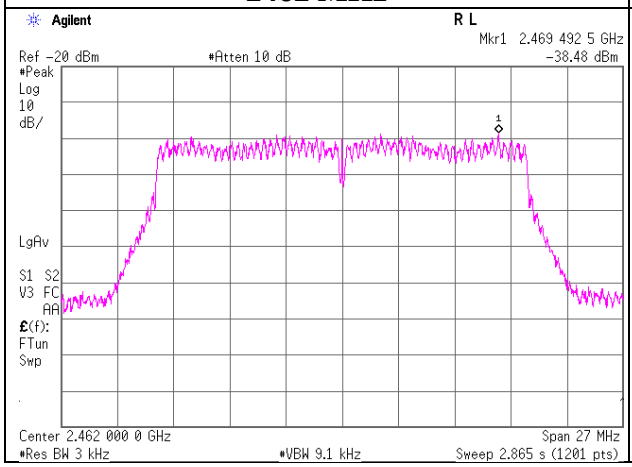
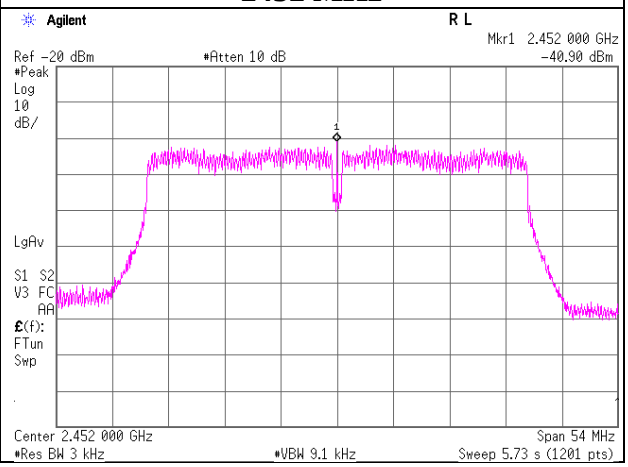
Power Density

