

FCC CERTIFICATION TEST REPORT

FOR

FCC ID: X5B-PL6453

Report Reference No.: 13EAB08092 41

Date of issue.....: 2013-09-20

Testing Laboratory.....: ATT Product Service Co., Ltd.

Address: No. 3, ChangLianShan Industrial Park, ChangAn Town,
DongGuan City, GuangDong, China.

Applicant's name: Performance Designed Products,LLC

Address: 14144 Ventura Blvd,Suite 200,Sherman Oaks,CA 91423
U.S.A

Manufacturer: Performance Designed Products,LLC

Test specification: FCC PART 15.247

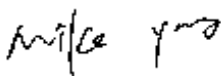
Test item description: PS3 AG2 BT Headset

Trade Mark: Rock Candy

Model/Type reference: PL-6453

Ratings: DC 3.7V

Responsible Engineer



(Mike Yang/ Engineer)

Approved by



(Tomy Wu /EMC Manager)

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TEST REPORT DECLARE

Applicant	:	Performance Designed Products,LLC
Address	:	14144 Ventura Blvd, Suite 200 Sherman Oaks, CA 91423 U.S.A
Equipment under Test	:	PS3 AG2 BT Headset
Model No	:	PL-6453
Trade Mark	:	Rock Candy
Manufacturer	:	Performance Designed Products,LLC
Address	:	14144 Ventura Blvd, Suite 200 Sherman Oaks, CA 91423 U.S.A

Test Standard Used: FCC Rules and Regulations Part 15 Subpart C: 2010

Test procedure used: ANSI C63.10:2009
ANSI C63.4:2009
FCC Public Notice DA 00-705

FCC ID: X5B-PL6453

We Declare:

The equipment described above is tested by ATT Product Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and ATT Product Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After test and evaluation, our opinion is that the equipment provided for test compliance with the requirement of the above FCC standards.

Report No:	13EAB08092 41		
Date of Test:	2013-9-10—2013-9-18	Date of Report:	2013-09-20

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of ATT Product Service Co., Ltd.

1.Summary of test results

Description of Test Item	Standard	Results
Maximum Peak Output Power	15.247(b)(1) ANSI C63.10 :2009	PASS
20dB Bandwidth	15. 247(a)(1) ANSI C63.10 :2009	PASS
Carrier Frequency Separation	15.247(a)(1) ANSI C63.10 :2009	PASS
Number Of Hopping Channel	15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Dwell Time	15.247(a)(1)(iii) ANSI C63.10 :2009	PASS
Radiated Emission	15.209 15.247(d) ANSI C63.10 :2009	PASS
Band Edge Compliance	15.247(d) ANSI C63.10 :2009	PASS
Power Line Conducted Emissions	15.207 ANSI C63.10 :2009	PASS
Antenna requirement	15.203	PASS
RF Exposure	15.247(i) 1.1310&2.1093	PASS

2.General test information

2.1 ACCREDITATIONS

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

USA **FCC** **Registration Number :923232**
Canada **INDUSTRY CANADA** **Registration Number :11033A**

2.2Description of EUT

EUT* Name	:	PS3 AG2 BT Headset
Model Number	:	PL-6453
Trade Mark	:	Rock Candy
EUT function description	:	Please reference user manual of this device
Power supply	:	DC 3.7V
Radio Specification	:	Bluetooth V2.1+EDR
Operation frequency	:	2402MHz -2480MHz
Modulation	:	GFSK, Pi/4-QPSK, 8-DPSK
Data rate	:	1Mbps, 2Mbps, 3Mbps
Antenna Type	:	built-in "F" shape PCB antenna, maximum PK gain:0.81dBi
Date of Receipt	:	2013-09-05
Sample Type	:	Series production

Note: EUT is the ab. of equipment under test.

This is a standard bluetooth device, using a standard bluetooth technology.

2.3Accessories of EUT

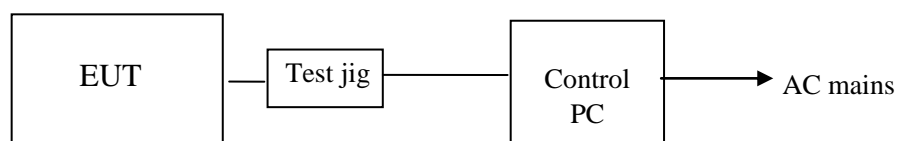
Description of Accessories	Manufacturer	Model number or Type	Other
/	/	/	/

2.4Assistant equipment used for test

Description of Assistant equipment	Manufacturer	Model number or Type	Other
PC	Lenovo	E R500	FCC DOC

REMARK : For conducted emission test , to be Power charger for the EUT .

2.5Block diagram of EUT configuration for test



EUT's Bluetooth module was connected to a special test jig provided by manufacturer which has a standard RSS-232 connector to connect to control PC, and the control PC will run a special test software

"RF Control Kit v1.0.exe" provided by manufacturer to control EUT work in test mode as blow table.

Tested mode, channel, information		
Mode	Channel	Frequency (MHz)
GFSK hopping on Tx Mode	CH0 to CH78	2402 to 2480
8-DPSK hopping on Tx Mode	CH0 to CH78	2402 to 2480
GFSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480
$\pi/4$ QPSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480
8-DPSK hopping off Tx Mode	CH0	2402
	CH39	2441
	CH78	2480

Note1: During the prescan between $\pi/4$ QPSK and 8-DPSK, the 8-DPSK is the worse case. So GFSK and 8-DPSK are the representative mode and test record of them are listed in report.

2.6 Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature range:	21-25°C
Humidity range:	40-75%
Pressure range:	86-106kPa

2.7 Measurement uncertainty

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.44dB
Uncertainty for Radiation Emission test (150KHz-30MHz)	3.21dB
Uncertainty for Radiation Emission test (30MHz-1GHz)	3.14 dB (Polarize: V)
	3.16 dB (Polarize: H)
Uncertainty for Radiation Emission test (1GHz to 25GHz)	2.08dB (Polarize: V)
	2.56dB (Polarize: H)
Uncertainty for radio frequency	1×10^{-9}
Uncertainty for conducted RF Power	0.65dB

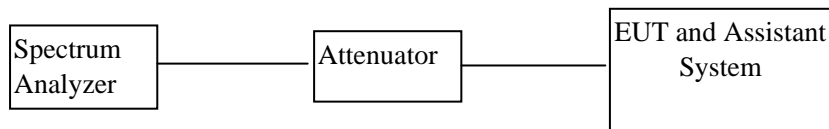
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.Maximum Peak Output Power

3.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101308	2012/12/28	1 Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1 Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1 Y
4	Spectrum analyzer	Agilent	E4407B	US4024070 8	2013/07/18	1 Y

3.2 Block diagram of test setup



3.3 Limits

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, the e.i.r.p shall not exceed 4W.

3.4 Test Procedure

- (1) Configure EUT and assistant system according clause 2.4 and 3.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable and though a 10dB attenuator.
- (3) Configure EUT work in test mode as stated in clause 2.4.

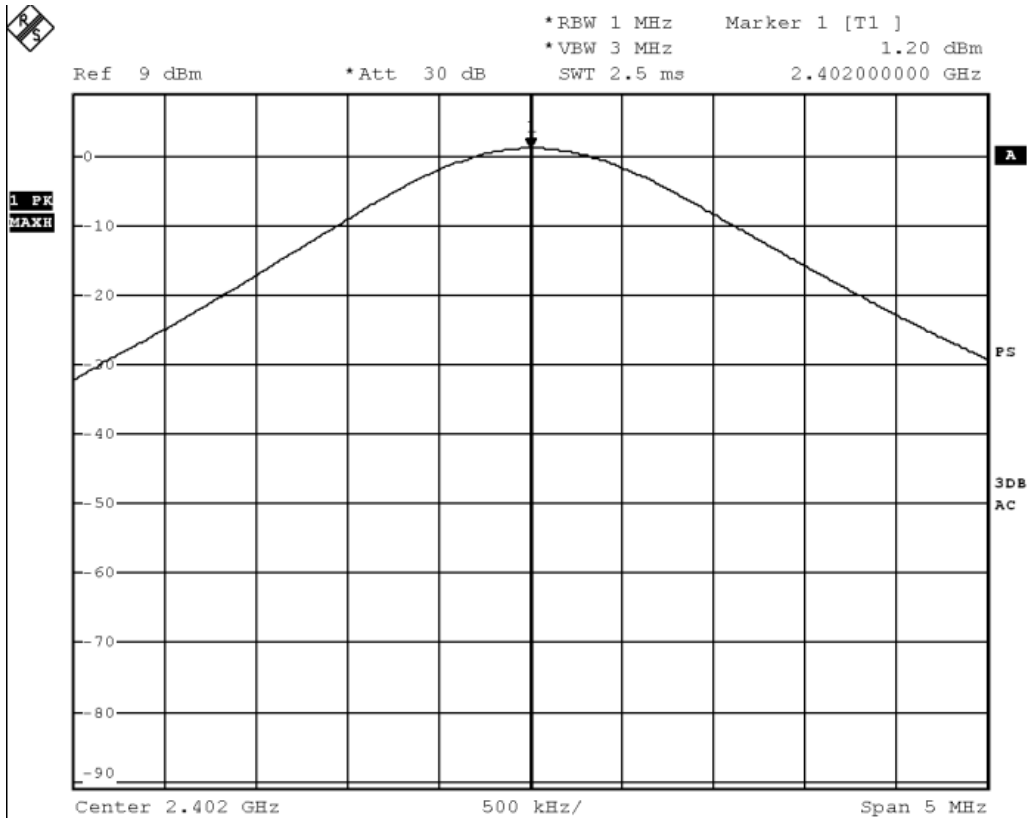
Measure the maximum output power of EUT by spectrum analyzer with PK detector and RBW=1MHz, VBW=3MHz , Span=5MHz, Sweep time=auto, Trace=max hold.

Note: The attenuator loss was inputted into spectrum analyzer as amplitude offset.

3.5 Test Result

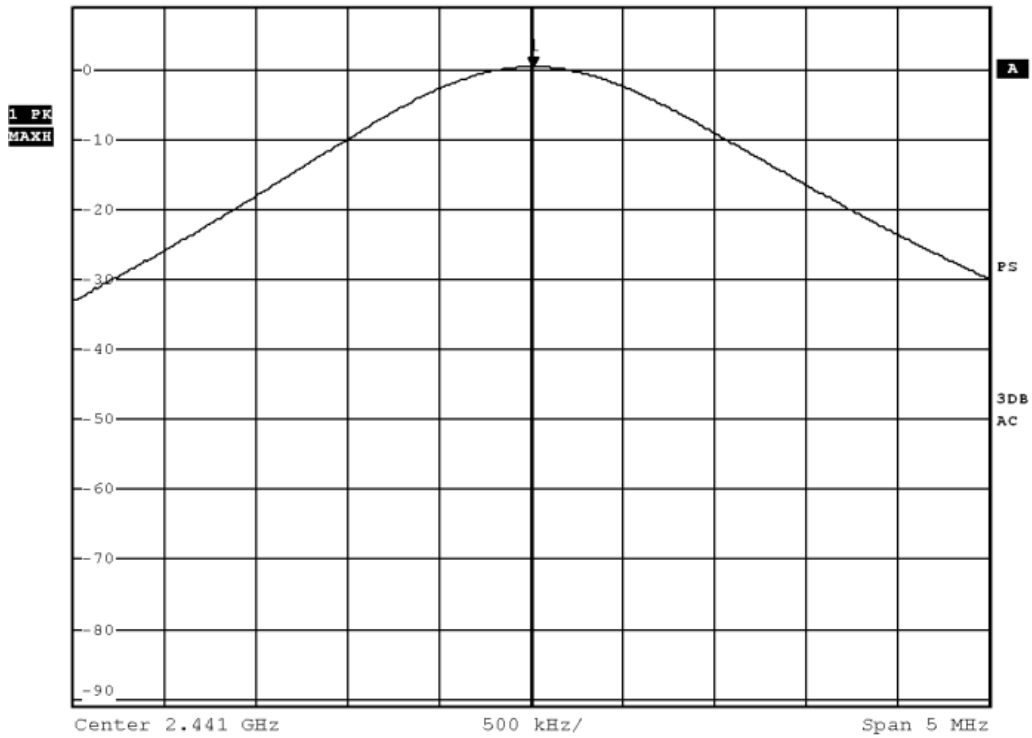
EUT: PS3 AG2 BT Headset M/N: PL-6453				
Mode	Freq (MHz)	Result (dBm)	Limit (dBm)	Conclusion
GFSK	2402	1.20	30	PASS
	2441	0.44	30	PASS
	2480	0.68	30	PASS
8DPSK	2402	1.53	30	PASS
	2441	1.33	30	PASS
	2480	0.57	30	PASS
Test Date : 2013-09-12			Test Engineer : Mike Yang	

GFSK

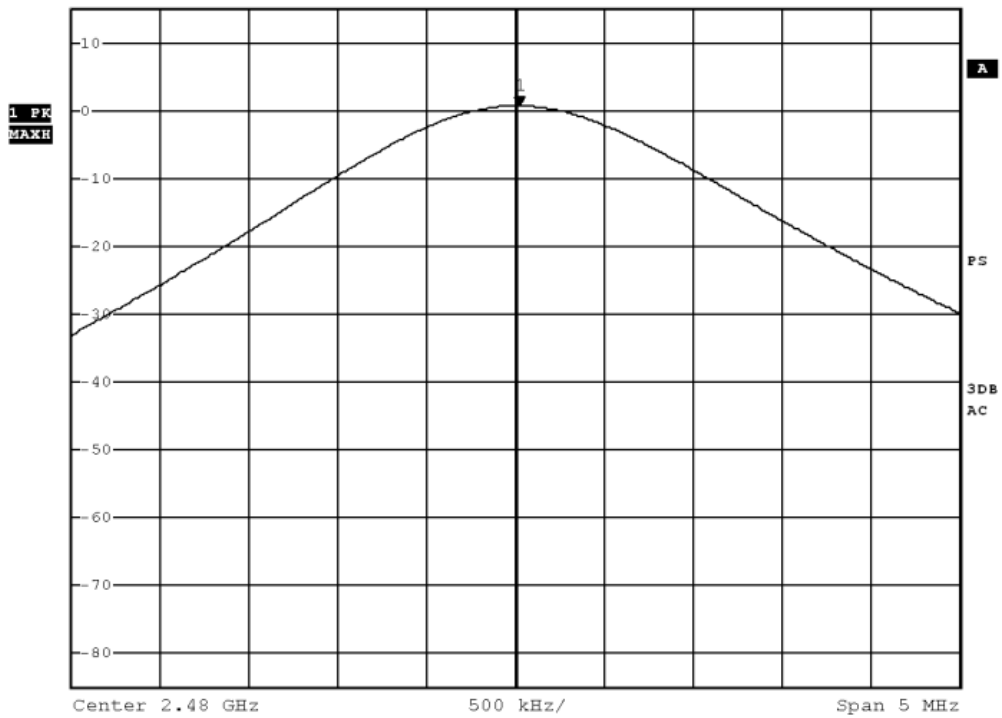




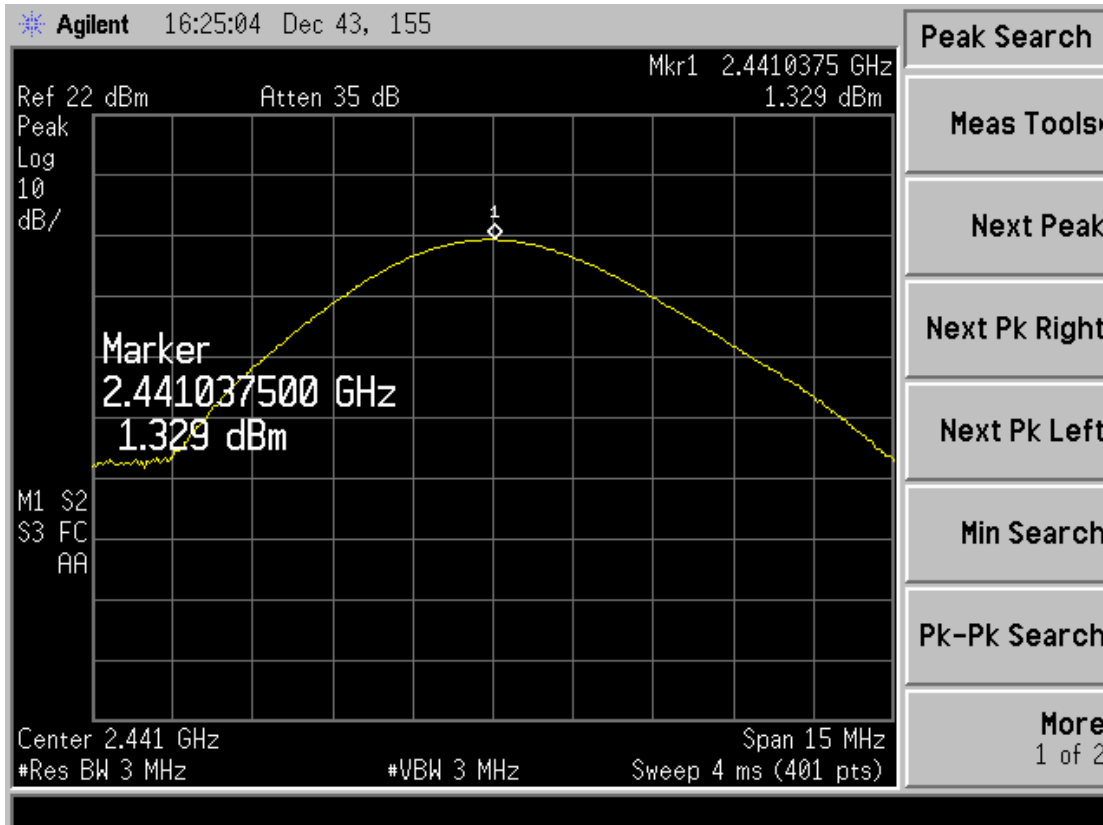
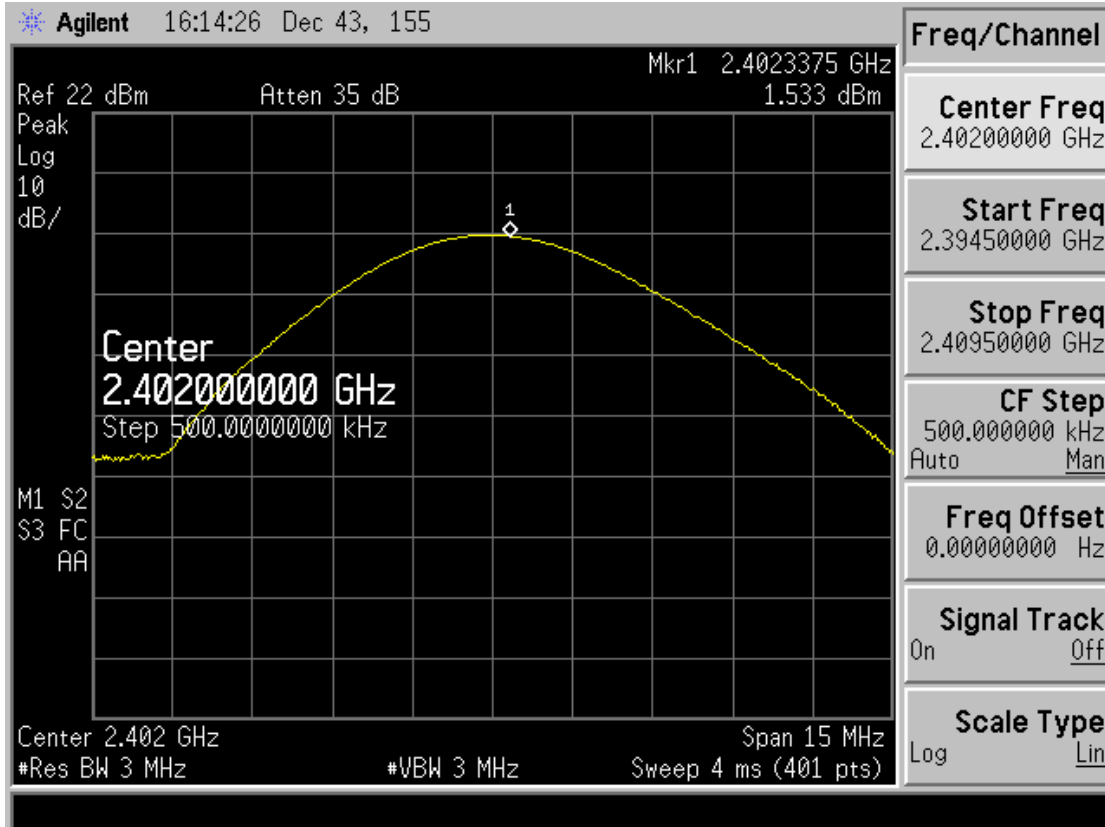
Ref 9 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] 0.44 dBm
*VBW 3 MHz 2.441010000 GHz
SWT 2.5 ms

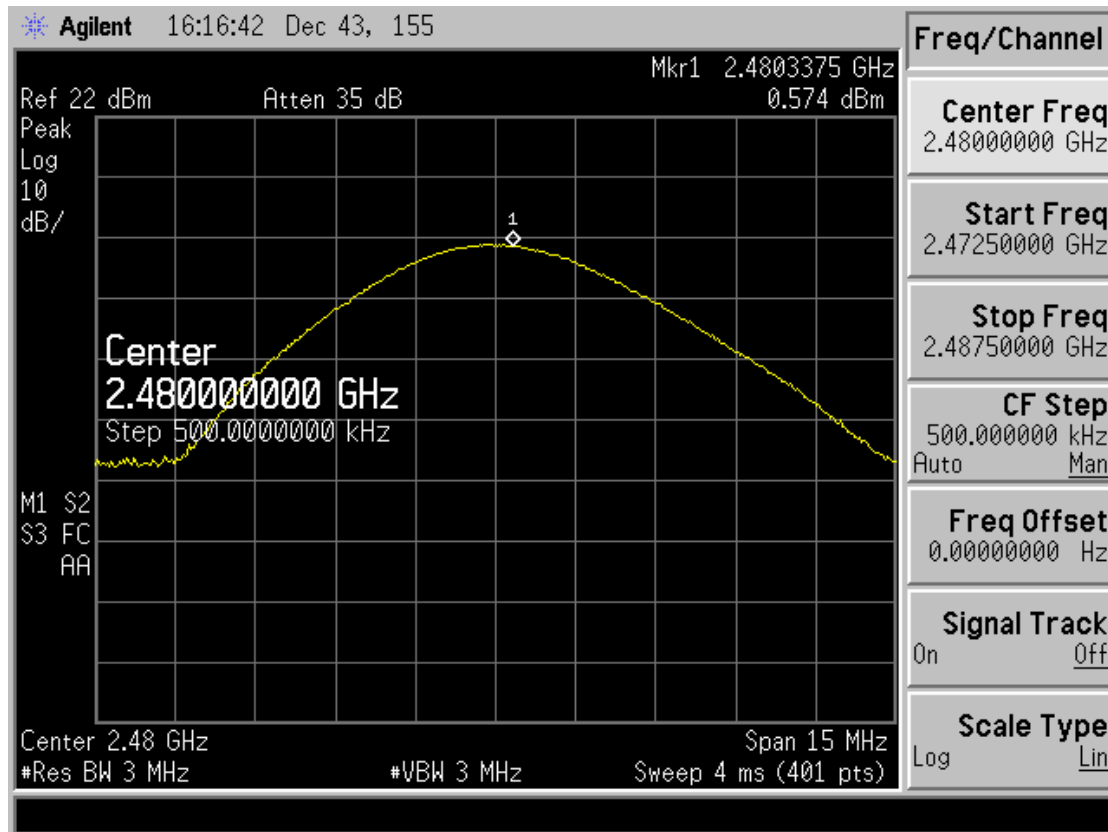


Ref 15 dBm *Att 30 dB *RBW 1 MHz Marker 1 [T1] 0.68 dBm
*VBW 1 MHz 2.480020000 GHz
SWT 2.5 ms



8DPSK



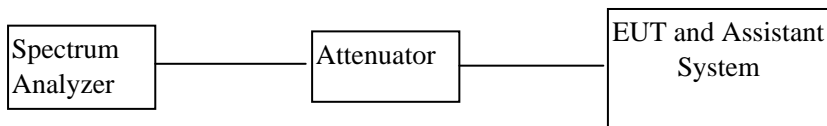


4.20dB Bandwidth

4.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101308	2012/12/28	1 Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1Y

4.2 Block diagram of test setup



4.3 Limits

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.

