



Test report No. : 10990291S-A
Page : 1 of 50
Issued date : October 29, 2015
Revised date : November 6, 2015
FCC ID : AK8ICDSX2000

RADIO TEST REPORT

Test Report No. : 10990291S-A

Applicant : Sony Corporation
Type of Equipment : IC Recorder
Model No. : ICD-SX2000
FCC ID : AK8ICDSX2000
Test regulation : FCC Part 15 Subpart C: 2015
Test Result : Complied

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.
5. 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)

Date of test: October 8 to 27, 2015

Representative test engineer:

Yosuke Ishikawa
Engineer

Consumer Technology Division

Approved by:

Toyokazu Imamura
Leader
Consumer Technology Division



JAB
Testing
RTL02610

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

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Shonan EMC Lab.

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13-EM-F0429

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SECTION 1: Customer information

Company Name	:	Sony Corporation
Address	:	2-10-1 Osaki, Shinagawa-ku, Tokyo, 141-8610, Japan
Telephone Number	:	+81-50 3750 7634

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

2.1 Identification of E.U.T.

Type of Equipment	:	IC Recorder
Model No.	:	ICD-SX2000
Serial No.	:	Refer to Section 4, Clause 4.2
Rating	:	DC 3.7 V, DC 5 V
Receipt Date of Sample	:	October 8, 2015
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: ICD-SX2000 (referred to as the EUT in this report) is an IC Recorder.

General Specification

Clock frequency(ies) in the system	:	32.768 kHz (RTC), 24 MHz (CPU), 11.2896 MHz (Audio), 12.288 MHz (Audio), 49.152 MHz (Audio), 26 MHz (Bluetooth)
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Radio Specification

Radio Type	:	Transceiver
Frequency of Operation	:	2402 MHz - 2480 MHz
Modulation	:	FHSS
Power Supply (radio part input)	:	DC 1.8 V
Antenna type	:	Pattern
Antenna Gain	:	+0.5 dBi

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C: 2015, final revised on September 8, 2015
 Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
 Section 15.207 Conducted limits
 Section 15.247 Operation within the bands 902-928 MHz,
 2400-2483.5 MHz, and 5725-5850 MHz

* The EUT has been tested for compliance with FCC Part 15 Subpart B. Refer to the test report 10990291S-C.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.4-2009 7. AC powerline conducted emission measurements IC: RSS-Gen 8.8	FCC: Section 15.207 IC: RSS-Gen 8.8	18.0 dB, 0.20210 MHz, L1 QP, Tx 2441 MHz, DH5	Complied	-
Carrier Frequency Separation	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (2)	See data.	Complied	Conducted
20 dB Bandwidth	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (1)		-	Conducted
Number of Hopping Frequency	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (4)		Complied	Conducted
Dwell time	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (4)		Complied	Conducted
Maximum Peak Output Power	FCC: FCC Public Notice DA 00-705 IC: RSS-Gen 6.12	FCC: Section15.247(a)(b)(1) IC: RSS-247 5.4 (2)		Complied	Conducted
Spurious Emission & Band Edge Compliance	FCC: FCC Public Notice DA 00-705 IC: RSS-Gen 6.13	FCC: Section15.247(d) IC: RSS-247 5.5 RSS-Gen 8.9 RSS-Gen 8.10	4.5 dB 2399.167 MHz, AV, Vertical Tx 2402 MHz, DH5	Complied	Conducted (below 30 MHz)/ Radiated (above 30 MHz) *1)

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422.

*1) Radiated test was selected over 30 MHz based on section 15.247(d) and KDB 558074 D01 12.2.7.

* In case any questions arise about test procedure, ANSI C 63.10:2013 is also referred.
 However, there is one deviation from ANSI C 63.10:2013. (ANSI C63.10:2013 is Non-accreditation)
 Measurement height is not 1.5 m, but 0.8 m.

FCC Part 15.31 (e)

This EUT provides stable voltage (DC 1.8 V) constantly to RF part regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203

It is impossible for end users to replace the antenna, because it is printed pattern antenna on the circuit board. 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.

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3.4 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k = 2$.
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Item	Frequency range	Uncertainty (+/-)		
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	3.6 dB	3.4 dB	3.4 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.7 dB	3.5 dB	3.5 dB
	30 MHz-300 MHz	4.9 dB	4.9 dB	4.7 dB
	300 MHz-1 GHz	5.0 dB	5.0 dB	4.8 dB
	1 GHz-13 GHz	4.9 dB	4.9 dB	4.9 dB
Radiated emission (Measurement distance: 1 m)	13 GHz-18 GHz	5.7 dB	5.7 dB	5.7 dB
	18 GHz-40 GHz	4.5 dB	4.3 dB	4.3 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
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.74 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.08 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
Spurious emission (Conducted) 26.5 GHz-40 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 report meets the limits unless the uncertainty is taken into consideration.

3.5 Test Location

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Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	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.

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

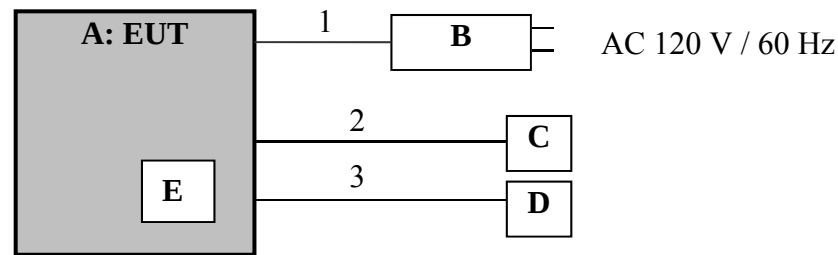
4.1 Operating Mode(s)

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, 3-DH5	2402 MHz, 2441 MHz, 2480 MHz
Carrier Frequency Separation	Tx (Hopping On) DH5, 3-DH5	2402 MHz, 2441 MHz, 2480 MHz
20 dB Bandwidth	Tx (Hopping Off) DH5, 3-DH5	2402 MHz, 2441 MHz, 2480 MHz
Number of Hopping Frequency	Tx (Hopping On) DH5, 3-DH5	-
Dwell time	Tx (Hopping On), -DH1, DH3, DH5 - 3-DH1, 3-DH3, 3-DH5	-
Maximum Peak Output Power	Tx (Hopping Off) DH5, 2DH5, 3DH5	2402 MHz, 2441 MHz, 2480 MHz
Band Edge Compliance (Conducted)	Tx DH5, 3-DH5 -Hopping On -Hopping Off	2402 MHz 2480 MHz
Band Edge Compliance (Radiated)	Tx DH5, 3-DH5 -Hopping Off	2402 MHz 2480 MHz
99 % Occupied Bandwidth	Tx DH5, 3-DH5 -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) *2-DH mode (2Mb/s EDR: pi/4DQPSK) was excluded for other tests than power measurement by using 3-DH mode (3 Mb/s EDR: 8DPSK) as a representative. * It is considered that the non-tested packet type (e.g. page scan) can be omitted as it is complied with above all the test items based on Bluetooth Core specification. * This EUT does not have inquiry mode. Power settings: Fixed Software: nmobile1.0_icx0453/Ver.0.62		

4.2 Configuration and peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	IC Recorder	ICD-SX2000	0310161 *1) 0310160 *2) 0310162 *3)	Sony Corporation	EUT
B	AC Adaptor	AC-UD20	13026000078	Sony Corporation	-
C	Headphones	MDR-E804	-	Sony Corporation	-
D	MIC	ECM-CS3	-	Sony Corporation	-
E	micro SDHC card	RP-SMEB08GJK	UJ3AA005833	Panasonic	-

*1) Used for antenna terminal conducted tests except maximum peak output power test.

*2) Used for maximum peak output power test.

*3) Used for Conducted Emission test and Radiated Emission test

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	USB	0.1 + 1.0	Shielded	Shielded	-
2	Headphone	1.1	Unshielded	Unshielded	-
3	MIC	1.05	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.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT via AC adaptor in a shielded room. The EUT via AC adaptor 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

Test Procedure

EUT was placed on a platform of nominal size, 1.0 m by 2.0 m (below 1 GHz) or 1.0 m by 1.5 m (above 1 GHz), 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 Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

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

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

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

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

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

Test Antennas are used as below;

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

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

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

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

*1) Although DA 00-705 accepts VBW = 10 Hz for AV measurements, it was confirmed that superfluous smoothing was not performed.

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

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	Frequency			
	Below 1 GHz	1 GHz - 2.8 GHz	2.8 GHz - 18 GHz	18 GHz - 25 GHz
Horizontal	X	X	Y	X
Vertical	X	Y	Y	X

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

Measurement range : 30 M - 25 GHz

Test data : APPENDIX

Test result : Pass

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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

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APPENDIX 1: Test data

Conducted Emission

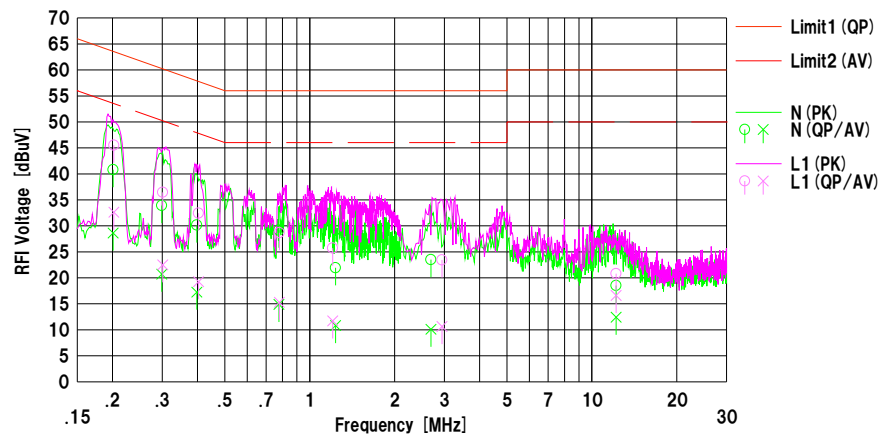
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.2 Shielded Room
Date : 2015/10/21

Mode : Bluetooth.Tx,DH5,2441 MHz
Order No. : 10990291S
Temp./Humi. : 25 deg.C / 39 %RH

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

Engineer : Yosuke Ishikawa

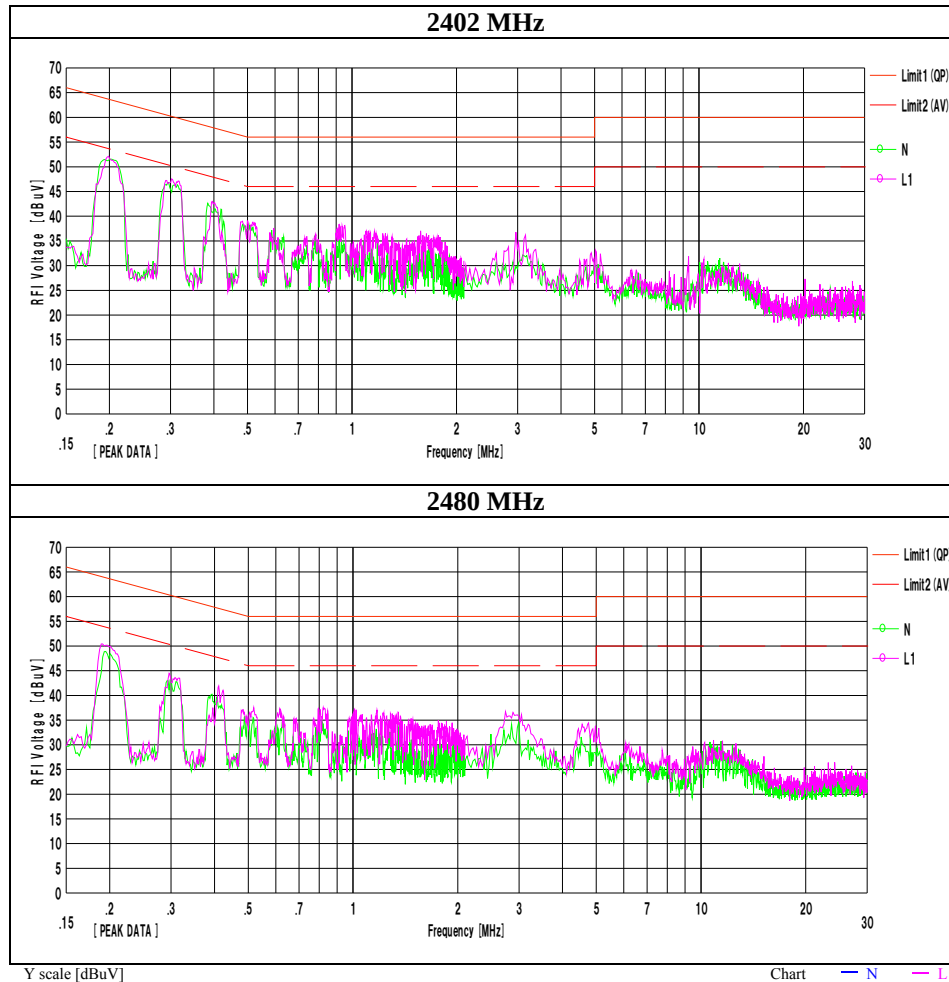


No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.20100	28.40	16.20	12.41	40.81	28.61	63.57	53.57	22.7	24.9	N	
2	0.29900	21.50	8.30	12.41	33.91	20.71	60.27	50.27	26.3	29.5	N	
3	0.39800	17.70	4.80	12.45	30.15	17.25	57.90	47.90	27.7	30.6	N	
4	0.77760	16.70	2.40	12.47	29.17	14.87	56.00	46.00	26.8	31.1	N	
5	1.23550	9.40	-1.70	12.53	21.93	10.83	56.00	46.00	34.0	35.1	N	
6	2.68800	10.90	-2.50	12.60	23.50	10.10	56.00	46.00	32.5	35.9	N	
7	12.19200	5.40	-0.70	13.12	18.52	12.42	60.00	50.00	41.4	37.5	N	
8	0.20210	33.10	20.20	12.41	45.51	32.61	63.52	53.52	18.0	20.9	L1	
9	0.30135	24.05	10.09	12.41	36.46	22.50	60.21	50.21	23.7	27.7	L1	
10	0.40372	20.00	6.80	12.45	32.45	19.25	57.78	47.78	25.3	28.5	L1	
11	0.78040	16.20	2.80	12.47	28.67	15.27	56.00	46.00	27.3	30.7	L1	
12	1.20600	13.20	-0.80	12.53	25.73	11.73	56.00	46.00	30.2	34.2	L1	
13	2.94400	10.80	-2.00	12.63	23.43	10.63	56.00	46.00	32.5	35.3	L1	
14	12.19200	7.70	3.50	13.12	20.82	16.62	60.00	50.00	39.1	33.3	L1	

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

Conducted Emission

Test place	Shonan EMC Lab. No.2 Shielded room
Report No.	10990291S-A
Date	October 21, 2015
Temperature / Humidity	25 deg. C / 39 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, DH5



