Shenzhen Certification Technologh Service Co., Ltd
3F, Bldg27,Area A, Tanglang Industrial Zone, Xili Town, Nanshan District, ShenZhen, Guang dong, P.R. China.

TEST REPORT

FCC ID: WVZG1-BT-01

Applicant : **PIONSTEP electronic technology limited**
Address : **Flat B, 3/F Kaming Ind, Bldg. 688-690 Castle Peak Road, Kowloon, Hongkong**

Equipment under Test (EUT):

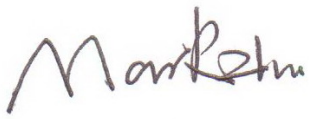
Name : Bluetooth headset
Model : P1-BT-01/G1-BT-01
Standards : FCC PART 15, SUBPART C : 2008 (Section 15.247)

Report No. : STE090818452
Date of Test : August 19-22, 2009
Date of Issue : August 25, 2009

Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above

Authorized Signature



(Mark Zhu)
General Manager

The manufacture should ensure that all the products in series production are in conformity with the product sample detailed in this report.

If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of Shenzhen Certification Technology Service Co., Ltd. Or test done by Shenzhen Certification Technology Service Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Certification Technology Service Co., Ltd. Approvals in writing.

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Description **Page**

1 General Information

1.1 Description of Device (EUT)

Trade Name	:	N/A
EUT	:	Bluetooth headset
Model No.	:	P1-BT-01/G1-BT-01
Model difference		“P1-BT-01” is single headphones. “G1-BT-01” is double headphones.
Type of Antenna	:	Integral Antenna
Antenna Specification	:	0 dBi
Operation Frequency	:	2402~2480MHZ
Channel number	:	79
Modulation type	:	Frequency Hopping Spread Spectrum (FHSS): (GFSK) (π/ 4-DQPSK) (8DPSK)
Power Supply	:	DC 3.7V
Rated PF output Power		-0.76 dBm
Applicant	:	PIONSTEP electronic technology limited
Address	:	Flat B, 3/F Kaming Ind, Bldg. 688-690 Castle Peak Road, Kowloon, Hongkong
Manufacturer	:	Zingy Electronics Factory
Address	:	No.38 ZhongChang Road, Shui Kou Ind. Est, Da lang town, Dong Guang City,Guang Dong Province, China

1.2 Description of Test Facility

Shenzhen Certification Technology Service Co.,Ltd.
3F, Bldg.27, Area A, Tanglang Industrial Zone, Xili Town, Nanshan District, Shenzhen 518055, Guangdong, P.R. China
FCC Registered No.:305283

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	16/06/2009	1Year
Spectrum analyzer	Agilent	E4443A	MY46185649	06/06/2009	1Year
Receiver	R&S	ESCI	100492	04/06/2009	1Year
Receiver	R&S	ESCI	101202	07/01/2009	1Year
Bilog Antenna	Sunol	JB3	A121206	04/06/2009	1Year
Horn Antenna	EMCO	3115	640201028-06	04/06/2009	1Year
Power Meter	Anritsu	ML2487A	6K00001491	02/23/2009	1Year
ETS Horn Antenna	ETS	3160	SEL0076	12/08/2009	1Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	15/06/2009	1Year
Cable	Resenberger	N/A	No.1	04/06/2009	1Year
Cable	SCHWARZBECK	N/A	No.2	04/06/2009	1Year
Cable	SCHWARZBECK	N/A	No.3	04/06/2009	1Year
Pre-amplifier	R&S	AFS42-00101800-25-S-42	SEL0081	18/06/2009	1Year
Pre-amplifier	R&S	AFS33-18002650-30-8P-44	SEL0080	18/06/2009	1Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50 u H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.
Example:
Freq (MHz) METER READING + ACF + CABLE = FS
33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m
ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

4 Summary of Measurement

Test Item	Test Requirement	Stanadard Paragraph	Result
Spurious Emission	FCC PART 15 : 2008	Section 15.247&15.209	Compliance
Conduction Emission	FCC PART 15: 2008	Section 15.207	Not applicable
Frequency Separation	FCC PART 15:2008	Section 15.247	Compliance
Peak Power	FCC PART 15:2008	Section 15.247	Compliance
Power Density	FCC PART 15:2008	Section 15.247	Not applicable
Number Channel	FCC PART 15:2008	Section 15.247	Compliance
Dwell Time	FCC PART 15:2008	Section 15.247	Compliance
Band Edge	FCC PART 15:2008	Section 15.247	Compliance
Antenna Requirement	FCC PART 15 : 2008	Section 15.203	Compliance

Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power(The new battery be used during Test)

5 Spurious Emission

5.1 Conducted Spurious Emission

5.1.1 Test limit

Please refer section15.247.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

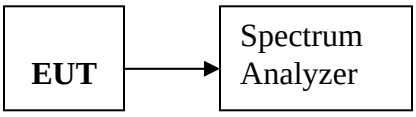
5.1.2 Method of measurement

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to100 KHz. The video bandwidth is set to 100 KHz.

Measurements are made over the 30MHz to 26GHzrange with the transmitter set to the lowest, middle, and highest channels.

5.1.3 Test Setup

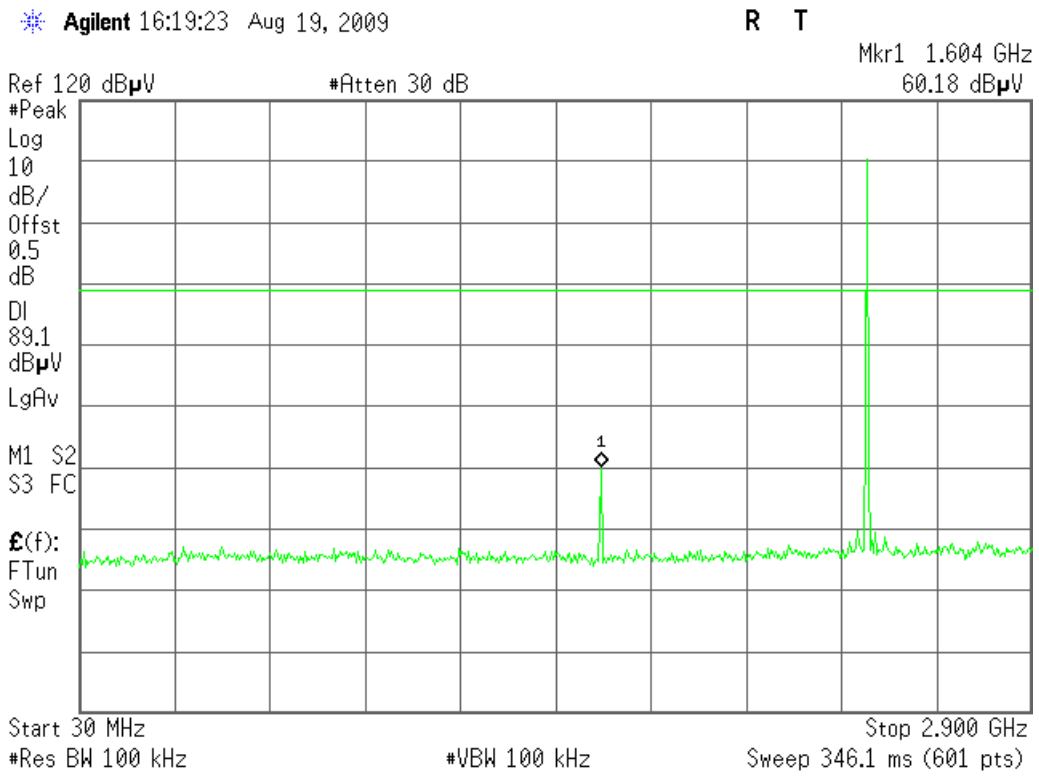


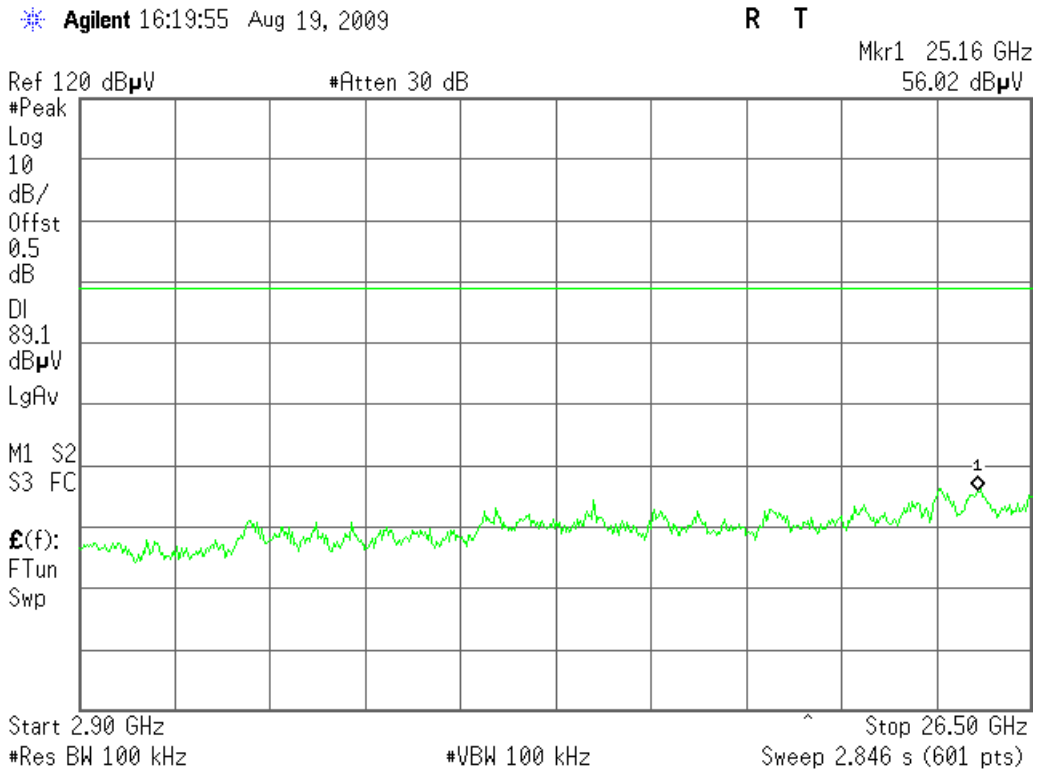
5.1.4 Test Results

PASS.

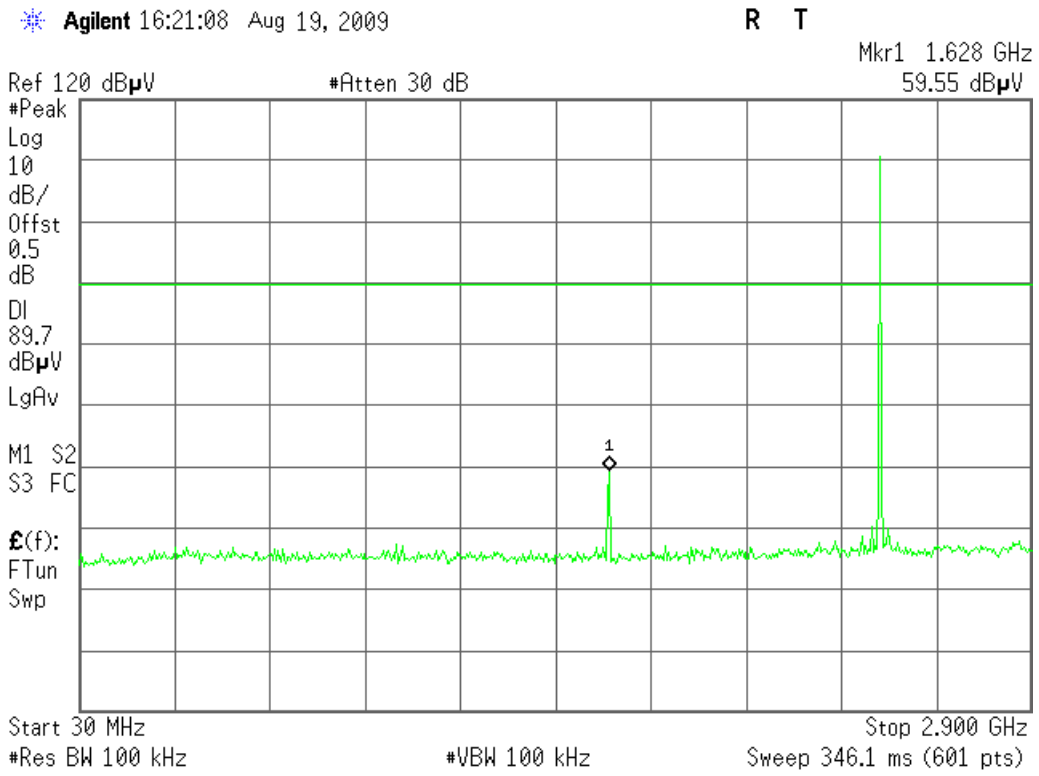
Detailed information please see the following page.

