RADIO TEST REPORT

Test Report No. : 10724035H-B-R2

Applicant	:	**Sony Computer Entertainment Inc.**
Type of Equipment	:	**Computer Entertainment System**
Model No.	:	**CUH-1215A**
FCC ID	:	**AK8CUH120W1**
Test regulation	:	**FCC Part 15 Subpart C: 2015** ***Bluetooth Part**
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 10724035H-B-R1. 10724035H-B-R1 is replaced with this report.

Date of test: March 19 to 25, 2015

Representative test engineer:
T. Shimada
Takumi Shimada
Engineer
Consumer Technology Division

Approved by:
M. Nishiyama
Masanori Nishiyama
Manager
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://www.ul.com/japan/jpn/pages/services/emc/about/mark1/index.jsp#nvlap

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REVISION HISTORY

Original Test Report No.: 10724035H-B

Revision	Test report No.	Date	Page revised	Contents
- (Original)	10724035H-B	April 15, 2015	-	-
1	10724035H-B-R1	April 27, 2015	P30	Correction of test data for Maximum Peak Output Power.
1	10724035H-B-R1	April 27, 2015	P31	Correction of test data for Average Output Power.
2	10724035H-B-R2	April 30, 2015	P6	Correction of Remarks for Spurious Emission & Band Edge Compliance test.

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SECTION 1: Customer information

Company Name	Sony Computer Entertainment Inc.
Brand Name	SONY
Address	1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan
Telephone Number	+81-3-6748-6333
Facsimile Number	+81-3-6748-6383
Contact Person	Kiyoto Sasaki

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

2.1 Identification of E.U.T.

Type of Equipment	Computer Entertainment System
Model No	CUH-1215A
Serial No	Refer to Clause 4.2
Country of Manufacture	China/Japan
Receipt Date of Sample	March 12, 2015
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

CUH-1215A is the Computer Entertainment System.

List of Model No.:

Model No.	Product Name	HDD capacity
CUH-1215A*	Computer Entertainment System	500GB
CUH-1215B	Computer Entertainment System	1TB

*Tested model

Product Specification

Maximum clock frequency in the system	2.75GHz
Clock frequency in the system (radio part)	40MHz
Operating Temperature	5-35 deg. C
Power Supply	AC 100-240V, 50Hz/60Hz
Size	275 x 53x 305 mm
Weight	Approx. 2.5kg

Radio Specification

WLAN (IEEE802.11b/g/n-20)

Equipment Type	Transceiver
Frequency of Operation	2412-2462MHz
Type of Modulation	DSSS, OFDM
Bandwidth & Channel spacing	Less than 20MHz & 5MHz
Method of frequency generation	Synthesizer
Power Supply (inner)	DC 3.3V/1.8V
Antenna Type	IFA (Antenna A/B)
Antenna Gain: G_{ANT}	4.0dBi (Antenna A/B)
Directional Gain	7.01dBi (Antenna A/B)

Bluetooth (BDR/EDR)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	FHSS (GFSK, π/4DQPSK, 8DPSK)
Bandwidth & Channel spacing	79MHz & 1MHz
Method of frequency generation	Synthesizer
Power Supply (inner)	DC 3.3V/1.8V
Antenna Type	PIFA
Antenna Gain	5.6dBi (peak)

Bluetooth (Low Energy)

Equipment Type	Transceiver
Frequency of Operation	2402-2480MHz
Type of Modulation	GFSK
Bandwidth & Channel spacing	1MHz & 2MHz
Method of frequency generation	Synthesizer
Power Supply (inner)	DC 3.3V/1.8V
Antenna Type	PIFA
Antenna Gain	5.6dBi (peak)

This test report applies to Bluetooth (BDR/EDR).

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C: 2015, final revised on January 21, 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

* The EUT complies with FCC Part 15 Subpart B: 2015, final revised on January 21, 2015.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.4:2009 7. AC powerline conducted emission measurements **IC:** RSS-Gen 8.8	**FCC:** Section 15.207 **IC:** RSS-Gen 8.8	**QP** 6.9dB 0.15116MHz, L **AV** 8.3dB 0.18988MHz, N / 0.19039MHz, L / 0.19033MHz, N / 0.19072MHz, L	Complied	-
Carrier Frequency Separation	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1) **IC:** RSS-210 A8.1 (b)	See data.	Complied	Conducted
20dB Bandwidth	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1) **IC:** RSS-210 A8.1 (a)		Complied	Conducted
Number of Hopping Frequency	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1)(iii) **IC:** RSS-210 A8.1 (d)		Complied	Conducted
Dwell time	**FCC:** FCC Public Notice DA 00-705 **IC:** -	**FCC:** Section15.247(a)(1)(iii) **IC:** RSS-210 A8.1 (d)		Complied	Conducted
Maximum Peak Output Power	**FCC:** FCC Public Notice DA 00-705 **IC:** RSS-Gen 6.12	**FCC:** Section15.247(a)(b)(1) **IC:** RSS-210 A8.4 (2)		Complied	Conducted
Spurious Emission & Band Edge Compliance	**FCC:** FCC Public Notice DA 00-705 **IC:** RSS-Gen 6.13	**FCC:** Section15.247(d) **IC:** RSS-210 A8.5 RSS-Gen 8.9 RSS-Gen 8.10	2.2dB 742.489MHz, QP, Vert./Hori. 742.475MHz, QP, Vert.	Complied	Conducted (below 30MHz)/ Radiated (above 30MHz)
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.					

* In case any questions arise about test procedure, ANSI C63.4: 2009 is also referred.

FCC 15.31 (e)
This EUT provides stable voltage (DC 3.3V/1.8V) constantly to RF Part regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99% Occupied Bandwidth	**IC:** RSS-Gen 6.6	**IC:** -	N/A	-	Conducted

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

3.4 Uncertainty

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

Test room (semi-anechoic chamber)	**Conducted emission (±dB)**
	150kHz-30MHz
No.1	3.5dB
No.2	3.5dB
No.3	3.4dB
No.4	3.5dB

Test room (semi-anechoic chamber)	**Radiated emission**						
	(3m*)(±dB)				**(1m*)(±dB)**		**(0.5m*)(±dB)**
	9kHz -30MHz	30MHz -300MHz	300MHz -1GHz	1GHz -10GHz	10GHz -18GHz	18GHz -26.5GHz	26.5GHz -40GHz
No.1	4.3dB	5.5dB	6.3dB	5.5dB	5.8dB	5.8dB	4.3dB
No.2	4.2dB	5.4dB	6.3dB	5.4dB	5.7dB	5.9dB	5.6dB
No.3	4.4dB	5.4dB	6.4dB	5.2dB	5.5dB	5.8dB	5.5dB
No.4	4.7dB	5.6dB	6.4dB	5.3dB	5.7dB	5.9dB	5.5dB

*3m/1m/0.5m = Measurement distance

Power meter (±dB)	
Below 1GHz	Above 1GHz
0.7dB	1.5dB

Antenna terminal conducted emission and Power density (±dB)			**Antenna terminal conducted emission (±dB)**		**Channel power (±dB)**
Below 1GHz	1GHz-3GHz	3GHz-18GHz	18GHz-26.5GHz	26.5GHz-40GHz	
1.5dB	1.7dB	2.8dB	2.8dB	2.9dB	2.6dB

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

Radiated emission test (3m)
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

3.5 Test Location

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	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	2973C-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	2973C-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
No.4 shielded room	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi-anechoic chamber	-	6.0 x 6.0 x 3.9m	6.0 x 6.0m	-
No.6 shielded room	-	4.0 x 4.5 x 2.7m	4.0 x 4.5 m	-
No.6 measurement room	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
No.7 shielded room	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	3.1 x 5.0 x 2.7m	N/A	-
No.9 measurement room	-	8.0 x 4.6 x 2.8m	2.4 x 2.4m	-
No.11 measurement room	-	6.2 x 4.7 x 3.0m	4.8 x 4.6m	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 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)

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

Details of Operating Mode(s)

Test Item	Mode	Tested frequency
Conducted Emission *1) Spurious Emission (Conducted/Radiated *1))	Tx (Hopping off) DH5, 3DH5	2402MHz 2441MHz 2480MHz
20dB Bandwidth	Tx (Hopping off) DH5, 3DH5 Inquiry	2402MHz 2441MHz 2480MHz
Maximum Peak Output Power	Tx (Hopping off) DH5, 2DH5, 3DH5 Inquiry	2402MHz 2441MHz 2480MHz
Number of Hopping Frequency Carrier Frequency Separation	Tx (Hopping on) DH5, 3DH5 Inquiry	-
Dwell time	Tx (Hopping on), -DH1, DH3, DH5 -3DH1, 3DH3, 3DH5 Inquiry	-
Band Edge Compliance (Conducted)	Tx DH5, 3DH5 -Hopping on -Hopping off	2402MHz 2480MHz
99% Occupied Bandwidth	Tx DH5, 3DH5 -Hopping on -Hopping off Inquiry	2402MHz 2441MHz 2480MHz

*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: Same as production model
Software: COpro_DOS_Labtool_Ver2.0.0.68
*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.
*1) The test was performed for both of Power Supply: Chicony and DELTA.

4.2 Configuration and peripherals

This page has been submitted for a separate exhibit.

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber .
The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

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

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

SECTION 6: Radiated Spurious Emission

Test Procedure
EUT was placed on a urethane platform of nominal size, 1.0m by 1.5m, raised 0.8m above the conducting ground plane.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.
The height of the measuring antenna varied between 1 and 4m 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	30MHz to 300MHz	300MHz to 1GHz	Above 1GHz
Antenna Type	Biconical	Logperiodic	Horn

In any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

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

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

- The carrier level and noise levels were confirmed at each position of X and Y axes of EUT 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 : 30M-25GHz
Test data : APPENDIX
Test result : Pass

SECTION 7: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used
20dB Bandwidth	3MHz	30kHz	100kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99% Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5% of OBW	Three times of RBW	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak Average *2)	-	Power Meter (Sensor: 50MHz BW)
Carrier Frequency Separation	5MHz or 3MHz	100kHz or 30kHz	300kHz or 100kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30MHz	300kHz	1MHz	Auto	Peak	Max Hold	Spectrum Analyzer
Dwell Time	Zero Span	100kHz, 1MHz	300kHz, 3MHz	As necessary capture the entire dwell time per hopping channel	Peak	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *3)	9kHz to 150kHz	200Hz	620Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150kHz to 30MHz	9.1kHz	27kHz				
	30MHz to 25GHz (Less or equal to 5GHz)	100kHz	300kHz				
Conducted Spurious Emission Band Edge compliance	10MHz	100kHz	300kHz	Auto	Peak	Max Hold	Spectrum Analyzer

*1) Peak hold was applied as Worst-case measurement.
*2) Reference data
*3) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.(9kHz-150kHz:RBW=200Hz, 150kHz-30MHz:RBW=9.1kHz)

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

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Conducted Emission

(Power Supply: Chicony)

DATA OF CONDUCTED EMISSION TEST

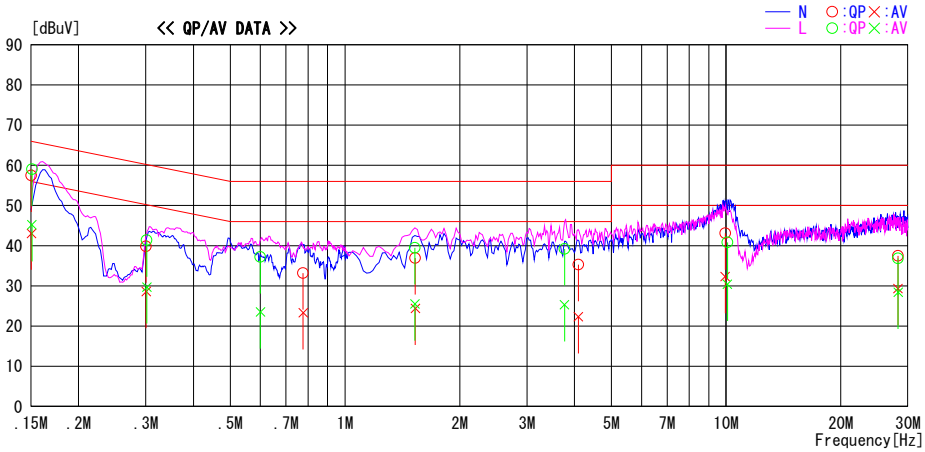
UL Japan, Inc. Ise EMC Lab. No.3 Semi Anechoic Chamber
Date: 2015/03/25

Report No. : 10724035H

Temp./Humi. : 18deg. C / 32% RH
Engineer : Takafumi Noguchi

Mode / Remarks : Tx DH5 2441MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.15040	44.3	29.9	13.2	57.5	43.1	66.0	56.0	8.5	12.9	N
0.30054	26.5	15.3	13.3	39.8	28.6	60.2	50.2	20.4	21.6	N
0.77632	19.9	10.0	13.3	33.2	23.3	56.0	46.0	22.8	22.7	N
1.52961	23.5	11.0	13.4	36.9	24.4	56.0	46.0	19.1	21.6	N
4.09446	21.7	8.7	13.6	35.3	22.3	56.0	46.0	20.7	23.7	N
9.94561	29.1	18.3	14.0	43.1	32.3	60.0	50.0	16.9	17.7	N
28.23496	22.6	14.4	14.9	37.5	29.3	60.0	50.0	22.5	20.7	N
0.15082	45.8	32.0	13.2	59.0	45.2	66.0	56.0	7.0	10.8	L
0.30184	28.1	16.4	13.3	41.4	29.7	60.2	50.2	18.8	20.5	L
0.59967	23.9	10.2	13.3	37.2	23.5	56.0	46.0	18.8	22.5	L
1.52616	26.1	12.1	13.4	39.5	25.5	56.0	46.0	16.5	20.5	L
3.76471	25.6	11.7	13.6	39.2	25.3	56.0	46.0	16.8	20.7	L
10.07204	26.8	16.4	14.0	40.8	30.4	60.0	50.0	19.2	19.6	L
28.26388	21.9	13.5	14.9	36.8	28.4	60.0	50.0	23.2	21.6	L

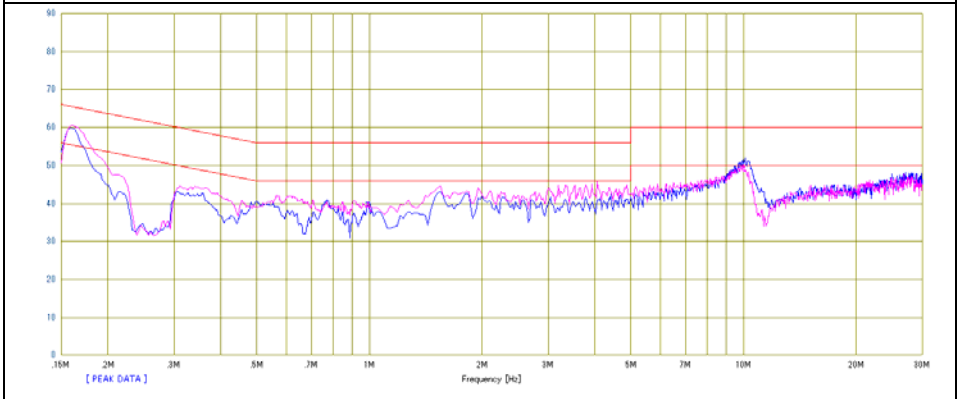
CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT=READING+C.F(LISN LOSS+ATT LOSS +CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

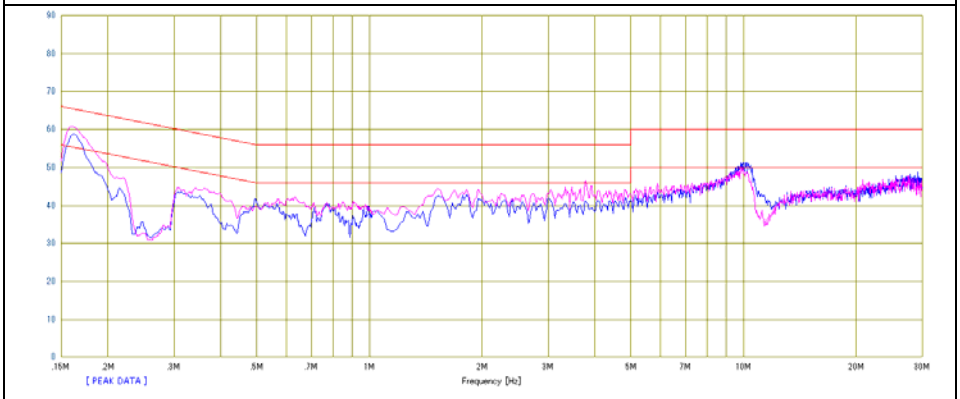
(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10724035H
Date	03/25/2015
Temperature/ Humidity	18deg. C / 32% RH
Engineer	Takafumi Noguchi
Mode	Tx DH5

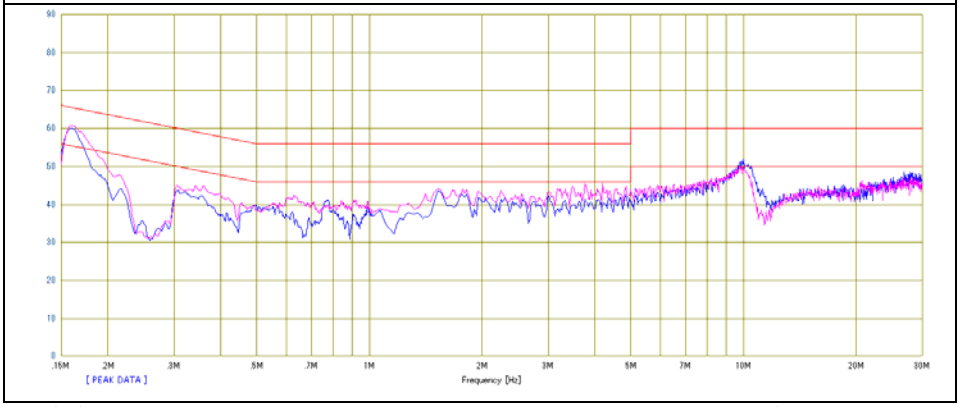
2402MHz



2441MHz



2480MHz



Y scale [dBuV] Chart — N — L

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Conducted Emission
(Power Supply: Chicony)

DATA OF CONDUCTED EMISSION TEST

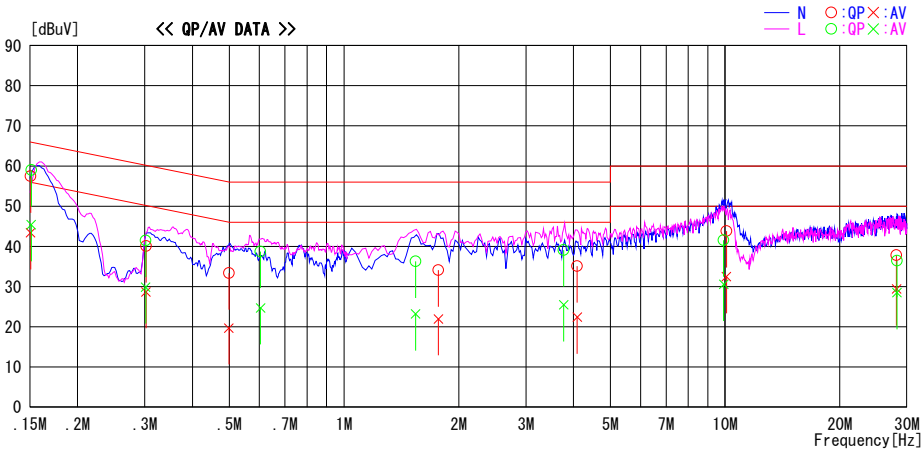
UL Japan, Inc. Ise EMC Lab. No.3 Semi Anechoic Chamber
Date: 2015/03/25

Report No. :10724035H

Temp./Humi. : 18deg. C / 32% RH
Engineer : Takafumi Noguchi

Mode / Remarks : Tx 3DH5 2441MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.15048	44.3	30.2	13.2	57.5	43.4	66.0	56.0	8.5	12.6	N
0.30219	26.8	15.4	13.3	40.1	28.7	60.2	50.2	20.1	21.5	N
0.49875	20.1	6.4	13.3	33.4	19.7	56.0	46.0	22.6	26.3	N
1.76794	20.7	8.6	13.4	34.1	22.0	56.0	46.0	21.9	24.0	N
4.09192	21.5	8.8	13.6	35.1	22.4	56.0	46.0	20.9	23.6	N
10.07876	29.8	18.5	14.0	43.8	32.5	60.0	50.0	16.2	17.5	N
28.15056	22.9	14.5	14.9	37.8	29.4	60.0	50.0	22.2	20.6	N
0.15116	45.8	32.2	13.2	59.0	45.4	65.9	55.9	6.9	10.5	L
0.30178	28.2	16.6	13.3	41.5	29.9	60.2	50.2	18.7	20.3	L
0.60365	25.4	11.4	13.3	38.7	24.7	56.0	46.0	17.3	21.3	L
1.54096	22.9	9.8	13.4	36.3	23.2	56.0	46.0	19.7	22.8	L
3.76872	25.5	11.9	13.6	39.1	25.5	56.0	46.0	16.9	20.5	L
9.91600	27.6	16.6	14.0	41.6	30.6	60.0	50.0	18.4	19.4	L
28.23112	21.6	13.6	14.9	36.5	28.5	60.0	50.0	23.5	21.5	L

