



RADIO TEST REPORT

Test Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
Type of Equipment : Wireless Stereo Headset
Model No. : DR-BT140Q
FCC ID : AK8DRBT140Q
Test regulation : FCC Part15 Subpart C: 2008
Test result : Complied

1. This test report shall not be reproduced except 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: April 22, 23, 30, May 2, 7 and 8, 2008

Tested by: M. Hosaka
Makoto Hosaka

I. Isozaki
Ichiro Isozaki

M. Nakatake
Minoru Nakatake

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

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

Table of Contents	Page
1 Applicant information	3
2 Equipment under test (E.U.T.)	3
3 Test specification, procedures and results	4
4 System test configuration	6
5 Carrier frequency separation	7
6 20dB bandwidth & Occupied bandwidth (99%)	7
7 Number of hopping frequency	7
8 Dwell time	7
9 Maximum peak output power	7
10 Out of band emissions (Antenna port conducted)	7
11 Out of band emissions (Radiated)	8
<u>Contents of Appendixes</u>	9
APPENDIX 1: Photographs of test setup	10
APPENDIX 2: Test data	12
APPENDIX 3: Test instruments	75

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

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 : +81-3-5769-5085
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-BT140Q
Serial No. : 5000021 (Radiated emission test), 5000020 (other test)
Rating : DC3.7V
Country of Mass-production : Malaysia
Receipt Date of Sample : April 21, 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-BT140Q (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: 300kHz, Module controller clock: 24MHz,
AC adaptor: 100kHz, Charge IC: 20kHz
Bandwidth & channel spacing : 79MHz & 1MHz
Type of modulation : FHSS
Antenna type : Chip helical 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 1.8 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.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

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 revision on May 19, 2008 does not influence the test specification applied to the EUT.

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	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	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	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	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	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	Section15.247 (b)(1)	Conducted	N/A		Complied	
Band Edge Compliance	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (d)	Radiated	N/A		Complied	
Spurious emission	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.209 Section15.247 (d)	Conducted / Radiated	N/A		14.2dB (4804.00MHz, PK, Vertical, Tx 2402MHz DH5)	Complied

*1) The test is not applicable since the EUT has no AC mains. Refer to 2.2 Product description.

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

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

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 test report has enough margin, more than site margin.

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

3.5 Test location

UL Japan, Inc. Yamakita EMC Lab.

907, Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken 258-0124 JAPAN

Telephone number : +81 465 77 1011

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 August 26, 2005 (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 November 2, 2005 (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

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

4 System test configuration

4.1 Operating mode

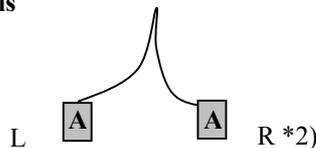
The system was configured in typical fashion (as a customer would normally use it) for testing.

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 (Tx)
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-BT140Q	*1)	SONY	EUT

*1) 5000021 (Radiated emission test), 5000020 (other test)

*2) Bluetooth module is installed in R side.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

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: May 7, 2008

Test engineer : Minoru Nakatake

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: April 30 and May 2, 2008

Test engineer : Minoru Nakatake

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: May 7, 2008

Test engineer : Minoru Nakatake

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: April 30, 2008

Test engineer : Minoru Nakatake

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: April 30, 2008

Test engineer : Minoru Nakatake

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: May 7 and 8, 2008

Test engineer : Minoru Nakatake

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (18.06.07)

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. A drawing of the set up is shown in the photos of 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.

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

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz, AV (Except pulse emission): RBW: 1MHz/VBW: 10Hz
Measuring antenna	Biconical (30-300MHz) Logperiodic (300MHz-1GHz)	Horn

* The test above 1GHz was performed with PK DETECT. Average emission values were calculated with PK DETECT and Duty cycle factor. Duty cycle was within 100msec.

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	X	Z
Vertical	X	Y

11.5 Band edge

Band edge level at 2400MHz is less than 20dB of peak point of the carrier. Refer to the data of out of band emissions (Antenna port conducted). Band edge level at 2390MHz 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 : April 22 and 23, 2008 Test engineer : Makoto Hosaka and Ichiro Isozaki

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (18.06.07)

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
---------	---	------------------

Radiated emission



UL Japan, Inc.

YAMAKITA EMC LAB.

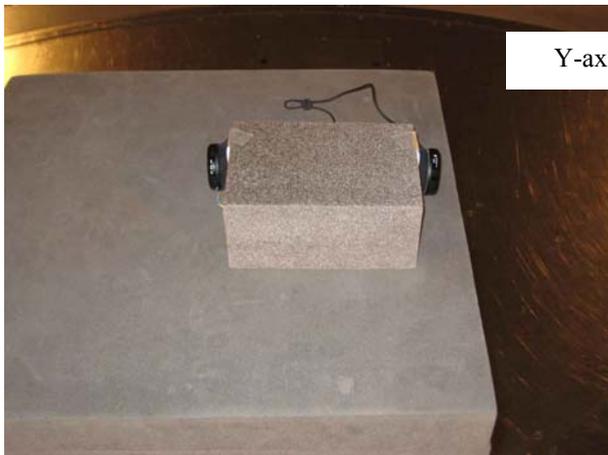
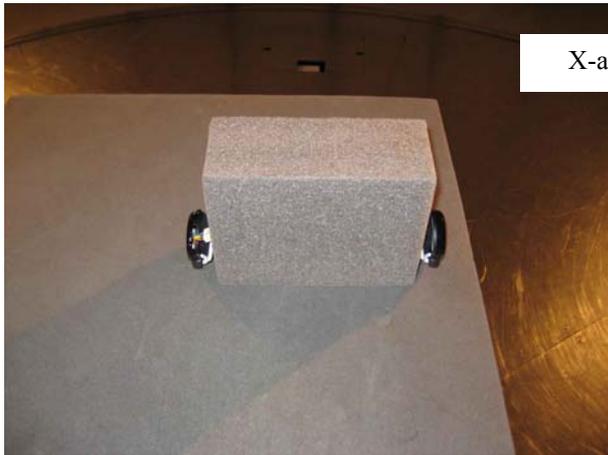
907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (18.06.07)

Pre-check of the worst position



UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (18.06.07)

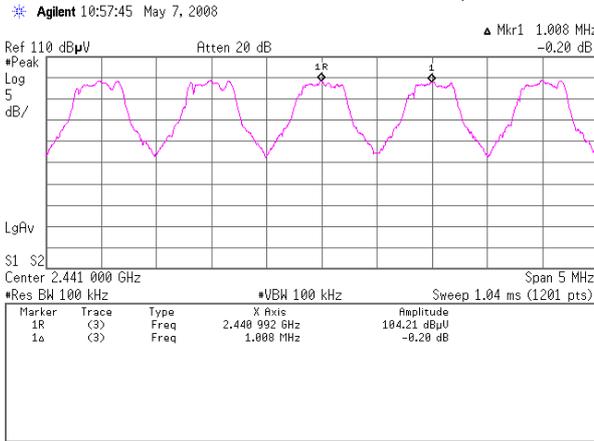
Channel Separation (Regulation: FCC 15.247(a)(1))

UL Japan, Inc. Yamakita EMC lab.
 Date:
 Temp./Humid.:
 Engineer:
 Test mode:

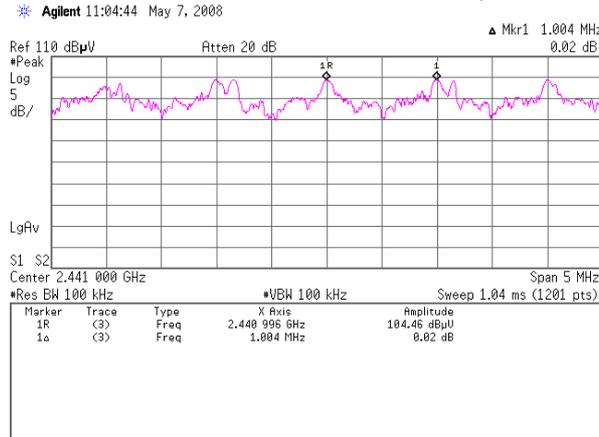
No.2 shielded room
 May 7, 2008
 24 deg. C. / 61 %
 Minoru Nakatake
 Transmitting

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

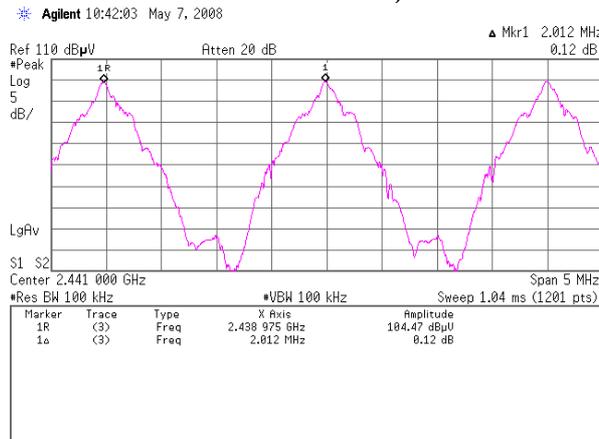
1. Hopping, DH5: 1.008MHz ($2/3 * 20\text{dB Bandwidth} : 2/3 * 1.117\text{MHz} = 744.7\text{kHz}$)



2. Hopping, 3DH5: 1.004MHz ($2/3 * 20\text{dB Bandwidth} : 2/3 * 1.385\text{MHz} = 923.3\text{kHz}$)



3. Inquiry: 2.012MHz ($2/3 * 20\text{dB Bandwidth} : 2/3 * 1.050\text{MHz} = 700.0\text{kHz}$)



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

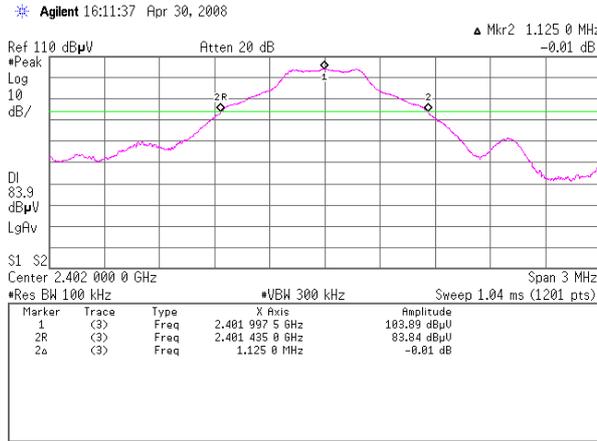
UL Japan, Inc. Yamakita EMC lab.

Date:
 Temp./Humid.:
 Date:
 Temp./Humid.:
 Engineer:
 Test mode:

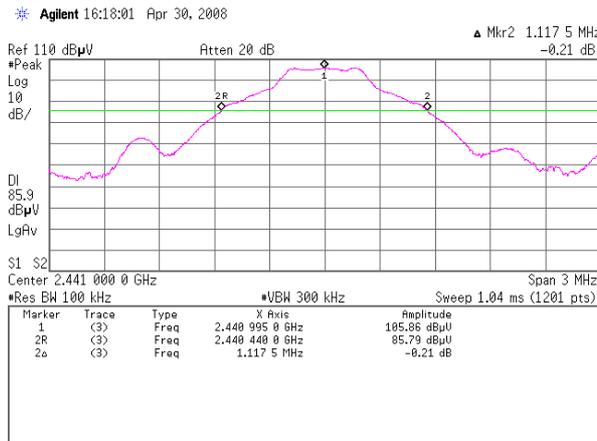
No.2 shielded room
 April 30, 2008
 21 deg. C. / 62 %
 May 2, 2008
 22 deg. C. / 62 %
 Minoru Nakatake
 Transmitting

[Hopping off, DH5]

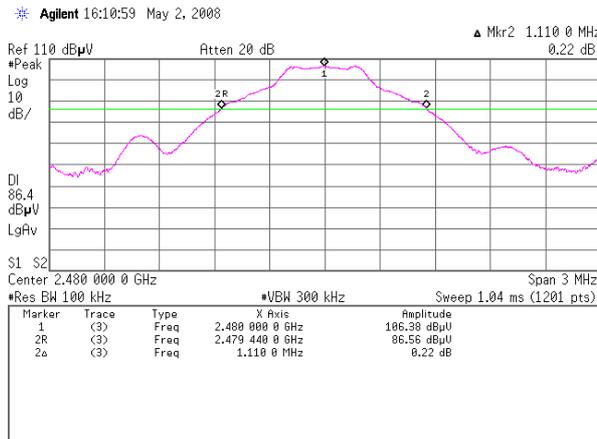
1. ch : 2402MHz/20dB Bandwidth:1.125MHz



2. ch : 2441MHz/20dB Bandwidth:1.117MHz

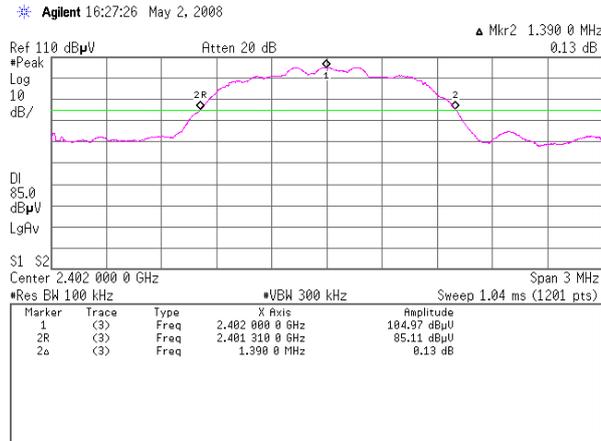


3. ch : 2480MHz/20dB Bandwidth:1.110MHz

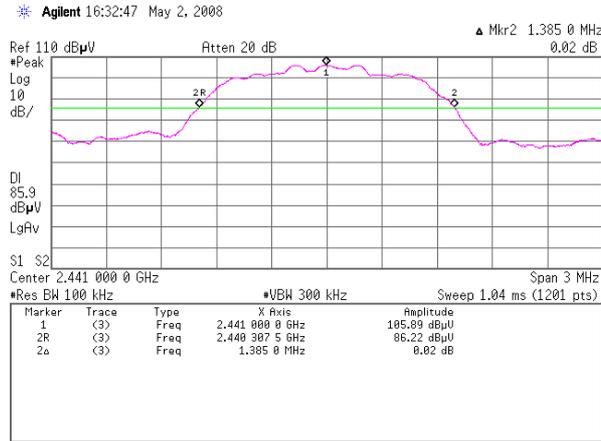


[Hopping off, 3DH5]

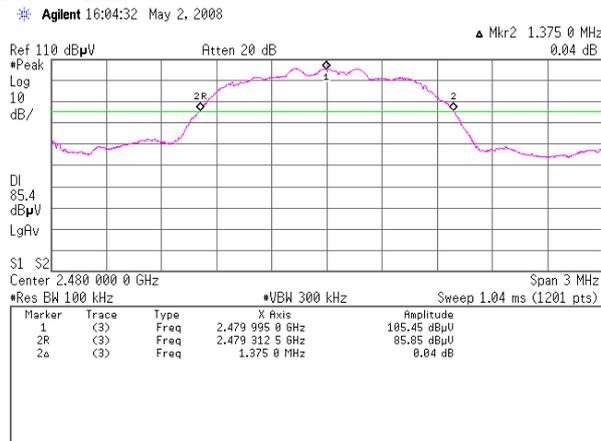
4. ch : 2402MHz/20dB Bandwidth:1.390MHz



5. ch : 2441MHz/20dB Bandwidth:1.385MHz

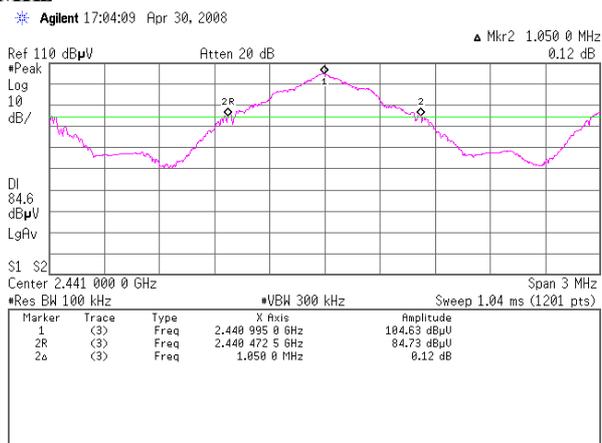


6. ch : 2480MHz/20dB Bandwidth:1.375MHz



[Inquiry]

7. Inauiiry/20dB Bandwidth:1.050MHz

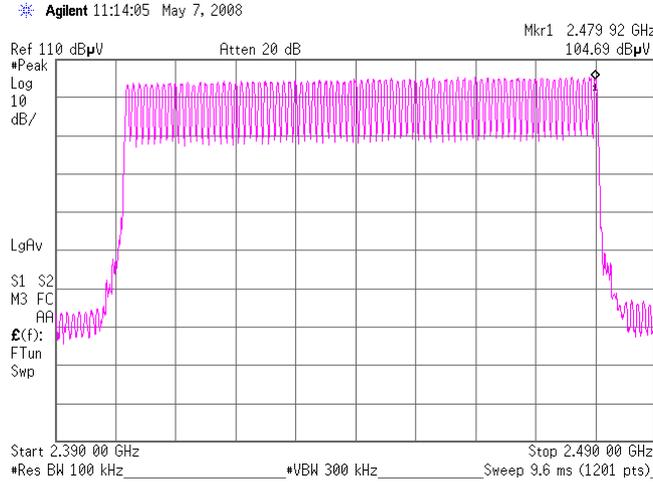


Channel Utilization (Regulation: FCC 15.247(a)(1)(iii))

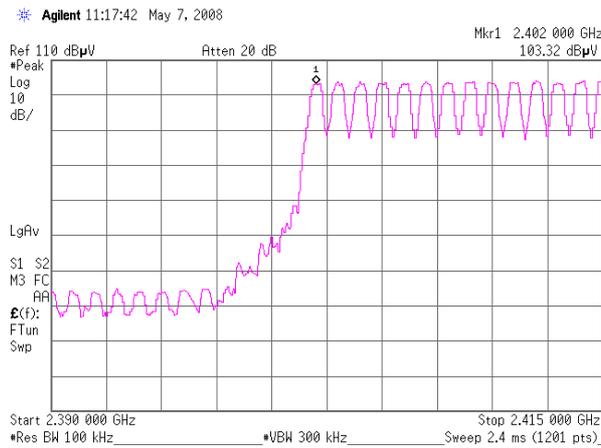
UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: May 7, 2008
 Temp./Humid.: 24 deg. C. / 61 %
 Engineer: Minoru Nakatake
 Test mode: Transmitting

Hopping, DH5: 79ch

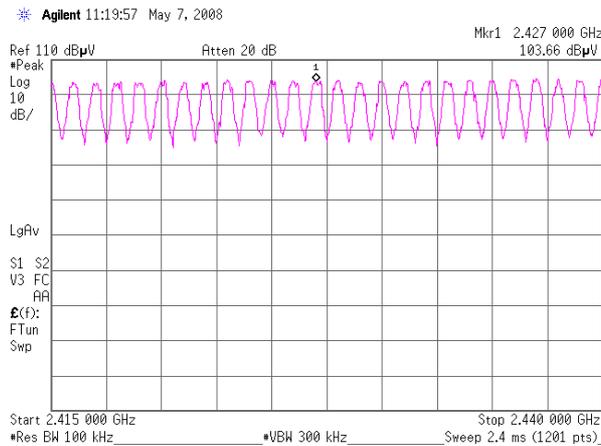
1.



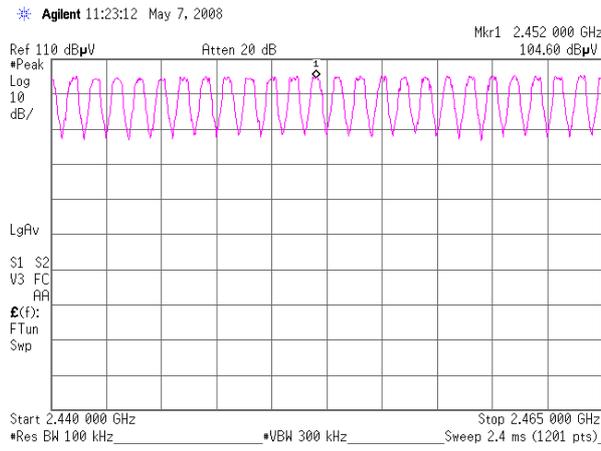
2.



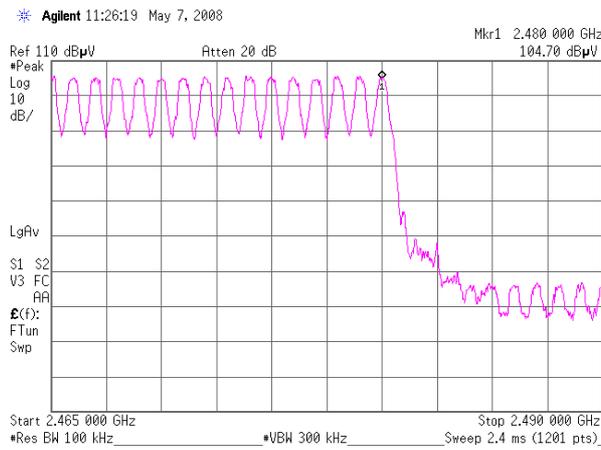
3.



4.

