



RADIO TEST REPORT

Test Report No. : 11166416H-A-R1

Applicant : silex technology, Inc.

Type of Equipment : Wireless LAN SDIO module

Model No. : SX-SDMAN2

FCC ID : N6C-SDMAN2

Test regulation : FCC Part 15 Subpart C: 2015
(Class II Permissive change)
*Spurious emission test only

Test Result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.
6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. This report is a revised version of 11166416H-A. 11166416H-A is replaced with this report.

Date of test: March 26 to 31, 2016

Representative test engineer:

Tomoki Matsui
Engineer
Consumer Technology Division

Approved by:

Tsubasa Takayama
Engineer
Consumer Technology Division



NVLAP LAB CODE: 200572-0

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

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13-EM-F0429

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SECTION 1: Customer information

Company Name	:	silex technology, Inc.
Address	:	2-3-1 Hikaridai, Seika-cho, Kyoto 619-0237, Japan
Telephone Number	:	+81-774-98-3878
Facsimile Number	:	+81-774-98-3758
Contact Person	:	Toshiro Kometani

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless LAN SDIO module
Model No.	:	SX-SDMAN2
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.3 V, DC 1.8 V
Receipt Date of Sample	:	March 29, 2016
Country of Mass-production	:	Japan
Condition of EUT	:	Production prototype
		(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

2.2 Product Description

Model: SX-SDMAN2 (referred to as the EUT in this report) is a Wireless LAN SDIO module.

General Specification

Clock frequency(ies) in the system	:	26 MHz
Operating Temperature	:	-20 deg. C - +85 deg. C

Radio Specification

Radio Type	:	Transceiver
Method of Frequency Generation	:	Synthesizer
Power Supply (inner)	:	DC 1.27 V

	IEEE802.11b	IEEE802.11g/n (20 M band)	IEEE802.11a/n (20 M band)	IEEE802.11n (40 M band)
Frequency of operation	2412 MHz - 2462 MHz *1)	2412 MHz - 2462 MHz *1)	5180 MHz - 5240 MHz 5260 MHz - 5320 MHz 5500 MHz - 5700 MHz 5745 MHz - 5825 MHz	5190 MHz - 5230 MHz 5270 MHz - 5310 MHz 5510 MHz - 5670 MHz 5755 MHz - 5795 MHz
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)	
Channel spacing	5MHz		20MHz	40MHz
Antenna type	[Antenna 1] Antenna port 0: Sleeve antenna: SANSEI ELECTRIC CO.,LTD. Antenna port 1: Sleeve antenna: SANSEI ELECTRIC CO.,LTD.			
	[Antenna 2] Antenna port 0: Embedded antenna: Ethertronics Antenna port 1: Embedded antenna: Ethertronics			
Antenna Connector type	Antenna 1: U.FL Alternative connector Antenna 2: U.FL Alternative connector			
Antenna Gain	Antenna 1: 2.0 dBi (2.4 GHz Band), 2.1 dBi (5 GHz Band) Antenna 2: 2.5 dBi (2.4 GHz Band), 3.5 dBi (5 GHz Band)			

*1) This test report applies to IEEE802.11b/g/n-20 (2412 MHz - 2462 MHz).

SECTION 3: Test specification, procedures & results

3.1 Test Specification

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

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
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	0.3 dB 2483.5000 MHz, AV, Vert.	Complied	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 v03r05 12.2.7.

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

FCC 15.31 (e)

The RF Module has own regulator.

The RF Module is constantly provided voltage through own regulator regardless of input voltage (DC 3.3 V / DC 1.8 V).

Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique coupling/antenna connector (U.FL Alternative connector). Therefore the equipment complies with the requirement of 15.203/212.

3.3 Addition to standard

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 $k = 2$.

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Test distance	Radiated emission (+dB) 9 kHz - 30 MHz
3m	3.8 dB
10m	3.7 dB

Polarity	Radiated emission (Below 1GHz)			
	(3 m*)(+dB)		(10 m*)(+dB)	
	30 – 300 MHz	300 – 1000MHz	30 – 300 MHz	300 – 1000MHz
Horizontal	4.8 dB	5.2 dB	4.8 dB	5.0 dB
Vertical	4.5 dB	5.9 dB	4.8 dB	5.1 dB

Radiated emission				
(3 m*)(+dB)		(1 m*)(+dB)	(0.5 m*)(+dB)	(10 m*)(+dB)
1 – 6GHz	6 – 18GHz	10 – 26.5 GHz	26.5 – 40GHz	1 -18 GHz
5.1 dB	5.3 dB	5.1 dB	5.1 dB	5.3 dB

*Measurement distance

Radiated emission test

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

3.5 Test Location

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

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

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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

4.1 Operating Mode(s)

Test operating mode was determined as follows according to “Section 1 of 6 802.11 a/b/g/n testing - Managing Complex Regulatory Approvals - ” of TCB Council Workshop October 2009.

Mode	Remarks*
IEEE 802.11b (11b)	11 Mbps, PN9
IEEE 802.11g (11g)	24 Mbps, PN9
IEEE 802.11n MIMO 20MHz BW (11n-20)	MCS 11 (Long GI), PN9
*The worst condition was determined based on the test result of Maximum Peak Output Power (Mid Channel) (Refer to Original test report: 10748020H-B-R2).	
*Power of the EUT was set by the software as follows; - Power Setting: Refer to the following table - Software: Atheros Radio Test Tool (ART-2-GUI) Version 2.3 *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.	

[Power setting: WLAN]

	Rate	Antenna port		Target Power	Power Setting
11b	11Mbps (Long GI)	Antenna 1	2412 MHz	12.5	13
			2437 MHz	12.5	13
			2462 MHz	12.5	13
11g	24Mbps	Antenna 1	2412 MHz	7.5	7
			2437 MHz	12.5	13
			2462 MHz	9	8.5
11n20	MCS11	Antenna 0+1	2412 MHz	5.5	5.5
			2437 MHz	12.5	13
			2462 MHz	6	6.5

*The details of Operating mode(s)

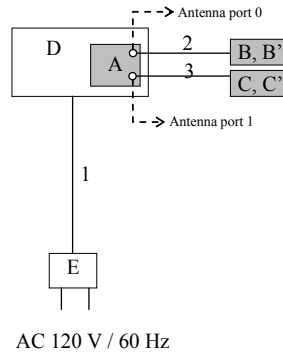
Test Item	Operating Mode	Tested Antenna port	Tested frequency
Spurious Emission above 1GHz (Radiated)	11b Tx 11g Tx	1 *2)	2412MHz 2437MHz 2462MHz
	11n-20 Tx	0+1 *3)	2412MHz 2437MHz 2462MHz
Spurious Emission below 1GHz (Radiated) *1)	11n-20 Tx	0+1 *3)	2437MHz

*1) The operating mode and tested frequency were tested as a representative, because it had the highest power at antenna terminal test.

*2) After the comparison between Antenna port 0 and Antenna port 1, test was performed with the antenna that had higher power as a representative for 11b and 11g.

*3) After the comparison MIMO and SISO in pre-check, test was performed with MIMO as a representative as it had worst case.

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	Remark
A	Wireless LAN SDIO module	SX-SDMAN2	84253F-01053E	silex technology, Inc.	EUT
B	External antenna	Presta_WLAN_1000418	001	Ethertronic	EUT
B'	External antenna	ANT DC-081A0	001	SANSEI ELECTRIC CO.,LTD.	EUT
C	External antenna	Presta_WLAN_1000418	002	Ethertronic	EUT
C'	External antenna	ANT DC-081A0	002	SANSEI ELECTRIC CO.,LTD.	EUT
D	Jig	-	-	silex technology, Inc.	-
E	AC Adapter	US115-05	B12-0112765	UNIFIVE	-

List of cables used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC Cable	1.8	Unshielded	Unshielded	-
2	RF Cable	0.1	Shielded	Shielded	-
3	RF Cable	0.1	Shielded	Shielded	-

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 1GHz]

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

[For above 1GHz]

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.75 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	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	PK	AV *3)	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	Average Power Method: <u>12.2.5.2</u> RBW: 1 MHz VBW: 3 MHz Detector: Power Averaging (RMS) Trace: 100 traces Duty factor was added to the results. Integration Method: <u>13.3.2</u> RBW: 100kHz VBW: 300kHz Span: 2MHz Band Power: 1MHz Detector: Power Averaging (RMS) Trace: 100 traces Duty factor was added to the results.	RBW: 100 kHz VBW: 300kHz
Test Distance	3m	4.45 m *1) (1 GHz – 10GHz), 1 m *2) (10 GHz – 26.5 GHz)		4.45 m *1) (1 GHz – 10GHz), 1 m *2) (10 GHz – 26.5 GHz)

*1) Distance Factor: $20 \times \log(4.45 \text{ m} / 3.0 \text{ m}) = 3.43 \text{ dB}$

*2) Distance Factor: $20 \times \log(1.0 \text{ m} / 3.0 \text{ m}) = -9.5 \text{ dB}$

*3) Average Power Measurement was performed based on 6.0 & 12.2.5 of "KDB 558074 D01 DTS Meas Guidance v03r05"

[Antenna]

- The carrier level and noise levels were confirmed at each position of X0, X90, Y0, Y90, Z0, Z90, X, Y and Z axes of Antenna to see the position of maximum noise, and the test was made at the position that has the maximum noise.

[Module]

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

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

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

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APPENDIX 1: Test data

Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016 March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH 19deg. C / 33 % RH
Engineer	Tomoki Matsui Tomoki Matsui
	(1-10GHz) (Above 10GHz)
Mode	Tx 11b 2412 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	49.0	27.9	6.7	32.1	-	51.5	73.9	22.4	
Hori	4824.000	PK	43.6	32.9	9.1	31.3	-	54.3	73.9	19.6	
Hori	7236.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Hori	9648.000	PK	41.5	38.1	11.1	32.6	-	58.1	73.9	15.8	Floor Noise
Hori	2390.000	AV	41.5	27.9	6.7	32.1	0.2	44.2	53.9	9.7	*1)
Hori	4824.000	AV	34.6	32.9	9.1	31.3	0.2	45.5	53.9	8.4	
Hori	7236.000	AV	32.4	36.8	10.3	32.6	-	46.9	53.9	7.0	Floor Noise
Hori	9648.000	AV	31.0	38.1	11.1	32.6	-	47.6	53.9	6.3	Floor Noise
Vert	2390.000	PK	46.5	27.9	6.7	32.1	-	49.0	73.9	24.9	
Vert	4824.000	PK	42.3	32.9	9.1	31.3	-	53.0	73.9	20.9	
Vert	7236.000	PK	40.0	36.8	10.3	32.6	-	54.5	73.9	19.4	Floor Noise
Vert	9648.000	PK	40.9	38.1	11.1	32.6	-	57.5	73.9	16.4	Floor Noise
Vert	2390.000	AV	38.7	27.9	6.7	32.1	0.2	41.4	53.9	12.5	*1)
Vert	4824.000	AV	34.3	32.9	9.1	31.3	0.2	45.2	53.9	8.7	
Vert	7236.000	AV	32.3	36.8	10.3	32.6	-	46.8	53.9	7.1	Floor Noise
Vert	9648.000	AV	31.0	38.1	11.1	32.6	-	47.6	53.9	6.3	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB

10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	103.1	28.0	6.7	32.1	105.7	-	-	Carrier
Hori	2399.008	PK	61.7	28.0	6.7	32.1	64.3	85.7	21.4	
Hori	2400.000	PK	59.9	28.0	6.7	32.1	62.5	85.7	23.2	
Vert	2412.000	PK	101.2	28.0	6.7	32.1	103.8	-	-	Carrier
Vert	2398.983	PK	58.0	28.0	6.7	32.1	60.6	83.8	23.2	
Vert	2400.000	PK	56.6	28.0	6.7	32.1	59.2	83.8	24.6	

