



RADIO TEST REPORT

Test Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
Type of Equipment : Wireless Stereo Headset
Model No. : DR-BT101
FCC ID : AK8DRBT101
Test regulation : FCC Part15 Subpart C: 2008
Test result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.

Date of test: October 27, 30 and November 6, 25, 2008

Tested by: T. Arai & A. Sato
Tatsuya Arai Akira Sato

F. Matsuo
Fumiaki Matsuo

Approved by: T. Imamura
Toyokazu Imamura
Engineer of Yamakita EMC Lab.

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MF060b (18.06.07)

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1 Applicant information

Company Name : Sony Corporation
Address : Shinagawa INTERCITY C Tower
2-15-3 Konan, Minato-ku, Tokyo, 108-6201 JAPAN
Telephone Number : +81-3-5769-5640
Facsimile Number : +81-3-5769-5915
Contact Person : Kikuo Murata

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

2.1 Identification of E.U.T.

Type of Equipment : Wireless Stereo Headset
Model No. : DR-BT101
Serial No. : Radiated emission test: QA34
Antenna port conducted test: 064 (Inquiry mode), 130 (other mode)
Rating : DC3.7V
Country of Mass-production : Thailand
Receipt Date of Sample : October 27 and November 4, 2008
Condition of EUT : Engineering 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: DR-BT101 (referred to as the EUT in this report) is a Wireless Stereo Headset.

Equipment type : Transceiver
Frequency of operation : 2402-2480MHz
Clock frequency : DD converter: 1.333MHz, Module controller clock: 24MHz,
Module clock: 16MHz
Bandwidth & channel spacing : 79MHz & 1MHz
Type of modulation : FHSS
Antenna type : Pattern antenna
Antenna connector type : Integral
Antenna gain : 2.0dBi
ITU code : F1D, G1D
Operation temperature range : 0 to +45 deg.C.

FCC Part15.31 (e)

The Bluetooth module is provided with stable power supply (DC 1.5 V), therefore, the equipment complies power supply regulation.

FCC Part15.203 Antenna requirement

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

FCC Part15.207 Conducted emission

The EUT is not supplied via AUX and other port is used for charging. During charging, the EUT doesn't perform BT operation. Although the AUX was insulated from the power supply, leakage of disturbance power was checked and it was not detected. Therefore, the EUT is not applicable to the test since it is considered as DC supplied equipment.

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3 Test specification, procedures and results

3.1 Test specification

Test specification : FCC Part15 Subpart C: 2008, final revised on May 19, 2008
 Title : FCC 47CFR Part15 Radio Frequency Device, Subpart C Intentional Radiators
 Section 15.207 Conducted limits
 Section 15.209 Radiated emission limits, general requirements
 Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz,
 and 5725-5850MHz

The EUT complies with FCC Part15 Subpart B: 2008, final revised on May 19, 2008. Refer to the test report 29CE0154-YK-01-C.

3.2 Procedures & results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC Section 15.207	-	N/A *1)	N/A	N/A
Carrier frequency separation	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)	Conducted	N/A	*See data.	Complied
20dB bandwidth	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)	Conducted	N/A		Complied
Number of hopping frequency	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum peak output power	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (b)(1)	Conducted	N/A		Complied
Band edge compliance & Spurious emission	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (d) Section15.209	Conducted/ Radiated	N/A		0.4dB (2400.00MHz, AV, Vertical, Tx 2402MHz, 3DH5)

Note: UL Japan's EMI Work Procedures No.QPM05 and QPM15.

*1) The test is not applicable since the EUT has no AC mains.

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3.3 Addition to standard

Item	Test Procedure	Specification	Remarks	Worst Margin	Results
Occupied Bandwidth (99%)	ANSI C63.4:2003 13. Measurement of intentional radiators RSS-Gen 4.6.1	RSS-Gen 4.6.1	Conducted	-	Complied

* 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.

	No.1 open site (±)	No.2 open site (±)	No.1 anechoic chamber (±)
Radiated emission (3m)			
30-300MHz	4.5 dB	4.4 dB	4.5 dB
300-1000MHz	4.3 dB	4.3 dB	4.3 dB
1GHz<	5.7 dB	5.7 dB	5.7 dB

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

Antenna port conducted test	(±)
Below 1GHz	0.4dB
1GHz and above	0.7dB

3.5 Test location

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Facsimile number : +81 465 77 2112

NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on July 23, 2008 (Registration No.: 95486).

IC Registration No. : 2973B-1

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on February 27, 2008 (Registration No.: 466226).

IC Registration No. : 2973B-3

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on October 22, 2008 (Registration No.: 95967).

IC Registration No. : 2973B-2

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 Semi-anechoic chamber	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

Open test site	Maximum measurement distance
No.1 open test site	30m
No.2 open test site	10m

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4 System test configuration

4.1 Operating mode

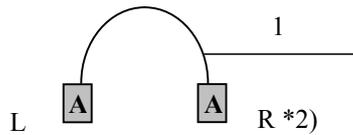
The system was configured in typical fashion (as a customer would normally use it) for testing.

Test item	Operating mode	Tested frequency
Carrier frequency separation	Transmitting Hopping ON (DH5/3DH5)/Inquiry, Payload: PRBS9	-
20dB bandwidth	Transmitting Hopping OFF (DH5/3DH5)/Inquiry, Payload: PRBS9	2402MHz, 2441MHz, 2480MHz
Number of hopping frequency	Transmitting Hopping ON (DH5/3DH5)/Inquiry, Payload: PRBS9	-
Dwell time	Transmitting (Hopping ON) -DH1, -DH3, -DH5 -3DH1, -3DH3, -3DH5 -Inquiry	-
Maximum peak output power	Transmitting Hopping OFF (DH5/3DH5)/Inquiry, Payload: PRBS9 -DH5 -2DH5 -3DH5	2402MHz, 2441MHz, 2480MHz
Band edge compliance & Spurious emission (Conducted)	Transmitting (DH5/3DH5), Payload: PRBS9 -Hopping ON/Inquiry -Hopping OFF	Band edge compliance: 2402MHz, 2480MHz
(Radiated)	Transmitting (DH5/3DH5), Payload: PRBS9	Spurious emission: 2402MHz, 2441MHz, 2480MHz
99% occupied bandwidth	Transmitting (DH5/3DH5), Payload: PRBS9 -Hopping ON -Hopping OFF	2402MHz, 2441MHz, 2480MHz

*As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload (except Dwell time test)

*Remarks: 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. However, the limit level 125mW of AFH mode was used for the test.

4.2 Configuration and peripherals



* Test data was taken under worse case conditions.

Description of EUT

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Wireless Stereo Headset	DR-BT101	*1)	SONY	EUT

*1) Radiated emission test: QA34, Antenna port conducted test: 064 (Inquiry mode), 130 (other mode)

*2) Bluetooth module is installed in R side.

List of cables used

No.	Name	Length (m)	Serial number	
			Cable	Connector
1	USB Cable	1.0	Shielded	Shielded

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5 Carrier frequency separation

Test procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date: October 30 and November 6, 2008

Test engineer : Tatsuya Arai

6 20dB bandwidth & Occupied bandwidth (99%)

Test procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

The channel separation in Hopping mode and Inquiry mode was separated by 25kHz and 2/3 of the 20dB bandwidth.

Summary of the test results: Pass

Date: November 25, 2008

Test engineer : Tatsuya Arai

7 Number of hopping frequency

Test procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date: October 30 and November 6, 2008

Test engineer : Tatsuya Arai

8 Dwell time

Test procedure

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date: October 30 and November 6, 2008

Test engineer : Tatsuya Arai

9 Maximum peak output power

Test procedure

The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Summary of the test results: Pass

Date: October 30 and November 6, 2008

Test engineer : Tatsuya Arai

10 Out of band emissions (Antenna port conducted)

Test procedure

The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

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

Summary of the test results: Pass

Date: October 30 and November 6, 2008

Test engineer : Tatsuya Arai

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11 Out of band emissions (Radiated)

11.1 Operating environment

The test was carried out in No.1 anechoic chamber.

11.2 Test configuration

EUT was placed on a urethane platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane to prevent the reflection influence. The setup was not the one for a system which is specified in ANSI C63.4: 2003. Photographs of the setup are shown in Appendix 1.

11.3 Test conditions

Frequency range : 30MHz - 26GHz
 Test distance : 3m

11.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m. The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity. The measurements were performed for both vertical and horizontal antenna polarization. Measurements were performed with QP, PK, and AV detector.

The radiated emission measurements were made with the following detector function of the test receiver.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz AV *1): RBW: 1MHz/VBW: See data
Measuring antenna	Biconical (30-300MHz) Logperiodic (300MHz-1GHz)	Horn

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

The equipment was previously checked at each position of three axes X, Y and Z. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 11. With the position, the noise levels of all the frequencies were measured.

	Below 1GHz	Above 1GHz
Horizontal	Y	Z
Vertical	Z	Y

11.5 Band edge

Band edge level at 2390MHz, 2400MHz and 2483.5MHz is below the limits of FCC 15.209. Refer to the data of radiated emission.

11.6 Results

Summary of the test results : Pass
 No noise was detected above the 5th order harmonics.

Date: October 27 and 30, 2008

Test engineer : Akira Sato and Fumiaki Matsuo

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APPENDIX 1: Photographs of test setup

Page 10	:	Radiated emission
Page 11	:	Pre-check of the worst position

APPENDIX 2: Test data

Page 12	:	Carrier frequency separation
Page 13 - 15	:	20dB bandwidth
Page 16 - 20	:	Number of hopping frequency
Page 21 - 34	:	Dwell time
Page 35	:	Maximum peak output power
Page 36 - 53	:	Out of band emissions (Antenna port conducted)
Page 54 - 71	:	Out of band emissions (Radiated)
Page 72 - 74	:	Occupied bandwidth

APPENDIX 3: Test instruments

Page 75	:	Test instruments
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FCC ID : AK8DRBT101
Test report No. : 29CE0154-YK-01-A
Page : 10 of 75
Issued date : December 1, 2008

Short-term confidentiality is applied. Please refer to the other test setup photo document for the test setup photo.

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MF060b (18.06.07)

FCC ID : AK8DRBT101
Test report No. : 29CE0154-YK-01-A
Page : 11 of 75
Issued date : December 1, 2008

Short-term confidentiality is applied. Please refer to the other test setup photo document for the test setup photo.

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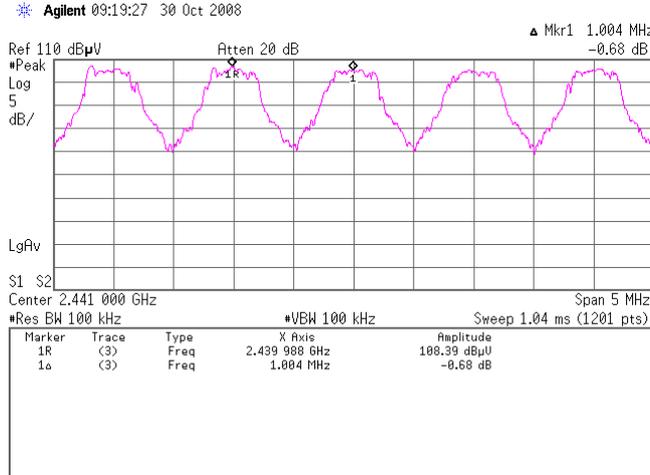
MF060b (18.06.07)

Channel Separation (Regulation: FCC 15.247(a)(1))

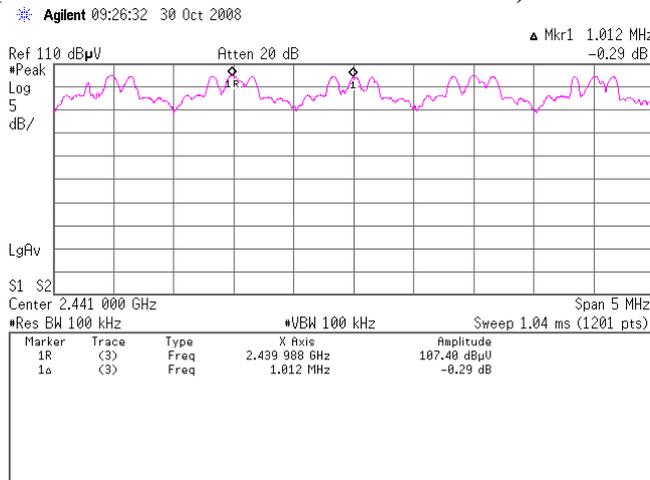
UL Japan, Inc. Yamakita EMC lab. No.2 / 3 shielded room
 Date: 2008/10/30 2008/11/6
 Temp: 24 deg. C. 22 deg. C.
 Humid: 40 % 58 %
 Engineer: Tatsuya Arai
 Test mode: Transmitting

Limit: $\geq 25\text{kHz}$ or $2/3 * 20\text{dB Bandwidth}$ (Power: No greater than 125mW)

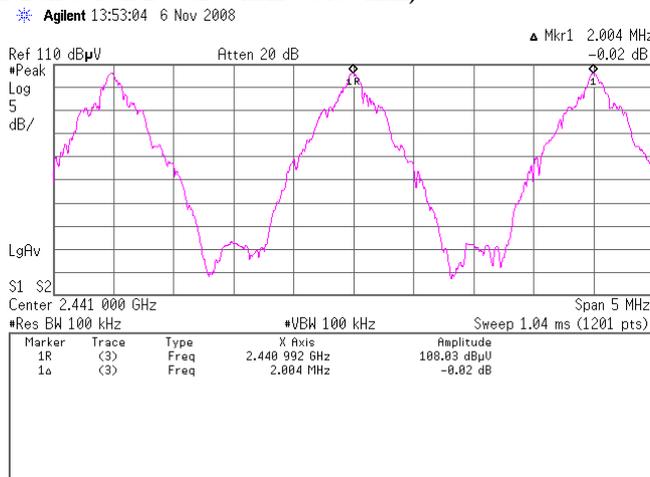
1. Hopping, DH5: 1.004MHz ($2/3 * 20\text{dB Bandwidth}: 2/3 * 935.0\text{kHz} = 623.3\text{kHz}$)



2. Hopping, 3DH5: 1.012MHz ($2/3 * 20\text{dB Bandwidth}: 2/3 * 1.2700\text{MHz} = 846.7\text{kHz}$)



3. Inquiry: 2.004MHz ($2/3 * 20\text{dB Bandwidth}: 2/3 * 820.0\text{kHz} = 546.7\text{kHz}$)

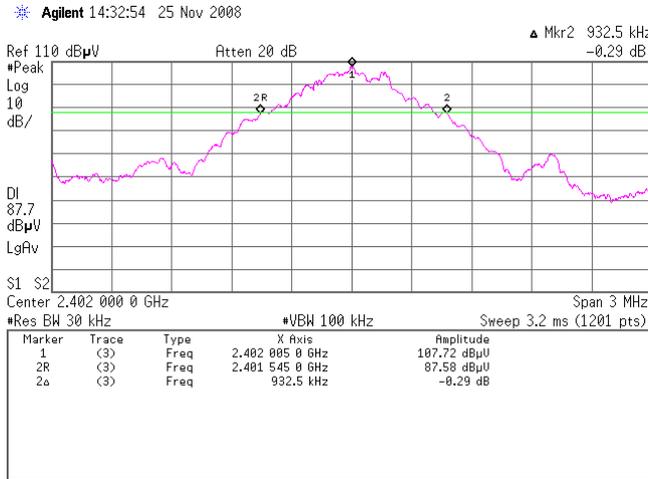


20dB Bandwidth (Regulation: FCC 15.247(a)(1))

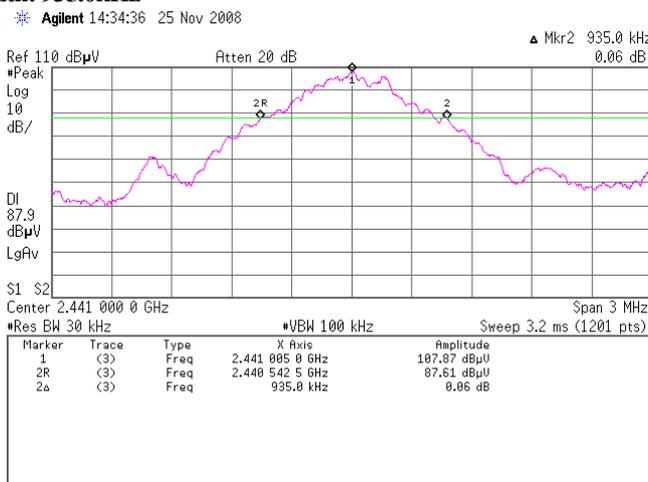
UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: 2008/11/25
 Temp/Humid.: 20 deg. C. / 41 %
 Engineer: Tatsuya Arai
 Test mode: Transmitting

[Hopping off, DHS]

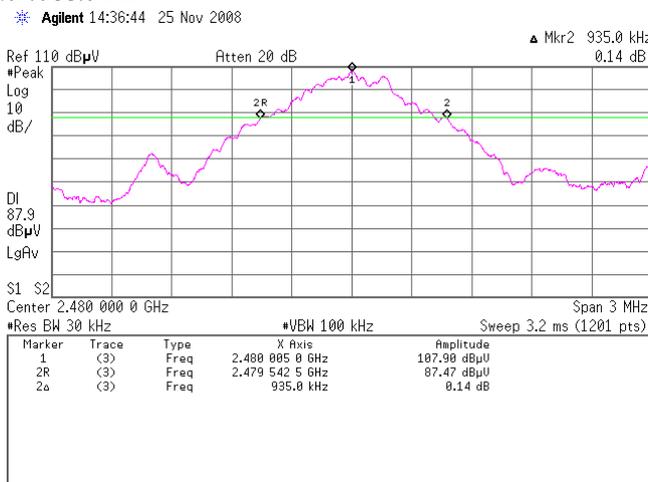
1. ch : 2402MHz/20dB Bandwidth: 932.5kHz



2. ch : 2441MHz/20dB Bandwidth: 935.0kHz

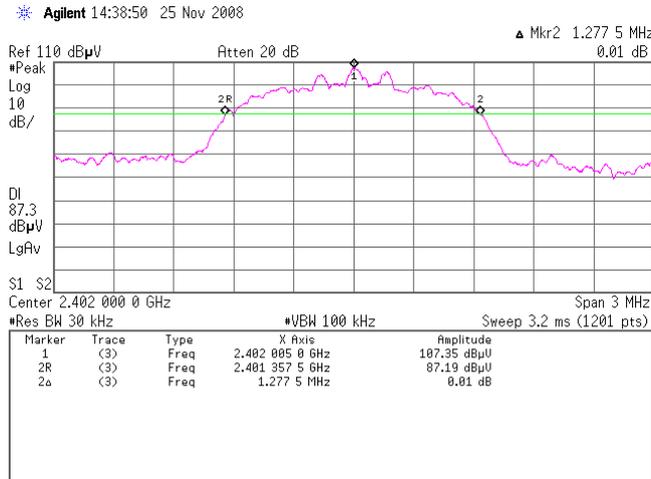


3. ch : 2480MHz/20dB Bandwidth: 935.0kHz

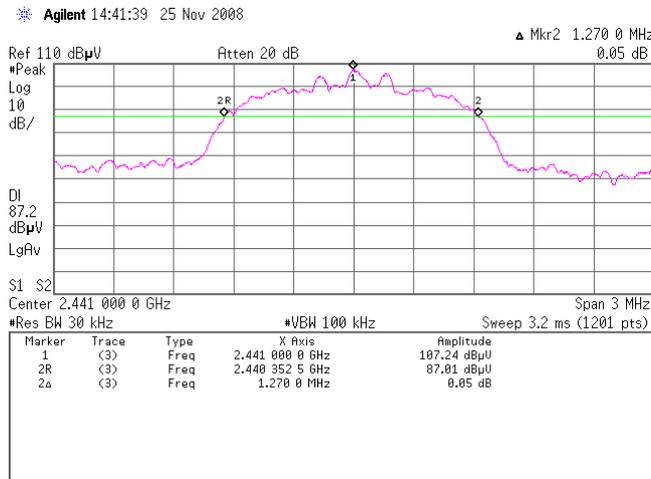


[Hopping off, 3DH5]

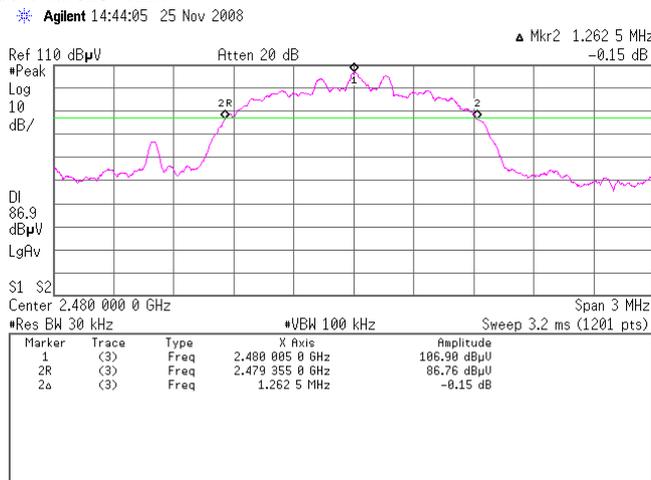
4. ch : 2402MHz/20dB Bandwidth: 1.2775MHz



5. ch : 2441MHz/20dB Bandwidth: 1.2700MHz

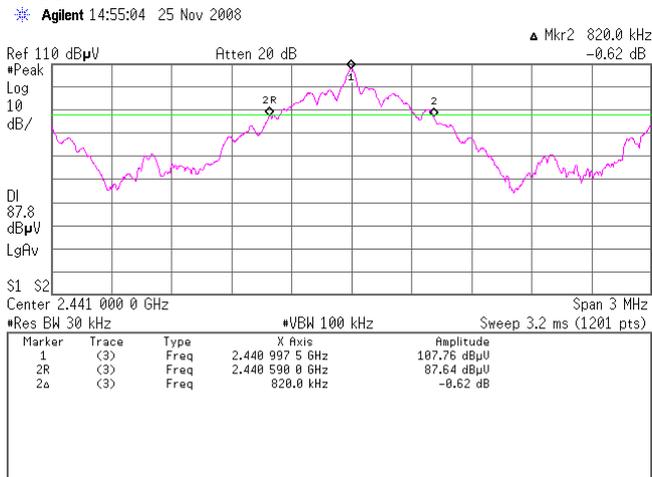


6. ch : 2480MHz/20dB Bandwidth: 1.2625MHz



[Inquiry]

7. Inaury/20dB Bandwidth: 820.0kHz

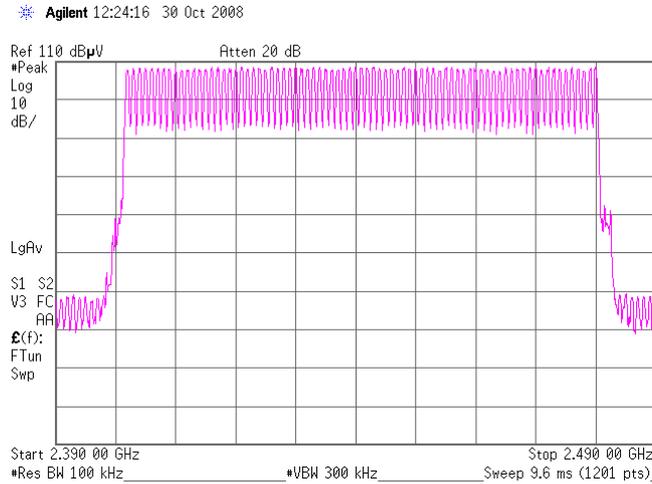


Channel Utilization (Regulation: FCC 15.247(a)(1)(iii))

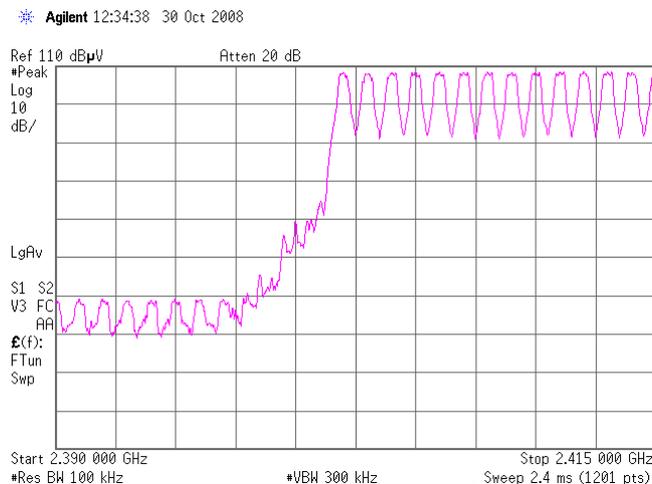
UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: 2008/10/30
 Temp/Humid.: 24 deg. C. / 40 %
 Engineer: Tatsuya Arai
 Test mode: Transmitting

Hopping, DH5: 79ch

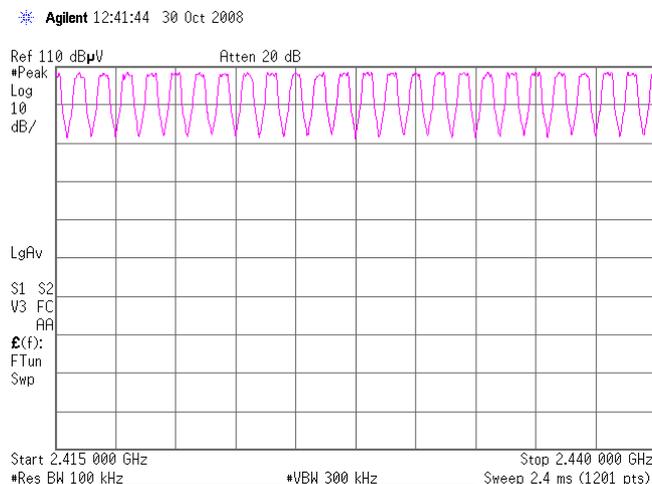
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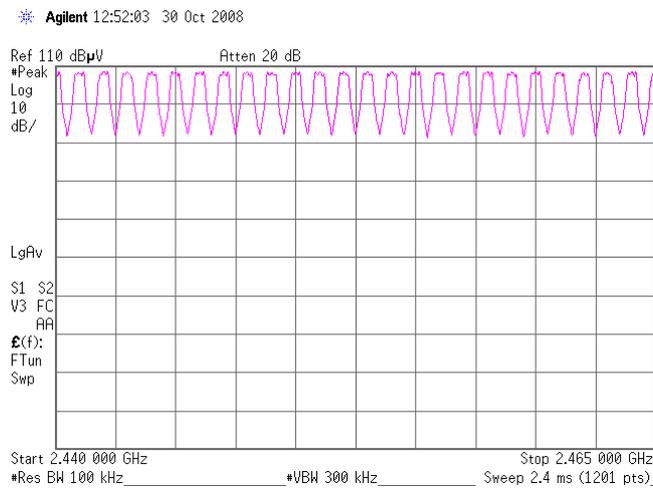
2.