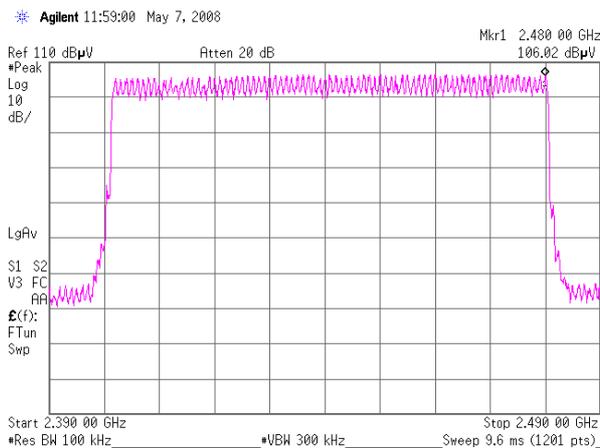


5.

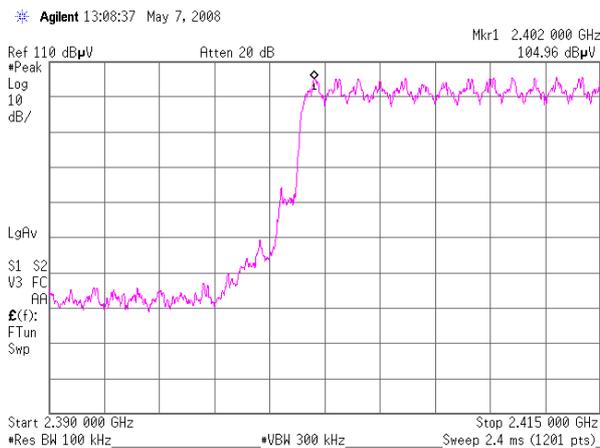


Hopping, 3DHS: 79ch

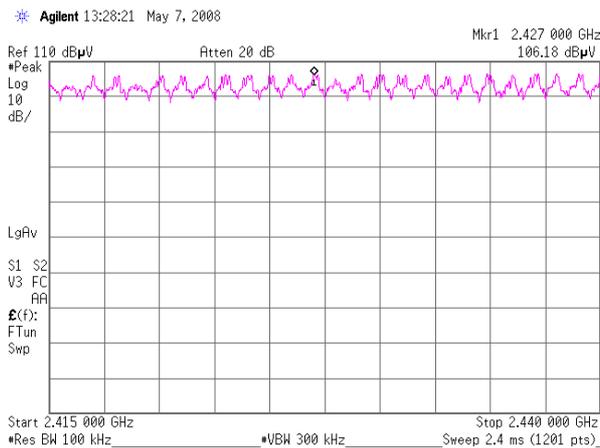
1.



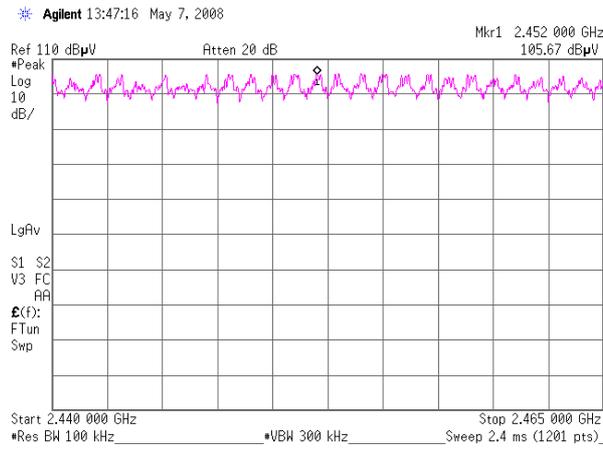
2.



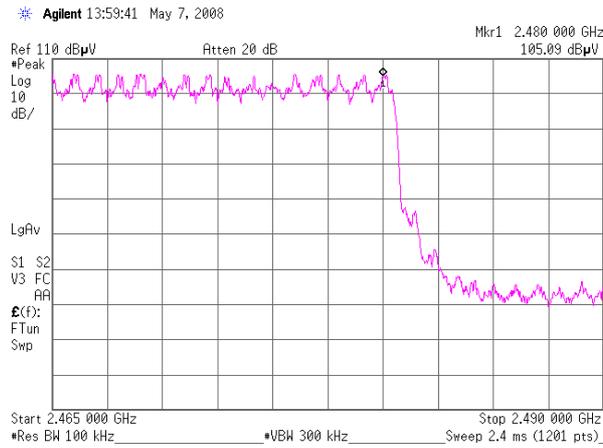
3.



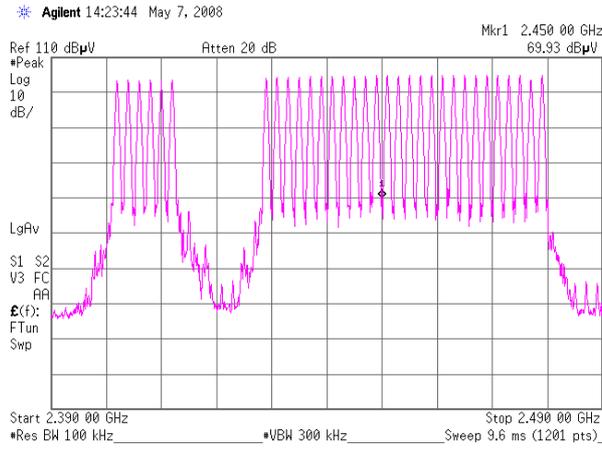
4.



5.



1. Inquiry: 32ch



Company: Sony Corporation
Kind of Equipment: Wireless Stereo Headset
Serial No.: 5000020

Report No.:
Model No.:
Power:

28HE0252-YK-E
DR-BT140Q
DC3.7V

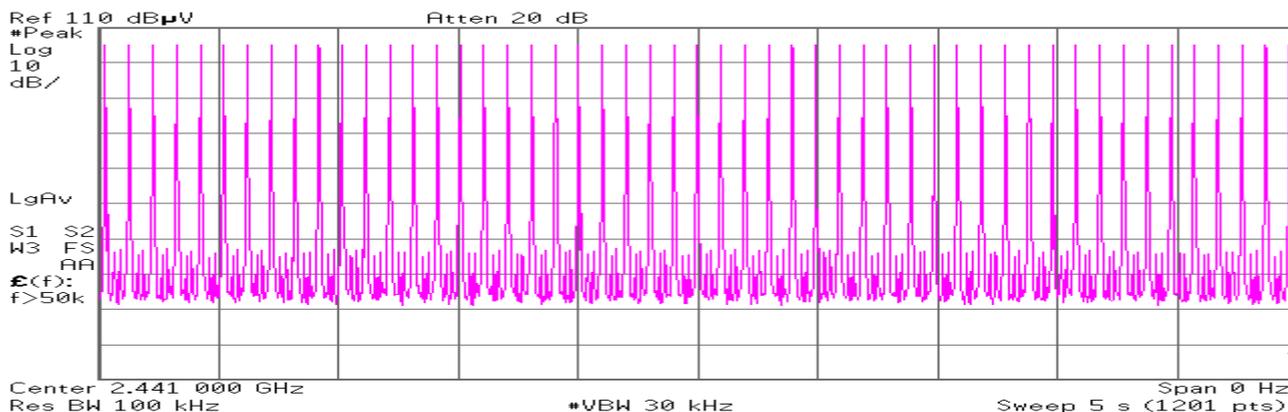
Dwell Time (Regulation: FCC 15.247(a)(1)(iii))

UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
Date: April 30, 2008
Temp/Humid.: 21 deg. C. / 62 %
Engineer: Minoru Nakatake
Test mode: Transmitting

Hopping (DH1):

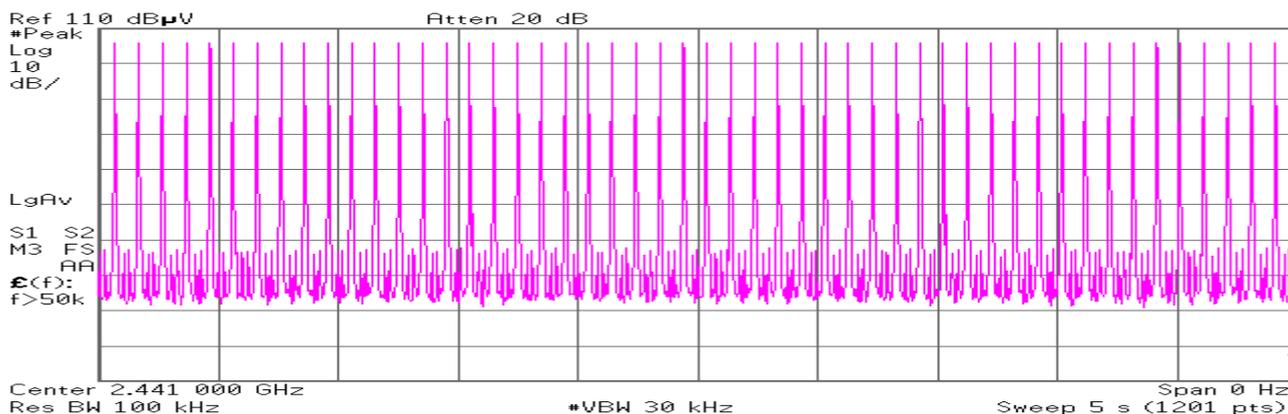
Count 1

Agilent 14:04:46 Apr 30, 2008



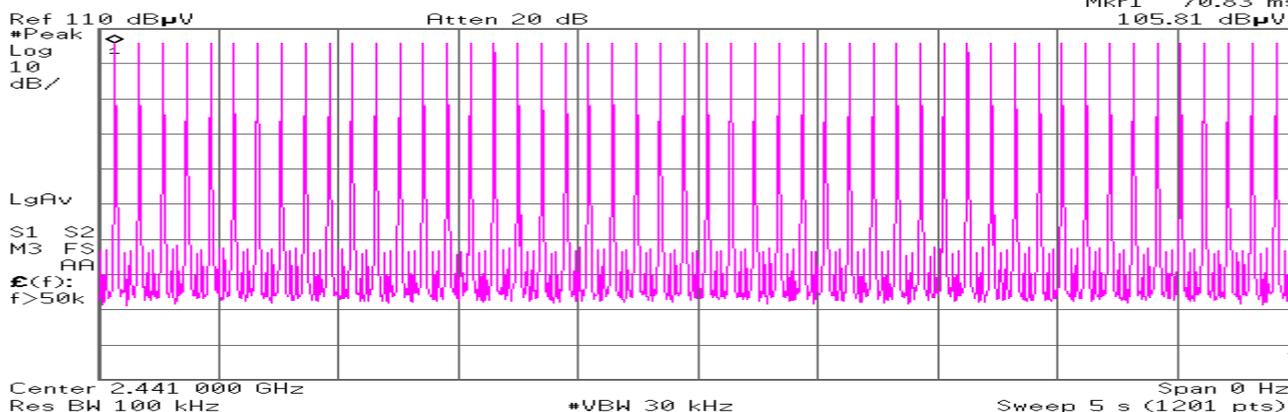
Count 2

Agilent 14:11:56 Apr 30, 2008

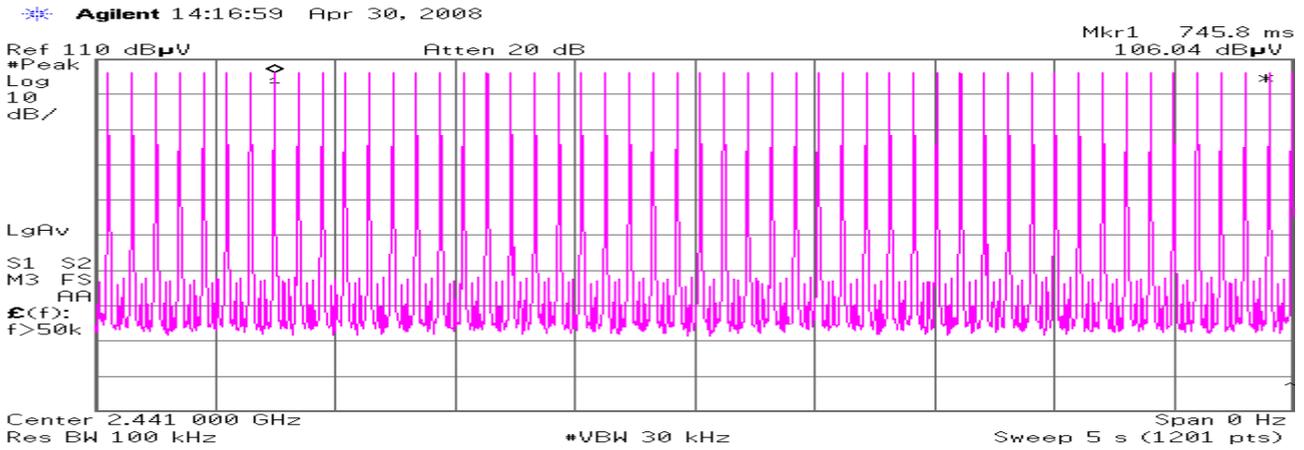


Count 3

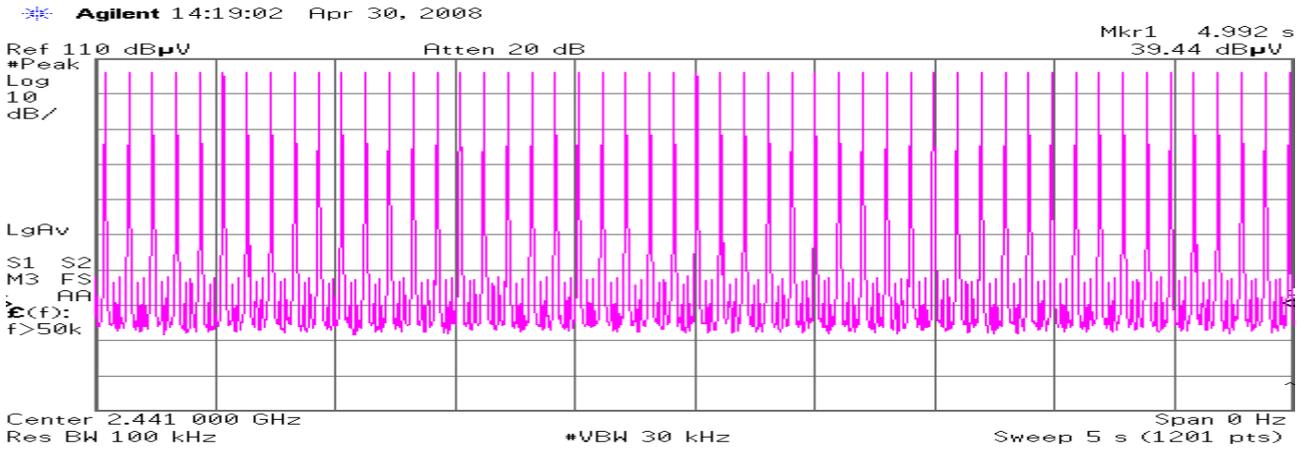
Agilent 14:14:15 Apr 30, 2008



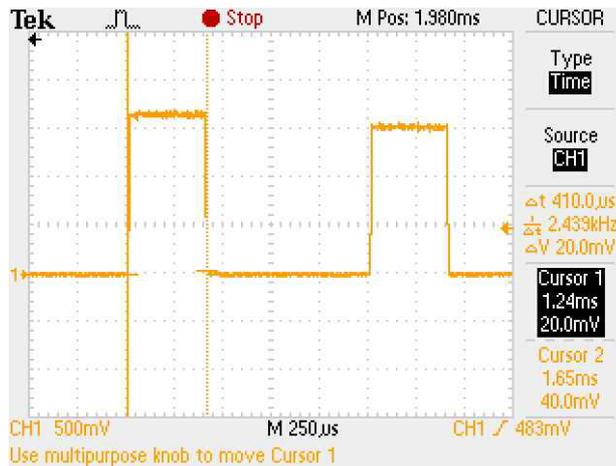
Count 4



Count 5



Duty cycle(Hopping DH1)



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

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

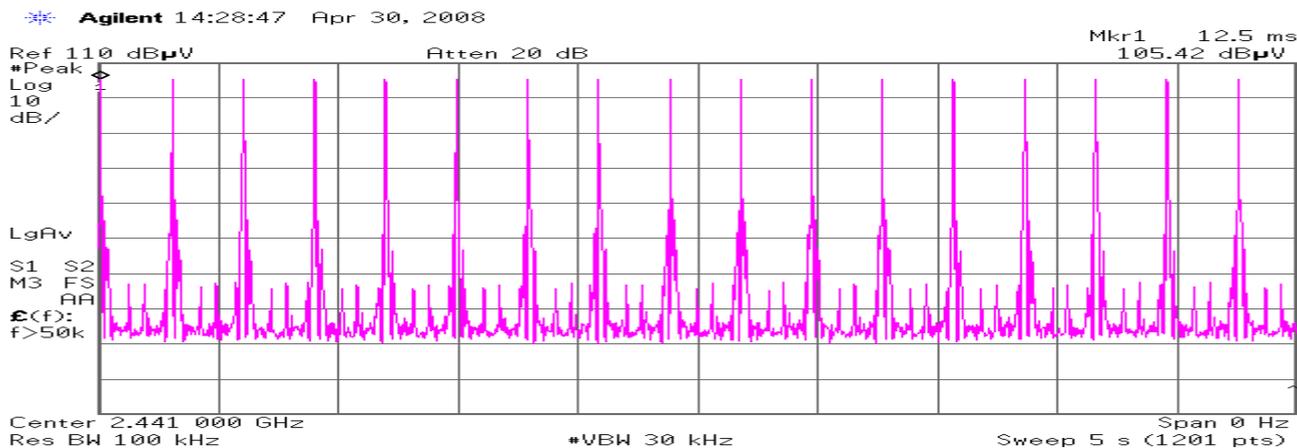
Average times of rising in 0.4x = 0.4 * 79ch * 10.12 = 319.792

Dwell time = 319.792 * 0.410 = 131.11 [ms]

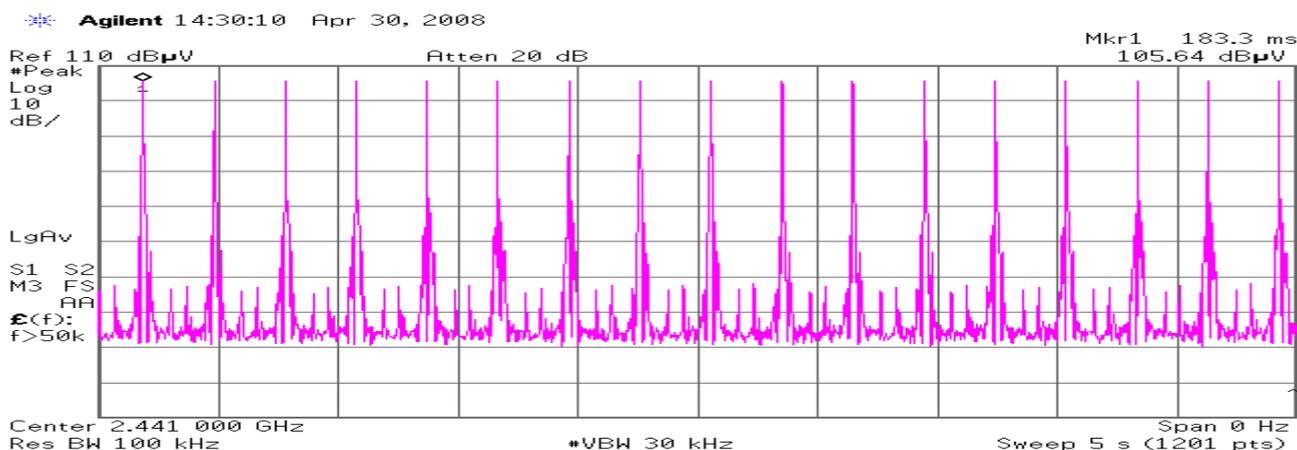
Limit : Dwell Time < 0.4[s]

Hopping (DH3):

