RADIO TEST REPORT

Test Report No. : 11435391S-A-R1

Applicant	:	**Canon Inc.**
Type of Equipment	:	**Wireless LAN Module**
Model No.	:	**K30365**
FCC ID	:	**AZDK30365**
Test regulation	:	**FCC Part 15 Subpart C: 2016**
Test item	:	**Radiated Spurious Emission**
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)
7. This report is a revised version of 11435391S-A. 11435391S-A is replaced with this report.

Date of test: September 16 to 18, 2016

Representative test engineer:
Makoto Hosaka
Engineer
Consumer Technology Division

Approved by:
Tatsuya Arai
Engineer
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

UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
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REVISION HISTORY

Original Test Report No.: 11435391S-A

Revision	Test report No.	Date	Page revised	Contents
- (Original)	11435391S-A	October 12, 2016	-	-
1	11435391S-A-R1	October 14, 2016	8	Correction of 4.2

CONTENTS **PAGE**

SECTION 1: Customer information

Company Name	:	Canon Inc.
Address	:	3-451 Tsukagoshi, Saiwai-ku, Kawasaki, kanagawa 212-8530 Japan
Telephone Number	:	+81-44-542-2111
Contact Person	:	Haruyuki Yanagi

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless LAN Module
Model No.	:	K30365
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.3 V
Receipt Date of Sample	:	September 16, 2016
Country of Mass-production	:	Thailand, Vietnam
Condition of EUT	:	Production model
Modification of EUT	:	No Modification by the test lab.

2.2 Product Description

Model: K30365 (referred to as the EUT in this report) is a Wireless LAN Module.

The clock frequencies used in the EUT: 38.4 MHz

Radio specification

Equipment type	:	Transceiver
Frequency of operation	:	2412 MHz -2462 MHz (IEEE 802.11b, 11g, 11n(HT20))
Type of modulation	:	DSSS (IEEE 802.11b), OFDM (IEEE 802.11g/n)
Antenna type	:	Pattern antenna (meander)
Antenna connector type	:	U.FL
Antenna gain	:	-0.92 dBi

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C FCC part 15 final revised on April 6, 2016.
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013 6. Standard test methods **IC:** RSS-Gen 8.8	**FCC:** Section 15.207 **IC:** RSS-Gen 8.8	-	-	*1)
6dB Bandwidth	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r05 **IC:** -	**FCC:** Section 15.247(a)(2) **IC:** RSS-247 5.2(1)	-	-	*1)
Maximum Peak Output Power	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r05 **IC:** RSS-Gen 6.12	**FCC:** Section 15.247(b)(3) **IC:** RSS-247 5.4(4)		-	*1)
Power Density	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r05 **IC:** -	**FCC:** Section 15.247(e) **IC:** RSS-247 5.2(2)		-	*1)
Spurious Emission Restricted Band Edges	**FCC:** KDB 558074 D01 DTS Meas Guidance v03r05 **IC:** RSS-Gen 6.13	**FCC:** Section15.247(d) **IC:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	5.2 dB 2390.000 MHz, AV, Horizontal Tx 2412 MHz, 11n-20 2483.500 MHz, AV, Vertical Tx 2462 MHz, 11n-20	Complied (above 30 MHz)	Radiated *2) *3)

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.
*1) Refer to the original test report: 10420214S-D.
*2) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 DTS Meas Guidance v03r05 12.2.7.
*3) For the frequency range of below 30 MHz, refer to the original test report: 10420214S-D.

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

FCC 15.31 (e) / 212
The module is constantly provided the stable voltage from the host device regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC 15.203 / 212
The antenna is not removable from the EUT. Therefore, the equipment complies with the antenna requirement.
The antenna connector is a unique type and not used by end user.

3.3 Addition to standard

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

3.4 Uncertainty

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

Item	Frequency range	Uncertainty (+/-)			
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR	No. 4 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.1 dB	2.1 dB	2.6 dB	2.2 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	2.7 dB	2.7 dB	3.1 dB	-
	30 MHz-300 MHz	4.4 dB	4.4 dB	4.6 dB	-
	300 MHz-1 GHz	5.6 dB	5.5 dB	5.3 dB	-
	1 GHz-13 GHz	5.2 dB	5.2 dB	5.2 dB	-
Radiated emission (Measurement distance: 1 m)	13 GHz-18 GHz	4.9 dB	4.9 dB	4.9 dB	-
	18 GHz-40 GHz	4.9 dB	4.9 dB	4.9 dB	-

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

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

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

3.5 Test Location

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

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

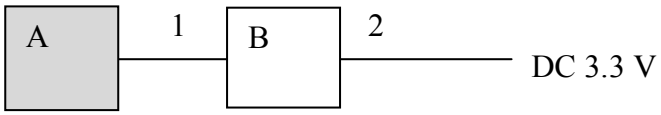
SECTION 4: Operation of E.U.T. during testing

4.1 Operating Mode(s)

Test item	Mode	Tested frequency	Power setting *1)	Worst data rate *2)
Radiated emission (below 1 GHz) *3)	Transmitting IEEE 802.11g	2412 MHz	10	6 Mbps, PN9
Radiated emission (Above 1 GHz)	Transmitting IEEE 802.11b	2412 MHz, 2437 MHz, 2462 MHz	12	1 Mbps, PN9
	Transmitting IEEE 802.11g	2412 MHz, 2437 MHz, 2462 MHz	10	6 Mbps, PN9
	Transmitting IEEE 802.11n (HT20)	2412 MHz, 2437 MHz, 2462 MHz	10	MCS0, PN9

*1) The actual output power differs from the setting value. Software used for the test: DutApiWiFi8801BrdigeEth.exe, Ver.2.0.0.79
*2) The worst condition was determined based on the test result of Maximum Peak Conducted Output Power. Refer to the original test report: 10420214S-D.
*3) 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.

4.2 Configuration and peripherals



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

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless LAN Module	K30365	RA002067058	Canon	EUT
B	WLAN JOINT PCB	-	-	Canon	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Flat	0.05	Unshielded	Unshielded	-
2	DC	0.3 + 2.0	Unshielded	Unshielded	-

SECTION 5: Radiated Spurious Emission

Test Procedure

It was measured based on "11.0 Emissions in non-restricted frequency bands" of "558074 D01 DTS Meas Guidance v03r05".

[For below 1 GHz]
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.

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

The height of the measuring antenna varied between 1 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	30 MHz to 300 MHz	300 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

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

20 dBc was applied to the frequency over the limit of FCC 15.209 / Table 4 of RSS-Gen 8.9(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	PK	AV *3) *4)	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	Average Power Method: RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: 100 traces If duty cycle was less than 98%, a duty factor was added to the results.	RBW: 100 kHz VBW: 300kHz
Test Distance	3 m	3.99 m *1) (1 GHz – 13 GHz), 1 m *2) (13 GHz – 26.5 GHz)		3.99 m *1) (1 GHz – 13 GHz), 1 m *2) (13 GHz – 26.5 GHz)

*1) Distance Factor: 20 x log (3.99 m / 3.0 m) = 2.48 dB
*2) Distance Factor: 20 x log (1.0 m / 3.0 m) = -9.5 dB
*3) Average Power Measurement was performed based on 6. 0 & 12.2.5 of "KDB 558074 D01 DTS Meas Guidance v03r05"
*4) Duty factor refer to the original test report: 10420214S-D.

