




RADIO TEST REPORT


Test Report No. : 11232718H-B-R1

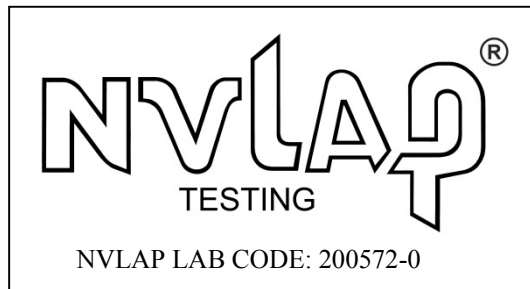
Applicant : silex technology, Inc.
Type of Equipment : PCI Express Half mini card WLAN module
Model No. : SX-PCEAN2
FCC ID : N6C-SXPCEAN2
Test regulation : FCC Part 15 Subpart E: 2016
(Class II Permissive change)
* Radiated Spurious Emission test only
Test Result : Complied

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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. 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 11232718H. 11232718H is replaced with this report.

Date of test: April 6 to September 16 , 2016

Representative test engineer: 
Takumi Shimada
Engineer
Consumer Technology Division

Approved by: 
Tsubasa Takayama
Engineer
Consumer Technology Division



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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 : PCI Express Half mini card WLAN module
Model No. : SX-PCEAN2
Serial No. : Refer to Section 4, Clause 4.2
Rating : DC 3.3 V
Receipt Date of Sample : March 15, 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-PCEAN2 (referred to as the EUT in this report) is a PCI Express Half mini card WLAN module.

Radio Specification

Radio Type : Transceiver
Method of Frequency Generation : Synthesizer
Power Supply (inner) : DC 1.2 V
Clock frequency : 40 MHz

Radio Specification

	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	2412 MHz-2462 MHz	5180 MHz-5240 MHz *1) 5260 MHz-5320 MHz *1) 5500 MHz-5700 MHz *1) 5745 MHz-5825 MHz *1)	2422 MHz-2452 MHz 5190 MHz-5230 MHz *1) 5270 MHz-5310 MHz *1) 5510 MHz-5670 MHz *1) 5755 MHz-5795 MHz *1)
Type of modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (64QAM, 16QAM, QPSK, BPSK)	OFDM (64QAM, 16QAM, QPSK, BPSK)	
Channel spacing	5 MHz		20 MHz	2.4 GHz: 5 MHz 5 GHz: 40 MHz
Antenna type	Sleeve antenna: SANSEI ELECTRIC CO.,LTD.			
Antenna Gain	2.0 dBi @2.4 GHz Band, 2.1 dBi @ 5GHz Band			
Antenna Connector type	U.FL Alternative connector			

*1) This test report applies to IEEE802.11a / n-20 / n-40 (5GHz band).

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart E
FCC part 15 final revised on April 6, 2016.

Title : FCC 47CFR Part15 Radio Frequency Device Subpart E
Unlicensed National Information Infrastructure Devices
Section 15.407 General technical requirements

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Spurious Emission Restricted Band Edge	FCC: ANSI C63.10-2013 KDB Publication Number 789033 IC: -	FCC: 15.407 (b), 15.205 and 15.209 IC: RSS-247 6.2.1 (2) 6.2.2 (2) 6.2.3 (2) 6.2.4 (2)	0.3 dB 11650.00 MHz, AV, Vertical.	Complied	Radiated (> 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 FCC 15.407 (b) and KDB 789033 D02 G.3.b).					

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

FCC 15.31 (e)

The RF Module has own regulator.
The RF Module is constantly provided voltage through own regulator regardless of input voltage (DC 1.2 V).
Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique antenna connector (U.FL on the Module).
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.

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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 (+/-) 9 kHz - 30 MHz
3m	3.8 dB
10m	3.7 dB

Polarity	Radiated emission (Below 1GHz)			
	(3 m*) (+/-)		(10 m*) (+/-)	
	30 MHz – 200 MHz	200 MHz – 1000 MHz	30 MHz – 200 MHz	200 MHz – 1000 MHz
Horizontal	5.0 dB	5.3 dB	5.0 dB	5.0 dB
Vertical	4.7 dB	5.9 dB	5.0 dB	5.1 dB

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

UL Japan, Inc. Ise EMC Lab. *NVLAP Lab. code: 200572-0
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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 x 2.0 m for No.1, No.2, No.3, and No.4 semi-anechoic chambers and No.3 and No.4 shielded rooms.

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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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 802.11a (11a)	18Mbps, PN9
IEEE 802.11n MIMO 20 MHz BW (11n-20)	MCS 12 (Short GI), PN9
IEEE 802.11n MIMO 40 MHz BW (11n-40)	MCS 11 (Long GI), PN9
*The worst antenna(Ant: 0) and condition was determined based on the test result of Maximum Conducted Output Power.	
*The power value of the EUT was set for testing as follows (setting value might be different from product specification value); Power settings: Refer to the following table Software: Atheros Radio Test Tool (ART2-GUI) Version 2.28.6 *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]

Operation	Rate	Frequency	Power Setting [dBm]
11a	18 Mbps	5180 MHz	13.5
		5220 MHz	13.5
		5240 MHz	13.5
		5260 MHz	13.5
		5300 MHz	13.5
		5320 MHz	13.5
		5500 MHz	13.5
		5580 MHz	13.5
		5700 MHz	13.5
		5745 MHz	13.5
		5785 MHz	13.5
11n MIMO 20 MHz band	MCS 12 (Short GI)	5180 MHz	14.5
		5220 MHz	14.5
		5240 MHz	14.5
		5260 MHz	14.5
		5300 MHz	14.5
		5320 MHz	14.5
		5500 MHz	14.0
		5580 MHz	14.0
		5700 MHz	14.0
		5745 MHz	14.0
		5785 MHz	14.0
11n MIMO 40 MHz band	MCS 11 (Long GI)	5190 MHz	12.0
		5230 MHz	12.0
		5270 MHz	12.0
		5310 MHz	12.0
		5510 MHz	12.0
		5550 MHz	12.0
		5670 MHz	12.0
		5755 MHz	12.0
5795 MHz	12.0		

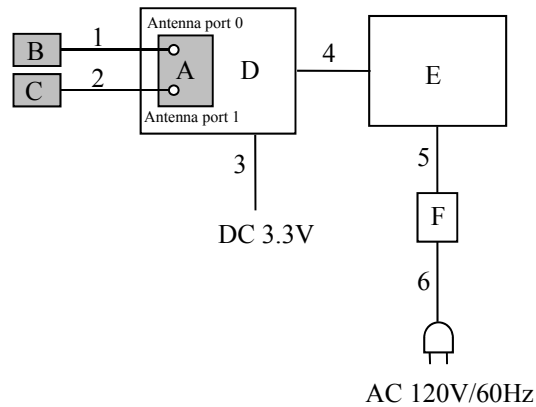
*The details of Operating mode(s)

Test Item	Operating Mode	Tested Antenna port	Tested Frequency			
			Lower Band	Middle Band	Additional Band	Upper Band
Radiated Spurious Emission (Below 1GHz)	11n-20 Tx *1)	0+1	-	5260 MHz *1)	-	-
Radiated Spurious Emission (Above 1GHz)	11n-20 Tx *2)	0+1	5180 MHz	5260 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	11n-40 Tx	0+1	5190 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz

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

*2) Since 11a and 11n-20 have the same modulation method and no differences in transmitting specification, test was performed on the representative mode that had the highest conducted output power.

4.2 Configuration and peripherals



- * Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.
- * The test was performed using a typical evaluation board (Jig board).