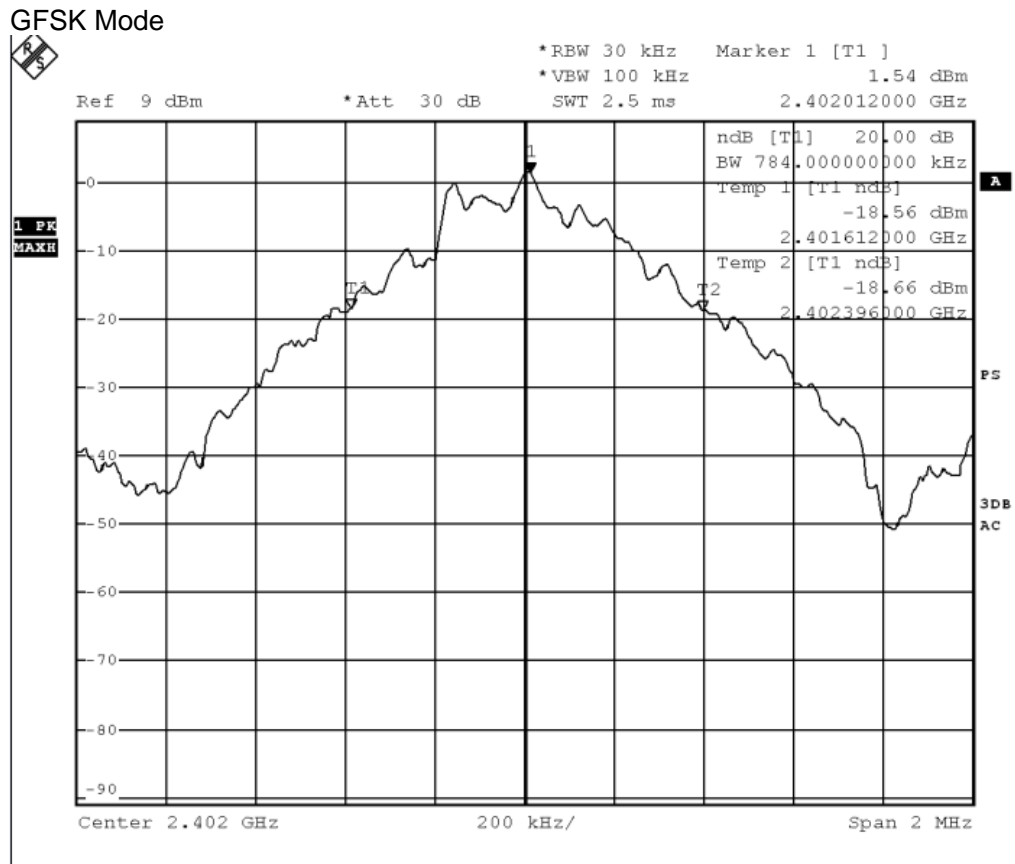
4.4 Test Procedure

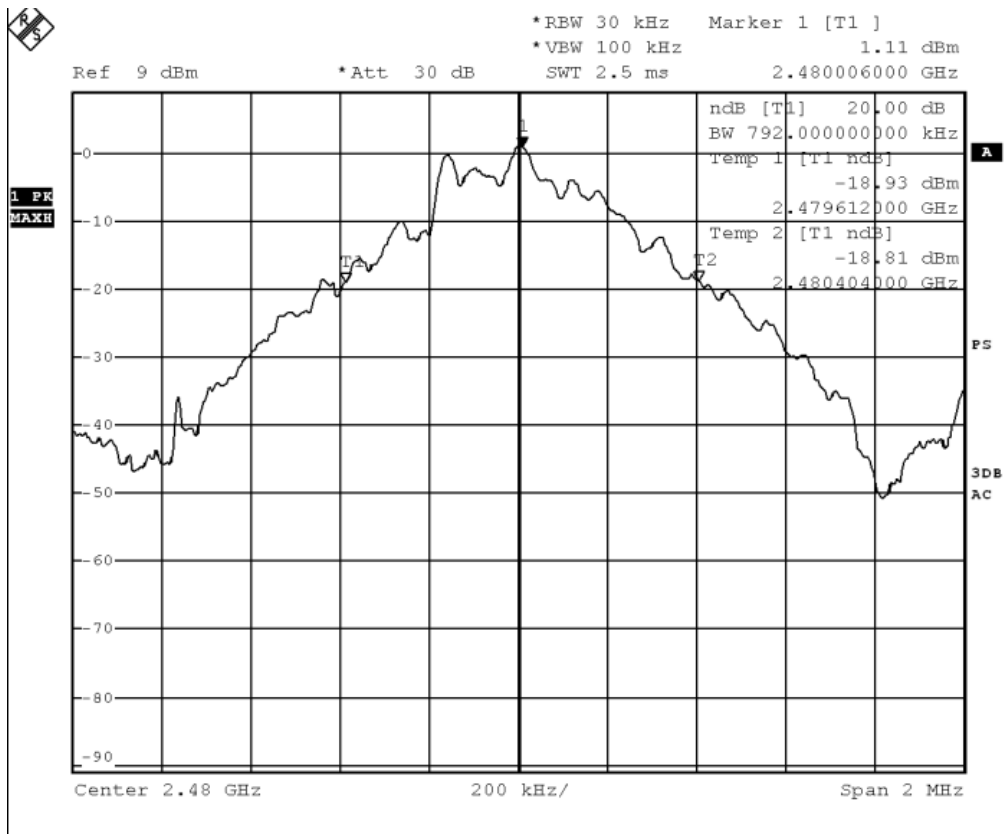
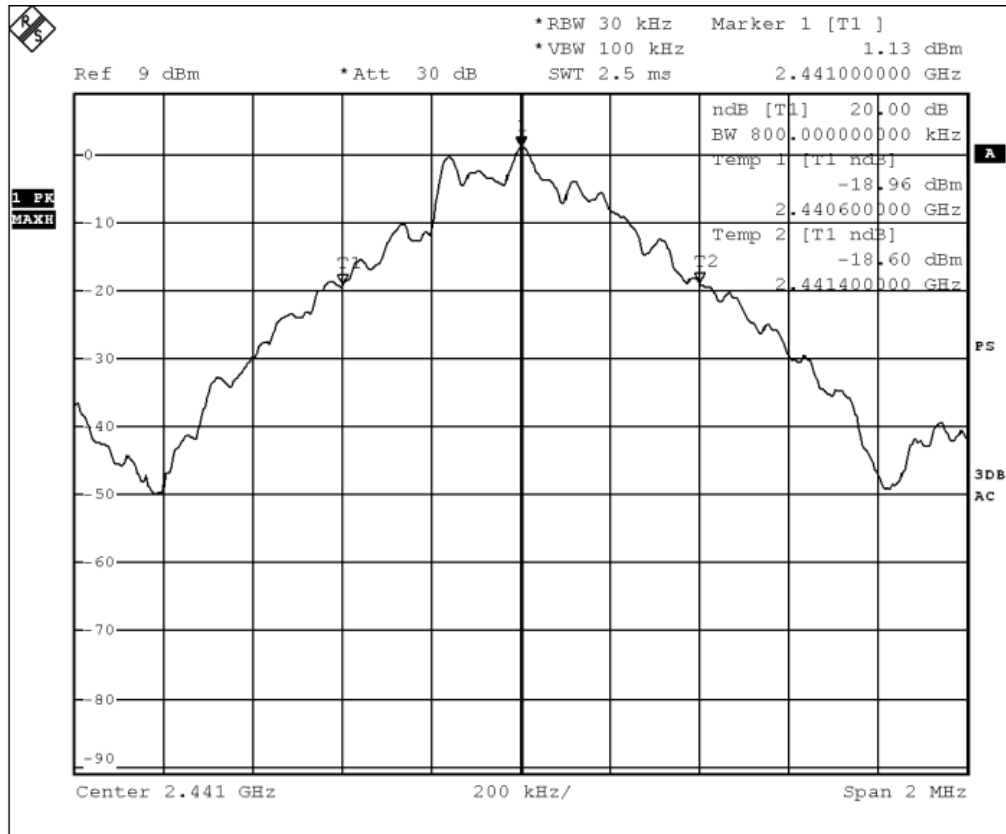
- (1) Configure EUT and assistant system according clause 2.4 and 4.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable and through a 10dB attenuator.
- (3) Configure EUT work in test mode as stated in clause 2.4.
- (4) The bandwidth of the fundamental frequency was measured by spectrum analyzer with RBW =30kHz and VBW =100kHz., Span=3MHz, Sweep time=auto
- (5) The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

4.5 Test Result

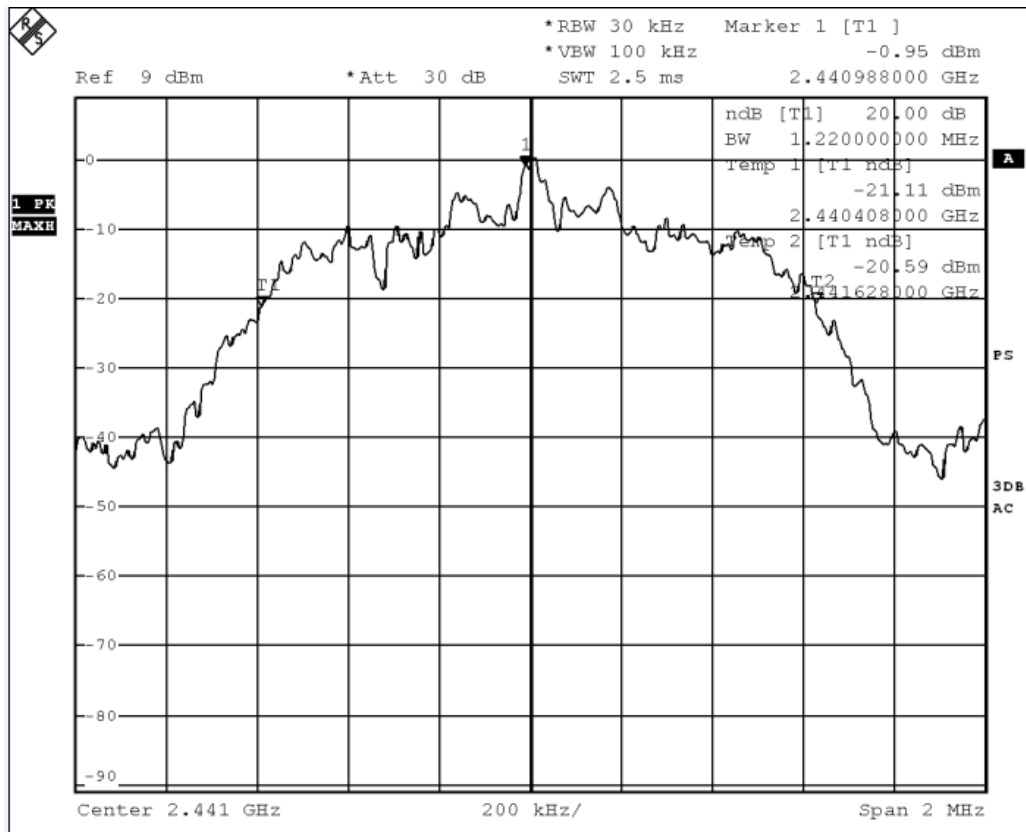
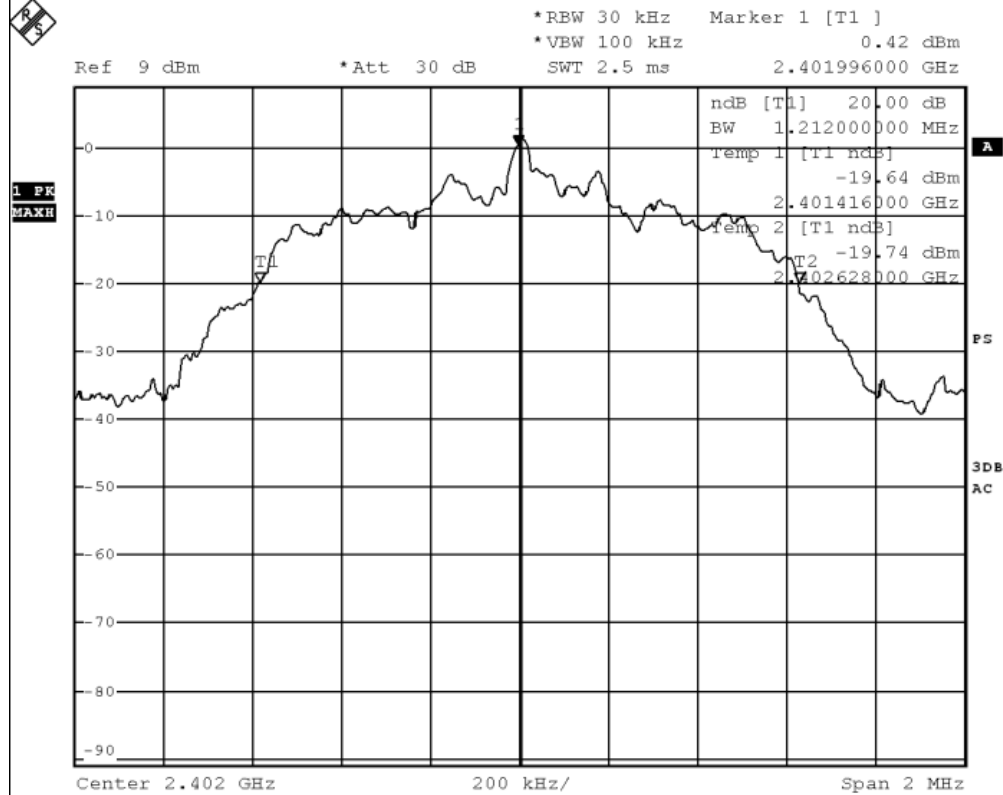
EUT: PS3 AG2 BT Headset M/N: PL-6453					
Mode	Freq (MHz)	Result (MHz)	Limit (MHz)	Margin (MHz)	Conclusion
GFSK	2402	0.784	/	/	PASS
	2441	0.800	/	/	PASS
	2480	0.792	/	/	PASS
8DPSK	2402	1.21	/	/	PASS
	2441	1.22	/	/	PASS
	2480	1.20	/	/	PASS
Test Date : 2013-09-12			Test Engineer : Mike Yang		

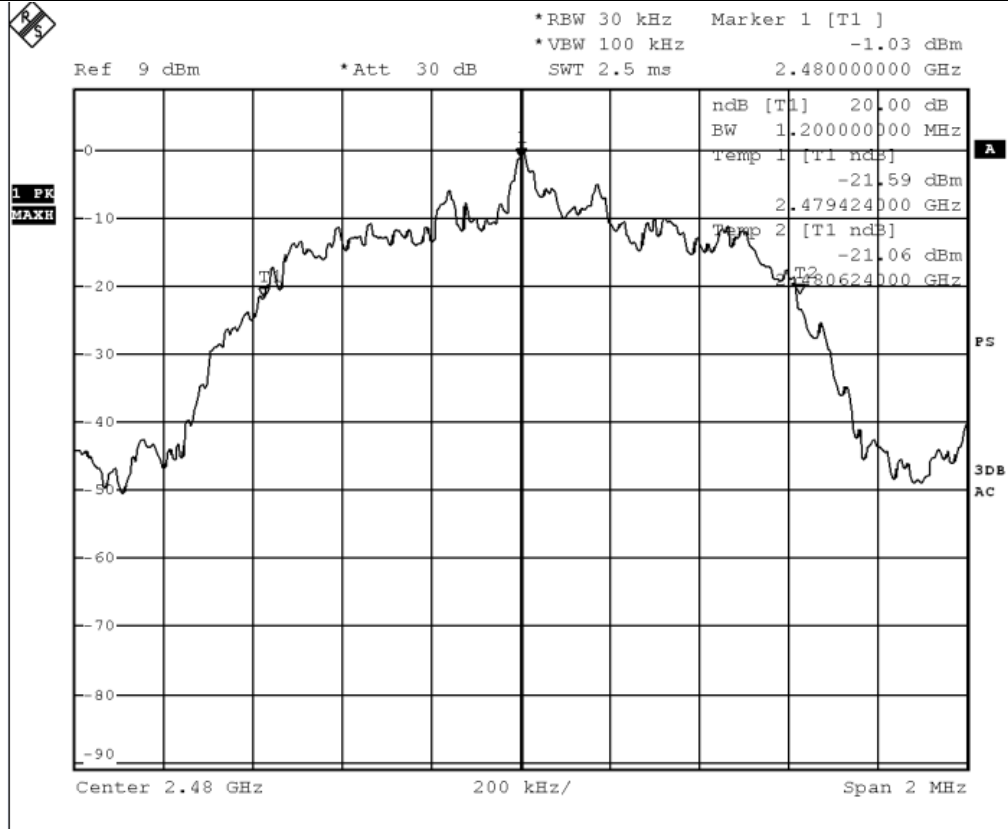
4.6 Original test data





8DPSK Mode



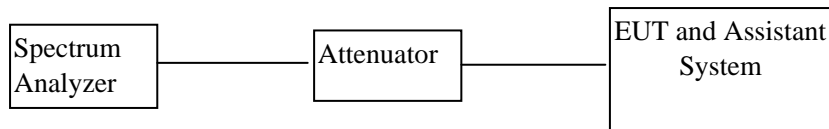


5. Carrier Frequency Separation

5.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101308	2012/12/28	1 Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1Y

5.2 Block diagram of test setup



5.3 Limits

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 Db 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.