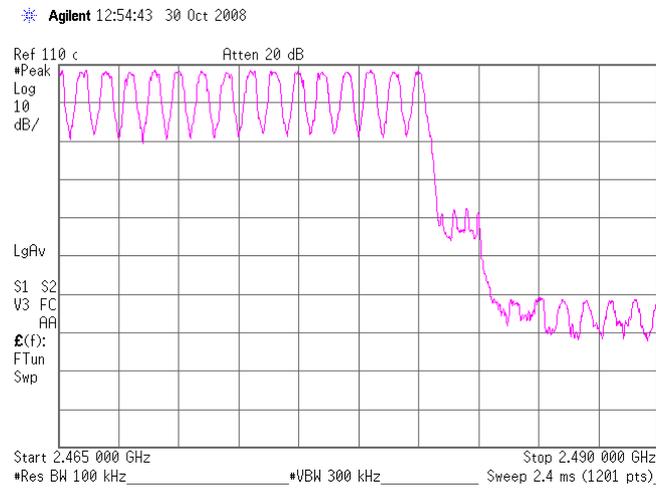
3.



4.

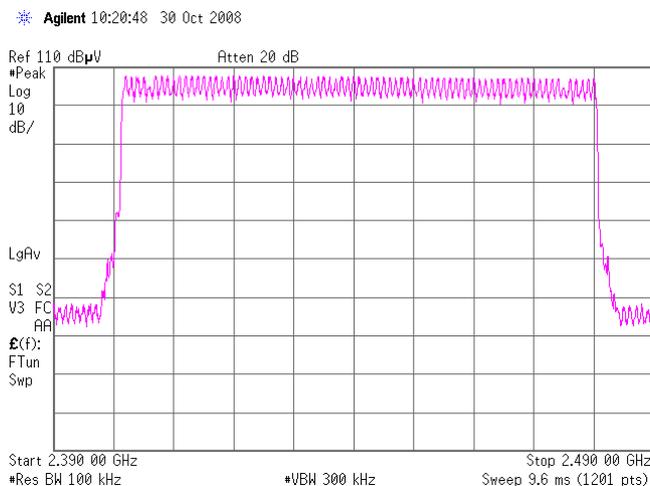


5.

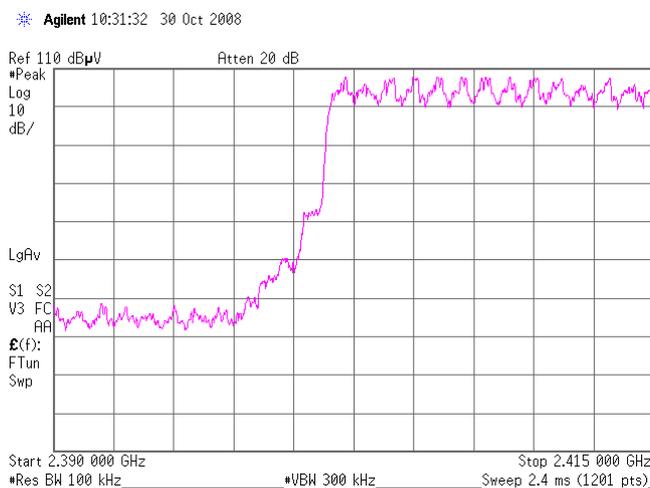


Hopping, 3DHS: 79ch

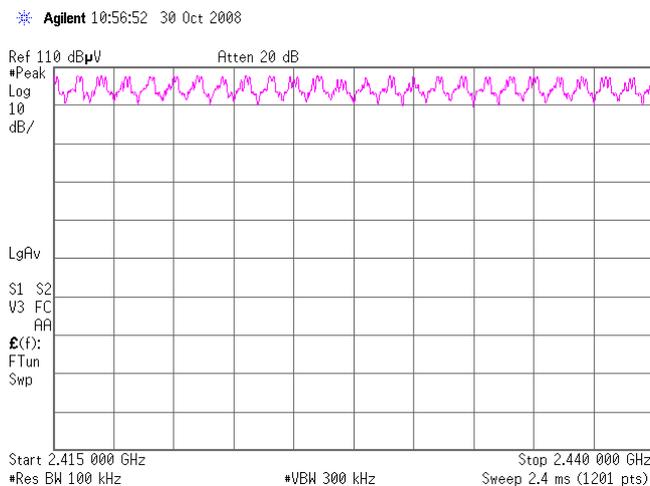
1.



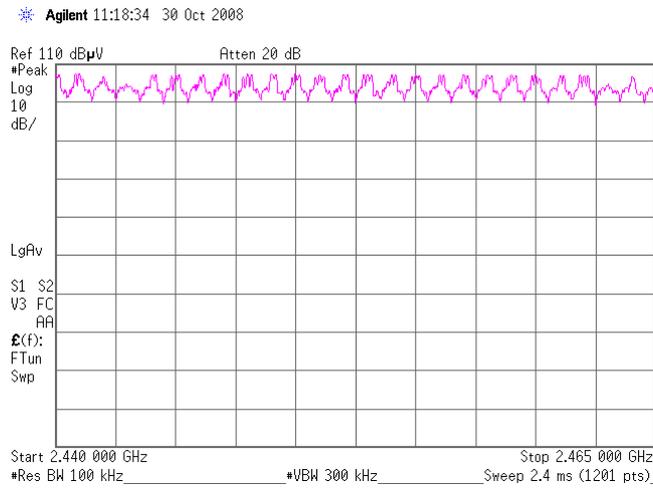
2.



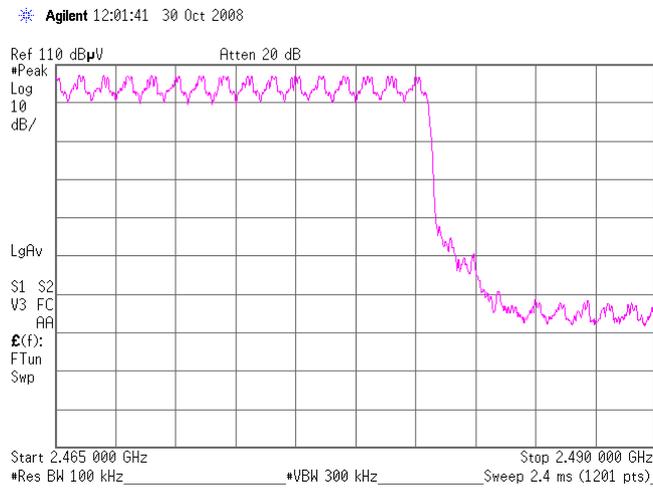
3.



4.



5.



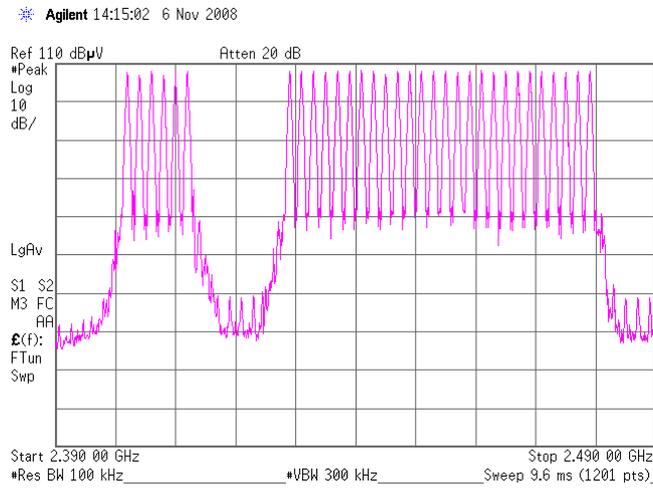
Company: Sony Corporation
Kind of Equipment: Wireless Stereo Headset
Serial No.: No.064 (Inquiry), No.130 (other)

Report No.:
Model No.:
Power:

29CE0154-YK-01-A
DR-BT101
DC 3.7V

UL Japan, Inc. Yamakita EMC lab. No.3 shielded room
Date: 2008/11/6
Temp./Humid.: 22 deg. C. / 58 %
Engineer: Tatsuya Arai
Test mode: Transmitting (Inquiry)

1. Inquiry: 32ch



Company: Sony Corporation
Kind of Equipment: Wireless Stereo Headset
Serial No.: No.064 (Inquiry), No.130 (other)

Report No.:
Model No.:
Power:

29CE0154-YK-01-A
DR-BT101
DC 3.7V

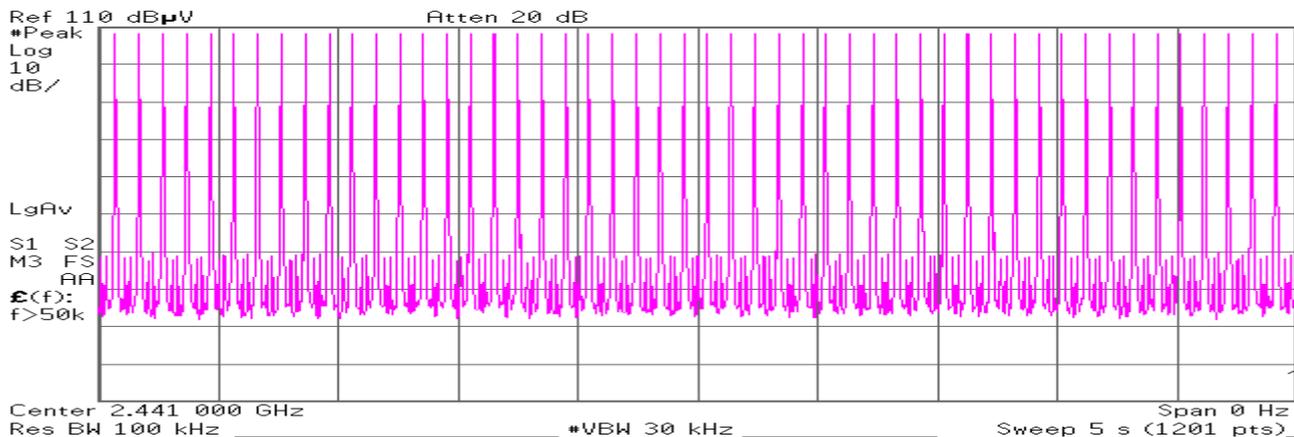
Dwell Time (Regulation: FCC 15.247(a)(1)(iii))

UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
Date: 2008/10/30
Temp/Humid.: 24 deg. C. / 40 %
Engineer: Tatsuya Arai
Test mode: Transmitting

Hopping (DH1):

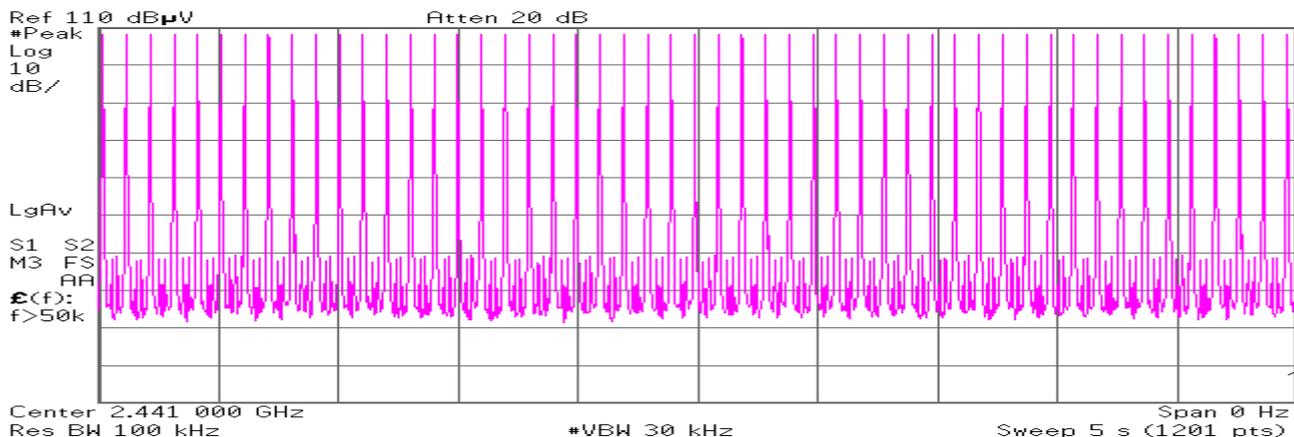
Count 1

Agilent 13:02:30 30 Oct 2008



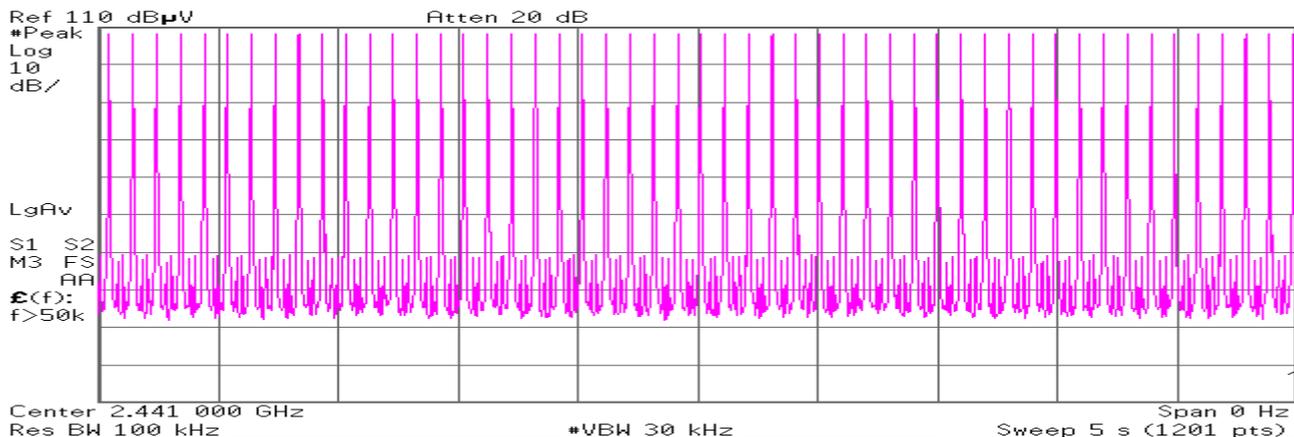
Count 2

Agilent 13:06:12 30 Oct 2008



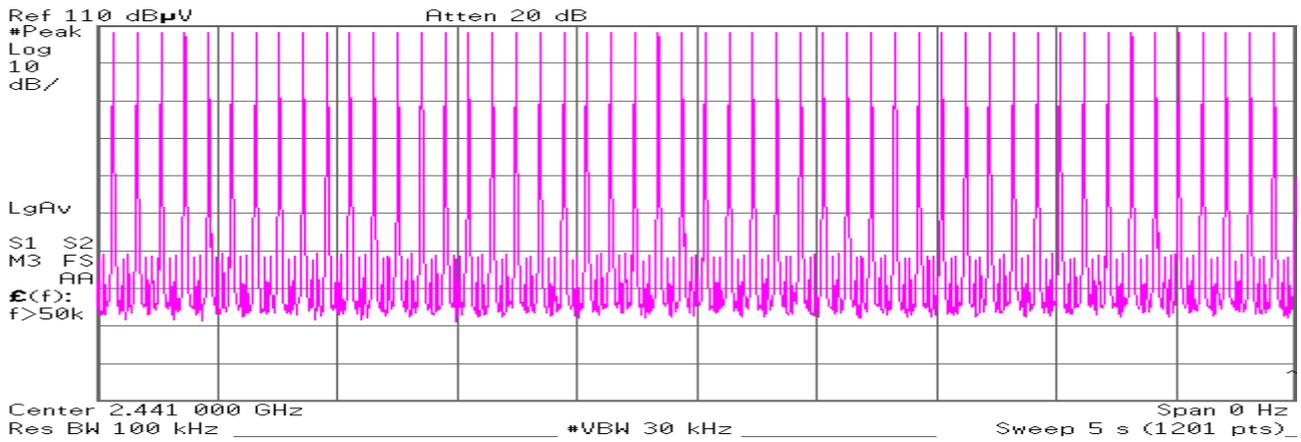
Count 3

Agilent 13:07:38 30 Oct 2008



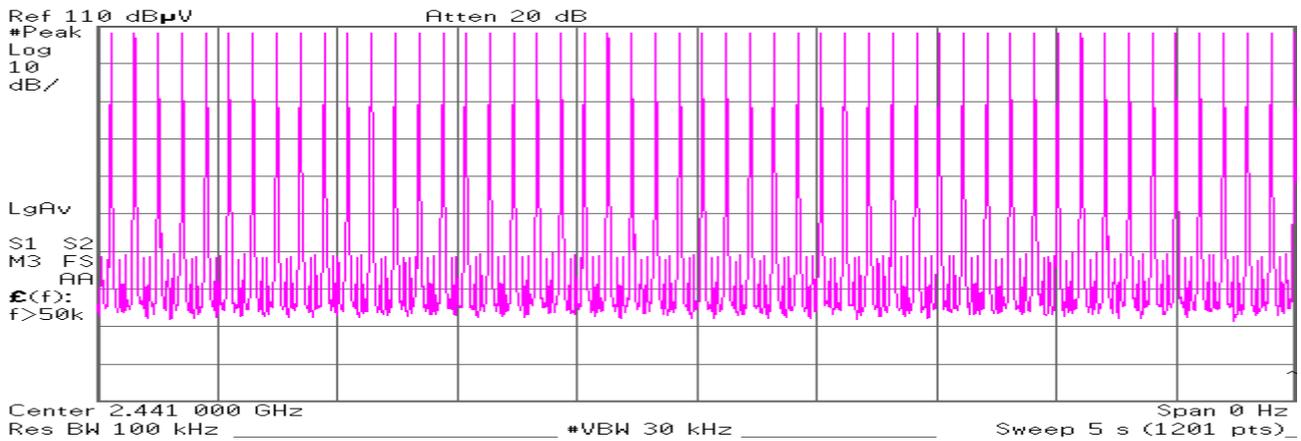
Count 4

Agilent 13:08:34 30 Oct 2008

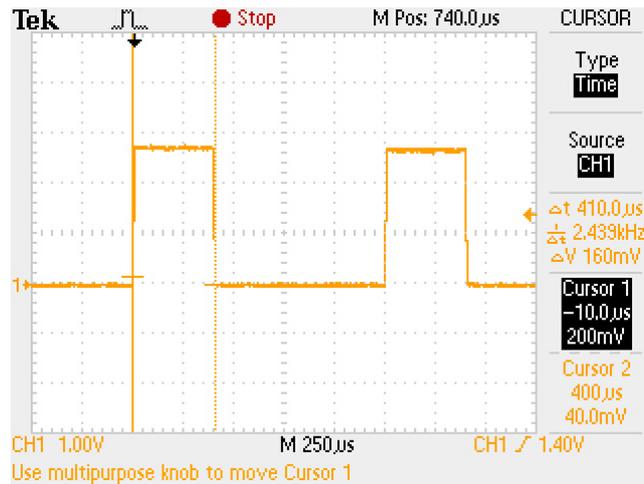


Count 5

Agilent 13:09:14 30 Oct 2008



Duty cycle(Hopping DH1)



Average times of rising in 5 sec. of sweep = $(50 + 51 + 51 + 50 + 50) / 5 = 50.4$

Average times of rising in 1 sec. = $50.4 / 5s = 10.08$

Average times of rising in 0.4x = $0.4 * 79ch * 10.08 = 318.53$

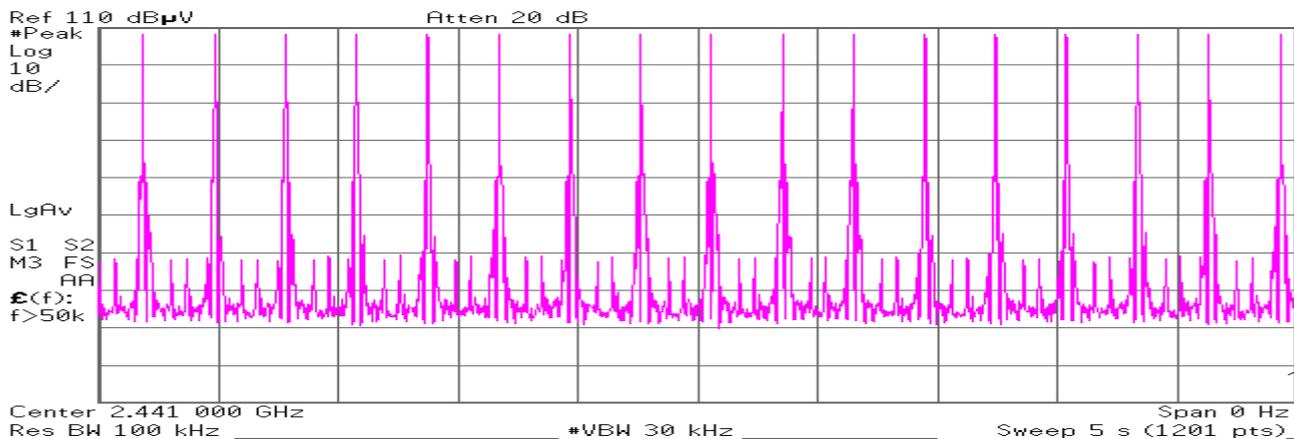
Dwell time = $318.53 * 0.410 = 130.60$ [ms]

Limit : Dwell Time < 0.4[s]

Hopping (DH3):

