



FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Mad Catz Inc

Bluetooth Headset

Model Number: 90700

FCC ID: P25A990700

Prepared for : Mad Catz Inc
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Date of Report : Nov.02, 2011

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FCC ID:P25A990700

TEST REPORT CERTIFICATION

Applicant : Mad Catz Inc
 EUT Description : Bluetooth Headset
 FCC ID : P25A990700
 (A) MODEL NO. : 90700
 (B) SERIAL NO. : N/A
 (C) POWER SUPPLY : DC 3.7V
 (D) TEST VOLTAGE : DC 3.7V

Tested for comply with:
 FCC Rules and Regulations Part 15 Subpart C: 2008
 Test procedure used:
 ANSI C63.10:2009
 FCC KDB Publication 447498

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Oct.11~31, 2011 Report of date: Nov.02, 2011

Prepared by : Cerry He Reviewer by : Sunny Lu
 Cerry He/ Assistant Sunny Lu / Supervisor



Approved & Authorized Signer : Ken Lu / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15: 15.207 ANSI C63.10 :2009	N/A
Radiated Emission Test	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
Conducted Spurious Emissions	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2009	PASS
Carrier Frequency Separation Test	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2009	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10 :2009	PASS
Number Of Hopping Frequency Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Dwell Time Test	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Maximum Peak Output Power Test	FCC Part 15: 15.247(b)(1)\ ANSI C63.10 :2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.247(d) ANSI C63.10 :2009	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

Product Name	: Bluetooth Headset
Model Number	: 90700
FCC ID	: P25A990700
Operation frequency	: 2402MHz-2480MHz
Antenna	: PCB, 4.0dBi gain
Modulation	: GFSK, $\pi/4$ DQPSK, 8-DPSK
Power Supply	: DC 3.7V
Applicant	: Mad Catz Inc 7480 Mission Valley Road, Suite 101, San Diego, California, 92108, USA
USB Cable	: Unshielded, Detachable, 1.0m
Date of Test	: Oct.11~31, 2011
Date of Receipt	: Oct.11, 2011
Sample Type	: Prototype production

2.2. EUT Configuration and operation conditions for test.

EUT

(EUT: Bluetooth Headset)

2.3. Test Facility

Site Description

Name of Firm : Audix Technology (Shenzhen) Co., Ltd.
 No. 6, Ke Feng Rd., 52 Block, Shenzhen
 Science & Industrial Park, Nantou,
 Shenzhen, Guangdong, China

3m Anechoic Chamber : Certificated by FCC, USA
 Registration Number: 90454
 Valid Date: Mar.31, 2012

3m & 10m Anechoic Chamber : Certificated by FCC, USA
 Registration Number: 794232
 Valid Date: Dec.30, 2012

EMC Lab. : Certificated by Industry Canada
 Registration Number: IC 5183A-1
 Valid Date: Jun.13, 2014

Certificated by DAkkS, Germany
 Registration No: D-PL-12151-01-01
 Valid Date: Feb.01, 2014

Accredited by NVLAP, USA
 NVLAP Code: 200372-0
 Valid Date: Mar.31, 2012

2.4. Measurement Uncertainty (95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	3.6 dB(30~200MHz, Polarize: H)
	3.7 dB(30~200MHz, Polarize: V)
	4.0 dB(200M~1GHz, Polarize: H)
	3.7 dB(200M~1GHz, Polarize: V)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.57dB
Uncertainty for Conduction Spurious emission test	2.00 dB
Uncertainty for Output power test	0.73 dB
Uncertainty for Power density test	2.00 dB
Uncertainty for Frequency range test	7×10^{-8}
Uncertainty for Bandwidth test	83 kHz
Uncertainty for DC power test	0.038 %
Uncertainty for test site temperature and humidity	0.6°C
	3%

3. RADIATED EMISSION TEST

3.1. Test Equipment

Frequency rang: 30~1000MHz

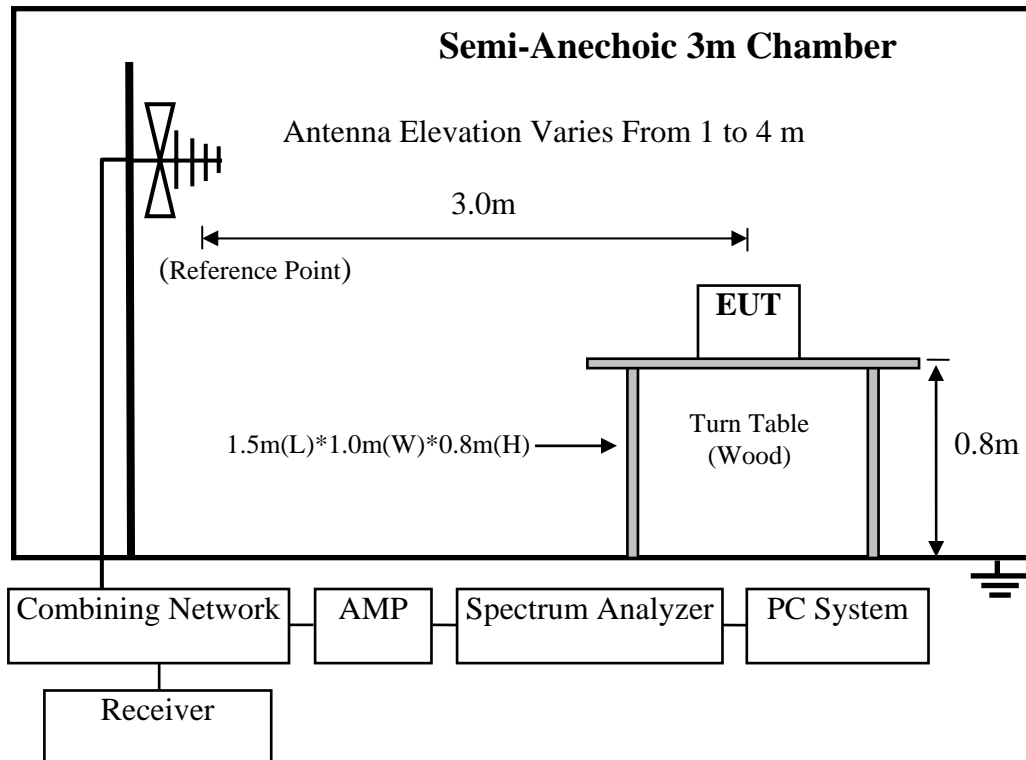
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	3#Chamber	AUDIX	N/A	N/A	Dec.06,10	1 Year
2	EMI Spectrum	Agilent	E4407B	MY41440292	May.08, 11	1 Year
3	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	May.08, 11	1 Year
4	Amplifier	HP	8447D	2648A04738	May.08, 11	1 Year
5	Bilog Antenna	Schaffner	CBL6111C	2597	May.25, 11	1 Year
6	RF Cable	MIYAZAKI	8D-FB	3# Chamber No.1	May.08, 11	1 Year
7	Coaxial Switch	Anritsu	MP59B	M73989	May.08, 11	1 Year

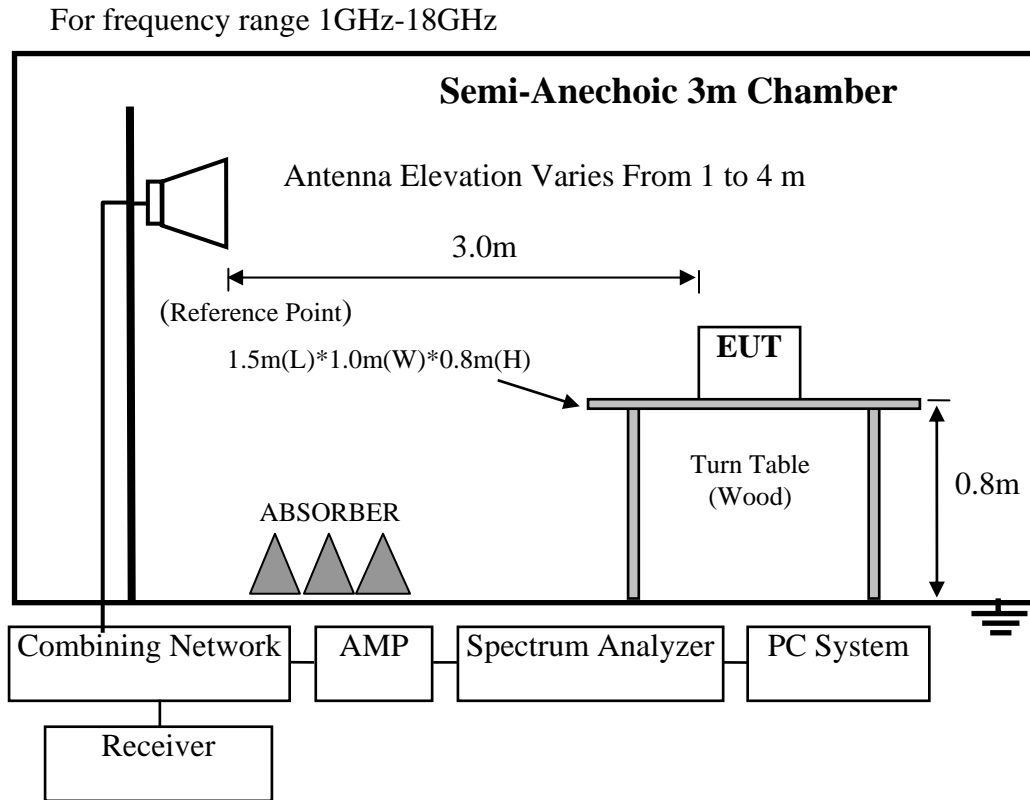
Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4407B	MY41440292	May.08, 11	1 Year
2	Horn Antenna	EMCO	3115	9607-4877	July.01, 11	1 Year
3	Horn Antenna	EMCO	3116	00060089	Nov.25, 10	1.5 Year
4	Amplifier	Agilent	8449B	3008A00863	May.08, 11	1 Year
5	RF Cable	Hubersuhner	SUCOFLEX102	28622/2	May.08, 11	1 Year
6	RF Cable	Hubersuhner	SUCOFLEX102	29091/2	May.08, 11	1 Year

3.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz





3.3. Radiated Emission Limit Standard: FCC 15.209

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

- Remark :
- (1) Emission level dBμV = 20 log Emission level μV/m
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
 - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

3.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

3.4.1. Bluetooth Headset (EUT)

Model Number : 90700

Serial Number : N/A

3.5. Operating Condition of EUT

- 3.5.1. Setup the EUT and simulator as shown as Section 3.2.
- 3.5.2. Turned on the power of all equipment.
- 3.5.3. Let EUT work in Tx mode.

3.6. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2009 on radiated emission Test.

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions.

After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation show in the test setup photos.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000 MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

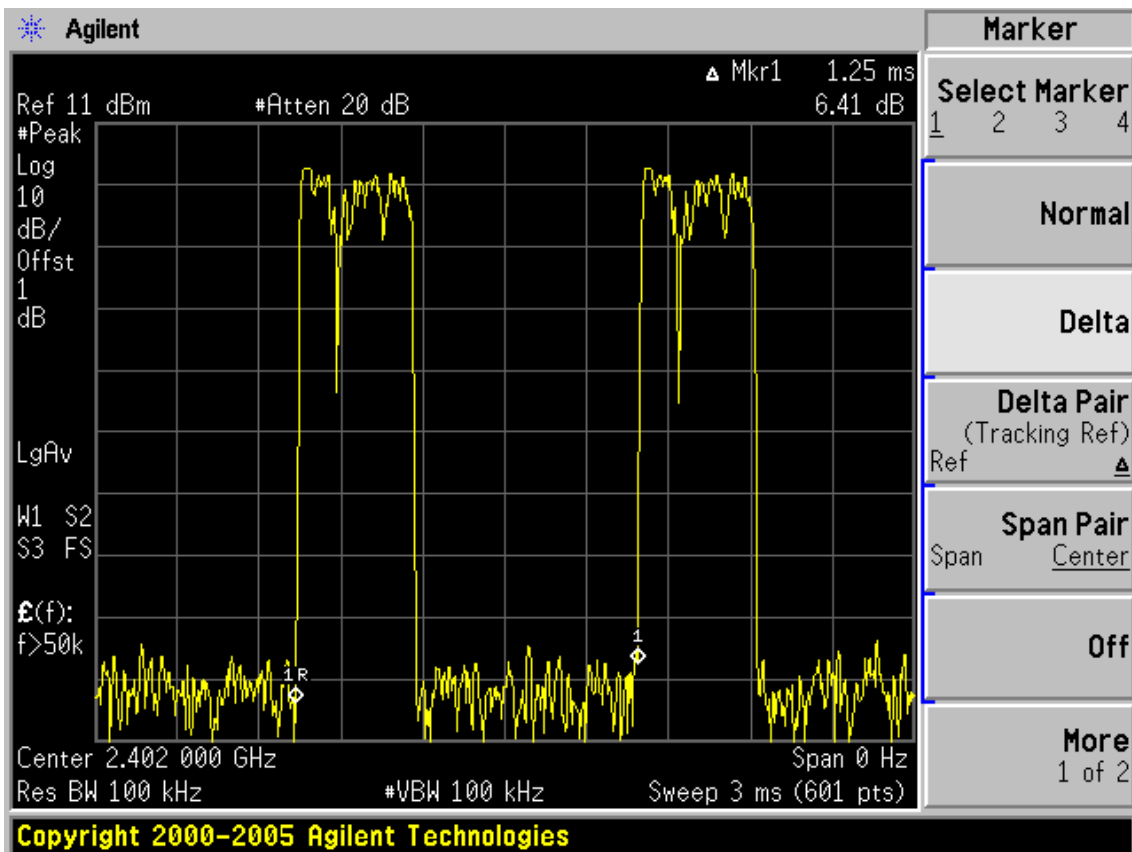
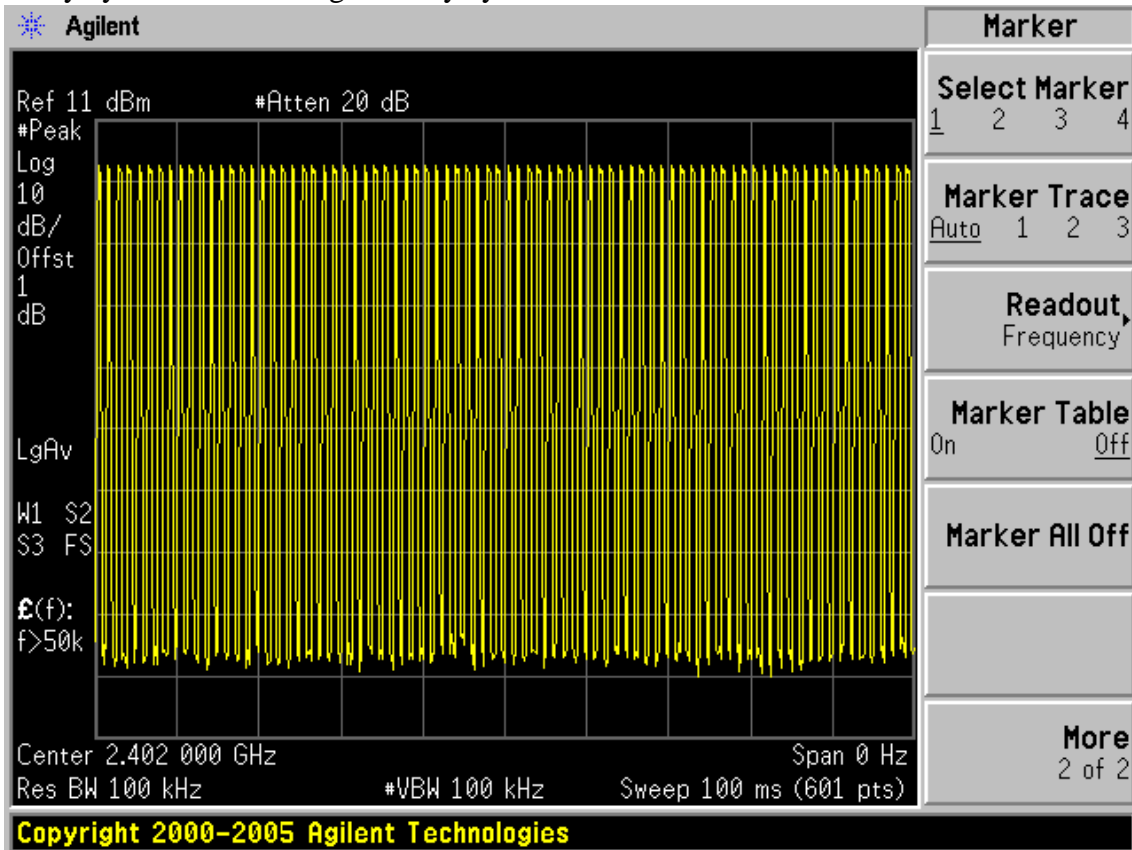
3.7. Radiated Emission Test Results

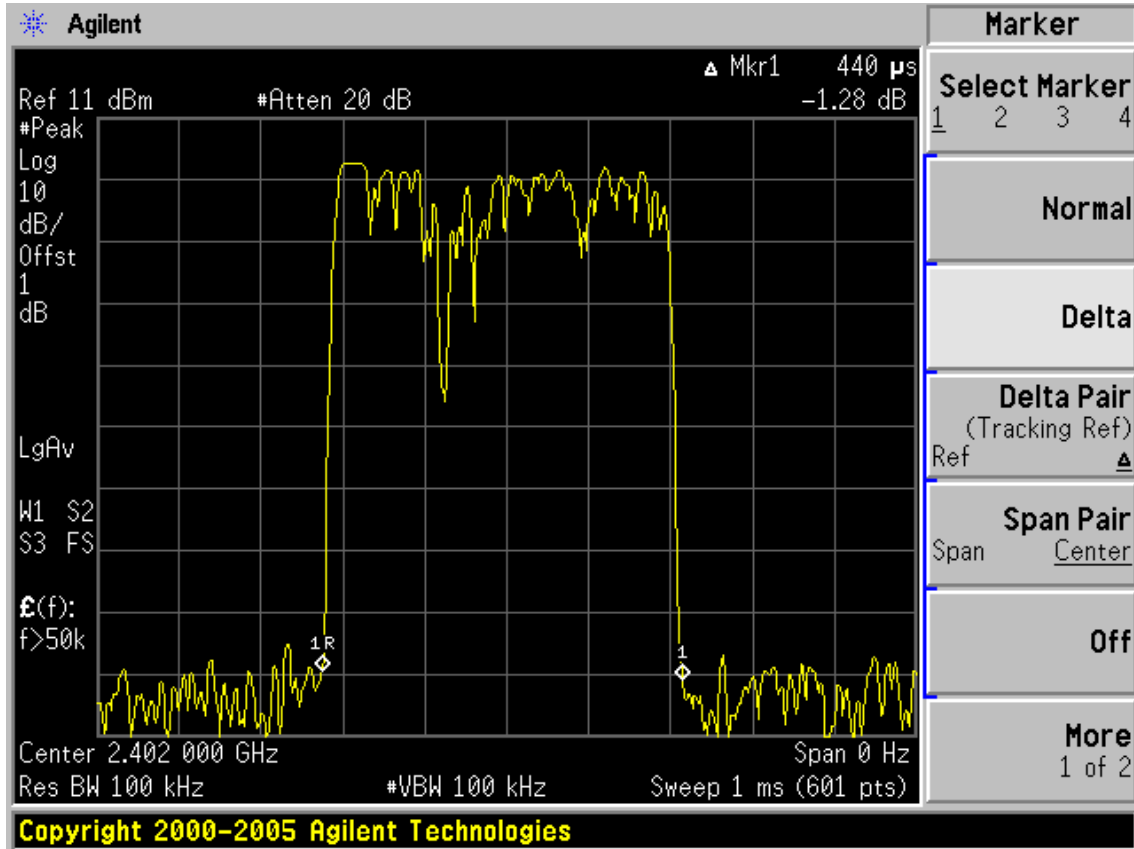
PASS.

All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note: The duty cycle factor for calculate average level is 9.07dB, and average limit is 20dB below peak limit, so if peak measured level comply with peak limit, the average level was deemed to comply with average limit.

Duty cycle: $440\mu\text{s} / 1.25\text{ms} * 100\% = 35.2\%$
 Duty cycle factor = $20\log (1/\text{duty cycle}) = 9.07$



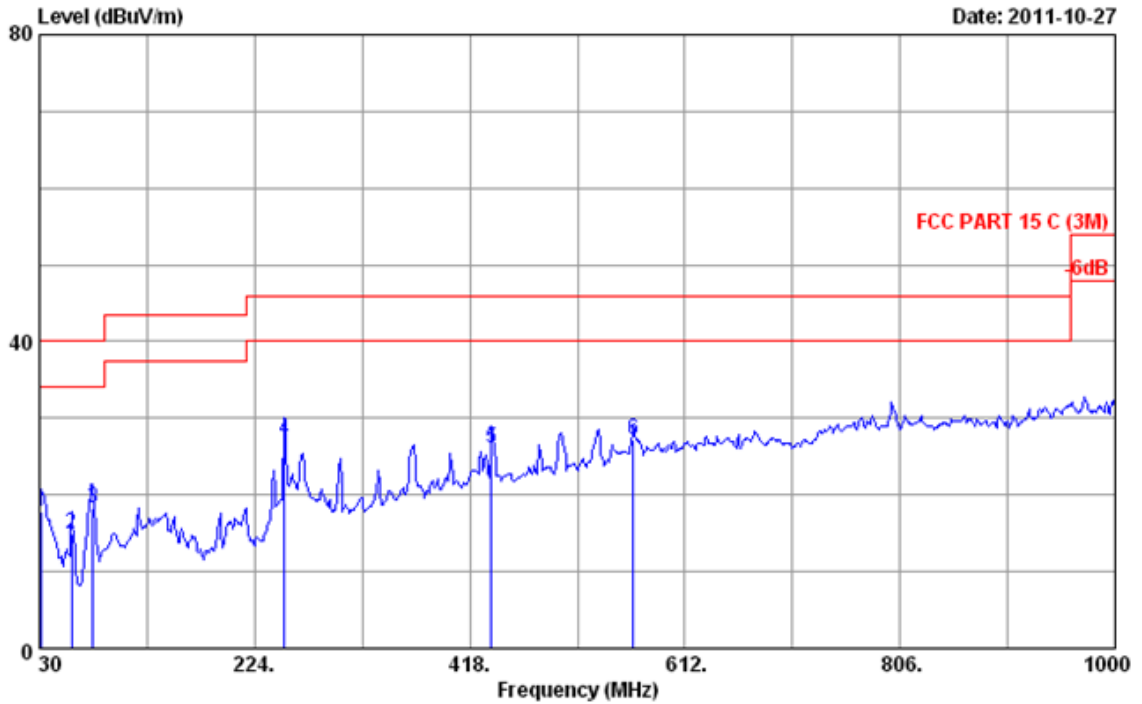


Frequency: 30MHz~1GHz

Data: 1

File: E:\2011 Report data\MMad catz\ACS111H164.EM6 (6)

Date: 2011-10-27

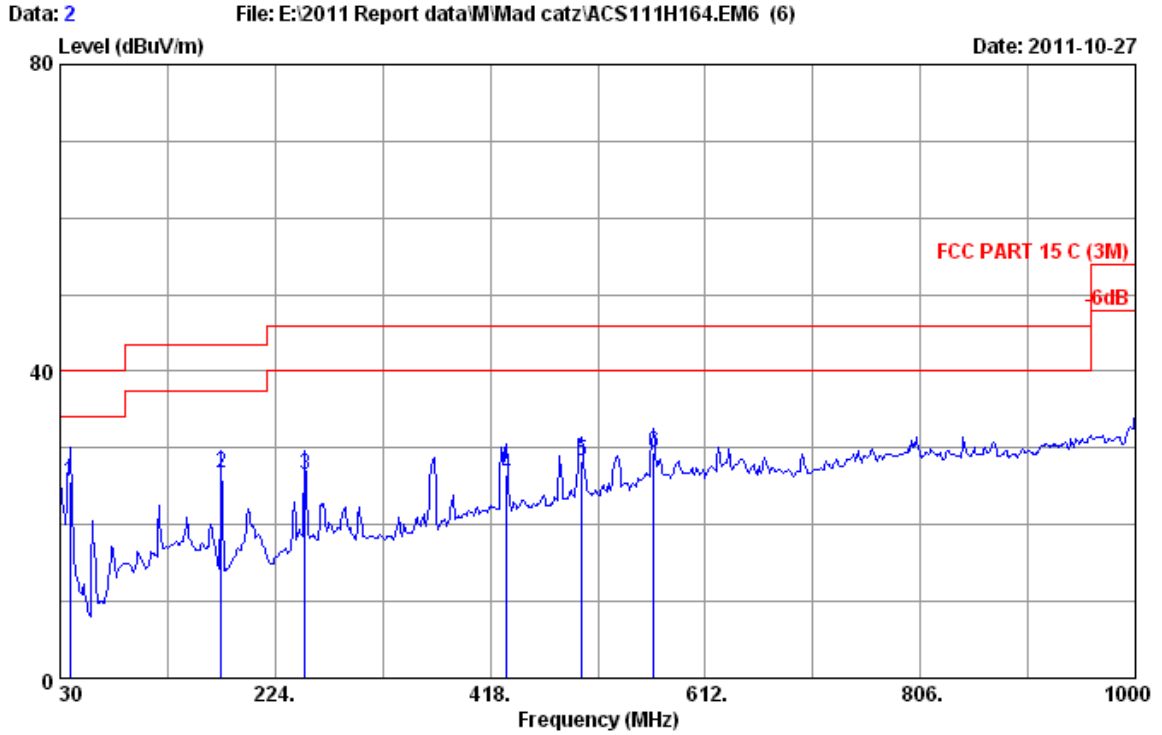


Site no. : 3m Chamber
 Dis. / Ant. : 3m 2010 CBL6111C 2598
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56%
 EUT : Bluetooth Headset M/N:90700
 Power rating : DC 3.7V
 Test Mode : Tx Mode

Data no. : 1
 Ant. pol. : HORIZONTAL
 Engineer : Leo_Li

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	31.940	18.88	0.61	-1.70	17.79	40.00	22.21	QP
2	59.100	6.22	0.89	7.76	14.87	40.00	25.13	QP
3	78.500	7.63	1.02	9.73	18.38	40.00	21.62	QP
4	251.160	12.90	2.43	11.79	27.12	46.00	18.88	QP
5	437.400	17.28	3.58	5.13	25.99	46.00	20.01	QP
6	565.440	19.61	4.32	3.36	27.29	46.00	18.71	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

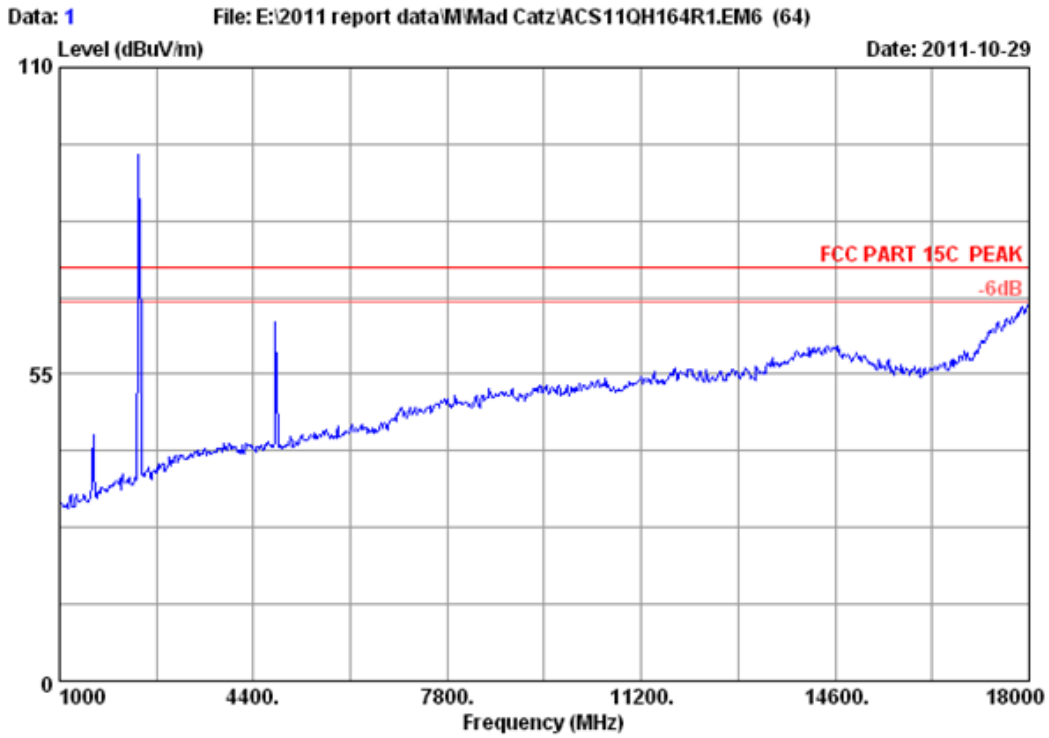


Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2010 CBL6111C 2598 Ant. pol. : VERTICAL
 Limit : FCC PART 15 C (3M)
 Env. / Ins. : 24°C/56% Engineer : Leo_Li
 EUT : Bluetooth Headset M/N:90700
 Power rating : DC 3.7V
 Test Mode : Tx Mode

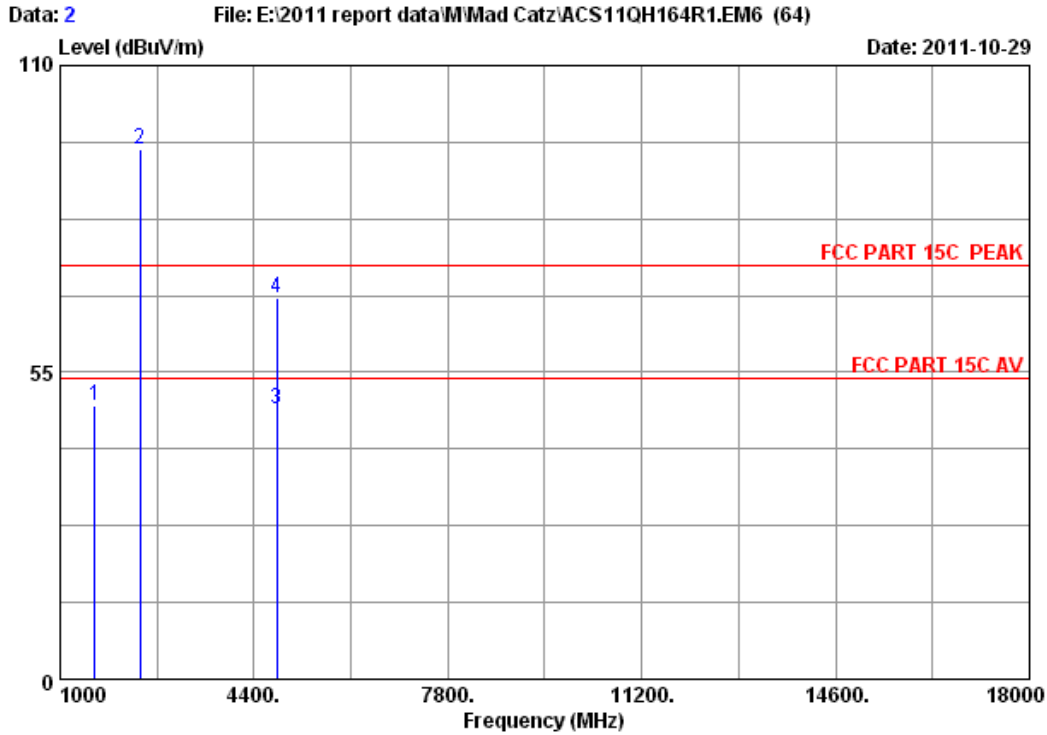
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	38.850	15.04	0.70	10.00	25.74	40.00	14.26	QP
2	175.500	9.65	1.66	15.38	26.69	43.50	16.81	QP
3	251.160	12.90	2.43	11.24	26.57	46.00	19.43	QP
4	432.550	17.42	3.55	5.51	26.48	46.00	19.52	QP
5	500.450	18.30	4.00	6.06	28.36	46.00	17.64	QP
6	565.440	19.61	4.32	5.58	29.51	46.00	16.49	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency: 1GHz~18GHz



Site no.	: 3m Chamber	Data no.	: 1
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2402MHz Tx		
M/N	: 90700		

