RADIO TEST REPORT

Test Report No. : 11170944S-B-R1

(Original test report: 11014760S-B-R1)

Applicant	:	**Sony Corporation**
Type of Equipment	:	**Wireless Transceiver Module**
Model No.	:	**BNSY25**
FCC ID	:	**AK8BNSY25**
Test regulation	:	**FCC Part 15 Subpart C: 2015**
Test item	:	**Radiated spurious emission**
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. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. This report is a revised version of 11170944S-B. 11170944S-B is replaced with this report.

Date of test: March 3 to 30, 2016

Representative test engineer:
Yosuke Ishikawa
Engineer
Consumer Technology Division

Approved by:
Toyokazu Imamura
Leader
Consumer Technology Division

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

RTL02610

UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

REVISION HISTORY

Original Test Report No.: 11170944S-B

Revision	Test report No.	Date	Page revised	Contents
- (Original)	11170944S-B	April 18, 2016	-	-
1	11170944S-B-R1	April 27, 2016	1-24	Correction of typo on Test report No.

UL Japan, Inc.
Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN
Telephone : +81 463 50 6400
Facsimile : +81 463 50 6401

CONTENTS **PAGE**

SECTION 1: Customer information

Company Name	:	Sony Global Manufacturing & Operations Corporation
Address	:	8-4 Shiomi Kisarazu-shi, Chiba, 292-0834 Japan
Telephone Number	:	+81-438-37-3982
Contact Person	:	Kazuhiko Nagano

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless Transceiver Module
Model No.	:	BNSY25
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.3 V, DC 2.8 V, DC 1.8 V
Receipt Date of Sample	:	February 22, 2016
Country of Mass-production	:	China, Taiwan
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: BNSY25 (referred to as the EUT in this report) is a Wireless Transceiver Module.
* BNSY25 is Controller IC (MT8591, etc.) and RF front-end part (DHSR-SY25).

General Specification

Clock frequency(ies) in the system	:	26 MHz

Radio Specification

Radio Type	:	Transceiver
Frequency of Operation	:	Wireless LAN part: 2412-2462 MHz, 5180-5320 MHz, 5500-5700 MHz, 5745-5825 MHz Bluetooth part: 2402-2480 MHz
Modulation	:	Wireless LAN part: 2.4 GHz bands: DBPSK, DQPSK, CCK, OFDM 5 GHz bands: OFDM Bluetooth part: BDR (Baisc Data Rate): GFSK EDR (Enhanced Data Rate): π/4-DQPSK, 8DPSK LE (Low Energy mode): GFSK
Antenna type	:	Dipole
Antenna connector	:	MHF4
Antenna Gain	:	2400 - 2483.5 MHz: +1.43 dBi max (include antenna cable 350 mm) 5150 - 5250 MHz: +0.59 dBi max (include antenna cable 350 mm) 5250 - 5350 MHz: -0.33 dBi max (include antenna cable 350 mm) 5470 - 5725 MHz: +0.08 dBi max (include antenna cable 350 mm) 5725 - 5850 MHz: +0.05 dBi max (include antenna cable 350 mm)

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

* Refer to the test reports: 11014760S-A-R1 and 11170944S-A-R1 for FCC 15.247 (Wireless LAN part).
Refer to the test reports: 11014760S-C-R1, 11014760S-D and 11170944S-C-R1 for FCC 15.407.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C: 2015, final revised on November 23, 2015
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

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

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013 6. Standard test methods **IC:** RSS-Gen 8.8	**FCC:** Section 15.207 **IC:** RSS-Gen 8.8	-	-	*1)
Carrier Frequency Separation	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1) **IC:** RSS-247 5.1 (2)		-	*1)
20dB Bandwidth	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1) **IC:** RSS-247 5.1 (1)		-	*1)
Number of Hopping Frequency	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1)(iii) **IC:** RSS-247 5.1 (4)		-	*1)
Dwell time	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1)(iii) **IC:** RSS-247 5.1 (4)		-	*1)
Maximum Peak Output Power	**FCC:** FCC Public Notice DA 00-705 **IC:** RSS-Gen 6.12	**FCC:** Section15.247(a)(b)(1) **IC:** RSS-247 5.4 (2)		-	*1)
Spurious Emission & Band Edge Compliance	**FCC:** FCC Public Notice DA 00-705 **IC:** RSS-Gen 6.13	**FCC:** Section15.247(d) **IC:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	8.1 dB 12400.00 MHz, AV, Vertical (Tx, 3DH5, 2480 MHz)	Complied	Conducted (below 30 MHz) *1)/ Radiated (above 30 MHz) *2)
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422. *1) Refer to the original test report: 11014760S-B-R1. *2) Radiated test was selected over 30 MHz based on section 15.247(d).					

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

FCC Part 15.31 (e)

This EUT is provided the stable voltage (DC 3.3 V, DC 2.8 V, DC 1.8 V) constantly to RF unit regardless of input voltage from PMIC. Therefore, the equipment complies with the requirement.

FCC Part 15.203 / 212

The EUT has a unique coupling/antenna connector. Therefore, the equipment complies with the antenna requirement.

3.3 Addition to standard

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

3.4 Uncertainty

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

Shonan EMC Lab.

