RADIO TEST REPORT

Test Report No. : 11257132S-A-R3

Applicant	:	**Nintendo Co., Ltd.**
Type of Equipment	:	**Wireless Game Device**
Model No.	:	**HAC-015**
FCC ID	:	**BKEHAC015**
Test regulation	:	**FCC Part 15 Subpart C: 2016**
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 standard.
4. The test results in this report are traceable to the national or international standards.
5. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. This report is a revised version of 11257132S-A-R2. 11257132S-A-R2 is replaced with this report.

Date of test: April 20 to June 15, 2016

Representative test engineer:
Makoto Hosaka
Engineer
Consumer Technology Division

Approved by:
Akio Hayashi
Leader
Consumer Technology Division

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

RTL02610

UL Japan, Inc.
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REVISION HISTORY

Original Test Report No.: 11257132S-A

Revision	Test report No.	Date	Page revised	Contents
- (Original)	11257132S-A	November 16, 2016	-	-
1	11257132S-A-R1	December 7,2016	4, 5	Update
			9	Addition of notes to 4.2
2	11257132S-A-R2	December 20, 2016	- (full-revision)	Update
3	11257132S-A-R3	December 21, 2016	- (full-revision)	Update

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SECTION 1: Customer information

Company Name	:	Nintendo Co., Ltd.
Address	:	11-1 Hokotate-cho, Kamitoba, Minami-ku, Kyoto 601-8501, Japan
Telephone Number	:	+81-75-662-9600
Facsimile Number	:	+81-75-662-9624
Contact Person	:	Kazuya Kuramoto

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

2.1 Identification of E.U.T.

Type of Equipment	:	Wireless Game Device
Model No.	:	HAC-015
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	Vbat: DC 3.2 V to DC 4.5 V (Typical: DC 3.7 V) Vin: DC 5.0 V
Receipt Date of Sample	:	April 20, 2016
Country of Mass-production	:	China
Condition of EUT	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab

2.2 Product Description

Model: HAC-015 (referred to as the EUT in this report) is a Wireless Game Device.

General Specification

Clock frequency(ies) in the system	:	Bluetooth: 24 MHz

Radio Specification

Bluetooth:

Radio Type	:	Transceiver
Frequency of Operation	:	2402 MHz - 2480 MHz
Modulation	:	FHSS
Power Supply (radio part input)	:	DC 1.8 V
Antenna type	:	Inverted-F Antenna
Antenna Gain	:	1.51 dBi
Operation temperature	:	+5 deg.C to +35 deg.C

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C FCC Part 15 final revised on November 14, 2016 and effective December 14, 2016
Title	:	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

* The revision on November 14, 2016, does not affect the test specification applied to the EUT.
*The EUT has been tested for compliance with FCC Part 15 Subpart B.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013 6. Standard test methods	**FCC:** Section 15.207	21.0 dB 0.16767 MHz, QP, N Tx 2441 MHz, DH5, Type-A	Complied	-
	IC: RSS-Gen 8.8	**IC:** RSS-Gen 8.8	22.6 dB 0.47612 MHz, AV, N Tx 2441 MHz, DH5, Type-B		
Carrier Frequency Separation	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(a)(1)	See data.	Complied	Conducted
	IC: -	**IC:** RSS-247 5.1 (2)			
20 dB Bandwidth	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(a)(1)		Complied	Conducted
	IC: -	**IC:** RSS-247 5.1 (1)			
Number of Hopping Frequency	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(a)(1)(iii)		Complied	Conducted
	IC: -	**IC:** RSS-247 5.1 (4)			
Dwell time	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(a)(1)(iii)		Complied	Conducted
	IC: -	**IC:** RSS-247 5.1 (4)			
Maximum Peak Output Power	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(a)(1)		Complied	Conducted
	IC: RSS-Gen 6.12	**IC:** RSS-247 5.4 (2)			
Spurious Emission & Band Edge Compliance	**FCC:** FCC Public Notice DA 00-705	**FCC:** Section15.247(d)	7.2 dB 12400 MHz, AV Horizontal & Vertical Tx 2480 MHz DH5, Type-A 12400 MHz, AV Horizontal & Vertical Tx 2480 MHz 3DH5, Type-A 12400 MHz, AV Horizontal Tx 2480 MHz DH5, Type-B 12205 MHz, AV Vertical Tx 2441 MHz 3DH5, Type-B	Complied	Conducted/ Radiated (above 30 MHz) *1)
	IC: RSS-Gen 6.13	**IC:** RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10			
99% Occupied Bandwidth	**IC:** RSS-Gen 6.6	**IC:** -	-	-	Conducted
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422. *1) Radiated test was selected over 30 MHz based on section 15.247(d).					

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

FCC Part 15.31 (e)
The EUT is supplied the power from battery or host device.
In either method, the EUT provides stable voltage (DC 1.8 V) constantly to RF Module regardless of input voltage.
In the case of battery method, the test was performed with the full-charged battery.
Therefore, the 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 requirement.

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

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

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

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

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

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

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

3.5 Test Location

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

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

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

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

4.1 Operating Mode(s)

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

Details of Operating Mode(s)

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

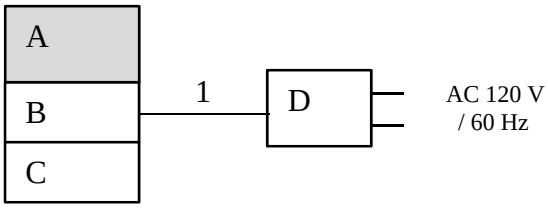
*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload length (except Dwell time test)
*2DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3DH mode (3 Mb/s EDR: 8DPSK) as a representative.
* It is considered that the non-tested packet type (e.g. inquiry) can be omitted as it is complied with above all the test items based on Bluetooth Core specification.

*EUT has the power settings by the software as follows;
Power settings: Fixed
Software: cmd.exe, Ver. 6.3.9600.17415,
Bluetool.exe, Ver.1.9.3.0
*This setting of software is the worst case.
Any conditions under the normal use do not exceed the condition of setting.
In addition, end users cannot change the settings of the output power of the product.

4.2 Configuration and peripherals

(1) For radiated emissions tests *

(2) For conducted emissions tests



* Pre-check measurement was performed with the EUT (supplied from the host device, and battery operation). It was confirmed that there was no difference.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless Game Device	*1)	*1)	NINTENDO	EUT
B	Grip(Fixing Jig)	-	-	NINTENDO	-
C	Wireless Game Device	HAC-016	XCL0000000929	NINTENDO	-
D	AC adapter	HAC-002	MAIN JPN No.1	NINTENDO	-

*1)

	Antenna port conducted tests	Conducted emission tests	Radiated emission tests (below 1GHz)	Radiated emission tests (above 1GHz)
Model number	HAC-016 *2)	HAC-015	HAC-015	HAC-015
Serial number	XCL0000002580 (Type-TX)	XBL0000000168 (Type-A), XBL0000002524 (Type-B)	XBL0000002524 (Type-B)	XBL0000000168 (Type-A), XBL0000002524 (Type-B)

*The EUT for final test was selected based on following preliminary test.
- Radiated Emission (below 1 GHz): Comparison of Type-A and Type-B on representative mode.
- Conducted Emission(Type-A): Worst mode of Type-B.
- Antenna Terminal Conducted test: Comparison of Type-DA and Type-TX on Output Power

Accessory and model differences
The difference between Type-A and Type-B is as following table.
The two crystals and 1.8 V LDO are compatible and are electrically identical having same radio parameters.

	Type-A (Type-DA *)	Type-B (Type-TX *)
Crystal (X1)	DSX211SH	7R24080002
1.8 V LDO (U32)	LD39020DTPU18R	RP202K181D

*In the case of HAC-016

So, for the Antenna port conducted tests, Conducted emission tests and Radiated emission tests (below 1GHz), the E.U.T. was selected worse Type by preliminary tests.

*2) For Antenna terminal conducted test, the result of HAC-016 is used since there is no difference in the radio block of HAC-015.

List of cables used

No.	Cable Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB cable	3.0	Shielded	Shielded	-
2	DC	1.8	Unshielded	Unshielded	-
3	AC	0.9	Unshielded	Unshielded	-

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1.0 m by 2.0 m, raised 0.8 m above the conducting ground plane. The table is made of Styrofoam and covered with polyvinyl chloride. That has very low permittivity. The rear of tabletop was located 40 cm 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 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a shielded room.
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 MHz - 30 MHz**
Test data	**: APPENDIX**
Test result	**: Pass**

SECTION 6: Radiated Spurious Emission

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

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

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

Test Antennas are used as below;

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

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

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

Frequency	Below 1 GHz	Above 1 GHz		20 dBc
Instrument used	Test Receiver	Spectrum Analyzer		Spectrum Analyzer
Detector	QP	PK	AV	PK
IF Bandwidth	BW 120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 10 Hz *1)	RBW: 100 kHz VBW: 300 kHz
Test Distance	3 m	4.45 m*2) (1 GHz – 13 GHz), 1 m*3) (13 GHz – 26.5 GHz)		4.45 m*2) (1 GHz – 13 GHz), 1 m*3) (13 GHz – 26.5 GHz)

*1) Although DA 00-705 accepts VBW = 10 Hz for AV measurements, it was confirmed that superfluous smoothing was not performed.
*2) Distance Factor: 20 x log (4.45 m/3.0 m) = 3.4 dB
*2) Distance Factor: 20 x log (1.0 m/3.0 m) = -9.5 dB

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

Antenna polarization	Carrier	Spurious (Below 1 GHz)	Spurious (1 GHz - 13 GHz)	Spurious (Above 13 GHz)
Horizontal	Y	X	Y	X
Vertical	X	X	X	X

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

Measurement range : 30 MHz - 26.5 GHz
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
20 dB Bandwidth	3 MHz	30 kHz	100 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Sample	Max Hold *1)	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak Average *3)	-	Power Meter (Sensor: 50MHz BW)
Carrier Frequency Separation	3 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Number of Hopping Frequency	30 MHz	300 kHz	1 MHz	Auto	Peak	Max Hold	Spectrum Analyzer
Dwell Time	Zero Span	100 kHz, 1 MHz	300 kHz, 3 MHz	As necessary capture the entire dwell time per hopping channel	Peak	Clear Write	Spectrum Analyzer
Conducted Spurious Emission *2)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				
	30 MHz to 25 GHz	100 kHz	300 kHz				
Conducted Spurious Emission Band Edge compliance	10 MHz	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer

*1) The measurement was performed with Max Hold since the duty cycle was not 100 %.
*2) 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.
(9 kHz -150 kHz: RBW = 200 Hz, 150 kHz - 30 MHz: RBW = 10 kHz)
*3) Reference data

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

(Type-B)

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2016/06/15

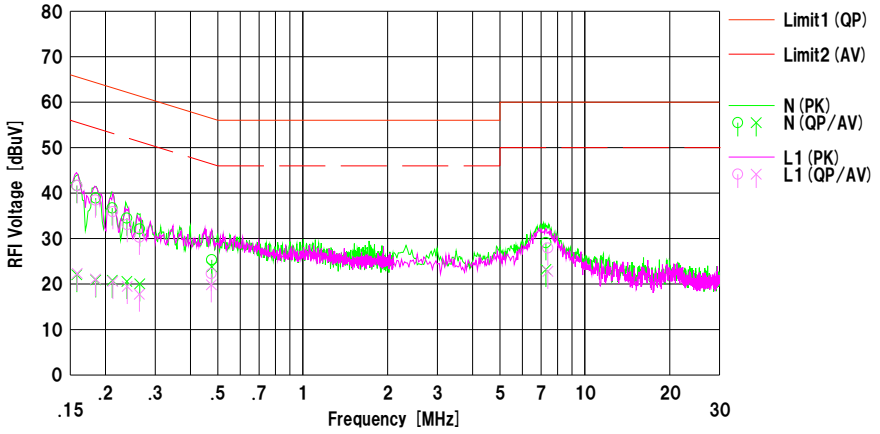
Mode : Tx DH5 2441 MHz

Power : AC 120 V/60 Hz
Temp./Humi. : 26 deg.C / 58 %RH

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Hikaru Shirasawa



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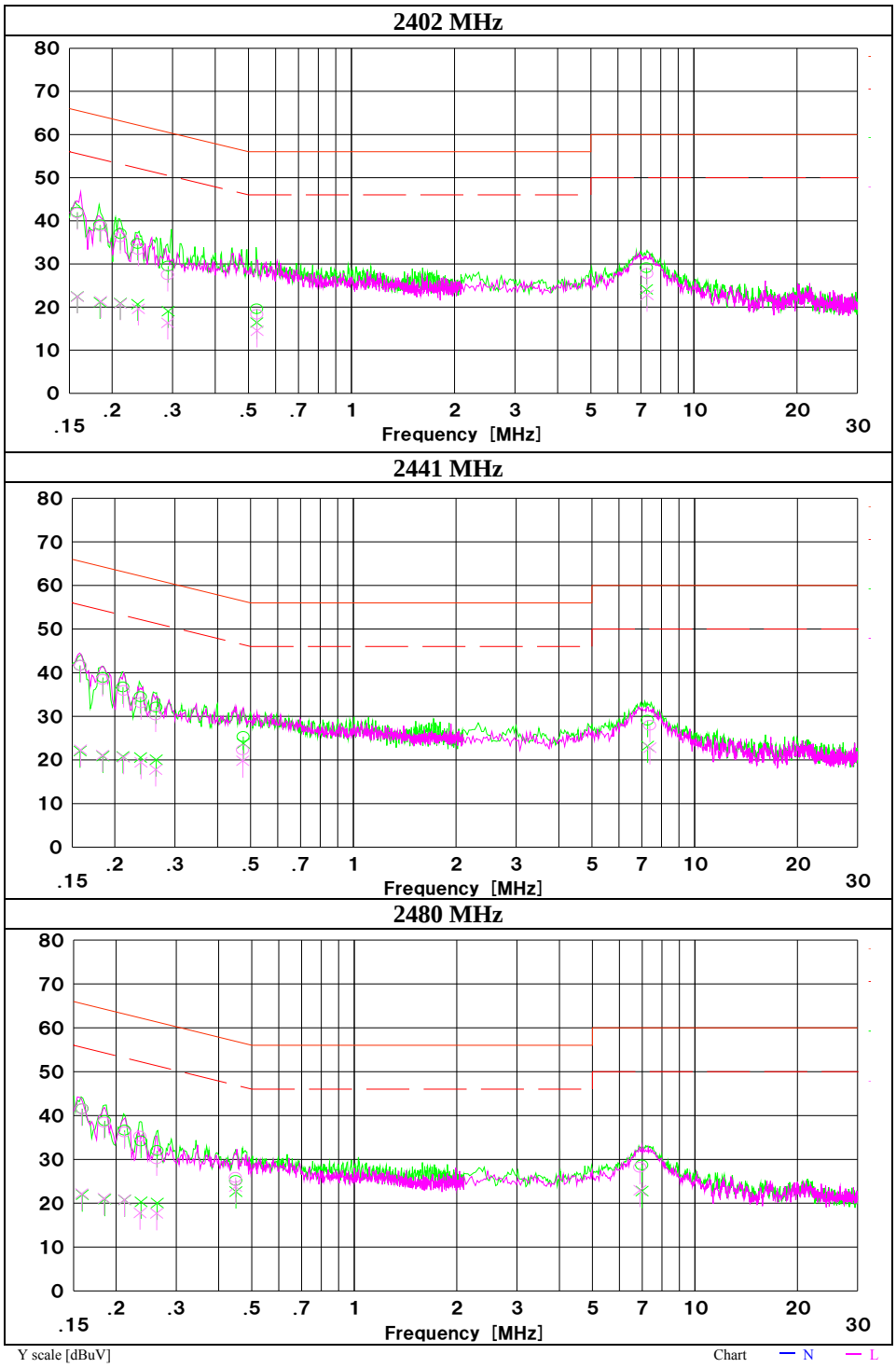
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15819	29.12	9.52	12.54	41.66	22.06	65.56	55.56	23.9	33.5	N	
2	0.18464	26.34	8.36	12.55	38.89	20.91	64.27	54.27	25.3	33.3	N	
3	0.21128	24.16	8.26	12.55	36.71	20.81	63.15	53.15	26.4	32.3	N	
4	0.23806	21.92	8.00	12.56	34.48	20.56	62.16	52.16	27.6	31.6	N	
5	0.26432	19.55	7.49	12.56	32.11	20.05	61.29	51.29	29.1	31.2	N	
6	0.47612	12.76	11.21	12.58	25.34	23.79	56.41	46.41	31.0	22.6	N	
7	7.28171	15.63	9.76	13.45	29.08	23.21	60.00	50.00	30.9	26.7	N	
8	0.15880	29.08	9.80	12.54	41.62	22.34	65.53	55.53	23.9	33.1	L1	
9	0.18412	25.90	8.55	12.55	38.45	21.10	64.30	54.30	25.8	33.2	L1	
10	0.21224	23.35	8.02	12.55	35.90	20.57	63.12	53.12	27.2	32.5	L1	
11	0.23868	20.52	6.91	12.56	33.08	19.47	62.14	52.14	29.0	32.6	L1	
12	0.26360	17.72	5.21	12.56	30.28	17.77	61.32	51.32	31.0	33.5	L1	
13	0.47426	9.70	7.24	12.58	22.28	19.82	56.44	46.44	34.1	26.6	L1	
14	7.39783	14.47	9.34	13.46	27.93	22.80	60.00	50.00	32.0	27.2	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-02

Conducted Emission

Test place	Shonan EMC Lab. No.1 Shielded Room
Report No.	11257132S-A-R3
Date	June 15, 2016
Temperature / Humidity	26 deg. C / 58 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, DH5, Type-B



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Conducted Emission

(Type-B)

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2016/06/15

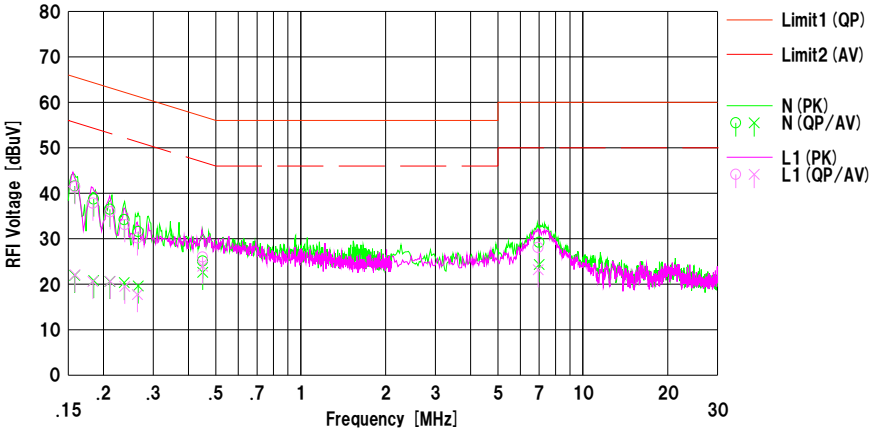
Mode : Tx 3-DH5 2441 MHz

Power : AC 120 V/60 Hz
Temp./Humi. : 26 deg.C / 58 %RH

Remarks : -

Limit1 : FCC 15C(15.207) QP
Limit2 : FCC 15C(15.207) AV

Engineer : Hikaru Shirasawa



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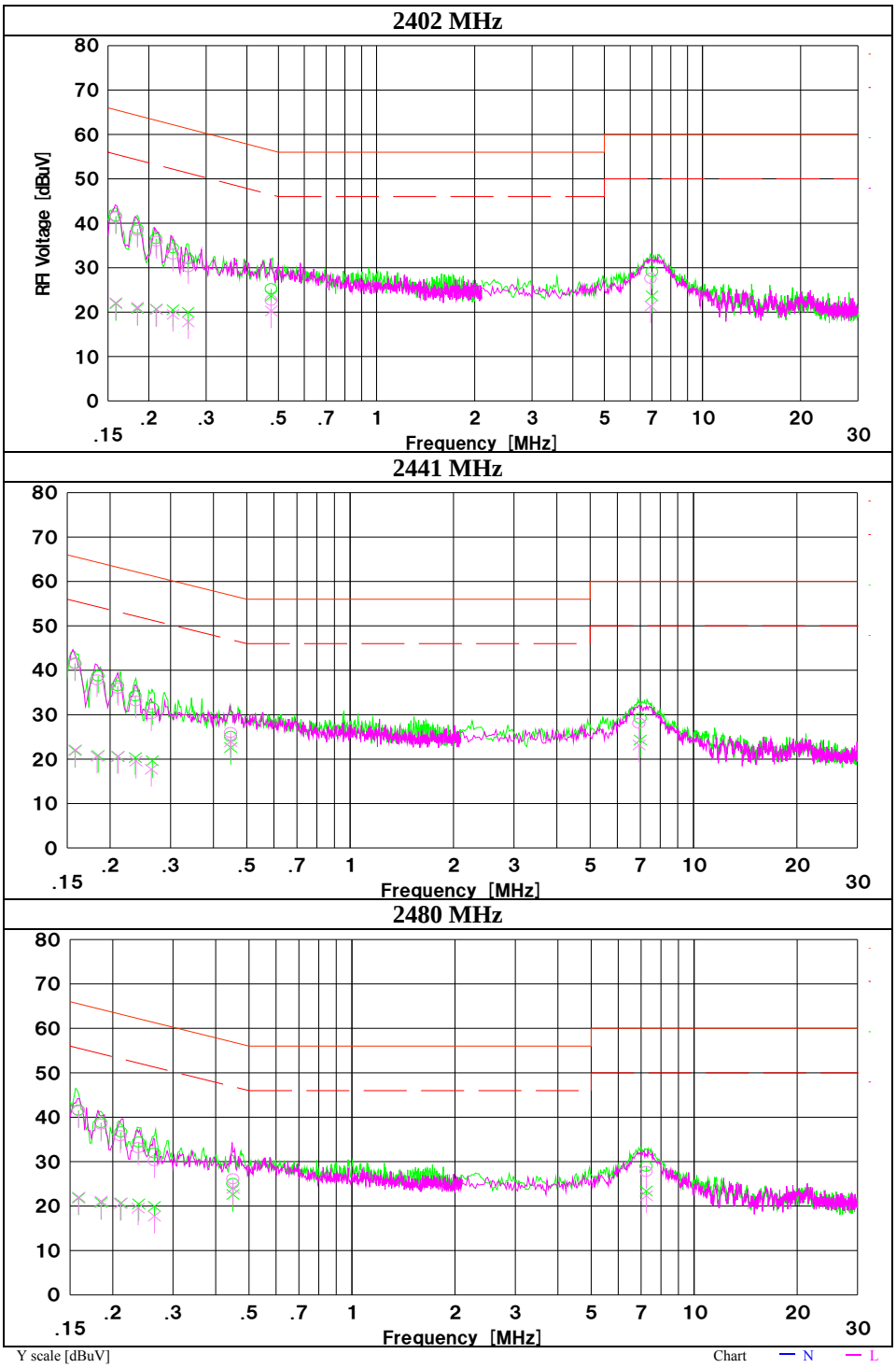
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15808	29.02	9.39	12.54	41.56	21.93	65.56	55.56	24.0	33.6	N	
2	0.18454	26.18	8.27	12.55	38.73	20.82	64.28	54.28	25.5	33.4	N	
3	0.21058	23.92	8.05	12.55	36.47	20.60	63.18	53.18	26.7	32.5	N	
4	0.23686	21.63	7.79	12.56	34.19	20.35	62.21	52.21	28.0	31.8	N	
5	0.26538	19.00	7.06	12.56	31.56	19.62	61.26	51.26	29.7	31.6	N	
6	0.44930	12.52	10.03	12.57	25.09	22.60	56.89	46.89	31.8	24.2	N	
7	7.00256	15.77	10.91	13.41	29.18	24.32	60.00	50.00	30.8	25.6	N	
8	0.15838	28.91	9.54	12.54	41.45	22.08	65.55	55.55	24.1	33.4	L1	
9	0.18340	25.27	8.06	12.55	37.82	20.61	64.33	54.33	26.5	33.7	L1	
10	0.21116	23.37	8.10	12.55	35.92	20.65	63.16	53.16	27.2	32.5	L1	
11	0.23780	20.54	6.97	12.56	33.10	19.53	62.17	52.17	29.0	32.6	L1	
12	0.26380	17.62	5.16	12.56	30.18	17.72	61.31	51.31	31.1	33.5	L1	
13	0.44911	13.43	11.37	12.57	26.00	23.94	56.89	46.89	30.8	22.9	L1	
14	6.94628	14.67	9.76	13.40	28.07	23.16	60.00	50.00	31.9	26.8	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-02

Conducted Emission

Test place	Shonan EMC Lab. No.1 Shielded Room
Report No.	11257132S-A-R3
Date	June 15, 2016
Temperature / Humidity	26 deg. C / 58 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, 3DH5, Type-B



Conducted Emission

(Type-A)

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.1 Shielded Room
Date : 2016/06/16

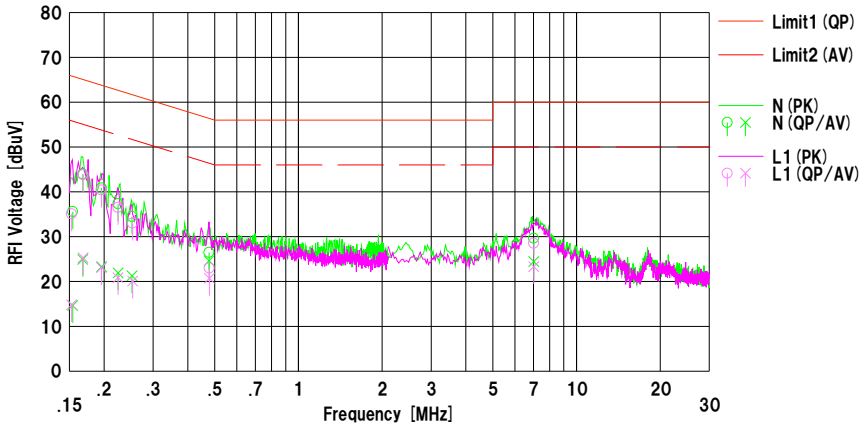
Mode : Tx DH5 2441 MHz

Power : AC 120 V/60 Hz
Temp./Humi. : 26 deg.C / 58 %RH

Remarks : -

Limit1 : FCC 15C (15.207) QP
Limit2 : FCC 15C (15.207) AV

Engineer : Hikaru Shirasawa



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15430	23.04	2.09	12.54	35.58	14.63	65.77	55.77	30.1	41.1	N	
2	0.16767	31.45	12.38	12.55	44.00	24.93	65.08	55.08	21.0	30.1	N	
3	0.19589	28.31	10.78	12.55	40.86	23.33	63.78	53.78	22.9	30.4	N	
4	0.22465	24.80	9.36	12.55	37.35	21.91	62.65	52.65	25.3	30.7	N	
5	0.25212	21.93	8.73	12.56	34.49	21.29	61.69	51.69	27.2	30.4	N	
6	0.47710	13.89	12.06	12.58	26.47	24.64	56.39	46.39	29.9	21.7	N	
7	7.01567	16.23	11.05	13.41	29.64	24.46	60.00	50.00	30.3	25.5	N	
8	0.15291	22.57	2.27	12.54	35.11	14.81	65.84	55.84	30.7	41.0	L1	
9	0.16814	31.26	12.74	12.55	43.81	25.29	65.05	55.05	21.2	29.7	L1	
10	0.19584	27.86	10.55	12.55	40.41	23.10	63.79	53.79	23.3	30.6	L1	
11	0.22443	23.98	8.31	12.55	36.53	20.86	62.65	52.65	26.1	31.7	L1	
12	0.25348	20.46	7.53	12.56	33.02	20.09	61.64	51.64	28.6	31.5	L1	
13	0.47828	10.42	8.11	12.58	23.00	20.69	56.37	46.37	33.3	25.6	L1	
14	7.01603	15.12	9.90	13.41	28.53	23.31	60.00	50.00	31.4	26.6	L1	

Calculation:Result [dBuV] =Reading [dBuV] +C.Fac (LISN+Cable+ATT) [dB]
LISN: SLS-02

20 dB Bandwidth and Carrier Frequency Separation

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, On

Mode	Freq. [MHz]	20 dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.975	1.000	>= 0.650
DH5	2441.0	0.978	1.000	>= 0.652
DH5	2480.0	0.984	1.000	>= 0.656
3DH5	2402.0	1.344	1.000	>= 0.896
3DH5	2441.0	1.319	1.000	>= 0.880
3DH5	2480.0	1.311	1.000	>= 0.874

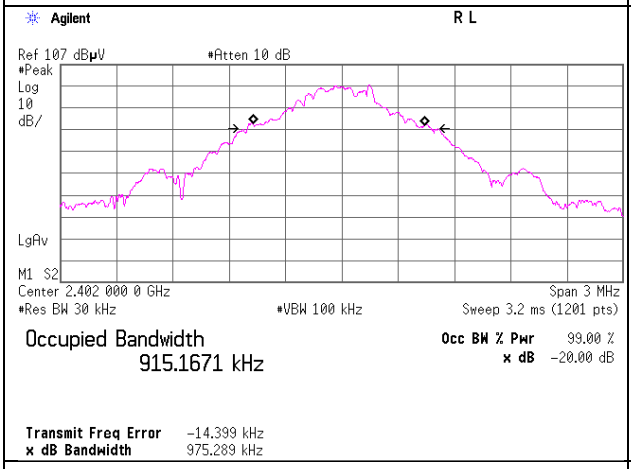
Limit: Two-thirds of 20 dB Bandwidth or 25 kHz (whichever is greater).
No limit applies to 20 dB Bandwidth.