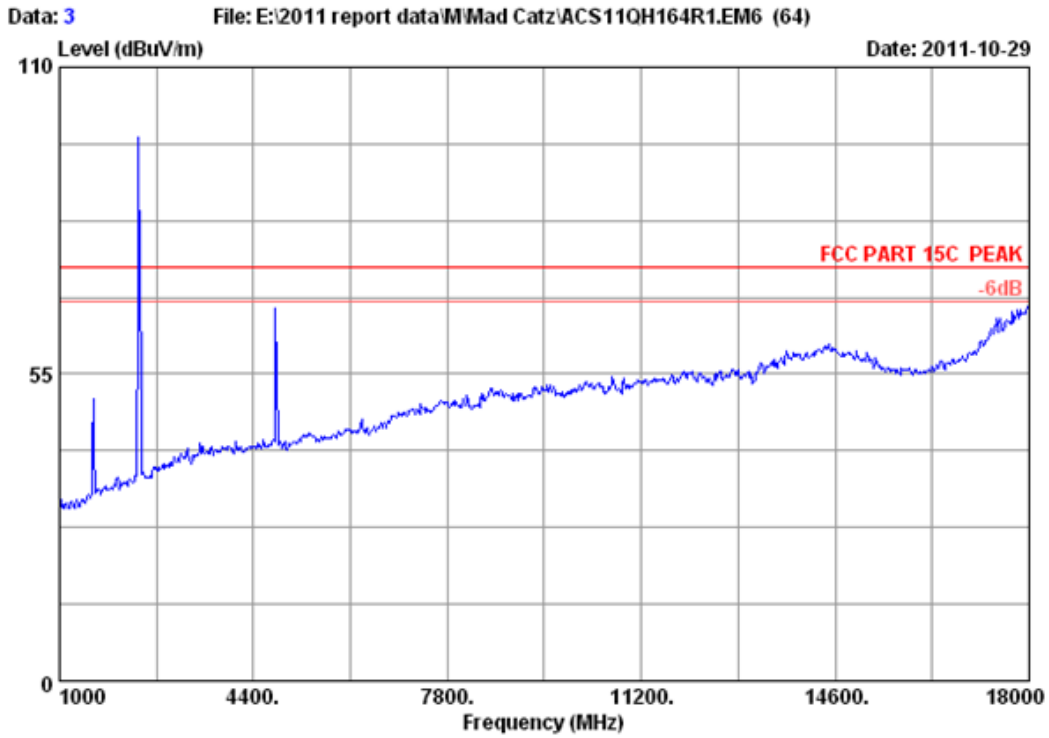


Site no. : 3m Chamber Data no. : 2
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2402MHz Tx
 M/N : 90700

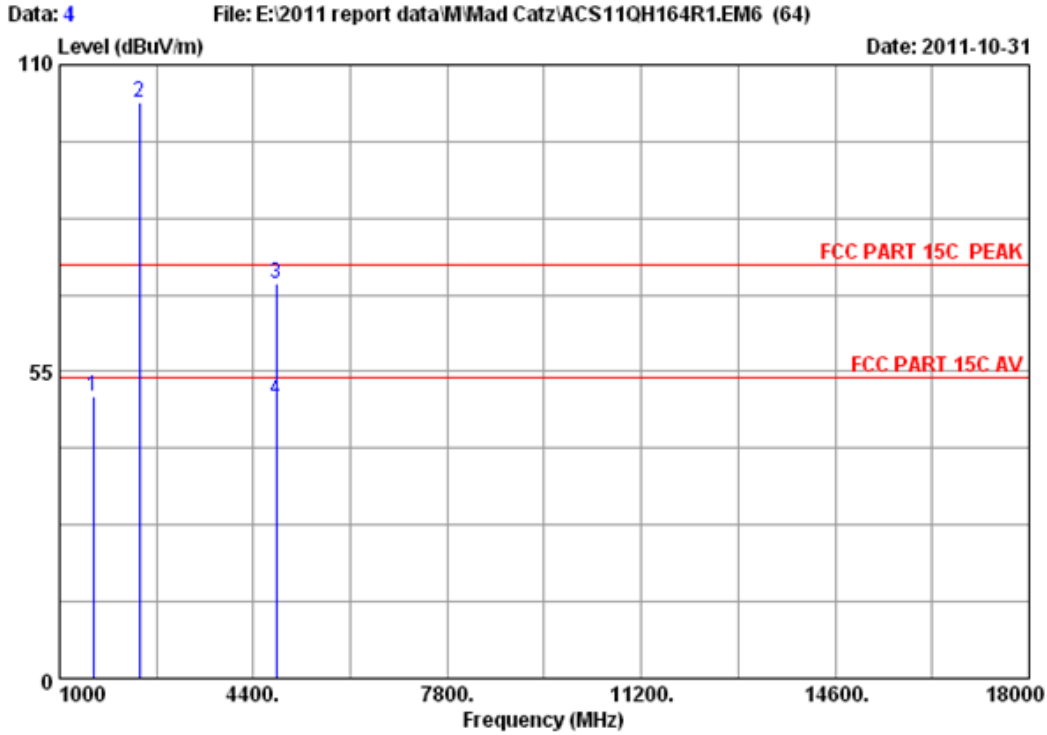
	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1602.000	25.72	5.35	34.60	52.52	48.99	74.00	25.01	Peak
2	2402.000	27.96	6.75	34.44	94.63	94.90	74.00	-20.90	Peak
3	4804.000	32.86	9.55	34.60	40.67	48.48	54.00	5.52	Average
4	4804.000	32.86	9.55	34.60	60.49	68.30	74.00	5.70	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	3
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2402MHz Tx		
M/N	: 90700		

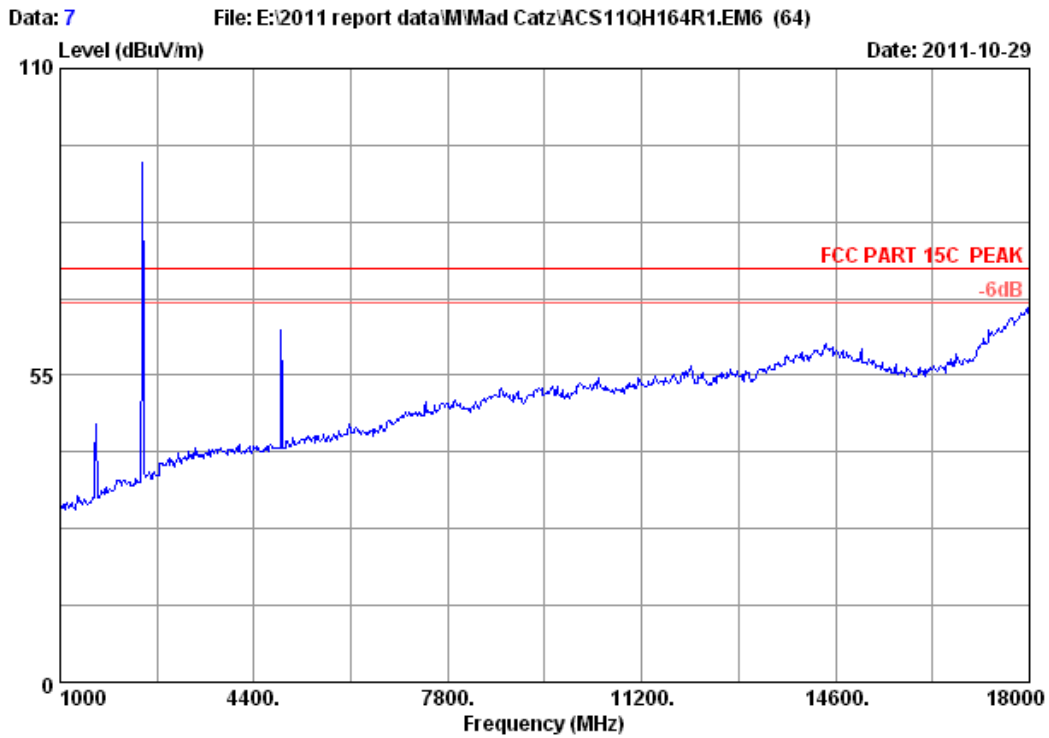


Site no. : 3m Chamber Data no. : 4
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2402MHz Tx
 M/N : 90700

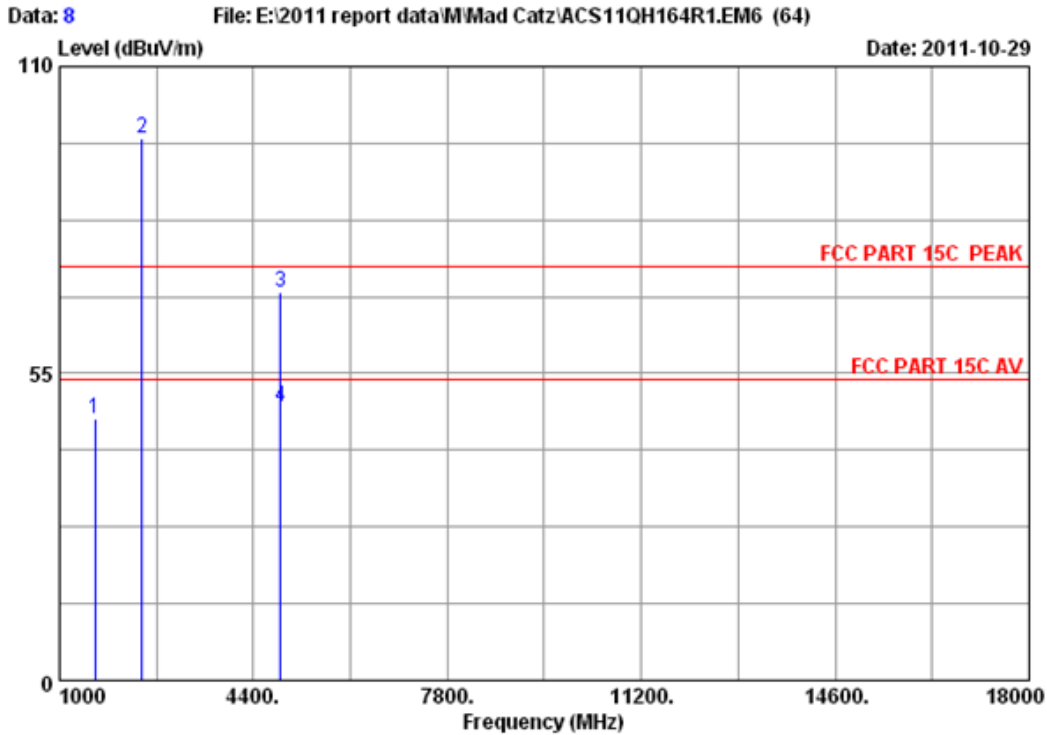
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1595.000	25.72	5.35	34.60	53.94	50.41	74.00	23.59	Peak
2	2402.000	27.96	6.75	34.44	102.97	103.24	74.00	-29.24	Peak
3	4804.000	32.86	9.55	34.60	63.03	70.84	74.00	3.16	Peak
4	4804.000	32.86	9.55	34.60	42.06	49.87	54.00	4.13	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no.	: 7
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2441MHz Tx		
M/N	: 90700		

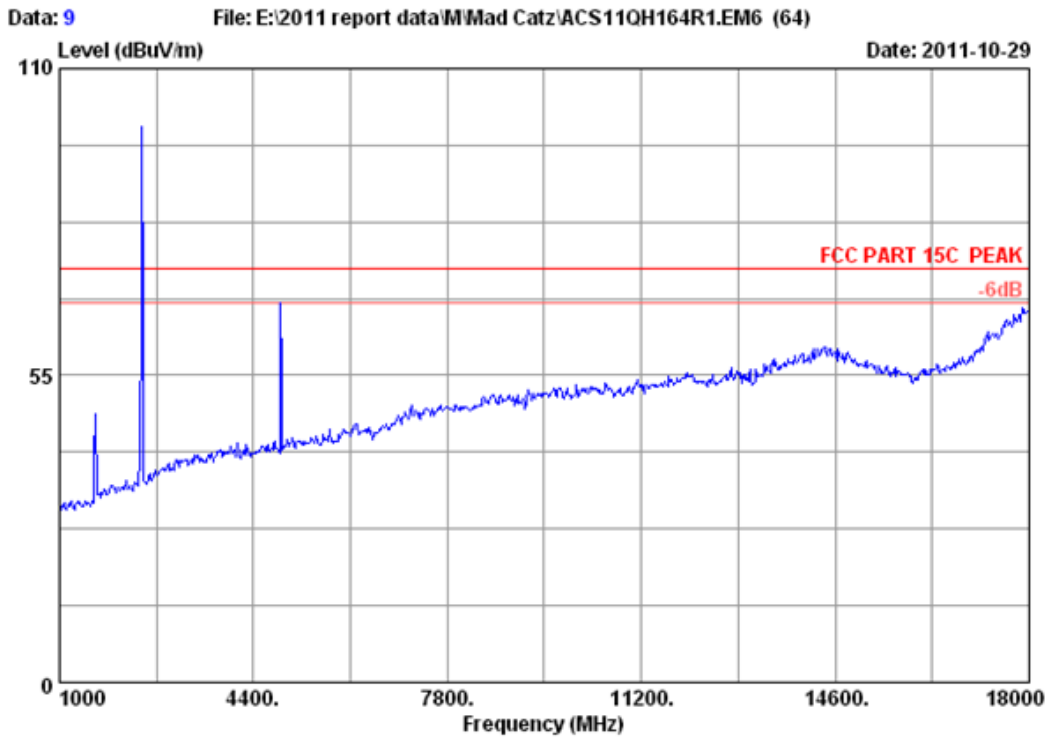


Site no. : 3m Chamber Data no. : 8
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2441MHz Tx
 M/N : 90700

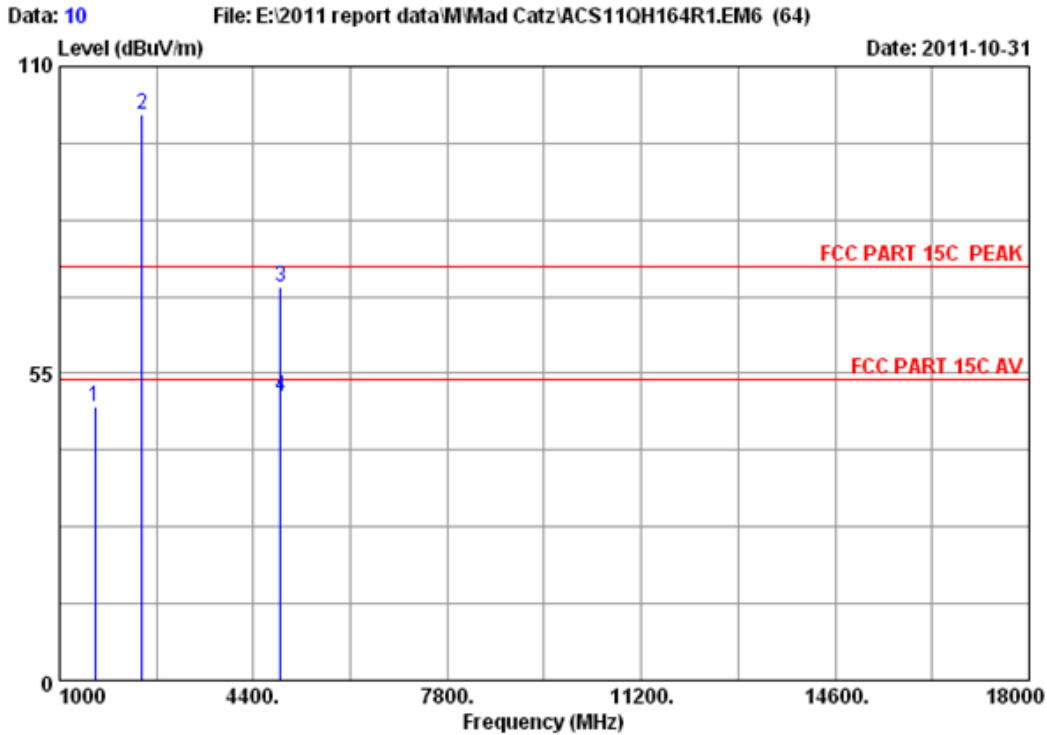
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1628.000	25.86	5.41	34.59	50.14	46.82	74.00	27.18	Peak
2	2441.000	28.03	6.81	34.44	96.71	97.11	74.00	-23.11	Peak
3	4882.000	32.98	9.62	34.60	61.55	69.55	74.00	4.45	Peak
4	4882.000	32.98	9.62	34.60	40.95	48.95	54.00	5.05	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no.	: 9
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK	Engineer	: Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2441MHz Tx		
M/N	: 90700		

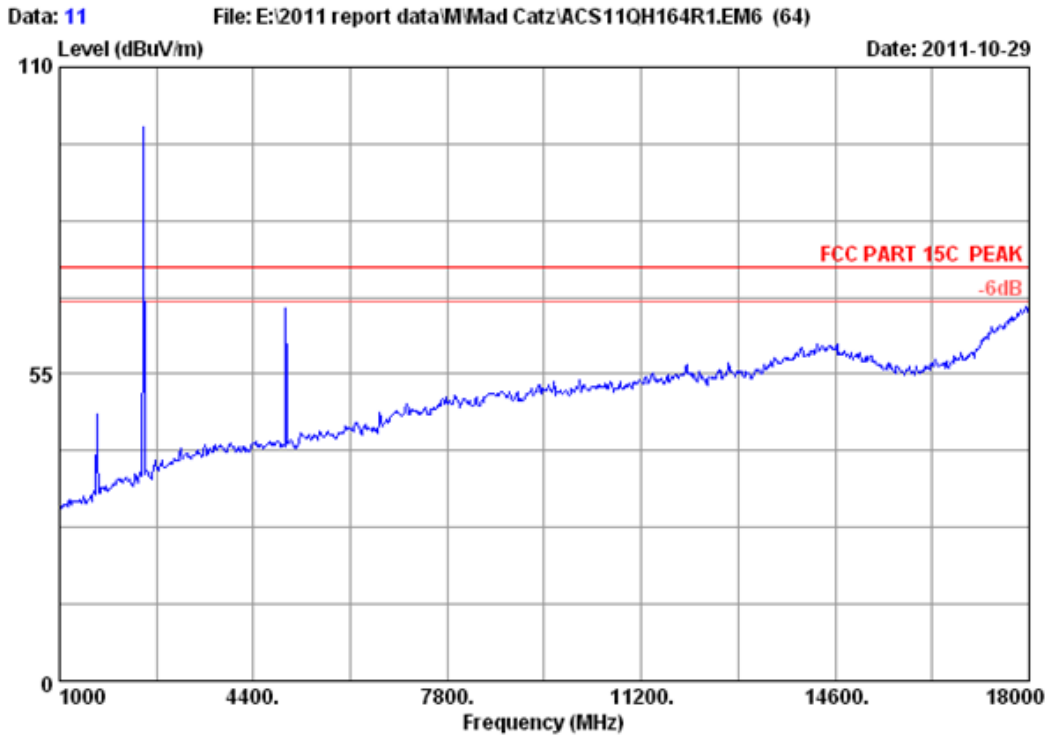


Site no. : 3m Chamber Data no. : 10
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2441MHz Tx
 M/N : 90700

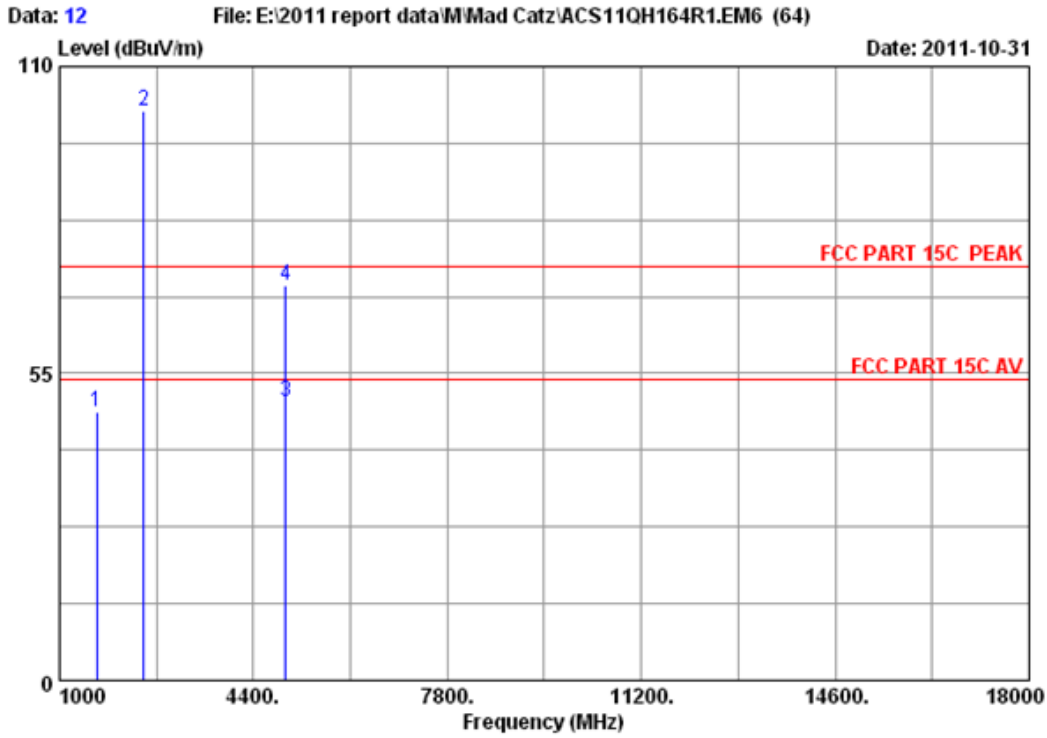
	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1628.000	25.86	5.41	34.59	52.34	49.02	74.00	24.98	Peak
2	2441.000	28.03	6.81	34.44	100.89	101.29	74.00	-27.29	Peak
3	4882.000	32.98	9.62	34.60	62.61	70.61	74.00	3.39	Peak
4	4882.000	32.98	9.62	34.60	42.76	50.76	54.00	3.24	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	11
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2480MHz Tx		
M/N	: 90700		

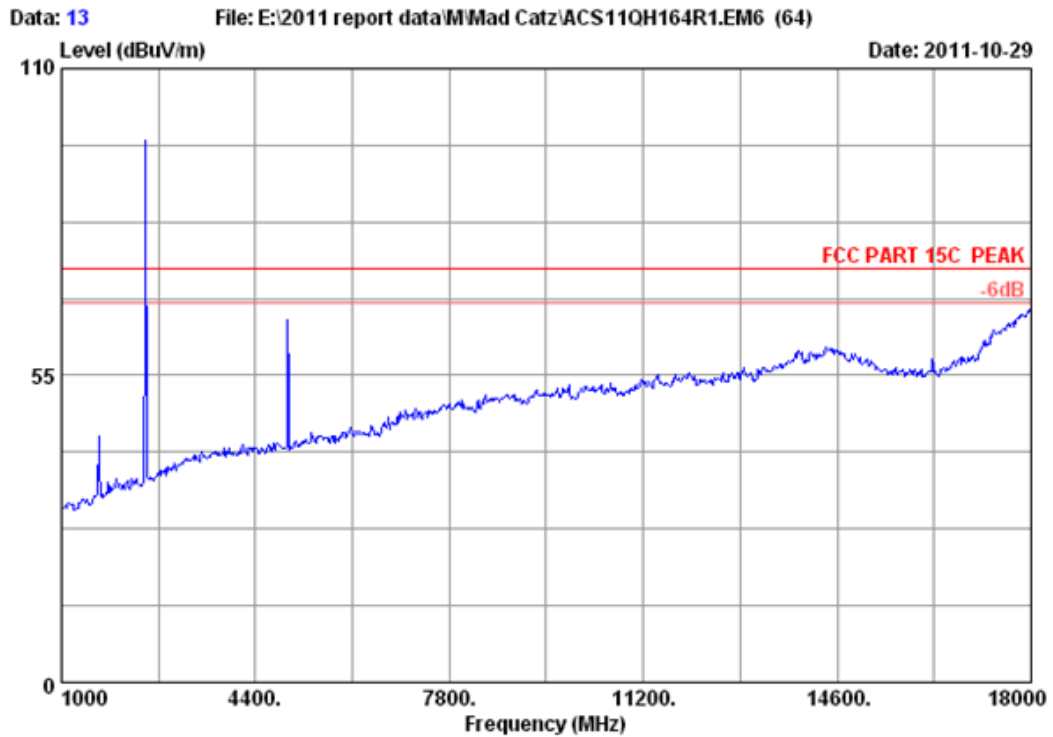


Site no. : 3m Chamber Data no. : 12
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2480MHz Tx
 M/N : 90700

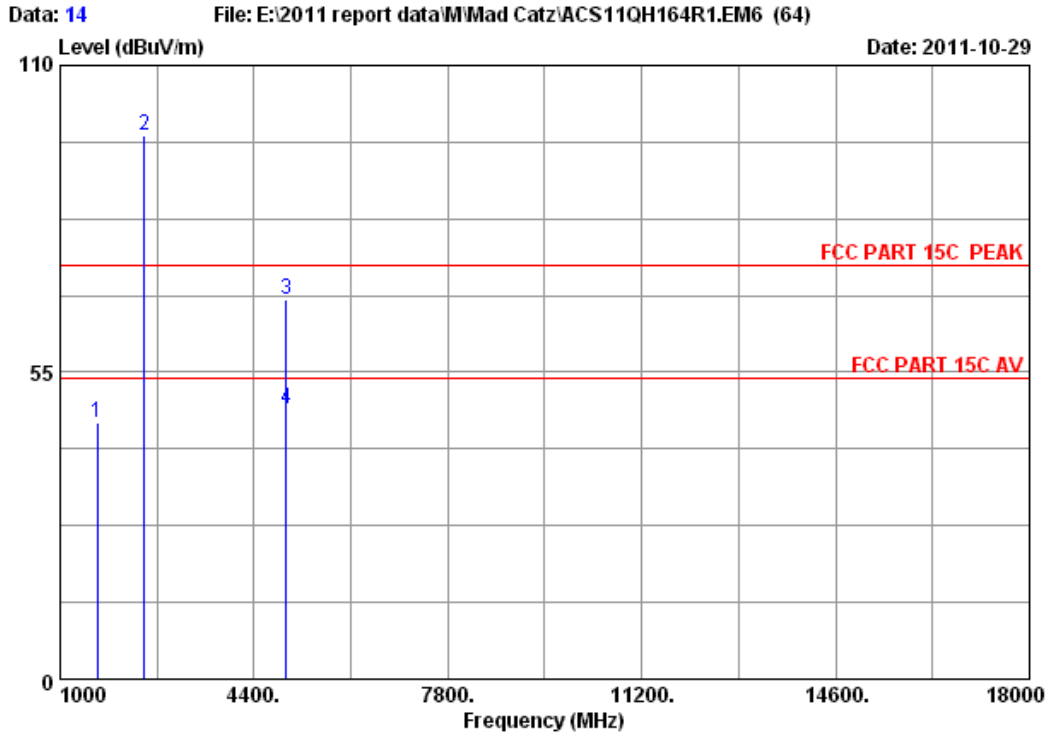
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits dBuV/m)	Margin (dB)	
1	1654.000	25.93	5.45	34.58	51.36	48.16	74.00	25.84	Peak
2	2480.000	28.08	6.87	34.45	101.55	102.05	74.00	-28.05	Peak
3	4960.000	33.14	9.69	34.60	41.58	49.81	54.00	4.19	Average
4	4960.000	33.14	9.69	34.60	62.68	70.91	74.00	3.09	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	13
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2480MHz Tx		
M/N	: 90700		

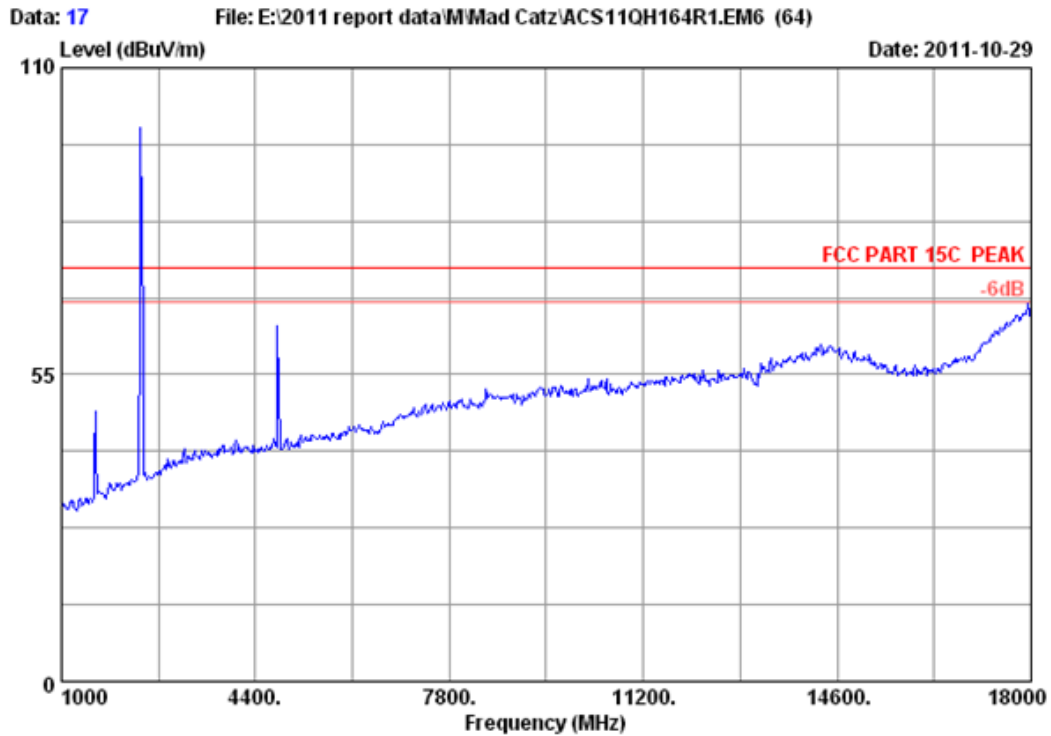


Site no. : 3m Chamber Data no. : 14
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2480MHz Tx
 M/N : 90700

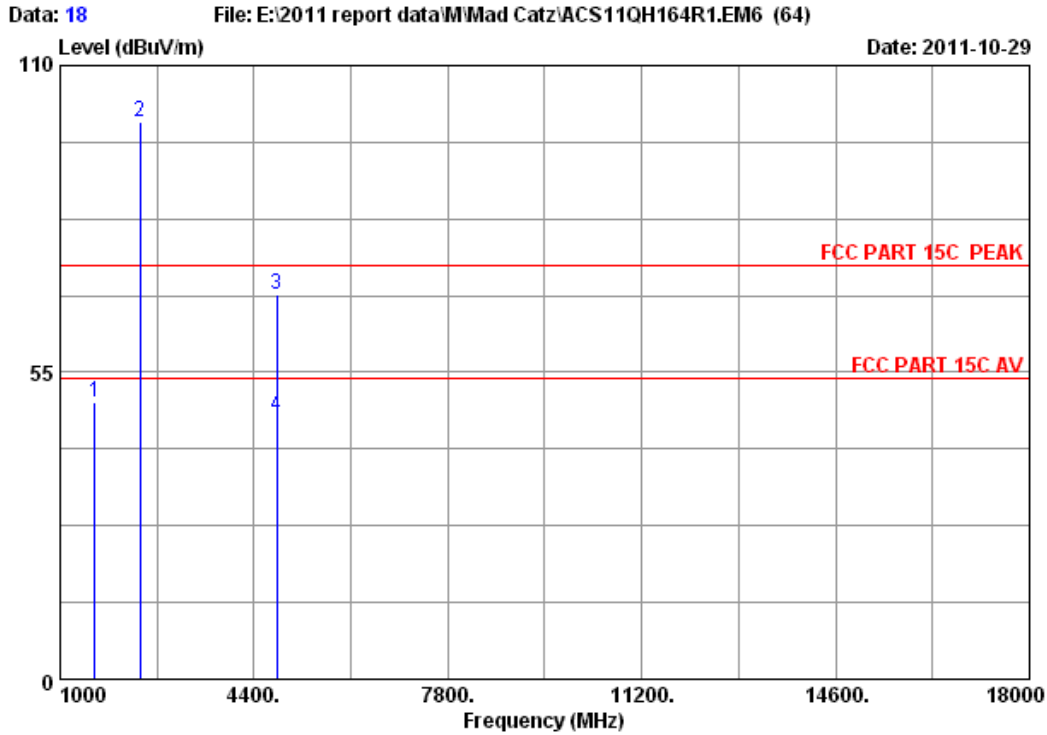
	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1654.000	25.93	5.45	34.58	49.23	46.03	74.00	27.97	Peak
2	2480.000	28.08	6.87	34.45	96.95	97.45	74.00	-23.45	Peak
3	4960.000	33.14	9.69	34.60	59.87	68.10	74.00	5.90	Peak
4	4960.000	33.14	9.69	34.60	40.28	48.51	54.00	5.49	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	17
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK	Engineer :	Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2402MHz Tx		
M/N	: 90700		

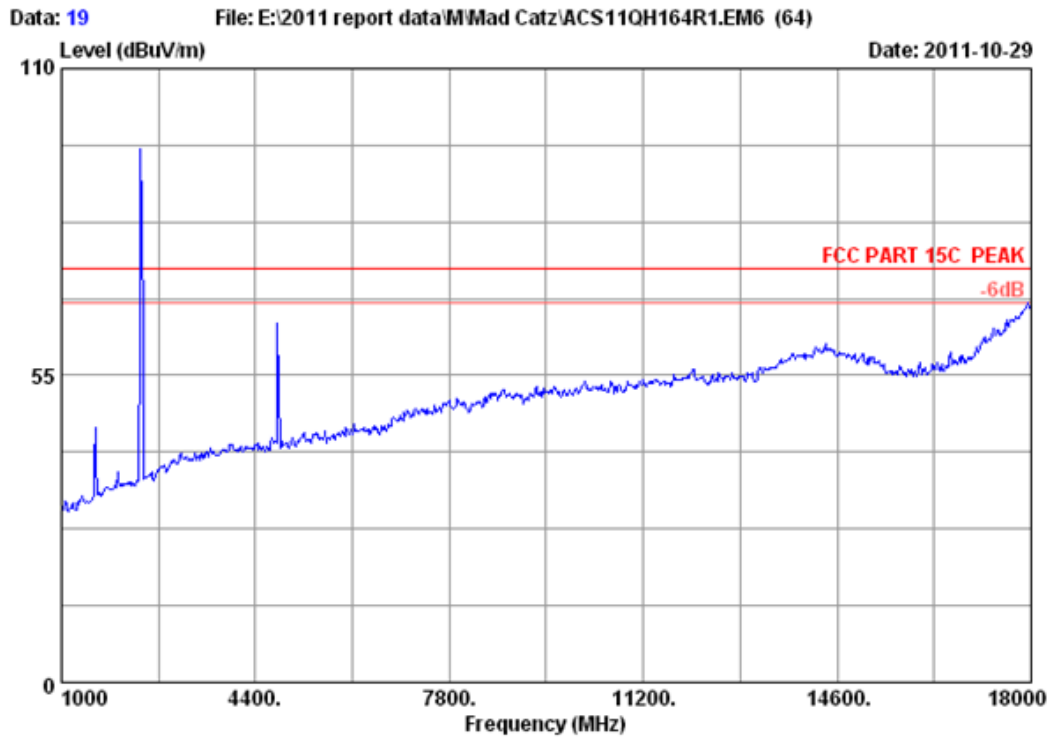


Site no. : 3m Chamber Data no. : 18
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : 8DPSK 2402MHz Tx
 M/N : 90700