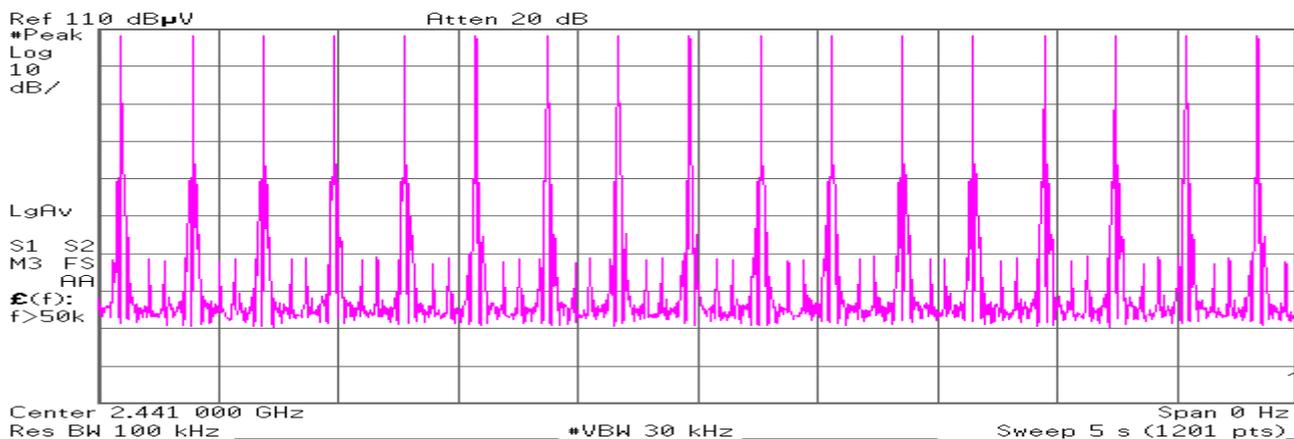
Count 1

Agilent 13:10:52 30 Oct 2008



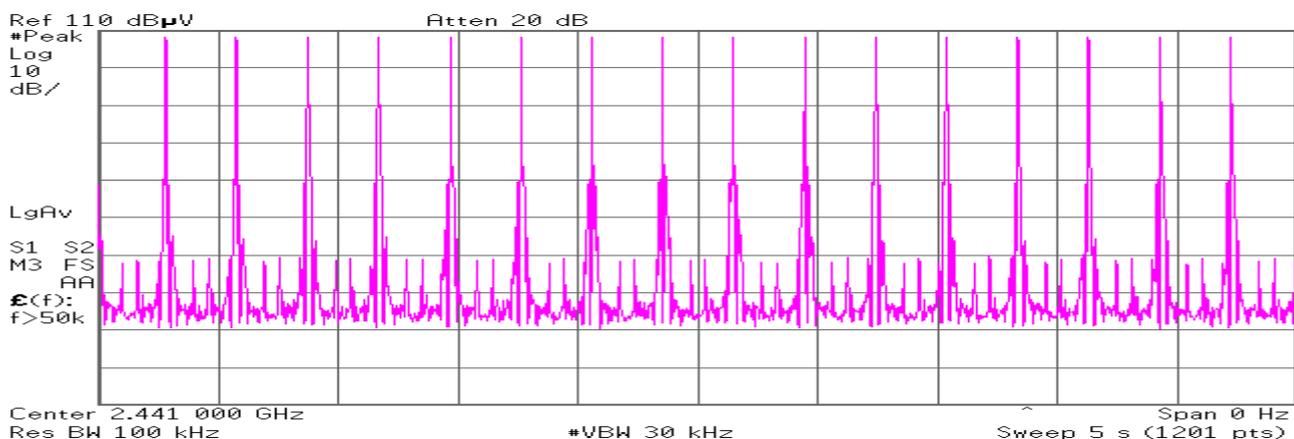
Count 2

Agilent 13:11:29 30 Oct 2008



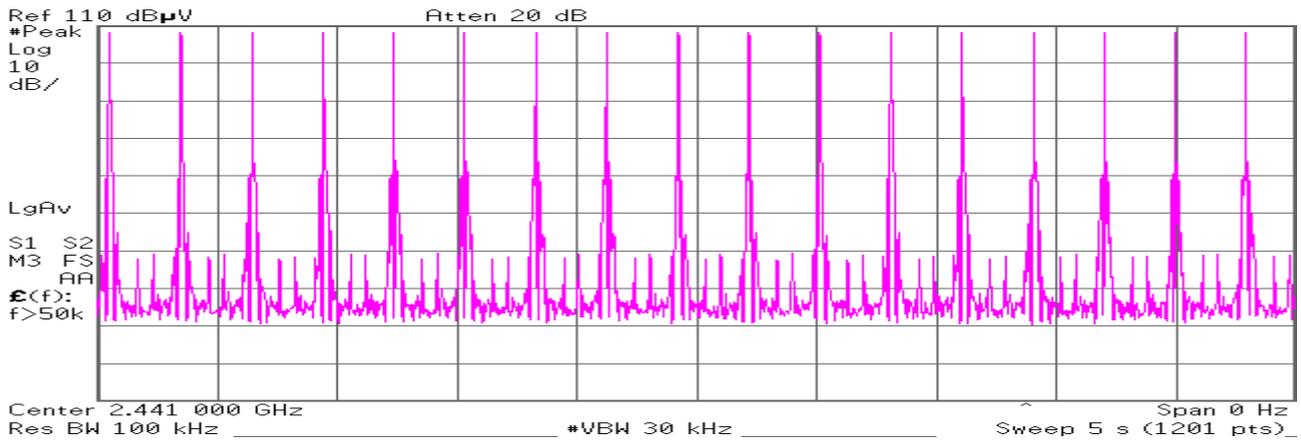
Count 3

Agilent 13:12:08 30 Oct 2008



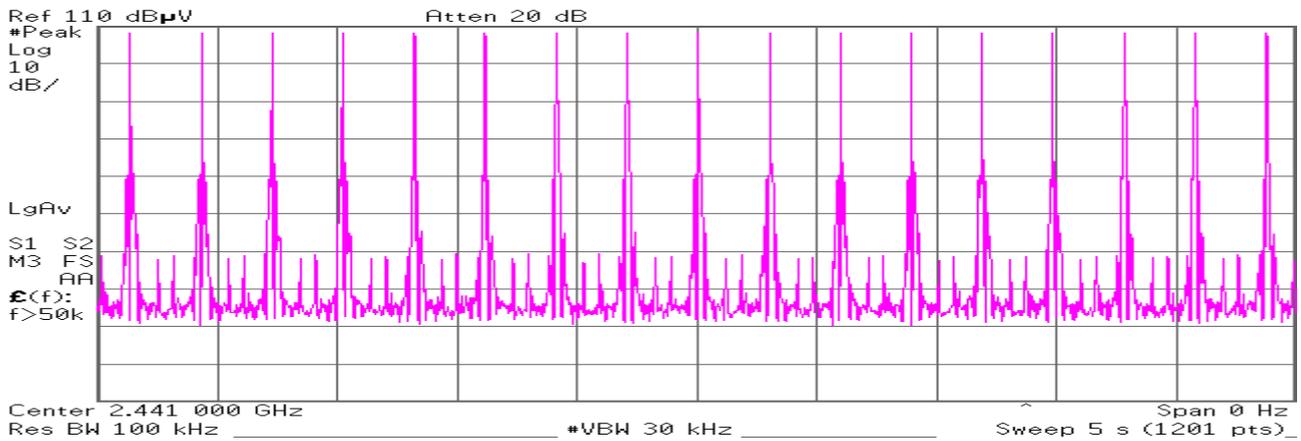
Count 4

Agilent 13:12:29 30 Oct 2008

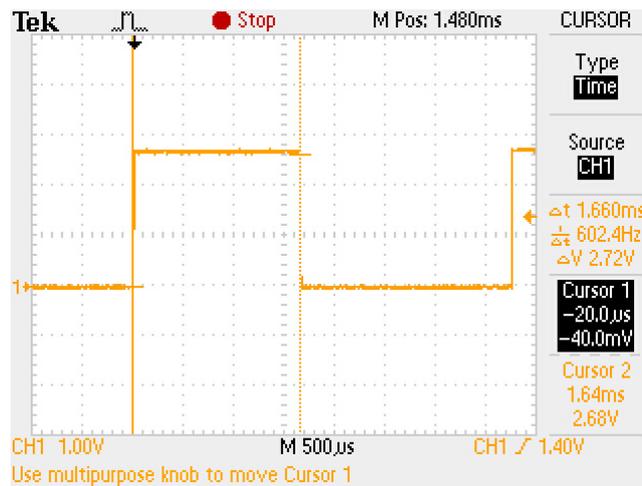


Count 5

Agilent 13:12:53 30 Oct 2008



Duty cycle(Hopping DH3)



Average times of rising in 5 sec. of sweep = (17 + 17 + 16 + 17 + 17) / 5 = 16.8

Average times of rising in 1 sec. = 16.8 / 5s = 3.36

Average times of rising in 0.4x = 0.4 * 79ch * 3.36 = 106.18

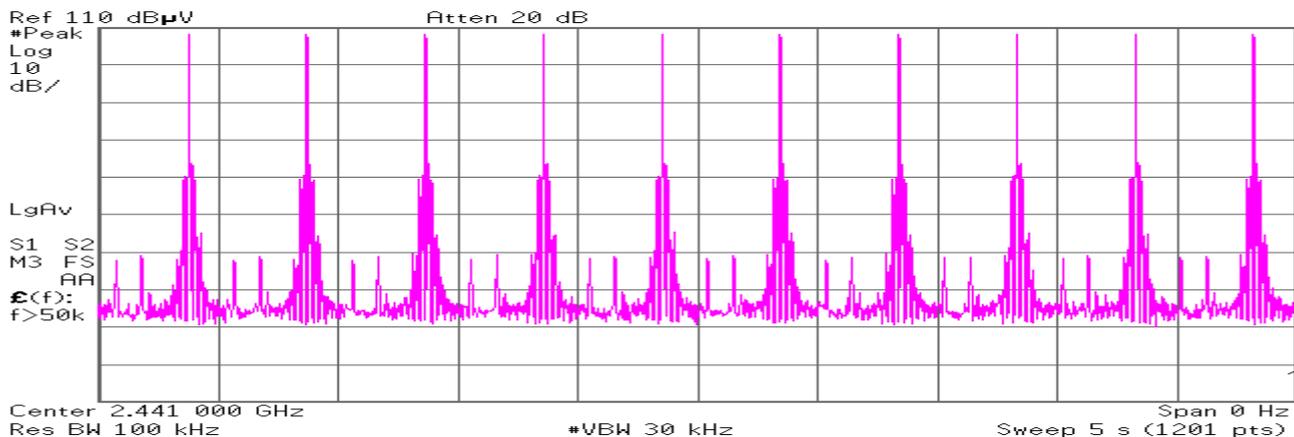
Dwell time = 106.18 * 1.66 = 176.26 [ms]

Limit : Dwell Time < 0.4[s]

Hopping (DHS):

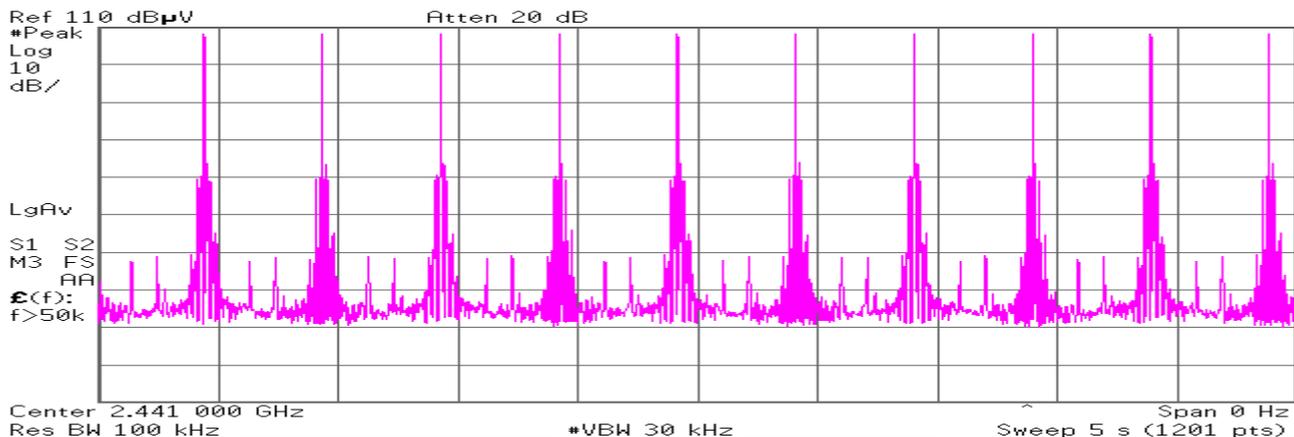
Count 1

Agilent 13:19:54 30 Oct 2008



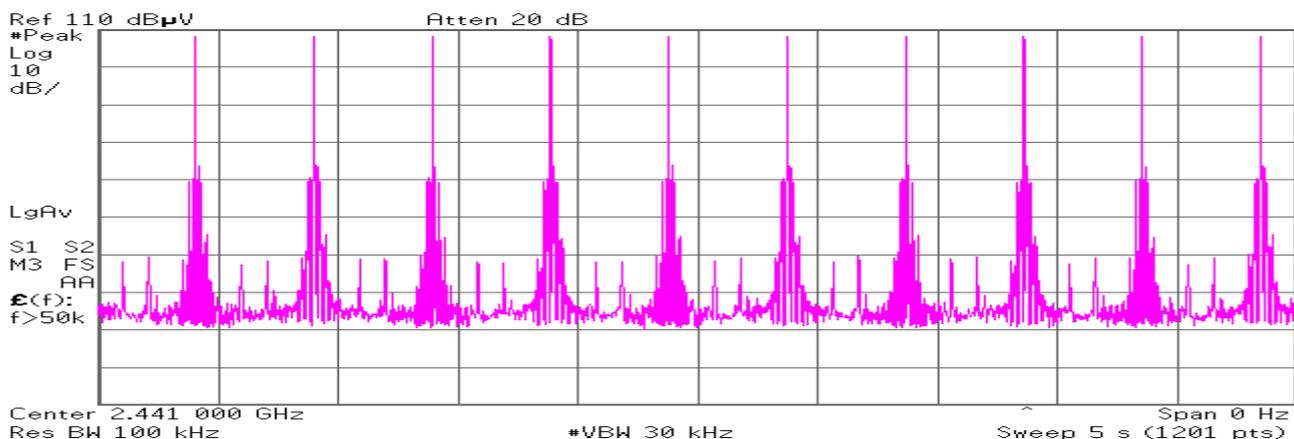
Count 2

Agilent 13:20:25 30 Oct 2008



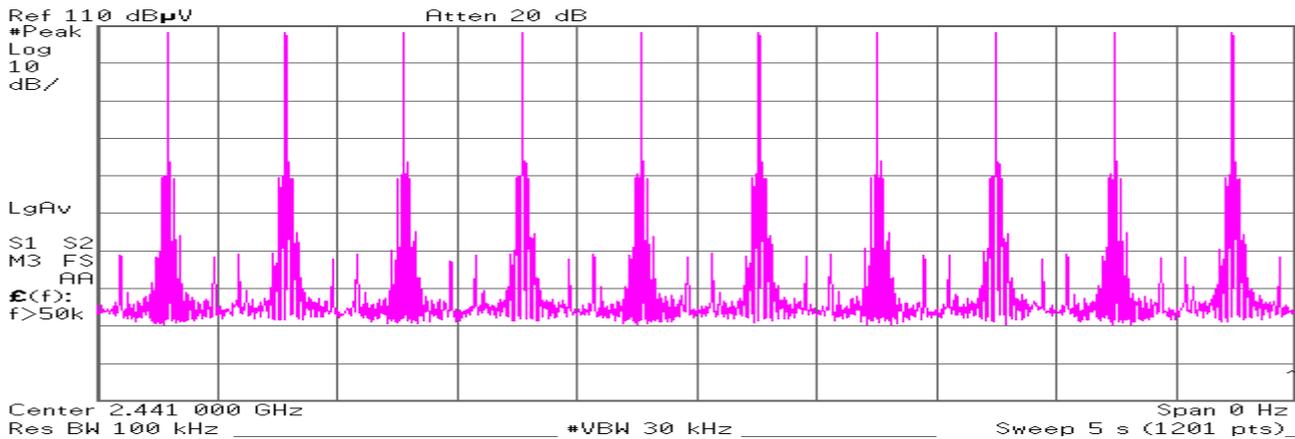
Count 3

Agilent 13:20:52 30 Oct 2008



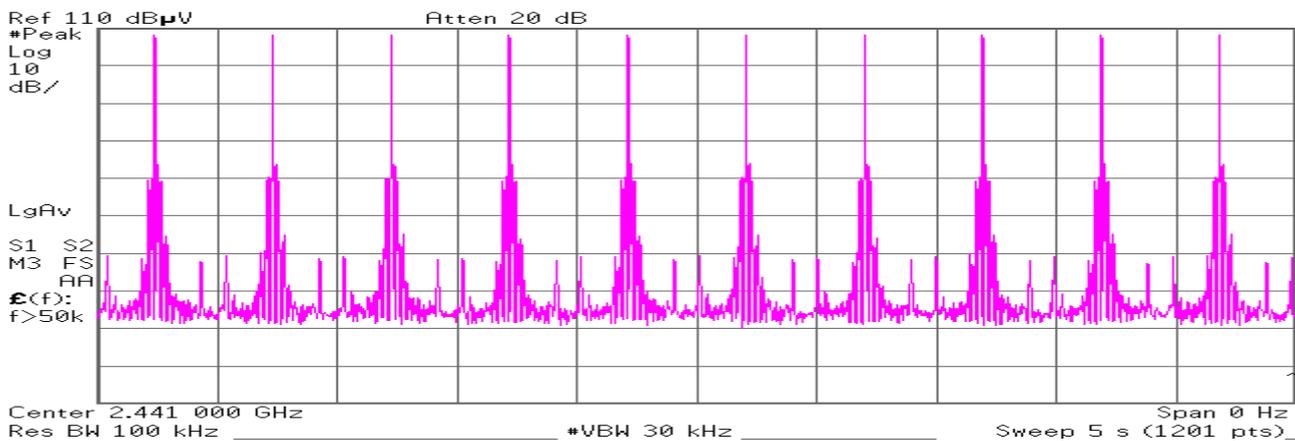
Count 4

Agilent 13:21:19 30 Oct 2008

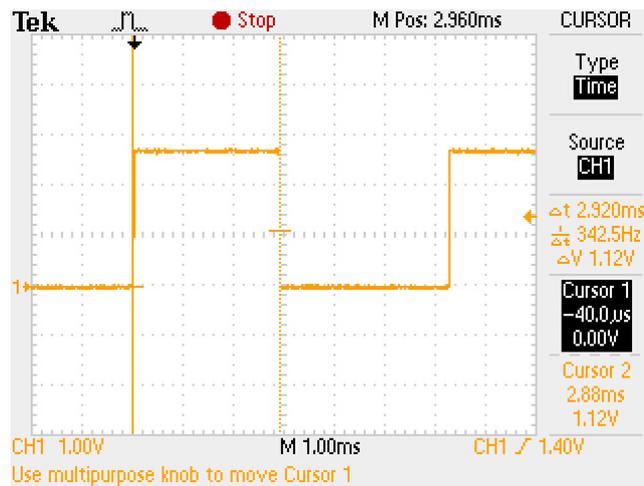


Count 5

Agilent 13:21:45 30 Oct 2008



Duty cycle(Hopping DH5)

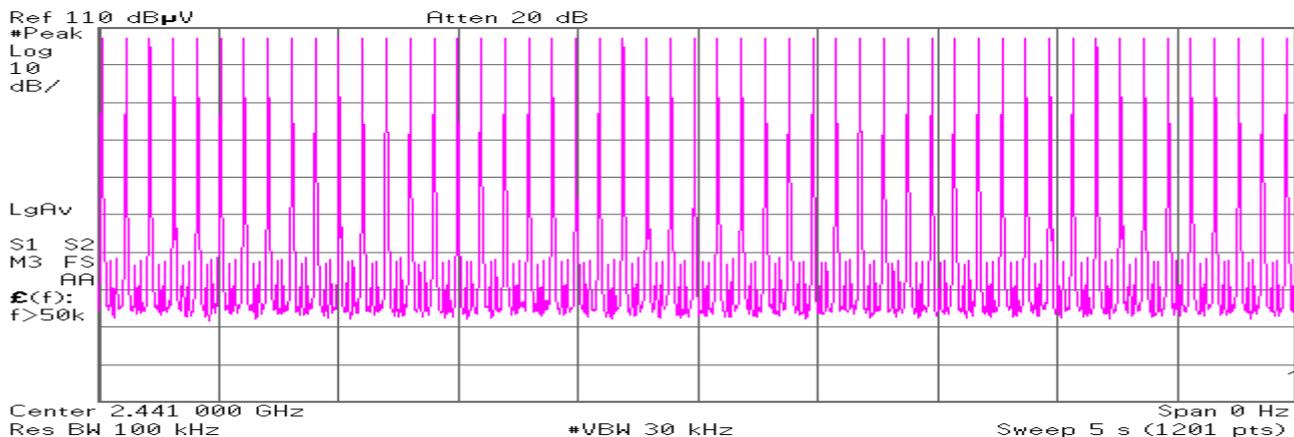


Average times of rising in 5 sec. of sweep = (10 + 10 + 10 + 10 + 10) / 5 = 10.0
 Average times of rising in 1 sec. = 10.0 / 5s = 2.0
 Average times of rising in 0.4x = 0.4 * 79ch * 2.0 = 63.2
 Dwell time = 63.2 * 2.92 = 184.54 [ms]
 Limit : Dwell Time < 0.4[s]

Hopping (3DH1):

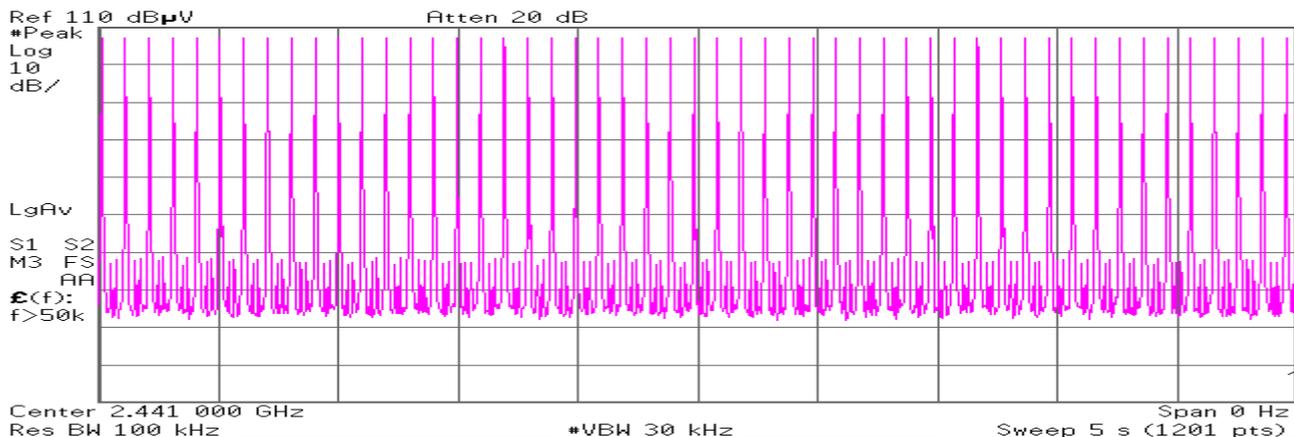
Count 1

Agilent 13:27:38 30 Oct 2008



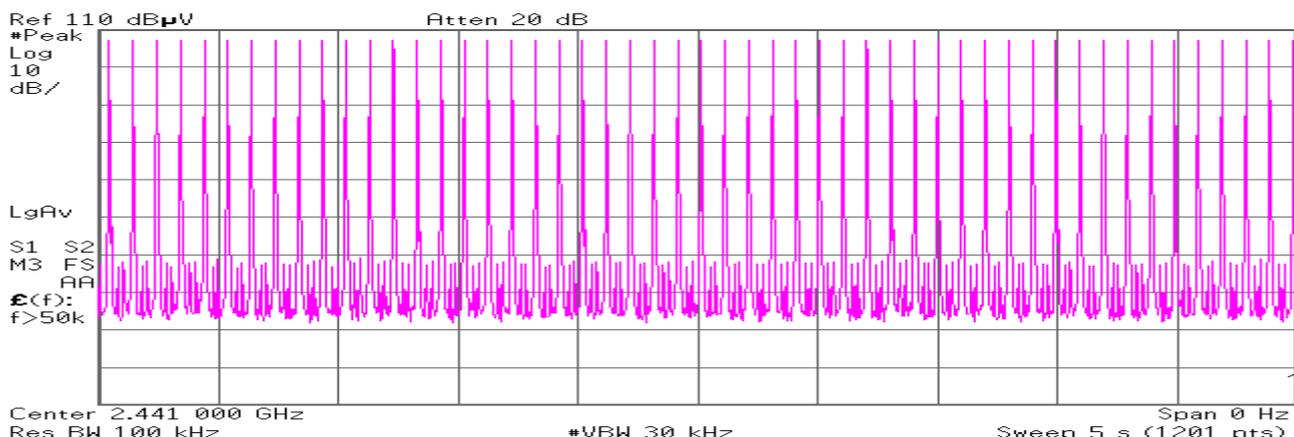
Count 2

Agilent 13:29:27 30 Oct 2008



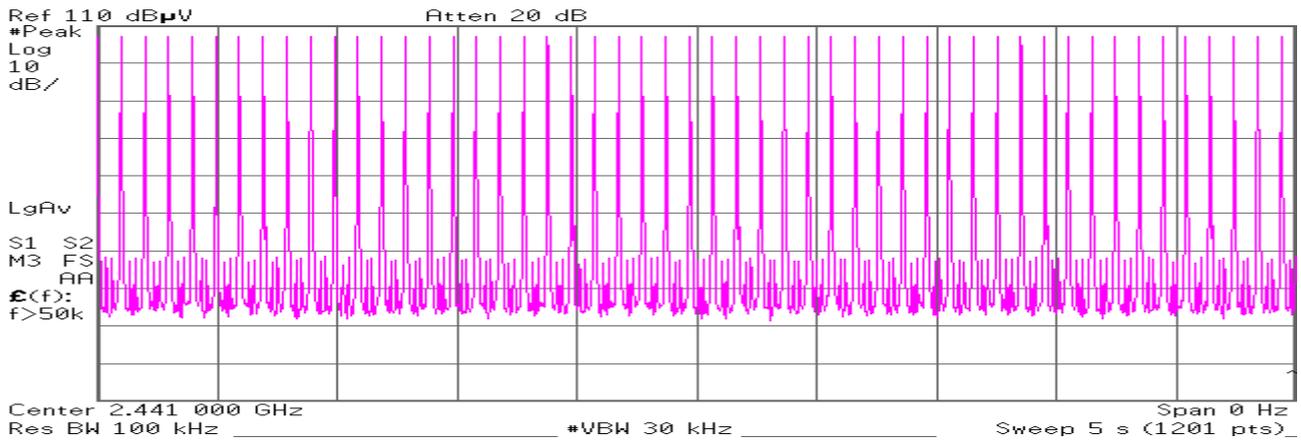
Count 3

Agilent 13:29:44 30 Oct 2008



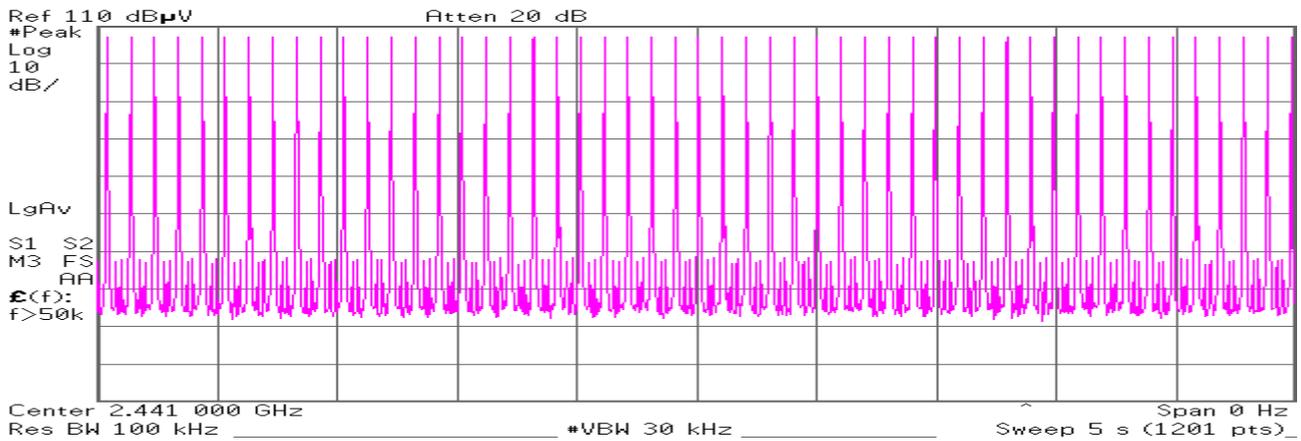
Count 4

Agilent 13:30:32 30 Oct 2008



Count 5

Agilent 13:31:10 30 Oct 2008



Duty cycle(Hopping 3DH1)