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

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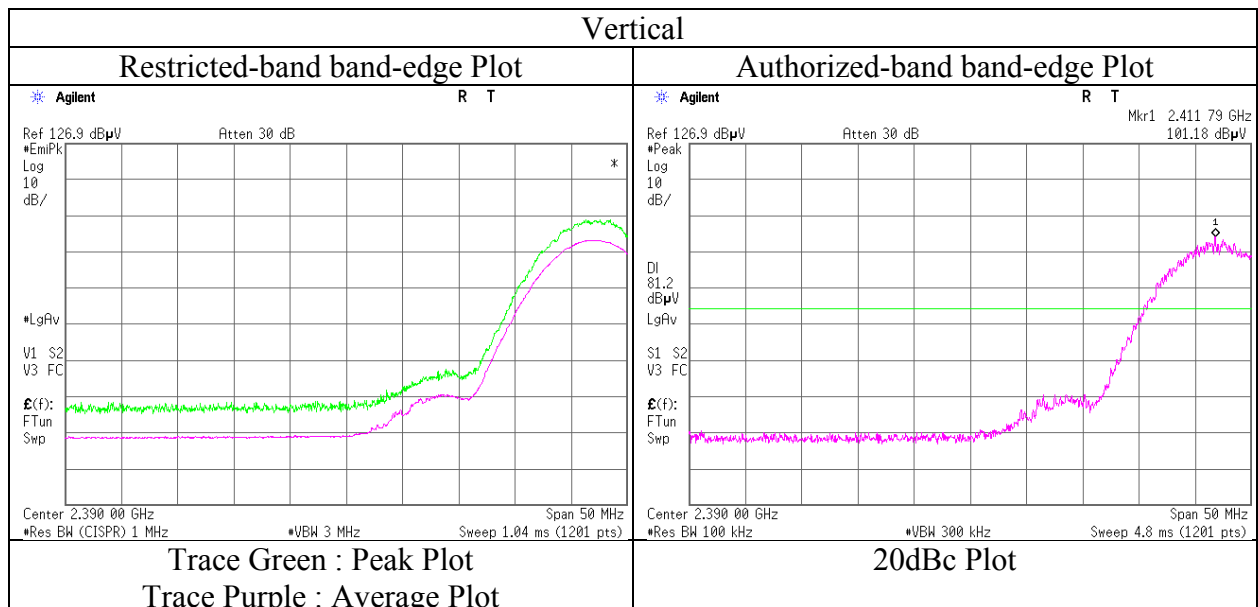
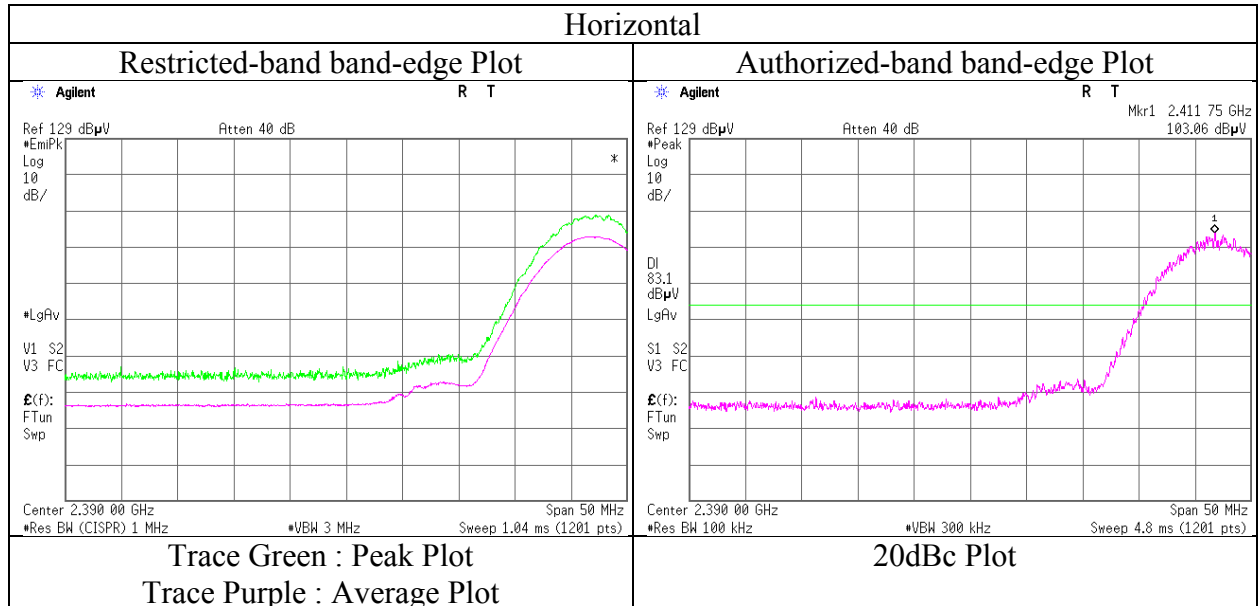
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Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11b 2412 MHz



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

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Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016 March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH 19deg. C / 33 % RH
Engineer	Tomoki Matsui Tomoki Matsui
	(1-10GHz) (Above 10GHz)
Mode	Tx 11b 2437 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	44.0	33.1	9.1	31.3	-	54.9	73.9	19.0	
Hori	7311.000	PK	41.0	36.8	10.3	32.6	-	55.5	73.9	18.4	Floor Noise
Hori	9748.000	PK	40.6	38.2	11.1	32.7	-	57.2	73.9	16.7	Floor Noise
Hori	4874.000	AV	34.9	33.1	9.1	31.3	0.2	46.0	53.9	7.9	
Hori	7311.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Hori	9748.000	AV	30.7	38.2	11.1	32.7	-	47.3	53.9	6.6	Floor Noise
Vert	4874.000	PK	44.0	33.1	9.1	31.3	-	54.9	73.9	19.0	
Vert	7311.000	PK	41.1	36.8	10.3	32.6	-	55.6	73.9	18.3	Floor Noise
Vert	9748.000	PK	40.2	38.2	11.1	32.7	-	56.8	73.9	17.1	Floor Noise
Vert	4874.000	AV	34.7	33.1	9.1	31.3	0.2	45.8	53.9	8.1	
Vert	7311.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Vert	9748.000	AV	30.8	38.2	11.1	32.7	-	47.4	53.9	6.5	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB
 10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 26, 2016	March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH	19deg. C / 33 % RH
Engineer	Tomoki Matsui (1-10GHz)	Tomoki Matsui (Above 10GHz)
Mode	Tx 11b 2462 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	45.3	28.1	6.8	32.1	-	48.1	73.9	25.8	
Hori	4924.000	PK	41.7	33.3	9.2	31.3	-	52.9	73.9	21.0	
Hori	7386.000	PK	40.7	36.8	10.3	32.6	-	55.2	73.9	18.7	Floor Noise
Hori	9848.000	PK	39.9	38.2	11.1	32.7	-	56.5	73.9	17.4	Floor Noise
Hori	2483.500	AV	37.0	28.1	6.8	32.1	0.2	40.0	53.9	13.9	*1)
Hori	4924.000	AV	33.3	33.3	9.2	31.3	0.2	44.7	53.9	9.2	
Hori	7386.000	AV	31.7	36.8	10.3	32.6	-	46.2	53.9	7.7	Floor Noise
Hori	9848.000	AV	31.1	38.2	11.1	32.7	-	47.7	53.9	6.2	Floor Noise
Vert	2483.500	PK	46.4	28.1	6.8	32.1	-	49.2	73.9	24.7	
Vert	4924.000	PK	43.4	33.3	9.2	31.3	-	54.6	73.9	19.3	
Vert	7386.000	PK	40.9	36.8	10.3	32.6	-	55.4	73.9	18.5	Floor Noise
Vert	9848.000	PK	40.0	38.2	11.1	32.7	-	56.6	73.9	17.3	Floor Noise
Vert	2483.500	AV	37.8	28.1	6.8	32.1	0.2	40.8	53.9	13.1	*1)
Vert	4924.000	AV	33.9	33.3	9.2	31.3	0.2	45.3	53.9	8.6	
Vert	7386.000	AV	31.5	36.8	10.3	32.6	-	46.0	53.9	7.9	Floor Noise
Vert	9848.000	AV	31.1	38.2	11.1	32.7	-	47.7	53.9	6.2	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz $20\log(4.45\text{ m} / 3.0\text{ m}) = 3.43\text{ dB}$

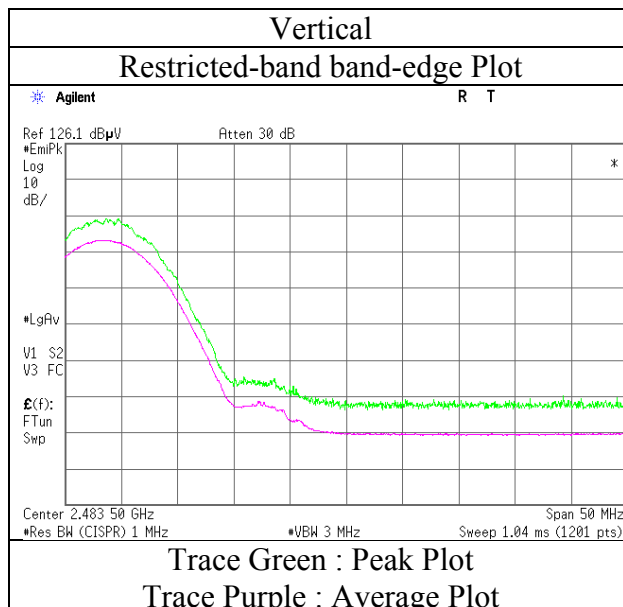
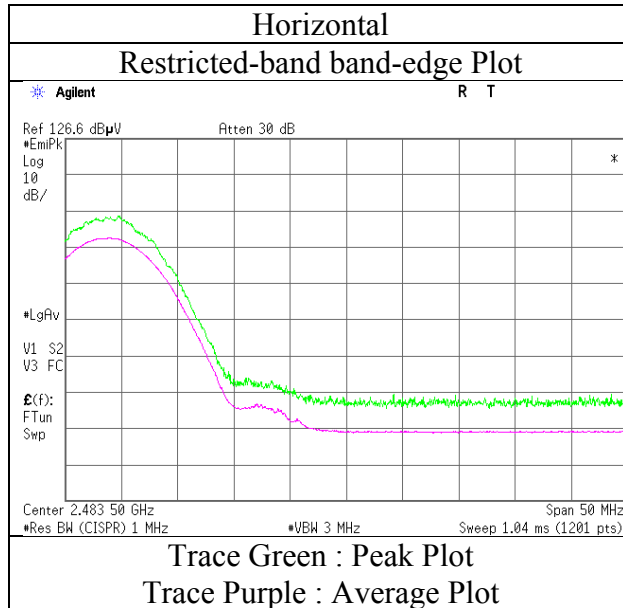
10 GHz - 26.5 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11b 2462 MHz



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

UL Japan, Inc.

Ise EMC Lab.