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

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

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

3.5 Test Location

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

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

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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

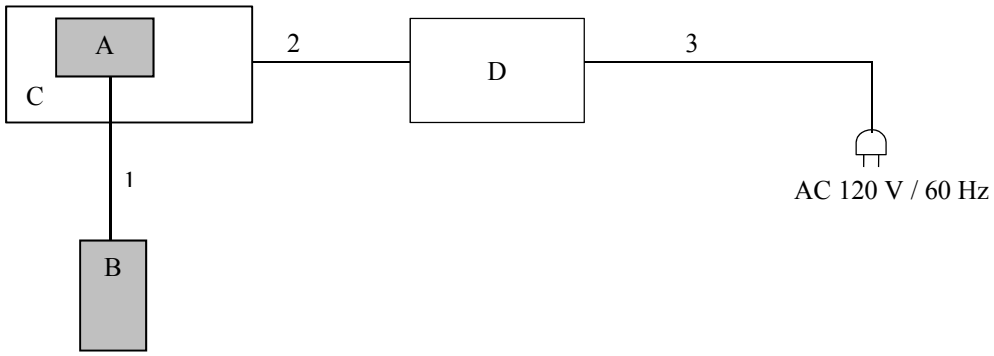
4.1 Operating Mode(s)

Bluetooth (BT): Transmitting (Tx), Payload: PRBS9

Details of Operating Mode(s)

Test Item	Mode	Tested Antenna cable (length)	Tested frequency
Spurious Emission (Radiated)	Tx (Hopping Off) DH5, 3DH5	350 mm	2402 MHz 2441 MHz 2480 MHz
*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload length (except Dwell time test) *2DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3DH mode (3 Mb/s EDR: 8DPSK) as a representative. *EUT has the power settings by the software as follows; Power settings: Fixed Software: MT6625 BT Test Version 0.2 *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.			

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

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless Transceiver Module	BNSY25	0F081530001703 *1) 0F08153000E603 *2)	Front-end: Wistron NeWeb Corporation Control IC: MediaTeK	EUT
B	Antenna	Y121JT008A-X-S	-	WIESON TECHNOLOGIES CO., LTD	EUT
C	Jig board	-	-	Sony	-
D	AC Adaptor	AC-M1208WW	M1521540404	Sony	-

*1) Used in March 3, 5, 6 and 7
*2) Used in March 24 and 30

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Cable (Antenna)	0.35	Shielded	Shielded	-
2	Output cord (AC Adaptor)	1.0	Unshielded	Unshielded	-
3	Power Supply Cord	0.7	Unshielded	Unshielded	-

SECTION 5: Radiated Spurious Emission

Test Procedure

[For below 1 GHz]
EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

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

The height of the measuring antenna varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field strength. The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer. The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Test Antennas are used as below;

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

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

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

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 10 Hz *1)	RBW: 100 kHz VBW: 300 kHz
Test Distance	3 m	3.87 m *2) (below 13 GHz, SVSWR, 1AC), 4.37 m *2) (below 13 GHz, SVSWR, 3AC), 1 m *3) (above 13 GHz)		3.87 m *2) (below 13 GHz, SVSWR, 1AC), 4.37 m *2) (below 13 GHz, SVSWR, 3AC), 1 m *3) (above 13 GHz)

*1) Although DA 00-705 accepts VBW = 10 Hz for AV measurements, it was confirmed that superfluous smoothing was not performed.
*2) Distance Factor: 20 x log (3.87 m/3 m) = 2.2 dB (for 1AC)
Distance Factor: 20 x log (4.37 m/3 m) = 3.2 dB (for 3AC)
*3) Distance Factor: 20 x log (1.0 m/3.0 m) = -9.5 dB

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

	Frequency / Test / Antenna	Carrier	Spurious			
			30 MHz-1 GHz	1-13 GHz	13-18 GHz	18-26 GHz
Module	Horizontal	Z	X	Z	Y	Z
	Vertical	Z	Z	Z	X	Z
Antenna	Horizontal	Y	X	Y	Y	X
	Vertical	Z	X	Z	Y	X

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

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

APPENDIX 1: Test data

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 5, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	27 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	31 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz) (3AC)	Hiroyuki Morikawa (13-18 GHz) (3AC)	Yosuke Ishikawa (18-26.5 GHz) (3AC)	Hiroyuki Morikawa (30-1000 MHz) (1AC)	Hikaru Shirasawa (2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, DH5 2402 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	167.893	QP	33.4	15.6	8.9	31.8	0.0	26.1	43.5	17.4	175	259	
Hori.	225.792	QP	35.3	16.7	9.4	31.7	0.0	29.7	46.0	16.3	146	163	
Hori.	835.588	QP	34.2	21.5	9.3	31.7	0.0	33.3	46.0	12.7	100	341	
Hori.	2390.000	PK	46.1	27.8	13.7	41.0	3.2	49.8	73.9	24.1	145	197	
Hori.	4804.000	PK	49.6	31.3	6.8	41.7	2.2	48.2	73.9	25.7	100	6	
Hori.	7206.000	PK	45.5	36.6	8.2	41.2	2.2	51.3	73.9	22.6	150	0	
Hori.	9608.000	PK	43.7	37.9	9.2	40.1	2.2	52.9	73.9	21.0	150	0	
Hori.	12010.000	PK	44.6	39.6	10.2	39.4	2.2	57.2	73.9	16.7	150	0	
Hori.	2390.000	AV	34.4	27.8	13.7	41.0	3.2	38.1	53.9	15.8	145	197	
Hori.	4804.000	AV	43.6	31.3	6.8	41.7	2.2	42.2	53.9	11.7	100	6	
Hori.	7206.000	AV	35.3	36.6	8.2	41.2	2.2	41.1	53.9	12.8	150	0	
Hori.	9608.000	AV	33.7	37.9	9.2	40.1	2.2	42.9	53.9	11.0	150	0	
Hori.	12010.000	AV	32.3	39.6	10.2	39.4	2.2	44.9	53.9	**9.0**	150	0	
Vert.	67.493	QP	48.9	6.3	7.3	31.8	0.0	30.7	40.0	9.3	100	58	
Vert.	167.902	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	281	
Vert.	225.794	QP	34.7	16.7	9.4	31.7	0.0	29.1	46.0	16.9	100	120	
Vert.	2390.000	PK	46.2	27.8	13.7	41.0	3.2	49.9	73.9	24.0	157	351	
Vert.	4804.000	PK	49.2	31.3	6.8	41.7	2.2	47.8	73.9	26.1	123	124	
Vert.	7206.000	PK	44.2	36.6	8.2	41.2	2.2	50.0	73.9	23.9	150	0	
Vert.	9608.000	PK	43.6	37.9	9.2	40.1	2.2	52.8	73.9	21.1	150	0	
Vert.	12010.000	PK	42.9	39.6	10.2	39.4	2.2	55.5	73.9	18.4	150	0	
Vert.	2390.000	AV	34.3	27.8	13.7	41.0	3.2	38.0	53.9	15.9	157	351	
Vert.	4804.000	AV	43.9	31.3	6.8	41.7	2.2	42.5	53.9	11.4	123	124	
Vert.	7206.000	AV	33.6	36.6	8.2	41.2	2.2	39.4	53.9	14.5	150	0	
Vert.	9608.000	AV	32.0	37.9	9.2	40.1	2.2	41.2	53.9	12.7	150	0	
Vert.	12010.000	AV	32.2	39.6	10.2	39.4	2.2	44.8	53.9	9.1	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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