Average times of rising in 5 sec. of sweep = (50 + 51 + 51 + 51 + 50) / 5 = 50.6

Average times of rising in 1 sec. = 50.6 / 5s = 10.12

Average times of rising in 0.4x = 0.4 * 79ch * 10.12 = 319.79

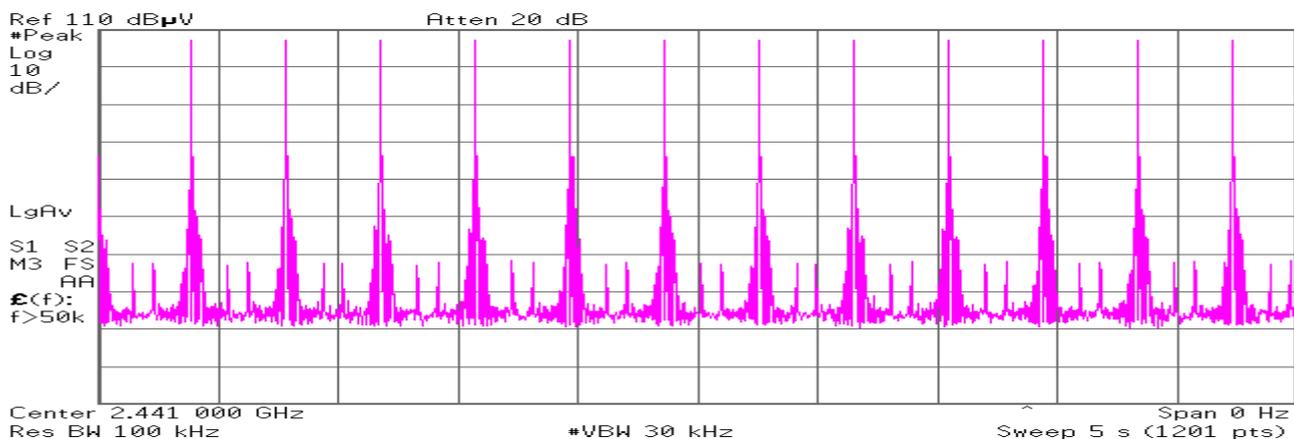
Dwell time = 319.79 * 0.42 = 134.31 [ms]

Limit : Dwell Time < 0.4[s]

Hopping (3DH3):

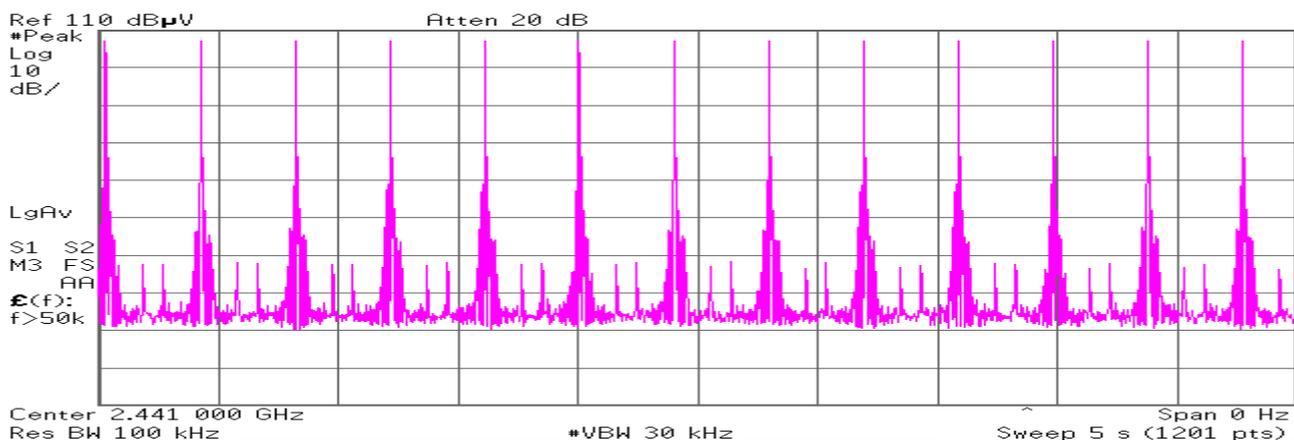
Count 1

Agilent 13:32:37 30 Oct 2008



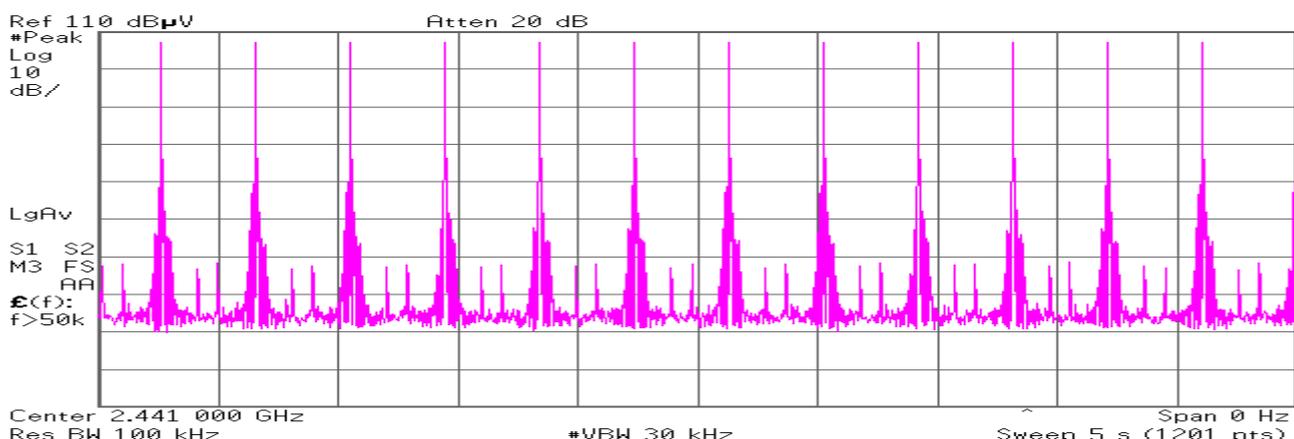
Count 2

Agilent 13:33:35 30 Oct 2008



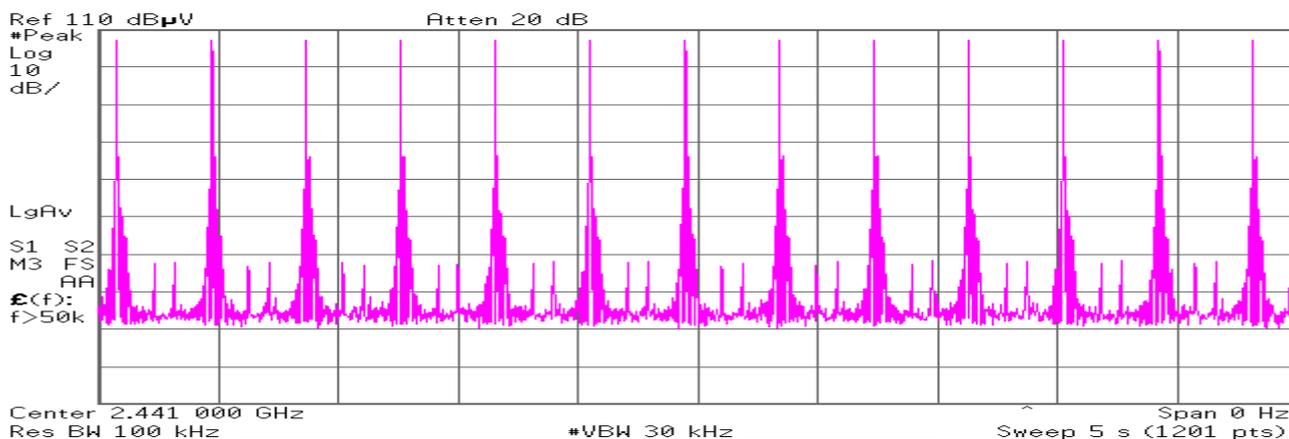
Count 3

Agilent 13:34:38 30 Oct 2008



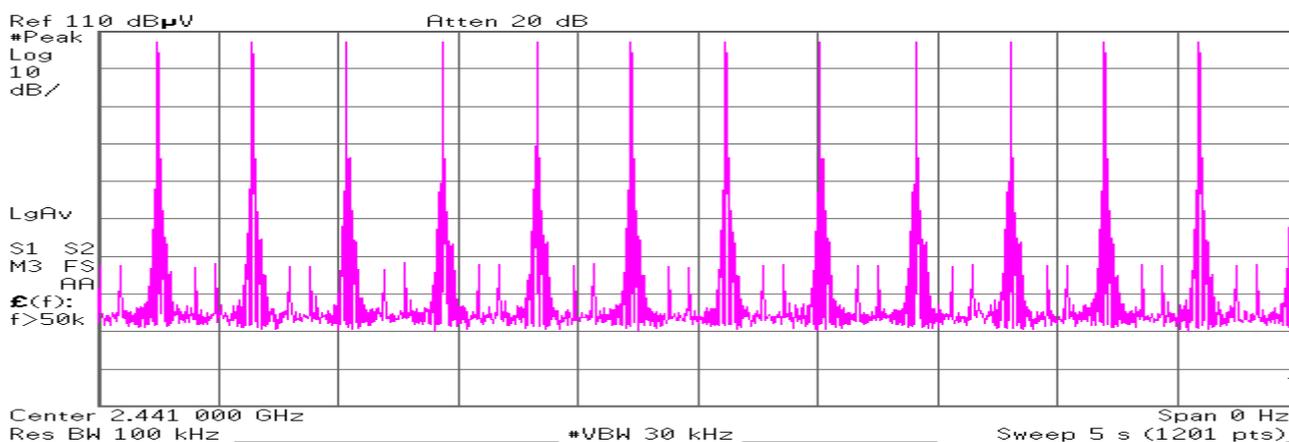
Count 4

Agilent 13:37:00 30 Oct 2008



Count 5

Agilent 13:37:23 30 Oct 2008



Duty cycle(Hopping 3DH3)



Average times of rising in 5 sec. of sweep = (12 + 13 + 12 + 13 + 13) / 5 = 17.0

Average times of rising in 1 sec. = 17.0 / 5s = 3.4

Average times of rising in 0.4x = 0.4 * 79ch * 3.4 = 107.44

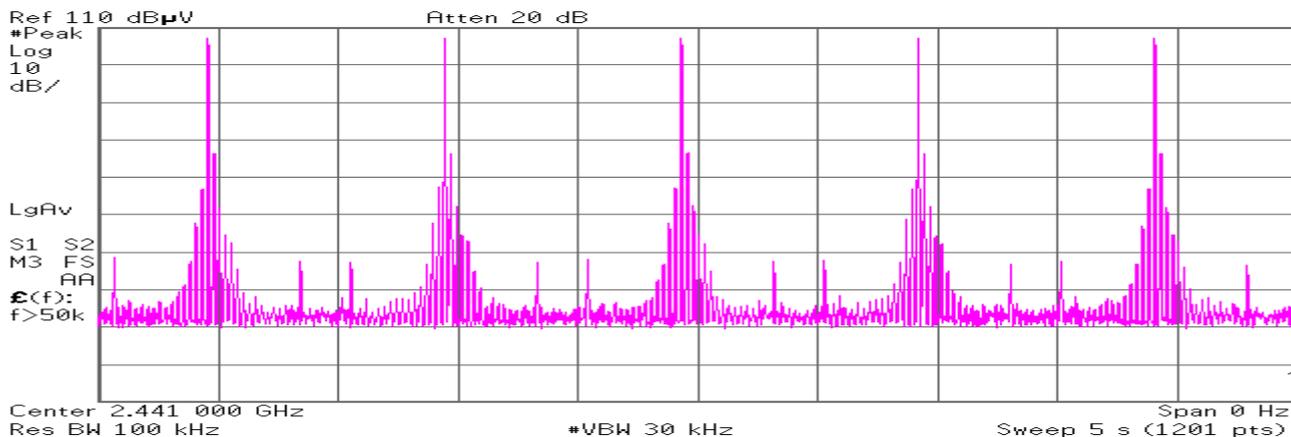
Dwell time = 107.44 * 1.68 = 180.50 [ms]

Limit : Dwell Time < 0.4[s]

Hopping (3DH5):

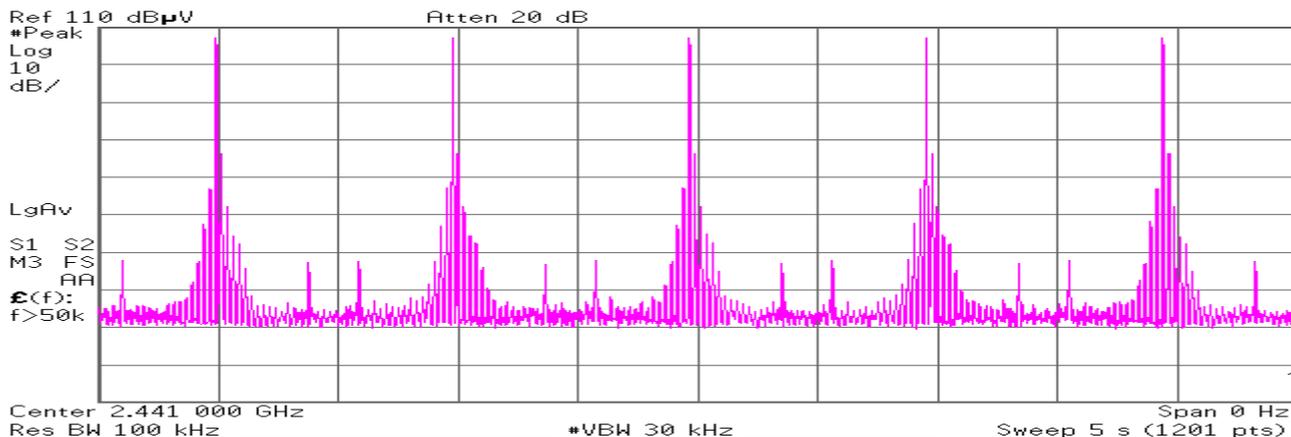
Count 1

Agilent 13:38:17 30 Oct 2008



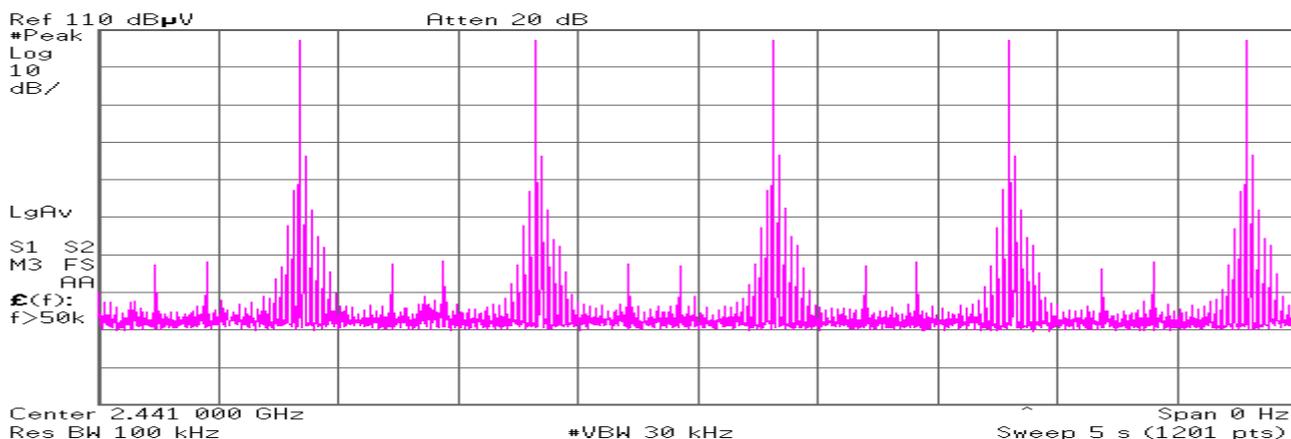
Count 2

Agilent 13:39:05 30 Oct 2008



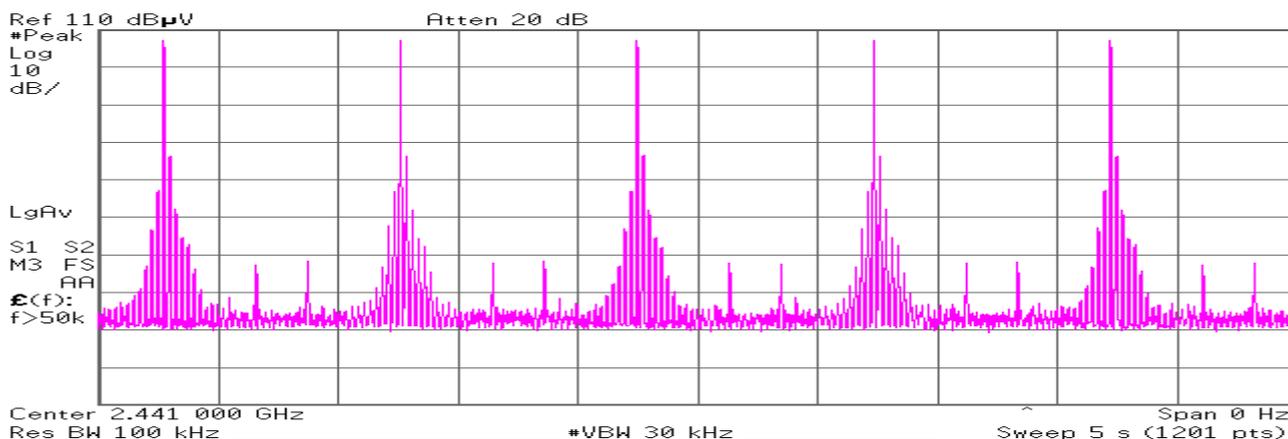
Count 3

Agilent 13:40:42 30 Oct 2008



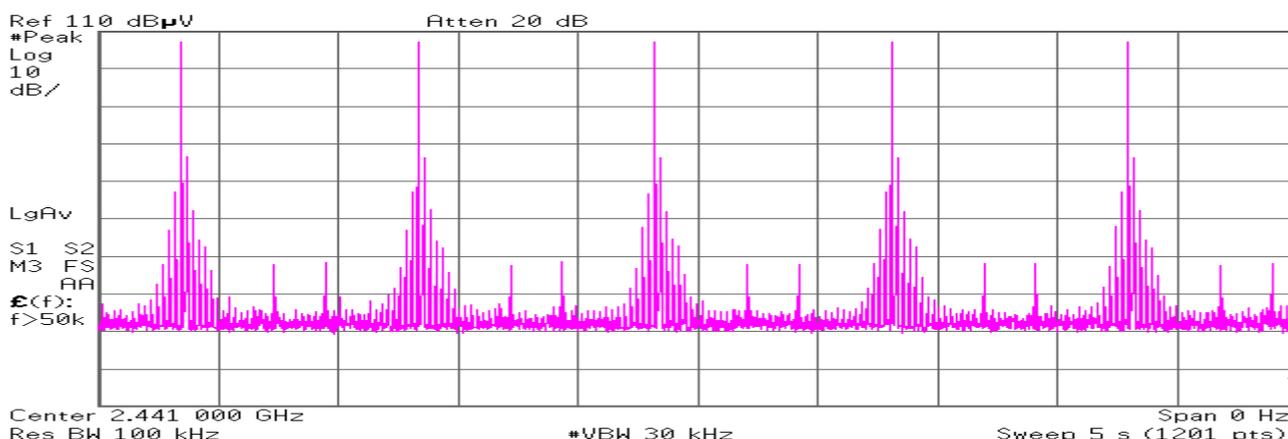
Count 4

Agilent 13:41:03 30 Oct 2008



Count 5

Agilent 13:41:41 30 Oct 2008



Duty cycle(Hopping 3DH5)



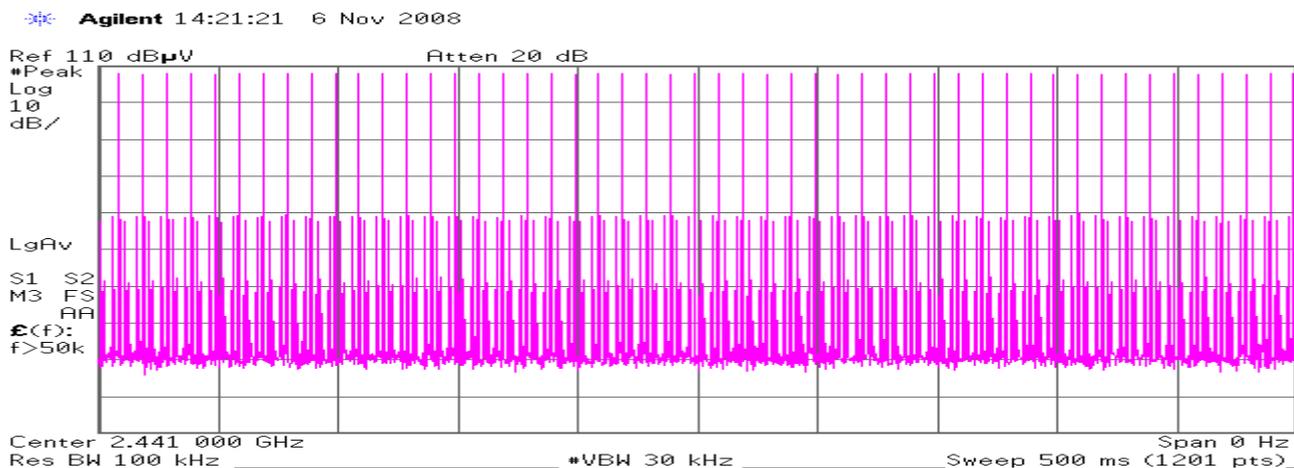
Average times of rising in 5 sec. of sweep = (5 + 5 + 5 + 5 + 5) / 5 = 5.0
 Average times of rising in 1 sec. = 5.0 / 5s = 1.0
 Average times of rising in 0.4x = 0.4 * 79ch * 1.0 = 31.6
 Dwell time = 31.6 * 2.90 = 91.64 [ms]
 Limit : Dwell Time < 0.4[s]

Company: Sony Corporation
Kind of Equipment: Wireless Stereo Headset
Serial No.: No.064 (Inquiry), No.130 (other)

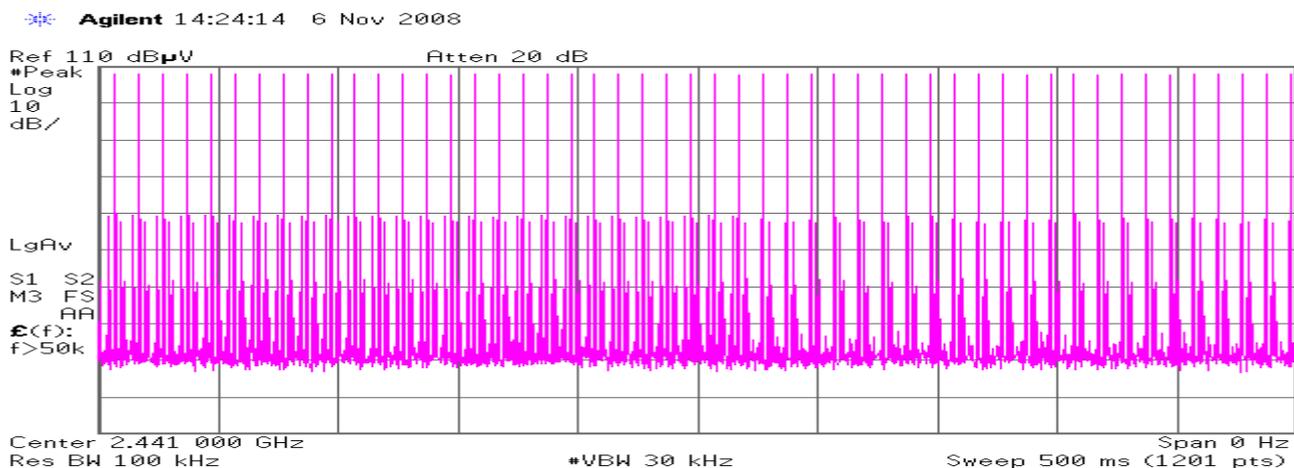
Report No.: 29CE0154-YK-01-A
Model No.: DR-BT101
Power: DC 3.7V

UL Japan, Inc. Yamakita EMC lab. 3 shielded room
Date: 2008/11/6
Temp./Humid.: 22 deg. C./ 58 %
Engineer: Tatsuya Arai
Test mode: Transmitting (Inquiry)