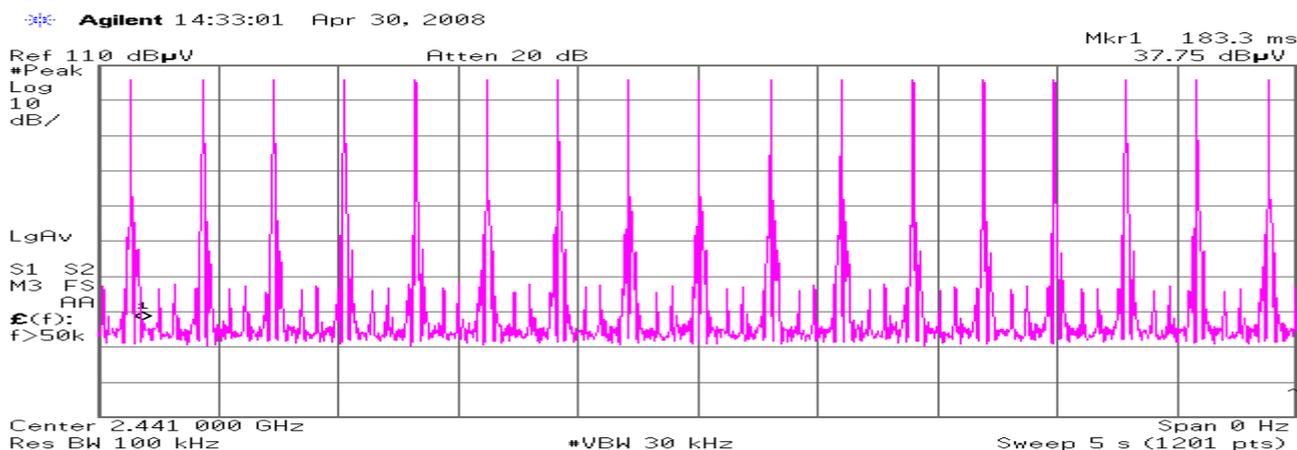
Count 1



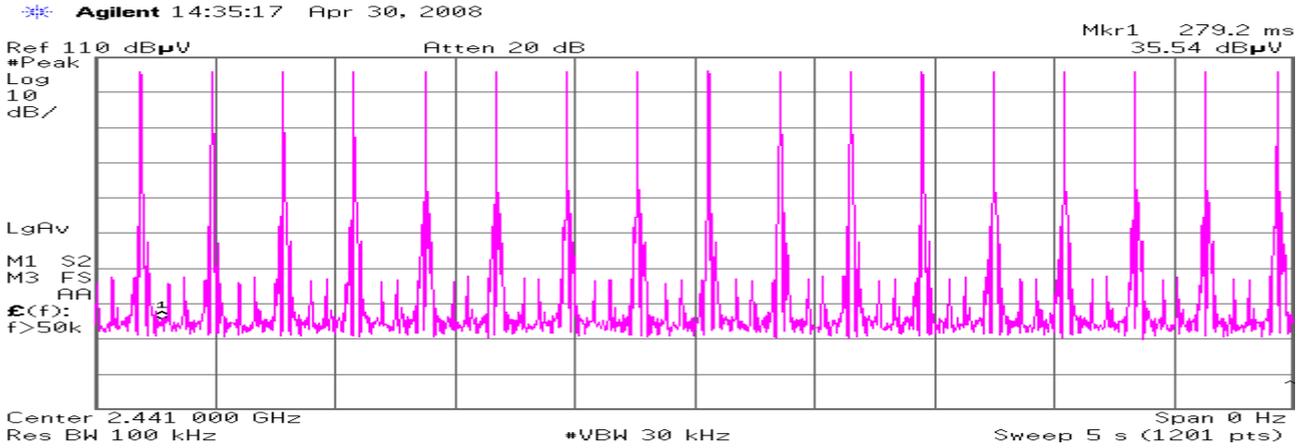
Count 2



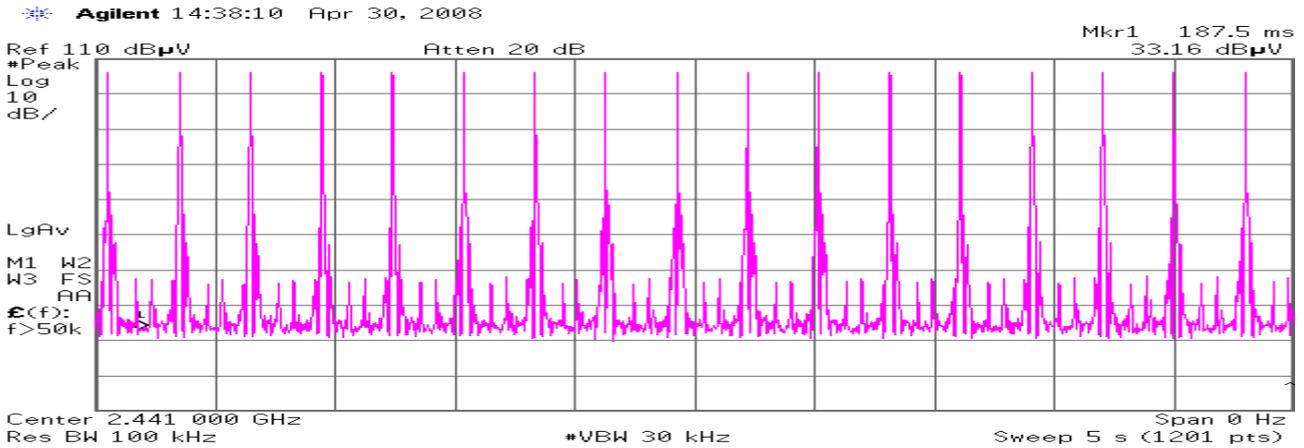
Count 3



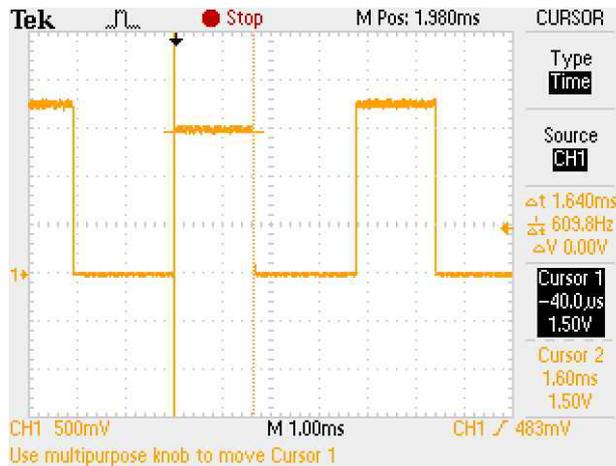
Count 4



Count 5



Duty cycle(Hopping DH3)

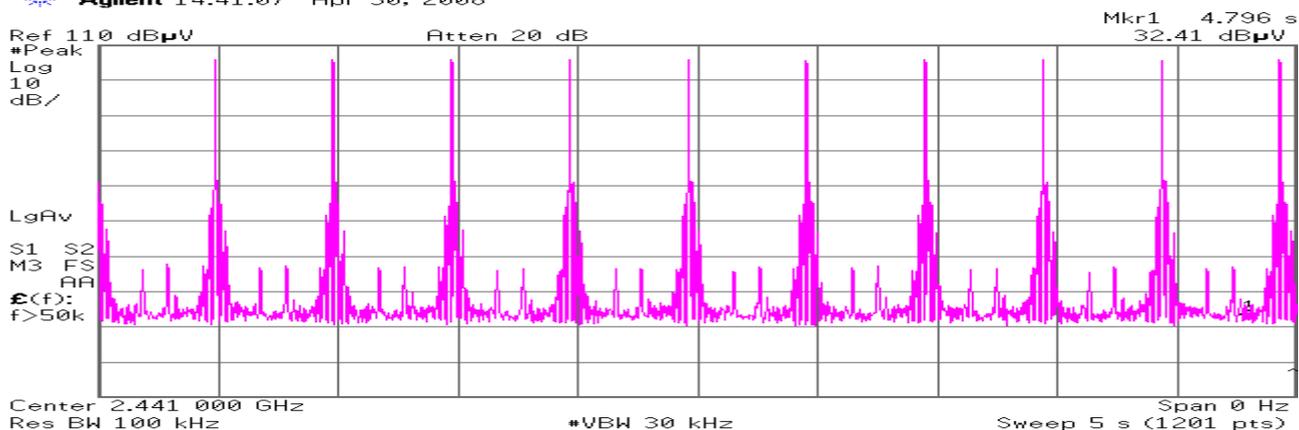


Average times of rising in 5 sec. of sweep = (17 + 17 + 17+ 17 + 17) / 5 = 17.0
 Average times of rising in 1 sec. = 17.0 / 5s = 3.4
 Average times of rising in 0.4x = 0.4 * 79ch * 3.4 = 107.44
 Dwell time = 107.44 * 1.64 = 176.20 [ms]
 Limit : Dwell Time < 0.4[s]

Hopping (DHS):

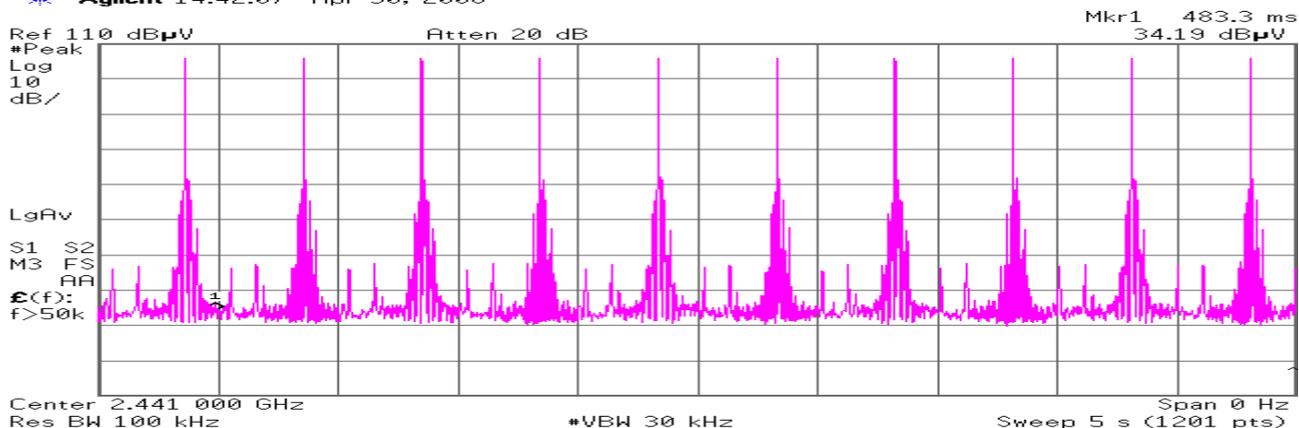
Count 1

Agilent 14:41:07 Apr 30, 2008



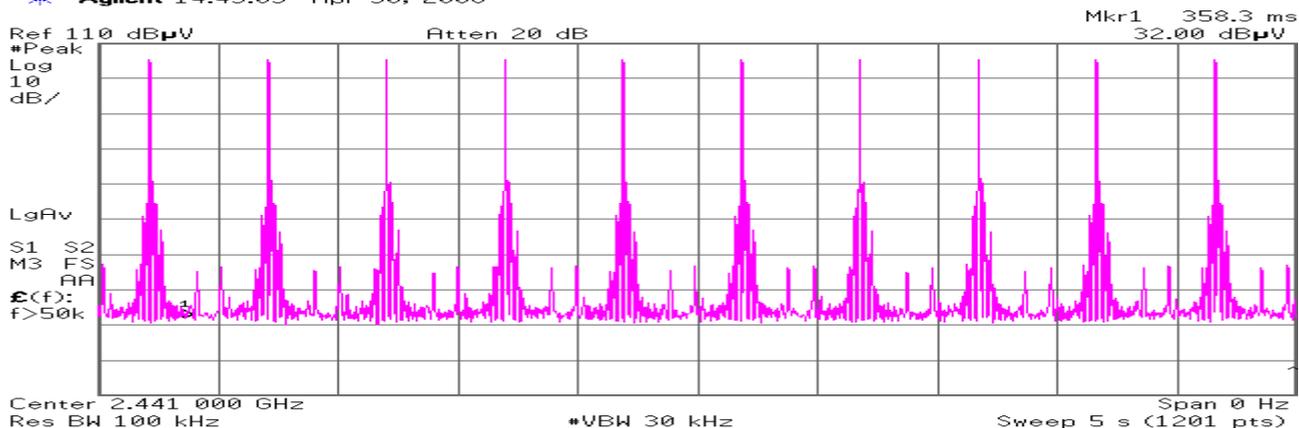
Count 2

Agilent 14:42:07 Apr 30, 2008

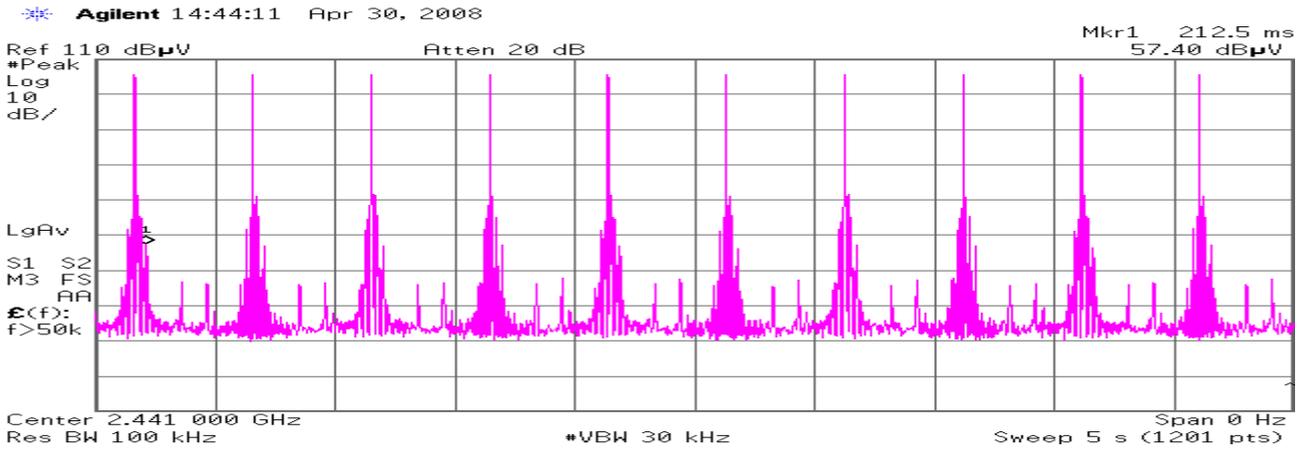


Count 3

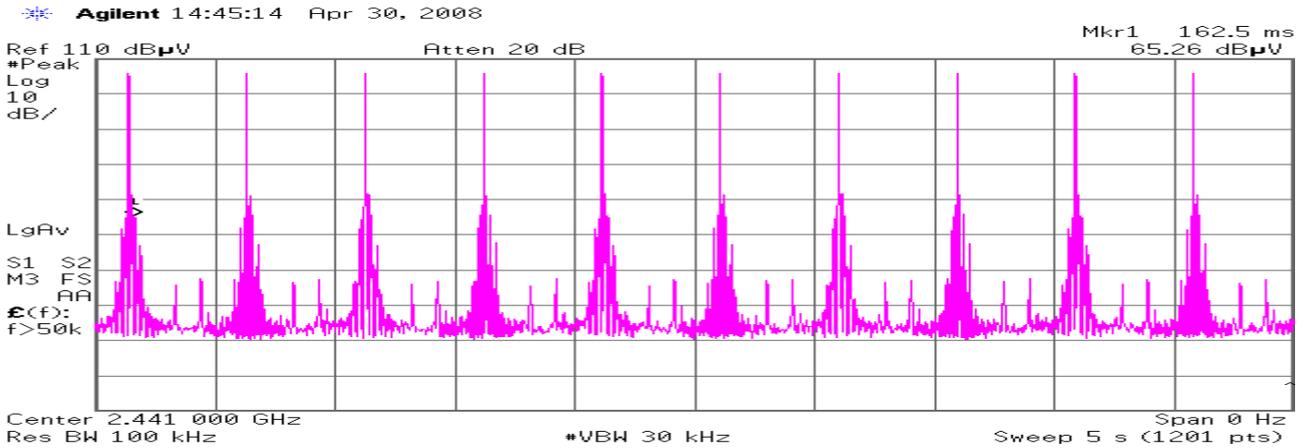
Agilent 14:43:03 Apr 30, 2008



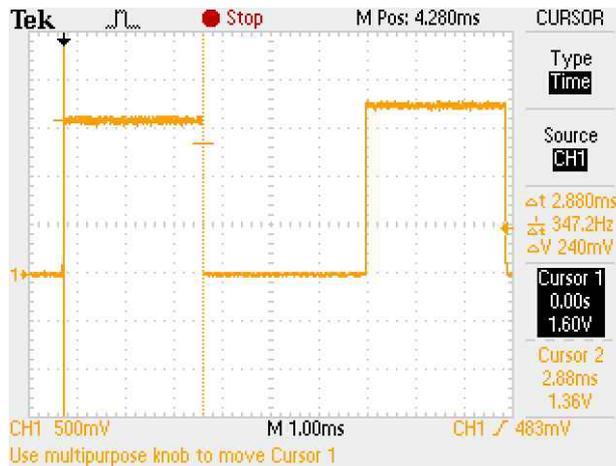
Count 4



Count 5



Duty cycle(Hopping DHS)



Average times of rising in 5 sec. of sweep = $(10 + 10 + 10 + 10 + 10) / 5 = 10.0$

Average times of rising in 1 sec. = $10.0 / 5s = 2.0$

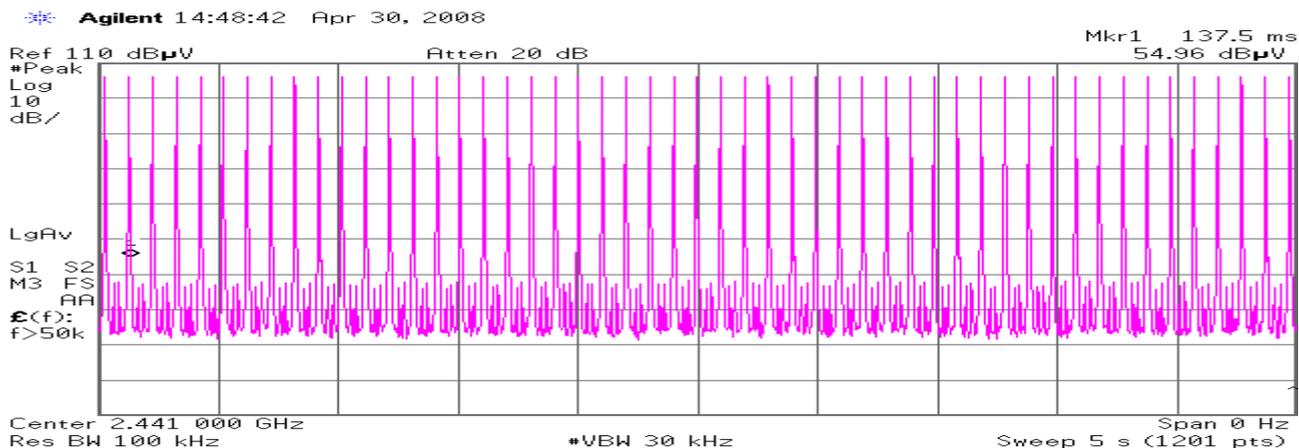
Average times of rising in 0.4x = $0.4 * 79ch * 2.0 = 63.2$

Dwell time = $63.2 * 2.88 = 182.0$ [ms]

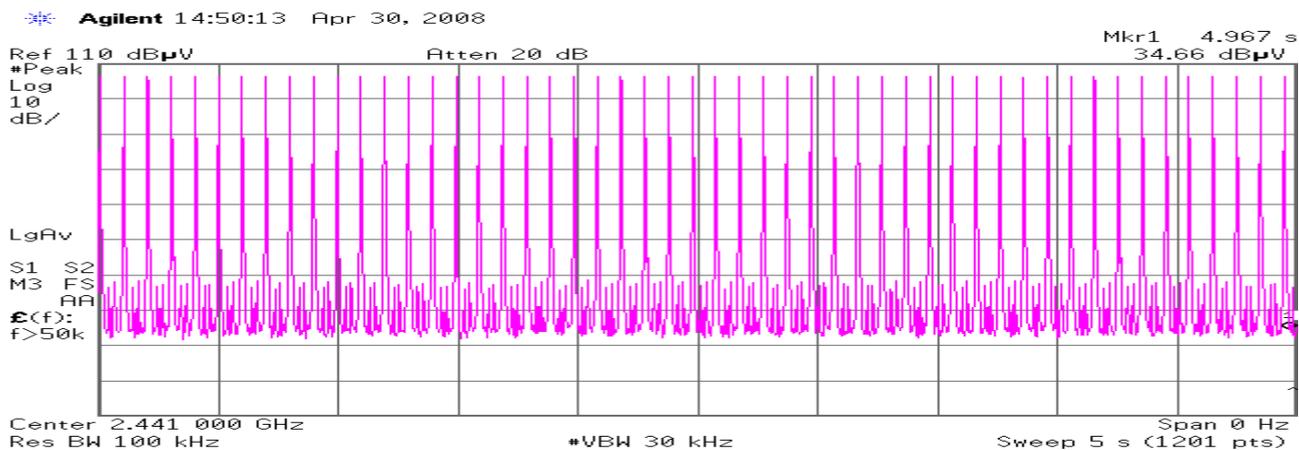
Limit : Dwell Time < 0.4[s]

Hopping (3DH1):