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Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11g 2412 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	60.6	27.9	6.7	32.1	-	63.1	73.9	10.8	
Hori	2390.000	AV	48.8	27.9	6.7	32.1	0.4	51.7	53.9	2.2	*1)
Vert	2390.000	PK	58.7	27.9	6.7	32.1	-	61.2	73.9	12.7	
Vert	2390.000	AV	48.7	27.9	6.7	32.1	0.4	51.6	53.9	2.3	*1)

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB

10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

20dBc Data Sheet

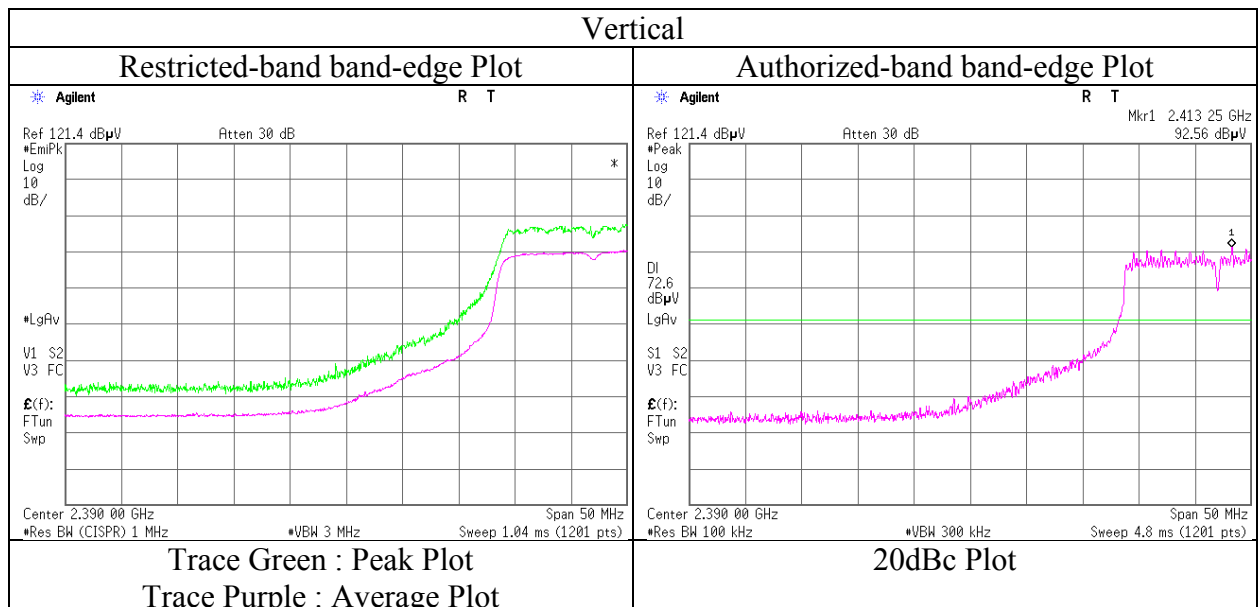
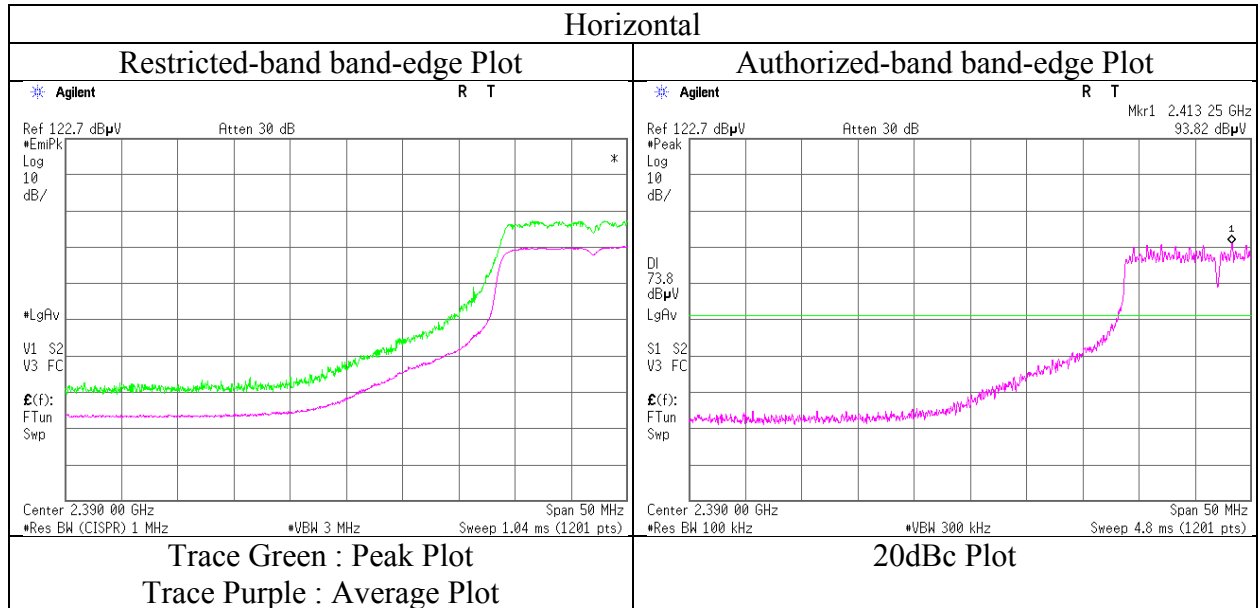
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	93.8	28.0	6.7	32.1	96.4	-	-	Carrier
Hori	2400.000	PK	63.0	28.0	6.7	32.1	65.6	76.4	10.8	
Vert	2412.000	PK	92.6	28.0	6.7	32.1	95.2	-	-	Carrier
Vert	2400.000	PK	61.1	28.0	6.7	32.1	63.7	75.2	11.5	

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11g 2412 MHz



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

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Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11g 2462 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	59.8	28.1	6.8	32.1	-	62.6	73.9	11.3	
Hori	2483.500	AV	47.8	28.1	6.8	32.1	0.4	51.0	53.9	2.9	*1) Integration Method
Vert	2483.500	PK	58.9	28.1	6.8	32.1	-	61.7	73.9	12.2	
Vert	2483.500	AV	46.7	28.1	6.8	32.1	0.4	49.9	53.9	4.0	*1) Integration Method

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz $20\log(4.45\text{ m} / 3.0\text{ m}) = 3.43\text{ dB}$

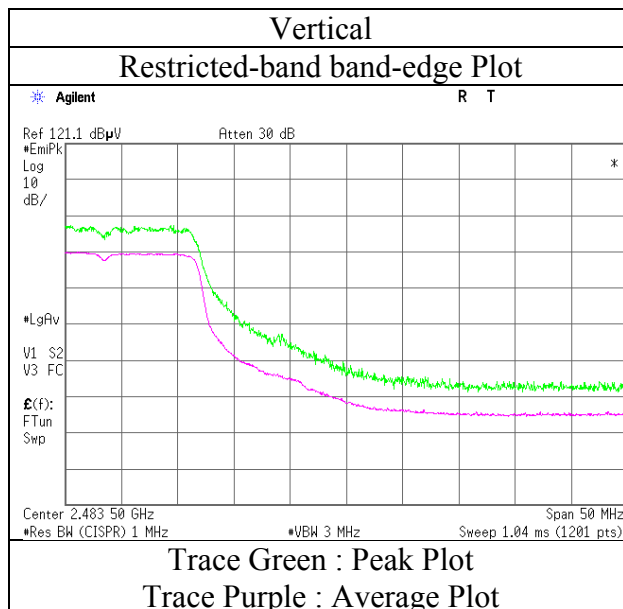
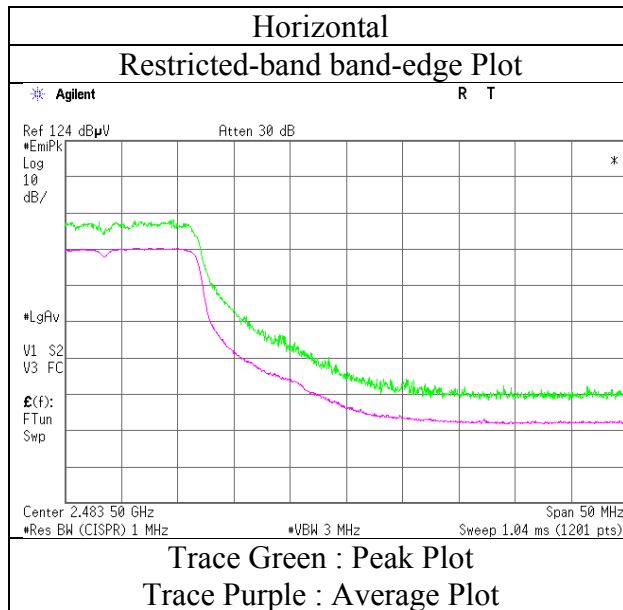
10 GHz - 26.5 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11g 2462 MHz



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

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Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 26, 2016	March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH	19deg. C / 33 % RH
Engineer	Tomoki Matsui	Tomoki Matsui
	(1-10GHz)	(Above 10GHz)
Mode	Tx 11n-20 2412 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	59.2	27.9	6.7	32.1	-	61.7	73.9	12.2	
Hori	4824.000	PK	40.4	32.9	9.1	31.3	-	51.1	73.9	22.8	Floor Noise
Hori	7236.000	PK	40.9	36.8	10.3	32.6	-	55.4	73.9	18.5	Floor Noise
Hori	9648.000	PK	41.0	38.1	11.1	32.6	-	57.6	73.9	16.3	Floor Noise
Hori	2390.000	AV	47.4	27.9	6.7	32.1	0.8	50.7	53.9	3.2	*1)
Hori	4824.000	AV	30.5	32.9	9.1	31.3	-	41.2	53.9	12.7	Floor Noise
Hori	7236.000	AV	30.3	36.8	10.3	32.6	-	44.8	53.9	9.1	Floor Noise
Hori	9648.000	AV	30.6	38.1	11.1	32.6	-	47.2	53.9	6.7	Floor Noise
Vert	2390.000	PK	57.9	27.9	6.7	32.1	-	60.4	73.9	13.5	
Vert	4824.000	PK	41.4	32.9	9.1	31.3	-	52.1	73.9	21.8	Floor Noise
Vert	7236.000	PK	40.8	36.8	10.3	32.6	-	55.3	73.9	18.6	Floor Noise
Vert	9648.000	PK	40.5	38.1	11.1	32.6	-	57.1	73.9	16.8	Floor Noise
Vert	2390.000	AV	47.4	27.9	6.7	32.1	0.8	50.7	53.9	3.2	*1)
Vert	4824.000	AV	29.4	32.9	9.1	31.3	-	40.1	53.9	13.8	Floor Noise
Vert	7236.000	AV	29.7	36.8	10.3	32.6	-	44.2	53.9	9.7	Floor Noise
Vert	9648.000	AV	30.6	38.1	11.1	32.6	-	47.2	53.9	6.7	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB