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.

Worst case:

Antenna polarization	Carrier (Band edge)	Spurious			
		Below 1 GHz	Above 1GHz		
			1-2.8 GHz	2.8-15 GHz	15-25 GHz
Horizontal	X	X	X	X	X
Vertical	Z	X	Z	Y	X

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

Measurement range : 30 M - 26.5 GHz
Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	13 GHz – 26.5 GHz
Mode	Tx 11b 2412 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	55.50	27.21	13.77	40.70	2.48	58.26	73.90	15.6	143	91	
Hori.	4824.000	PK	49.50	31.17	6.00	41.50	2.48	47.65	73.90	26.3	146	124	
Hori.	7236.000	PK	48.78	36.29	7.34	41.16	2.48	53.73	73.90	20.2	100	0	
Hori.	9648.000	PK	48.21	38.19	8.16	40.47	2.48	56.57	73.90	17.3	150	0	
Hori.	12060.000	PK	48.42	39.14	9.34	39.85	2.48	59.53	73.90	14.4	150	0	
Hori.	2390.000	AV	36.47	27.21	13.77	40.70	2.48	39.23	53.90	14.7	143	91	
Hori.	4824.000	AV	40.87	31.17	6.00	41.50	2.48	39.02	53.90	14.9	146	124	
Hori.	7236.000	AV	37.06	36.29	7.34	41.16	2.48	42.01	53.90	11.9	100	0	
Hori.	9648.000	AV	36.46	38.19	8.16	40.47	2.48	44.82	53.90	9.1	150	0	
Hori.	12060.000	AV	36.63	39.14	9.34	39.85	2.48	47.74	53.90	**6.2**	150	0	
Vert.	2390.000	PK	54.30	27.21	13.77	40.70	2.48	57.06	73.90	16.8	144	14	
Vert.	4824.000	PK	50.96	31.17	6.00	41.50	2.48	49.11	73.90	24.8	130	44	
Vert.	7236.000	PK	48.83	36.29	7.34	41.16	2.48	53.78	73.90	20.1	150	0	
Vert.	9648.000	PK	48.44	38.19	8.16	40.47	2.48	56.80	73.90	17.1	150	0	
Vert.	12060.000	PK	47.75	39.14	9.34	39.85	2.48	58.86	73.90	15.0	150	0	
Vert.	2390.000	AV	36.42	27.21	13.77	40.70	2.48	39.18	53.90	14.7	144	14	
Vert.	4824.000	AV	39.70	31.17	6.00	41.50	2.48	37.85	53.90	16.1	130	44	
Vert.	7236.000	AV	36.83	36.29	7.34	41.16	2.48	41.78	53.90	12.1	150	0	
Vert.	9648.000	AV	35.82	38.19	8.16	40.47	2.48	44.18	53.90	9.7	150	0	
Vert.	12060.000	AV	36.24	39.14	9.34	39.85	2.48	47.35	53.90	6.6	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 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	96.36	27.29	13.79	40.70	2.48	99.22	-	-	Carrier
Hori.	2397.050	PK	52.15	27.24	13.77	40.70	2.48	54.94	79.22	24.3	
Hori.	2400.000	PK	50.23	27.25	13.78	40.70	2.48	53.04	79.22	26.2	
Vert.	2412.000	PK	95.87	27.29	13.79	40.70	2.48	98.73	-	-	Carrier
Vert.	2397.020	PK	49.02	27.24	13.77	40.70	2.48	51.81	78.73	26.9	
Vert.	2400.000	PK	49.45	27.25	13.78	40.70	2.48	52.26	78.73	26.5	

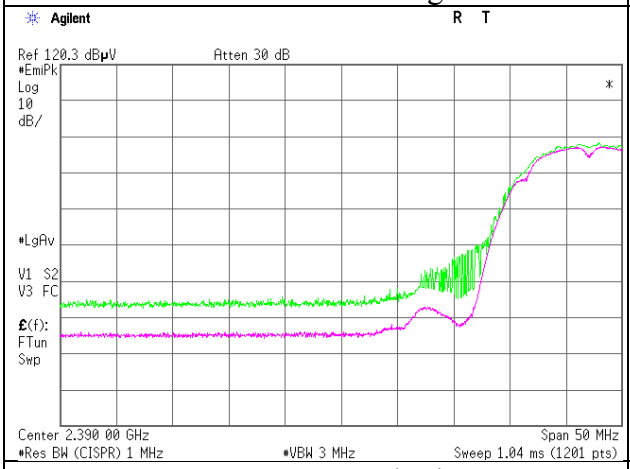
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11b 2412 MHz