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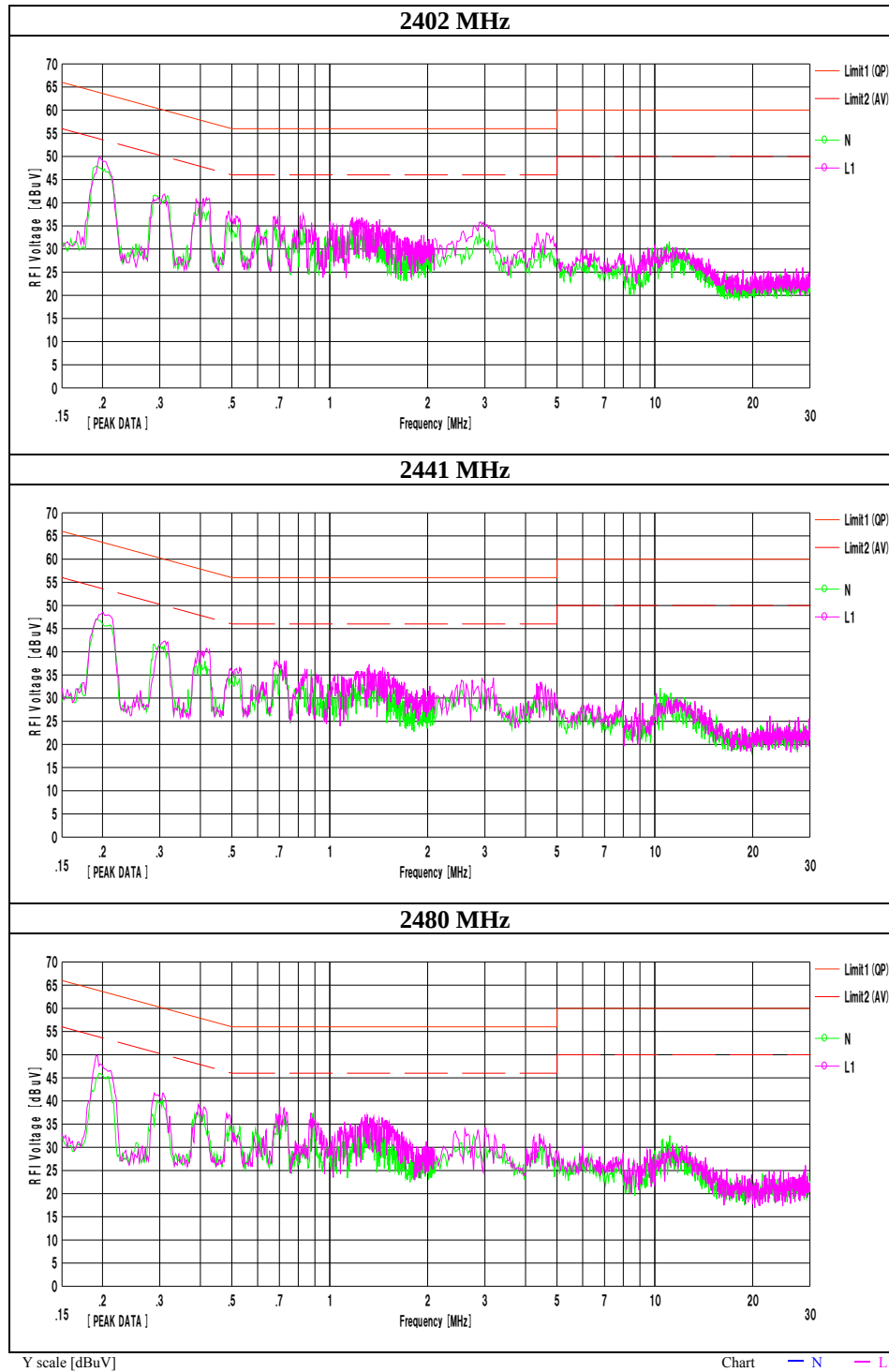
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Conducted Emission

Test place	Shonan EMC Lab. No.2 Shielded room
Report No.	10990291S-A
Date	October 21, 2015
Temperature / Humidity	25 deg. C / 39 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, 3-DH5



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20 dB Bandwidth and Carrier Frequency Separation

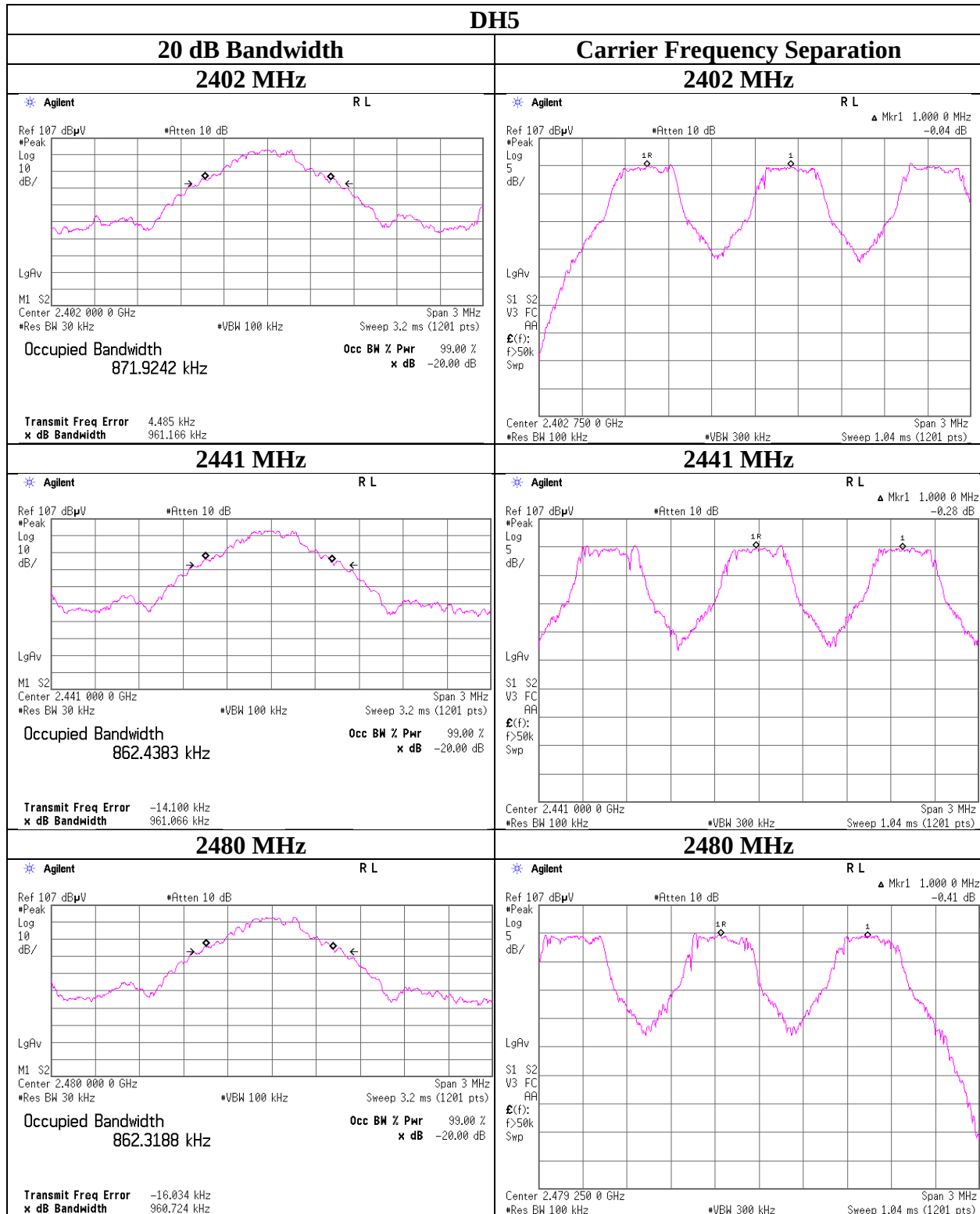
Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 10990291S-A
Date October 8, 2015
Temperature / Humidity 26 deg. C / 34 % RH
Engineer Kenichi Adachi
Mode Tx, Hopping Off, Tx, Hopping On

Mode	Freq. [MHz]	20 dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.961	1.000	≥ 0.641
DH5	2441.0	0.961	1.000	≥ 0.641
DH5	2480.0	0.961	1.000	≥ 0.640
3-DH5	2402.0	1.281	1.000	≥ 0.854
3-DH5	2441.0	1.277	1.000	≥ 0.852
3-DH5	2480.0	1.276	1.000	≥ 0.851

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



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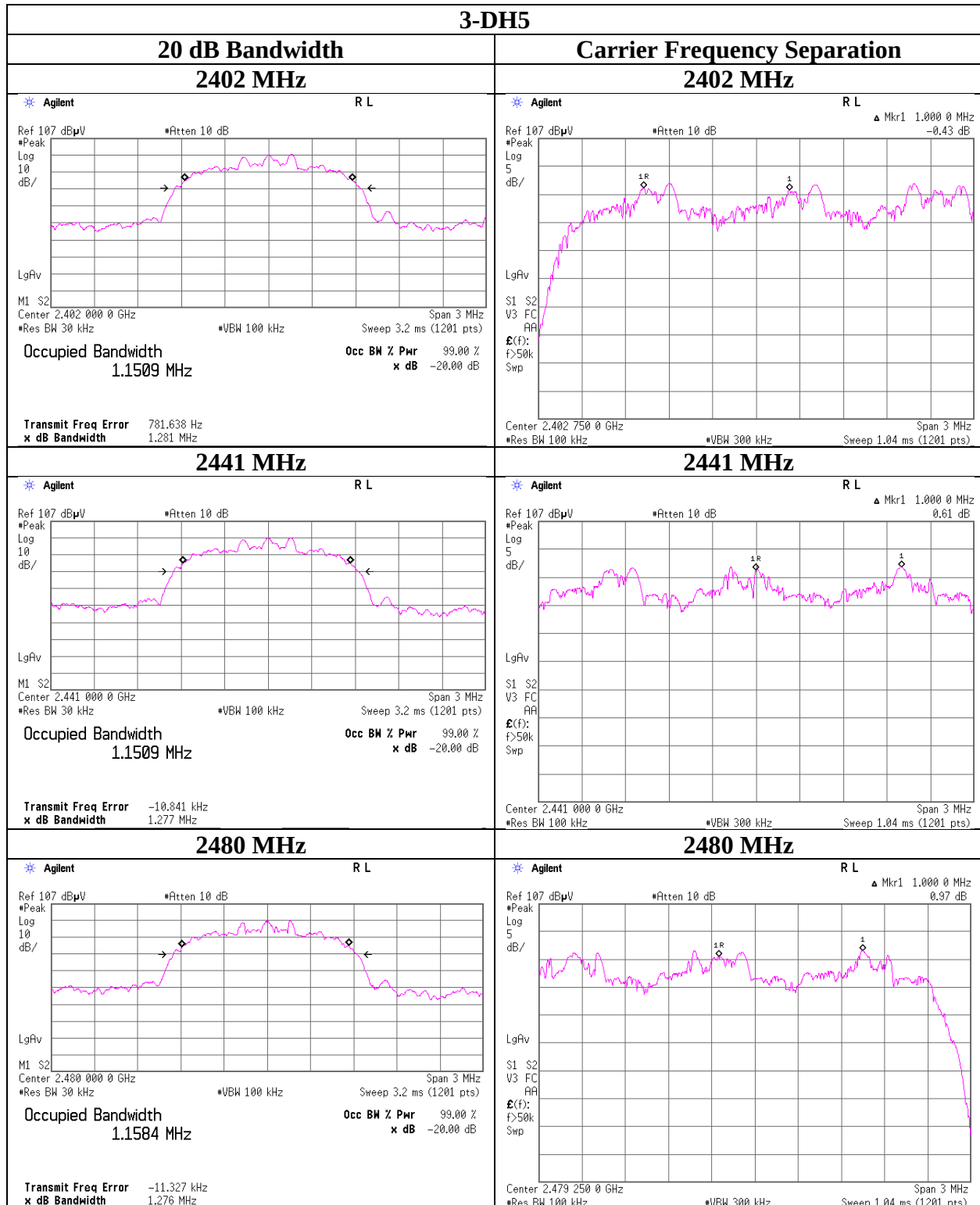
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20 dB Bandwidth and Carrier Frequency Separation



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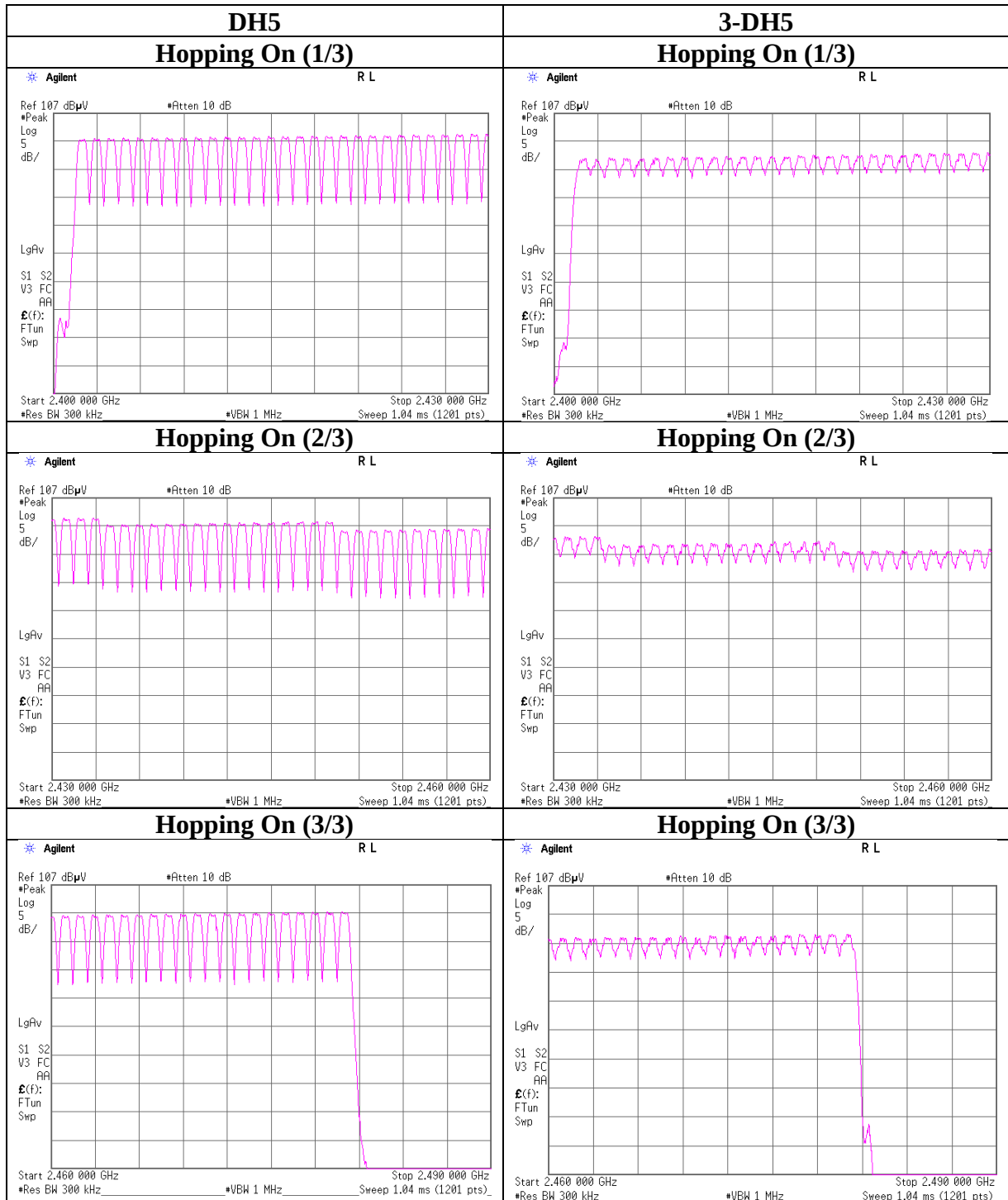
Number of Hopping Frequency

Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 10990291S-A
Date October 8, 2015
Temperature / Humidity 26 deg. C / 34 % RH
Engineer Kenichi Adachi
Mode Tx, Hopping On

Mode	Number of channel [channels]	Limit [channels]
DH5	79	≥ 15
3-DH5	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



Dwell time

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 8, 2015
Temperature / Humidity	26 deg. C / 34 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping On