10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

20dBc Data Sheet

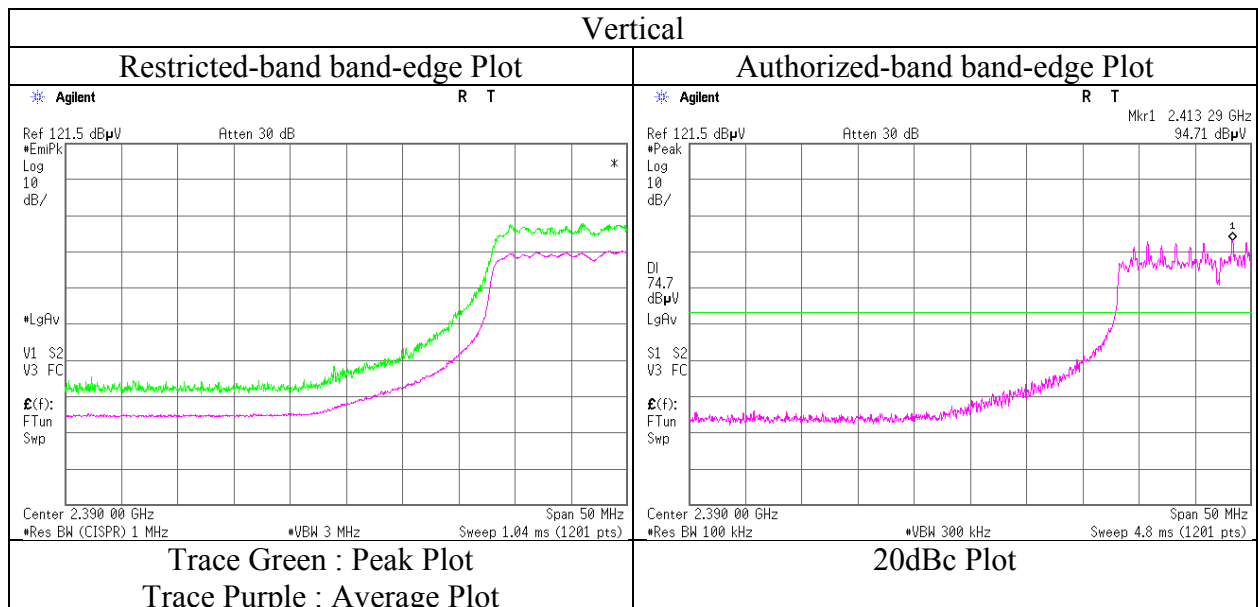
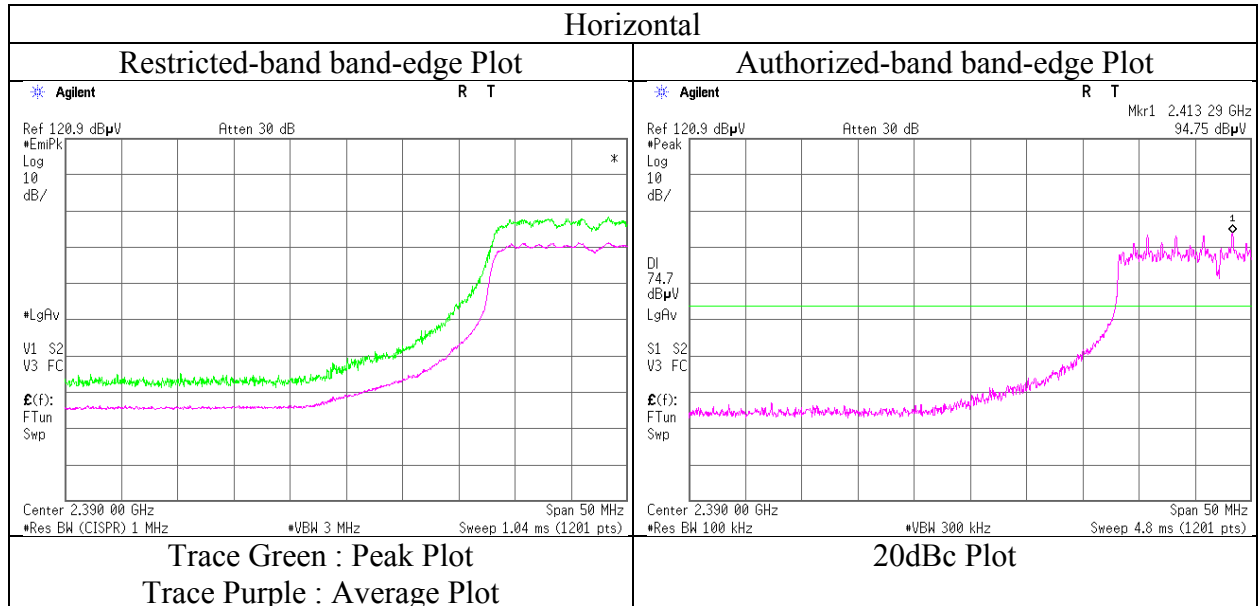
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	94.8	28.0	6.7	32.1	97.4	-	-	Carrier
Hori	2400.000	PK	61.5	28.0	6.7	32.1	64.1	77.4	13.3	
Vert	2412.000	PK	94.7	28.0	6.7	32.1	97.3	-	-	Carrier
Vert	2400.000	PK	61.1	28.0	6.7	32.1	63.7	77.3	13.6	

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11n-20 2412 MHz



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

Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	11166416H		
Date	March 26, 2016	March 28, 2016	March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH	19deg. C / 33 % RH	24deg. C / 31 % RH
Engineer	Tomoki Matsui (1-10GHz)	Tomoki Matsui (Above 10GHz)	Keisuke Kawamura (Below 1GHz)
Mode	Tx 11n-20 2437 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	37.575	QP	24.1	15.0	7.2	32.1	-	14.2	40.0	25.8	
Hori	349.996	QP	38.5	18.0	10.3	31.9	-	34.9	46.0	11.1	
Hori	399.994	QP	34.0	18.4	10.6	32.1	-	30.9	46.0	15.1	
Hori	411.421	QP	36.6	18.5	10.7	32.1	-	33.7	46.0	12.3	
Hori	449.987	QP	28.2	18.9	10.9	32.2	-	25.8	46.0	20.2	
Hori	499.990	QP	31.0	19.5	11.2	32.2	-	29.5	46.0	16.5	
Hori	4874.000	PK	41.7	33.1	9.1	31.3	-	52.6	73.9	21.3	Floor Noise
Hori	7311.000	PK	41.1	36.8	10.3	32.6	-	55.6	73.9	18.3	Floor Noise
Hori	9748.000	PK	41.5	38.2	11.1	32.7	-	58.1	73.9	15.8	Floor Noise
Hori	4874.000	AV	32.1	33.1	9.1	31.3	-	43.0	53.9	10.9	Floor Noise
Hori	7311.000	AV	32.5	36.8	10.3	32.6	-	47.0	53.9	6.9	Floor Noise
Hori	9748.000	AV	31.2	38.2	11.1	32.7	-	47.8	53.9	6.1	Floor Noise
Vert	37.575	QP	39.3	15.0	7.2	32.1	-	29.4	40.0	10.6	
Vert	349.996	QP	30.5	18.0	10.3	31.9	-	26.9	46.0	19.1	
Vert	399.994	QP	28.3	18.4	10.6	32.1	-	25.2	46.0	20.8	
Vert	411.421	QP	30.0	18.5	10.7	32.1	-	27.1	46.0	18.9	
Vert	449.987	QP	23.2	18.9	10.9	32.2	-	20.8	46.0	25.2	
Vert	499.990	QP	23.1	19.5	11.2	32.2	-	21.6	46.0	24.4	
Vert	4874.000	PK	41.8	33.1	8.2	31.3	-	51.8	73.9	22.1	Floor Noise
Vert	7311.000	PK	40.2	36.8	10.3	32.6	-	54.7	73.9	19.2	Floor Noise
Vert	9748.000	PK	40.7	38.2	11.1	32.7	-	57.3	73.9	16.6	Floor Noise
Vert	4874.000	AV	32.0	33.1	9.1	31.3	-	42.9	53.9	11.0	Floor Noise
Vert	7311.000	AV	32.3	36.8	10.3	32.6	-	46.8	53.9	7.1	Floor Noise
Vert	9748.000	AV	30.8	38.2	11.1	32.7	-	47.4	53.9	6.5	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016 March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH 19deg. C / 33 % RH
Engineer	Tomoki Matsui Tomoki Matsui
	(1-10GHz) (Above 10GHz)
Mode	Tx 11n-20 2462 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	57.6	28.1	6.8	32.1	-	60.4	73.9	13.5	
Hori	4924.000	PK	38.6	33.3	9.2	31.3	-	49.8	73.9	24.1	Floor Noise
Hori	7386.000	PK	37.1	36.8	10.3	32.6	-	51.6	73.9	22.3	Floor Noise
Hori	9848.000	PK	40.0	38.2	11.1	32.7	-	56.6	73.9	17.3	Floor Noise
Hori	2483.500	AV	47.3	28.1	6.8	32.1	0.8	50.9	53.9	3.0	*1)
Hori	4924.000	AV	30.2	33.3	9.2	31.3	-	41.4	53.9	12.5	Floor Noise
Hori	7386.000	AV	31.7	36.8	10.3	32.6	-	46.2	53.9	7.7	Floor Noise
Hori	9848.000	AV	30.8	38.2	11.1	32.7	-	47.4	53.9	6.5	Floor Noise
Vert	2483.500	PK	58.1	28.1	6.8	32.1	-	60.9	73.9	13.0	
Vert	4924.000	PK	38.4	33.3	9.2	31.3	-	49.6	73.9	24.3	Floor Noise
Vert	7386.000	PK	37.1	36.8	10.3	32.6	-	51.6	73.9	22.3	Floor Noise
Vert	9848.000	PK	40.2	38.2	11.1	32.7	-	56.8	73.9	17.1	Floor Noise
Vert	2483.500	AV	47.5	28.1	6.8	32.1	0.8	51.1	53.9	2.8	*1)
Vert	4924.000	AV	30.1	33.3	9.2	31.3	-	41.3	53.9	12.6	Floor Noise
Vert	7386.000	AV	31.8	36.8	10.3	32.6	-	46.3	53.9	7.6	Floor Noise
Vert	9848.000	AV	30.8	38.2	11.1	32.7	-	47.4	53.9	6.5	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45 m / 3.0 m) = 3.43 dB

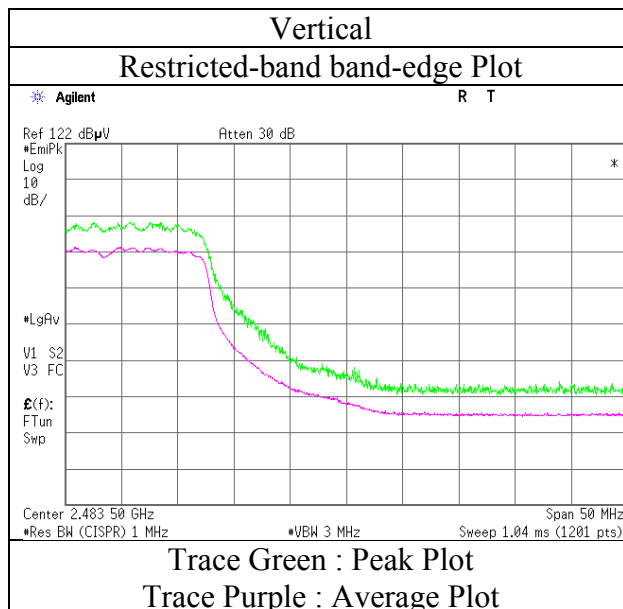
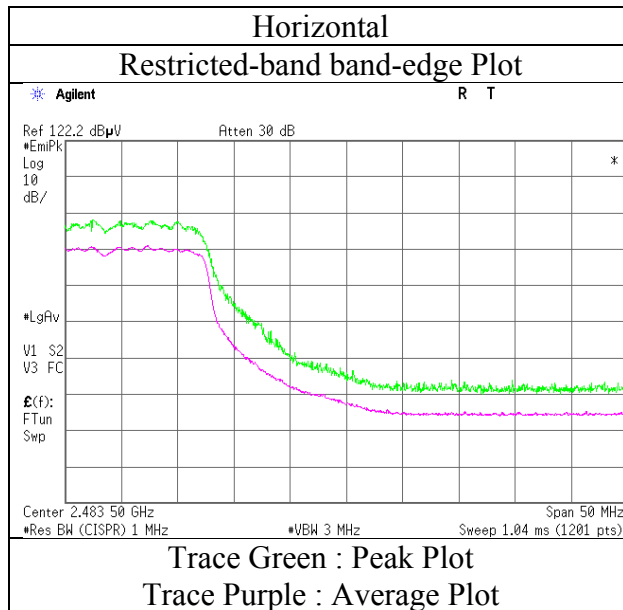
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 26, 2016
Temperature / Humidity	20 deg. C / 31 % RH
Engineer	Tomoki Matsui
	(1-10GHz)
Mode	Tx 11n-20 2462 MHz