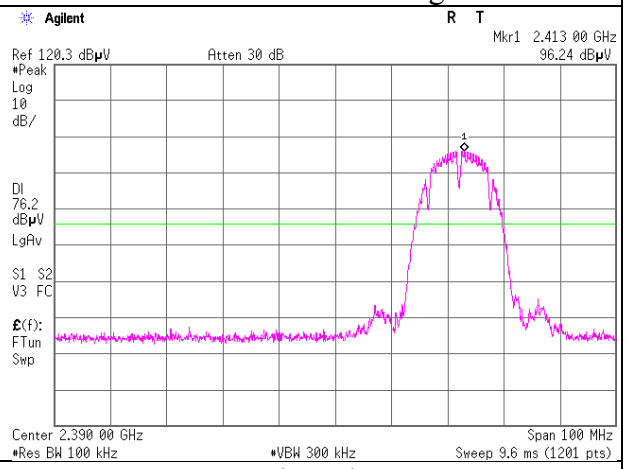
Horizontal

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

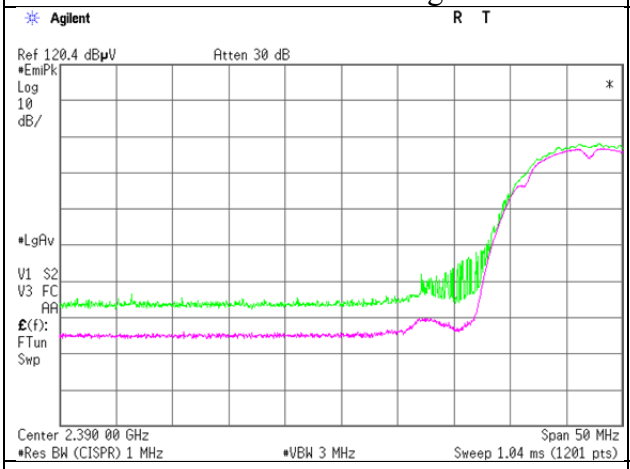
Authorized-band band-edge Plot



20dBc Plot

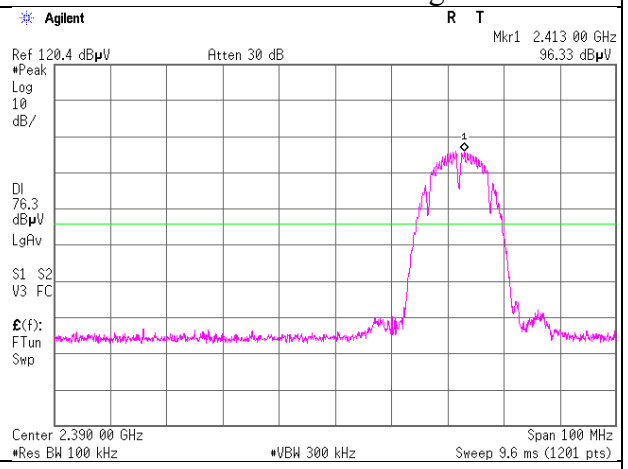
Vertical

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

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	13 GHz – 26.5 GHz
Mode	Tx 11b 2437 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	4874.000	PK	50.65	31.27	6.01	41.40	2.48	49.01	73.90	24.9	141	140	
Hori.	7311.000	PK	48.40	36.39	7.40	41.23	2.48	53.44	73.90	20.5	150	0	
Hori.	9748.000	PK	47.31	38.33	8.23	40.42	2.48	55.93	73.90	18.0	150	0	
Hori.	12185.000	PK	46.57	39.12	9.44	39.80	2.48	57.81	73.90	16.1	150	0	
Hori.	4874.000	AV	41.14	31.27	6.01	41.40	2.48	39.50	53.90	14.4	141	140	
Hori.	7311.000	AV	36.26	36.39	7.40	41.23	2.48	41.30	53.90	12.6	150	0	
Hori.	9748.000	AV	35.28	38.33	8.23	40.42	2.48	43.90	53.90	10.0	150	0	
Hori.	12185.000	AV	34.69	39.12	9.44	39.80	2.48	45.93	53.90	8.0	150	0	
Vert.	4874.000	PK	50.09	31.27	6.01	41.40	2.48	48.45	73.90	25.5	136	41	
Vert.	7311.000	PK	47.76	36.39	7.40	41.23	2.48	52.80	73.90	21.1	150	0	
Vert.	9748.000	PK	46.74	38.33	8.23	40.42	2.48	55.36	73.90	18.5	150	0	
Vert.	12185.000	PK	46.47	39.12	9.44	39.80	2.48	57.71	73.90	16.2	150	0	
Vert.	4874.000	AV	39.29	31.27	6.01	41.40	2.48	37.65	53.90	16.3	136	41	
Vert.	7311.000	AV	36.81	36.39	7.40	41.23	2.48	41.85	53.90	12.1	150	0	
Vert.	9748.000	AV	35.54	38.33	8.23	40.42	2.48	44.16	53.90	9.7	150	0	
Vert.	12185.000	AV	35.00	39.12	9.44	39.80	2.48	46.24	53.90	**7.7**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	13 GHz – 26.5 GHz
Mode	Tx 11b 2462 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	54.01	27.52	13.86	40.69	2.48	57.18	73.90	16.7	166	86	
Hori.	4924.000	PK	50.00	31.37	6.04	41.30	2.48	48.59	73.90	25.3	157	131	
Hori.	7386.000	PK	48.51	36.50	7.45	41.31	2.48	53.63	73.90	20.3	150	0	
Hori.	9848.000	PK	47.57	38.48	8.31	40.36	2.48	56.48	73.90	17.4	100	0	
Hori.	12310.000	PK	46.04	39.11	9.53	39.75	2.48	57.41	73.90	16.5	150	0	
Hori.	2483.500	AV	36.67	27.52	13.86	40.69	2.48	39.84	53.90	14.1	166	86	
Hori.	4924.000	AV	41.14	31.37	6.04	41.30	2.48	39.73	53.90	14.2	157	131	
Hori.	7386.000	AV	36.34	36.50	7.45	41.31	2.48	41.46	53.90	12.4	150	0	
Hori.	9848.000	AV	35.17	38.48	8.31	40.36	2.48	44.08	53.90	9.8	100	0	
Hori.	12310.000	AV	34.21	39.11	9.53	39.75	2.48	45.58	53.90	**8.3**	150	0	
Vert.	2483.500	PK	57.42	27.52	13.86	40.69	2.48	60.59	73.90	13.3	136	14	
Vert.	4924.000	PK	49.99	31.37	6.04	41.30	2.48	48.58	73.90	25.3	137	45	
Vert.	7386.000	PK	48.33	36.50	7.45	41.31	2.48	53.45	73.90	20.5	100	0	
Vert.	9848.000	PK	46.97	38.48	8.31	40.36	2.48	55.88	73.90	18.0	100	0	
Vert.	12310.000	PK	45.72	39.11	9.53	39.75	2.48	57.09	73.90	16.8	100	0	
Vert.	2483.500	AV	36.70	27.52	13.86	40.69	2.48	39.87	53.90	14.0	136	14	
Vert.	4924.000	AV	39.36	31.37	6.04	41.30	2.48	37.95	53.90	16.0	137	45	
Vert.	7386.000	AV	36.22	36.50	7.45	41.31	2.48	41.34	53.90	12.6	100	0	
Vert.	9848.000	AV	35.29	38.48	8.31	40.36	2.48	44.20	53.90	9.7	100	0	
Vert.	12310.000	AV	34.08	39.11	9.53	39.75	2.48	45.45	53.90	8.5	100	0	

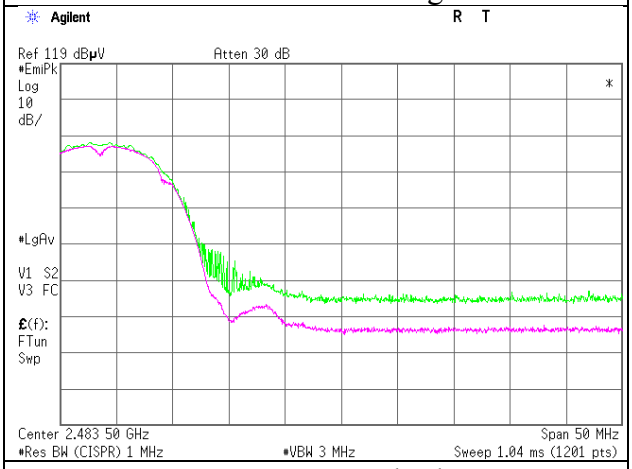
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11b 2462 MHz