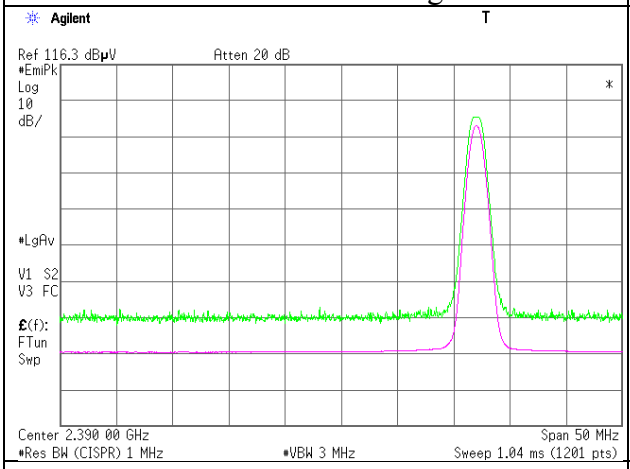
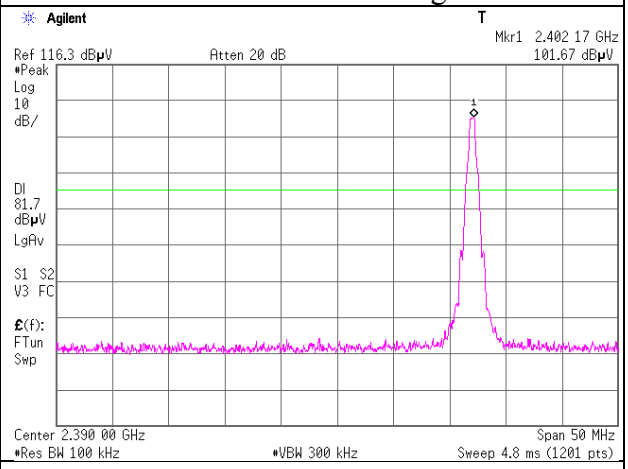
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	101.8	27.8	13.7	41.0	3.2	105.5	-	-	Carrier
Hori.	2400.000	PK	47.2	27.8	13.7	41.0	3.2	50.9	85.5	34.6	
Vert.	2402.000	PK	99.9	27.8	13.7	41.0	3.2	103.6	-	-	Carrier
Vert.	2400.000	PK	44.3	27.8	13.7	41.0	3.2	48.0	83.5	35.5	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