[Low Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

Power Density

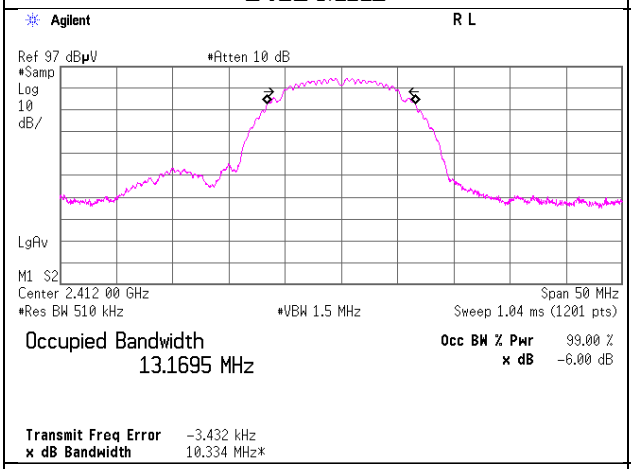
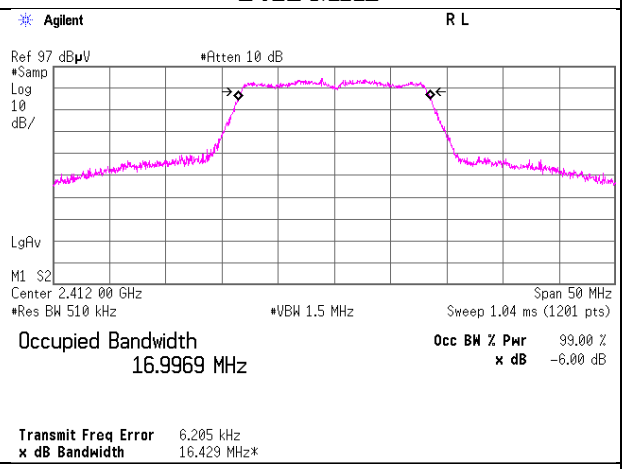
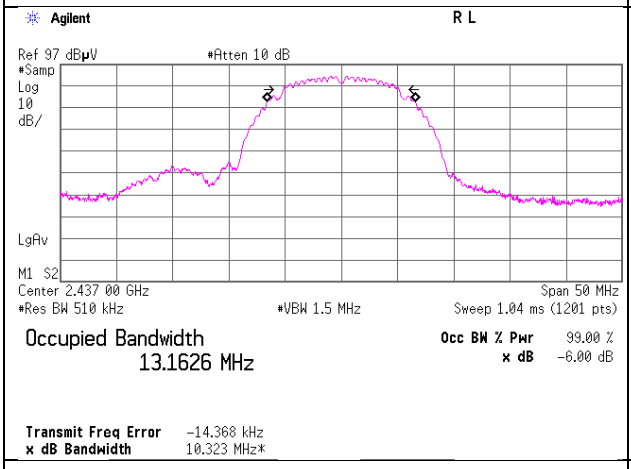
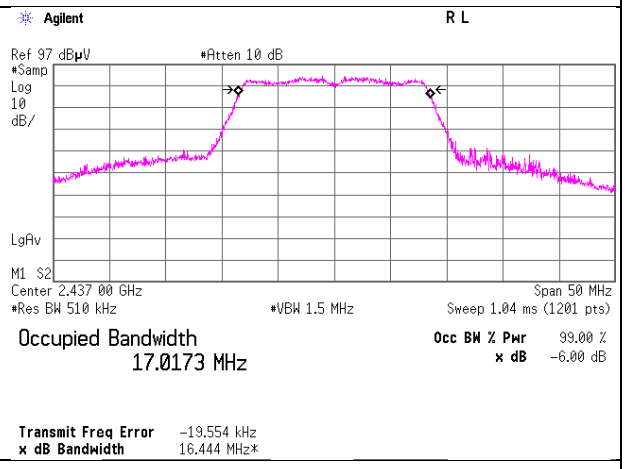
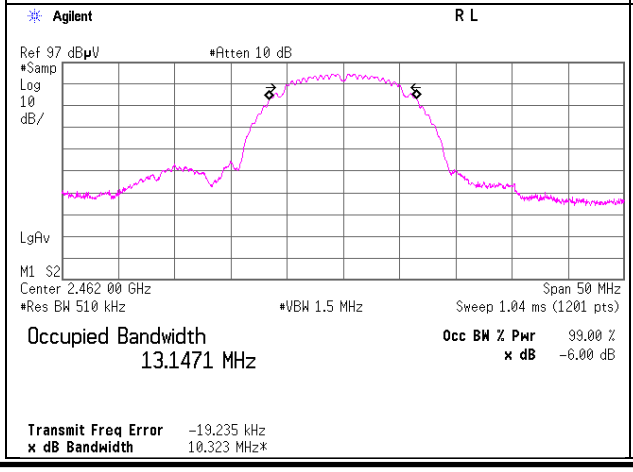
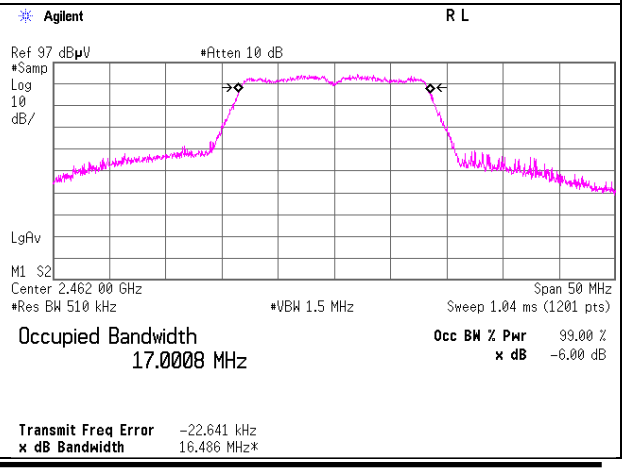
[Low Power mode]

11n-20	11n-40
2412 MHz	**2452 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2452 MHz**
	

99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

[Normal Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

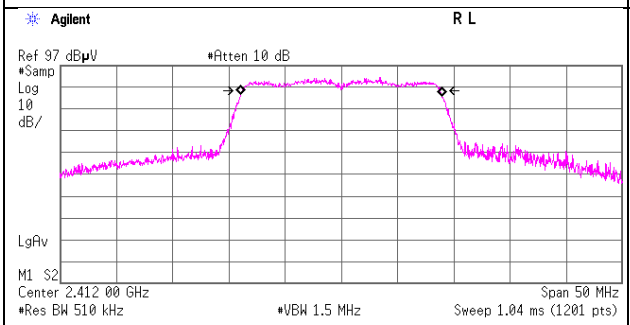
99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