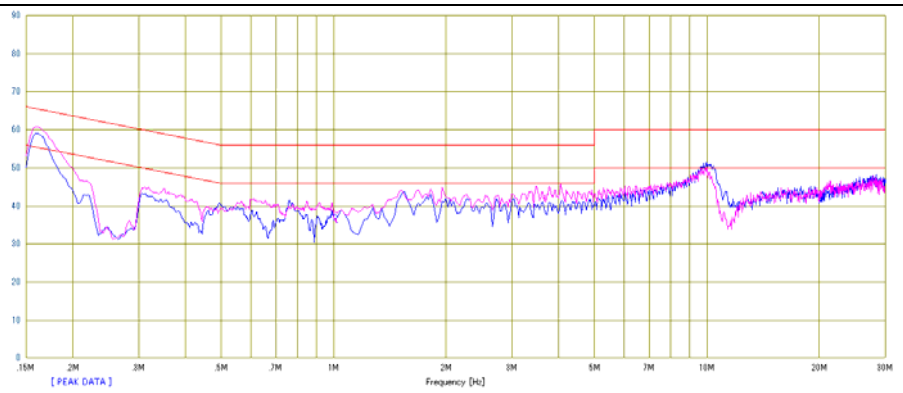
CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT=READING+C.F(LISN LOSS+ATT LOSS +CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

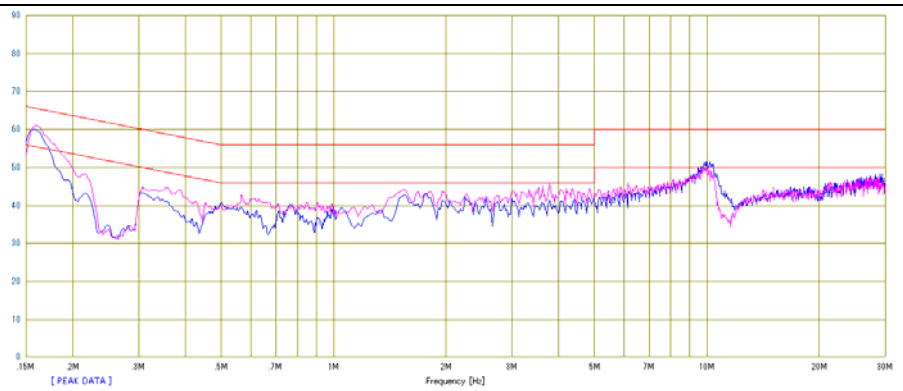
(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10724035H
Date	03/25/2015
Temperature/ Humidity	18deg. C / 32% RH
Engineer	Takafumi Noguchi
Mode	Tx 3DH5

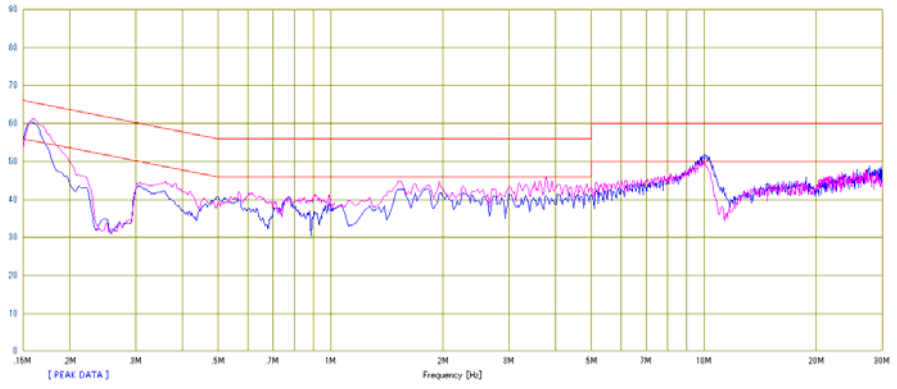
2402MHz



2441MHz



2480MHz



Y scale [dBuV] Chart — N — L

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Conducted Emission
(Power Supply: DELTA)

DATA OF CONDUCTED EMISSION TEST

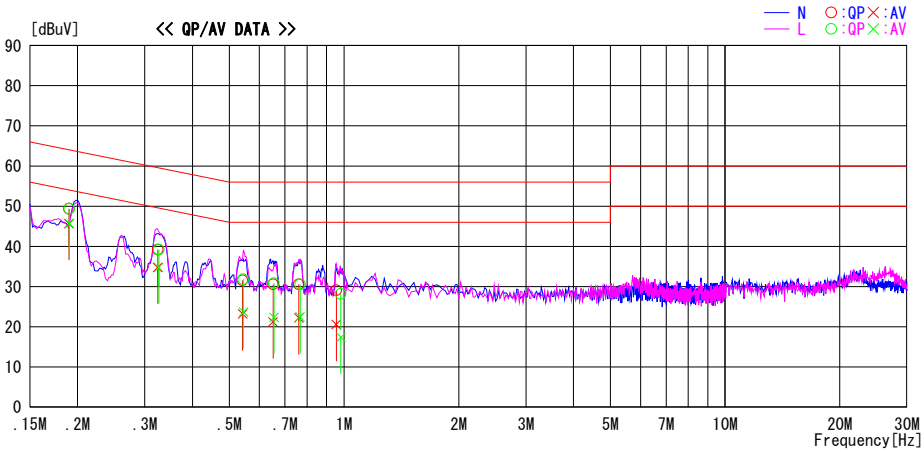
UL Japan, Inc. Ise EMC Lab. No.3 Semi Anechoic Chamber
Date: 2015/03/25

Report No. : 10724035H

Temp./Humi. : 18deg. C / 32% RH
Engineer : Takafumi Noguchi

Mode / Remarks : Tx DH5 2441MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



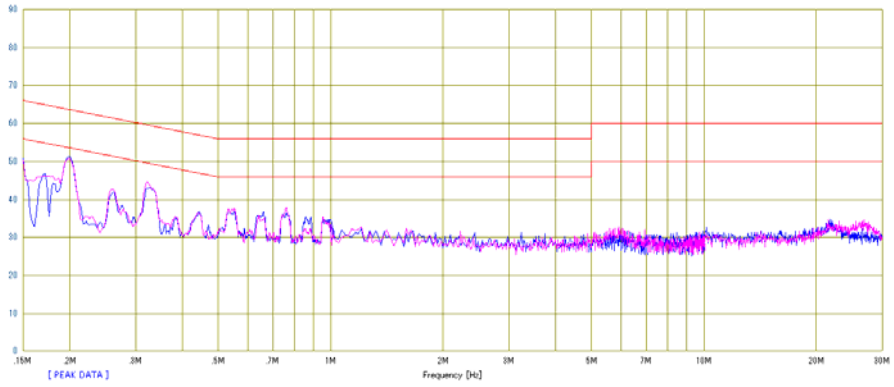
Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.18988	36.2	32.5	13.2	49.4	45.7	64.0	54.0	14.6	8.3	N
0.32444	25.9	21.5	13.3	39.2	34.8	59.6	49.6	20.4	14.8	N
0.54202	18.3	9.9	13.3	31.6	23.2	56.0	46.0	24.4	22.8	N
0.65168	17.3	7.9	13.3	30.6	21.2	56.0	46.0	25.4	24.8	N
0.76165	17.3	8.9	13.3	30.6	22.2	56.0	46.0	25.4	23.8	N
0.95440	15.8	7.3	13.3	29.1	20.6	56.0	46.0	26.9	25.4	N
0.19039	36.2	32.5	13.2	49.4	45.7	64.0	54.0	14.6	8.3	L
0.32645	25.9	21.5	13.3	39.2	34.8	59.5	49.5	20.3	14.7	L
0.54411	18.5	10.4	13.3	31.8	23.7	56.0	46.0	24.2	22.3	L
0.65532	17.5	9.0	13.3	30.8	22.3	56.0	46.0	25.2	23.7	L
0.76722	17.3	9.2	13.3	30.6	22.5	56.0	46.0	25.4	23.5	L
0.98162	14.9	4.1	13.3	28.2	17.4	56.0	46.0	27.8	28.6	L

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT=READING+C.F(LISN LOSS+ATT LOSS +CABLE LOSS)
Except for the above table : adequate margin data below the limits.

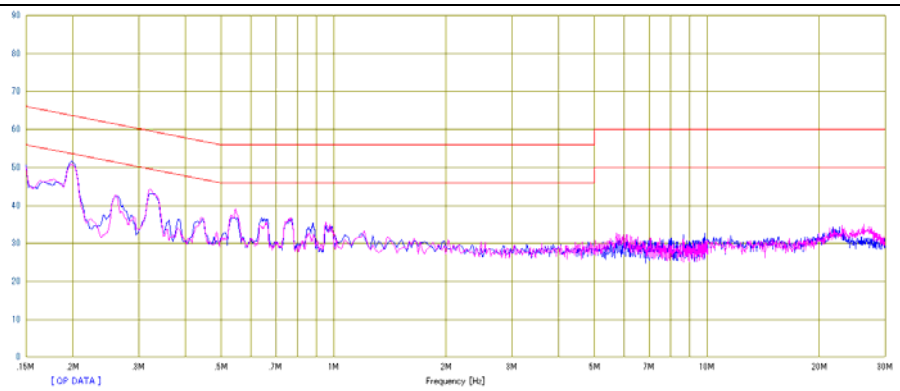
Conducted Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10724035H
Date	03/25/2015
Temperature/ Humidity	18deg. C / 32% RH
Engineer	Takafumi Noguchi
Mode	Tx DH5

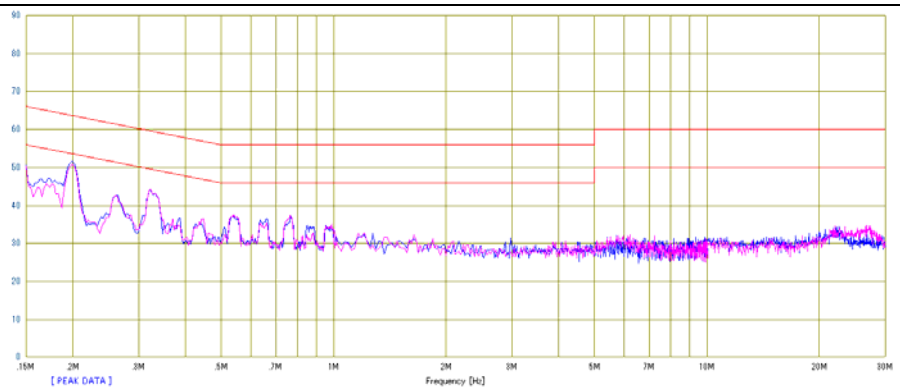
2402MHz



2441MHz



2480MHz



Y scale [dBuV] Chart — N — L

Conducted Emission
(Power Supply: DELTA)

DATA OF CONDUCTED EMISSION TEST

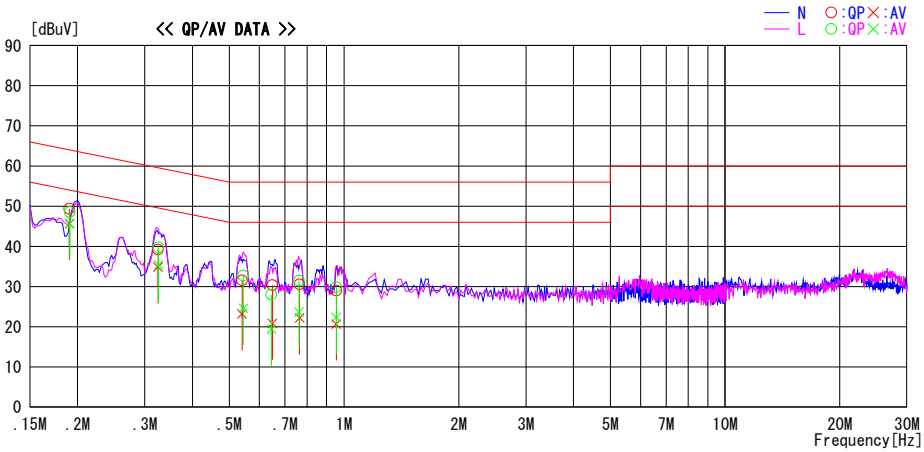
UL Japan, Inc. Ise EMC Lab. No.3 Semi Anechoic Chamber
Date: 2015/03/25

Report No. : 10724035H

Temp./Humi. : 18deg. C / 32% RH
Engineer : Takafumi Noguchi

Mode / Remarks : Tx 3DH5 2441MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.19033	36.2	32.5	13.2	49.4	45.7	64.0	54.0	14.6	8.3	N
0.32502	25.9	21.6	13.3	39.2	34.9	59.6	49.6	20.4	14.7	N
0.54022	18.3	9.9	13.3	31.6	23.2	56.0	46.0	24.4	22.8	N
0.64882	17.1	7.6	13.3	30.4	20.9	56.0	46.0	25.6	25.1	N
0.76458	17.3	8.9	13.3	30.6	22.2	56.0	46.0	25.4	23.8	N
0.95496	15.7	7.4	13.3	29.0	20.7	56.0	46.0	27.0	25.3	N
0.19072	35.4	32.5	13.2	48.6	45.7	64.0	54.0	15.4	8.3	L
0.32614	26.4	22.1	13.3	39.7	35.4	59.5	49.5	19.8	14.1	L
0.54446	19.4	11.3	13.3	32.7	24.6	56.0	46.0	23.3	21.4	L
0.64508	14.7	6.1	13.3	28.0	19.4	56.0	46.0	28.0	26.6	L
0.76193	18.2	10.4	13.3	31.5	23.7	56.0	46.0	24.5	22.3	L
0.95443	16.5	9.0	13.3	29.8	22.3	56.0	46.0	26.2	23.7	L

CHART:WITH FACTOR,Peak hold data. CALCULATION:RESULT=READING+C.F(LISN LOSS+ATT LOSS +CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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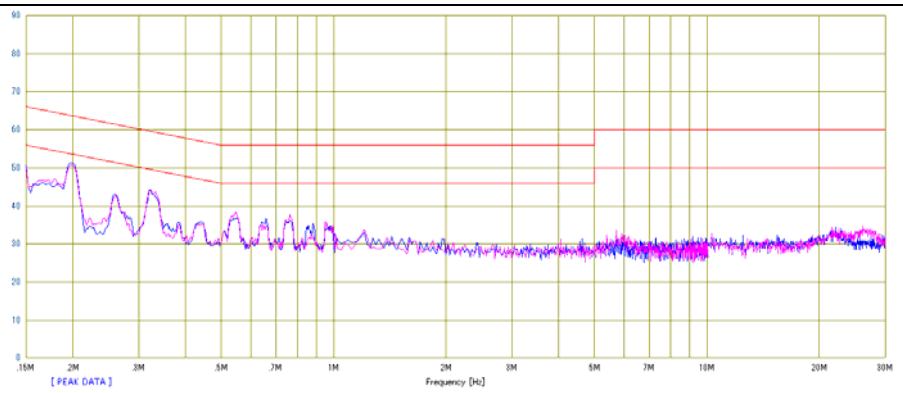
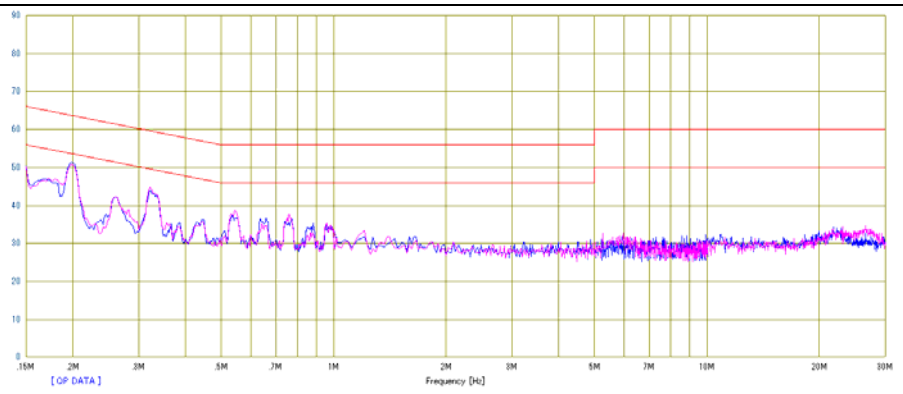
Conducted Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber
Report No.	10724035H
Date	03/25/2015
Temperature/ Humidity	18deg. C / 32% RH
Engineer	Takafumi Noguchi
Mode	Tx 3DH5

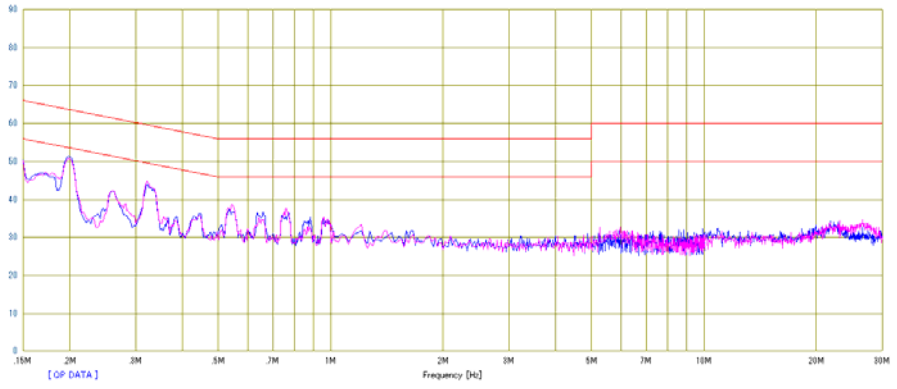
2402MHz



2441MHz



2480MHz



Y scale [dBuV] Chart — N — L

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20dB Bandwidth and Carrier Frequency Separation

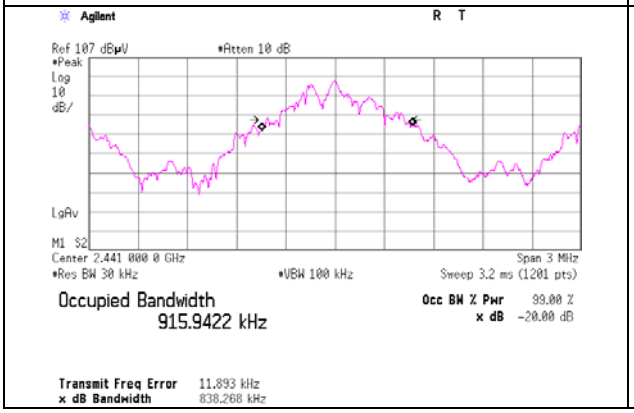
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.956	1.000	>= 0.637
DH5	2441.0	0.956	1.000	>= 0.637
DH5	2480.0	0.956	1.000	>= 0.637
3DH5	2402.0	1.298	1.000	>= 0.865
3DH5	2441.0	1.303	1.000	>= 0.869
3DH5	2480.0	1.301	1.000	>= 0.867
Inquiry	2441.0	0.838	2.000	>= 0.559

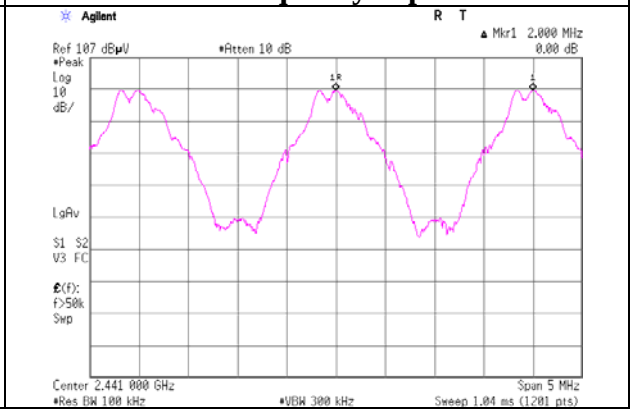
Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).
No limit applies to 20dB Bandwidth.