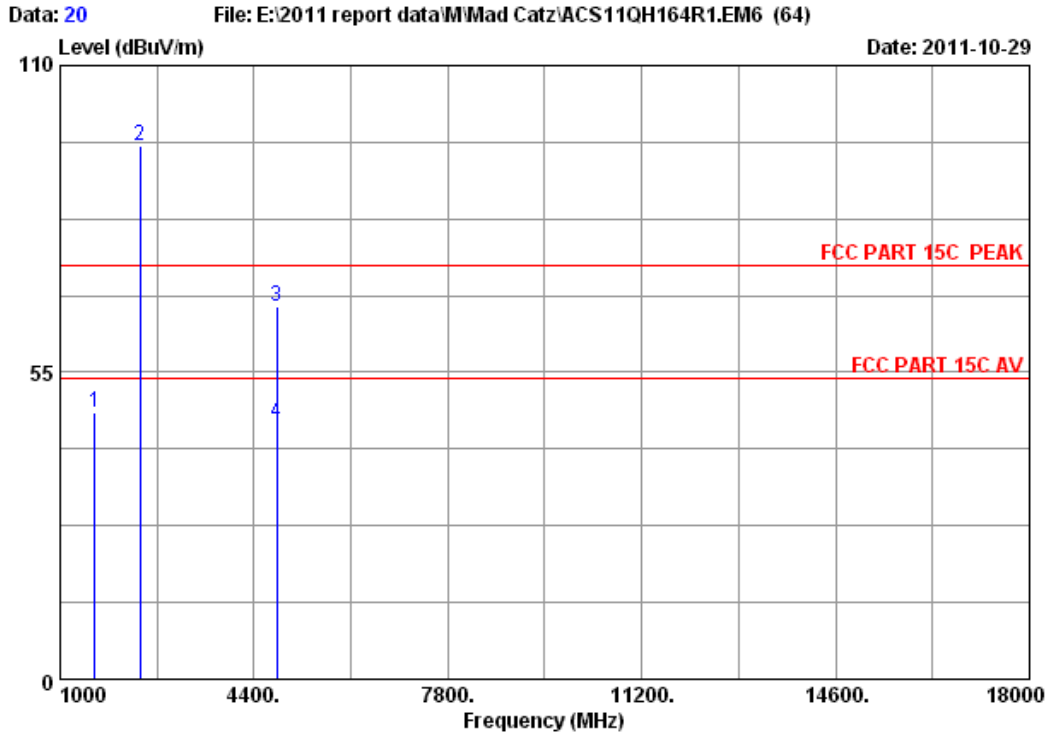
	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	1602.000	25.72	5.35	34.60	53.26	49.73	74.00	24.27	Peak
2	2402.000	27.96	6.75	34.44	99.65	99.92	74.00	-25.92	Peak
3	4804.000	32.86	9.55	34.60	61.07	68.88	74.00	5.12	Peak
4	4804.000	32.86	9.55	34.60	39.31	47.12	54.00	6.88	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	19
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15C PEAK	Engineer :	Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2402MHz Tx		
M/N	: 90700		

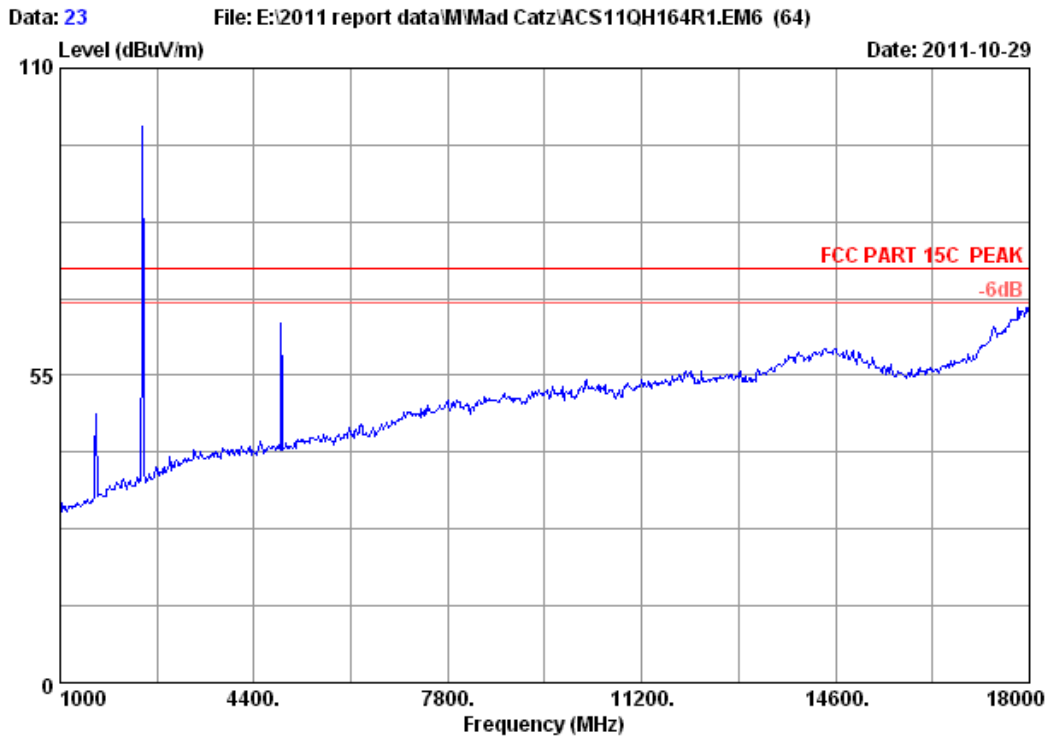


Site no. : 3m Chamber Data no. : 20
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : 8DPSK 2402MHz Tx
 M/N : 90700

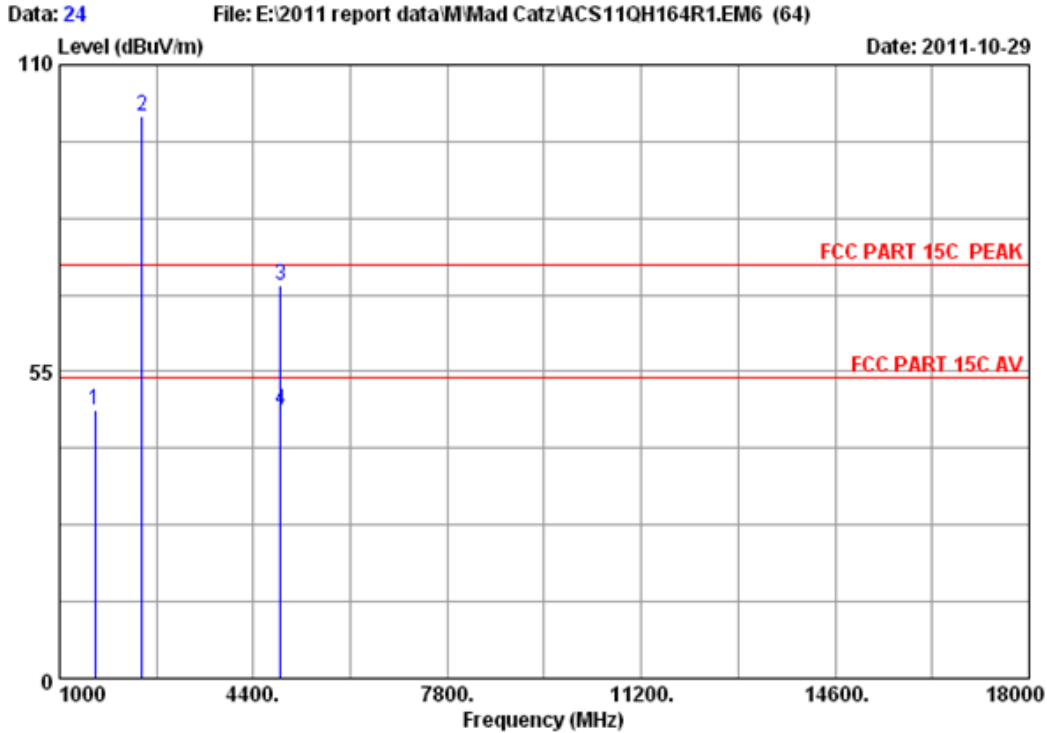
	Ant.	Cable	Amp.	Emission					
Freq.	Factor	loss	Factor	Reading	Level	Limits	Margin	Remark	
(MHz)	(dB/m)	(dB)	(dB)	(dBuV)	(dBuV/m)	dBuV/m)	(dB)		
1	1602.000	25.72	5.35	34.60	51.23	47.70	74.00	26.30	Peak
2	2402.000	27.96	6.75	34.44	95.22	95.49	74.00	-21.49	Peak
3	4804.000	32.86	9.55	34.60	59.09	66.90	74.00	7.10	Peak
4	4804.000	32.86	9.55	34.60	38.02	45.83	54.00	8.17	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	23
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2441MHz Tx		
M/N	: 90700		

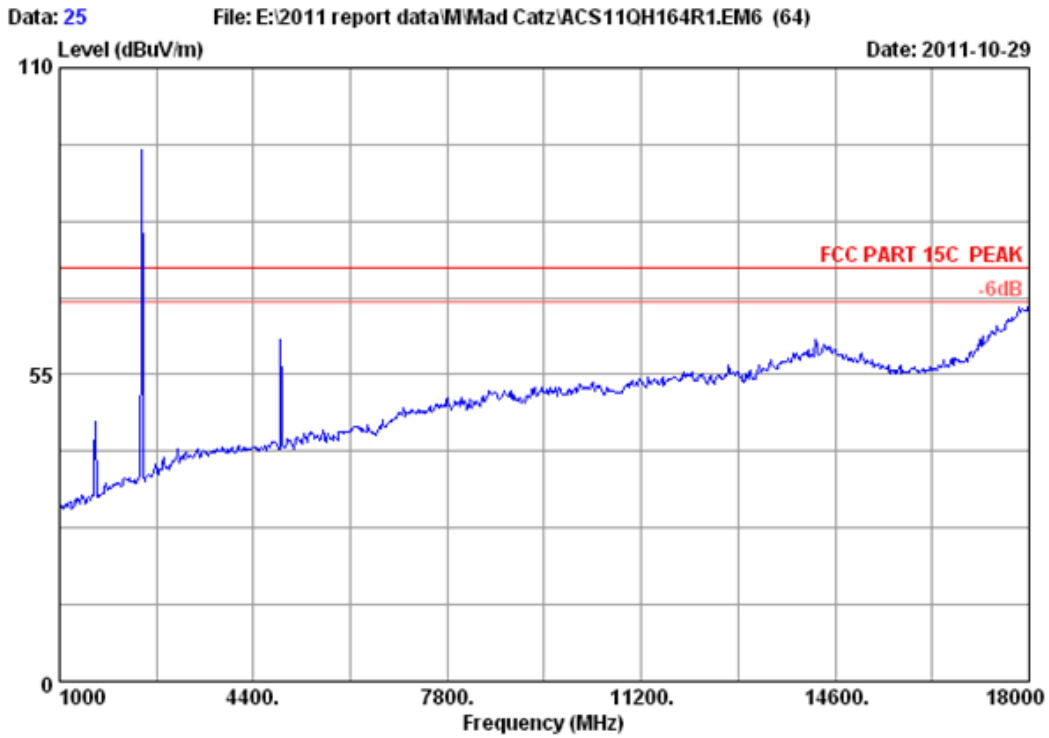


Site no.	: 3m Chamber	Data no.	: 24
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23*C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2441MHz Tx		
M/N	: 90700		

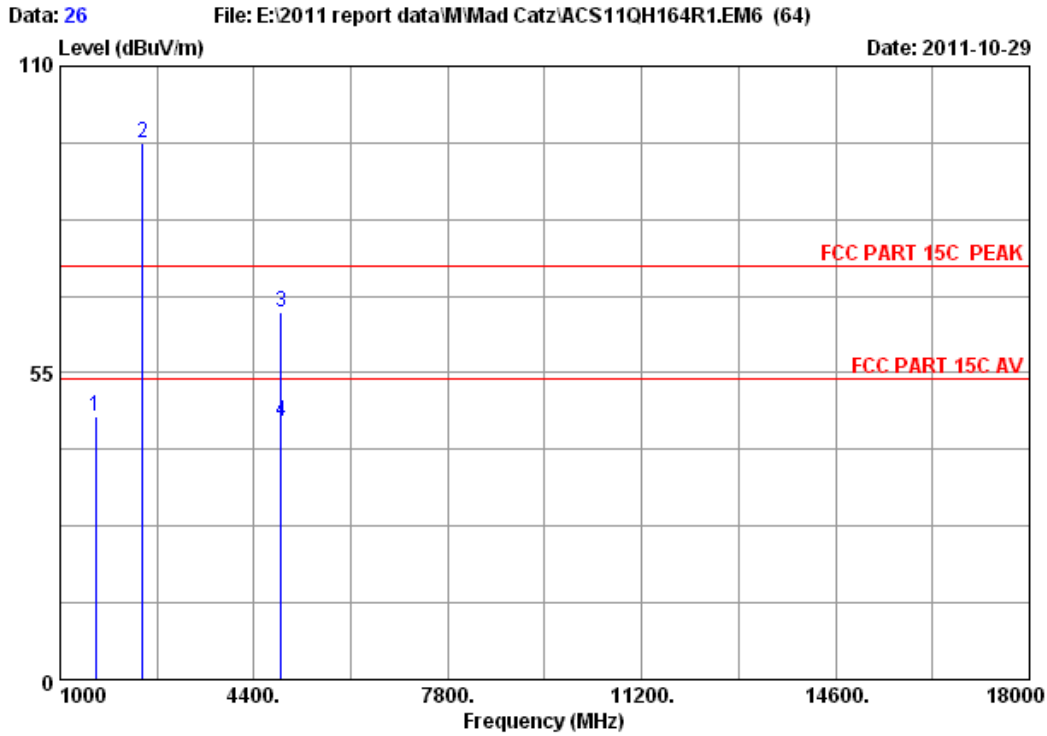
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1629.000	25.86	5.41	34.59	51.44	48.12	74.00	25.88	Peak
2	2441.000	28.03	6.81	34.44	100.49	100.89	74.00	-26.89	Peak
3	4882.000	32.98	9.62	34.60	62.41	70.41	74.00	3.59	Peak
4	4882.000	32.98	9.62	34.60	40.00	48.00	54.00	6.00	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no.	: 25
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK	Engineer	: Leo-Li
Env. / Ins.	: 23°C/54%		
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2441MHz Tx		
M/N	: 90700		

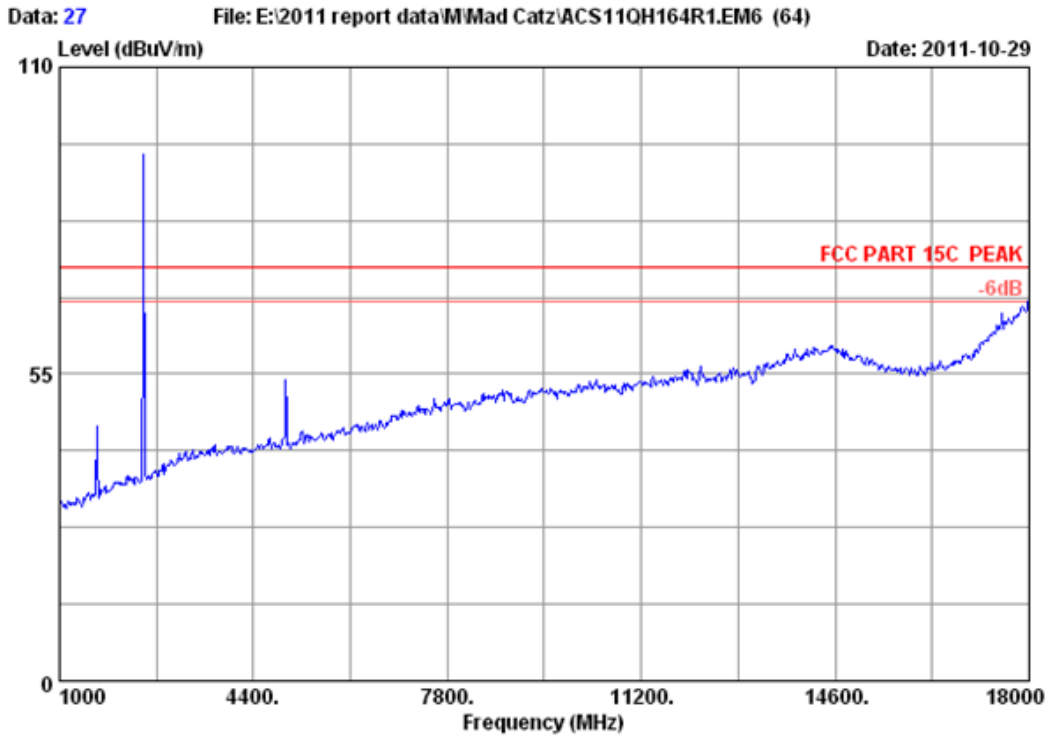


Site no.	: 3m Chamber	Data no.	: 26
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2441MHz Tx		
M/N	: 90700		

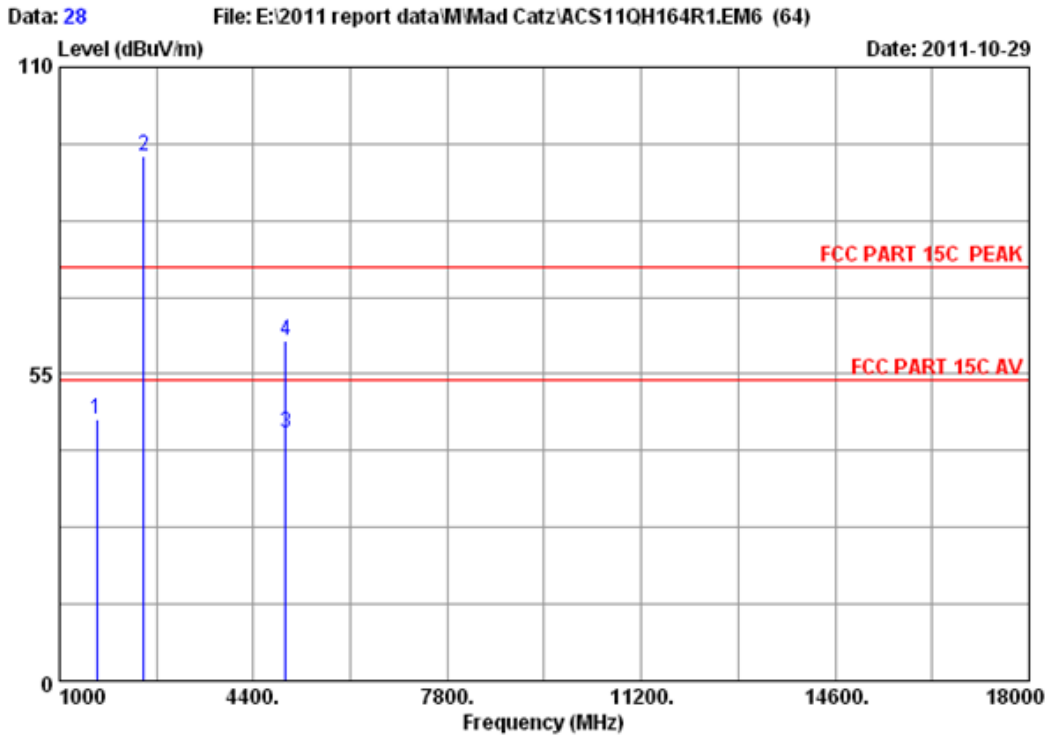
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1628.000	25.86	5.41	34.59	50.38	47.06	74.00	26.94	Peak
2	2441.000	28.03	6.81	34.44	95.74	96.14	74.00	-22.14	Peak
3	4882.000	32.98	9.62	34.60	57.79	65.79	74.00	8.21	Peak
4	4882.000	32.98	9.62	34.60	38.33	46.33	54.00	7.67	Average

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	27
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2480MHz Tx		
M/N	: 90700		



```

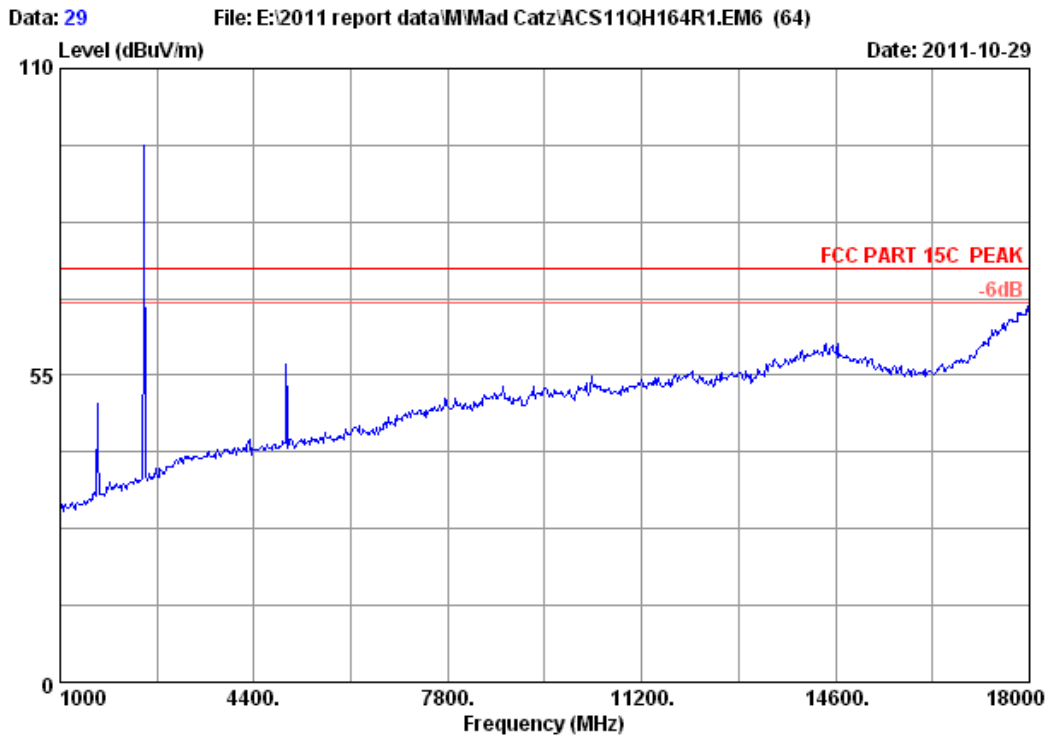
Site no.      : 3m Chamber
Dis. / Ant.  : 3m 2011 3115 4580
Limit        : FCC PART 15C PEAK
Env. / Ins.  : 23*C/54%
EUT          : Bluetooth Headset
Power        : DC 3.7V
Test mode    : 8DPSK 2480MHz Tx
M/N         : 90700

Data no.     : 28
Ant. pol.    : VERTICAL
Engineer     : Leo-Li
    
```

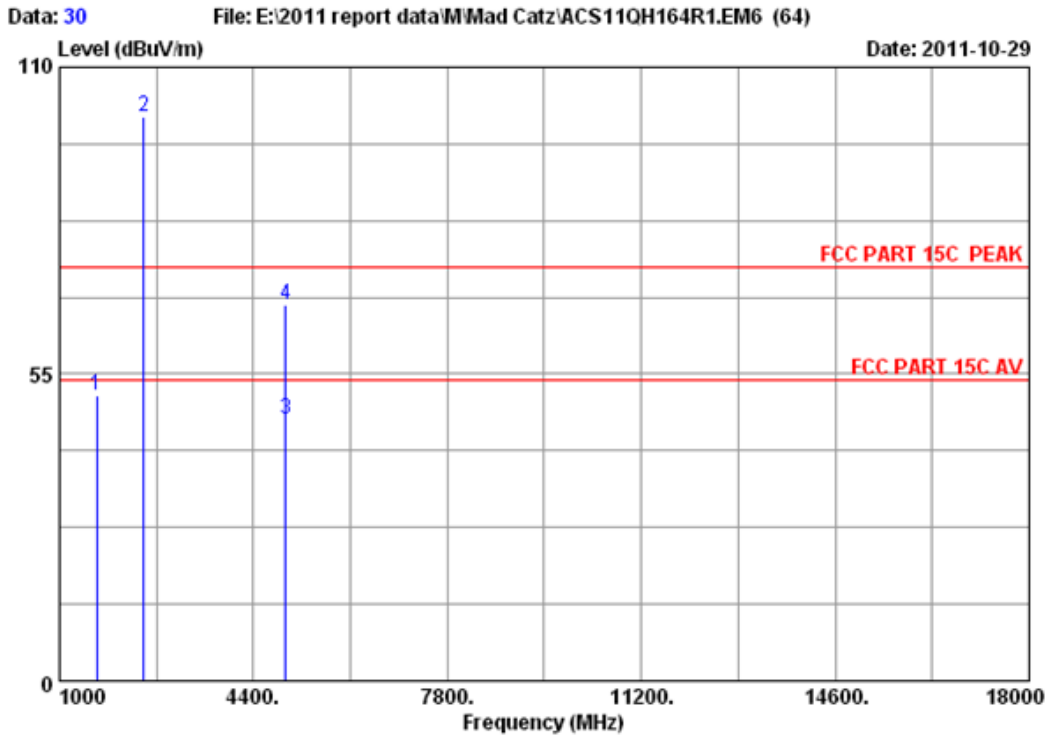
	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1654.000	25.93	5.45	34.58	50.13	46.93	74.00	27.07	Peak
2	2480.000	28.08	6.87	34.45	93.68	94.18	74.00	-20.18	Peak
3	4960.000	33.14	9.69	34.60	36.09	44.32	54.00	9.68	Average
4	4960.000	33.14	9.69	34.60	52.84	61.07	74.00	12.93	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	29
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2480MHz Tx		
M/N	: 90700		



Site no. : 3m Chamber Data no. : 30
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : 8DPSK 2480MHz Tx
 M/N : 90700

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	1654.000	25.93	5.45	34.58	54.23	51.03	74.00	22.97	Peak
2	2480.000	28.08	6.87	34.45	100.67	101.17	74.00	-27.17	Peak
3	4960.000	33.14	9.69	34.60	38.77	47.00	54.00	7.00	Average
4	4960.000	33.14	9.69	34.60	59.03	67.26	74.00	6.74	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss - Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

4. CONDUCTED SPURIOUS EMISSIONS

4.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year
2.	Attenuator	Agilent	8491B	MY39262165	May.08,11	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1Year

4.2. Limit

In any 100kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.

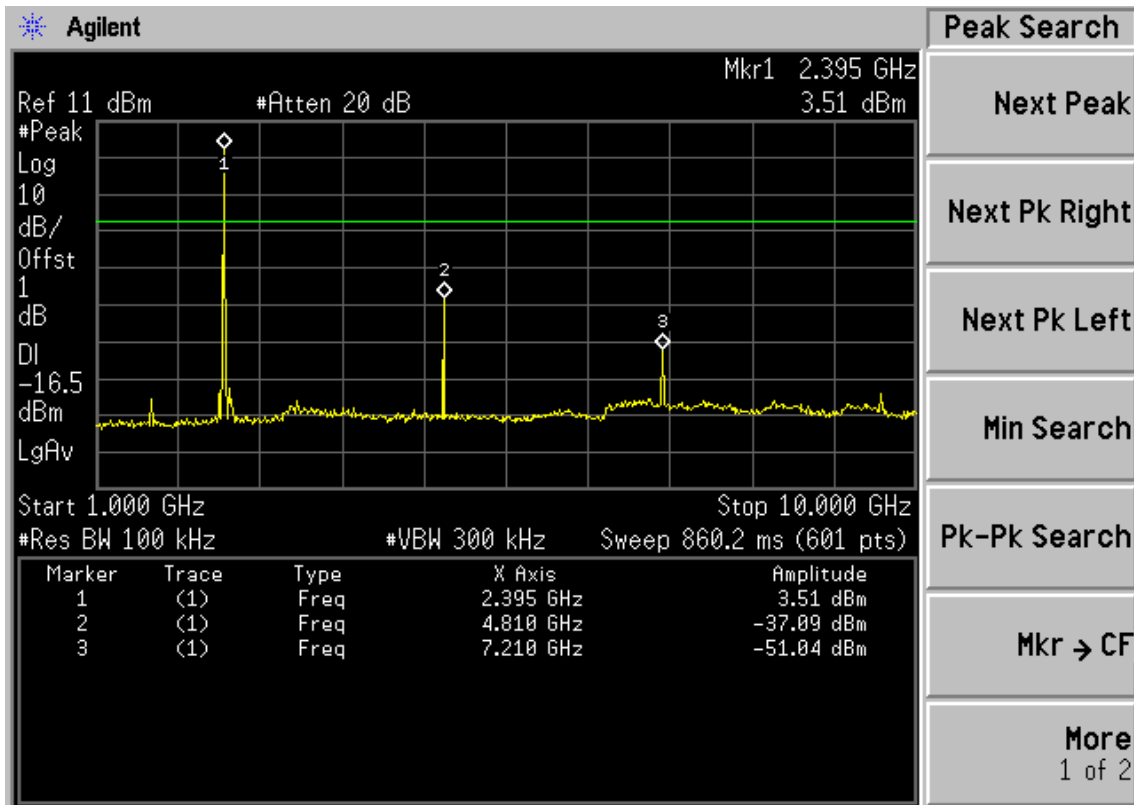
4.3. Test Procedure

The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions detected.

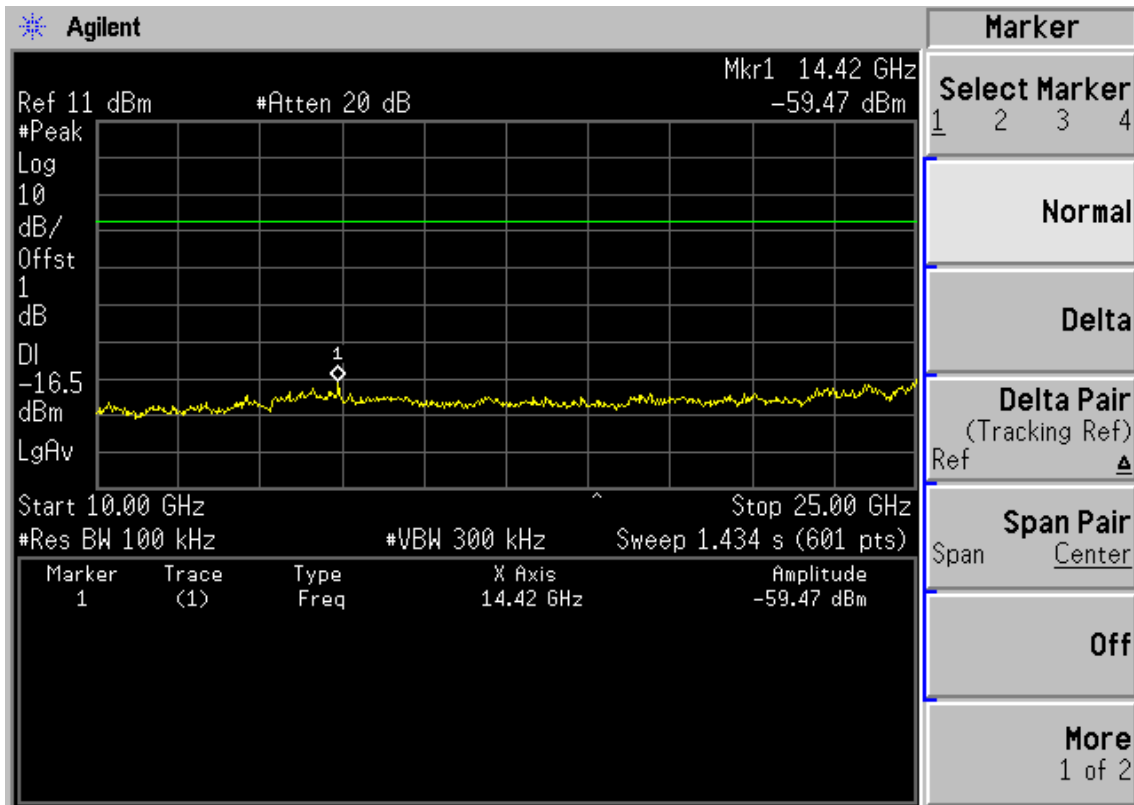
4.4. Test result

PASS (The testing data was attached in the next pages.)