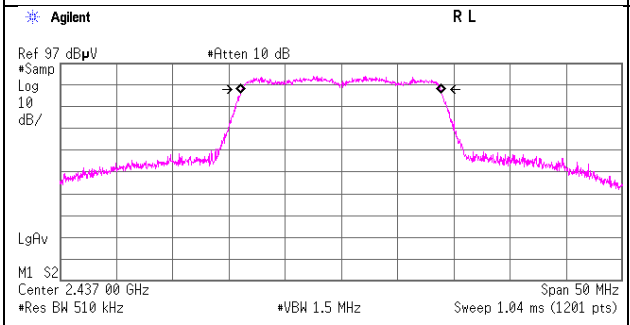
[Normal Power mode]

11n-20

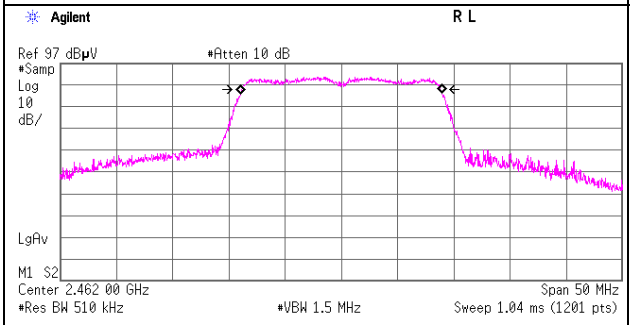
2412 MHz



2437 MHz

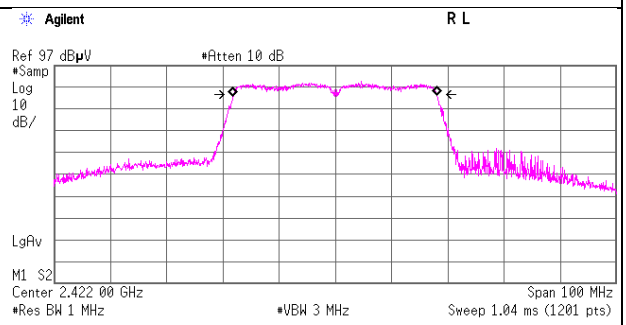


2462 MHz

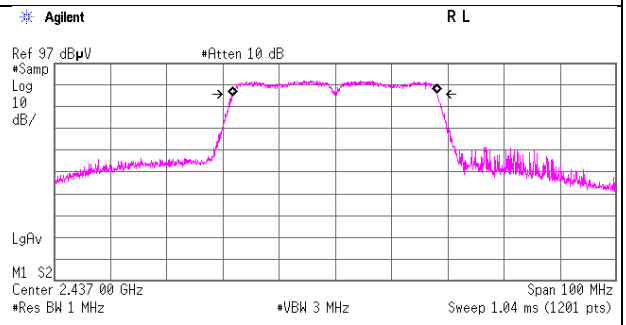


11n-40

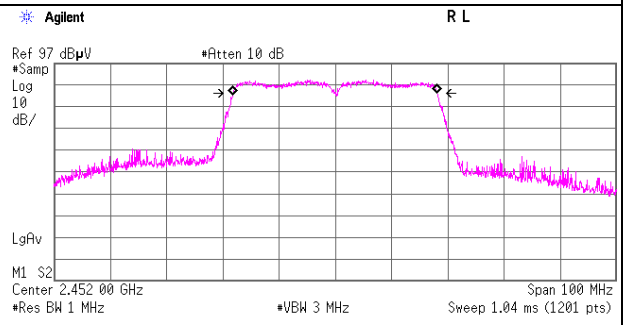
2422 MHz



2437 MHz



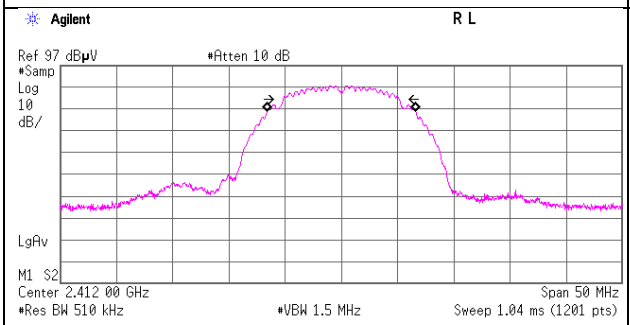