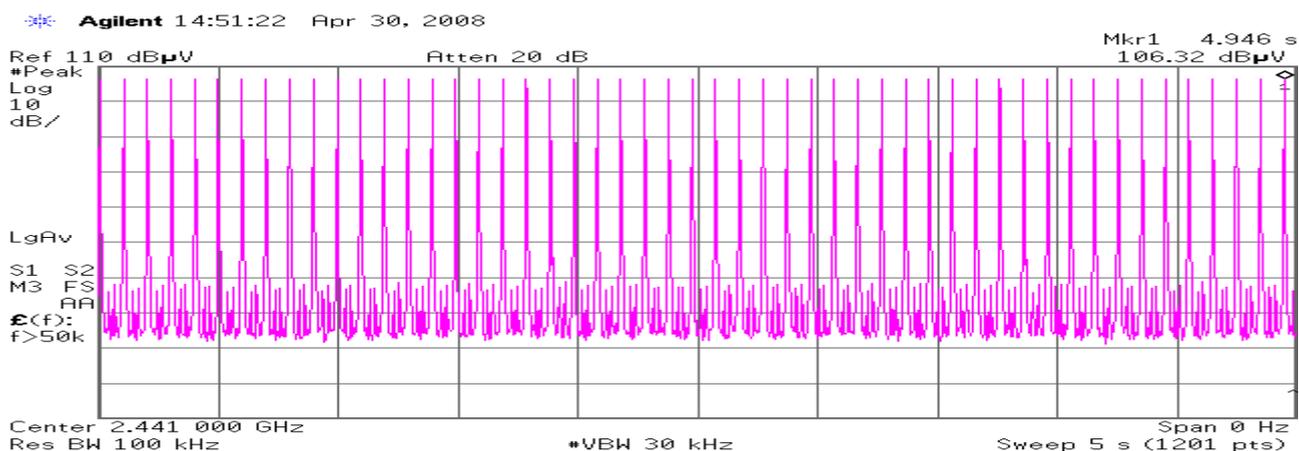
Count 1



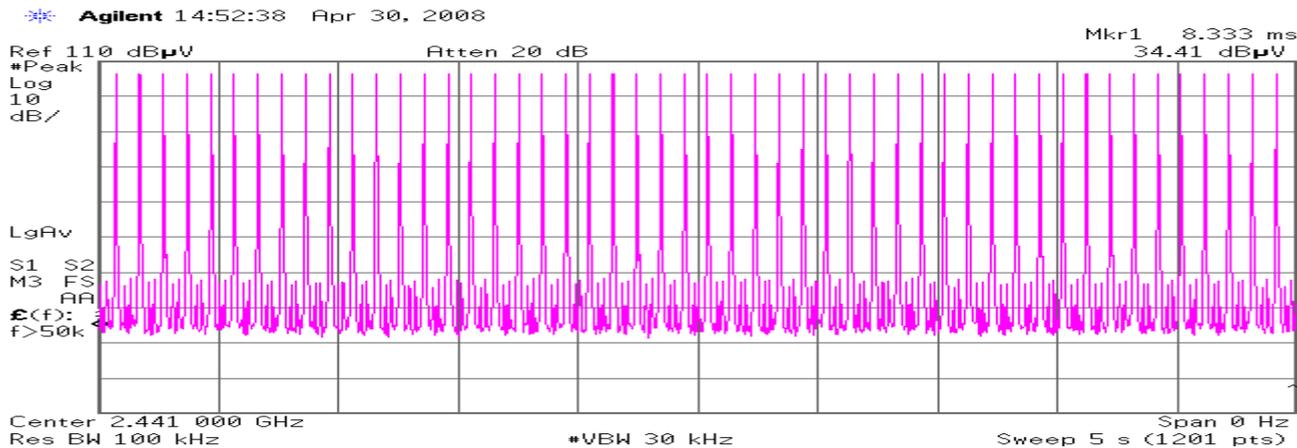
Count 2



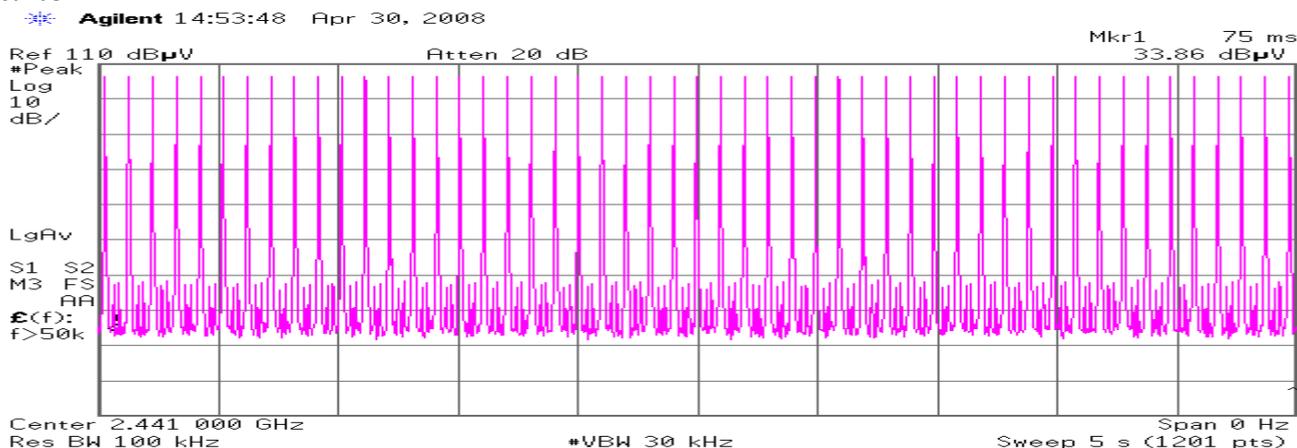
Count 3



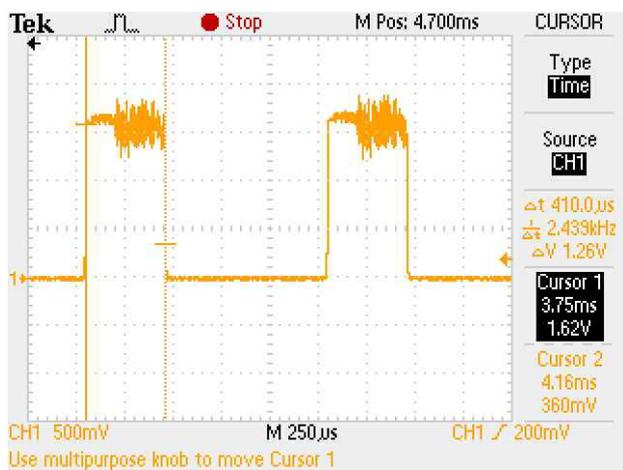
Count 4



Count 5



Duty cycle(Hopping 3DH1)

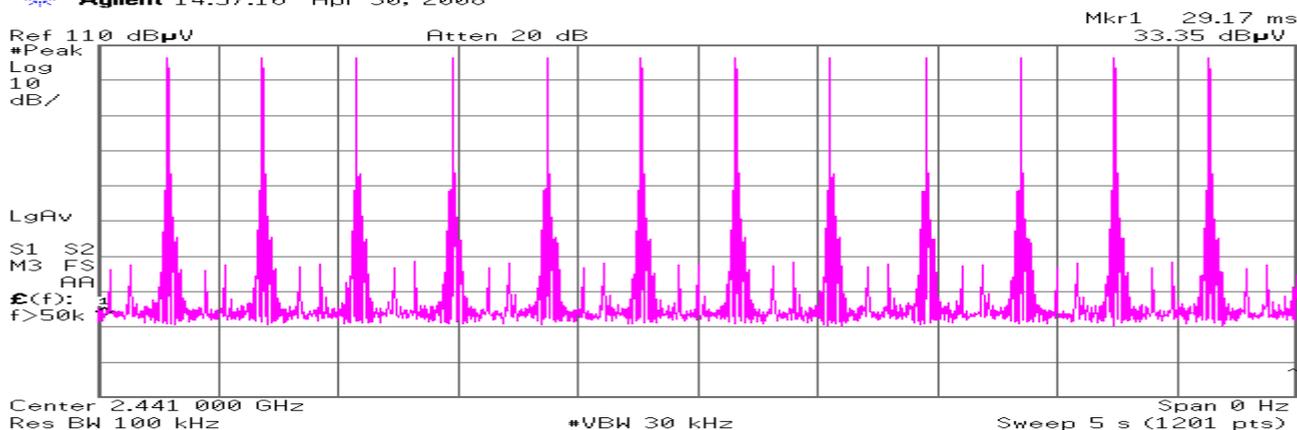


Average times of rising in 5 sec. of sweep = $(51 + 52 + 51 + 51 + 52) / 5 = 51.4$
 Average times of rising in 1 sec. = $51.4 / 5s = 10.28$
 Average times of rising in 0.4x = $0.4 * 79ch * 10.28 = 324.85$
 Dwell time = $324.85 * 0.41 = 133.19 [ms]$
 Limit : Dwell Time < 0.4[s]

Hopping (3DH3):

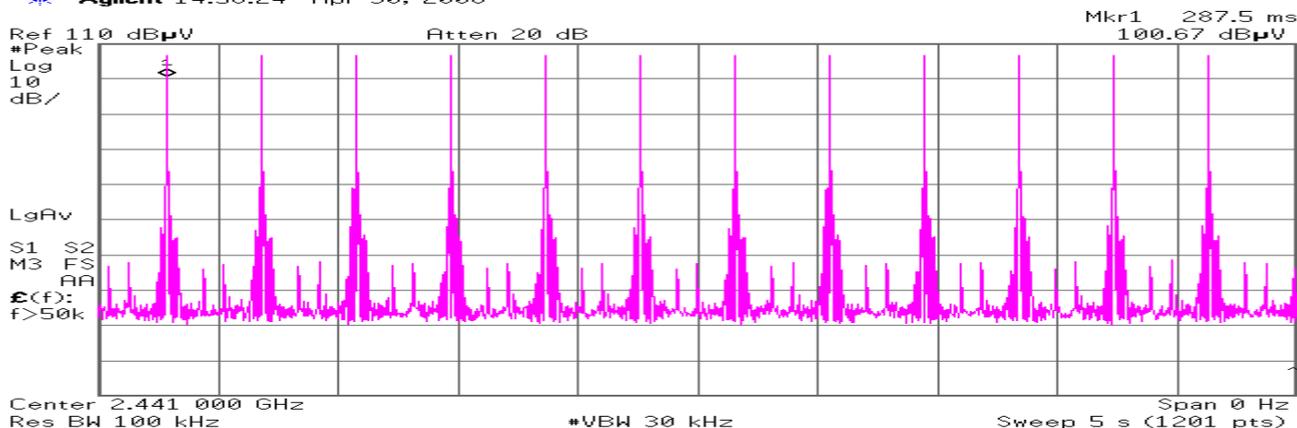
Count 1

Agilent 14:57:16 Apr 30, 2008



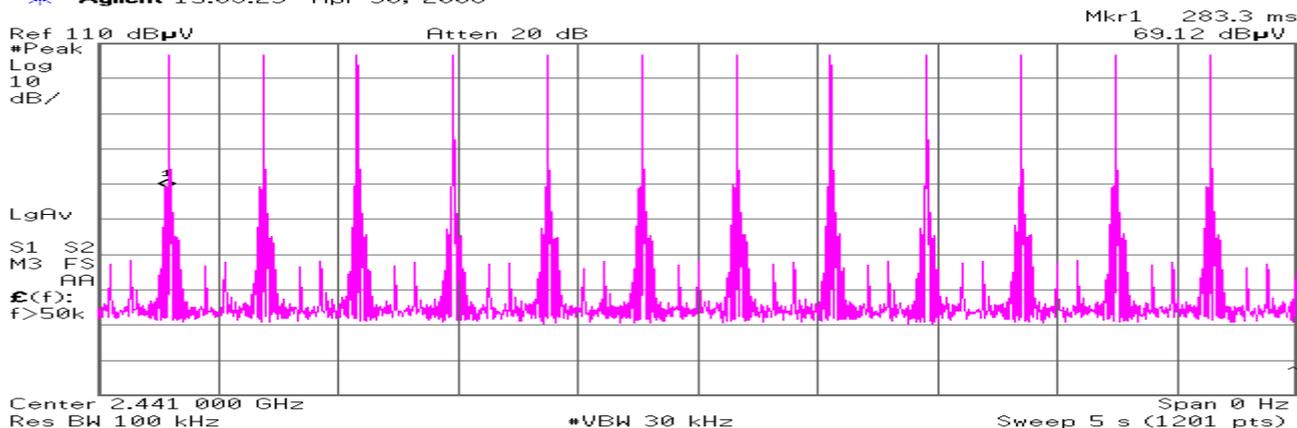
Count 2

Agilent 14:58:24 Apr 30, 2008

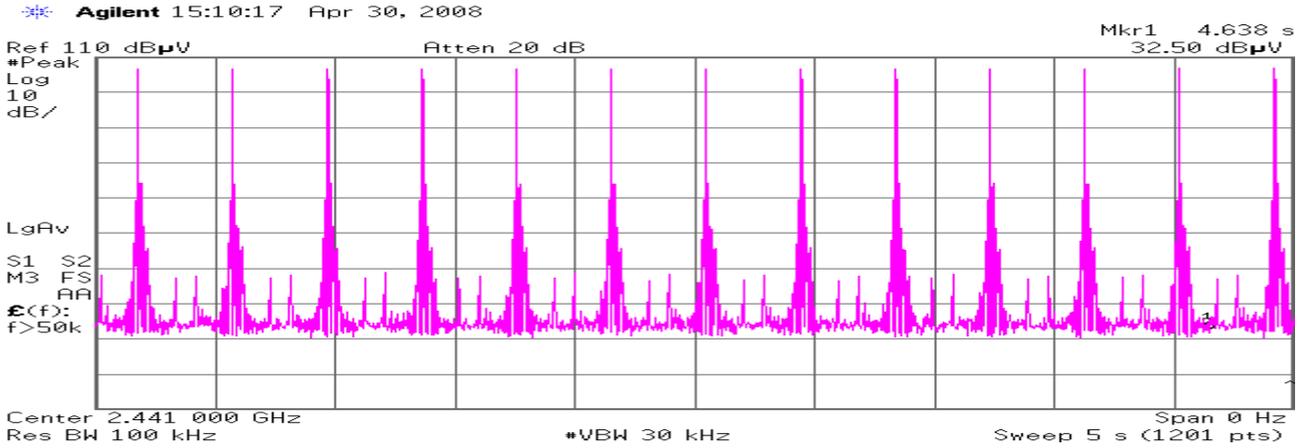


Count 3

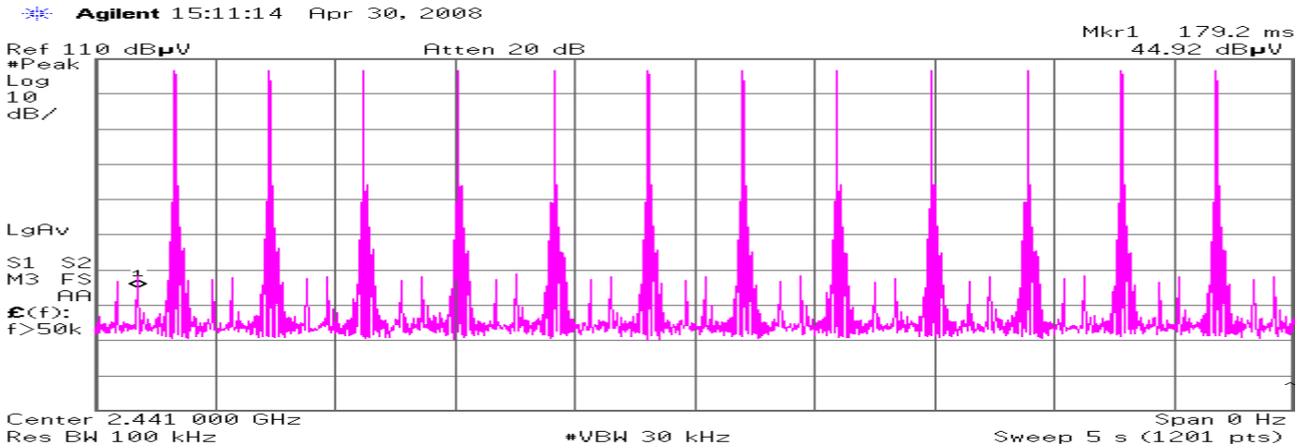
Agilent 15:09:23 Apr 30, 2008



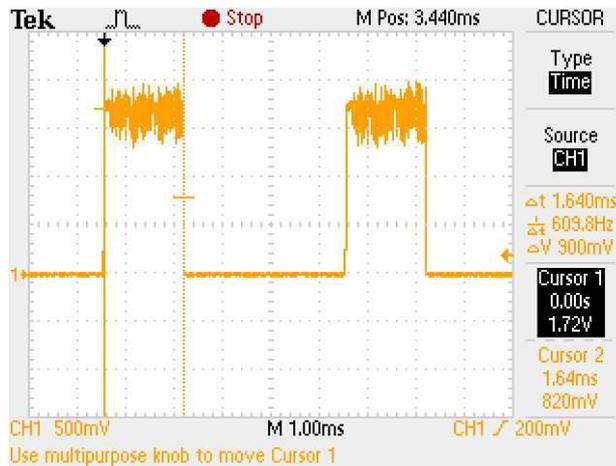
Count 4



Count 5



Duty cycle(Hopping 3DH3)

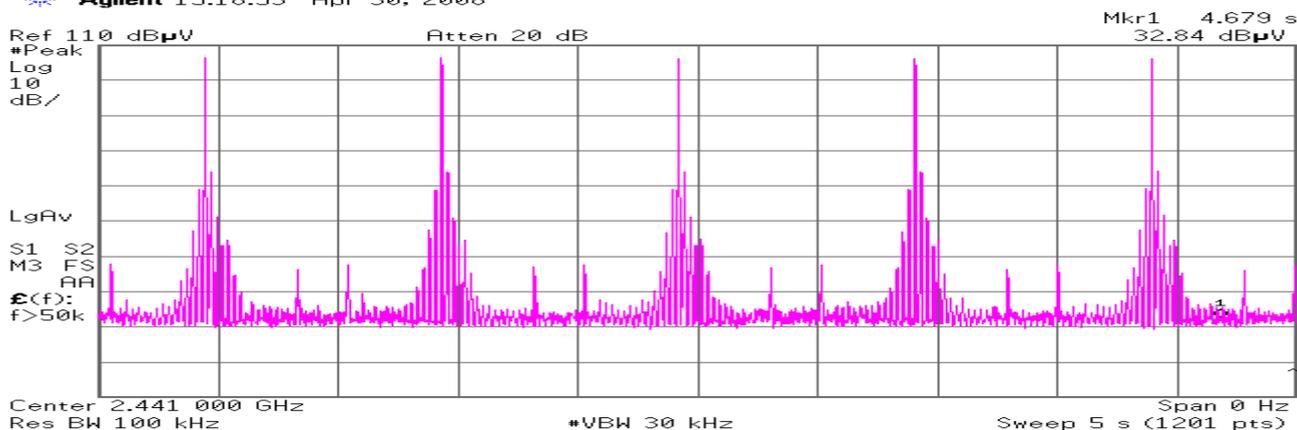


Average times of rising in 5 sec. of sweep = (12 + 12 + 12 + 13 + 12) / 5 = 12.2
 Average times of rising in 1 sec. = 12.2 / 5s = 2.44
 Average times of rising in 0.4x = 0.4 * 79ch * 2.44 = 77.1
 Dwell time = 77.1 * 1.64 = 126.45 [ms]
 Limit : Dwell Time < 0.4[s]

Hopping (3DH5):