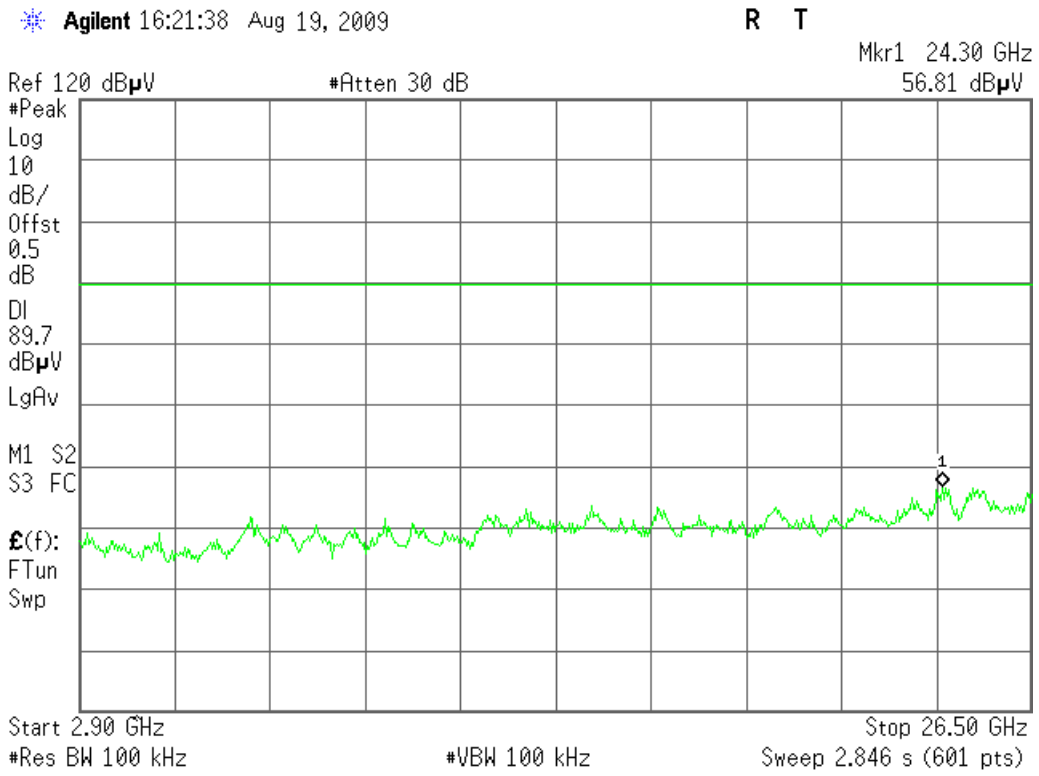
CH Low：30MHz-2.6.5GHz



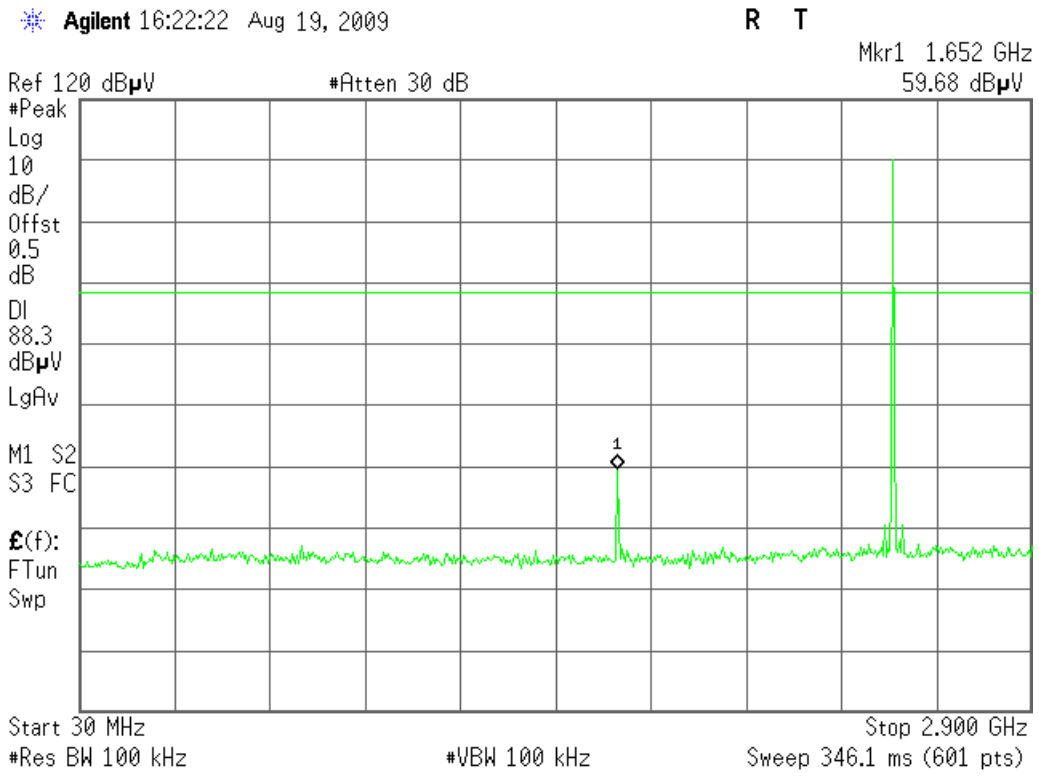


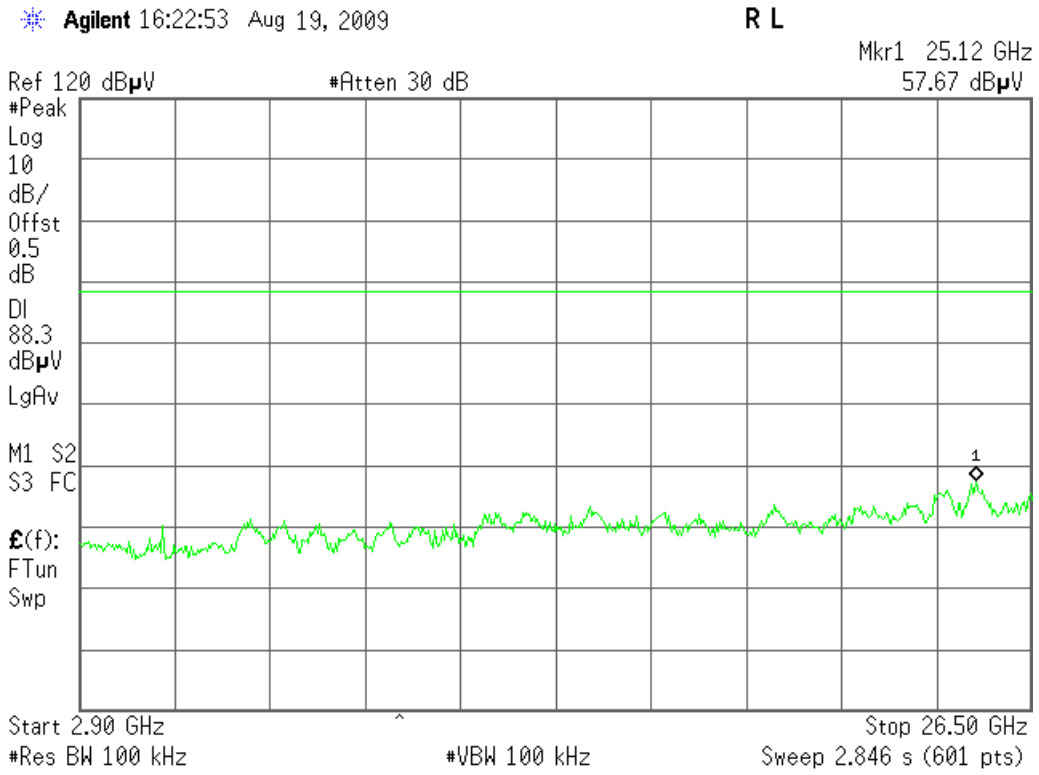
CH Mid : 30MHz-2.6.5GHz