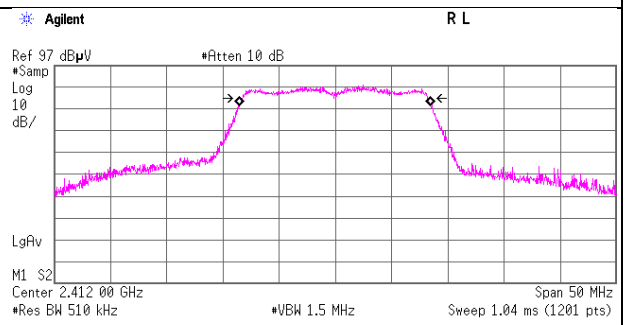
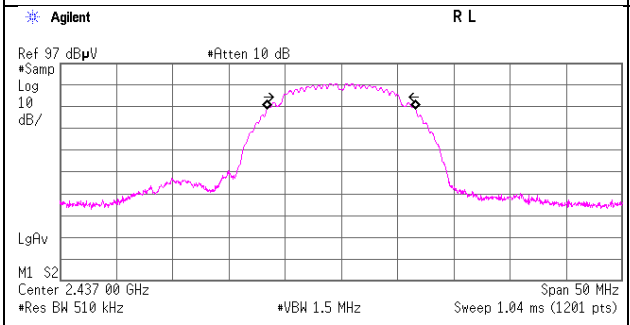
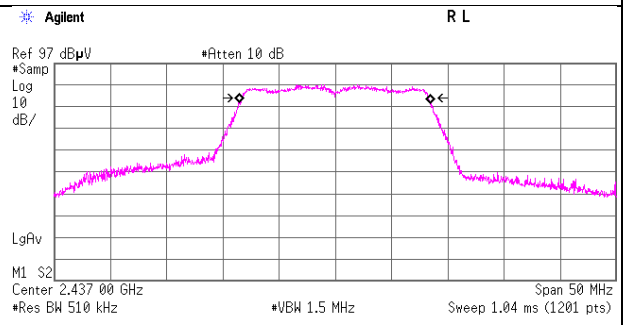
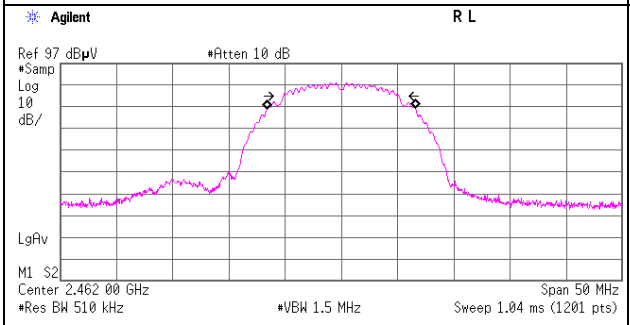
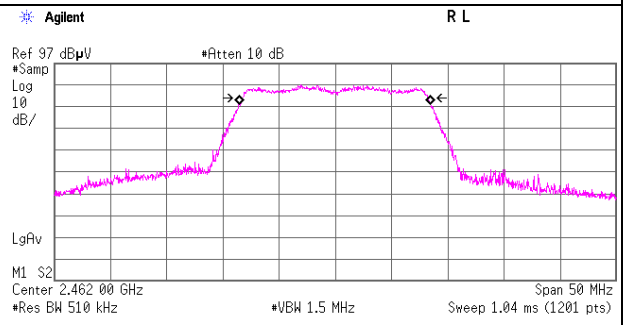
2452 MHz



99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	July 10, 2015
Temperature / Humidity	25 deg. C / 67 % RH
Engineer	Shinichi Takano
Mode	Tx

[Low Power mode]