Mode	Number of transmission in a 31.6 (79 Hopping x 0.4) / 12.8 (32 Hopping x 0.4) second period	Length of transmission [ms]	Result [ms]	Limit [ms]
DH1	51.0 times / 5 s x 31.6 s = 323 times	0.413	133	400
DH3	26.0 times / 5 s x 31.6 s = 165 times	1.674	276	400
DH5	17.0 times / 5 s x 31.6 s = 108 times	2.919	315	400
3-DH1	51.0 times / 5 s x 31.6 s = 323 times	0.427	138	400
3-DH3	26.0 times / 5 s x 31.6 s = 165 times	1.678	277	400
3-DH5	17.0 times / 5 s x 31.6 s = 108 times	2.928	316	400

Sample Calculation

Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

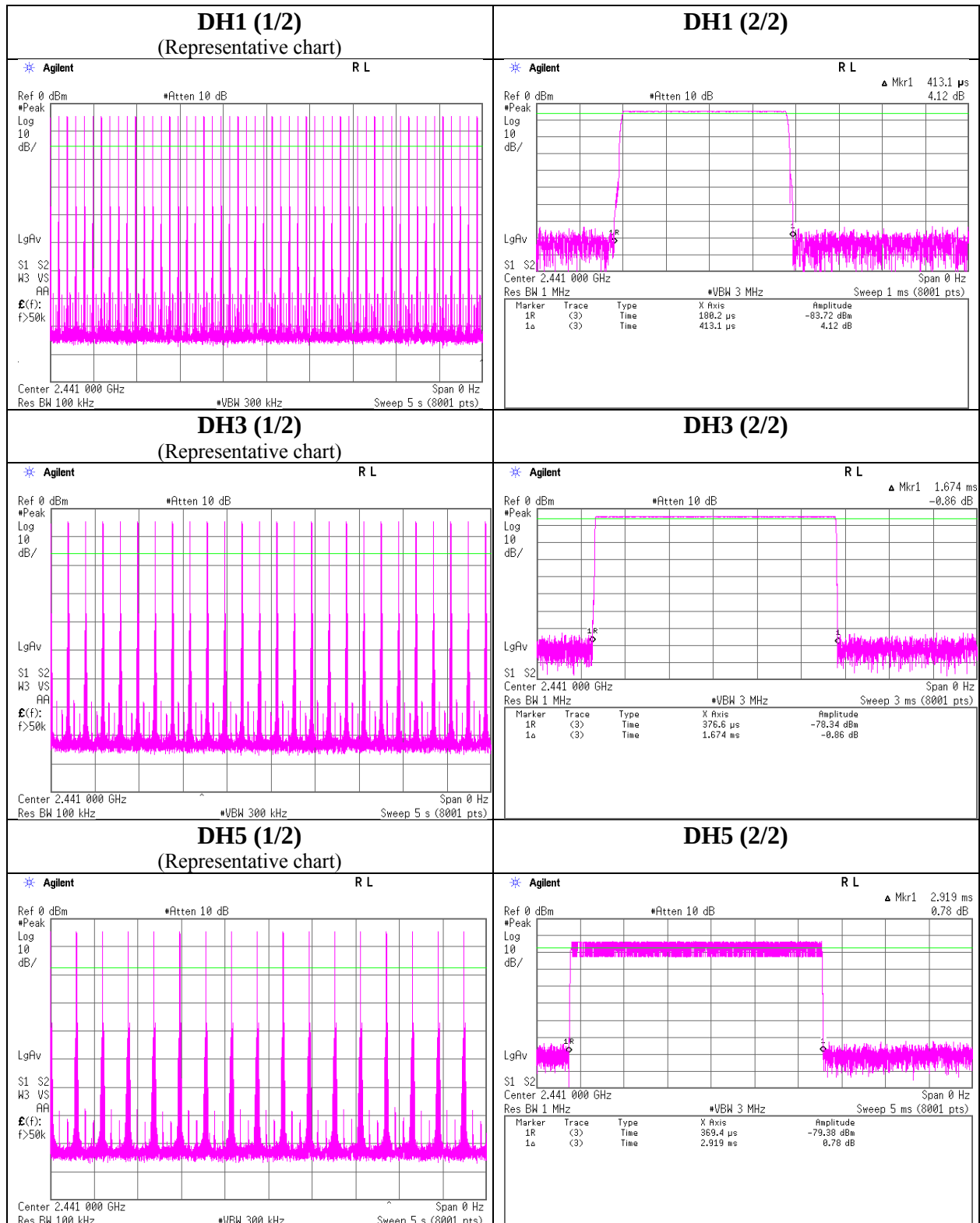
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	51	51	51	51	51	51
DH3	26	26	26	26	26	26
DH5	17	17	17	17	17	17
3-DH1	51	51	51	51	51	51
3-DH3	26	26	26	26	26	26
3-DH5	17	17	17	17	17	17

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 $N \times 0.4$ s, where N is the number of channels being used in the hopping sequence ($20 \leq N \leq 79$), is always less than 0.4 s regardless of packet size. This is confirmed in the test report for $N = 79$.

Dwell time



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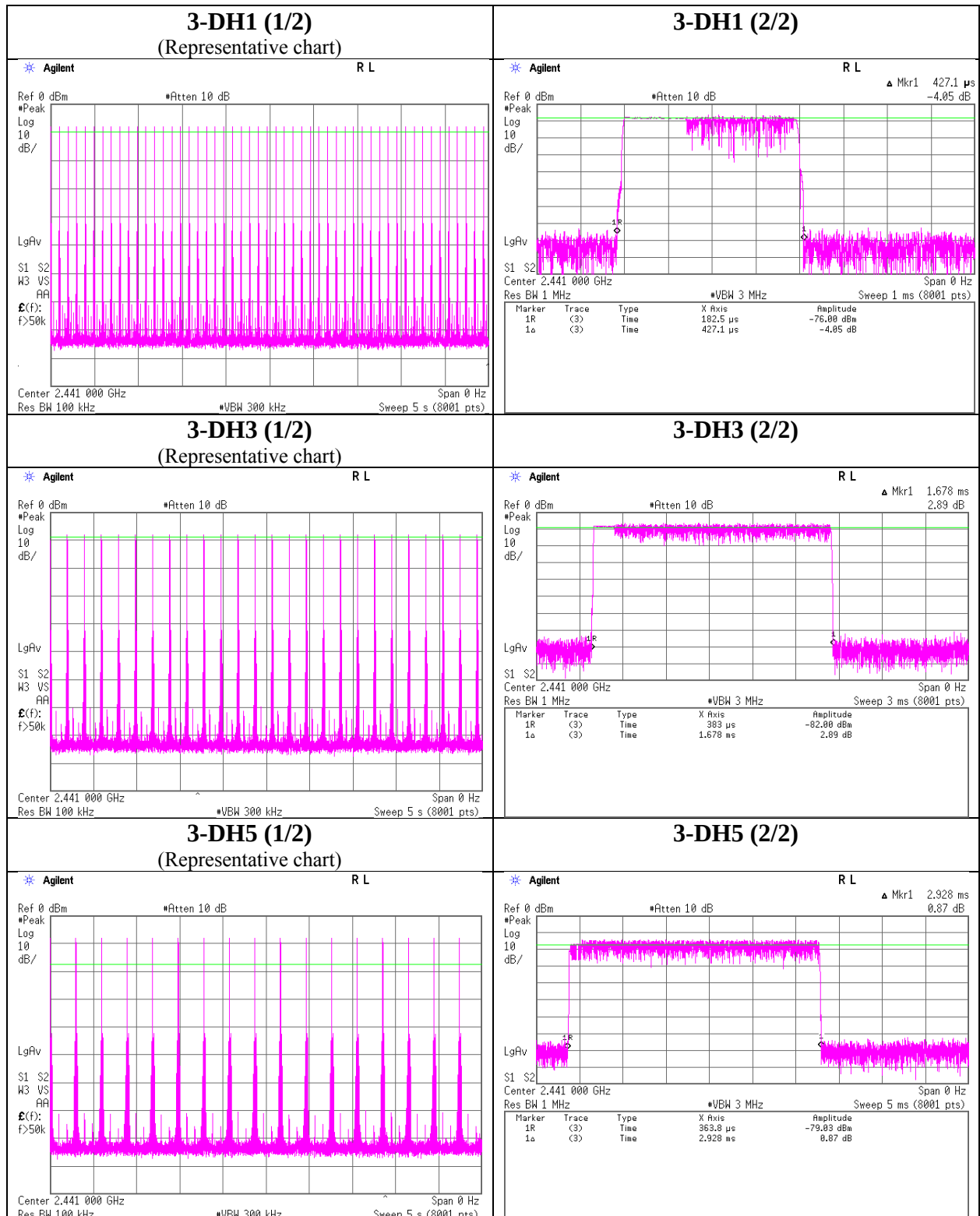
Shonan EMC Lab.

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Dwell time



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Shonan EMC Lab.

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Maximum Peak Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 8, 2015
Temperature / Humidity	26 deg. C / 34 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
DH5	2402.0	-2.53	1.67	9.93	9.07	8.07	20.96	125	11.89
DH5	2441.0	-2.50	1.68	9.93	9.11	8.15	20.96	125	11.85
DH5	2480.0	-2.55	1.69	9.93	9.07	8.07	20.96	125	11.89
2-DH5	2402.0	-3.77	1.67	9.93	7.83	6.07	20.96	125	13.13
2-DH5	2441.0	-3.66	1.68	9.93	7.95	6.24	20.96	125	13.01
2-DH5	2480.0	-3.75	1.69	9.93	7.87	6.12	20.96	125	13.09
3-DH5	2402.0	-3.41	1.67	9.93	8.19	6.59	20.96	125	12.77
3-DH5	2441.0	-3.30	1.68	9.93	8.31	6.78	20.96	125	12.65
3-DH5	2480.0	-3.42	1.69	9.93	8.20	6.61	20.96	125	12.76

Sample Calculation:

Result = Reading + Cable Loss (including the cable(s) customer supplied) + 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.

UL Japan, Inc.

Shonan EMC Lab.

1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

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

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 8, 2015
Temperature / Humidity	26 deg. C / 34 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Frame power)		Duty factor [dB]	Result (Burst power)	
					[dBm]	[mW]		[dBm]	[mW]
DH5	2402.0	-3.83	1.67	9.93	7.77	5.98	1.08	8.85	7.67
DH5	2441.0	-3.77	1.68	9.93	7.84	6.08	1.08	8.92	7.80
DH5	2480.0	-3.83	1.69	9.93	7.79	6.01	1.08	8.87	7.71
2-DH5	2402.0	-7.02	1.67	9.93	4.58	2.87	1.07	5.65	3.67
2-DH5	2441.0	-6.91	1.68	9.93	4.70	2.95	1.07	5.77	3.78
2-DH5	2480.0	-7.01	1.69	9.93	4.61	2.89	1.07	5.68	3.70
3-DH5	2402.0	-7.04	1.67	9.93	4.56	2.86	1.07	5.63	3.66
3-DH5	2441.0	-6.91	1.68	9.93	4.70	2.95	1.07	5.77	3.78
3-DH5	2480.0	-7.01	1.69	9.93	4.61	2.89	1.07	5.68	3.70

Sample Calculation:

Result (Frame power) = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

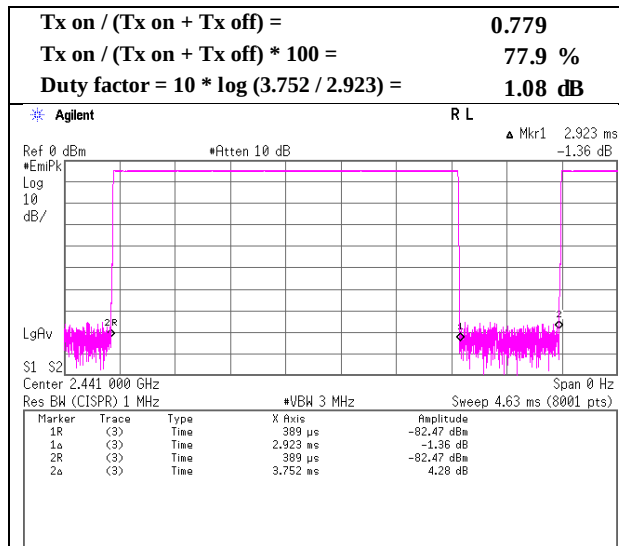
Result (Burst power) = Frame power + Duty factor

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

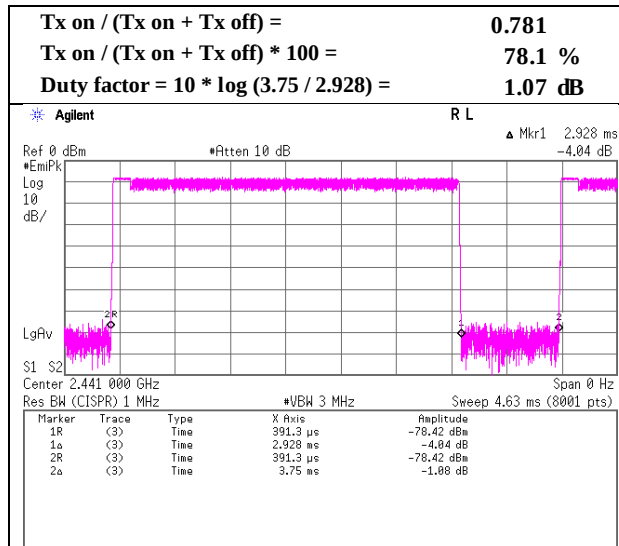
Burst Rate Confirmation (for average output power)

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 8, 2015
Temperature / Humidity : 26 deg. C / 34 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off