20 dB Bandwidth and Carrier Frequency Separation

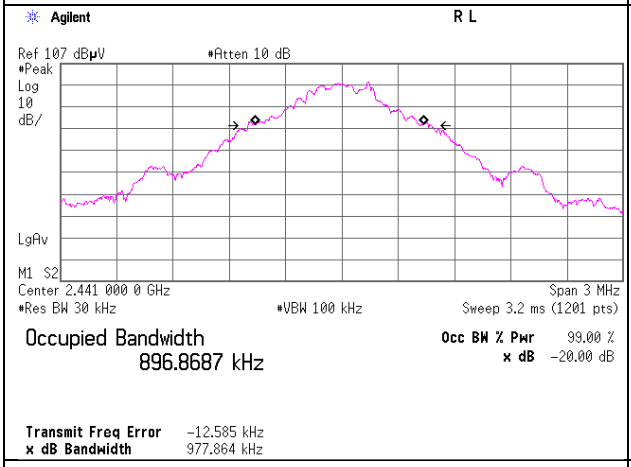
DH5

20 dB Bandwidth

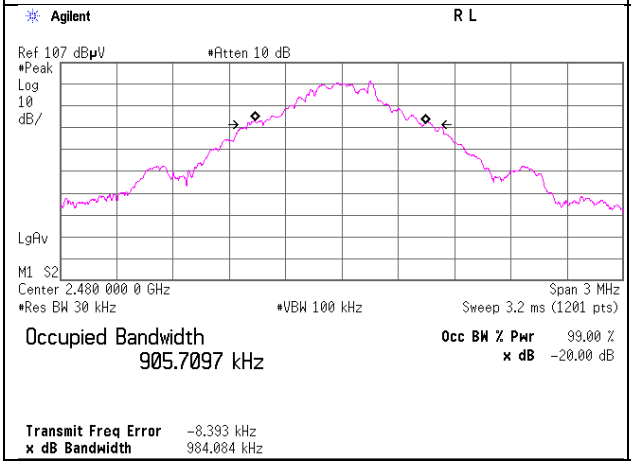
2402 MHz



2441 MHz

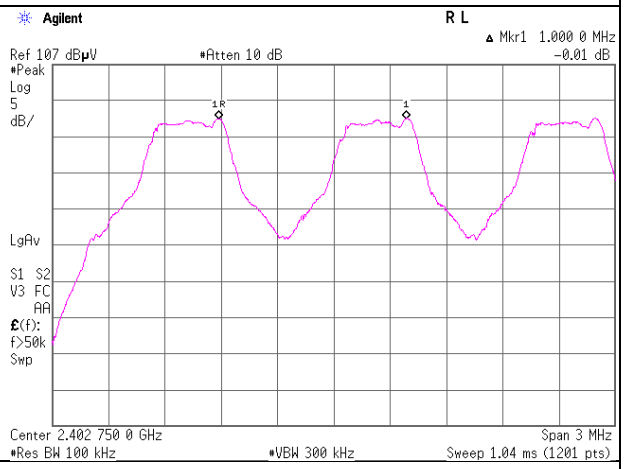


2480 MHz

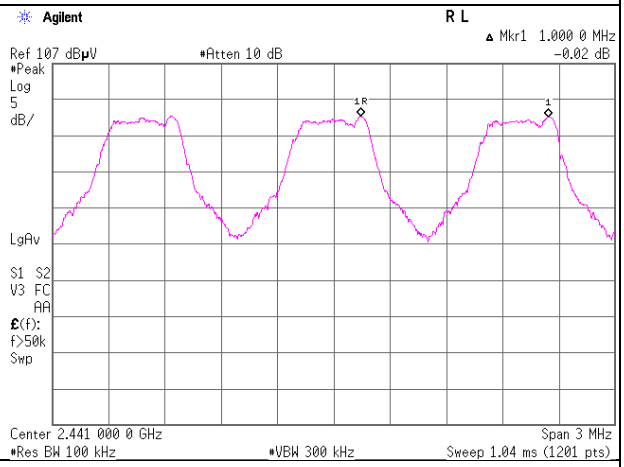


Carrier Frequency Separation

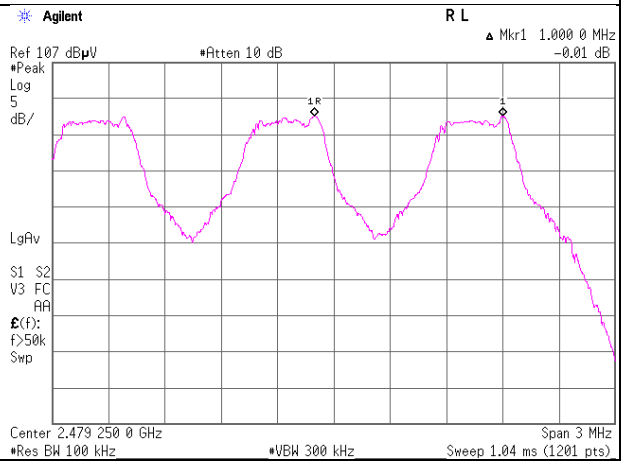
2402 MHz



2441 MHz



2480 MHz

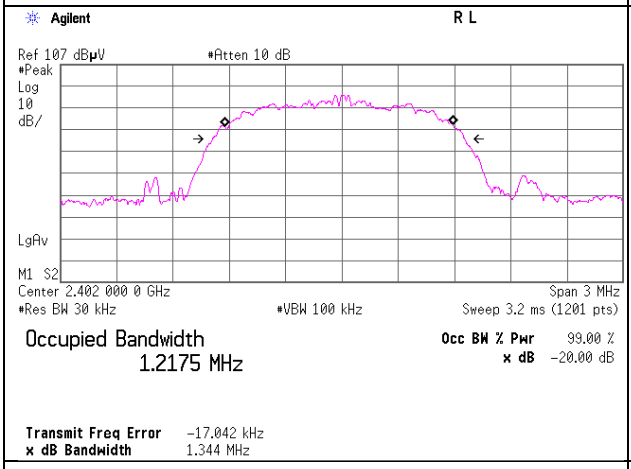


20 dB Bandwidth and Carrier Frequency Separation

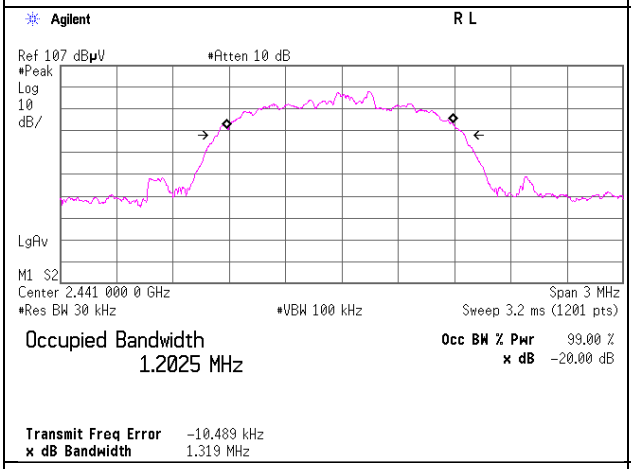
3DH5

20 dB Bandwidth

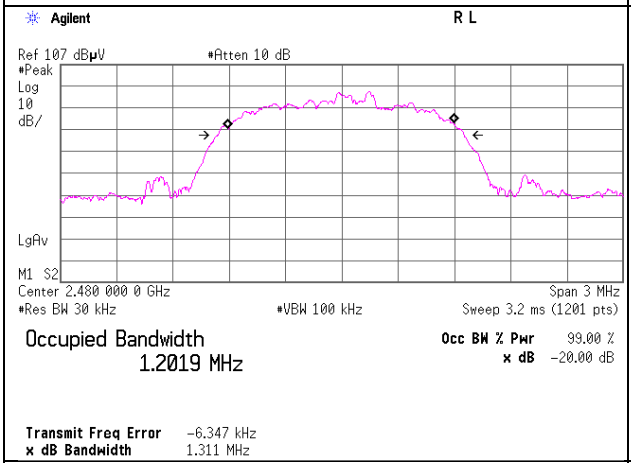
2402 MHz



2441MHz

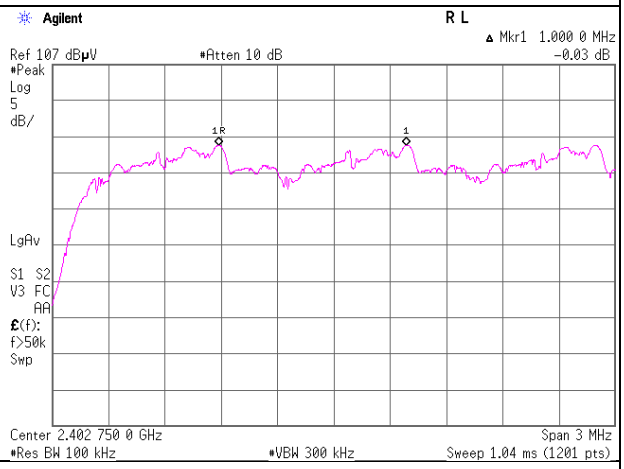


2480MHz

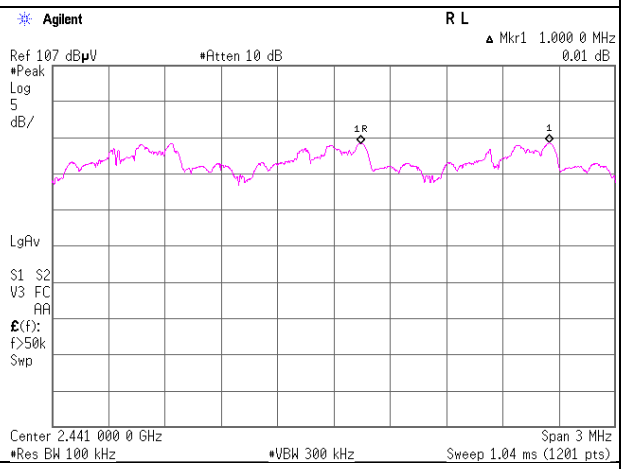


Carrier Frequency Separation

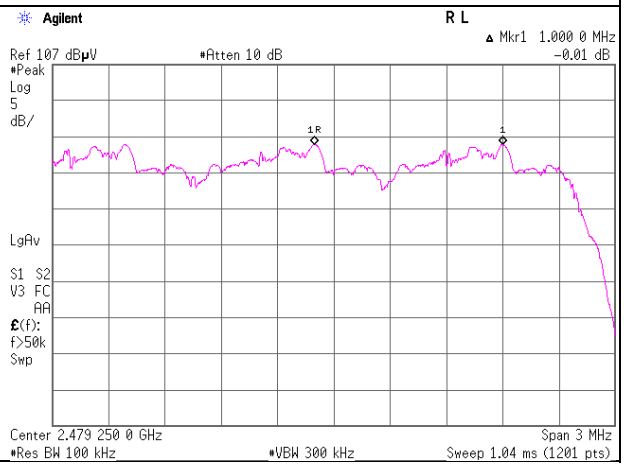
2402 MHz



2441 MHz



2480 MHz



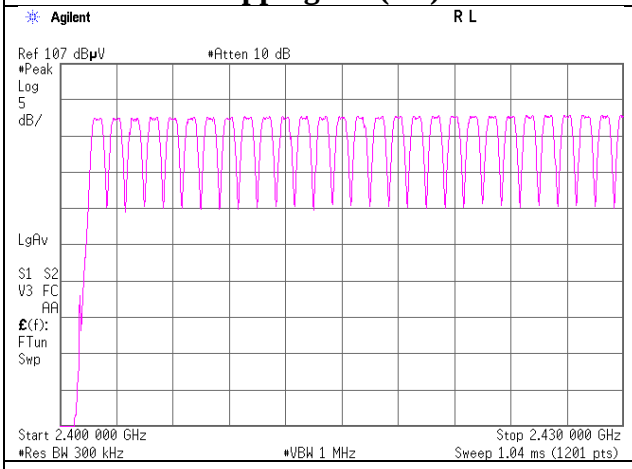
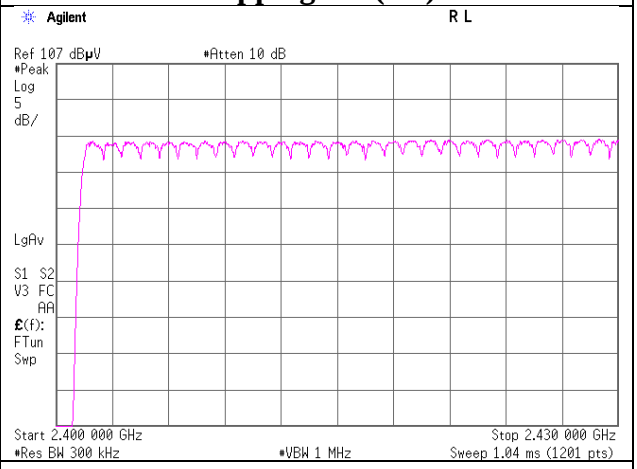
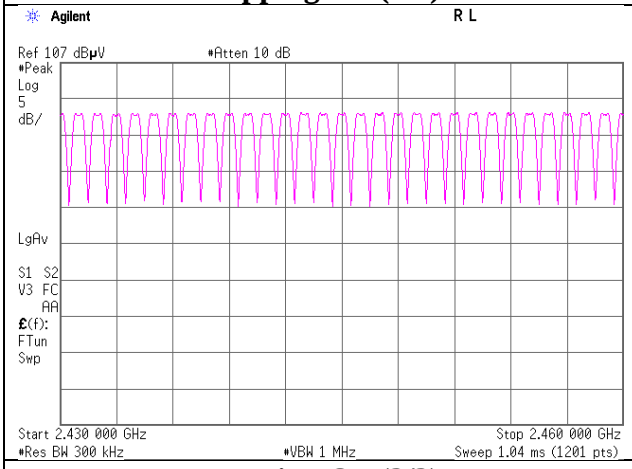
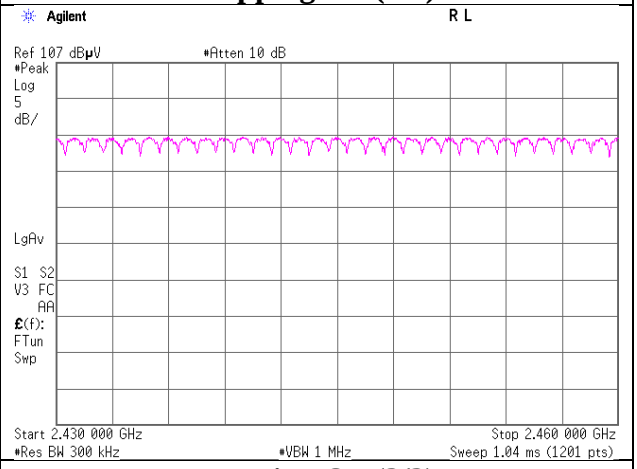
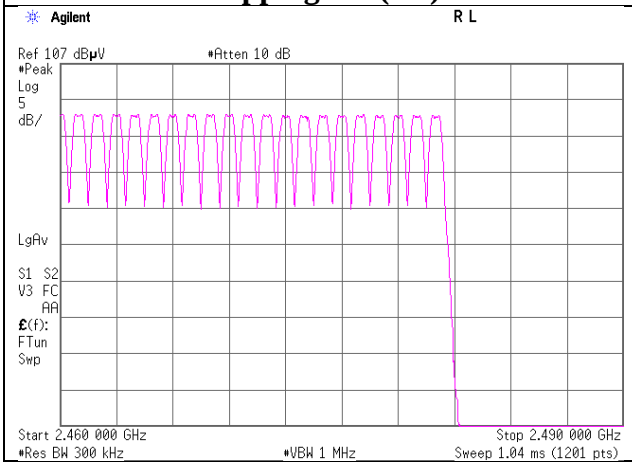
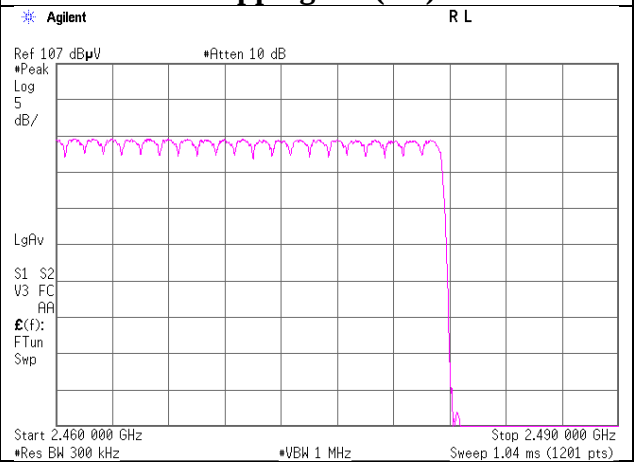
Number of Hopping Frequency

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping On

Mode	Number of channel [channels]	Limit [channels]
DH5	79	>= 15
3DH5	79	>= 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.

Number of Hopping Frequency

DH5	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	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping On

Mode	Number of transmission in a 31.6 (79 Hopping x 0.4) / 12.8 (32 Hopping x 0.4) s period				Length of transmission [ms]	Result [ms]	Limit [ms]
DH1	50.8 times /	5 s x	31.6 s =	322 times	0.422	136	400
DH3	25.8 times /	5 s x	31.6 s =	164 times	1.683	276	400
DH5	19.2 times /	5 s x	31.6 s =	122 times	2.931	358	400
3DH1	50.6 times /	5 s x	31.6 s =	320 times	0.428	137	400
3DH3	26.0 times /	5 s x	31.6 s =	165 times	1.686	278	400
3DH5	18.6 times /	5 s x	31.6 s =	118 times	2.939	347	400

Sample Calculation
Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

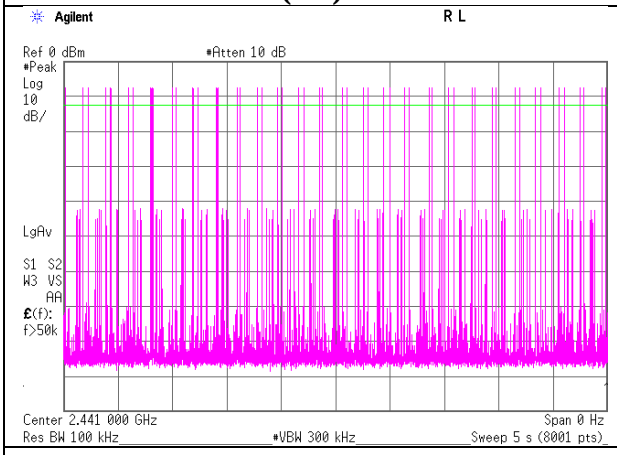
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	51	50	51	51	51	50.8
DH3	23	27	27	24	28	25.8
DH5	19	20	17	20	20	19.2
3DH1	51	51	51	50	50	50.6
3DH3	25	28	24	27	26	26.0
3DH5	20	19	17	17	20	18.6

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

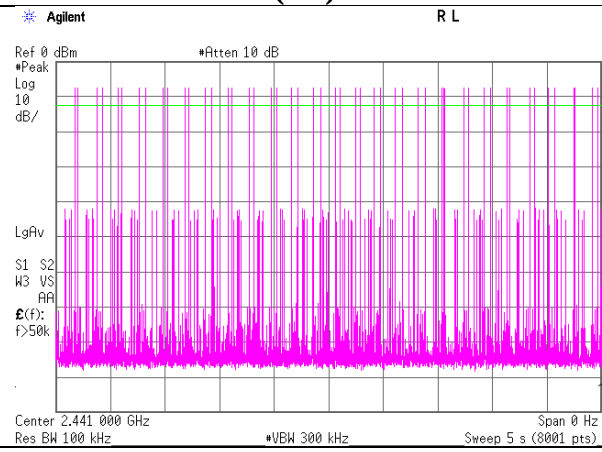
This device complies with the Bluetooth protocol for FHSS operation, employing a pseudo random channel selection and hopping rate to ensure that the occupancy time in N x 0.4s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4s regardless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

Dwell time

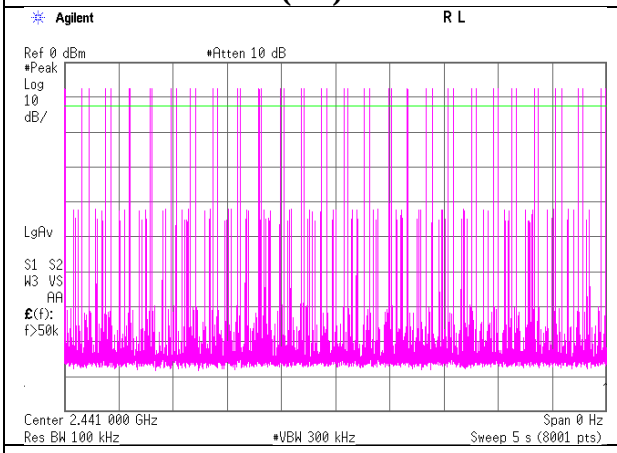
DH1 (1/6) in 5 s



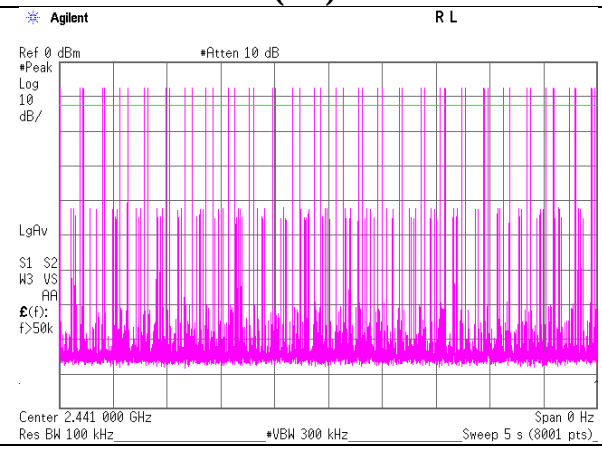
DH1 (2/6) in 5 s



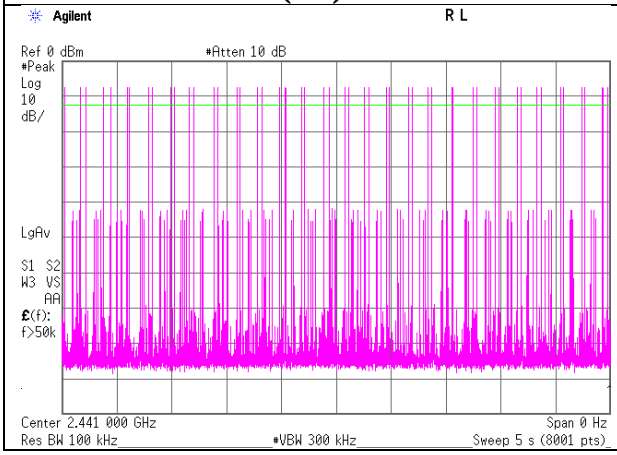
DH1 (3/6) in 5 s



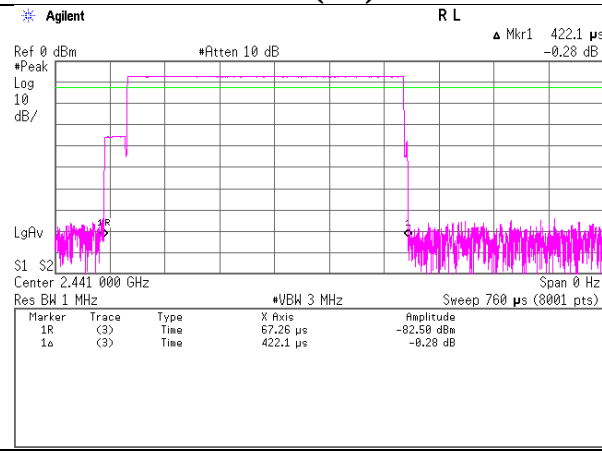
DH1 (4/6) in 5 s



DH1 (5/6) in 5 s

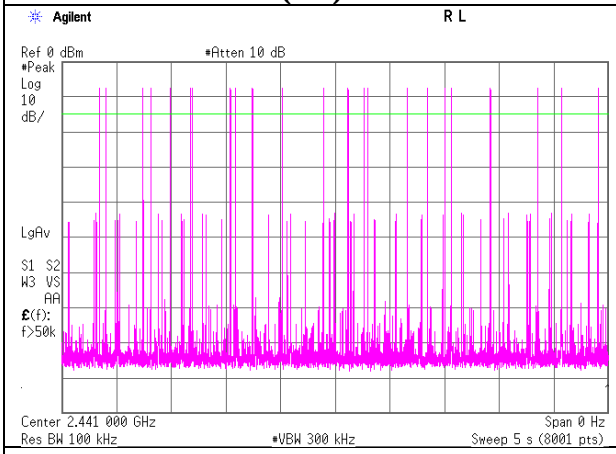


DH1 (6/6)

