



RADIO TEST REPORT

Test Report No. : 11922902S-A-R2

Applicant : PIONEER CORPORATION
Type of Equipment : MULTIMEDIA NAVIGATION RECEIVER
Model No. : AVIC-W8400NEX
FCC ID : AJDK103
Test regulation : FCC Part 15 Subpart C: 2017
(*Bluetooth part)
Test items : Other than radiated emission tests
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)
7. This report is a revised version of 11922902S-A-R1. 11922902S-A-R1 is replaced with this report.

Date of test: August 28 to 29, 2017

Representative test engineer:

M. Hosaka

Makoto Hosaka
Engineer
Consumer Technology Division

Approved by:

A. Hayashi

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".

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13-EM-F0429

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SECTION 1: Customer information

Company Name : PIONEER CORPORATION
Address : 25-1, Yamada, Kawagoe-shi, Saitama, 350-8555, Japan
Telephone Number : +81-49-228-7787
Facsimile Number : +81-49-228-6493
Contact Person : Hiroshi Fuse

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

2.1 Identification of E.U.T.

Type of Equipment : MULTIMEDIA NAVIGATION RECEIVER
Model No. : AVIC-W8400NEX
Serial No. : Refer to Section 4, Clause 4.2
Rating : DC 14.4 V
Receipt Date of Sample : August 23, 2017
Country of Mass-production : Thailand
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

General Specification

Model: AVIC-W8400NEX (referred to as the EUT in this report) is a MULTIMEDIA NAVIGATION RECEIVER.

Clock frequency(ies) in the system : Bluetooth Wi-Fi module: 37.4 MHz
LPO clock for Bluetooth Wi-Fi module: 32.768 kHz
DC-DC CONVERTER: 1000 kHz/ 700.5 kHz/ 2.29 MHz/ 2.17 MHz/
767.25 kHz/ 699.05 kHz/ 767.25 kHz/ 699.05 kHz/ 436.907 kHz/
383.625 kHz/ 436.907 kHz/ 383.625 kHz
FM/AM TUNER: 9.216 MHz (VCO: 5.9904 GHz/ 6.2208 GHz)
TMC TUNER: 9.216 MHz (VCO: 5.9904 GHz/ 6.2208 GHz)
MAIN PROCESSER: 24 MHz/ 32.768 kHz/ 11.2896 MHz
SYSTEM MICRO COMPUTER: 3.93216 MHz
DVD DRIVER: 27 MHz/ 121.5 MHz/ 36.864 MHz/ 33.8688 MHz
LCD BACK LIGHT: 436.907 kHz/ 383.625 kHz
ELECTRONIC VOLUME: 18.432 MHz
FPGA: 14.7456 MHz
ECHO CANCELLER: 12.288 MHz
HDMI RECEIVER: 27 MHz
DISPLAY CONTROLLER: 32 MHz
VIDEO DECODER: 32 MHz
MICRO COMPUTER: 10 MHz
WWR UNIT: 24 MHz
GPS: 26 MHz

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Radio Specification

Radio Type	:	Transceiver
Frequency of Operation	:	2.4 GHz: 2402 MHz - 2480 MHz (Bluetooth BDR/EDR) 2412 MHz - 2462 MHz (IEEE 802.11b/g/n) W58: 5745 MHz - 5825 MHz (IEEE 802.11a/n) 5755 MHz - 5795 MHz (IEEE 802.11n/ac) 5775 MHz (IEEE 802.11ac)
Modulation	:	DSSS (IEEE 802.11b), OFDM (IEEE 802.11g/n/a/ac) FHSS (Bluetooth BDR/EDR)
Power Supply (inner)	:	DC 3.3 V/1.8 V
Antenna type	:	Monopole Antenna
Antenna Gain	:	2.4 GHz: -8.0 dBi (Bluetooth BDR/EDR) -4.7 dBi (IEEE 802.11b/g/n) 5 GHz: -3.0 dBi
Operating Temperature	:	-10 deg. C to +60 deg. C

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C
FCC Part 15 final revised on September 20, 2017 and effective October 20, 2017

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 September 20, 2017, does not affect the test specification applied to the EUT.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.10-2013 6. Standard test methods IC: RSS-Gen 8.8	FCC: Section 15.207 IC: RSS-Gen 8.8	N/A	N/A	*1)
Carrier Frequency Separation	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (b)	See data.	Complied	Conducted
20dB Bandwidth	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1) IC: RSS-247 5.1 (a)		Complied	Conducted
Number of Hopping Frequency	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (d)		Complied	Conducted
Dwell time	FCC: FCC Public Notice DA 00-705 IC: -	FCC: Section15.247(a)(1)(iii) IC: RSS-247 5.1 (d)		Complied	Conducted
Maximum Peak Output Power	FCC: FCC Public Notice DA 00-705 IC: RSS-Gen 6.12	FCC: Section15.247(a)(b)(1) IC: RSS-247 5.4 (b)		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	N/A	N/A	Conducted / Radiated (above 30 MHz) *2)

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

*1) The test is not applicable since the EUT does not have AC power ports.

*2) For the Radiated spurious emission test, refer to test report No 11922904M-A-R2

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

FCC Part 15.31 (e)

This EUT provides stable voltage (DC 3.3 V / 1.8 V) constantly to the wireless transmitter regardless of input voltage. Instead of a new battery, DC power supply was used for the test. That does not affect the test result, Therefore this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

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

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3.3 Addition to standard

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

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

3.4 Uncertainty

EMI

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k=2$.
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Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	0.72 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	0.85 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.74 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	0.91 dB
Spurious emission (Conducted) below 1GHz	1.6 dB
Spurious emission (Conducted) 1 GHz-3 GHz	1.3 dB
Spurious emission (Conducted) 3 GHz-18 GHz	2.2 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.3 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.4 dB
Bandwidth Measurement	1.01 %
Duty cycle and Time Measurement	0.012 %

3.5 Test Location

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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.

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

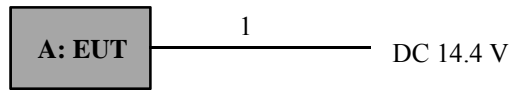
4.1 Operating Mode(s)

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

Details of Operating Mode(s)

Test Item	Mode	Tested frequency
Spurious Emission (Conducted)	Tx (Hopping Off) DH5, 3DH5	2402 MHz 2441 MHz 2480 MHz
Carrier Frequency Separation 20dB 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
<p>*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)</p> <p>*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.</p> <p>* 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.</p> <p>*EUT has the power settings by the software as follows; Power settings: Fixed Software: SoC: Ver0.041100 System uCom: Ver7.07</p> <p>*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.</p>		

4.2 Configuration and peripherals



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

Description of EUT

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	MULTIMEDIA NAVIGATION RECEIVER	AVIC-W8400NEX	QFTM000026UC	Pioneer Corporation	EUT

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Power Supply Cable	0.3 + 1.5	Unshielded	Unshielded	-

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SECTION 5: Antenna Terminal Conducted Tests

Test Procedure

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

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used
20dB Bandwidth	3 MHz	30 kHz	100 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99% Occupied Bandwidth *1)	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Sample	Max Hold *1)	Spectrum Analyzer
Maximum Peak Output Power	-	-	-	Auto	Peak Average *2)	-	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 *3)	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 %. Max hold was applied as Worst-case measurement.

*2) Reference data

*3) In the frequency range below 30MHz, RBW was narrowed to separate the noise contents.

Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart.