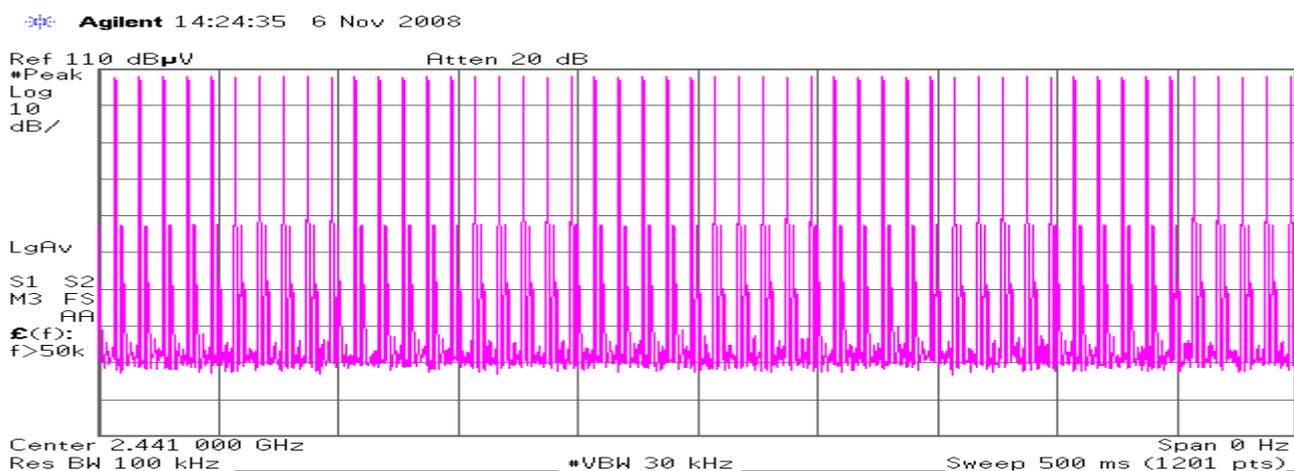
Inquiry:
Count 1



Count 2

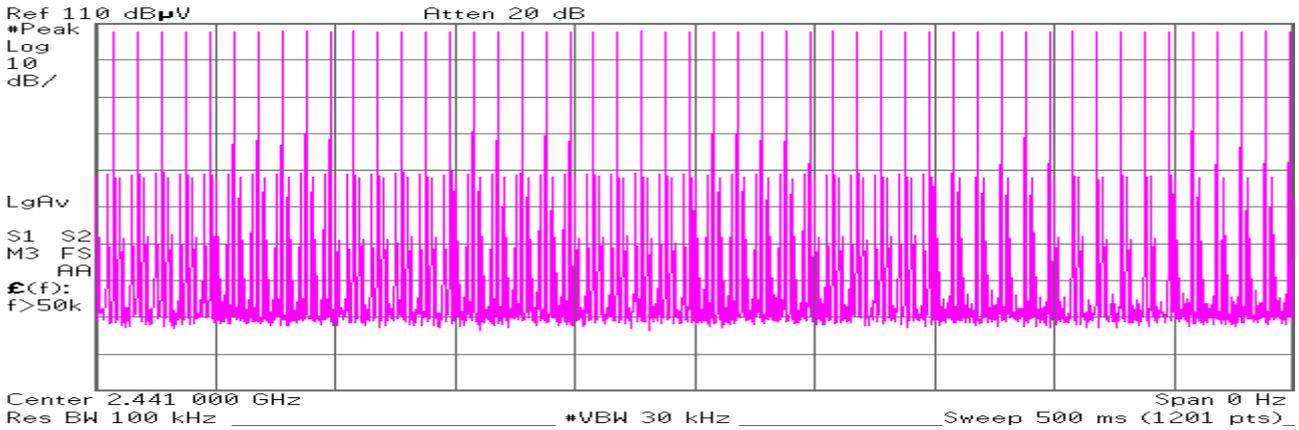


Count 3



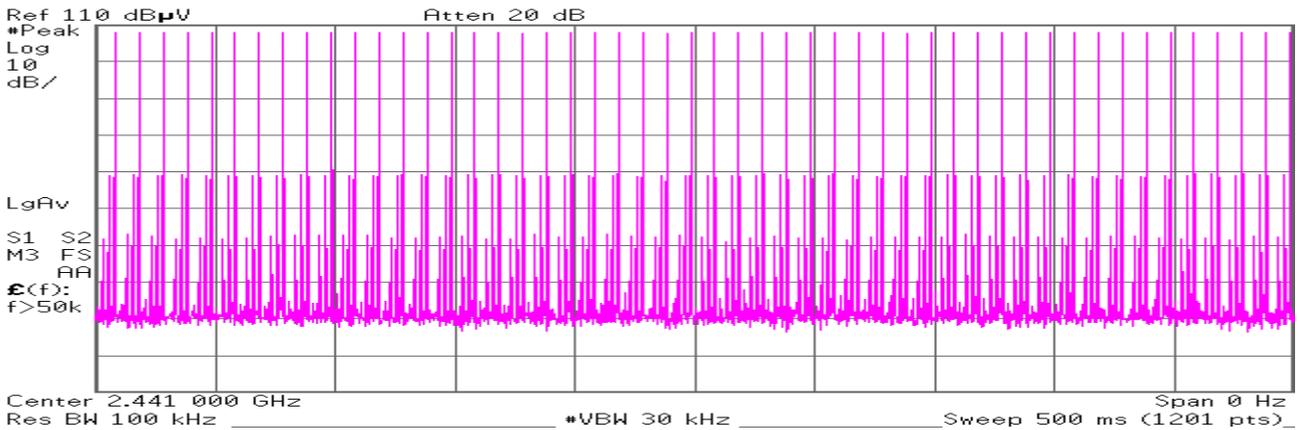
Count 4

Agilent 14:24:56 6 Nov 2008

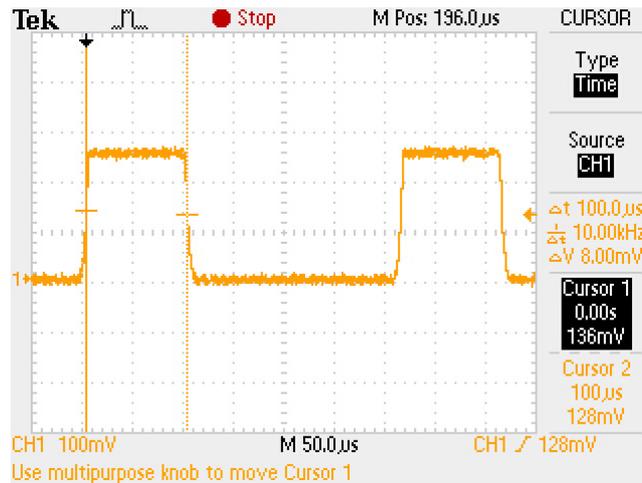


Count 5

Agilent 14:28:12 6 Nov 2008



Duty cycle(Inquiry)



Average times of rising in 0.5 sec. of sweep = (50 + 50 + 50 + 50 + 50) / 5 = 50.0

Average times of rising in 1 sec. = 50.0 / 0.5s = 100.0

Average times of rising in 0.4x = 0.4 * 32ch * 100.0 = 1280.0

Dwell time = 1280.0 * 0.100 = 128.0 [ms]

Limit : Dwell Time < 0.4[s]

Company: Sony Corporation
Kind of Equipment: Wireless Stereo Headset
Serial No.: No.064 (Inquiry), No.130 (other)

Report No.: 29CE0154-YK-01-A
Model No.: DR-BT101
Power: DC 3.7V

Maximum Peak Conducted Output Power (Regulation: FCC 15.247(b)(1))

UL Japan, Inc Yamakita EMC lab.
No.2, 3 Shielded Room

DATE: 2008/10/30, 11/6
TEMP./HUMID.: 23deg.C/38%, 22deg.C/58%
TEST MODE: Transmitting

ENGINEER: Akira Sato, Tatsuya Arai

DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	1.21	0.30	1.51	20.96	19.45
Mid	2441.00	1.41	0.30	1.71	20.96	19.25
High	2480.00	1.29	0.30	1.59	20.96	19.37
Inquiry	-	1.09	0.30	1.39	20.96	19.57

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:Customer's cable + KCC-D20

2DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	1.54	0.30	1.84	20.96	19.12
Mid	2441.00	1.33	0.30	1.63	20.96	19.33
High	2480.00	1.79	0.30	2.09	20.96	18.87

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:Customer's cable + KCC-D20

3DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	1.54	0.30	1.84	20.96	19.12
Mid	2441.00	1.50	0.30	1.80	20.96	19.16
High	2480.00	1.07	0.30	1.37	20.96	19.59

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:Customer's cable + KCC-D20

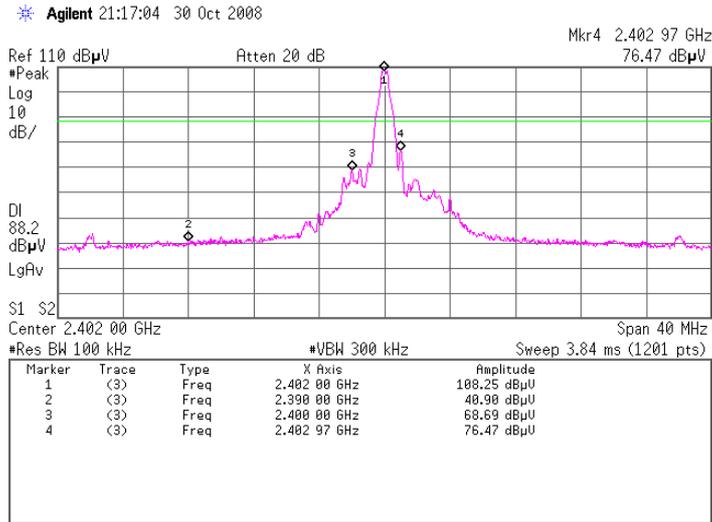
Out of Band Emission (Antenna Terminal Conducted) (Regulation: FCC 15.247(d))

UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: 2008.10.30
 Temp/Humid.: 23 deg. C. / 38 %
 Engineer: Akira Sato
 Test mode: Transmitting

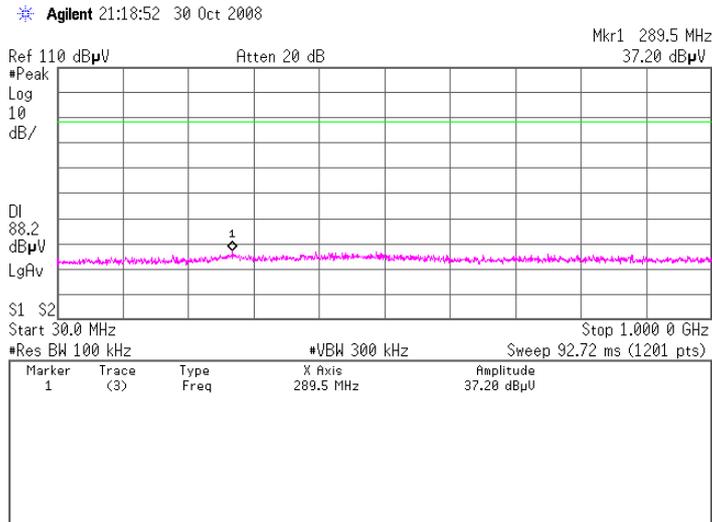
[Transmitting DHS]

Ch:2402MHz

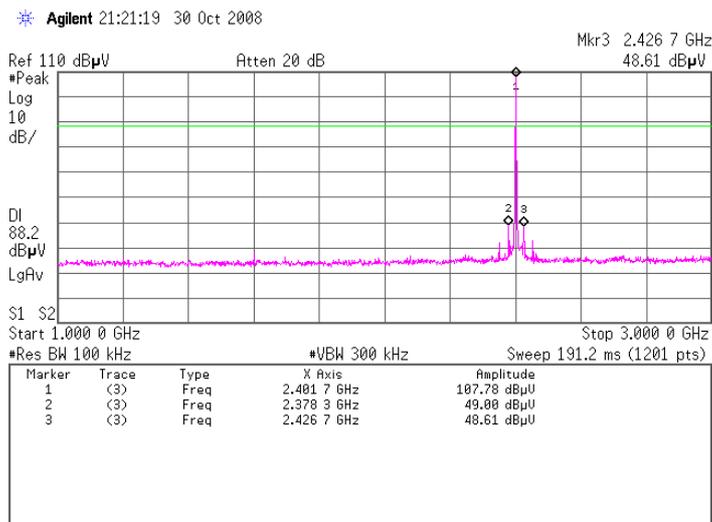
1.



2.

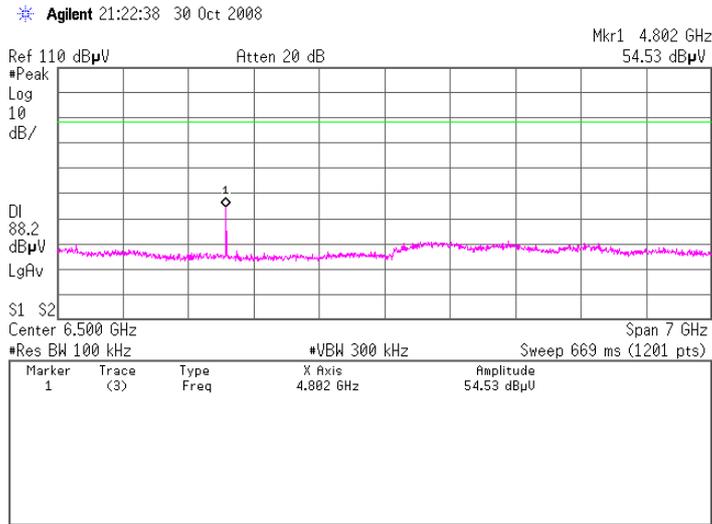


3.

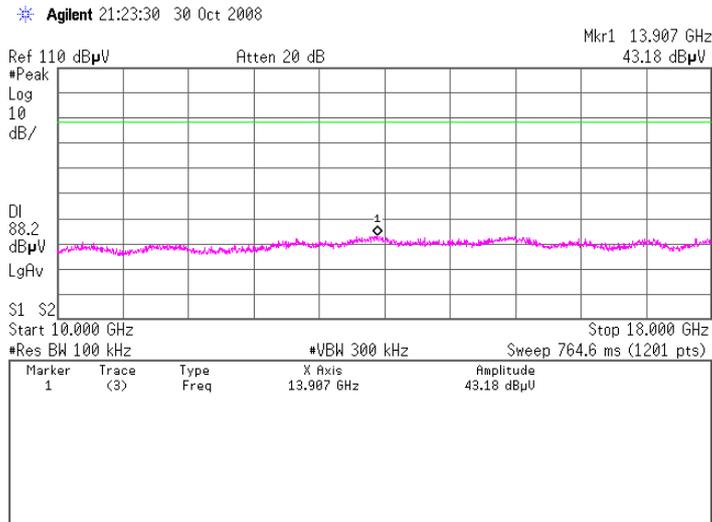


[Transmitting DH5]
Ch:2402MHz

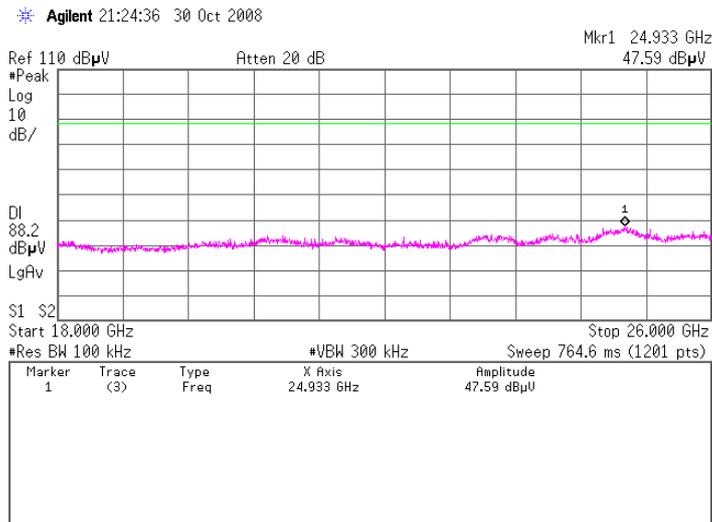
4.



5.

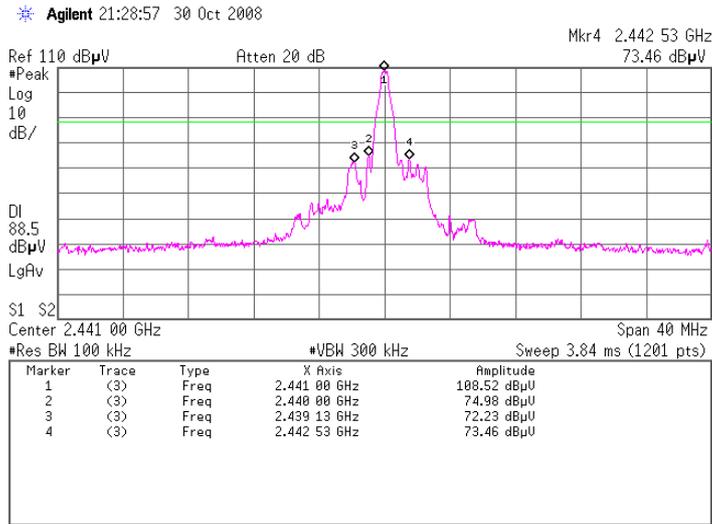


6.

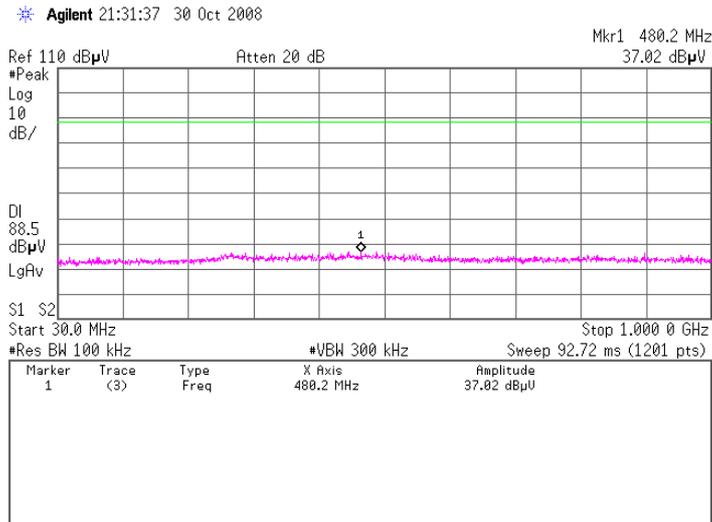


[Transmitting DH5]
Ch:2441MHz

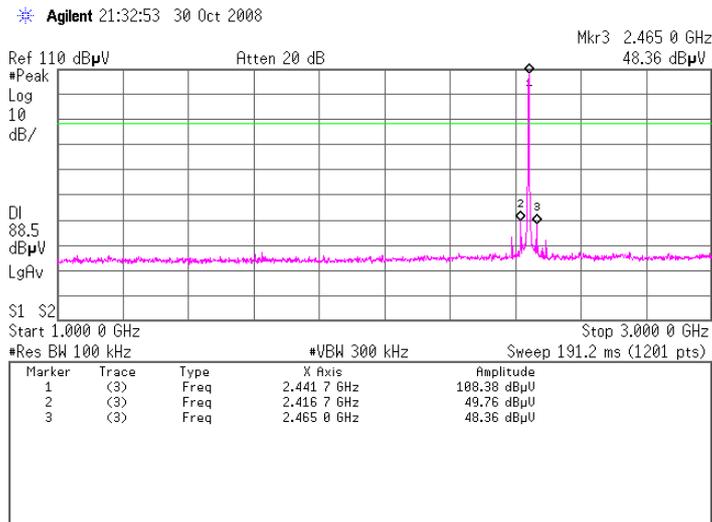
1.



2.

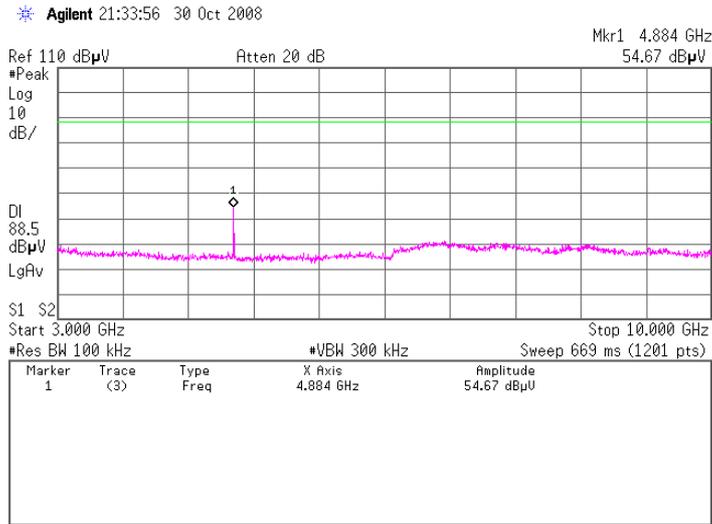


3.

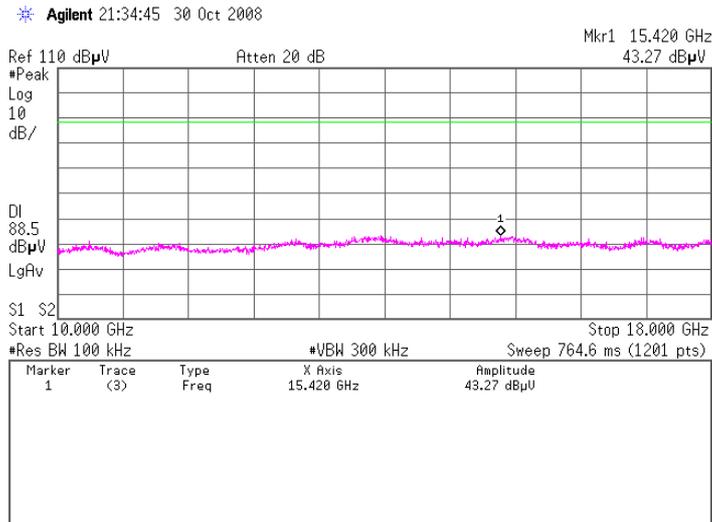


[Transmitting DH5]
Ch:2441MHz

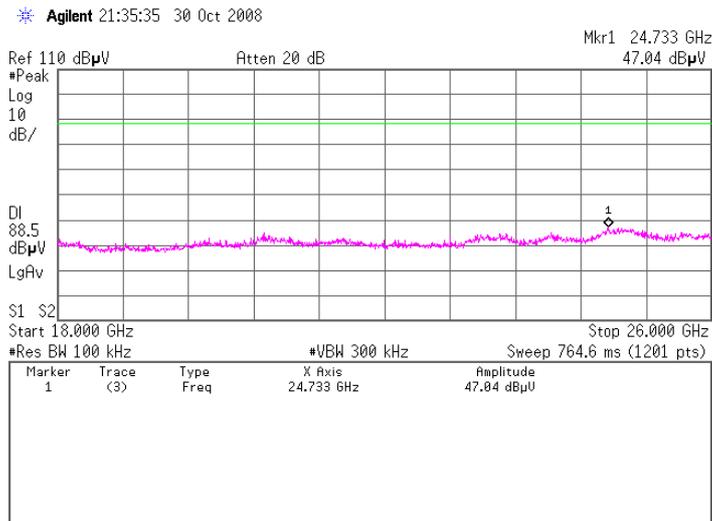
4.



5.

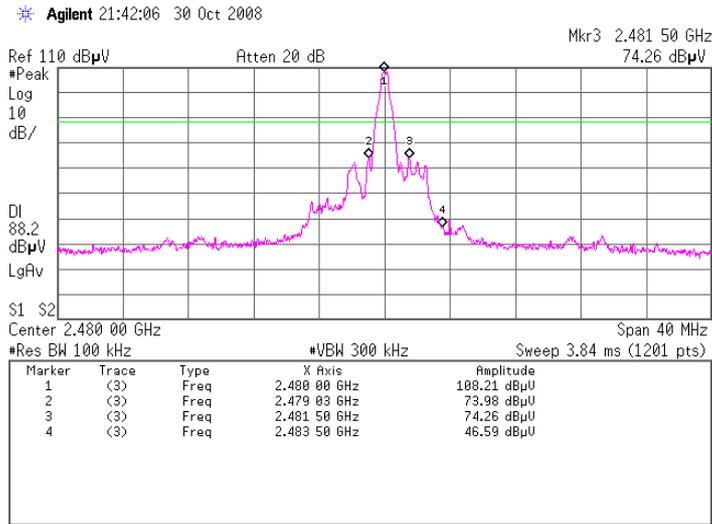


6.

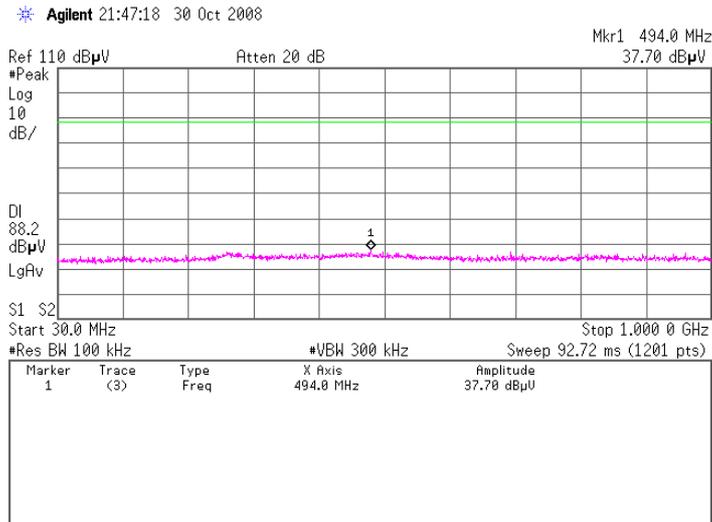


[Transmitting DH5]
Ch:2480MHz

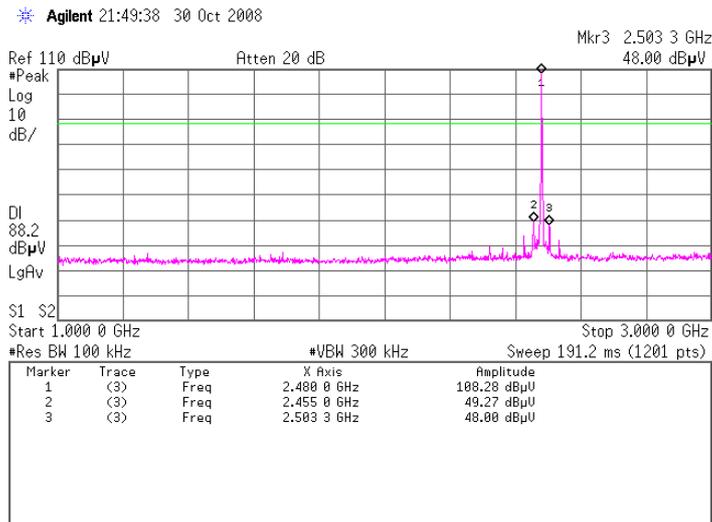
1.



2.

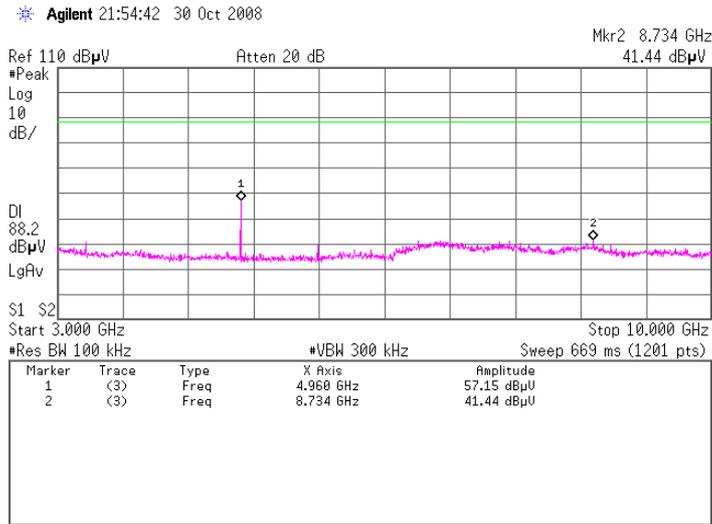


3.