5.4 Test Procedure

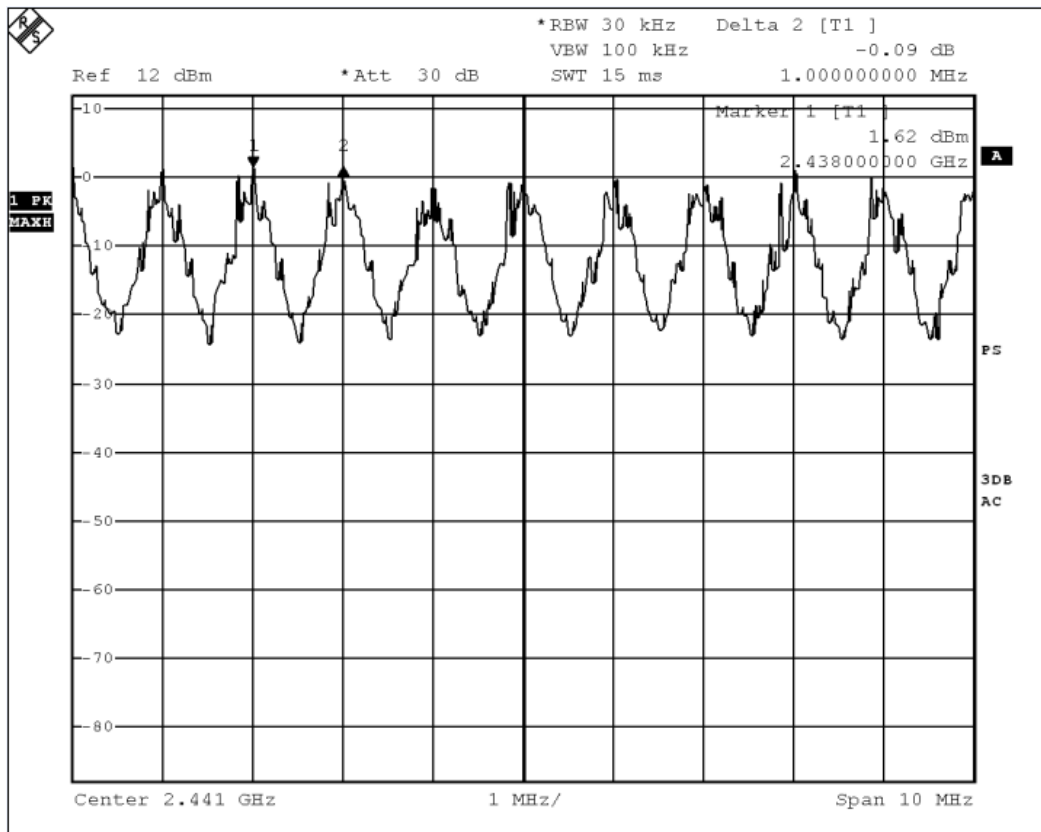
- (1) Configure EUT and assistant system according clause 2.4 and 5.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable and though a 10Db attenuator.
- (3) Configure EUT work in test mode as stated in clause 2.4.
- (4) The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

5.5 Test Result

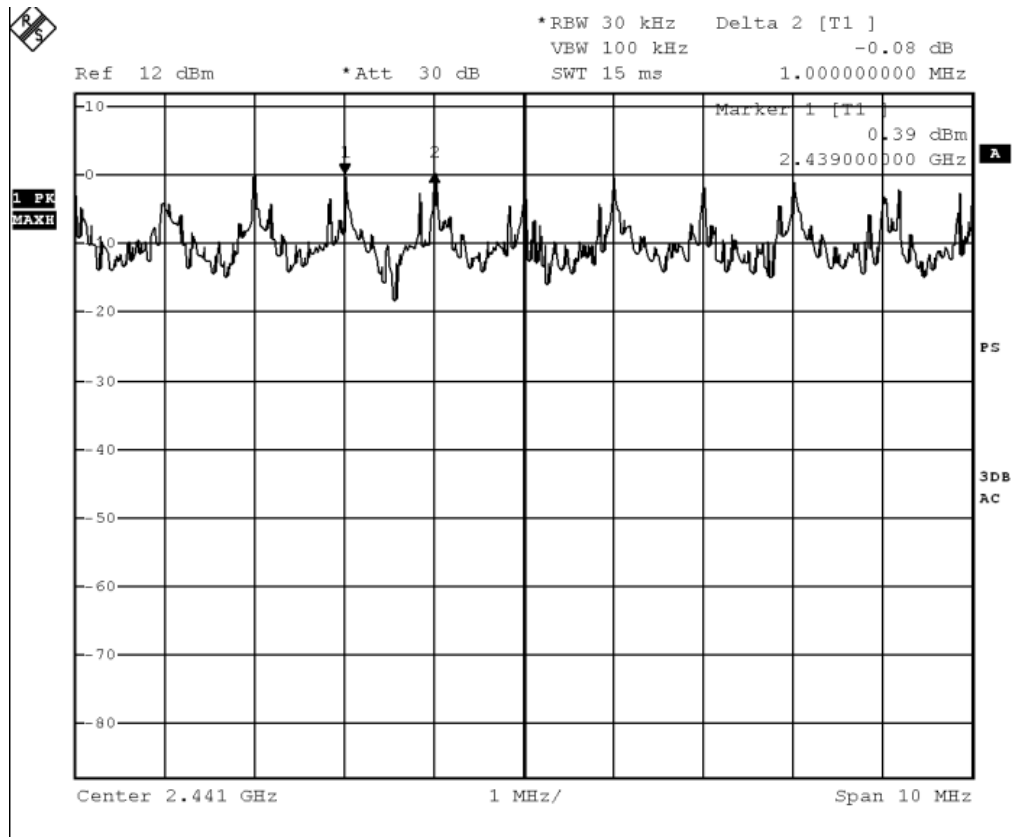
EUT: PS3 AG2 BT Headset M/N: PL-6453				
Mode	Channel separation (MHz)	20Db Bandwidth (MHz)	Limit (MHz) 2/3 of 20Db bandwidth	Conclusion
GFSK	1.0	0.80	0.54	PASS
8DPSK	1.0	1.22	0.82	PASS
Test Date :2013-9-12			Test Engineer : Mike Yang	

5.6 Original test data

GFSK



8DPSK

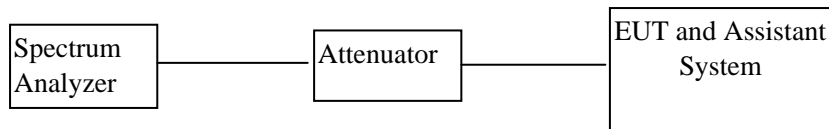


6. Number Of Hopping Channel

6.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESCI	101308	2012/12/28	1 Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1Y

6.2 Block diagram of test setup



6.3 Limits

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

6.4 Test Procedure

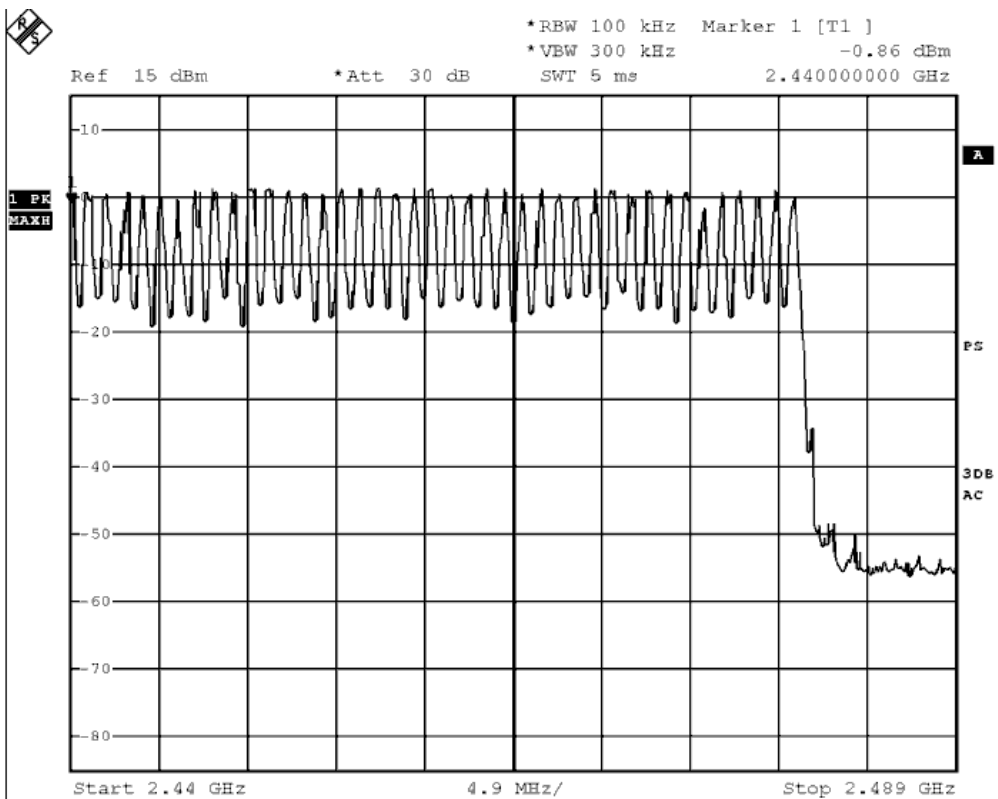
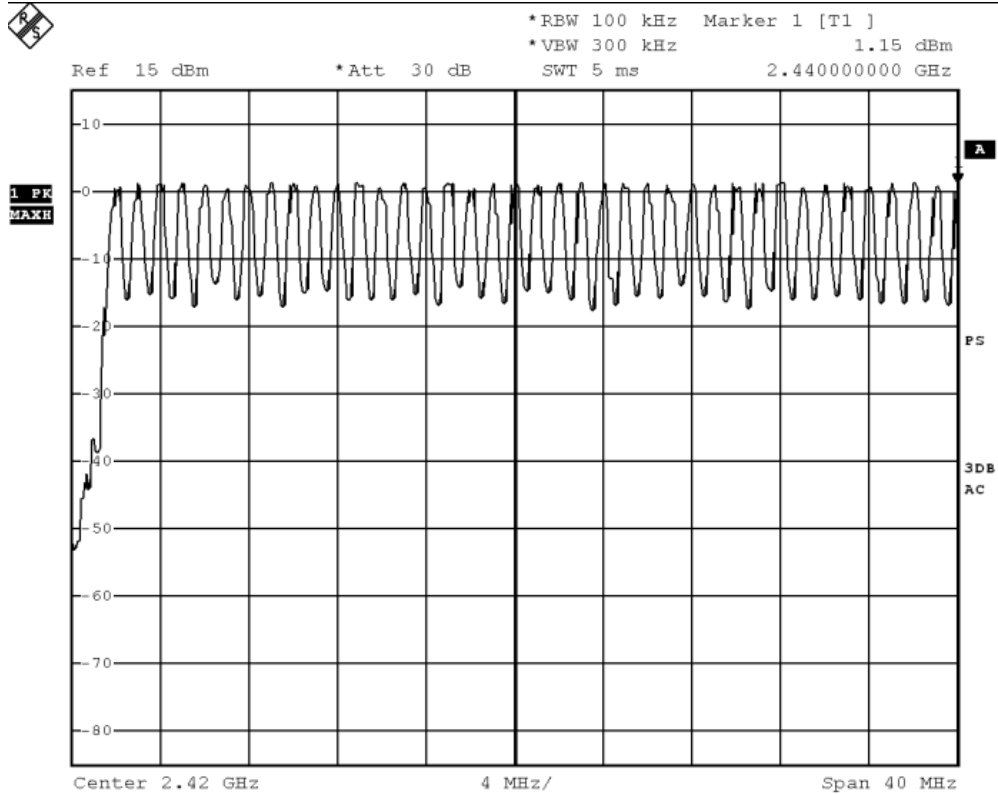
- (1) Configure EUT and assistant system according clause 2.4 and 6.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable and though a 10Db attenuator.
- (3) Configure EUT work in test mode as stated in clause 2.4.
- (4) The number of hopping channel was measured by spectrum analyzer with 300 kHz RBW and 1MHz VBW.

6.5 Test Result

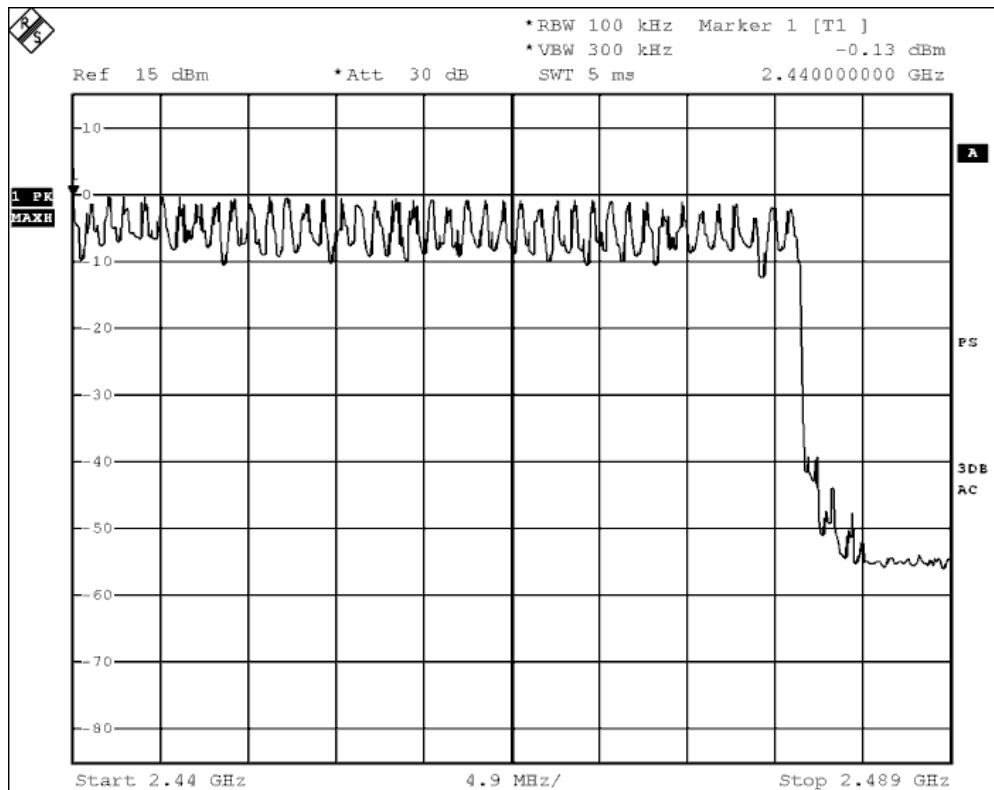
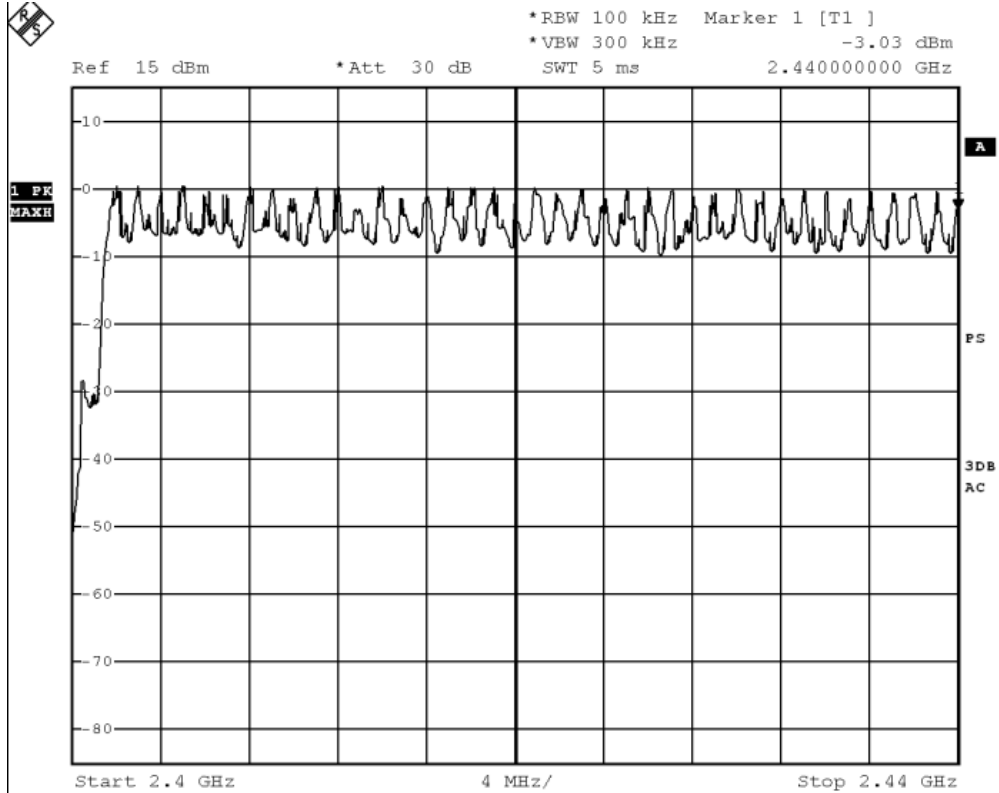
EUT: PS3 AG2 BT Headset M/N: PL-6453			
Mode	Number of hopping channel	Limit	Conclusion
GFSK	79	>15	PASS
8DPSK	79	>15	PASS
Test Date : 2013-9-12		Test Engineer : Mike Yang	

6.6 Original test data

GFSK:



8DPSK:

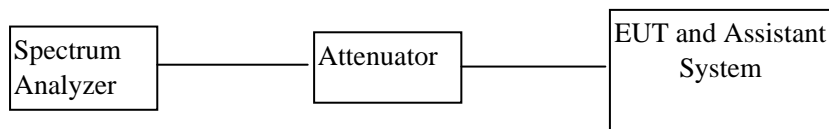


7.Dwell Time

7.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	Agilent	E4407B	US40240708	2013/07/18	1Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1Y

7.2 Block diagram of test setup



7.3 Limits

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.

7.4 Test Procedure

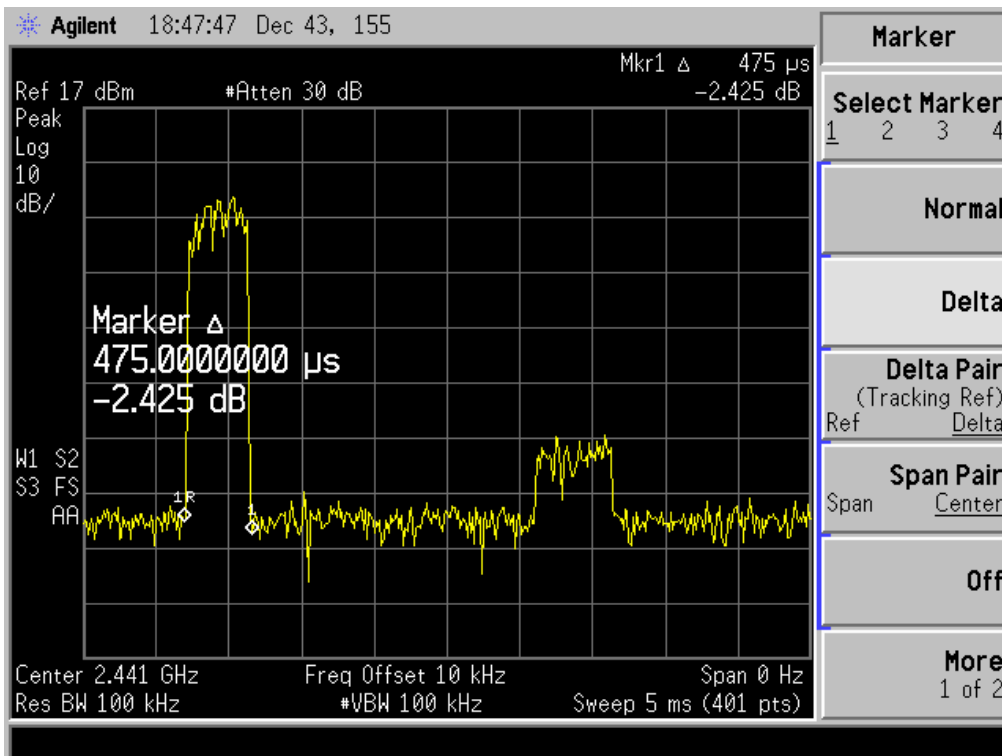
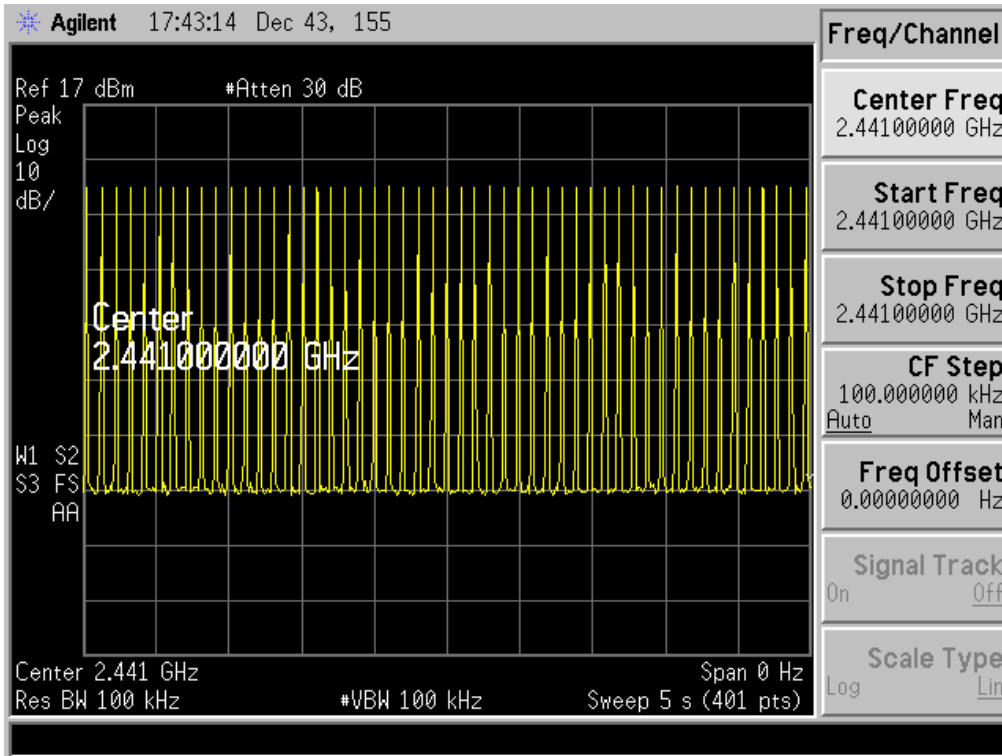
- (1) Configure EUT and assistant system according clause 2.4 and 7.2
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable and through a 10dB attenuator.
- (3) Configure EUT work in test mode as stated in clause 2.4.
- (4) Measure the hopping number and on time of each pulse with spectrum analyzer in zero span set, and calculate dwell time with formula $Dwell\ time = Hopping\ number / measure\ time * 0.4 * 79 * pulse's\ on\ time$