Inquiry

20dB Bandwidth



Carrier Frequency Separation



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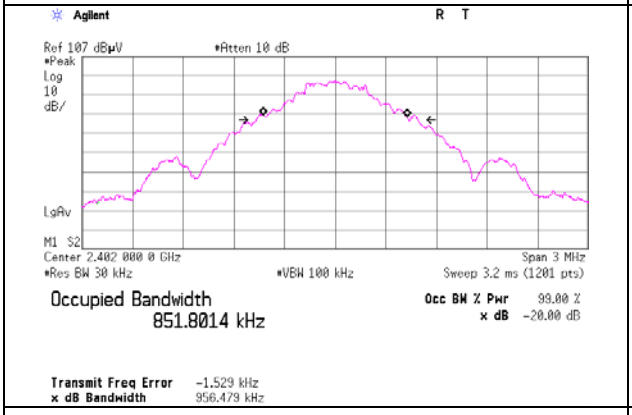
20dB Bandwidth and Carrier Frequency Separation

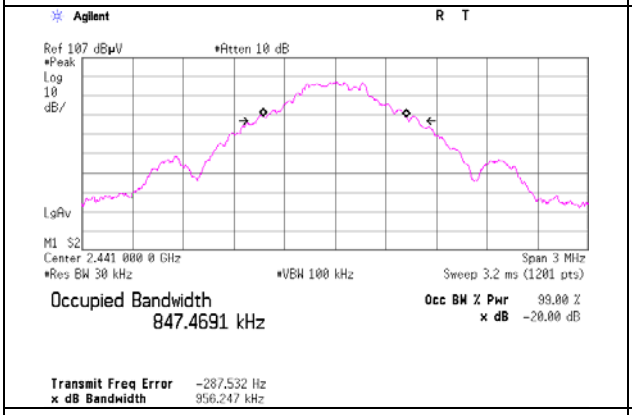
Tx DH5

20dB Bandwidth

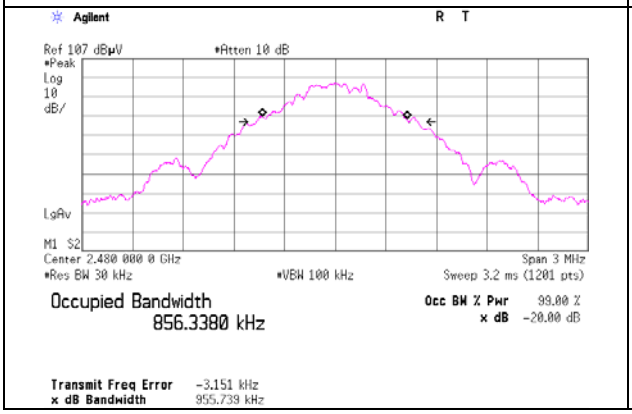
2402MHz



2441MHz

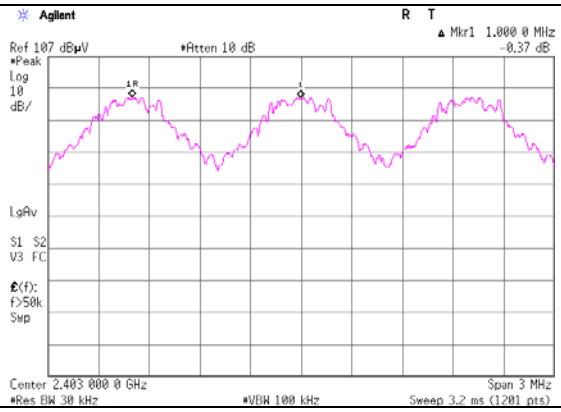


2480MHz

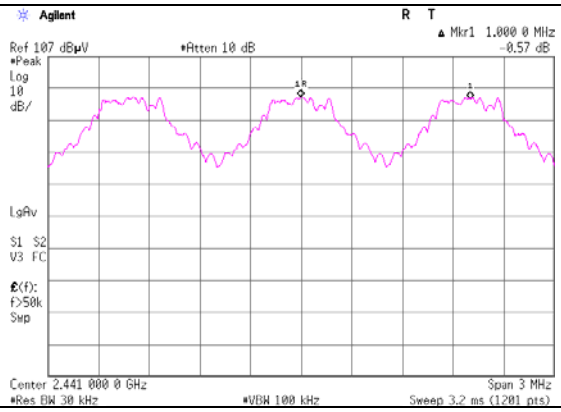


Carrier Frequency Separation

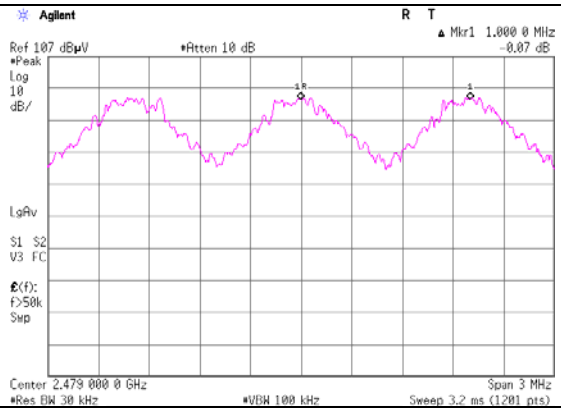
2402MHz



2441MHz



2480MHz

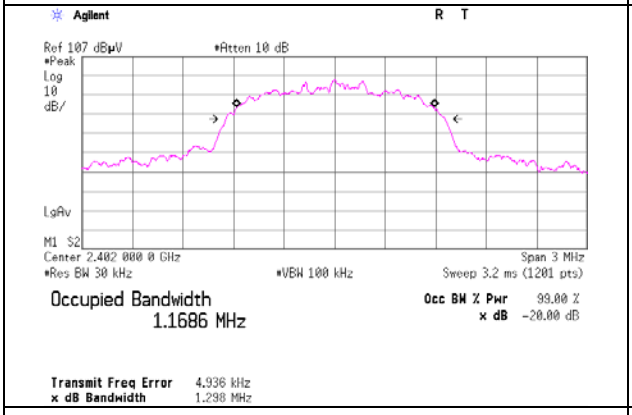


20dB Bandwidth and Carrier Frequency Separation

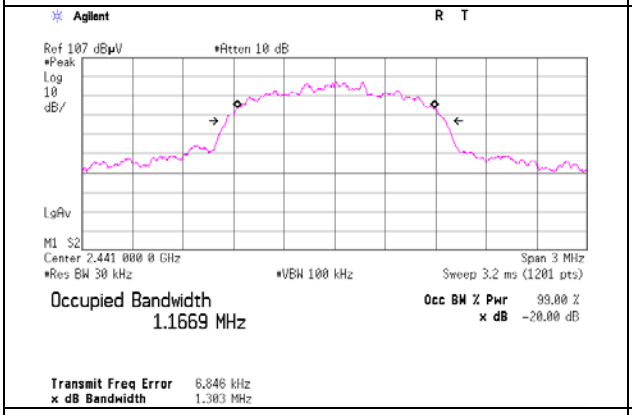
Tx 3DH5

20dB Bandwidth

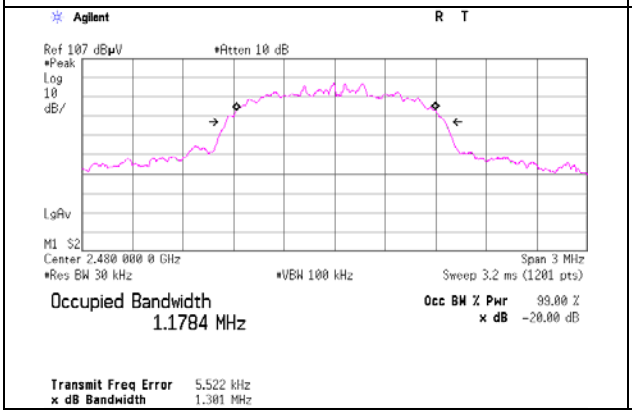
2402MHz



2441MHz

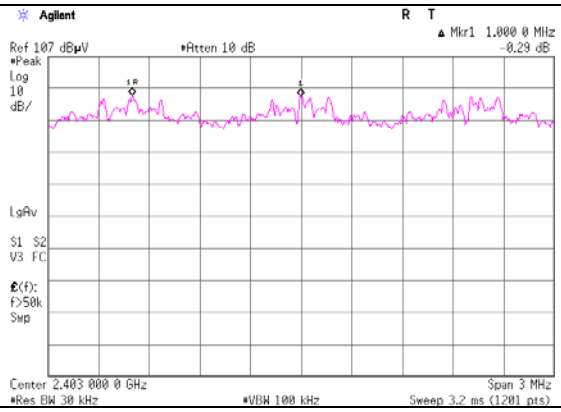


2480MHz

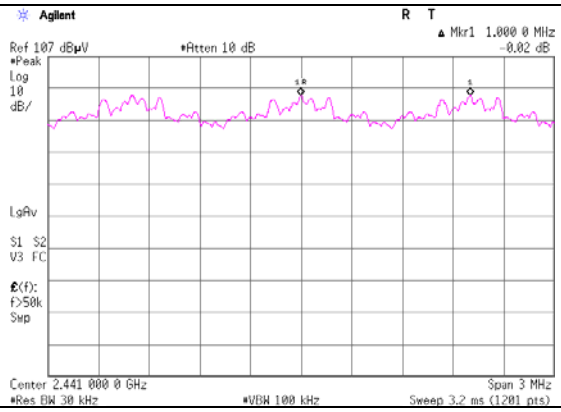


Carrier Frequency Separation

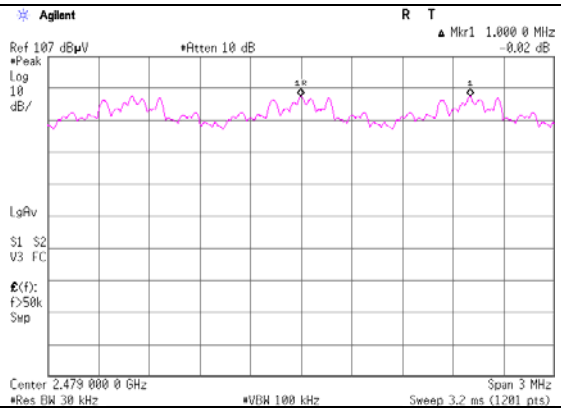
2402MHz



2441MHz



2480MHz



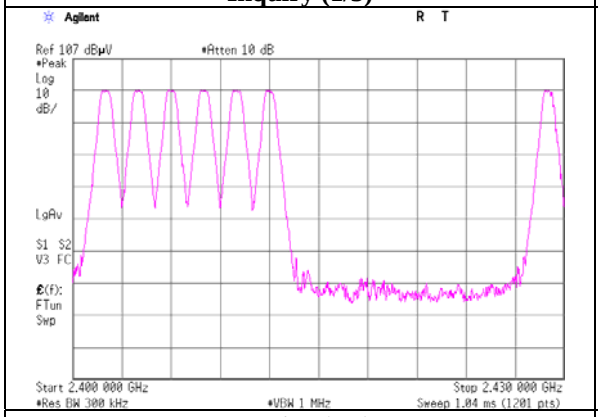
Number of Hopping Frequency

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

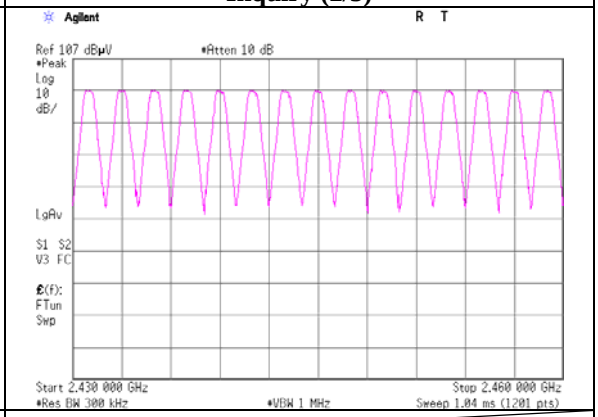
Mode	Number of channel [times]	Limit [times]
DH5	79	>= 15
3DH5	79	>= 15
Inquiry	32	>= 15

Test was not performed at AFH mode whose number of hopping channel is 20 channels because this Bluetooth radio is in compliance of Bluetooth Specification.

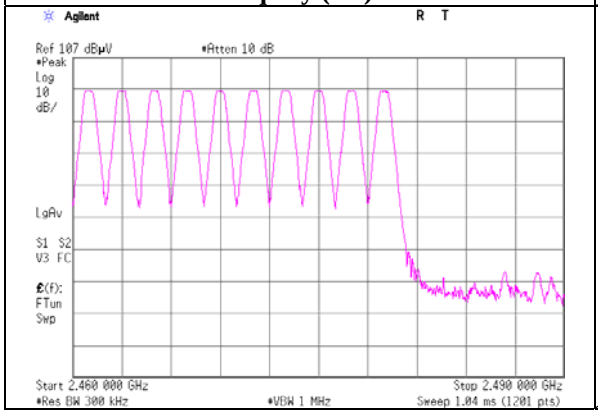
Inquiry (1/3)

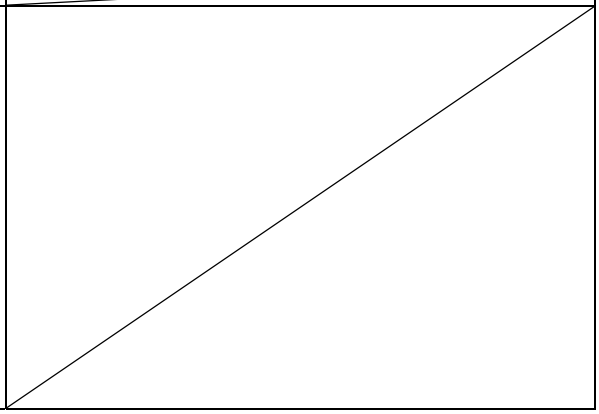


Inquiry (2/3)

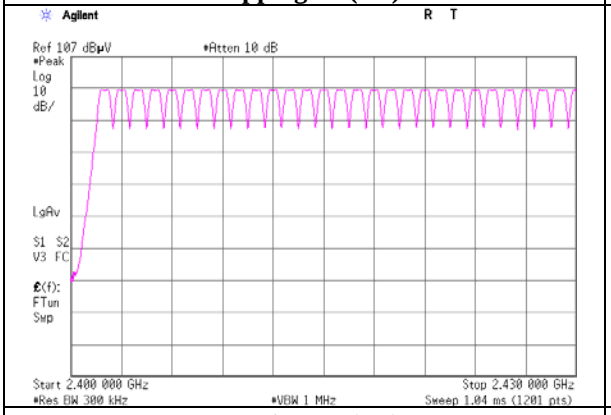
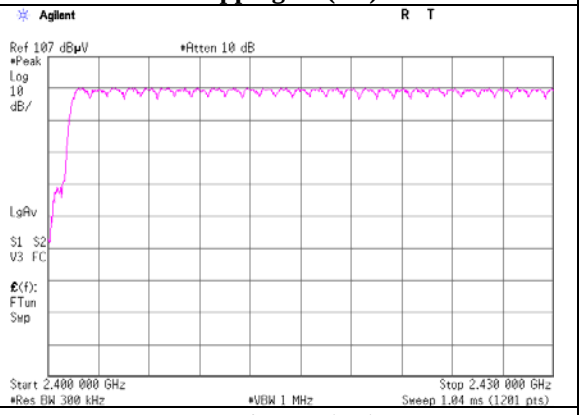
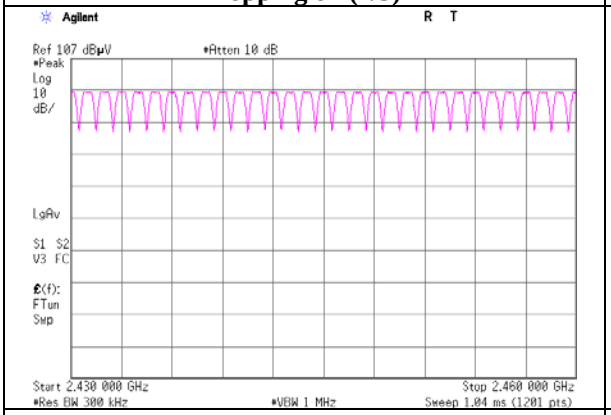
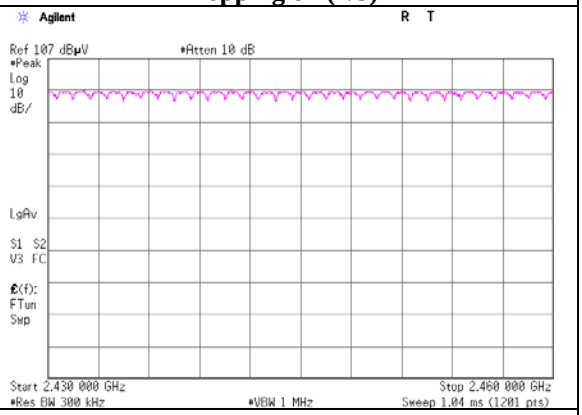
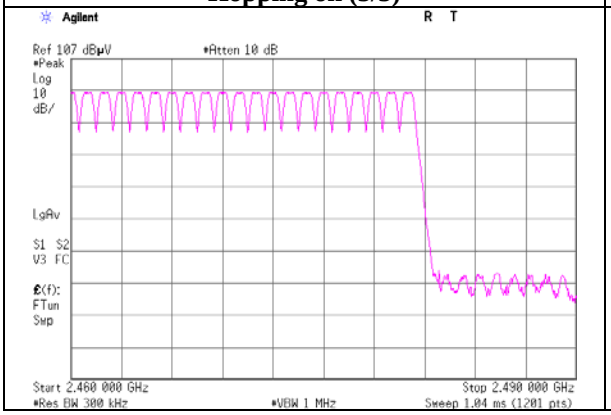
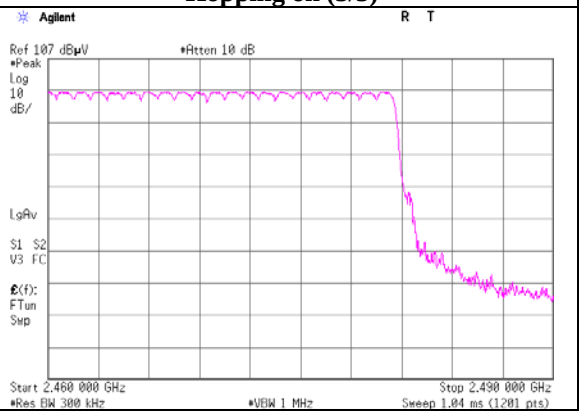


Inquiry (3/3)





Number of Hopping Frequency

Tx DH5	Tx 3DH5
Hopping on (1/3)	Hopping on (1/3)
	
Hopping on (2/3)	Hopping on (2/3)
	
Hopping on (3/3)	Hopping on (3/3)
	

Dwell time

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period					Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	49.2 times	/	5 sec.	x	31.6 sec. = 311 times	0.404	126	400
DH3	26.8 times	/	5 sec.	x	31.6 sec. = 170 times	1.671	284	400
DH5	17.6 times	/	5 sec.	x	31.6 sec. = 112 times	2.918	327	400
3DH1	50.8 times	/	5 sec.	x	31.6 sec. = 322 times	0.411	132	400
3DH3	27.0 times	/	5 sec.	x	31.6 sec. = 171 times	1.663	284	400
3DH5	15.4 times	/	5 sec.	x	31.6 sec. = 98 times	2.920	286	400
Inquiry	100.0 times	/	1 sec.	x	12.8 sec. = 1280 times	0.109	140	400

Sample Calculation
Result = Number of transmission x Length of transmition time

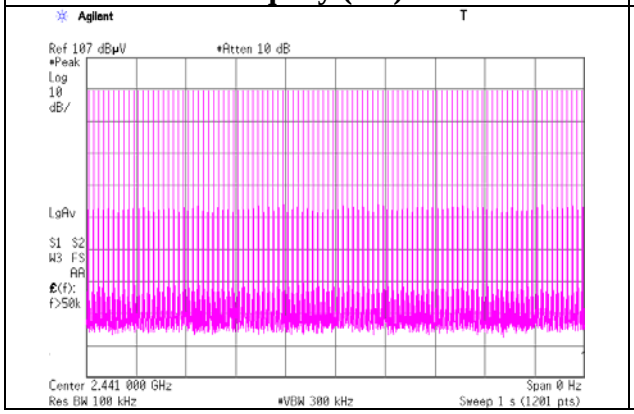
*Average data of 5 tests.(except Inquiry)

Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	50	49	48	49	50	49.2
DH3	31	26	24	27	26	26.8
DH5	21	19	16	14	18	17.6
3DH1	52	50	50	52	50	50.8
3DH3	28	27	26	28	26	27
3DH5	14	17	15	15	16	15.4

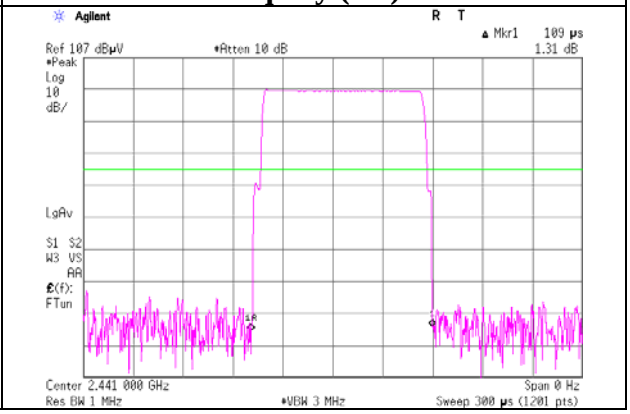
Sample Calculation
Average= Summation(Sampling 1 to 5) / 5

This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in N x 0.4s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless of packet size. This is confirmed in the test report for N=79.