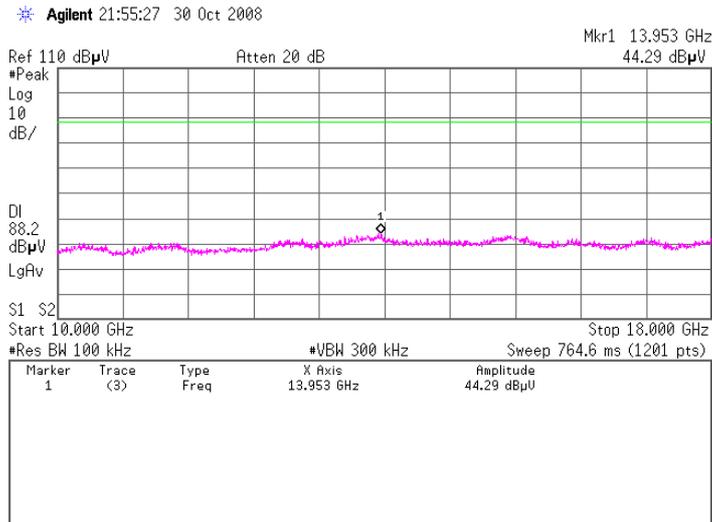


[Transmitting DH5]
Ch:2480MHz

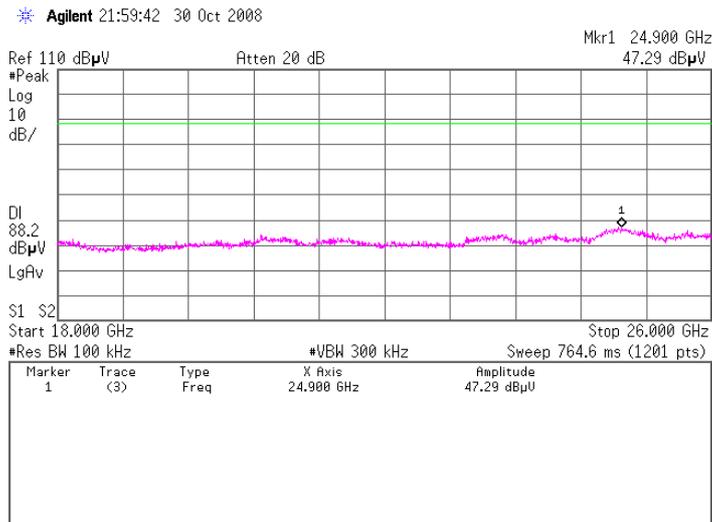
4.



5.

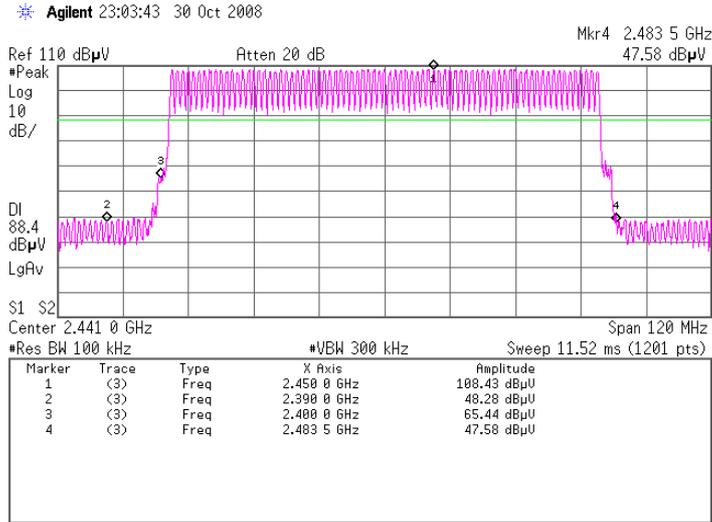


6.

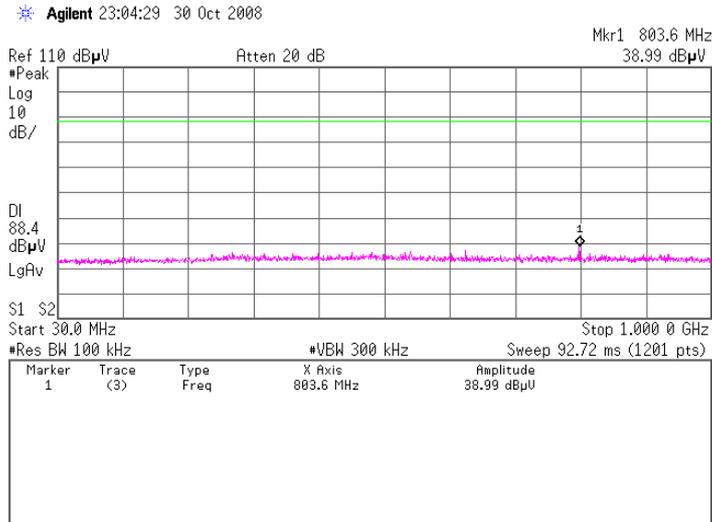


[Transmitting DH5]
Hopping

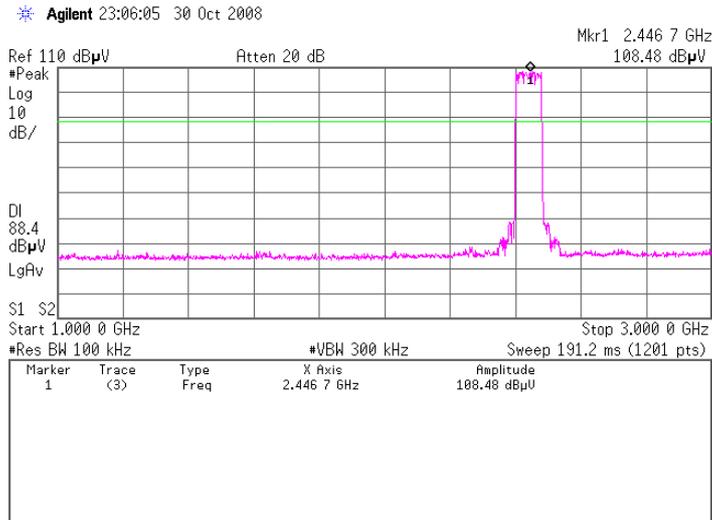
1.



2.

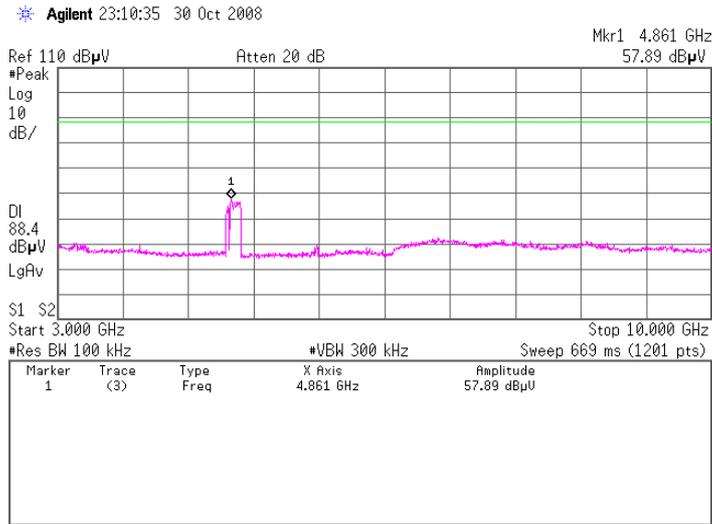


3.

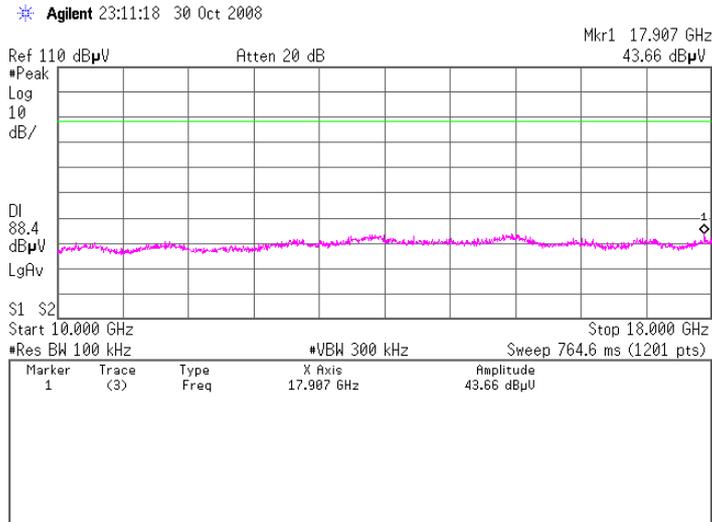


[Transmitting DHS]
Hopping

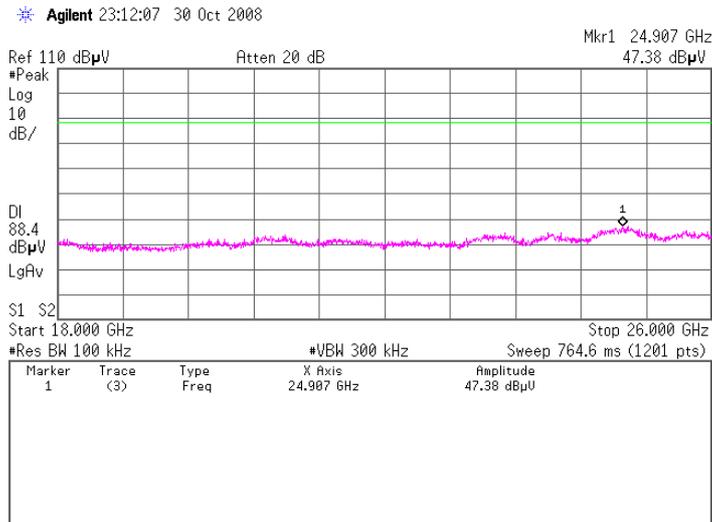
4.



5.

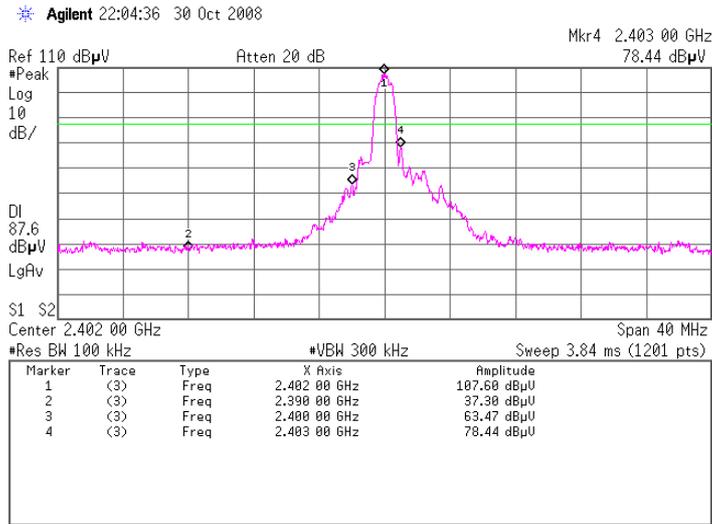


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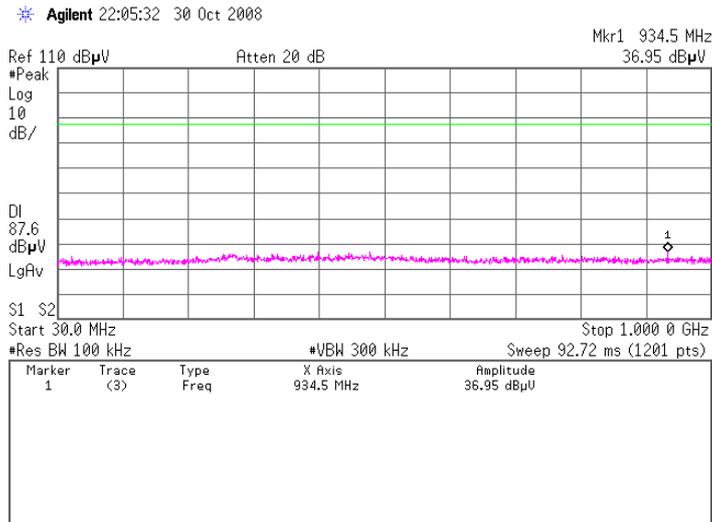


[Transmitting 3DH5]
 Ch:2402MHz

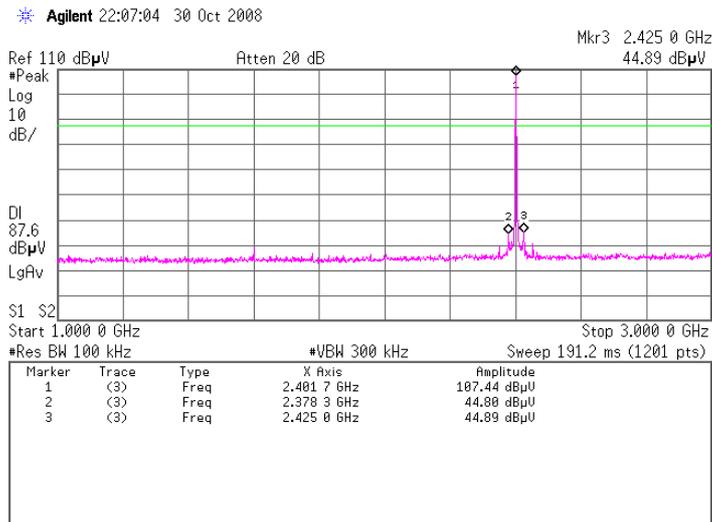
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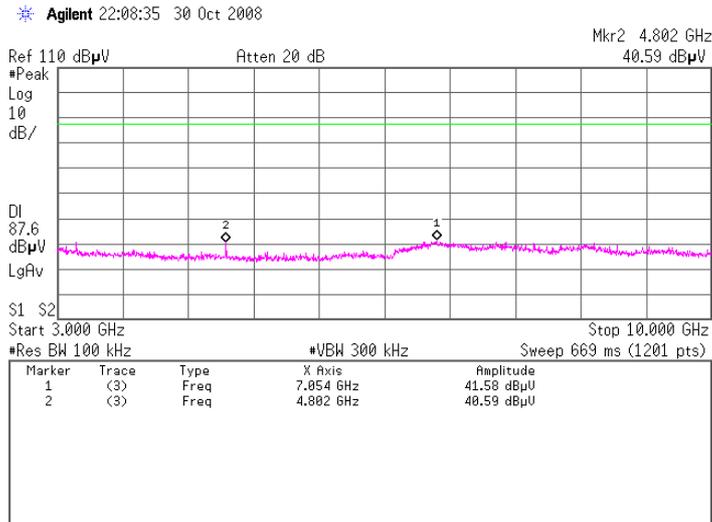


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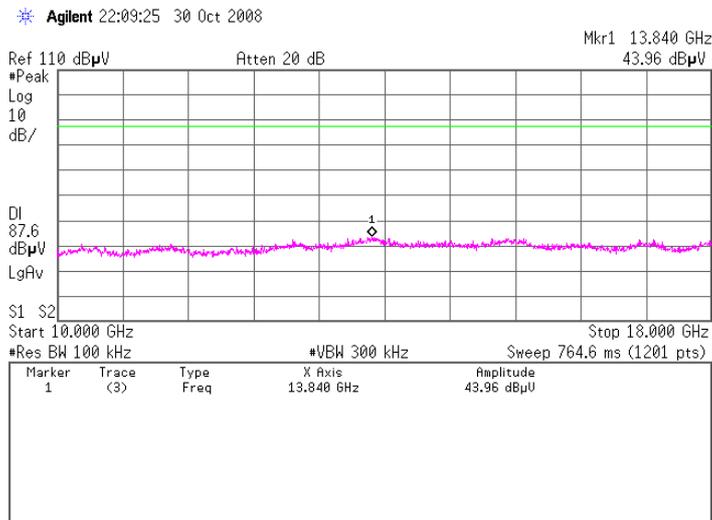


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 Ch:2402MHz

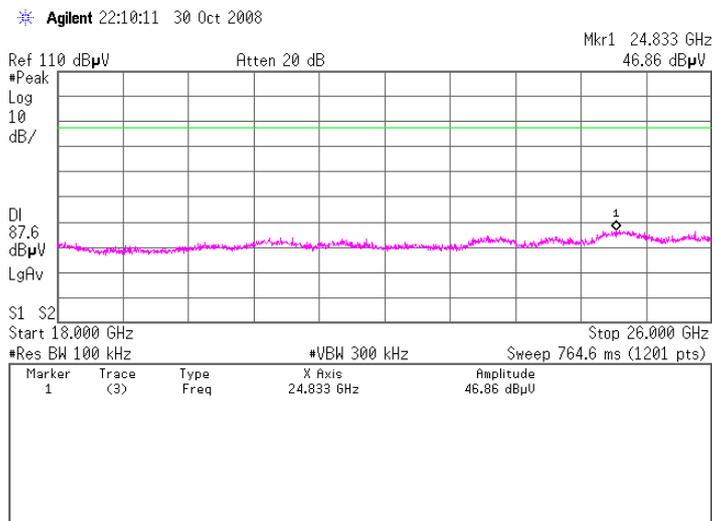
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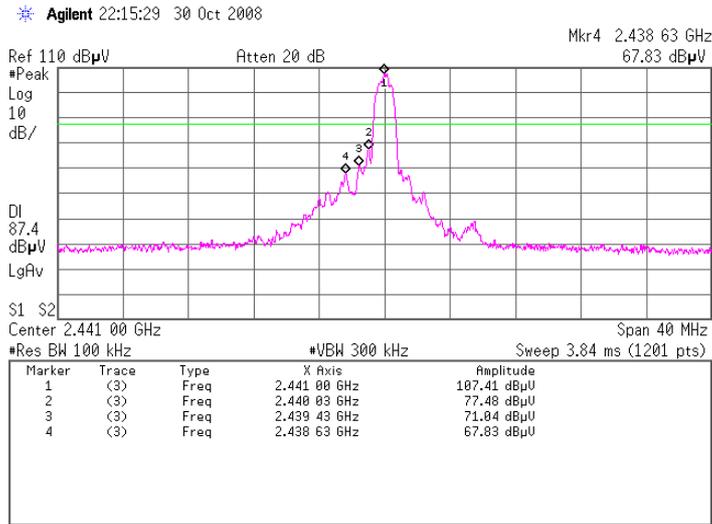


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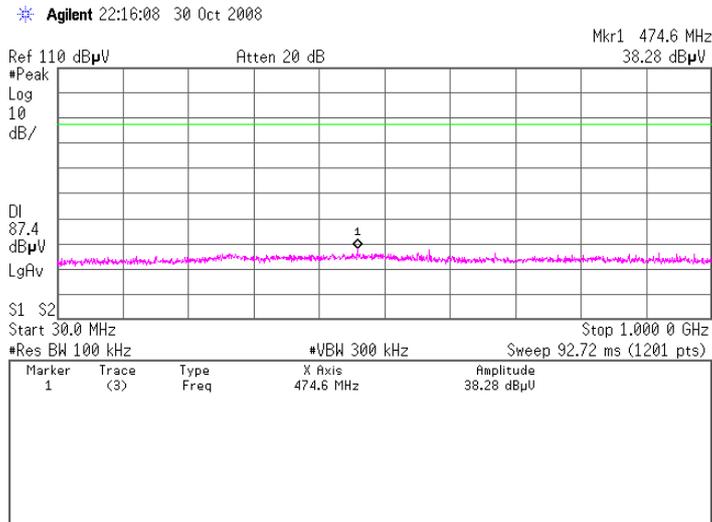


[Transmitting 3DH5]
 Ch:2441MHz

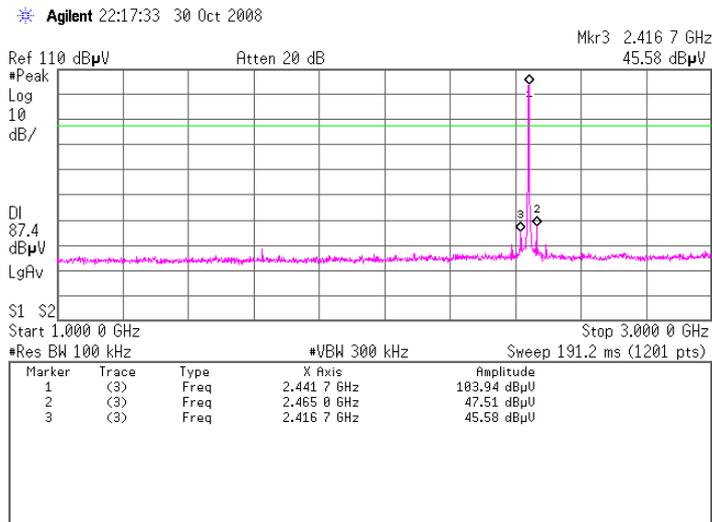
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2.

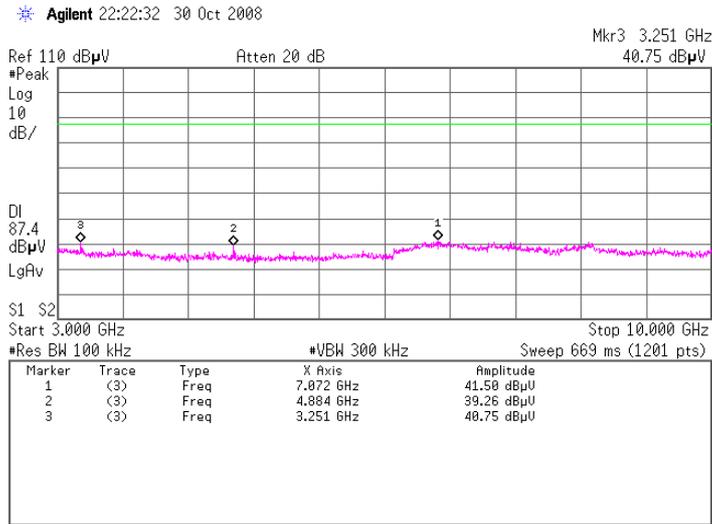


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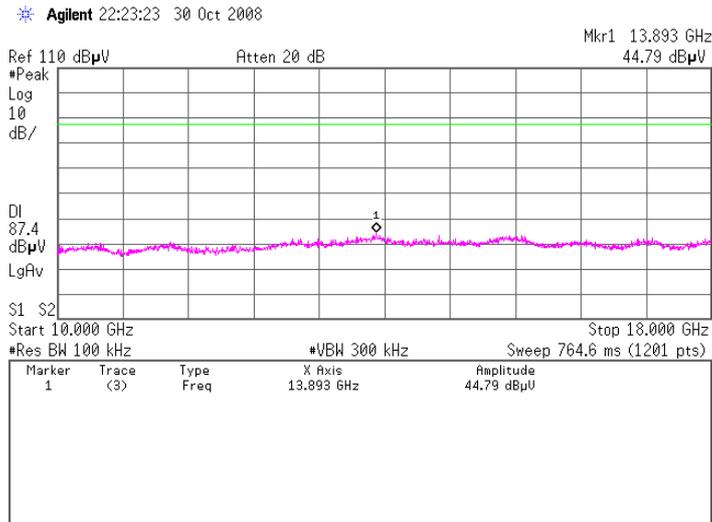


[Transmitting 3DH5]
 Ch:2441MHz

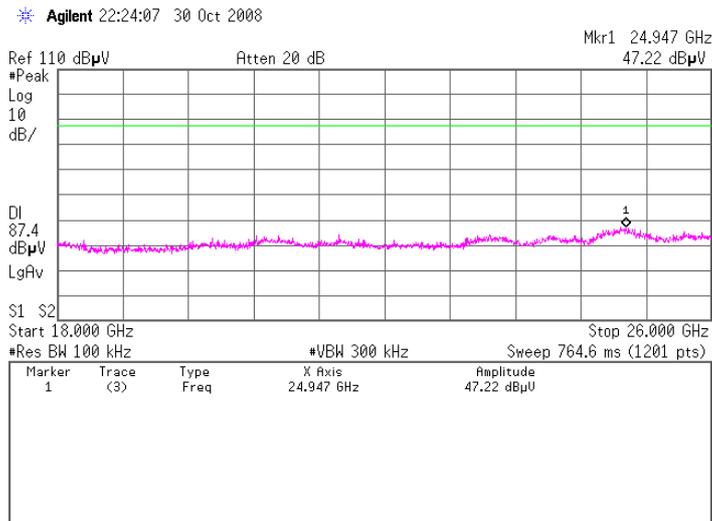
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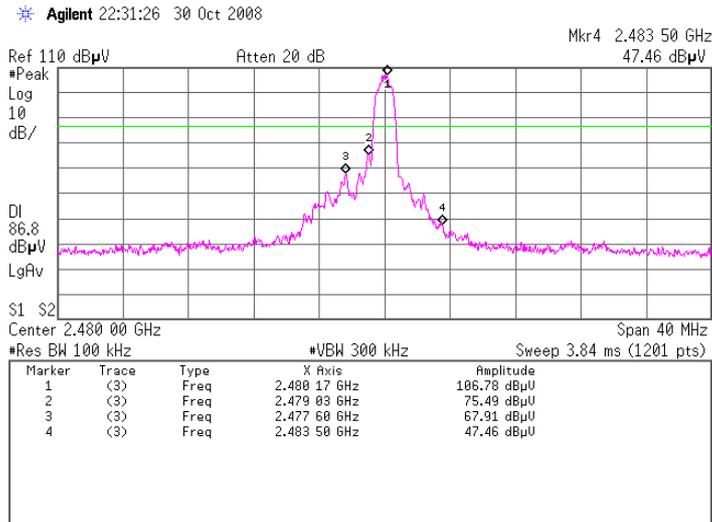


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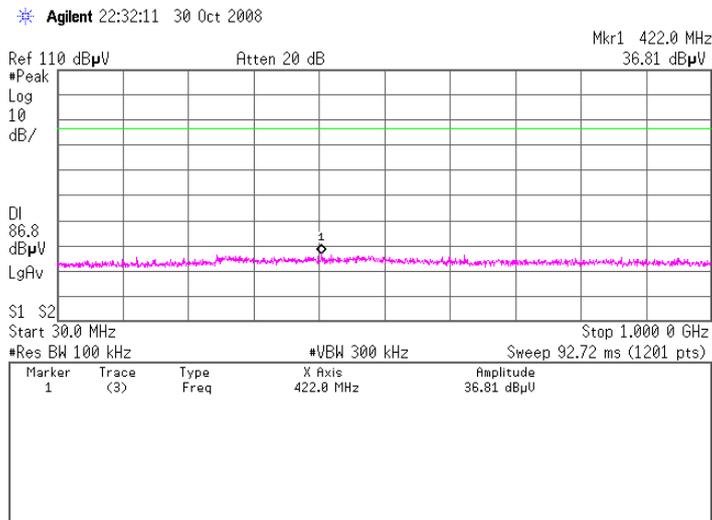


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 Ch:2480MHz

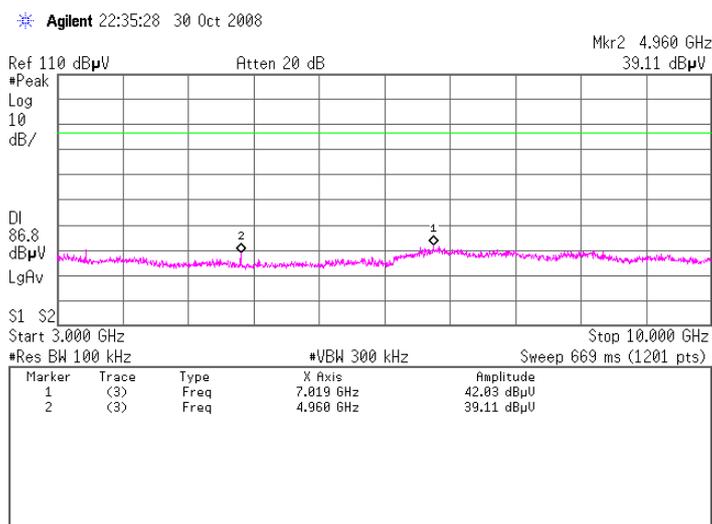
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2.