Horizontal

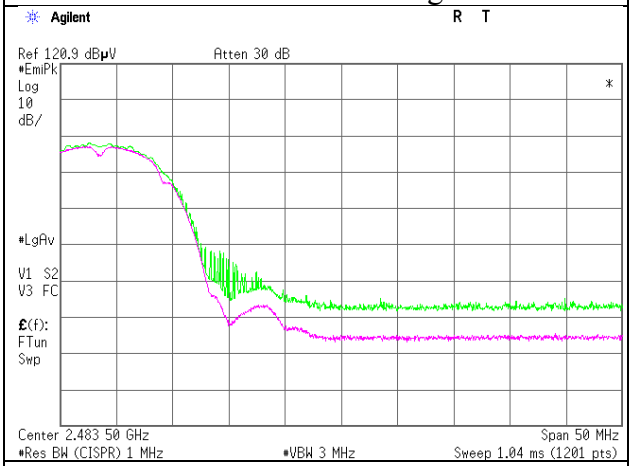
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11g 2412 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	153.670	QP	22.09	14.79	7.83	32.09	0.00	12.62	43.50	30.8	300	358	
Hori.	230.704	QP	21.78	16.77	8.30	32.01	0.00	14.84	46.00	31.1	151	1	
Hori.	803.931	QP	22.02	21.02	10.71	31.55	0.00	22.20	46.00	23.8	100	359	
Hori.	956.489	QP	20.56	22.66	11.21	30.54	0.00	23.89	46.00	22.1	150	0	
Hori.	2390.000	PK	53.87	27.21	13.77	40.70	2.48	56.63	73.90	17.3	147	118	
Hori.	4824.000	PK	48.49	31.17	6.00	41.50	2.48	46.64	73.90	27.3	136	118	
Hori.	7236.000	PK	48.86	36.29	7.34	41.16	2.48	53.81	73.90	20.1	150	0	
Hori.	9648.000	PK	47.03	38.19	8.16	40.47	2.48	55.39	73.90	18.5	150	0	
Hori.	12060.000	PK	47.86	39.14	9.34	39.85	2.48	58.97	73.90	14.9	150	0	
Hori.	2390.000	AV	41.10	27.21	13.77	40.70	2.48	43.86	53.90	10.0	147	118	
Hori.	4824.000	AV	37.39	31.17	6.00	41.50	2.48	35.54	53.90	18.4	136	118	
Hori.	7236.000	AV	37.12	36.29	7.34	41.16	2.48	42.07	53.90	11.8	150	0	
Hori.	9648.000	AV	35.90	38.19	8.16	40.47	2.48	44.26	53.90	9.6	150	0	
Hori.	12060.000	AV	36.83	39.14	9.34	39.85	2.48	47.94	53.90	**6.0**	150	0	
Vert.	91.765	QP	29.38	8.13	7.37	32.14	0.00	12.74	43.50	30.7	171	50	
Vert.	117.988	QP	27.42	12.28	7.57	32.12	0.00	15.15	43.50	28.3	100	351	
Vert.	268.646	QP	22.04	17.89	8.52	31.99	0.00	16.46	46.00	29.5	100	12	
Vert.	975.612	QP	20.13	22.78	11.27	30.40	0.00	23.78	53.90	30.1	100	359	
Vert.	2390.000	PK	54.11	27.21	13.77	40.70	2.48	56.87	73.90	17.0	148	9	
Vert.	4824.000	PK	48.90	31.17	6.00	41.50	2.48	47.05	73.90	26.9	137	49	
Vert.	7236.000	PK	48.43	36.29	7.34	41.16	2.48	53.38	73.90	20.5	150	0	
Vert.	9648.000	PK	47.49	38.19	8.16	40.47	2.48	55.85	73.90	18.1	150	0	
Vert.	12060.000	PK	47.56	39.14	9.34	39.85	2.48	58.67	73.90	15.2	150	0	
Vert.	2390.000	AV	39.77	27.21	13.77	40.70	2.48	42.53	53.90	11.4	148	9	
Vert.	4824.000	AV	37.52	31.17	6.00	41.50	2.48	35.67	53.90	18.2	137	49	
Vert.	7236.000	AV	37.14	36.29	7.34	41.16	2.48	42.09	53.90	11.8	150	0	
Vert.	9648.000	AV	36.11	38.19	8.16	40.47	2.48	44.47	53.90	9.4	150	0	
Vert.	12060.000	AV	36.38	39.14	9.34	39.85	2.48	47.49	53.90	6.4	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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

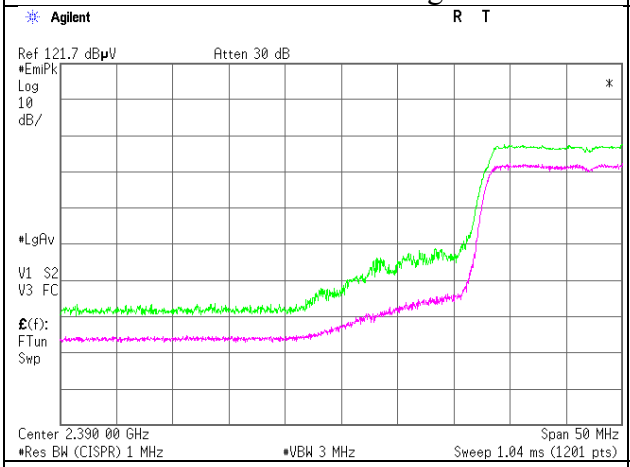
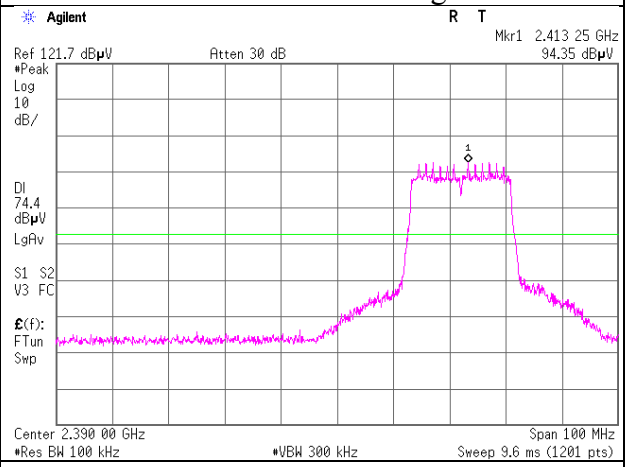
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2412.000	PK	92.21	27.29	13.79	40.70	2.48	95.07	-	-	Carrier
Hori.	2400.000	PK	56.55	27.25	13.78	40.70	2.48	59.36	75.07	15.7	
Vert.	2412.000	PK	92.73	27.29	13.79	40.70	2.48	95.59	-	-	Carrier
Vert.	2400.000	PK	55.28	27.25	13.78	40.70	2.48	58.09	75.59	17.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