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

20dB Bandwidth and Carrier Frequency Separation

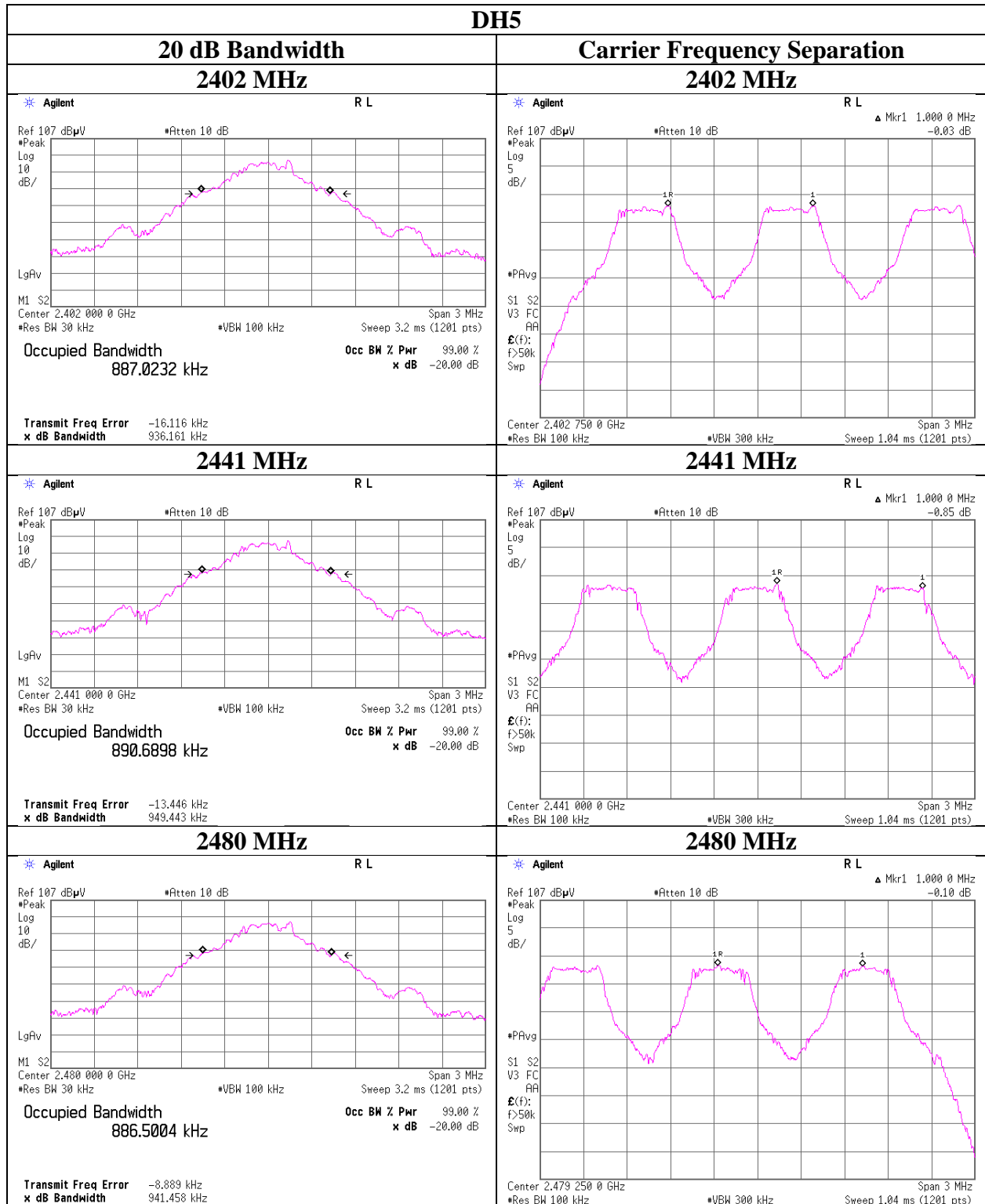
Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 11922902S-A-R2
Date August 28, 2017 August 29, 2017
Temperature / Humidity 25 deg. C / 40 % RH 26 deg. C / 49 % RH
Engineer Makoto Hosaka Makoto Hosaka
Mode Tx, Hopping Off, DH5

Mode	Freq. [MHz]	20dB Bandwidth [MHz]	Carrier Frequency Separation [MHz]	Limit for Carrier Frequency separation [MHz]
DH5	2402.0	0.936	1.000	>= 0.624
DH5	2441.0	0.949	1.000	>= 0.633
DH5	2480.0	0.941	1.000	>= 0.628
3DH5	2402.0	1.341	1.000	>= 0.894
3DH5	2441.0	1.319	1.000	>= 0.879
3DH5	2480.0	1.317	1.000	>= 0.878

Limit: Two-thirds of 20dB Bandwidth or 25kHz (whichever is greater).

No limit applies to 20dB Bandwidth.

20dB Bandwidth and Carrier Frequency Separation



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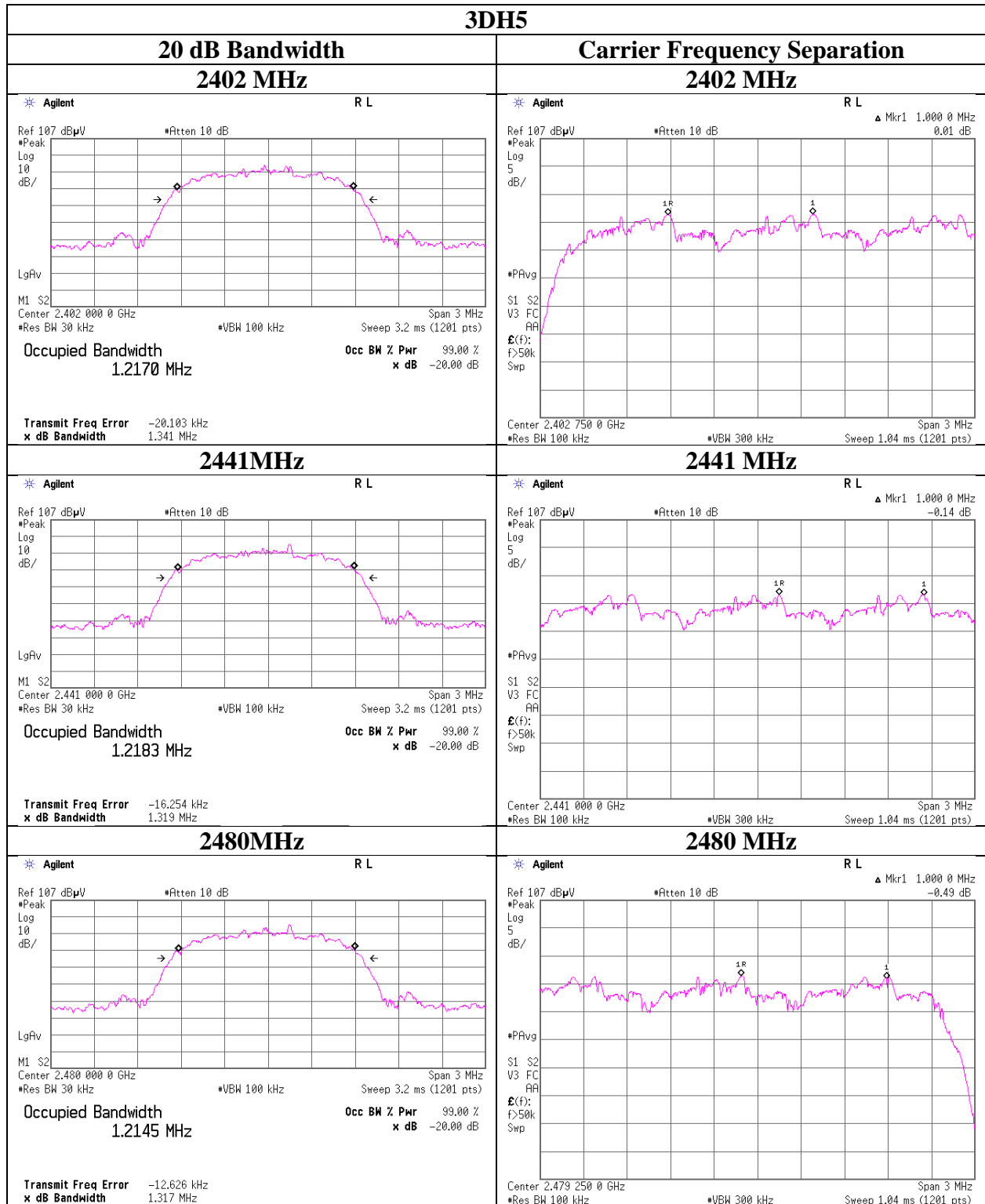
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20dB Bandwidth and Carrier Frequency Separation



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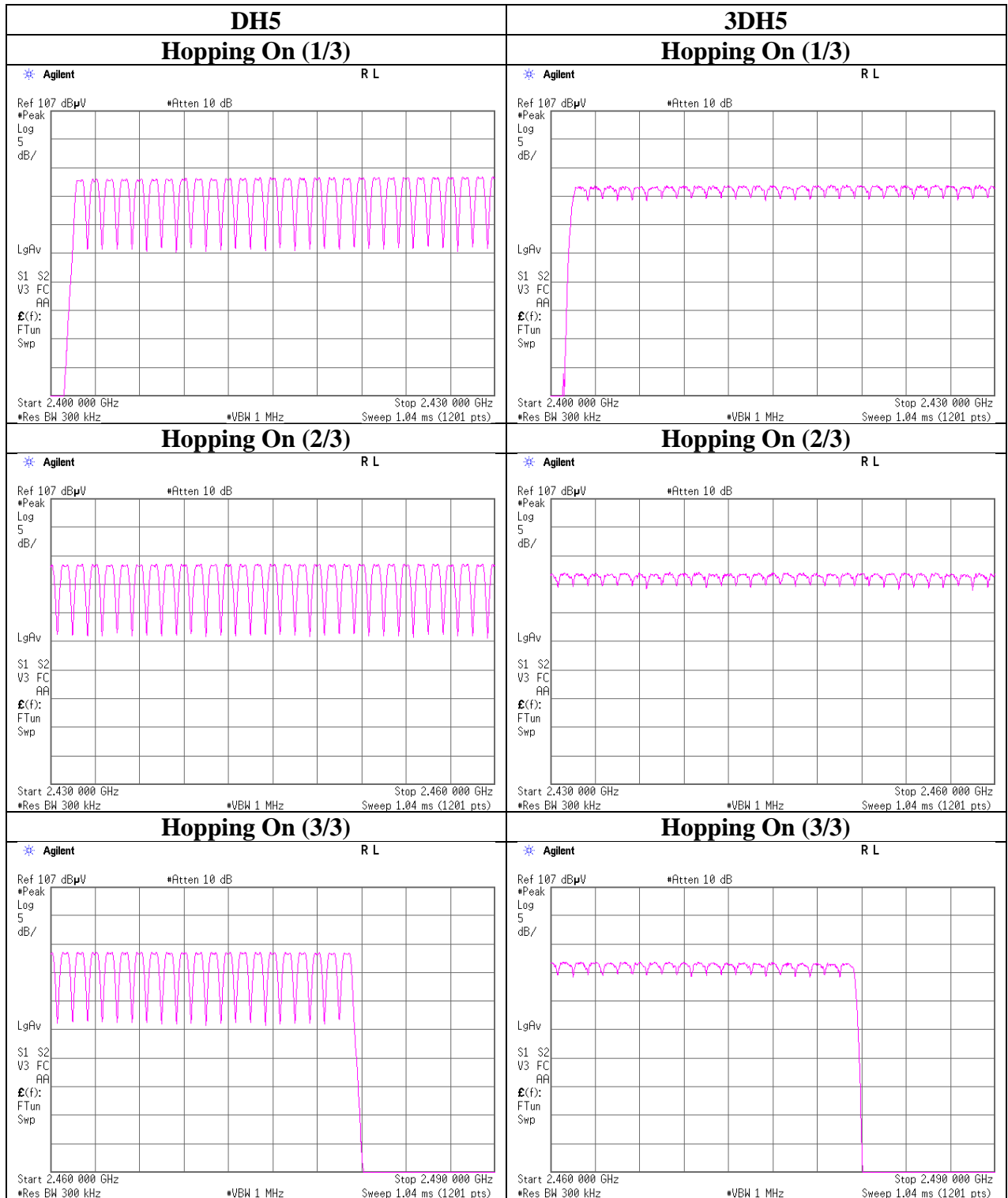
Number of Hopping Frequency