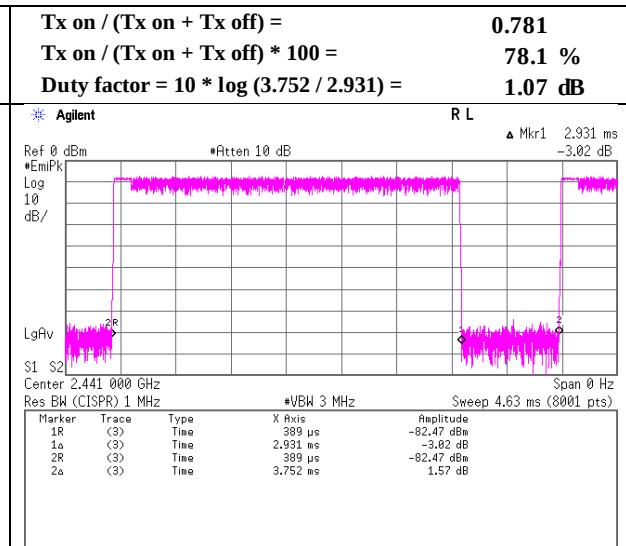
DH5



2-DH5



3-DH5



Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, DH5, 2402 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	56.491	QP	22.0	8.8	7.1	31.9	0.0	6.0	40.0	34.0	300	145	
Hori.	198.234	QP	22.0	16.4	8.8	31.8	0.0	15.4	43.5	28.1	150	52	
Hori.	700.021	QP	21.5	20.3	8.8	31.5	0.0	19.1	46.0	26.9	100	206	
Hori.	2390.000	PK	45.7	27.8	13.7	41.0	1.2	47.4	73.9	26.5	100	116	
Hori.	2399.167	PK	55.2	27.8	13.7	41.0	1.2	56.9	73.9	17.0	100	116	
Hori.	2531.994	PK	48.3	28.0	13.8	41.0	1.2	50.3	73.9	23.6	100	116	
Hori.	2557.988	PK	50.9	28.0	13.8	41.0	1.2	52.9	73.9	21.0	100	116	
Hori.	2584.016	PK	49.2	28.0	13.8	40.9	1.2	51.3	73.9	22.6	100	116	
Hori.	4804.000	PK	48.1	31.4	5.7	39.6	1.2	46.8	73.9	27.1	109	193	
Hori.	7206.000	PK	45.6	36.9	7.1	40.1	1.2	50.7	73.9	23.2	100	0	
Hori.	9608.000	PK	45.2	38.5	8.2	39.6	1.2	53.5	73.9	20.4	100	0	
Hori.	2390.000	AV	33.9	27.8	13.7	41.0	1.2	35.6	53.9	18.3	100	116	
Hori.	2399.167	AV	45.4	27.8	13.7	41.0	1.2	47.1	53.9	6.8	100	116	
Hori.	2531.994	AV	38.7	28.0	13.8	41.0	1.2	40.7	53.9	13.2	100	116	
Hori.	2557.988	AV	42.8	28.0	13.8	41.0	1.2	44.8	53.9	9.1	100	116	
Hori.	2584.016	AV	39.5	28.0	13.8	40.9	1.2	41.6	53.9	12.3	100	116	
Hori.	4804.000	AV	39.5	31.4	5.7	39.6	1.2	38.2	53.9	15.7	109	193	
Hori.	7206.000	AV	34.3	36.9	7.1	40.1	1.2	39.4	53.9	14.5	100	0	
Hori.	9608.000	AV	33.6	38.5	8.2	39.6	1.2	41.9	53.9	12.0	100	0	
Vert.	56.491	QP	22.1	8.8	7.1	31.9	0.0	6.1	40.0	33.9	100	272	
Vert.	198.234	QP	22.1	16.4	8.8	31.8	0.0	15.5	43.5	28.0	100	64	
Vert.	700.021	QP	21.5	20.3	8.8	31.5	0.0	19.1	46.0	26.9	100	93	
Vert.	2390.000	PK	46.6	27.8	13.7	41.0	1.2	48.3	73.9	25.6	100	257	
Vert.	2399.167	PK	56.7	27.8	13.7	41.0	1.2	58.4	73.9	15.5	100	257	
Vert.	2531.994	PK	49.0	28.0	13.8	41.0	1.2	51.0	73.9	22.9	100	258	
Vert.	2557.988	PK	52.0	28.0	13.8	41.0	1.2	54.0	73.9	19.9	100	258	
Vert.	2584.016	PK	49.2	28.0	13.8	40.9	1.2	51.3	73.9	22.6	100	258	
Vert.	4804.000	PK	48.6	31.4	5.7	39.6	1.2	47.3	73.9	26.6	100	339	
Vert.	7206.000	PK	45.8	36.9	7.1	40.1	1.2	50.9	73.9	23.0	100	0	
Vert.	9608.000	PK	44.4	38.5	8.2	39.6	1.2	52.7	73.9	21.2	100	0	
Vert.	2390.000	AV	34.0	27.8	13.7	41.0	1.2	35.7	53.9	18.2	100	257	
Vert.	2399.167	AV	47.7	27.8	13.7	41.0	1.2	49.4	53.9	4.5	100	257	
Vert.	2531.994	AV	41.0	28.0	13.8	41.0	1.2	43.0	53.9	10.9	100.0	258.0	
Vert.	2557.988	AV	45.1	28.0	13.8	41.0	1.2	47.1	53.9	6.8	100.0	258.0	
Vert.	2584.016	AV	41.1	28.0	13.8	40.9	1.2	43.2	53.9	10.7	100.0	258.0	
Vert.	4804.000	AV	39.8	31.4	5.7	39.6	1.2	38.5	53.9	15.4	100.0	339.0	
Vert.	7206.000	AV	33.8	36.9	7.1	40.1	1.2	38.9	53.9	15.0	100.0	0.0	
Vert.	9608.000	AV	33.3	38.5	8.2	39.6	1.2	41.6	53.9	12.3	100.0	0.0	

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

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	101.2	27.8	13.7	41.0	1.2	102.9	-	-	Carrier
Hori.	2400.000	PK	64.4	27.8	13.7	41.0	1.2	66.1	82.9	16.8	
Vert.	2402.000	PK	99.7	27.8	13.7	41.0	1.2	101.4	-	-	Carrier
Vert.	2400.000	PK	63.1	27.8	13.7	41.0	1.2	64.8	81.4	16.6	

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

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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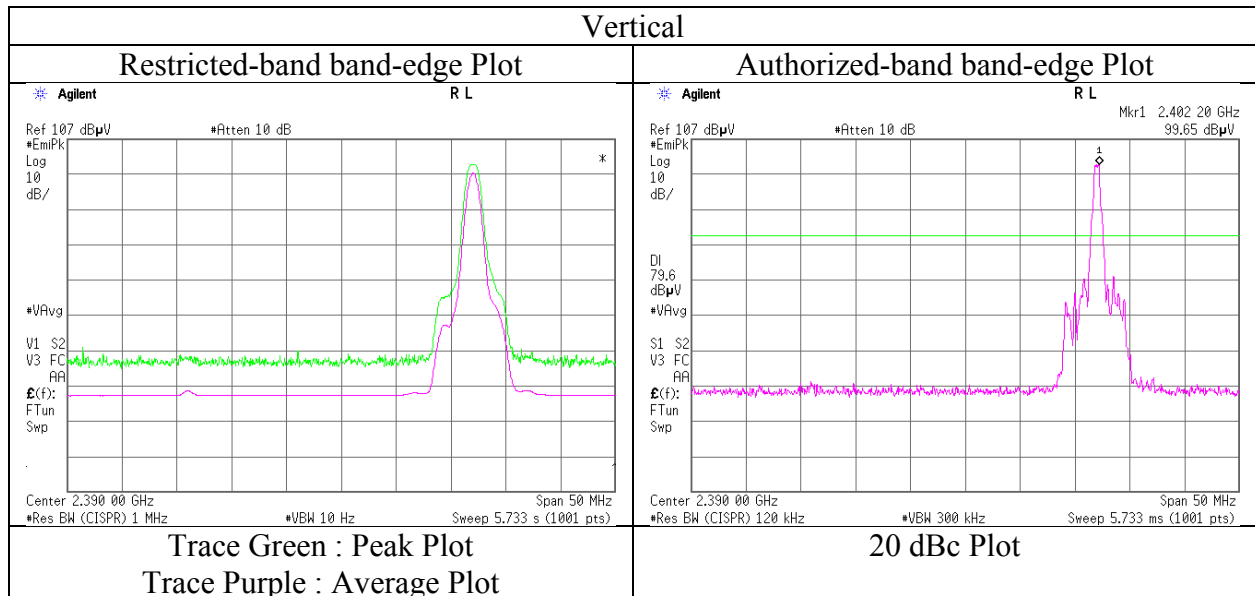
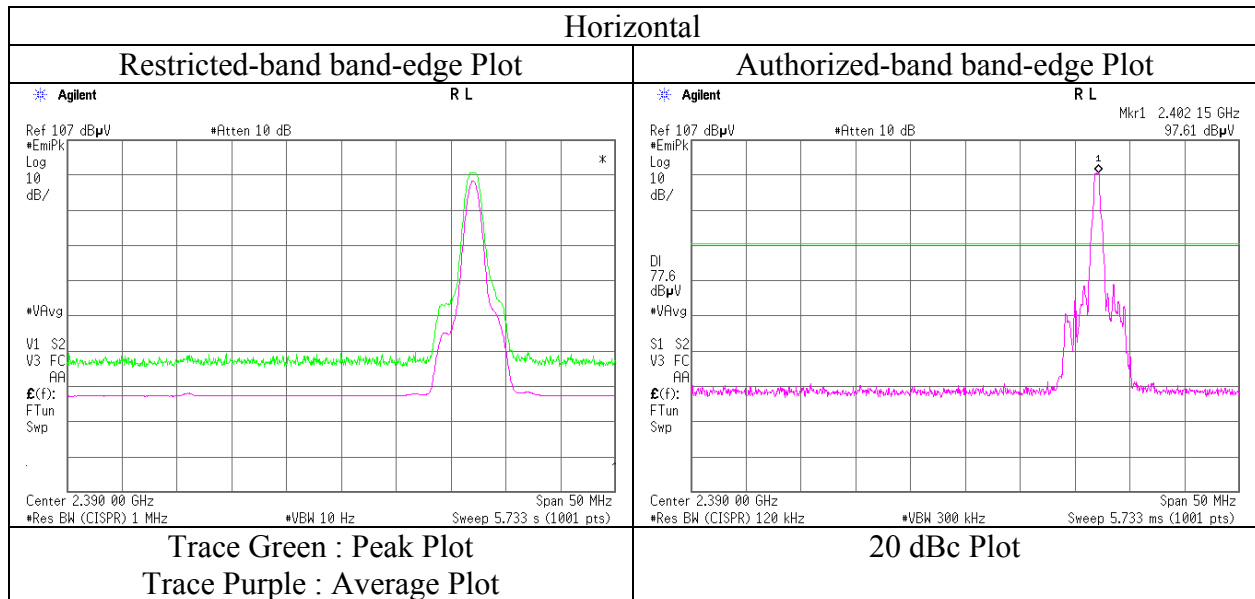
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission (Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No.	10990291S-A
Date	October 15, 2015
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, DH5, 2402 MHz



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

Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, DH5, 2441 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	51.317	QP	22.4	10.4	7.2	31.9	0.0	8.1	40.0	31.9	150	320	
Hori.	200.355	QP	22.0	16.4	8.9	31.8	0.0	15.5	43.5	28.0	150	232	
Hori.	699.892	QP	21.5	20.3	8.8	31.5	0.0	19.1	46.0	26.9	100	98	
Hori.	2571.015	PK	48.5	28.0	13.8	41.0	1.2	50.5	73.9	23.4	124	329	
Hori.	2596.944	PK	51.0	28.0	13.8	40.9	1.2	53.1	73.9	20.8	124	329	
Hori.	2622.996	PK	49.8	28.0	13.9	40.9	1.2	52.0	73.9	21.9	124	329	
Hori.	4882.000	PK	48.2	31.7	5.8	39.5	1.2	47.4	73.9	26.5	100	191	
Hori.	7323.000	PK	44.3	36.9	7.2	40.2	1.2	49.4	73.9	24.5	100	0	
Hori.	9764.000	PK	44.9	38.5	8.2	39.5	1.2	53.3	73.9	20.6	100	0	
Hori.	2571.015	AV	40.2	28.0	13.8	41.0	1.2	42.2	53.9	11.7	124	329	
Hori.	2596.944	AV	44.4	28.0	13.8	40.9	1.2	46.5	53.9	7.4	124	329	
Hori.	2622.996	AV	41.6	28.0	13.9	40.9	1.2	43.8	53.9	10.1	124	329	
Hori.	4882.000	AV	37.9	31.7	5.8	39.5	1.2	37.1	53.9	16.8	100	191	
Hori.	7323.000	AV	33.5	36.9	7.2	40.2	1.2	38.6	53.9	15.3	100	0	
Hori.	9764.000	AV	33.4	38.5	8.2	39.5	1.2	41.8	53.9	12.1	100	0	
Vert.	51.317	QP	22.4	10.4	7.2	31.9	0.0	8.1	40.0	31.9	100	70	
Vert.	200.355	QP	21.9	16.4	8.9	31.8	0.0	15.4	43.5	28.1	100	255	
Vert.	699.892	QP	21.5	20.3	8.8	31.5	0.0	19.1	46.0	26.9	100	240	
Vert.	2571.015	PK	49.6	28.0	13.8	41.0	1.2	51.6	73.9	22.3	123	258	
Vert.	2596.944	PK	51.4	28.0	13.8	40.9	1.2	53.5	73.9	20.4	123	258	
Vert.	2622.996	PK	50.0	28.0	13.9	40.9	1.2	52.2	73.9	21.7	123	258	
Vert.	4882.000	PK	50.3	31.7	5.8	39.5	1.2	49.5	73.9	24.4	100	337	
Vert.	7323.000	PK	44.9	36.9	7.2	40.2	1.2	50.0	73.9	23.9	100	0	
Vert.	9764.000	PK	44.9	38.5	8.2	39.5	1.2	53.3	73.9	20.6	100	0	
Vert.	2571.015	AV	41.2	28.0	13.8	41.0	1.2	43.2	53.9	10.7	123	258	
Vert.	2596.944	AV	45.8	28.0	13.8	40.9	1.2	47.9	53.9	6.0	123	258	
Vert.	2622.996	AV	41.9	28.0	13.9	40.9	1.2	44.1	53.9	9.8	123	258	
Vert.	4882.000	AV	39.6	31.7	5.8	39.5	1.2	38.8	53.9	15.1	100	337	
Vert.	7323.000	AV	33.5	36.9	7.2	40.2	1.2	38.6	53.9	15.3	100	0	
Vert.	9764.000	AV	33.5	38.5	8.2	39.5	1.2	41.9	53.9	12.0	100	0	

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

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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Shonan EMC Lab.

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Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, DH5, 2480 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	70.019	QP	22.2	6.3	7.3	31.9	0.0	3.9	40.0	36.1	200	71	
Hori.	207.940	QP	22.1	16.5	9.0	31.8	0.0	15.8	43.5	27.7	200	13	
Hori.	688.426	QP	21.6	20.2	8.8	31.5	0.0	19.1	46.0	26.9	150	99	
Hori.	2483.500	PK	52.4	27.9	13.8	41.0	1.2	54.3	73.9	19.6	100	106	
Hori.	2610.025	PK	48.8	28.0	13.8	40.9	1.2	50.9	73.9	23.0	100	74	
Hori.	2635.998	PK	50.7	28.0	13.9	40.9	1.2	52.9	73.9	21.0	100	74	
Hori.	2662.007	PK	48.9	28.0	13.9	40.9	1.2	51.1	73.9	22.8	100	74	
Hori.	4960.000	PK	49.8	32.0	5.8	39.4	1.2	49.4	73.9	24.5	100	193	
Hori.	7440.000	PK	44.6	37.0	7.2	40.4	1.2	49.6	73.9	24.3	100	0	
Hori.	9920.000	PK	44.1	38.4	8.2	39.4	1.2	52.5	73.9	21.4	100	0	
Hori.	2483.500	AV	40.5	27.9	13.8	41.0	1.2	42.4	53.9	11.5	100	106	
Hori.	2610.025	AV	41.0	28.0	13.8	40.9	1.2	43.1	53.9	10.8	100	74	
Hori.	2635.998	AV	44.5	28.0	13.9	40.9	1.2	46.7	53.9	7.2	100	74	
Hori.	2662.007	AV	40.7	28.0	13.9	40.9	1.2	42.9	53.9	11.0	100	74	
Hori.	4960.000	AV	41.3	32.0	5.8	39.4	1.2	40.9	53.9	13.0	100	193	
Hori.	7440.000	AV	33.9	37.0	7.2	40.4	1.2	38.9	53.9	15.0	100	0	
Hori.	9920.000	AV	32.4	38.4	8.2	39.4	1.2	40.8	53.9	13.1	100	0	
Vert.	70.019	QP	22.4	6.3	7.3	31.9	0.0	4.1	40.0	35.9	100	355	
Vert.	207.940	QP	21.7	16.5	9.0	31.8	0.0	15.4	43.5	28.1	100	358	
Vert.	688.426	QP	21.5	20.2	8.8	31.5	0.0	19.0	46.0	27.0	100	43	
Vert.	2483.500	PK	51.2	27.9	13.8	41.0	1.2	53.1	73.9	20.8	100	256	
Vert.	2610.025	PK	49.1	28.0	13.8	40.9	1.2	51.2	73.9	22.7	100	264	
Vert.	2635.998	PK	51.3	28.0	13.9	40.9	1.2	53.5	73.9	20.4	100	264	
Vert.	2662.007	PK	49.6	28.0	13.9	40.9	1.2	51.8	73.9	22.1	100	264	
Vert.	4960.000	PK	50.2	32.0	5.8	39.4	1.2	49.8	73.9	24.1	100	24	
Vert.	7440.000	PK	45.2	37.0	7.2	40.4	1.2	50.2	73.9	23.7	100	0	
Vert.	9920.000	PK	43.8	38.4	8.2	39.4	1.2	52.2	73.9	21.7	100	0	
Vert.	2483.500	AV	38.8	27.9	13.8	41.0	1.2	40.7	53.9	13.2	100	256	
Vert.	2610.025	AV	41.3	28.0	13.8	40.9	1.2	43.4	53.9	10.5	100	264	
Vert.	2635.998	AV	45.3	28.0	13.9	40.9	1.2	47.5	53.9	6.4	100	264	
Vert.	2662.007	AV	41.1	28.0	13.9	40.9	1.2	43.3	53.9	10.6	100	264	
Vert.	4960.000	AV	42.1	32.0	5.8	39.4	1.2	41.7	53.9	12.2	100	24	
Vert.	7440.000	AV	33.8	37.0	7.2	40.4	1.2	38.8	53.9	15.1	100	0	
Vert.	9920.000	AV	32.4	38.4	8.2	39.4	1.2	40.8	53.9	13.1	100	0	

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

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

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Shonan EMC Lab.