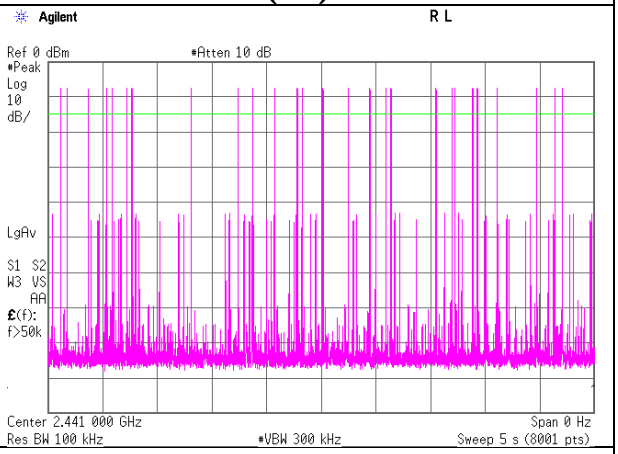


Dwell time

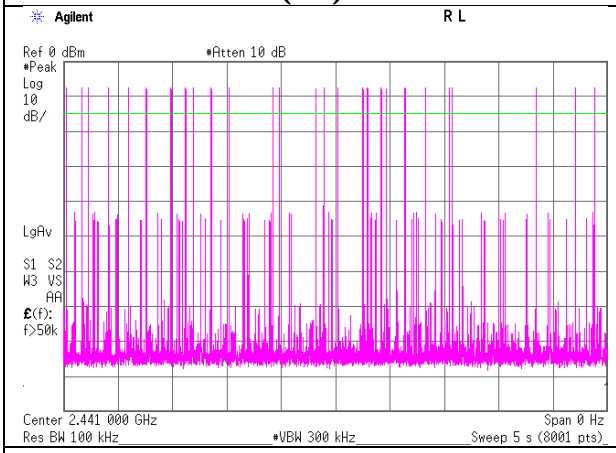
DH3 (1/6) in 5 s



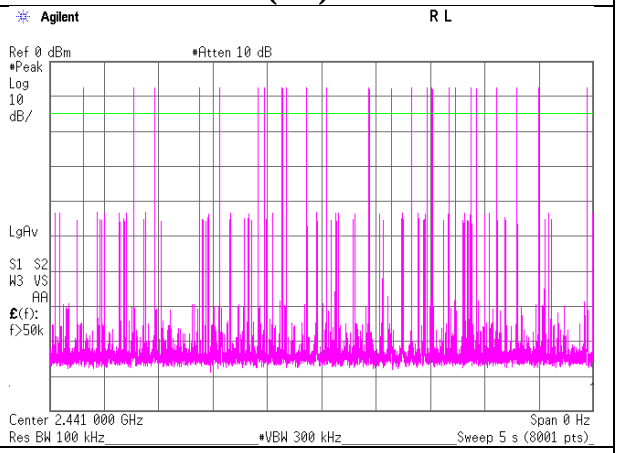
DH3 (2/6) in 5 s



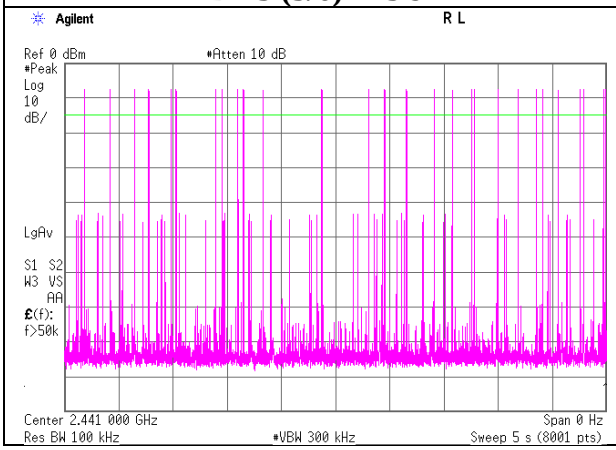
DH3 (3/6) in 5 s



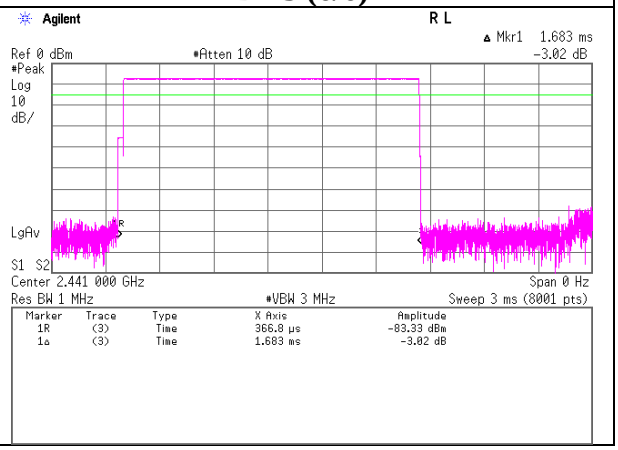
DH3 (4/6) in 5 s



DH3 (5/6) in 5 s

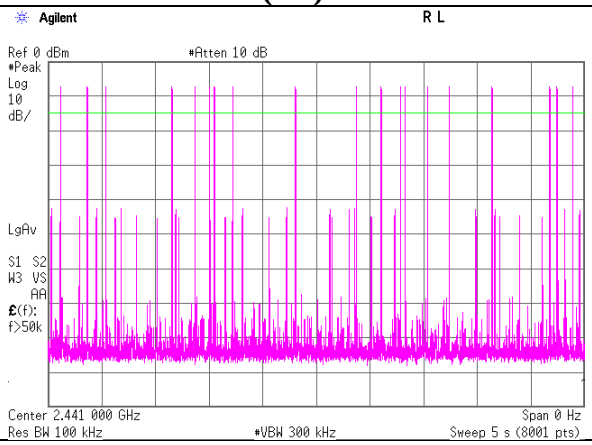


DH3 (6/6)

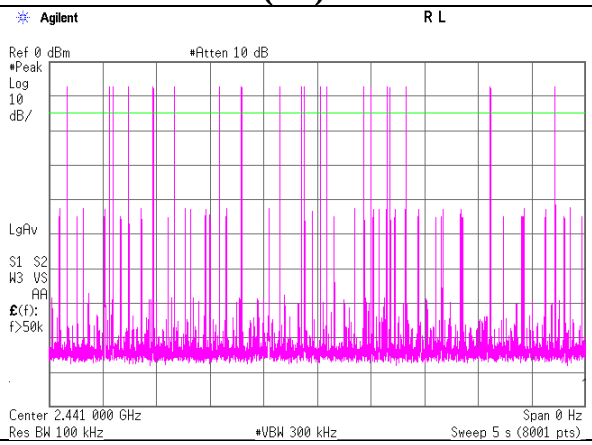


Dwell time

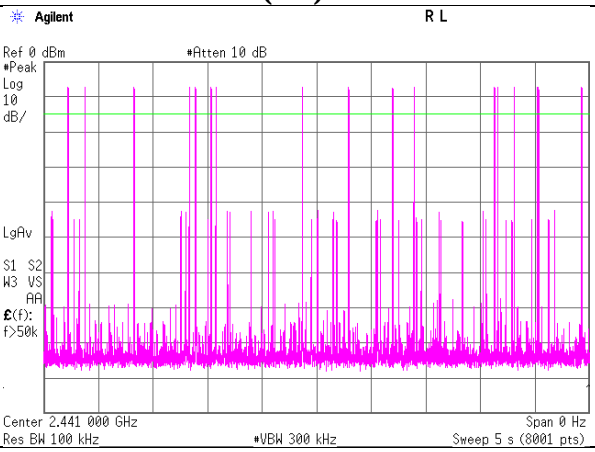
DH5 (1/6) in 5 s



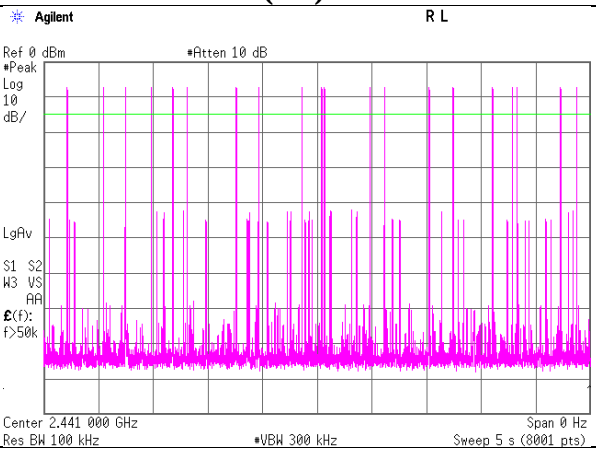
DH5 (2/6) in 5 s



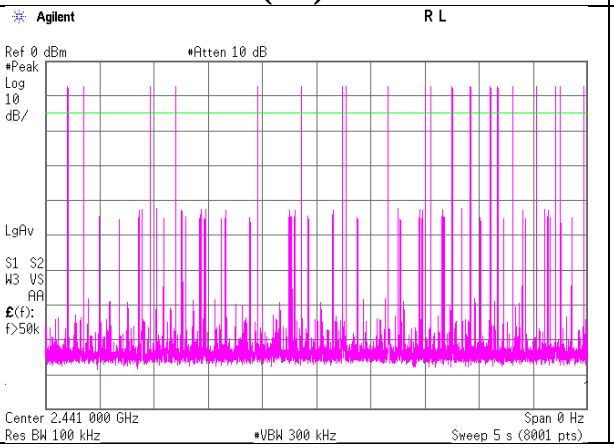
DH5 (3/6) in 5 s



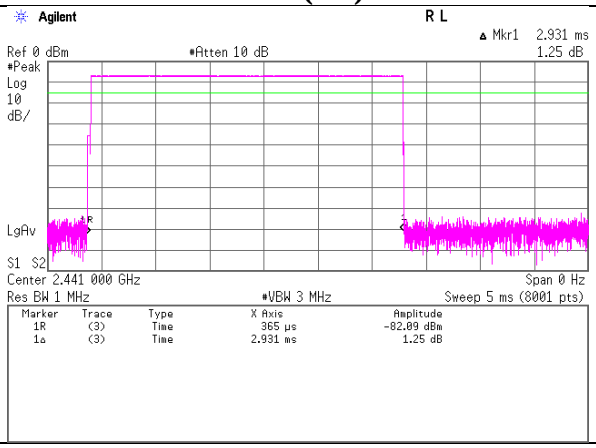
DH5 (4/6) in 5 s



DH5 (5/6) in 5 s

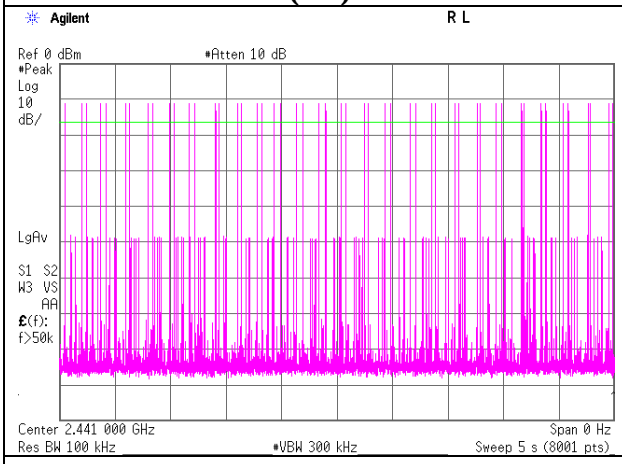


DH5 (6/6)

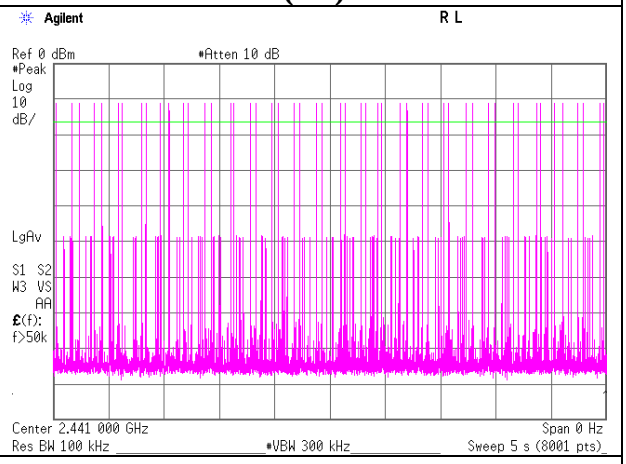


Dwell time

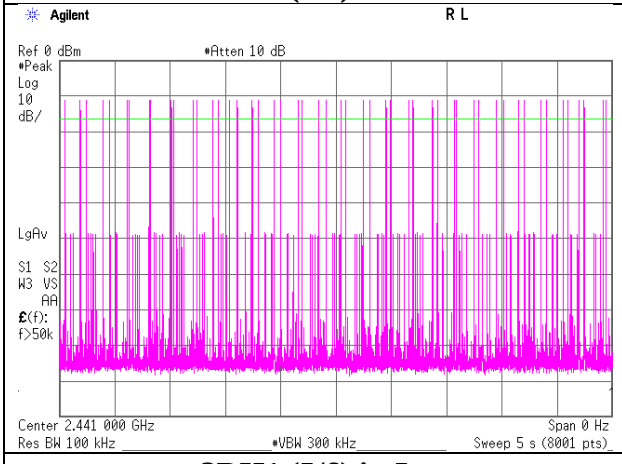
3DH1 (1/6) in 5 s



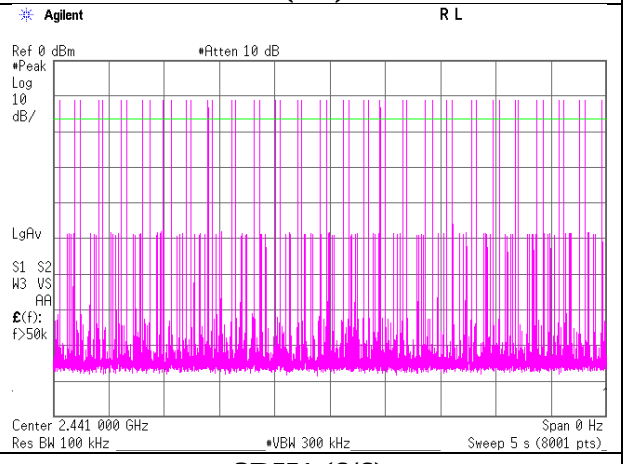
3DH1 (2/6) in 5 s



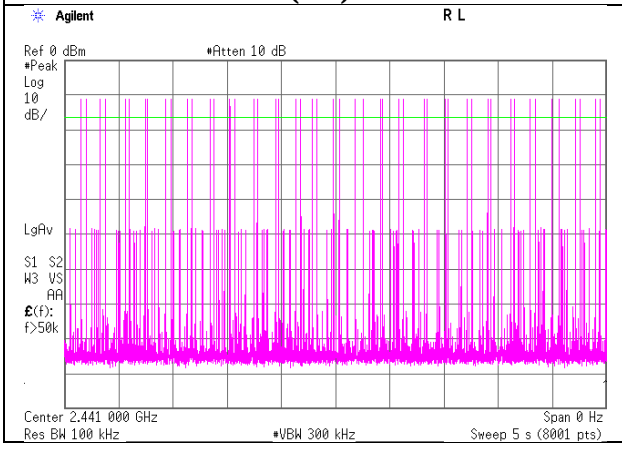
3DH1 (3/6) in 5 s



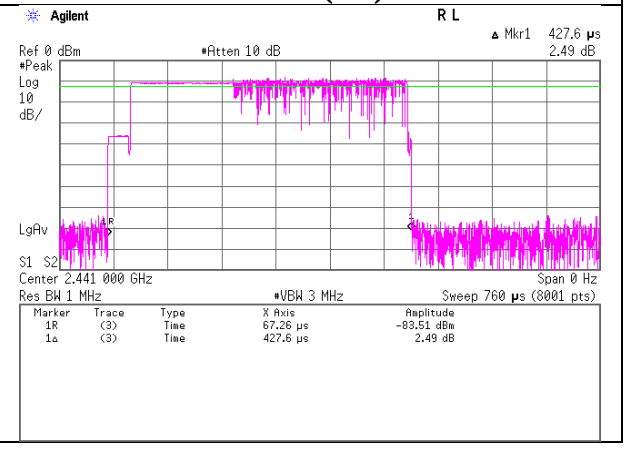
3DH1 (4/6) in 5 s



3DH1 (5/6) in 5 s

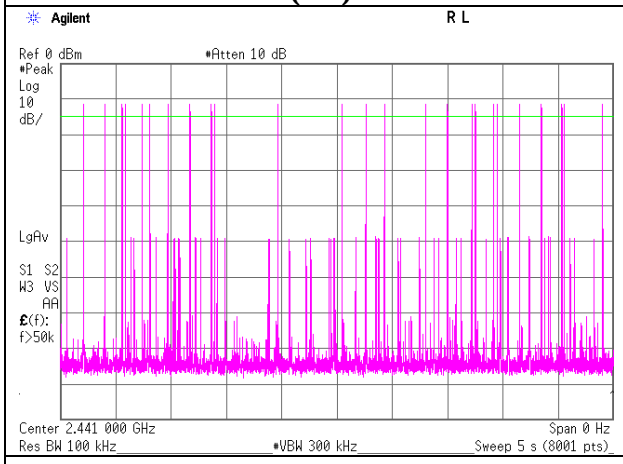


3DH1 (6/6)

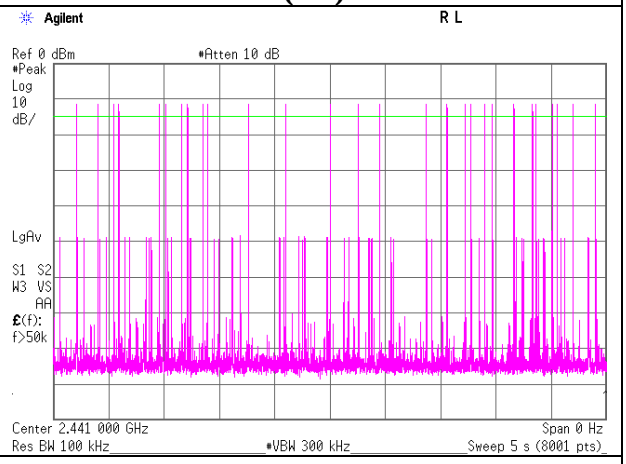


Dwell time

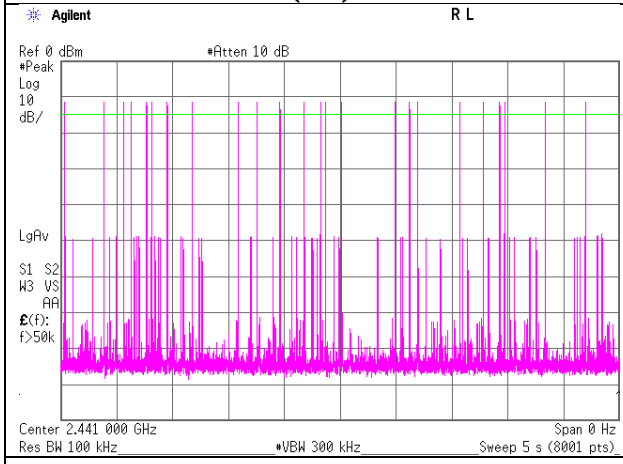
3DH3 (1/6) in 5 s



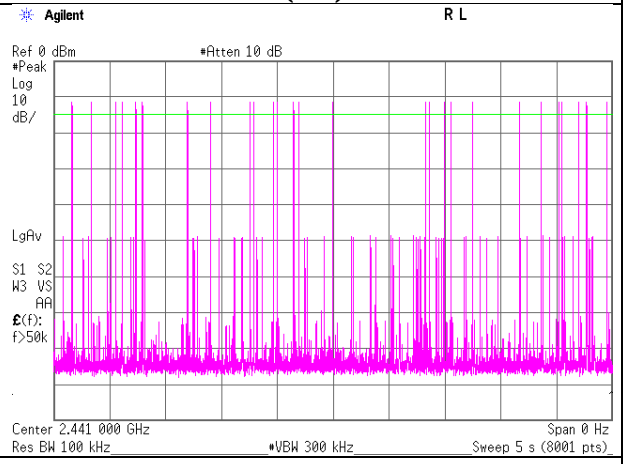
3DH3 (2/6) in 5 s



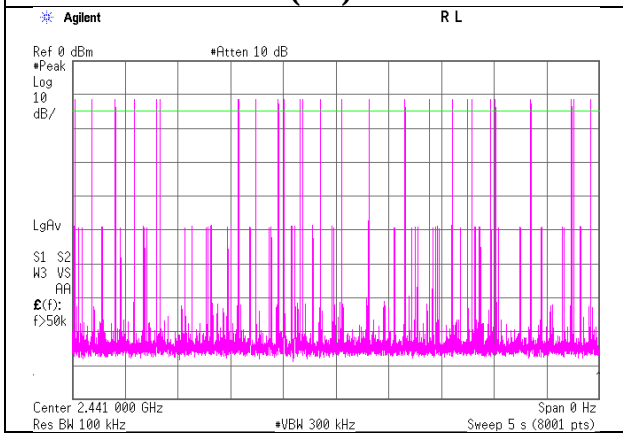
3DH3 (3/6) in 5 s



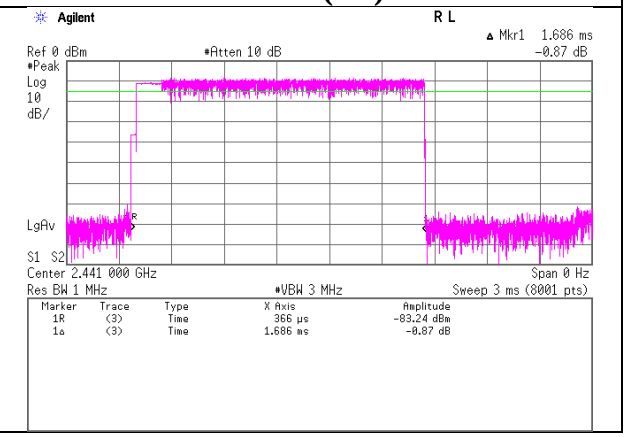
3DH3 (4/6) in 5 s



3DH3 (5/6) in 5 s

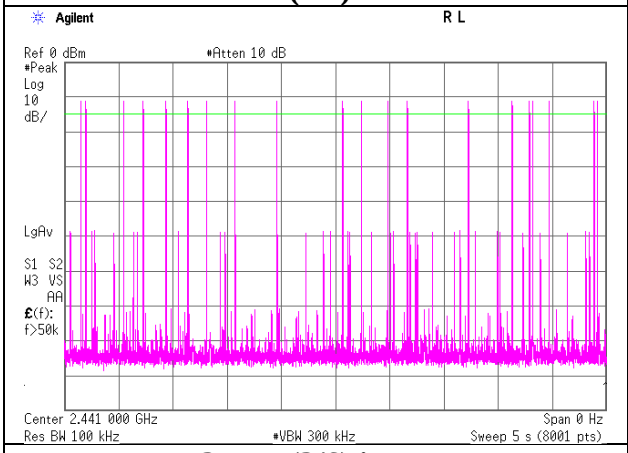


3DH3 (6/6)