Test place Shonan EMC Lab. No.5 Shielded Room
Report No. 11922902S-A-R2
Date August 28, 2017 August 29, 2017
Temperature / Humidity 25 deg. C / 40 % RH 26 deg. C / 49 % RH
Engineer Makoto Hosaka Makoto Hosaka
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



Dwell time

Test place	Shonan EMC Lab. No.5 Shielded Room	
Report No.	11922902S-A-R2	
Date	August 28, 2017	August 29, 2017
Temperature / Humidity	25 deg. C / 40 % RH	26 deg. C / 49 % RH
Engineer	Makoto Hosaka	
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 [msec]	Result [msec]	Limit [msec]
DH1	50.2 times / 5 sec. x 31.6 sec. = 318 times	0.422	134	400
DH3	27.2 times / 5 sec. x 31.6 sec. = 172 times	1.679	289	400
DH5	19.0 times / 5 sec. x 31.6 sec. = 121 times	2.933	355	400
3DH1	49.8 times / 5 sec. x 31.6 sec. = 315 times	0.428	135	400
3DH3	25.0 times / 5 sec. x 31.6 sec. = 158 times	1.679	265	400
3DH5	20.8 times / 5 sec. x 31.6 sec. = 132 times	2.931	387	400

Sample Calculation

Result = Number of transmission x Length of transmission

*Average data of 5 tests.(except Inquiry)

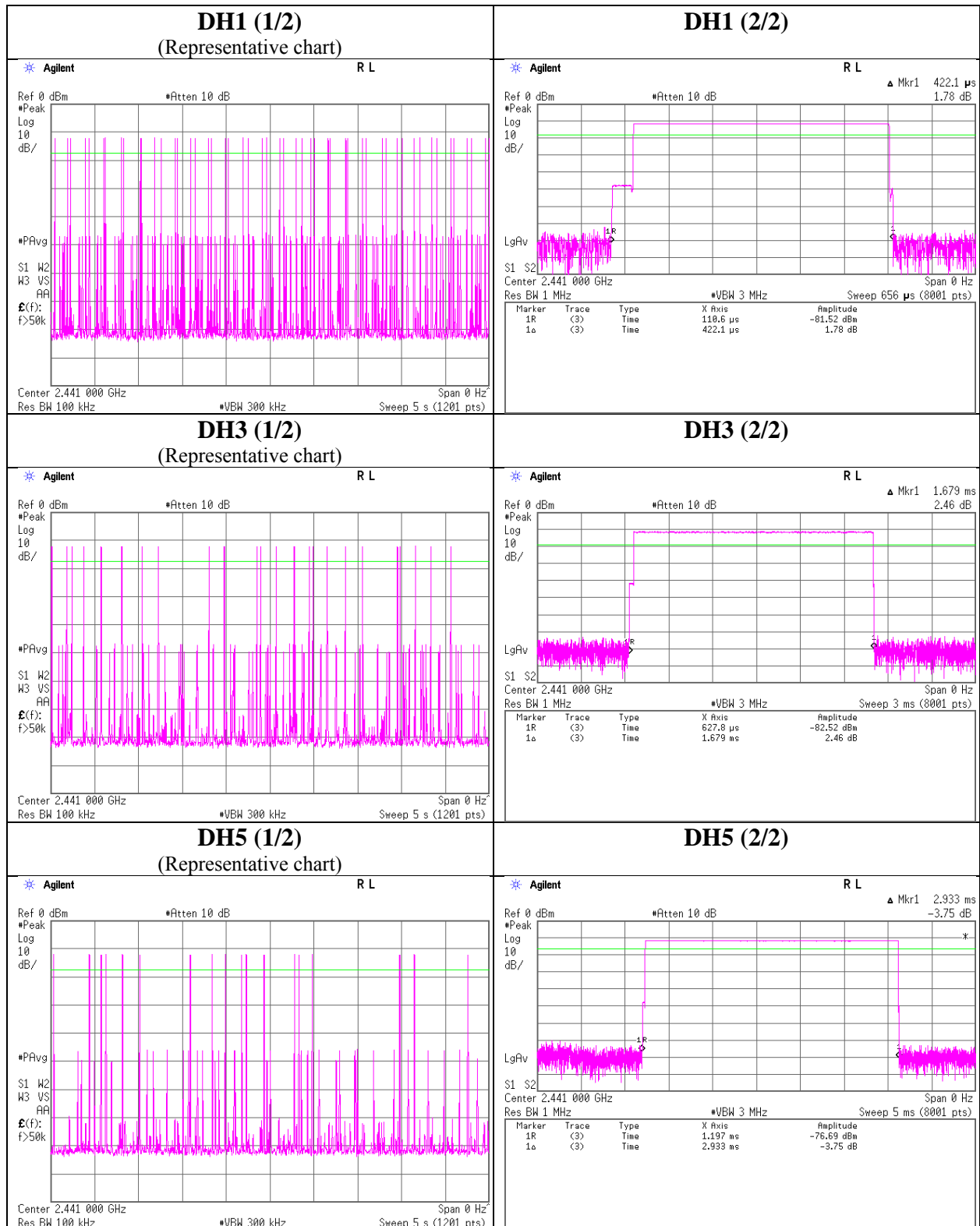
Mode	Sampling [times]					Average [times]
	1	2	3	4	5	
DH1	50	50	50	50	51	50.2
DH3	31	26	28	27	24	27.2
DH5	19	19	21	18	18	19
3DH1	51	50	51	49	48	49.8
3DH3	25	24	26	25	25	25
3DH5	19	17	23	25	20	20.8

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 $N \times 0.4s$, 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