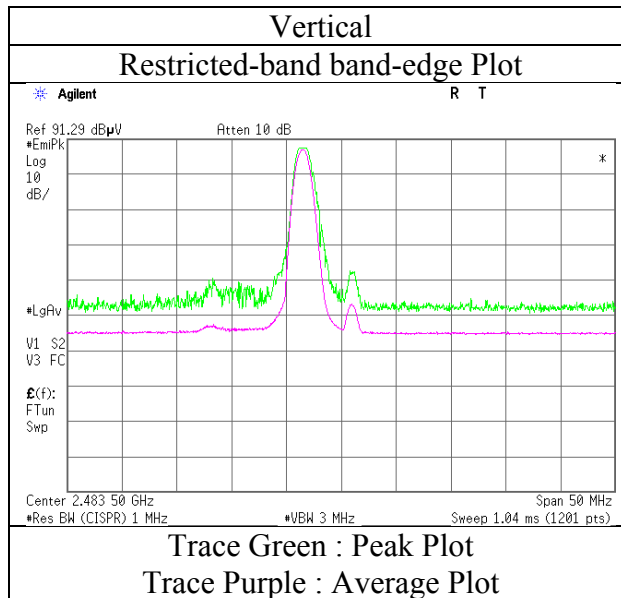
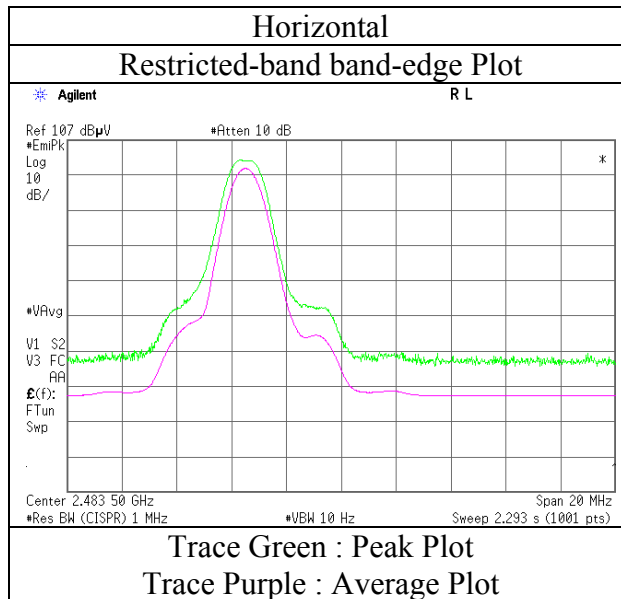
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission (Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No.	10990291S-A
Date	October 15, 2015
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, DH5, 2480 MHz



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

Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, 3-DH5, 2402 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	98.712	QP	22.1	9.9	8.0	31.9	0.0	8.1	43.5	35.4	150	225	
Hori.	273.223	QP	21.7	18.1	9.5	31.7	0.0	17.6	46.0	28.4	300	305	
Hori.	687.741	QP	21.5	20.2	8.8	31.5	0.0	19.0	46.0	27.0	150	287	
Hori.	2390.000	PK	46.2	27.8	13.7	41.0	1.2	47.9	73.9	26.0	100	71	
Hori.	2399.167	PK	54.1	27.8	13.7	41.0	1.2	55.8	73.9	18.1	100	71	
Hori.	2558.043	PK	49.5	28.0	13.8	41.0	1.2	51.5	73.9	22.4	100	96	
Hori.	4804.000	PK	49.2	31.4	5.7	39.6	1.2	47.9	73.9	26.0	100	191	
Hori.	7206.000	PK	45.7	36.9	7.1	40.1	1.2	50.8	73.9	23.1	100	0	
Hori.	9608.000	PK	44.4	38.5	8.2	39.6	1.2	52.7	73.9	21.2	100	0	
Hori.	2390.000	AV	34.0	27.8	13.7	41.0	1.2	35.7	53.9	18.2	100	71	
Hori.	2399.167	AV	39.2	27.8	13.7	41.0	1.2	40.9	53.9	13.0	100	71	
Hori.	2558.043	AV	40.3	28.0	13.8	41.0	1.2	42.3	53.9	11.6	100	96	
Hori.	4804.000	AV	39.1	31.4	5.7	39.6	1.2	37.8	53.9	16.1	100	191	
Hori.	7206.000	AV	34.3	36.9	7.1	40.1	1.2	39.4	53.9	14.5	100	0	
Hori.	9608.000	AV	33.6	38.5	8.2	39.6	1.2	41.9	53.9	12.0	100	0	
Vert.	98.712	QP	22.2	9.9	8.0	31.9	0.0	8.2	43.5	35.3	100	1	
Vert.	273.223	QP	21.8	18.1	9.5	31.7	0.0	17.7	46.0	28.3	100	183	
Vert.	687.741	QP	21.4	20.2	8.8	31.5	0.0	18.9	46.0	27.1	100	245	
Vert.	2390.000	PK	45.9	27.8	13.7	41.0	1.2	47.6	73.9	26.3	100	254	
Vert.	2399.167	PK	51.5	27.8	13.7	41.0	1.2	53.2	73.9	20.7	100	254	
Vert.	2558.043	PK	49.4	28.0	13.8	41.0	1.2	51.4	73.9	22.5	100	287	
Vert.	4804.000	PK	48.4	31.4	5.7	39.6	1.2	47.1	73.9	26.8	100	160	
Vert.	7206.000	PK	46.1	36.9	7.1	40.1	1.2	51.2	73.9	22.7	100	0	
Vert.	9608.000	PK	44.6	38.5	8.2	39.6	1.2	52.9	73.9	21.0	100	0	
Vert.	2390.000	AV	33.7	27.8	13.7	41.0	1.2	35.4	53.9	18.5	100	254	
Vert.	2399.167	AV	36.4	27.8	13.7	41.0	1.2	38.1	53.9	15.8	100	254	
Vert.	2558.043	AV	40.9	28.0	13.8	41.0	1.2	42.9	53.9	11.0	100	287	
Vert.	4804.000	AV	39.8	31.4	5.7	39.6	1.2	38.5	53.9	15.4	100	160	
Vert.	7206.000	AV	34.3	36.9	7.1	40.1	1.2	39.4	53.9	14.5	100	0	
Vert.	9608.000	AV	33.6	38.5	8.2	39.6	1.2	41.9	53.9	12.0	100	0	

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

Distance factor : 1 GHz - 13 GHz : 20log (3.45 m / 3.0 m) = 1.2 dB

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

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
Hori.	2402.000	PK	99.2	27.8	13.7	41.0	1.2	100.9	-	-	Carrier
Hori.	2400.000	PK	52.0	27.8	13.7	41.0	1.2	53.7	80.8	27.1	
Vert.	2402.000	PK	98.4	27.8	13.7	41.0	1.2	100.1	-	-	Carrier
Vert.	2400.000	PK	51.4	27.8	13.7	41.0	1.2	53.1	80.0	26.9	

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

Distance factor : 1 GHz - 13 GHz : 20log (3.45 m / 3.0 m) = 1.2 dB

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

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Shonan EMC Lab.

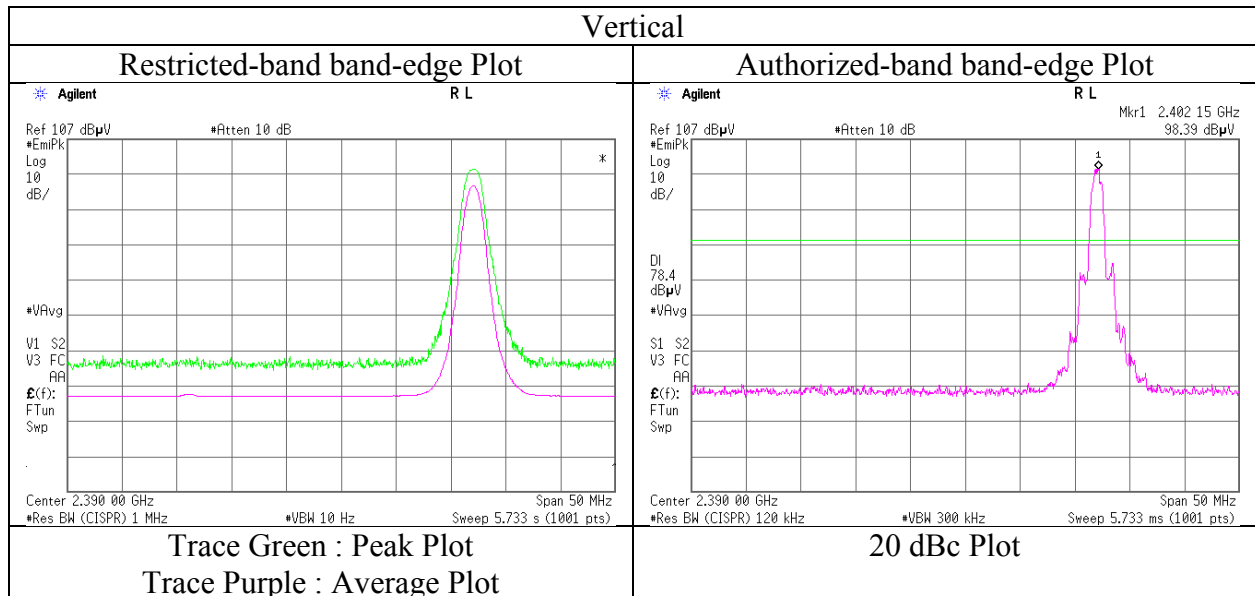
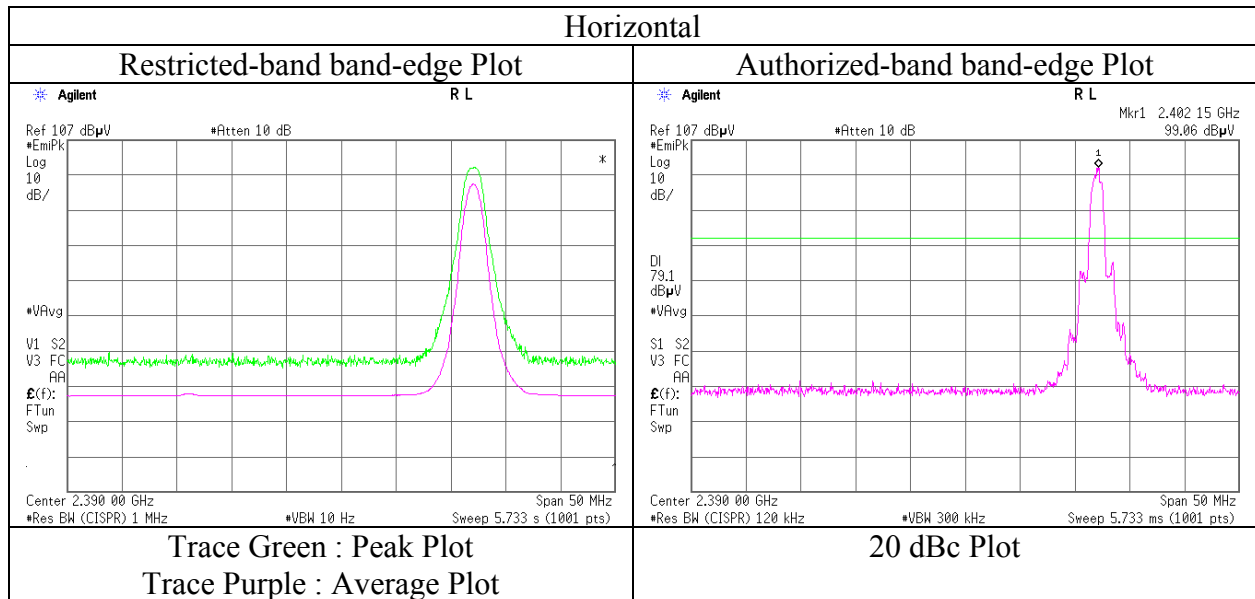
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Radiated Spurious Emission (Reference Plot for band-edge)

Test place	Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No.	10990291S-A
Date	October 15, 2015
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, 3-DH5, 2402 MHz



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

Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, 3-DH5, 2441 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	41.338	QP	22.4	13.9	7.1	31.9	0.0	11.5	40.0	28.5	200	179	
Hori.	140.054	QP	22.2	14.3	8.4	31.8	0.0	13.1	43.5	30.4	200	299	
Hori.	612.761	QP	21.7	19.2	8.4	31.6	0.0	17.7	46.0	28.3	100	348	
Hori.	2596.980	PK	50.1	28.0	13.8	40.9	1.2	52.2	73.9	21.7	100	88	
Hori.	4882.000	PK	47.7	31.7	5.8	39.5	1.2	46.9	73.9	27.0	100	189	
Hori.	7323.000	PK	46.4	36.9	7.2	40.2	1.2	51.5	73.9	22.4	100	0	
Hori.	9764.000	PK	46.3	38.5	8.2	39.5	1.2	54.7	73.9	19.2	100	0	
Hori.	2596.980	AV	41.5	28.0	13.8	40.9	1.2	43.6	53.9	10.3	100	88	
Hori.	4882.000	AV	36.7	31.7	5.8	39.5	1.2	35.9	53.9	18.0	100	189	
Hori.	7323.000	AV	33.7	36.9	7.2	40.2	1.2	38.8	53.9	15.1	100	0	
Hori.	9764.000	AV	34.1	38.5	8.2	39.5	1.2	42.5	53.9	11.4	100	0	
Vert.	41.338	QP	22.5	13.9	7.1	31.9	0.0	11.6	40.0	28.4	100	223	
Vert.	140.050	QP	22.2	14.3	8.4	31.8	0.0	13.1	43.5	30.4	100	305	
Vert.	612.761	QP	21.7	19.2	8.4	31.6	0.0	17.7	46.0	28.3	100	32	
Vert.	2596.980	PK	51.3	28.0	13.8	40.9	1.2	53.4	73.9	20.5	100	260	
Vert.	4882.000	PK	47.6	31.7	5.8	39.5	1.2	46.8	73.9	27.1	100	185	
Vert.	7323.000	PK	45.8	36.9	7.2	40.2	1.2	50.9	73.9	23.0	100	0	
Vert.	9764.000	PK	46.5	38.5	8.2	39.5	1.2	54.9	73.9	19.0	100	0	
Vert.	2596.980	AV	43.3	28.0	13.8	40.9	1.2	45.4	53.9	8.5	100	260	
Vert.	4882.000	AV	37.0	31.7	5.8	39.5	1.2	36.2	53.9	17.7	100	185	
Vert.	7323.000	AV	33.7	36.9	7.2	40.2	1.2	38.8	53.9	15.1	100	0	
Vert.	9764.000	AV	34.1	38.5	8.2	39.5	1.2	42.5	53.9	11.4	100	0	

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

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission

Test place : Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No. : 10990291S-A
Date : October 15, 2015 October 21, 2015
Temperature / Humidity : 23 deg. C / 48 % RH 24 deg. C / 44 % RH
Engineer : Yosuke Ishikawa Yosuke Ishikawa
(1 - 18 GHz) (30 - 1000 MHz,
18-26.5 GHz)
Mode : Tx, Hopping Off, 3-DH5, 2480 MHz