11b	11g
2412 MHz	**2412 MHz**
	
2437 MHz	**2437 MHz**
	
2462 MHz	**2462 MHz**
	

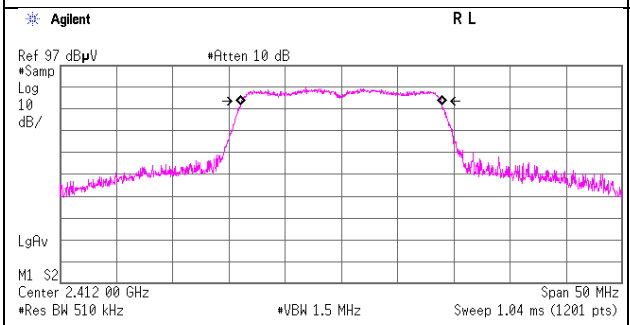
99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10882638S-M
Date	August 21, 2015
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shinichi Takano
Mode	Tx

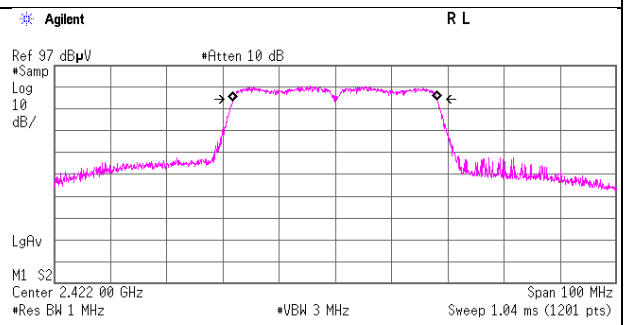
[Low Power mode]