Description of EUT

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	PCI Express Half Mini Card WLAN Module	SX-PCEAN2	M7000030	Silex	EUT
B	Antenna	ANTDC-081A0	001	SANSEI ELECTRIC CO.,LTD.	EUT
C	Antenna	ANTDC-081A0	002	SANSEI ELECTRIC CO.,LTD.	EUT
D	Jig board	-	-	-	-
E	Laptop PC	HP ProBook 6550 b	CNU1242 MQ0	HP	-
F	AC Adapter	Series PPP009L-E	CT: WBGST0A1R0PJ9u	HP	-
G	Regulated DC Power Supply	PW16-5ADP	171116437	TEXO	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Antenna Cable	0.15	Shielded	Shielded	-
2	Antenna Cable	0.15	Shielded	Shielded	-
3	DC Cable	2.7	Unshielded	Unshielded	-
4	Mini PCI Cable	0.3	Shielded	Shielded	-
5	DC Cable	1.8	Unshielded	Unshielded	-
6	AC Cable	1.8	Unshielded	Unshielded	-
7	AC Cable	1.8	Unshielded	Unshielded	-

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SECTION 5: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

< Below 1GHz >

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

< Above 1GHz >

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane.

The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane.

The height of the measuring antenna varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

< Below 1GHz >

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

< Above 1GHz >

Inside of restricted bands (Section 15.205):

Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

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

Apply to limit in the Section 15.407 (b) (4) (i) for W58 band.

Restricted band edge:

Apply to limit in the Section 15.209 (a).

Since this limit is severer than the limit of the inside of restricted bands.

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

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

Test Antennas are used as below;

Frequency	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Biconical	Logperiodic	Horn

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

*1) The test method was also referred to KDB 789033 D01 General UNII Test Procedures 1 Old Rules v01r04 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E (Issued on June 6, 2014)".

*2) Distance Factor: $20 \times \log(4.4 \text{ m}/3.0 \text{ m}) = 3.33 \text{ dB}$

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

[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]

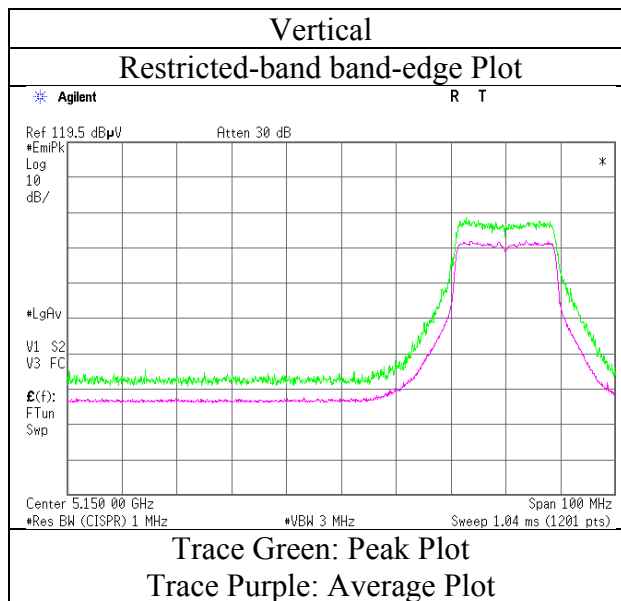
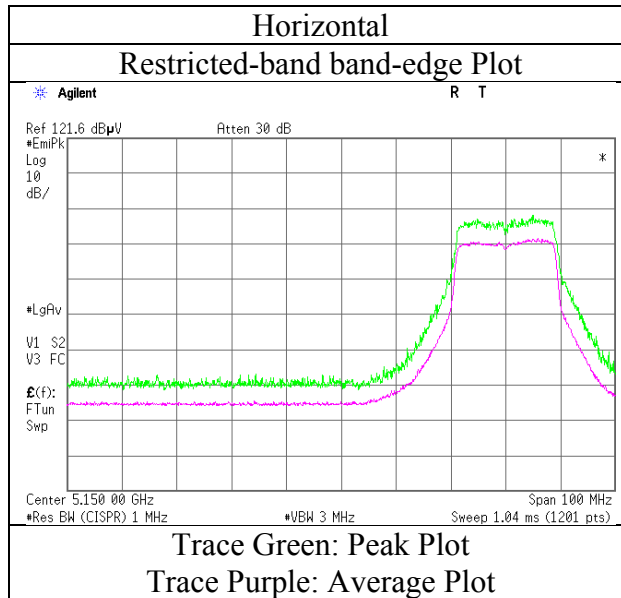
- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of Module to see the position of maximum noise, and the test was made at the position that has the maximum noise.

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

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

Radiated Spurious Emission

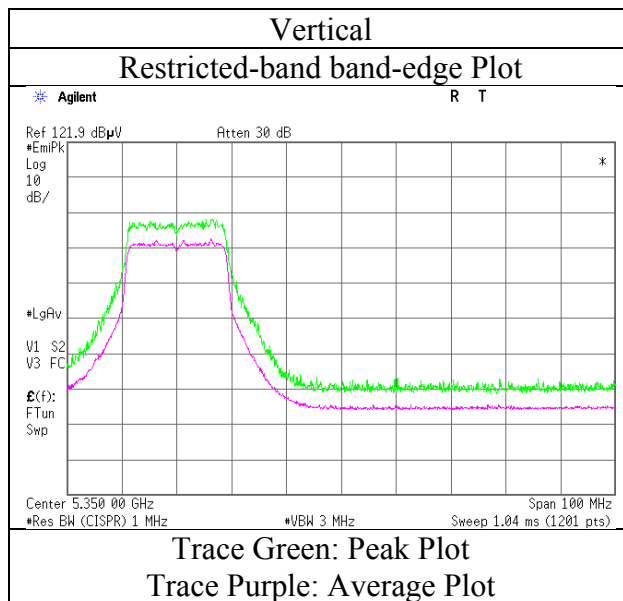
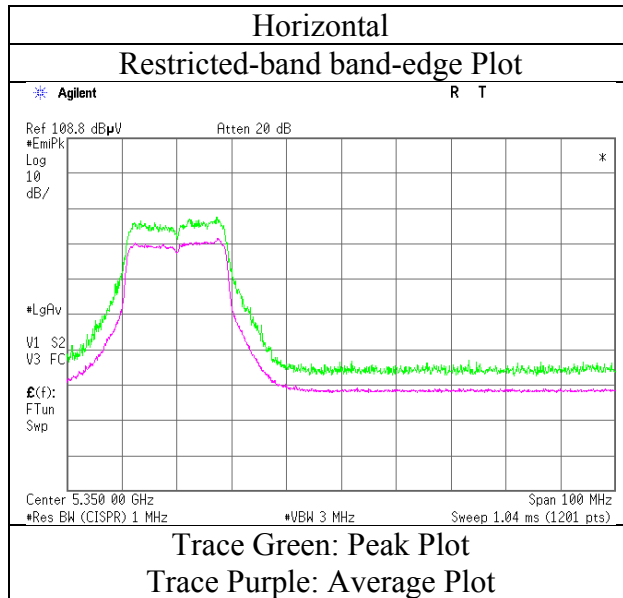
Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5180 MHz