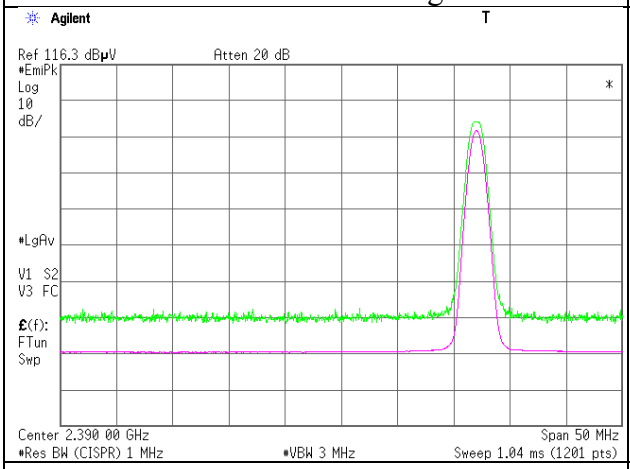
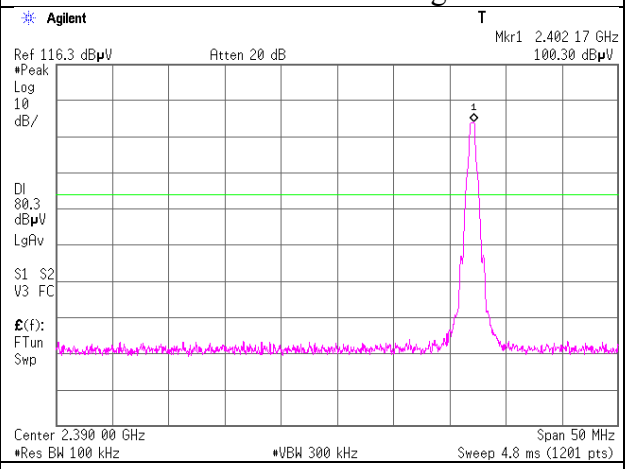
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11170944S-B-R1
Date	March 5, 2016
Temperature / Humidity	27 deg. C / 31 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 5, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	27 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	31 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz) (3AC)	Hiroyuki Morikawa (13-18 GHz) (3AC)	Yosuke Ishikawa (18-26.5 GHz) (3AC)	Hiroyuki Morikawa (30-1000 MHz) (1AC)	Hikaru Shirasawa (2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, DH5 2441 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	171.250	QP	32.6	15.8	8.9	31.8	0.0	25.5	43.5	18.0	174	275	
Hori.	225.789	QP	35.3	16.7	9.4	31.7	0.0	29.7	46.0	16.3	145	165	
Hori.	835.592	QP	34.1	21.5	9.3	31.7	0.0	33.2	46.0	12.8	100	341	
Hori.	4882.000	PK	48.8	31.6	6.9	41.6	2.2	47.9	73.9	26.0	145	184	
Hori.	7323.000	PK	45.8	36.7	8.2	41.3	2.2	51.6	73.9	22.3	150	0	
Hori.	9764.000	PK	44.4	38.0	9.3	40.1	2.2	53.8	73.9	20.1	150	0	
Hori.	12205.000	PK	44.0	39.6	10.2	39.2	2.2	56.8	73.9	17.1	150	0	
Hori.	4882.000	AV	43.2	31.6	6.9	41.6	2.2	42.3	53.9	11.6	145	184	
Hori.	7323.000	AV	33.8	36.7	8.2	41.3	2.2	39.6	53.9	14.3	150	0	
Hori.	9764.000	AV	32.3	38.0	9.3	40.1	2.2	41.7	53.9	12.2	150	0	
Hori.	12205.000	AV	32.1	39.6	10.2	39.2	2.2	44.9	53.9	**9.0**	150	0	
Vert.	67.493	QP	48.9	6.3	7.3	31.8	0.0	30.7	40.0	9.3	100	56	
Vert.	167.887	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	283	
Vert.	225.791	QP	34.6	16.7	9.4	31.7	0.0	29.0	46.0	17.0	100	126	
Vert.	4882.000	PK	48.6	31.6	6.9	41.6	2.2	47.7	73.9	26.2	153	260	
Vert.	7323.000	PK	46.0	36.7	8.2	41.3	2.2	51.8	73.9	22.1	150	0	
Vert.	9764.000	PK	45.6	38.0	9.3	40.1	2.2	55.0	73.9	18.9	150	0	
Vert.	12205.000	PK	43.4	39.6	10.2	39.2	2.2	56.2	73.9	17.7	150	0	
Vert.	4882.000	AV	42.9	31.6	6.9	41.6	2.2	42.0	53.9	11.9	153	260	
Vert.	7323.000	AV	33.9	36.7	8.2	41.3	2.2	39.7	53.9	14.2	150	0	
Vert.	9764.000	AV	32.5	38.0	9.3	40.1	2.2	41.9	53.9	12.0	150	0	
Vert.	12205.000	AV	32.1	39.6	10.2	39.2	2.2	44.9	53.9	**9.0**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 5, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	27 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	31 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz) (3AC)	Hiroyuki Morikawa (13-18 GHz) (3AC)	Yosuke Ishikawa (18-26.5 GHz) (3AC)	Hiroyuki Morikawa (30-1000 MHz) (1AC)	Hikaru Shirasawa (2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, DH5 2480 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	167.971	QP	33.7	15.6	8.9	31.8	0.0	26.4	43.5	17.1	180	272	
Hori.	225.792	QP	35.2	16.7	9.4	31.7	0.0	29.6	46.0	16.4	144	159	
Hori.	835.587	QP	34.2	21.5	9.3	31.7	0.0	33.3	46.0	12.7	100	342	
Hori.	2483.500	PK	48.1	27.9	13.8	41.0	3.2	52.0	73.9	21.9	164	195	
Hori.	4960.000	PK	47.8	31.9	6.9	41.6	2.2	47.2	73.9	26.7	141	11	
Hori.	7440.000	PK	45.7	36.7	8.2	41.3	2.2	51.5	73.9	22.4	150	0	
Hori.	9920.000	PK	44.6	38.1	9.4	40.0	2.2	54.3	73.9	19.6	150	0	
Hori.	12400.000	PK	43.0	39.6	10.2	39.0	2.2	56.0	73.9	17.9	150	0	
Hori.	2483.500	AV	35.6	27.9	13.8	41.0	2.2	38.5	53.9	15.4	164	195	
Hori.	4960.000	AV	42.1	31.9	6.9	41.6	2.2	41.5	53.9	12.4	141	11	
Hori.	7440.000	AV	34.3	36.7	8.2	41.3	2.2	40.1	53.9	13.8	150	0	
Hori.	9920.000	AV	33.3	38.1	9.4	40.0	2.2	43.0	53.9	10.9	150	0	
Hori.	12400.000	AV	32.2	39.6	10.2	39.0	2.2	45.2	53.9	8.7	150	0	
Vert.	67.507	QP	49.0	6.3	7.3	31.8	0.0	30.8	40.0	9.2	100	47	
Vert.	167.933	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	286	
Vert.	225.794	QP	34.7	16.7	9.4	31.7	0.0	29.1	46.0	16.9	100	124	
Vert.	2483.500	PK	47.3	27.9	13.8	41.0	3.2	51.2	73.9	22.7	197	237	
Vert.	4960.000	PK	47.9	31.9	6.9	41.6	2.2	47.3	73.9	26.6	144	347	
Vert.	7440.000	PK	46.1	36.7	8.2	41.3	2.2	51.9	73.9	22.0	150	0	
Vert.	9920.000	PK	44.7	38.1	9.4	40.0	2.2	54.4	73.9	19.5	150	0	
Vert.	12400.000	PK	44.9	39.6	10.2	39.0	2.2	57.9	73.9	16.0	150	0	
Vert.	2483.500	AV	35.2	27.9	13.8	41.0	2.2	38.1	53.9	15.8	197	237	
Vert.	4960.000	AV	41.4	31.9	6.9	41.6	2.2	40.8	53.9	13.1	144	347	
Vert.	7440.000	AV	34.2	36.7	8.2	41.3	2.2	40.0	53.9	13.9	150	0	
Vert.	9920.000	AV	33.3	38.1	9.4	40.0	2.2	43.0	53.9	10.9	150	0	
Vert.	12400.000	AV	32.5	39.6	10.2	39.0	2.2	45.5	53.9	**8.4**	150	0	

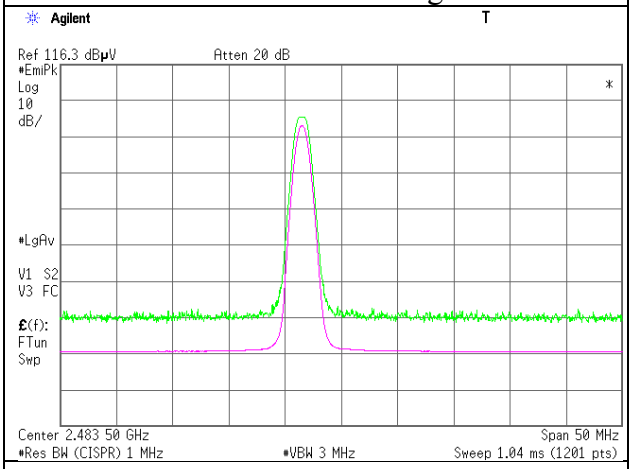
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11170944S-B-R1
Date	March 5, 2016
Temperature / Humidity	27 deg. C / 31 % RH
Engineer	Hiroyuki Morikawa
	(1-2.8 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz

Horizontal

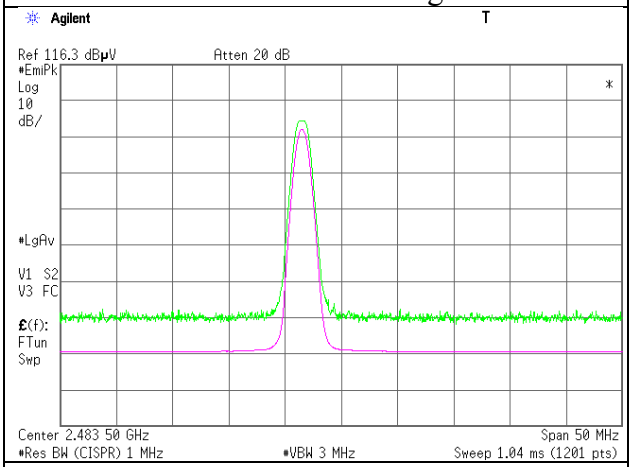
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 5, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	27 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	31 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz) (3AC)	Hiroyuki Morikawa (13-18 GHz) (3AC)	Yosuke Ishikawa (18-26.5 GHz) (3AC)	Hiroyuki Morikawa (30-1000 MHz) (1AC)	Hikaru Shirasawa (2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, 3DH5 2402 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	167.954	QP	33.5	15.6	8.9	31.8	0.0	26.2	43.5	17.3	178	274	
Hori.	225.790	QP	35.2	16.7	9.4	31.7	0.0	29.6	46.0	16.4	144	165	
Hori.	835.589	QP	34.2	21.5	9.3	31.7	0.0	33.3	46.0	12.7	100	341	
Hori.	2390.000	PK	45.7	27.8	13.7	41.0	3.2	49.4	73.9	24.5	149	198	
Hori.	4804.000	PK	49.4	31.3	6.8	41.7	2.2	48.0	73.9	25.9	142	8	
Hori.	7206.000	PK	44.8	36.6	8.2	41.2	2.2	50.5	73.9	23.4	150	0	
Hori.	9608.000	PK	43.7	37.9	9.2	40.1	2.2	52.9	73.9	21.0	150	0	
Hori.	12010.000	PK	43.8	39.6	10.2	39.4	2.2	56.3	73.9	17.6	150	0	
Hori.	2390.000	AV	34.4	27.8	13.7	41.0	3.2	38.1	53.9	15.8	149	198	
Hori.	4804.000	AV	44.1	31.3	6.8	41.7	2.2	42.7	53.9	11.2	142	8	
Hori.	7206.000	AV	33.4	36.6	8.2	41.2	2.2	39.1	53.9	14.8	150	0	
Hori.	9608.000	AV	32.4	37.9	9.2	40.1	2.2	41.6	53.9	12.3	150	0	
Hori.	12010.000	AV	32.4	39.6	10.2	39.4	2.2	45.0	53.9	**8.9**	150	0	
Vert.	67.498	QP	48.9	6.3	7.3	31.8	0.0	30.7	40.0	9.3	100	58	
Vert.	167.921	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	288	
Vert.	225.794	QP	34.6	16.7	9.4	31.7	0.0	29.0	46.0	17.0	100	123	
Vert.	2390.000	PK	46.7	27.8	13.7	41.0	3.2	50.4	73.9	23.5	164	353	
Vert.	4804.000	PK	49.8	31.3	6.8	41.7	2.2	48.4	73.9	25.6	144	118	
Vert.	7206.000	PK	44.6	36.6	8.2	41.2	2.2	50.4	73.9	23.6	150	0	
Vert.	9608.000	PK	43.9	37.9	9.2	40.1	2.2	53.0	73.9	20.9	150	0	
Vert.	12010.000	PK	45.0	39.6	10.2	39.4	2.2	57.6	73.9	16.4	150	0	
Vert.	2390.000	AV	34.2	27.8	13.7	41.0	3.2	37.9	53.9	16.0	164	353	
Vert.	4804.000	AV	44.6	31.3	6.8	41.7	2.2	43.1	53.9	10.8	144	118	
Vert.	7206.000	AV	33.5	36.6	8.2	41.2	2.2	39.3	53.9	14.6	150	0	
Vert.	9608.000	AV	32.5	37.9	9.2	40.1	2.2	41.6	53.9	12.3	150	0	
Vert.	12010.000	AV	32.4	39.6	10.2	39.4	2.2	45.0	53.9	8.9	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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