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

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg]	Remark
Hori.	45.393	QP	22.7	12.3	7.2	31.9	0.0	10.3	40.0	29.7	150	1	
Hori.	157.174	QP	22.2	15.1	8.7	31.8	0.0	14.2	43.5	29.3	150	271	
Hori.	696.880	QP	21.6	20.3	8.8	31.5	0.0	19.2	46.0	26.8	150	13	
Hori.	2483.500	PK	47.2	27.9	13.8	41.0	1.2	49.1	73.9	24.8	100	75	
Hori.	2635.981	PK	49.3	28.0	13.9	40.9	1.2	51.5	73.9	22.4	100	71	
Hori.	4960.000	PK	48.3	32.0	5.8	39.4	1.2	47.9	73.9	26.0	100	173	
Hori.	7440.000	PK	44.8	37.0	7.2	40.4	1.2	49.8	73.9	24.1	100	0	
Hori.	9920.000	PK	43.9	38.4	8.2	39.4	1.2	52.3	73.9	21.6	100	0	
Hori.	2483.500	AV	34.5	27.9	13.8	41.0	1.2	36.4	53.9	17.5	100	75	
Hori.	2635.981	AV	40.5	28.0	13.9	40.9	1.2	42.7	53.9	11.2	100	71	
Hori.	4960.000	AV	38.2	32.0	5.8	39.4	1.2	37.8	53.9	16.1	100	173	
Hori.	7440.000	AV	33.8	37.0	7.2	40.4	1.2	38.8	53.9	15.1	100	0	
Hori.	9920.000	AV	32.5	38.4	8.2	39.4	1.2	40.9	53.9	13.0	100	0	
Vert.	45.393	QP	22.8	12.3	7.2	31.9	0.0	10.4	40.0	29.6	100	251	
Vert.	157.174	QP	22.2	15.1	8.7	31.8	0.0	14.2	43.5	29.3	100	246	
Vert.	696.880	QP	21.6	20.3	8.8	31.5	0.0	19.2	46.0	26.8	100	244	
Vert.	2483.500	PK	47.0	27.9	13.8	41.0	1.2	48.9	73.9	25.0	100	277	
Vert.	2635.981	PK	49.7	28.0	13.9	40.9	1.2	51.9	73.9	22.0	100	273	
Vert.	4960.000	PK	49.1	32.0	5.8	39.4	1.2	48.7	73.9	25.2	100	266	
Vert.	7440.000	PK	45.2	37.0	7.2	40.4	1.2	50.2	73.9	23.7	100	0	
Vert.	9920.000	PK	43.4	38.4	8.2	39.4	1.2	51.8	73.9	22.1	100	0	
Vert.	2483.500	AV	34.5	27.9	13.8	41.0	1.2	36.4	53.9	17.5	100	277	
Vert.	2635.981	AV	41.0	28.0	13.9	40.9	1.2	43.2	53.9	10.7	100	273	
Vert.	4960.000	AV	38.3	32.0	5.8	39.4	1.2	37.9	53.9	16.0	100	266	
Vert.	7440.000	AV	33.8	37.0	7.2	40.4	1.2	38.8	53.9	15.1	100	0	
Vert.	9920.000	AV	32.3	38.4	8.2	39.4	1.2	40.7	53.9	13.2	100	0	

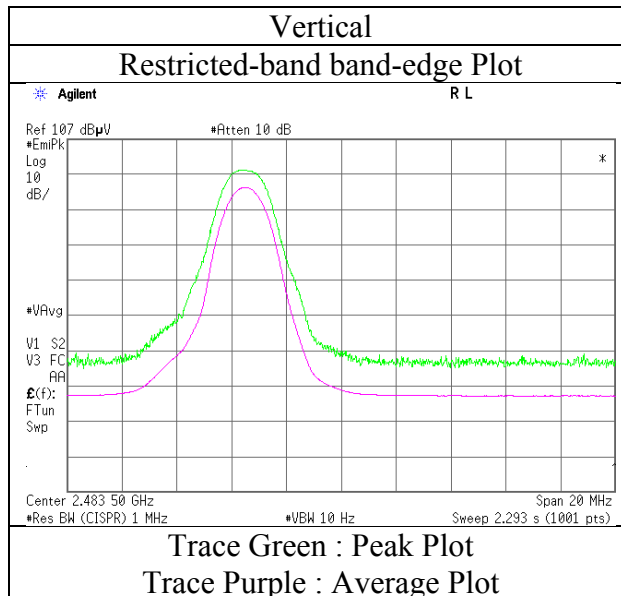
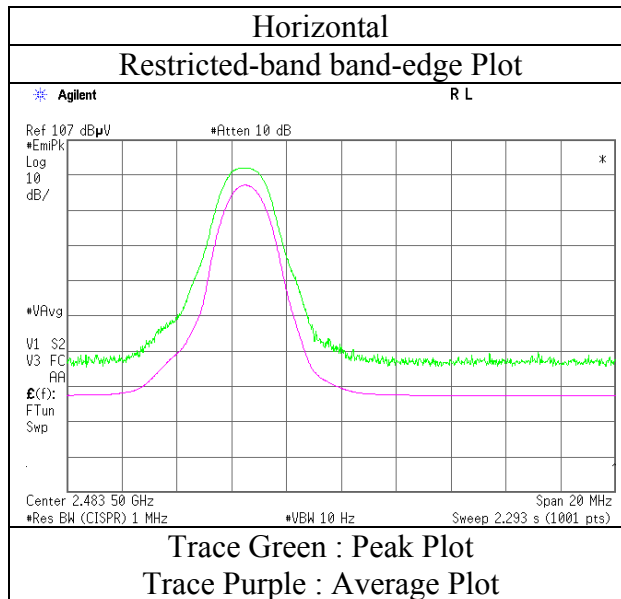
Result = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Distance factor : 1 GHz - 13 GHz : $20\log(3.45\text{ m} / 3.0\text{ m}) = 1.2\text{ dB}$

13 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.5\text{ dB}$

Radiated Spurious Emission (Reference Plot for band-edge)

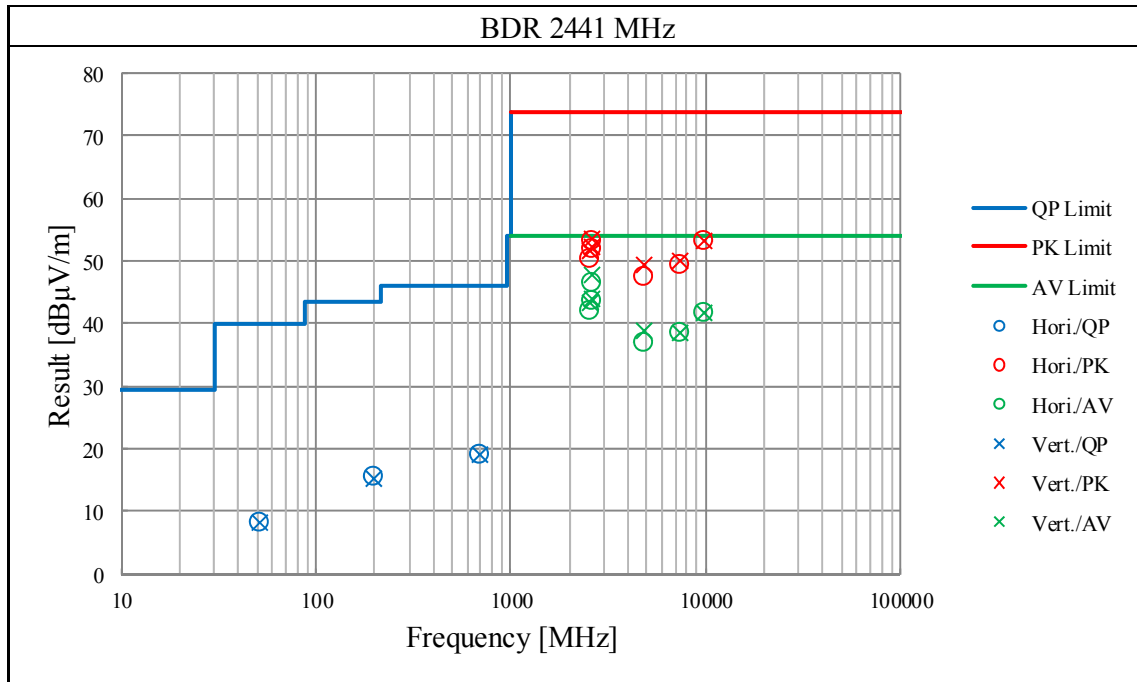
Test place	Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber
Report No.	10990291S-A
Date	October 15, 2015
Temperature / Humidity	23 deg. C / 48 % RH
Engineer	Yosuke Ishikawa
Mode	Tx, Hopping Off, 3-DH5, 2480 MHz



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

Radiated Spurious Emission (Plot data, Worst case)

Test place	Shonan EMC Lab. No.2 and 3 Semi Anechoic Chamber	
Report No.	10990291S-A	
Date	October 15, 2015	October 21, 2015
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 44 % RH
Engineer	Yosuke Ishikawa	Yosuke Ishikawa
	(1 - 18 GHz)	(30 - 1000 MHz, 18-26.5 GHz)
Mode	Tx, Hopping Off, DH5, 2441 MHz	

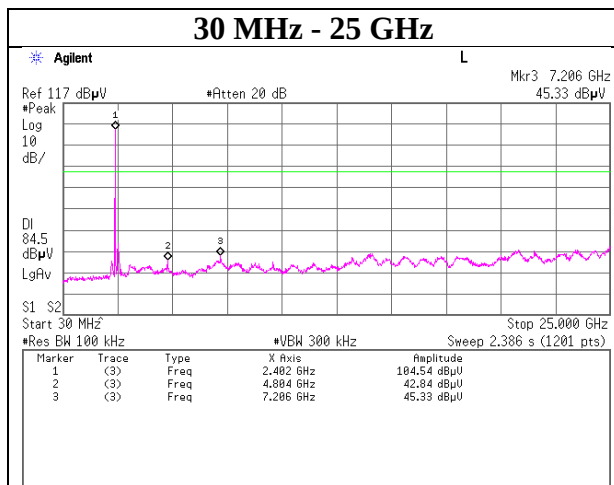
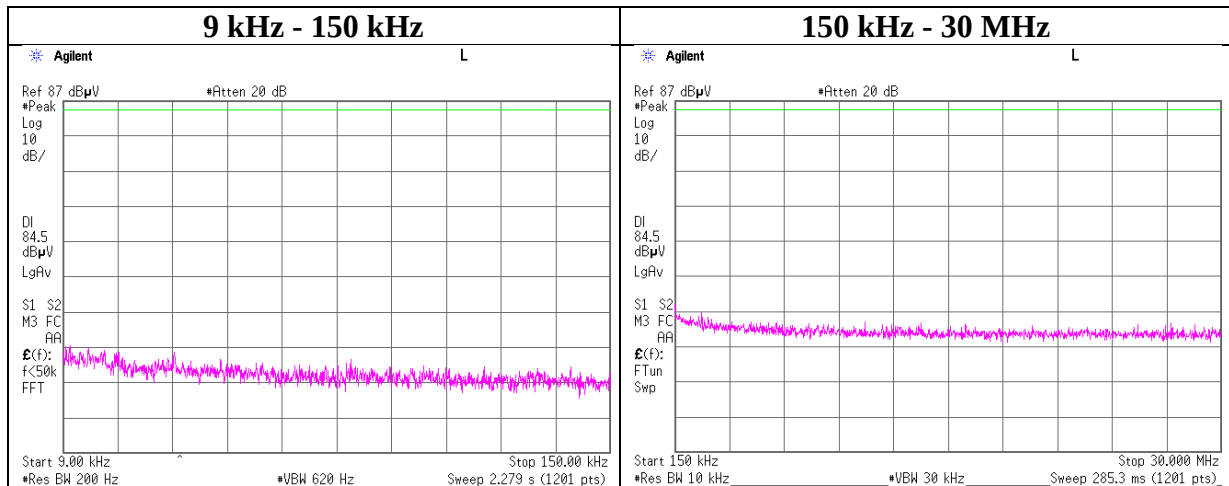


*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 27, 2015
Temperature / Humidity	25 deg. C / 44 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off, DH5

2402 MHz



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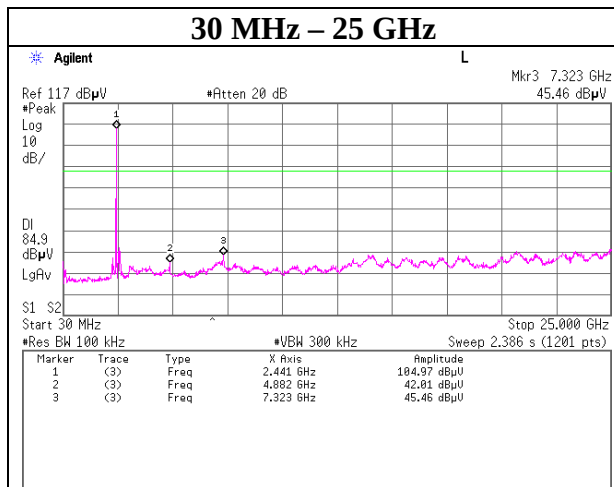
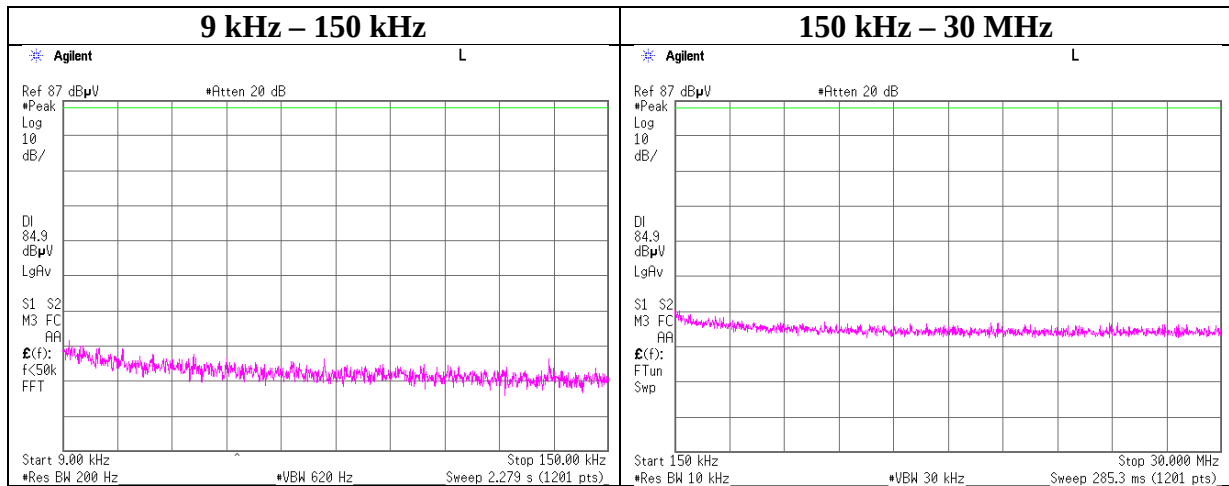
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Conducted Spurious Emission

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 27, 2015
Temperature / Humidity : 25 deg. C / 44 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off, DH5