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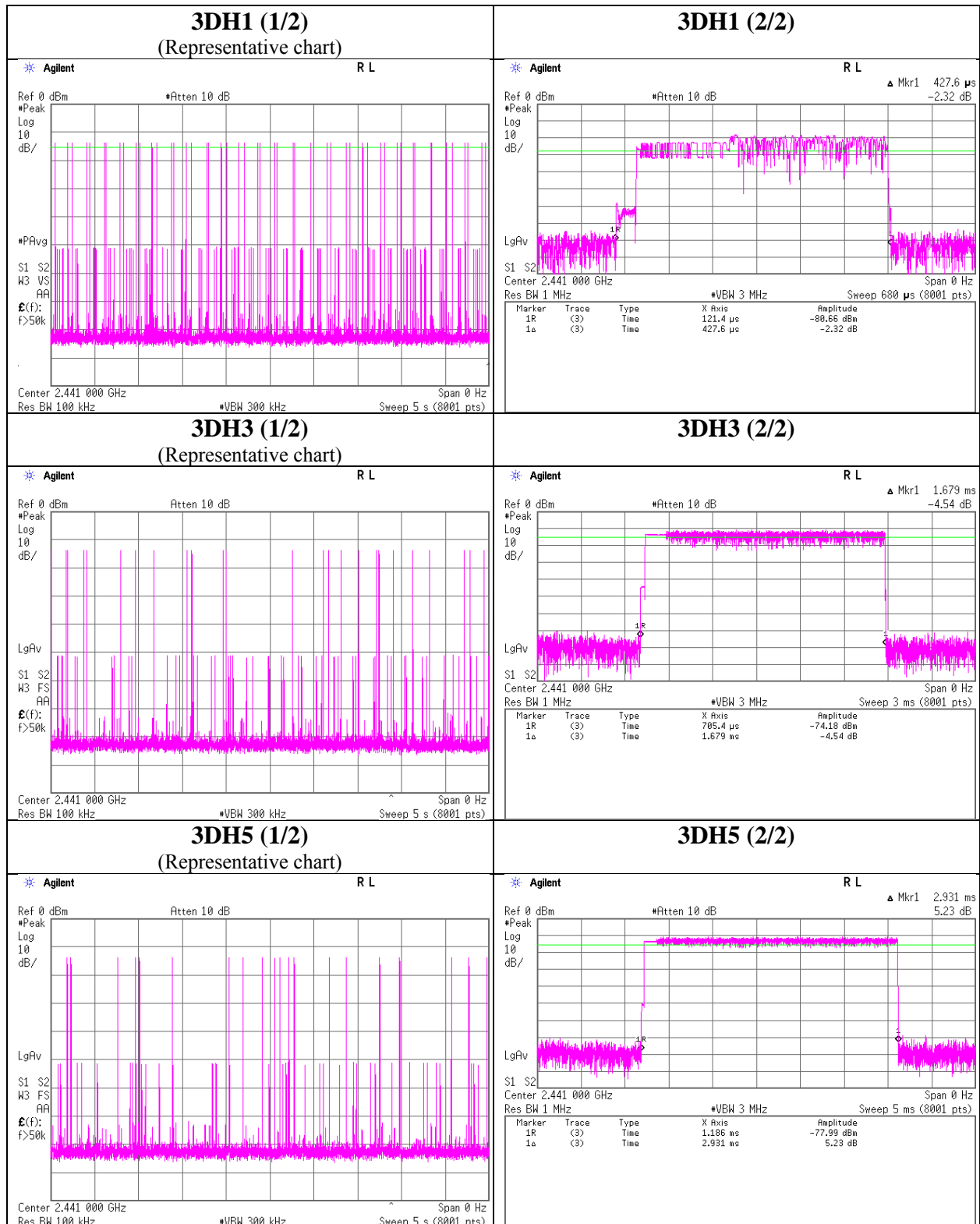
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Dwell time



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Maximum Peak Output Power

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 11922902S-A-R2
Date : August 29, 2017
Temperature / Humidity : 26 deg. C / 49 % RH
Engineer : Makoto Hosaka
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	-1.95	2.33	0.00	0.38	1.09	20.96	125	20.58
DH5	2441.0	-1.39	2.34	0.00	0.95	1.24	20.96	125	20.01
DH5	2480.0	-1.58	2.35	0.00	0.77	1.19	20.96	125	20.19
2DH5	2402.0	-0.57	2.33	0.00	1.76	1.50	20.96	125	19.20
2DH5	2441.0	-0.18	2.34	0.00	2.16	1.64	20.96	125	18.80
2DH5	2480.0	-0.43	2.35	0.00	1.92	1.56	20.96	125	19.04
3DH5	2402.0	-0.43	2.33	0.00	1.90	1.55	20.96	125	19.06
3DH5	2441.0	-0.12	2.34	0.00	2.22	1.67	20.96	125	18.74
3DH5	2480.0	-0.32	2.35	0.00	2.03	1.60	20.96	125	18.93

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: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.

As this device had AFH mode and frequency separation could not meet the requirement of over 20dB BW without 2/3 relaxation, 125mW power limit was applied to it.

Average Output Power
(Reference data for RF Exposure)

Test place : Shonan EMC Lab. No.5 Shielded Room
Report No. : 11922902S-A-R2
Date : August 29, 2017
Temperature / Humidity : 26 deg. C / 49 % RH
Engineer : Makoto Hosaka
Mode : Tx, Hopping Off

Mode	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Result (Time average)		Duty factor [dB]	Result (Burst power average)	
					[dBm]	[mW]		[dBm]	[mW]
DH5	2402.0	-3.30	2.33	0.00	-0.97	0.80	1.07	0.10	1.02
DH5	2441.0	-2.80	2.34	0.00	-0.46	0.90	1.07	0.61	1.15
DH5	2480.0	-2.94	2.35	0.00	-0.59	0.87	1.07	0.48	1.12
2DH5	2402.0	-4.32	2.33	0.00	-1.99	0.63	1.07	-0.92	0.81
2DH5	2441.0	-4.00	2.34	0.00	-1.66	0.68	1.07	-0.59	0.87
2DH5	2480.0	-4.20	2.35	0.00	-1.85	0.65	1.07	-0.78	0.84
3DH5	2402.0	-4.33	2.33	0.00	-2.00	0.63	1.06	-0.94	0.81
3DH5	2441.0	-4.04	2.34	0.00	-1.70	0.68	1.06	-0.64	0.86
3DH5	2480.0	-4.26	2.35	0.00	-1.91	0.64	1.06	-0.85	0.82

Sample Calculation:

Result (Time average) = Reading + Cable Loss (including the cable(s) customer supplied) + Attenuator Loss

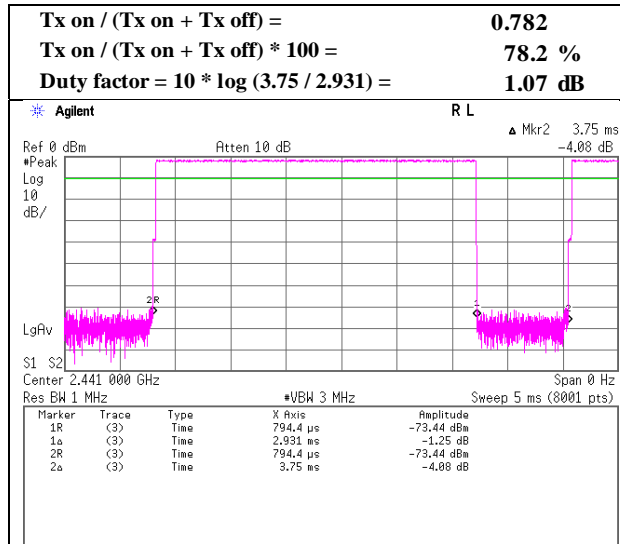
Result (Burst power average) = Time average + Duty factor

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

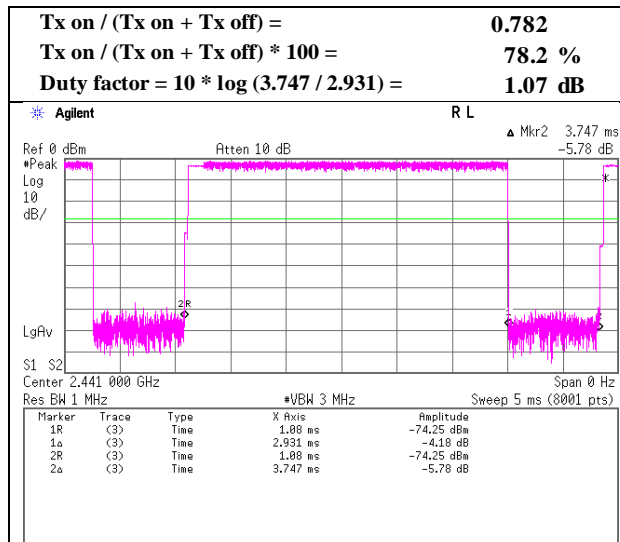
Burst Rate Confirmation

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 29, 2017
Temperature / Humidity	26 deg. C / 49 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off