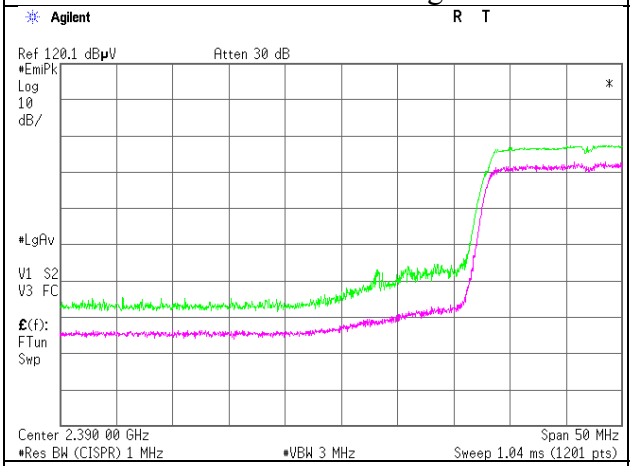
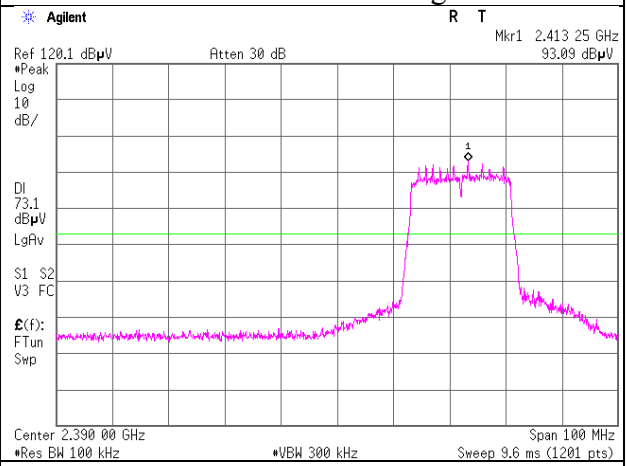
Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11g 2412 MHz

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11g 2437 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	4874.000	PK	48.66	31.27	6.01	41.40	2.48	47.02	73.90	26.9	127	145	
Hori.	7311.000	PK	48.15	36.39	7.40	41.23	2.48	53.19	73.90	20.7	150	0	
Hori.	9748.000	PK	47.66	38.33	8.23	40.42	2.48	56.28	73.90	17.6	150	0	
Hori.	12185.000	PK	46.40	39.12	9.44	39.80	2.48	57.64	73.90	16.3	150	0	
Hori.	4874.000	AV	36.98	31.27	6.01	41.40	2.48	35.34	53.90	18.6	127	145	
Hori.	7311.000	AV	36.67	36.39	7.40	41.23	2.48	41.71	53.90	12.2	150	0	
Hori.	9748.000	AV	35.35	38.33	8.23	40.42	2.48	43.97	53.90	9.9	150	0	
Hori.	12185.000	AV	34.77	39.12	9.44	39.80	2.48	46.01	53.90	7.9	150	0	
Vert.	4874.000	PK	49.69	31.27	6.01	41.40	2.48	48.05	73.90	25.9	137	37	
Vert.	7311.000	PK	49.60	36.39	7.40	41.23	2.48	54.64	73.90	19.3	150	0	
Vert.	9748.000	PK	47.65	38.33	8.23	40.42	2.48	56.27	73.90	17.6	150	0	
Vert.	12185.000	PK	47.24	39.12	9.44	39.80	2.48	58.48	73.90	15.4	150	0	
Vert.	4874.000	AV	37.52	31.27	6.01	41.40	2.48	35.88	53.90	18.0	137	37	
Vert.	7311.000	AV	36.77	36.39	7.40	41.23	2.48	41.81	53.90	12.1	150	0	
Vert.	9748.000	AV	35.71	38.33	8.23	40.42	2.48	44.33	53.90	9.6	150	0	
Vert.	12185.000	AV	34.88	39.12	9.44	39.80	2.48	46.12	53.90	**7.8**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11g 2462 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	55.51	27.52	13.86	40.69	2.48	58.68	73.90	15.2	161	86	
Hori.	2484.578	PK	56.67	27.53	13.86	40.69	2.48	59.85	73.90	14.1	161	86	
Hori.	4924.000	PK	48.69	31.37	6.04	41.30	2.48	47.28	73.90	26.6	138	118	
Hori.	7386.000	PK	47.87	36.50	7.45	41.31	2.48	52.99	73.90	20.9	150	0	
Hori.	9848.000	PK	46.94	38.48	8.31	40.36	2.48	55.85	73.90	18.1	150	0	
Hori.	12310.000	PK	45.89	39.11	9.53	39.75	2.48	57.26	73.90	16.6	150	0	
Hori.	2483.500	AV	41.99	27.52	13.86	40.69	2.48	45.16	53.90	8.7	161	86	
Hori.	2484.578	AV	40.25	27.53	13.86	40.69	2.48	43.43	53.90	10.5	161	86	
Hori.	4924.000	AV	37.14	31.37	6.04	41.30	2.48	35.73	53.90	18.2	138	118	
Hori.	7386.000	AV	36.20	36.50	7.45	41.31	2.48	41.32	53.90	12.6	150	0	
Hori.	9848.000	AV	35.11	38.48	8.31	40.36	2.48	44.02	53.90	9.9	150	0	
Hori.	12310.000	AV	34.18	39.11	9.53	39.75	2.48	45.55	53.90	8.4	150	0	
Vert.	2483.500	PK	56.08	27.52	13.86	40.69	2.48	59.25	73.90	14.7	141	12	
Vert.	2484.584	PK	57.66	27.53	13.86	40.69	2.48	60.84	73.90	13.1	141	12	
Vert.	4924.000	PK	49.65	31.37	6.04	41.30	2.48	48.24	73.90	25.7	133	41	
Vert.	7386.000	PK	47.40	36.50	7.45	41.31	2.48	52.52	73.90	21.4	150	0	
Vert.	9848.000	PK	46.54	38.48	8.31	40.36	2.48	55.45	73.90	18.5	150	0	
Vert.	12310.000	PK	45.31	39.11	9.53	39.75	2.48	56.68	73.90	17.2	150	0	
Vert.	2483.500	AV	42.57	27.52	13.86	40.69	2.48	45.74	53.90	**8.2**	141	12	
Vert.	2484.584	AV	41.48	27.53	13.86	40.69	2.48	44.66	53.90	9.2	141	12	
Vert.	4924.000	AV	37.53	31.37	6.04	41.30	2.48	36.12	53.90	17.8	133	41	
Vert.	7386.000	AV	36.39	36.50	7.45	41.31	2.48	41.51	53.90	12.4	150	0	
Vert.	9848.000	AV	35.31	38.48	8.31	40.36	2.48	44.22	53.90	9.7	150	0	
Vert.	12310.000	AV	34.19	39.11	9.53	39.75	2.48	45.56	53.90	8.3	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