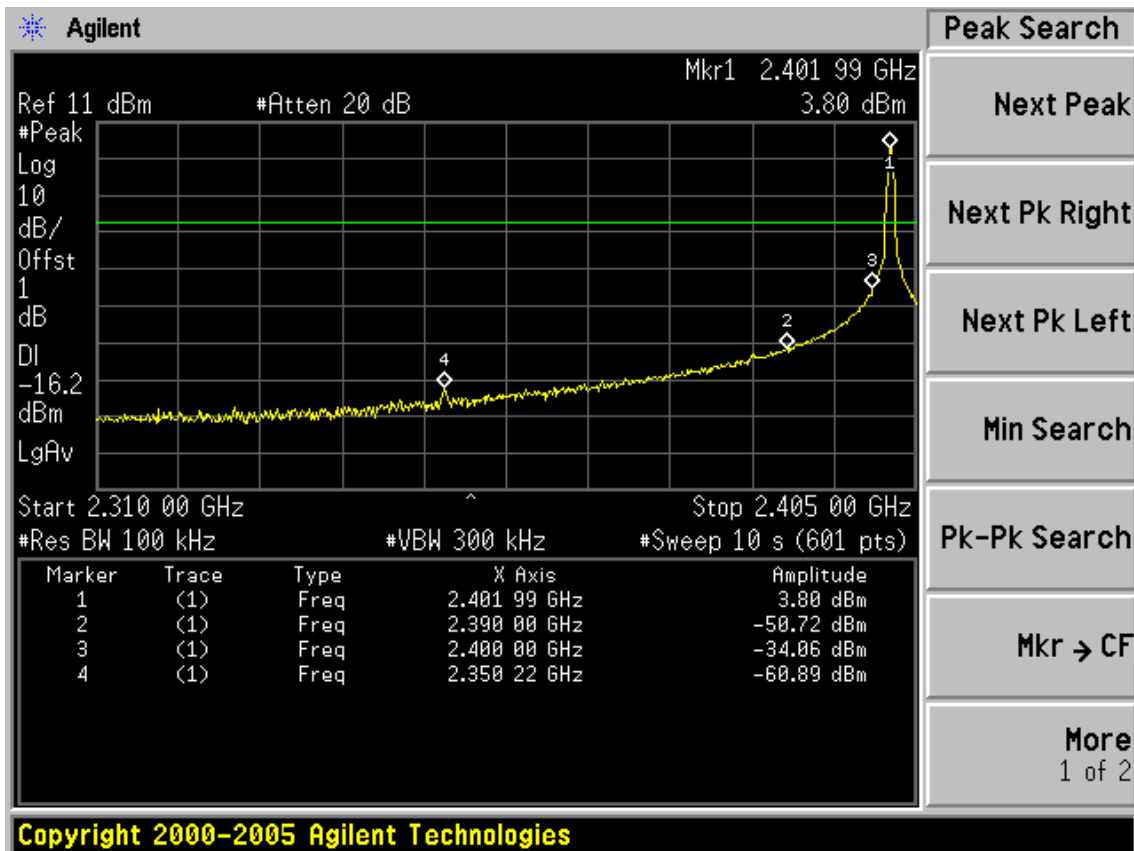
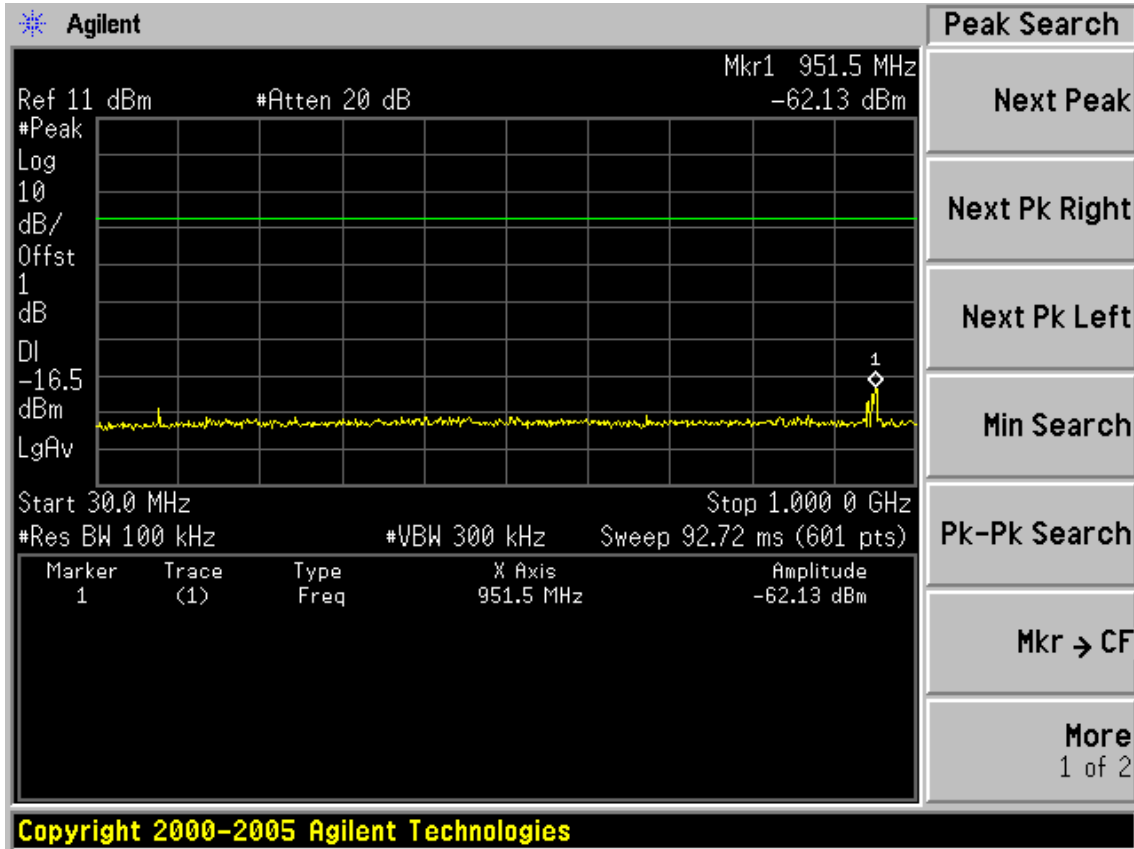
GFSK
2402

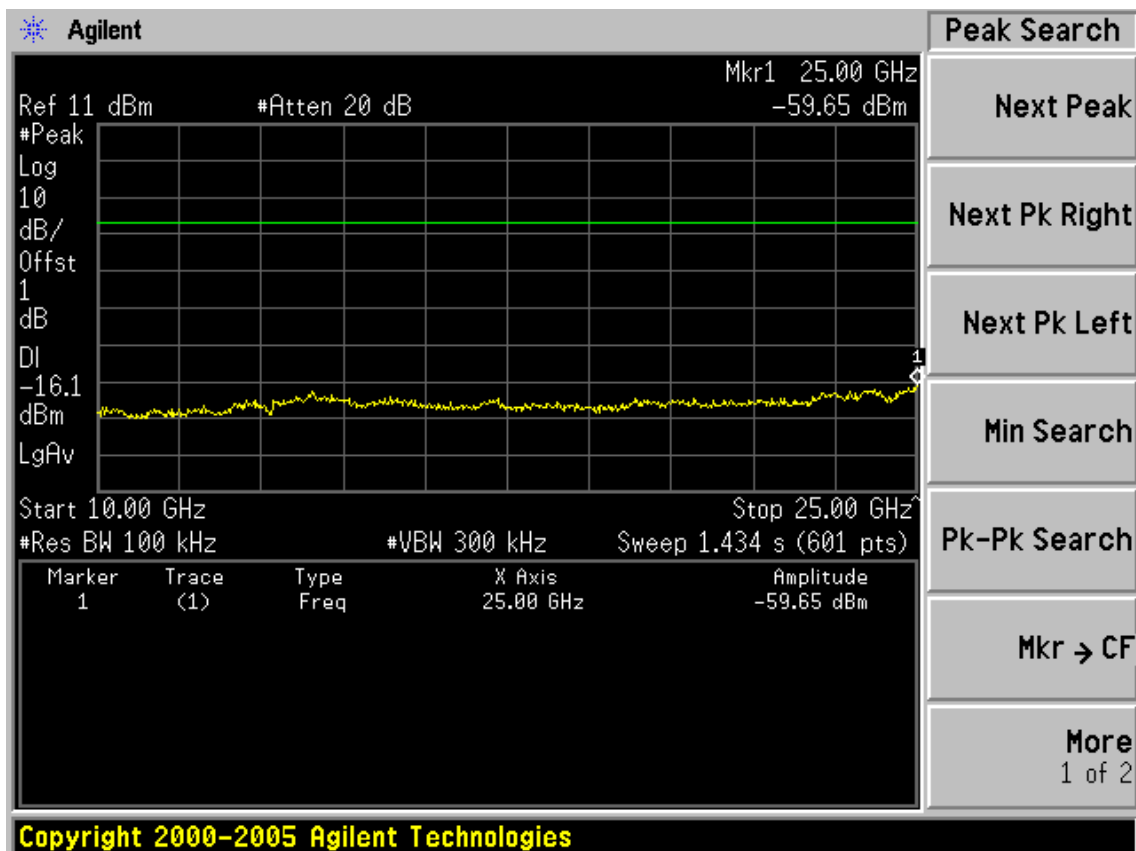
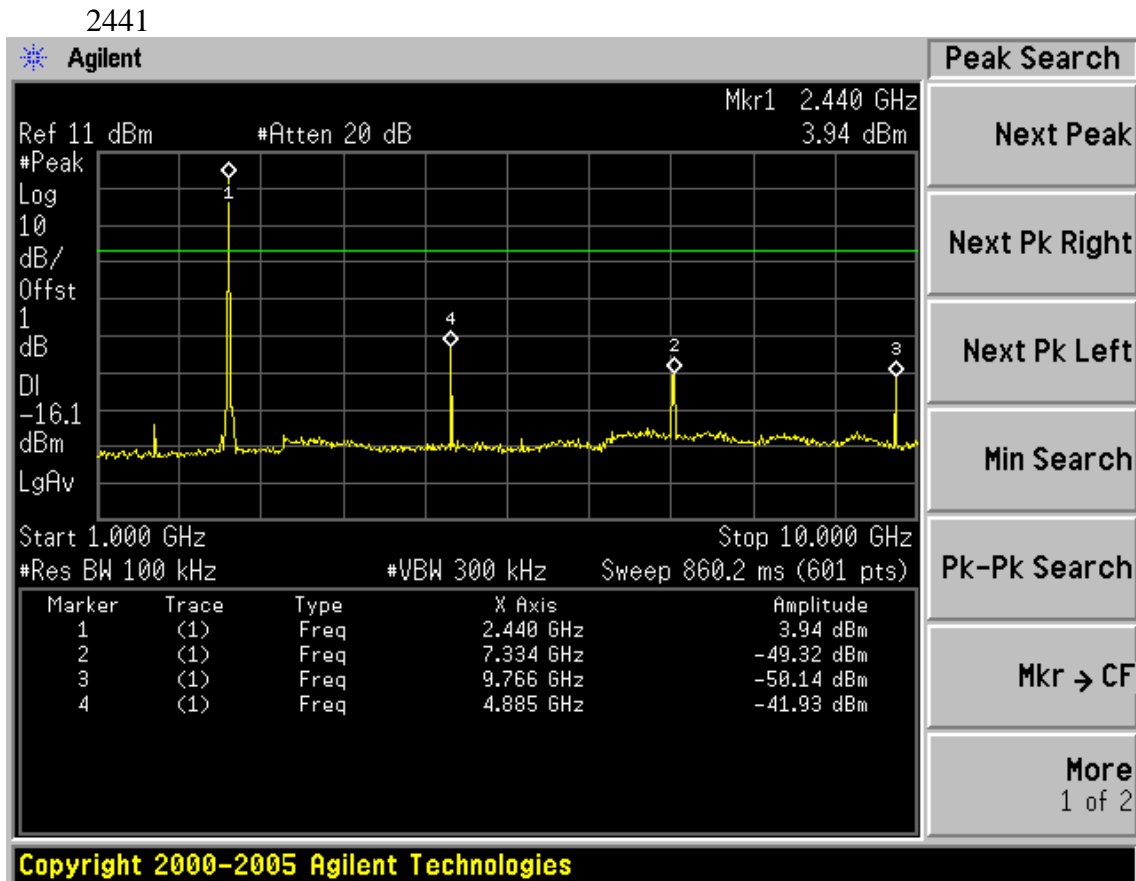


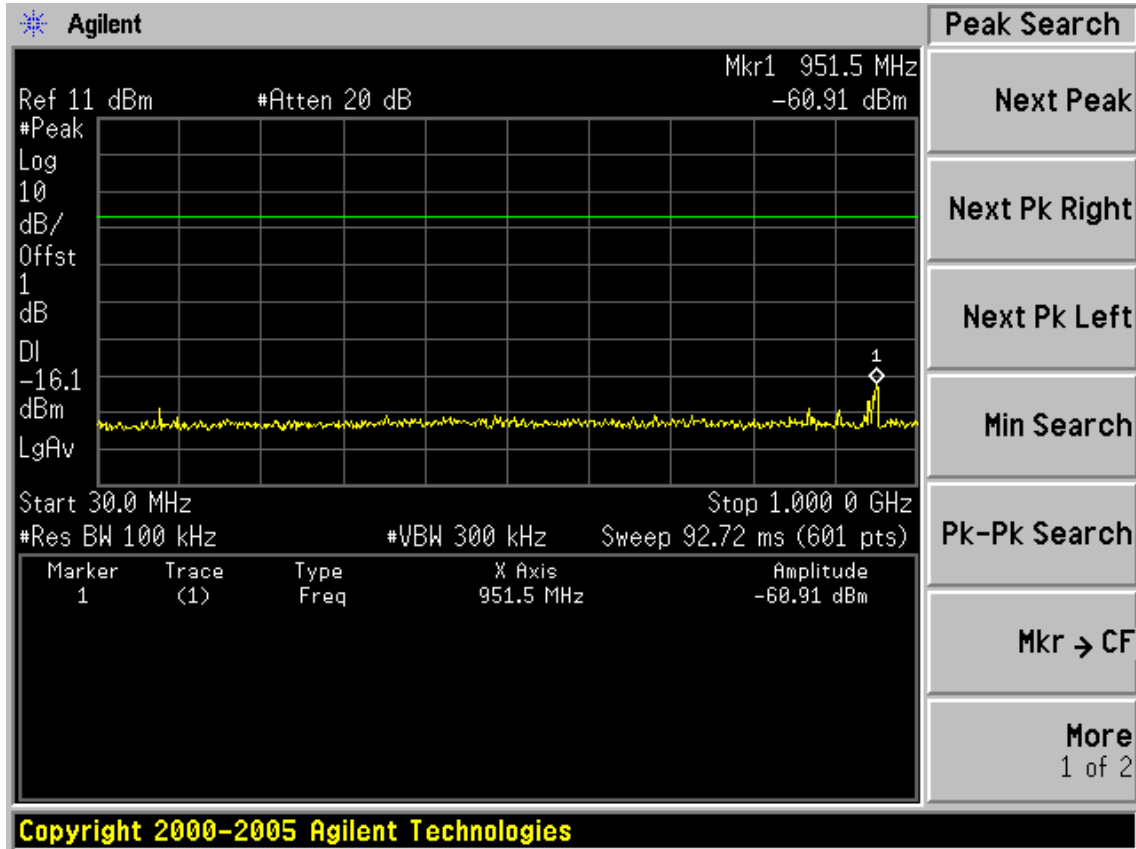
Copyright 2000-2005 Agilent Technologies



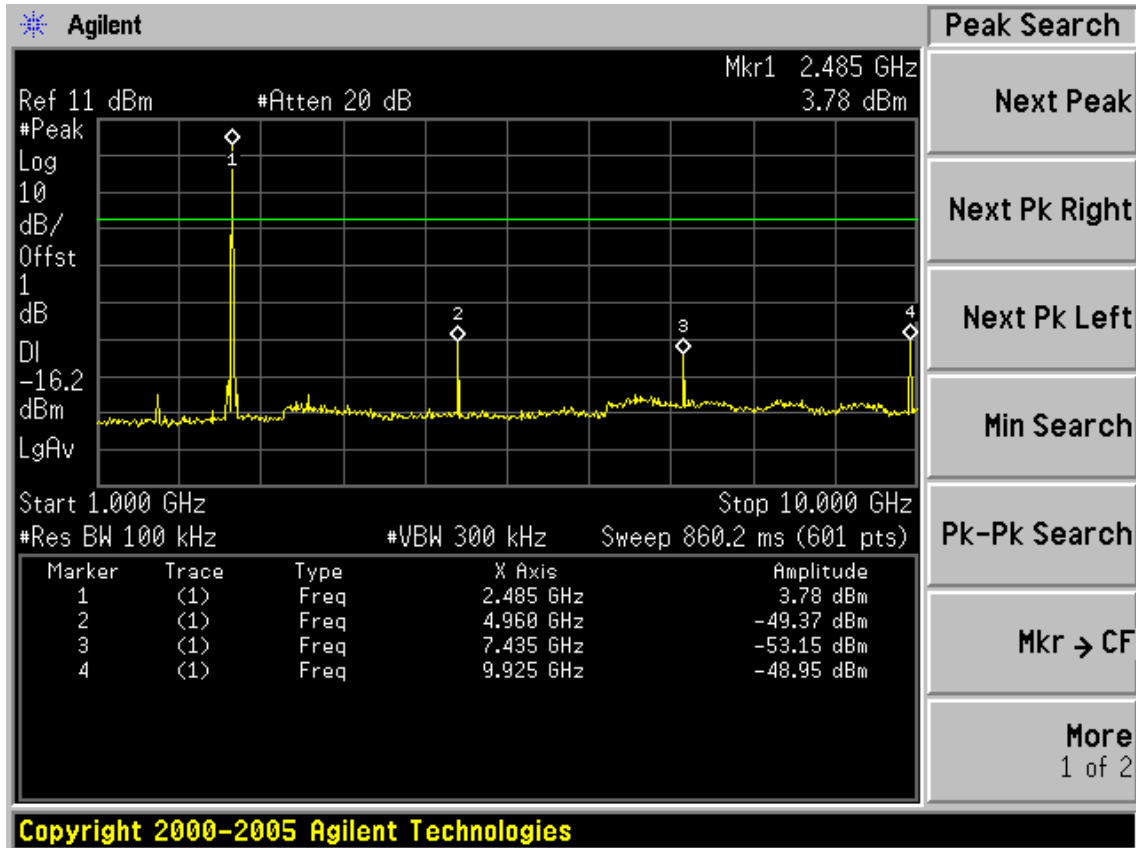
Copyright 2000-2005 Agilent Technologies

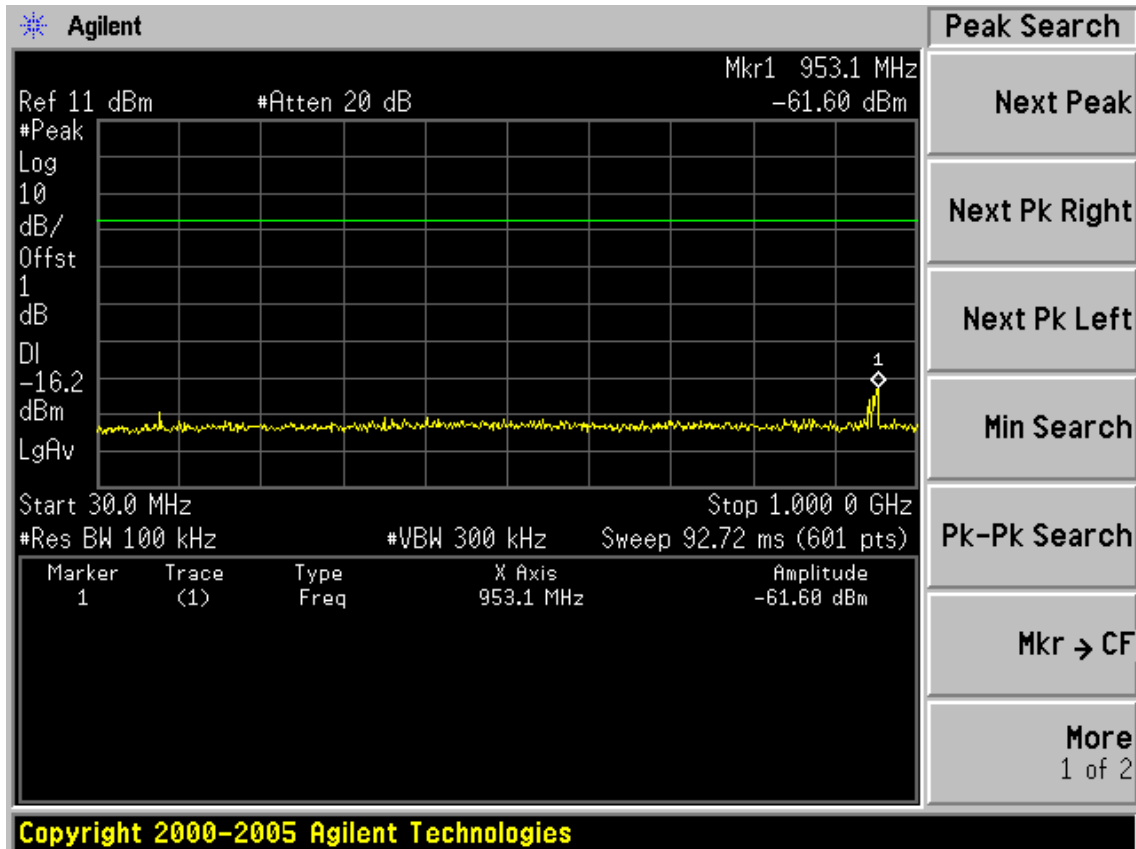
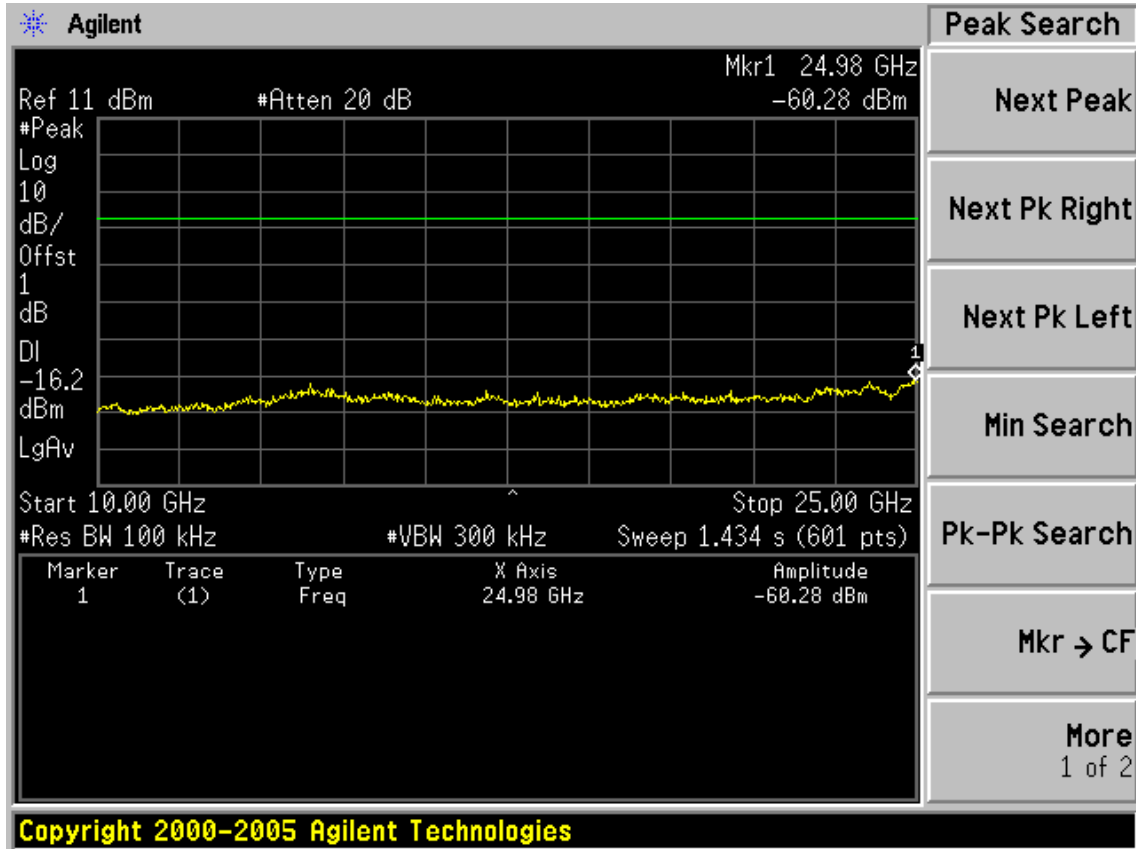


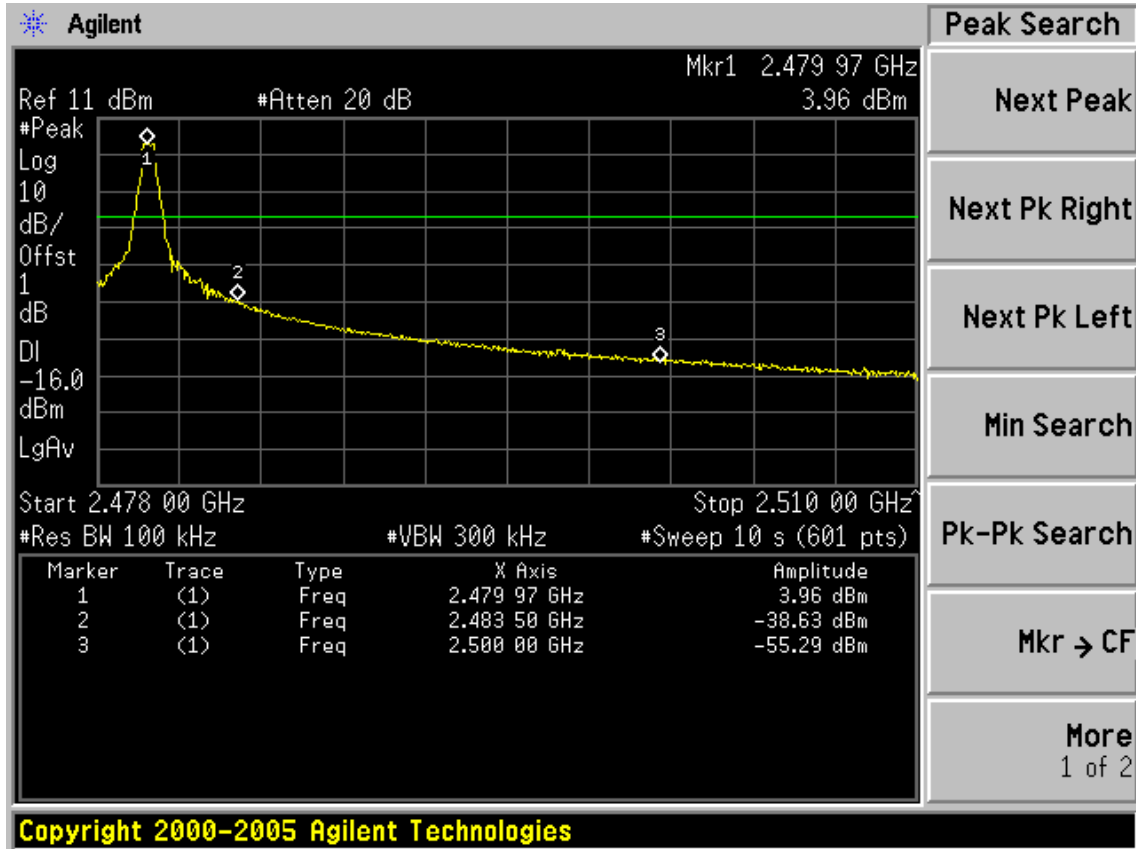




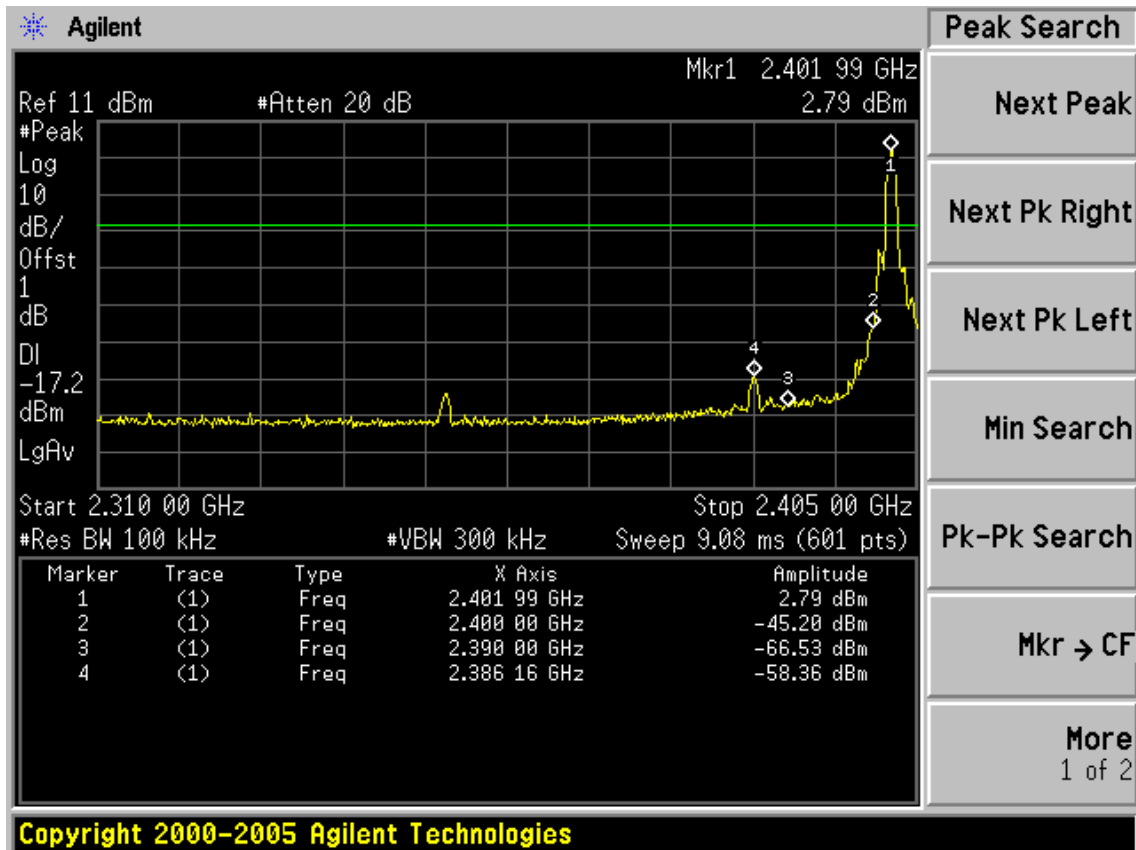
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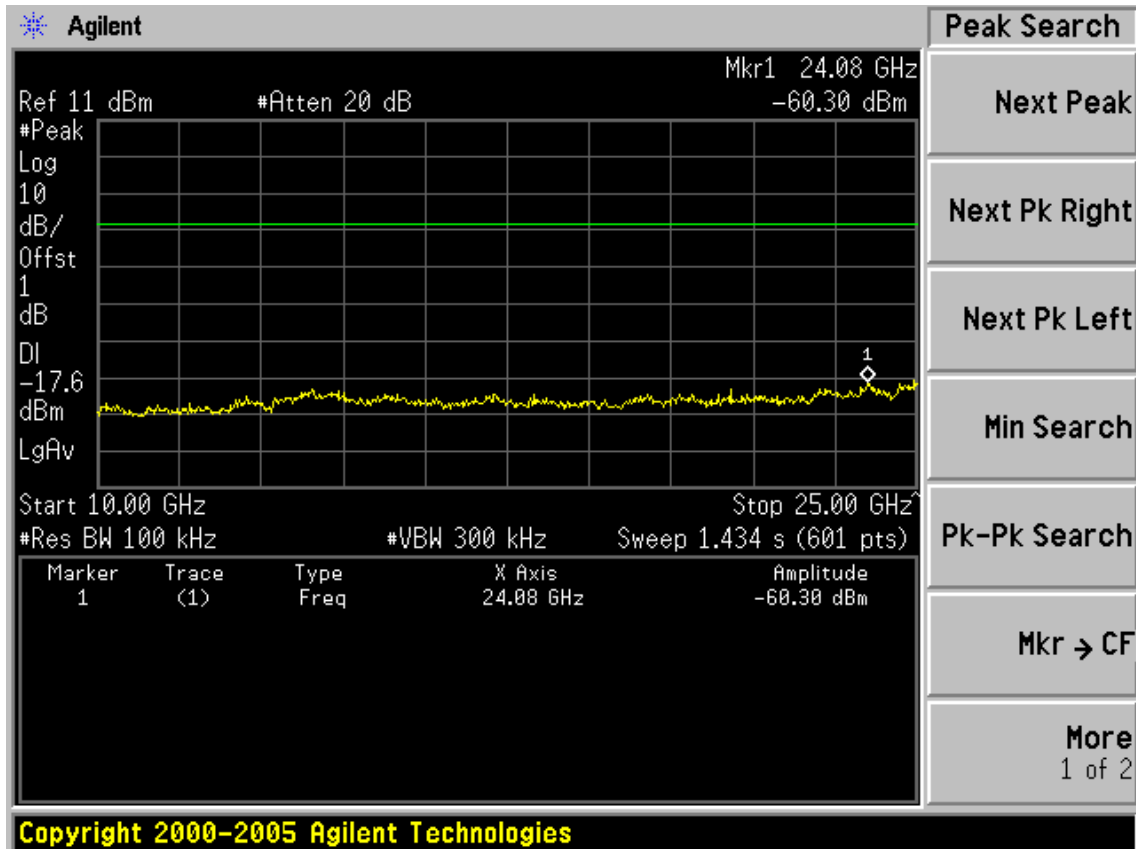
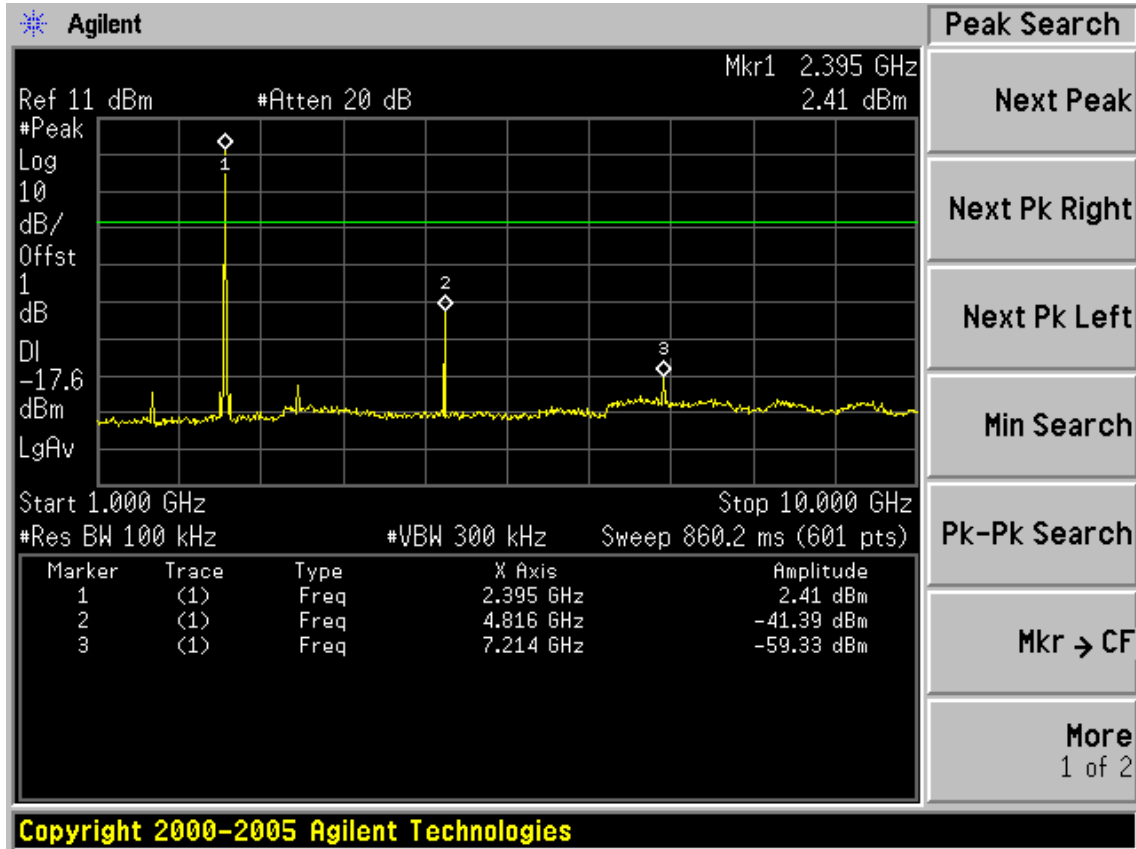