7.5 Test Result

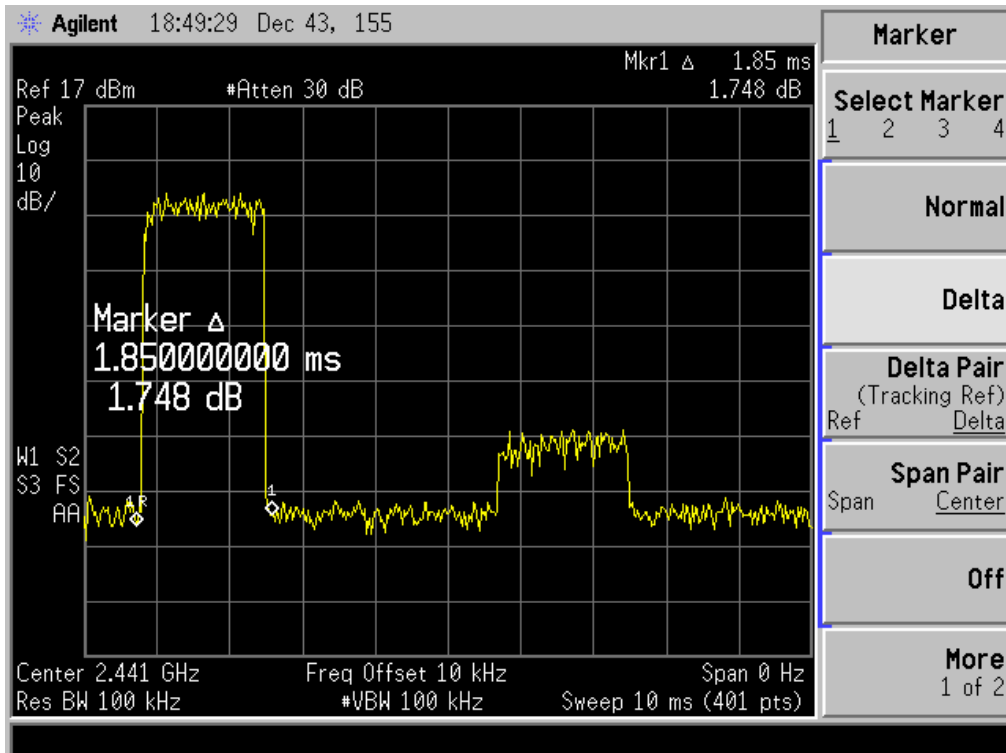
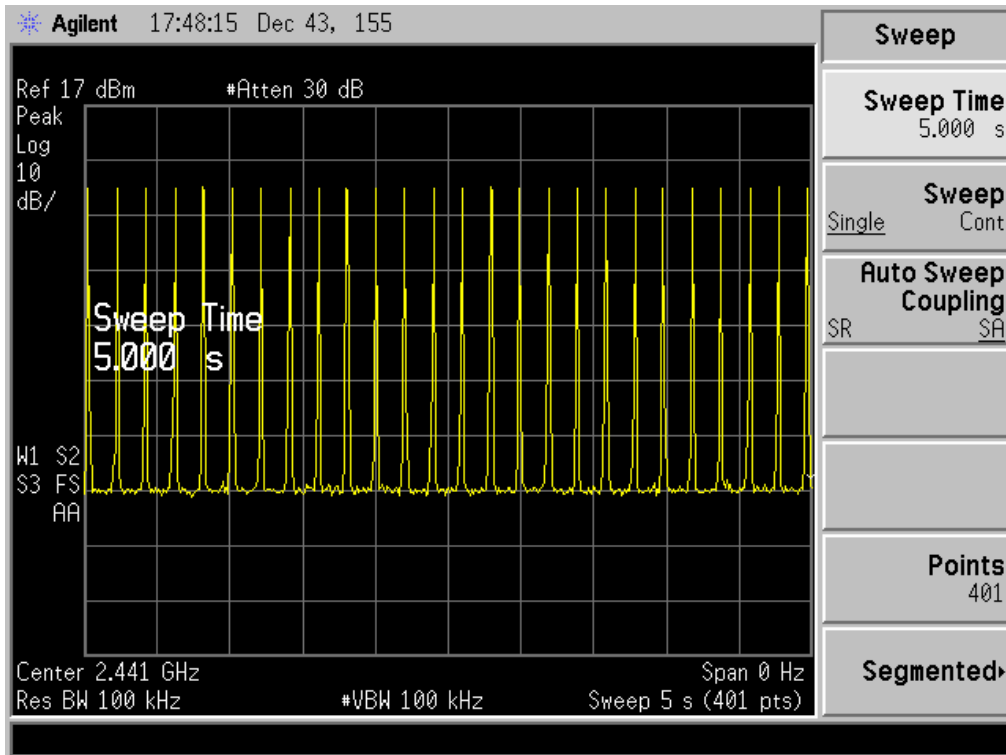
EUT: PS3 AG2 BT Headset M/N: PL-6453			
Mode	Number of hopping channel	Limit	Conclusion
DH1	150.10ms	<400ms	PASS
DH3	304.00ms	<400ms	PASS
DH5	325.00ms	<400ms	PASS
3-DH1	158.00ms	<400ms	PASS
3-DH3	287.56ms	<400ms	PASS
3-DH5	333.10ms	<400ms	PASS
Test Date : 2013-9-10		Test Engineer : Mike Yang	

7.6 Original test data

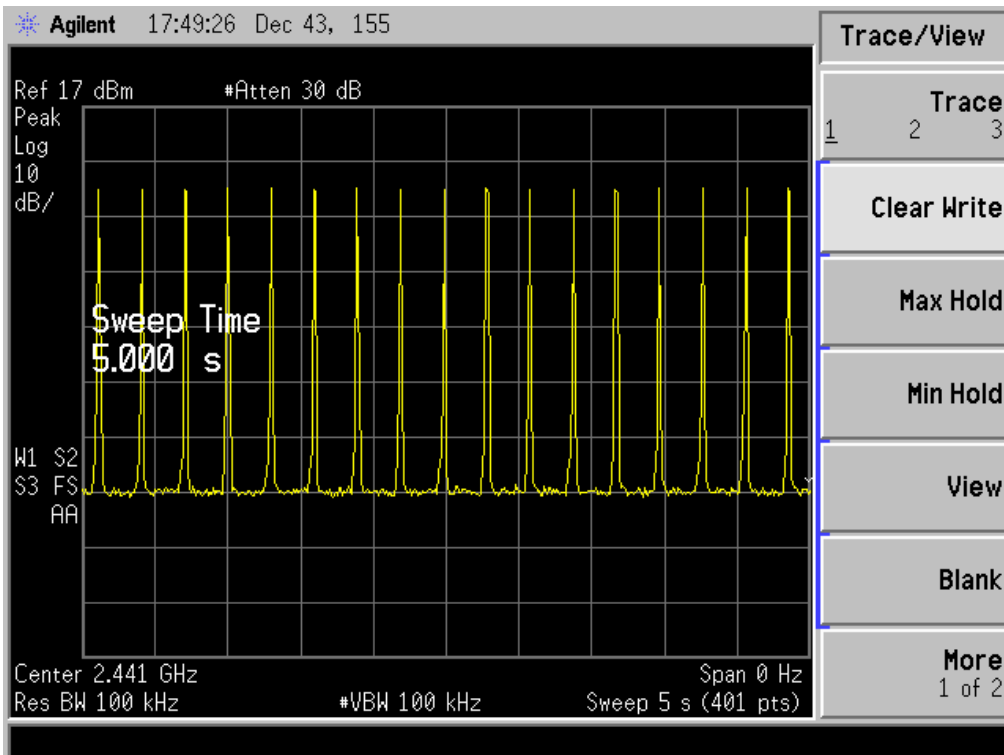
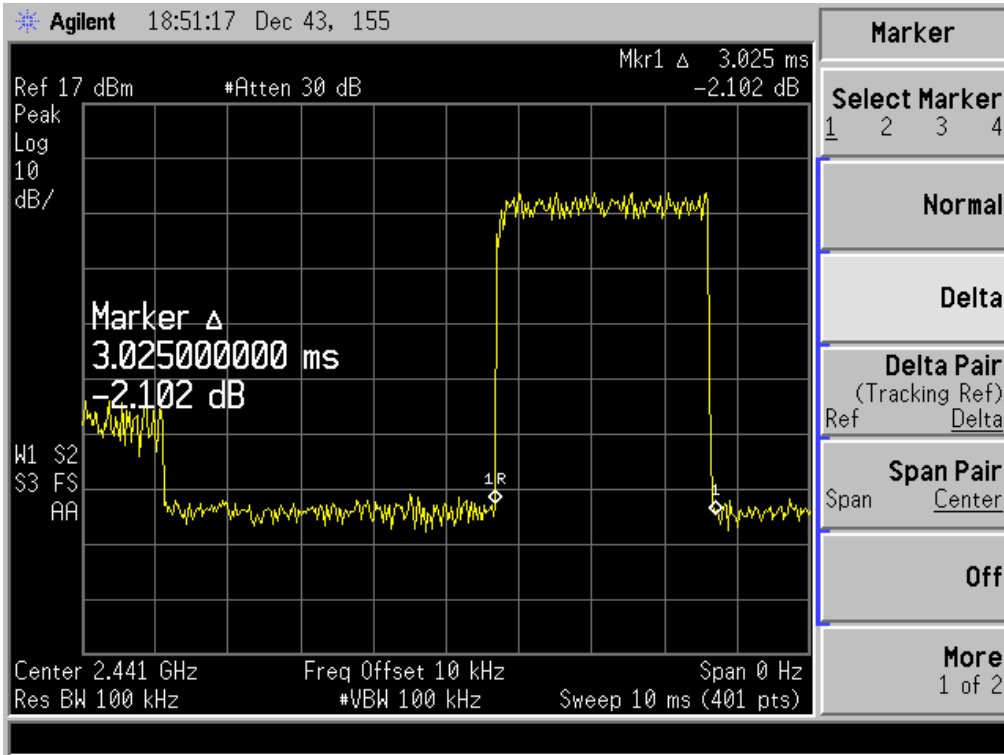
DH1: $50/5s * 0.4 * 79 * 0.475 = 150.1ms$



DH3: $26/5s \times 0.4 \times 79 \times 1.85 = 304.0ms$

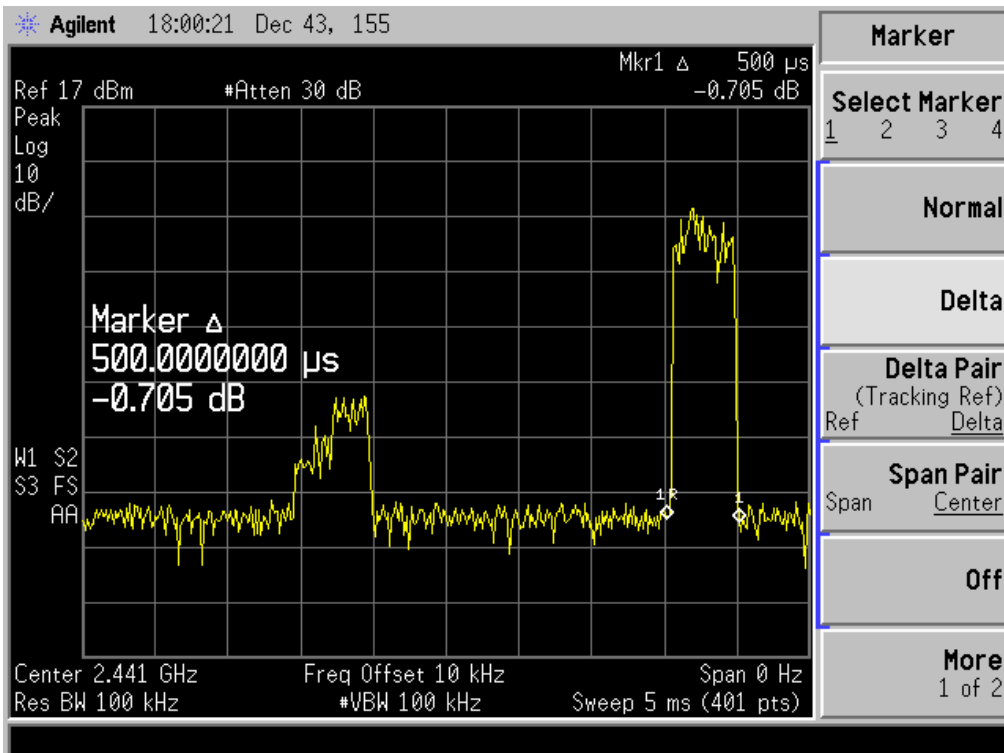
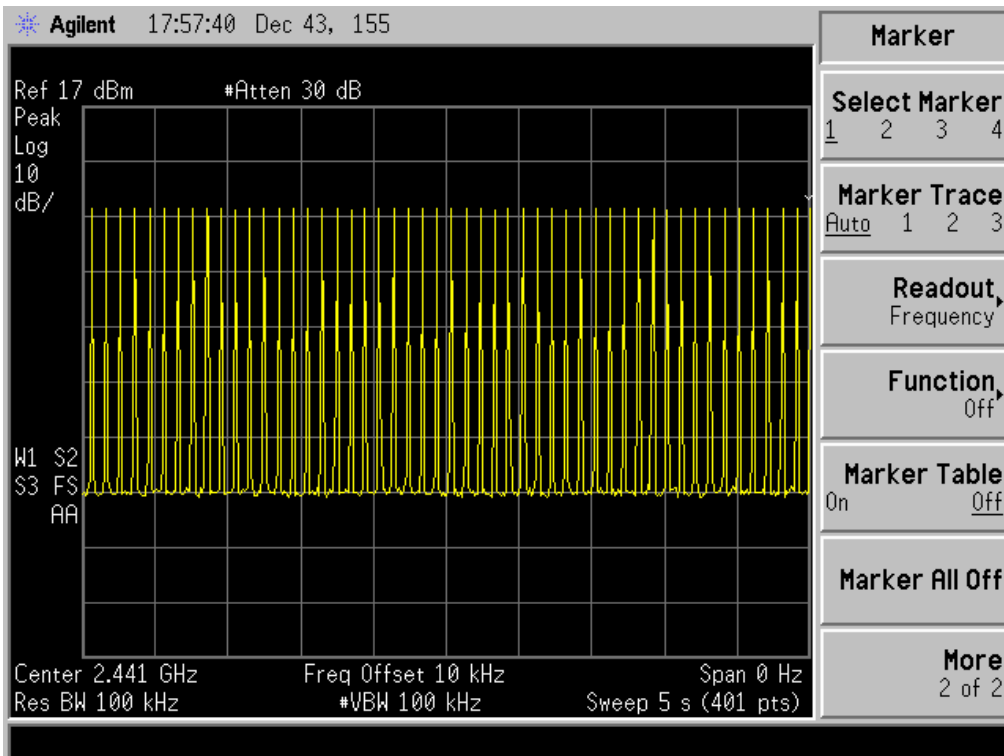


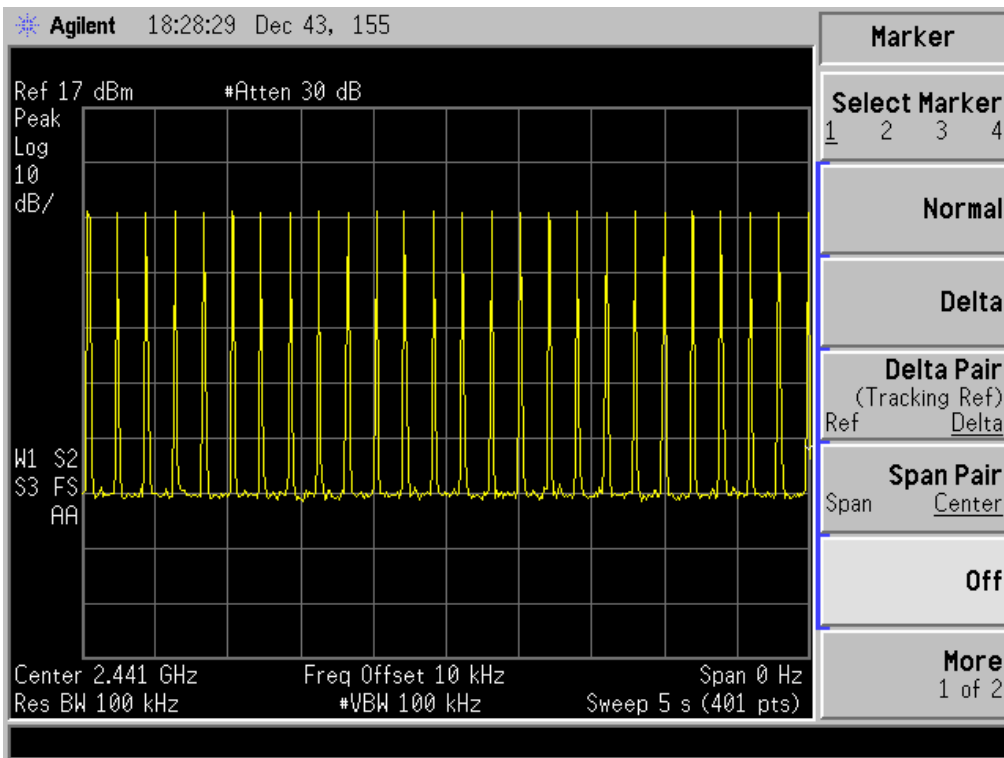
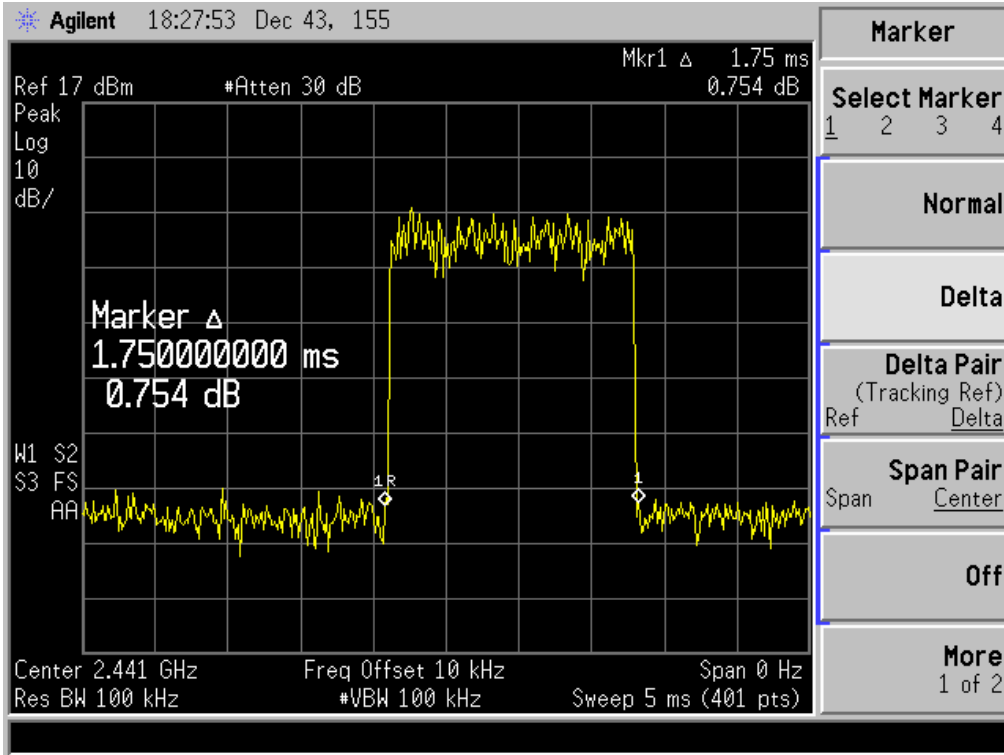
DH5: $17/5s * 0.4 * 79 * 3.025 = 325.0ms$

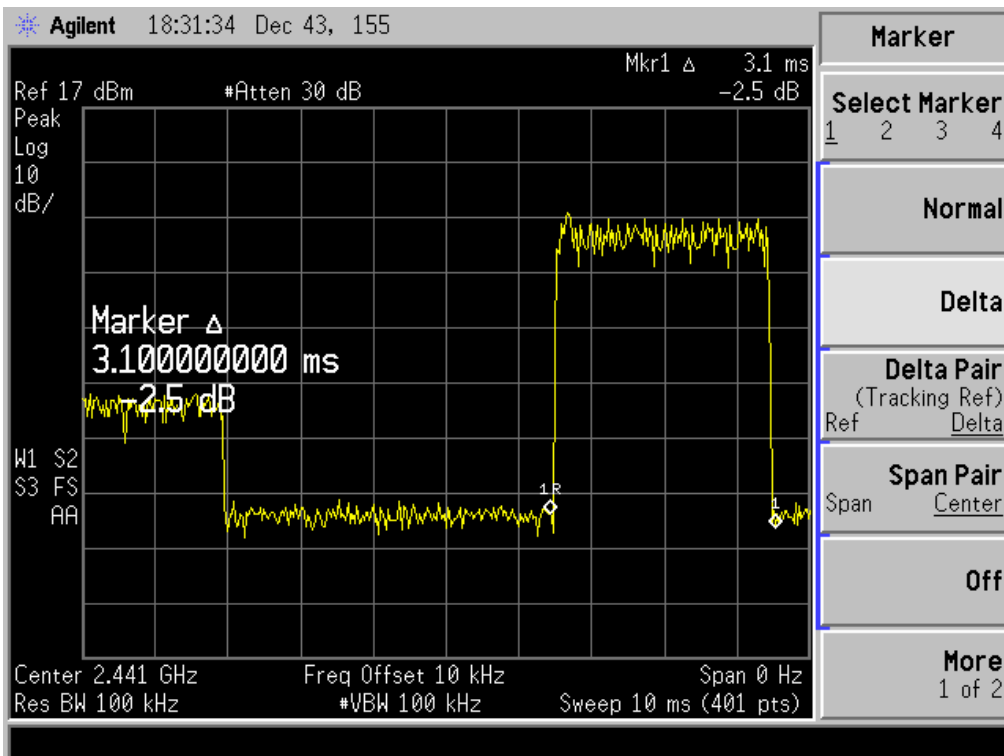
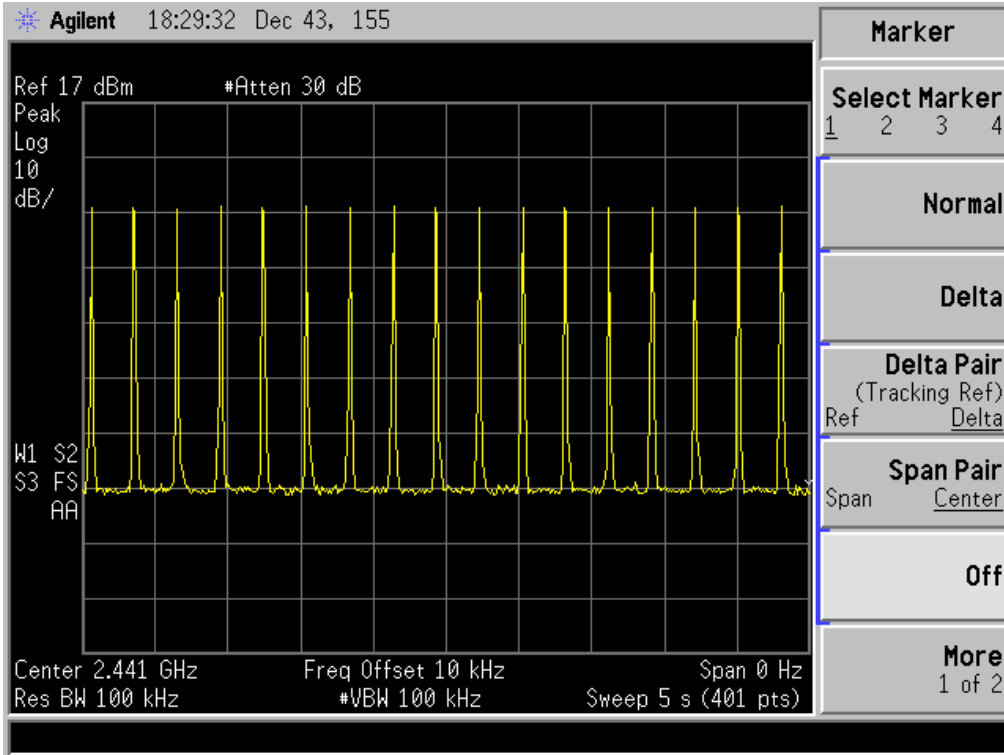