CH High : 30MHz-2.6.5GHz





5.2 Radiation Emission

5.2.1 Radiation Emission Limits(15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

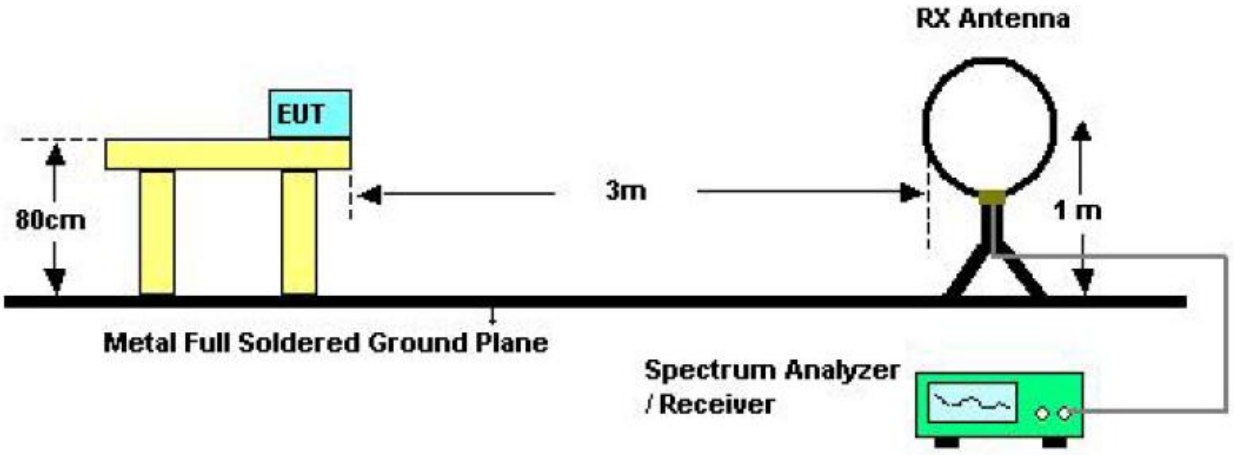