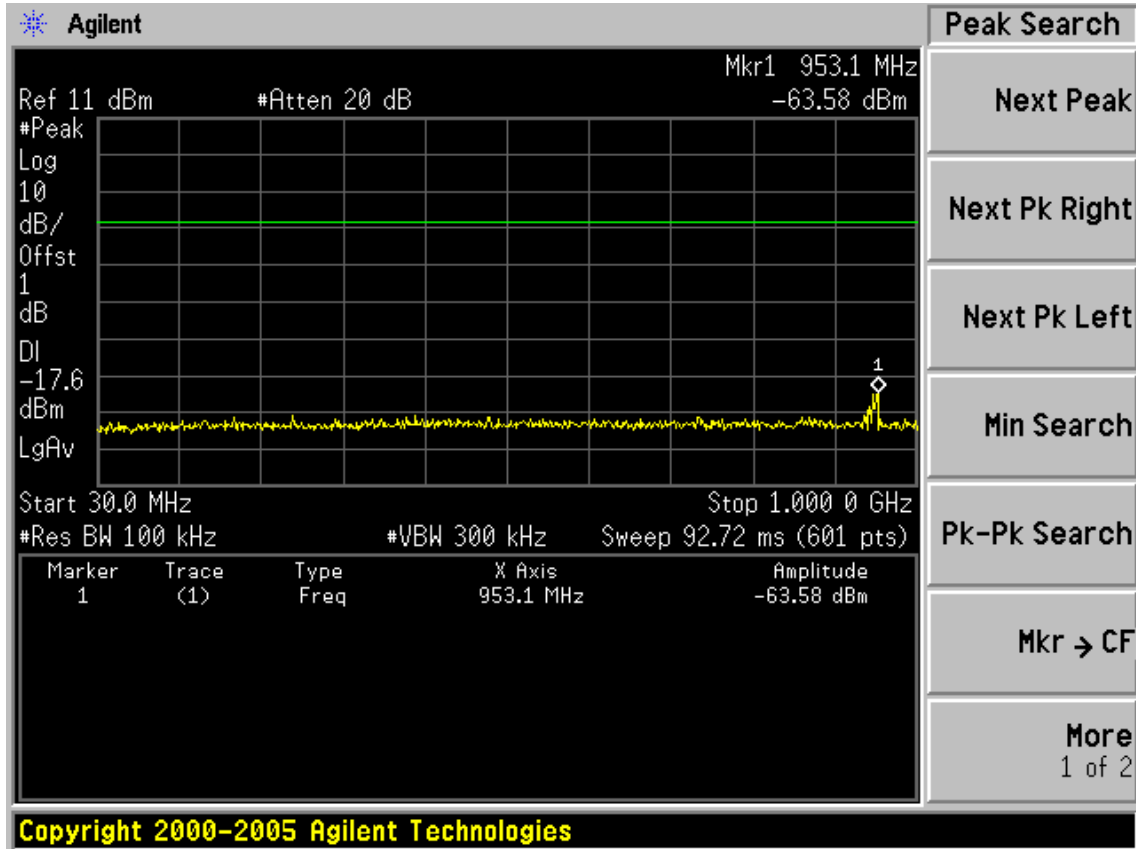




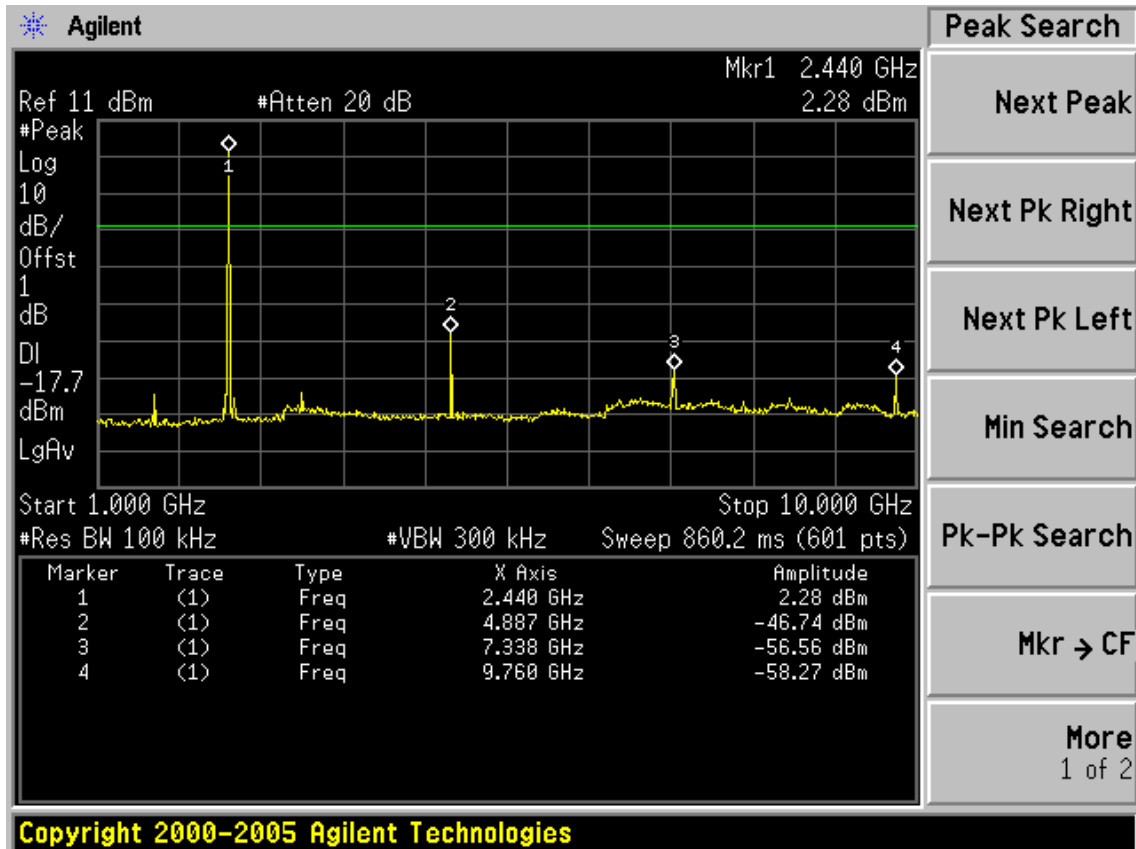
8-DPSK
2402

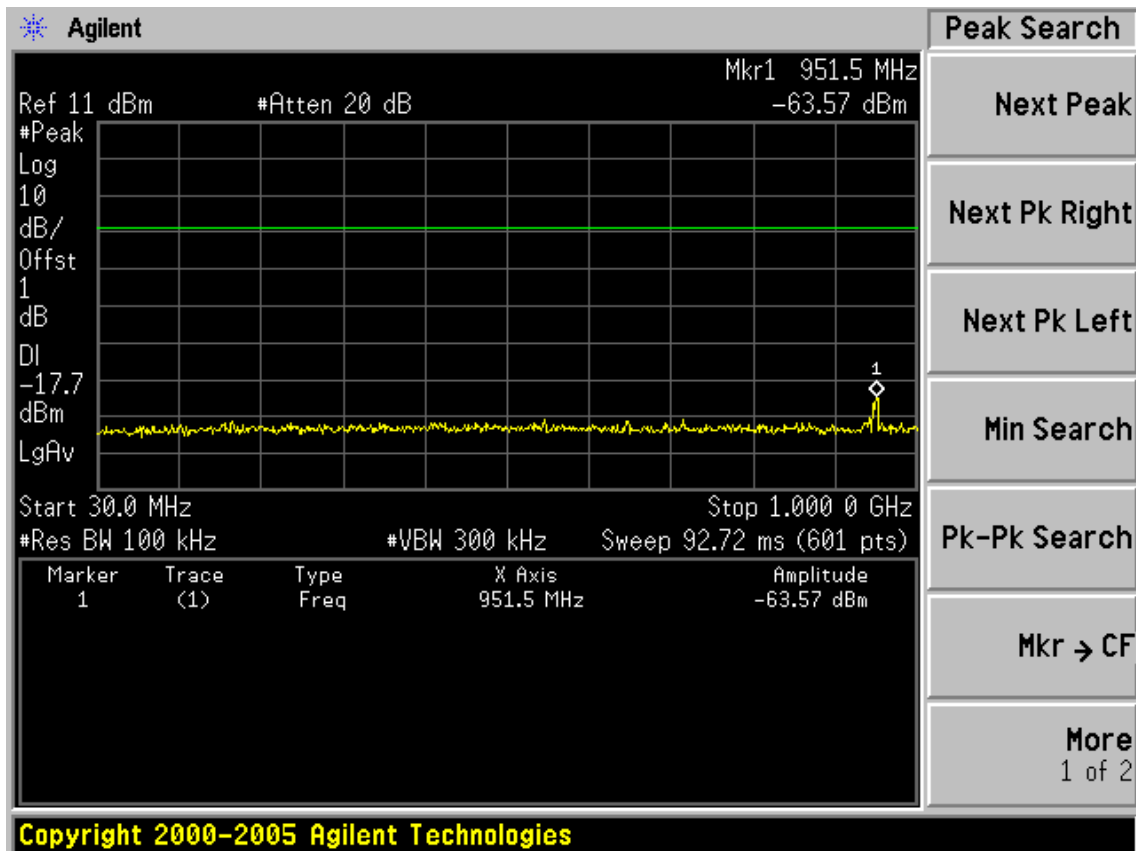
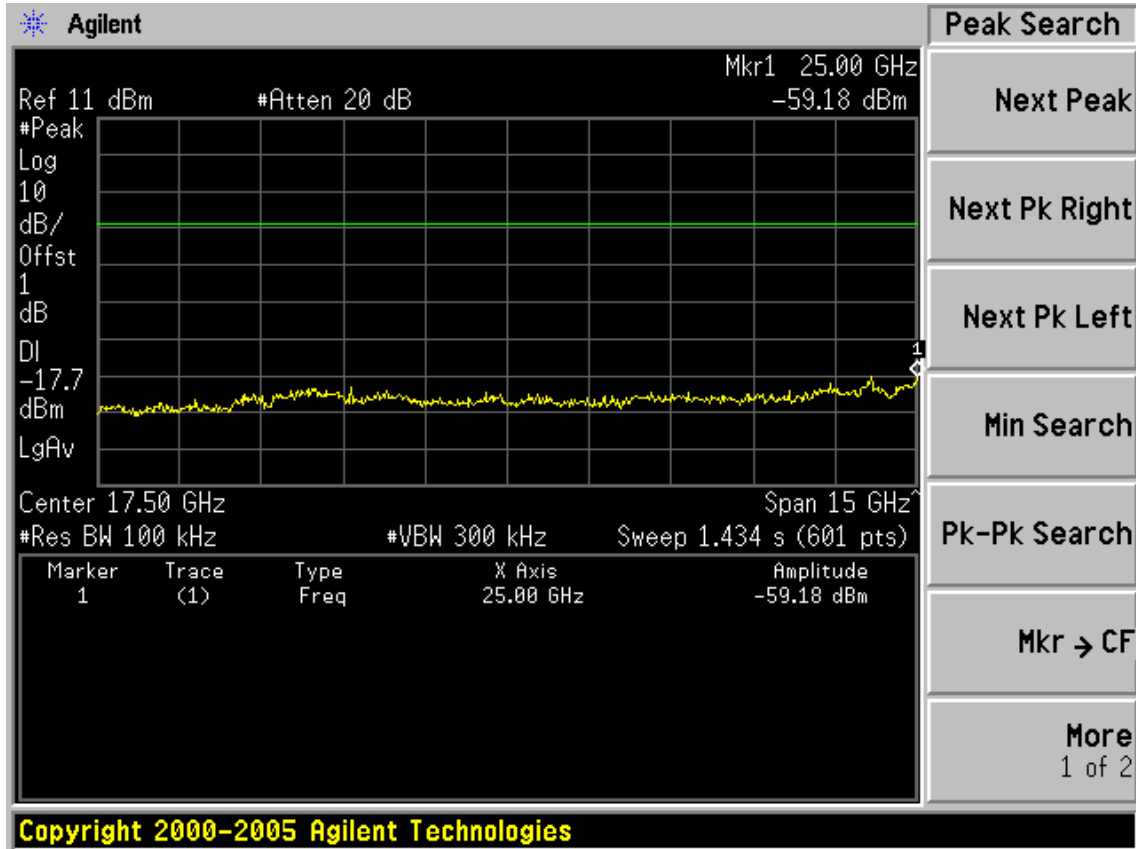


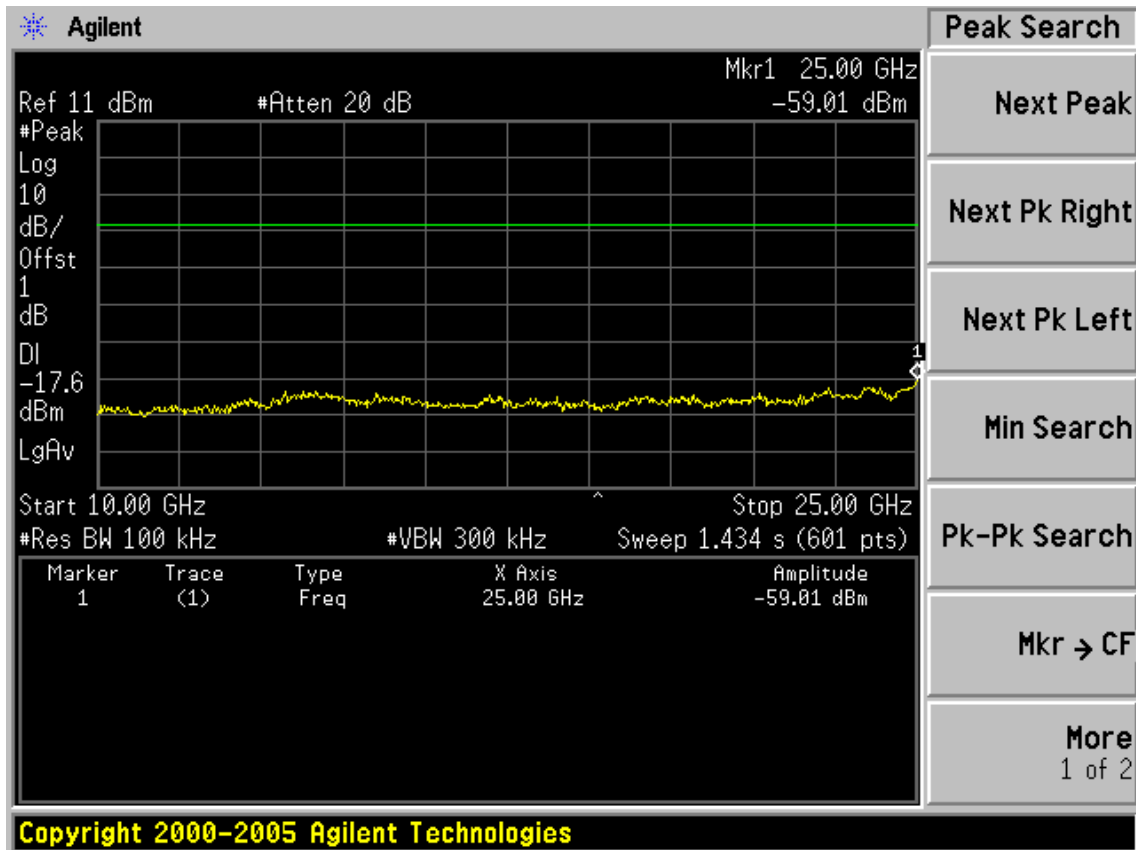
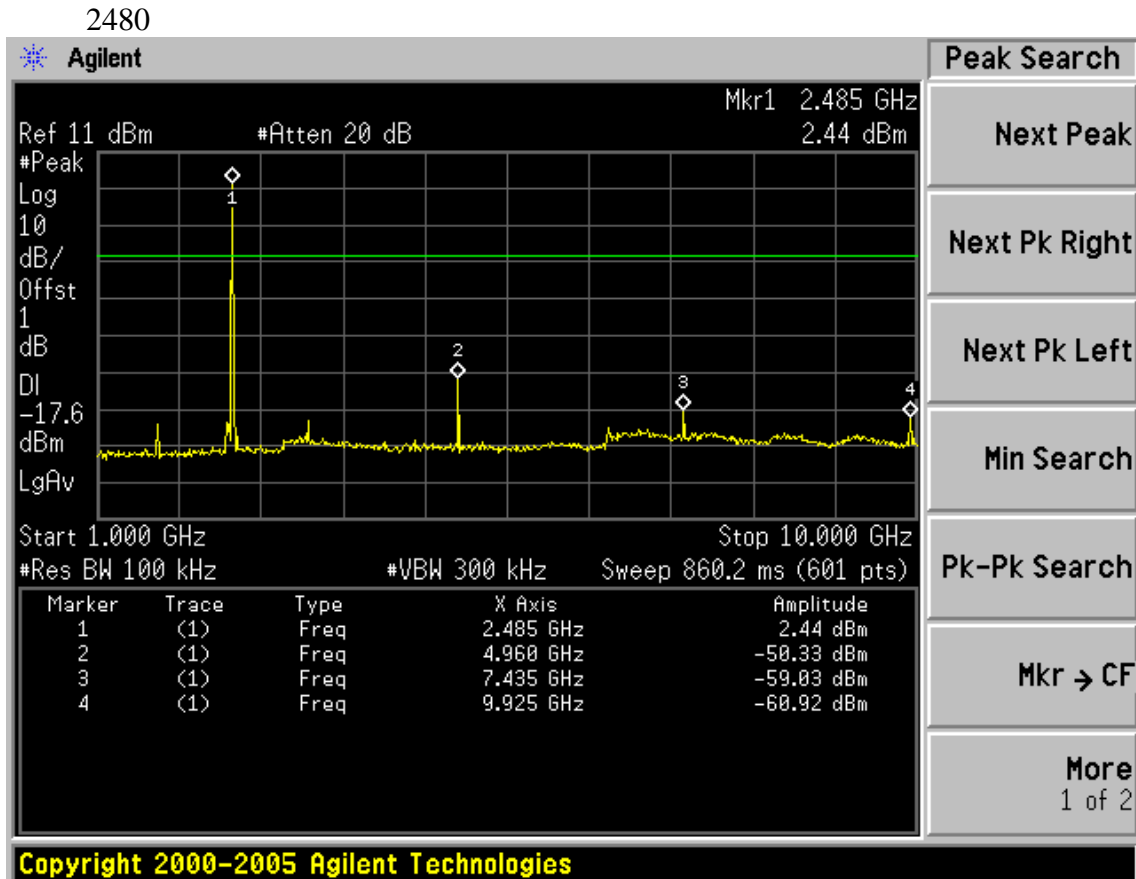


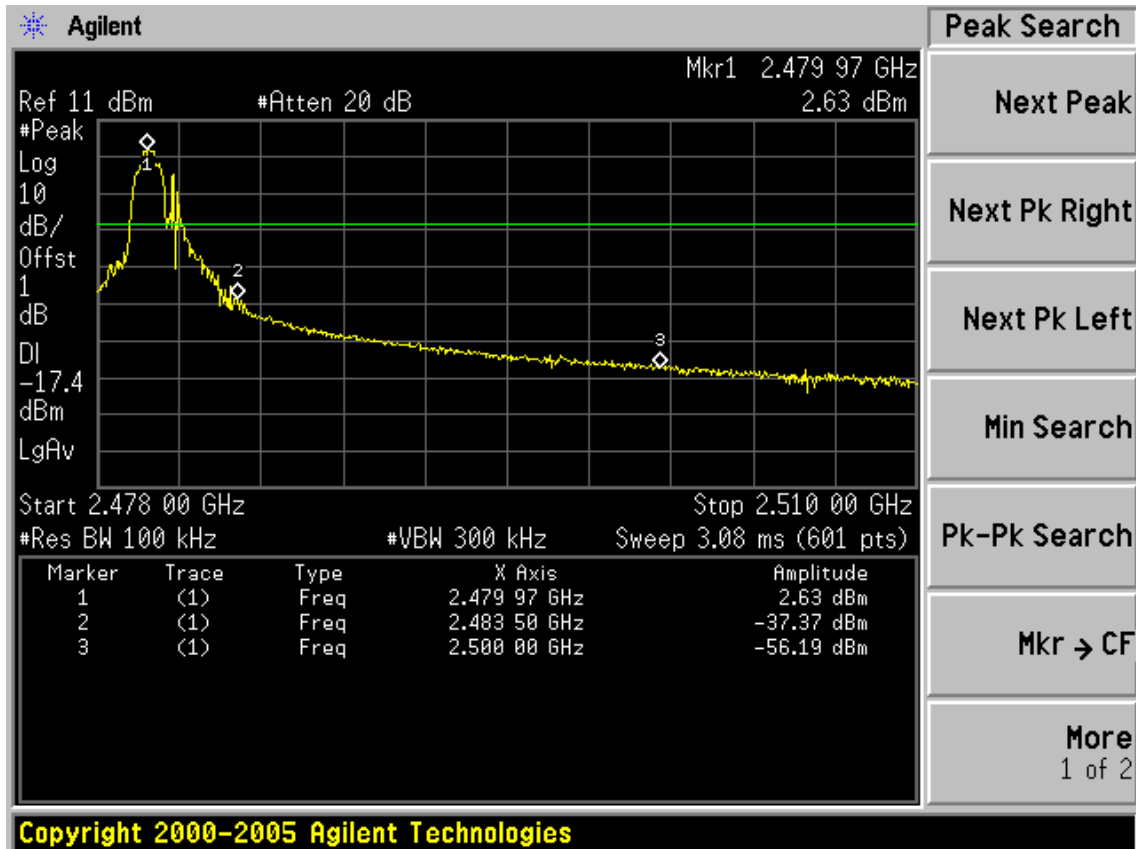
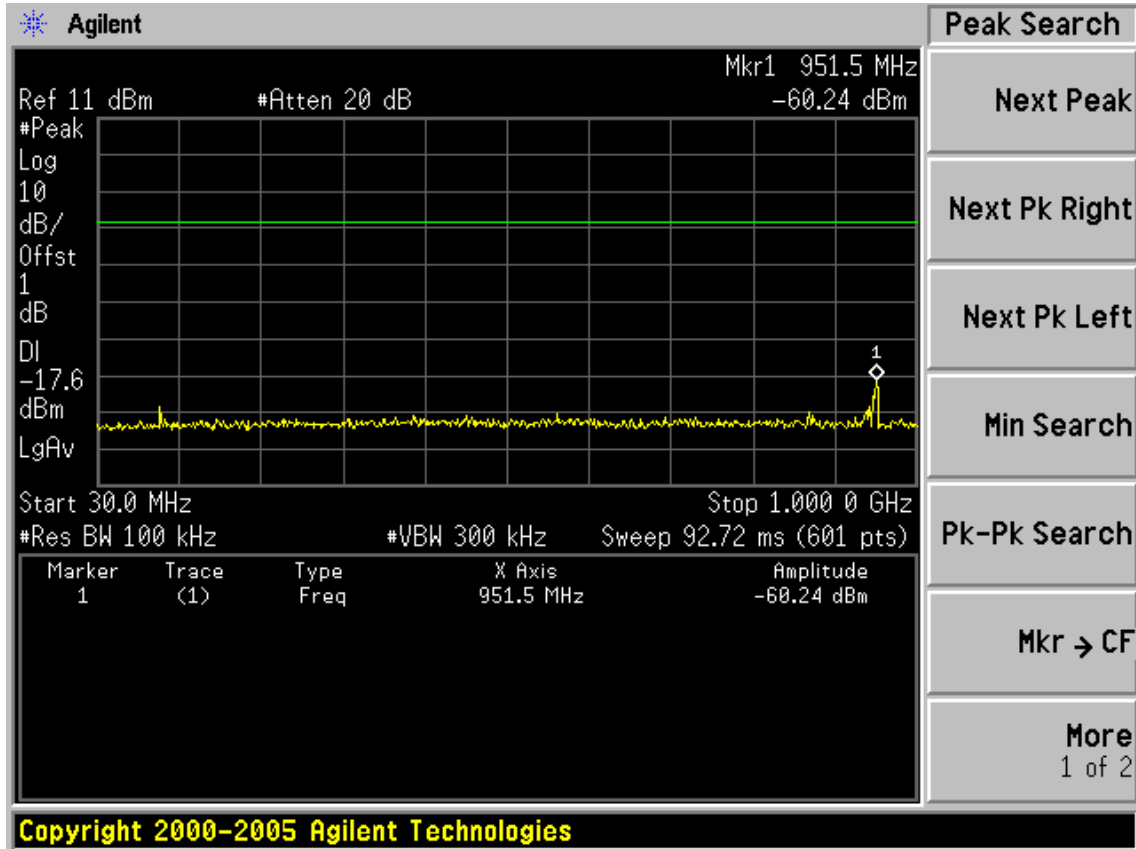


2441









5. CARRIER FREQUENCY SEPARATION TEST

5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year

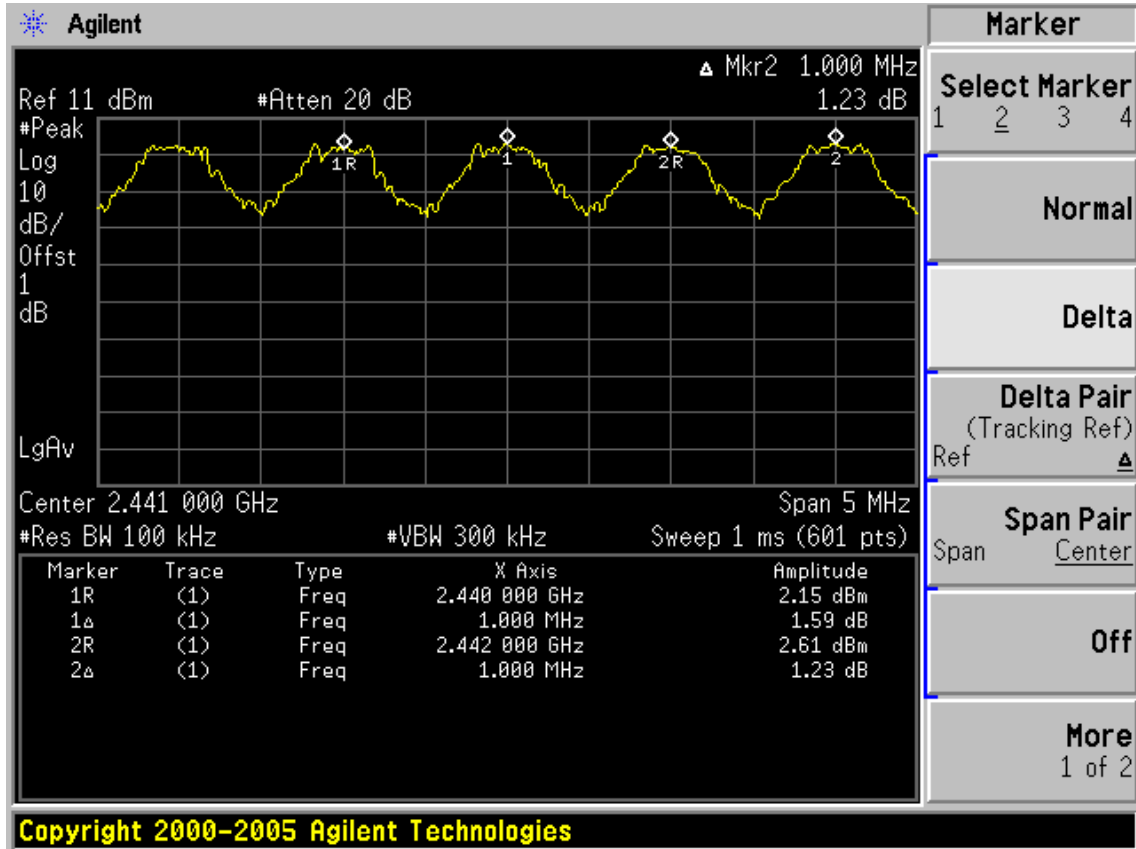
5.2. Limit

Frequency hopping systems shall have hopping channel carrier frequency separated by a minimum of 25kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

5.3. Test Results.

EUT: Bluetooth Headset		
M/N: 90700		
Test date:2011-10-12	Pressure:100.6 kpa	Humidity:53%
Tested by: Leo-Li	Test site: RF site	Temperature:25 °C

Channel separation	Conclusion
1.00MHz	PASS



6. 20 DB BANDWIDTH TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year

6.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

6.3. Test Results

EUT: Bluetooth Headset		
M/N: 90700		
Test date: 2011-10-11	Pressure: 100.6 kpa	Humidity: 53%
Tested by: Leo-Li	Test site: RF Site	Temperature : 24.9 °C

Cable loss: 1.0dB		Attenuator loss: 20 dB	Antenna Gain: 4.0dBi
Test Mode	CH (MHz)	20dB bandwidth (MHz)	Limit (KHz)
GFSK	2402	0.8545	N/A
	2441	0.8469	N/A
	2480	0.8395	N/A
8-DPSK	2402	1.212	N/A
	2441	1.210	N/A
	2480	1.213	N/A
Conclusion : PASS			

GFSK

Test Frequency: 2402MHz

Agilent Freq/Channel

Ch Freq 2.402 GHz Trig Free

Center 2.402000000 GHz

Ref 11 dBm #Atten 20 dB

#Peak Log 10 dB/Offst 1 dB

Center 2.402 000 GHz Span 3 MHz

#Res BW 30 kHz #VBW 100 kHz Sweep 3.2 ms (601 pts)