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

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5320 MHz



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

Radiated Spurious Emission

Test place Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. 11232718H
Date September 15, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer Takumi Shimada Masafumi Niwa Takafumi Noguchi Masafumi Niwa
(1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode Tx 11n-20 5500 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	43.2	31.2	7.5	31.8	-	50.1	73.9	23.8	
Hori	5470.000	PK	50.7	31.2	7.5	31.8	-	57.6	73.9	16.3	
Hori	11000.000	PK	54.4	40.1	-1.6	33.0	-	59.9	73.9	14.0	
Hori	16500.000	PK	45.0	40.3	0.0	32.6	-	52.7	73.9	21.2	
Hori	5460.000	AV	32.0	31.2	7.5	31.8	1.2	40.1	53.9	13.8	*1)
Hori	5470.000	AV	33.3	31.2	7.5	31.8	1.2	41.4	53.9	12.5	*1)
Hori	11000.000	AV	45.9	40.1	-1.6	33.0	1.2	52.6	53.9	1.3	
Hori	16500.000	AV	35.7	40.3	0.0	32.6	1.2	44.6	53.9	9.3	
Vert	5460.000	PK	42.6	31.2	7.5	31.8	-	49.5	73.9	24.4	
Vert	5470.000	PK	49.4	31.2	7.5	31.8	-	56.3	73.9	17.6	
Vert	11000.000	PK	55.8	40.1	-1.6	33.0	-	61.3	73.9	12.6	
Vert	16500.000	PK	43.9	40.3	0.0	32.6	-	51.6	73.9	22.3	
Vert	5460.000	AV	33.7	31.2	7.5	31.8	1.2	41.8	53.9	12.1	*1)
Vert	5470.000	AV	35.7	31.2	7.5	31.8	1.2	43.8	53.9	10.1	*1)
Vert	11000.000	AV	45.4	40.1	-1.6	33.0	1.2	52.1	53.9	1.8	
Vert	16500.000	AV	36.2	40.3	0.0	32.6	1.2	45.1	53.9	8.8	

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

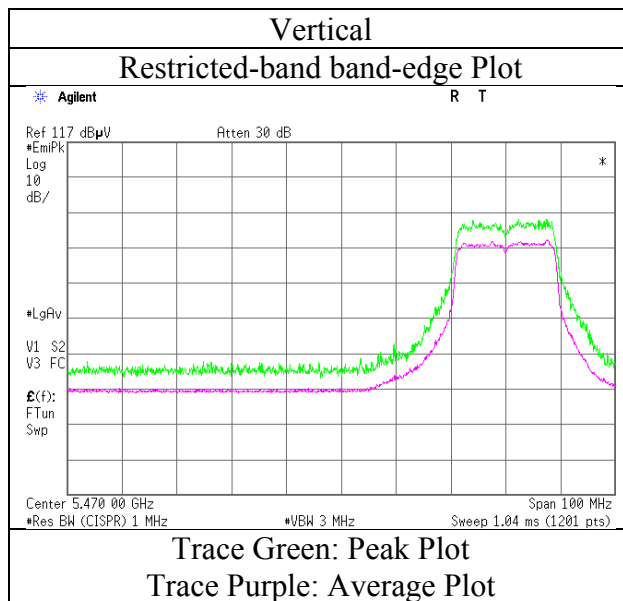
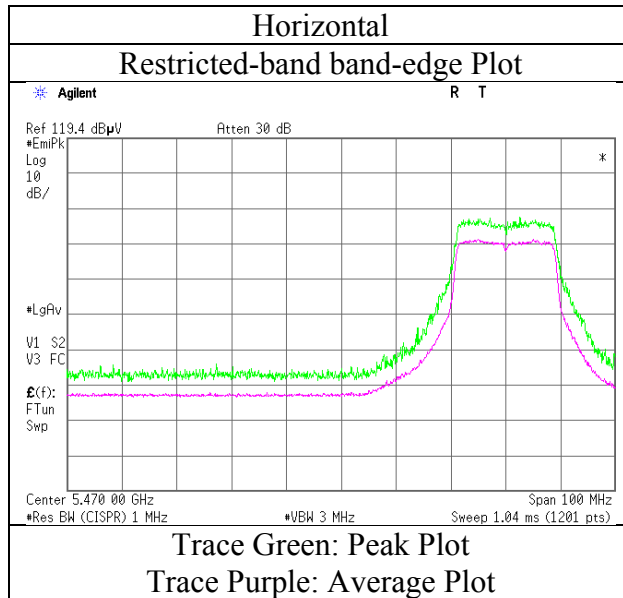
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.4 m / 3.0 m) = 3.33 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5500 MHz



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

Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 15, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Takumi Shimada Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-20 5700 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5725.000	PK	47.1	31.4	7.6	31.8	-	54.3	73.9	19.6	
Hori	11400.000	PK	52.3	40.2	-1.6	33.1	-	57.8	73.9	16.1	
Hori	17100.000	PK	45.5	42.0	0.0	32.6	-	54.9	73.9	19.0	
Hori	5725.000	AV	34.4	31.4	7.6	31.8	1.2	42.8	53.9	11.1	*1)
Hori	11400.000	AV	41.9	40.2	-1.6	33.1	1.2	48.6	53.9	5.3	
Hori	17100.000	AV	36.5	42.0	0.0	32.6	1.2	47.1	53.9	6.8	
Vert	5725.000	PK	46.4	31.4	7.6	31.8	-	53.6	73.9	20.3	
Vert	11400.000	PK	51.6	40.2	-1.6	33.1	-	57.1	73.9	16.8	
Vert	17100.000	PK	45.6	42.0	0.0	32.6	-	55.0	73.9	18.9	
Vert	5725.000	AV	33.8	31.4	7.6	31.8	1.2	42.2	53.9	11.7	*1)
Vert	11400.000	AV	43.1	40.2	-1.6	33.1	1.2	49.8	53.9	4.1	
Vert	17100.000	AV	36.5	42.0	0.0	32.6	1.2	47.1	53.9	6.8	

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

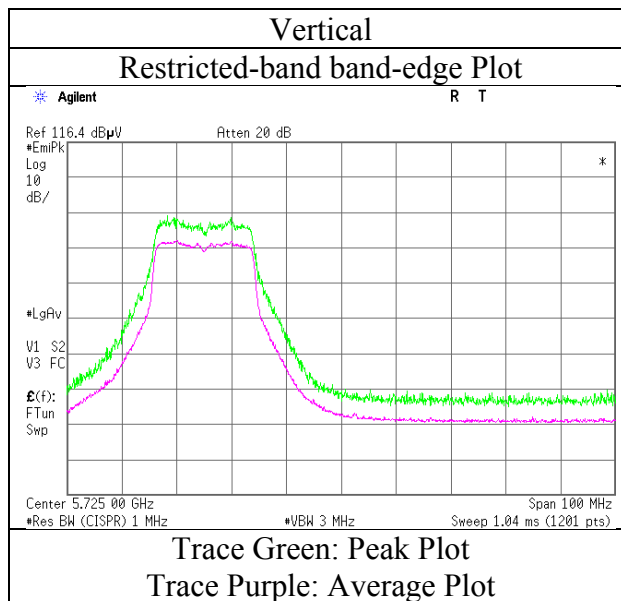
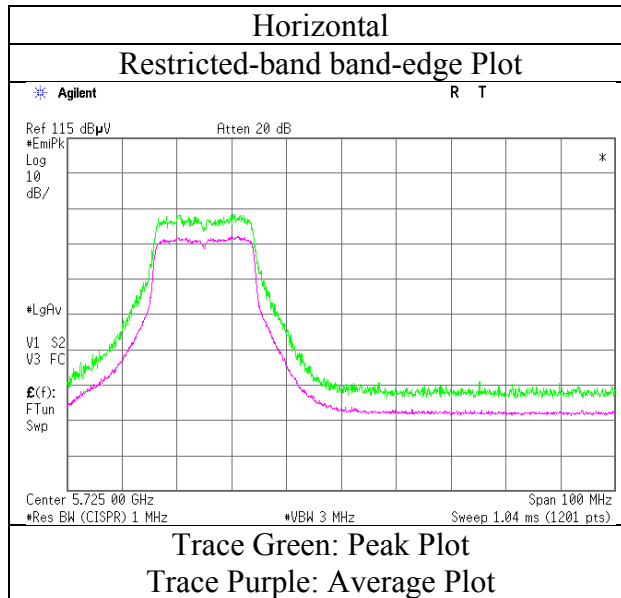
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log(4.4 m / 3.0 m) = 3.33 dB
 10 GHz - 40 GHz 20log(1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5700 MHz