11n-20	11n-40

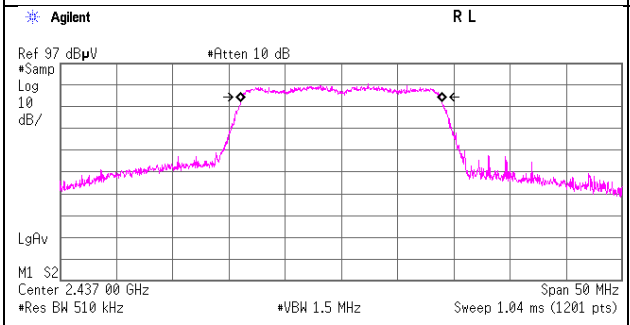
2412 MHz



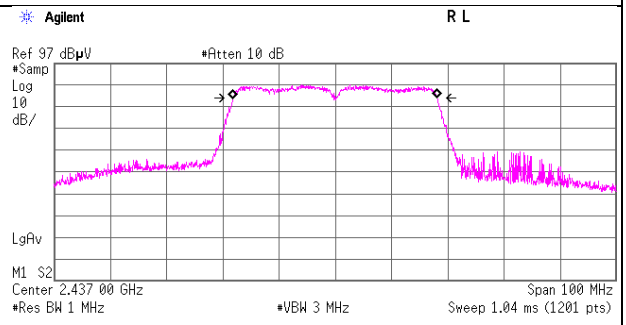
2422 MHz



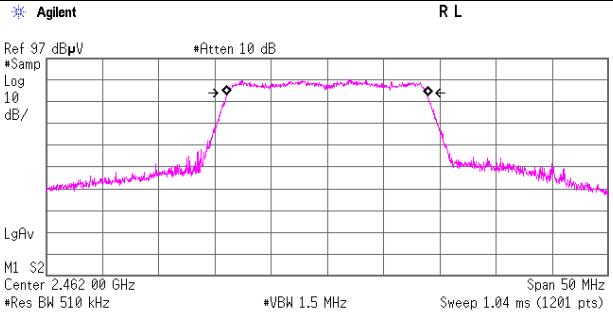
2437 MHz



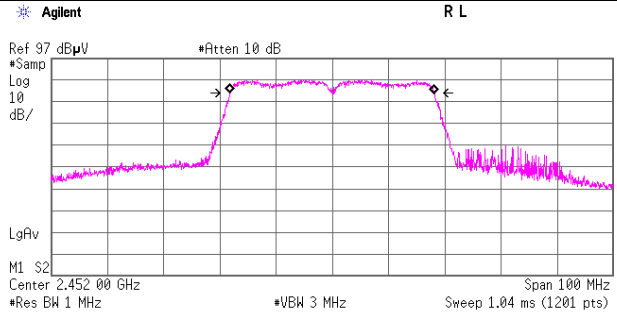
2437 MHz



2462 MHz



2452 MHz



APPENDIX 2: Test instruments

Test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	AT,RE	2015/03/26 * 12
SAT10-11	Attenuator	Weinschel Corp.	54A-10	37588	AT	2015/04/09 * 12
SCC-G12	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	AT	2015/03/11 * 12
SPM-07	Power Meter	Agilent	8990B	MY5100272	AT	2015/04/02 * 12
SPSS-04	Power sensor	Agilent	N1923A	MY5326009	AT	2015/04/02 * 12
SOS-13	Humidity Indicator	Custom	CTH-202	Q.C.17	AT	2015/04/28 * 12
STS-05	Digital Hitester	Hioki	3805-50	080997828	AT	2014/11/11 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2014/12/24 * 12
SAT20-05	Attenuator	Weinschel Corp.	54A-20	Y5649	AT	2014/11/21 * 12
CSA-07	Spectrum Analyzer	Agilent	E4448A	MY52490024	AT	2015/05/28 * 12
SAEC-02(NSA)	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	RE	2015/07/15 * 12
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2015/03/23 * 12
SCC-G05	Coaxial Cable	Junkosha	J12J102207-00	APR-30-15-037	RE	2015/05/11 * 12
SCC-G22	Coaxial Cable	Suhner	SUCOFLEX 104	296199/4	RE	2015/05/19 * 12
HA-06	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9120 D	9120D-683	RE	2015/06/17 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2014/10/30 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2015/03/23 * 12
SJM-14	Measure	ASKUL	-	-	RE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE,CE	-
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2014/11/21 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2014/11/21 * 12
STS-02	Digital Hitester	Hioki	3805-50	080997819	RE	2015/03/10 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2015/07/16 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2015/05/27 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2015/06/08 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2015/05/19 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2015/08/11 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2014/10/30 * 12
STS-03	Digital Hitester	Hioki	3805-50	080997823	RE	2014/11/11 * 12
SJM-15	Measure	ASKUL	-	-	RE	-
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2015/03/17 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2015/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2015/03/11 * 12
SSA-01	Spectrum Analyzer	Agilent	N9010A-526	MY48031482	RE	2015/04/10 * 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 test**
RE: Radiated Emission test
AT: Antenna Terminal Conducted test

Test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-02	Pre Amplifier	SONOMA	310N	290212	RE	2015/02/18 * 12
SAT6-02	Attenuator	JFW	50HF-006N	-	RE	2015/02/18 * 12
KAT3-11	Attenuator	JFW IND. INC.	50HF-003N	-	RE	2014/08/27 * 12
SBA-02	Biconical Antenna	Schwarzbeck	BBA9106	91032665	RE	2014/11/22 * 12
SCC-B1/B3/B5/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2015/04/17 * 12
SCC-B2/B4/B6/B7/B8/B13/SRSE-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2015/04/17 * 12
SLA-02	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0893	RE	2014/11/22 * 12
STR-07	Test Receiver	Rohde & Schwarz	ESU26	100484	RE	2014/09/03 * 12
SCC-A12/A13/SRSE-01	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-269(RF Selector)	CE	2015/04/17 * 12
SLS-01	LISN	Rohde & Schwarz	ENV216	100511	CE	2015/02/24 * 12
SLS-02	LISN	Rohde & Schwarz	ENV216	100512	CE	2015/02/24 * 12
SAT3-10	Attenuator	JFW	50HF-003N	-	CE	2014/09/02 * 12
SOS-02	Humidity Indicator	A&D	AD-5681	4063343	CE	2014/12/24 * 12
STM-01	Terminator	TME	CT-01 BP	-	CE	2014/12/19 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	CE	2014/11/11 * 12
SJM-02	Measure	KOMELON	KMC-36	-	CE	-
STS-01	Digital Hitester	Hioki	3805-50	080997812	CE	2014/11/11 * 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 test**
RE: Radiated Emission test
AT: Antenna Terminal Conducted test