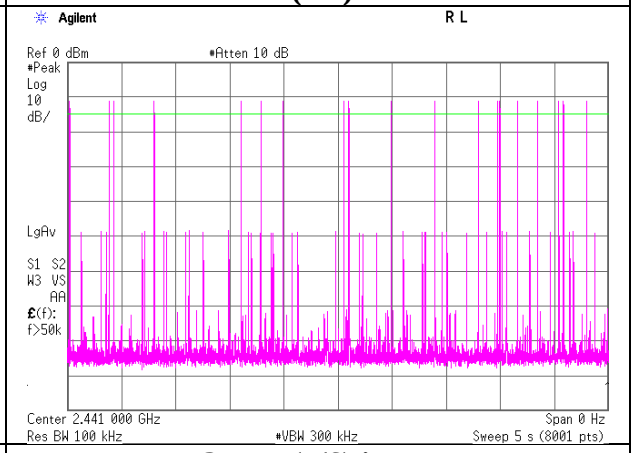


Dwell time

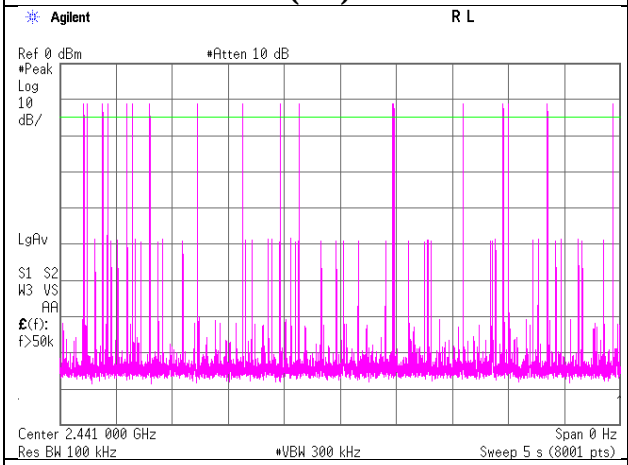
3DH5 (1/6) in 5 s



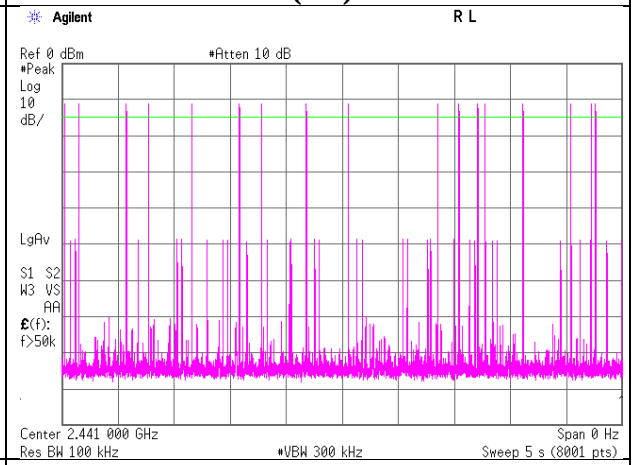
3DH5 (2/6) in 5 s



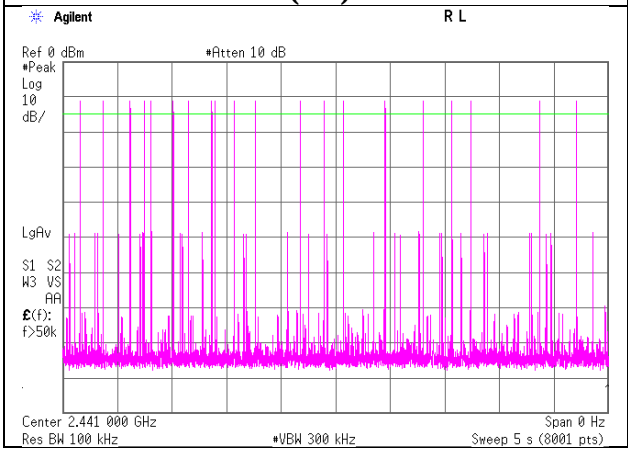
3DH5 (3/6) in 5 s



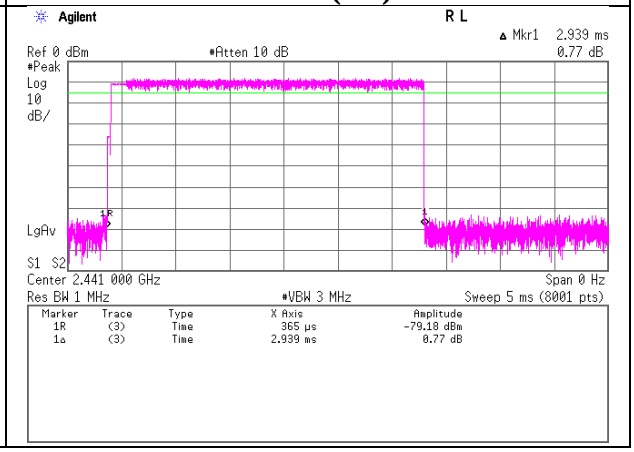
3DH5 (4/6) in 5 s



3DH5 (5/6) in 5 s



3DH5 (6/6)



Maximum Peak Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
DH5	2402.0	-7.80	1.79	9.92	3.91	2.46	20.96	125	17.05
DH5	2441.0	-7.36	1.76	9.92	4.32	2.70	20.96	125	16.64
DH5	2480.0	-7.51	1.78	9.92	4.19	2.62	20.96	125	16.77
2DH5	2402.0	-8.77	1.79	9.92	2.94	1.97	20.96	125	18.02
2DH5	2441.0	-8.42	1.76	9.92	3.26	2.12	20.96	125	17.70
2DH5	2480.0	-8.66	1.78	9.92	3.04	2.01	20.96	125	17.92
3DH5	2402.0	-8.57	1.79	9.92	3.14	2.06	20.96	125	17.82
3DH5	2441.0	-8.21	1.76	9.92	3.47	2.22	20.96	125	17.49
3DH5	2480.0	-8.43	1.78	9.92	3.27	2.12	20.96	125	17.69

Sample Calculation:
Result = Reading + Cable Loss + Attenuator Loss

*The equipment and cables were not used for factor 0 dB of the data sheets.

Test was not performed at AFH mode, because the decrease of number of channel (min: 20 ch) 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 20 dB BW without 2/3 relaxation, 125 mW power limit was applied to it.

Average Output Power
(Reference data for RF Exposure / SAR testing)

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off

Mode	Freq.	Reading	Cable Loss	Atten. Loss	Result (Time average)		Duty factor	Result (Burst power average)	
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dB]	[dBm]	[mW]
DH5	2402.0	-9.12	1.79	9.92	2.59	1.82	1.08	3.67	2.33
DH5	2441.0	-8.69	1.76	9.92	2.99	1.99	1.08	4.07	2.55
DH5	2480.0	-8.84	1.78	9.92	2.86	1.93	1.08	3.94	2.48
2DH5	2402.0	-12.53	1.79	9.92	-0.82	0.83	1.07	0.25	1.06
2DH5	2441.0	-12.17	1.76	9.92	-0.49	0.89	1.07	0.58	1.14
2DH5	2480.0	-12.40	1.78	9.92	-0.70	0.85	1.07	0.37	1.09
3DH5	2402.0	-12.52	1.79	9.92	-0.81	0.83	1.07	0.26	1.06
3DH5	2441.0	-12.15	1.76	9.92	-0.47	0.90	1.07	0.60	1.15
3DH5	2480.0	-12.39	1.78	9.92	-0.69	0.85	1.07	0.38	1.09

Sample Calculation:
Result (Time average) = Reading + Cable Loss + Attenuator Loss
Result (Burst power average) = Time average power + Duty factor

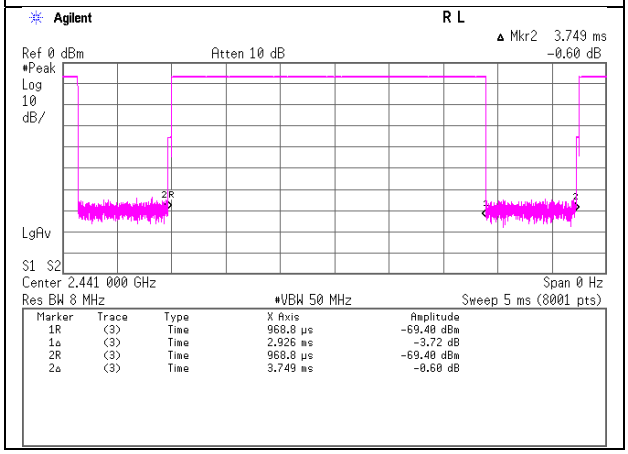
*The equipment and cables were not used for factor 0 dB of the data sheets.

Burst Rate Confirmation

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off

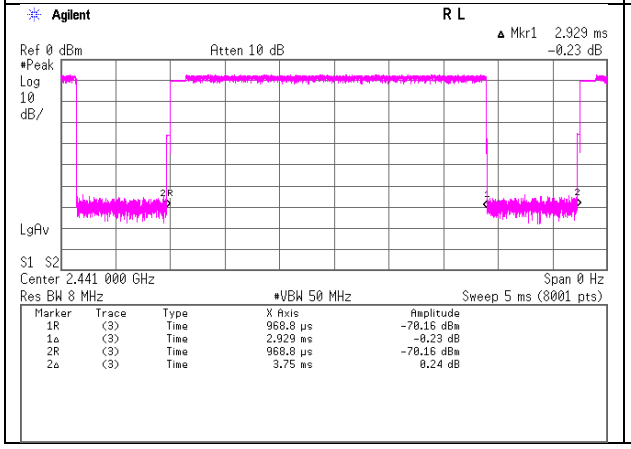
DH5

Tx on / (Tx on + Tx off) =	**0.780**
Tx on / (Tx on + Tx off) * 100 =	**78.0 %**
Duty factor = 10 * log (3.749 / 2.926) =	**1.08 dB**



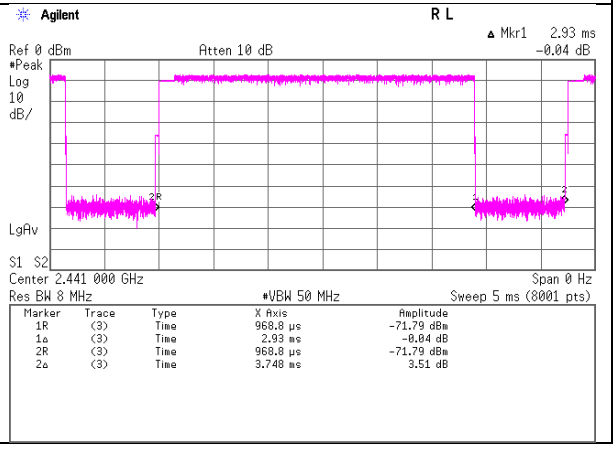
2DH5

Tx on / (Tx on + Tx off) =	**0.781**
Tx on / (Tx on + Tx off) * 100 =	**78.1 %**
Duty factor = 10 * log (3.75 / 2.929) =	**1.07 dB**



3DH5

Tx on / (Tx on + Tx off) =	**0.782**
Tx on / (Tx on + Tx off) * 100 =	**78.2 %**
Duty factor = 10 * log (3.748 / 2.93) =	**1.07 dB**



Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	23 deg. C / 39 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	Hikaru Shirasawa
	(1 GHz - 13 GHz)	(1 GHz - 13 GHz)	(13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1441.226	PK	48.2	24.8	12.9	40.7	3.4	48.6	73.9	25.3	295	0	
Hori.	2390.000	PK	46.4	27.8	13.7	41.0	3.4	50.3	73.9	23.6	222	276	
Hori.	3843.181	PK	45.8	28.9	5.5	40.6	3.4	43.0	73.9	30.9	150	0	
Hori.	4794.020	PK	45.3	31.4	5.8	39.6	3.4	46.3	73.9	27.6	109	52	
Hori.	4804.000	PK	45.6	31.4	5.8	39.6	3.4	46.6	73.9	27.3	100	171	
Hori.	7206.000	PK	45.0	36.9	7.2	40.1	3.4	52.4	73.9	21.5	239	359	
Hori.	9608.000	PK	44.5	38.5	8.2	39.6	3.4	55.0	73.9	18.9	126	28	
Hori.	12010.000	PK	45.0	39.7	9.4	39.3	3.4	58.2	73.9	15.7	150	0	
Hori.	1441.226	AV	39.0	24.8	12.9	40.7	3.4	39.4	53.9	14.5	295	0	
Hori.	2390.000	AV	33.4	27.8	13.7	41.0	3.4	37.3	53.9	16.6	222	276	
Hori.	3843.181	AV	35.9	28.9	5.5	40.6	3.4	33.1	53.9	20.8	150	0	
Hori.	4794.020	AV	34.1	31.4	5.8	39.6	3.4	35.1	53.9	18.8	109	52	
Hori.	4804.000	AV	33.6	31.4	5.8	39.6	3.4	34.6	53.9	19.3	100	171	
Hori.	7206.000	AV	33.4	36.9	7.2	40.1	3.4	40.8	53.9	13.1	239	359	
Hori.	9608.000	AV	33.4	38.5	8.2	39.6	3.4	43.9	53.9	10.0	126	28	
Hori.	12010.000	AV	32.4	39.7	9.4	39.3	3.4	45.6	53.9	8.3	150	0	
Vert.	1441.204	PK	47.9	24.8	12.9	40.7	3.4	48.3	73.9	25.6	148	256	
Vert.	2390.000	PK	45.8	27.8	13.7	41.0	3.4	49.7	73.9	24.2	102	281	
Vert.	3843.182	PK	44.0	28.9	5.5	40.6	3.4	41.2	73.9	32.7	159	152	
Vert.	4794.056	PK	45.6	31.4	5.8	39.6	3.4	46.6	73.9	27.3	272	143	
Vert.	4804.000	PK	44.8	31.4	5.8	39.6	3.4	45.8	73.9	28.1	217	295	
Vert.	7206.000	PK	44.2	36.9	7.2	40.1	3.4	51.6	73.9	22.3	228	80	
Vert.	9608.000	PK	45.4	38.5	8.2	39.6	3.4	55.9	73.9	18.0	234	308	
Vert.	12010.000	PK	45.2	39.7	9.4	39.3	3.4	58.4	73.9	15.5	150	0	
Vert.	1441.204	AV	39.2	24.8	12.9	40.7	3.4	39.6	53.9	14.3	148	256	
Vert.	2390.000	AV	33.6	27.8	13.7	41.0	3.4	37.5	53.9	16.4	102	281	
Vert.	3843.182	AV	32.6	28.9	5.5	40.6	3.4	29.8	53.9	24.1	159	152	
Vert.	4794.056	AV	33.2	31.4	5.8	39.6	3.4	34.2	53.9	19.7	272	143	
Vert.	4804.000	AV	33.1	31.4	5.8	39.6	3.4	34.1	53.9	19.8	217	295	
Vert.	7206.000	AV	33.1	36.9	7.2	40.1	3.4	40.5	53.9	13.4	228	80	
Vert.	9608.000	AV	33.7	38.5	8.2	39.6	3.4	44.2	53.9	9.7	234	308	
Vert.	12010.000	AV	32.5	39.7	9.4	39.3	3.4	45.7	53.9	**8.2**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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

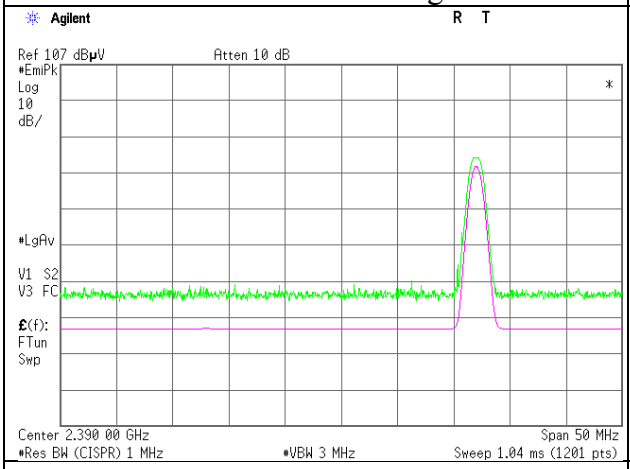
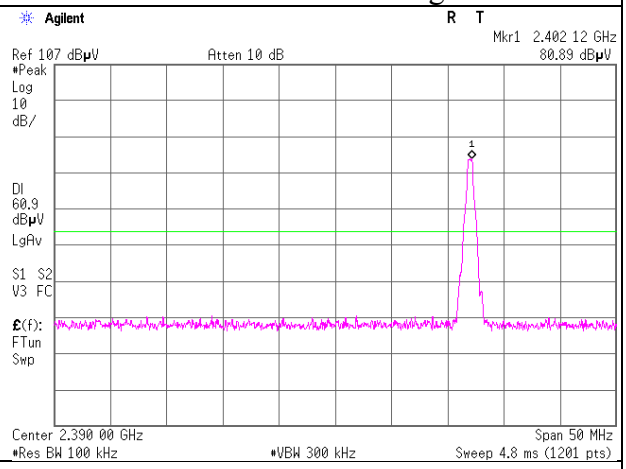
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	82.0	27.8	13.7	41.0	3.4	85.9	-	-	Carrier
Hori.	2400.000	PK	37.5	27.8	13.7	41.0	3.4	41.4	65.8	24.4	
Vert.	2402.000	PK	81.3	27.8	13.7	41.0	3.4	85.2	-	-	Carrier
Vert.	2400.000	PK	37.7	27.8	13.7	41.0	3.4	41.6	65.2	23.6	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

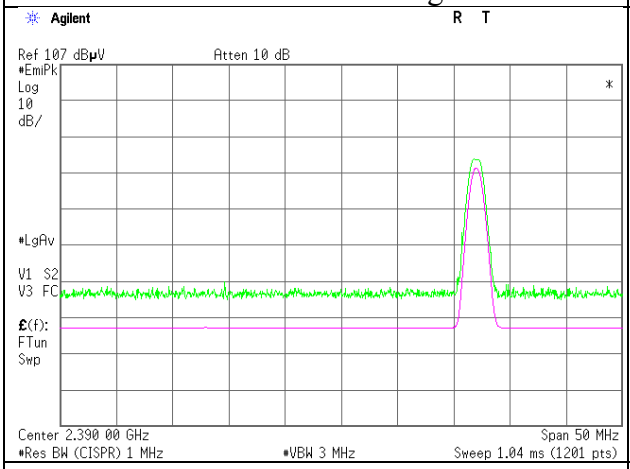
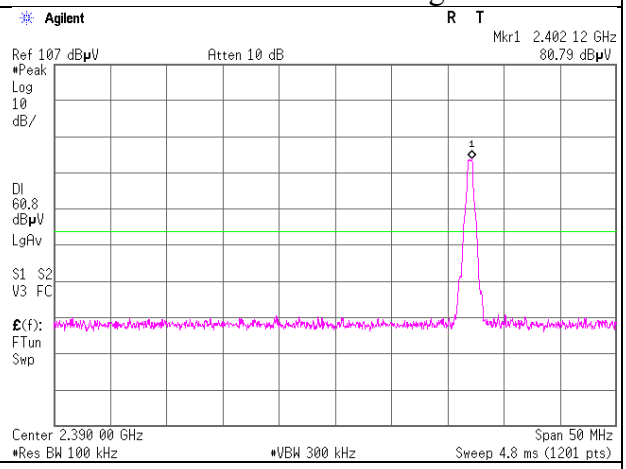
Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 25, 2016
Temperature / Humidity	21 deg. C / 53 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, DH5 2402 MHz, Type-A

Horizontal

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

Vertical

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

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	23 deg. C / 39 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	Hikaru Shirasawa
	(1 GHz - 13 GHz)	(1 GHz - 13 GHz)	(13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1464.610	PK	49.4	24.8	12.9	40.8	3.4	49.7	73.9	24.2	105	0	
Hori.	3905.610	PK	46.1	29.0	5.5	40.5	3.4	43.5	73.9	30.4	130	0	
Hori.	4794.062	PK	46.1	31.4	5.8	39.6	3.4	47.1	73.9	26.8	151	52	
Hori.	4882.000	PK	44.2	31.7	5.9	39.5	3.4	45.7	73.9	28.2	100	359	
Hori.	7323.000	PK	43.7	36.9	7.3	40.2	3.4	51.1	73.9	22.8	200	0	
Hori.	9764.000	PK	44.6	38.5	8.3	39.5	3.4	55.3	73.9	18.6	319	44	
Hori.	12205.000	PK	43.2	39.6	9.5	39.4	3.4	56.3	73.9	17.6	150	111	
Hori.	1464.610	AV	40.5	24.8	12.9	40.8	3.4	40.8	53.9	13.1	105	0	
Hori.	3905.610	AV	36.4	29.0	5.5	40.5	3.4	33.8	53.9	20.1	130	0	
Hori.	4794.062	AV	33.3	31.4	5.8	39.6	3.4	34.3	53.9	19.6	151	52	
Hori.	4882.000	AV	33.0	31.7	5.9	39.5	3.4	34.5	53.9	19.4	100	359	
Hori.	7323.000	AV	32.3	36.9	7.3	40.2	3.4	39.7	53.9	14.2	200	0	
Hori.	9764.000	AV	32.7	38.5	8.3	39.5	3.4	43.4	53.9	10.5	319	44	
Hori.	12205.000	AV	31.8	39.6	9.5	39.4	3.4	44.9	53.9	9.0	150	111	
Vert.	1464.599	PK	48.8	24.8	12.9	40.8	3.4	49.1	73.9	24.8	150	154	
Vert.	3905.591	PK	46.4	29.0	5.5	40.5	3.4	43.8	73.9	30.1	141	127	
Vert.	4793.487	PK	46.2	31.4	5.8	39.6	3.4	47.2	73.9	26.7	150	174	
Vert.	4882.000	PK	45.7	31.7	5.9	39.5	3.4	47.2	73.9	26.7	313	125	
Vert.	7323.000	PK	44.8	36.9	7.3	40.2	3.4	52.2	73.9	21.7	161	201	
Vert.	9764.000	PK	45.2	38.5	8.3	39.5	3.4	55.9	73.9	18.0	150	0	
Vert.	12205.000	PK	43.7	39.6	9.5	39.4	3.4	56.8	73.9	17.1	150	359	
Vert.	1464.599	AV	40.6	24.8	12.9	40.8	3.4	40.9	53.9	13.0	150	154	
Vert.	3905.591	AV	37.2	29.0	5.5	40.5	3.4	34.6	53.9	19.3	141	127	
Vert.	4793.487	AV	33.6	31.4	5.8	39.6	3.4	34.6	53.9	19.3	150	174	
Vert.	4882.000	AV	33.1	31.7	5.9	39.5	3.4	34.6	53.9	19.3	313	125	
Vert.	7323.000	AV	32.9	36.9	7.3	40.2	3.4	40.3	53.9	13.6	161	201	
Vert.	9764.000	AV	33.9	38.5	8.3	39.5	3.4	44.6	53.9	9.3	150	0	
Vert.	12205.000	AV	31.9	39.6	9.5	39.4	3.4	45.0	53.9	**8.9**	150	359	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	23 deg. C / 39 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	Hikaru Shirasawa
	(1 GHz - 13 GHz)	(1 GHz - 13 GHz)	(13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1488.027	PK	50.3	24.8	12.9	40.8	3.4	50.6	73.9	23.3	109	0	
Hori.	2483.500	PK	46.8	27.9	13.8	41.0	3.4	50.9	73.9	23.0	205	301	
Hori.	3968.003	PK	47.1	29.1	5.4	40.4	3.4	44.6	73.9	29.3	122	63	
Hori.	4793.993	PK	46.2	31.4	5.8	39.6	3.4	47.2	73.9	26.7	150	0	
Hori.	4960.000	PK	45.2	32.0	6.0	39.4	3.4	47.2	73.9	26.7	150	47	
Hori.	7440.000	PK	45.3	37.0	7.5	40.4	3.4	52.8	73.9	21.1	150	337	
Hori.	9920.000	PK	45.5	38.4	8.4	39.4	3.4	56.3	73.9	17.6	150	16	
Hori.	12400.000	PK	45.4	39.5	9.6	39.6	3.4	58.3	73.9	15.6	150	0	
Hori.	1488.027	AV	42.3	24.8	12.9	40.8	3.4	42.6	53.9	11.3	109	0	
Hori.	2483.500	AV	33.9	27.9	13.8	41.0	3.4	38.0	53.9	15.9	205	301	
Hori.	3968.003	AV	36.2	29.1	5.4	40.4	3.4	33.7	53.9	20.2	122	63	
Hori.	4793.993	AV	33.5	31.4	5.8	39.6	3.4	34.5	53.9	19.4	150	0	
Hori.	4960.000	AV	33.4	32.0	6.0	39.4	3.4	35.4	53.9	18.5	150	47	
Hori.	7440.000	AV	33.8	37.0	7.5	40.4	3.4	41.3	53.9	12.6	150	337	
Hori.	9920.000	AV	33.5	38.4	8.4	39.4	3.4	44.3	53.9	9.6	150	16	
Hori.	12400.000	AV	33.8	39.5	9.6	39.6	3.4	46.7	53.9	**7.2**	150	0	
Vert.	1487.996	PK	49.9	24.8	12.9	40.8	3.4	50.2	73.9	23.7	105	183	
Vert.	2483.500	PK	46.6	27.9	13.8	41.0	3.4	50.7	73.9	23.2	100	296	
Vert.	3968.019	PK	46.8	29.1	5.4	40.4	3.4	44.3	73.9	29.6	123	128	
Vert.	4794.039	PK	46.5	31.4	5.8	39.6	3.4	47.5	73.9	26.4	153	139	
Vert.	4960.000	PK	45.2	32.0	6.0	39.4	3.4	47.2	73.9	26.7	150	80	
Vert.	7440.000	PK	45.4	37.0	7.5	40.4	3.4	52.9	73.9	21.0	108	162	
Vert.	9920.000	PK	45.3	38.4	8.4	39.4	3.4	56.1	73.9	17.8	127	0	
Vert.	12400.000	PK	46.4	39.5	9.6	39.6	3.4	59.3	73.9	14.6	150	359	
Vert.	1487.996	AV	42.5	24.8	12.9	40.8	3.4	42.8	53.9	11.1	105	183	
Vert.	2483.500	AV	33.8	27.9	13.8	41.0	3.4	37.9	53.9	16.0	100	296	
Vert.	3968.019	AV	36.1	29.1	5.4	40.4	3.4	33.6	53.9	20.3	123	128	
Vert.	4794.039	AV	33.4	31.4	5.8	39.6	3.4	34.4	53.9	19.5	153	139	
Vert.	4960.000	AV	33.3	32.0	6.0	39.4	3.4	35.3	53.9	18.6	150	80	
Vert.	7440.000	AV	33.9	37.0	7.5	40.4	3.4	41.4	53.9	12.5	108	162	
Vert.	9920.000	AV	33.6	38.4	8.4	39.4	3.4	44.4	53.9	9.5	127	0	
Vert.	12400.000	AV	33.8	39.5	9.6	39.6	3.4	46.7	53.9	**7.2**	150	359	