Occupied Bandwidth 826.0396 kHz

Occ BW % Pwr 99.00 %

x dB Bandwidth 854.459 kHz

x dB -20.00 dB

Transmit Freq Error -3.781 kHz

Center Freq 2.40200000 GHz

Start Freq 2.40050000 GHz

Stop Freq 2.40350000 GHz

CF Step 300.000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

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Test Frequency: 2441MHz

Agilent Freq/Channel

Ch Freq 2.441 GHz Trig Free

Center 2.441000000 GHz

Ref 11 dBm #Atten 20 dB

#Peak Log 10 dB/Offst 1 dB

Center 2.441 000 GHz Span 3 MHz

#Res BW 30 kHz #VBW 100 kHz Sweep 3.2 ms (601 pts)

Occupied Bandwidth 825.9506 kHz

Occ BW % Pwr 99.00 %

x dB Bandwidth 846.909 kHz

x dB -20.00 dB

Transmit Freq Error -4.257 kHz

Center Freq 2.44100000 GHz

Start Freq 2.43950000 GHz

Stop Freq 2.44250000 GHz

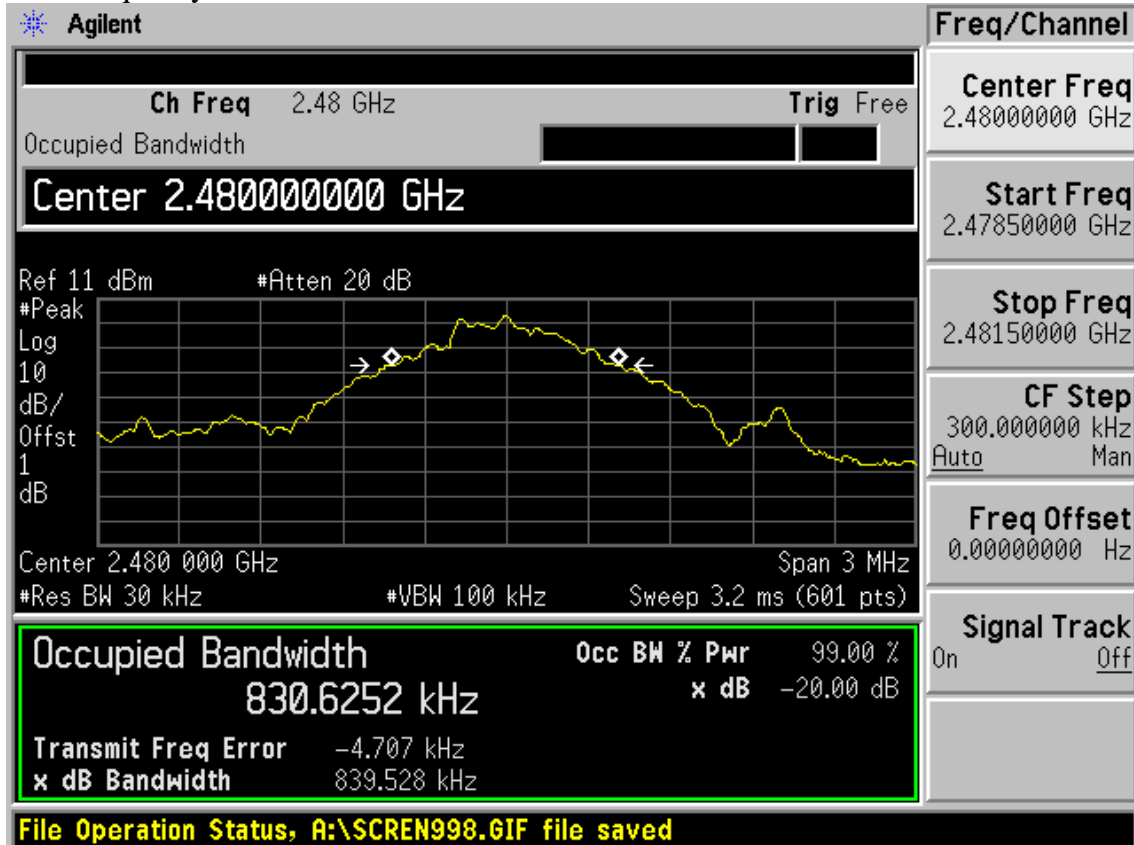
CF Step 300.000000 kHz Auto Man

Freq Offset 0.00000000 Hz

Signal Track On Off

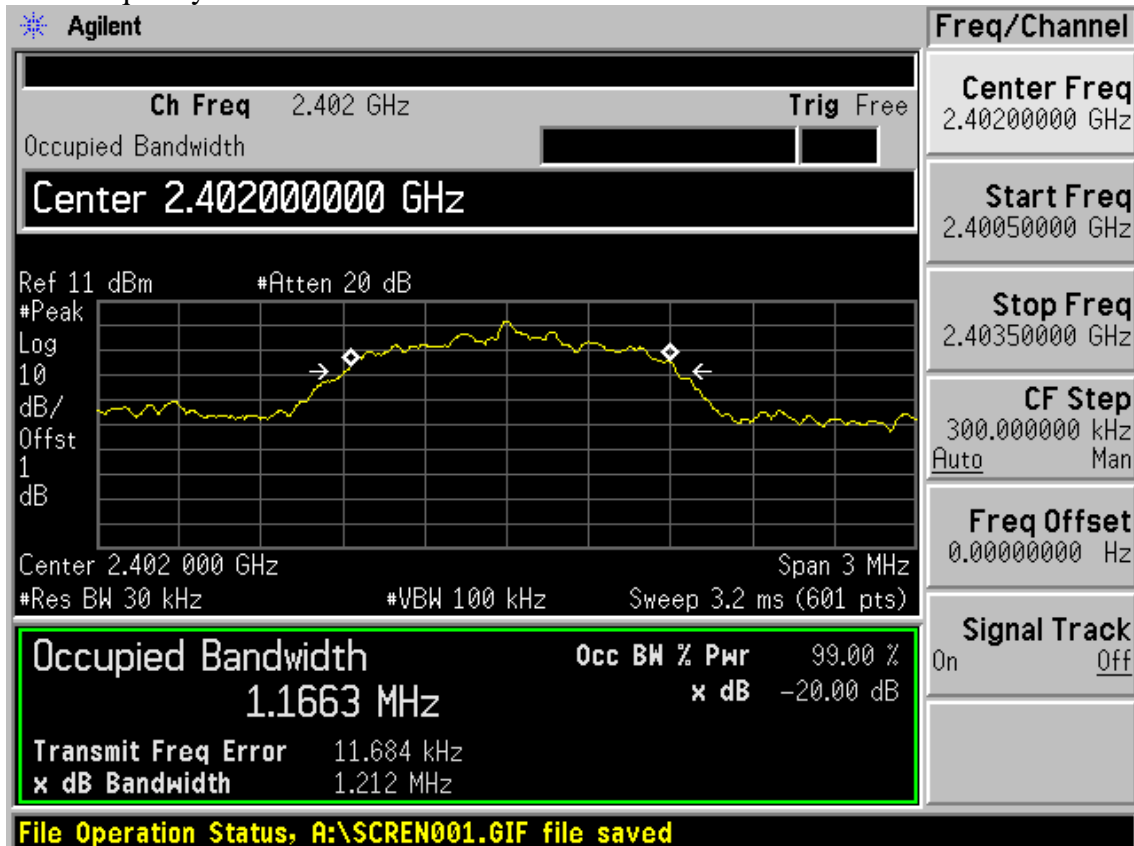
File Operation Status, A:\SCREN997.GIF file saved

Test Frequency: 2480MHz



8-DPSK

Test Frequency: 2402MHz



Test Frequency: 2441MHz

Agilent

Trace

Ch Freq 2.441 GHz
Trig Free

Occupied Bandwidth

Center 2.441000000 GHz

Ref 11 dBm
#Atten 20 dB

#Peak
Log
10
dB/
Offst
1
dB

Center 2.441 000 GHz
Span 3 MHz

#Res BW 30 kHz
#VBW 100 kHz
Sweep 3.2 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr 99.00 %
1.1630 MHz	x dB -20.00 dB
Transmit Freq Error 11.139 kHz	
x dB Bandwidth 1.213 MHz	

File Operation Status, A:\SCREEN000.GIF file saved

Trace

Trace 1 2 3

Clear Write

Max Hold

Min Hold

View

Blank

More 1 of 2

Test Frequency: 2480MHz

Agilent

Trace

Ch Freq 2.48 GHz
Trig Free

Occupied Bandwidth

Center 2.480000000 GHz

Ref 11 dBm
#Atten 20 dB

#Peak
Log
10
dB/
Offst
1
dB

Center 2.480 000 GHz
Span 3 MHz

#Res BW 30 kHz
#VBW 100 kHz
Sweep 3.2 ms (601 pts)

Occupied Bandwidth	Occ BW % Pwr 99.00 %
1.1539 MHz	x dB -20.00 dB
Transmit Freq Error 11.963 kHz	
x dB Bandwidth 1.210 MHz	

File Operation Status, A:\SCREEN999.GIF file saved

Trace

Trace 1 2 3

Clear Write

Max Hold

Min Hold

View

Blank

More 1 of 2

7. NUMBER OF HOPPING FREQUENCY TEST

7.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year

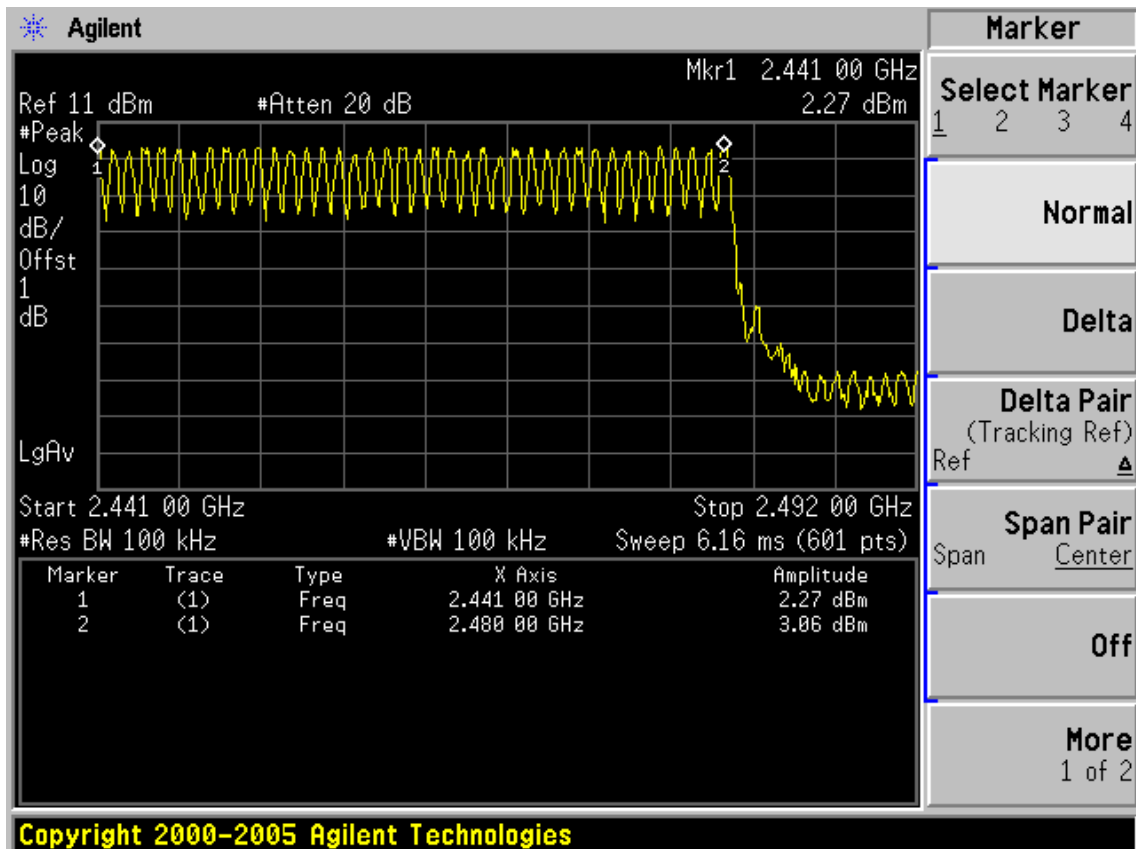
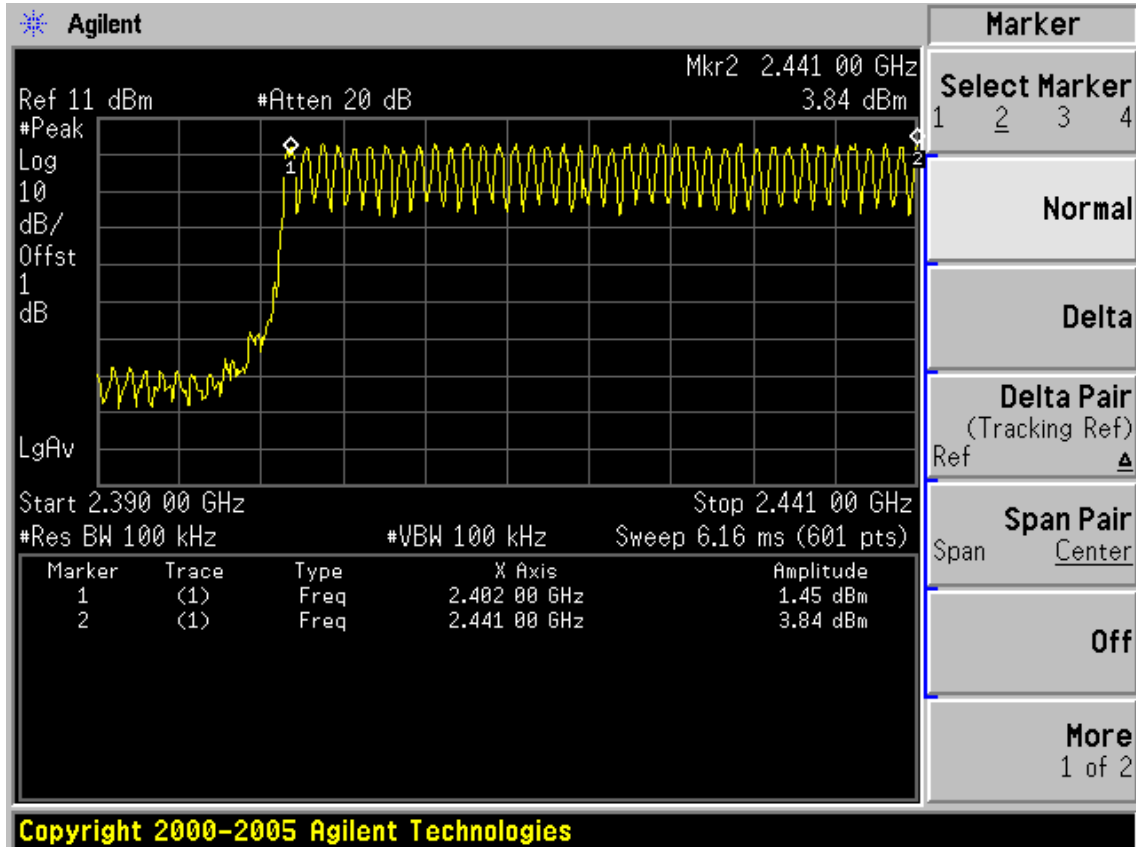
7.2. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels

7.3. Test Results

EUT: Bluetooth Headset		
M/N: 90700		
Test date:2011-10-12	Pressure:100.6 kpa	Humidity:53%
Tested by:Leo-Li	Test site: RF site	Temperature:25 °C

Number of channel	Limit	Conclusion
79	≥ 15	PASS



8. DWELL TIME

8.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year

8.2. Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

8.3. Test Results

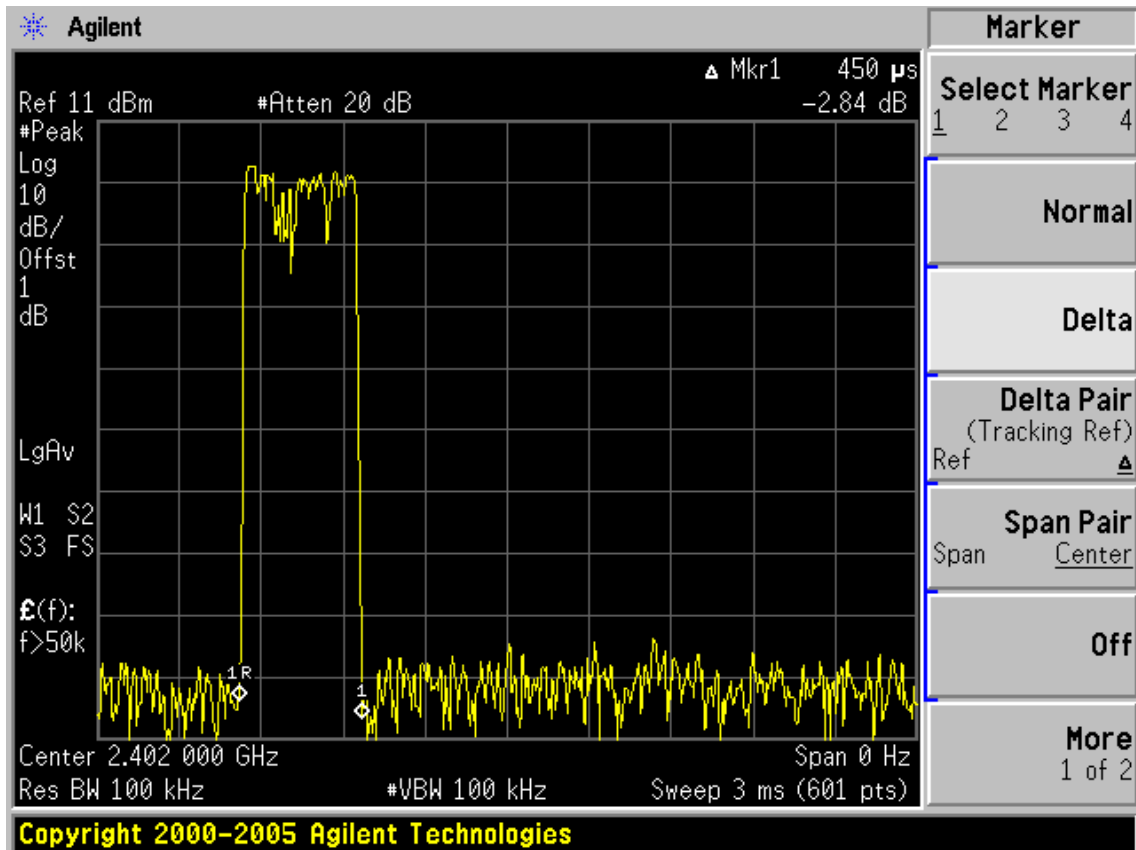
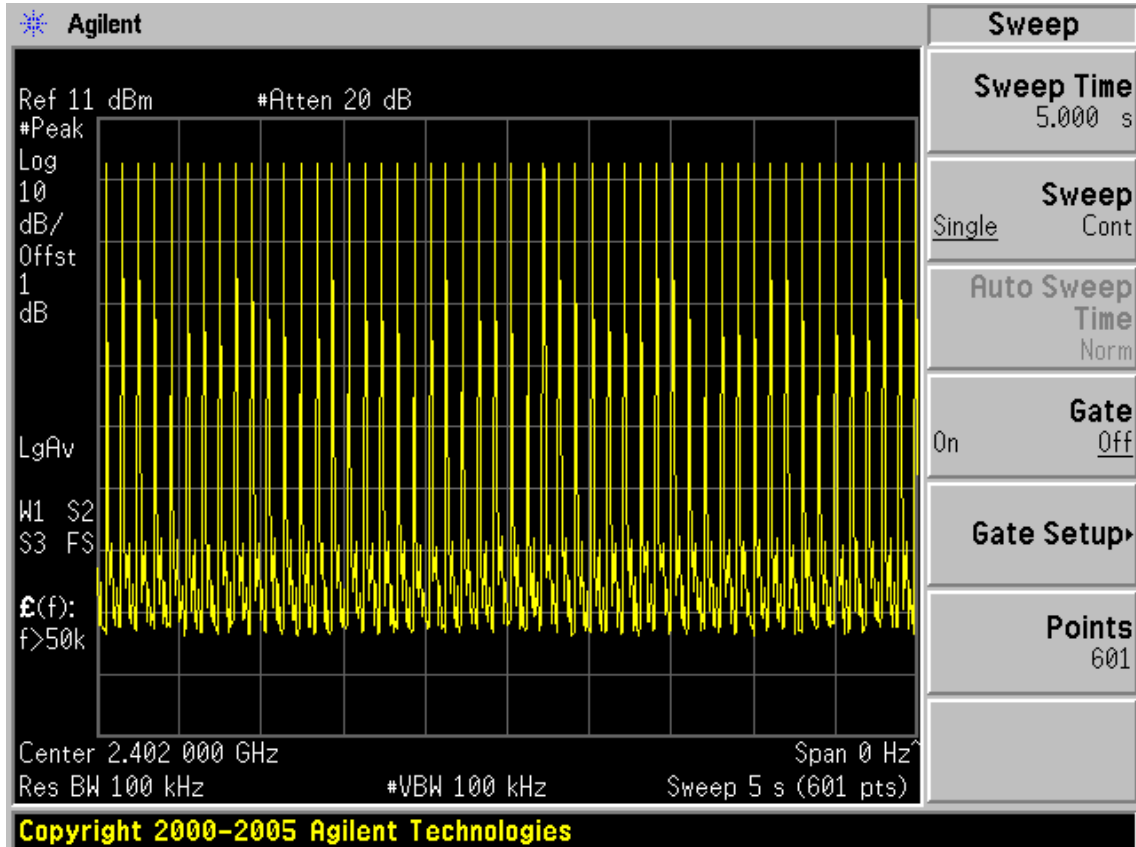
EUT: Bluetooth Headset		
M/N: 90700		
Test date: 2011-10-11	Pressure: 100.6 kpa	Humidity: 53%
Tested by: Leo-Li	Test site: RF site	Temperature: 25 °C

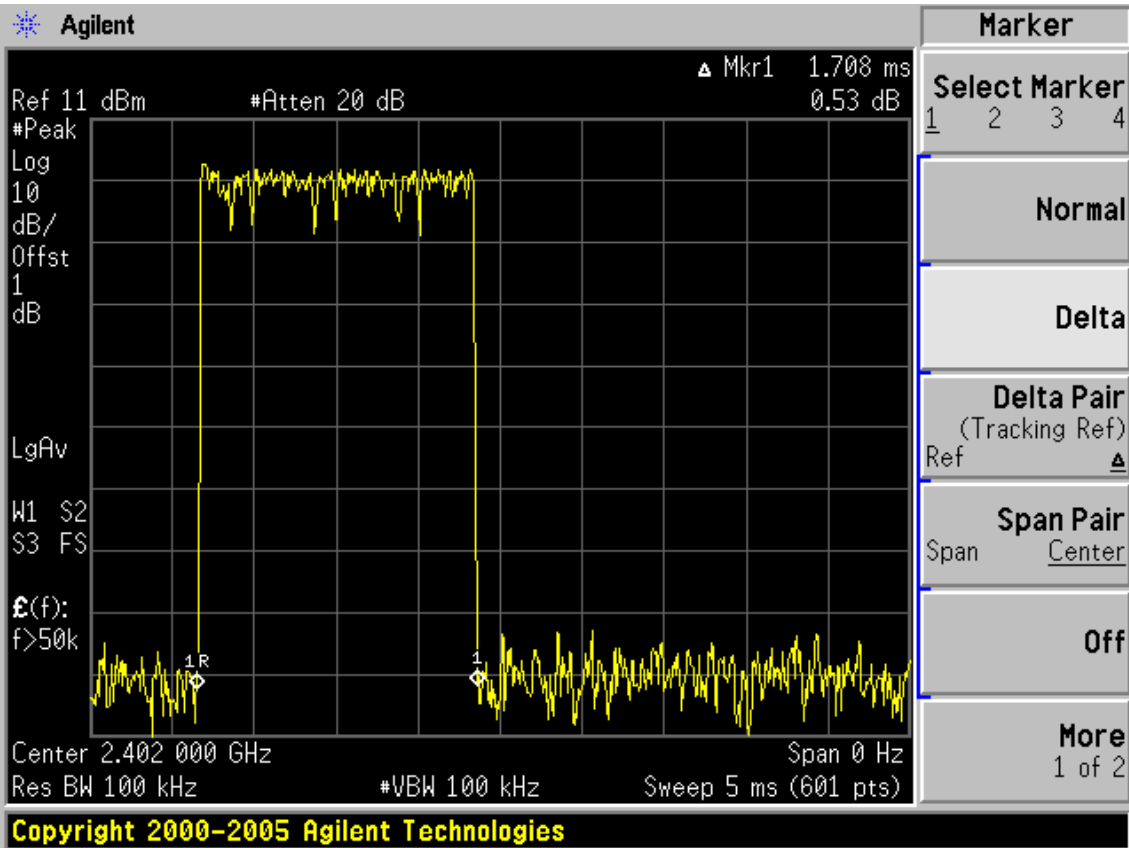
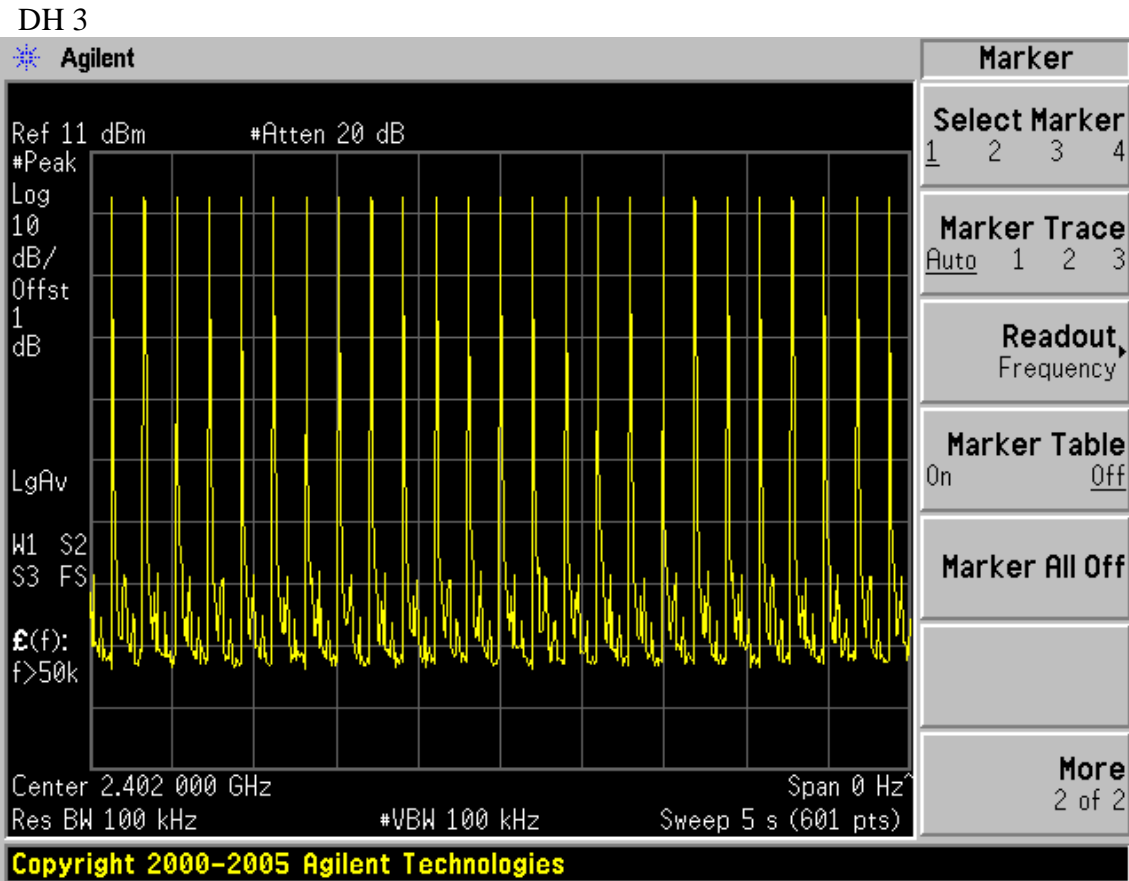
Mode	dwel time	Limit	Conclusion
GFSK	DH1 $51\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 0.45\text{ms} = 145.04\text{ms}$	<400ms	PASS
	DH3 $25\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 1.708\text{ms} = 269.86\text{ms}$	<400ms	PASS
	DH5 $17\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 2.987\text{ms} = 320.92\text{ms}$	<400ms	PASS
8-DPSK	DH1 $51\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 0.465\text{ms} = 149.88\text{ms}$	<400ms	PASS
	DH3 $26\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 1.717\text{ms} = 282.14\text{ms}$	<400ms	PASS
	DH5 $17\text{hops}/5\text{s} * 0.4 * 79\text{chanel} * 2.973\text{ms} = 319.41\text{ms}$	<400ms	PASS

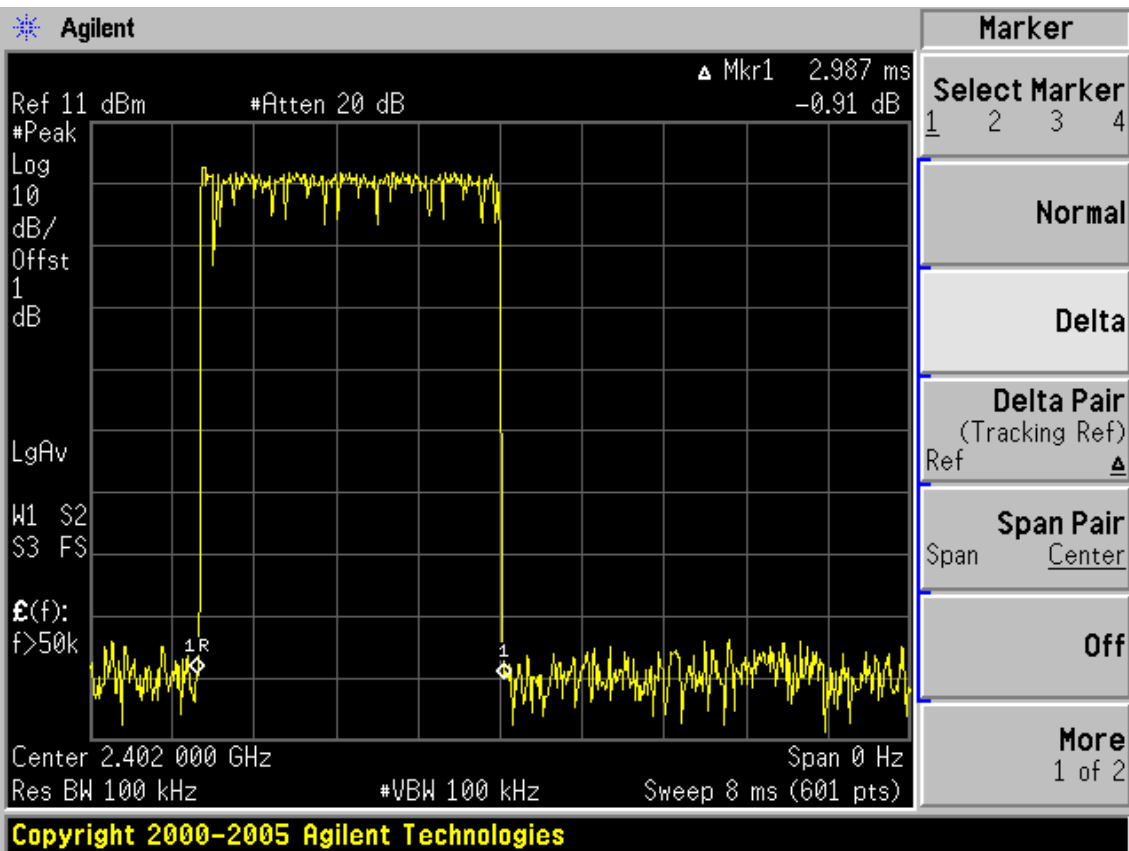
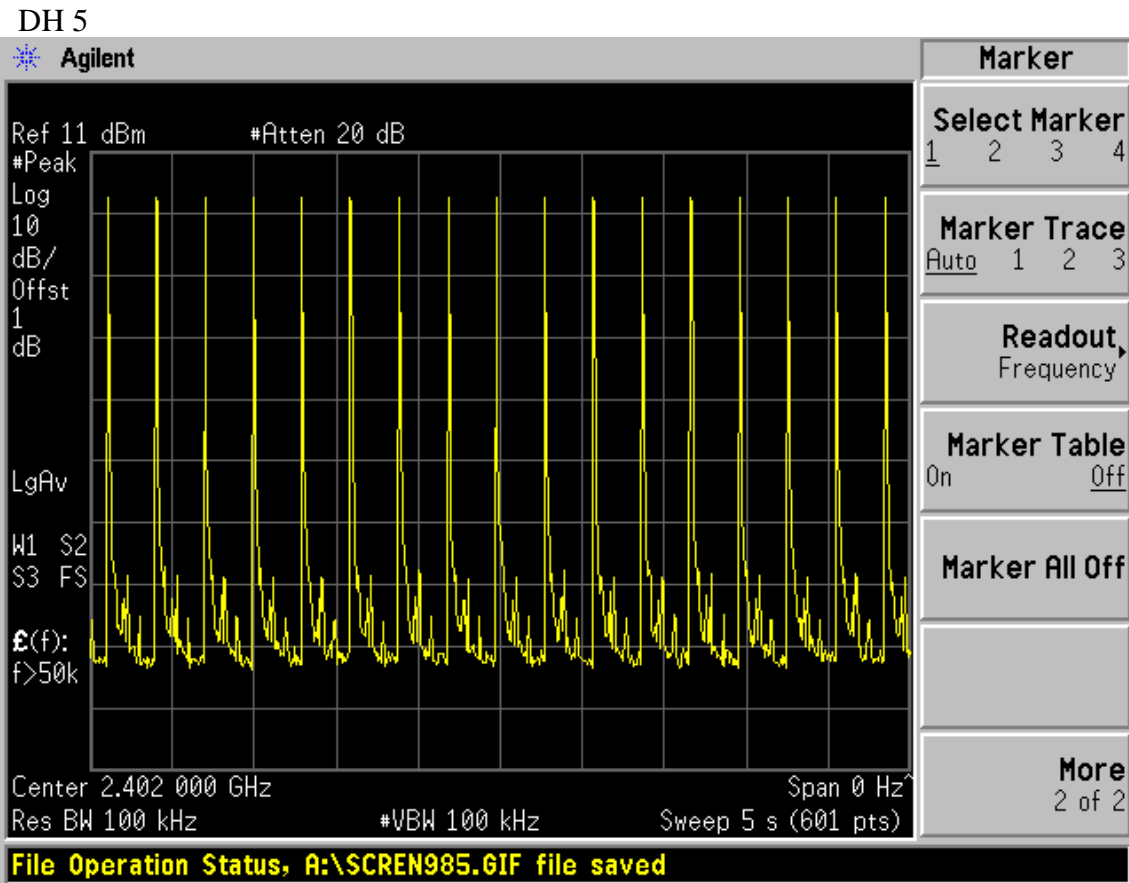
Note: All the lower levels were signal from receiver's, and should not considered in here.