Inquiry (1/2)

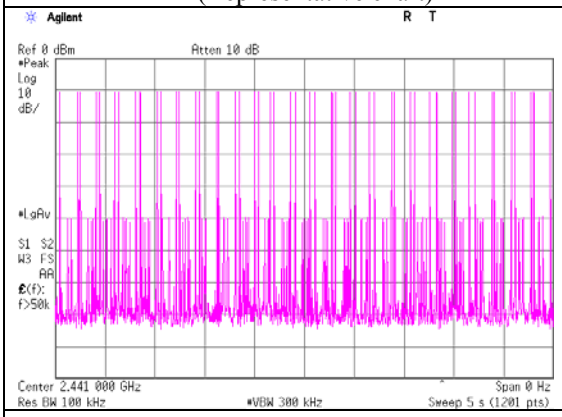


Inquiry (2/2)

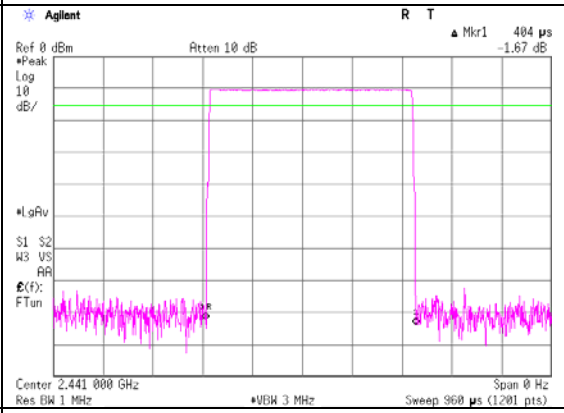


Dwell time

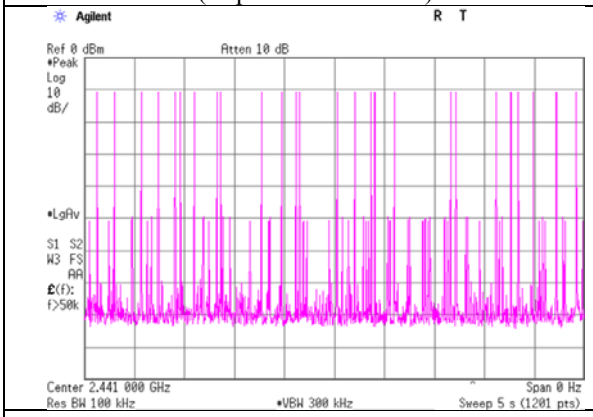
DH1 (1/2)
(Representative chart)



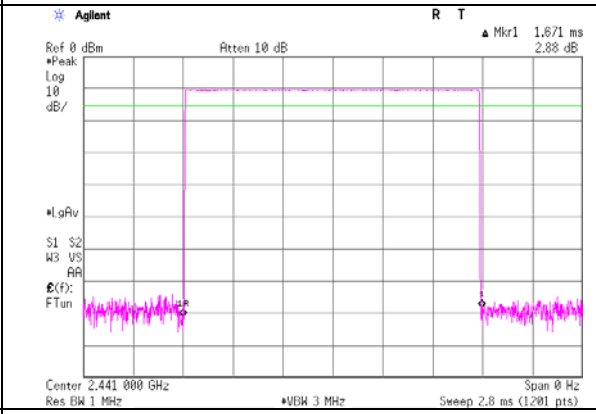
DH1 (2/2)



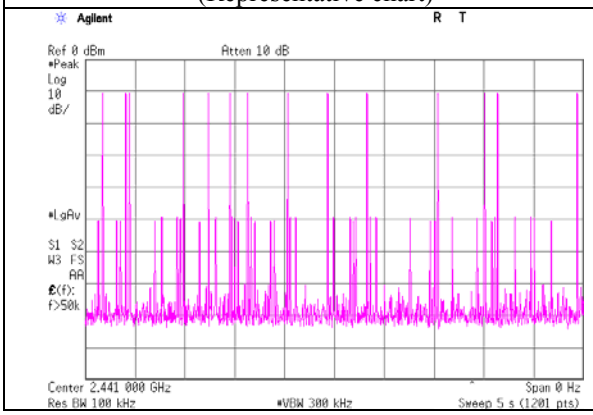
DH3 (1/2)
(Representative chart)



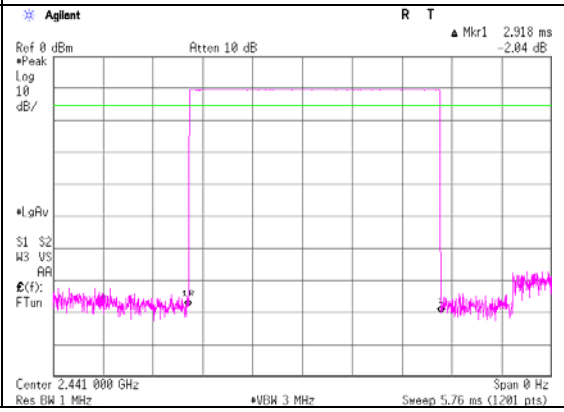
DH3 (2/2)



DH5 (1/2)
(Representative chart)

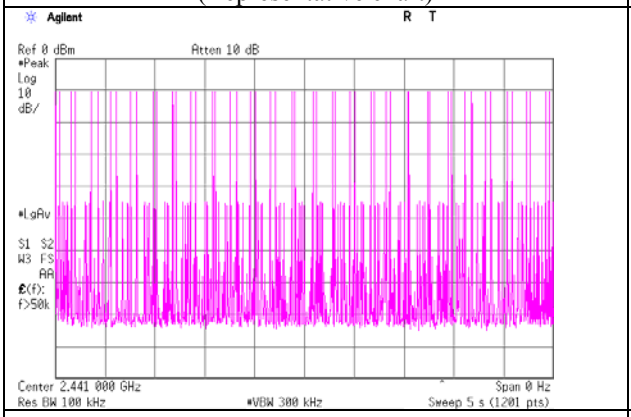


DH5 (2/2)

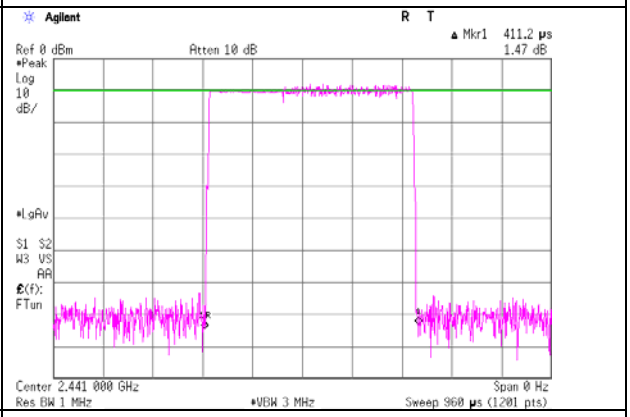


Dwell time

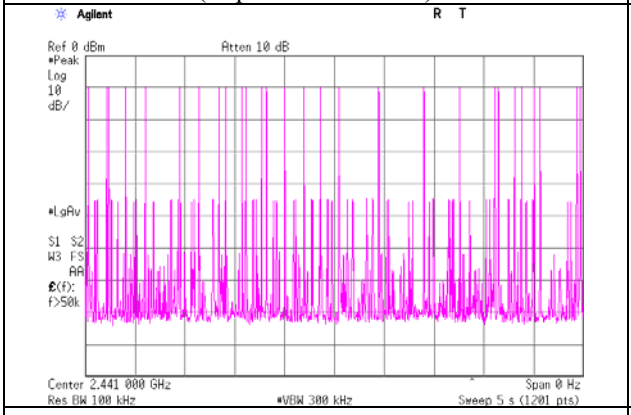
3DH1 (1/2)
(Representative chart)



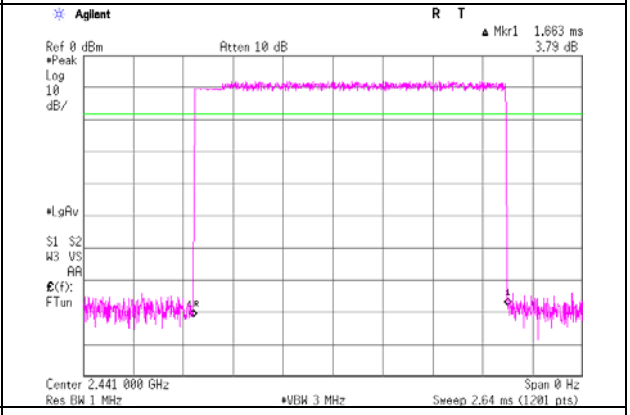
3DH1 (2/2)



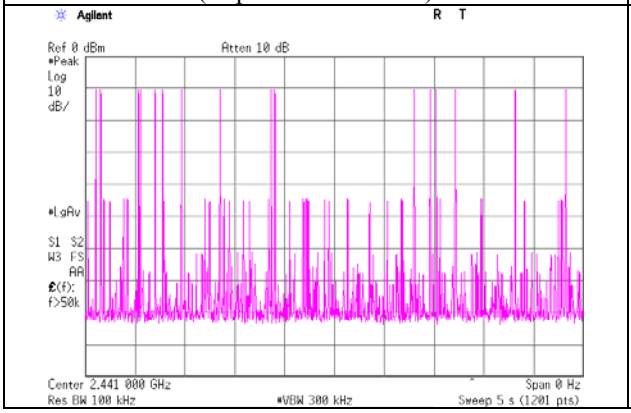
3DH3 (1/2)
(Representative chart)



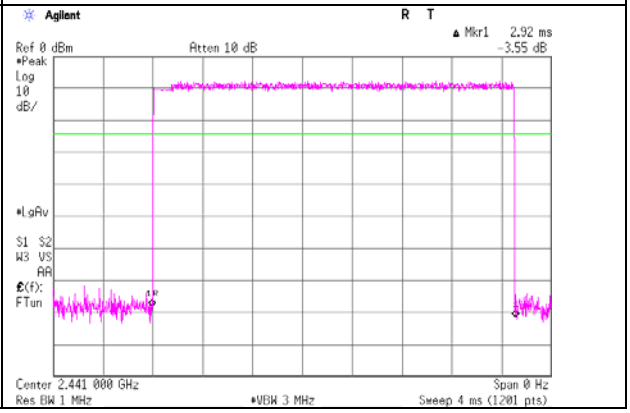
3DH3 (2/2)



3DH5 (1/2)
(Representative chart)



3DH5 (2/2)



Maximum Peak Output Power

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/19/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5/2DH5/3DH5/Inquiry

Mode	Freq.	Reading	Cable Loss	Atten.	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
DH5	2402.0	-9.44	2.07	10.11	2.74	1.88	20.96	125	18.22
DH5	2441.0	-9.52	2.09	10.11	2.68	1.85	20.96	125	18.28
DH5	2480.0	-9.74	2.09	10.11	2.46	1.76	20.96	125	18.50
2DH5	2402.0	-7.95	2.07	10.11	4.23	2.65	20.96	125	16.73
2DH5	2441.0	-8.06	2.09	10.11	4.14	2.59	20.96	125	16.82
2DH5	2480.0	-8.23	2.09	10.11	3.97	2.49	20.96	125	16.99
3DH5	2402.0	-7.65	2.07	10.11	4.53	2.84	20.96	125	16.43
3DH5	2441.0	-7.75	2.09	10.11	4.45	2.79	20.96	125	16.51
3DH5	2480.0	-7.90	2.09	10.11	4.30	2.69	20.96	125	16.66
Inquiry	2441.0	-10.02	2.09	10.11	2.18	1.65	20.96	125	18.78

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

Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.
As this device had AFH mode and frequency separation could not meet the requirement of over 20dB BW without 2/3 relaxation, 125mW power limit was applied to it.

Average Output Power
(Reference data for SAR testing)

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/19/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5/2DH5/3DH5

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Result [mW]
DH5	2402.0	-10.47	2.07	10.11	1.71	1.48
DH5	2441.0	-10.49	2.09	10.11	1.71	1.48
DH5	2480.0	-10.55	2.09	10.11	1.65	1.46
2DH5	2402.0	-11.67	2.07	10.11	0.51	1.12
2DH5	2441.0	-11.70	2.09	10.11	0.50	1.12
2DH5	2480.0	-11.89	2.09	10.11	0.31	1.07
3DH5	2402.0	-11.66	2.07	10.11	0.52	1.13
3DH5	2441.0	-11.69	2.09	10.11	0.51	1.12
3DH5	2480.0	-11.66	2.09	10.11	0.54	1.13

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

Radiated Spurious Emission
(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, DH5 2402MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.3	11.5	7.3	32.2	22.9	40.0	17.1	
Hori	68.711	QP	45.2	6.3	7.6	32.1	27.0	40.0	13.0	
Hori	148.503	QP	42.5	14.9	8.6	32.2	33.8	43.5	9.7	
Hori	301.167	QP	42.8	14.7	10.0	32.0	35.5	46.0	10.5	
Hori	405.009	QP	34.1	17.6	10.6	32.0	30.3	46.0	15.7	
Hori	742.489	QP	41.6	21.2	12.6	31.9	43.5	46.0	2.5	
Hori	2390.000	PK	46.2	26.8	3.2	32.0	44.2	73.9	29.7	
Hori	2748.708	PK	63.4	27.1	3.5	31.7	62.3	73.9	11.6	
Hori	4804.000	PK	42.6	30.6	5.2	31.3	47.1	73.9	26.8	
Hori	7206.000	PK	43.5	35.9	6.6	32.0	54.0	73.9	19.9	Floor Nosie
Hori	9608.000	PK	43.4	38.4	7.0	32.4	56.4	73.9	17.5	Floor Nosie
Hori	2390.000	AV	32.4	26.8	3.2	32.0	30.4	53.9	23.5	
Hori	2748.708	AV	42.2	27.1	3.5	31.7	41.1	53.9	12.8	
Hori	4804.000	AV	31.4	30.6	5.2	31.3	35.9	53.9	18.0	
Hori	7206.000	AV	30.4	35.9	6.6	32.0	40.9	53.9	13.0	Floor Nosie
Hori	9608.000	AV	30.6	38.4	7.0	32.4	43.6	53.9	10.3	Floor Nosie
Vert	47.551	QP	44.1	11.5	7.3	32.2	30.7	40.0	9.3	
Vert	68.711	QP	46.6	6.3	7.6	32.1	28.4	40.0	11.6	
Vert	148.503	QP	43.5	14.9	8.6	32.2	34.8	43.5	8.7	
Vert	301.167	QP	39.5	14.7	10.0	32.0	32.2	46.0	13.8	
Vert	405.009	QP	37.6	17.6	10.6	32.0	33.8	46.0	12.2	
Vert	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Vert	2390.000	PK	47.7	26.8	3.2	32.0	45.7	73.9	28.2	
Vert	2748.777	PK	60.8	27.1	3.5	31.7	59.7	73.9	14.2	
Vert	4804.000	PK	42.8	30.6	5.2	31.3	47.3	73.9	26.6	
Vert	7206.000	PK	43.0	35.9	6.6	32.0	53.5	73.9	20.4	Floor Nosie
Vert	9608.000	PK	42.2	38.4	7.0	32.4	55.2	73.9	18.7	Floor Nosie
Vert	2390.000	AV	39.1	26.8	3.2	32.0	37.1	53.9	16.8	
Vert	2748.777	AV	41.5	27.1	3.5	31.7	40.4	53.9	13.5	
Vert	4804.000	AV	31.8	30.6	5.2	31.3	36.3	53.9	17.6	
Vert	7206.000	AV	30.2	35.9	6.6	32.0	40.7	53.9	13.2	Floor Nosie
Vert	9608.000	AV	30.3	38.4	7.0	32.4	43.3	53.9	10.6	Floor Nosie

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

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

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	2402.000	PK	100.1	26.8	3.2	32.0	98.1	-	-	Carrier
Hori	2400.000	PK	41.2	26.8	3.2	32.0	39.2	78.1	38.9	
Vert	2402.000	PK	107.2	26.8	3.2	32.0	105.2	-	-	Carrier
Vert	2400.000	PK	46.4	26.8	3.2	32.0	44.4	85.2	40.8	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amprifier)

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Radiated Spurious Emission

(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, DH5 2441MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.2	11.5	7.3	32.2	22.8	40.0	17.2	
Hori	68.711	QP	45.2	6.3	7.6	32.1	27.0	40.0	13.0	
Hori	148.503	QP	42.8	14.9	8.6	32.2	34.1	43.5	9.4	
Hori	301.167	QP	43.0	14.7	10.0	32.0	35.7	46.0	10.3	
Hori	405.009	QP	33.7	17.6	10.6	32.0	29.9	46.0	16.1	
Hori	742.489	QP	41.9	21.2	12.6	31.9	43.8	46.0	2.2	
Hori	2748.708	PK	61.2	27.1	3.5	31.7	60.1	73.9	13.8	
Hori	4882.000	PK	42.9	30.8	5.3	31.3	47.7	73.9	26.2	
Hori	7323.000	PK	42.6	35.9	6.5	32.0	53.0	73.9	20.9	Floor Noise
Hori	9764.000	PK	42.3	38.7	7.1	32.5	55.6	73.9	18.3	Floor Noise
Hori	2748.708	AV	41.9	27.1	3.5	31.7	40.8	53.9	13.1	
Hori	4882.000	AV	31.9	30.8	5.3	31.3	36.7	53.9	17.2	
Hori	7323.000	AV	30.2	35.9	6.5	32.0	40.6	53.9	13.3	Floor Noise
Hori	9764.000	AV	30.0	38.7	7.1	32.5	43.3	53.9	10.6	Floor Noise
Vert	47.551	QP	44.2	11.5	7.3	32.2	30.8	40.0	9.2	
Vert	68.711	QP	46.5	6.3	7.6	32.1	28.3	40.0	11.7	
Vert	148.503	QP	43.6	14.9	8.6	32.2	34.9	43.5	8.6	
Vert	301.167	QP	39.4	14.7	10.0	32.0	32.1	46.0	13.9	
Vert	405.009	QP	37.5	17.6	10.6	32.0	33.7	46.0	12.3	
Vert	742.489	QP	41.9	21.2	12.6	31.9	43.8	46.0	2.2	
Vert	2749.810	PK	61.6	27.1	3.5	31.7	60.5	73.9	13.4	
Vert	4882.000	PK	44.1	30.8	5.3	31.3	48.9	73.9	25.0	
Vert	7323.000	PK	42.4	35.9	6.5	32.0	52.8	73.9	21.1	Floor Noise
Vert	9764.000	PK	42.6	38.7	7.1	32.5	55.9	73.9	18.0	Floor Noise
Vert	2749.810	AV	38.7	27.1	3.5	31.7	37.6	53.9	16.3	
Vert	4882.000	AV	34.8	30.8	5.3	31.3	39.6	53.9	14.3	
Vert	7323.000	AV	30.5	35.9	6.5	32.0	40.9	53.9	13.0	Floor Noise
Vert	9764.000	AV	30.0	38.7	7.1	32.5	43.3	53.9	10.6	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission

(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, DH5 2480MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.1	11.5	7.3	32.2	22.7	40.0	17.3	
Hori	68.711	QP	45.1	6.3	7.6	32.1	26.9	40.0	13.1	
Hori	148.503	QP	42.7	14.9	8.6	32.2	34.0	43.5	9.5	
Hori	301.167	QP	42.9	14.7	10.0	32.0	35.6	46.0	10.4	
Hori	405.009	QP	34.0	17.6	10.6	32.0	30.2	46.0	15.8	
Hori	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Hori	2483.500	PK	49.7	26.9	3.2	32.0	47.8	73.9	26.1	
Hori	2749.583	PK	65.3	27.1	3.5	31.7	64.2	73.9	9.7	
Hori	4960.000	PK	42.0	30.9	5.2	31.2	46.9	73.9	27.0	
Hori	7440.000	PK	42.8	35.9	6.6	32.1	53.2	73.9	20.7	Floor Noise
Hori	9920.000	PK	41.8	38.9	7.1	32.5	55.3	73.9	18.6	Floor Noise
Hori	2483.500	AV	36.6	26.9	3.2	32.0	34.7	53.9	19.2	
Hori	2749.583	AV	42.3	27.1	3.5	31.7	41.2	53.9	12.7	
Hori	4960.000	AV	30.0	30.9	5.2	31.2	34.9	53.9	19.0	
Hori	7440.000	AV	30.5	35.9	6.6	32.1	40.9	53.9	13.0	Floor Noise
Hori	9920.000	AV	30.3	38.9	7.1	32.5	43.8	53.9	10.1	Floor Noise
Vert	47.551	QP	44.1	11.5	7.3	32.2	30.7	40.0	9.3	
Vert	68.711	QP	46.5	6.3	7.6	32.1	28.3	40.0	11.7	
Vert	148.503	QP	43.2	14.9	8.6	32.2	34.5	43.5	9.0	
Vert	301.167	QP	39.6	14.7	10.0	32.0	32.3	46.0	13.7	
Vert	405.009	QP	37.2	17.6	10.6	32.0	33.4	46.0	12.6	
Vert	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Vert	2483.500	PK	50.8	26.9	3.2	32.0	48.9	73.9	25.0	
Vert	2749.655	PK	61.8	27.1	3.5	31.7	60.7	73.9	13.2	
Vert	4960.000	PK	42.3	30.9	5.2	31.2	47.2	73.9	26.7	
Vert	7440.000	PK	42.2	35.9	6.6	32.1	52.6	73.9	21.3	Floor Noise
Vert	9920.000	PK	42.7	38.9	7.1	32.5	56.2	73.9	17.7	Floor Noise
Vert	2483.500	AV	38.2	26.9	3.2	32.0	36.3	53.9	17.6	
Vert	2749.655	AV	39.7	27.1	3.5	31.7	38.6	53.9	15.3	
Vert	4960.000	AV	31.6	30.9	5.2	31.2	36.5	53.9	17.4	
Vert	7440.000	AV	30.5	35.9	6.6	32.1	40.9	53.9	13.0	Floor Noise
Vert	9920.000	AV	30.3	38.9	7.1	32.5	43.8	53.9	10.1	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission

(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, 3DH5 2402MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.3	11.5	7.3	32.2	22.9	40.0	17.1	
Hori	68.711	QP	45.2	6.3	7.6	32.1	27.0	40.0	13.0	
Hori	148.503	QP	42.5	14.9	8.6	32.2	33.8	43.5	9.7	
Hori	301.167	QP	42.8	14.7	10.0	32.0	35.5	46.0	10.5	
Hori	405.009	QP	34.1	17.6	10.6	32.0	30.3	46.0	15.7	
Hori	742.489	QP	41.6	21.2	12.6	31.9	43.5	46.0	2.5	
Hori	2390.000	PK	44.9	26.8	3.2	32.0	42.9	73.9	31.0	
Hori	2749.760	PK	63.3	27.1	3.5	31.7	62.2	73.9	11.7	
Hori	4804.000	PK	41.2	30.6	5.2	31.3	45.7	73.9	28.2	
Hori	7206.000	PK	42.0	35.9	6.6	32.0	52.5	73.9	21.4	Floor Noise
Hori	9608.000	PK	41.9	38.4	7.0	32.4	54.9	73.9	19.0	Floor Noise
Hori	2390.000	AV	31.9	26.8	3.2	32.0	29.9	53.9	24.0	
Hori	2749.760	AV	39.9	27.1	3.5	31.7	38.8	53.9	15.1	
Hori	4804.000	AV	29.0	30.6	5.2	31.3	33.5	53.9	20.4	
Hori	7206.000	AV	30.5	35.9	6.6	32.0	41.0	53.9	12.9	Floor Noise
Hori	9608.000	AV	30.5	38.4	7.0	32.4	43.5	53.9	10.4	Floor Noise
Vert	47.551	QP	44.1	11.5	7.3	32.2	30.7	40.0	9.3	
Vert	68.711	QP	46.6	6.3	7.6	32.1	28.4	40.0	11.6	
Vert	148.503	QP	43.5	14.9	8.6	32.2	34.8	43.5	8.7	
Vert	301.167	QP	39.5	14.7	10.0	32.0	32.2	46.0	13.8	
Vert	405.009	QP	37.6	17.6	10.6	32.0	33.8	46.0	12.2	
Vert	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Vert	2390.000	PK	50.0	26.8	3.2	32.0	48.0	73.9	25.9	
Vert	2749.641	PK	61.2	27.1	3.5	31.7	60.1	73.9	13.8	
Vert	4804.000	PK	40.5	30.6	5.2	31.3	45.0	73.9	28.9	
Vert	7206.000	PK	43.1	35.9	6.6	32.0	53.6	73.9	20.3	Floor Noise
Vert	9608.000	PK	42.6	38.4	7.0	32.4	55.6	73.9	18.3	Floor Noise
Vert	2390.000	AV	39.4	26.8	3.2	32.0	37.4	53.9	16.5	
Vert	2749.641	AV	38.5	27.1	3.5	31.7	37.4	53.9	16.5	
Vert	4804.000	AV	28.8	30.6	5.2	31.3	33.3	53.9	20.6	
Vert	7206.000	AV	30.5	35.9	6.6	32.0	41.0	53.9	12.9	Floor Noise
Vert	9608.000	AV	30.7	38.4	7.0	32.4	43.7	53.9	10.2	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