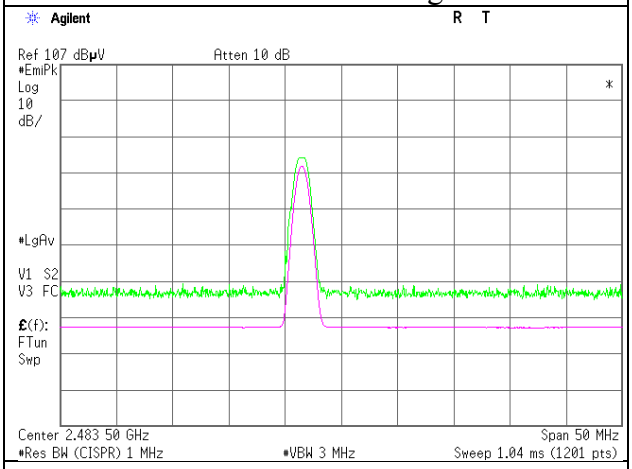
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 25, 2016
Temperature / Humidity	21 deg. C / 53 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, DH5 2480 MHz, Type-A

Horizontal

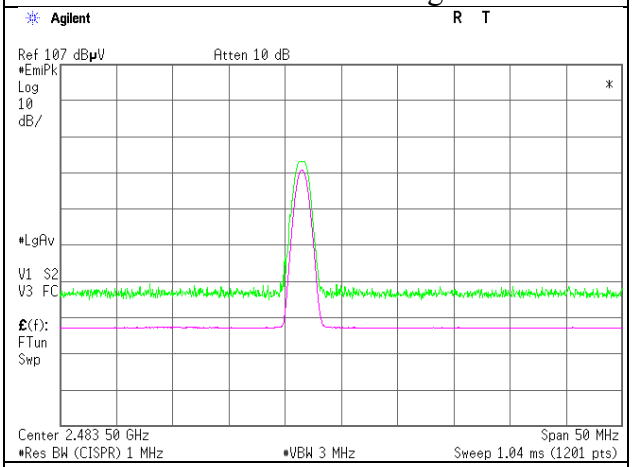
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	25 deg. C / 37 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa (1 GHz - 13 GHz)	Kenichi Adachi (1 GHz - 13 GHz)	Hikaru Shirasawa (13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1441.210	PK	47.0	24.8	12.9	40.7	3.4	47.4	73.9	26.5	112	0	
Hori.	2390.000	PK	46.0	27.8	13.7	41.0	3.4	49.9	73.9	24.0	221	289	
Hori.	3843.186	PK	45.6	28.9	5.5	40.6	3.4	42.8	73.9	31.1	128	0	
Hori.	4794.056	PK	45.5	31.4	5.8	39.6	3.4	46.5	73.9	27.4	160	0	
Hori.	4804.000	PK	44.8	31.4	5.8	39.6	3.4	45.8	73.9	28.1	131	45	
Hori.	7206.000	PK	43.8	36.9	7.2	40.1	3.4	51.2	73.9	22.7	151	0	
Hori.	9608.000	PK	44.8	38.5	8.2	39.6	3.4	55.3	73.9	18.6	100	0	
Hori.	12010.000	PK	44.4	39.7	9.4	39.3	3.4	57.6	73.9	16.3	100	0	
Hori.	1441.210	AV	36.8	24.8	12.9	40.7	3.4	37.2	53.9	16.7	112	0	
Hori.	2390.000	AV	33.8	27.8	13.7	41.0	3.4	37.7	53.9	16.2	221	289	
Hori.	3843.186	AV	36.2	28.9	5.5	40.6	3.4	33.4	53.9	20.5	128	0	
Hori.	4794.056	AV	33.4	31.4	5.8	39.6	3.4	34.4	53.9	19.5	160	0	
Hori.	4804.000	AV	33.1	31.4	5.8	39.6	3.4	34.1	53.9	19.8	131	45	
Hori.	7206.000	AV	32.9	36.9	7.2	40.1	3.4	40.3	53.9	13.6	151	0	
Hori.	9608.000	AV	32.9	38.5	8.2	39.6	3.4	43.4	53.9	10.5	100	0	
Hori.	12010.000	AV	33.2	39.7	9.4	39.3	3.4	46.4	53.9	7.5	100	0	
Vert.	1441.230	PK	47.6	24.8	12.9	40.7	3.4	48.0	73.9	25.9	108	243	
Vert.	2390.000	PK	45.8	27.8	13.7	41.0	3.4	49.7	73.9	24.2	105	285	
Vert.	3843.186	PK	45.5	28.9	5.5	40.6	3.4	42.7	73.9	31.2	162	42	
Vert.	4794.056	PK	47.0	31.4	5.8	39.6	3.4	48.0	73.9	25.9	150	144	
Vert.	4804.000	PK	45.4	31.4	5.8	39.6	3.4	46.4	73.9	27.5	150	135	
Vert.	7206.000	PK	44.9	36.9	7.2	40.1	3.4	52.3	73.9	21.6	148	201	
Vert.	9608.000	PK	45.8	38.5	8.2	39.6	3.4	56.3	73.9	17.6	150	0	
Vert.	12010.000	PK	45.3	39.7	9.4	39.3	3.4	58.5	73.9	15.4	150	0	
Vert.	1441.230	AV	36.6	24.8	12.9	40.7	3.4	37.0	53.9	16.9	108	243	
Vert.	2390.000	AV	33.8	27.8	13.7	41.0	3.4	37.7	53.9	16.2	105	285	
Vert.	3843.186	AV	35.9	28.9	5.5	40.6	3.4	33.1	53.9	20.8	162	42	
Vert.	4794.056	AV	33.6	31.4	5.8	39.6	3.4	34.6	53.9	19.3	150	144	
Vert.	4804.000	AV	33.4	31.4	5.8	39.6	3.4	34.4	53.9	19.5	150	135	
Vert.	7206.000	AV	33.3	36.9	7.2	40.1	3.4	40.7	53.9	13.2	148	201	
Vert.	9608.000	AV	33.2	38.5	8.2	39.6	3.4	43.7	53.9	10.2	150	0	
Vert.	12010.000	AV	33.3	39.7	9.4	39.3	3.4	46.5	53.9	**7.4**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	78.5	27.8	13.7	41.0	3.4	82.4	-	-	Carrier
Hori.	2400.000	PK	38.1	27.8	13.7	41.0	3.4	42.0	62.3	20.3	
Vert.	2402.000	PK	77.4	27.8	13.7	41.0	3.4	81.3	-	-	Carrier
Vert.	2400.000	PK	37.5	27.8	13.7	41.0	3.4	41.4	61.3	19.9	

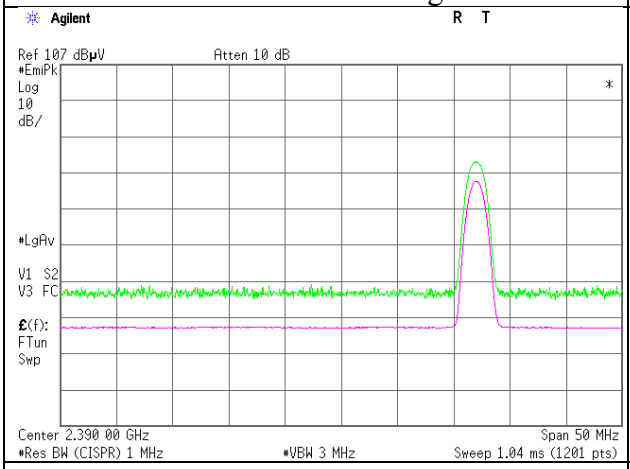
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 25, 2016
Temperature / Humidity	21 deg. C / 53 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, 3DH5 2402 MHz, Type-A

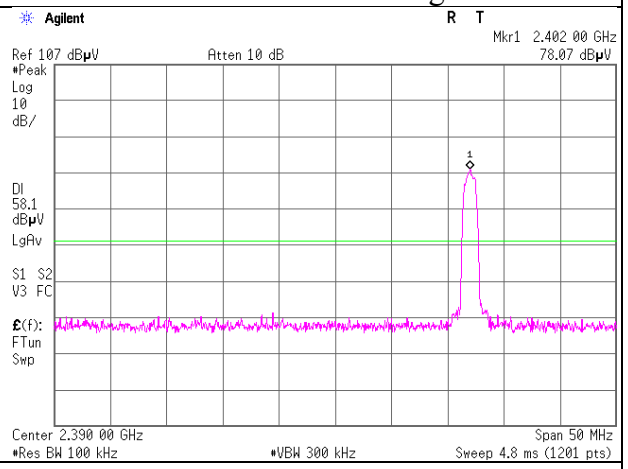
Horizontal

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

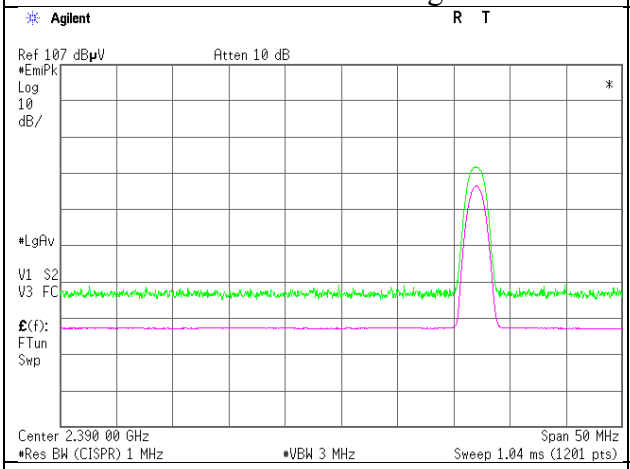
Authorized-band band-edge Plot



20dBc Plot

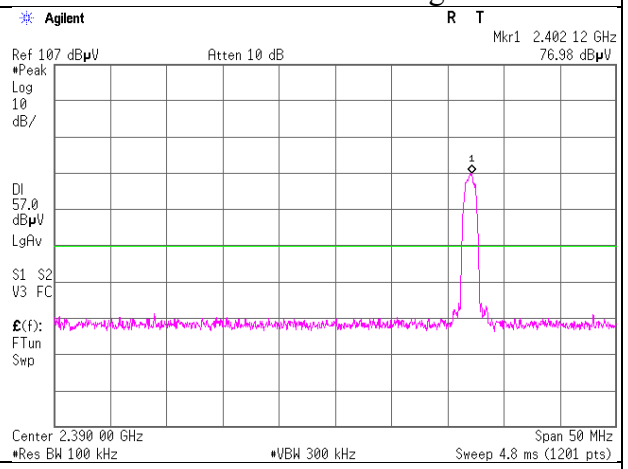
Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Authorized-band band-edge Plot



20dBc Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	25 deg. C / 37 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa (1 GHz - 13 GHz)	Kenichi Adachi (1 GHz - 13 GHz)	Hikaru Shirasawa (13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1464.585	PK	48.4	24.8	12.9	40.8	3.4	48.7	73.9	25.2	222	0	
Hori.	3905.607	PK	47.1	29.0	5.5	40.5	3.4	44.5	73.9	29.4	113	0	
Hori.	4794.055	PK	47.5	31.4	5.8	39.6	3.4	48.5	73.9	25.4	150	52	
Hori.	4882.000	PK	44.5	31.7	5.9	39.5	3.4	46.0	73.9	27.9	150	0	
Hori.	7323.000	PK	44.5	36.9	7.3	40.2	3.4	51.9	73.9	22.0	150	0	
Hori.	9764.000	PK	44.7	38.5	8.3	39.5	3.4	55.4	73.9	18.5	100	0	
Hori.	12205.000	PK	44.3	39.6	9.5	39.4	3.4	57.4	73.9	16.5	100	0	
Hori.	1464.585	AV	37.8	24.8	12.9	40.8	3.4	38.1	53.9	15.8	222	0	
Hori.	3905.607	AV	36.9	29.0	5.5	40.5	3.4	34.3	53.9	19.6	113	0	
Hori.	4794.055	AV	33.7	31.4	5.8	39.6	3.4	34.7	53.9	19.2	150	52	
Hori.	4882.000	AV	33.2	31.7	5.9	39.5	3.4	34.7	53.9	19.2	150	0	
Hori.	7323.000	AV	32.9	36.9	7.3	40.2	3.4	40.3	53.9	13.6	150	0	
Hori.	9764.000	AV	33.3	38.5	8.3	39.5	3.4	44.0	53.9	9.9	100	0	
Hori.	12205.000	AV	33.0	39.6	9.5	39.4	3.4	46.1	53.9	**7.8**	100	0	
Vert.	1464.637	PK	48.9	24.8	12.9	40.8	3.4	49.2	73.9	24.7	126	136	
Vert.	3905.607	PK	47.4	29.0	5.5	40.5	3.4	44.8	73.9	29.1	117	129	
Vert.	4794.055	PK	45.9	31.4	5.8	39.6	3.4	46.9	73.9	27.0	161	160	
Vert.	4882.000	PK	44.4	31.7	5.9	39.5	3.4	45.9	73.9	28.0	219	89	
Vert.	7323.000	PK	43.2	36.9	7.3	40.2	3.4	50.6	73.9	23.3	174	0	
Vert.	9764.000	PK	45.6	38.5	8.3	39.5	3.4	56.3	73.9	17.6	100	0	
Vert.	12205.000	PK	45.3	39.6	9.5	39.4	3.4	58.4	73.9	15.5	100	0	
Vert.	1464.637	AV	38.1	24.8	12.9	40.8	3.4	38.4	53.9	15.5	126	136	
Vert.	3905.607	AV	37.4	29.0	5.5	40.5	3.4	34.8	53.9	19.1	117	129	
Vert.	4794.055	AV	33.5	31.4	5.8	39.6	3.4	34.5	53.9	19.4	161	160	
Vert.	4882.000	AV	32.9	31.7	5.9	39.5	3.4	34.4	53.9	19.5	219	89	
Vert.	7323.000	AV	32.5	36.9	7.3	40.2	3.4	39.9	53.9	14.0	174	0	
Vert.	9764.000	AV	33.7	38.5	8.3	39.5	3.4	44.4	53.9	9.5	100	0	
Vert.	12205.000	AV	32.8	39.6	9.5	39.4	3.4	45.9	53.9	8.0	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	25 deg. C / 37 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa	Kenichi Adachi	Hikaru Shirasawa
	(1 GHz - 13 GHz)	(1 GHz - 13 GHz)	(13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, 3DH5 2480 MHz, Type-A		

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	1488.063	PK	49.1	24.8	12.9	40.8	3.4	49.4	73.9	24.5	107	358	
Hori.	2483.500	PK	45.7	27.9	13.8	41.0	3.4	49.8	73.9	24.1	107	309	
Hori.	3967.999	PK	46.5	29.1	5.4	40.4	3.4	44.0	73.9	29.9	122	57	
Hori.	4793.947	PK	46.5	31.4	5.8	39.6	3.4	47.5	73.9	26.4	114	55	
Hori.	4960.000	PK	44.2	32.0	6.0	39.4	3.4	46.2	73.9	27.7	102	58	
Hori.	7440.000	PK	45.1	37.0	7.5	40.4	3.4	52.6	73.9	21.3	150	34	
Hori.	9920.000	PK	45.0	38.4	8.4	39.4	3.4	55.8	73.9	18.1	100	0	
Hori.	12400.000	PK	45.0	39.5	9.6	39.6	3.4	57.9	73.9	16.0	100	0	
Hori.	1488.063	AV	39.1	24.8	12.9	40.8	3.4	39.4	53.9	14.5	107	358	
Hori.	2483.500	AV	33.6	27.9	13.8	41.0	3.4	37.7	53.9	16.2	107	309	
Hori.	3967.999	AV	36.2	29.1	5.4	40.4	3.4	33.7	53.9	20.2	122	57	
Hori.	4793.947	AV	33.5	31.4	5.8	39.6	3.4	34.5	53.9	19.4	114	55	
Hori.	4960.000	AV	33.2	32.0	6.0	39.4	3.4	35.2	53.9	18.7	102	58	
Hori.	7440.000	AV	33.8	37.0	7.5	40.4	3.4	41.3	53.9	12.6	150	34	
Hori.	9920.000	AV	33.3	38.4	8.4	39.4	3.4	44.1	53.9	9.8	100	0	
Hori.	12400.000	AV	33.8	39.5	9.6	39.6	3.4	46.7	53.9	**7.2**	100	0	
Vert.	1487.787	PK	48.6	24.8	12.9	40.8	3.4	48.9	73.9	25.0	150	207	
Vert.	2483.500	PK	46.0	27.9	13.8	41.0	3.4	50.1	73.9	23.8	126	276	
Vert.	3967.999	PK	46.4	29.1	5.4	40.4	3.4	43.9	73.9	30.0	122	144	
Vert.	4793.947	PK	46.9	31.4	5.8	39.6	3.4	47.9	73.9	26.0	150	157	
Vert.	4960.000	PK	44.9	32.0	6.0	39.4	3.4	46.9	73.9	27.0	172	96	
Vert.	7440.000	PK	45.1	37.0	7.5	40.4	3.4	52.6	73.9	21.3	151	0	
Vert.	9920.000	PK	44.8	38.4	8.4	39.4	3.4	55.6	73.9	18.3	100	0	
Vert.	12400.000	PK	44.9	39.5	9.6	39.6	3.4	57.8	73.9	16.1	100	0	
Vert.	1487.787	AV	38.9	24.8	12.9	40.8	3.4	39.2	53.9	14.7	150	207	
Vert.	2483.500	AV	34.3	27.9	13.8	41.0	3.4	38.4	53.9	15.5	126	276	
Vert.	3967.999	AV	36.0	29.1	5.4	40.4	3.4	33.5	53.9	20.4	122	144	
Vert.	4793.947	AV	33.7	31.4	5.8	39.6	3.4	34.7	53.9	19.2	150	157	
Vert.	4960.000	AV	33.3	32.0	6.0	39.4	3.4	35.3	53.9	18.6	172	96	
Vert.	7440.000	AV	33.8	37.0	7.5	40.4	3.4	41.3	53.9	12.6	151	0	
Vert.	9920.000	AV	33.2	38.4	8.4	39.4	3.4	44.0	53.9	9.9	100	0	
Vert.	12400.000	AV	33.8	39.5	9.6	39.6	3.4	46.7	53.9	**7.2**	100	0	

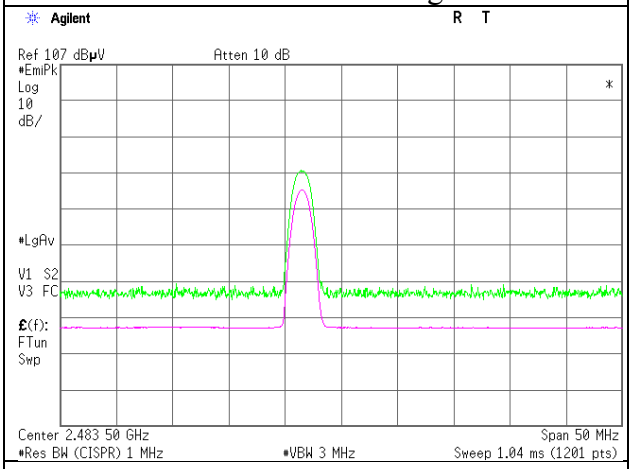
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission
(Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 25, 2016
Temperature / Humidity	21 deg. C / 53 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, 3DH5 2480 MHz, Type-A

Horizontal

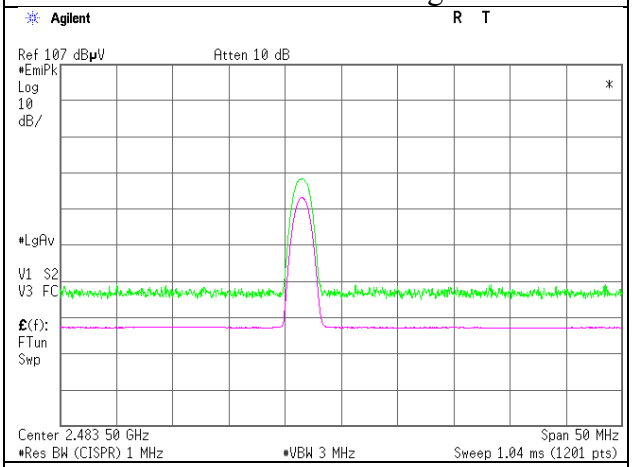
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 20, 2016	April 26, 2016
Temperature / Humidity	25 deg. C / 37 % RH	24 deg. C / 46 % RH
Engineer	Kenichi Adachi	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, DH5 2402 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.848	QP	23.0	12.4	6.9	32.2	0.0	10.1	40.0	29.9	300	147	
Hori.	1441.199	PK	48.1	24.8	12.9	40.7	3.4	48.5	73.9	25.4	119	0	
Hori.	2390.000	PK	45.9	27.8	13.7	41.0	3.4	49.8	73.9	24.1	286	190	
Hori.	3843.188	PK	47.3	28.9	5.5	40.6	3.4	44.5	73.9	29.4	132	0	
Hori.	4794.019	PK	45.7	31.4	5.8	39.6	3.4	46.7	73.9	27.2	181	0	
Hori.	4804.000	PK	44.4	31.4	5.8	39.6	3.4	45.4	73.9	28.5	199	89	
Hori.	7206.000	PK	44.3	36.9	7.2	40.1	3.4	51.7	73.9	22.2	153	194	
Hori.	9206.000	PK	44.2	38.1	8.1	40.0	3.4	53.8	73.9	20.1	100	0	
Hori.	12010.000	PK	44.8	39.7	9.4	39.3	3.4	58.0	73.9	15.9	100	0	
Hori.	1441.199	AV	37.0	24.8	12.9	40.7	3.4	37.4	53.9	16.5	119	0	
Hori.	2390.000	AV	33.9	27.8	13.7	41.0	3.4	37.8	53.9	16.1	286	190	
Hori.	3843.188	AV	36.9	28.9	5.5	40.6	3.4	34.1	53.9	19.8	132	0	
Hori.	4794.019	AV	33.2	31.4	5.8	39.6	3.4	34.2	53.9	19.7	181	0	
Hori.	4804.000	AV	33.1	31.4	5.8	39.6	3.4	34.1	53.9	19.8	199	89	
Hori.	7206.000	AV	33.0	36.9	7.2	40.1	3.4	40.4	53.9	13.5	153	194	
Hori.	9206.000	AV	33.0	38.1	8.1	40.0	3.4	42.6	53.9	11.3	100	0	
Hori.	12010.000	AV	33.0	39.7	9.4	39.3	3.4	46.2	53.9	7.7	100	0	
Vert.	36.343	QP	22.9	15.2	6.7	32.2	0.0	12.6	40.0	27.4	100	4	
Vert.	43.848	QP	23.0	12.4	6.9	32.2	0.0	10.1	40.0	29.9	100	58	
Vert.	99.351	QP	22.7	9.6	7.5	32.1	0.0	7.7	43.5	35.8	100	144	
Vert.	215.948	QP	22.6	16.5	8.2	32.0	0.0	15.3	43.5	28.2	100	233	
Vert.	739.076	QP	22.1	20.5	10.5	31.8	0.0	21.3	46.0	24.7	100	301	
Vert.	959.809	QP	21.6	22.7	11.2	30.5	0.0	25.0	46.0	21.0	100	78	
Vert.	1441.199	PK	48.9	24.8	12.9	40.7	3.4	49.3	73.9	24.6	145	179	
Vert.	2390.000	PK	46.4	27.8	13.7	41.0	3.4	50.3	73.9	23.6	233	252	
Vert.	3843.188	PK	47.2	28.9	5.5	40.6	3.4	44.4	73.9	29.5	171	149	
Vert.	4794.019	PK	45.9	31.4	5.8	39.6	3.4	46.9	73.9	27.0	102	151	
Vert.	4804.000	PK	44.5	31.4	5.8	39.6	3.4	45.5	73.9	28.4	221	91	
Vert.	7206.000	PK	44.4	36.9	7.2	40.1	3.4	51.8	73.9	22.1	162	200	
Vert.	9206.000	PK	44.3	38.1	8.1	40.0	3.4	53.9	73.9	20.0	100	0	
Vert.	12010.000	PK	44.9	39.7	9.4	39.3	3.4	58.1	73.9	15.8	100	0	
Vert.	12010.000	PK	45.3	39.7	9.4	39.3	3.4	58.5	73.9	15.4	100	0	
Vert.	1441.199	AV	37.5	24.8	12.9	40.7	3.4	37.9	53.9	16.0	145	179	
Vert.	2390.000	AV	33.9	27.8	13.7	41.0	3.4	37.8	53.9	16.1	233	252	
Vert.	3843.188	AV	36.9	28.9	5.5	40.6	3.4	34.1	53.9	19.8	171	149	
Vert.	4794.019	AV	33.2	31.4	5.8	39.6	3.4	34.2	53.9	19.7	102	151	
Vert.	4804.000	AV	33.2	31.4	5.8	39.6	3.4	34.2	53.9	19.7	221	91	
Vert.	7206.000	AV	33.1	36.9	7.2	40.1	3.4	40.5	53.9	13.4	162	200	
Vert.	9206.000	AV	33.1	38.1	8.1	40.0	3.4	42.7	53.9	11.2	100	0	
Vert.	12010.000	AV	33.1	39.7	9.4	39.3	3.4	46.3	53.9	**7.6**	100	0	
Vert.	12010.000	AV	32.9	39.7	9.4	39.3	3.4	46.1	53.9	7.8	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Dwell(time)factor + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
Dwell (time) factor refer to "Dwell time factor Calculation chart" sheet.