GFSK

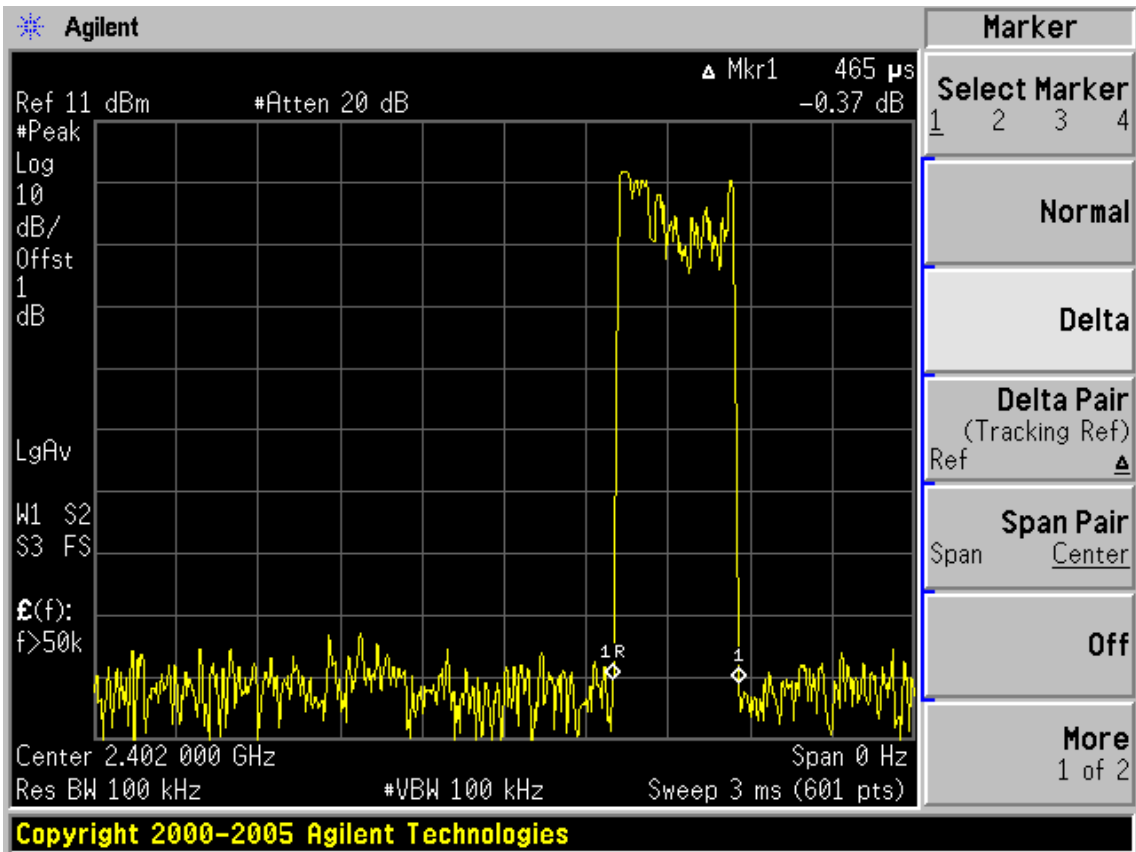
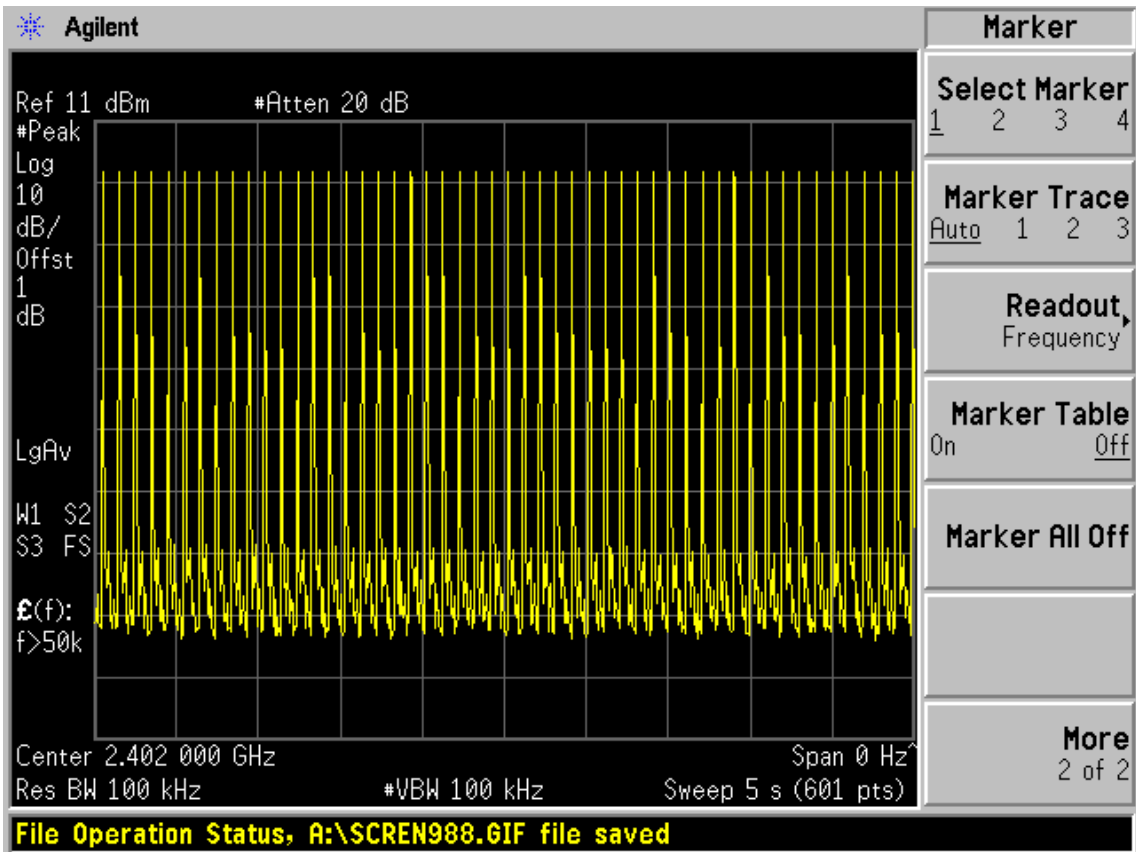
DH 1

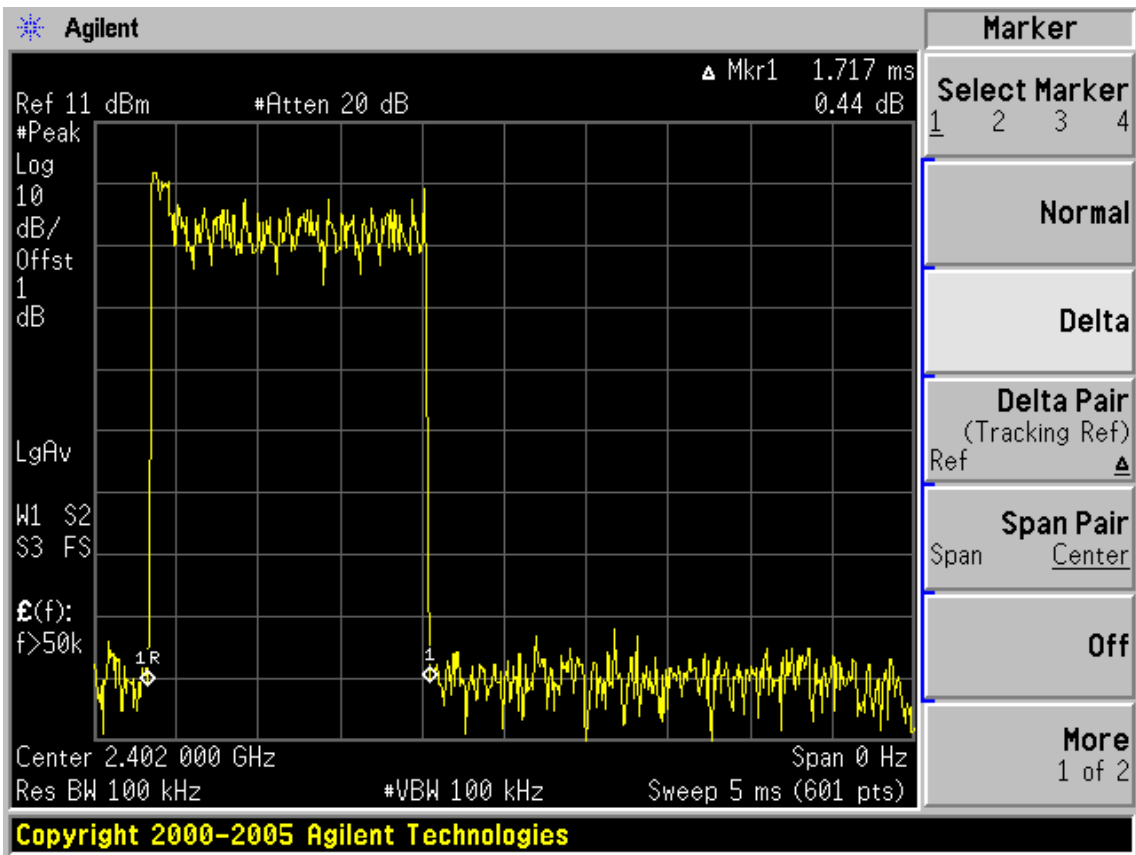
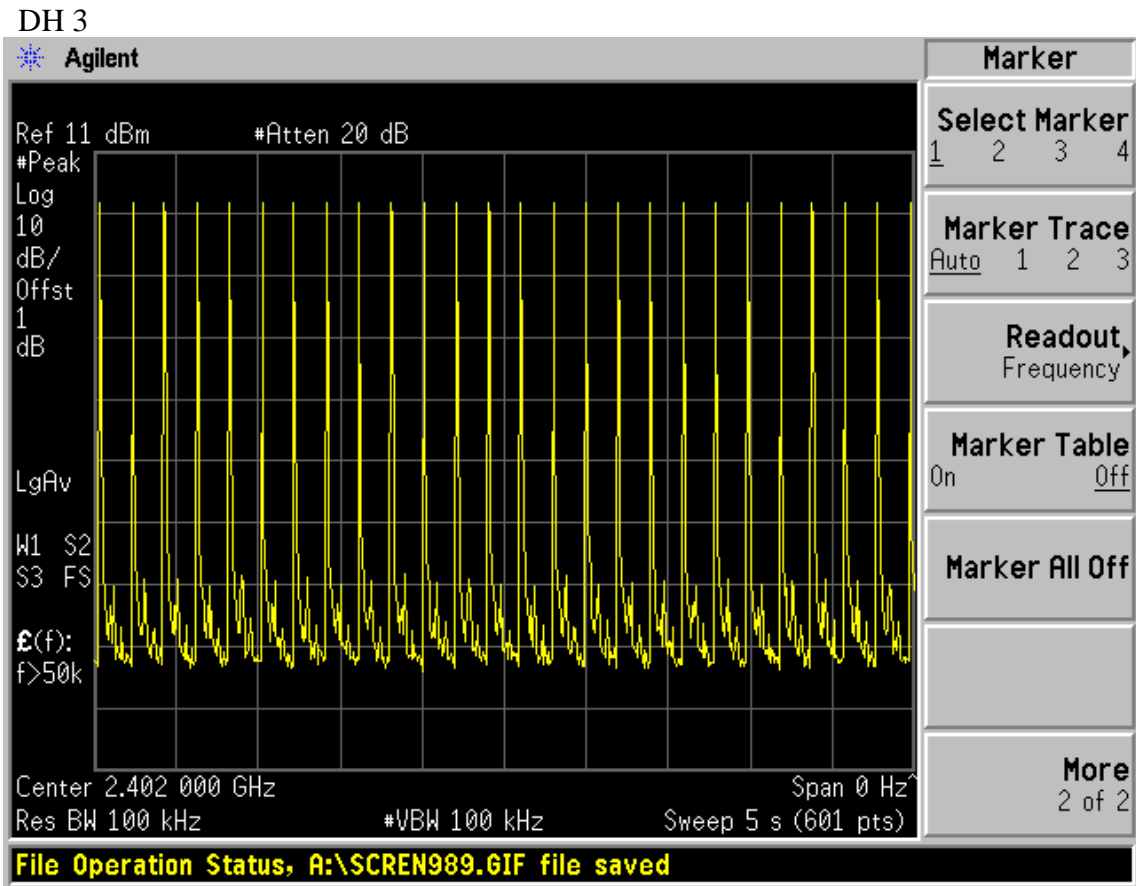




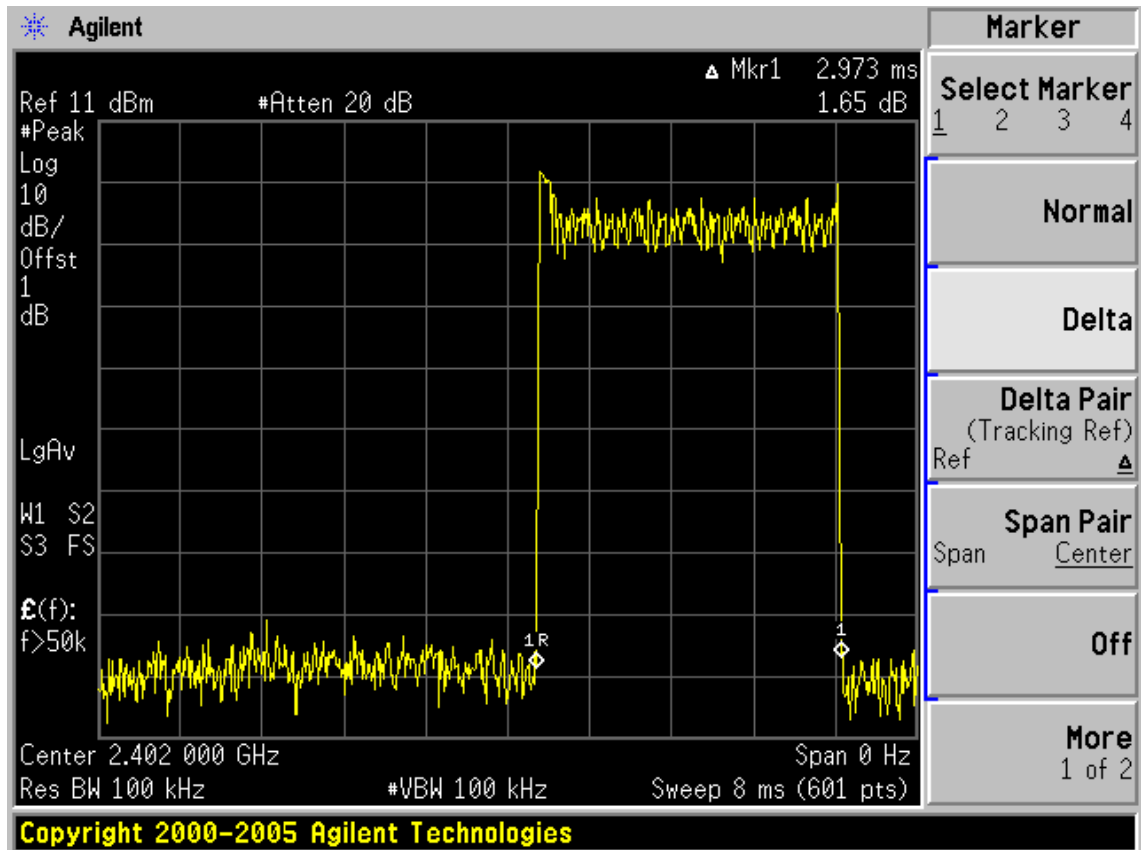
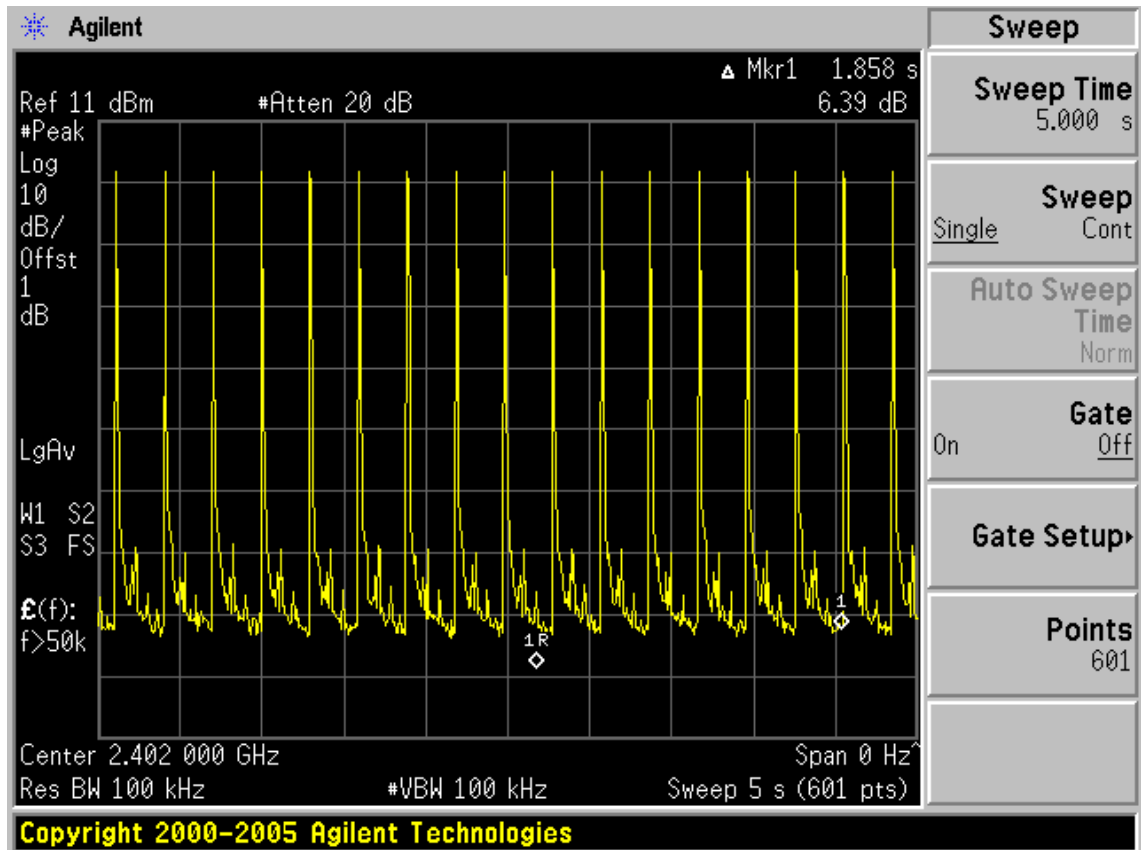


8-DPSK
DH 1





DH 5



9. MAXIMUM PEAK OUTPUT POWER TEST

9.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08, 11	1 Year
2.	Horn Antenna	EMCO	3115	9510-4580	Nov.19, 10	1.5 Year
3.	Horn Antenna	EMCO	3115	9607-4877	Nov. 25, 10	1.5 Year
4.	Signal Generator	HP	83732B	VS34490501	May.08, 11	1 Year
5.	Amplifier	Agilent	8491B	MY39262165	May.08, 11	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX 102	28620/2	May,08, 11	1 Year
7.	RF Cable	Hubersuhner	SUCOFLEX 102	271471/4	May,08, 11	1 Year
8.	RF Cable	Hubersuhner	SUCOFLEX 102	29086/2	May,08, 11	1 Year
9.	RF Cable	Hubersuhner	SUCOFLEX 102	271473/4	May,08, 11	1 Year
10.	RF Cable	Hubersuhner	SUCOFLEX 102	29091/2	May,08, 11	1 Year

9.2. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

9.3. Test Procedure

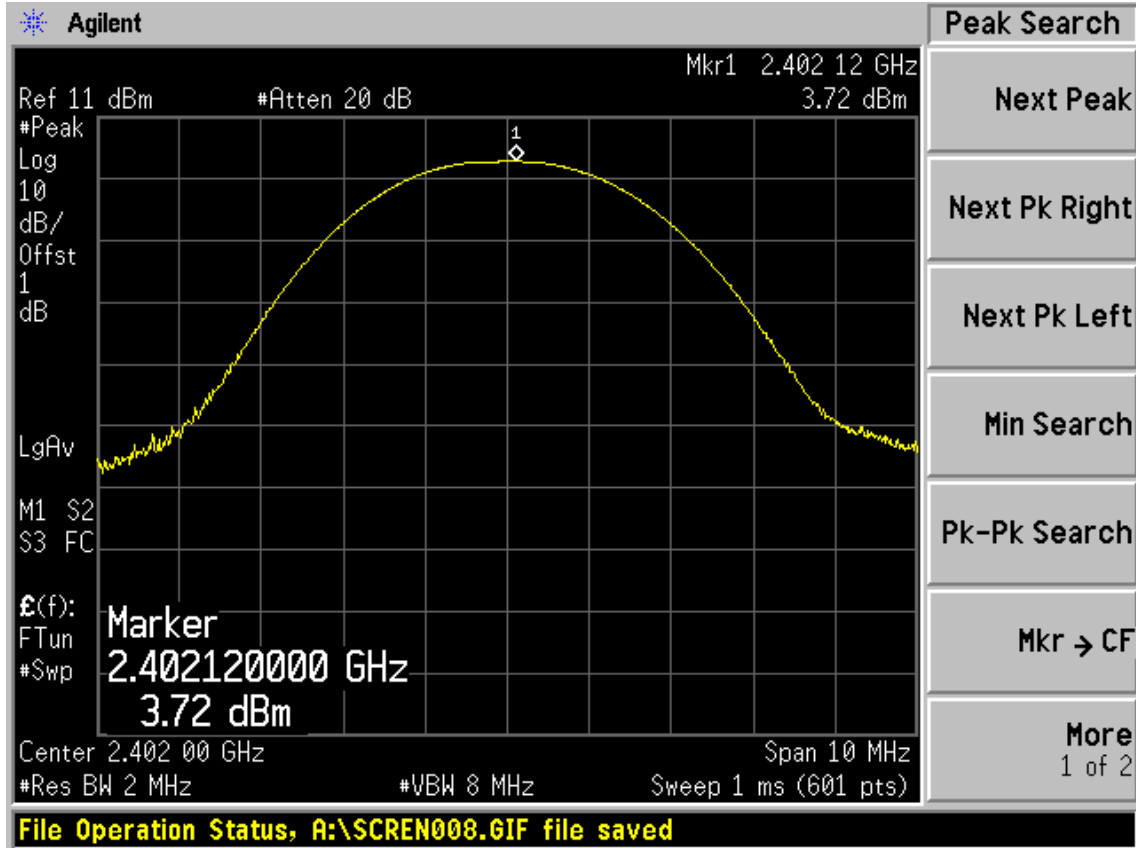
1. Connected the EUT's antenna port to spectrum analyzer.
2. Set the RBW> Bandwidth of test Frequency and put the test Frequency, Set the Span large enough to capture the entire signal
3. Use a peak detector on max hold
4. Reading the value from the Spectrum analyzer

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

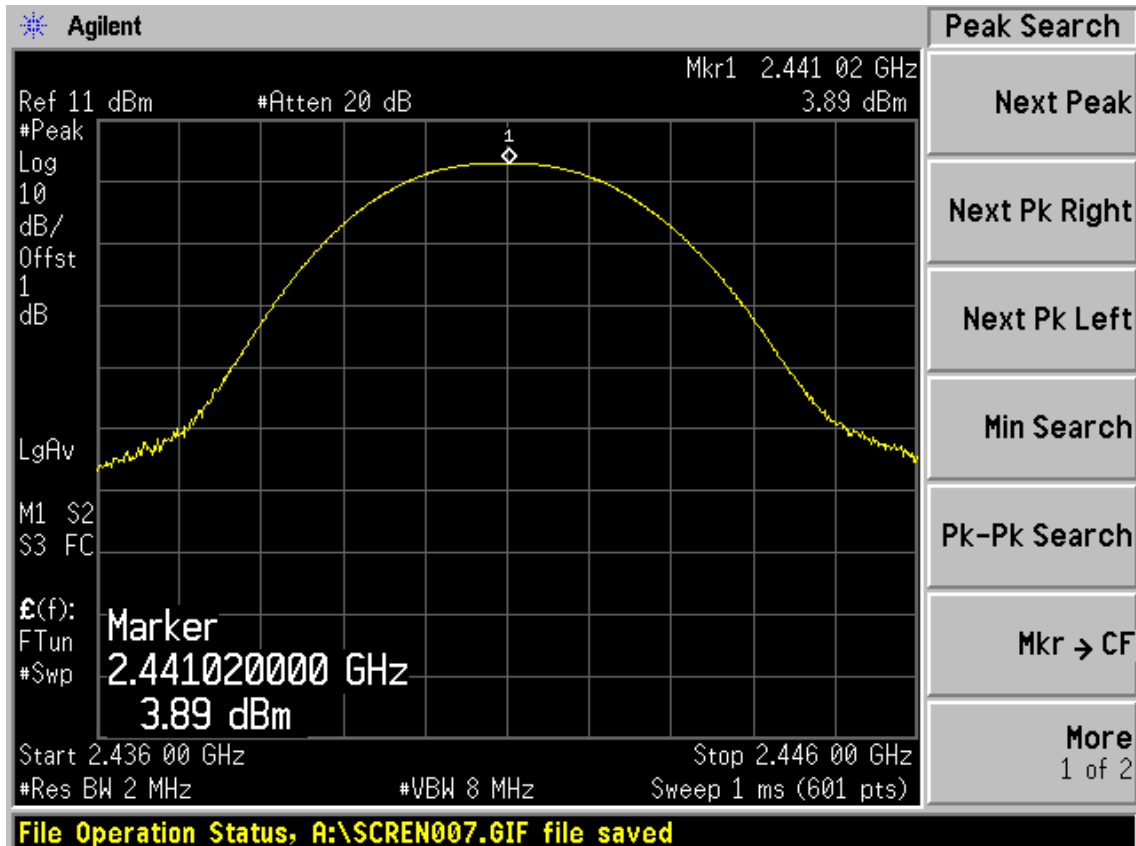
9.4. Test Results

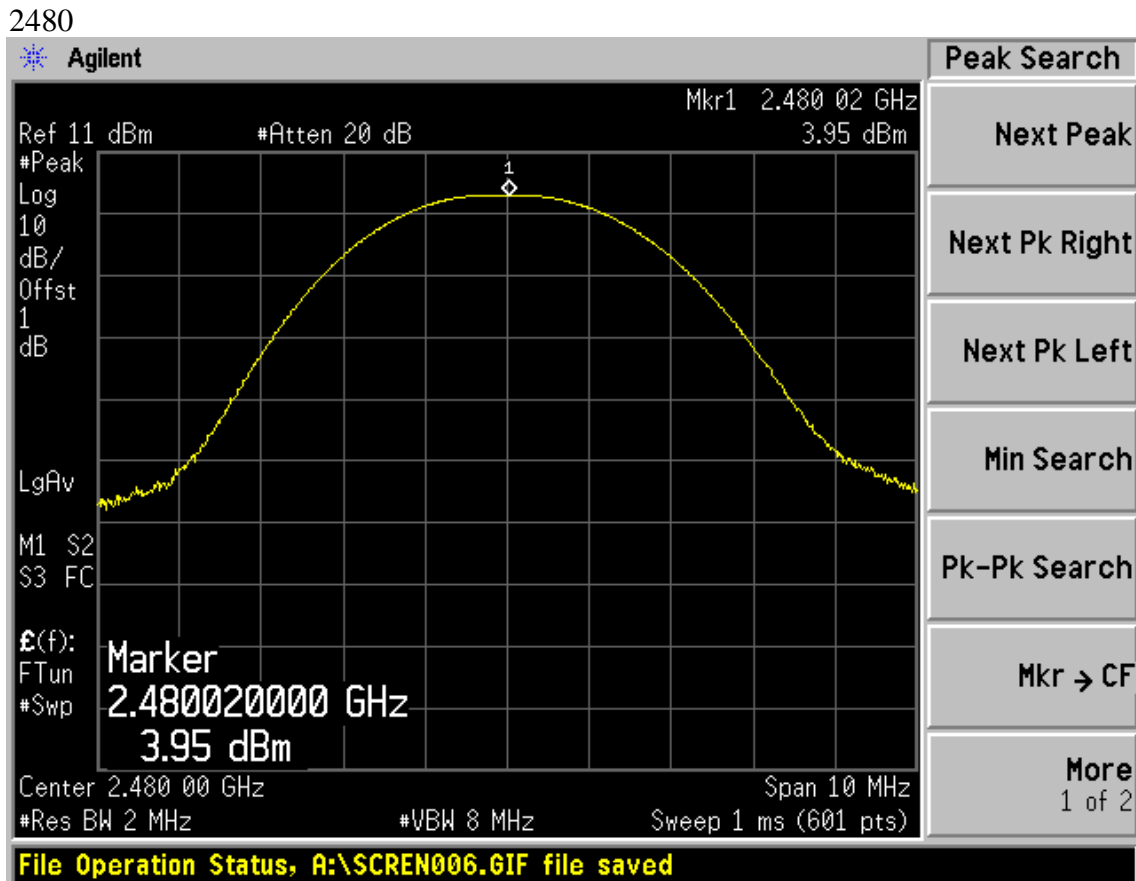
EUT: Bluetooth Headset			
M/N: 90700			
Test date: 2011-10-11	Pressure: 101.6 kpa	Humidity: 53%	
Tested by: Leo-Li	Test site: RF site	Temperature: 24.8 °C	
Cable loss: 1.0 dB			
Attenuator loss: 20 dB			
Test Mode	CH (MHz)	Peak output Power (dBm)	Limit (dBm)
8DPSK	2402	3.33	30
	2441	3.50	30
	2480	3.36	30
GFSK	2402	3.72	30
	2441	3.89	30
	2480	3.95	30
Conclusion: PASS			