8DPSK:

3-DH1







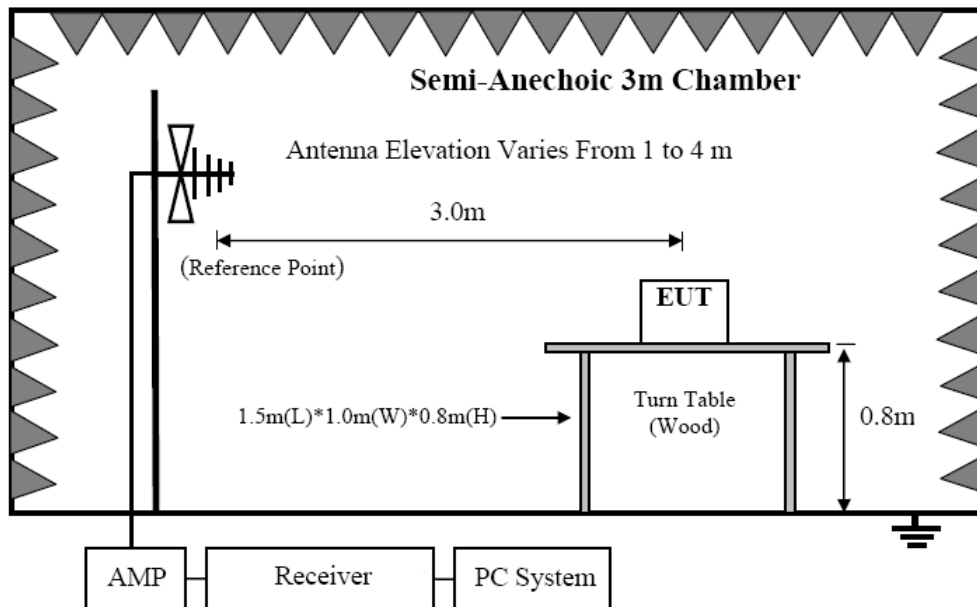
8. Radiated emission

8.1 Test equipment

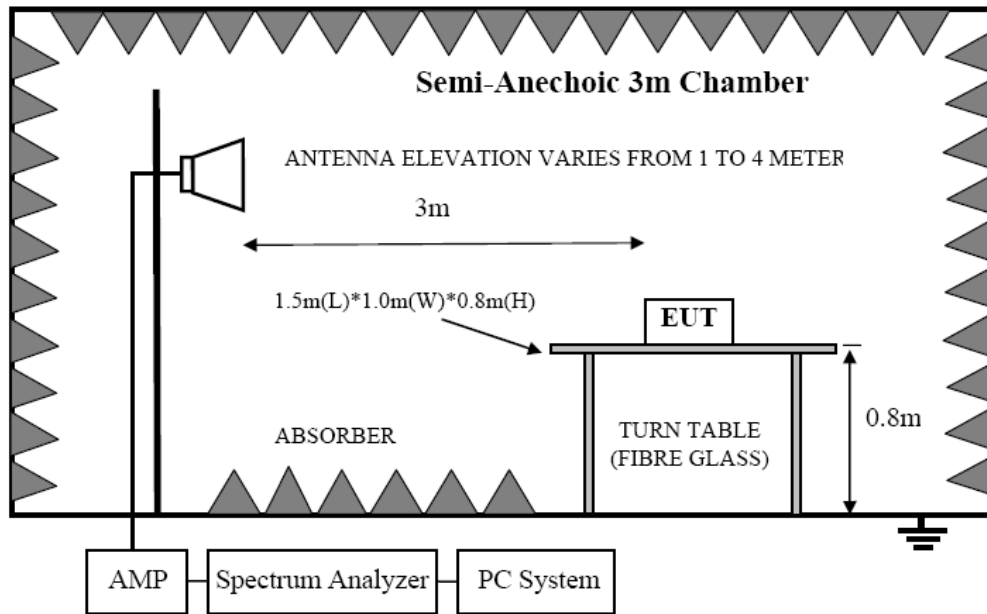
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESU8	100316	2012/11/26	1Y
2	Spectrum analyzer	Agilent	E4407B	US40240708	2013/07/18	1Y
3	Loop antenna	Chase	HLA6120	20129	2012/12/28	1Y
4	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2012/12/28	1Y
5	Double Ridged Horn Antenna	R&S	HF907	100276	2012/12/28	1Y
6	Pre-Amplifier	R&S	SCU-01	10049	2012/12/28	1Y
7	Pre-amplifier	A.H.	PAM0-0118	360	2012/12/28	1Y
8	RF Cable	R&S	R01	10403	2012/12/28	1Y
9	RF Cable	R&S	R02	10512	2012/12/28	1Y
10	Horn Antenna	EMCO	3116	9608-4877	2012/12/28	1Y

8.2 Block diagram of test setup

In 3m Anechoic Chamber Test Setup Diagram for below 1GHz



In 3m Anechoic Chamber Test Setup Diagram for frequency above 1GHz



Note: For harmonic emissions test a appropriate high pass filter was inserted in the input port of AMP.

8.3 Limit

8.3.1 FCC 15.205 Restricted frequency band

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)

8.3.2 FCC 15.209 Limit

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
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 1000	3	74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

8.3.3 Limit for this EUT

All the emissions appearing within 15.205 restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

8.4 Test Procedure

- (1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber.
- (2) Setup EUT and assistant system according clause 2.4 and 8.2
- (3) Test antenna was located 3m from the EUT on an adjustable mast. Below pre-scan procedure was first performed in order to find prominent radiated emissions.
 - (a) Change work frequency or channel of device if practicable.
 - (b) Change modulation type of device if practicable.
 - (c) Change power supply range from 85% to 115% of the rated supply voltage
 - (d) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions, the worse case setup reference the test photos.
- (4) Spectrum frequency from 9MHz to 25GHz (tenth harmonic of fundamental frequency) was investigated, and no any obvious emission were detected from 9KHz to 30MHz and 18GHz to 25GHz, so below final test was performed with frequency range from 30MHz to 18GHz.
- (5) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.10 2009 on Radiated Emission test.
- (6) For emissions from 30MHz to 1GHz, Quasi-Peak values were measured with EMI Receiver and the bandwidth of Receiver is 120 KHz.
- (7) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz, VBW is set at 3MHz for Peak measure by peak detector ; RBW is set at 1MHz, VBW is set at 10Hz for Average measure by peak detector. according explorer test, when change Tx mode 's channel and modulation, there is no distinct

influence on emissions level, so for emissions above 1GHz, the final test was only performed with EUT working in the worse case mode GFSK.

- (8) For emissions below 1GHz, according explorer test, when change Tx mode 's channel and modulation, there is no distinct influence on emissions level, so for emissions below 1GHz, the final test was only performed with EUT working in GFSK, Tx 2440MHz mode(worse case).

8.5 Test result

PASS. (See below detailed test result)

All the emissions except fundamental emission from 9KHz to 25GHz were comply with 15.209 limit.

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.



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Radiated Emission Test Result (Below 1GHz)

Test Mode:GFSK

Test Site : 3m Chamber

Test Date : 2013-9-18

EUT : PS3 AG2 BT Headset

Power Supply : DC 3.7V

Condition : Temp:24.5°C,Humi:55%

Tested By : Mike Yang

Model Number : PL-6453

Test Mode : GFSK Tx mode CH39

Antenna/Distance : 3m/H

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	24.80	-6.93	17.87	40.00	-22.13	QP
2	445.1600	27.97	-2.28	25.69	46.00	-20.31	QP
3	525.6699	25.17	0.57	25.74	46.00	-20.26	QP
4	702.2100	25.31	3.32	28.63	46.00	-17.37	QP
5	858.3799	25.43	4.87	30.30	46.00	-15.70	QP
6	985.4500	26.53	6.50	33.03	54.00	-20.97	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit

Test Site : 3m Chamber

Test Date : 2013-9-18

EUT : RockCandy PS3 BT Headset

Power Supply : DC 3.7V

Condition : Temp:24.5°C,Humi:55%

Tested By : Mike Yang

Model Number : PL-6453

Test Mode : GFSK Tx mode CH39

Antenna/Distance : 3m/V

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	113.4200	30.39	-9.42	20.97	43.50	-22.53	QP
2	521.7899	26.60	-0.27	26.33	46.00	-19.67	QP
3	594.5399	23.28	0.87	24.15	46.00	-21.85	QP
4	795.3300	24.67	5.69	30.36	46.00	-15.64	QP
5	876.8099	24.26	7.21	31.47	46.00	-14.53	QP
6	934.0399	26.26	7.02	33.28	46.00	-12.72	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

2. If Peak Result comply with QP limit, QP Result is deemed to comply with QP limit

Radiated Emission Test Result (Above 1GHz)

Test Mode:GFSK

Test Site	: 3m Chamber	Tested By	: Mike Yang
Test Date	: 2013-09-16	Model Number	: PL-6453
EUT	: PS3 AG2 BT Headset	Test Mode	: GFSK Tx mode CH0
Power Supply	: DC 3.7V	Antenna/Distance	: 3m/V
Condition	: Temp:24.5°C,Humi:55%		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2402.000	92.70	0.18	92.88			
2	4797.500	50.14	6.83	56.97	74.00	-17.03	peak
3	4797.500	39.56	6.83	46.39	54.00	-7.61	AVG
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	46.50	0.17	46.67	74.00	-27.33	peak
2	2390.037	36.47	0.17	36.64	54.00	-17.36	AVG

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

Test Site	: 3m Chamber	Tested By	: Mike Yang
Test Date	: 2013-09-16	Model Number	: PL-6453
EUT	: PS3 AG2 BT Headset	Test Mode	: GFSK Tx mode CH0
Power Supply	: DC 3.7V	Antenna/Distance	: 3m/H
Condition	: Temp:24.5°C,Humi:55%		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2402.000	95.21	0.18	95.39			
2	4797.500	53.39	6.83	60.22	74.00	-13.78	peak
3	4797.500	44.09	6.83	50.92	54.00	-3.08	AVG
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2390.000	46.50	0.17	46.67	74.00	-27.33	peak
2	2390.275	35.69	0.17	35.86	54.00	-18.14	AVG

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5°C,Humi:55%
Tested By : Mike Yang
Model Number : PL-6453
Test Mode : GFSK Tx mode CH39
Antenna/Distance : 3m/H

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441.000	95.34	0.24	95.58			
2	4885.000	53.37	6.97	60.34	74.00	-13.66	peak
3	4885.000	44.07	6.97	51.04	54.00	-2.96	AVG

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5°C,Humi:55%
Tested By : Mike Yang
Model Number : PL-6453
Test Mode : GFSK Tx mode CH39
Antenna/Distance : 3m/V

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2441.000	92.49	0.24	92.73			
2	4885.000	48.15	6.97	55.12	74.00	-18.88	peak
3	4885.000	38.85	6.97	45.82	54.00	-8.18	AVG

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5°C,Humi:55%
Tested By : Mike Yang
Model Number : PL-6453
Test Mode : GFSK Tx mode CH78
Antenna/Distance : 3m/V

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.000	91.27	0.33	91.60			
2	4955.000	44.15	7.08	51.23	74.00	-22.77	peak
3	4955.000	34.85	7.08	41.93	54.00	-12.07	AVG
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.440	55.54	0.33	55.87	74.00	-18.13	peak
2	2483.440	45.30	0.33	45.63	54.00	-8.37	AVG
3	2500.640	46.06	0.35	46.41	74.00	-27.59	peak

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5°C,Humi:55%
Tested By : Mike Yang
Model Number : PL-6453
Test Mode : GFSK Tx mode CH78
Antenna/Distance : 3m/H

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2480.000	95.09	0.33	95.42			
2	4955.000	51.88	7.08	58.96	74.00	-15.04	peak
3	4955.000	42.58	7.08	49.66	54.00	-4.34	AVG
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.440	54.04	0.33	54.37	74.00	-19.63	peak
2	2483.440	44.06	0.33	44.39	54.00	-9.61	AVG
3	2500.480	45.27	0.35	45.62	74.00	-28.38	peak

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

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8DPSK CH L RESTRICTION BAND WORSE CASE IS AS BELOW :

H polarity:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	45.76	0.17	45.93	74.00	-28.07	peak
2	2390.000	35.34	0.17	35.51	54.00	-18.49	AVG
3	2400.000	50.85	0.18	51.03	74.00	-22.97	peak

V polarity:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2390.000	45.92	0.17	46.09	74.00	-27.91	peak
2	2390.037	36.01	0.17	36.18	54.00	-17.82	AVG

8DPSK CH H RESTRICTION BAND WORSE CASE IS AS BELOW :

H polarity:

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.440	55.04	0.33	55.37	74.00	-18.63	peak
2	2483.440	44.53	0.33	44.86	54.00	-9.14	AVG
3	2500.480	45.27	0.35	45.62	74.00	-28.38	peak

V polarity:

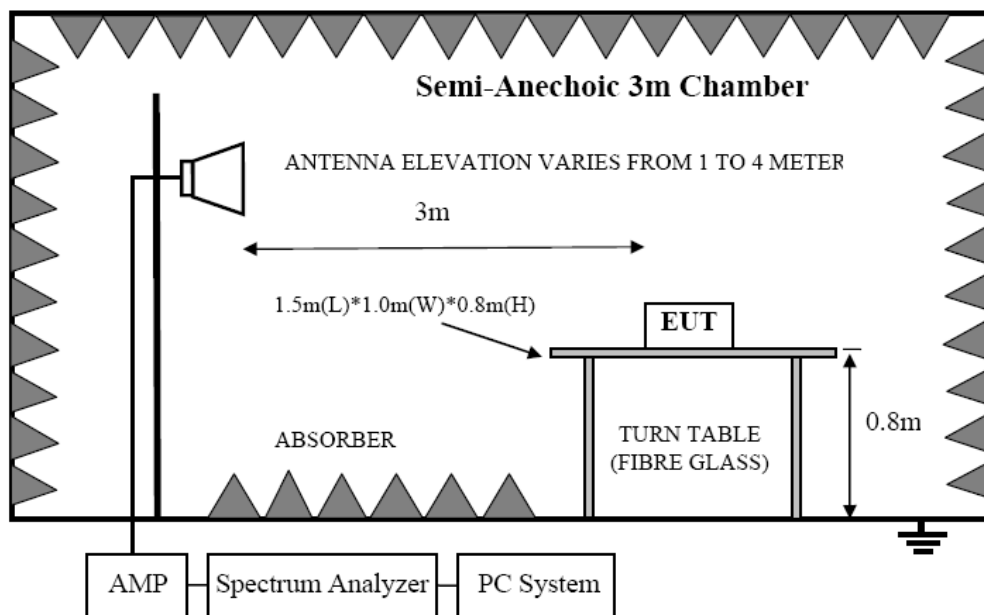
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.520	49.88	0.33	50.21	74.00	-23.79	peak
2	2483.520	39.90	0.33	40.23	54.00	-13.77	AVG
3	2500.000	45.81	0.35	46.16	74.00	-27.84	peak

9. Band Edge Compliance

9.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	R&S	ESU8	100316	2012/11/26	1Y
2	Spectrum analyzer	Agilent	E4407B	US40240708	2013/07/18	1Y
3	Trilog Broadband Antenna	Schwarzbeck	VULB9163	9163-462	2012/12/28	1 Y
4	Double Ridged Horn Antenna	R&S	HF907	100276	2012/12/28	1 Y
5	Pre-Amplifier	R&S	SCU-01	10049	2012/12/28	1Y
6	Pre-amplifier	A.H.	PAM0-0118	360	2012/12/28	1Y
7	RF Cable	R&S	R01	10403	2012/12/28	1Y
8	RF Cable	R&S	R02	10512	2012/12/28	1Y

9.2 Block diagram of test setup



9.3 Limit

All the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions .

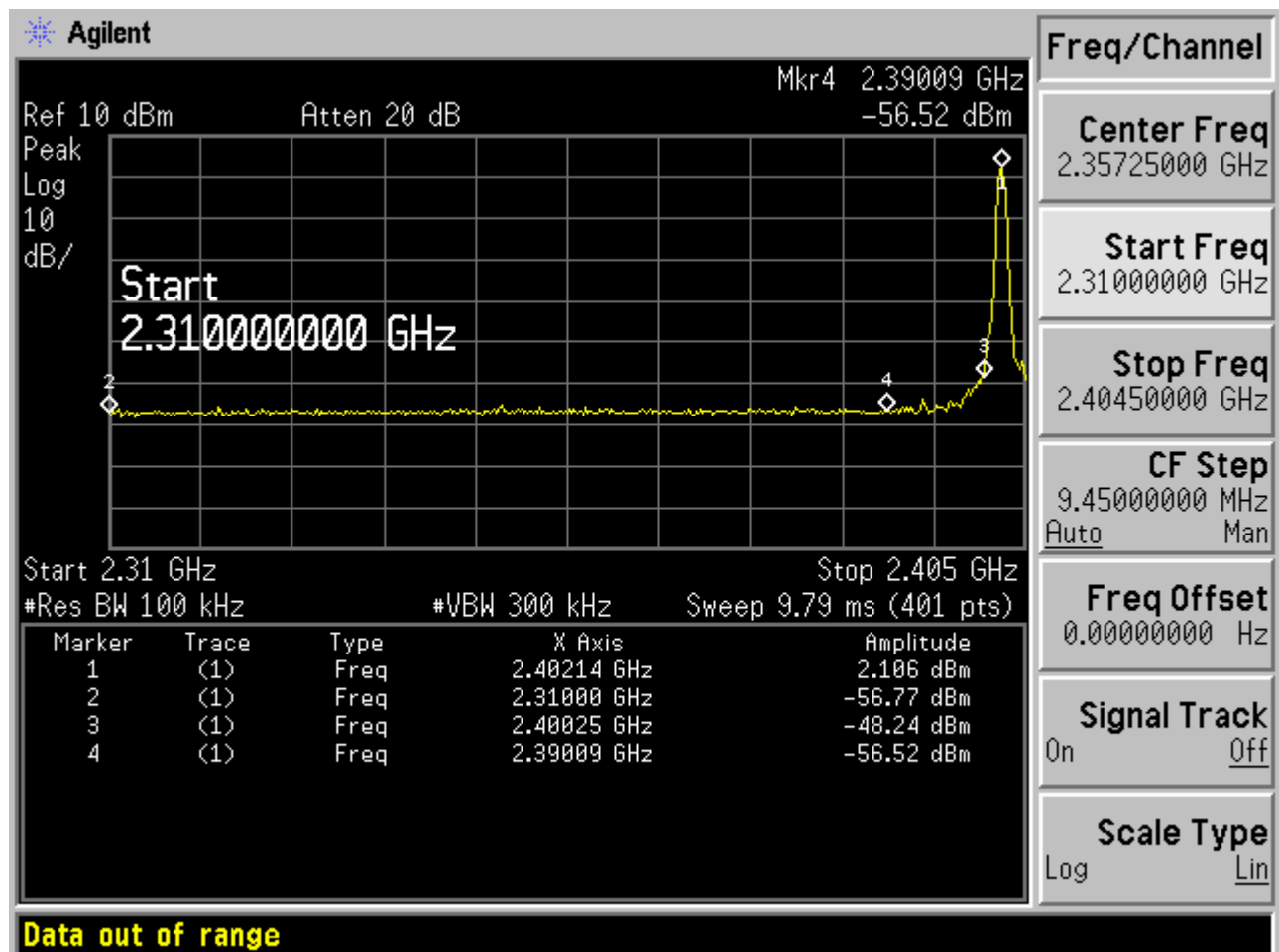
9.4 Test result

PASS. (See below detailed test result)

Remark : HOPPING ON AND OFF MODE ARE BEEN TESTED ,HOPPING OFF MODE IS THE WORSE CASE TO BE REPORTED .