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	83.2	27.8	13.7	41.0	3.4	87.1	-	-	Carrier
Hori.	2400.000	PK	37.2	27.8	13.7	41.0	3.4	41.1	67.1	26.0	
Vert.	2402.000	PK	81.9	27.8	13.7	41.0	3.4	85.8	-	-	Carrier
Vert.	2400.000	PK	36.6	27.8	13.7	41.0	3.4	40.5	65.8	25.3	

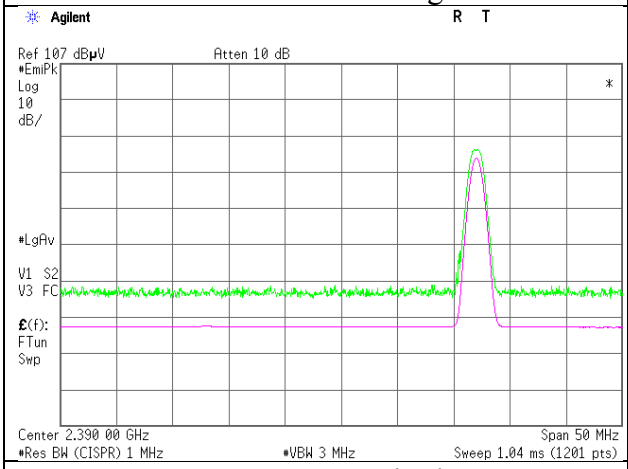
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 27, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, DH5 2402 MHz, Type-B

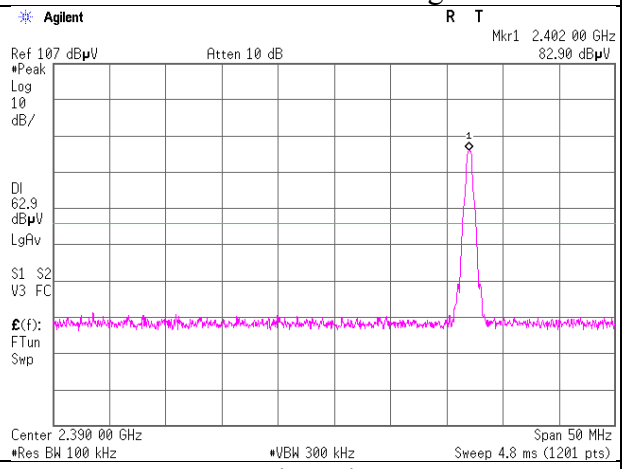
Horizontal

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

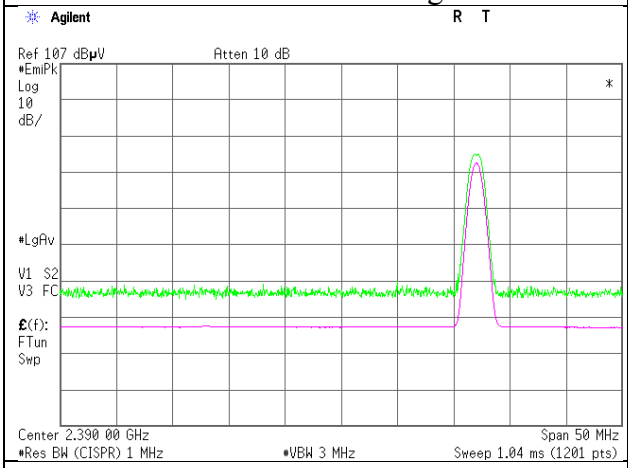
Authorized-band band-edge Plot



20dBc Plot

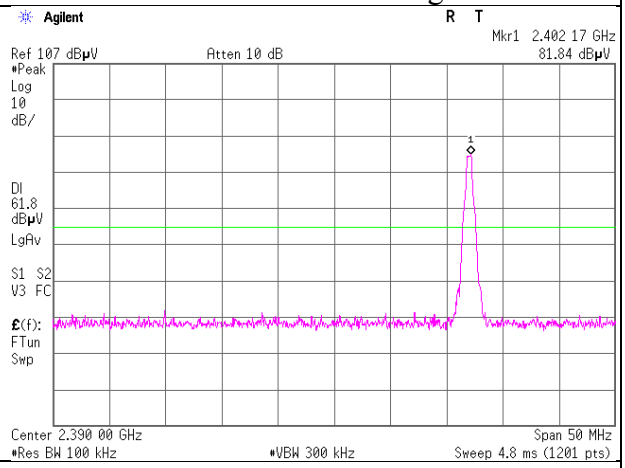
Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Authorized-band band-edge Plot



20dBc Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 20, 2016	April 26, 2016
Temperature / Humidity	25 deg. C / 37 % RH	24 deg. C / 46 % RH
Engineer	Kenichi Adachi	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.849	QP	23.0	12.4	6.9	32.2	0.0	10.1	40.0	29.9	150	142	
Hori.	1464.599	PK	49.2	24.8	12.9	40.8	3.4	49.5	73.9	24.4	109	0	
Hori.	3905.601	PK	47.6	29.0	5.5	40.5	3.4	45.0	73.9	28.9	129	0	
Hori.	4794.017	PK	45.4	31.4	5.8	39.6	3.4	46.4	73.9	27.5	179	0	
Hori.	4882.000	PK	44.2	31.7	5.9	39.5	3.4	45.7	73.9	28.2	202	91	
Hori.	7323.000	PK	44.1	36.9	7.3	40.2	3.4	51.5	73.9	22.4	154	188	
Hori.	9764.000	PK	45.0	38.5	8.3	39.5	3.4	55.7	73.9	18.2	100	0	
Hori.	12205.000	PK	44.3	39.6	9.5	39.4	3.4	57.4	73.9	16.5	100	0	
Hori.	1464.599	AV	38.3	24.8	12.9	40.8	3.4	38.6	53.9	15.3	109	0	
Hori.	3905.601	AV	37.4	29.0	5.5	40.5	3.4	34.8	53.9	19.1	129	0	
Hori.	4794.017	AV	33.1	31.4	5.8	39.6	3.4	34.1	53.9	19.8	179	0	
Hori.	4882.000	AV	33.1	31.7	5.9	39.5	3.4	34.6	53.9	19.3	202	91	
Hori.	7323.000	AV	32.6	36.9	7.3	40.2	3.4	40.0	53.9	13.9	154	188	
Hori.	9764.000	AV	33.0	38.5	8.3	39.5	3.4	43.7	53.9	10.2	100	0	
Hori.	12205.000	AV	32.4	39.6	9.5	39.4	3.4	45.5	53.9	**8.4**	100	0	
Vert.	35.478	QP	22.6	15.5	6.7	32.2	0.0	12.6	40.0	27.4	100	26	
Vert.	43.849	QP	23.0	12.4	6.9	32.2	0.0	10.1	40.0	29.9	100	300	
Vert.	98.395	QP	22.6	9.4	7.5	32.1	0.0	7.4	43.5	36.1	100	3	
Vert.	215.870	QP	22.7	16.5	8.2	32.0	0.0	15.4	43.5	28.1	100	222	
Vert.	820.289	QP	22.2	21.2	10.8	31.5	0.0	22.7	46.0	23.3	100	355	
Vert.	959.570	QP	21.6	22.7	11.2	30.5	0.0	25.0	46.0	21.0	100	309	
Vert.	1464.599	PK	49.3	24.8	12.9	40.8	3.4	49.6	73.9	24.3	149	184	
Vert.	3905.601	PK	47.4	29.0	5.5	40.5	3.4	44.8	73.9	29.1	169	151	
Vert.	4794.017	PK	45.7	31.4	5.8	39.6	3.4	46.7	73.9	27.2	106	148	
Vert.	4882.000	PK	44.4	31.7	5.9	39.5	3.4	45.9	73.9	28.0	218	90	
Vert.	7323.000	PK	44.0	36.9	7.3	40.2	3.4	51.4	73.9	22.5	159	197	
Vert.	9764.000	PK	45.1	38.5	8.3	39.5	3.4	55.8	73.9	18.1	100	0	
Vert.	12205.000	PK	44.4	39.6	9.5	39.4	3.4	57.5	73.9	16.4	100	0	
Vert.	1464.599	AV	38.9	24.8	12.9	40.8	3.4	39.2	53.9	14.7	149	184	
Vert.	3905.601	AV	37.2	29.0	5.5	40.5	3.4	34.6	53.9	19.3	169	151	
Vert.	4794.017	AV	33.1	31.4	5.8	39.6	3.4	34.1	53.9	19.8	106	148	
Vert.	4882.000	AV	33.1	31.7	5.9	39.5	3.4	34.6	53.9	19.3	218	90	
Vert.	7323.000	AV	32.5	36.9	7.3	40.2	3.4	39.9	53.9	14.0	159	197	
Vert.	9764.000	AV	33.1	38.5	8.3	39.5	3.4	43.8	53.9	10.1	100	0	
Vert.	12205.000	AV	32.4	39.6	9.5	39.4	3.4	45.5	53.9	**8.4**	100	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 20, 2016	April 26, 2016
Temperature / Humidity	25 deg. C / 37 % RH	24 deg. C / 46 % RH
Engineer	Kenichi Adachi	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.999	QP	23.1	12.4	6.9	32.2	0.0	10.2	40.0	29.8	150	201	
Hori.	1488.003	PK	49.6	24.8	12.9	40.8	3.4	49.9	73.9	24.0	109	0	
Hori.	2483.500	PK	46.0	27.9	13.8	41.0	3.4	50.1	73.9	23.8	185	287	
Hori.	3967.994	PK	47.7	29.1	5.4	40.4	3.4	45.2	73.9	28.7	137	0	
Hori.	4793.999	PK	46.8	31.4	5.8	39.6	3.4	47.8	73.9	26.1	179	0	
Hori.	4960.000	PK	45.8	32.0	6.0	39.4	3.4	47.8	73.9	26.1	203	89	
Hori.	7440.000	PK	44.7	37.0	7.5	40.4	3.4	52.2	73.9	21.7	155	192	
Hori.	9920.000	PK	45.3	38.4	8.4	39.4	3.4	56.1	73.9	17.8	100	0	
Hori.	12400.000	PK	44.5	39.5	9.6	39.6	3.4	57.4	73.9	16.5	100	0	
Hori.	1488.003	AV	39.9	24.8	12.9	40.8	3.4	40.2	53.9	13.7	109	0	
Hori.	2483.500	AV	33.8	27.9	13.8	41.0	3.4	37.9	53.9	16.0	185	287	
Hori.	3967.994	AV	37.7	29.1	5.4	40.4	3.4	35.2	53.9	18.7	137	0	
Hori.	4793.999	AV	33.5	31.4	5.8	39.6	3.4	34.5	53.9	19.4	179	0	
Hori.	4960.000	AV	33.1	32.0	6.0	39.4	3.4	35.1	53.9	18.8	203	89	
Hori.	7440.000	AV	34.0	37.0	7.5	40.4	3.4	41.5	53.9	12.4	155	192	
Hori.	9920.000	AV	33.4	38.4	8.4	39.4	3.4	44.2	53.9	9.7	100	0	
Hori.	12400.000	AV	33.8	39.5	9.6	39.6	3.4	46.7	53.9	**7.2**	100	0	
Vert.	35.032	QP	22.5	15.7	6.7	32.2	0.0	12.7	40.0	27.3	100	295	
Vert.	43.999	QP	23.1	12.4	6.9	32.2	0.0	10.2	40.0	29.8	100	35	
Vert.	100.033	QP	23.4	9.7	7.5	32.1	0.0	8.5	43.5	35.0	100	249	
Vert.	215.970	QP	22.7	16.5	8.2	32.0	0.0	15.4	43.5	28.1	100	298	
Vert.	717.226	QP	22.0	20.4	10.4	31.8	0.0	21.0	46.0	25.0	100	350	
Vert.	959.129	QP	21.7	22.7	11.2	30.5	0.0	25.1	46.0	20.9	100	97	
Vert.	1488.003	PK	49.7	24.8	12.9	40.8	3.4	50.0	73.9	23.9	107	103	
Vert.	2483.500	PK	46.0	27.9	13.8	41.0	3.4	50.1	73.9	23.8	100	272	
Vert.	3967.994	PK	47.6	29.1	5.4	40.4	3.4	45.1	73.9	28.8	174	153	
Vert.	4793.999	PK	46.7	31.4	5.8	39.6	3.4	47.7	73.9	26.2	106	148	
Vert.	4960.000	PK	46.3	32.0	6.0	39.4	3.4	48.3	73.9	25.6	222	93	
Vert.	7440.000	PK	44.8	37.0	7.5	40.4	3.4	52.3	73.9	21.6	161	198	
Vert.	9920.000	PK	45.2	38.4	8.4	39.4	3.4	56.0	73.9	17.9	100	0	
Vert.	12400.000	PK	44.4	39.5	9.6	39.6	3.4	57.3	73.9	16.6	100	0	
Vert.	1488.003	AV	41.5	24.8	12.9	40.8	3.4	41.8	53.9	12.1	107	103	
Vert.	2483.500	AV	33.7	27.9	13.8	41.0	3.4	37.8	53.9	16.1	100	272	
Vert.	3967.994	AV	37.6	29.1	5.4	40.4	3.4	35.1	53.9	18.8	174	153	
Vert.	4793.999	AV	33.5	31.4	5.8	39.6	3.4	34.5	53.9	19.4	106	148	
Vert.	4960.000	AV	33.1	32.0	6.0	39.4	3.4	35.1	53.9	18.8	222	93	
Vert.	7440.000	AV	34.1	37.0	7.5	40.4	3.4	41.6	53.9	12.3	161	198	
Vert.	9920.000	AV	33.3	38.4	8.4	39.4	3.4	44.1	53.9	9.8	100	0	
Vert.	12400.000	AV	33.7	39.5	9.6	39.6	3.4	46.6	53.9	7.3	100	0	

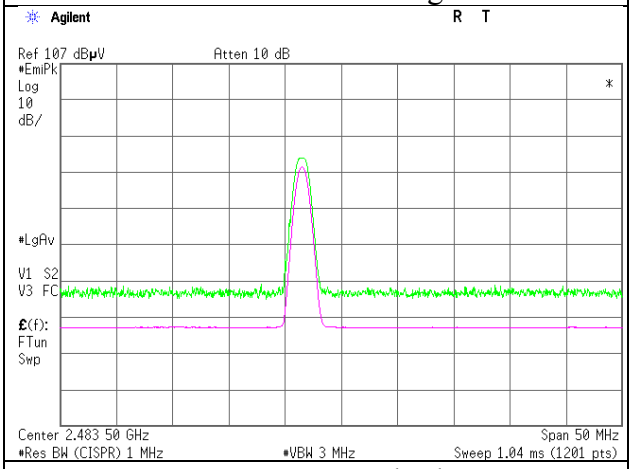
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 27, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, DH5 2480 MHz, Type-B

Horizontal

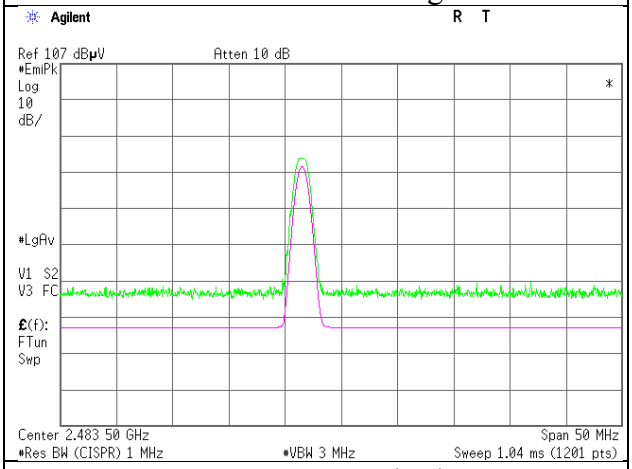
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 21, 2016	April 26, 2016
Temperature / Humidity	24 deg. C / 38 % RH	24 deg. C / 46 % RH
Engineer	Hikaru Shirasawa	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2402 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.995	QP	23.1	12.4	6.9	32.2	0.0	10.2	40.0	29.8	200	82	
Hori.	1441.203	PK	47.4	24.8	12.9	40.7	3.4	47.8	73.9	26.1	112	0	
Hori.	2390.000	PK	45.7	27.8	13.7	41.0	3.4	49.6	73.9	24.3	286	243	
Hori.	3843.155	PK	46.1	28.9	5.5	40.6	3.4	43.3	73.9	30.6	138	0	
Hori.	4794.071	PK	46.4	31.4	5.8	39.6	3.4	47.4	73.9	26.5	150	305	
Hori.	4804.000	PK	45.1	31.4	5.8	39.6	3.4	46.1	73.9	27.8	128	169	
Hori.	7206.000	PK	45.7	36.9	7.2	40.1	3.4	53.1	73.9	20.8	150	359	
Hori.	9608.000	PK	45.1	38.5	8.2	39.6	3.4	55.6	73.9	18.3	150	0	
Hori.	12010.000	PK	45.1	39.7	9.4	39.3	3.4	58.3	73.9	15.6	150	359	
Hori.	1441.203	AV	35.1	24.8	12.9	40.7	3.4	35.5	53.9	18.4	112	0	
Hori.	2390.000	AV	33.7	27.8	13.7	41.0	3.4	37.6	53.9	16.3	286	243	
Hori.	3843.155	AV	35.3	28.9	5.5	40.6	3.4	32.5	53.9	21.4	138	0	
Hori.	4794.071	AV	32.8	31.4	5.8	39.6	3.4	33.8	53.9	20.1	150	305	
Hori.	4804.000	AV	32.7	31.4	5.8	39.6	3.4	33.7	53.9	20.2	128	169	
Hori.	7206.000	AV	33.2	36.9	7.2	40.1	3.4	40.6	53.9	13.3	150	359	
Hori.	9608.000	AV	33.0	38.5	8.2	39.6	3.4	43.5	53.9	10.4	150	0	
Hori.	12010.000	AV	33.1	39.7	9.4	39.3	3.4	46.3	53.9	**7.6**	150	359	
Vert.	36.849	QP	23.0	15.0	6.8	32.2	0.0	12.6	40.0	27.4	100	1	
Vert.	43.995	QP	23.1	12.4	6.9	32.2	0.0	10.2	40.0	29.8	100	9	
Vert.	99.849	QP	23.7	9.7	7.5	32.1	0.0	8.8	43.5	34.7	100	42	
Vert.	215.958	QP	22.7	16.5	8.2	32.0	0.0	15.4	43.5	28.1	100	128	
Vert.	774.626	QP	22.1	20.8	10.6	31.7	0.0	21.8	46.0	24.2	100	55	
Vert.	959.305	QP	21.7	22.7	11.2	30.5	0.0	25.1	46.0	20.9	100	1	
Vert.	1441.203	PK	47.5	24.8	12.9	40.7	3.4	47.9	73.9	26.0	196	233	
Vert.	2390.000	PK	46.0	27.8	13.7	41.0	3.4	49.9	73.9	24.0	172	262	
Vert.	3843.186	PK	47.1	28.9	5.5	40.6	3.4	44.3	73.9	29.6	154	88	
Vert.	4794.056	PK	45.5	31.4	5.8	39.6	3.4	46.5	73.9	27.4	145	134	
Vert.	4804.000	PK	46.8	31.4	5.8	39.6	3.4	47.8	73.9	26.1	150	107	
Vert.	7206.000	PK	45.9	36.9	7.2	40.1	3.4	53.3	73.9	20.6	150	359	
Vert.	9608.000	PK	46.2	38.5	8.2	39.6	3.4	56.7	73.9	17.2	150	0	
Vert.	12010.000	PK	46.3	39.7	9.4	39.3	3.4	59.5	73.9	14.4	150	359	
Vert.	1441.203	AV	34.7	24.8	12.9	40.7	3.4	35.1	53.9	18.8	196	233	
Vert.	2390.000	AV	33.6	27.8	13.7	41.0	3.4	37.5	53.9	16.4	172	262	
Vert.	3843.186	AV	35.5	28.9	5.5	40.6	3.4	32.7	53.9	21.2	154	88	
Vert.	4794.056	AV	32.4	31.4	5.8	39.6	3.4	33.4	53.9	20.5	145	134	
Vert.	4804.000	AV	32.5	31.4	5.8	39.6	3.4	33.5	53.9	20.4	150	107	
Vert.	7206.000	AV	32.5	36.9	7.2	40.1	3.4	39.9	53.9	14.0	150	359	
Vert.	9608.000	AV	32.4	38.5	8.2	39.6	3.4	42.9	53.9	11.0	150	0	
Vert.	12010.000	AV	32.6	39.7	9.4	39.3	3.4	45.8	53.9	8.1	150	359	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	80.2	27.8	13.7	41.0	3.4	84.1	-	-	Carrier
Hori.	2400.000	PK	38.4	27.8	13.7	41.0	3.4	42.3	64.1	21.8	
Vert.	2402.000	PK	78.8	27.8	13.7	41.0	3.4	82.7	-	-	Carrier
Vert.	2400.000	PK	37.0	27.8	13.7	41.0	3.4	40.9	62.7	21.8	

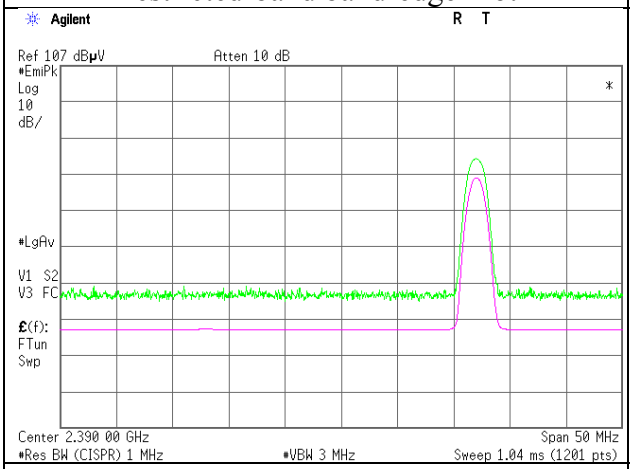
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 27, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, 3DH5 2402 MHz, Type-B

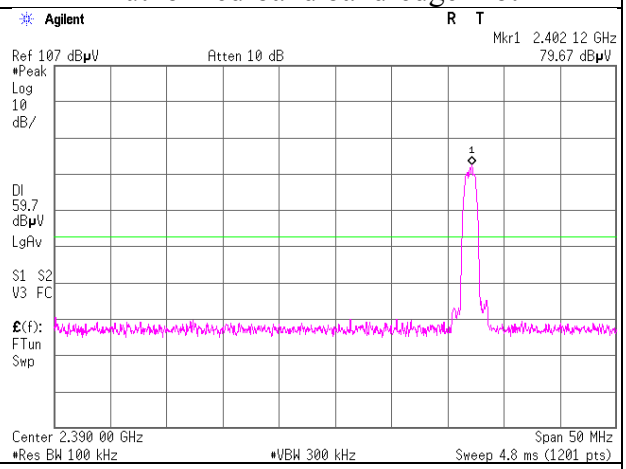
Horizontal

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

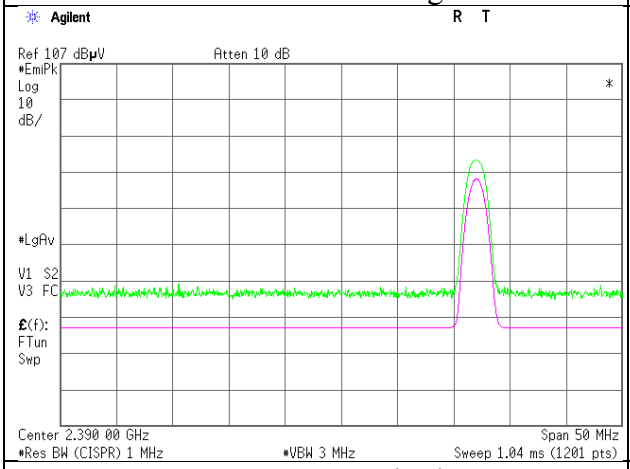
Authorized-band band-edge Plot



20dBc Plot

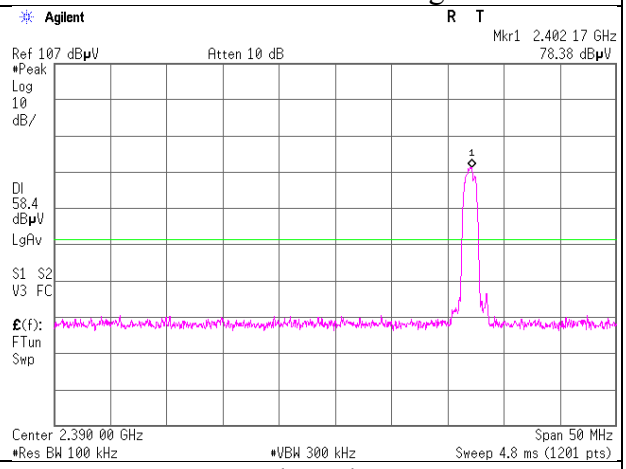
Vertical

Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Authorized-band band-edge Plot