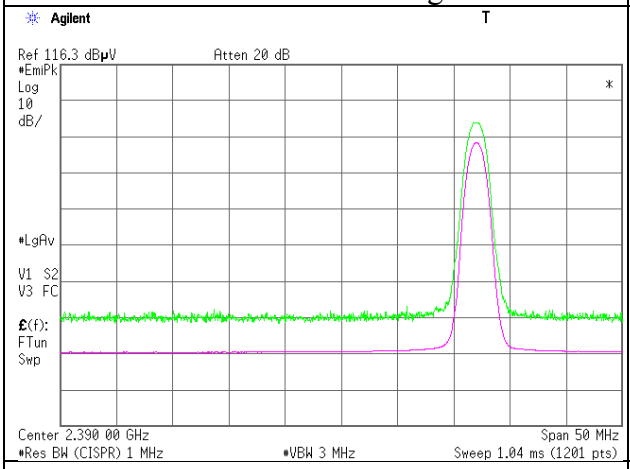
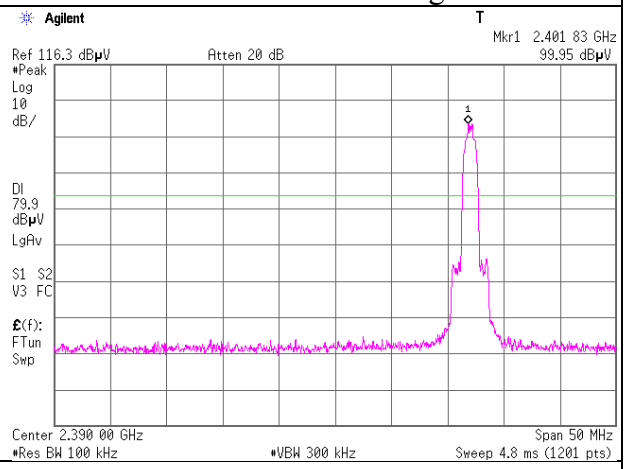
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	99.8	27.8	13.7	41.0	3.2	103.5	-	-	Carrier
Hori.	2400.000	PK	44.0	27.8	13.7	41.0	3.2	47.7	83.5	35.8	
Vert.	2402.000	PK	98.8	27.8	13.7	41.0	3.2	102.5	-	-	Carrier
Vert.	2400.000	PK	42.1	27.8	13.7	41.0	3.2	45.8	82.5	36.7	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

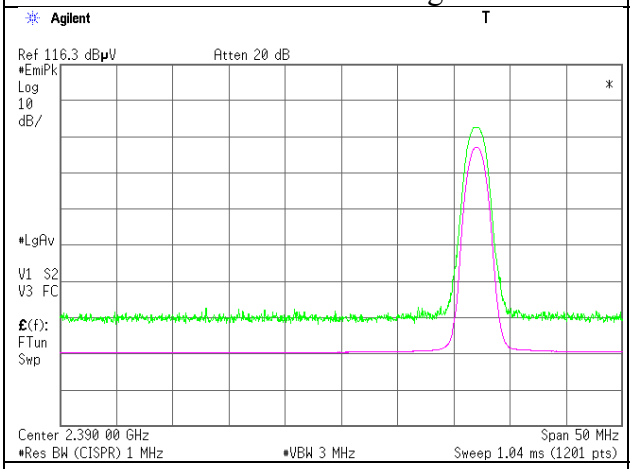
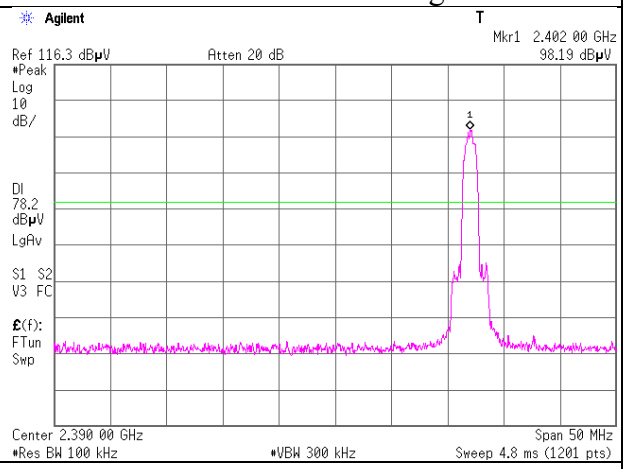
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11170944S-B-R1
Date	March 5, 2016
Temperature / Humidity	27 deg. C / 31 % RH
Engineer	Hiroyuki Morikawa (1-2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 6, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	26 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	28 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Kenichi Adachi	Hiroyuki Morikawa	Yosuke Ishikawa	Hiroyuki Morikawa	Hikaru Shirasawa
	(1-2.8 GHz) (3AC)	(13-18 GHz) (3AC)	(18-26.5 GHz) (3AC)	(30-1000 MHz) (1AC)	(2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, 3DH5 2441 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	167.971	QP	33.4	15.6	8.9	31.8	0.0	26.1	43.5	17.4	180	273	
Hori.	225.791	QP	35.1	16.7	9.4	31.7	0.0	29.5	46.0	16.5	145	161	
Hori.	835.588	QP	34.2	21.5	9.3	31.7	0.0	33.3	46.0	12.7	100	342	
Hori.	4882.000	PK	48.5	31.6	6.9	41.6	2.2	47.6	73.9	26.3	115	11	
Hori.	7323.000	PK	45.9	36.7	8.2	41.3	2.2	51.7	73.9	22.2	150	0	
Hori.	9764.000	PK	44.1	38.0	9.3	40.1	2.2	53.5	73.9	20.4	150	0	
Hori.	12205.000	PK	42.8	39.6	10.2	39.2	2.2	55.6	73.9	18.3	150	0	
Hori.	4882.000	AV	43.6	31.6	6.9	41.6	2.2	42.7	53.9	11.2	115	11	
Hori.	7323.000	AV	34.1	36.7	8.2	41.3	2.2	39.9	53.9	14.0	150	0	
Hori.	9764.000	AV	32.8	38.0	9.3	40.1	2.2	42.2	53.9	11.7	150	0	
Hori.	12205.000	AV	32.1	39.6	10.2	39.2	2.2	44.9	53.9	**9.0**	150	0	
Vert.	67.494	QP	48.8	6.3	7.3	31.8	0.0	30.6	40.0	9.4	100	57	
Vert.	167.911	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	284	
Vert.	225.794	QP	34.7	16.7	9.4	31.7	0.0	29.1	46.0	16.9	100	125	
Vert.	4882.000	PK	48.7	31.6	6.9	41.6	2.2	47.8	73.9	26.1	149	308	
Vert.	7323.000	PK	45.4	36.7	8.2	41.3	2.2	51.2	73.9	22.7	150	0	
Vert.	9764.000	PK	45.5	38.0	9.3	40.1	2.2	54.9	73.9	19.0	150	0	
Vert.	12205.000	PK	43.8	39.6	10.2	39.2	2.2	56.6	73.9	17.3	150	0	
Vert.	4882.000	AV	42.6	31.6	6.9	41.6	2.2	41.7	53.9	12.2	149	308	
Vert.	7323.000	AV	34.3	36.7	8.2	41.3	2.2	40.1	53.9	13.8	150	0	
Vert.	9764.000	AV	32.8	38.0	9.3	40.1	2.2	42.2	53.9	11.7	150	0	
Vert.	12205.000	AV	32.0	39.6	10.2	39.2	2.2	44.8	53.9	9.1	150	0	