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

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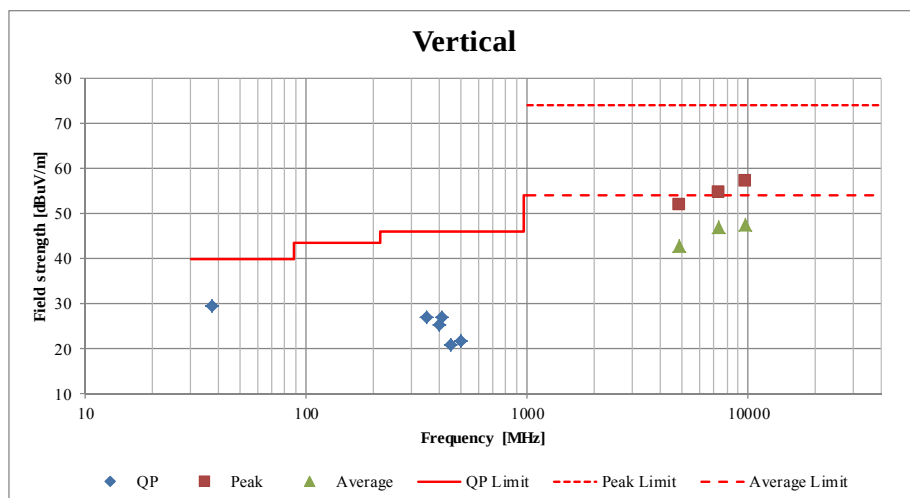
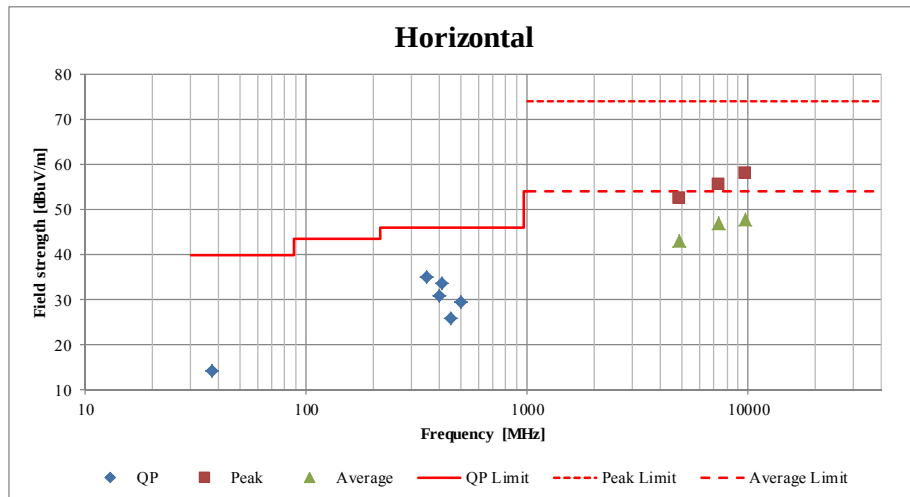
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Radiated Spurious Emission
(Plot data, Worst case)

[Antenna 1]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	11166416H		
Date	March 26, 2016	March 28, 2016	March 28, 2016
Temperature / Humidity	20 deg. C / 31 % RH	19deg. C / 33 % RH	24deg. C / 31 % RH
Engineer	Tomoki Matsui (1-10GHz)	Tomoki Matsui (Above 10GHz)	Keisuke Kawamura (Below 1GHz)
Mode	Tx 11n-20 2437 MHz		



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

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Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 29, 2016	March 31, 2016
Temperature / Humidity	26 deg. C / 31 % RH	23deg. C / 33 % RH
Engineer	Keisuke Kawamura (1-10GHz)	Ken Fujita (Above 10GHz)
Mode	Tx 11b 2412 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	48.0	27.9	6.7	32.1	-	50.5	73.9	23.4	
Hori	4824.000	PK	44.5	32.9	9.1	31.3	-	55.2	73.9	18.7	
Hori	7236.000	PK	39.2	36.8	10.3	32.6	-	53.7	73.9	20.2	Floor Noise
Hori	9648.000	PK	40.3	38.1	11.1	32.6	-	56.9	73.9	17.0	Floor Noise
Hori	2390.000	AV	40.5	27.9	6.7	32.1	0.2	43.2	53.9	10.7	*1)
Hori	4824.000	AV	35.8	32.9	9.1	31.3	0.2	46.7	53.9	7.2	
Hori	7236.000	AV	31.5	36.8	10.3	32.6	-	46.0	53.9	7.9	Floor Noise
Hori	9648.000	AV	31.0	38.1	11.1	32.6	-	47.6	53.9	6.3	Floor Noise
Vert	2390.000	PK	60.3	27.9	6.7	32.1	-	62.8	73.9	11.1	
Vert	4824.000	PK	44.7	32.9	9.1	31.3	-	55.4	73.9	18.5	
Vert	7236.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Vert	9648.000	PK	40.5	38.1	11.1	32.6	-	57.1	73.9	16.8	Floor Noise
Vert	2390.000	AV	42.3	27.9	6.7	32.1	0.2	45.0	53.9	8.9	*1)
Vert	4824.000	AV	36.6	32.9	9.1	31.3	0.2	47.5	53.9	6.4	
Vert	7236.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Vert	9648.000	AV	31.1	38.1	11.1	32.6	-	47.7	53.9	6.2	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45m / 3.0 m) = 3.43 dB

10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

20dBc Data Sheet

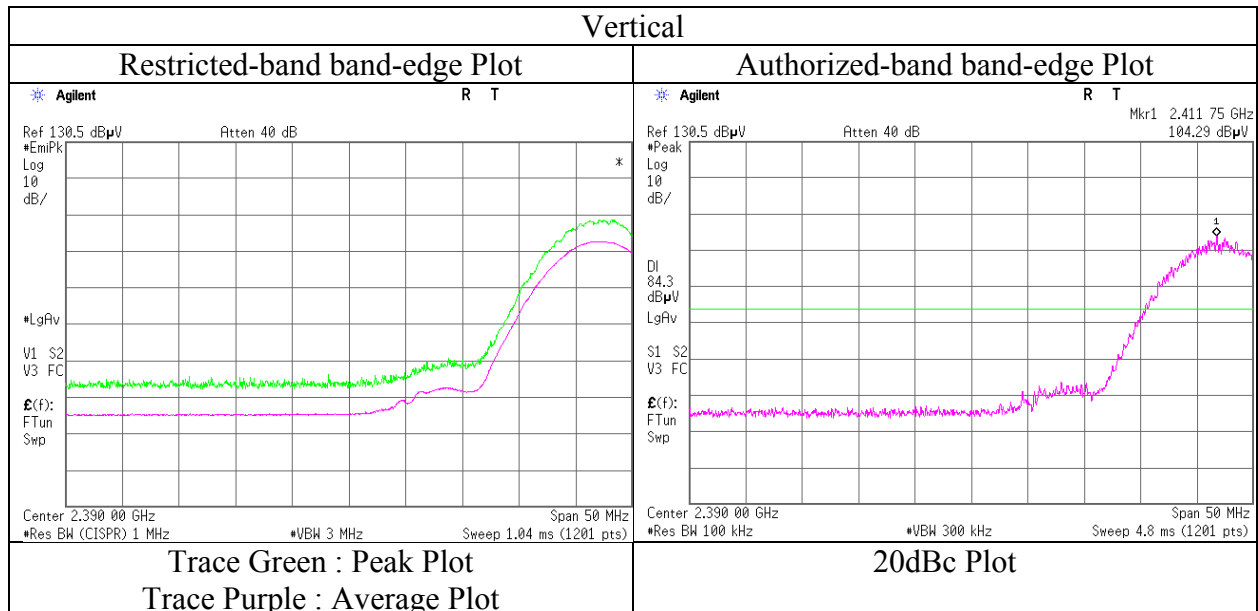
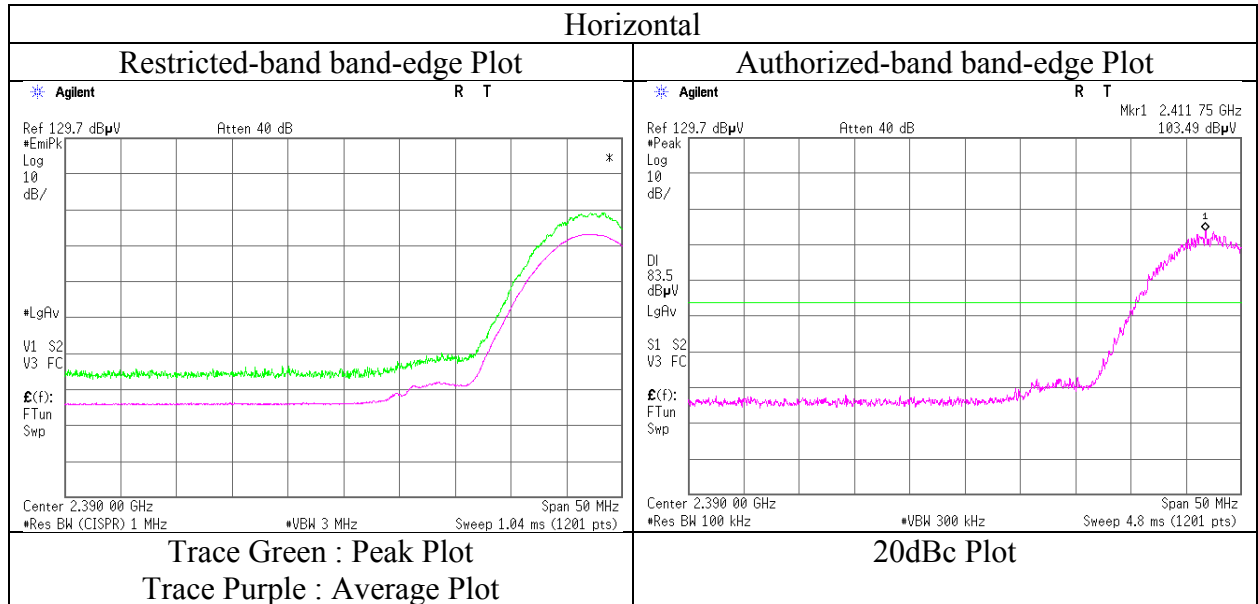
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	103.5	28.0	6.7	32.1	106.1	-	-	Carrier
Hori	2400.000	PK	58.5	28.0	6.7	32.1	61.1	86.1	25.0	
Vert	2412.000	PK	104.3	28.0	6.7	32.1	106.9	-	-	Carrier
Vert	2400.000	PK	60.3	28.0	6.7	32.1	62.9	86.9	24.0	

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11b 2412 MHz



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

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Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 29, 2016	March 31, 2016
Temperature / Humidity	26 deg. C / 31 % RH	23deg. C / 33 % RH
Engineer	Keisuke Kawamura (1-10GHz)	Ken Fujita (Above 10GHz)
Mode	Tx 11b 2437 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	4874.000	PK	43.3	33.1	9.1	31.3	-	54.2	73.9	19.7	
Hori	7311.000	PK	39.9	36.8	10.3	32.6	-	54.4	73.9	19.5	Floor Noise
Hori	9748.000	PK	40.3	38.2	11.1	32.7	-	56.9	73.9	17.0	Floor Noise
Hori	4874.000	AV	34.7	33.1	9.1	31.3	0.2	45.8	53.9	8.1	*1)
Hori	7311.000	AV	31.3	36.8	10.3	32.6	-	45.8	53.9	8.1	Floor Noise
Hori	9748.000	AV	31.0	38.2	11.1	32.7	-	47.6	53.9	6.3	Floor Noise
Vert	4874.000	PK	43.9	33.1	9.1	31.3	-	54.8	73.9	19.1	
Vert	7311.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Vert	9748.000	PK	40.3	38.2	11.1	32.7	-	56.9	73.9	17.0	Floor Noise
Vert	4874.000	AV	35.5	33.1	9.1	31.3	0.2	46.6	53.9	7.3	*1)
Vert	7311.000	AV	31.5	36.8	10.3	32.6	-	46.0	53.9	7.9	Floor Noise
Vert	9748.000	AV	31.2	38.2	11.1	32.7	-	47.8	53.9	6.1	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz $20\log(4.45\text{m} / 3.0\text{m}) = 3.43\text{ dB}$