20dBc Plot

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

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 21, 2016	April 26, 2016
Temperature / Humidity	24 deg. C / 38 % RH	24 deg. C / 46 % RH
Engineer	Hikaru Shirasawa	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, 3DH5 2441 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.904	QP	23.0	12.4	6.9	32.2	0.0	10.1	40.0	29.9	200	146	
Hori.	1464.523	PK	47.7	24.8	12.9	40.8	3.4	48.0	73.9	25.9	107	0	
Hori.	3905.592	PK	45.8	29.0	5.5	40.5	3.4	43.2	73.9	30.7	147	0	
Hori.	4794.004	PK	44.6	31.4	5.8	39.6	3.4	45.6	73.9	28.3	217	246	
Hori.	4882.000	PK	45.2	31.7	5.9	39.5	3.4	46.7	73.9	27.2	150	359	
Hori.	7323.000	PK	45.5	36.9	7.3	40.2	3.4	52.9	73.9	21.0	150	0	
Hori.	9764.000	PK	45.9	38.5	8.3	39.5	3.4	56.6	73.9	17.3	150	359	
Hori.	12205.000	PK	45.8	39.6	9.5	39.4	3.4	58.9	73.9	15.0	150	0	
Hori.	1464.523	AV	36.2	24.8	12.9	40.8	3.4	36.5	53.9	17.4	107	0	
Hori.	3905.592	AV	35.4	29.0	5.5	40.5	3.4	32.8	53.9	21.1	147	0	
Hori.	4794.004	AV	32.4	31.4	5.8	39.6	3.4	33.4	53.9	20.5	217	246	
Hori.	4882.000	AV	32.4	31.7	5.9	39.5	3.4	33.9	53.9	20.0	150	359	
Hori.	7323.000	AV	33.5	36.9	7.3	40.2	3.4	40.9	53.9	13.0	150	0	
Hori.	9764.000	AV	32.9	38.5	8.3	39.5	3.4	43.6	53.9	10.3	150	359	
Hori.	12205.000	AV	33.3	39.6	9.5	39.4	3.4	46.4	53.9	7.5	150	0	
Vert.	34.322	QP	22.2	15.9	6.7	32.2	0.0	12.6	40.0	27.4	100	124	
Vert.	43.904	QP	22.9	12.4	6.9	32.2	0.0	10.0	40.0	30.0	100	242	
Vert.	100.027	QP	23.4	9.7	7.5	32.1	0.0	8.5	43.5	35.0	100	78	
Vert.	214.958	QP	22.5	16.5	8.2	32.0	0.0	15.2	43.5	28.3	100	69	
Vert.	761.591	QP	22.1	20.7	10.6	31.7	0.0	21.7	46.0	24.3	100	187	
Vert.	958.220	QP	21.8	22.7	11.2	30.5	0.0	25.2	46.0	20.8	100	15	
Vert.	1464.523	PK	48.8	24.8	12.9	40.8	3.4	49.1	73.9	24.8	141	214	
Vert.	3905.593	PK	46.8	29.0	5.5	40.5	3.4	44.2	73.9	29.7	150	110	
Vert.	4794.006	PK	45.8	31.4	5.8	39.6	3.4	46.8	73.9	27.1	125	150	
Vert.	4882.000	PK	45.1	31.7	5.9	39.5	3.4	46.6	73.9	27.3	150	359	
Vert.	7323.000	PK	45.9	36.9	7.3	40.2	3.4	53.3	73.9	20.6	150	0	
Vert.	9764.000	PK	46.2	38.5	8.3	39.5	3.4	56.9	73.9	17.0	150	359	
Vert.	12205.000	PK	46.1	39.6	9.5	39.4	3.4	59.2	73.9	14.7	150	0	
Vert.	1464.523	AV	36.5	24.8	12.9	40.8	3.4	36.8	53.9	17.1	141	214	
Vert.	3905.593	AV	36.0	29.0	5.5	40.5	3.4	33.4	53.9	20.5	150	110	
Vert.	4794.006	AV	32.5	31.4	5.8	39.6	3.4	33.5	53.9	20.4	125	150	
Vert.	4882.000	AV	34.0	31.7	5.9	39.5	3.4	35.5	53.9	18.4	150	359	
Vert.	7323.000	AV	34.0	36.9	7.3	40.2	3.4	41.4	53.9	12.5	150	0	
Vert.	9764.000	AV	33.5	38.5	8.3	39.5	3.4	44.2	53.9	9.7	150	359	
Vert.	12205.000	AV	33.6	39.6	9.5	39.4	3.4	46.7	53.9	**7.2**	150	0	

Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

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Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 21, 2016	April 26, 2016
Temperature / Humidity	24 deg. C / 38 % RH	24 deg. C / 46 % RH
Engineer	Hikaru Shirasawa	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, DH5 2480 MHz, Type-B	

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	43.557	QP	23.0	12.6	6.9	32.2	0.0	10.3	40.0	29.7	300	30	
Hori.	1488.020	PK	49.1	24.8	12.9	40.8	3.4	49.4	73.9	24.5	105	0	
Hori.	2483.500	PK	46.7	27.9	13.8	41.0	3.4	50.8	73.9	23.1	150	297	
Hori.	3968.034	PK	46.6	29.1	5.4	40.4	3.4	44.1	73.9	29.8	100	0	
Hori.	4794.084	PK	46.0	31.4	5.8	39.6	3.4	47.0	73.9	26.9	105	244	
Hori.	4960.000	PK	46.3	32.0	6.0	39.4	3.4	48.3	73.9	25.6	150	359	
Hori.	7440.000	PK	47.2	37.0	7.5	40.4	3.4	54.7	73.9	19.2	150	0	
Hori.	9920.000	PK	47.5	38.4	8.4	39.4	3.4	58.3	73.9	15.6	150	359	
Hori.	12400.000	PK	47.2	39.5	9.6	39.6	3.4	60.1	73.9	13.8	150	0	
Hori.	1488.020	AV	37.2	24.8	12.9	40.8	3.4	37.5	53.9	16.4	105	0	
Hori.	2483.500	AV	33.6	27.9	13.8	41.0	3.4	37.7	53.9	16.2	150	297	
Hori.	3968.034	AV	35.7	29.1	5.4	40.4	3.4	33.2	53.9	20.7	100	0	
Hori.	4794.084	AV	32.7	31.4	5.8	39.6	3.4	33.7	53.9	20.2	105	244	
Hori.	4960.000	AV	32.5	32.0	6.0	39.4	3.4	34.5	53.9	19.4	150	359	
Hori.	7440.000	AV	33.7	37.0	7.5	40.4	3.4	41.2	53.9	12.7	150	0	
Hori.	9920.000	AV	33.4	38.4	8.4	39.4	3.4	44.2	53.9	9.7	150	359	
Hori.	12400.000	AV	33.6	39.5	9.6	39.6	3.4	46.5	53.9	7.4	150	0	
Vert.	33.952	QP	22.3	16.0	6.7	32.2	0.0	12.8	40.0	27.2	100	233	
Vert.	43.557	QP	23.0	12.6	6.9	32.2	0.0	10.3	40.0	29.7	100	300	
Vert.	100.115	QP	23.4	9.7	7.5	32.1	0.0	8.5	43.5	35.0	100	42	
Vert.	215.680	QP	22.6	16.5	8.2	32.0	0.0	15.3	43.5	28.2	100	63	
Vert.	767.952	QP	22.1	20.7	10.6	31.7	0.0	21.7	46.0	24.3	100	86	
Vert.	950.806	QP	21.5	22.6	11.2	30.6	0.0	24.7	46.0	21.3	100	327	
Vert.	1488.020	PK	48.6	24.8	12.9	40.8	3.4	48.9	73.9	25.0	124	211	
Vert.	2483.500	PK	45.7	27.9	13.8	41.0	3.4	49.8	73.9	24.1	150	266	
Vert.	3968.016	PK	46.5	29.1	5.4	40.4	3.4	44.0	73.9	29.9	161	129	
Vert.	4793.573	PK	45.4	31.4	5.8	39.6	3.4	46.4	73.9	27.5	106	135	
Vert.	4960.000	PK	46.4	32.0	6.0	39.4	3.4	48.4	73.9	25.5	150	359	
Vert.	7440.000	PK	47.2	37.0	7.5	40.4	3.4	54.7	73.9	19.2	150	0	
Vert.	9920.000	PK	46.8	38.4	8.4	39.4	3.4	57.6	73.9	16.3	150	359	
Vert.	12400.000	PK	46.6	39.5	9.6	39.6	3.4	59.5	73.9	14.4	150	0	
Vert.	1488.020	AV	37.5	24.8	12.9	40.8	3.4	37.8	53.9	16.1	124	211	
Vert.	2483.500	AV	33.3	27.9	13.8	41.0	3.4	37.4	53.9	16.5	150	266	
Vert.	3968.016	AV	36.6	29.1	5.4	40.4	3.4	34.1	53.9	19.8	161	129	
Vert.	4793.573	AV	32.4	31.4	5.8	39.6	3.4	33.4	53.9	20.5	106	135	
Vert.	4960.000	AV	32.7	32.0	6.0	39.4	3.4	34.7	53.9	19.2	150	359	
Vert.	7440.000	AV	33.9	37.0	7.5	40.4	3.4	41.4	53.9	12.5	150	0	
Vert.	9920.000	AV	33.5	38.4	8.4	39.4	3.4	44.3	53.9	9.6	150	359	
Vert.	12400.000	AV	33.7	39.5	9.6	39.6	3.4	46.6	53.9	**7.3**	150	0	

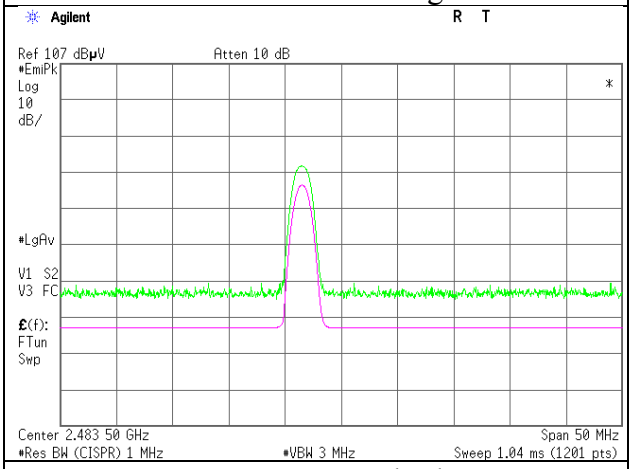
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amprifier) + Distance factor
Distance factor : 1 GHz - 13 GHz : 20log (4.45 m / 3.0 m) = 3.4 dB
13 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.5 dB
* These results have sufficient margin without taking account Dwell time factor.

Radiated Spurious Emission

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber
Report No.	11257132S-A-R3
Date	April 27, 2016
Temperature / Humidity	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa
Mode	Tx, Hopping Off, 3DH5 2480 MHz, Type-B

Horizontal

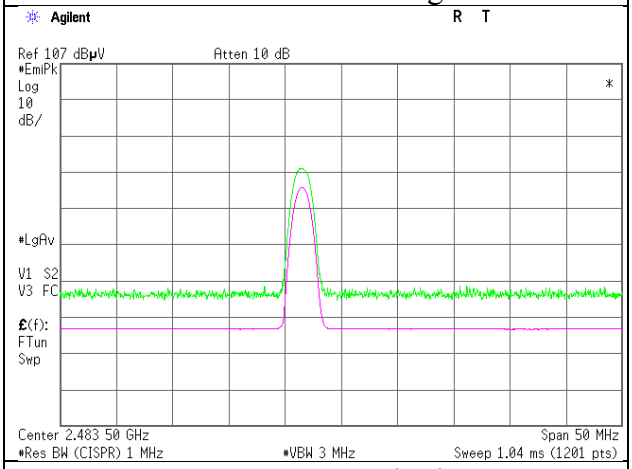
Restricted-band band-edge Plot



Trace Green : Peak Plot
Trace Purple : Average Plot

Vertical

Restricted-band band-edge Plot



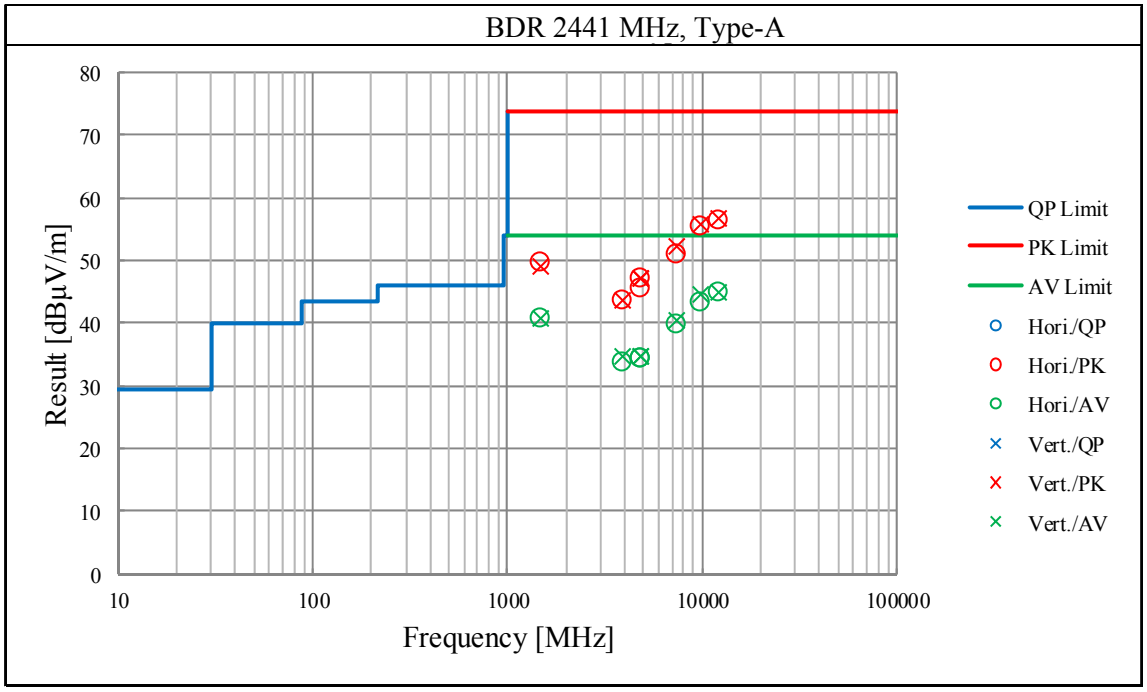
Trace Green : Peak Plot
Trace Purple : Average Plot

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

Radiated Spurious Emission
(Plot data, Worst case)

(reference)

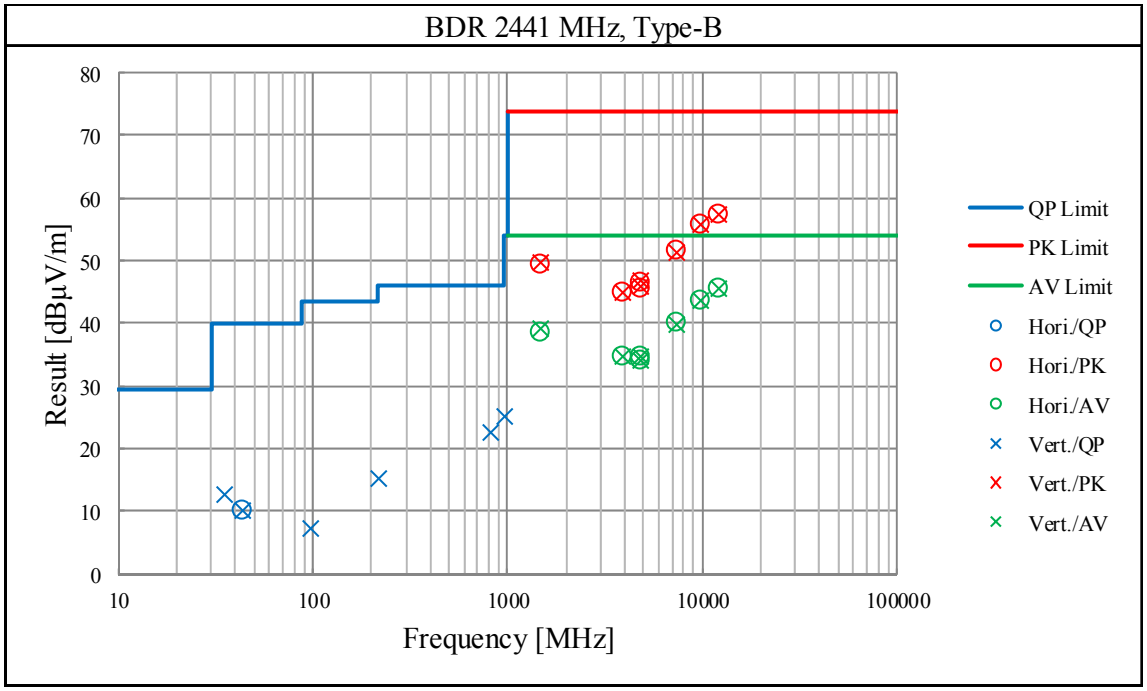
Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber		
Report No.	11257132S-A-R3		
Date	April 25, 2016	April 20, 2016	April 27, 2016
Temperature / Humidity	21 deg. C / 53 % RH	23 deg. C / 39 % RH	24 deg. C / 49 % RH
Engineer	Hikaru Shirasawa	Hikaru Shirasawa	Hikaru Shirasawa
	(1 GHz - 13 GHz)	(1 GHz - 13 GHz)	(13 GHz - 26.5 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz, Type-A		



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

Radiated Spurious Emission
(Plot data, Worst case)

Test place	Shonan EMC Lab. No.3 Semi Anechoic Chamber	
Report No.	11257132S-A-R3	
Date	April 21, 2016	April 26, 2016
Temperature / Humidity	24 deg. C / 38 % RH	24 deg. C / 46 % RH
Engineer	Hikaru Shirasawa	Makoto Hosaka
	(1 GHz - 13 GHz)	(30 MHz - 1 GHz)
Mode	Tx, Hopping Off, DH5 2441 MHz, Type-B	



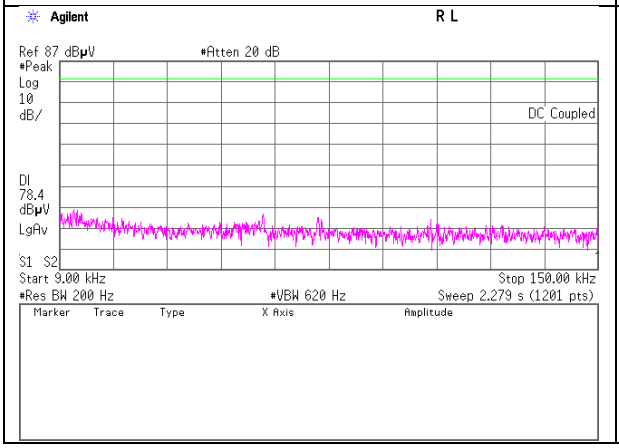
*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

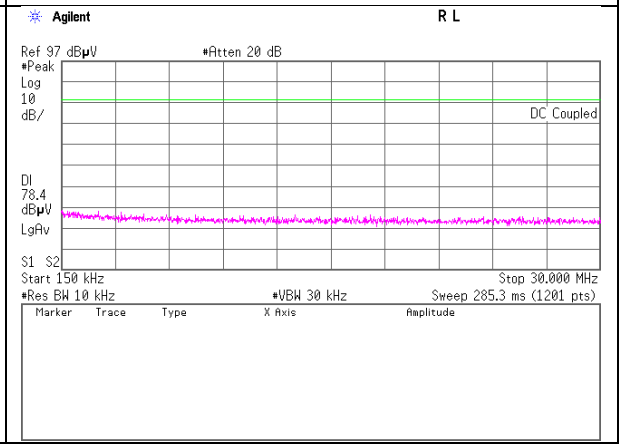
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, DH5

2402 MHz

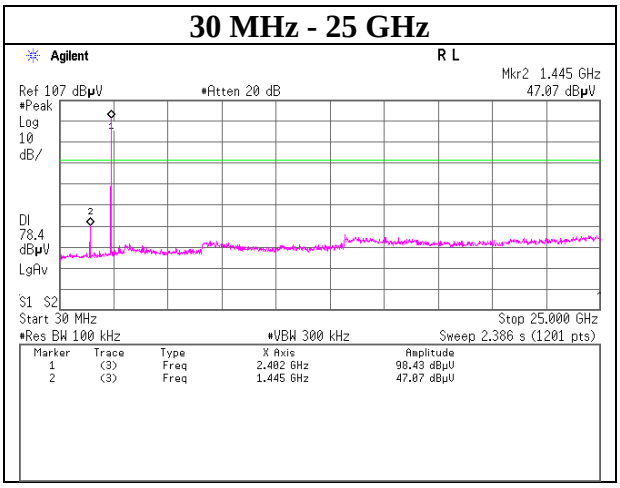
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

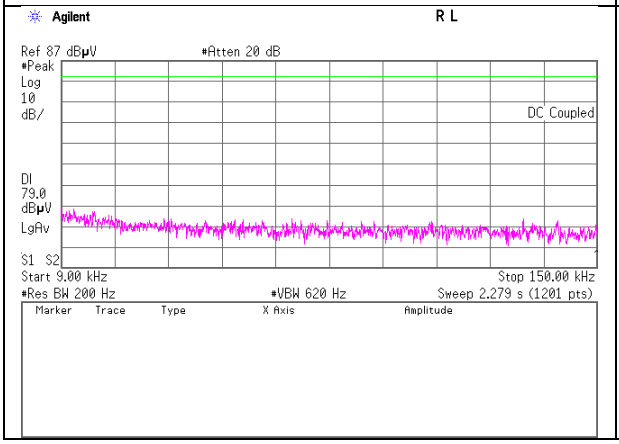


Conducted Spurious Emission

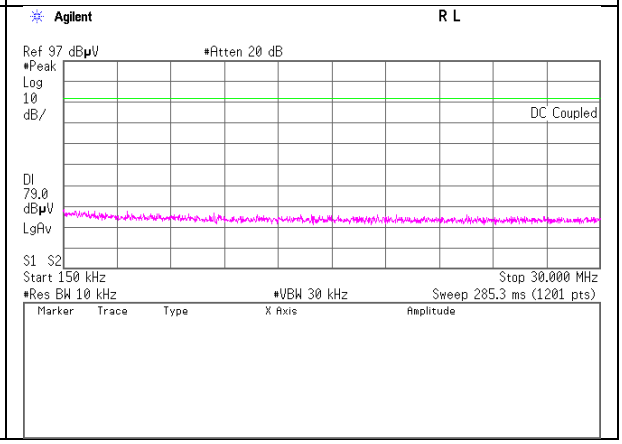
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, DH5

2441 MHz

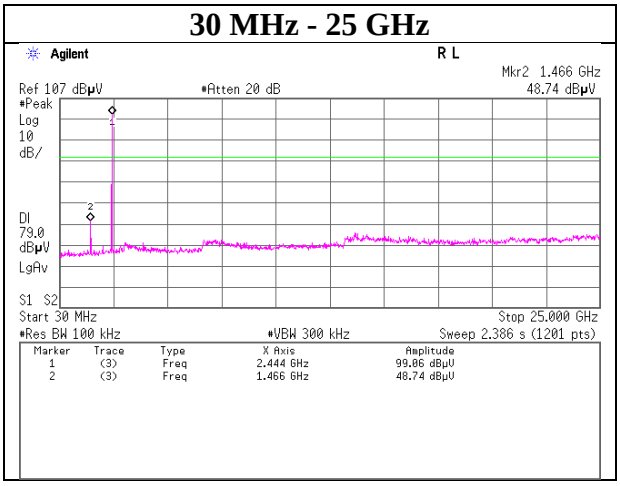
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

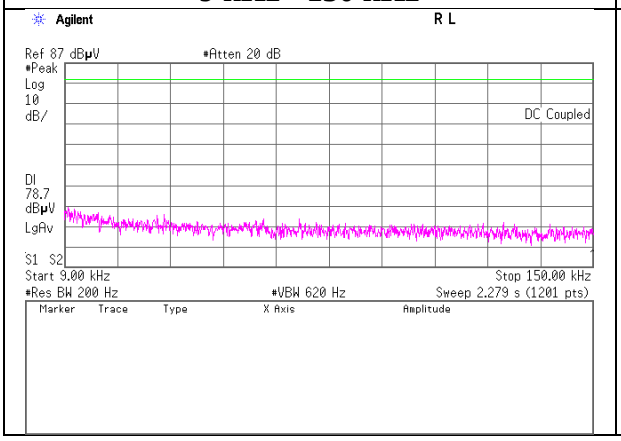


Conducted Spurious Emission

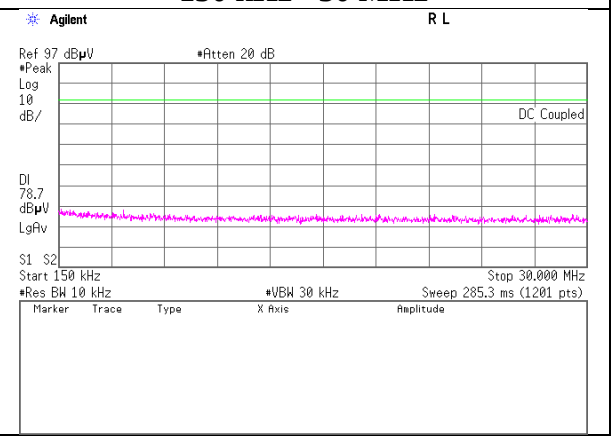
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, DH5

2480 MHz

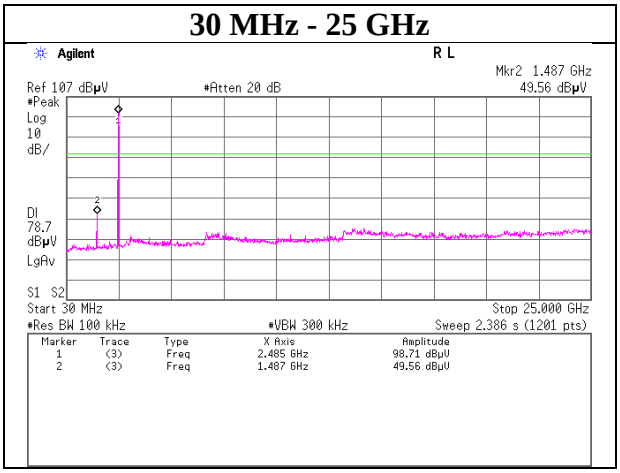
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