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

Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)

13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 6, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature /	26 deg. C /	25 deg. C /	25 deg. C /	25 deg. C /	20 deg. C /
Humidity	28 % RH	45 % RH	37 % RH	45 % RH	28 % RH
Engineer	Kenichi Adachi	Hiroyuki Morikawa	Yosuke Ishikawa	Hiroyuki Morikawa	Hikaru Shirasawa
	(1-2.8 GHz) (3AC)	(13-18 GHz) (3AC)	(18-26.5 GHz) (3AC)	(30-1000 MHz) (1AC)	(2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, 3DH5 2480 MHz				

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	167.972	QP	33.5	15.6	8.9	31.8	0.0	26.2	43.5	17.3	176	273	
Hori.	225.790	QP	35.2	16.7	9.4	31.7	0.0	29.6	46.0	16.4	144	162	
Hori.	835.587	QP	34.2	21.5	9.3	31.7	0.0	33.3	46.0	12.7	100	341	
Hori.	2483.500	PK	48.6	27.9	13.8	41.0	3.2	52.5	73.9	21.4	137	196	
Hori.	4960.000	PK	48.5	31.9	6.9	41.6	2.2	47.9	73.9	26.0	144	175	
Hori.	7440.000	PK	45.8	36.7	8.2	41.3	2.2	51.6	73.9	22.3	100	0	
Hori.	9920.000	PK	44.7	38.1	9.4	40.0	2.2	54.4	73.9	19.5	100	0	
Hori.	12400.000	PK	43.6	39.6	10.2	39.0	2.2	56.6	73.9	17.3	100	0	
Hori.	2483.500	AV	35.8	27.9	13.8	41.0	3.2	39.7	53.9	14.2	137	196	
Hori.	4960.000	AV	42.7	31.9	6.9	41.6	2.2	42.1	53.9	11.8	144	175	
Hori.	7440.000	AV	34.3	36.7	8.2	41.3	2.2	40.1	53.9	13.8	100	0	
Hori.	9920.000	AV	33.7	38.1	9.4	40.0	2.2	43.4	53.9	10.5	100	0	
Hori.	12400.000	AV	32.7	39.6	10.2	39.0	2.2	45.7	53.9	8.2	100	0	
Vert.	67.501	QP	48.9	6.3	7.3	31.8	0.0	30.7	40.0	9.3	100	58	
Vert.	167.935	QP	34.0	15.6	8.9	31.8	0.0	26.7	43.5	16.8	100	285	
Vert.	225.794	QP	34.7	16.7	9.4	31.7	0.0	29.1	46.0	16.9	100	124	
Vert.	2483.500	PK	48.8	27.9	13.8	41.0	3.2	52.7	73.9	21.2	281	353	
Vert.	4960.000	PK	48.4	31.9	6.9	41.6	2.2	47.8	73.9	26.1	147	311	
Vert.	7440.000	PK	46.3	36.7	8.2	41.3	2.2	52.1	73.9	21.8	100	0	
Vert.	9920.000	PK	44.8	38.1	9.4	40.0	2.2	54.5	73.9	19.4	100	0	
Vert.	12400.000	PK	44.2	39.6	10.2	39.0	2.2	57.2	73.9	16.7	100	0	
Vert.	2483.500	AV	35.5	27.9	13.8	41.0	3.2	39.4	53.9	14.5	281	353	
Vert.	4960.000	AV	41.9	31.9	6.9	41.6	2.2	41.3	53.9	12.6	147	311	
Vert.	7440.000	AV	34.6	36.7	8.2	41.3	2.2	40.4	53.9	13.5	100	0	
Vert.	9920.000	AV	33.8	38.1	9.4	40.0	2.2	43.5	53.9	10.4	100	0	
Vert.	12400.000	AV	32.8	39.6	10.2	39.0	2.2	45.8	53.9	**8.1**	100	0	

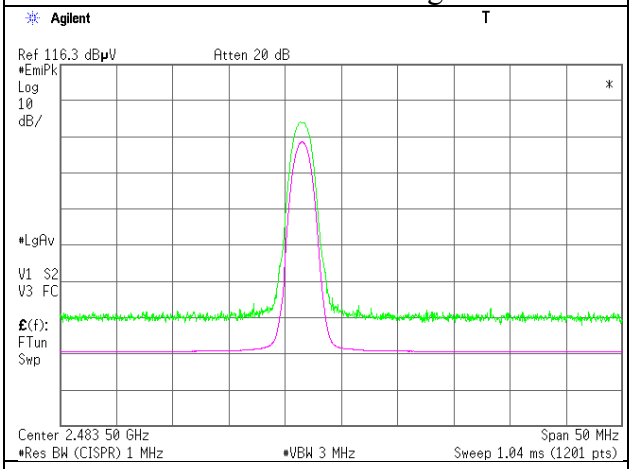
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.35 m / 3.0 m) = 3.2 dB (3AC) / 20log (3.85 m / 3.0 m) = 2.2 dB (1AC)
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11170944S-B-R1
Date	March 5, 2016
Temperature / Humidity	27 deg. C / 31 % RH
Engineer	Hiroyuki Morikawa
	(1-2.8 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz

Horizontal

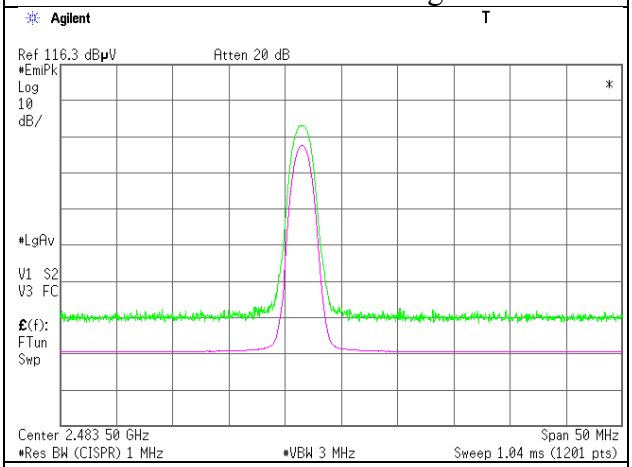
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot

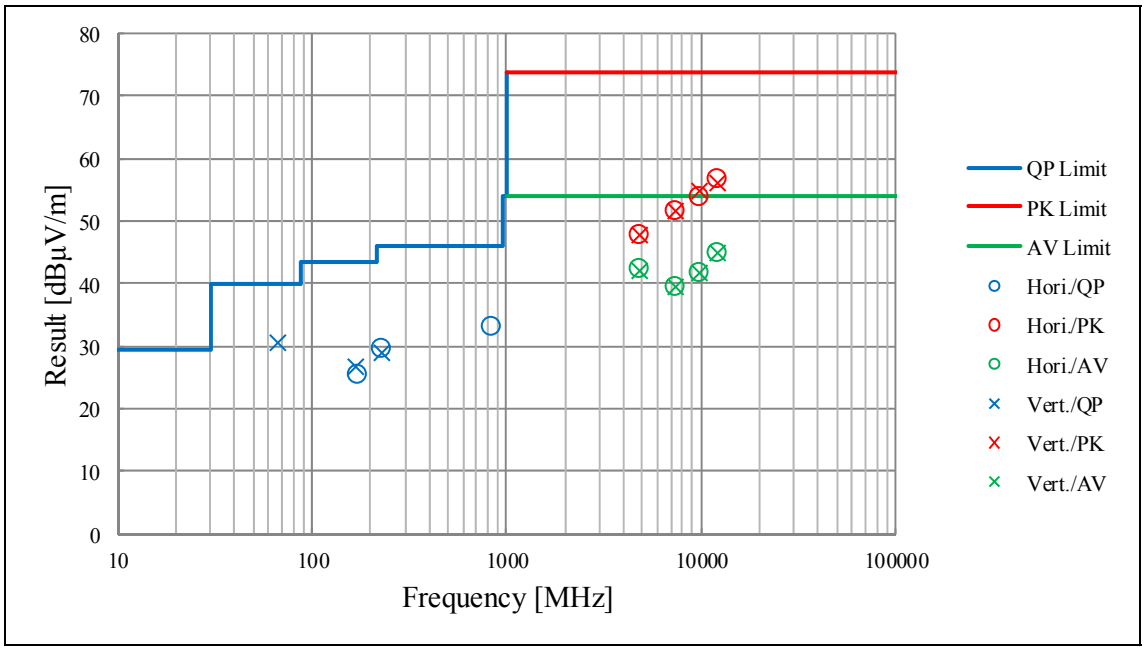


Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.1, 3 Semi Anechoic Chamber				
Report No.	11170944S-B-R1				
Date	March 6, 2016	March 24, 2016	March 30, 2016	March 7, 2016	March 3, 2016
Temperature / Humidity	26 deg. C / 28 % RH	25 deg. C / 45 % RH	25 deg. C / 37 % RH	25 deg. C / 45 % RH	20 deg. C / 28 % RH
Engineer	Kenichi Adachi (1-2.8 GHz) (3AC)	Hiroyuki Morikawa (13-18 GHz) (3AC)	Yosuke Ishikawa (18-26.5 GHz) (3AC)	Hiroyuki Morikawa (30-1000 MHz) (1AC)	Hikaru Shirasawa (2.8-13 GHz) (1AC)
Mode	Tx, Hopping Off, DH5 2441 MHz				



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

APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SAF-04	Pre Amplifier	TOYO Corporation	TPA0118-36	1440489	RE	2016/03/22 * 12
SCC-G01	Coaxial Cable	Suhner	SUCOFLEX 104A	46497/4A	RE	2015/04/17 * 12
SCC-G21	Coaxial Cable	Suhner	SUCOFLEX 104	296169/4	RE	2015/05/19 * 12
SHA-01	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-725	RE	2015/08/10 * 12
SOS-01	Humidity Indicator	A&D	AD-5681	4062555	RE	2015/10/22 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2016/03/28 * 12
SJM-02	Measure	KOMELON	KMC-36	-	RE	-
SAEC-01(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-01(SVSWR)	1	RE	2015/07/08 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI,MF)	-	RE	-
STS-01	Digital Hitester	Hioki	3805-50	080997812	RE	2015/11/18 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2015/11/16 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2015/05/27 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2015/06/08 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2015/05/19 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2015/08/11 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2015/10/22 * 12
SAEC-03(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	RE	2015/08/28 * 12
STS-03	Digital Hitester	Hioki	3805-50	080997823	RE	2015/11/18 * 12
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2015/11/04 * 12
SAF-01	Pre Amplifier	SONOMA	310N	290211	RE	2016/02/19 * 12
KAT6-04	Attenuator	INMET	18N-6dB	-	RE	2015/12/18 * 12
SAT3-09	Attenuator	JFW	50HF-003N	-	RE	2015/08/31 * 12
SBA-01	Biconical Antenna	Schwarzbeck	BBA9106	91032664	RE	2015/10/11 * 12
SCC-A1/A3/A5/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	RE	2015/04/17 * 12
SCC-A2/A4/A6/A7/A8/A13/SRSE-01	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	RE	2015/04/17 * 12
SLA-01	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0888	RE	2015/10/11 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	RE	2015/11/06 * 12
SAEC-01(NSA)	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	RE	2015/07/13 * 12
SJM-16	Measure	ASKUL	-	-	RE	-
SHA-05	Horn Antenna	ETS LINDGREN	3160-09	LM4210	RE	2015/03/17 * 12
SAF-09	Pre Amplifier	TOYO Corporation	HAP18-26W	00000018	RE	2015/09/07 * 12
SCC-G20	Coaxial Cable	Junkosha	J12J102518-00	APR-15-15-003	RE	2015/04/30 * 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