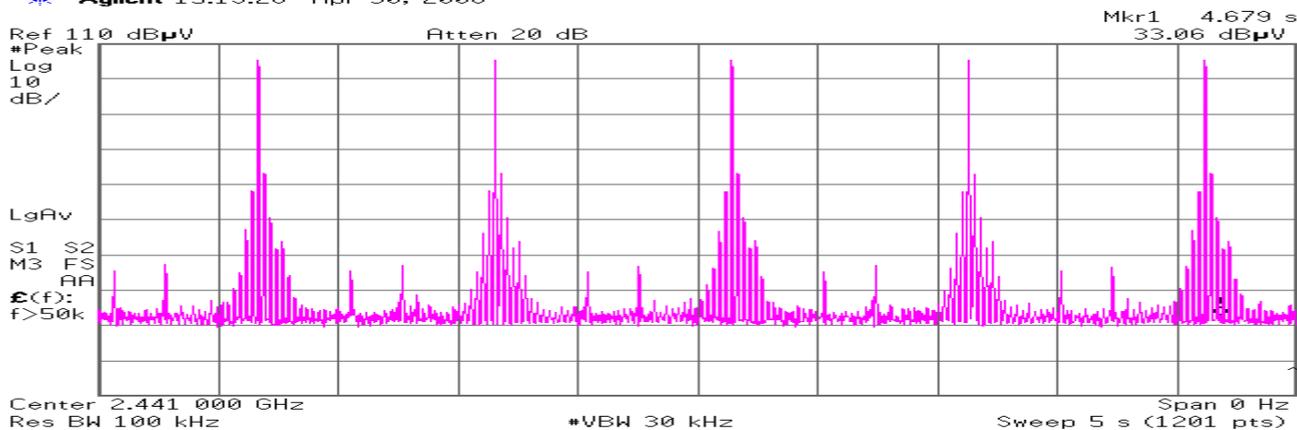
Count 1

Agilent 15:18:53 Apr 30, 2008



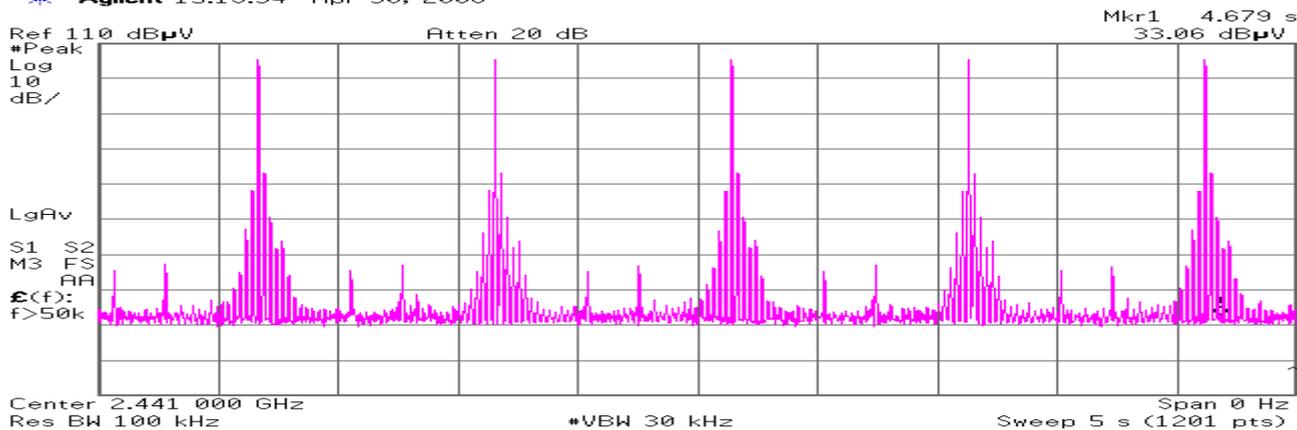
Count 2

Agilent 15:19:28 Apr 30, 2008

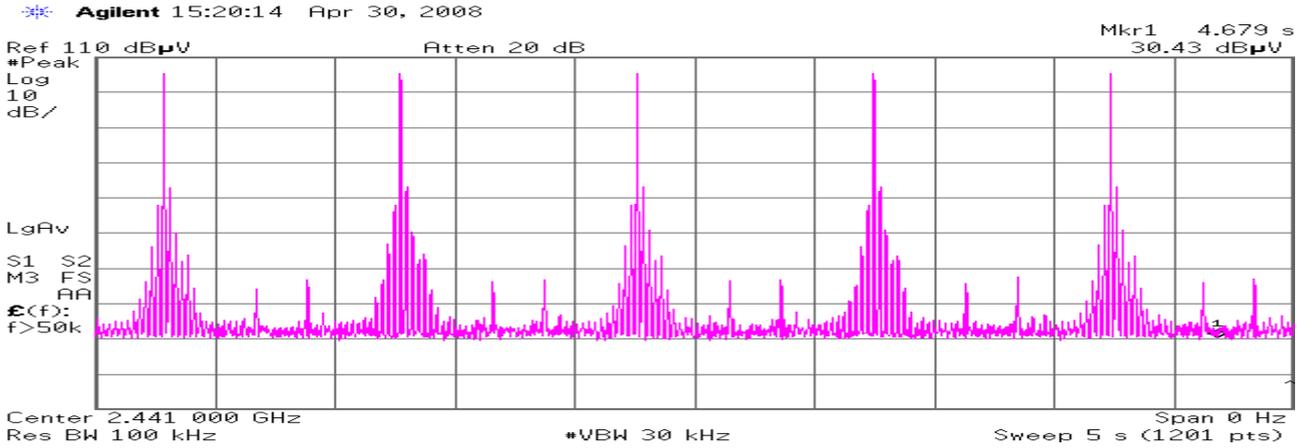


Count 3

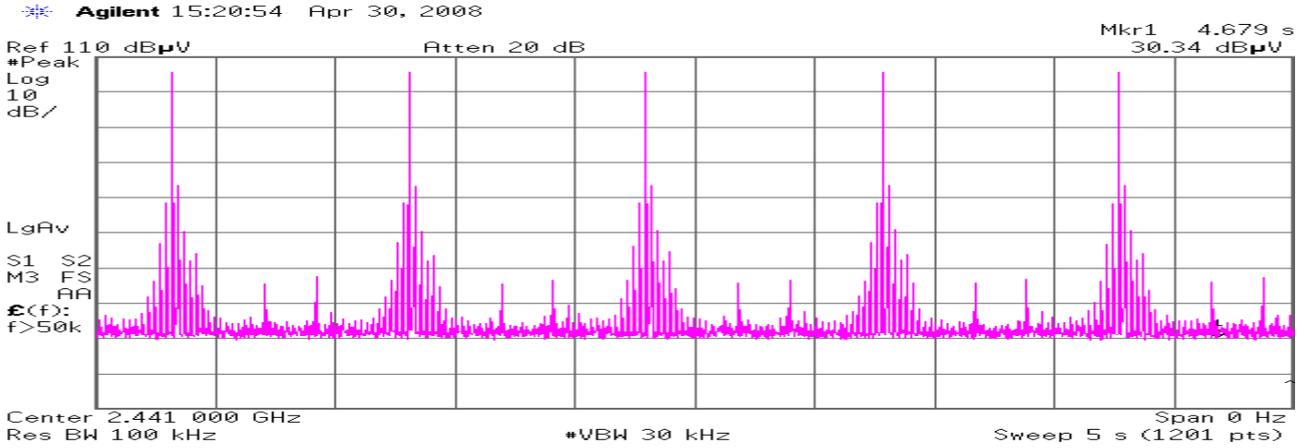
Agilent 15:19:34 Apr 30, 2008



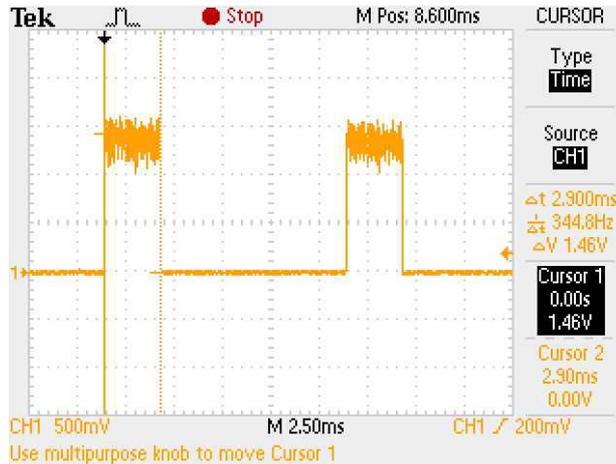
Count 4



Count 5



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 * 2.9 = 91.64 [ms]
 Limit : Dwell Time < 0.4[s]

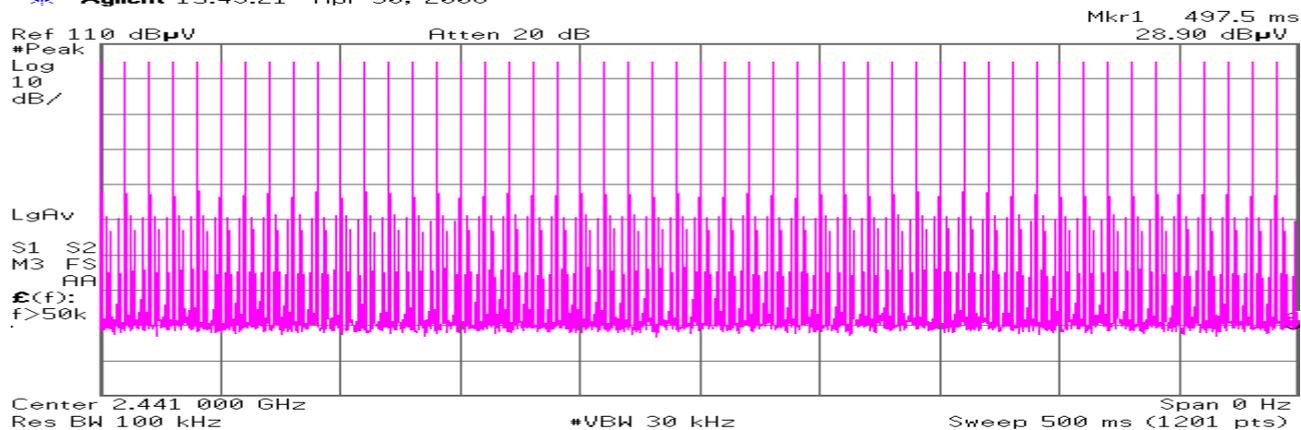
Inquiry:
Count 1

Agilent 15:45:59 Apr 30, 2008



Count 2

Agilent 15:49:21 Apr 30, 2008

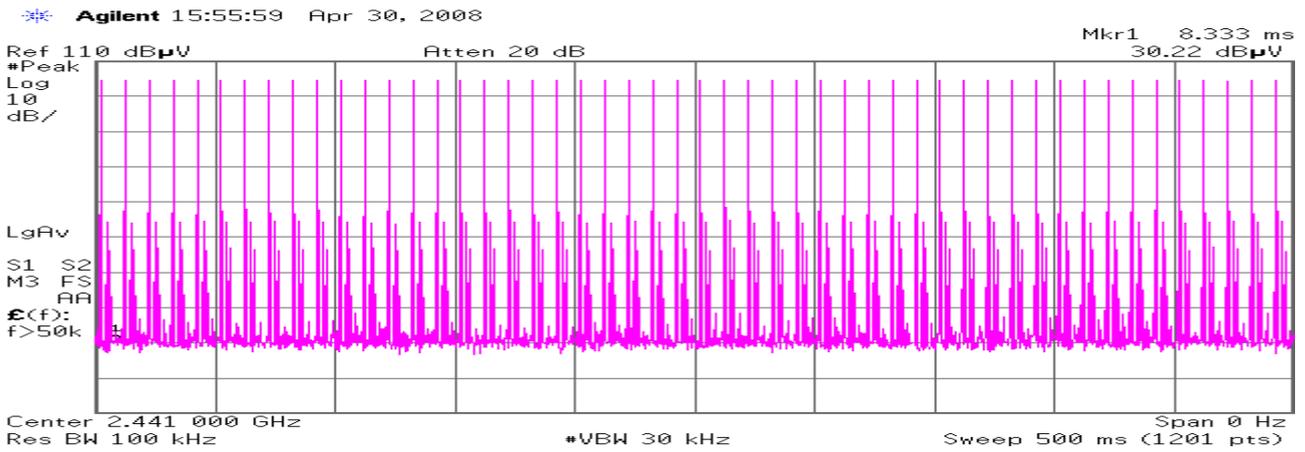


Count 3

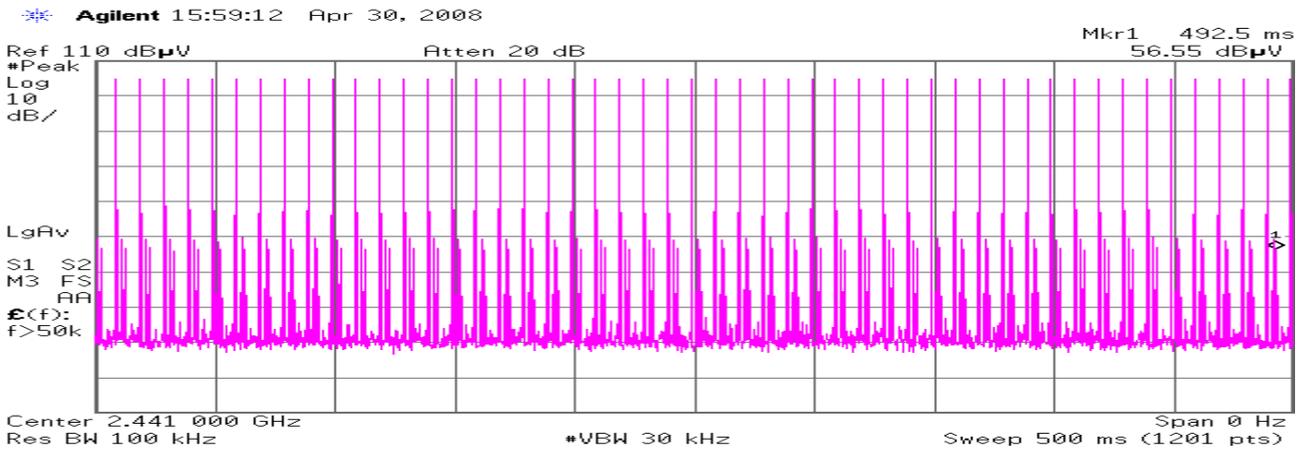
Agilent 15:51:46 Apr 30, 2008



Count 4



Count 5



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.: 5000020

Report No.: 28HE0252-YK-E
Model No.: DR-BT140Q
Power: DC3.7V

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

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

DATE: 30-Apr-08
TEMP./HUMID.: 21deg.C/62%
TEST MODE: Transmitting

ENGINEER: Minoru Nakatake

DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	-2.66	1.05	-1.61	20.96	22.57
Mid	2441.00	-1.48	1.05	-0.43	20.96	21.39
High	2480.00	-0.94	1.04	0.10	20.96	20.86
Inquiry	-	-2.12	1.05	-1.07	20.96	22.03

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:Customer's cable + KCC-D16

2DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	-2.15	1.05	-1.10	20.96	22.06
Mid	2441.00	-1.11	1.05	-0.06	20.96	21.02
High	2480.00	-1.09	1.04	-0.05	20.96	21.01

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:Customer's cable + KCC-D16

3DH5

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	-1.88	1.05	-0.83	20.96	21.79
Mid	2441.00	-0.84	1.05	0.21	20.96	20.75
High	2480.00	-0.90	1.04	0.14	20.96	20.82

Limit: 125mW=20.96dBm

P/M: Power Meter

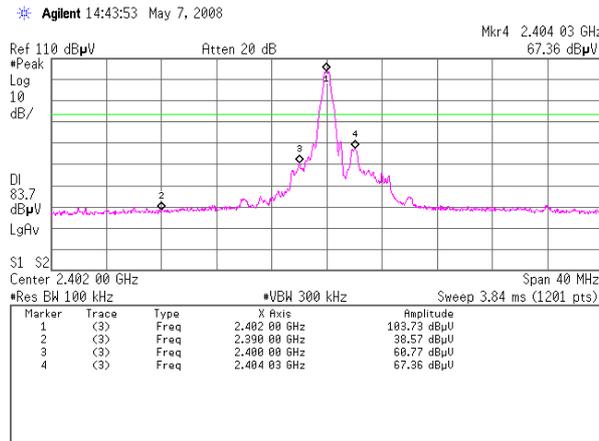
CABLE LOSS:Customer's cable + KCC-D16

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

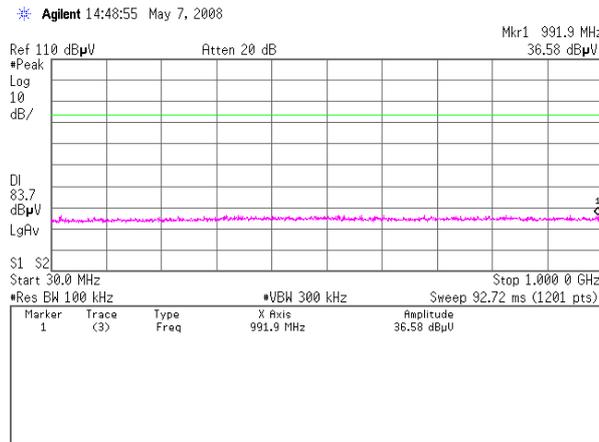
UL Japan, Inc. Yamakita EMC lab. No. shielded room
 Date: May 7, 2008
 Temp./Humid.: 24 deg. C. / 61 %
 Date: May 8, 2008
 Temp./Humid.: 24 deg. C. / 43 %
 Engineer: Minoru Nakatake
 Test mode: Transmitting

[Transmitting DH5]
 Ch:2402MHz

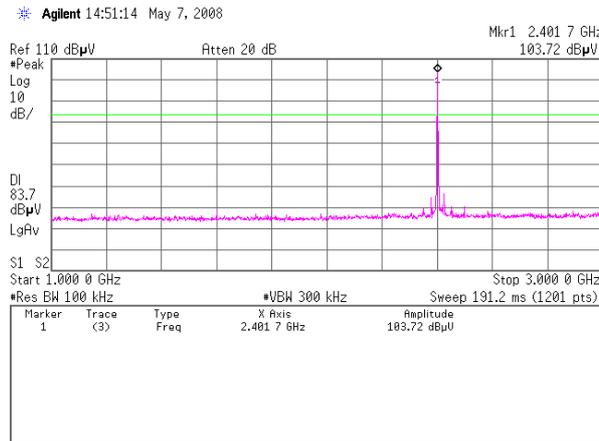
1.



2.

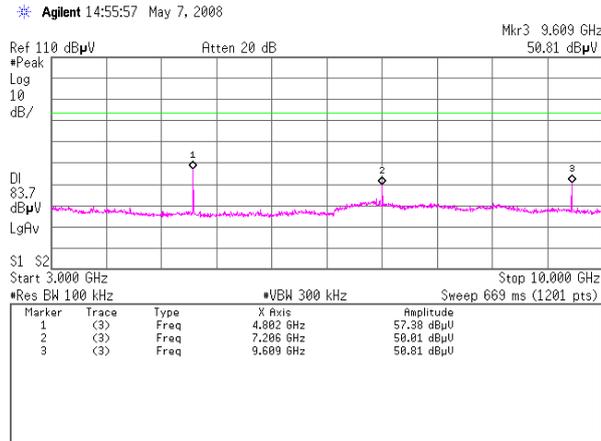


3.

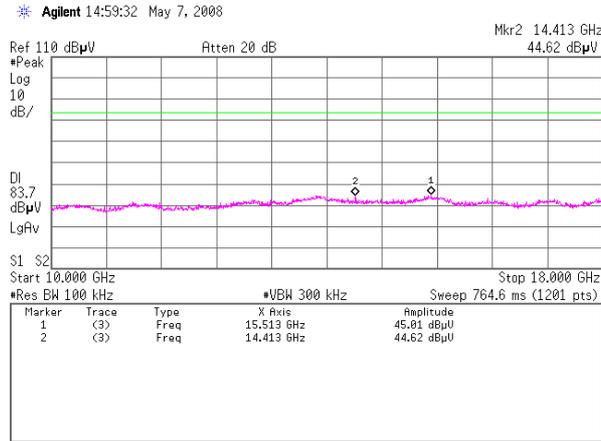


[Transmitting DH5]
Ch:2402MHz

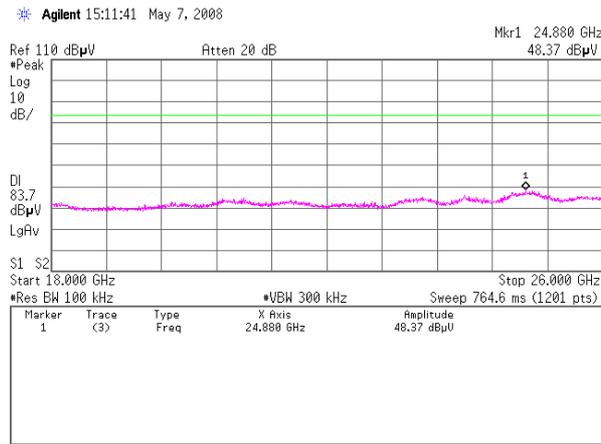
4.



5.

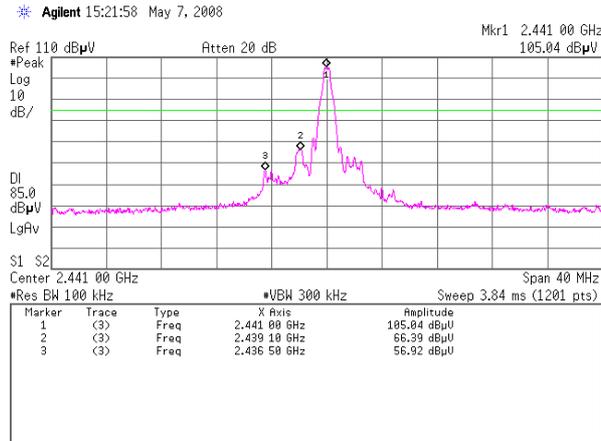


6.

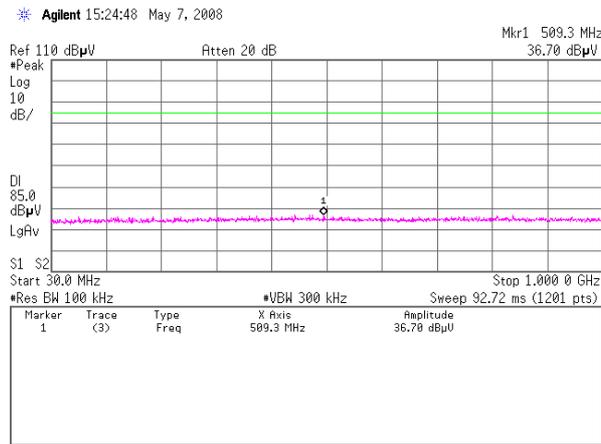


[Transmitting DH5]
Ch:2441MHz

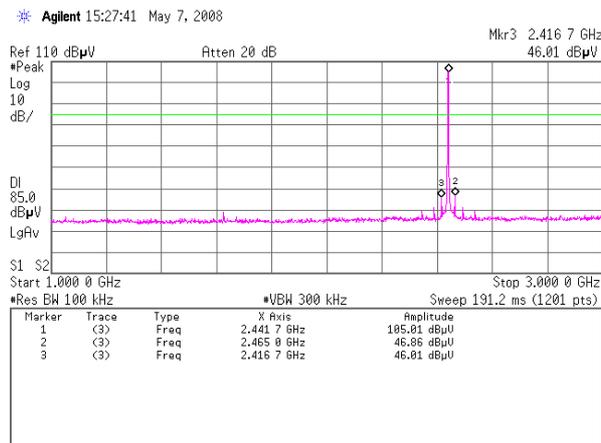
1.



2.

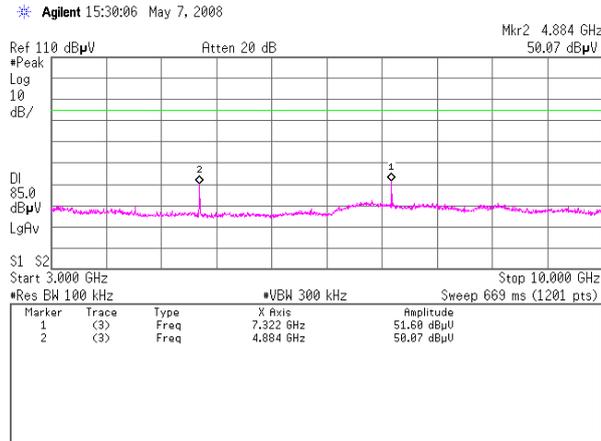


3.