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

Radiated Spurious Emission

Test place Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. 11232718H
Date September 15, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer Takumi Shimada Masafumi Niwa Takafumi Noguchi Masafumi Niwa
(1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode Tx 11n-20 5745 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	41.9	31.3	7.6	31.8	-	49.0	68.2	19.2	
Hori	5700.000	PK	41.9	31.4	7.6	31.8	-	49.1	105.2	56.1	
Hori	5715.000	PK	42.6	31.4	7.6	31.8	-	49.8	109.4	59.6	
Hori	5720.000	PK	47.6	31.4	7.6	31.8	-	54.8	110.8	56.0	
Hori	5725.000	PK	52.2	31.4	7.6	31.8	-	59.4	122.2	62.8	
Hori	11490.000	PK	54.9	40.2	-1.7	33.1	-	60.3	73.9	13.6	
Hori	17235.000	PK	43.4	42.2	0.1	32.6	-	53.1	73.9	20.8	
Hori	11490.000	AV	43.9	40.2	-1.7	33.1	1.2	50.5	53.9	3.4	
Hori	17235.000	AV	34.9	42.2	0.1	32.6	1.2	45.8	53.9	8.1	
Vert	5650.000	PK	42.5	31.3	7.6	31.8	-	49.6	68.2	18.6	
Vert	5700.000	PK	42.5	31.4	7.6	31.8	-	49.7	105.2	55.5	
Vert	5715.000	PK	43.7	31.4	7.6	31.8	-	50.9	109.4	58.5	
Vert	5720.000	PK	47.3	31.4	7.6	31.8	-	54.5	110.8	56.3	
Vert	5725.000	PK	52.1	31.4	7.6	31.8	-	59.3	122.2	62.9	
Vert	11490.000	PK	55.2	40.2	-1.7	33.1	-	60.6	73.9	13.3	
Vert	17235.000	PK	44.1	42.2	0.1	32.6	-	53.8	73.9	20.1	
Vert	11490.000	AV	44.1	40.2	-1.7	33.1	1.2	50.7	53.9	3.2	
Vert	17235.000	AV	36.0	42.2	0.1	32.6	1.2	46.9	53.9	7.0	

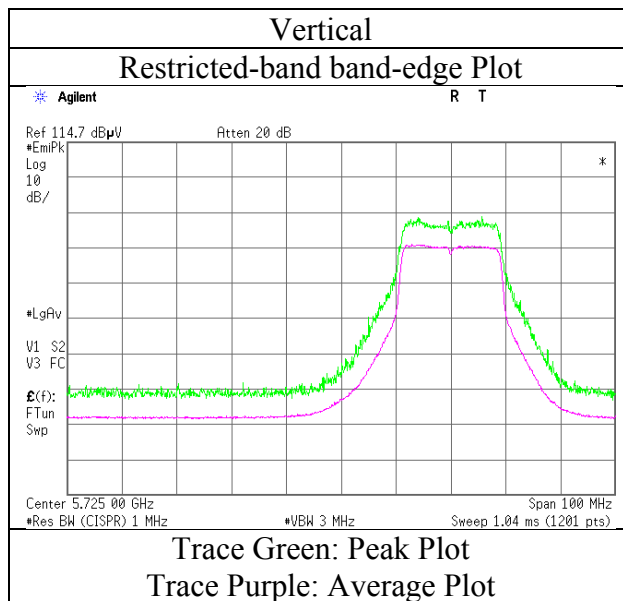
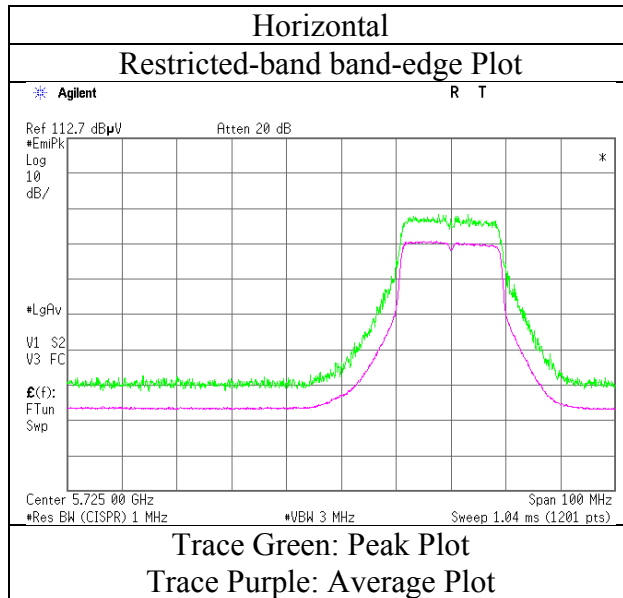
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

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

Distance factor: 1 GHz - 10 GHz 20log (4.4 m / 3.0 m) = 3.33 dB
10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5745 MHz



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

Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 15, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Takumi Shimada Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-20 5785 MHz

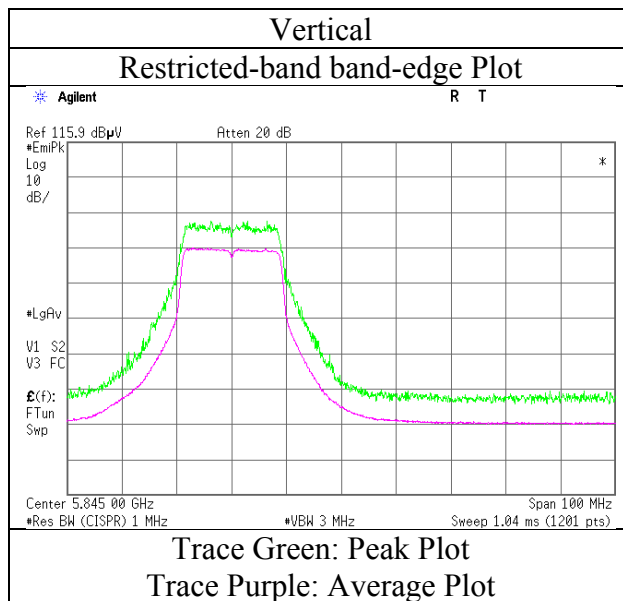
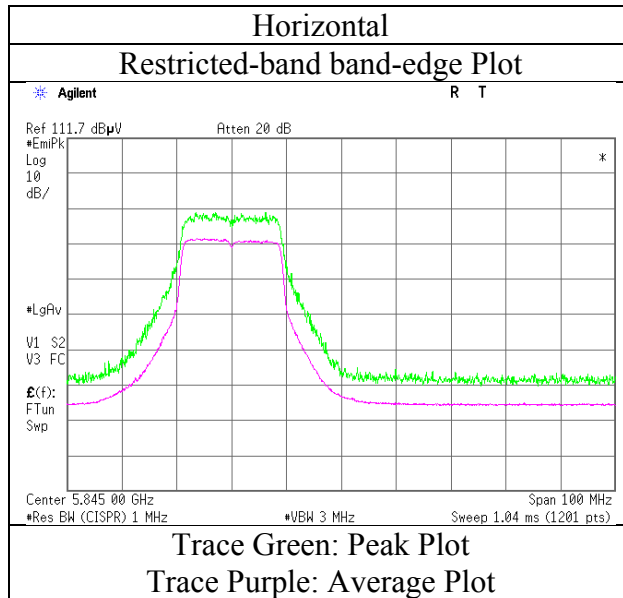
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11570.000	PK	56.0	40.1	-1.7	33.1	-	61.3	73.9	12.6	
Hori	17355.000	PK	45.3	42.4	0.0	32.6	-	55.1	73.9	18.8	
Hori	11570.000	AV	45.0	40.1	-1.7	33.1	1.2	51.5	53.9	2.4	
Hori	17355.000	AV	36.6	42.4	0.0	32.6	1.2	47.6	53.9	6.3	
Vert	11570.000	PK	58.7	40.1	-1.7	33.1	-	64.0	73.9	9.9	
Vert	17355.000	PK	45.7	42.4	0.0	32.6	-	55.5	73.9	18.4	
Vert	11570.000	AV	45.7	40.1	-1.7	33.1	1.2	52.2	53.9	1.7	
Vert	17355.000	AV	37.1	42.4	0.0	32.6	1.2	48.1	53.9	5.8	