10 GHz - 26.5 GHz $20\log(1.0\text{m} / 3.0\text{m}) = -9.5\text{ dB}$

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

Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 29, 2016	March 31, 2016
Temperature / Humidity	26 deg. C / 31 % RH	23deg. C / 33 % RH
Engineer	Keisuke Kawamura (1-10GHz)	Ken Fujita (Above 10GHz)
Mode	Tx 11b 2462 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	48.2	28.1	6.8	32.1	-	51.0	73.9	22.9	
Hori	4924.000	PK	43.0	33.3	9.2	31.3	-	54.2	73.9	19.7	
Hori	7386.000	PK	39.2	36.8	10.3	32.6	-	53.7	73.9	20.2	Floor Noise
Hori	9848.000	PK	40.3	38.2	11.1	32.7	-	56.9	73.9	17.0	Floor Noise
Hori	2483.500	AV	39.8	28.1	6.8	32.1	0.2	42.8	53.9	11.1	*1)
Hori	4924.000	AV	34.1	33.3	9.2	31.3	0.2	45.5	53.9	8.4	
Hori	7386.000	AV	31.5	36.8	10.3	32.6	-	46.0	53.9	7.9	Floor Noise
Hori	9848.000	AV	31.0	38.2	11.1	32.7	-	47.6	53.9	6.3	Floor Noise
Vert	2483.500	PK	49.0	28.1	6.8	32.1	-	51.8	73.9	22.1	
Vert	4924.000	PK	44.4	33.3	9.2	31.3	-	55.6	73.9	18.3	
Vert	7386.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Vert	9848.000	PK	40.5	38.2	11.1	32.7	-	57.1	73.9	16.8	Floor Noise
Vert	2483.500	AV	40.6	28.1	6.8	32.1	0.2	43.6	53.9	10.3	*1)
Vert	4924.000	AV	36.1	33.3	9.2	31.3	0.2	47.5	53.9	6.4	
Vert	7386.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Vert	9848.000	AV	31.0	38.2	11.1	32.7	-	47.6	53.9	6.3	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

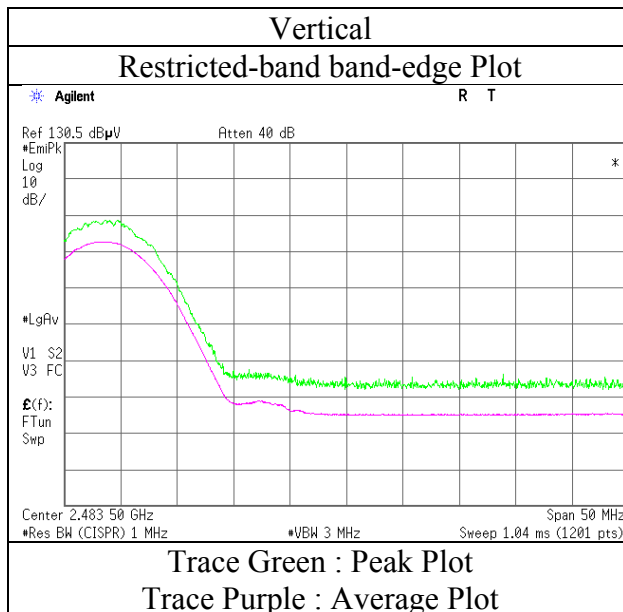
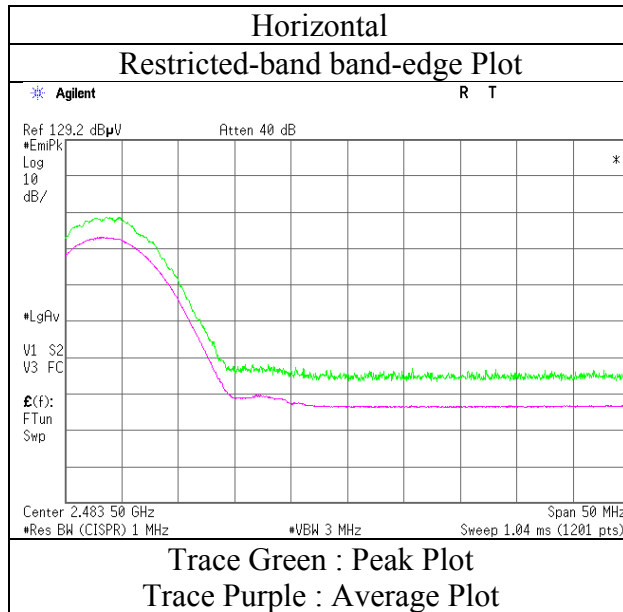
Distance factor: 1 GHz - 10 GHz 20log (4.45m / 3.0 m) = 3.43 dB

10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission
(Reference Plot for band-edge)
[Antenna 2]

Test place : Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No. : 11166416H
Date : March 29, 2016
Temperature / Humidity : 26 deg. C / 31 % RH
Engineer : Keisuke Kawamura
(1-10GHz)
Mode : Tx 11b 2462 MHz



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

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Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11g 2412 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	59.0	27.9	6.7	32.1	-	61.5	73.9	12.4	
Hori	2390.000	AV	48.6	27.9	6.7	32.1	0.4	51.5	53.9	2.4	*1)
Vert	2390.000	PK	59.8	27.9	6.7	32.1	-	62.3	73.9	11.6	
Vert	2390.000	AV	49.0	27.9	6.7	32.1	0.4	51.9	53.9	2.0	*1)

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz $20\log(4.45\text{m} / 3.0\text{m}) = 3.43\text{ dB}$

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

20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	94.9	28.0	6.7	32.1	97.5	-	-	Carrier
Hori	2400.000	PK	64.0	28.0	6.7	32.1	66.6	77.5	10.9	
Vert	2412.000	PK	95.0	28.0	6.7	32.1	97.6	-	-	Carrier
Vert	2400.000	PK	65.1	28.0	6.7	32.1	67.7	77.6	9.9	

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

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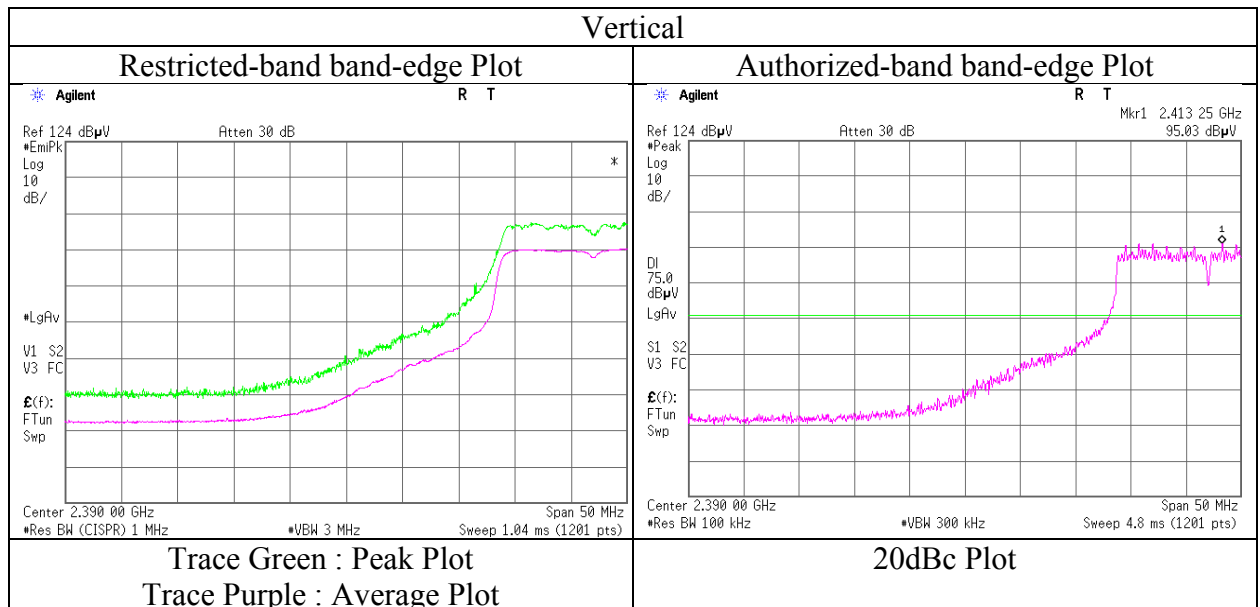
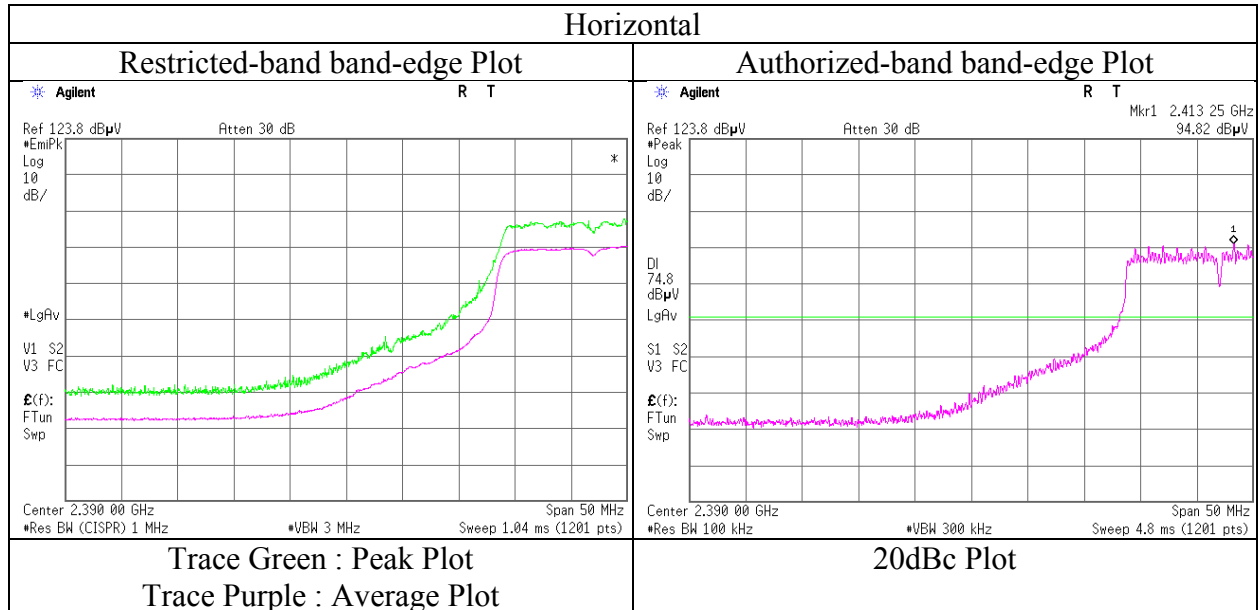
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Radiated Spurious Emission (Reference Plot for band-edge) [Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11g 2412 MHz



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

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Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11g 2462 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	61.4	28.1	6.8	32.1	-	64.2	73.9	9.7	
Hori	2483.500	AV	49.3	28.1	6.8	32.1	0.4	52.5	53.9	1.4	integration method *1)
Vert	2483.500	PK	62.2	28.1	6.8	32.1	-	65.0	73.9	8.9	
Vert	2483.500	AV	49.9	28.1	6.8	32.1	0.4	53.1	53.9	0.8	integration method *1)

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

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

*The 10th harmonic was not seen so the result was its base noise level.