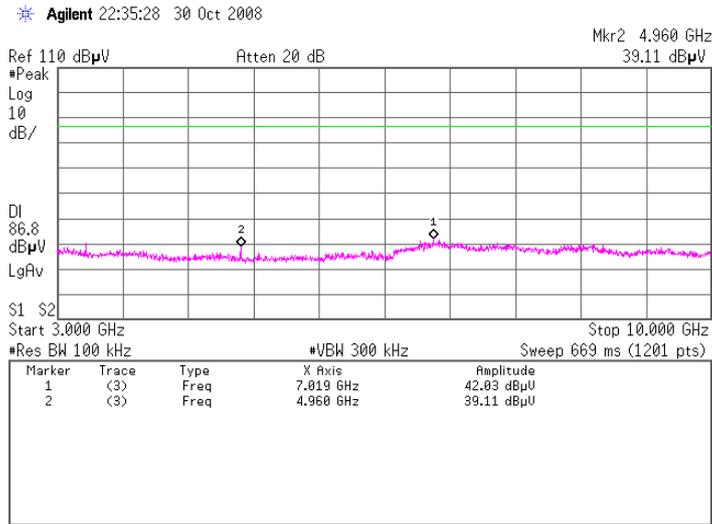


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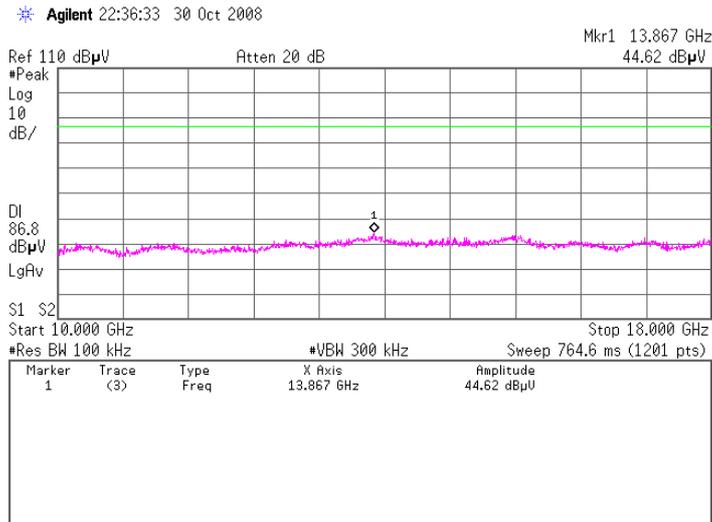


[Transmitting 3DH5]
Ch:2480MHz

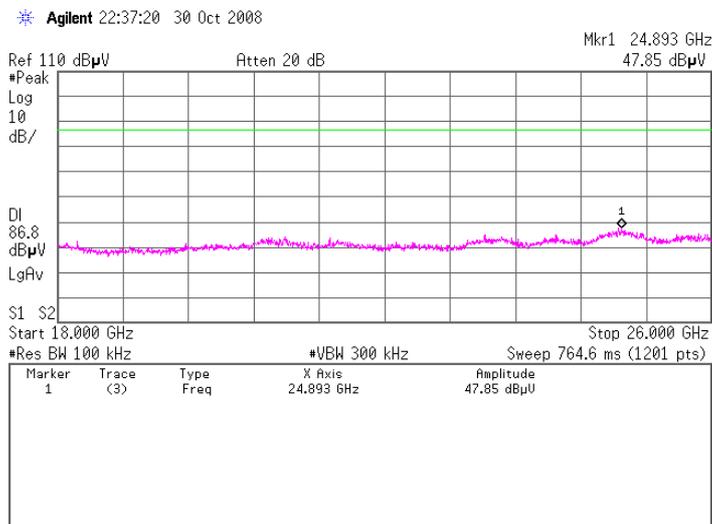
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5.

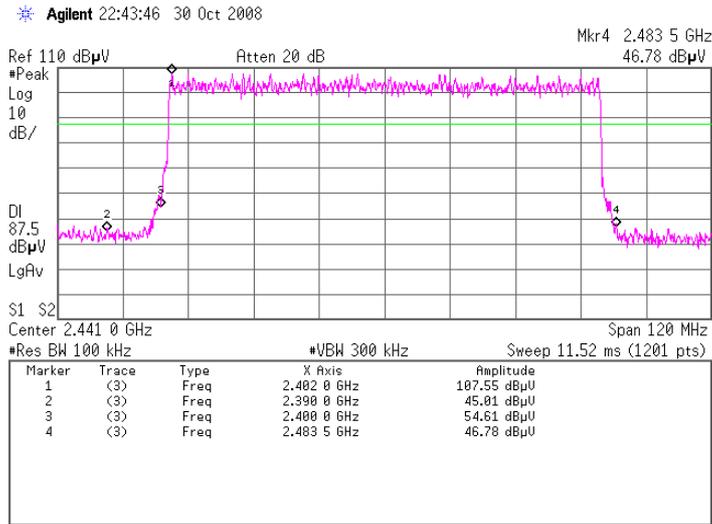


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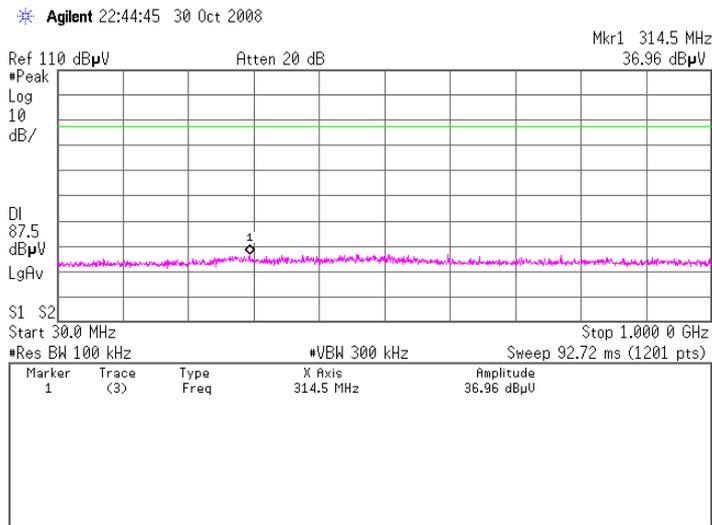


[Transmitting 3DH5]
Hopping

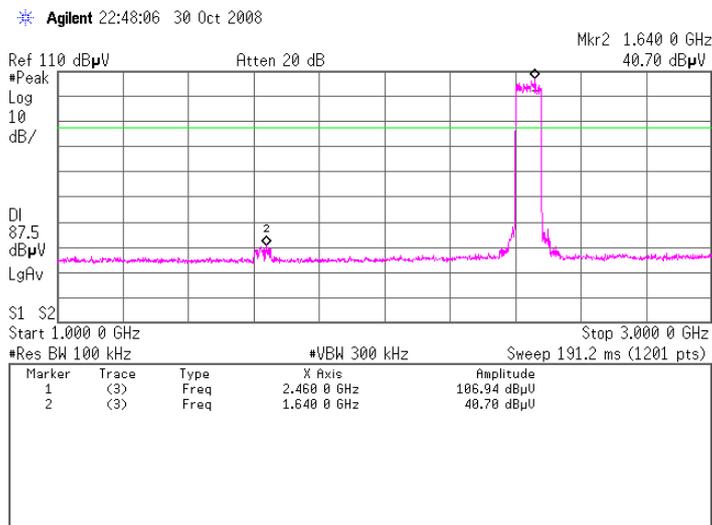
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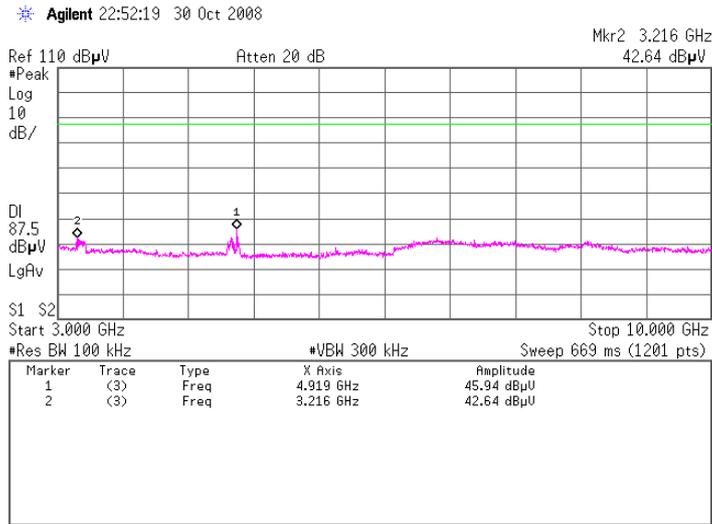


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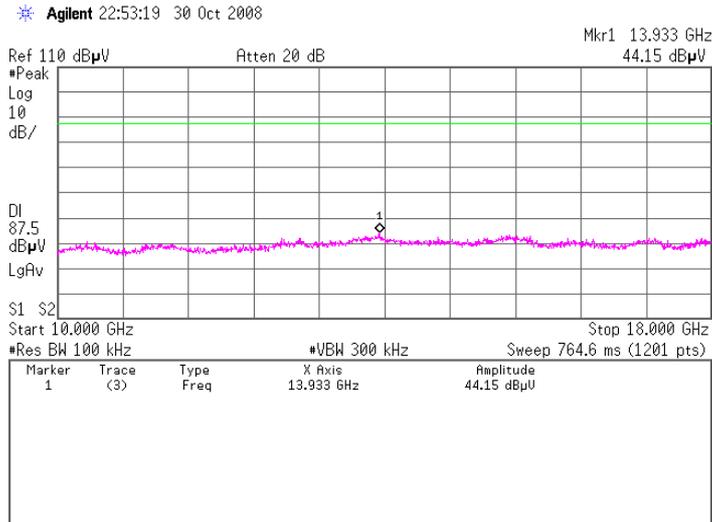


[Transmitting3 DHS]
Hopping

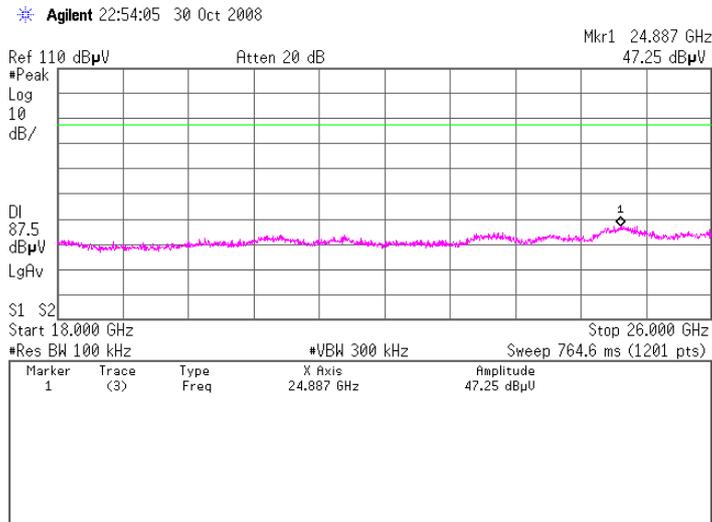
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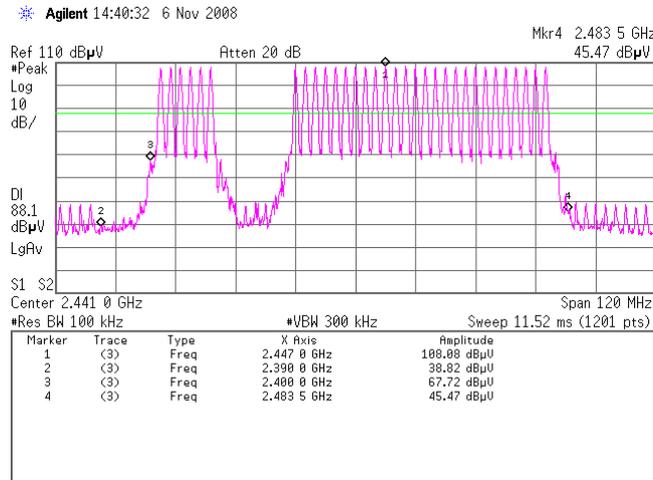
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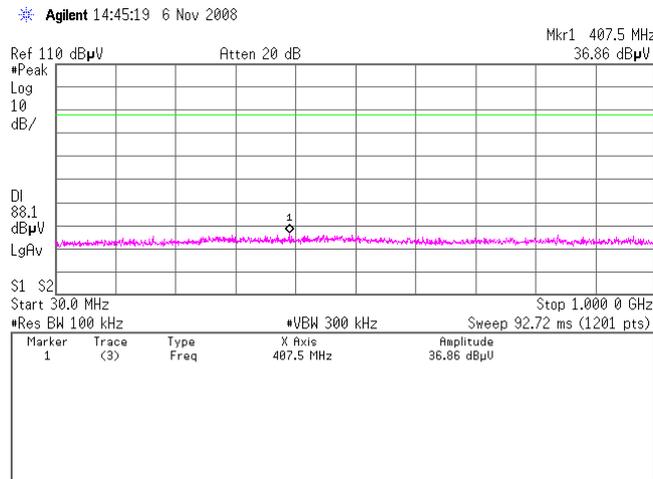
UL Japan, Inc. Yamakita EMC lab. No.3 shielded room
 Date: 2008/11/6
 Temp./Humid.: 22 deg. C. / 58 %
 Engineer: Tatsuya Arai
 Test mode: Transmitting (Inquiry)

[Transmitting]
 Inquiry

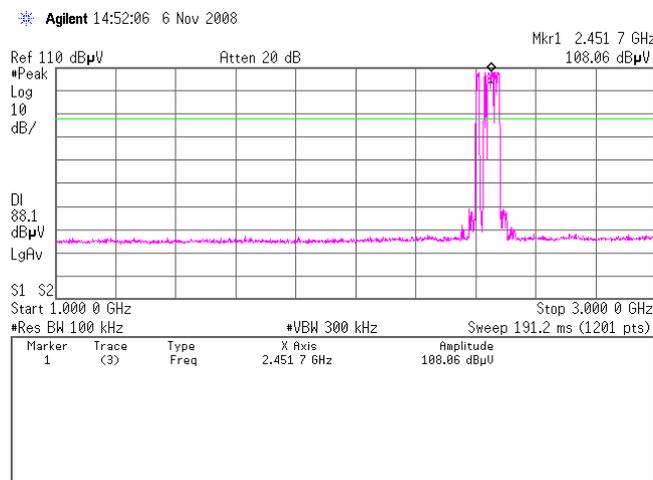
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2.

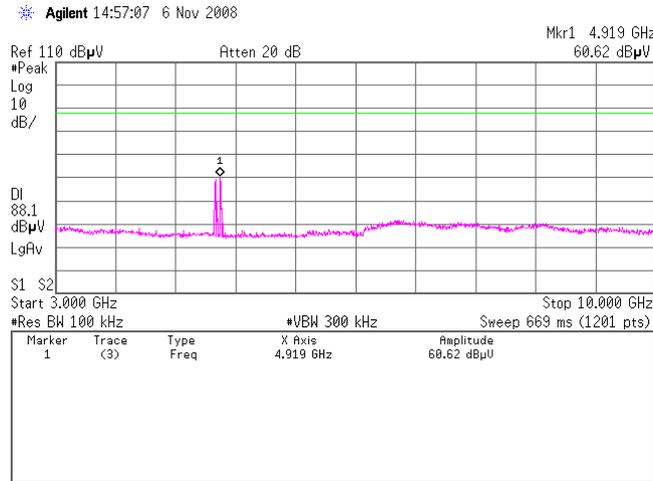


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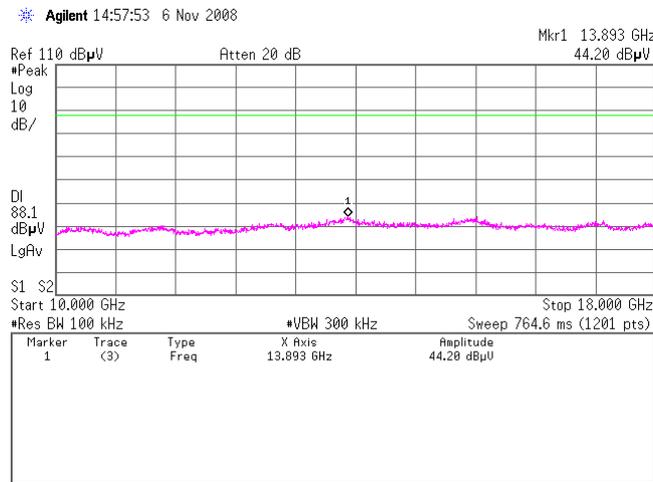


[Transmitting]
Inquiry

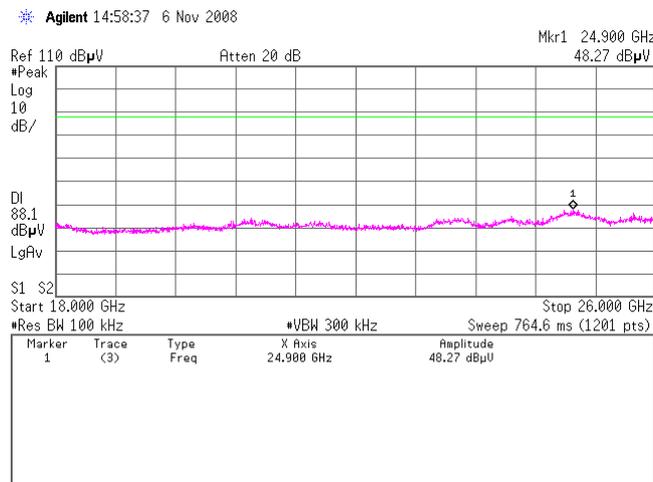
4.



5.



6.



DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2402MHz) DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.67	BB	34.8	35.5	9.9	27.5	2.2	6.0	25.4	26.1	43.5	18.1	17.4	
2.	100.00	BB	32.8	33.2	10.1	27.5	2.2	6.0	23.6	24.0	43.5	19.9	19.5	
3.	154.68	BB	34.9	32.5	15.0	27.5	2.7	6.0	31.1	28.7	43.5	12.4	14.8	
4.	522.57	BB	34.3	34.2	18.9	27.0	5.6	6.0	37.8	37.7	46.0	8.2	8.3	
5.	772.90	BB	23.9	20.5	21.2	27.2	7.1	6.1	31.1	27.7	46.0	14.9	18.3	

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2441MHz) DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.67	BB	35.0	32.9	9.9	27.5	2.2	6.0	25.6	23.5	43.5	17.9	20.0	
2.	100.01	BB	34.3	32.2	10.1	27.5	2.2	6.0	25.1	23.0	43.5	18.4	20.5	
3.	154.68	BB	29.8	26.6	15.0	27.5	2.7	6.0	26.0	22.8	43.5	17.5	20.7	
4.	522.60	BB	33.6	33.8	18.9	27.0	5.6	6.0	37.1	37.3	46.0	8.9	8.7	
5.	772.92	BB	22.5	19.6	21.2	27.2	7.1	6.1	29.7	26.8	46.0	16.3	19.2	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2480MHz) DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.67	BB	34.4	32.9	9.9	27.5	2.2	6.0	25.0	23.5	43.5	18.5	20.0	
2.	100.01	BB	32.6	30.0	10.1	27.5	2.2	6.0	23.4	20.8	43.5	20.1	22.7	
3.	154.67	BB	33.3	30.0	15.0	27.5	2.7	6.0	29.5	26.2	43.5	14.0	17.3	
4.	522.63	BB	32.7	32.0	18.9	27.0	5.6	6.0	36.2	35.5	46.0	9.8	10.5	
5.	772.92	BB	22.5	20.2	21.2	27.2	7.1	6.1	29.7	27.4	46.0	16.3	18.6	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2402MHz) DH5
 Remarks : HOR:Z/VER:Y, PK
 Date : 10/30/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Fumiaki Matsuo

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1602.06	BB	52.3	52.0	25.7	35.9	3.6	0.0	45.7	45.4	74.0	28.3	28.6
2.	2390.00	BB	43.5	43.8	26.7	35.4	4.4	0.0	39.2	39.5	74.0	34.8	34.5
3.	2400.00	BB	60.0	58.4	26.7	35.3	4.5	0.0	55.9	54.3	74.0	18.1	19.7
4.	4804.00	BB	53.8	48.0	31.1	34.1	5.9	0.0	56.7	50.9	74.0	17.3	23.1
5.	7206.00	BB	45.4	45.2	35.6	34.7	7.1	0.0	53.4	53.2	74.0	20.6	20.8
6.	9608.00	BB	46.3	46.7	38.3	35.3	8.2	0.0	57.5	57.9	74.0	16.5	16.1
7.	12010.00	BB	46.1	45.3	38.6	35.0	8.9	0.0	58.6	57.8	74.0	15.4	16.2

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ CABLE : KCC-D16/D17 ■ PREAMP : KAF-07 (8449B) ■ EMI RECEIVER : KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation
Equipment : Wireless Stereo Headset
Model : DR-BT101
Sample No. : QA34
Power : DC3.7V
Mode : Transmitting 2402MHz(DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/10/30
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dBuV/m]	VER		HOR [dB]	VER	
1*	1602.06	50.9	47.0	25.7	35.9	3.6	0.0	0.0	44.3	40.4	54.0	9.7	13.6	10
2	2390.00	43.5	43.8	26.7	35.4	4.4	0.0	-6.7	32.5	32.8	54.0	21.5	21.2	1M
3	2400.00	60.0	58.4	26.7	35.3	4.5	0.0	-6.7	49.2	47.6	54.0	4.8	6.4	1M
4	4804.00	53.8	48.0	31.1	34.1	5.9	0.0	-6.7	50.0	44.2	54.0	4.0	9.8	1M
5	7206.00	45.4	45.2	35.6	34.7	7.1	0.0	-6.7	46.7	46.5	54.0	7.3	7.5	1M
6	9608.00	46.3	46.7	38.3	35.3	8.2	0.0	-6.7	50.8	51.2	54.0	3.2	2.8	1M
7	12010.00	46.1	45.3	38.6	35.0	8.9	0.0	-6.7	51.9	51.1	54.0	2.1	2.9	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.92[\text{ms}]/100[\text{ms}]) = -30.69[\text{dB}]$

Dwell time: $184.54\text{ms}/4 = 46.135\text{ms}$ per 100ms See Dwell Time data

In this time, Dwell factor is -30.69dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

We would like to consider all channel on time. If so, maximum all channel on time is $184.54/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $46.135/100\text{msec} = -6.7\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT101
Serial No. : QA34
Power : DC3.7V
Mode : Transmitting(2441MHz)DH5
Remarks : HOR:Z/VER:Y, PK
Date : 10/30/2008
Test Distance : 3 m
Temperature : 20 °C Engineer : Fumiaki Matsuo
Humidity : 51 %
Regulation : FCC Part15C § 15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1626.71	BB	54.4	52.5	25.8	35.9	3.6	0.0	47.9	46.0	74.0	26.1	28.0
2.	4882.00	BB	52.1	51.2	31.3	34.1	6.0	0.0	55.3	54.4	74.0	18.7	19.6
3.	7323.00	BB	45.3	45.5	35.8	34.8	7.1	0.0	53.4	53.6	74.0	20.6	20.4
4.	9764.00	BB	46.0	46.6	38.4	35.4	8.2	0.0	57.2	57.8	74.0	16.8	16.2
5.	12205.00	BB	46.2	45.9	38.9	34.8	9.0	0.0	59.3	59.0	74.0	14.7	15.0

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation	Regulation : FCC Part15C Section 15.209
Equipment : Wireless Stereo Headset	Test Distance : 3m
Model : DR-BT101	Date : 2008/10/30
Sample No. : QA34	Temperature : 20deg.C
Power : DC3.7V	Humidity : 51%
Mode : Transmitting 2441MHz(DH5)	

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dBuV/m]	VER		HOR [dB]	VER	
1*	1626.71	48.7	44.8	25.8	35.9	3.6	0.0	0.0	42.2	38.3	54.0	11.8	15.7	10
2	4882.00	52.1	51.2	31.3	34.1	6.0	0.0	-6.7	48.6	47.7	54.0	5.4	6.3	1M
3	7323.00	45.3	45.5	35.8	34.8	7.1	0.0	-6.7	46.7	46.9	54.0	7.3	7.1	1M
4	9764.00	46.0	46.6	38.4	35.4	8.2	0.0	-6.7	50.5	51.1	54.0	3.5	2.9	1M
5	12205.00	46.2	45.9	38.9	34.8	9.0	0.0	-6.7	52.6	52.3	54.0	1.4	1.7	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.92[\text{ms}]/100[\text{ms}]) = -30.69[\text{dB}]$