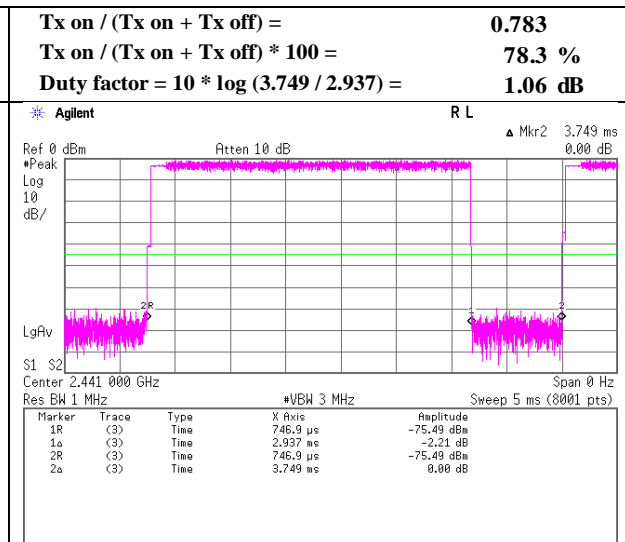
DH5



2DH5



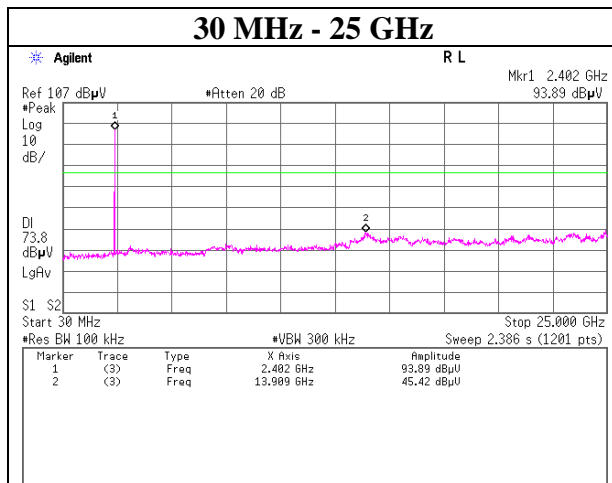
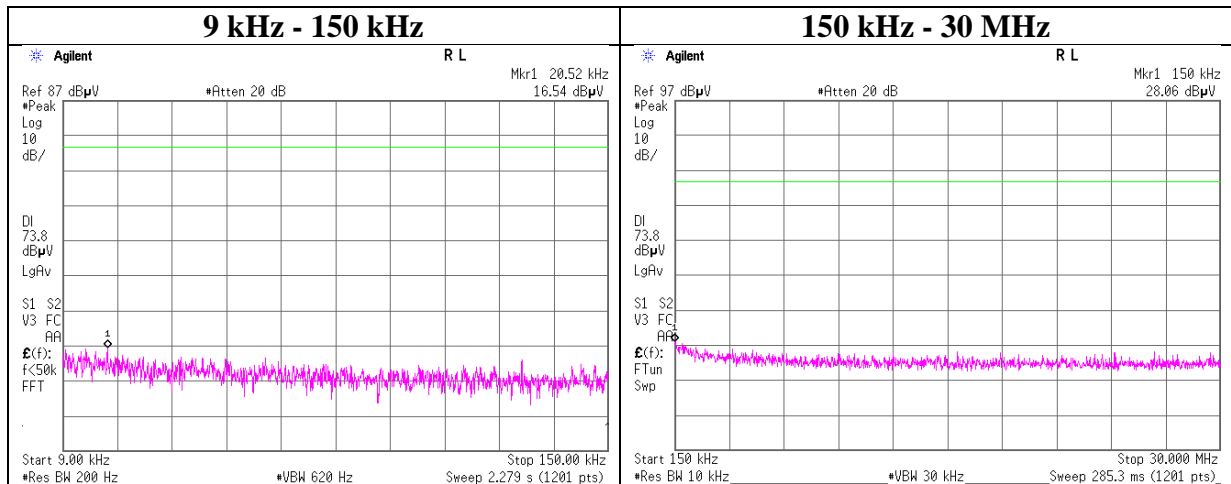
3DH5



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 28, 2017
Temperature / Humidity	25 deg. C / 40 % RH
Engineer	Hosaka Makokto
Mode	Tx, Hopping Off, DH5

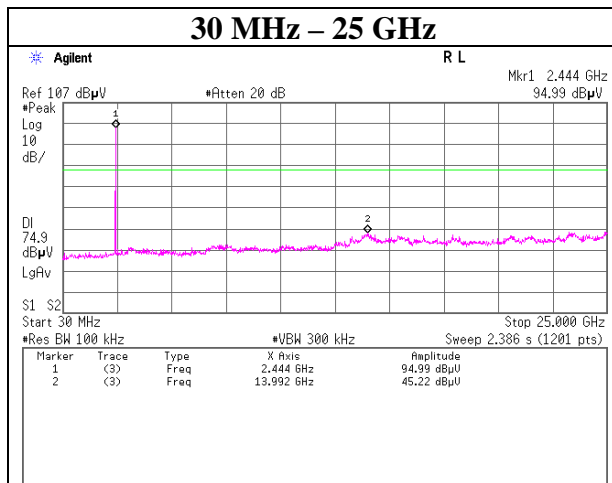
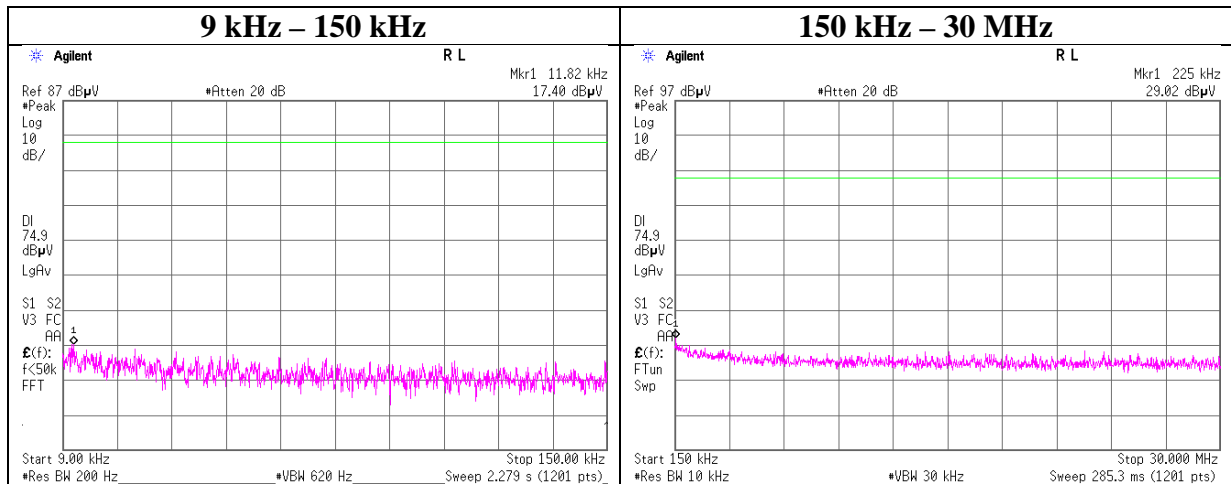
2402 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Measurement Room
Report No.	11922902S-A-R2
Date	August 28, 2017
Temperature / Humidity	25 deg. C / 40% RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off, DH5

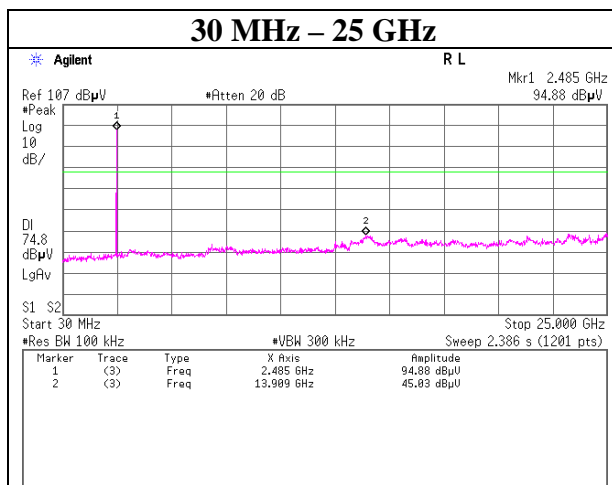
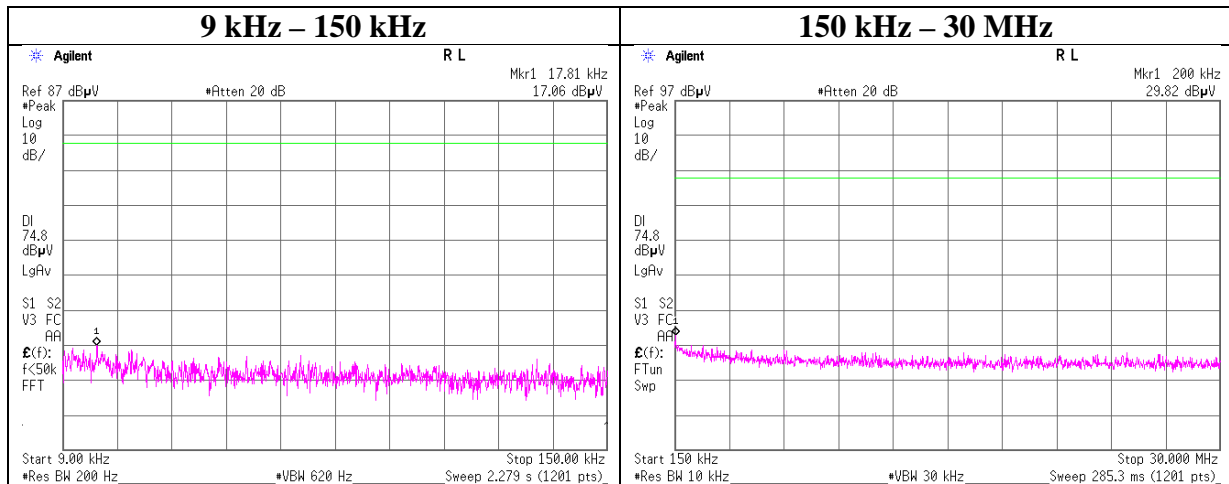
2441 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.1 Shielded Room
Report No.	11922902S-A-R2
Date	August 28, 2017
Temperature / Humidity	25 deg. C / 40 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off, DH5