Band edge Test Result

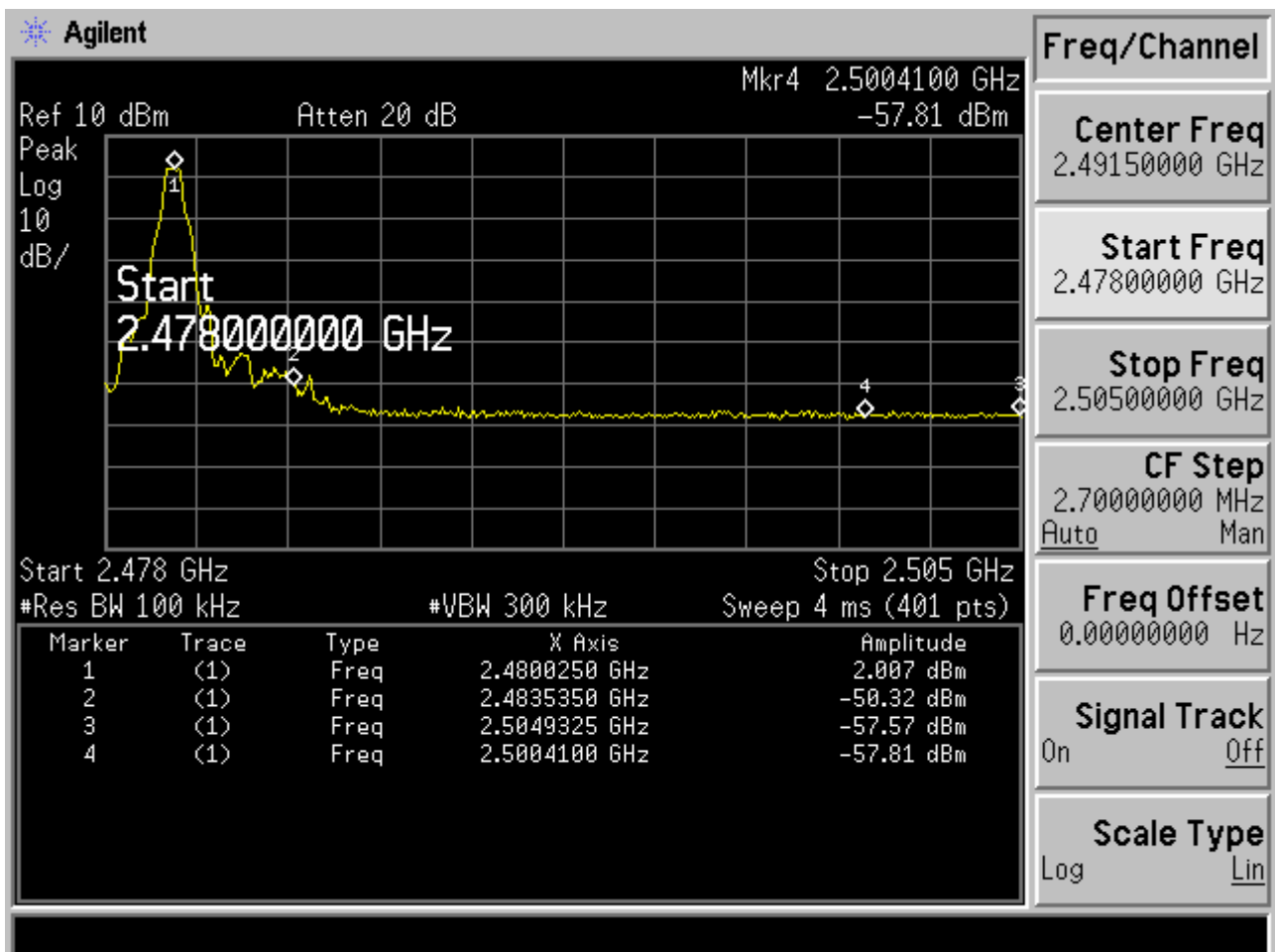
Test Site	: 3m Chamber	Tested By	: Mike Yang
Test Date	: 2013-09-16	Model Number	: PL-6453
EUT	: PS3 AG2 BT Headset	Test Mode	: GFSK Hopping off
Power Supply	: DC 3.7V		
Condition	: Temp:24.5'C,Humi:55%		CH0



Band edge Test Result

Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5'C,Humi:55%

Tested By : Mike Yang
Model Number : PL-6453
Test Mode : GFSK Hopping off
 CH78



Band edge Test Result

Test Site : 3m Chamber

Test Date : 2013-09-16

Tested By : Mike Yang

EUT : PS3 AG2 BT Headset

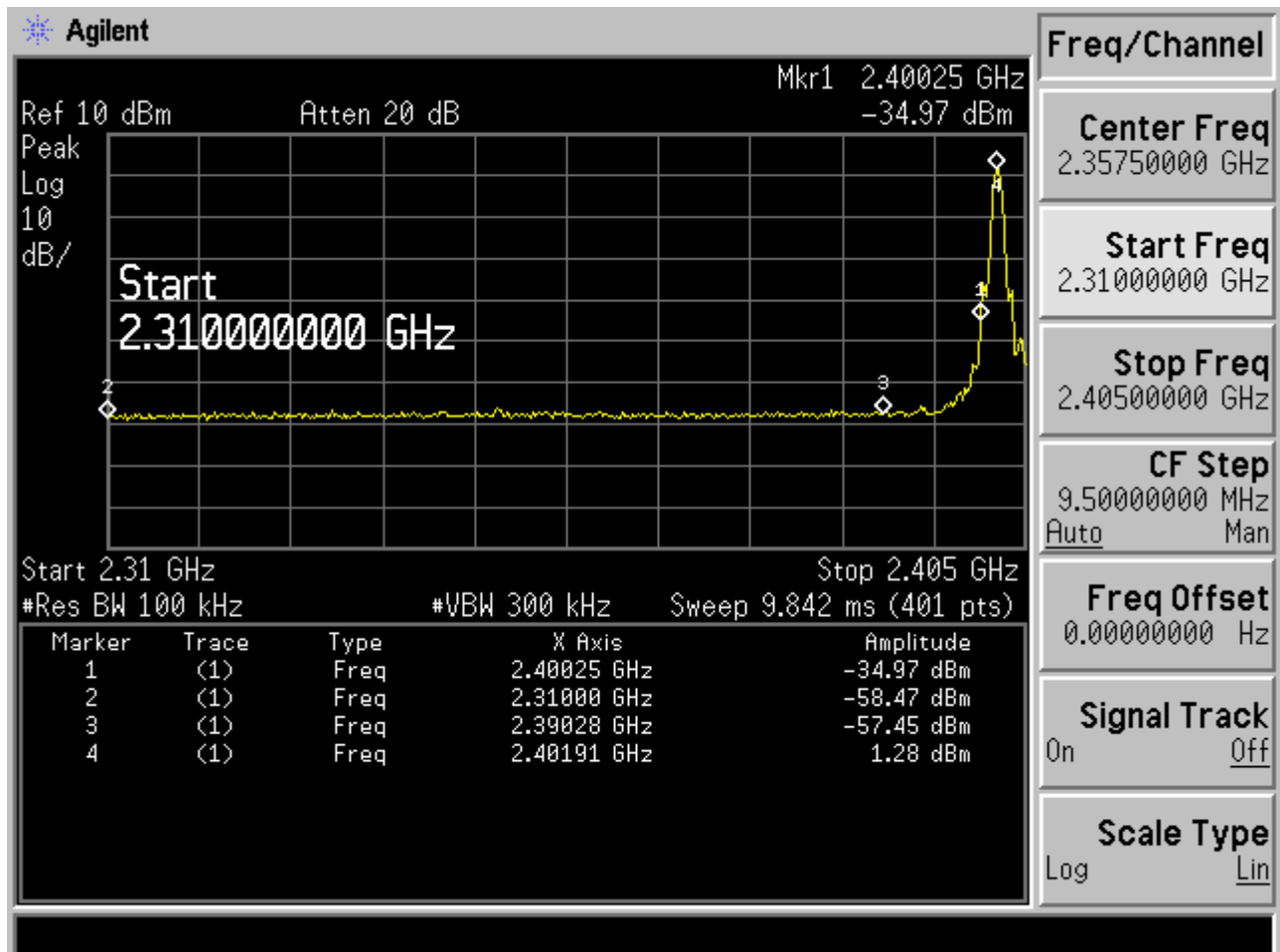
Model Number : PL-6453

Power Supply : DC 3.7V

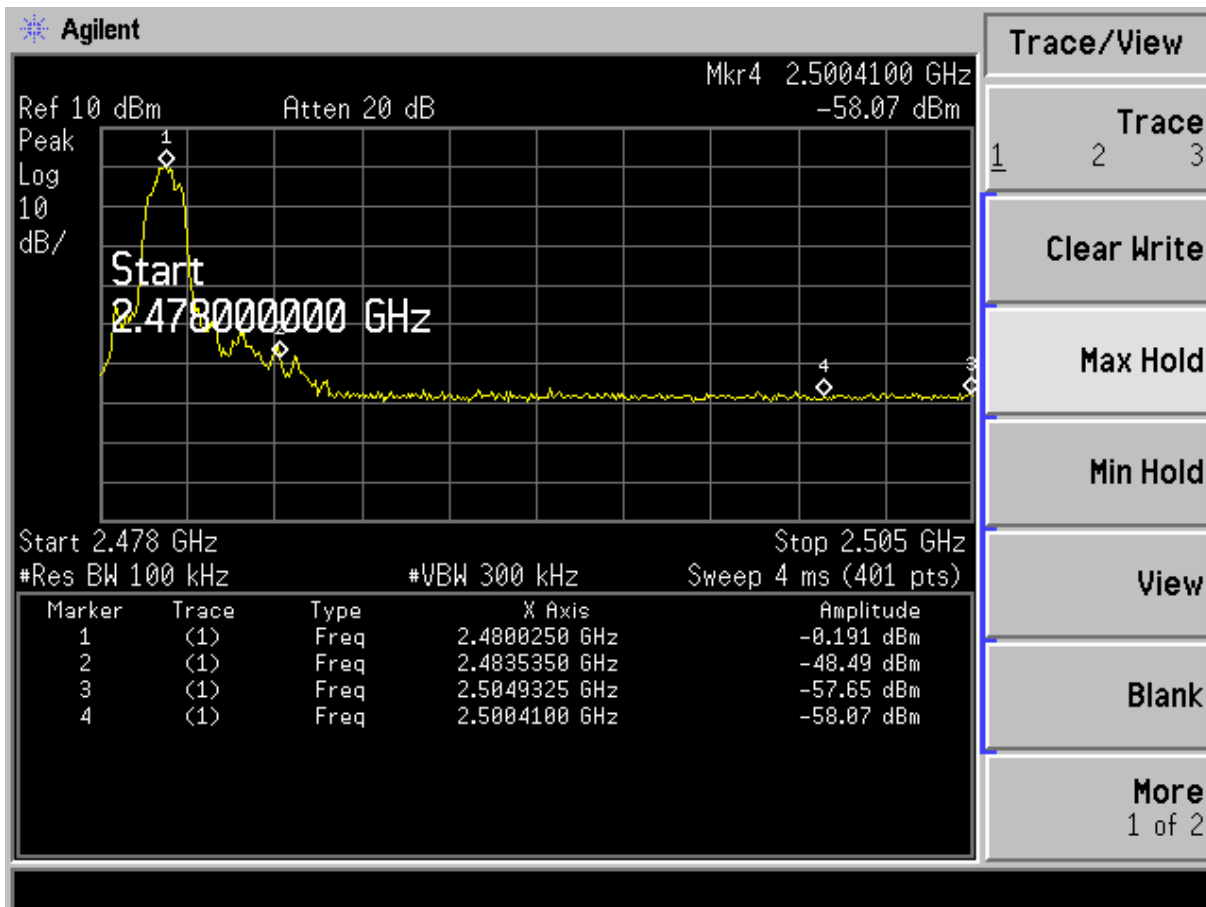
Test Mode : 8DPSK Hopping off

Condition : Temp:24.5'C,Humi:55%

CH0



Test Site : 3m Chamber
Test Date : 2013-09-16
EUT : PS3 AG2 BT Headset
Power Supply : DC 3.7V
Condition : Temp:24.5°C,Humi:55%
Tested By : Mike Yang
Model Number : PL-6453
Test Mode : 8DPSK Hopping off
CH78

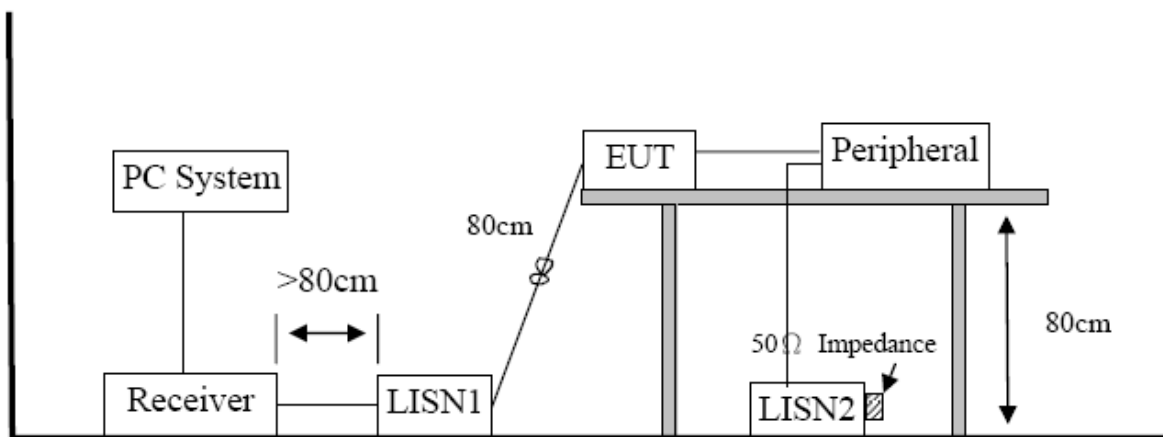


10. Power Line Conducted Emission

10.1 Test equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	R&S	ESCI	101308	2012/11/26	1 Year
2	LISN 1	AFJ	LS16	16011103219	2012/12/28	1 Year
3	LISN 2	R&S	ESH2-Z5	100309	2012/12/28	1 Year
4	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	2012/12/28	1 Year

10.2 Block diagram of test setup



10.3 Power Line Conducted Emission Limits (Class B)

Frequency	Quasi-Peak Level dB(μ V)	Average Level dB(μ V)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Note 1: * Decreasing linearly with logarithm of frequency.

Note 2: The lower limit shall apply at the transition frequencies.

10.4 Test Procedure

The EUT and Support equipment, if needed, were put placed on a non-metallic table, 80cm above the ground plane.

Configuration EUT to simulate typical usage as described in clause 2.4 and test equipment as described in clause 10.2 of this report.

All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.

All support equipment power received from a second LISN.

Emissions were measured on each current carrying line of the EUT using an EMI Test Receiver connected to the LISN powering the EUT.

The Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.

During the above scans, the emissions were maximized by cable manipulation.

The test mode(s) described in clause 2.4 were scanned during the preliminary test.

After the preliminary scan, we found the test mode producing the highest emission level.

The EUT configuration and worse cable configuration of the above highest emission levels were recorded for reference of the final test.

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test.

A scan was taken on both power lines, Neutral and Line, recording at least the six highest emissions.

Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit.

The test data of the worst-case condition(s) was recorded.

The bandwidth of test receiver is set at 9 KHz.

10.5 Test Result

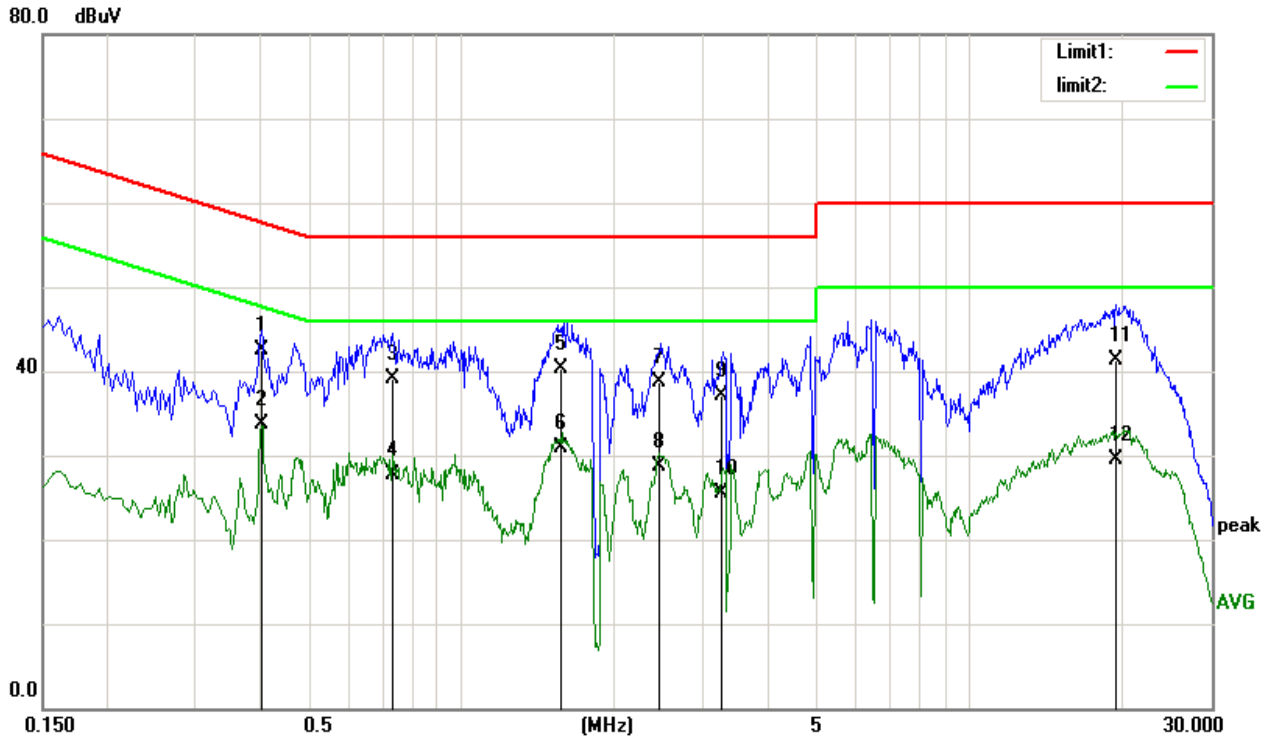
PASS. (See below detailed test result)

Note1: All emissions not reported below are too low against the prescribed limits.

Note2: "----" means average detection; "----" mans peak detection

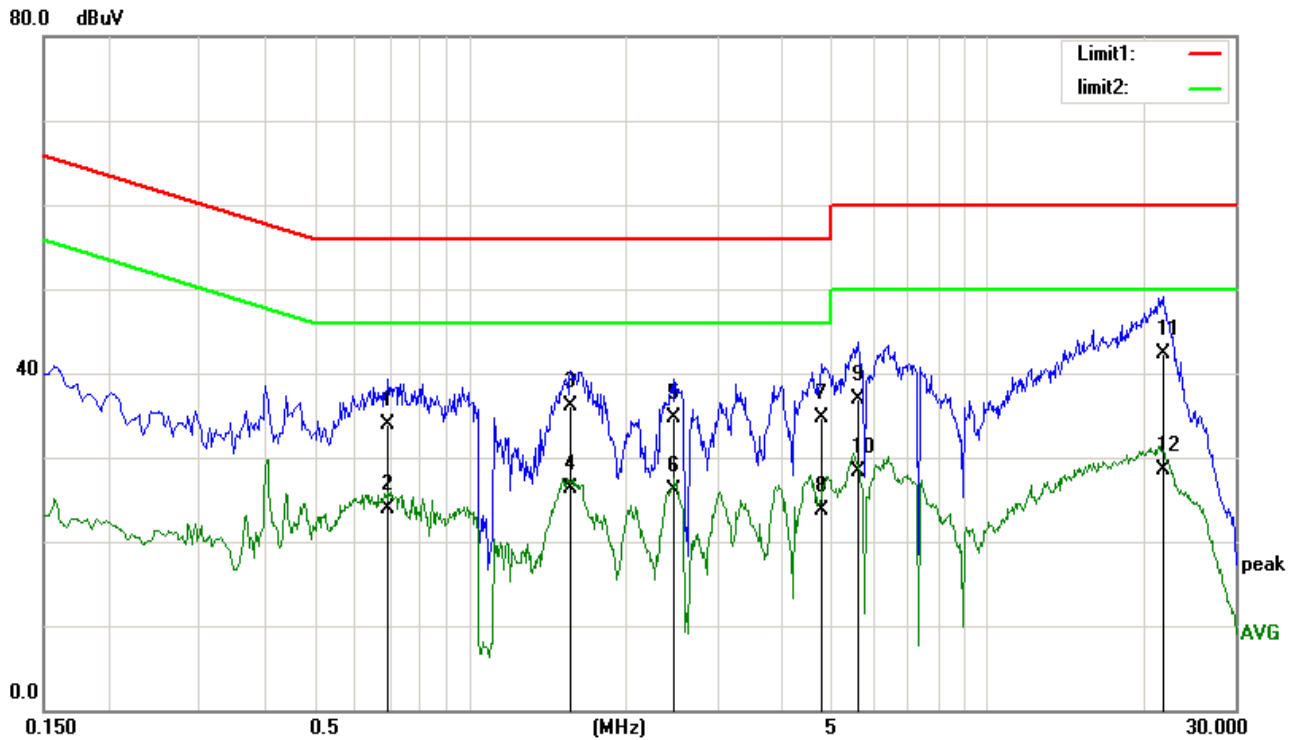
Test Site : 1#CE

Test Date : 2013-09-16 **Tested By** : Mike Yang
EUT : PS3 AG2 BT Headset **Model Number** : PL-6453
Power Supply : DC 5V From pc input AC 120V/60Hz **Test Mode** : Charging AND KEEPING TX MODE
Condition : Temp:24.5'C,Humi:55% **Antenna** : L



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.4040	32.13	10.30	42.43	57.77	-15.34	QP
2	0.4040	23.38	10.30	33.68	47.77	-14.09	AVG
3	0.7362	28.99	10.11	39.10	56.00	-16.90	QP
4	0.7362	17.52	10.11	27.63	46.00	-18.37	AVG
5	1.5660	30.24	10.11	40.35	56.00	-15.65	QP
6	1.5660	20.84	10.11	30.95	46.00	-15.05	AVG
7	2.4474	28.52	10.12	38.64	56.00	-17.36	QP
8	2.4474	18.68	10.12	28.80	46.00	-17.20	AVG
9	3.2720	26.94	10.14	37.08	56.00	-18.92	QP
10	3.2720	15.32	10.14	25.46	46.00	-20.54	AVG
11	19.4617	31.06	10.16	41.22	60.00	-18.78	QP
12	19.4617	19.36	10.16	29.52	50.00	-20.48	AVG

Test Site : 1#CE
Test Date : 2013-09-16 **Tested By** : Mike Yang
EUT : PS3 AG2 BT Headset **Model Number** : PL-6453
Power Supply : DC 5V From pc input AC 120V/60Hz **Test Mode** : Charging AND KEEPING TX MODE
Condition : Temp:24.5'C,Humi:55% **Antenna** : N



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.6964	23.82	10.12	33.94	56.00	-22.06	QP
2	0.6964	13.78	10.12	23.90	46.00	-22.10	AVG
3	1.5577	25.93	10.11	36.04	56.00	-19.96	QP
4	1.5577	16.20	10.11	26.31	46.00	-19.69	AVG
5	2.4806	24.50	10.12	34.62	56.00	-21.38	QP
6	2.4806	15.91	10.12	26.03	46.00	-19.97	AVG
7	4.7700	24.59	10.11	34.70	56.00	-21.30	QP
8	4.7700	13.69	10.11	23.80	46.00	-22.20	AVG
9	5.5716	26.77	10.11	36.88	60.00	-23.12	QP
10	5.5716	18.18	10.11	28.29	50.00	-21.71	AVG
11	21.7449	32.08	10.17	42.25	60.00	-17.75	QP
12	21.7449	18.37	10.17	28.54	50.00	-21.46	AVG

11.CONDUCTED SPURIOUS EMISSIONS

11.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Spectrum analyzer	Agilent	E4407B	US40240708	2013/07/18	1 Y
2	Attenuator	Mini-Circuits	BW-S10W2	101109	2012/12/28	1 Y
3	RF Cable	Micable	C10-01-01-1	100309	2012/12/28	1 Y

11.2. 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.