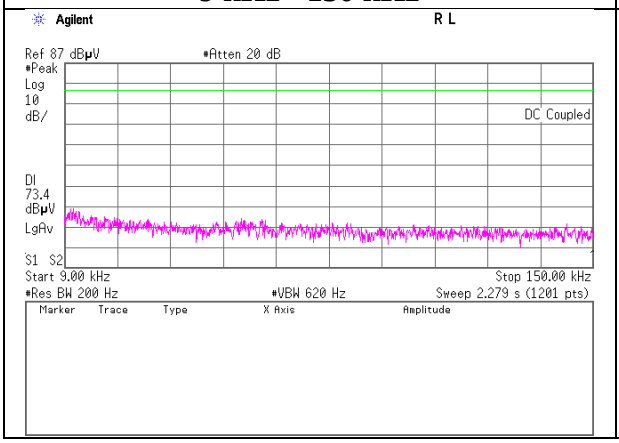


Conducted Spurious Emission

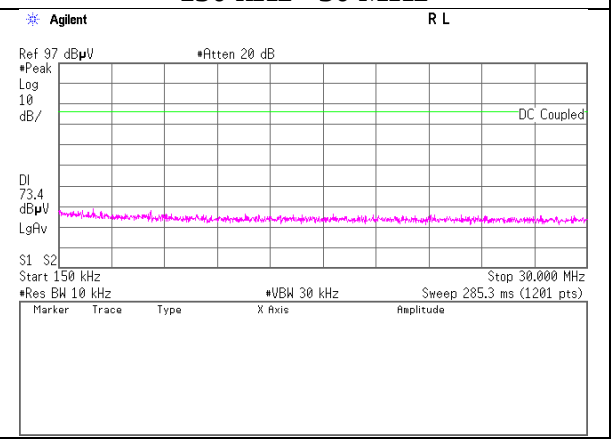
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, 3DH5

2402 MHz

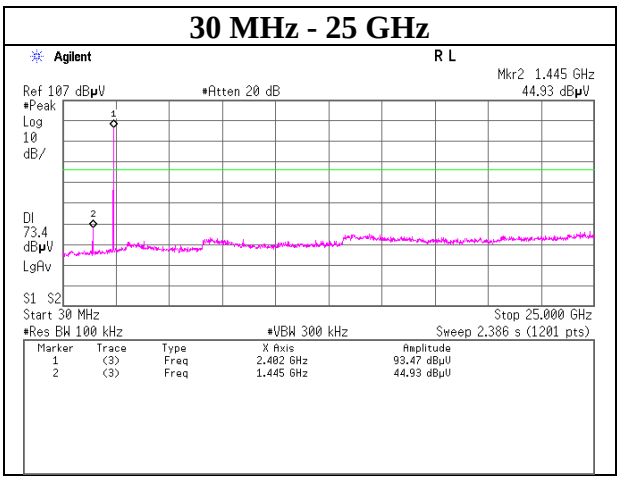
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

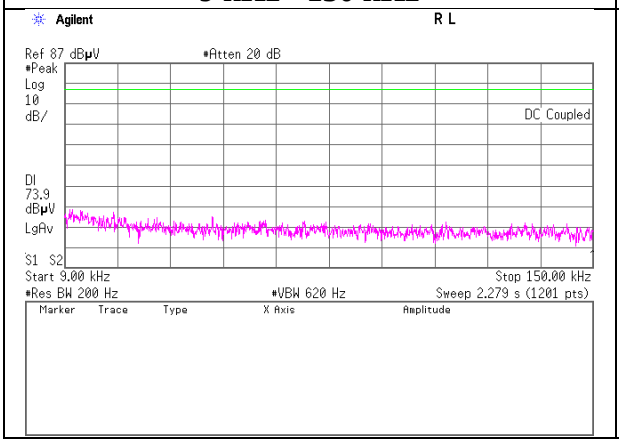


Conducted Spurious Emission

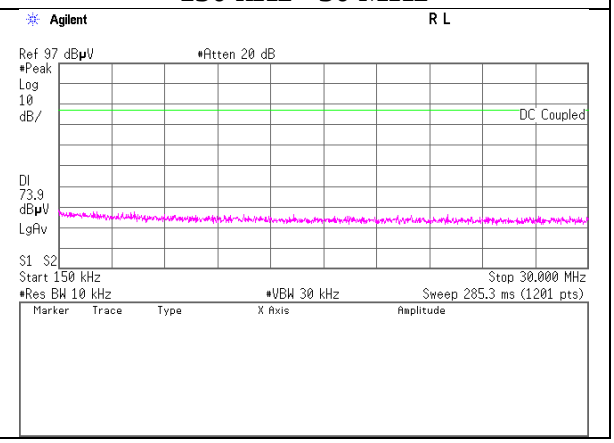
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, 3DH5

2441 MHz

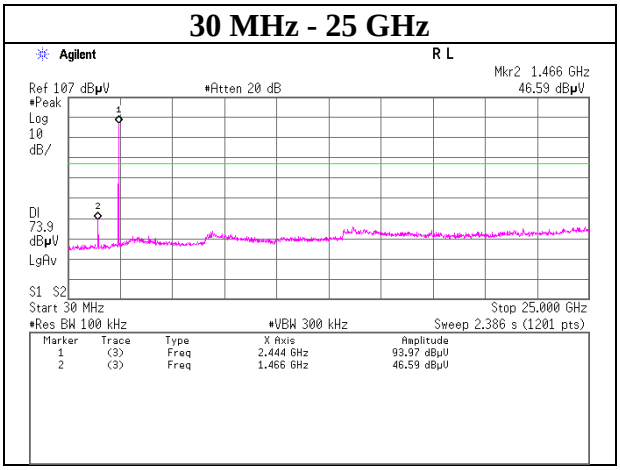
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

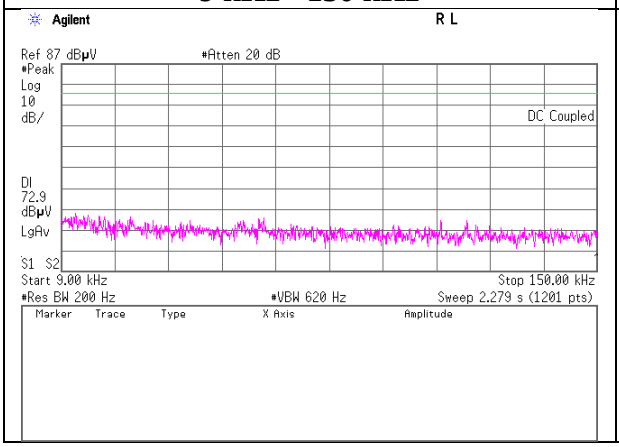


Conducted Spurious Emission

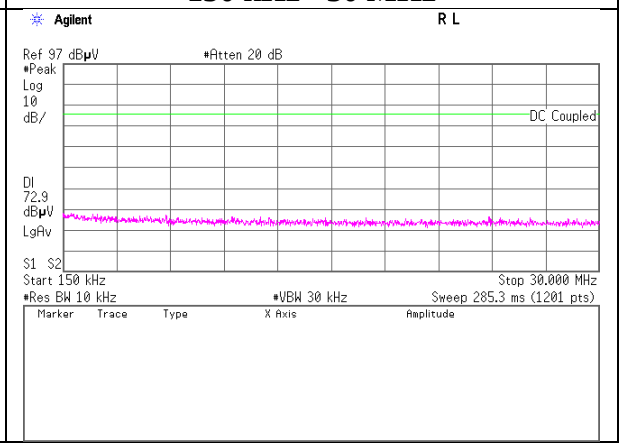
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off, 3DH5

2480 MHz

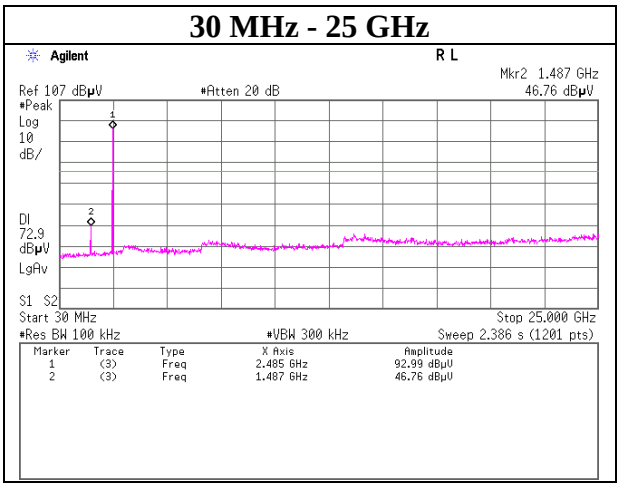
9 kHz - 150 kHz



150 kHz - 30 MHz



30 MHz - 25 GHz

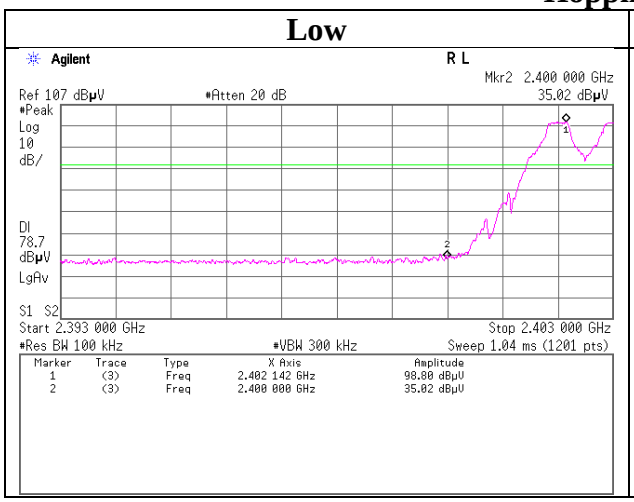


Conducted Emission Band Edge compliance

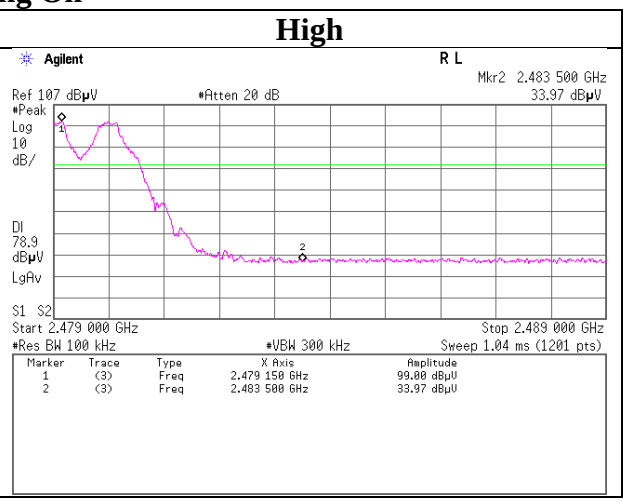
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping On, Off, DH5

Hopping On

Low

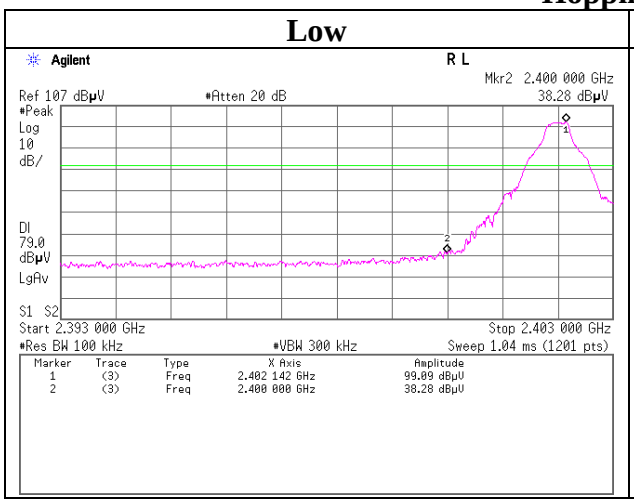


High

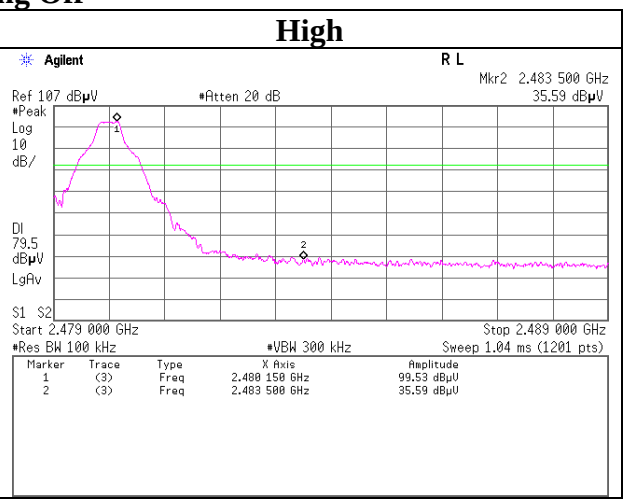


Hopping Off

Low



High

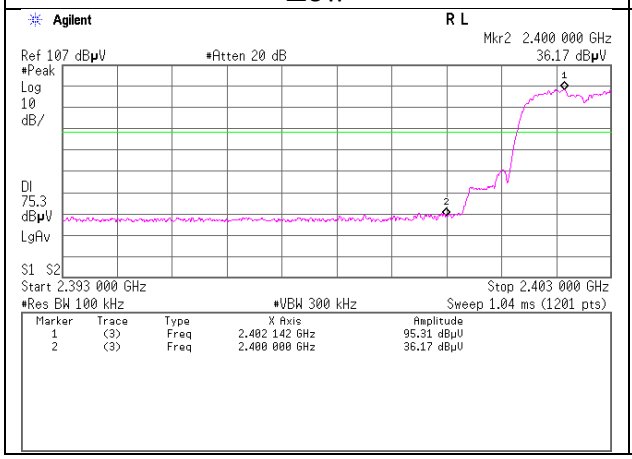


Conducted Emission Band Edge compliance

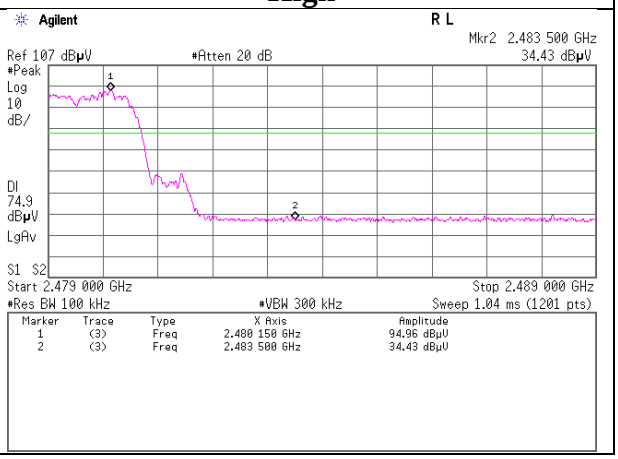
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping On, Off, 3DH5

Hopping On

Low

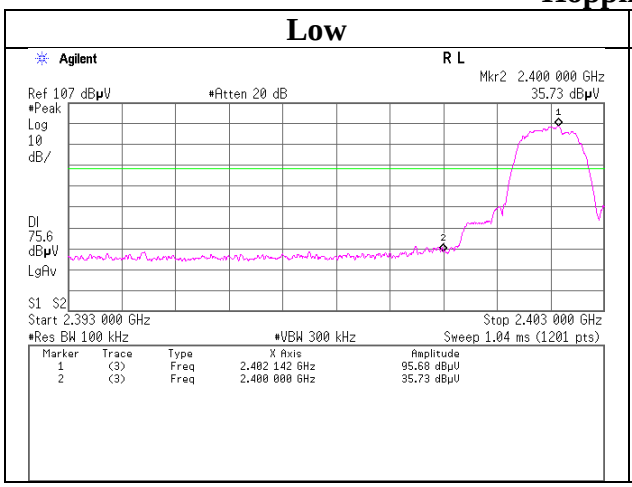


High

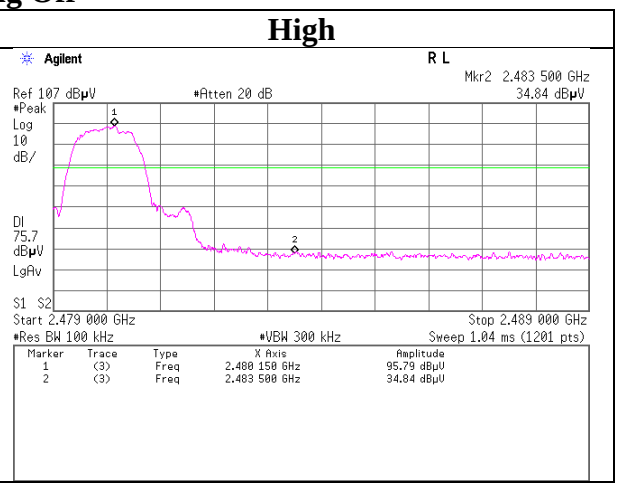


Hopping Off

Low



High

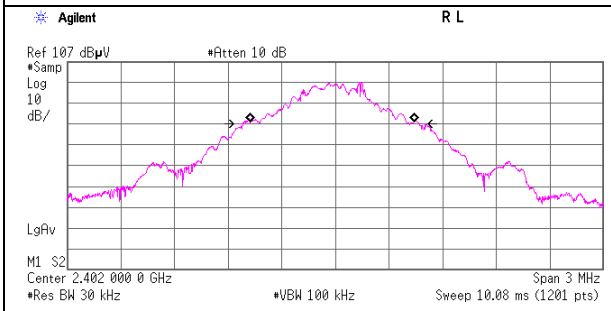


99 %Occupied Bandwidth

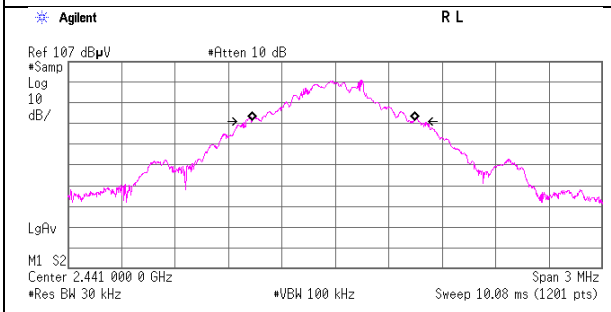
Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping Off

Hopping Off, DH5

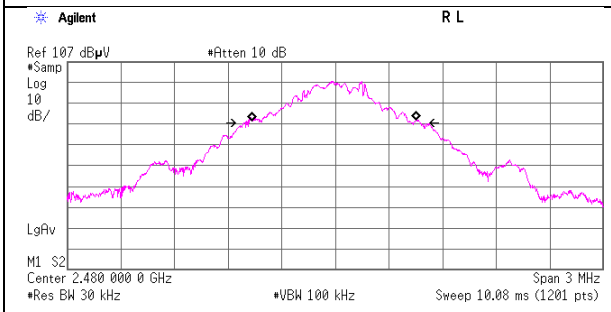
2402 MHz



2441 MHz

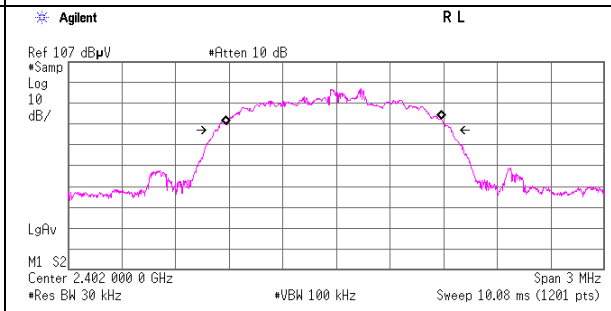


2480 MHz

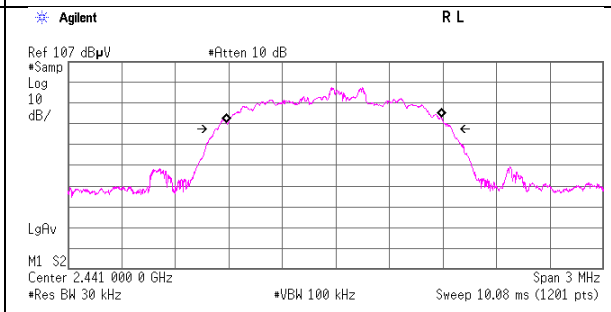


Hopping Off, 3DH5

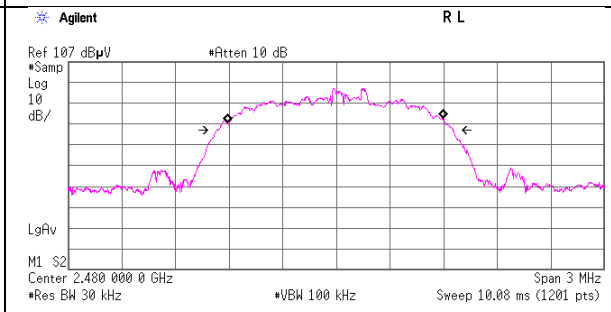
2402 MHz



2441 MHz



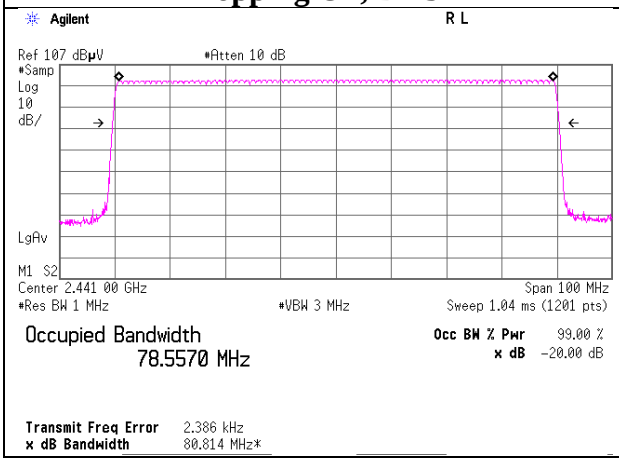
2480 MHz



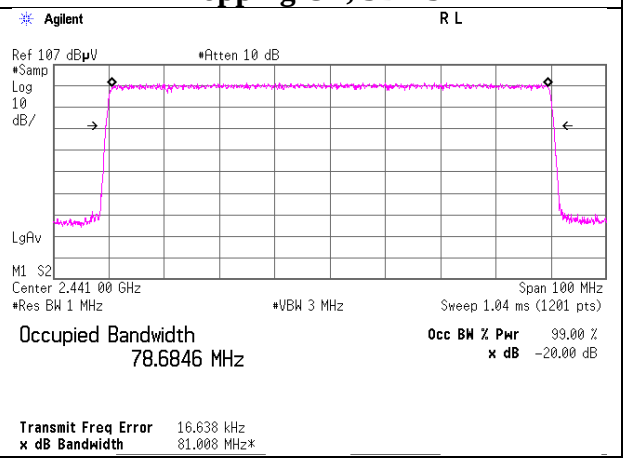
99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11257132S-A-R3
Date	April 22, 2016
Temperature / Humidity	26 deg.C / 51 % RH
Engineer	Shinichi Takano
Mode	Tx, Hopping On

Hopping On, DH5



Hopping On, 3DH5



APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SRENT-05	Spectrum Analyzer	KEYSIGHT	E4440A	MY46187752	AT	2015/10/05 * 12
SAT10-10	Attenuator	Weinschel Corp.	54A-10	37584	AT	2016/04/18 * 12
SCC-G32	Coaxial Cable	Junkosha	MWX241-02000KMSK MS	OCT-09-13-005	AT	2015/10/08 * 12
SCC-H14	Microwave cable	RS Pro	R-132G7210 100CO	-	AT	2016/04/18 * 12
SPM-06	Power Meter	Anritsu	ML2495A	0850009	AT	2016/04/01 * 12
SPSS-03	Power sensor	Anritsu	MA2411B	0917063	AT	2016/04/01 * 12
SOS-13	Humidity Indicator	Custom	CTH-202	Q.C.17	AT	2015/12/07 * 12
SAF-06	Pre Amplifier	TOYO Corporation	TPA0118-36	1440491	RE	2015/05/27 * 12
SCC-G04	Coaxial Cable	Junkosha	J12J102207-00	JUN-12-14-018	RE	2015/06/08 * 12
SCC-G23	Coaxial Cable	Suhner	SUCOFLEX 104	297342/4	RE	2015/05/19 * 12
SHA-03	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-739	RE	2015/08/11 * 12
SOS-05	Humidity Indicator	A&D	AD-5681	4062518	RE	2015/10/22 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE	2016/03/28 * 12
SJM-15	Measure	ASKUL	-	-	RE	-
SAEC-03(SVSWR)	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	RE	2015/08/28 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI, MF)	-	RE	
SAT10-05	Attenuator(above1GHz)	Agilent	8493C-010	74864	RE	2015/11/04 * 12
SFL-02	Highpass Filter	MICRO-TRONICS	HPM50111	051	RE	2015/11/16 * 12
SAEC-03(NSA)	Semi-Anechoic Chamber	TDK	SAEC-03(NSA)	3	RE	2015/07/16 * 12
SBA-03	Biconical Antenna	Schwarzbeck	BBA9106	91032666	RE	2015/10/11 * 12
SLA-03	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0901	RE	2015/10/11 * 12
SAT6-08	Attenuator	HIROSE ELECTRIC CO.,LTD.	AT-406(40)	-	RE	2015/08/31 * 12
SCC-C1/C2/C3/C4/ C5/C10/SRSE-03	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/ Suhner/Suhner/Suhner/T OYO	8D2W/12DSFA/141PE/1 41PE/141PE/141PE/NS4 906	-/0901-271(RF Selector)	RE	2016/04/22 * 12
SAF-03	Pre Amplifier	SONOMA	310N	290213	RE	2016/02/25 * 12
STR-06	Test Receiver	Rohde & Schwarz	ESCI	101259	RE	2016/03/28 * 12
SHA-04	Horn Antenna	ETS LINDGREN	3160-09	LM3640	RE	2016/03/15 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2016/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2016/03/08 * 12
SCC-G33	Coaxial Cable	Junkosha	MWX241-01000KMSK MS	-	RE	2016/04/18 * 12
SCC-A12/A13/SRS E-01	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-269(RF Selector)	CE	2016/04/22 * 12
SLS-02	LISN	Rohde & Schwarz	ENV216	100512	CE	2016/02/08 * 12
SAT3-10	Attenuator	JFW	50HF-003N	-	CE	2015/08/31 * 12
SOS-02	Humidity Indicator	A&D	AD-5681	4063343	CE	2015/12/07 * 12
STR-01	Test Receiver	Rohde & Schwarz	ESU40	100093	CE	2015/11/06 * 12
SJM-02	Measure	KOMELON	KMC-36	-	CE	-
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI, MF)	-	CE	-
STS-01	Digital Hitester	Hioki	3805-50	080997812	CE	2015/11/18 * 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

(Tested date)
Conducted Emission test : June 6, 2016
Radiated Emissions test : April 20 to 27, 2016
Antenna Terminal Conducted test : April 22, 2016