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	2402.000	PK	101.2	26.8	3.2	32.0	99.2	-	-	Carrier
Hori	2400.000	PK	49.6	26.8	3.2	32.0	47.6	79.2	31.6	
Vert	2402.000	PK	107.3	26.8	3.2	32.0	105.3	-	-	Carrier
Vert	2400.000	PK	56.4	26.8	3.2	32.0	54.4	85.3	30.9	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amprifier)

Radiated Spurious Emission

(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, 3DH5 2441MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.1	11.5	7.3	32.2	22.7	40.0	17.3	
Hori	68.711	QP	45.1	6.3	7.6	32.1	26.9	40.0	13.1	
Hori	148.503	QP	42.7	14.9	8.6	32.2	34.0	43.5	9.5	
Hori	301.167	QP	42.9	14.7	10.0	32.0	35.6	46.0	10.4	
Hori	405.009	QP	34.0	17.6	10.6	32.0	30.2	46.0	15.8	
Hori	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Hori	2749.640	PK	60.1	27.1	3.5	31.7	59.0	73.9	14.9	
Hori	4882.000	PK	41.4	30.8	5.3	31.3	46.2	73.9	27.7	
Hori	7323.000	PK	42.4	35.9	6.5	32.0	52.8	73.9	21.1	Floor Noise
Hori	9764.000	PK	42.1	38.7	7.1	32.5	55.4	73.9	18.5	Floor Noise
Hori	2749.640	AV	38.7	27.1	3.5	31.7	37.6	53.9	16.3	
Hori	4882.000	AV	28.8	30.8	5.3	31.3	33.6	53.9	20.3	
Hori	7323.000	AV	30.3	35.9	6.5	32.0	40.7	53.9	13.2	Floor Noise
Hori	9764.000	AV	30.1	38.7	7.1	32.5	43.4	53.9	10.5	Floor Noise
Vert	47.551	QP	44.1	11.5	7.3	32.2	30.7	40.0	9.3	
Vert	68.711	QP	46.5	6.3	7.6	32.1	28.3	40.0	11.7	
Vert	148.503	QP	43.2	14.9	8.6	32.2	34.5	43.5	9.0	
Vert	301.167	QP	39.6	14.7	10.0	32.0	32.3	46.0	13.7	
Vert	405.009	QP	37.2	17.6	10.6	32.0	33.4	46.0	12.6	
Vert	742.489	QP	41.8	21.2	12.6	31.9	43.7	46.0	2.3	
Vert	2749.567	PK	62.6	27.1	3.5	31.7	61.5	73.9	12.4	
Vert	4882.000	PK	41.0	30.8	5.3	31.3	45.8	73.9	28.1	
Vert	7323.000	PK	42.2	35.9	6.5	32.0	52.6	73.9	21.3	Floor Noise
Vert	9764.000	PK	43.0	38.7	7.1	32.5	56.3	73.9	17.6	Floor Noise
Vert	2749.567	AV	40.6	27.1	3.5	31.7	39.5	53.9	14.4	
Vert	4882.000	AV	29.0	30.8	5.3	31.3	33.8	53.9	20.1	
Vert	7323.000	AV	30.4	35.9	6.5	32.0	40.8	53.9	13.1	Floor Noise
Vert	9764.000	AV	30.4	38.7	7.1	32.5	43.7	53.9	10.2	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission
(Power Supply: Chicony)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/20/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	20deg. C / 55% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Takumi Shimada (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Keisuke Kawamura (30-1000MHz)
Mode	Tx, 3DH5 2480MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	47.551	QP	36.2	11.5	7.3	32.2	22.8	40.0	17.2	
Hori	68.711	QP	45.2	6.3	7.6	32.1	27.0	40.0	13.0	
Hori	148.503	QP	42.8	14.9	8.6	32.2	34.1	43.5	9.4	
Hori	301.167	QP	43.0	14.7	10.0	32.0	35.7	46.0	10.3	
Hori	405.009	QP	33.7	17.6	10.6	32.0	29.9	46.0	16.1	
Hori	742.489	QP	41.9	21.2	12.6	31.9	43.8	46.0	2.2	
Hori	2483.500	PK	53.7	26.9	2.5	32.0	51.1	73.9	22.8	
Hori	2749.583	PK	66.3	27.1	2.7	31.7	64.4	73.9	9.5	
Hori	4960.000	PK	40.7	30.9	5.2	31.2	45.6	73.9	28.3	
Hori	7440.000	PK	42.5	35.9	6.6	32.1	52.9	73.9	21.0	Floor Noise
Hori	9920.000	PK	43.0	38.9	7.1	32.5	56.5	73.9	17.4	Floor Noise
Hori	2483.500	AV	37.4	26.9	2.5	32.0	34.8	53.9	19.1	
Hori	2749.583	AV	42.6	27.1	2.7	31.7	40.7	53.9	13.2	
Hori	4960.000	AV	28.9	30.9	5.2	31.2	33.8	53.9	20.1	
Hori	7440.000	AV	30.5	35.9	6.6	32.1	40.9	53.9	13.0	Floor Noise
Hori	9920.000	AV	30.1	38.9	7.1	32.5	43.6	53.9	10.3	Floor Noise
Vert	47.551	QP	44.2	11.5	7.3	32.2	30.8	40.0	9.2	
Vert	68.711	QP	46.5	6.3	7.6	32.1	28.3	40.0	11.7	
Vert	148.503	QP	43.6	14.9	8.6	32.2	34.9	43.5	8.6	
Vert	301.167	QP	39.4	14.7	10.0	32.0	32.1	46.0	13.9	
Vert	405.009	QP	37.5	17.6	10.6	32.0	33.7	46.0	12.3	
Vert	742.489	QP	41.9	21.2	12.6	31.9	43.8	46.0	2.2	
Vert	2483.500	PK	59.2	26.9	3.2	32.0	57.3	73.9	16.6	
Vert	2749.680	PK	60.4	27.1	3.5	31.7	59.3	73.9	14.6	
Vert	4960.000	PK	29.1	30.9	5.2	31.2	34.0	73.9	39.9	
Vert	7440.000	PK	42.5	35.9	6.6	32.1	52.9	73.9	21.0	Floor Noise
Vert	9920.000	PK	41.4	38.9	7.1	32.5	54.9	73.9	19.0	Floor Noise
Vert	2483.500	AV	42.5	26.9	3.2	32.0	40.6	53.9	13.3	
Vert	2749.680	AV	38.4	27.1	3.5	31.7	37.3	53.9	16.6	
Vert	4960.000	AV	40.3	30.9	5.2	31.2	45.2	53.9	8.7	
Vert	7440.000	AV	30.5	35.9	6.6	32.1	40.9	53.9	13.0	Floor Noise
Vert	9920.000	AV	30.0	38.9	7.1	32.5	43.5	53.9	10.4	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).

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

Radiated Spurious Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, DH5 2402MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.250	QP	37.1	17.0	7.0	32.3	28.8	40.0	11.2	
Hori	47.039	QP	37.7	11.6	7.3	32.2	24.4	40.0	15.6	
Hori	68.700	QP	48.9	6.3	7.6	32.1	30.7	40.0	9.3	
Hori	148.495	QP	44.0	14.9	8.6	32.2	35.3	43.5	8.2	
Hori	405.009	QP	35.8	17.6	10.6	32.0	32.0	46.0	14.0	
Hori	742.471	QP	37.8	21.2	12.6	31.9	39.7	46.0	6.3	
Hori	2390.000	PK	45.2	26.8	3.2	32.0	43.2	73.9	30.7	
Hori	2740.171	PK	58.8	27.1	3.5	31.7	57.7	73.9	16.2	
Hori	4804.000	PK	39.7	30.6	5.2	31.3	44.2	73.9	29.7	Floor Noise
Hori	7206.000	PK	42.2	35.9	6.6	32.0	52.7	73.9	21.2	Floor Noise
Hori	9608.000	PK	41.9	38.4	7.0	32.4	54.9	73.9	19.0	Floor Noise
Hori	2390.000	AV	32.0	26.8	3.2	32.0	30.0	53.9	23.9	
Hori	2740.171	AV	41.6	27.1	3.5	31.7	40.5	53.9	13.4	
Hori	4804.000	AV	29.5	30.6	5.2	31.3	34.0	53.9	19.9	Floor Noise
Hori	7206.000	AV	31.2	35.9	6.6	32.0	41.7	53.9	12.2	Floor Noise
Hori	9608.000	AV	30.9	38.4	7.0	32.4	43.9	53.9	10.1	Floor Noise
Vert	31.335	QP	37.7	17.0	7.0	32.3	29.4	40.0	10.6	
Vert	47.204	QP	45.1	11.6	7.3	32.2	31.8	40.0	8.2	
Vert	72.838	QP	46.7	6.3	7.7	32.1	28.6	40.0	11.4	
Vert	148.495	QP	44.3	14.9	8.6	32.2	35.6	43.5	7.9	
Vert	405.010	QP	39.5	17.6	10.6	32.0	35.7	46.0	10.3	
Vert	742.475	QP	41.9	21.2	12.6	31.9	43.8	46.0	2.2	
Vert	2390.000	PK	47.3	26.8	3.2	32.0	45.3	73.9	28.6	
Vert	2740.171	PK	56.2	27.1	3.5	31.7	55.1	73.9	18.8	
Vert	4804.000	PK	40.5	30.6	5.2	31.3	45.0	73.9	28.9	Floor Noise
Vert	7206.000	PK	42.2	35.9	6.6	32.0	52.7	73.9	21.2	Floor Noise
Vert	9608.000	PK	42.5	38.4	7.0	32.4	55.5	73.9	18.5	Floor Noise
Vert	2390.000	AV	34.0	26.8	3.2	32.0	32.0	53.9	21.9	
Vert	2740.171	AV	40.9	27.1	3.5	31.7	39.8	53.9	14.1	
Vert	4804.000	AV	29.5	30.6	5.2	31.3	34.0	53.9	19.9	Floor Noise
Vert	7206.000	AV	31.3	35.9	6.6	32.0	41.8	53.9	12.1	Floor Noise
Vert	9608.000	AV	30.8	38.4	7.0	32.4	43.8	53.9	10.1	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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	2402.000	PK	99.2	26.8	3.2	32.0	97.2	-	-	Carrier
Hori	2400.000	PK	49.2	26.8	3.2	32.0	47.2	77.2	30.0	
Vert	2402.000	PK	106.0	26.8	3.2	32.0	104.0	-	-	Carrier
Vert	2400.000	PK	55.5	26.8	3.2	32.0	53.5	84.0	30.5	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amprifier)

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Radiated Spurious Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, DH5 2441MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.248	QP	36.6	17.0	7.0	32.3	28.3	40.0	11.7	
Hori	46.679	QP	38.1	11.7	7.3	32.2	24.9	40.0	15.1	
Hori	68.863	QP	48.9	6.3	7.6	32.1	30.7	40.0	9.3	
Hori	148.495	QP	43.5	14.9	8.6	32.2	34.8	43.5	8.7	
Hori	405.007	QP	34.1	17.6	10.6	32.0	30.3	46.0	15.7	
Hori	742.471	QP	41.2	21.2	12.6	31.9	43.1	46.0	2.9	
Hori	2740.171	PK	57.9	27.1	3.5	31.7	56.8	73.9	17.1	
Hori	4882.000	PK	44.8	30.8	5.3	31.3	49.6	73.9	24.4	
Hori	7323.000	PK	42.2	35.9	6.5	32.0	52.6	73.9	21.3	Floor Noise
Hori	9764.000	PK	41.9	38.7	7.1	32.5	55.2	73.9	18.7	Floor Noise
Hori	2740.171	AV	41.6	27.1	3.5	31.7	40.5	53.9	13.4	
Hori	4882.000	AV	35.6	30.8	5.3	31.3	40.4	53.9	13.5	
Hori	7323.000	AV	31.2	35.9	6.5	32.0	41.6	53.9	12.3	Floor Noise
Hori	9764.000	AV	30.9	38.7	7.1	32.5	44.2	53.9	9.8	Floor Noise
Vert	31.248	QP	41.2	17.0	7.0	32.3	32.9	40.0	7.1	
Vert	47.388	QP	45.3	11.5	7.3	32.2	31.9	40.0	8.1	
Vert	72.868	QP	46.6	6.3	7.7	32.1	28.5	40.0	11.5	
Vert	148.498	QP	42.7	14.9	8.6	32.2	34.0	43.5	9.5	
Vert	405.008	QP	38.4	17.6	10.6	32.0	34.6	46.0	11.4	
Vert	742.479	QP	41.3	21.2	12.6	31.9	43.2	46.0	2.8	
Vert	2740.171	PK	55.7	27.1	3.5	31.7	54.6	73.9	19.3	
Vert	4882.000	PK	44.2	30.8	5.3	31.3	49.0	73.9	24.9	
Vert	7323.000	PK	42.2	35.9	6.5	32.0	52.6	73.9	21.3	Floor Noise
Vert	9764.000	PK	42.5	38.7	7.1	32.5	55.8	73.9	18.2	Floor Noise
Vert	2740.171	AV	40.9	27.1	3.5	31.7	39.8	53.9	14.1	
Vert	4882.000	AV	34.0	30.8	5.3	31.3	38.8	53.9	15.1	
Vert	7323.000	AV	31.3	35.9	6.5	32.0	41.7	53.9	12.2	Floor Noise
Vert	9764.000	AV	30.8	38.7	7.1	32.5	44.1	53.9	9.8	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, DH5 2480MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.251	QP	35.6	17.0	7.0	32.3	27.3	40.0	12.7	
Hori	46.699	QP	37.7	11.7	7.3	32.2	24.5	40.0	15.5	
Hori	68.903	QP	48.3	6.3	7.6	32.1	30.1	40.0	9.9	
Hori	148.497	QP	42.4	14.9	8.6	32.2	33.7	43.5	9.8	
Hori	405.008	QP	33.9	17.6	10.6	32.0	30.1	46.0	15.9	
Hori	742.480	QP	39.7	21.2	12.6	31.9	41.6	46.0	4.4	
Hori	2483.500	PK	49.7	26.9	3.2	32.0	47.8	73.9	26.2	
Hori	2740.171	PK	57.9	27.1	3.5	31.7	56.8	73.9	17.1	
Hori	4960.000	PK	40.5	30.9	5.2	31.2	45.4	73.9	28.5	
Hori	7440.000	PK	42.2	35.9	6.6	32.1	52.6	73.9	21.3	Floor Noise
Hori	9920.000	PK	41.9	38.9	7.1	32.5	55.4	73.9	18.5	Floor Noise
Hori	2483.500	AV	37.0	26.9	3.2	32.0	35.1	53.9	18.8	
Hori	2740.171	AV	41.2	27.1	3.5	31.7	40.1	53.9	13.8	
Hori	4960.000	AV	29.8	30.9	5.2	31.2	34.7	53.9	19.2	
Hori	7440.000	AV	31.2	35.9	6.6	32.1	41.6	53.9	12.4	Floor Noise
Hori	9920.000	AV	30.9	38.9	7.1	32.5	44.4	53.9	9.5	Floor Noise
Vert	31.250	QP	40.5	17.0	7.0	32.3	32.2	40.0	7.8	
Vert	47.430	QP	45.1	11.5	7.3	32.2	31.7	40.0	8.3	
Vert	72.895	QP	46.6	6.3	7.7	32.1	28.5	40.0	11.5	
Vert	148.495	QP	41.0	14.9	8.6	32.2	32.3	43.5	11.2	
Vert	405.007	QP	38.4	17.6	10.6	32.0	34.6	46.0	11.4	
Vert	742.474	QP	41.3	21.2	12.6	31.9	43.2	46.0	2.8	
Vert	2483.500	PK	51.2	26.9	3.2	32.0	49.3	73.9	24.6	
Vert	2740.171	PK	56.3	27.1	3.5	31.7	55.2	73.9	18.8	
Vert	4960.000	PK	42.0	30.9	5.2	31.2	46.9	73.9	27.0	
Vert	7440.000	PK	42.2	35.9	6.6	32.1	52.6	73.9	21.3	Floor Noise
Vert	9920.000	PK	42.5	38.9	7.1	32.5	56.0	73.9	18.0	Floor Noise
Vert	2483.500	AV	37.8	26.9	3.2	32.0	35.9	53.9	18.0	
Vert	2740.171	AV	40.9	27.1	3.5	31.7	39.8	53.9	14.1	
Vert	4960.000	AV	30.5	30.9	5.2	31.2	35.4	53.9	18.5	
Vert	7440.000	AV	31.3	35.9	6.6	32.1	41.7	53.9	12.2	Floor Noise
Vert	9920.000	AV	30.8	38.9	7.1	32.5	44.3	53.9	9.6	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission
(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, 3DH5 2402MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.248	QP	36.3	17.0	7.0	32.3	28.0	40.0	12.0	
Hori	46.652	QP	37.6	11.7	7.3	32.2	24.4	40.0	15.6	
Hori	68.893	QP	48.0	6.3	7.6	32.1	29.8	40.0	10.2	
Hori	148.497	QP	42.0	14.9	8.6	32.2	33.3	43.5	10.2	
Hori	405.008	QP	33.6	17.6	10.6	32.0	29.8	46.0	16.2	
Hori	742.474	QP	39.0	21.2	12.6	31.9	40.9	46.0	5.1	
Hori	2390.000	PK	45.1	26.8	3.2	32.0	43.1	73.9	30.8	
Hori	2740.171	PK	58.8	27.1	3.5	31.7	57.7	73.9	16.2	
Hori	4804.000	PK	42.9	30.6	5.2	31.3	47.4	73.9	26.5	
Hori	7206.000	PK	42.2	35.9	6.6	32.0	52.7	73.9	21.2	Floor Noise
Hori	9608.000	PK	41.9	38.4	7.0	32.4	54.9	73.9	19.0	Floor Noise
Hori	2390.000	AV	32.3	26.8	3.2	32.0	30.3	53.9	23.6	
Hori	2740.171	AV	41.6	27.1	3.5	31.7	40.5	53.9	13.4	
Hori	4804.000	AV	32.9	30.6	5.2	31.3	37.4	53.9	16.6	
Hori	7206.000	AV	31.2	35.9	6.6	32.0	41.7	53.9	12.2	Floor Noise
Hori	9608.000	AV	30.9	38.4	7.0	32.4	43.9	53.9	10.1	Floor Noise
Vert	31.249	QP	40.7	17.0	7.0	32.3	32.4	40.0	7.6	
Vert	47.444	QP	45.4	11.5	7.3	32.2	32.0	40.0	8.0	
Vert	72.888	QP	46.6	6.3	7.7	32.1	28.5	40.0	11.5	
Vert	148.495	QP	43.7	14.9	8.6	32.2	35.0	43.5	8.5	
Vert	405.009	QP	38.7	17.6	10.6	32.0	34.9	46.0	11.1	
Vert	742.478	QP	41.5	21.2	12.6	31.9	43.4	46.0	2.6	
Vert	2390.000	PK	46.9	26.8	3.2	32.0	44.9	73.9	29.0	
Vert	2740.171	PK	55.7	27.1	3.5	31.7	54.6	73.9	19.3	
Vert	4804.000	PK	43.2	30.6	5.2	31.3	47.7	73.9	26.2	
Vert	7206.000	PK	42.2	35.9	6.6	32.0	52.7	73.9	21.2	Floor Noise
Vert	9608.000	PK	42.5	38.4	7.0	32.4	55.5	73.9	18.5	Floor Noise
Vert	2390.000	AV	34.0	26.8	3.2	32.0	32.0	53.9	21.9	
Vert	2740.171	AV	40.9	27.1	3.5	31.7	39.8	53.9	14.1	
Vert	4804.000	AV	33.8	30.6	5.2	31.3	38.3	53.9	15.6	
Vert	7206.000	AV	31.3	35.9	6.6	32.0	41.8	53.9	12.1	Floor Noise
Vert	9608.000	AV	30.8	38.4	7.0	32.4	43.8	53.9	10.1	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)
*Other frequency noises omitted in this report were not seen or had enough margin (more than 20dB).
Distance factor: 10GHz-26.5GHz 20log(3.0m/1.0m)= 9.5dB

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	2402.000	PK	99.1	26.8	3.2	32.0	97.1	-	-	Carrier
Hori	2400.000	PK	41.8	26.8	3.2	32.0	39.8	77.1	37.3	
Vert	2402.000	PK	105.6	26.8	3.2	32.0	103.6	-	-	Carrier
Vert	2400.000	PK	46.3	26.8	3.2	32.0	44.3	83.6	39.3	

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amprifier)