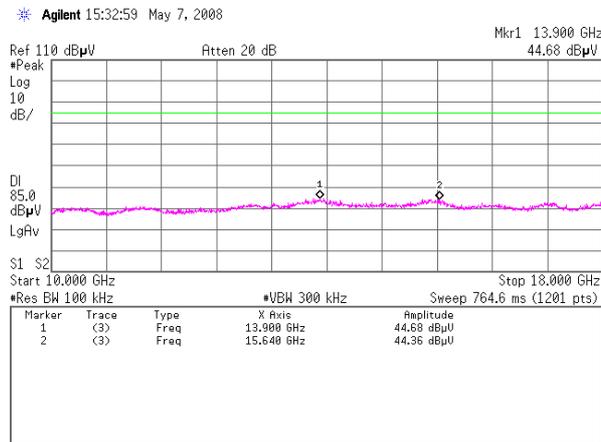


[Transmitting DH5]
Ch:2441MHz

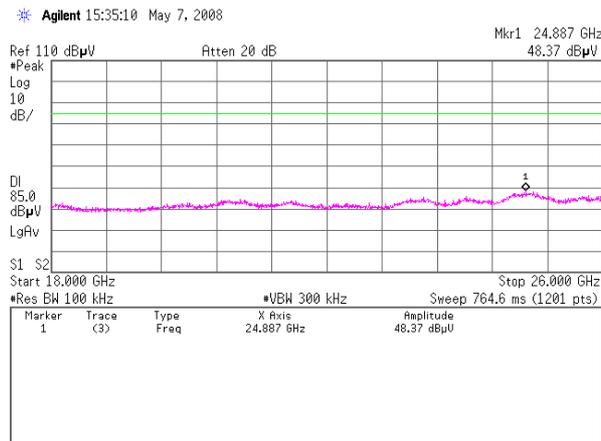
4.



5.

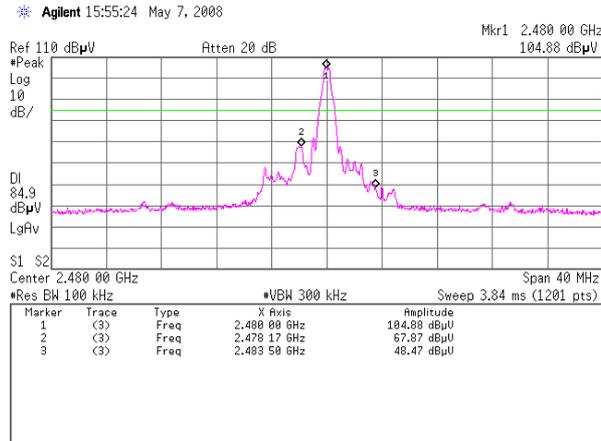


6.

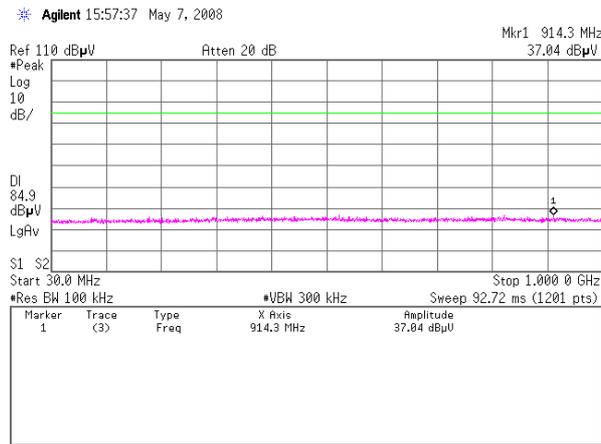


[Transmitting DH5]
Ch:2480MHz

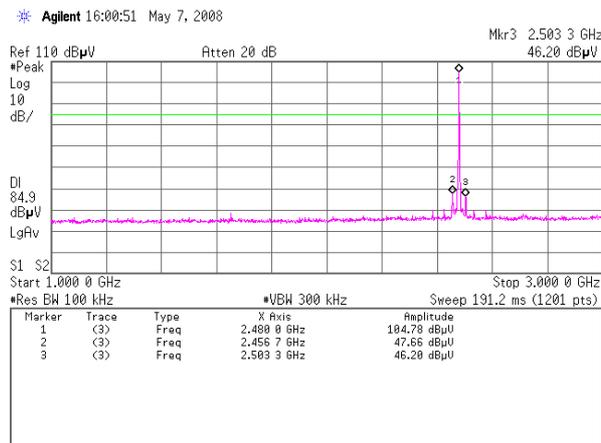
1.



2.

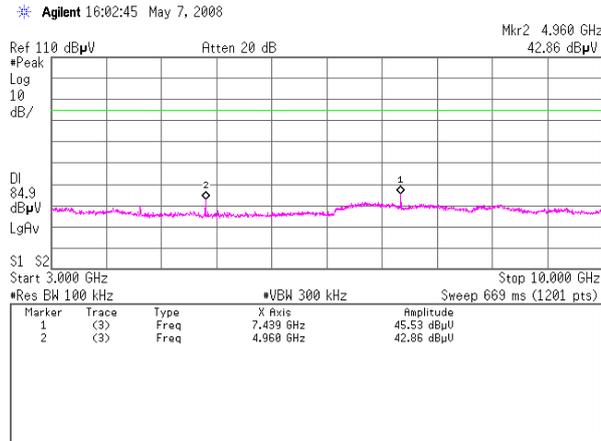


3.

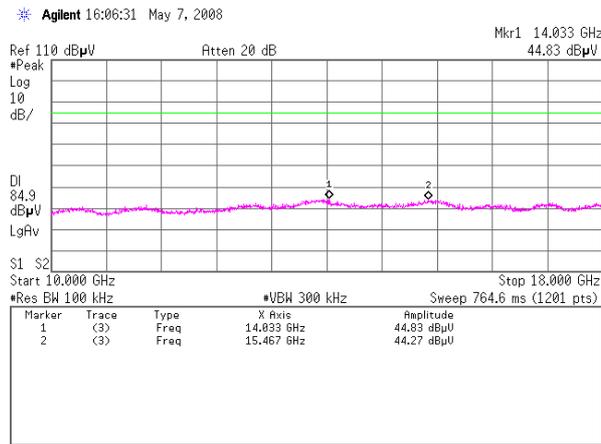


[Transmitting DH5]
Ch:2480MHz

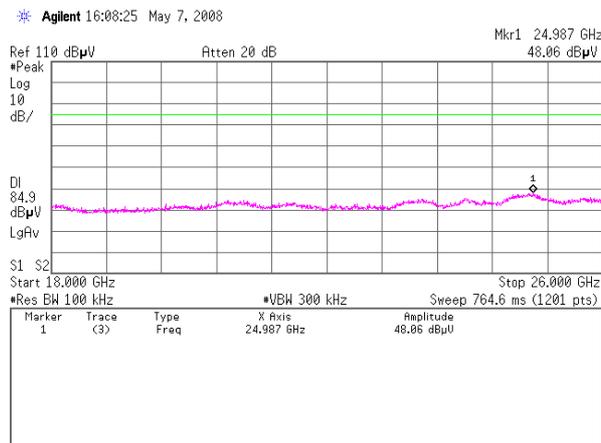
4.



5.

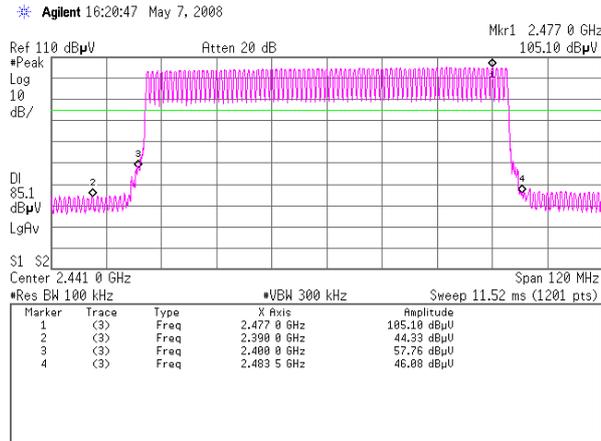


6.

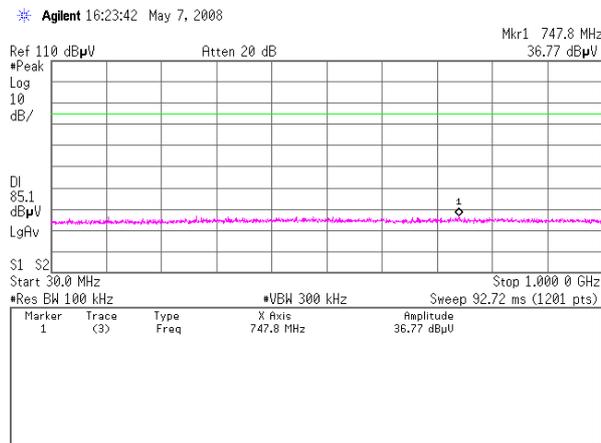


[Transmitting DH5]
Hopping

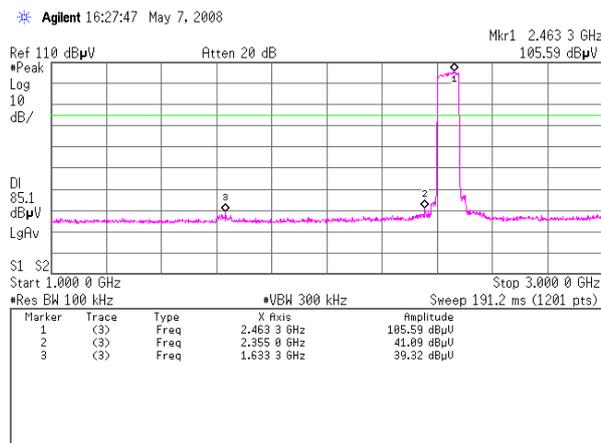
1.



2.

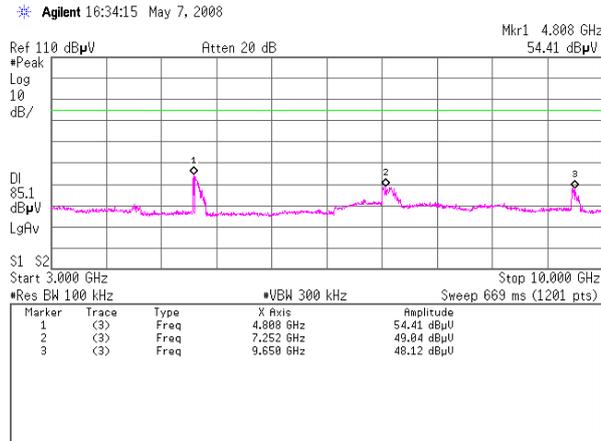


3.

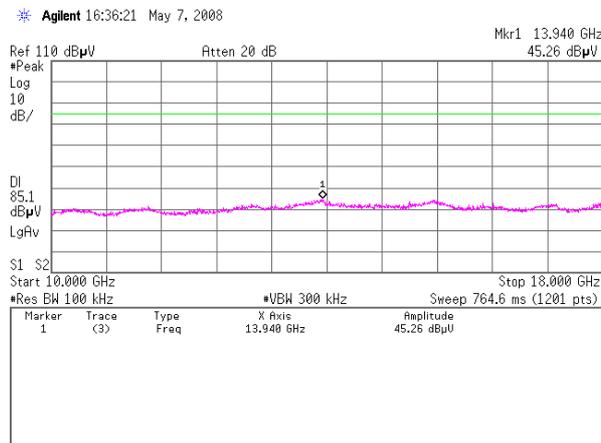


[Transmitting DH5]
Hopping

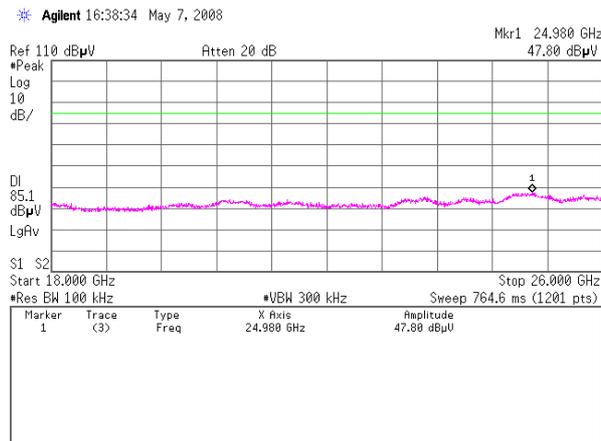
4.



5.

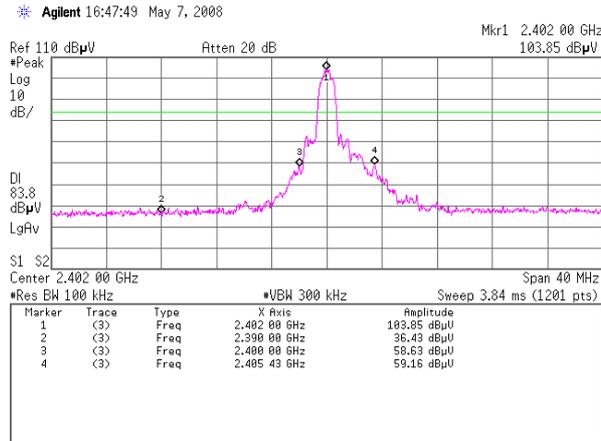


6.

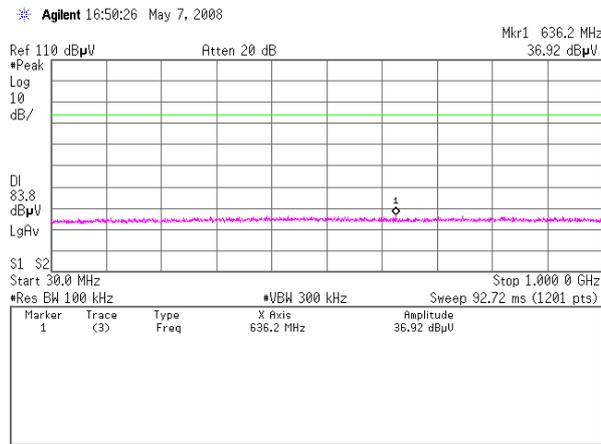


[Transmitting 3DH5]
 Ch:2402MHz

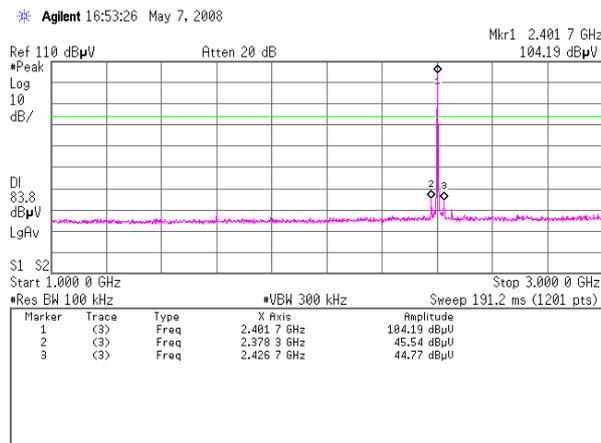
1.



2.

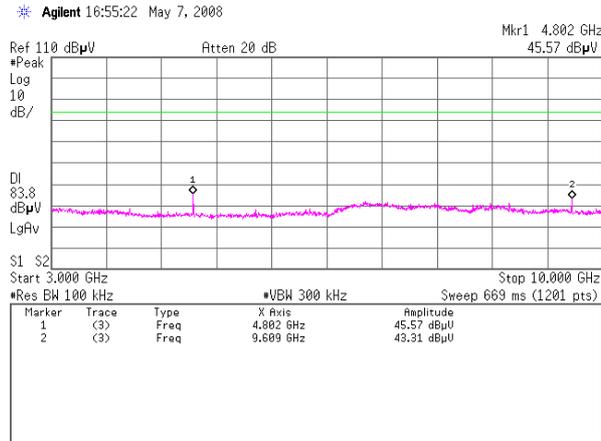


3.

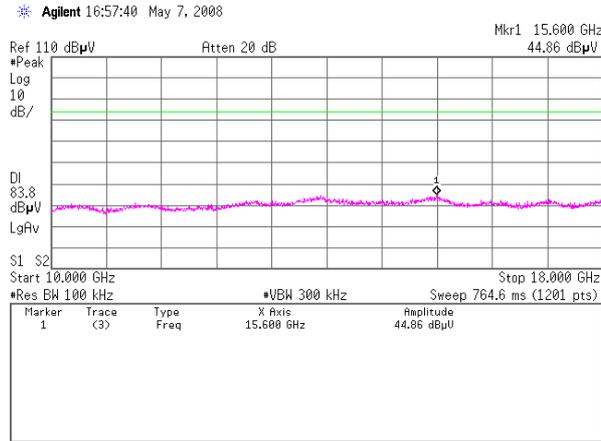


[Transmitting 3DH5]
 Ch:2402MHz

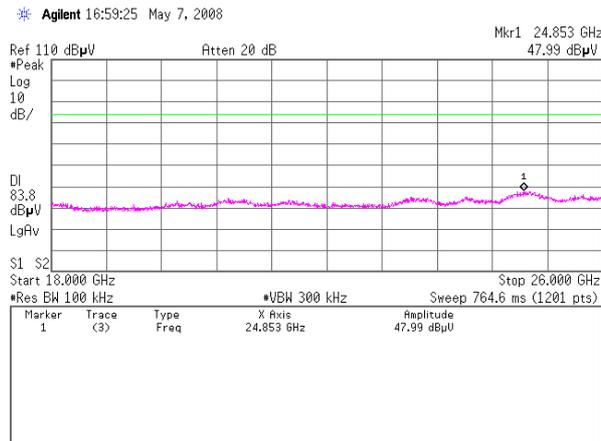
4.



5.

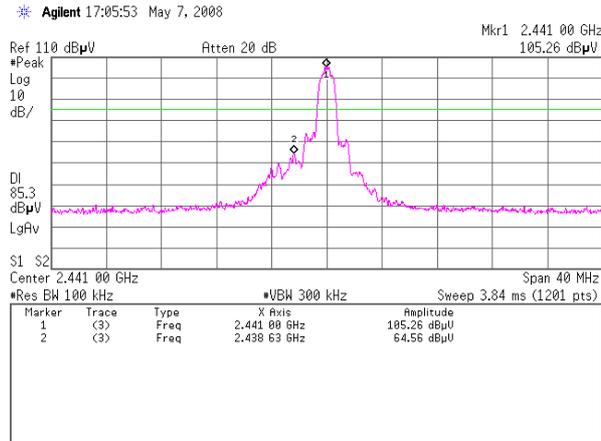


6.

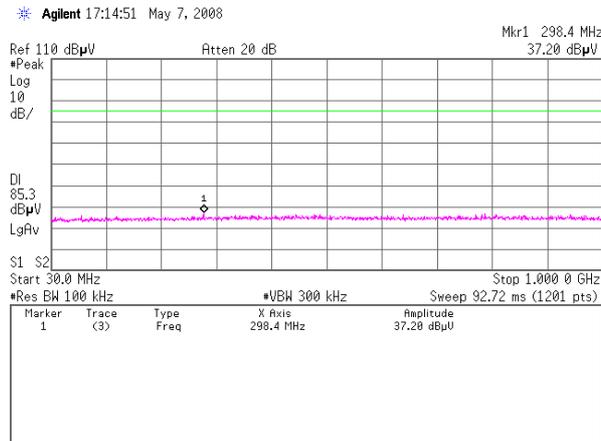


[Transmitting 3DH5]
 Ch:2441MHz

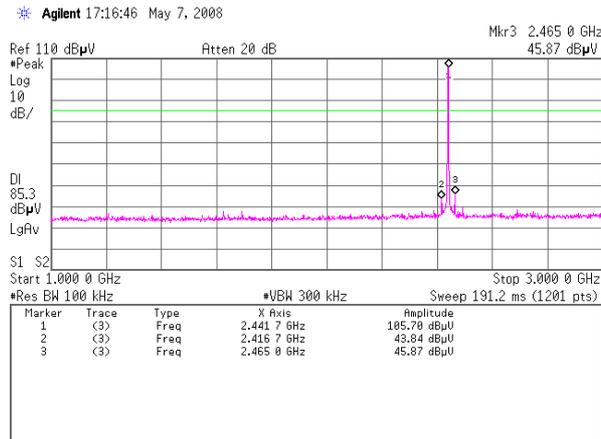
1.



2.

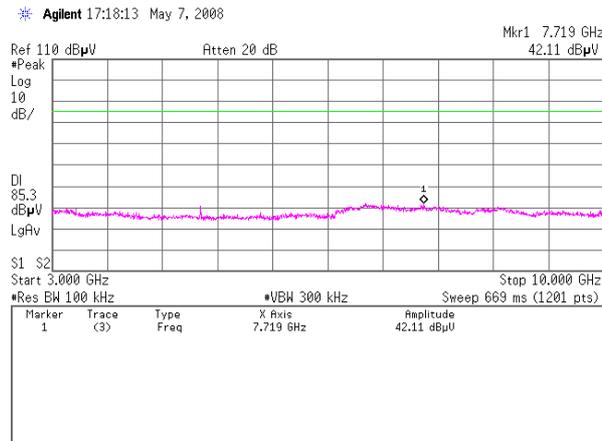


3.