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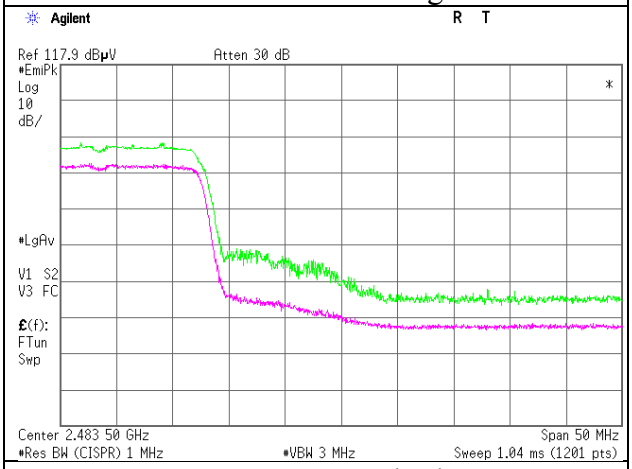
Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11g 2462 MHz

Horizontal

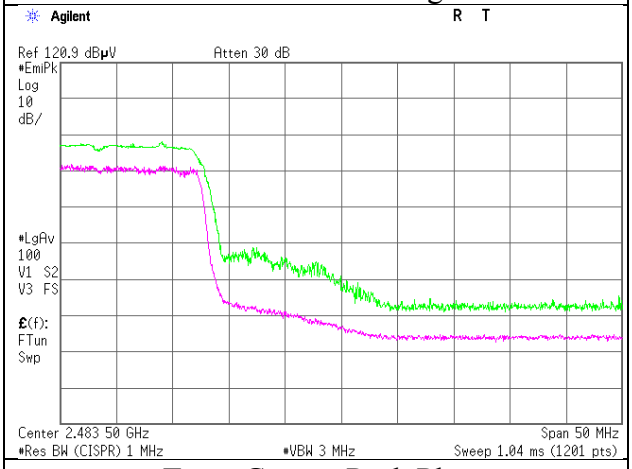
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

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Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11n-20 2412 MHz	

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

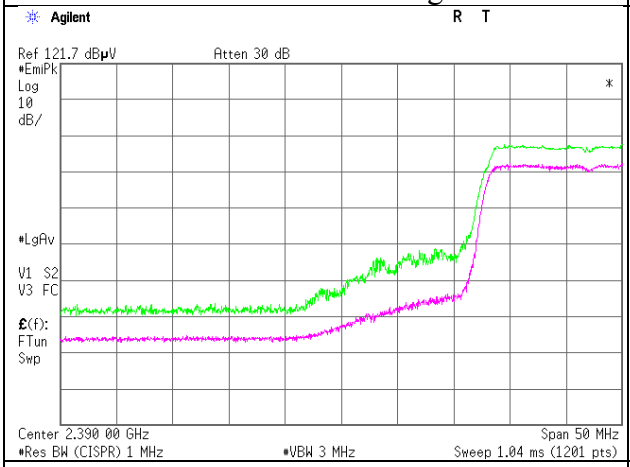
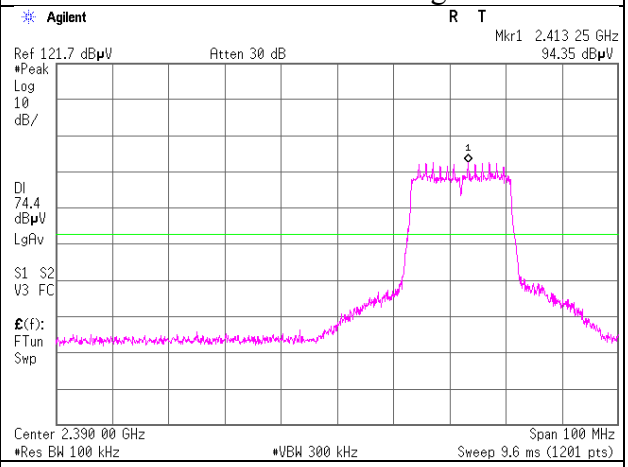
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2390.000	PK	62.85	27.21	13.77	40.70	2.48	65.61	73.90	8.3	141	99	
Hori.	4824.000	PK	49.17	31.17	6.00	41.50	2.48	47.32	73.90	26.6	157	132	
Hori.	7236.000	PK	48.00	36.29	7.34	41.16	2.48	52.95	73.90	21.0	150	0	
Hori.	9648.000	PK	47.95	38.19	8.16	40.47	2.48	56.31	73.90	17.6	150	0	
Hori.	12060.000	PK	47.72	39.14	9.34	39.85	2.48	58.83	73.90	15.1	150	0	
Hori.	2390.000	AV	45.98	27.21	13.77	40.70	2.48	48.74	53.90	**5.2**	141	99	
Hori.	4824.000	AV	37.90	31.17	6.00	41.50	2.48	36.05	53.90	17.9	157	132	
Hori.	7236.000	AV	37.24	36.29	7.34	41.16	2.48	42.19	53.90	11.7	150	0	
Hori.	9648.000	AV	36.10	38.19	8.16	40.47	2.48	44.46	53.90	9.4	150	0	
Hori.	12060.000	AV	36.37	39.14	9.34	39.85	2.48	47.48	53.90	6.4	150	0	
Vert.	2390.000	PK	58.01	27.21	13.77	40.70	2.48	60.77	73.90	13.1	147	16	
Vert.	4824.000	PK	49.51	31.17	6.00	41.50	2.48	47.66	73.90	26.2	137	144	
Vert.	7236.000	PK	48.76	36.29	7.34	41.16	2.48	53.71	73.90	20.2	150	0	
Vert.	9648.000	PK	47.37	38.19	8.16	40.47	2.48	55.73	73.90	18.2	150	0	
Vert.	12060.000	PK	47.96	39.14	9.34	39.85	2.48	59.07	73.90	14.8	150	0	
Vert.	2390.000	AV	42.45	27.21	13.77	40.70	2.48	45.21	53.90	8.7	147	16	
Vert.	4824.000	AV	37.33	31.17	6.00	41.50	2.48	35.48	53.90	18.4	137	144	
Vert.	7236.000	AV	37.28	36.29	7.34	41.16	2.48	42.23	53.90	11.7	150	0	
Vert.	9648.000	AV	36.24	38.19	8.16	40.47	2.48	44.60	53.90	9.3	150	0	
Vert.	12060.000	AV	36.69	39.14	9.34	39.85	2.48	47.80	53.90	6.1	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