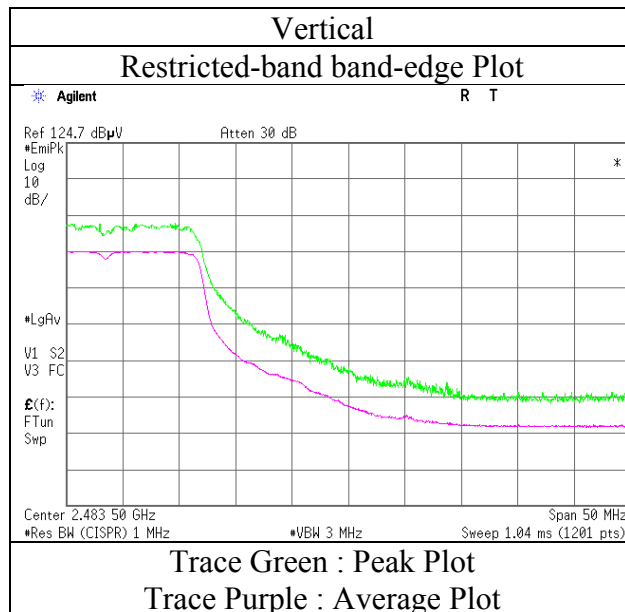
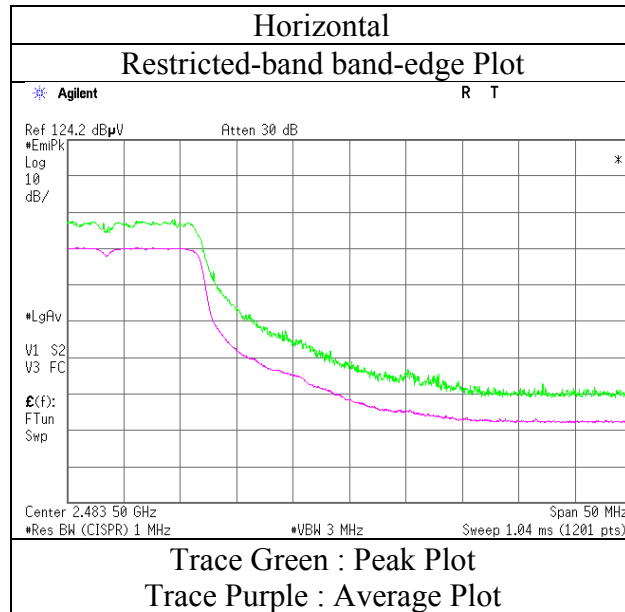
Distance factor: 1 GHz - 10 GHz 20log (4.45m / 3.0 m) = 3.43 dB

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11g 2462 MHz



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

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Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber	
Report No.	11166416H	
Date	March 29, 2016	March 31, 2016
Temperature / Humidity	20 deg. C / 30 % RH	23deg. C / 33 % RH
Engineer	Takafumi Noguchi	Ken Fujita
	(1-10GHz)	(Above 10GHz)
Mode	Tx 11n-20 2412 MHz	

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2390.000	PK	58.2	27.9	6.7	32.1	-	60.7	73.9	13.2	
Hori	4824.000	PK	41.0	32.9	8.1	31.3	-	50.7	73.9	23.2	Floor Noise
Hori	7236.000	PK	42.1	36.8	9.0	32.6	-	55.3	73.9	18.6	Floor Noise
Hori	9648.000	PK	42.6	38.1	9.6	32.6	-	57.7	73.9	16.2	Floor Noise
Hori	2390.000	AV	47.1	27.9	6.7	32.1	0.8	50.4	53.9	3.5	*1)
Hori	4824.000	AV	31.0	32.9	8.1	31.3	-	40.7	53.9	13.2	Floor Noise
Hori	7236.000	AV	32.0	36.8	9.0	32.6	-	45.2	53.9	8.7	Floor Noise
Hori	9648.000	AV	32.6	38.1	9.6	32.6	-	47.7	53.9	6.2	Floor Noise
Vert	2390.000	PK	60.2	27.9	6.7	32.1	-	62.7	73.9	11.2	
Vert	4824.000	PK	40.9	32.9	8.1	31.3	-	50.6	73.9	23.3	Floor Noise
Vert	7236.000	PK	42.1	36.8	9.0	32.6	-	55.3	73.9	18.6	Floor Noise
Vert	9648.000	PK	42.8	38.1	9.6	32.6	-	57.9	73.9	16.0	Floor Noise
Vert	2390.000	AV	48.5	27.9	6.7	32.1	0.8	51.8	53.9	2.1	*1)
Vert	4824.000	AV	31.3	32.9	8.1	31.3	-	41.0	53.9	12.9	Floor Noise
Vert	7236.000	AV	32.1	36.8	9.0	32.6	-	45.3	53.9	8.6	Floor Noise
Vert	9648.000	AV	32.7	38.1	9.6	32.6	-	47.8	53.9	6.1	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz $20\log(4.45\text{m} / 3.0\text{m}) = 3.43\text{ dB}$

10 GHz - 26.5 GHz $20\log(1.0\text{m} / 3.0\text{m}) = -9.5\text{ dB}$

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

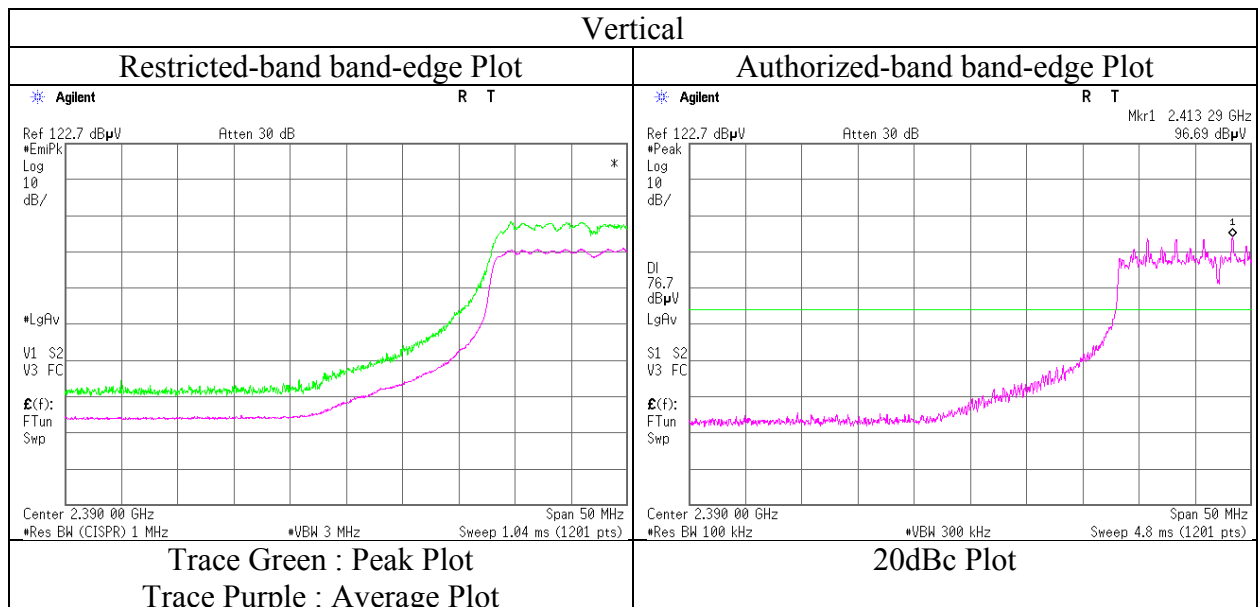
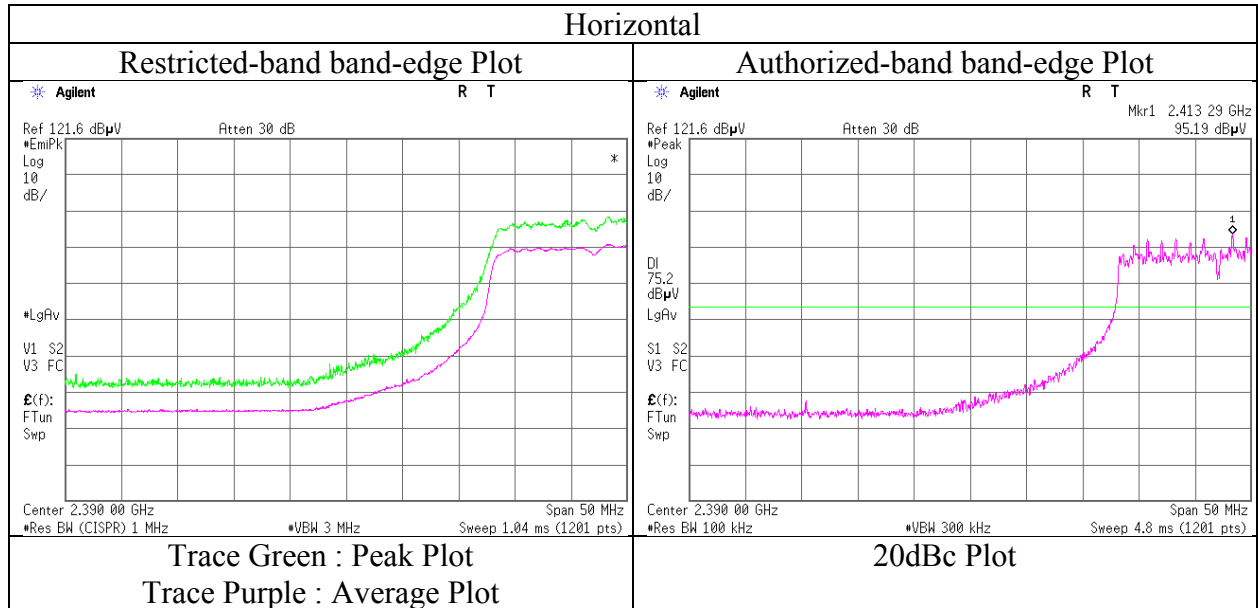
20dBc Data Sheet

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2412.000	PK	95.2	28.0	6.7	32.1	97.8	-	-	Carrier
Hori	2400.000	PK	62.3	28.0	6.7	32.1	64.9	77.8	12.9	
Vert	2412.000	PK	96.7	28.0	6.7	32.1	99.3	-	-	Carrier
Vert	2400.000	PK	62.8	28.0	6.7	32.1	65.4	79.3	13.9	

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

Radiated Spurious Emission (Reference Plot for band-edge) [Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	20 deg. C / 30 % RH
Engineer	Takafumi Noguchi (1-10GHz)
Mode	Tx 11n-20 2412 MHz



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

Radiated Spurious Emission

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	11166416H		
Date	March 29, 2016	March 31, 2016	March 31, 2016
Temperature / Humidity	26 deg. C / 31 % RH	23deg. C / 33 % RH	26deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)	Ken Fujita (Above 10GHz)	Keisuke Kawamura (Below 1GHz)
Mode	Tx 11n-20 2437 MHz		