Radiated Spurious Emission

(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, 3DH5 2441MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.249	QP	36.4	17.0	7.0	32.3	28.1	40.0	11.9	
Hori	46.668	QP	37.6	11.7	7.3	32.2	24.4	40.0	15.6	
Hori	68.908	QP	48.1	6.3	7.6	32.1	29.9	40.0	10.1	
Hori	148.497	QP	44.5	14.9	8.6	32.2	35.8	43.5	7.7	
Hori	405.008	QP	33.5	17.6	10.6	32.0	29.7	46.0	16.3	
Hori	742.475	QP	39.0	21.2	12.6	31.9	40.9	46.0	5.1	
Hori	2740.171	PK	58.1	27.1	3.5	31.7	57.0	73.9	16.9	
Hori	4882.000	PK	41.2	30.8	5.3	31.3	46.0	73.9	27.9	Floor Noise
Hori	7323.000	PK	42.2	35.9	6.5	32.0	52.6	73.9	21.3	Floor Noise
Hori	9764.000	PK	41.9	38.7	7.1	32.5	55.2	73.9	18.7	Floor Noise
Hori	2740.171	AV	41.6	27.1	3.5	31.7	40.5	53.9	13.4	
Hori	4882.000	AV	29.4	30.8	5.3	31.3	34.2	53.9	19.7	Floor Noise
Hori	7323.000	AV	31.2	35.9	6.5	32.0	41.6	53.9	12.3	Floor Noise
Hori	9764.000	AV	30.9	38.7	7.1	32.5	44.2	53.9	9.8	Floor Noise
Vert	31.249	QP	40.6	17.0	7.0	32.3	32.3	40.0	7.7	
Vert	47.459	QP	45.5	11.5	7.3	32.2	32.1	40.0	7.9	
Vert	72.889	QP	46.6	6.3	7.7	32.1	28.5	40.0	11.5	
Vert	148.497	QP	43.8	14.9	8.6	32.2	35.1	43.5	8.4	
Vert	405.009	QP	38.8	17.6	10.6	32.0	35.0	46.0	11.0	
Vert	742.481	QP	41.4	21.2	12.6	31.9	43.3	46.0	2.7	
Vert	2740.171	PK	56.3	27.1	3.5	31.7	55.2	73.9	18.7	
Vert	4882.000	PK	40.4	30.8	5.3	31.3	45.2	73.9	28.8	Floor Noise
Vert	7323.000	PK	42.2	35.9	6.5	32.0	52.6	73.9	21.3	Floor Noise
Vert	9764.000	PK	42.5	38.7	7.1	32.5	55.8	73.9	18.2	Floor Noise
Vert	2740.171	AV	40.9	27.1	3.5	31.7	39.8	53.9	14.1	
Vert	4882.000	AV	29.5	30.8	5.3	31.3	34.3	53.9	19.6	Floor Noise
Vert	7323.000	AV	31.3	35.9	6.5	32.0	41.7	53.9	12.2	Floor Noise
Vert	9764.000	AV	30.8	38.7	7.1	32.5	44.1	53.9	9.8	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

Radiated Spurious Emission

(Power Supply: DELTA)

Test place	Ise EMC Lab. No.3 Semi Anechoic Chamber			
Report No.	10724035H			
Date	03/21/2015	03/23/2015	03/23/2015	03/24/2015
Temperature/ Humidity	23deg. C / 68% RH	20deg. C / 37% RH	20deg. C / 37% RH	18deg. C / 31% RH
Engineer	Keisuke Kawamura (1-10GHz)	Takafumi Noguchi (10-18GHz)	Keisuke Kawamura (18-26.5GHz)	Takafumi Noguchi (Below 1GHz)
Mode	Tx, 3DH5 2480MHz			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori	31.251	QP	36.6	17.0	7.0	32.3	28.3	40.0	11.7	
Hori	46.666	QP	37.7	11.7	7.3	32.2	24.5	40.0	15.5	
Hori	68.976	QP	47.9	6.2	7.6	32.1	29.6	40.0	10.4	
Hori	148.498	QP	44.4	14.9	8.6	32.2	35.7	43.5	7.8	
Hori	405.008	QP	33.8	17.6	10.6	32.0	30.0	46.0	16.0	
Hori	742.477	QP	38.8	21.2	12.6	31.9	40.7	46.0	5.3	
Hori	2483.500	PK	55.7	26.9	3.2	32.0	53.8	73.9	20.1	
Hori	2740.171	PK	57.7	27.1	3.5	31.7	56.6	73.9	17.3	
Hori	4960.000	PK	41.2	30.9	5.2	31.2	46.1	73.9	27.8	Floor Noise
Hori	7440.000	PK	42.2	35.9	6.6	32.1	52.6	73.9	21.3	Floor Noise
Hori	9920.000	PK	41.9	38.9	7.1	32.5	55.4	73.9	18.5	Floor Noise
Hori	2483.500	AV	40.5	26.9	3.2	32.0	38.6	53.9	15.4	
Hori	2740.171	AV	41.5	27.1	3.5	31.7	40.4	53.9	13.5	
Hori	4960.000	AV	29.4	30.9	5.2	31.2	34.3	53.9	19.6	Floor Noise
Hori	7440.000	AV	31.2	35.9	6.6	32.1	41.6	53.9	12.3	Floor Noise
Hori	9920.000	AV	30.9	38.9	7.1	32.5	44.4	53.9	9.5	Floor Noise
Vert	31.246	QP	40.4	17.0	7.0	32.3	32.1	40.0	7.9	
Vert	47.462	QP	45.5	11.5	7.3	32.2	32.1	40.0	7.9	
Vert	72.890	QP	46.6	6.3	7.7	32.1	28.5	40.0	11.5	
Vert	148.500	QP	44.0	14.9	8.6	32.2	35.3	43.5	8.2	
Vert	405.009	QP	38.9	17.6	10.6	32.0	35.1	46.0	10.9	
Vert	742.485	QP	41.3	21.2	12.6	31.9	43.2	46.0	2.8	
Vert	2483.500	PK	58.7	26.9	3.2	32.0	56.8	73.9	17.1	
Vert	2740.171	PK	55.4	27.1	3.5	31.7	54.3	73.9	19.6	
Vert	4960.000	PK	40.4	30.9	5.2	31.2	45.3	73.9	28.7	Floor Noise
Vert	7440.000	PK	42.2	35.9	6.6	32.1	52.6	73.9	21.3	Floor Noise
Vert	9920.000	PK	42.5	38.9	7.1	32.5	56.0	73.9	18.0	Floor Noise
Vert	2483.500	AV	43.0	26.9	3.2	32.0	41.1	53.9	12.8	
Vert	2740.171	AV	40.8	27.1	3.5	31.7	39.7	53.9	14.2	
Vert	4960.000	AV	29.5	30.9	5.2	31.2	34.4	53.9	19.5	Floor Noise
Vert	7440.000	AV	31.3	35.9	6.6	32.1	41.7	53.9	12.2	Floor Noise
Vert	9920.000	AV	30.8	38.9	7.1	32.5	44.3	53.9	9.6	Floor Noise

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter-Distance factor(above 10GHz)) - Gain(Amplifier)

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

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

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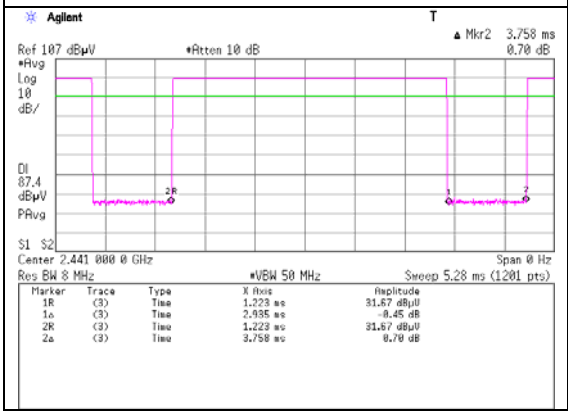
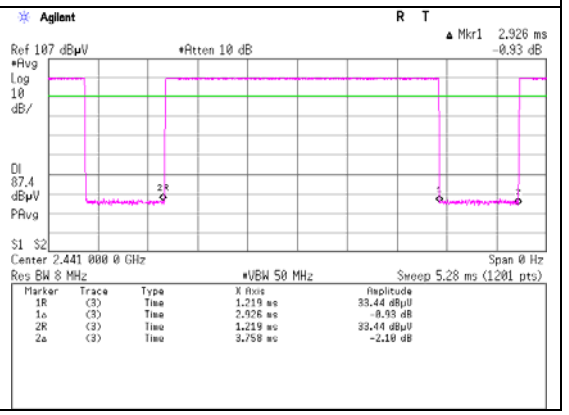
Burst Rate Confirmation

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5/3DH5

DH5



3DH5

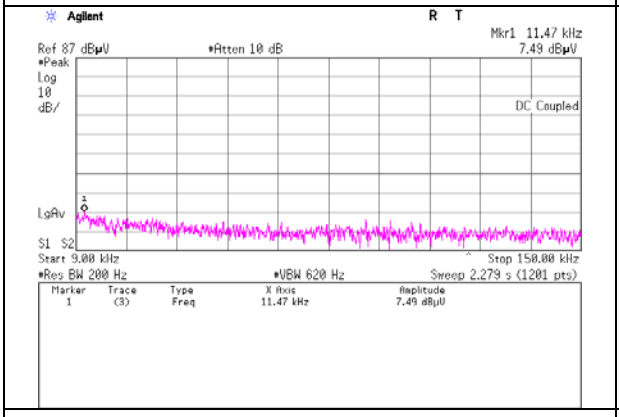


Conducted Spurious Emission

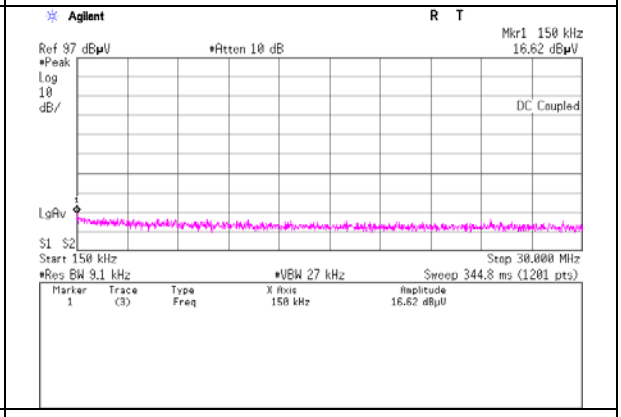
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2402MHz

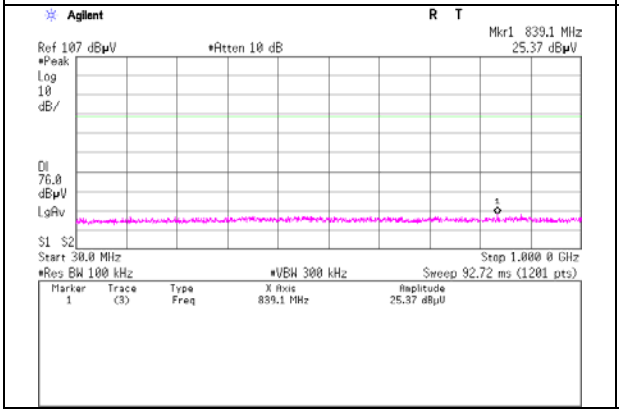
9kHz-150kHz



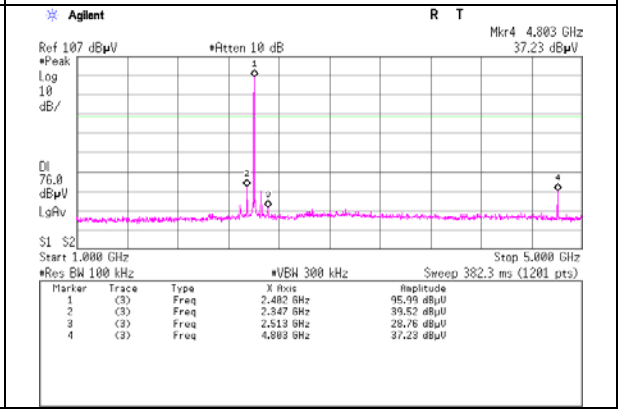
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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Telephone : +81 596 24 8999
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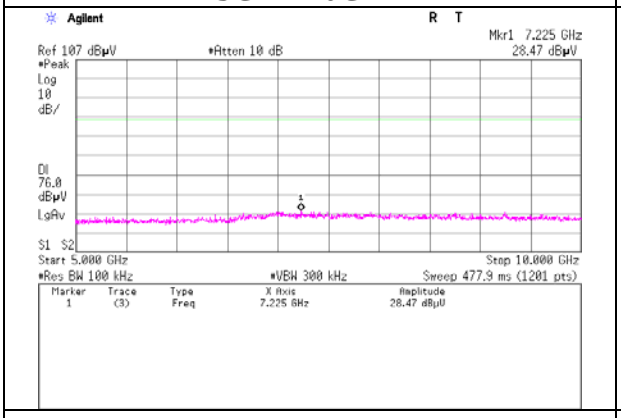
Conducted Spurious Emission

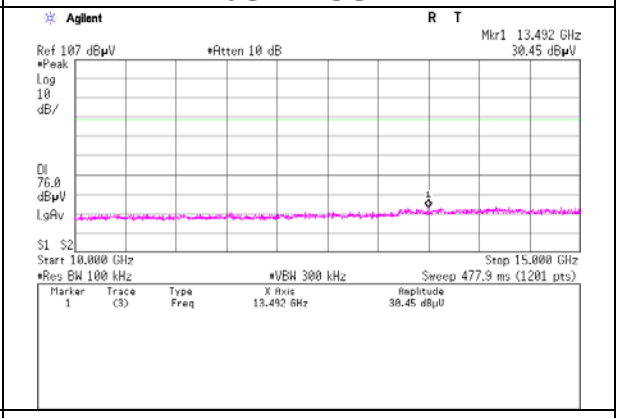
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2402MHz

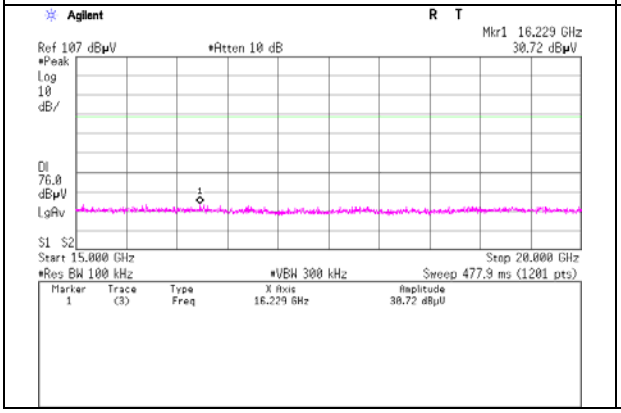
5GHz-10GHz



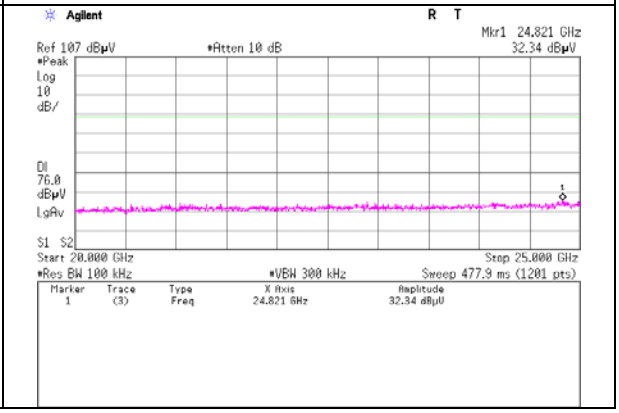
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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Conducted Spurious Emission

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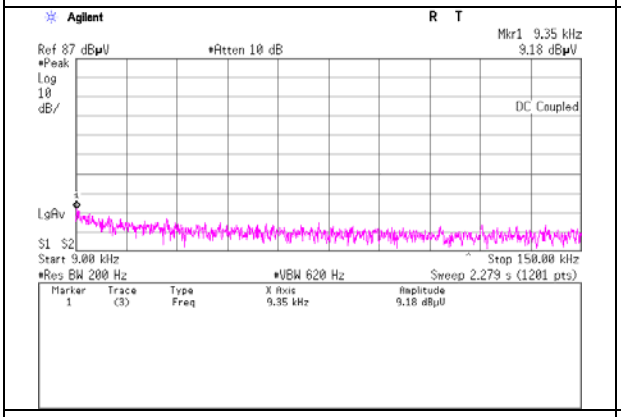
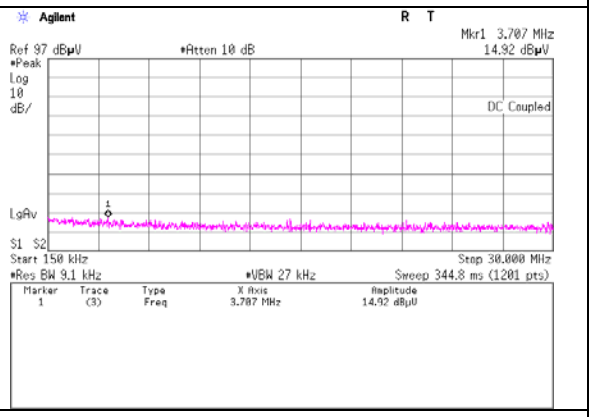
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2441MHz

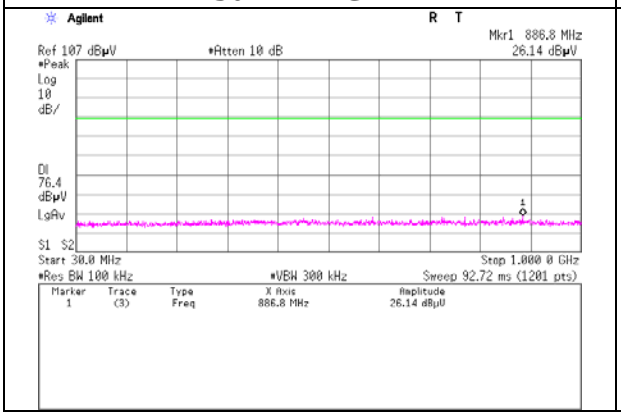
9kHz-150kHz



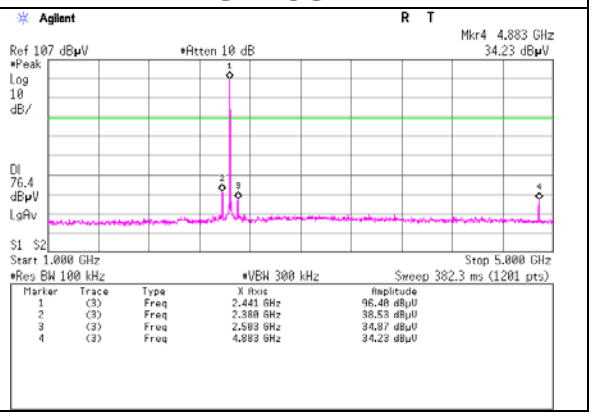
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz

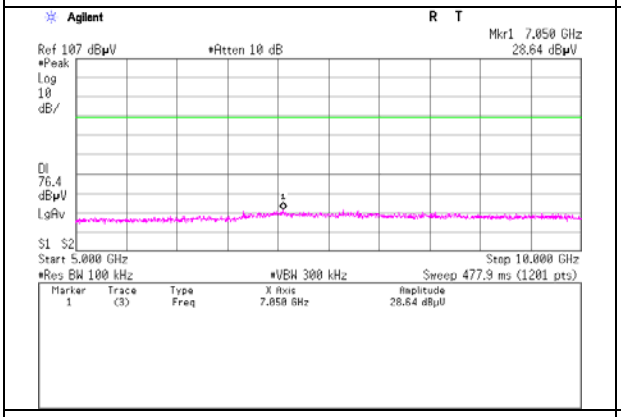


Conducted Spurious Emission

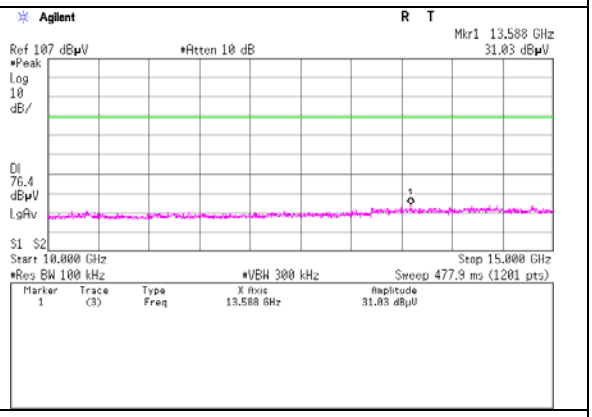
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2441MHz

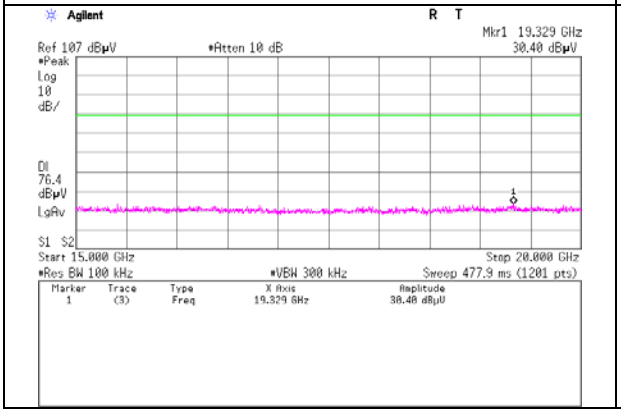
5GHz-10GHz



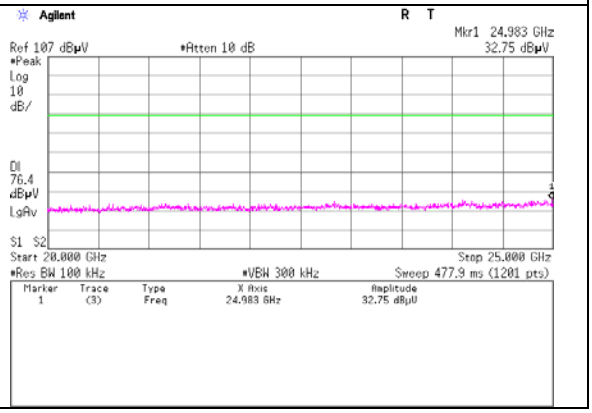
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz