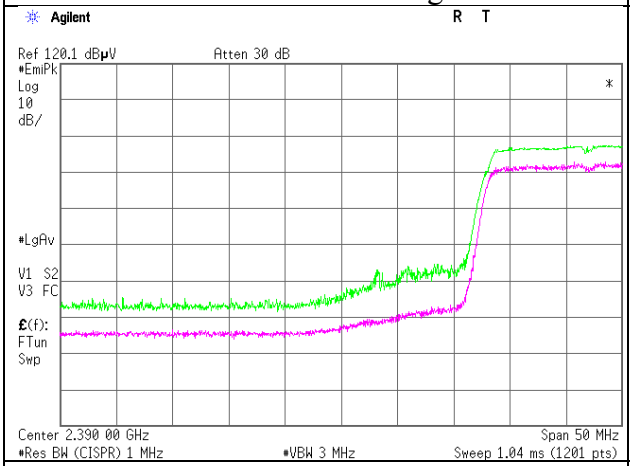
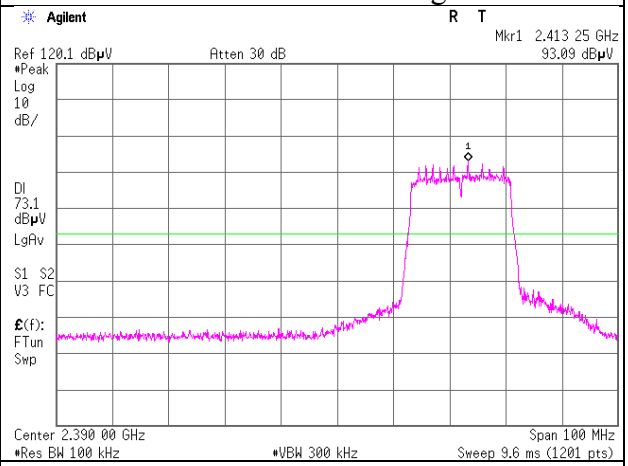
Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11n-20 2412 MHz

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11n-20 2437 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	4874.000	PK	49.12	31.27	6.01	41.40	2.48	47.48	73.90	26.4	151	135	
Hori.	7311.000	PK	48.54	36.39	7.40	41.23	2.48	53.58	73.90	20.3	150	0	
Hori.	9748.000	PK	47.52	38.33	8.23	40.42	2.48	56.14	73.90	17.8	150	0	
Hori.	12185.000	PK	46.44	39.12	9.44	39.80	2.48	57.68	73.90	16.2	150	0	
Hori.	4874.000	AV	37.37	31.27	6.01	41.40	2.48	35.73	53.90	18.2	151	135	
Hori.	7311.000	AV	36.55	36.39	7.40	41.23	2.48	41.59	53.90	12.3	150	0	
Hori.	9748.000	AV	35.22	38.33	8.23	40.42	2.48	43.84	53.90	10.1	150	0	
Hori.	12185.000	AV	34.60	39.12	9.44	39.80	2.48	45.84	53.90	8.1	150	0	
Vert.	4874.000	PK	48.26	31.27	6.01	41.40	2.48	46.62	73.90	27.3	133	45	
Vert.	7311.000	PK	48.00	36.39	7.40	41.23	2.48	53.04	73.90	20.9	150	0	
Vert.	9748.000	PK	47.34	38.33	8.23	40.42	2.48	55.96	73.90	17.9	150	0	
Vert.	12185.000	PK	46.24	39.12	9.44	39.80	2.48	57.48	73.90	16.4	150	0	
Vert.	4874.000	AV	37.15	31.27	6.01	41.40	2.48	35.51	53.90	18.4	133	45	
Vert.	7311.000	AV	36.92	36.39	7.40	41.23	2.48	41.96	53.90	11.9	150	0	
Vert.	9748.000	AV	35.79	38.33	8.23	40.42	2.48	44.41	53.90	9.5	150	0	
Vert.	12185.000	AV	34.97	39.12	9.44	39.80	2.48	46.21	53.90	**7.7**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	13 GHz – 26.5 GHz
Mode	Tx 11n-20 2462 MHz	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	2483.500	PK	58.82	27.52	13.86	40.69	2.48	61.99	73.90	11.9	138	92	
Hori.	2484.452	PK	60.55	27.53	13.86	40.69	2.48	63.73	73.90	10.2	138	92	
Hori.	4924.000	PK	49.62	31.37	6.04	41.30	2.48	48.21	73.90	25.7	146	134	
Hori.	7386.000	PK	48.47	36.50	7.45	41.31	2.48	53.59	73.90	20.3	150	0	
Hori.	9848.000	PK	47.01	38.48	8.31	40.36	2.48	55.92	73.90	18.0	150	0	
Hori.	12310.000	PK	46.20	39.11	9.53	39.75	2.48	57.57	73.90	16.3	150	0	
Hori.	2483.500	AV	44.67	27.52	13.86	40.69	2.48	47.84	53.90	6.1	138	92	
Hori.	2484.452	AV	42.95	27.53	13.86	40.69	2.48	46.13	53.90	7.8	138	92	
Hori.	4924.000	AV	36.50	31.37	6.04	41.30	2.48	35.09	53.90	18.8	146	134	
Hori.	7386.000	AV	35.21	36.50	7.45	41.31	2.48	40.33	53.90	13.6	150	0	
Hori.	9848.000	AV	34.13	38.48	8.31	40.36	2.48	43.04	53.90	10.9	150	0	
Hori.	12310.000	AV	33.25	39.11	9.53	39.75	2.48	44.62	53.90	9.3	150	0	
Vert.	2483.500	PK	58.95	27.52	13.86	40.69	2.48	62.12	73.90	11.8	138	13	
Vert.	2484.743	PK	62.08	27.53	13.86	40.69	2.48	65.26	73.90	8.6	138	13	
Vert.	4924.000	PK	49.10	31.37	6.04	41.30	2.48	47.69	73.90	26.2	137	33	
Vert.	7386.000	PK	47.94	36.50	7.45	41.31	2.48	53.06	73.90	20.8	150	0	
Vert.	9848.000	PK	46.61	38.48	8.31	40.36	2.48	55.52	73.90	18.4	150	0	
Vert.	12310.000	PK	46.03	39.11	9.53	39.75	2.48	57.40	73.90	16.5	150	0	
Vert.	2483.500	AV	45.49	27.52	13.86	40.69	2.48	48.66	53.90	**5.2**	138	13	
Vert.	2484.743	AV	43.50	27.53	13.86	40.69	2.48	46.68	53.90	7.2	138	13	
Vert.	4924.000	AV	37.38	31.37	6.04	41.30	2.48	35.97	53.90	17.9	137	33	
Vert.	7386.000	AV	36.49	36.50	7.45	41.31	2.48	41.61	53.90	12.3	150	0	
Vert.	9848.000	AV	35.53	38.48	8.31	40.36	2.48	44.44	53.90	9.5	150	0	
Vert.	12310.000	AV	34.24	39.11	9.53	39.75	2.48	45.61	53.90	8.3	150	0	