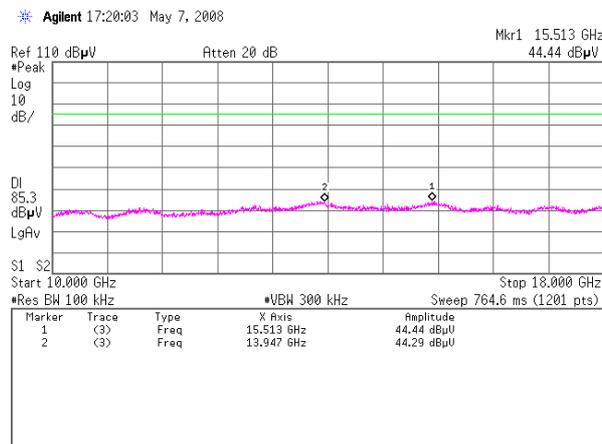


[Transmitting 3DH5]
 Ch:2441MHz

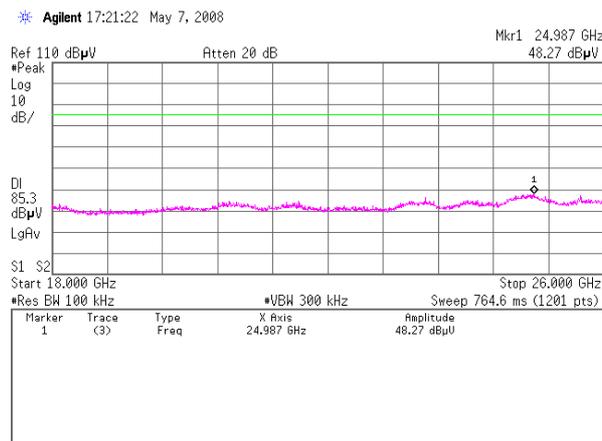
4.



5.

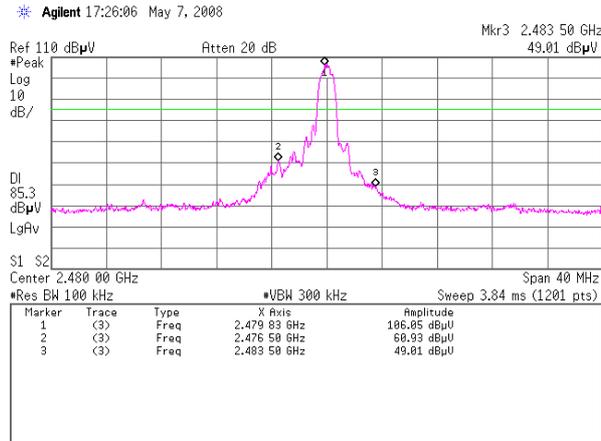


6.

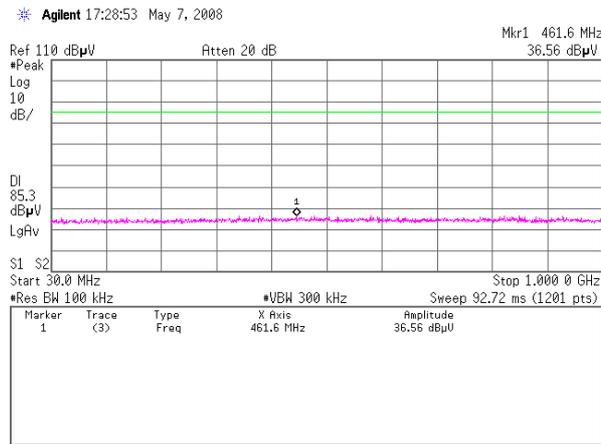


[Transmitting 3DH5]
 Ch:2480MHz

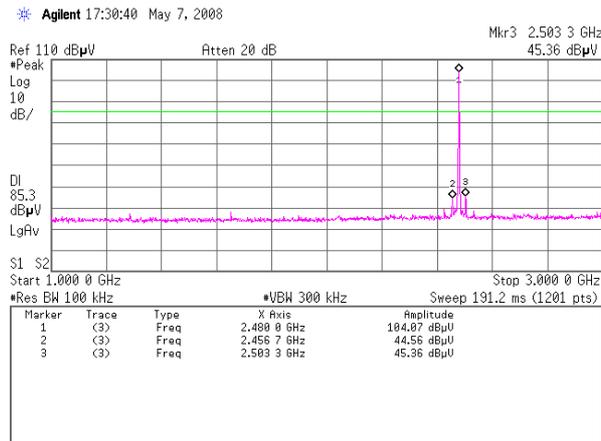
1.



2.

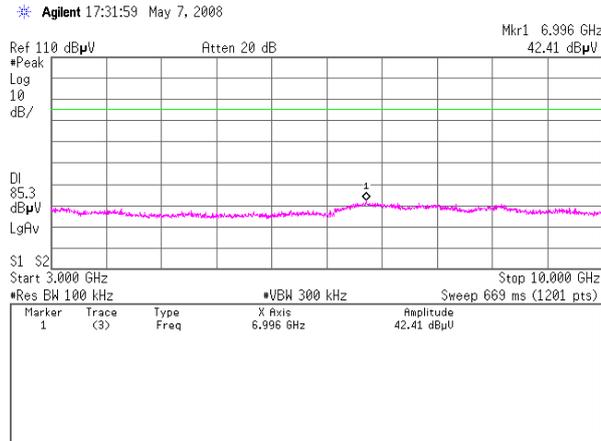


3.

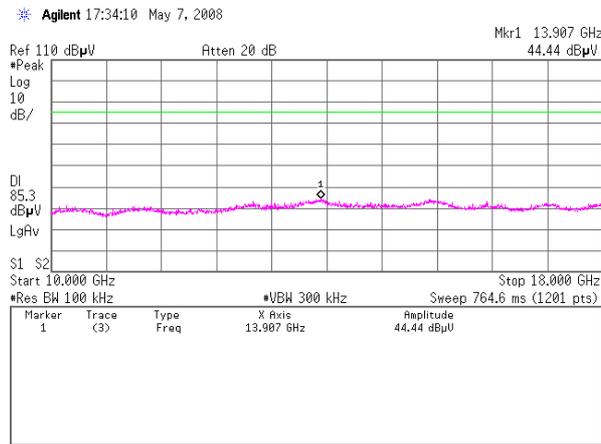


[Transmitting 3DH5]
 Ch:2480MHz

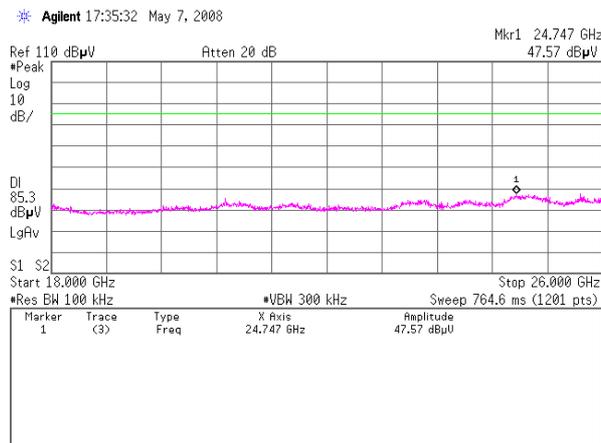
4.



5.

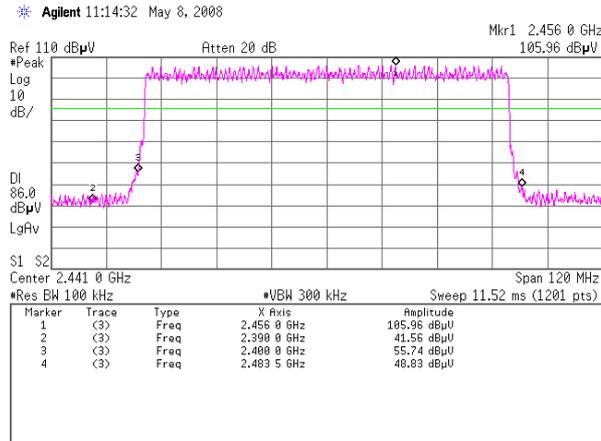


6.

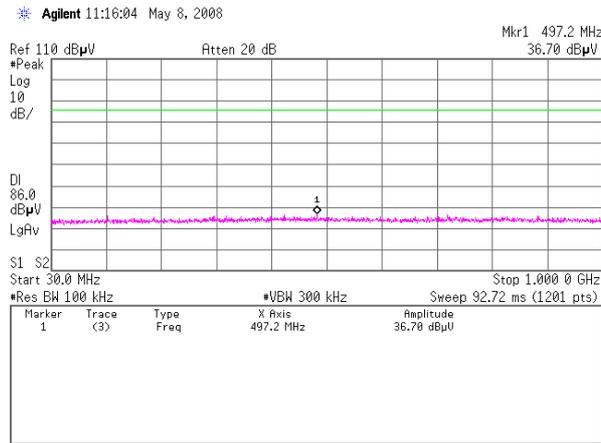


[Transmitting 3DH5]
Hopping

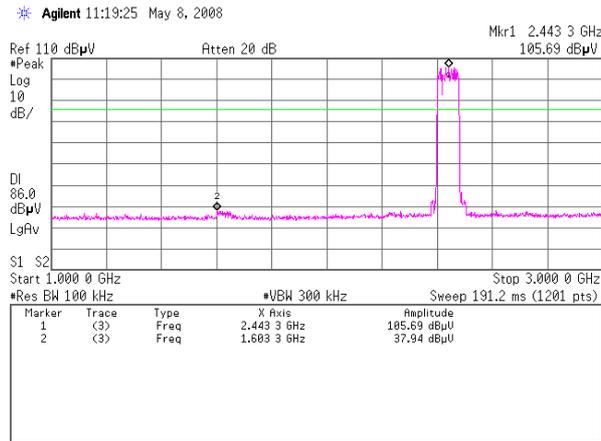
1.



2.

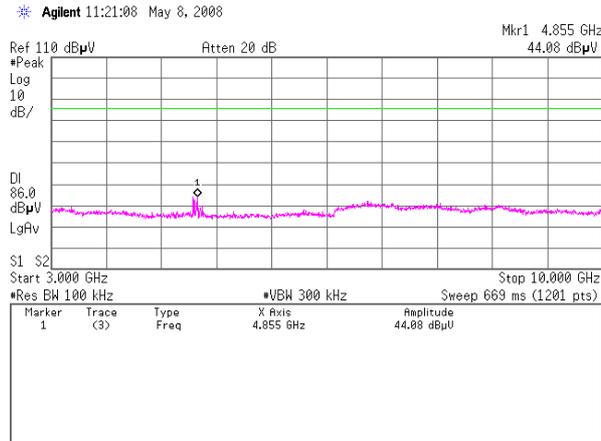


3.

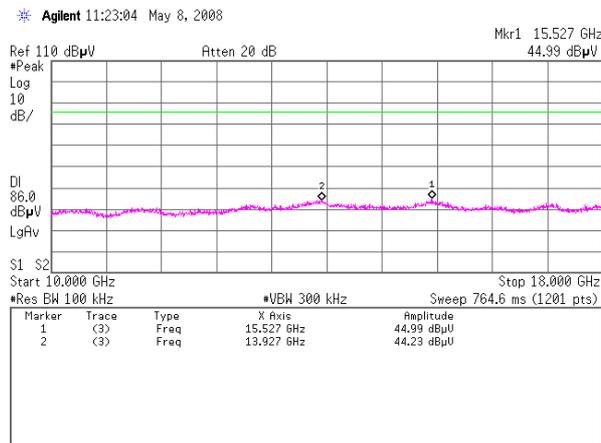


[Transmitting3 DHS]
Hopping

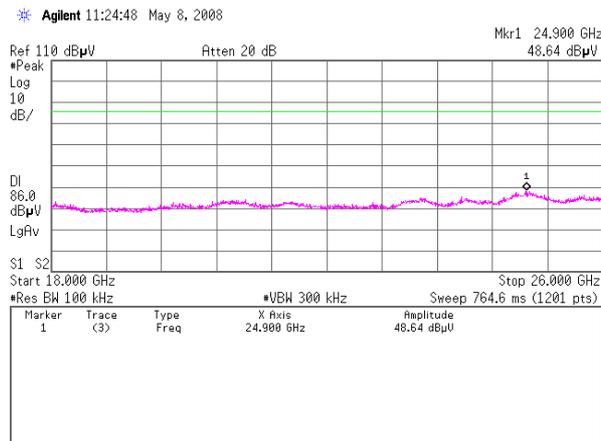
4.



5.

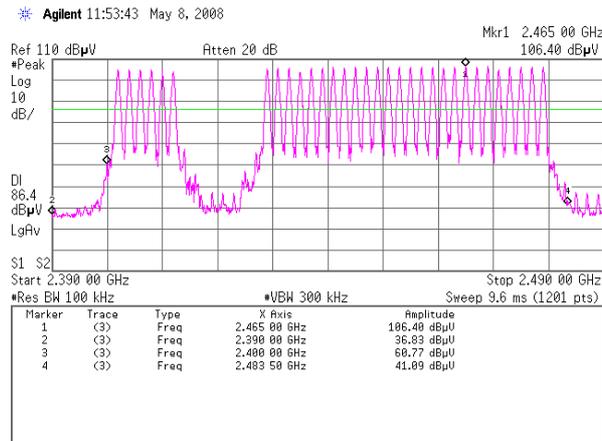


6.

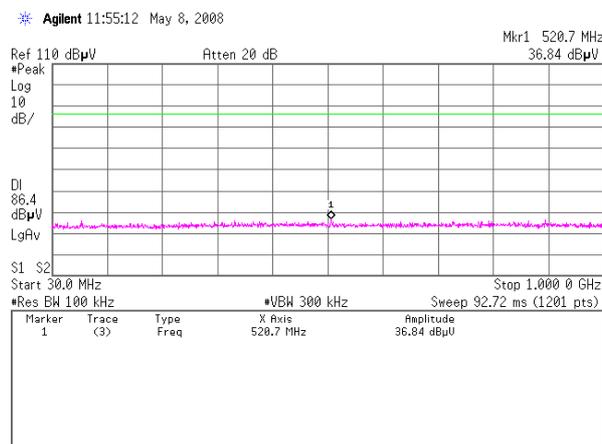


[Transmitting]
Inquiry

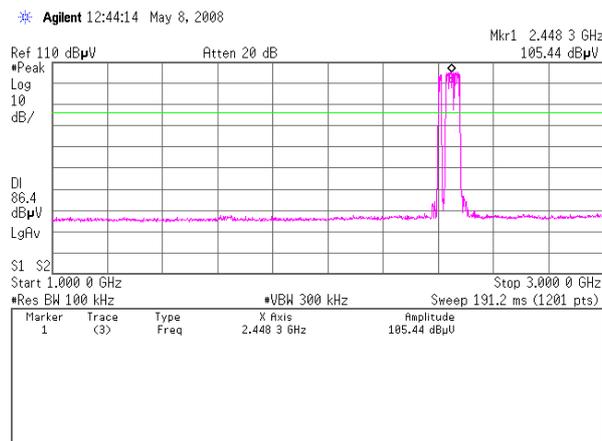
1.



2.

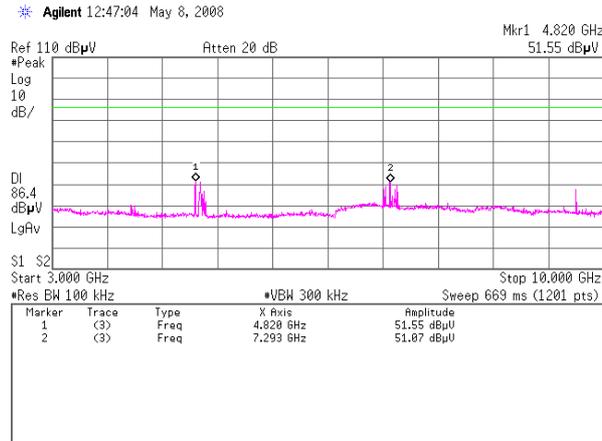


3.

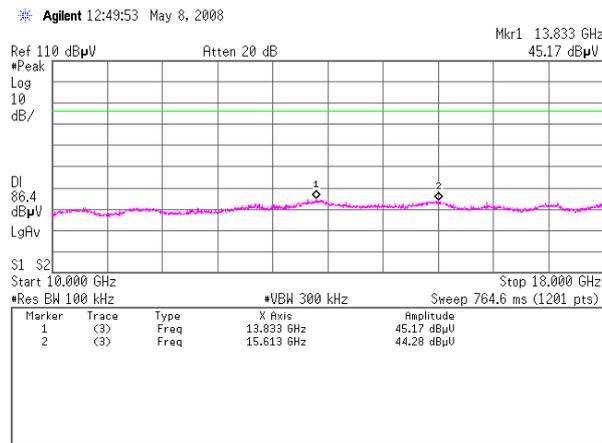


[Transmitting]
 Inquiry

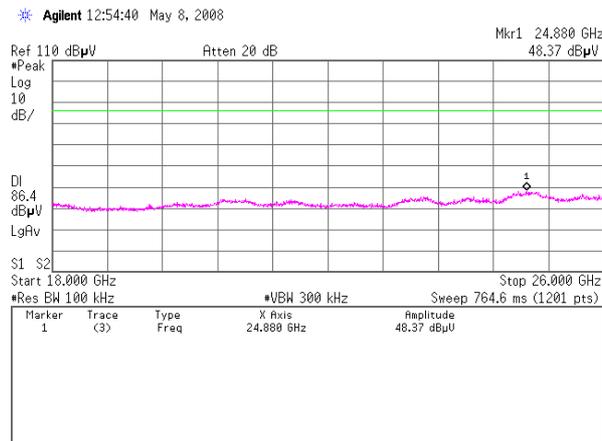
4.



5.



6.



DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2402MHz)
 Remarks : DH5
 Date : 4/22/2008
 Test Distance : 3 m
 Temperature : 19 °C
 Humidity : 55 %
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.4	21.4	17.9	28.4	0.9	6.0	17.8	17.8	40.0	22.2	22.2
2.	48.00	BB	21.5	21.5	10.9	28.5	1.2	6.0	11.1	11.1	40.0	28.9	28.9
3.	64.00	BB	21.5	21.4	7.3	28.3	1.4	6.0	7.9	7.8	40.0	32.1	32.2

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2441MHz)
 Remarks : DH5
 Date : 4/22/2008
 Test Distance : 3 m
 Temperature : 19 °C
 Humidity : 55 %
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.4	21.4	17.9	28.4	0.9	6.0	17.8	17.8	40.0	22.2	22.2
2.	48.00	BB	21.5	22.0	10.9	28.5	1.2	6.0	11.1	11.6	40.0	28.9	28.4
3.	64.00	BB	21.5	21.5	7.3	28.3	1.4	6.0	7.9	7.9	40.0	32.1	32.1

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2480MHz)
 Remarks : DH5
 Date : 4/22/2008
 Test Distance : 3 m
 Temperature : 19 °C
 Humidity : 55 %
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.4	21.4	17.9	28.4	0.9	6.0	17.8	17.8	40.0	22.2	22.2
2.	48.00	BB	21.5	22.0	10.9	28.5	1.2	6.0	11.1	11.6	40.0	28.9	28.4
3.	64.00	BB	21.5	21.5	7.3	28.3	1.4	6.0	7.9	7.9	40.0	32.1	32.1

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2402MHz)
 Remarks : DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1602.00	BB	46.5	45.6	25.9	35.9	3.6	0.0	40.1	39.2	74.0	33.9	34.8
2.	2390.00	BB	41.9	41.4	28.6	35.4	4.4	0.0	39.5	39.0	74.0	34.5	35.0
3.	2400.00	BB	51.9	53.5	28.6	35.3	4.5	0.0	49.7	51.3	74.0	24.3	22.7
4.	4804.00	BB	47.3	54.8	33.2	34.1	5.9	0.0	52.3	59.8	74.0	21.7	14.2
5.	7206.00	BB	42.1	42.4	36.2	34.7	7.1	0.0	50.7	51.0	74.0	23.3	23.0
6.	9608.00	BB	43.3	44.0	38.7	35.3	8.2	0.0	54.9	55.6	74.0	19.1	18.4
7.	12010.00	BB	41.7	43.4	40.3	35.0	8.9	0.0	55.9	57.6	74.0	18.1	16.4

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2402MHz(DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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*	1602.00	38.3	38.7	25.9	35.9	3.6	0.0	0.0	31.9	32.3	54.0	22.1	21.7	10
2	2390.00	41.9	41.4	28.6	35.4	4.4	0.0	-30.8	8.7	8.2	54.0	45.3	45.8	1M
3	2390.00	51.9	53.5	28.6	35.3	4.5	0.0	-30.8	18.9	20.5	54.0	35.1	33.5	1M
4	4804.00	47.3	54.8	33.2	34.1	5.9	0.0	-30.8	21.5	29.0	54.0	32.5	25.0	1M
5	7206.00	42.1	42.4	36.2	34.7	7.1	0.0	-30.8	19.9	20.2	54.0	34.1	33.8	1M
6	9608.00	43.3	44.0	38.7	35.3	8.2	0.0	-30.8	24.1	24.8	54.0	29.9	29.2	1M
7	12010.00	41.7	43.4	40.3	35.0	8.9	0.0	-30.8	25.1	26.8	54.0	28.9	27.2	1M

Sample Calculation :

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

Duty Factor calculation: $20 \cdot \log(2.88[\text{ms}]/100[\text{ms}]) = -30.81[\text{dB}]$ See Dwell Time data

* This noise is not pulse emission

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2441MHz)
 Remarks : DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1626.70	BB	44.8	44.4	26.0	35.9	3.6	0.0	38.5	38.1	74.0	35.5	35.9	
2.	4882.00	BB	46.3	52.3	33.5	34.1	6.0	0.0	51.7	57.7	74.0	22.3	16.3	
3.	7323.00	BB	41.0	40.9	36.3	34.8	7.1	0.0	49.6	49.5	74.0	24.4	24.5	
4.	9764.00	BB	43.0	43.6	38.6	35.4	8.2	0.0	54.4	55.0	74.0	19.6	19.0	
5.	12205.00	BB	43.1	42.4	40.4	34.8	9.0	0.0	57.7	57.0	74.0	16.3	17.0	