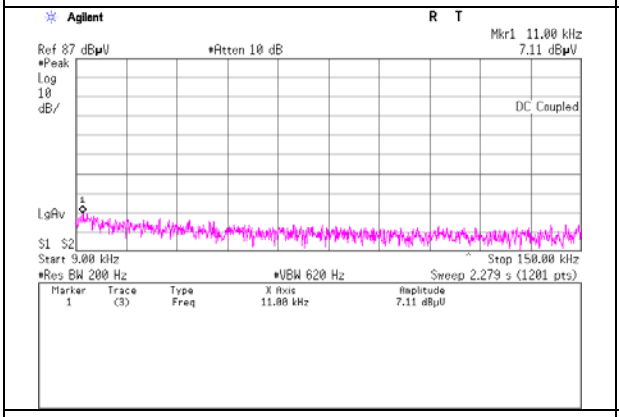


Conducted Spurious Emission

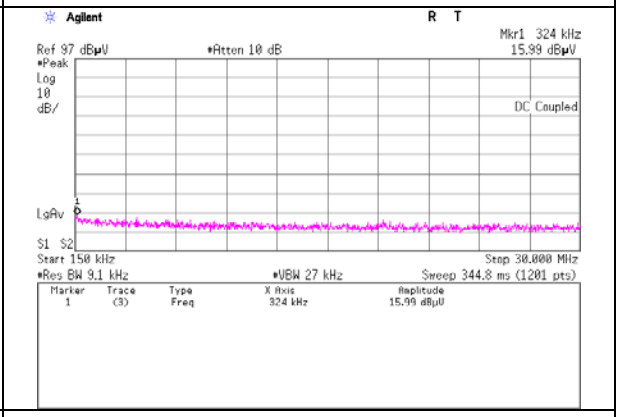
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2480MHz

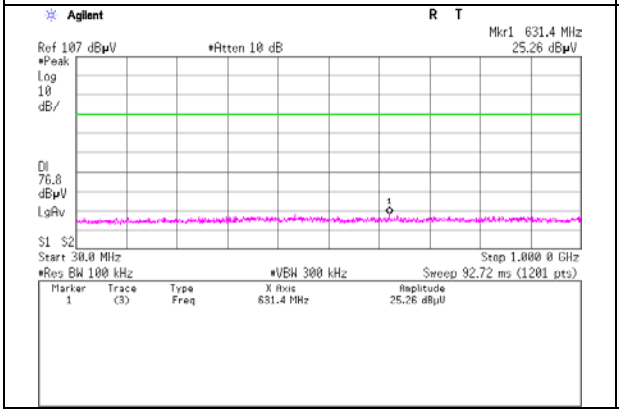
9kHz-150kHz



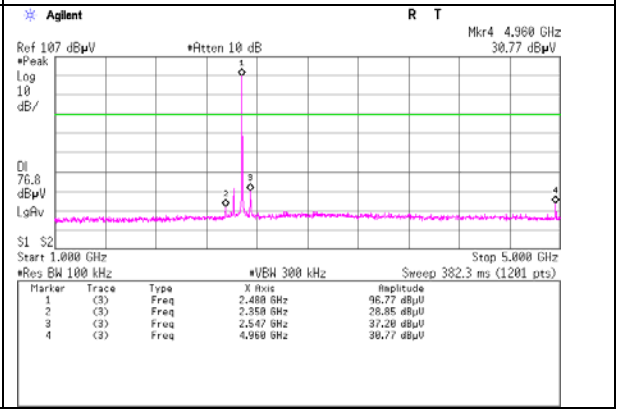
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



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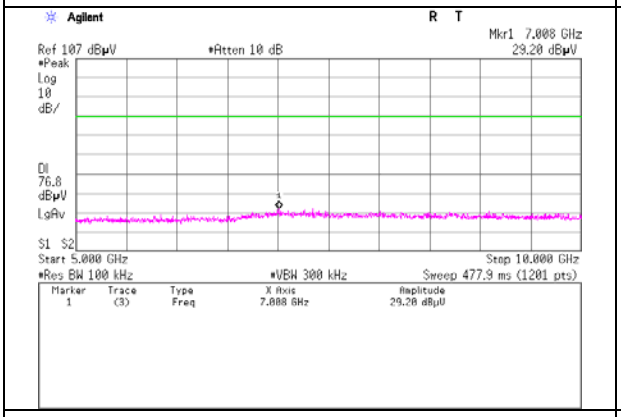
Conducted Spurious Emission

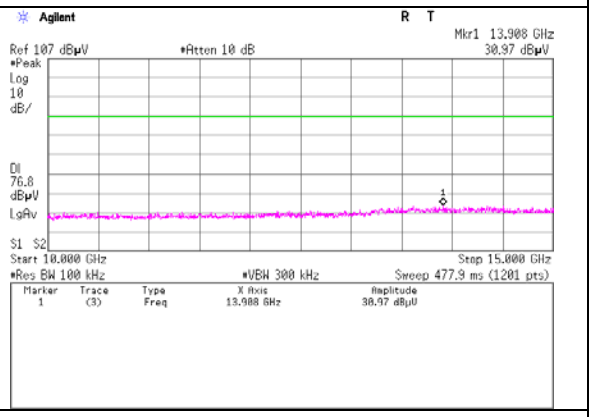
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5

Tx DH5 2480MHz

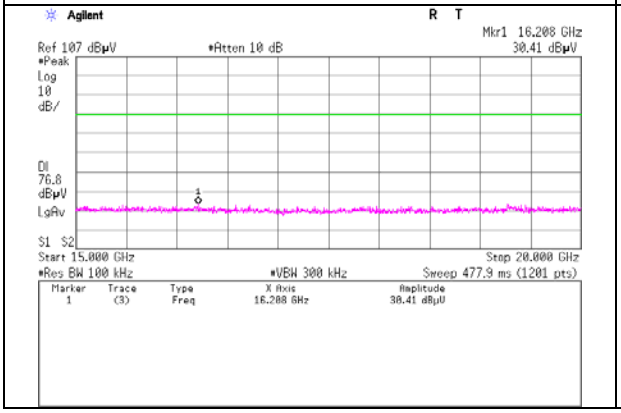
5GHz-10GHz



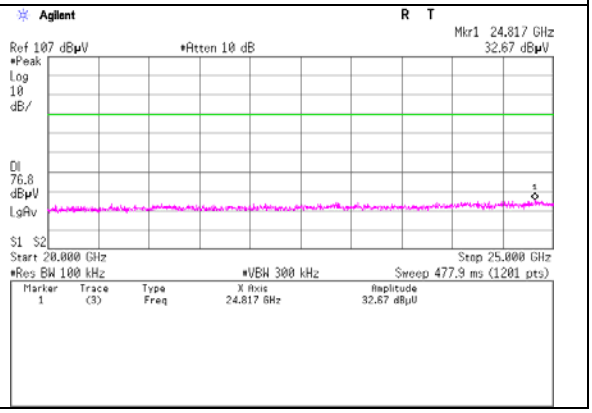
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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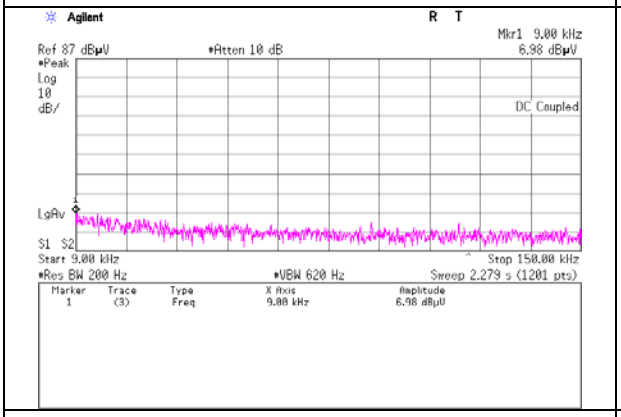
Conducted Spurious Emission

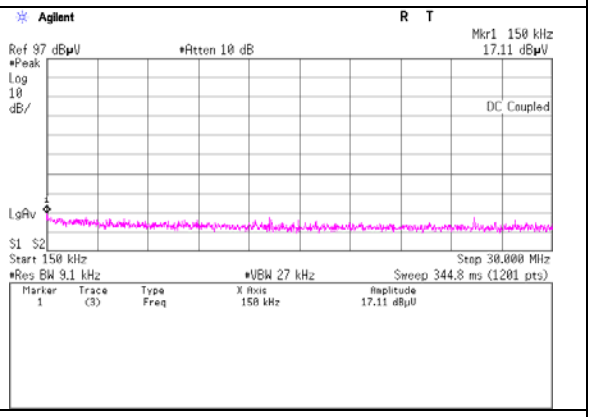
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2402MHz

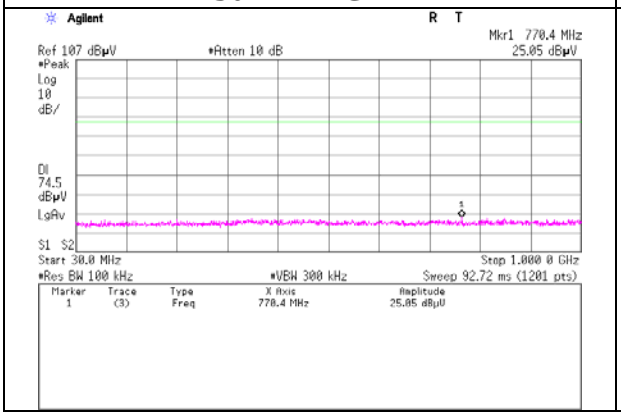
9kHz-150kHz



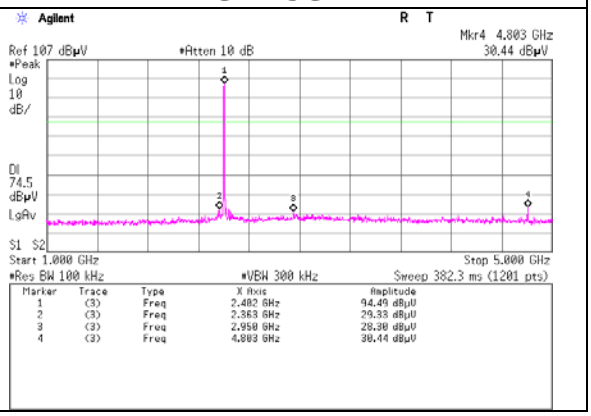
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz

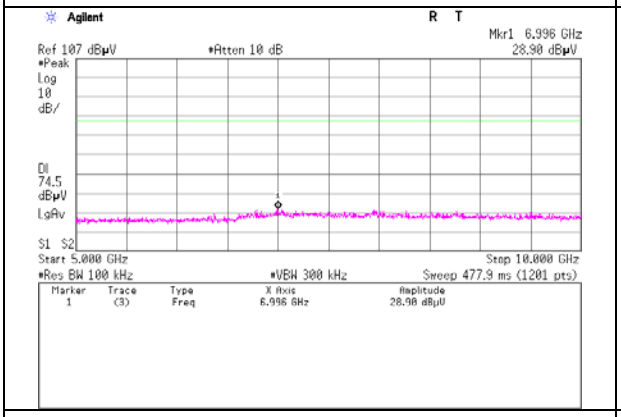


Conducted Spurious Emission

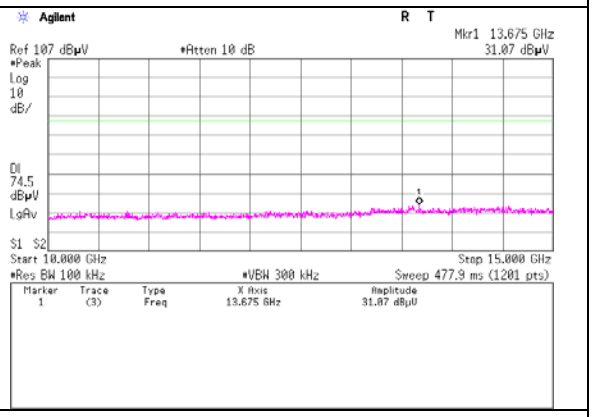
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2402MHz

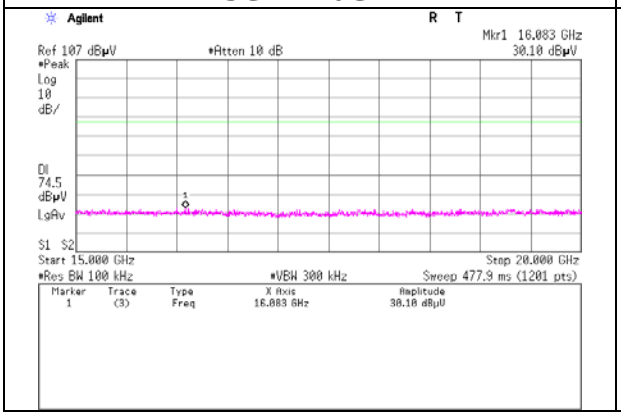
5GHz-10GHz



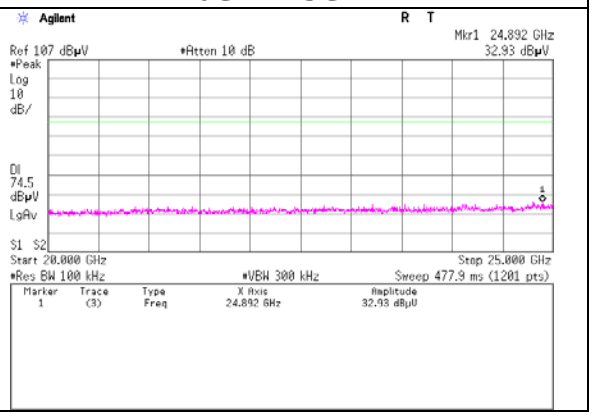
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz

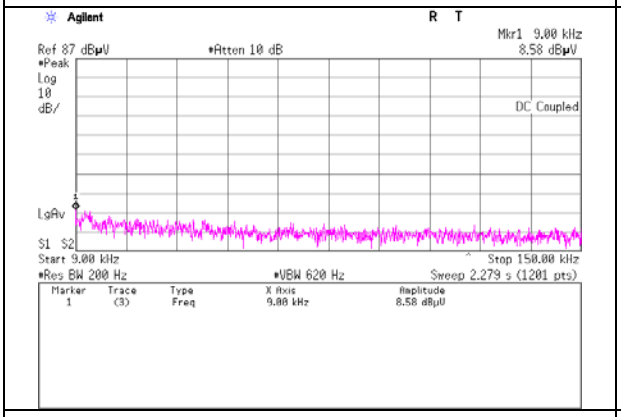


Conducted Spurious Emission

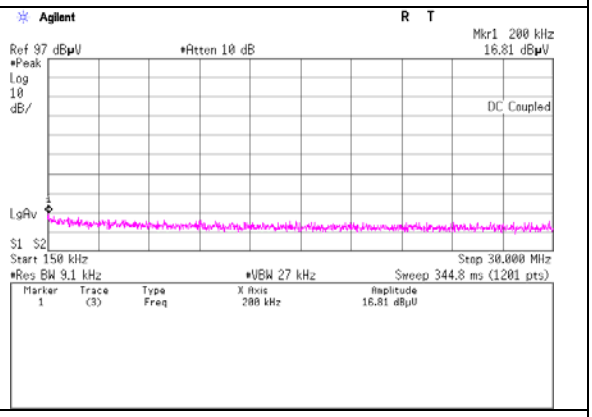
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2441MHz

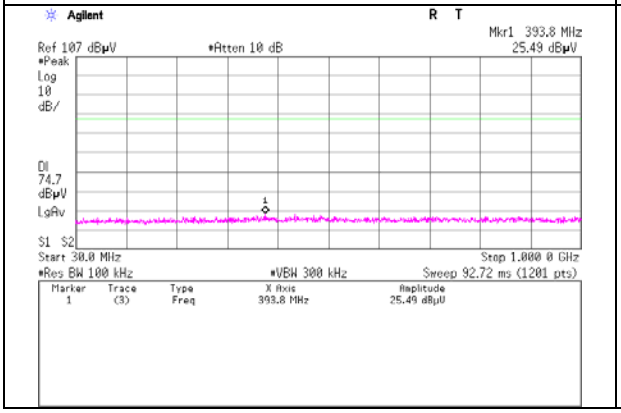
9kHz-150kHz



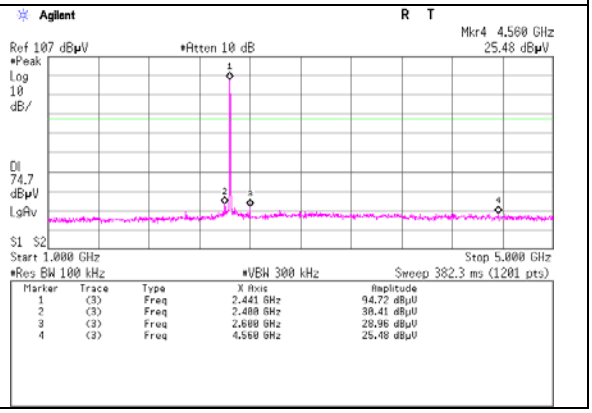
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz



Conducted Spurious Emission

Test place	Ise EMC Lab. No.6 Measurement Room
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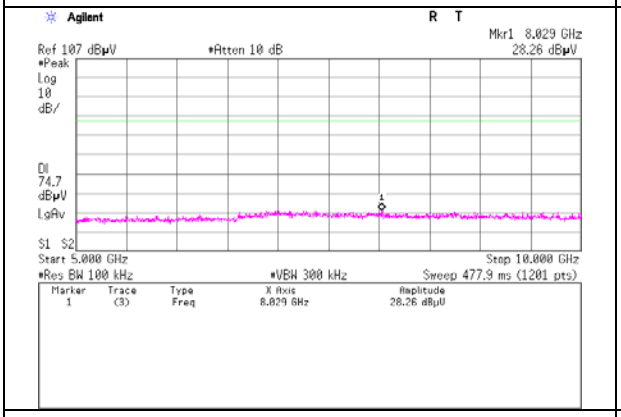
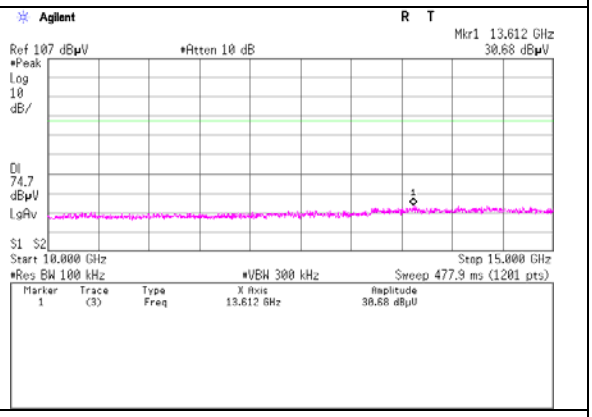
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2441MHz

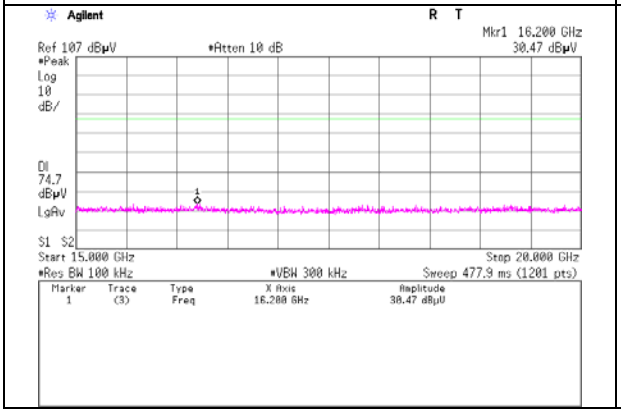
5GHz-10GHz



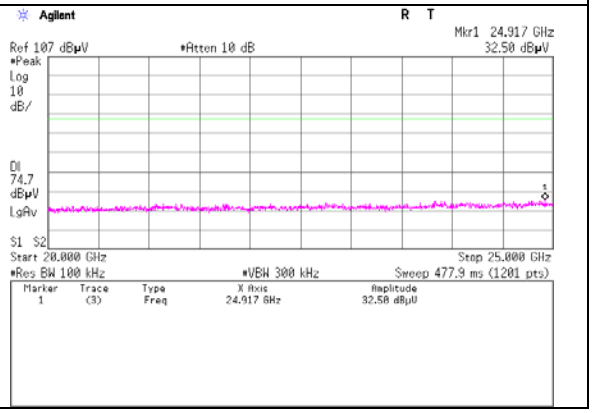
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



Conducted Spurious Emission

Test place	Ise EMC Lab. No.6 Measurement Room
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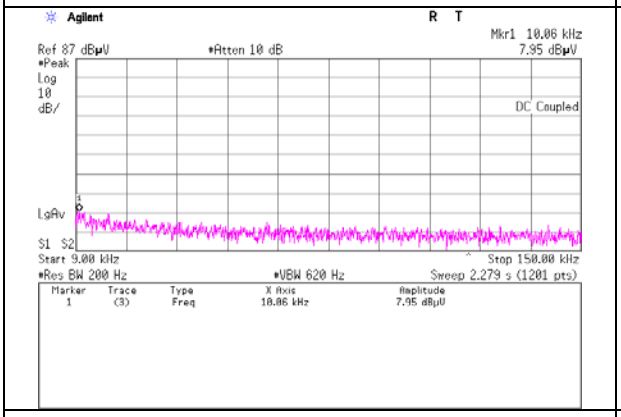
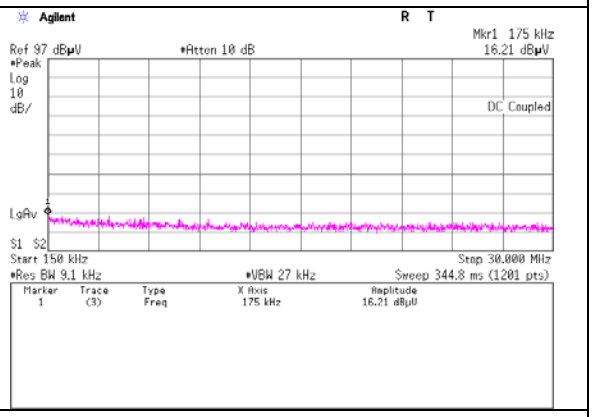
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2480MHz