11.3. Test Procedure

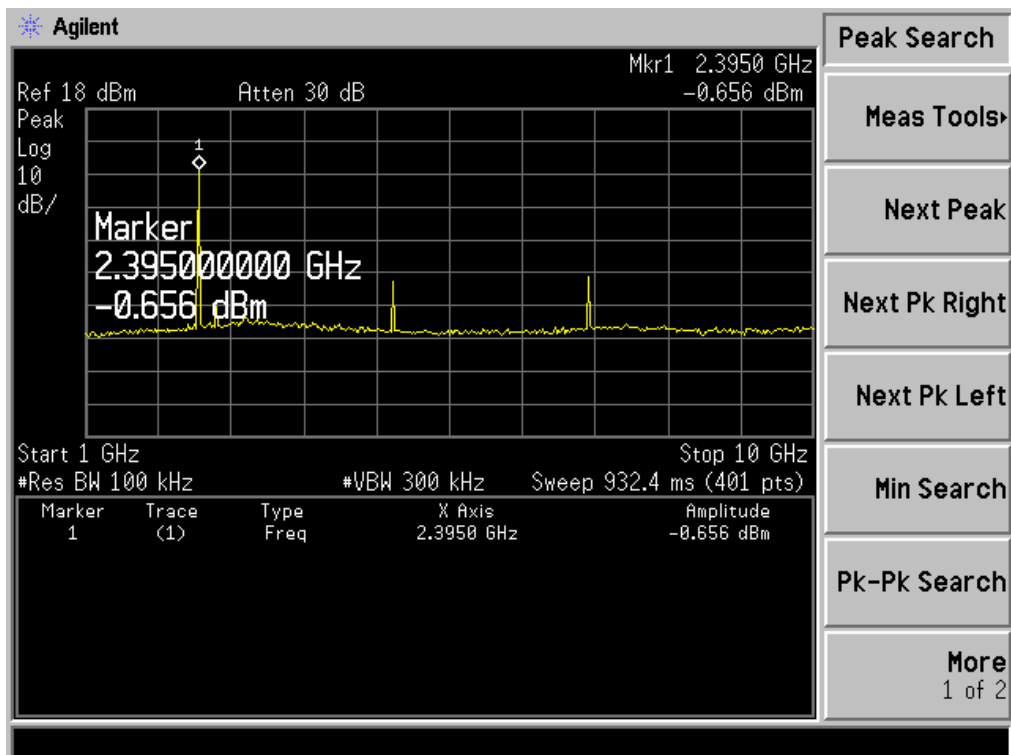
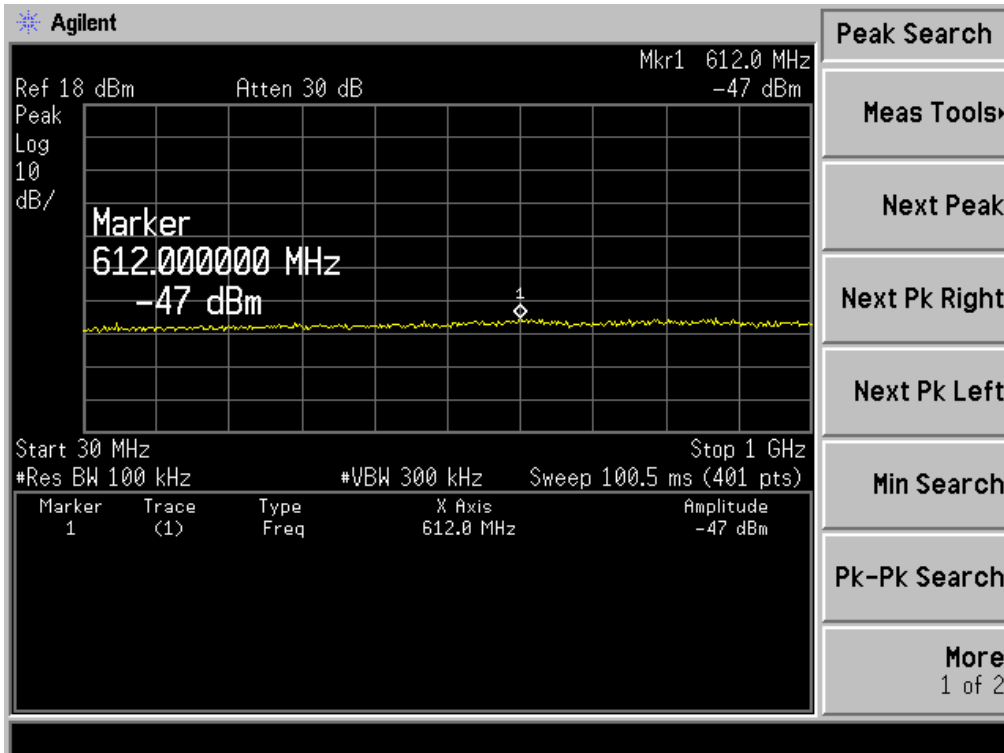
The transmitter output was connected to a spectrum analyzer, The resolution bandwidth is set to 100 kHz, The video bandwidth is set to 300 kHz and measure all the emissions detected.

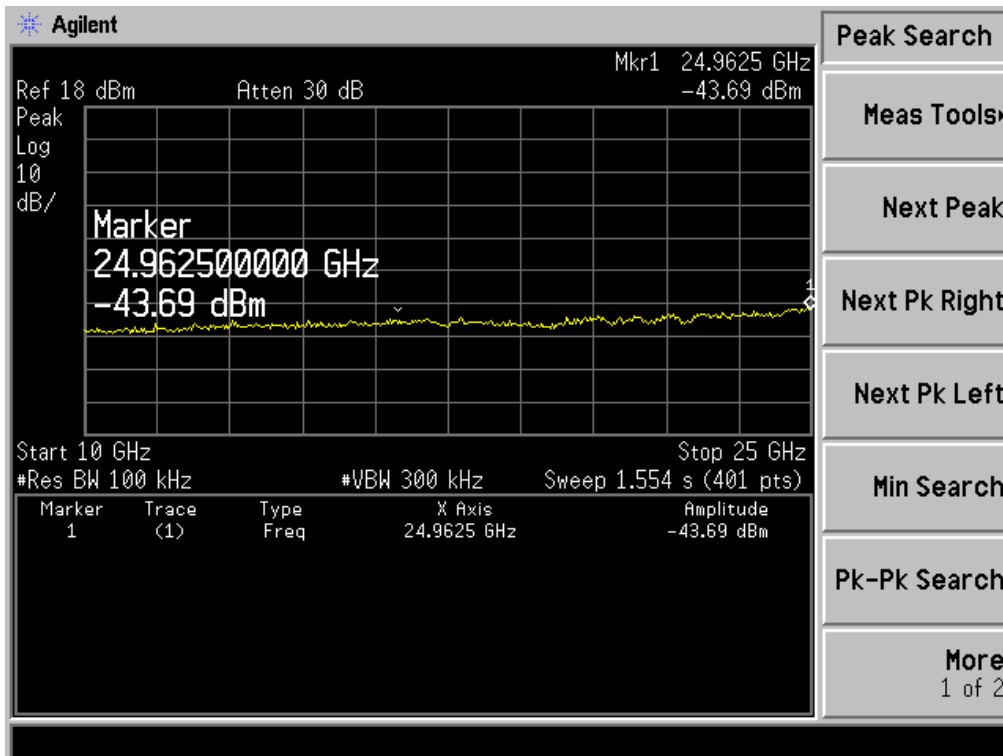
REMARK : ONLY WORSE CASE IS REPORTED

11.4. Test result

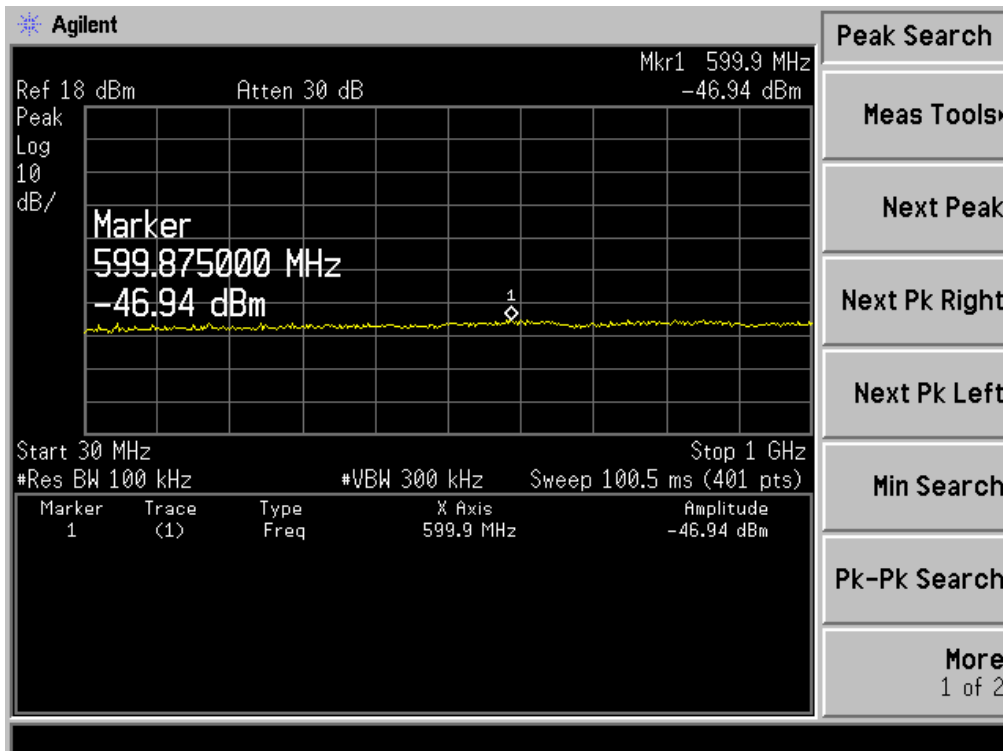
PASS (The testing data was attached in the next pages.)

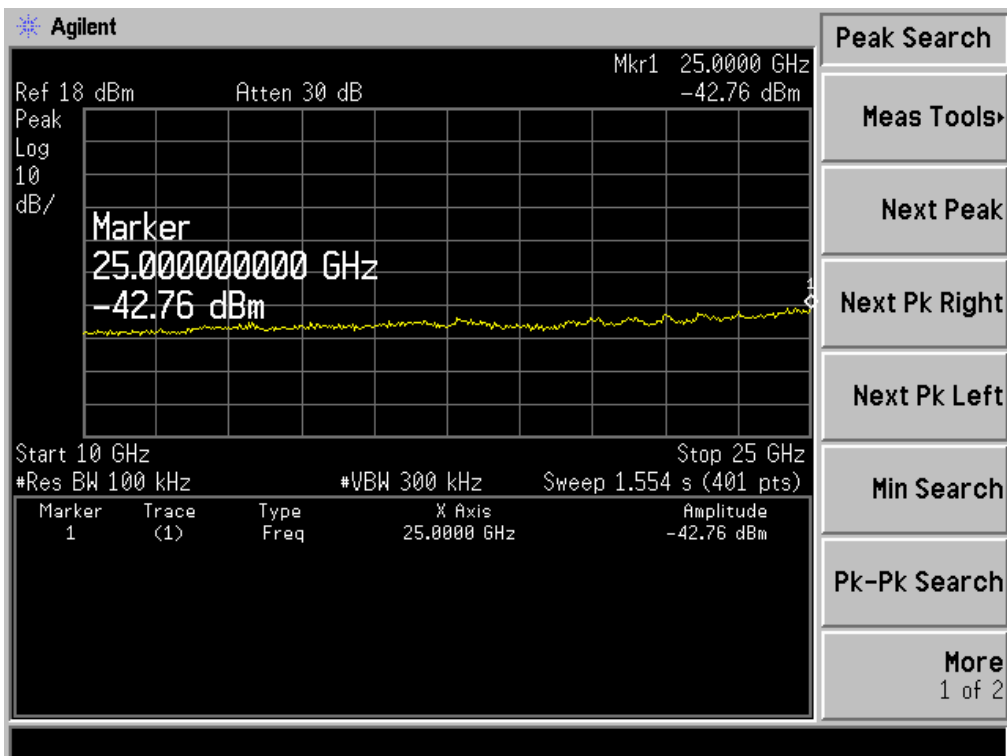
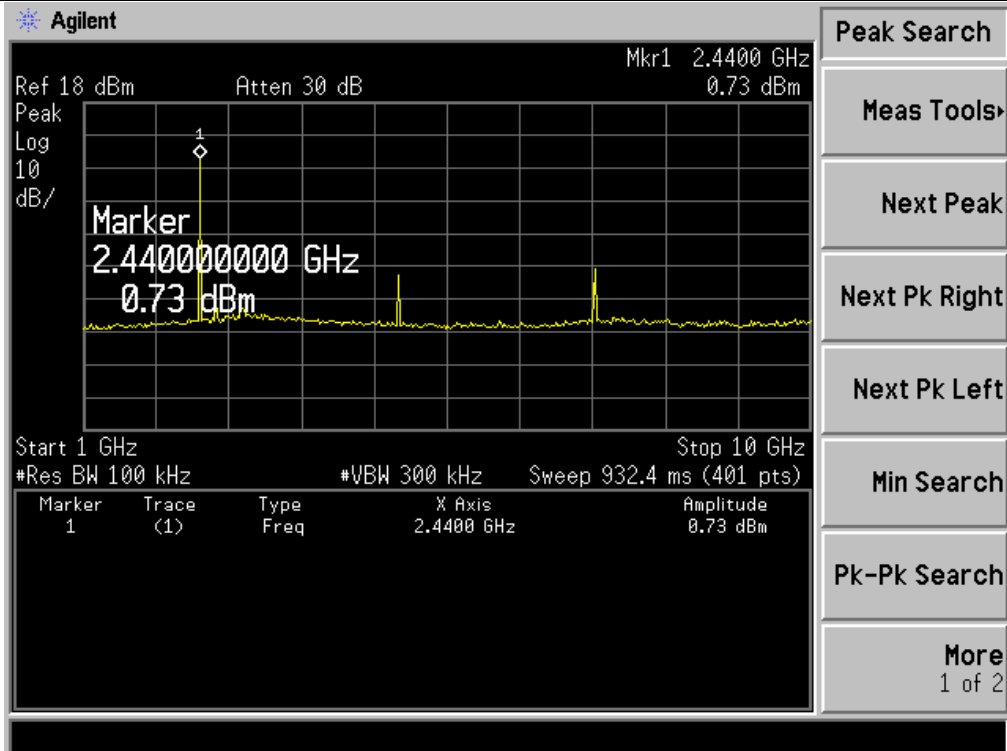
GFSK
2402



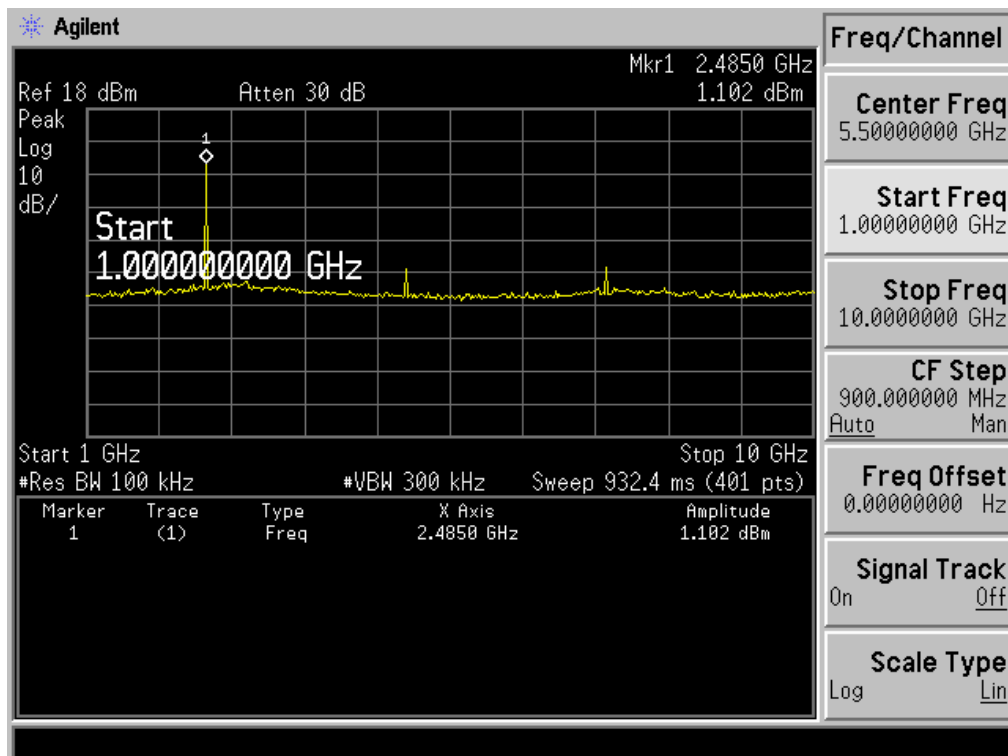
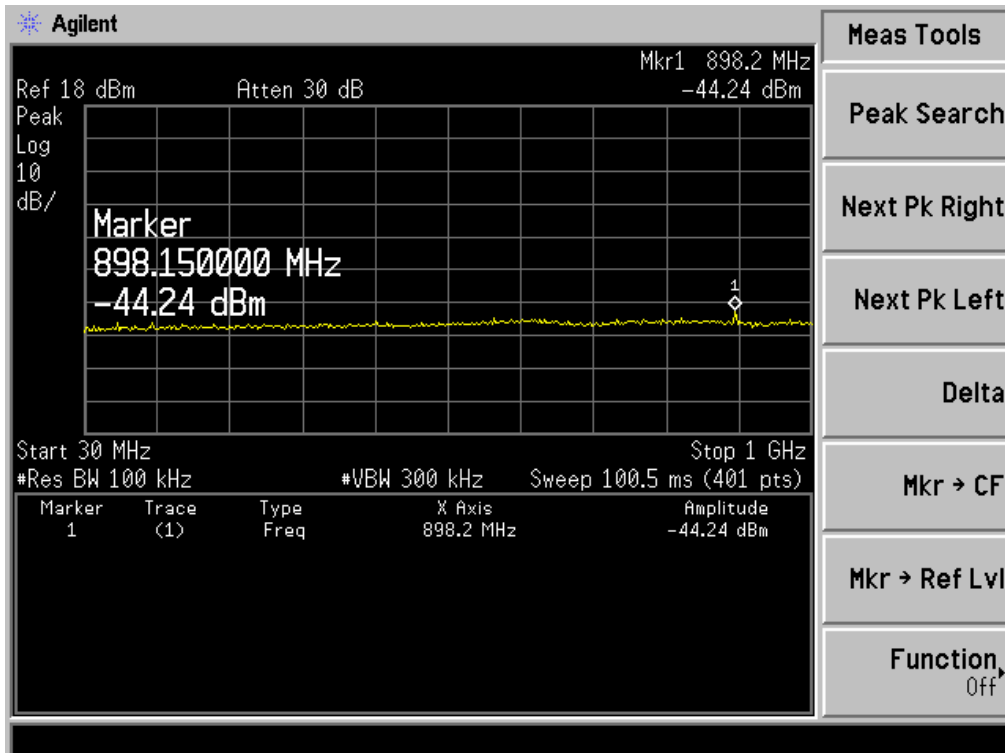