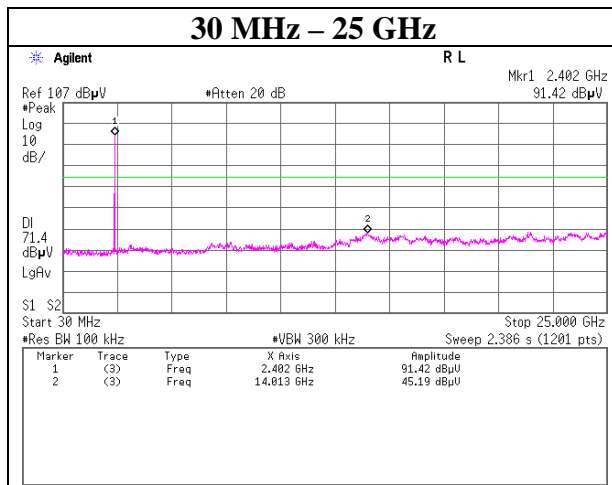
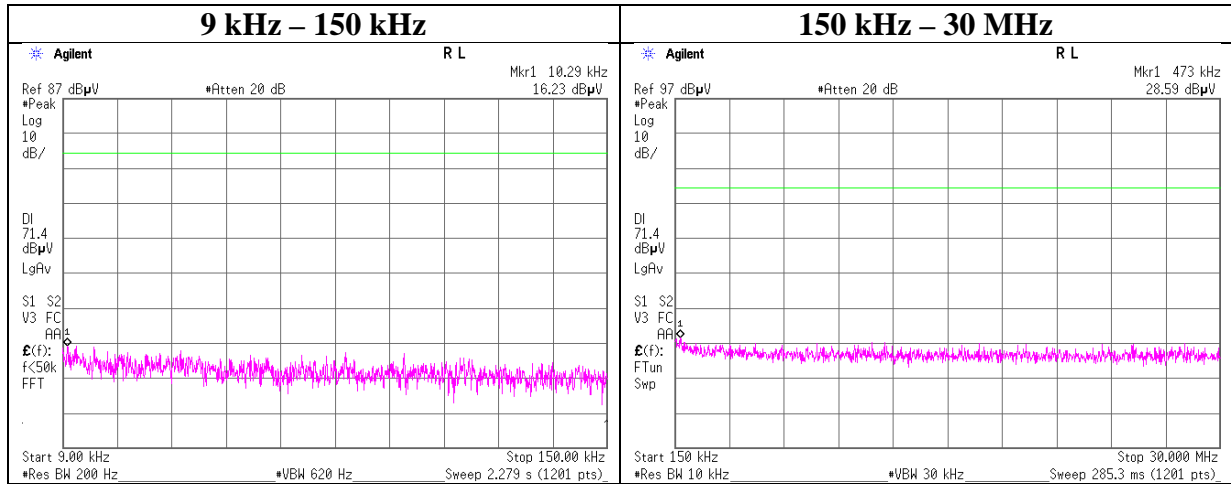
2480 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.1 Shielded Room
Report No.	11922902S-A-R2
Date	August 29, 2017
Temperature / Humidity	26 deg. C / 49 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off, 3DH5

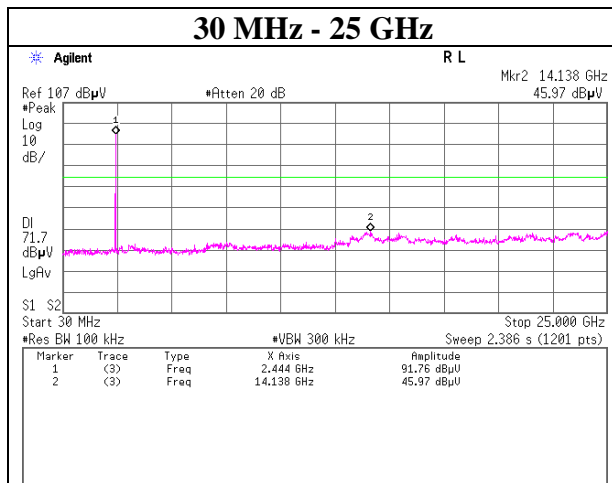
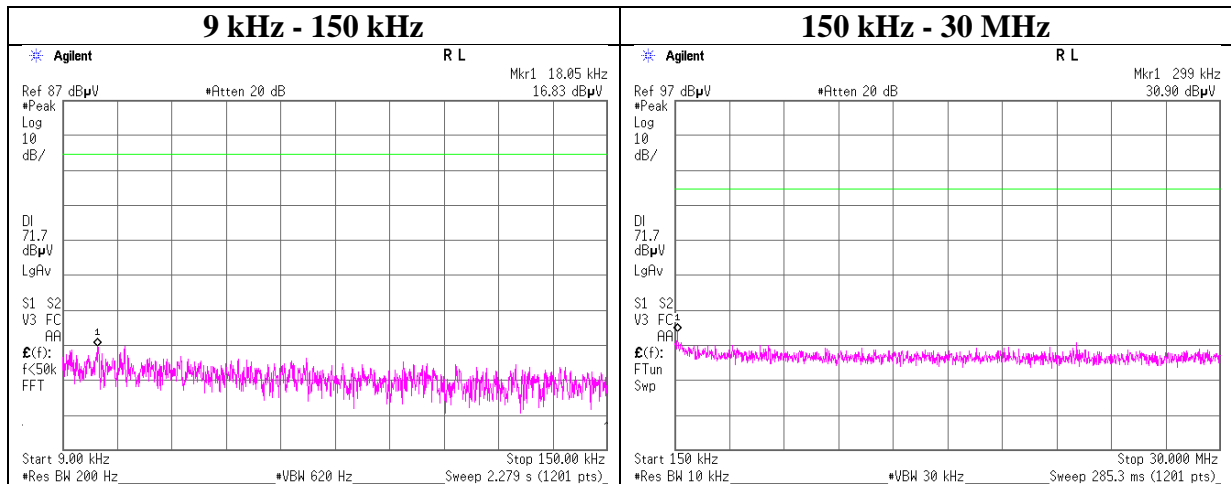
2402 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 29, 2017
Temperature / Humidity	26 deg. C / 49 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off, 3DH5

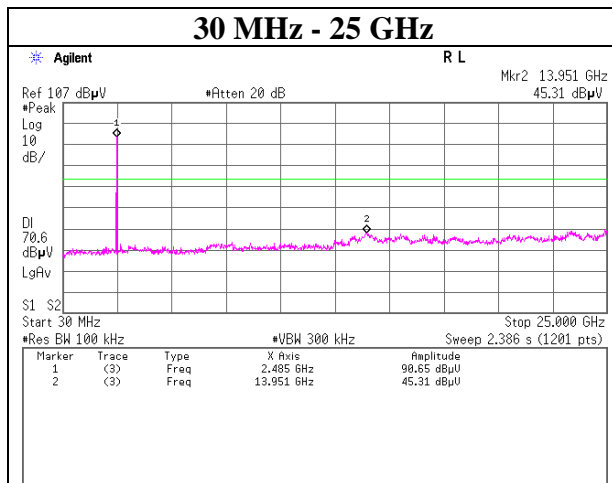
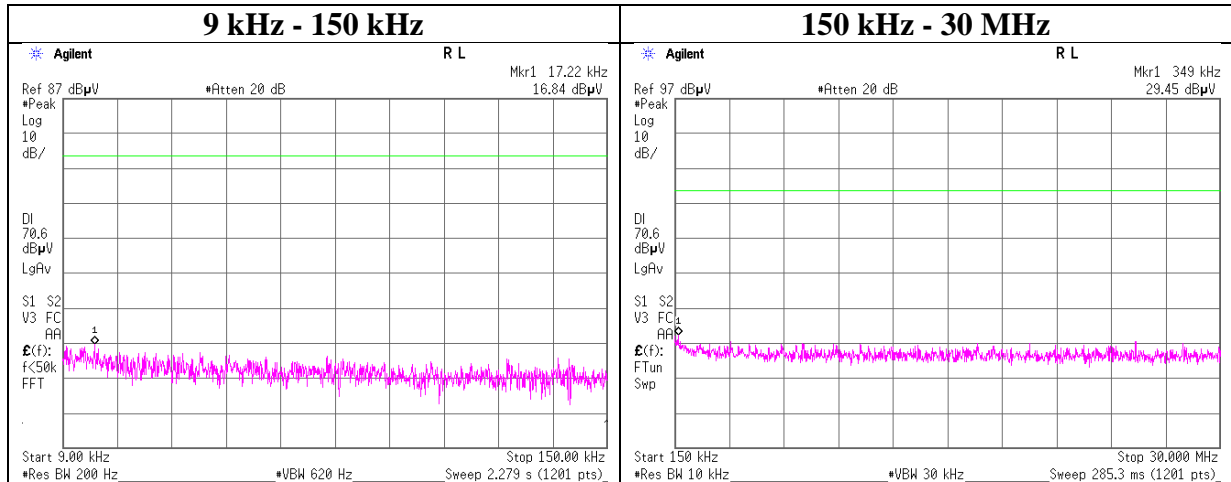
2441 MHz



Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 29, 2017
Temperature / Humidity	26 deg. C / 49 % RH
Engineer	Makoto Hosaka
Mode	Tx, Hopping Off, 3DH5