GFSK
2402



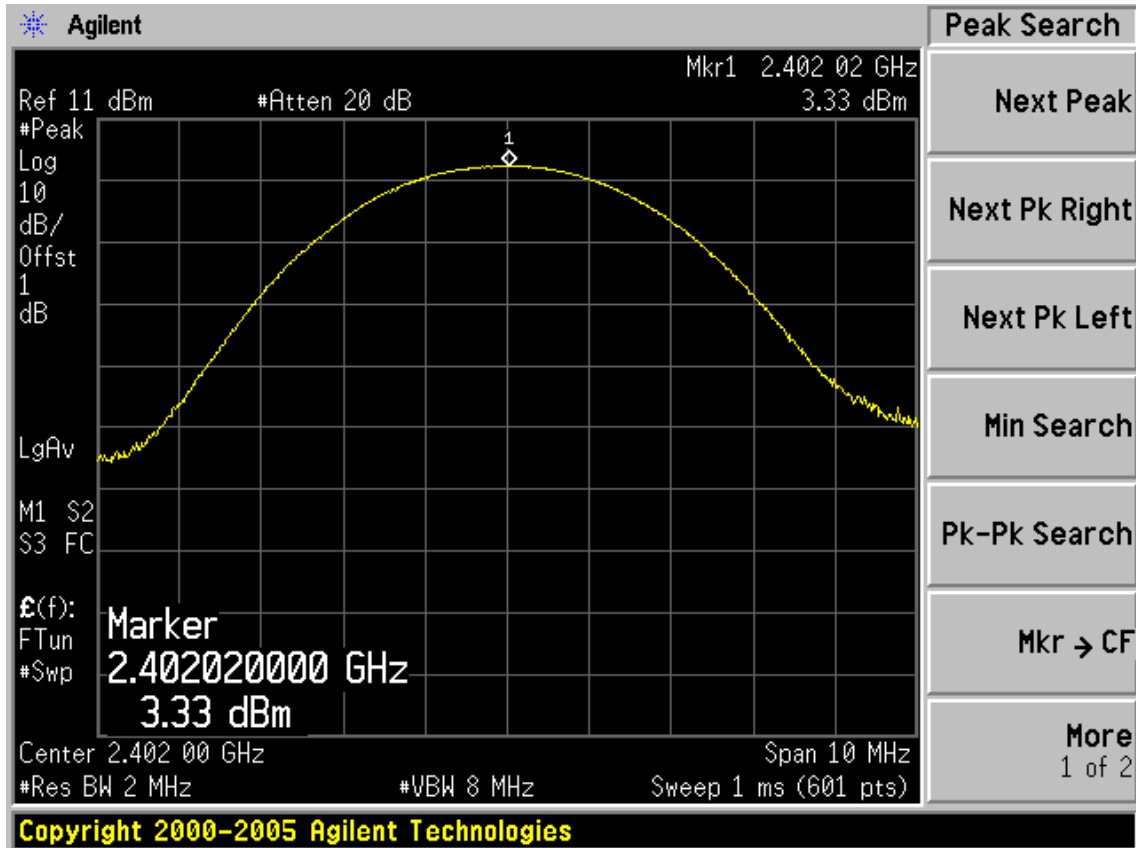
2441



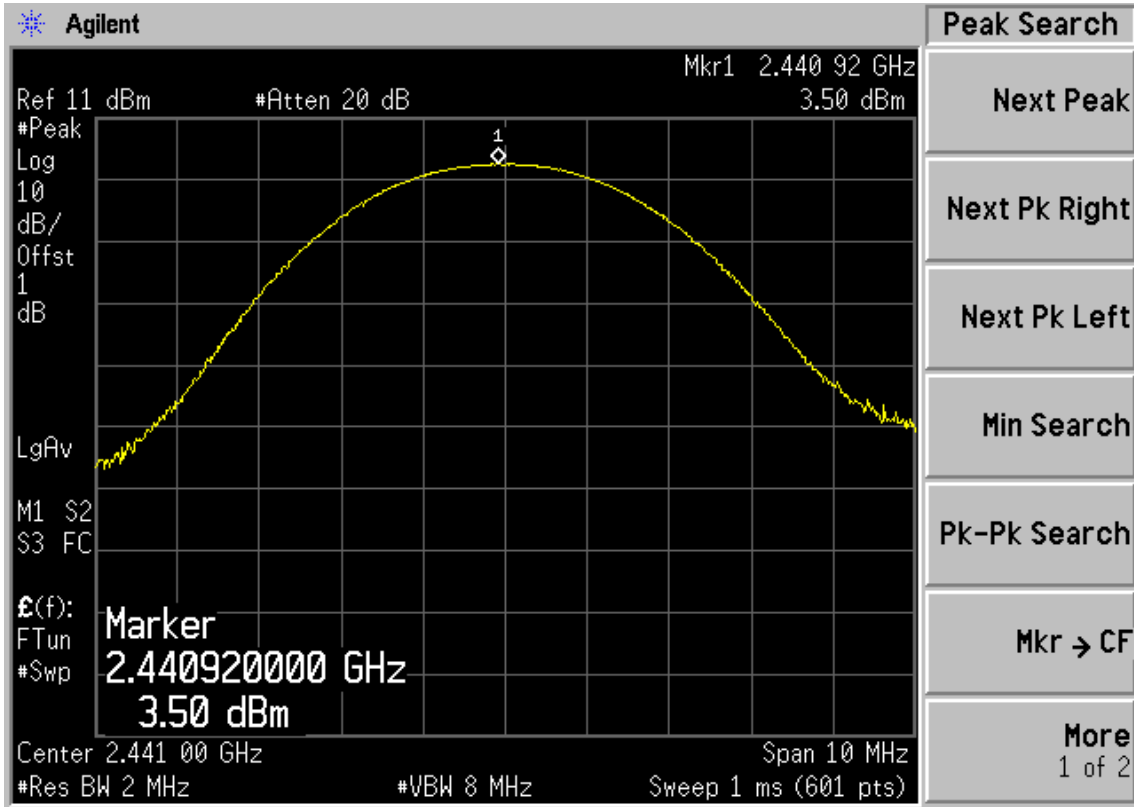


8DPSK

2402

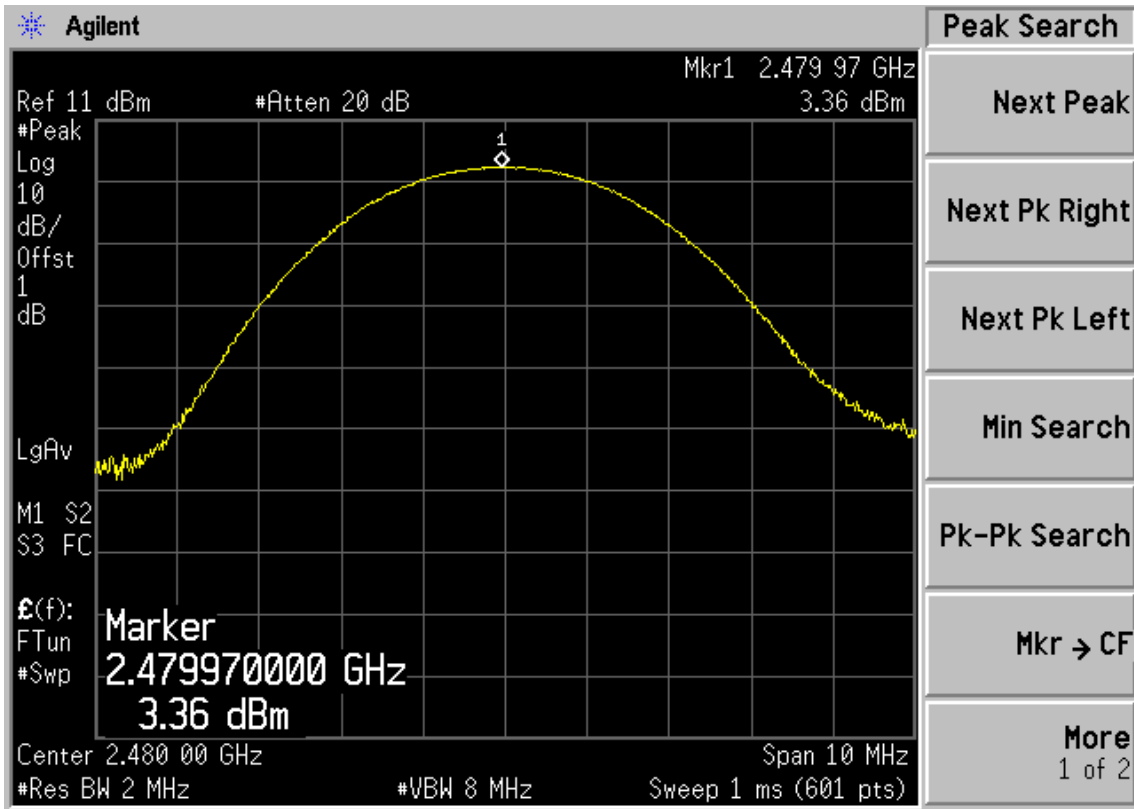


2441



File Operation Status, A:\SCREN003.GIF file saved

2441



File Operation Status, A:\SCREN005.GIF file saved

10. BAND EDGE COMPLIANCE TEST

10.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300459	May.08,11	1 Year
2.	Horn Antenna	EMCO	3115	9607-4877	Nov.25, 10	1.5 Year
3.	Amplifier	Agilent	8449B	3008A02495	May.08, 11	1 Year
4.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	May.08,11	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX102	28618/2	May.08,11	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX102	28610/2	May.08,11	1 Year

10.2. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

10.3. Test Produce

For upper band emissions that are up to two bandwidths(2MHz) away (2483.5MHz to 2485.5MHz) from the band-edge use below produce:

1. Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 100KHz and with a video bandwidth 300KHz. Record the peak levels of the fundamental emission and the relevant band-edge emission, Observe the stored trace and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission. This is not a field strength measurement, it is only a relative measurement to determine the amount by which the emission drops at the band edge relative to the highest fundamental emission level.
2. Subtract the delta measured in step (1) from the maximum field strengths measured in clause 4 .The resultant field strengths are then used to determine band-edge compliance as required by Section 15.205

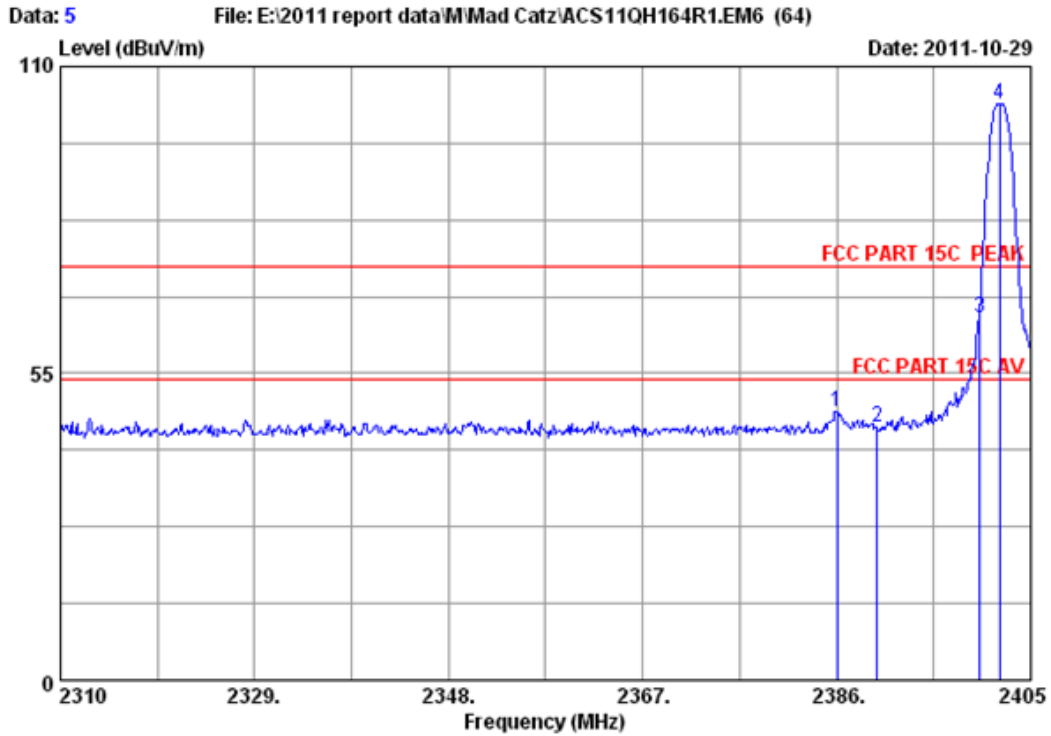
For emissions above two bandwidths away from the band-edge use below produce:

1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
 - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
 - (b)This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level

10.4. Test Results

Pass (The testing data was attached in the next pages.)

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

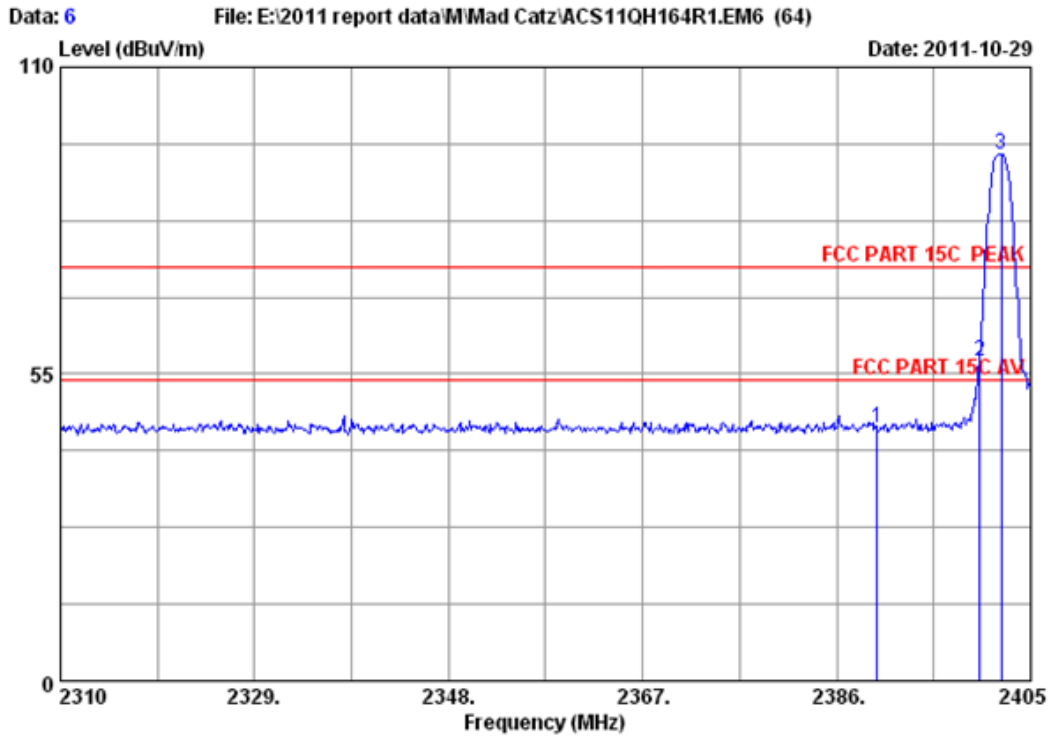


Site no. : 3m Chamber Data no. : 5
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : HORIZONTAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2402MHz Tx
 M/N : 90700

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2386.000	27.96	6.72	34.44	47.93	48.17	74.00	25.83	Peak
2	2390.000	27.96	6.72	34.44	45.14	45.38	74.00	28.62	Peak
3	2400.000	27.96	6.75	34.44	64.61	64.88	74.00	9.12	Peak
4	2401.960	27.96	6.75	34.44	102.96	103.23	74.00	-29.23	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

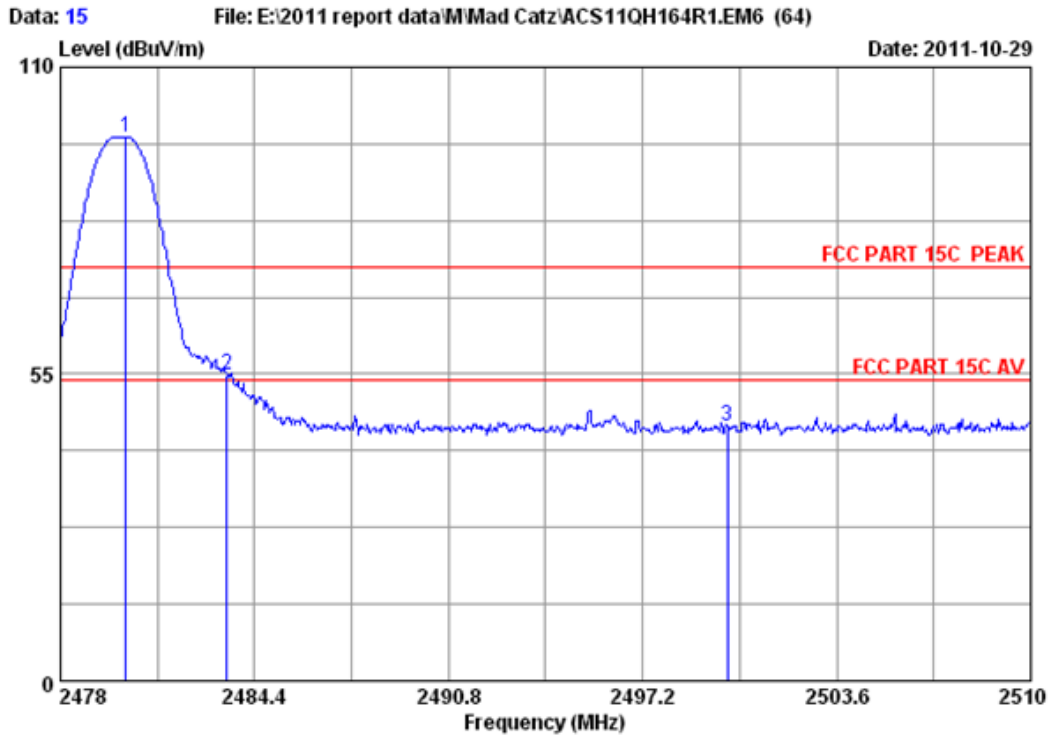


Site no. : 3m Chamber Data no. : 6
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2402MHz Tx
 M/N : 90700

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2390.000	27.96	6.72	34.44	45.00	45.24	74.00	28.76	Peak
2	2400.000	27.96	6.75	34.44	57.07	57.34	74.00	16.66	Peak
3	2402.150	27.96	6.75	34.44	94.21	94.48	74.00	-20.48	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

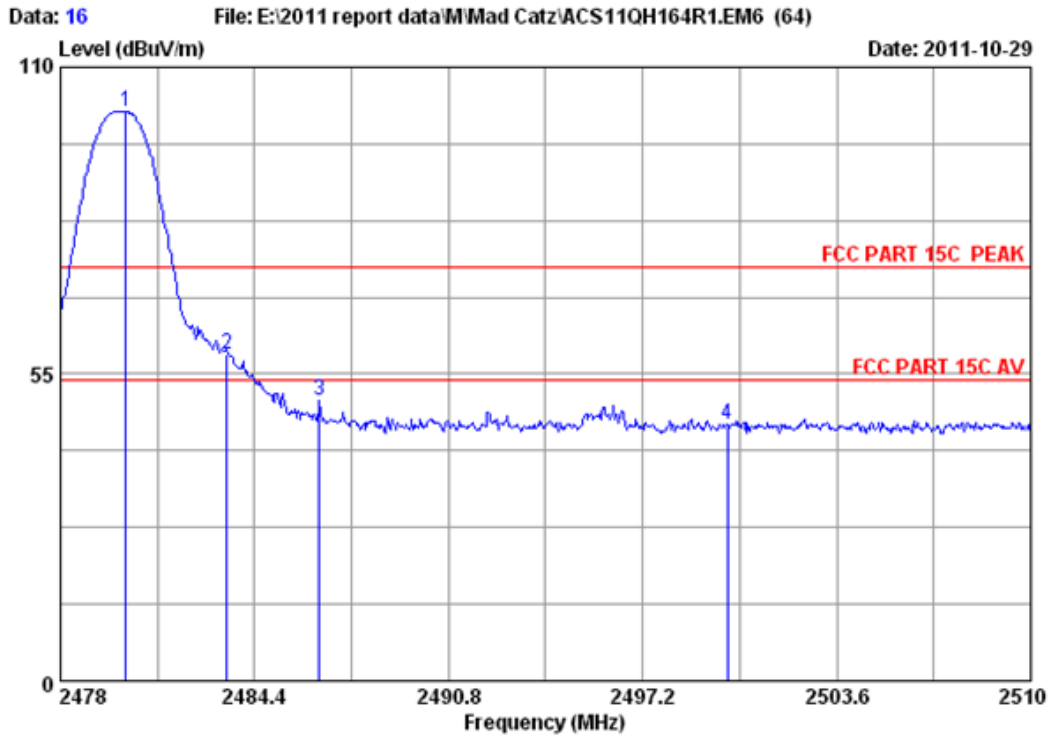


Site no. : 3m Chamber Data no. : 15
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : GFSK 2480MHz Tx
 M/N : 90700

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2480.145	28.08	6.87	34.45	97.01	97.51	74.00	-23.51	Peak
2	2483.500	28.08	6.90	34.45	54.24	54.77	74.00	19.23	Peak
3	2500.000	28.10	6.90	34.45	45.21	45.76	74.00	28.24	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

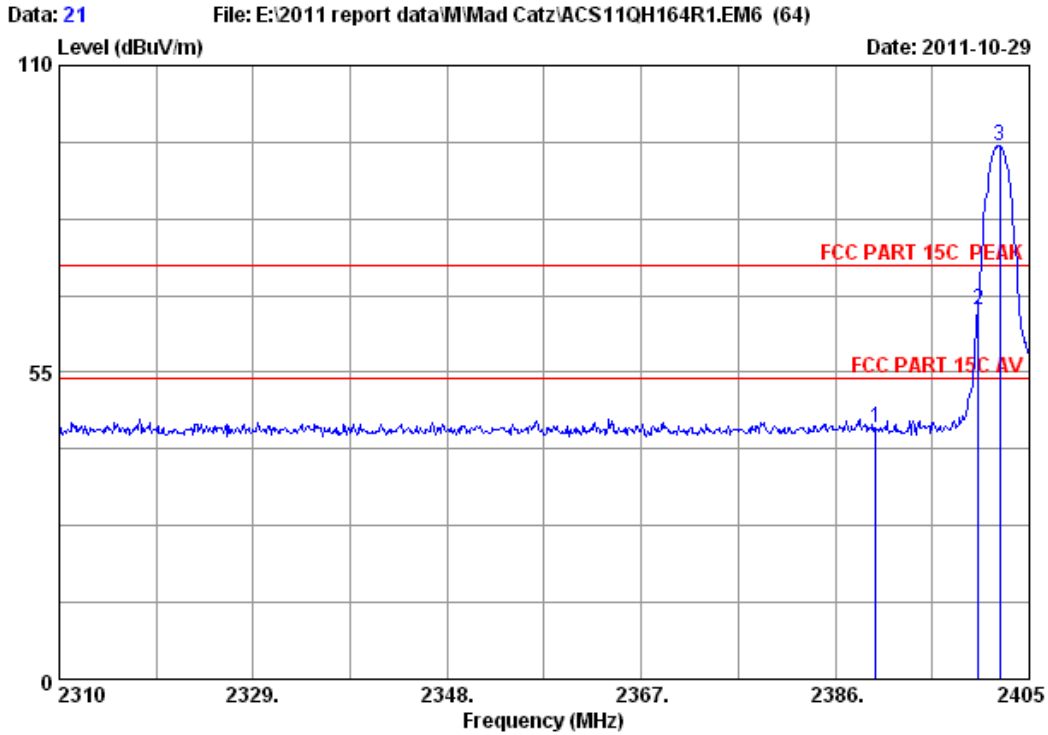


Site no.	: 3m Chamber	Data no. :	16
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: GFSK 2480MHz Tx		
M/N	: 90700		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2480.145	28.08	6.87	34.45	101.50	102.00	74.00	-28.00	Peak
2	2483.500	28.08	6.90	34.45	58.12	58.65	74.00	15.35	Peak
3	2486.550	28.08	6.90	34.45	49.71	50.24	74.00	23.76	Peak
4	2500.000	28.10	6.90	34.45	45.40	45.95	74.00	28.05	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

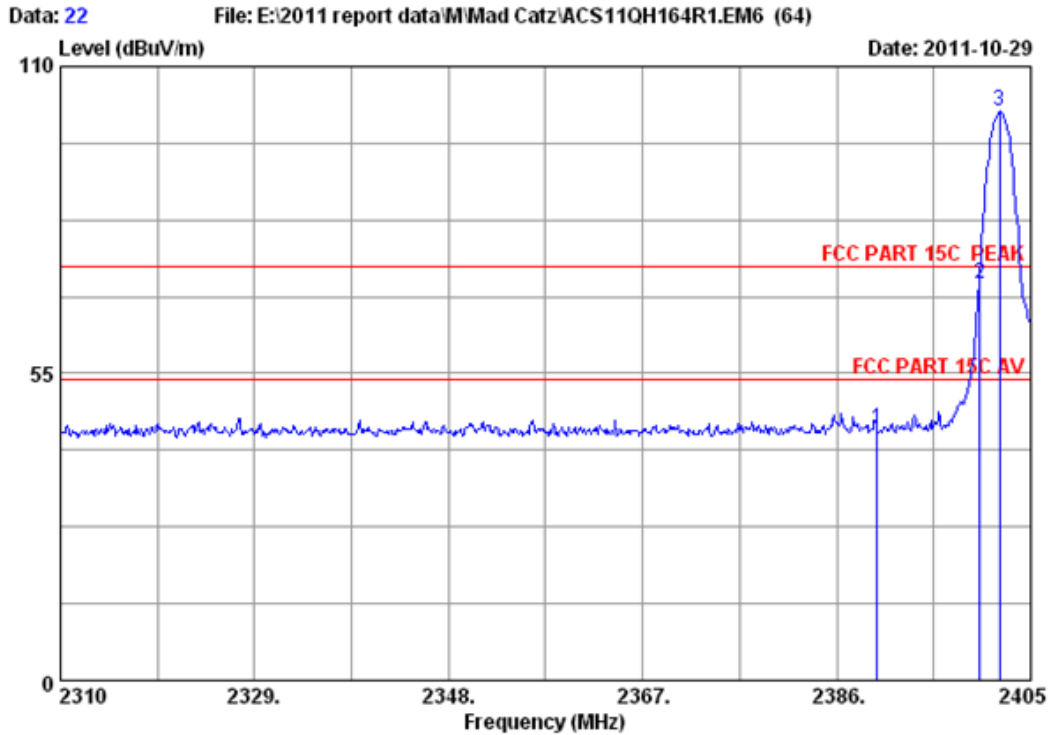


Site no.	: 3m Chamber	Data no.	: 21
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: VERTICAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2402MHz Tx		
M/N	: 90700		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2390.000	27.96	6.72	34.44	44.66	44.90	74.00	29.10	Peak
2	2400.000	27.96	6.75	34.44	66.01	66.28	74.00	7.72	Peak
3	2402.150	27.96	6.75	34.44	95.23	95.50	74.00	-21.50	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

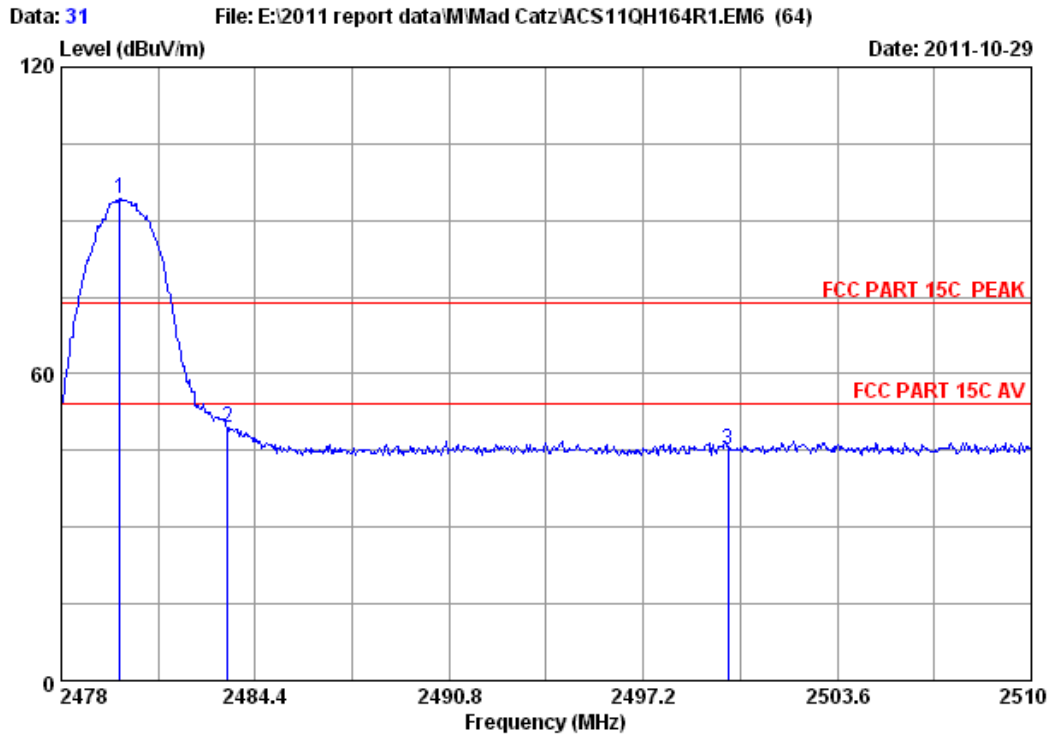


Site no.	: 3m Chamber	Data no.	: 22
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol.	: HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer	: Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2402MHz Tx		
M/N	: 90700		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2390.000	27.96	6.72	34.44	44.91	45.15	74.00	28.85	Peak
2	2400.000	27.96	6.75	34.44	70.72	70.99	74.00	3.01	Peak
3	2401.960	27.96	6.75	34.44	101.62	101.89	74.00	-27.89	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

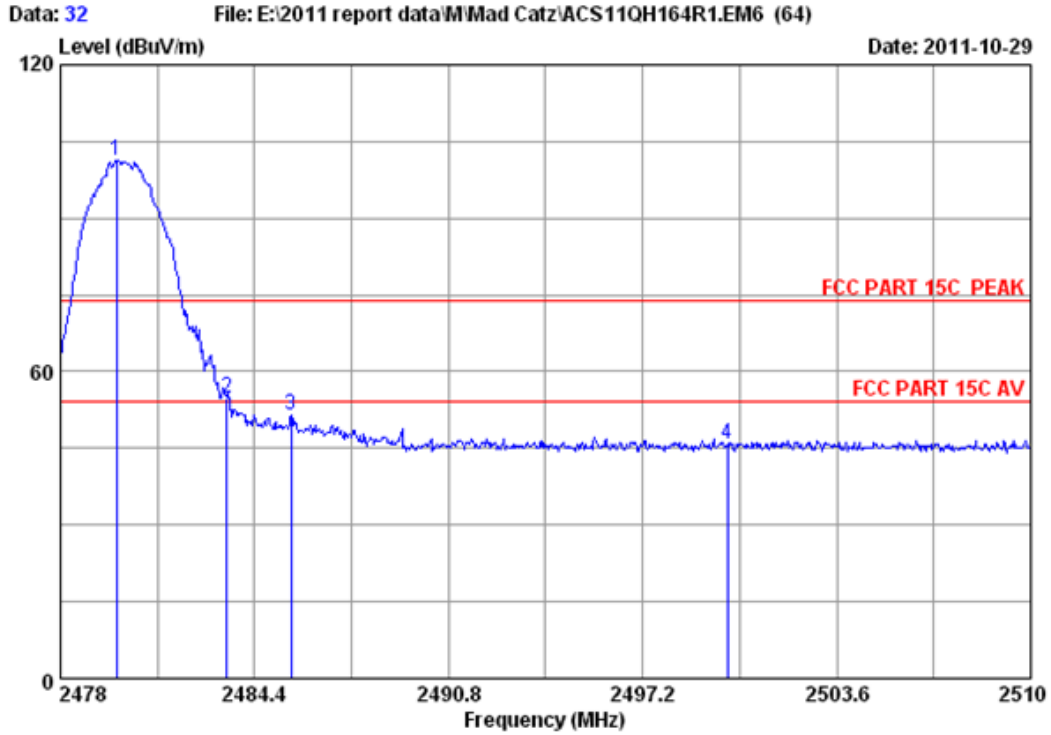


Site no. : 3m Chamber Data no. : 31
 Dis. / Ant. : 3m 2011 3115 4580 Ant. pol. : VERTICAL
 Limit : FCC PART 15C PEAK
 Env. / Ins. : 23°C/54% Engineer : Leo-Li
 EUT : Bluetooth Headset
 Power : DC 3.7V
 Test mode : 8DPSK 2480MHz Tx
 M/N : 90700

	Ant. Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2479.920	28.08	6.87	34.45	93.72	94.22	74.00	-20.22	Peak
2	2483.500	28.08	6.90	34.45	48.80	49.33	74.00	24.67	Peak
3	2500.000	28.10	6.90	34.45	44.67	45.22	74.00	28.78	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.



Site no.	: 3m Chamber	Data no. :	32
Dis. / Ant.	: 3m 2011 3115 4580	Ant. pol. :	HORIZONTAL
Limit	: FCC PART 15C PEAK		
Env. / Ins.	: 23°C/54%	Engineer :	Leo-Li
EUT	: Bluetooth Headset		
Power	: DC 3.7V		
Test mode	: 8DPSK 2480MHz Tx		
M/N	: 90700		

	Freq. (MHz)	Ant. Factor (dB/m)	Cable loss (dB)	Amp. Factor (dB)	Reading (dBuV)	Emission			Remark
						Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	
1	2479.856	28.08	6.87	34.45	100.81	101.31	74.00	-27.31	Peak
2	2483.500	28.08	6.90	34.45	54.38	54.91	74.00	19.09	Peak
3	2485.616	28.08	6.90	34.45	50.93	51.46	74.00	22.54	Peak
4	2500.000	28.10	6.90	34.45	45.13	45.68	74.00	28.32	Peak

Remarks:

1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

11. ANTENNA REQUIREMENT

RESULT : **PASS**

Test Date : Oct.12, 2011

Test standard : FCC Part 15.203

Limit : the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 4.0dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply the provision

12. RADIO FRREQUENCY EXPOSURE COMPLIANCE

RESULT : PASS

Test standard : FCC KDB Publication 447498

Since maximum peak output power of the transmitter is $<60/f(\text{GHz})\text{mW}$,
i.e. $2.483\text{mW} < 25(=60/2.4)\text{mW}$, hence the EUT is excluded from SAR evaluation according to
FCC KDB Publication 447498 D01: Mobile Portable RF Exposure

13. TEST SOFTWARE

Manufacturer : CSR

Version : CSR Blue Suite Blue Test 3

The test software is used to control EUT work in TX mode and to change the test channel.

14. DEVIATION TO TEST SPECIFICATIONS

[NONE]