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

Distance factor: 1 GHz - 10 GHz $20\log(4.4\text{ m} / 3.0\text{ m}) = 3.33\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

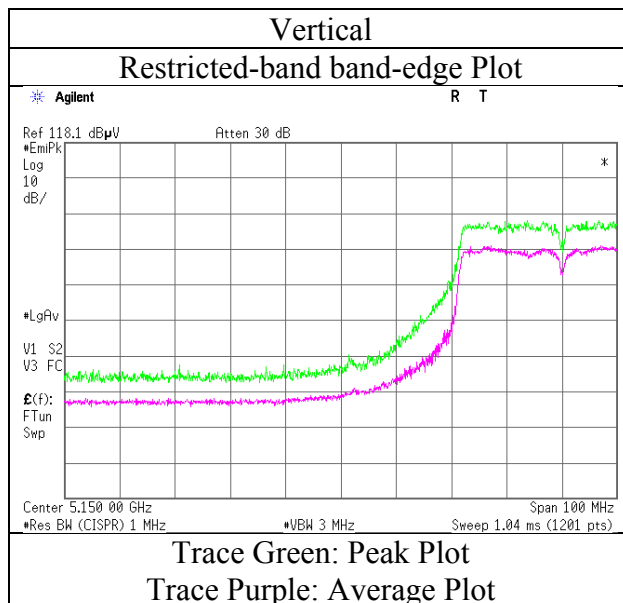
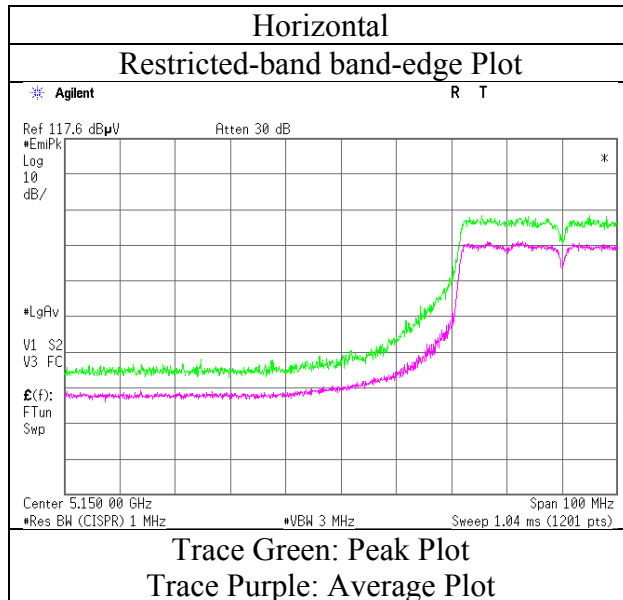
Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 15, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Takumi Shimada
Mode	Tx 11n-20 5825 MHz



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

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 16, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5190 MHz



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

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Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 16, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Yuta Moriya Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-40 5310 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5350.000	PK	49.8	31.3	7.4	31.8	-	56.7	73.9	17.2	
Hori	10620.000	PK	49.7	39.7	-1.7	33.0	-	54.7	73.9	19.2	
Hori	15930.000	PK	43.5	39.0	0.0	32.7	-	49.8	73.9	24.1	Floor noise
Hori	5350.000	AV	39.9	31.3	7.4	31.8	1.0	47.8	53.9	6.1	*1)
Hori	10620.000	AV	38.9	39.7	-1.7	33.0	1.0	44.9	53.9	9.0	
Hori	15930.000	AV	35.3	39.0	0.0	32.7	-	41.6	53.9	12.3	Floor noise
Vert	5350.000	PK	52.4	31.3	7.4	31.8	-	59.3	73.9	14.6	
Vert	10620.000	PK	48.5	39.7	-1.7	33.0	-	53.5	73.9	20.4	
Vert	15930.000	PK	44.0	39.0	0.0	32.7	-	50.3	73.9	23.6	Floor noise
Vert	5350.000	AV	42.4	31.3	7.4	31.8	1.0	50.3	53.9	3.6	*1)
Vert	10620.000	AV	37.6	39.7	-1.7	33.0	1.0	43.6	53.9	10.3	
Vert	15930.000	AV	35.4	39.0	0.0	32.7	-	41.7	53.9	12.2	Floor noise

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

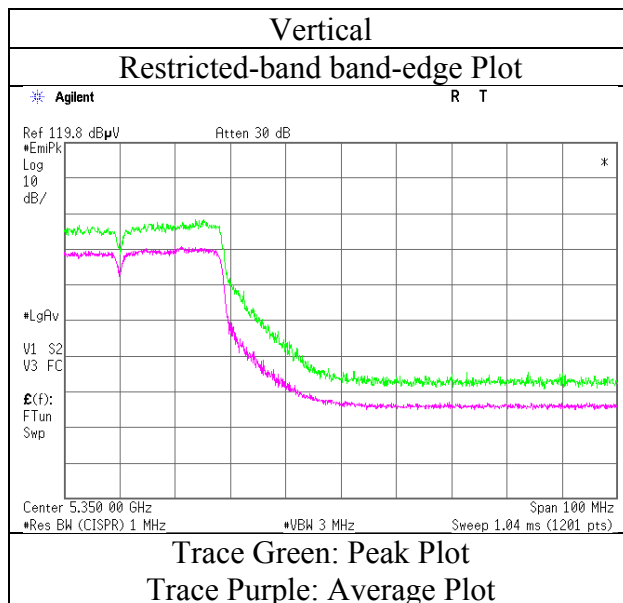
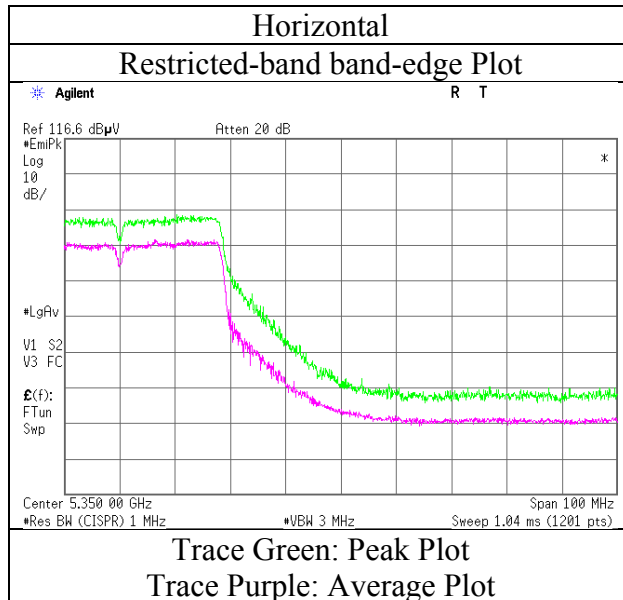
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20 dB).