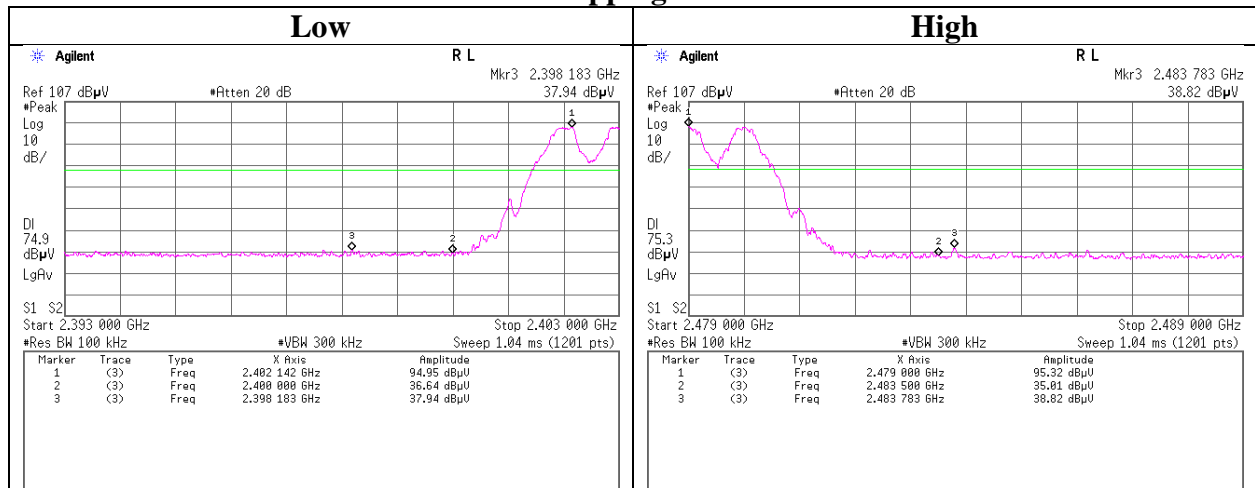
2480 MHz



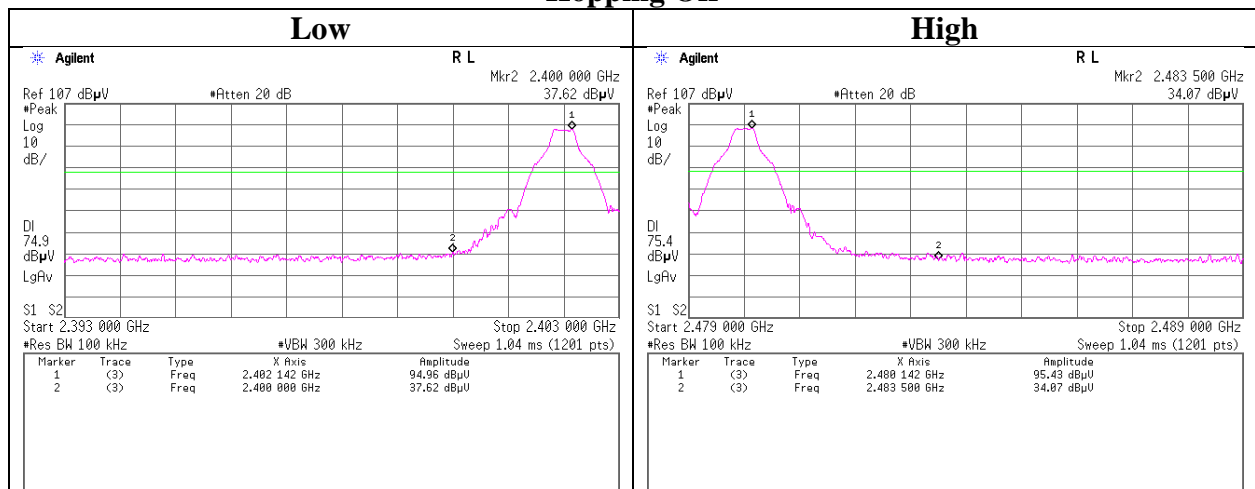
Conducted Emission Band Edge compliance

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 28, 2017
Temperature / Humidity	25 deg. C / 40 % RH
Engineer	Makoto Hosaka
Mode	Tx DH5

Hopping On



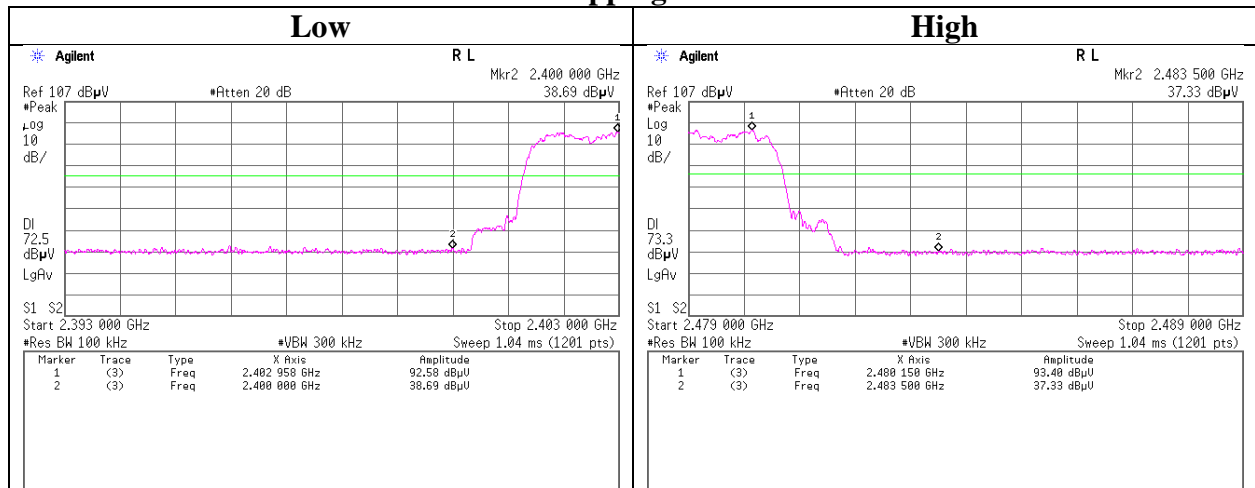
Hopping Off



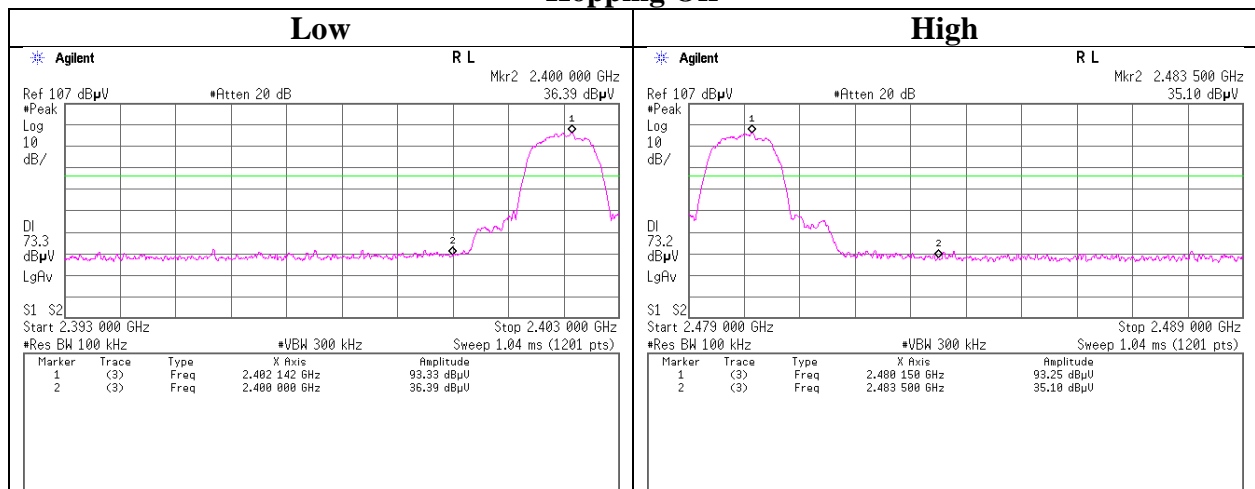
Conducted Emission Band Edge compliance

Test place	Shonan EMC Lab. No.5 Shielded Room
Report No.	11922902S-A-R2
Date	August 29, 2017
Temperature / Humidity	26 deg. C / 49 % RH
Engineer	Makoto Hosaka
Mode	Tx 3DH5

Hopping On



Hopping Off



UL Japan, Inc.

Shonan EMC Lab.