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2441MHz(DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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*	1626.70	37.5	38.2	26.0	35.9	3.6	0.0	0.0	31.2	31.9	54.0	22.8	22.1	10
2	4882.00	46.3	52.3	33.5	34.1	6.0	0.0	-30.8	20.9	26.9	54.0	33.1	27.1	1M
3	7323.00	41.0	40.9	36.3	34.8	7.1	0.0	-30.8	18.8	18.7	54.0	35.2	35.3	1M
4	9764.00	43.0	43.6	38.6	35.4	8.2	0.0	-30.8	23.6	24.2	54.0	30.4	29.8	1M
5	12205.00	43.1	42.4	40.4	34.8	9.0	0.0	-30.8	26.9	26.2	54.0	27.1	27.8	1M

Sample Calculation :

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

Duty Factor calculation: $20 \cdot \log(2.88[\text{ms}]/100[\text{ms}]) = -30.81[\text{dB}]$ See Dwell Time data

* This noise is not pulse emission

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2480MHz)
 Remarks : DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1652.67	BB	44.9	45.0	26.2	35.9	3.7	0.0	38.9	39.0	74.0	35.1	35.0	
2.	2483.50	BB	44.3	43.5	28.6	35.3	4.5	0.0	42.1	41.3	74.0	31.9	32.7	
3.	4960.00	BB	45.0	51.4	33.7	34.1	6.0	0.0	50.6	57.0	74.0	23.4	17.0	
4.	7440.00	BB	40.8	41.1	36.5	34.8	7.1	0.0	49.6	49.9	74.0	24.4	24.1	
5.	9920.00	BB	42.8	42.9	38.5	35.4	8.3	0.0	54.2	54.3	74.0	19.8	19.7	
6.	12400.00	BB	43.4	43.4	40.5	34.6	9.0	0.0	58.3	58.3	74.0	15.7	15.7	

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2480MHz(DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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 [dBuV]						HOR [dB]	VER [dB]				
1*	1652.67	37.4	37.4	26.2	35.9	3.7	0.0	0.0	31.4	31.4	54.0	22.6	22.6	10
2	2483.50	44.3	43.5	28.6	35.3	4.5	0.0	-30.8	11.3	10.5	54.0	42.7	43.5	1M
3	4960.00	45.0	51.4	33.7	34.1	6.0	0.0	-30.8	19.8	26.2	54.0	34.2	27.8	1M
4	7440.00	40.8	41.1	36.5	34.8	7.1	0.0	-30.8	18.8	19.1	54.0	35.2	34.9	1M
5	9920.00	42.8	42.9	38.5	35.4	8.3	0.0	-30.8	23.4	23.5	54.0	30.6	30.5	1M
6	12400.00	43.4	43.4	40.5	34.6	9.0	0.0	-30.8	27.5	27.5	54.0	26.5	26.5	1M

Sample Calculation :

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

Duty Factor calculation: $20 \cdot \log(2.88[\text{ms}]/100[\text{ms}]) = -30.81[\text{dB}]$ See Dwell Time data

* This noise is not pulse emission

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2402MHz)
 Remarks : 3DH5
 Date : 4/22/2008
 Test Distance : 3 m
 Temperature : 19 °C
 Humidity : 55 %
 Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.4	21.6	17.9	28.4	0.9	6.0	17.8	18.0	40.0	22.2	22.0
2.	48.00	BB	21.5	21.8	10.9	28.5	1.2	6.0	11.1	11.4	40.0	28.9	28.6
3.	64.00	BB	21.5	22.0	7.3	28.3	1.4	6.0	7.9	8.4	40.0	32.1	31.6

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT140Q
Serial No. : 5000021
Power : DC3.7V
Mode : Transmitting(2441MHz)
Remarks : 3DH5
Date : 4/22/2008
Test Distance : 3 m
Temperature : 19 °C
Humidity : 55 %
Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.5	21.6	17.9	28.4	0.9	6.0	17.9	18.0	40.0	22.1	22.0	
2.	48.00	BB	21.5	21.9	10.9	28.5	1.2	6.0	11.1	11.5	40.0	28.9	28.5	
3.	64.00	BB	21.5	21.6	7.3	28.3	1.4	6.0	7.9	8.0	40.0	32.1	32.0	

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

Page:

DATA OF RADIATION TEST

UL Japan, Inc.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
Kind of Equipment : Wireless Stereo Headset
Model No. : DR-BT140Q
Serial No. : 5000021
Power : DC3.7V
Mode : Transmitting(2480MHz)
Remarks : 3DH5
Date : 4/22/2008
Test Distance : 3 m
Temperature : 19 °C
Humidity : 55 %
Regulation : FCC Part15C § 15.209

Engineer : Ichiro Isozaki

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.	31.99	BB	21.5	21.5	17.9	28.4	0.9	6.0	17.9	17.9	40.0	22.1	22.1	
2.	48.00	BB	21.4	22.0	10.9	28.5	1.2	6.0	11.0	11.6	40.0	29.0	28.4	
3.	64.00	BB	21.5	21.5	7.3	28.3	1.4	6.0	7.9	7.9	40.0	32.1	32.1	

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
■ CABLE: KCC-A2/A3 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-04 (ESVS10)

Page:

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2402MHz)
 Remarks : 3DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1602.02	BB	45.9	46.5	25.9	35.9	3.6	0.0	39.5	40.1	74.0	34.5	33.9
2.	2390.00	BB	43.4	42.7	28.6	35.4	4.4	0.0	41.0	40.3	74.0	33.0	33.7
3.	2400.00	BB	60.5	60.2	28.6	35.3	4.5	0.0	58.3	58.0	74.0	15.7	16.0
4.	4804.00	BB	46.4	46.1	33.2	34.1	5.9	0.0	51.4	51.1	74.0	22.6	22.9
5.	7206.00	BB	42.1	42.3	36.2	34.7	7.1	0.0	50.7	50.9	74.0	23.3	23.1
6.	9608.00	BB	42.7	43.2	38.7	35.3	8.2	0.0	54.3	54.8	74.0	19.7	19.2
7.	12010.00	BB	42.7	42.1	40.3	35.0	8.9	0.0	56.9	56.3	74.0	17.1	17.7

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2402MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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*	1602.02	36.7	36.8	25.9	35.9	3.6	0.0	0.0	30.3	30.4	54.0	23.7	23.6	10
2	2390.00	43.4	42.7	28.6	35.4	4.4	0.0	-30.7	10.3	9.6	54.0	43.7	44.4	1M
3	2400.00	60.5	60.2	28.6	35.3	4.5	0.0	-30.7	27.6	27.3	54.0	26.4	26.7	1M
4	4804.00	46.4	46.1	33.2	34.1	5.9	0.0	-30.7	20.7	20.4	54.0	33.3	33.6	1M
5	7206.00	42.1	42.3	36.2	34.7	7.1	0.0	-30.7	20	20.2	54.0	34.0	33.8	1M
6	9608.00	42.7	43.2	38.7	35.3	8.2	0.0	-30.7	23.6	24.1	54.0	30.4	29.9	1M
7	12010.00	42.7	42.1	40.3	35.0	8.9	0.0	-30.7	26.2	25.6	54.0	27.8	28.4	1M

Sample Calculation :

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

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

* This noise is not pulse emission

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2441MHz)
 Remarks : 3DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1626.70	BB	44.2	45.1	26.0	35.9	3.6	0.0	37.9	38.8	74.0	36.1	35.2
2.	4882.00	BB	44.5	45.4	33.5	34.1	6.0	0.0	49.9	50.8	74.0	24.1	23.2
3.	7323.00	BB	41.5	41.8	36.3	34.8	7.1	0.0	50.1	50.4	74.0	23.9	23.6
4.	9764.00	BB	43.5	42.6	38.6	35.4	8.2	0.0	54.9	54.0	74.0	19.1	20.0
5.	12205.00	BB	42.2	42.8	40.4	34.8	9.0	0.0	56.8	57.4	74.0	17.2	16.6

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2441MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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*	1626.70	37.0	34.1	26.0	35.9	3.6	0.0	0.0	30.7	27.8	54.0	23.3	26.2	10
2	4882.00	44.5	45.4	33.5	34.1	6.0	0.0	-30.7	19.2	20.1	54.0	34.8	33.9	1M
3	7323.00	41.5	41.8	36.3	34.8	7.1	0.0	-30.7	19.4	19.7	54.0	34.6	34.3	1M
4	9764.00	43.5	42.6	38.6	35.4	8.2	0.0	-30.7	24.2	23.3	54.0	29.8	30.7	1M
5	12205.00	42.2	42.8	40.4	34.8	9.0	0.0	-30.7	26.1	26.7	54.0	27.9	27.3	1M

Sample Calculation :

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

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

* This noise is not pulse emission

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Applicant : Sony Corporation
 Kind of Equipment : Wireless Stereo Headset
 Model No. : DR-BT140Q
 Serial No. : 5000021
 Power : DC3.7V
 Mode : Transmitting(2480MHz)
 Remarks : 3DH5 PK RBW:1MHz, VBW:1MHz
 Date : 4/23/2008
 Test Distance : 3 m
 Temperature : 20 °C
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209(PK Detection)

Engineer : Makoto Hosaka

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.	1652.69	BB	46.0	45.7	26.2	35.9	3.7	0.0	40.0	39.7	74.0	34.0	34.3	
2.	2483.50	BB	44.6	45.2	28.6	35.3	4.5	0.0	42.4	43.0	74.0	31.6	31.0	
3.	4960.00	BB	42.4	45.7	33.7	34.1	6.0	0.0	48.0	51.3	74.0	26.0	22.7	
4.	7440.00	BB	41.6	42.4	36.5	34.8	7.1	0.0	50.4	51.2	74.0	23.6	22.8	
5.	9920.00	BB	42.6	42.6	38.5	35.4	8.3	0.0	54.0	54.0	74.0	20.0	20.0	
6.	12400.00	BB	42.0	42.9	40.5	34.6	9.0	0.0	56.9	57.8	74.0	17.1	16.2	

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

■ ANTENNA: KHA-08 (1-18GHz) / KHA-06 (18-26.5GHz)
 ■ CABLE: KCC-D16/D17 ■ AMP: KAF-07 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST (Above 1GHz)

UL Japan, Inc.
YAMAKITA NO.1 ANECHOIC CHAMBER
Report No. : 28HE0252-YK-E

Company : Sony Corporation
Equipment : Wireless Speaker Headset
Model : DR-BT140Q
Sample No. : 5000021
Power : DC3.7V
Mode : Transmitting 2480MHz(3DH5)

Regulation : FCC Part15C Section 15.209
Test Distance : 3m
Date : 2008/04/23
Temperature : 20deg.C
Humidity : 51%

ENGINEER : Makoto Hosaka

AV calculation value SPECTRUMANALYZER 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*	1652.69	37.9	34.6	26.2	35.9	3.7	0.0	0.0	31.9	28.6	54.0	22.1	25.4	10
2	2483.50	44.6	45.2	28.6	35.3	4.5	0.0	-30.7	11.7	12.3	54.0	42.3	41.7	1M
3	4960.00	42.4	45.7	33.7	34.1	6.0	0.0	-30.7	17.3	20.6	54.0	36.7	33.4	1M
4	7440.00	41.6	42.4	36.5	34.8	7.1	0.0	-30.7	19.7	20.5	54.0	34.3	33.5	1M
5	9920.00	42.6	42.6	38.5	35.4	8.3	0.0	-30.7	23.3	23.3	54.0	30.7	30.7	1M
6	12400.00	42.0	42.9	40.5	34.6	9.0	0.0	-30.7	26.2	27.1	54.0	27.8	26.9	1M

Sample Calculation :

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

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

* This noise is not pulse emission

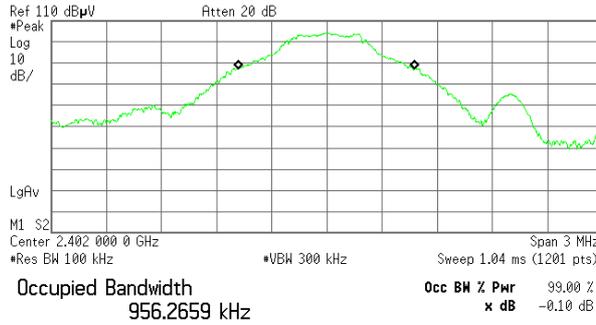
Occupied Bandwidth (99%) (Regulation: RSS-Gen 4.6.1)

UL Japan, Inc. Yamakita EMC lab. No.2 shielded room
 Date: May 8, 2008
 Temp./Humid.: 24 deg. C. / 63 %
 Engineer: Minoru Nakatake
 Test mode: Transmitting

[Hopping off, DHS]

1. ch : 2402MHz/Occupied Bandwidth:956.3kHz

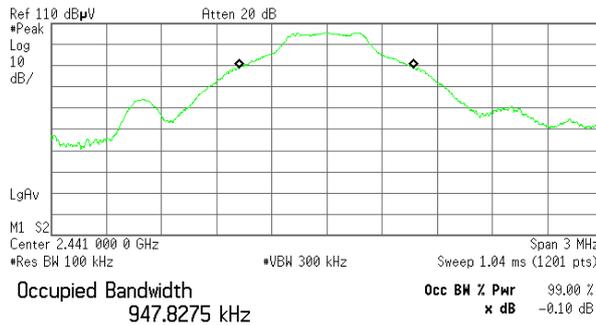
* Agilent 09:12:15 May 8, 2008



Transmit Freq Error -3.833 kHz
 x dB Bandwidth 25.720 kHz

2. ch : 2441MHz/Occupied Bandwidth:947.8kHz

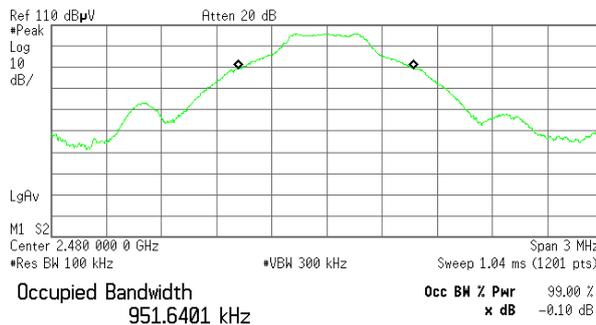
* Agilent 09:14:39 May 8, 2008



Transmit Freq Error -1.704 kHz
 x dB Bandwidth 185.495 kHz

3. ch : 2480MHz/Occupied Bandwidth:951.6kHz

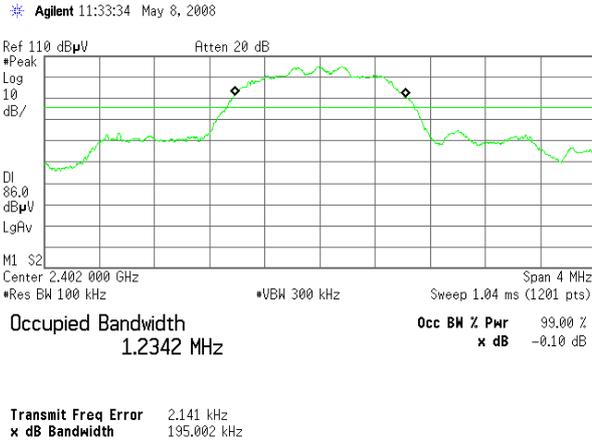
* Agilent 09:15:49 May 8, 2008



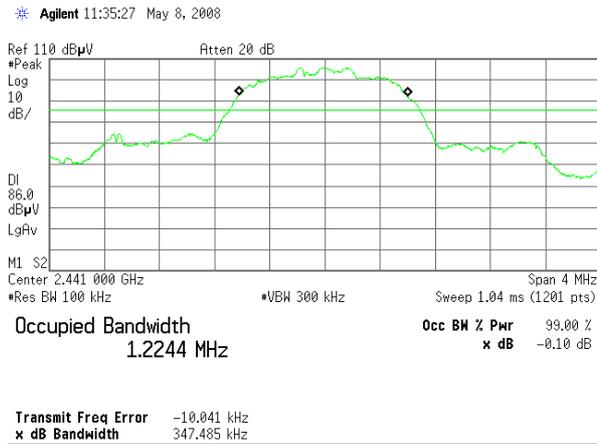
Transmit Freq Error -3.758 kHz
 x dB Bandwidth 326.222 kHz

[Hopping off, 3DH5]

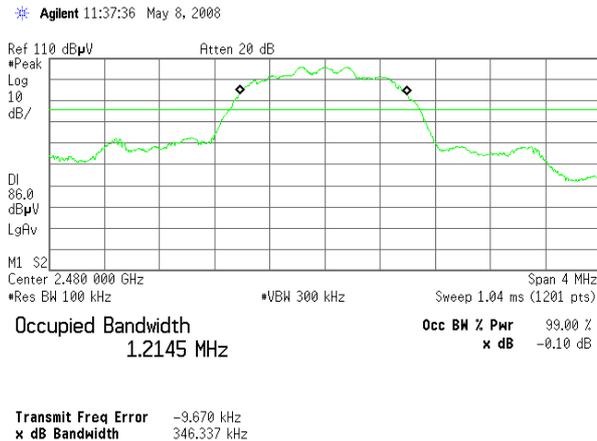
4. ch : 2402MHz/Occupied Bandwidth:1.2342MHz



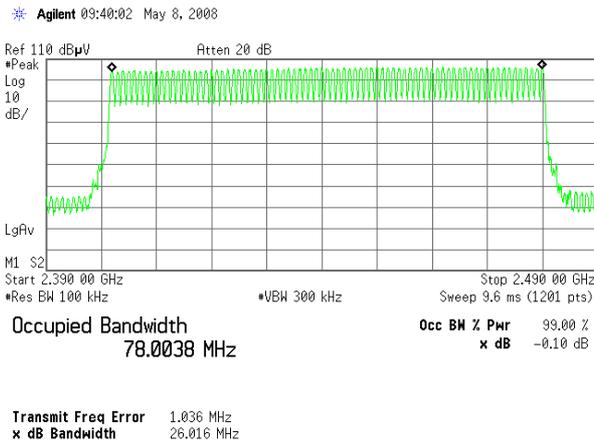
5. ch : 2441MHz/Occupied Bandwidth:1.2244MHz



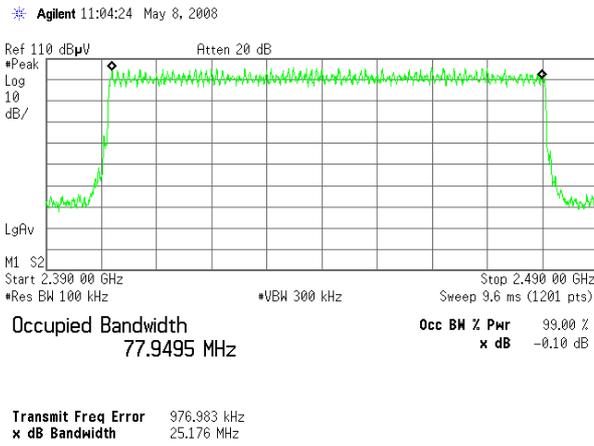
6. ch : 2480MHz/Occupied Bandwidth:1.2145MHz



7. Hopping, DH5/Occupied Bandwidth:78.0MHz



8. Hopping, 3DH5/Occupied Bandwidth:77.9MHz



**APPENDIX 3
Test Instruments**

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-RE	Radiated emission(software)	UL Japan	RE(Ver.1.5)	RE	-
KAEC-01	Anechoic Chamber	JSE	Semi 3m	RE	2007/08/26 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2008/04/08 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2008/03/17 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/12/27 * 12
KCC-A2/A3	Coaxial Cable	Fujikura	5D-2W	RE	2007/05/15 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/12/27 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	RE	2006/07/10 * 24
KSA-02	Spectrum Analyzer	Advantest	R3265A	RE	2007/12/20 * 12
KTR-04	Test Receiver	Rohde & Schwarz	ESVS10	RE	2007/10/30 * 12
KJM-07	Measure	KOMELON	KMC-36	RE	-
KHA-06	Horn Antenna	ETS LINDGREN	3116	RE	2007/08/16 * 12
KHA-08	DRG Horn Antenna	A.H.Systems	SAS-200/571	RE	2007/11/02 * 12
KAF-07	Pre Amplifier	Hewlett Packard	8449B	RE	2007/12/10 * 12
KCC-D16/D17	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KPS/K PS-1501-2000-KPS	RE	2008/02/21 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE	2008/04/18 * 12
KSA-08	Spectrum Analyzer	Agilent	E4446A	AT(1,2,3,4,6)	2008/01/11 * 12
KCC-D16	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KPS	AT(full)	2008/02/21 * 12
KPM-05	Power meter	Agilent	E4417A	AT(5)	2008/03/21 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT(5)	2008/03/27 * 12
KOSC-01	Oscilloscope	Tektronix	TDS-2022B	AT(4)	2008/05/07 * 12
KDT-01	Coaxial Crystal Detector	Agilent	8473C	AT(4)	Pre Check
KOS-01	Humidity Indicator	Custom	CTH-190	AT(full)	2006/07/14 * 24

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: Radiated emission,
- AT: Antenna terminal disturbance voltage
- AT1: Carrier Frequency Separation
- AT2: 20dB Bandwidth & Occupied Bandwidth (99%)
- AT3: Number of Hopping Frequency
- AT4: Dwell time
- AT5: Maximum Peak Output Power
- AT6: Out of Band Emissions (Antenna Port Conducted)

*Some calibrations were performed after the tested dates , however those EMI test equipment have been controlled by means of an unbroken chains of calibrations .