Distance factor: 1 GHz - 10 GHz 20log (4.4 m / 3.0 m) = 3.33 dB
 10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

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

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 16, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5310 MHz



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

Radiated Spurious Emission

Test place Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. 11232718H
Date September 16, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer Yuta Moriya Masafumi Niwa Takafumi Noguchi Masafumi Niwa
(1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode Tx 11n-40 5510 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5460.000	PK	52.7	31.2	7.5	31.8	-	59.6	73.9	14.3	
Hori	5470.000	PK	57.6	31.2	7.5	31.8	-	64.5	68.2	3.7	
Hori	11020.000	PK	53.4	40.1	-1.7	33.0	-	58.8	73.9	15.1	
Hori	16530.000	PK	43.6	40.4	0.0	32.6	-	51.4	73.9	22.5	Floor noise
Hori	5460.000	AV	39.0	31.2	7.5	31.8	1.0	46.9	53.9	7.0	*1)
Hori	11020.000	AV	43.4	40.1	-1.7	33.0	1.0	49.8	53.9	4.1	
Hori	16530.000	AV	35.1	40.4	0.0	32.6	-	42.9	53.9	11.0	Floor noise
Vert	5460.000	PK	53.8	31.2	7.5	31.8	-	60.7	73.9	13.2	
Vert	5470.000	PK	58.6	31.2	7.5	31.8	-	65.5	68.2	2.7	
Vert	11020.000	PK	50.1	40.1	-1.7	33.0	-	55.5	73.9	18.4	
Vert	16530.000	PK	44.2	40.4	0.0	32.6	-	52.0	73.9	21.9	Floor noise
Vert	5460.000	AV	40.6	31.2	7.5	31.8	1.0	48.5	53.9	5.4	*1)
Vert	11020.000	AV	40.1	40.1	-1.7	33.0	1.0	46.5	53.9	7.4	
Vert	16530.000	AV	35.4	40.4	0.0	32.6	-	43.2	53.9	10.7	Floor noise

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

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

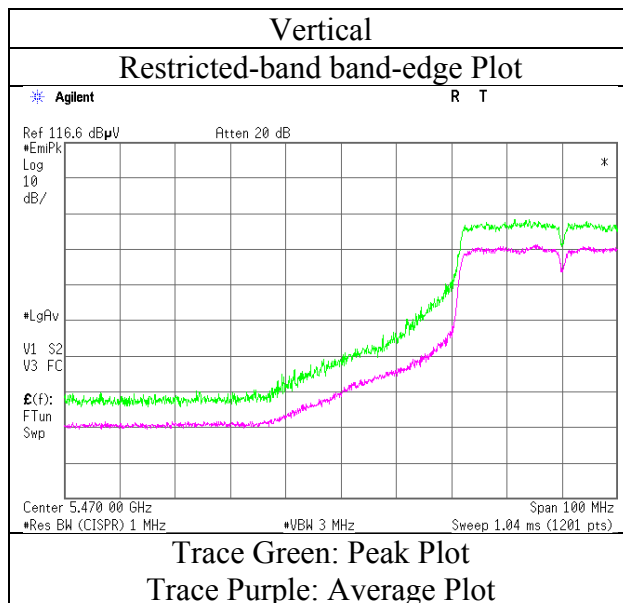
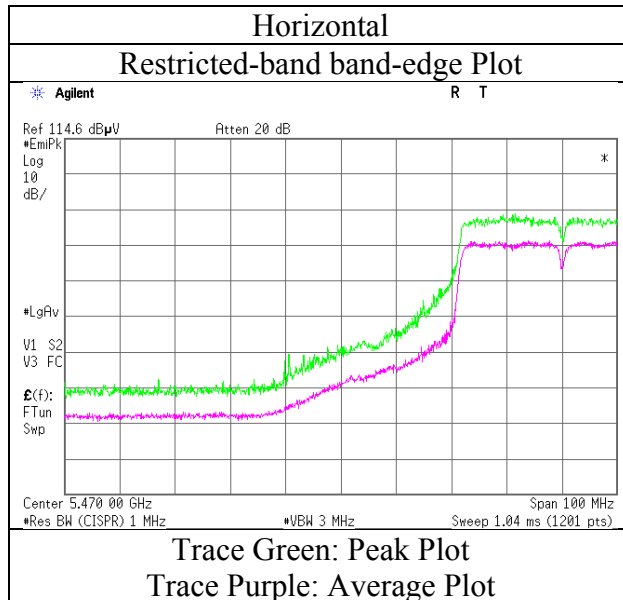
Distance factor: 1 GHz - 10 GHz $20\log(4.4\text{ m} / 3.0\text{ m}) = 3.33\text{ dB}$

10 GHz - 40 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

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	April 6, 2016
Temperature / Humidity	22 deg. C / 38 % RH
Engineer	Masafumi Niwa
Mode	Tx 11n-40 5510 MHz



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

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Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 16, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Yuta Moriya Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-40 5550 MHz

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	11100.000	PK	53.5	40.1	-1.7	33.1	-	58.8	73.9	15.1	
Hori	16650.000	PK	43.7	40.8	0.0	32.6	-	51.9	73.9	22.0	Floor noise
Hori	11100.000	AV	43.4	40.1	-1.7	33.1	1.0	49.7	53.9	4.2	
Hori	16650.000	AV	34.0	40.8	0.0	32.6	-	42.2	53.9	11.7	Floor noise
Vert	11100.000	PK	53.1	40.1	-1.7	33.1	-	58.4	73.9	15.5	
Vert	16650.000	PK	44.1	40.8	0.0	32.6	-	52.3	73.9	21.6	Floor noise
Vert	11100.000	AV	41.9	40.1	-1.7	33.1	1.0	48.2	53.9	5.7	
Vert	16650.000	AV	35.2	40.8	0.0	32.6	-	43.4	53.9	10.5	Floor noise

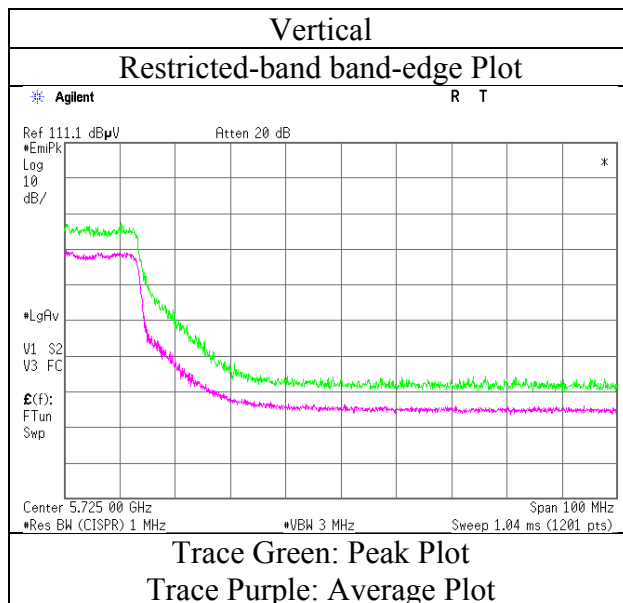
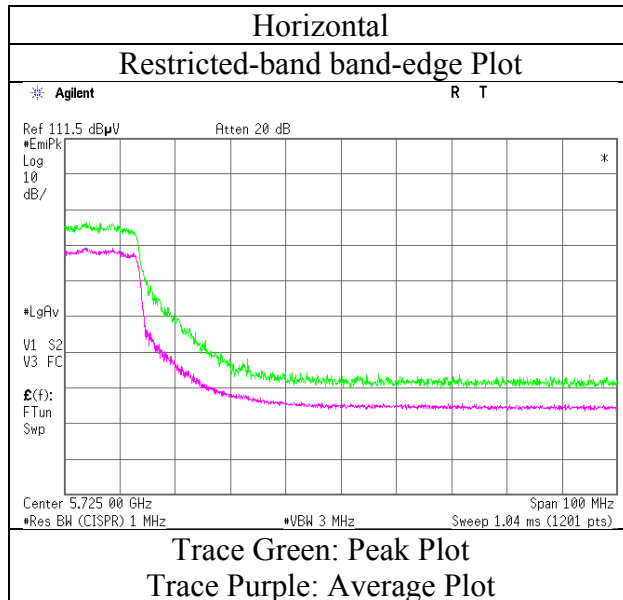
Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter+Distance factor(above 1 GHz)) - Gain(Amplifier) + Duty factor