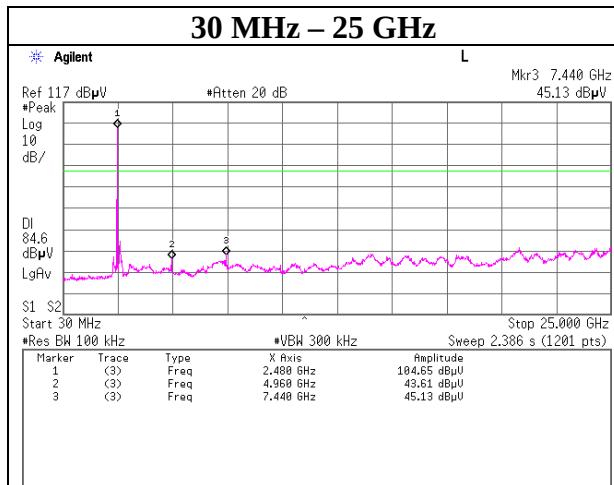
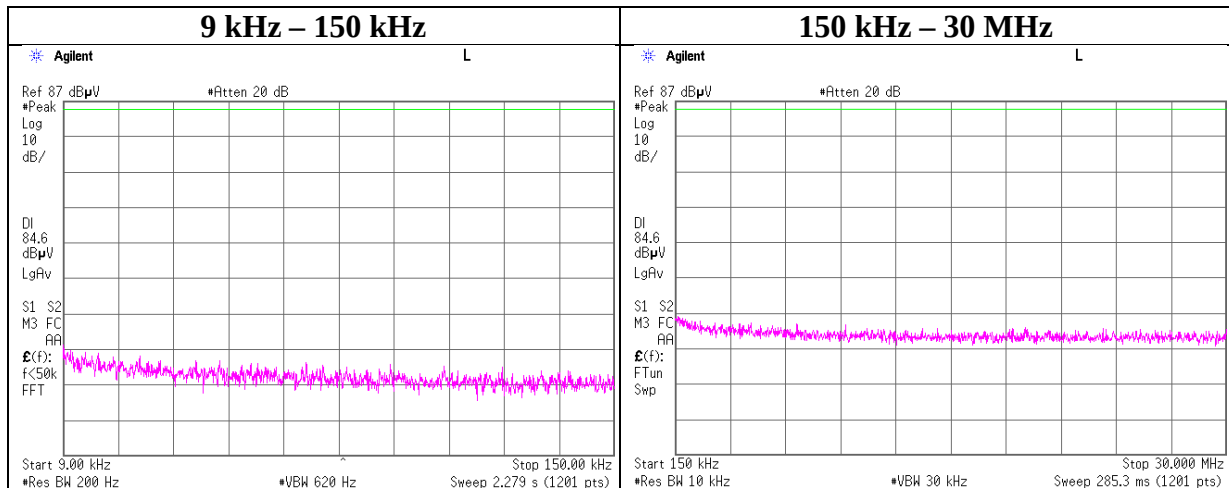
2441 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 27, 2015
Temperature / Humidity	25 deg. C / 44 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping Off, DH5

2480 MHz



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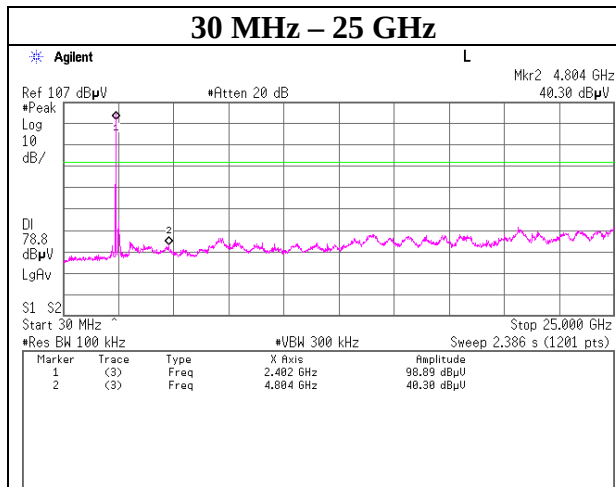
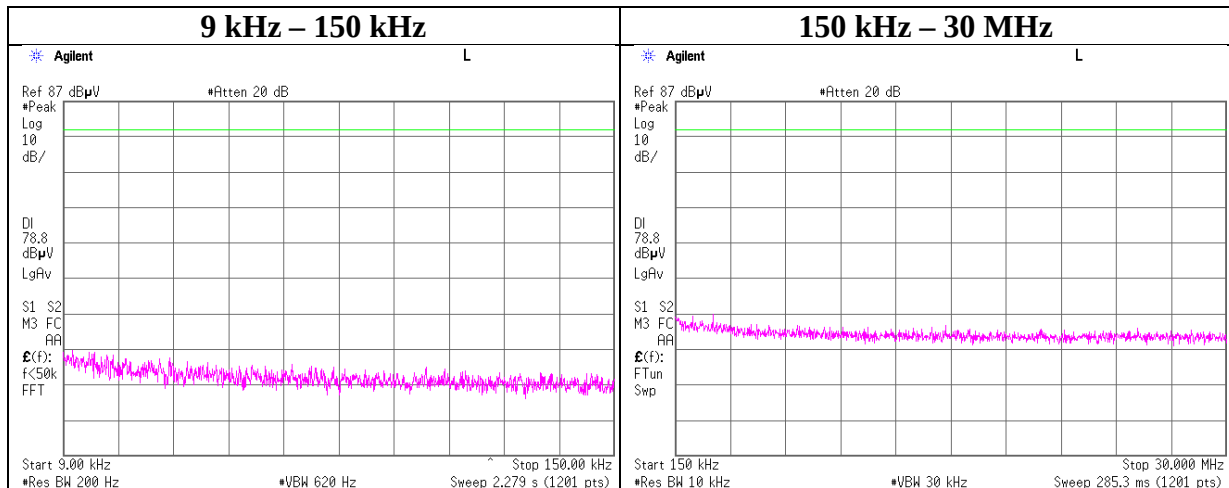
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Conducted Spurious Emission

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 27, 2015
Temperature / Humidity : 25 deg. C / 44 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off, 3-DH5

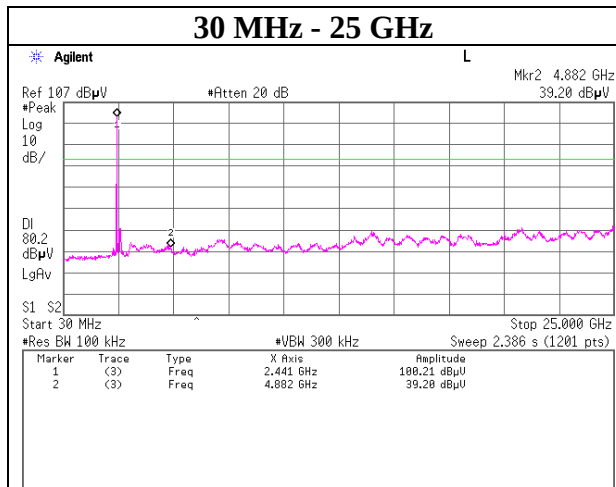
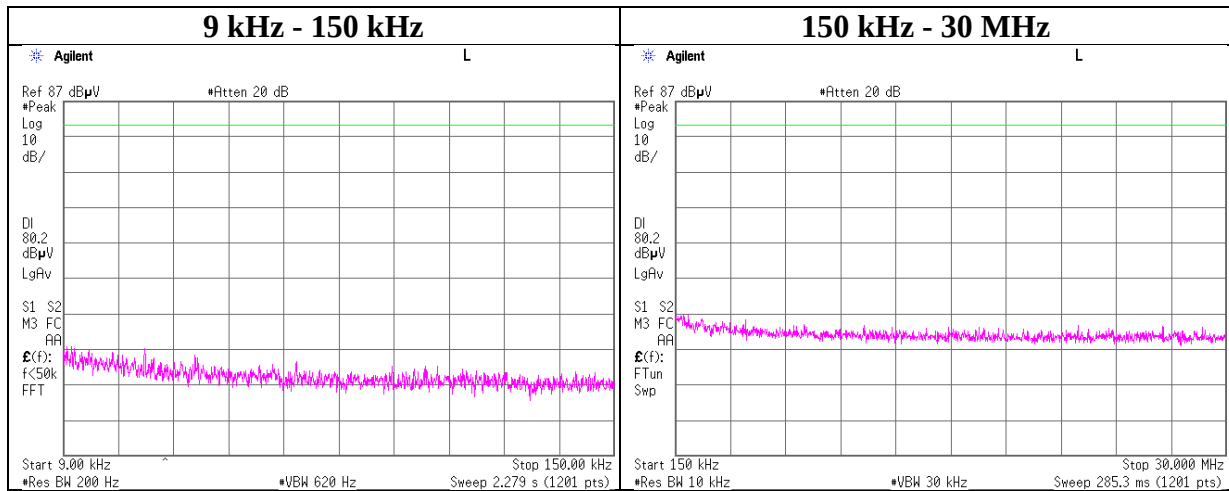
2402 MHz



Conducted Spurious Emission

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 27, 2015
Temperature / Humidity : 25 deg. C / 44 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off, 3-DH5

2441 MHz



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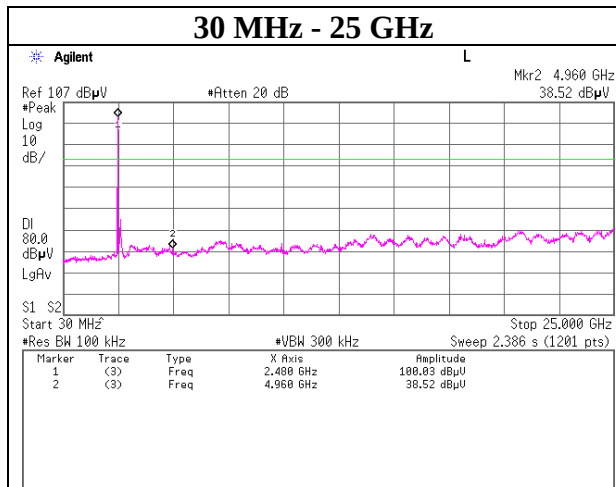
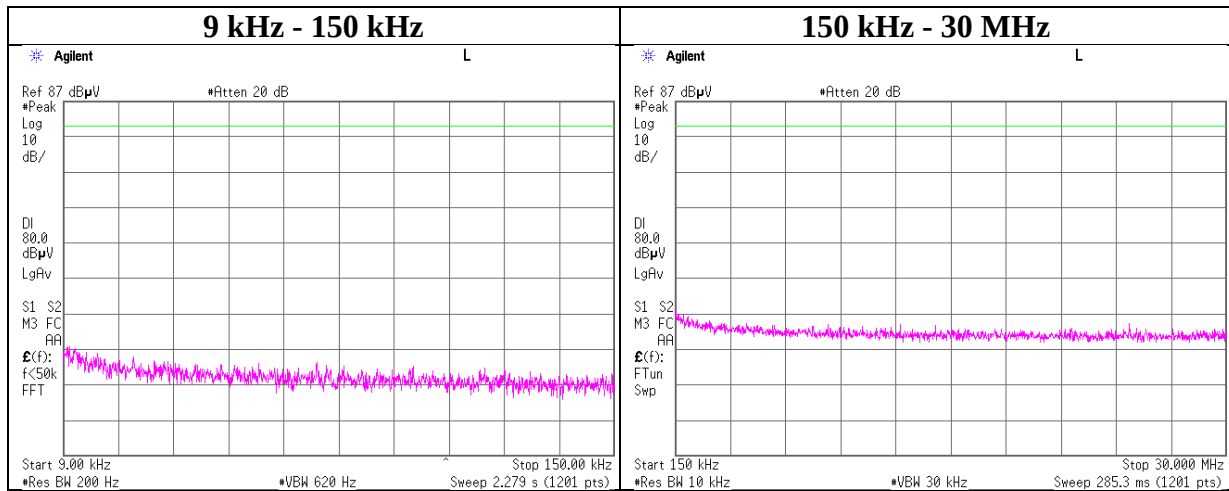
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

Conducted Spurious Emission

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 27, 2015
Temperature / Humidity : 25 deg. C / 44 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off, 3-DH5

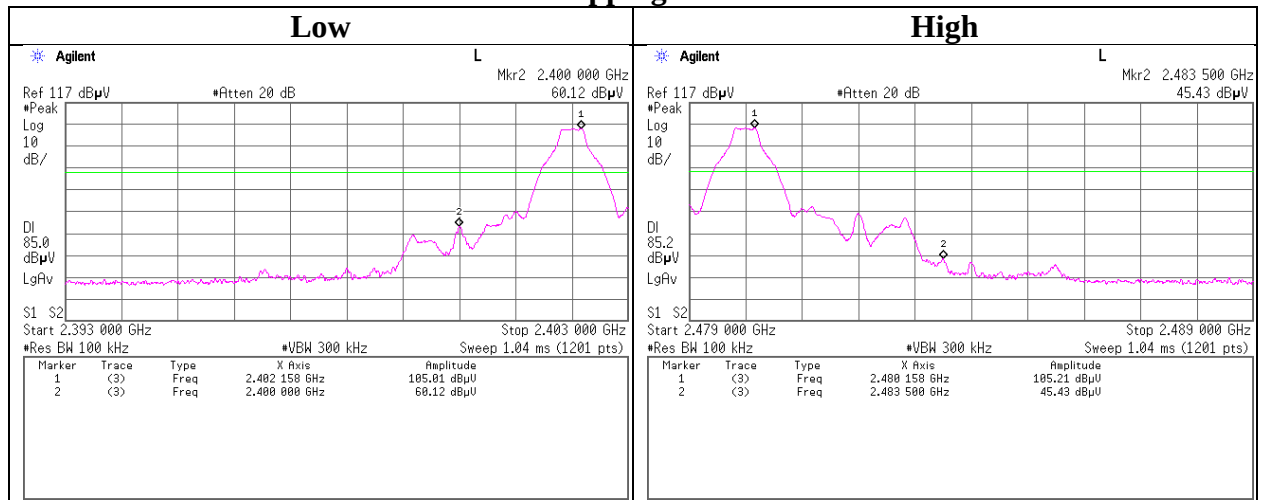
2480 MHz



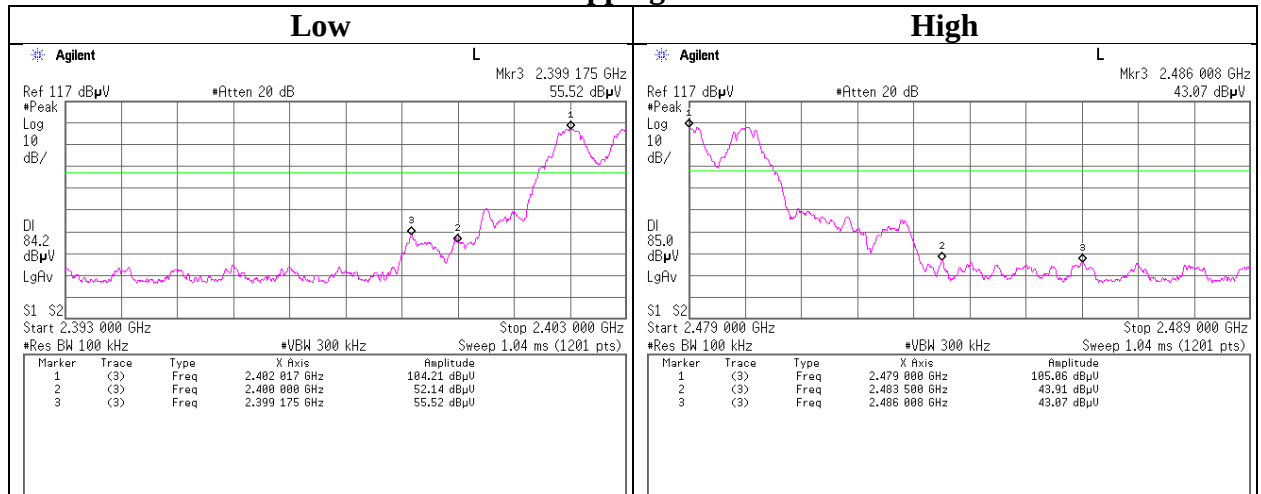
Conducted Emission Band Edge compliance

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 27, 2015
Temperature / Humidity : 25 deg. C / 44 % RH
Engineer : Kenichi Adachi
Mode : Tx, DH5

Hopping On



Hopping Off



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Shonan EMC Lab.