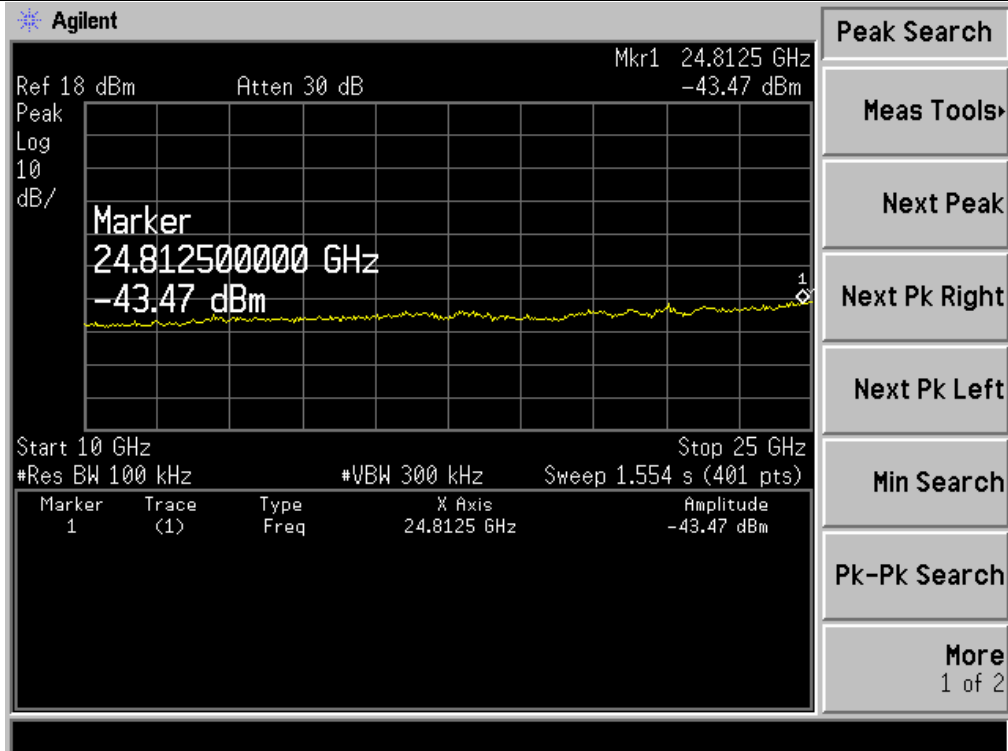
2441





2480





12. Antenna Requirements

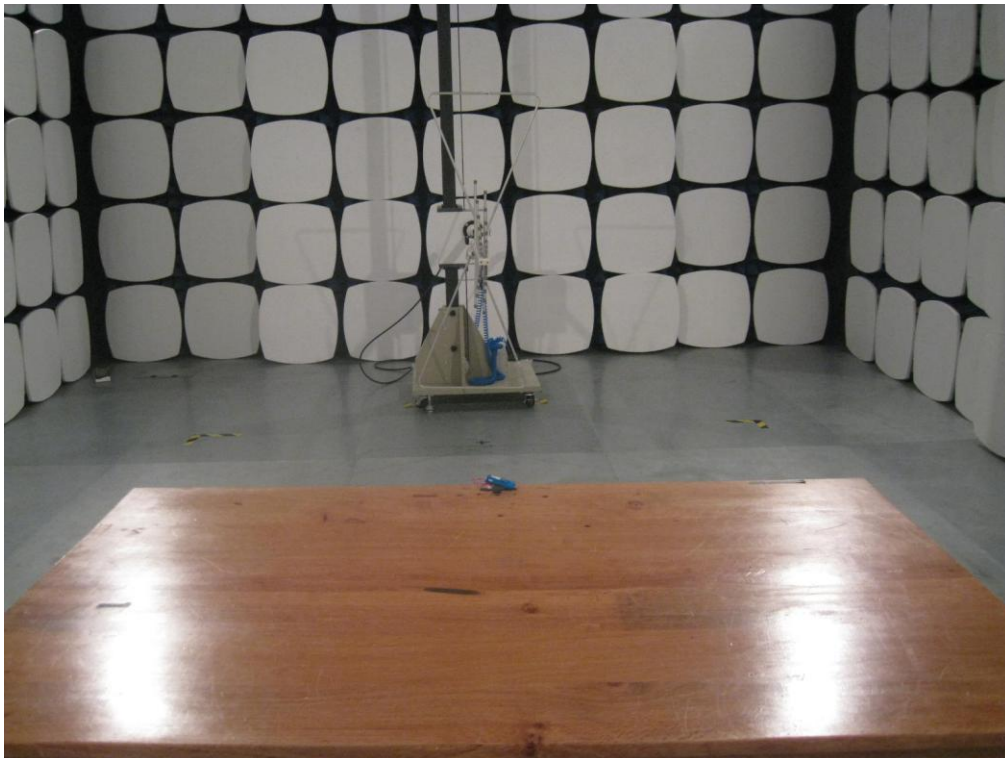
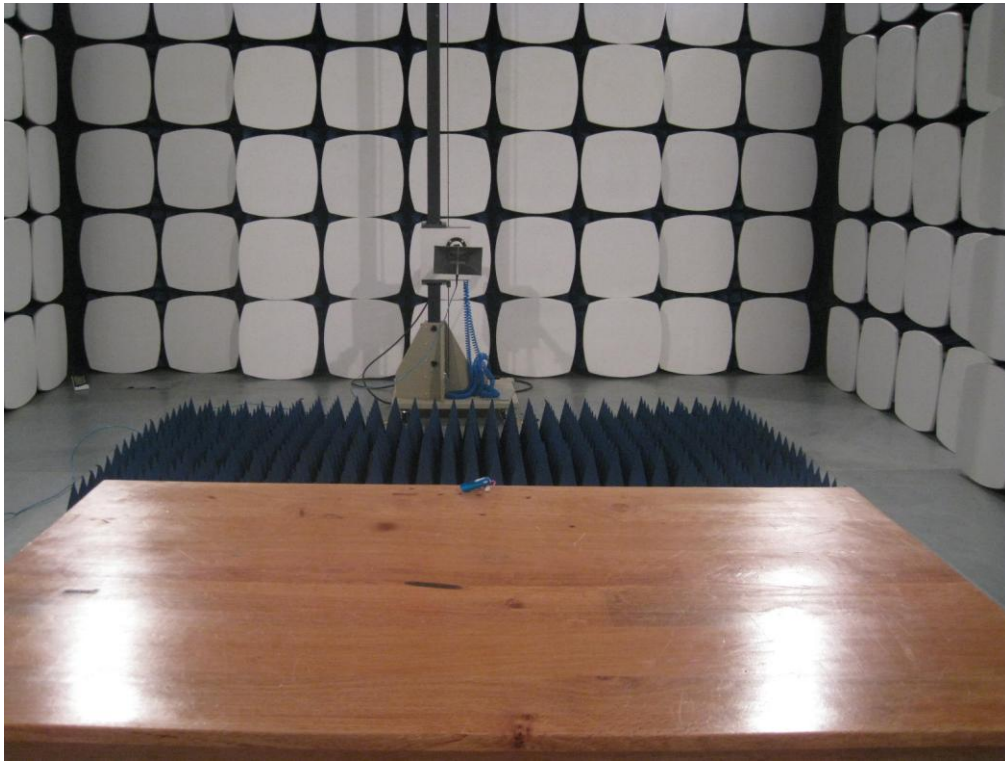
12.1 Limit

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

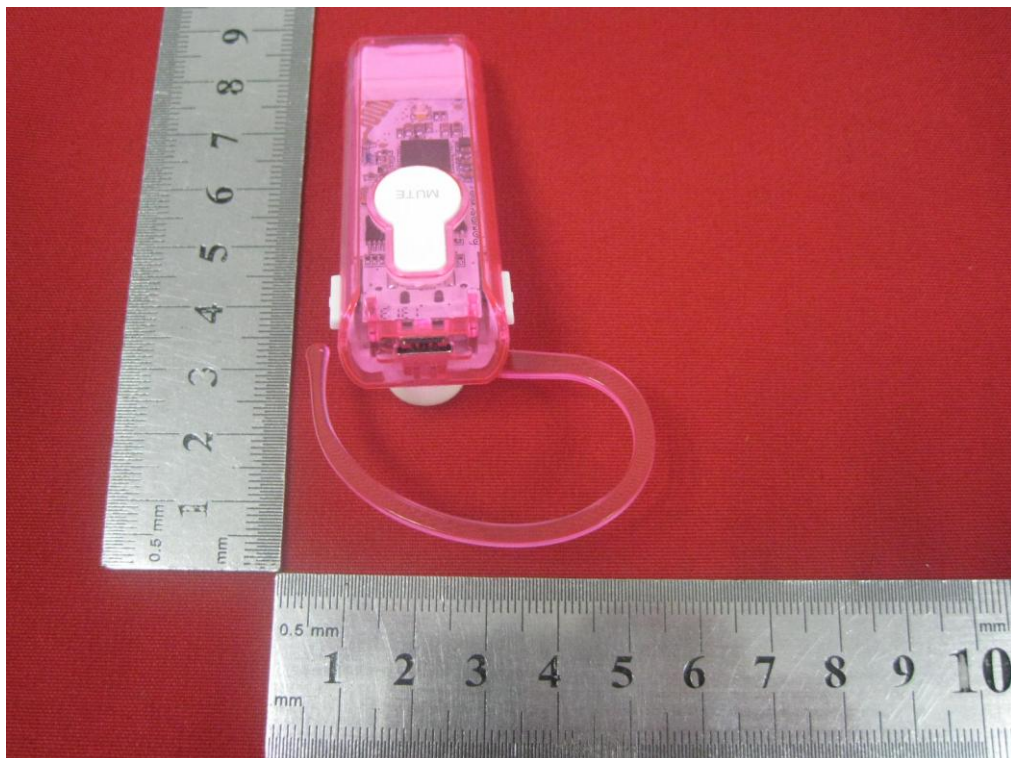
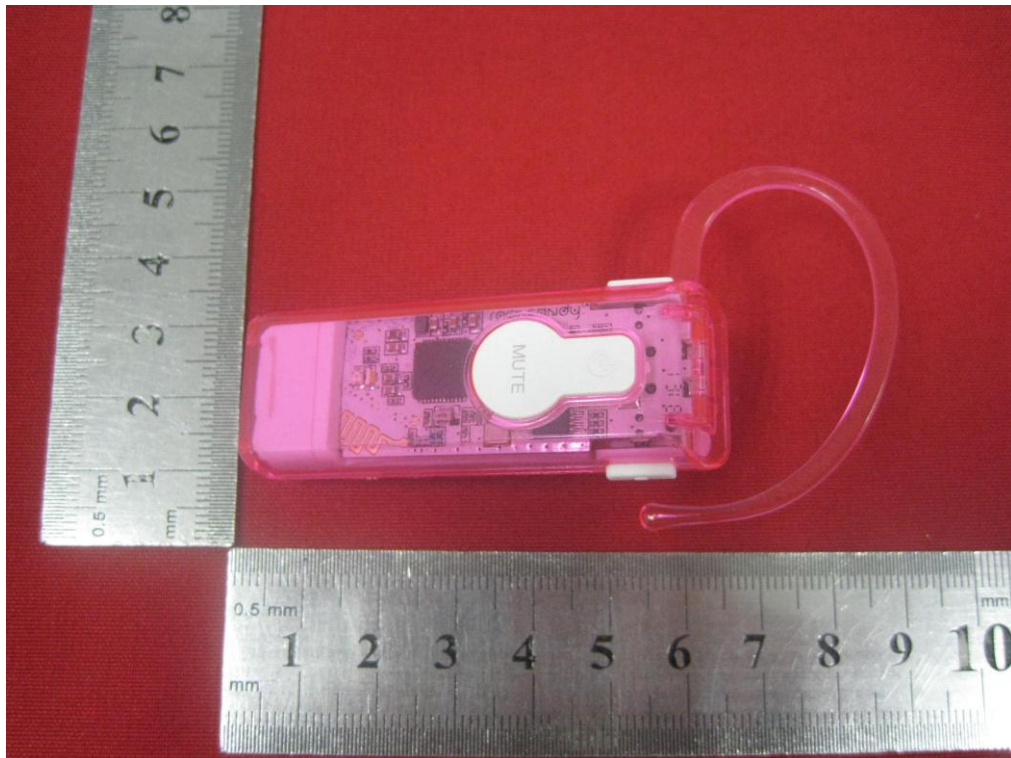
12.2 Result

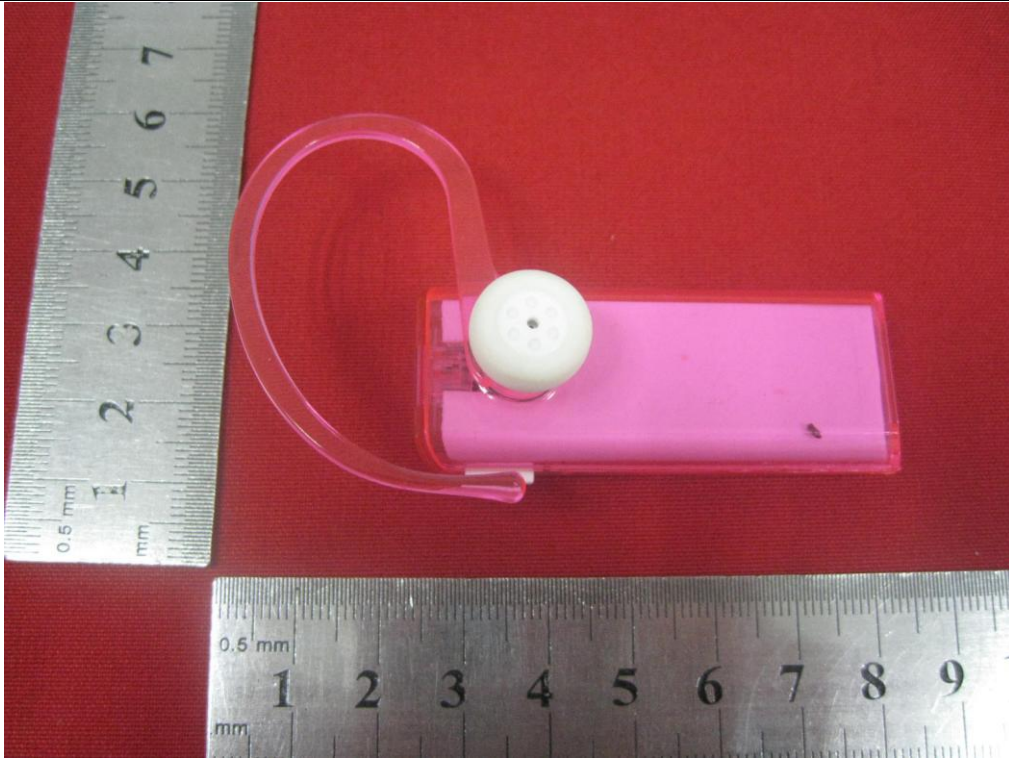
The antennas used for this product are built-in “F” shape PCB antenna and that no antenna other than that furnished by the responsible party shall be used with the device, the maximum peak gain of the transmit antenna is only 0.81dBi.

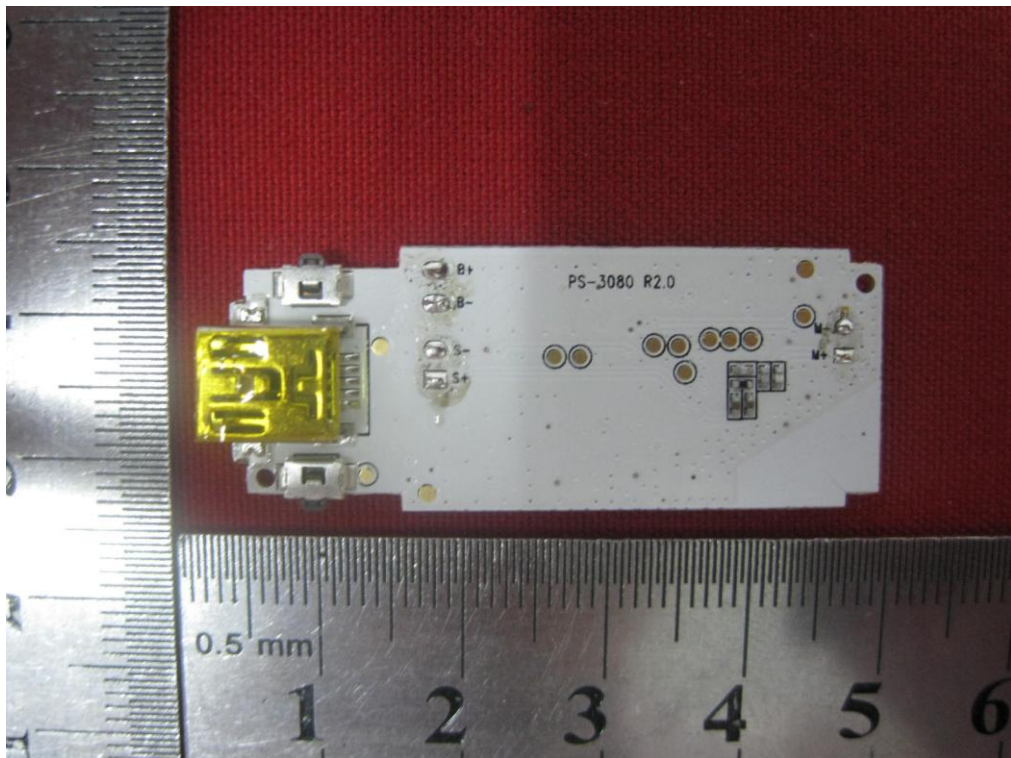
13.Test setup photograph

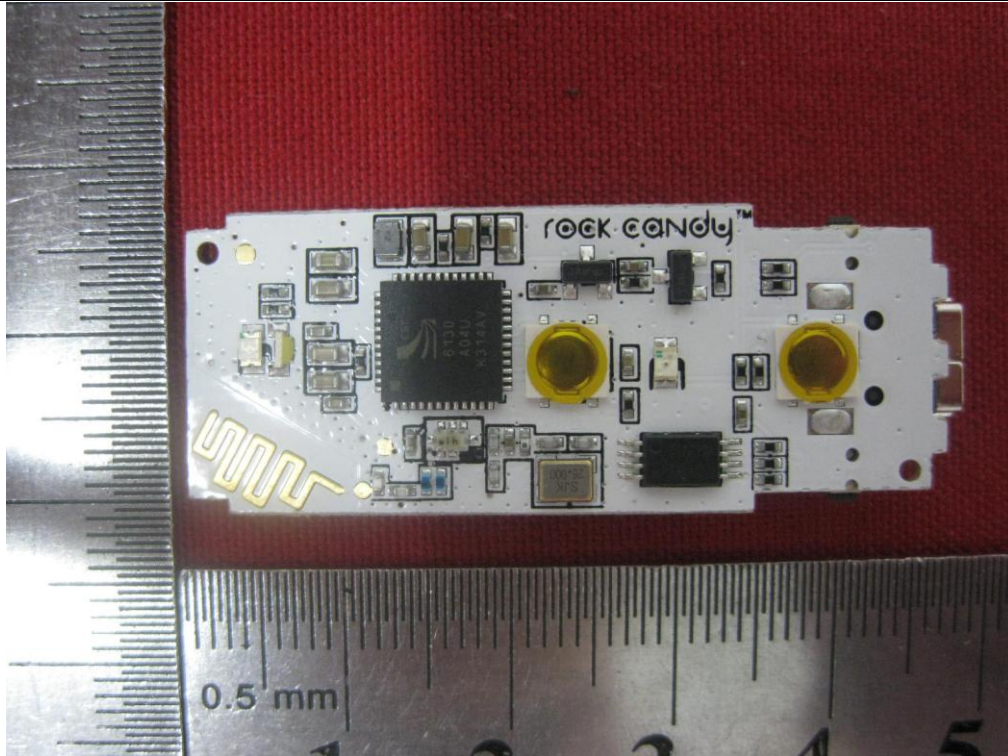


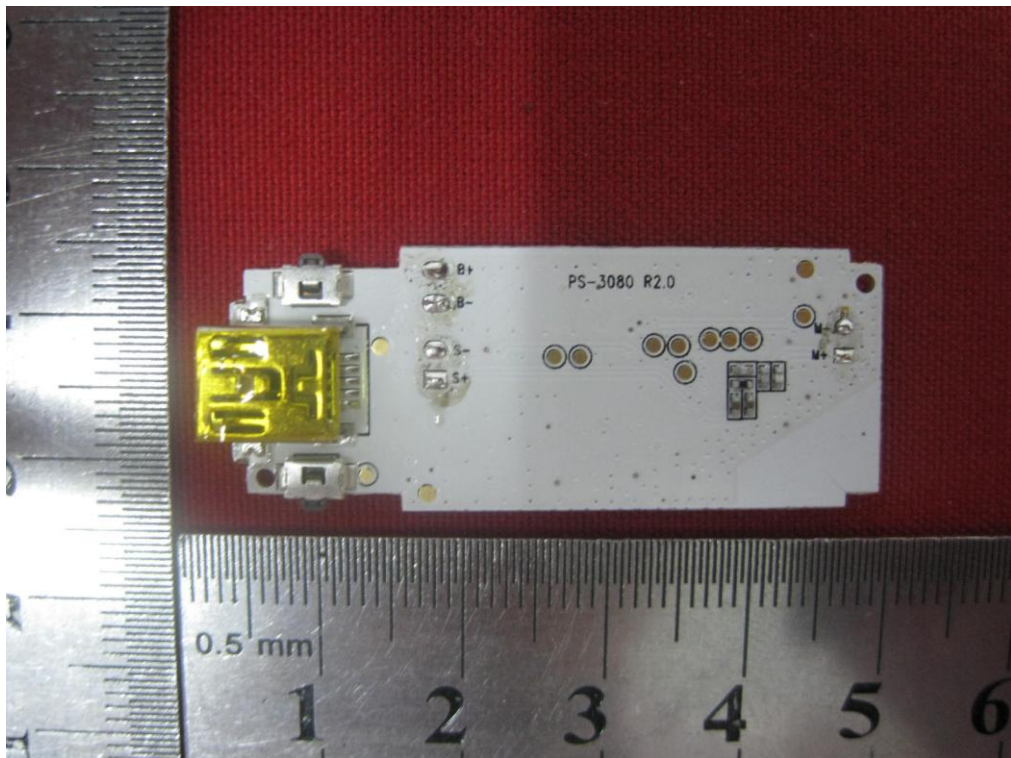
15.Photos of the EUT

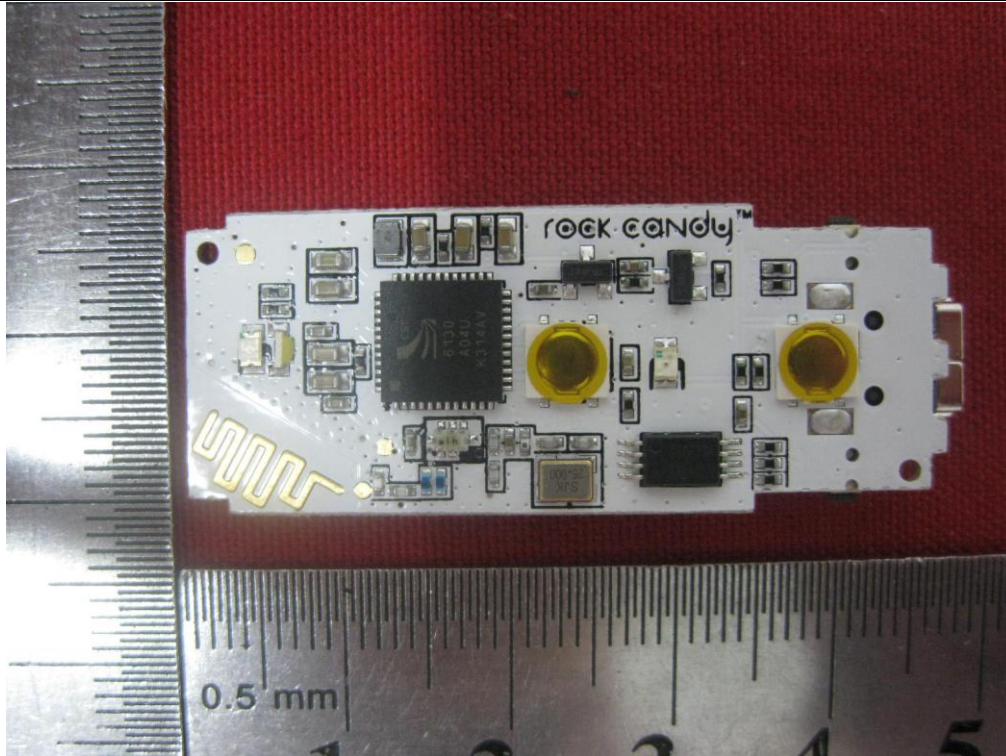












END OF REPORT