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

Distance factor: 1 GHz - 10 GHz $20\log(4.4\text{ m} / 3.0\text{ m}) = 3.33\text{ dB}$
 10 GHz - 40 GHz $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 16, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5670 MHz



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

Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 16, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Yuta Moriya Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-40 5755 MHz

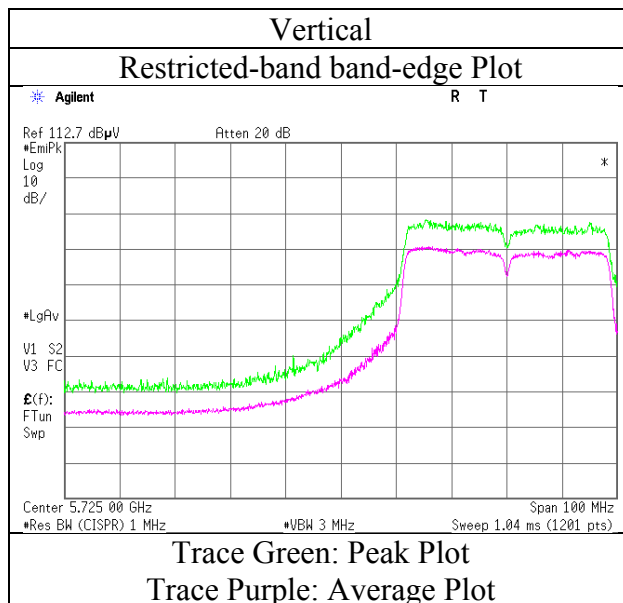
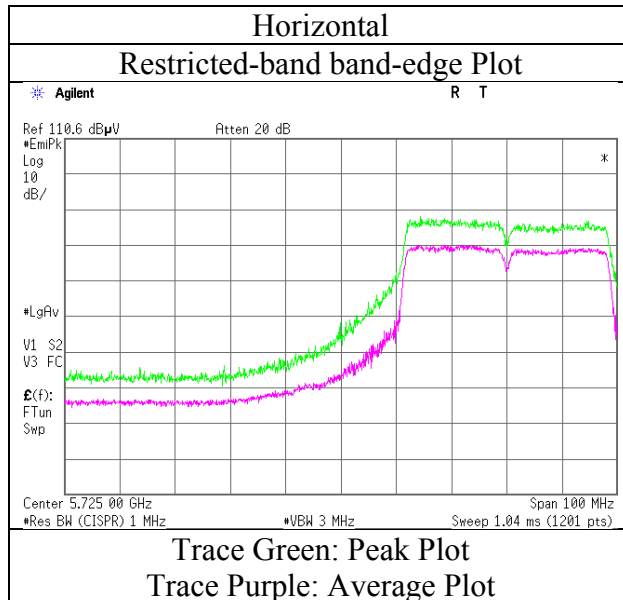
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5650.000	PK	41.3	31.3	7.6	31.8	-	48.4	68.2	19.8	
Hori	5700.000	PK	42.5	31.4	7.6	31.8	-	49.7	105.2	55.5	
Hori	5715.000	PK	49.9	31.4	7.6	31.8	-	57.1	109.4	52.3	
Hori	5720.000	PK	50.9	31.4	7.6	31.8	-	58.1	110.8	52.7	
Hori	5725.000	PK	59.3	31.4	7.6	31.8	-	66.5	122.2	55.7	
Hori	11510.000	PK	49.0	40.2	-1.7	33.1	-	54.4	73.9	19.5	
Hori	17265.000	PK	43.0	42.3	0.0	32.6	-	52.7	73.9	21.2	Floor noise
Hori	11510.000	AV	39.2	40.2	-1.7	33.1	1.0	45.6	53.9	8.3	
Hori	17265.000	AV	35.0	42.3	0.0	32.6	-	44.7	53.9	9.2	Floor noise
Vert	5650.000	PK	44.0	31.3	7.6	31.8	-	51.1	68.2	17.1	
Vert	5700.000	PK	43.7	31.4	7.6	31.8	-	50.9	105.2	54.3	
Vert	5715.000	PK	49.6	31.4	7.6	31.8	-	56.8	109.4	52.6	
Vert	5720.000	PK	53.0	31.4	7.6	31.8	-	60.2	110.8	50.6	
Vert	5725.000	PK	60.5	31.4	7.6	31.8	-	67.7	122.2	54.5	
Vert	11510.000	PK	50.6	40.2	-1.7	33.1	-	56.0	73.9	17.9	
Vert	17265.000	PK	43.1	42.3	0.0	32.6	-	52.8	73.9	21.1	Floor noise
Vert	11510.000	AV	39.4	40.2	-1.7	33.1	1.0	45.8	53.9	8.1	
Vert	17265.000	AV	34.8	42.3	0.0	32.6	-	44.5	53.9	9.4	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4.4 m / 3.0 m) = 3.33 dB
 10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 16, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5755 MHz



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

Radiated Spurious Emission

Test place : Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber
Report No. : 11232718H
Date : September 16, 2016 April 7, 2016 April 8, 2016 April 8, 2016
Temperature / Humidity : 24deg. C / 64 % RH 20deg. C / 52 % RH 21 deg. C / 51 % RH 21 deg. C / 51 % RH
Engineer : Yuta Moriya Masafumi Niwa Takafumi Noguchi Masafumi Niwa
 (1 GHz-10 GHz) (10 GHz-18 GHz) (18 GHz-26.5 GHz) (26.5 GHz-40 GHz)
Mode : Tx 11n-40 5795 MHz

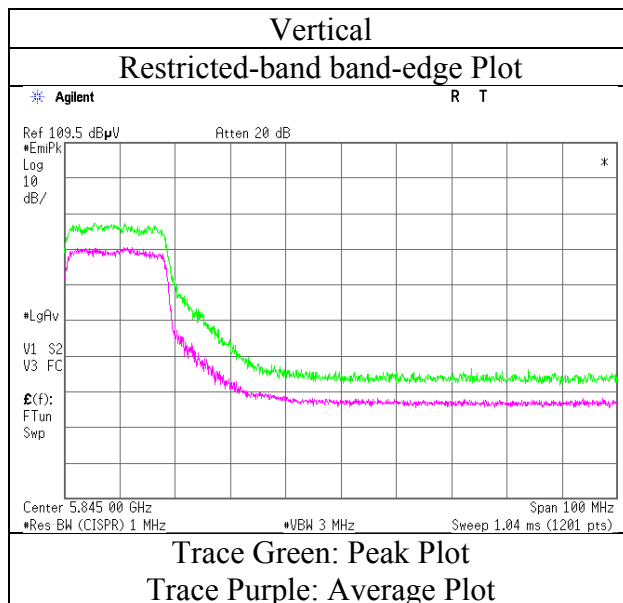
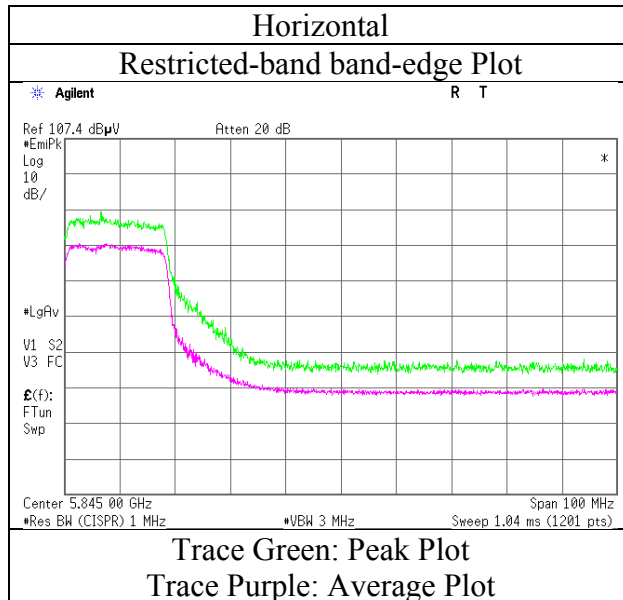
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	5850.000	PK	41.4	31.6	7.6	31.8	-	48.8	122.2	73.4	
Hori	5855.000	PK	40.6	31.6	7.6	31.8	-	48.0	110.8	62.8	
Hori	5860.000	PK	40.4	31.6	7.6	31.8	-	47.8	107.4	59.6	
Hori	5875.000	PK	40.2	31.6	7.6	31.8	-	47.6	105.2	57.6	
Hori	5925.000	PK	40.0	31.6	7.6	31.8	-	47.4	68.2	20.8	
Hori	11590.000	PK	50.1	40.1	-1.6	33.1	-	55.5	73.9	18.4	
Hori	17385.000	PK	43.4	42.5	0.0	32.6	-	53.3	73.9	20.6	Floor noise
Hori	11590.000	AV	40.1	40.1	-1.6	33.1	1.0	46.5	53.9	7.4	
Hori	17385.000	AV	35.1	42.5	0.0	32.6	-	45.0	53.9	8.9	Floor noise
Vert	5850.000	PK	43.0	31.6	7.6	31.8	-	50.4	122.2	71.8	
Vert	5855.000	PK	42.1	31.6	7.6	31.8	-	49.5	110.8	61.3	
Vert	5860.000	PK	41.9	31.6	7.6	31.8	-	49.3	107.4	58.1	
Vert	5875.000	PK	41.4	31.6	7.6	31.8	-	48.8	105.2	56.4	
Vert	5925.000	PK	40.5	31.6	7.6	31.8	-	47.9	68.2	20.3	
Vert	11590.000	PK	55.4	40.1	-1.6	33.1	-	60.8	73.9	13.1	
Vert	17385.000	PK	43.7	42.5	0.0	32.6	-	53.6	73.9	20.3	Floor noise
Vert	11590.000	AV	43.3	40.1	-1.6	33.1	1.0	49.7	53.9	4.2	
Vert	17385.000	AV	35.2	42.5	0.0	32.6	-	45.1	53.9	8.8	Floor noise