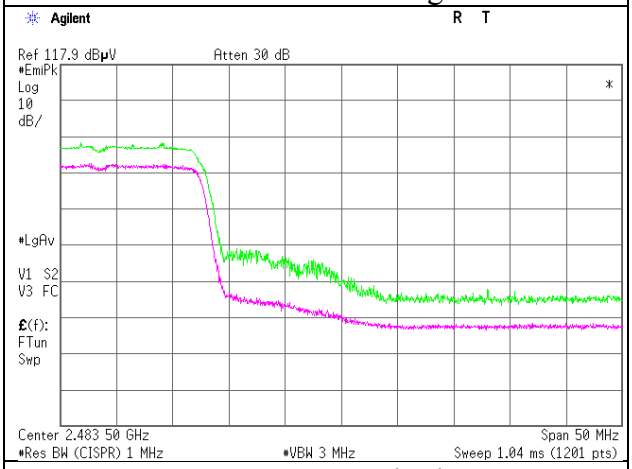
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (3.99 m / 3.0 m) = 2.48 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission
(Reference Plot for band-edge)

Report No.	11435391S-A-R1
Test place(AC No.)	1
Date	September 16, 2016
Temperature / Humidity	24 deg. C / 62 % RH
Engineer	Makoto Hosaka
Test frequency band	1 GHz – 13 GHz
Mode	Tx 11n-20 2462 MHz

Horizontal

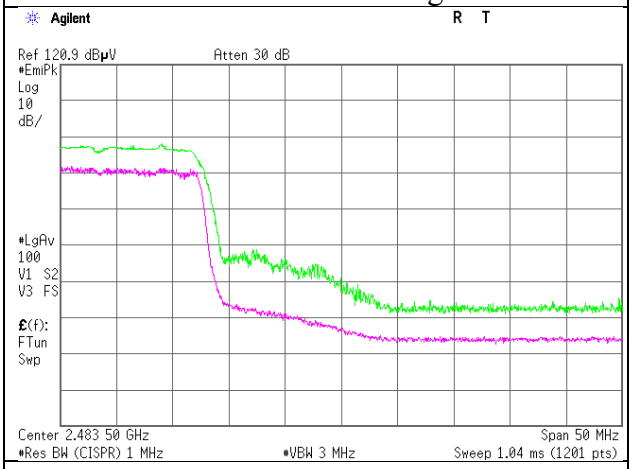
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

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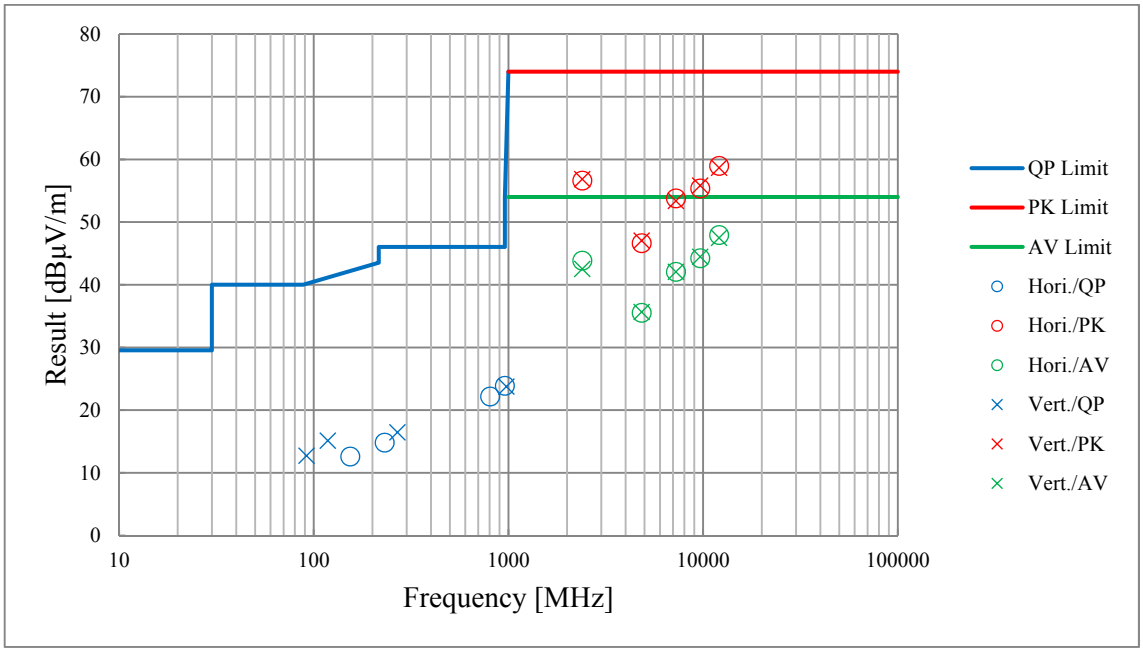
Radiated Spurious Emission
(Plot data, Worst case)

Report No.	11435391S-A-R1	
Test place(AC No.)	1	3
Date	September 16, 2016	September 18, 2016
Temperature / Humidity	24 deg. C / 62 % RH	23 deg. C / 70 % RH
Engineer	Makoto Hosaka	Kenichi Adachi
Test frequency band	1 GHz – 13 GHz	30 MHz – 1000 MHz 13 GHz – 26.5 GHz
Mode	Tx 11g 2412 MHz	



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

APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2016/03/22 * 12
SCC-G06	Coaxial Cable	Junkosha	J12J102207-00	MAY-23-16-09 1	RE	2016/06/14 * 12
SCC-G21	Coaxial Cable	Suhner	SUCOFLEX 104	296169/4	RE	2016/05/11 * 12
SHA-01	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-725	RE	2016/08/09 * 12
SOS-01	Humidity Indicator	A&D	AD-5681	4062555	RE	2015/10/22 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2016/03/23 * 12
KJM-09	Measure	KOMELON	KMC-36	-	RE	-
SAEC-01(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-01(SVSWR)	1	RE	2016/07/24 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE	-
STS-01	Digital Hitester	Hioki	3805-50	080997812	RE	2015/11/18 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2015/11/04 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2015/11/16 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2016/07/15 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2015/10/11 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2015/10/11 * 12
SAT6-08	Attenuator	HIROSE ELECTRIC CO.,LTD.	AT-406(40)	-	RE	2016/08/04 * 12
SCC-C1/C2/C3/C4/C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-271(RF Selector)	RE	2016/04/22 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2016/02/25 * 12
STR-06	Test Receiver	Rohde & Schwarz	ESCI	101259	RE	2016/03/28 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE	-
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2015/10/22 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
STS-03	Digital Hitester	Hioki	3805-50	080997823	RE	2015/11/18 * 12
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2016/03/22 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2016/06/23 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2016/05/11 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2016/08/22 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2016/03/15 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	RE	2016/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2016/03/08 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	RE	2016/03/23 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2015/11/16 * 12
SAJ-01	Antenna Tilt Jig	Intelligent System Engineering Co., Ltd	Antenna Tilt Jig	T-S001	RE	Pre Check

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: RE: Radiated Emission test