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

Telephone : +81 463 50 6400

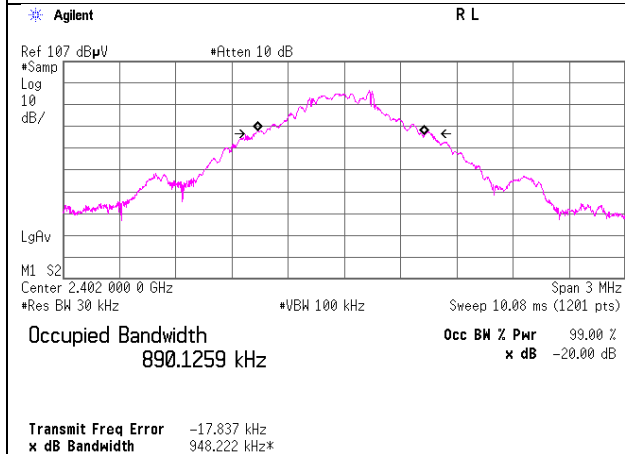
Facsimile : +81 463 50 6401

99%Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room	
Report No.	11922902S-A-R2	
Date	August 28, 2017	August 29, 2017
Temperature / Humidity	25 deg. C / 40 % RH	26 deg. C / 49 % RH
Engineer	Makoto Hosaka	Makoto Hosaka
Mode	Tx Hopping Off	

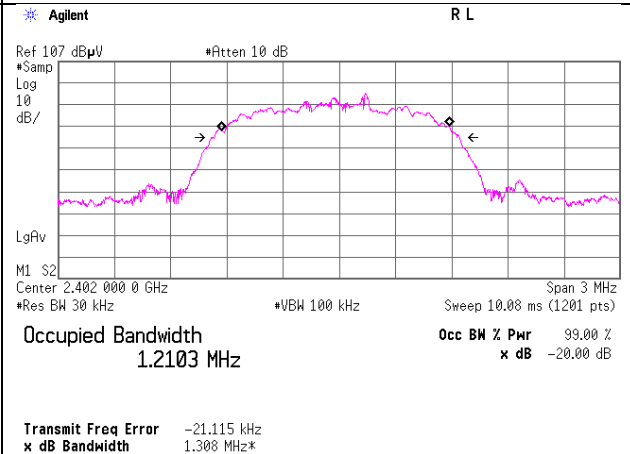
Hopping Off, DH5

2402 MHz

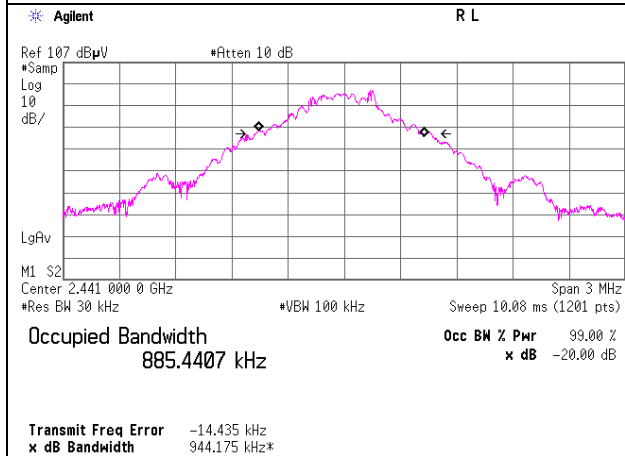


Hopping Off, 3DH5

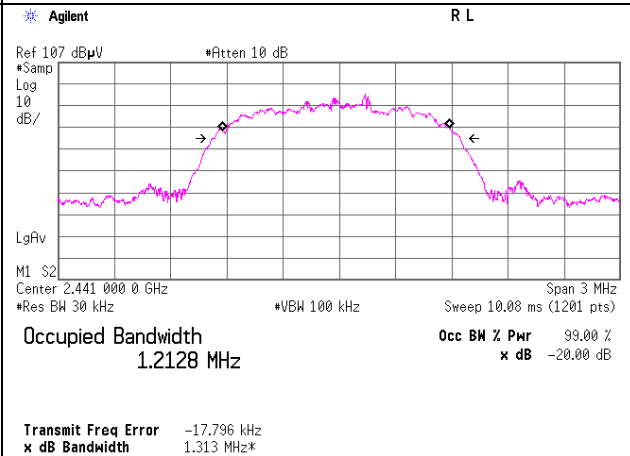
2402 MHz



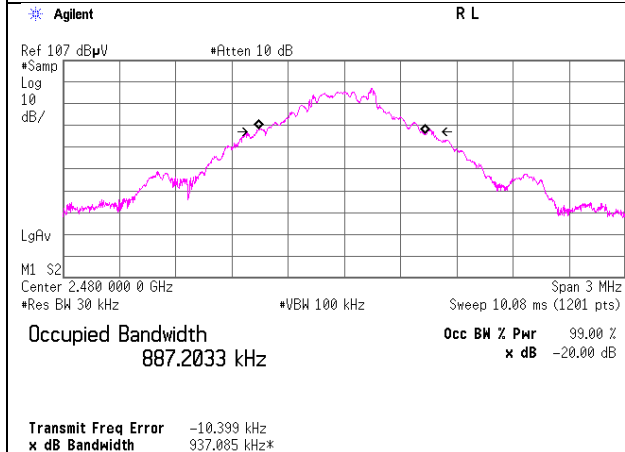
2441 MHz



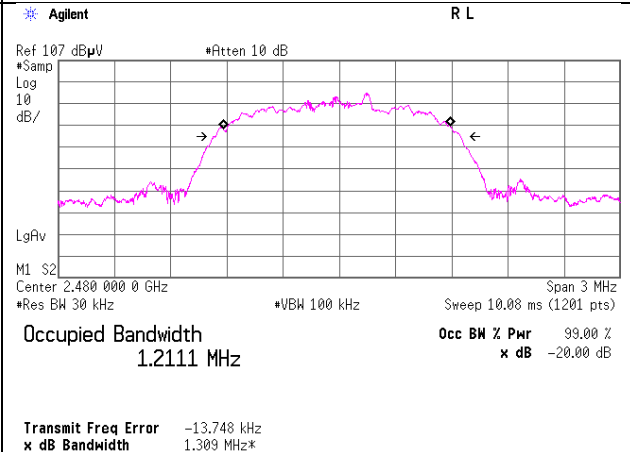
2441 MHz



2480 MHz



2480 MHz



UL Japan, Inc.

Shonan EMC Lab.

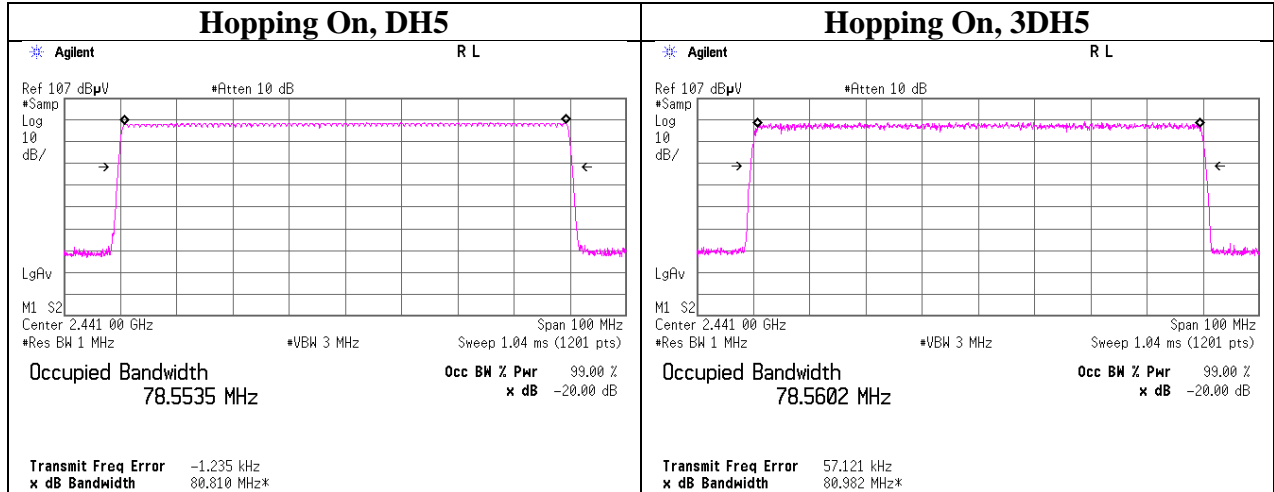
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken, 259-1220 JAPAN

Telephone : +81 463 50 6400

Facsimile : +81 463 50 6401

99% Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room	
Report No.	11922902S-A-R2	
Date	August 28, 2017	August 29, 2017
Temperature / Humidity	25 deg. C / 40 % RH	26 deg. C / 49 % RH
Engineer	Makoto Hosaka	
Mode	Tx Hopping On	



APPENDIX 2: Test instruments

Test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
SCC-G32	Coaxial Cable	Junkosha	MWX241-02 000KMSKM S	OCT-09-13- 005	AT	2016/11/07 * 12
SAT10-12	Attenuator	Weinschel Corp.	54A-10	81601	AT	2017/03/23 * 12
SRENT-08	Spectrum Analyzer	Agilent	E4448A	MY501800 19	AT	2016/10/24 * 12
KTS-07	Digital Tester	SANWA	PC500	7019232	AT	2016/10/17 * 12
SOS-09	Humidity Indicator	A&D	AD-5681	4061484	AT	2016/12/13 * 12
SPM-07	Power Meter	Agilent	8990B	MY510027 2	AT	2017/05/01 * 12
SPSS-04	Power sensor	Agilent	N1923A	MY532600 9	AT	2017/05/01 * 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: AT: Antenna Terminal Conducted test