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

Distance factor: 1 GHz - 10 GHz 20log (4.4 m / 3.0 m) = 3.33 dB
 10 GHz - 40 GHz 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

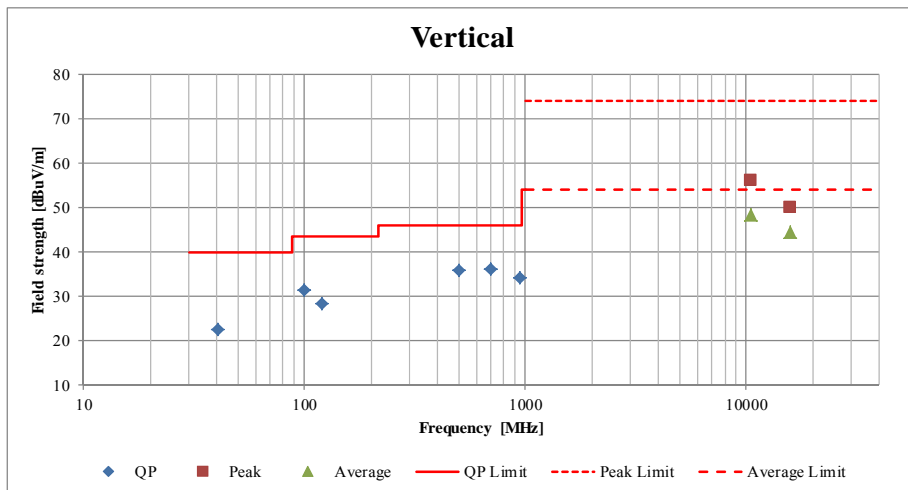
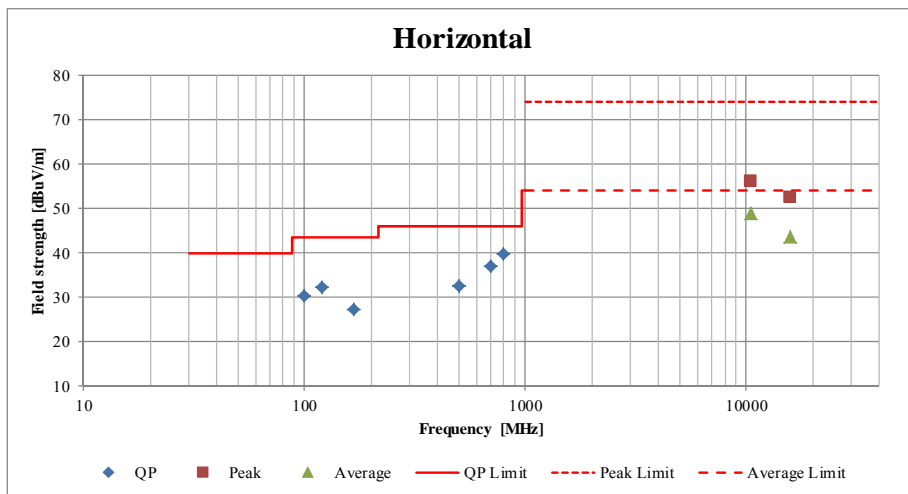
Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11232718H
Date	September 16, 2016
Temperature / Humidity	24deg. C / 64 % RH
Engineer	Yuta Moriya
Mode	Tx 11n-40 5795 MHz



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

Radiated Spurious Emission (Plot data, Worst case)

Test place	Ise EMC Lab. No.3 & No.4 Semi Anechoic Chamber			
Report No.	11232718H			
Date	September 15, 2016	April 6, 2016	April 8, 2016	April 8, 2016
Temperature / Humidity	24deg. C / 64 % RH	22 deg. C / 38 % RH	21 deg. C / 51 % RH	21 deg. C / 51 % RH
Engineer	Takumi Shimada (1 GHz-10 GHz)	Masafumi Niwa (10 GHz-18 GHz)	Takafumi Noguchi (18 GHz-26.5 GHz)	Masafumi Niwa (26.5 GHz-40 GHz) (30 MHz-1000 MHz)
Mode	Tx 11n-20 5260 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)
MAEC-03	Semi Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2015/10/01 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	1301	RE	2016/01/21 * 12
MJM-16	Measure	KOMELON	KMC-36	-	RE	-
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2016/05/29 * 12
MCC-167	Microwave Cable	Junkosha	MWX221	1404S374(1m) / 1405S074(5m)	RE	2016/05/20 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2016/03/24 * 12
MMM-08	DIGITAL HiTESTER	Hioki	3805	051201197	RE	2016/01/13 * 12
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-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	RE	2016/02/24 * 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
MMM-10	DIGITAL HiTESTER	Hioki	3805	051201148	RE	2016/01/18 * 12
MHF-23	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCC	603	RE	2016/01/19 * 12
MCC-178	Microwave Cable	Junkosha	MMX221-00500D MSDMS	1502S305	RE	2016/03/10 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2015/06/06 * 12
MTR-10	EMI Test Receiver	Rohde & Schwarz	ESR26	101408	RE	2016/01/29 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2015/10/11 * 12
MLA-23	Logperiodic Antenna(200-1000MHz)	Schwarzbeck	VUSLP9111B	911B-192	RE	2016/01/30 * 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
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2015/11/06 * 12
MCC-54	Microwave Cable	Suhner	SUCOFLEX101	2873(1m) / 2876(5m)	RE	2016/03/18 * 12
MHA-29	Horn Antenna 26.5-40GHz	ETS LINDGREN	3160-10	00152399	RE	2015/09/04 * 12
MPA-22	Pre Amplifier	MITEQ, Inc	AMF-6F-2600400-3 3-8P / AMF-4F-2600400-3 3-8P	1871355 /1871328	RE	2015/09/03 * 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

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