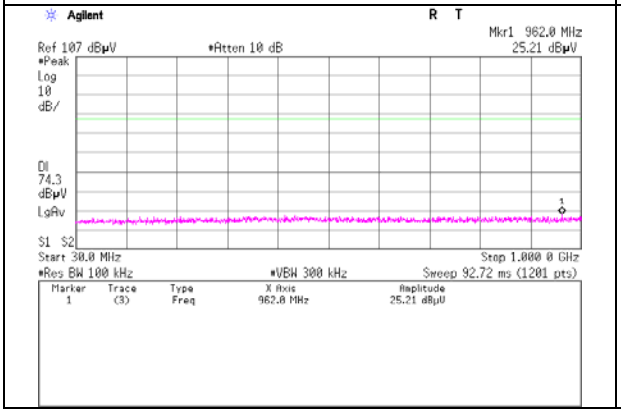
9kHz-150kHz



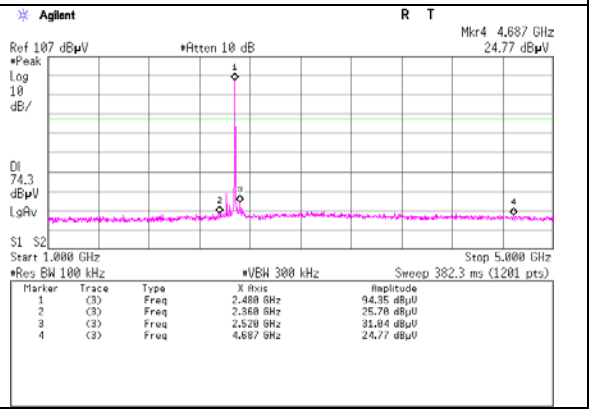
150kHz-30MHz



30MHz-1GHz



1GHz-5GHz

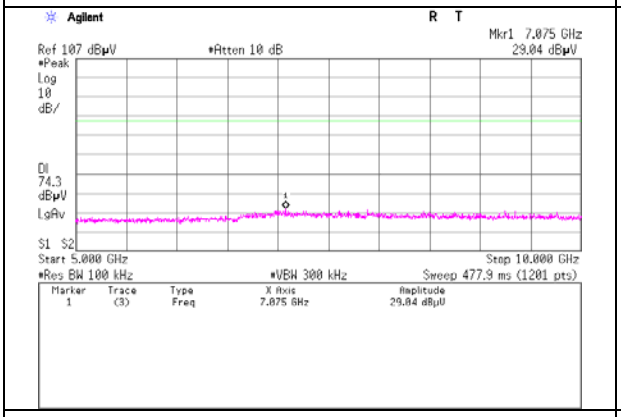


Conducted Spurious Emission

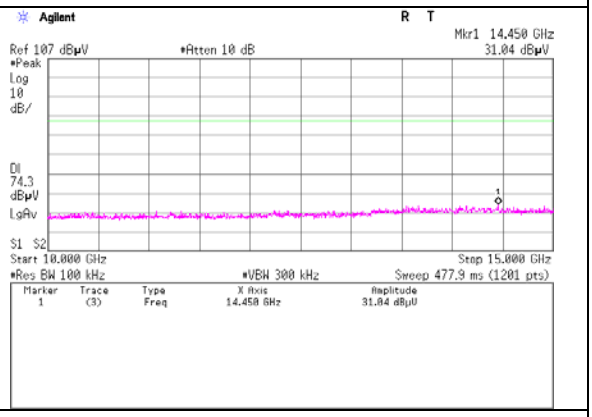
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) 3DH5

Tx 3DH5 2480MHz

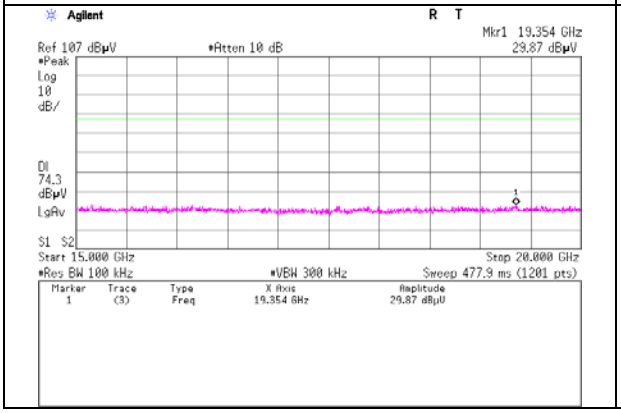
5GHz-10GHz



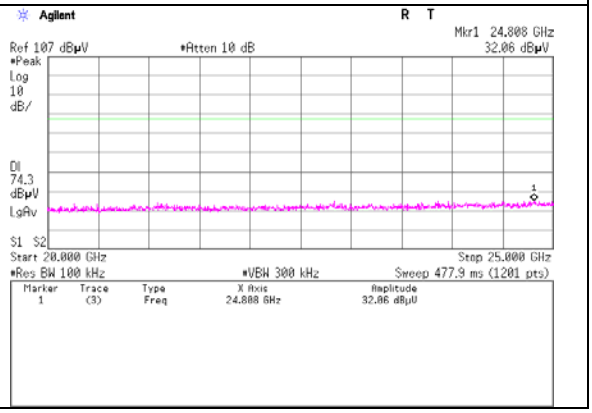
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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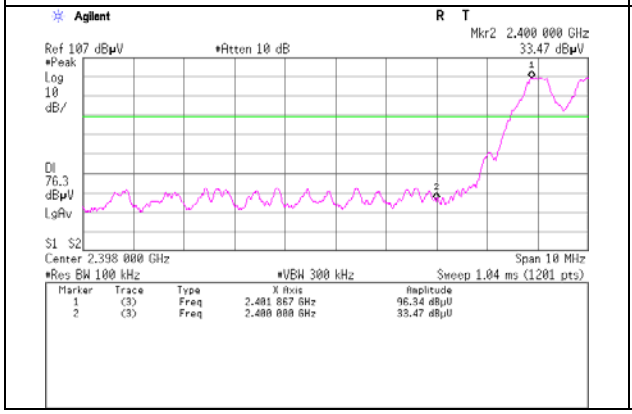
Conducted Emission Band Edge compliance

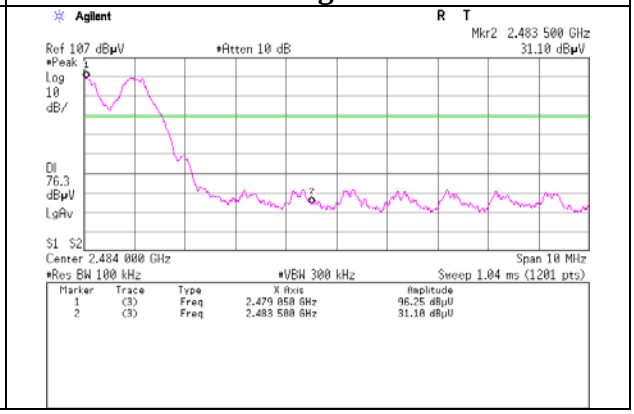
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on/off) DH5

Tx DH5, Hopping on

Low

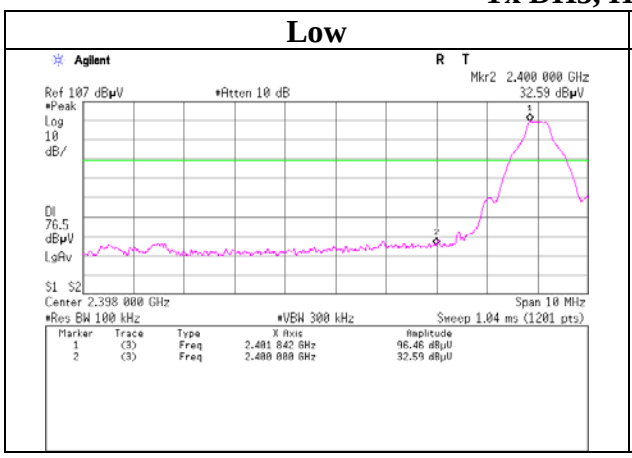


High

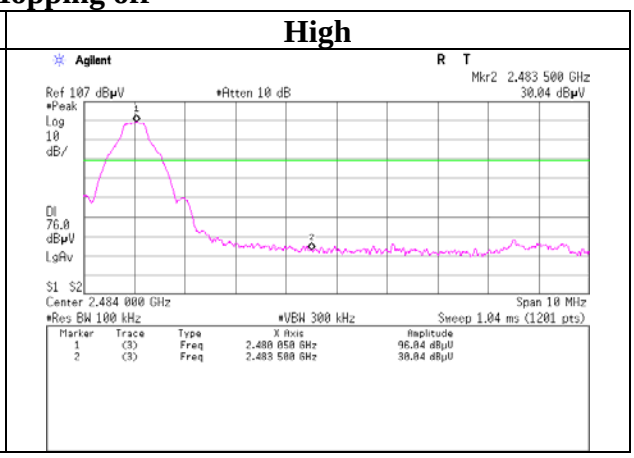


Tx DH5, Hopping off

Low



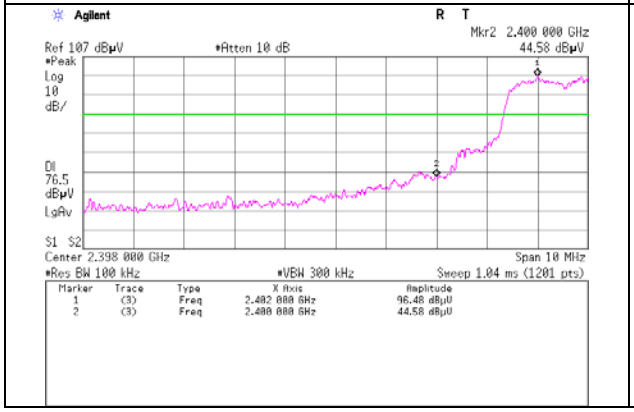
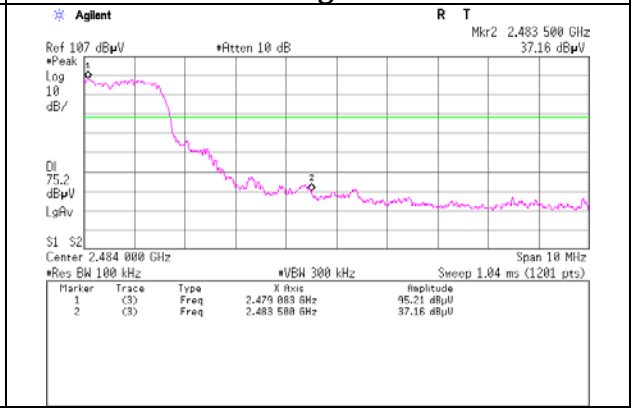
High



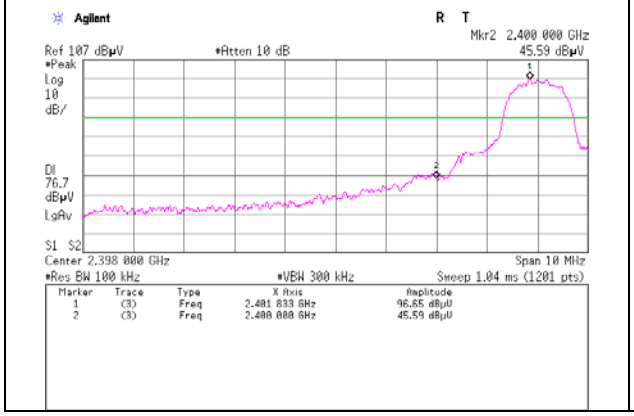
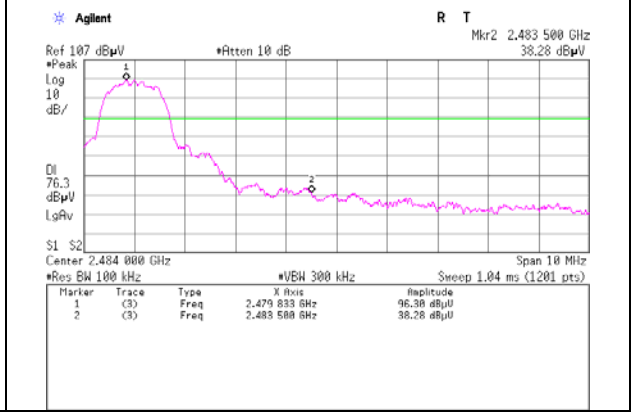
Conducted Emission Band Edge compliance

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on/off) 3DH5

Tx 3DH5, Hopping on

Low	High
	

Tx 3DH5, Hopping off

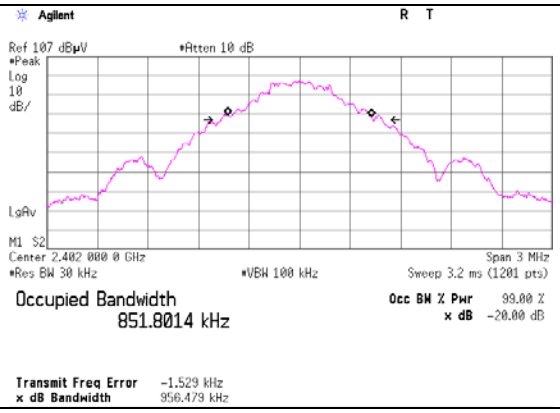
Low	High
	

99%Occupied Bandwidth

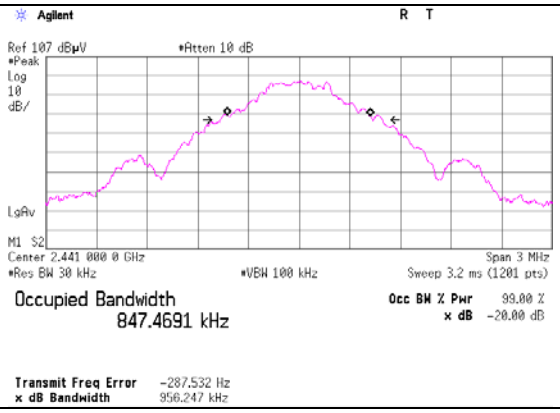
Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping off) DH5/3DH5

Tx DH5, Hopping off

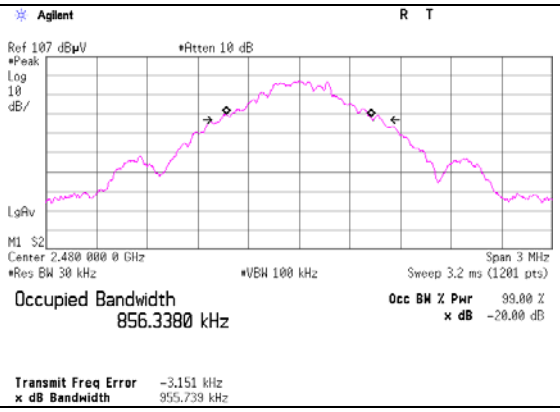
2402MHz



2441MHz

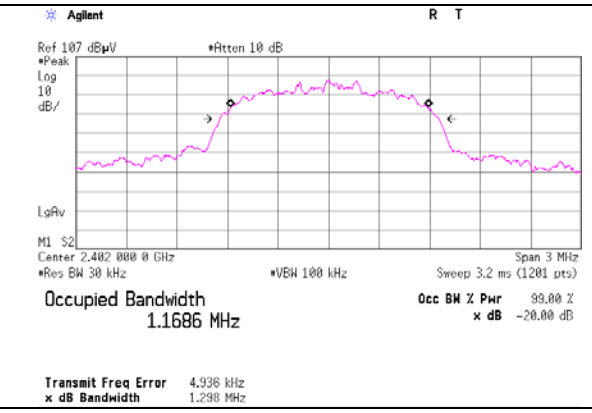


2480MHz

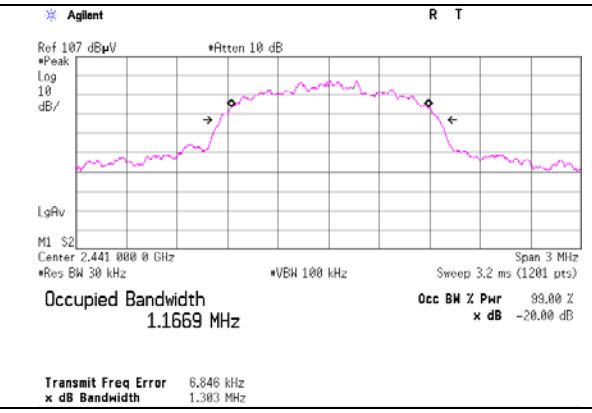


Tx 3DH5, Hopping off

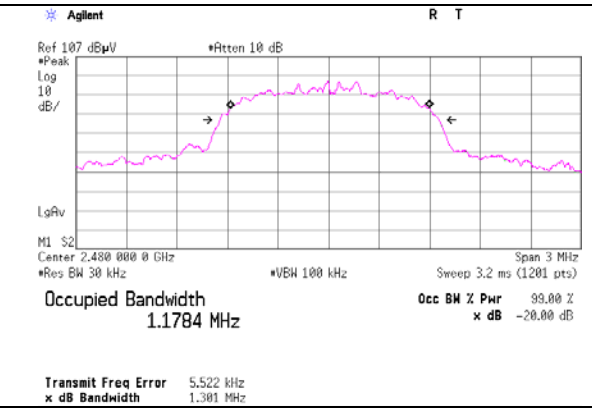
2402MHz



2441MHz



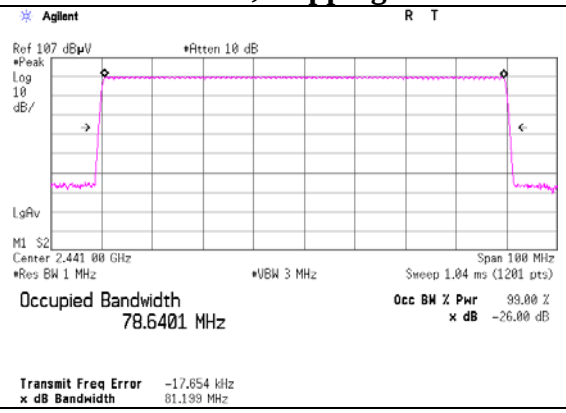
2480MHz



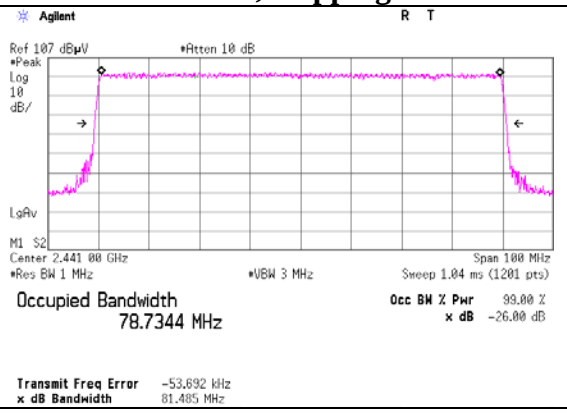
99% Occupied Bandwidth

Test place	Ise EMC Lab. No.6 Measurement Room
Report No.	10724035H
Date	03/20/2015
Temperature/ Humidity	23deg. C / 47% RH
Engineer	Ken Fujita
Mode	Tx (Hopping on) DH5/3DH5/Inquiry

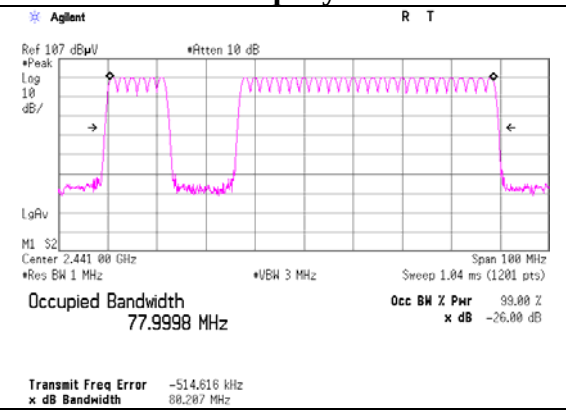
Tx DH5, Hopping on



Tx 3DH5, Hopping on



Inquiry



APPENDIX 2: Test instruments

EMI 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/CE	2015/02/19 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	1301	RE/CE	2015/01/13 * 12
MJM-16	Measure	KOMELON	KMC-36	-	RE/CE	-
COTS-MEMI	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2014/04/08 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2014/05/26 * 12
MCC-167	Microwave Cable	Junkosha	MWX221	1404S374(1m) / 1405S074(5m)	RE	2014/05/26 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2015/03/19 * 12
MHF-25	High Pass Filter 3.5-18.0GHz	UL Japan	HPF SELECTOR	001	RE	2014/09/22 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170306	RE	2014/05/26 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE/CE	2014/08/19 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2014/10/18 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2014/10/18 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2014/07/14 * 12
MAT-70	Attenuator(6dB)	Agilent	8491A-006	MY52460153	RE	2014/04/14 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2015/03/10 * 12
MTW-03	Torque wrench	HUBER+SUHNER	74 Z-0-0-21	98142	RE	2015/01/16 * 36
MLS-23	LISN(AMN)	Schwarzbeck	NSLK8127	8127-729	CE(AE)	2014/07/10 * 12
MLS-24	LISN(AMN)	Schwarzbeck	NSLK8127	8127-730	CE(EUT)	2014/07/10 * 12
MTA-31	Terminator	TME	CT-01	-	CE	2015/01/19 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	5D-2W(10m)/SFM141(3m)/sucoform141-PE(1m)/421-010(1.5m)/RFM-E321(Switcher)	-/00640	CE	2014/07/14 * 12
MAT-66	Attenuator(13dB)	JFW Industries, Inc.	50FP-013H2 N	-	CE	2015/01/29 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-201	1401	AT	2015/01/13 * 12
MSA-13	Spectrum Analyzer	Agilent	E4440A	MY46185823	AT	2014/06/06 * 12
MPM-09	Power Meter	Anritsu	ML2495A	6K00003348	AT	2014/10/06 * 12
MPSE-12	Power sensor	Anritsu	MA2411B	011598	AT	2014/10/06 * 12
MCC-138	Microwave cable	HUBER+SUHNER	SUCOFLEX 102	37953/2	AT	2014/10/02 * 12
MAT-22	Attenuator(10dB) 1-18GHz	Orient Microwave	BX10-0476-00	-	AT	2015/03/18 * 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: CE: Conducted Emission test
RE: Radiated Emission test
AT: Antenna Terminal Conducted test