Dwell time: $184.54\text{ms}/4 = 46.135\text{ms}$ per 100ms See Dwell Time data

In this time, Dwell factor is -30.69dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

So we would like to consider all channel on time. If so, maximum all channel on time is $184.54/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $46.135/100\text{msec} = -6.7\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2480MHz) DH5
 Remarks : HOR:Z/VER:Y, PK
 Date : 10/30/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Fumiaki Matsuo

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1652.71	BB	53.2	52.2	25.8	35.9	3.7	0.0	46.8	45.8	74.0	27.2	28.2
2.	2483.50	BB	52.1	48.5	26.9	35.3	4.5	0.0	48.2	44.6	74.0	25.8	29.4
3.	4960.00	BB	55.1	56.1	31.5	34.1	6.0	0.0	58.5	59.5	74.0	15.5	14.5
4.	7440.00	BB	45.0	45.4	36.0	34.8	7.1	0.0	53.3	53.7	74.0	20.7	20.3
5.	9920.00	BB	46.2	46.0	38.5	35.4	8.3	0.0	57.6	57.4	74.0	16.4	16.6
6.	12400.00	BB	46.2	46.5	39.1	34.6	9.0	0.0	59.7	60.0	74.0	14.3	14.0

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) /KHA-04 (18-26GHz)
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation
Equipment : Wireless Stereo Headset
Model : DR-BT101
Sample No. : QA34
Power : DC3.7V
Mode : Transmitting 2480MHz(DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/10/30
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dBuV/m]	VER		HOR [dB]	VER	
1*	1652.71	48.6	46.3	25.8	35.9	3.7	0.0	0.0	42.2	39.9	54.0	11.8	14.1	10
2	2483.50	52.1	48.5	26.9	35.3	4.5	0.0	-6.7	41.5	37.9	54.0	12.5	16.1	1M
3	4960.00	55.1	56.1	31.5	34.1	6.0	0.0	-6.7	51.8	52.8	54.0	2.2	1.2	1M
4	7440.00	45.0	45.4	36.0	34.8	7.1	0.0	-6.7	46.6	47.0	54.0	7.4	7.0	1M
5	9920.00	46.2	46.0	38.5	35.4	8.3	0.0	-6.7	50.9	50.7	54.0	3.1	3.3	1M
6	12400.00	46.2	46.5	39.1	34.6	9.0	0.0	-6.7	53.0	53.3	54.0	1.0	0.7	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.92[\text{ms}]/100[\text{ms}]) = -30.69[\text{dB}]$

Dwell time: $184.54\text{ms}/4 = 46.135\text{ms}$ per 100ms See Dwell Time data

In this time, Dwell factor is -30.69dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

So we would like to consider all channel on time. If so, maximum all channel on time is $184.54/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $46.135/100\text{msec} = -6.7\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2402MHz) 3DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.69	BB	33.1	31.0	9.9	27.5	2.2	6.0	23.7	21.6	43.5	19.8	21.9	
2.	100.03	BB	31.4	29.7	10.1	27.5	2.2	6.0	22.2	20.5	43.5	21.3	23.0	
3.	156.20	BB	31.8	26.1	15.0	27.5	2.8	6.0	28.1	22.4	43.5	15.4	21.1	
4.	522.61	BB	33.1	33.1	18.9	27.0	5.6	6.0	36.6	36.6	46.0	9.4	9.4	
5.	772.90	BB	22.0	19.8	21.2	27.2	7.1	6.1	29.2	27.0	46.0	16.8	19.0	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2441MHz) 3DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.68	BB	33.4	31.0	9.9	27.5	2.2	6.0	24.0	21.6	43.5	19.5	21.9	
2.	100.02	BB	30.3	30.4	10.1	27.5	2.2	6.0	21.1	21.2	43.5	22.4	22.3	
3.	153.33	BB	35.3	33.3	14.9	27.5	2.7	6.0	31.4	29.4	43.5	12.1	14.1	
4.	522.66	BB	35.1	33.3	18.9	27.0	5.6	6.0	38.6	36.8	46.0	7.4	9.2	
5.	772.99	BB	23.7	20.1	21.2	27.2	7.1	6.1	30.9	27.3	46.0	15.1	18.7	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2480MHz) 3DH5
 Remarks : HOR:Y/VER:Z
 Date : 10/27/2008
 Test Distance : 3 m
 Temperature : 23 °C
 Humidity : 62 %
 Regulation : FCC Part15C § 15.209

Engineer : Akira Sato

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB]	VER		
1.	98.68	BB	34.7	32.0	9.9	27.5	2.2	6.0	25.3	22.6	43.5	18.2	20.9	
2.	100.00	BB	32.4	28.1	10.1	27.5	2.2	6.0	23.2	18.9	43.5	20.3	24.6	
3.	158.68	BB	36.0	28.1	15.2	27.5	2.8	6.0	32.5	24.6	43.5	11.0	18.9	
4.	522.60	BB	35.0	33.5	18.9	27.0	5.6	6.0	38.5	37.0	46.0	7.5	9.0	
5.	772.98	BB	23.5	20.2	21.2	27.2	7.1	6.1	30.7	27.4	46.0	15.3	18.6	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA : KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE : KCC-30/31/32/34 ■ PREAMP : KAF-08 (MH648A) ■ EMI RECEIVER : KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2402MHz) 3DH5
 Remarks : HOR:Z/VER:Y, PK
 Date : 10/30/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)
 Engineer : Fumiaki Matsuo

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1602.40	BB	53.6	51.1	25.7	35.9	3.6	0.0	47.0	44.5	74.0	27.0	29.5
2.	2390.00	BB	45.6	45.5	26.7	35.4	4.4	0.0	41.3	41.2	74.0	32.7	32.8
3.	2400.00	BB	62.0	64.6	26.7	35.3	4.5	0.0	57.9	60.5	74.0	16.1	13.5
4.	4804.00	BB	45.0	44.7	31.1	34.1	5.9	0.0	47.9	47.6	74.0	26.1	26.4
5.	7206.00	BB	45.4	45.2	35.6	34.7	7.1	0.0	53.4	53.2	74.0	20.6	20.8
6.	9608.00	BB	46.1	46.2	38.3	35.3	8.2	0.0	57.3	57.4	74.0	16.7	16.6
7.	12010.00	BB	46.0	45.8	38.6	35.0	8.9	0.0	58.5	58.3	74.0	15.5	15.7

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)

■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation
Equipment : Wireless Stereo Headset
Model : DR-BT101
Sample No. : QA34
Power : DC3.7V
Mode : Transmitting 2402MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/10/30
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dBuV/m]	VER		HOR [dB]	VER	
1*	1602.04	51.6	46.7	25.7	35.9	3.6	0.0	0.0	45.0	40.1	54.0	9.0	13.9	10
2	2390.00	45.6	45.5	26.7	35.4	4.4	0.0	-6.9	34.4	34.3	54.0	19.6	19.7	1M
3	2400.00	62.0	64.6	26.7	35.3	4.5	0.0	-6.9	51.0	53.6	54.0	3.0	0.4	1M
4	4804.00	45.0	44.7	31.1	34.1	5.9	0.0	-6.9	41.0	40.7	54.0	13.0	13.3	1M
5	7206.00	45.4	45.2	35.6	34.7	7.1	0.0	-6.9	46.5	46.3	54.0	7.5	7.7	1M
6	9608.00	46.1	46.2	38.3	35.3	8.2	0.0	-6.9	50.4	50.5	54.0	3.6	3.5	1M
7	12010.00	46.0	45.8	38.6	35.0	8.9	0.0	-6.9	51.6	51.4	54.0	2.4	2.6	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.90[\text{ms}]/100[\text{ms}]) = -30.75[\text{dB}]$

Dwell time: $91.64\text{ms}/4 = 22.91\text{ms}$ per 100ms See Dwell Time data

Worst Dwell time maybe occur at 3DH3, so we used the value 180.50ms for this calculation.

Dwell time: $180.50\text{ms}/4 = 45.125\text{ms}$

In this time, Dwell factor is -30.75dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

So we would like to consider all channel on time. If so, maximum all channel on time is $180.50/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $45.125/100\text{msec} = -6.9\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2441MHz) 3DH5
 Remarks : HOR:Z/VER:Y, PK
 Date : 10/30/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Fumiaki Matsuo

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER	HOR [dB μ V/m]	VER	HOR [dB]	VER
1.	1626.76	BB	51.1	50.5	25.8	35.9	3.6	0.0	44.6	44.0	74.0	29.4	30.0	
2.	4882.00	BB	44.9	44.1	31.3	34.1	6.0	0.0	48.1	47.3	74.0	25.9	26.7	
3.	7323.00	BB	45.3	45.1	35.8	34.8	7.1	0.0	53.4	53.2	74.0	20.6	20.8	
4.	9764.00	BB	45.9	46.7	38.4	35.4	8.2	0.0	57.1	57.9	74.0	16.9	16.1	
5.	12205.00	BB	46.4	46.0	38.9	34.8	9.0	0.0	59.5	59.1	74.0	14.5	14.9	

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) / KHA-04 (18-26GHz)
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation
Equipment : Wireless Stereo Headset
Model : DR-BT101
Sample No. : QA34
Power : DC3.7V
Mode : Transmitting 2441MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/10/30
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dB]	VER				
1*	1626.76	46.0	45.1	25.8	35.9	3.6	0.0	0.0	39.5	38.6	54.0	14.5	15.4	10
2	4882.00	44.9	44.1	31.3	34.1	6.0	0.0	-6.9	41.2	40.4	54.0	12.8	13.6	1M
3	7323.00	45.3	45.1	35.8	34.8	7.1	0.0	-6.9	46.5	46.3	54.0	7.5	7.7	1M
4	9764.00	45.9	46.7	38.4	35.4	8.2	0.0	-6.9	50.2	51.0	54.0	3.8	3.0	1M
5	12205.00	46.4	46.0	38.9	34.8	9.0	0.0	-6.9	52.6	52.2	54.0	1.4	1.8	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.90[\text{ms}]/100[\text{ms}]) = -30.75[\text{dB}]$

Dwell time: $91.64\text{ms}/4 = 22.91\text{ms}$ per 100ms See Dwell Time data

Worst Dwell time maybe occur at 3DH3, so we used the value 180.50ms for this calculation.

Dwell time: $180.50\text{ms}/4 = 45.125\text{ms}$

In this time, Dwell factor is -30.75dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

So we would like to consider all channel on time. If so, maximum all channel on time is $180.50/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $45.125/100\text{msec} = -6.9\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT101
 Serial No. : QA34
 Power : DC3.7V
 Mode : Transmitting (2480MHz) 3DH5
 Remarks : HOR:Z/VER:Y, PK
 Date : 10/30/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Fumiaki Matsuo

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1652.64	BB	53.1	51.7	25.8	35.9	3.7	0.0	46.7	45.3	74.0	27.3	28.7
2.	2483.50	BB	44.4	47.0	26.9	35.3	4.5	0.0	40.5	43.1	74.0	33.5	30.9
3.	4960.00	BB	44.7	44.4	31.5	34.1	6.0	0.0	48.1	47.8	74.0	25.9	26.2
4.	7440.00	BB	45.9	45.3	36.0	34.8	7.1	0.0	54.2	53.6	74.0	19.8	20.4
5.	9920.00	BB	46.0	45.9	38.5	35.4	8.3	0.0	57.4	57.3	74.0	16.6	16.7
6.	12400.00	BB	46.2	46.0	39.1	34.6	9.0	0.0	59.7	59.5	74.0	14.3	14.5

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-02 (1-18GHz) /KHA-04 (18-26GHz)
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 29CE0154-YK-01-A

Company : Sony corporation
Equipment : Wireless Stereo Headset
Model : DR-BT101
Sample No. : QA34
Power : DC3.7V
Mode : Transmitting 2480MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/10/30
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Fumiaki Matsuo

AV calculation value SPECTRUM ANALYZER RBW:1MHz

No.	FREQ [MHz]	READING		ANT Factor [dB]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN [dB]	Duty Factor	RESULT		LIMIT [dBuV/m]	MARGIN		VBW [Hz]
		HOR [dBuV]	VER						HOR [dBuV/m]	VER		HOR [dB]	VER	
1*	1652.64	49.2	46.8	25.8	35.9	3.7	0.0	0.0	42.8	40.4	54.0	11.2	13.6	10
2	2483.50	44.4	47.0	26.9	35.3	4.5	0.0	-6.9	33.6	36.2	54.0	20.4	17.8	1M
3	4960.00	44.7	44.4	31.5	34.1	6.0	0.0	-6.9	41.2	40.9	54.0	12.8	13.1	1M
4	7440.00	45.9	45.3	36.0	34.8	7.1	0.0	-6.9	47.3	46.7	54.0	6.7	7.3	1M
5	9920.00	46.0	45.9	38.5	35.4	8.3	0.0	-6.9	50.5	50.4	54.0	3.5	3.6	1M
6	12400.00	46.2	46.0	39.1	34.6	9.0	0.0	-6.9	52.8	52.6	54.0	1.2	1.4	1M

Sample Calculation :

RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + ATT + Duty Factor

Duty Factor calculation: $20 \cdot \log(2.90[\text{ms}]/100[\text{ms}]) = -30.75[\text{dB}]$

Dwell time: $91.64\text{ms}/4 = 22.91\text{ms}$ per 100ms See Dwell Time data

Worst Dwell time maybe occur at 3DH3, so we used the value 180.50ms for this calculation.

Dwell time: $180.50\text{ms}/4 = 45.125\text{ms}$

In this time, Dwell factor is -30.75dB but if we subtract this data from reading data, that calculation data will fall below noise floor. When the EUT power is turned off, the noise floor falls 20dB below the worst spurious emission level, therefore correction is performed as follows.

So we would like to consider all channel on time. If so, maximum all channel on time is $180.50/4\text{msec}$ at 100msec.

So we treat this value for Dwell time factor. This value is $45.125/100\text{msec} = -6.9\text{dB}$.

Because we cannot distinguish the noise coming from which channel, so we consider all channel on time.

AV calculation is in accordance with FCC Public Notice DA00-705.

Average emission values were calculated with PK DETECT.

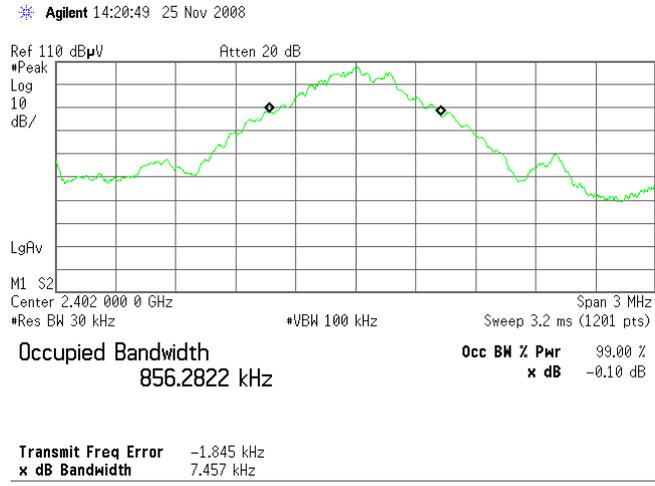
* This noise is not pulse emission, therefore measurement was performed with 10Hz VBW according to DA00-705.

Occupied Bandwidth (99%) (Regulation: RSS-Gen 4.6.1)

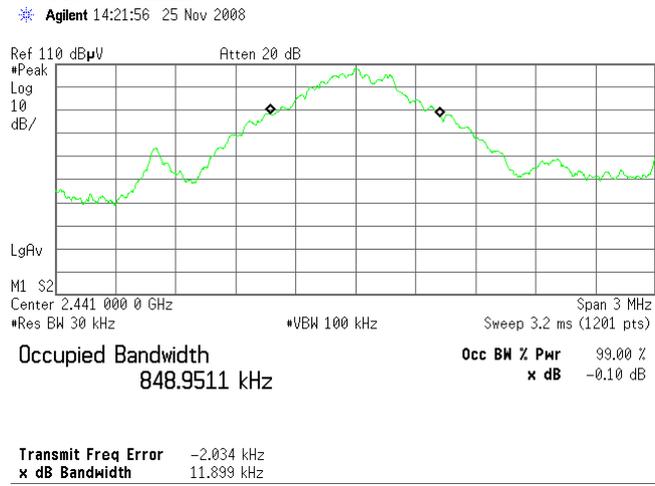
UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: 2008.11.25
 Temp./Humid.: 20 deg. C. / 41 %
 Engineer: Tatsuya Arai
 Test mode: Transmitting

[Hopping off, DHS]

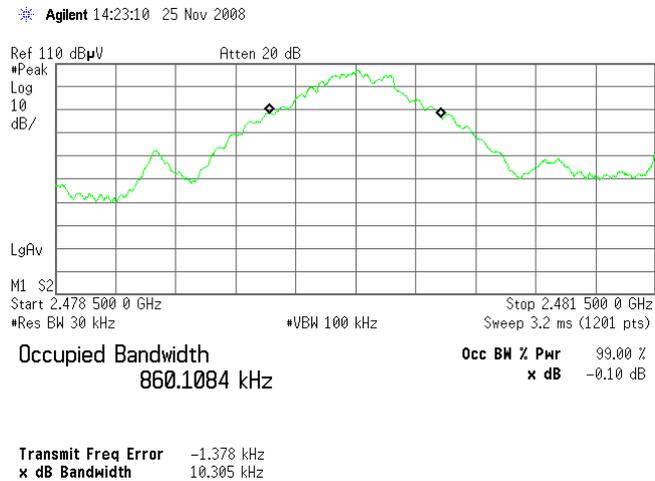
1. ch : 2402MHz/Occupied Bandwidth: 856.3kHz



2. ch : 2441MHz/Occupied Bandwidth: 849.0kHz



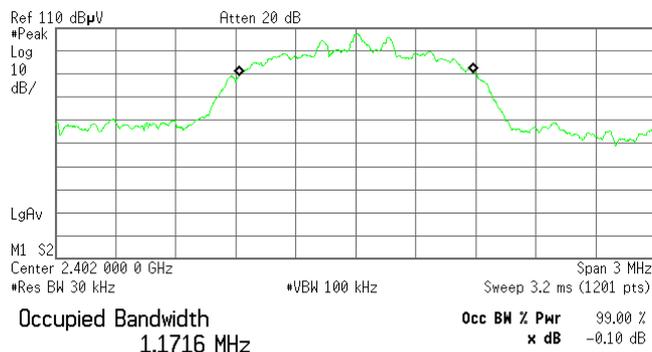
3. ch : 2480MHz/Occupied Bandwidth: 860.1kHz



[Hopping off, 3DH5]

4. ch : 2402MHz/Occupied Bandwidth: 1.1716MHz

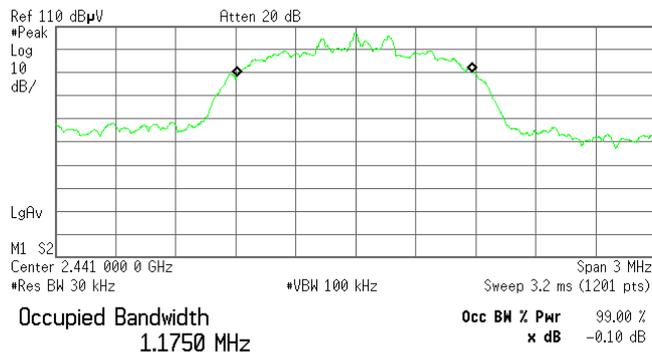
* Agilent 14:25:44 25 Nov 2008



Transmit Freq Error 2.601 kHz
 x dB Bandwidth 7.185 kHz

5. ch : 2441MHz/Occupied Bandwidth: 1.1750MHz

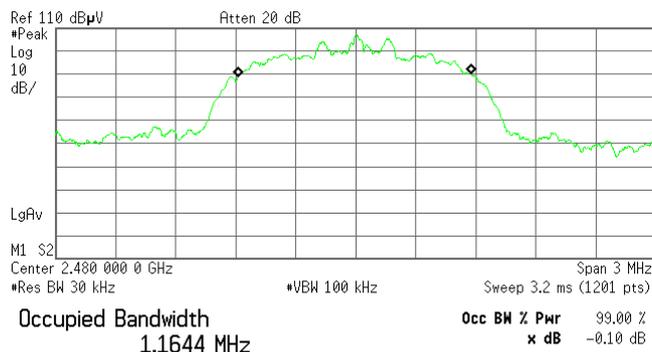
* Agilent 14:27:40 25 Nov 2008



Transmit Freq Error -5.248 kHz
 x dB Bandwidth 7.498 kHz

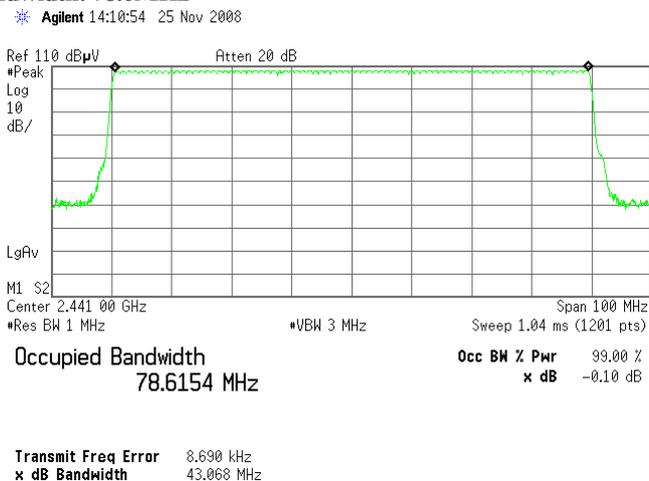
6. ch : 2480MHz/Occupied Bandwidth: 1.1644MHz

* Agilent 14:29:16 25 Nov 2008

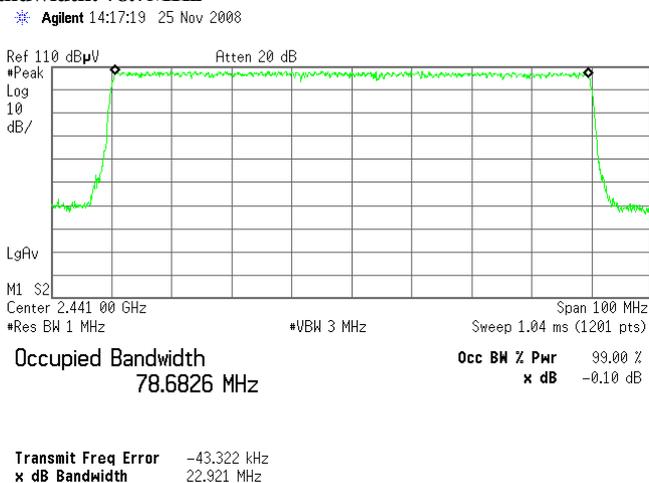


Transmit Freq Error -3.764 kHz
 x dB Bandwidth 7.669 kHz

7. Hopping, DH5/Occupied Bandwidth: 78.6MHz



8. Hopping, 3DH5/Occupied Bandwidth: 78.7MHz



APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
KSA-08	Spectrum Analyzer	Agilent	E4446A	MY46180525	RE/AT 1,2,3,4,6	2008/01/11 * 12
KCC-D20	Coaxial Cable	SUHNER	SUCOFLEX102	31110/2	AT all	2008/07/09 * 12
KPM-05	Power meter	Agilent	E4417A	GB41290718	AT 5	2008/03/21 * 12
KPSS-01	Power sensor	Agilent	E9327A	US40440544	AT 5	2008/03/27 * 12
KDT-01	Coaxial Crystal Detector	Agilent	8473C	1822A05320	AT 4	Pre Check
KOSC-01	Oscilloscope	Tektronix	TDS-2022B	C050588	AT 4	2008/05/07 * 12
KOS-01	Humidity Indicator	Custom	CTH-190	K-01	AT(2S/R)	2008/07/14 * 12
KOS-10	Humidity Indicator	Custom	CTH-190	K-10	AT(3S/R)	2008/07/07 * 12
YA-RE	Radiated emission(software)	UL Japan	RE(Ver.1.5)	-	RE	-
KAEC-01	Anechoic Chamber	JSE	Semi 3m	1	RE	2008/08/06 * 12
KAF-08	Pre Amplifier	Anritsu	MH648A	M90147	RE	2008/06/03 * 12
KAT6-01	Attenuator	INMET	18N-6dB	-	RE	2008/03/17 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1926	RE	2007/12/27 * 12
KCC-30/31/32 /34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/ RFM-E421	-/01055	RE	2008/10/22 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	170	RE	2007/12/27 * 12
KSA-04	Spectrum Analyzer	Advantest	R3271A	95060087	RE	2008/09/29 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ES140	100054/040	RE	2008/04/18 * 12
KTR-04	Test Receiver	Rohde & Schwarz	ESVS10	825475/006	RE	2008/10/20 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	K-02	RE	2008/07/07 * 12
KJM-01	Measure	TAJIMA	GL19-55	-	RE	-
KAF-07	Pre Amplifier	Hewlett Packard	8449B	3008A01002	RE	2007/12/10 * 12
KCC-D16/D17	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KP S/KPS-1501-2000 -KPS	04202005	RE	2008/02/21 * 12
KHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	230	RE	2008/04/23 * 12
KHA-04	Horn Antenna	EMCO	3160-09	1278	RE	2008/04/30 * 12
KSA-06	Spectrum Analyzer	Agilent	N9320A	CN0163000425	RE	2008/10/09 * 12

The expiration date of the calibration is the end of the expired month .

All equipment is calibrated with traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

- RE: Out of Band Emission (Radiated)
- AT: Antenna terminal conducted test
 - 1: Carrier Frequency Separation
 - 2: 20dB Bandwidth
 - 3: Number of Hopping Frequency
 - 4: Dwell time
 - 5: Maximum Peak Output Power
 - 6: Out of Band Emission (Conducted)