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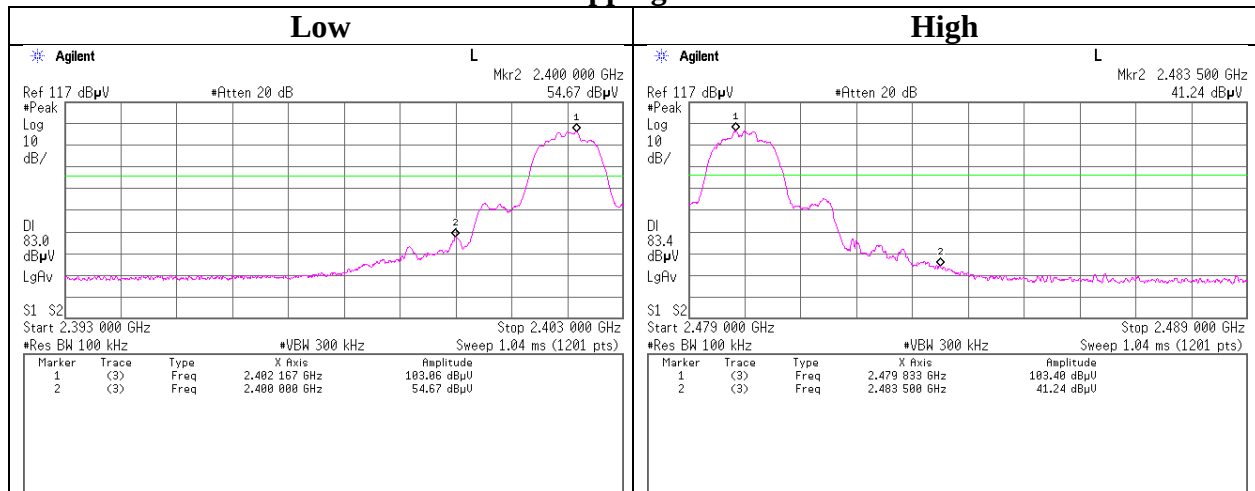
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

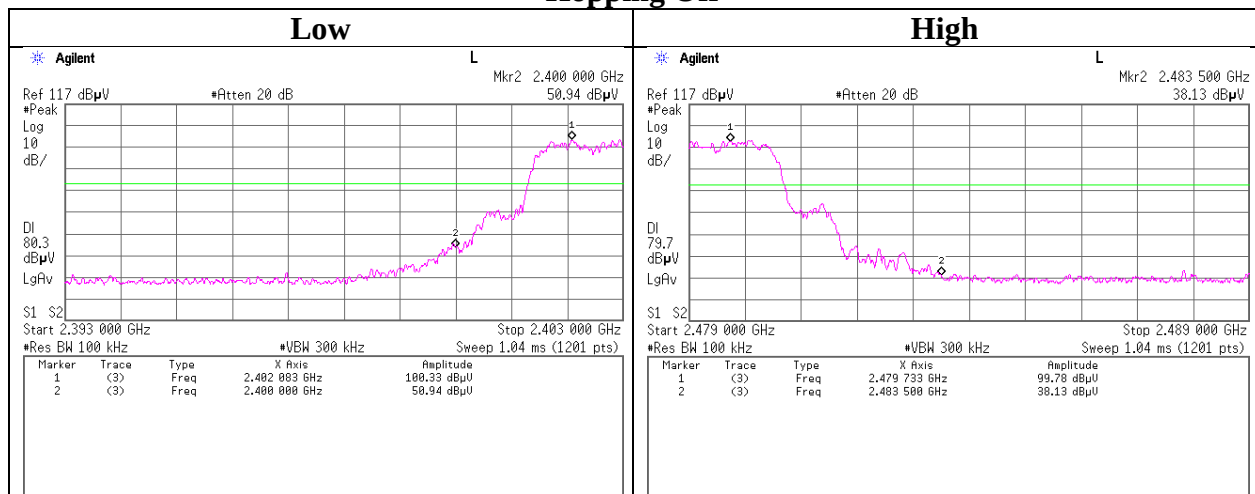
Conducted Emission Band Edge compliance

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 27, 2015
Temperature / Humidity	25 deg. C / 44 % RH
Engineer	Kenichi Adachi
Mode	Tx, 3-DH5

Hopping On



Hopping Off



UL Japan, Inc.

Shonan EMC Lab.

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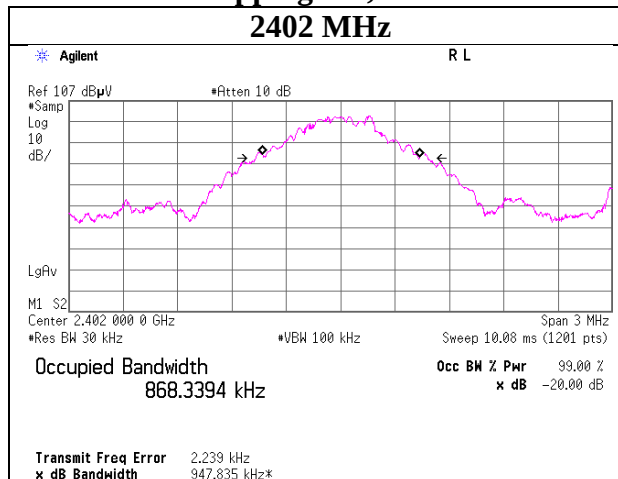
Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

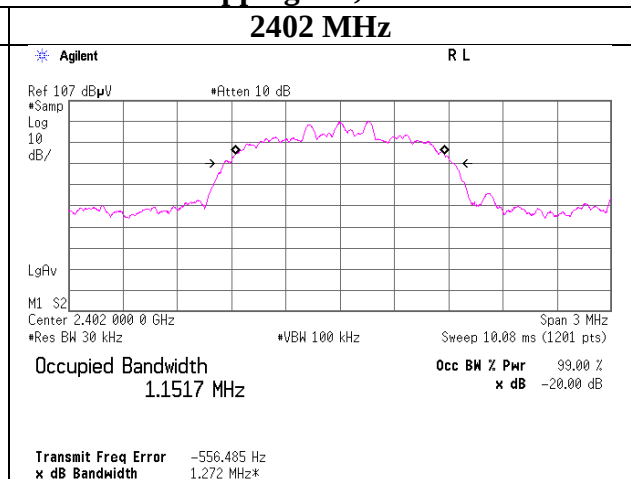
99 %Occupied Bandwidth

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 10990291S-A
Date : October 8, 2015
Temperature / Humidity : 26 deg. C / 34 % RH
Engineer : Kenichi Adachi
Mode : Tx, Hopping Off

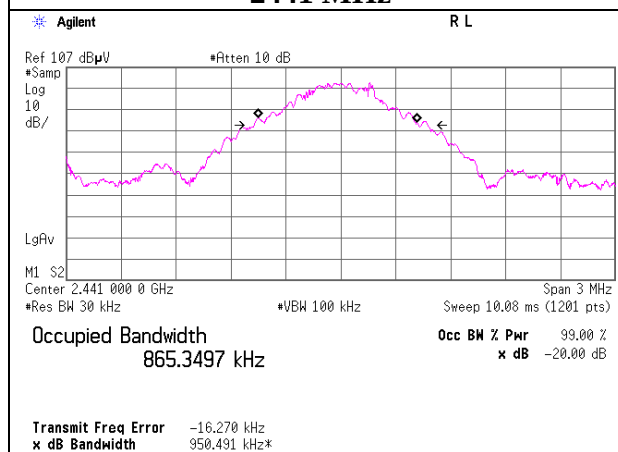
Hopping Off, DH5



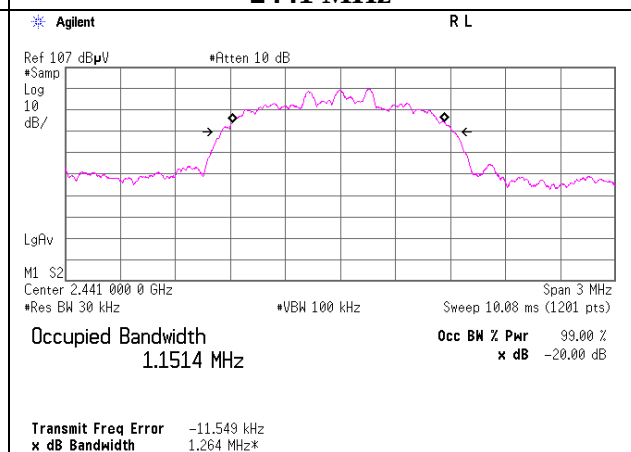
Hopping Off, 3-DH5



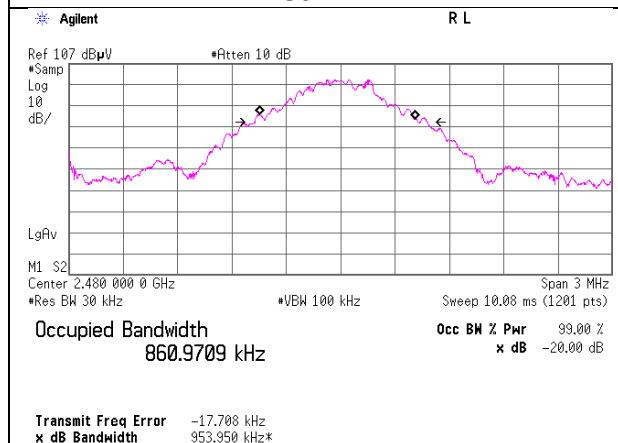
2441 MHz



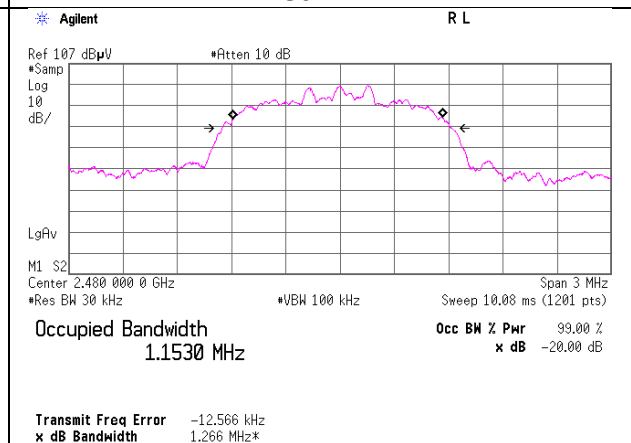
2441 MHz



2480 MHz



2480 MHz



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Shonan EMC Lab.

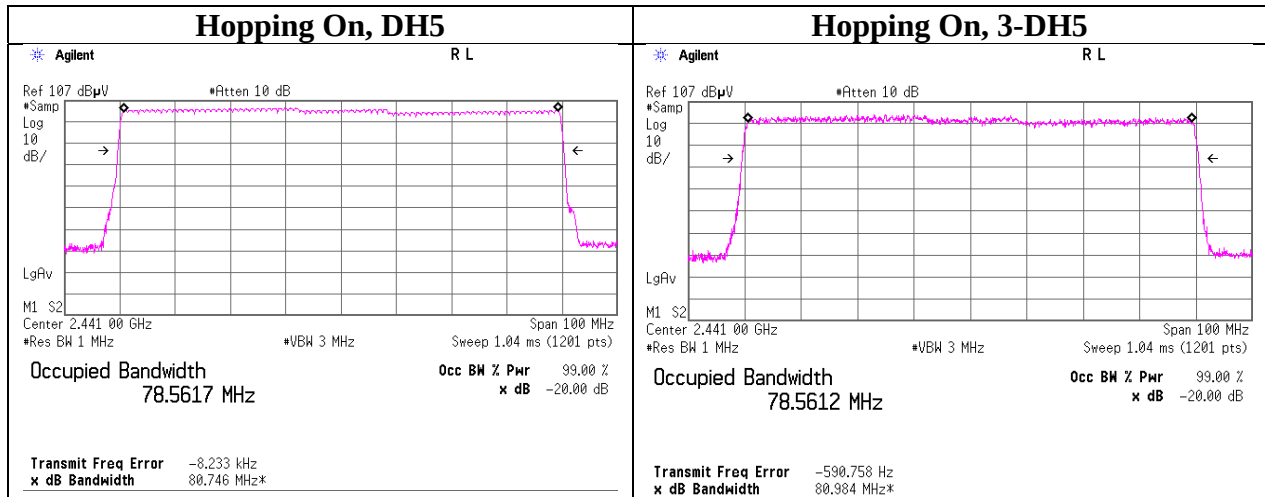
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

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99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	10990291S-A
Date	October 8, 2015
Temperature / Humidity	26 deg. C / 34 % RH
Engineer	Kenichi Adachi
Mode	Tx, Hopping On



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APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SPM-07	Power Meter	Agilent	8990B	MY5100272	AT	2015/04/02 * 12
SPSS-04	Power sensor	Agilent	N1923A	MY5326009	AT	2015/04/02 * 12
SSA-02	Spectrum Analyzer	Agilent	E4448A	MY48250106	AT,RE	2015/03/26 * 12
SAT10-10	Attenuator	Weinschel Corp.	54A-10	37584	AT	2015/04/09 * 12
SCC-G13	Coaxial Cable	Suhner	SUCOFLEX 102	31599/2	AT	2015/03/11 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2014/12/24 * 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	2014/10/30 * 12
SSA-03	Spectrum Analyzer	Agilent	E4448A	MY48250152	RE	2015/09/16 * 12
SJM-15	Measure	ASKUL	-	-	RE	-
SAEC-03(SVS WR)	Semi-Anechoic Chamber	TDK	SAEC-03(SV SWR)	3	RE	2015/08/28 * 12
COTS-SEMI-1	EMI Software	TSJ	TEPTO-DV(RE,CE,RFI, MF)	-	RE,CE	-
SAT10-06	Attenuator	Agilent	8493C-010	74865	RE	2014/11/21 * 12
SFL-18	Highpass Filter	MICRO-TRONICS	HPM50111	119	RE	2015/04/09 * 12
SAF-08	Pre Amplifier	TOYO Corporation	HAP18-26W	00000019	RE	2015/03/23 * 12
SCC-G15	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	RE	2015/03/11 * 12
SAF-02	Pre Amplifier	SONOMA	310N	290212	RE	2015/02/18 * 12
SAT6-02	Attenuator	JFW	50HF-006N	-	RE	2015/02/18 * 12
KAT3-11	Attenuator	JFW IND. INC.	50HF-003N	-	RE	2015/08/31 * 12
SBA-02	Biconical Antenna	Schwarzbeck	BBA9106	91032665	RE	2014/11/22 * 12
SCC-B1/B3/B5/B7/B8/B13/SRS E-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DS FA/141PE/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2015/04/17 * 12
SCC-B2/B4/B6/B7/B8/B13/SRS E-02	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DS FA/141PE/141PE/141PE/NS4906	-/0901-270(RF Selector)	RE	2015/04/17 * 12
SLA-02	Logperiodic Antenna	Schwarzbeck	UHALP9108A	UHALP 9108-A 0893	RE	2014/11/22 * 12
SOS-03	Humidity Indicator	A&D	AD-5681	4063325	RE	2014/10/30 * 12
STR-07	Test Receiver	Rohde & Schwarz	ESU26	100484	RE,CE	2015/09/04 * 12
SJM-14	Measure	ASKUL	-	-	RE,CE	-
SAEC-02(NSA)	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	RE	2015/07/15 * 12
SCC-B12/B13/S RSE-02	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-270(RF Selector)	CE	2015/04/17 * 12
SLS-02	LISN	Rohde & Schwarz	ENV216	100512	CE	2015/02/24 * 12
SAT3-10	Attenuator	JFW	50HF-003N	-	CE	2015/08/31 * 12
SOS-04	Humidity Indicator	A&D	AD-5681	4061512	CE	2014/12/24 * 12
STS-02	Digital Hitester	Hioki	3805-50	080997819	CE	2015/03/10 * 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

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