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	49.959	QP	26.4	10.7	7.4	32.1	-	12.4	40.0	27.6	
Hori	94.875	QP	26.0	9.1	8.0	32.1	-	11.0	43.5	32.5	
Hori	399.995	QP	35.7	18.4	10.6	32.1	-	32.6	46.0	13.4	
Hori	411.423	QP	38.1	18.5	10.7	32.1	-	35.2	46.0	10.8	
Hori	499.995	QP	44.0	19.5	11.2	32.2	-	42.5	46.0	3.5	
Hori	636.675	QP	31.8	21.2	12.0	32.2	-	32.8	46.0	13.2	
Hori	4874.000	PK	41.9	33.1	9.1	31.3	-	52.8	73.9	21.1	Floor Noise
Hori	7311.000	PK	39.2	36.8	10.3	32.6	-	53.7	73.9	20.2	Floor Noise
Hori	9748.000	PK	40.0	38.2	11.1	32.7	-	56.6	73.9	17.3	Floor Noise
Hori	4874.000	AV	31.2	33.1	9.1	31.3	-	42.1	53.9	11.8	Floor Noise
Hori	7311.000	AV	31.4	36.8	10.3	32.6	-	45.9	53.9	8.0	Floor Noise
Hori	9748.000	AV	31.0	38.2	11.1	32.7	-	47.6	53.9	6.3	Floor Noise
Vert	49.959	QP	42.2	10.7	7.4	32.1	-	28.2	40.0	11.8	
Vert	94.875	QP	34.0	9.1	8.0	32.1	-	19.0	43.5	24.5	
Vert	399.995	QP	28.5	18.4	10.6	32.1	-	25.4	46.0	20.6	
Vert	411.423	QP	32.3	18.5	10.7	32.1	-	29.4	46.0	16.6	
Vert	499.995	QP	38.0	19.5	11.2	32.2	-	36.5	46.0	9.5	
Vert	636.675	QP	26.3	21.2	12.0	32.2	-	27.3	46.0	18.7	
Vert	4874.000	PK	40.8	33.1	9.1	31.3	-	51.7	73.9	22.2	Floor Noise
Vert	7311.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Vert	9748.000	PK	40.7	38.2	11.1	32.7	-	57.3	73.9	16.6	Floor Noise
Vert	4874.000	AV	31.7	33.1	9.1	31.3	-	42.6	53.9	11.3	Floor Noise
Vert	7311.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Vert	9748.000	AV	31.1	38.2	11.1	32.7	-	47.7	53.9	6.2	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45m / 3.0 m) = 3.43 dB
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

[Antenna 2]

Test place : Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No. : 11166416H
Date : March 29, 2016 March 31, 2016
Temperature / Humidity : 26 deg. C / 31 % RH 23deg. C / 33 % RH
Engineer : Keisuke Kawamura Ken Fujita
 (1-10GHz) (Above 10GHz)
Mode : Tx 11n-20 2462 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	2483.500	PK	59.9	28.1	6.8	32.1	-	62.7	73.9	11.2	
Hori	4924.000	PK	41.9	33.3	9.2	31.3	-	53.1	73.9	20.8	Floor Noise
Hori	7386.000	PK	39.2	36.8	10.3	32.6	-	53.7	73.9	20.2	Floor Noise
Hori	9848.000	PK	40.3	38.2	11.1	32.7	-	56.9	73.9	17.0	Floor Noise
Hori	2483.500	AV	49.0	28.1	6.8	32.1	0.8	52.6	53.9	1.3	*1)
Hori	4924.000	AV	31.2	33.3	9.2	31.3	-	42.4	53.9	11.5	Floor Noise
Hori	7386.000	AV	31.5	36.8	10.3	32.6	-	46.0	53.9	7.9	Floor Noise
Hori	9848.000	AV	31.1	38.2	11.1	32.7	-	47.7	53.9	6.2	Floor Noise
Vert	2483.500	PK	62.0	28.1	6.8	32.1	-	64.8	73.9	9.1	
Vert	4924.000	PK	40.8	33.3	9.2	31.3	-	52.0	73.9	21.9	Floor Noise
Vert	7386.000	PK	40.1	36.8	10.3	32.6	-	54.6	73.9	19.3	Floor Noise
Vert	9848.000	PK	40.5	38.2	11.1	32.7	-	57.1	73.9	16.8	Floor Noise
Vert	2483.500	AV	50.0	28.1	6.8	32.1	0.8	53.6	53.9	0.3	*1)
Vert	4924.000	AV	31.7	33.3	9.2	31.3	-	42.9	53.9	11.0	Floor Noise
Vert	7386.000	AV	31.9	36.8	10.3	32.6	-	46.4	53.9	7.5	Floor Noise
Vert	9848.000	AV	31.2	38.2	11.1	32.7	-	47.8	53.9	6.1	Floor Noise

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

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

*The 10th harmonic was not seen so the result was its base noise level.

Distance factor: 1 GHz - 10 GHz 20log (4.45m / 3.0 m) = 3.43 dB

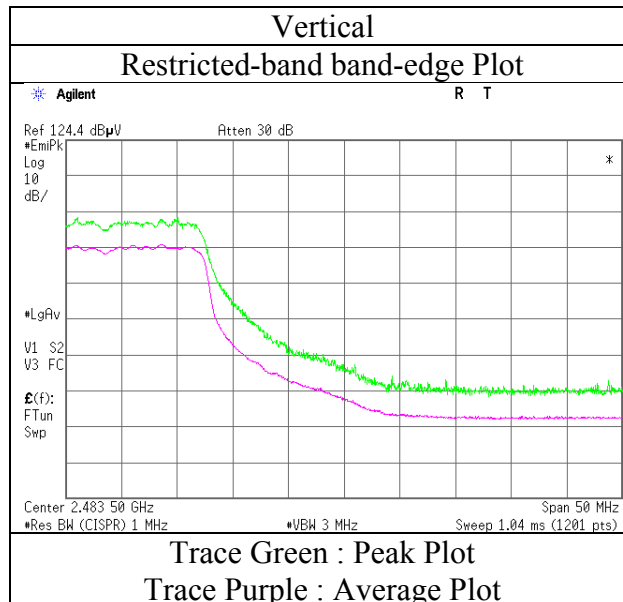
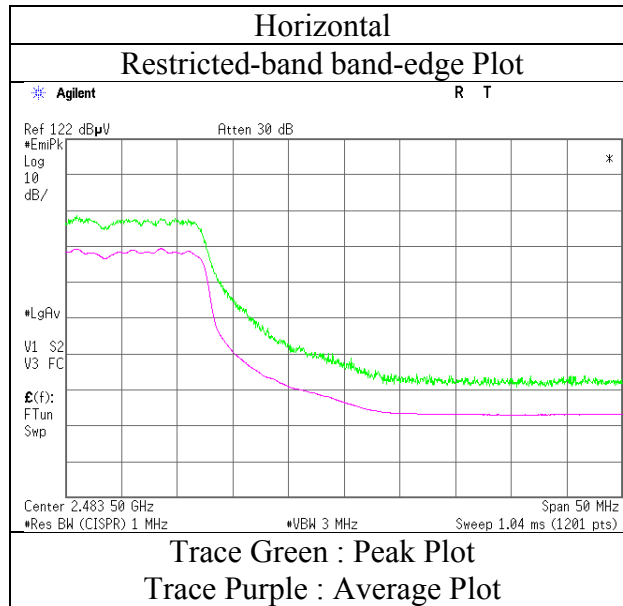
10 GHz - 26.5 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission (Reference Plot for band-edge)

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber
Report No.	11166416H
Date	March 29, 2016
Temperature / Humidity	26 deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)
Mode	Tx 11n-20 2462 MHz



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

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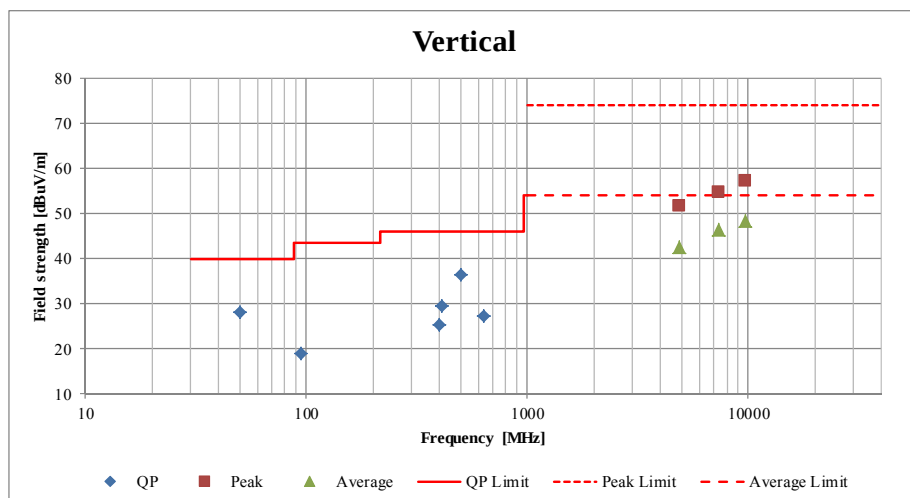
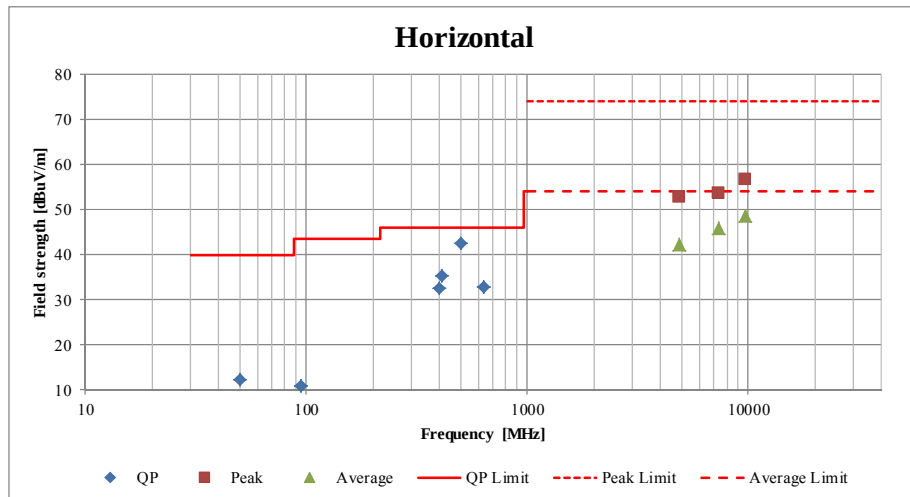
Telephone : +81 596 24 8999

Facsimile : +81 596 24 8124

Radiated Spurious Emission
(Plot data, Worst case)

[Antenna 2]

Test place	Ise EMC Lab. No.4 Semi Anechoic Chamber		
Report No.	11166416H		
Date	March 29, 2016	March 31, 2016	March 31, 2016
Temperature / Humidity	26 deg. C / 31 % RH	23deg. C / 33 % RH	26deg. C / 31 % RH
Engineer	Keisuke Kawamura (1-10GHz)	Ken Fujita (Above 10GHz)	Keisuke Kawamura (Below 1GHz)
Mode	Tx 11n-20 2437 MHz		



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

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APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-04	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2015/10/02 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	1501	RE	2016/01/21 * 12
MJM-26	Measure	KOMELON	KMC-36	-	RE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2015/11/06 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2015/08/10 * 12
MCC-141	Microwave Cable	Junkosha	MWX221	1305S002R(1m) / 1405S146(5m)	RE	2015/06/22 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	00650	RE	2015/10/01 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2015/06/06 * 12
MMM-10	DIGITAL HiTESTER	Hioki	3805	051201148	RE	2016/01/18 * 12
MHF-26	High Pass Filter 3.5-18.0GHz	UL Japan	HPF SELECTOR	002	RE	2015/09/17 * 12
MTR-10	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	RE	2016/01/29 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2015/11/02 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2015/11/03 * 12
MCC-50	Coaxial Cable	UL Japan	-	-	RE	2015/06/19 * 12
MAT-68	Attenuator	Anritsu	MP721B	6200961025	RE	2015/11/12 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2016/03/18 * 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: RE: Radiated Emission test

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