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

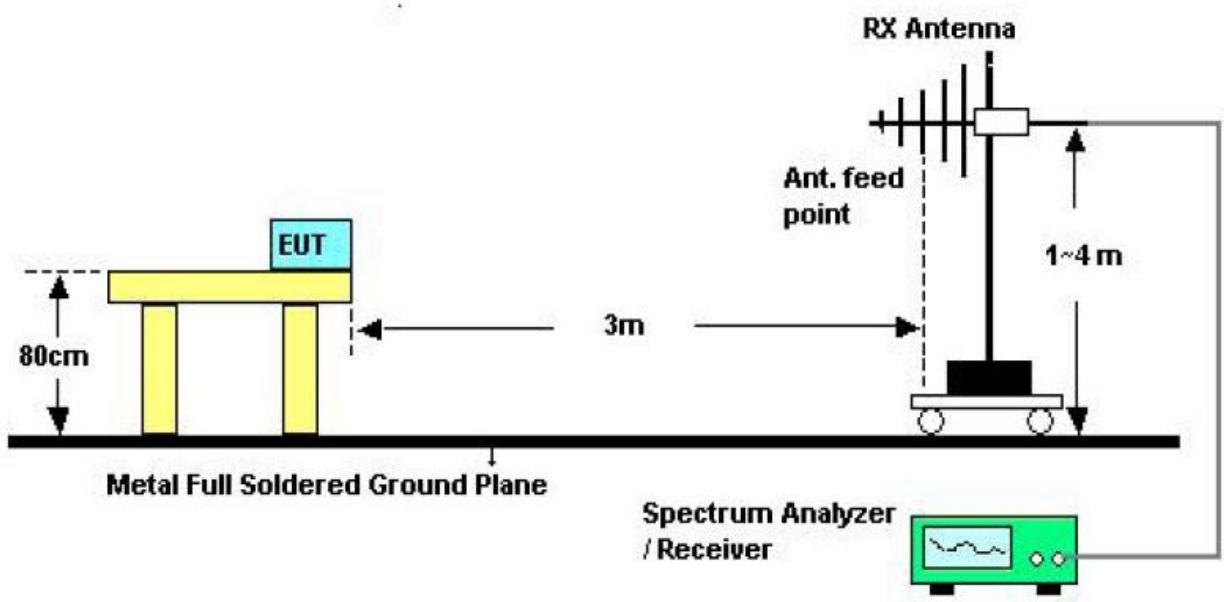
a) The tighter limit applies at the band edges.
b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

5.2.2 Test Setup

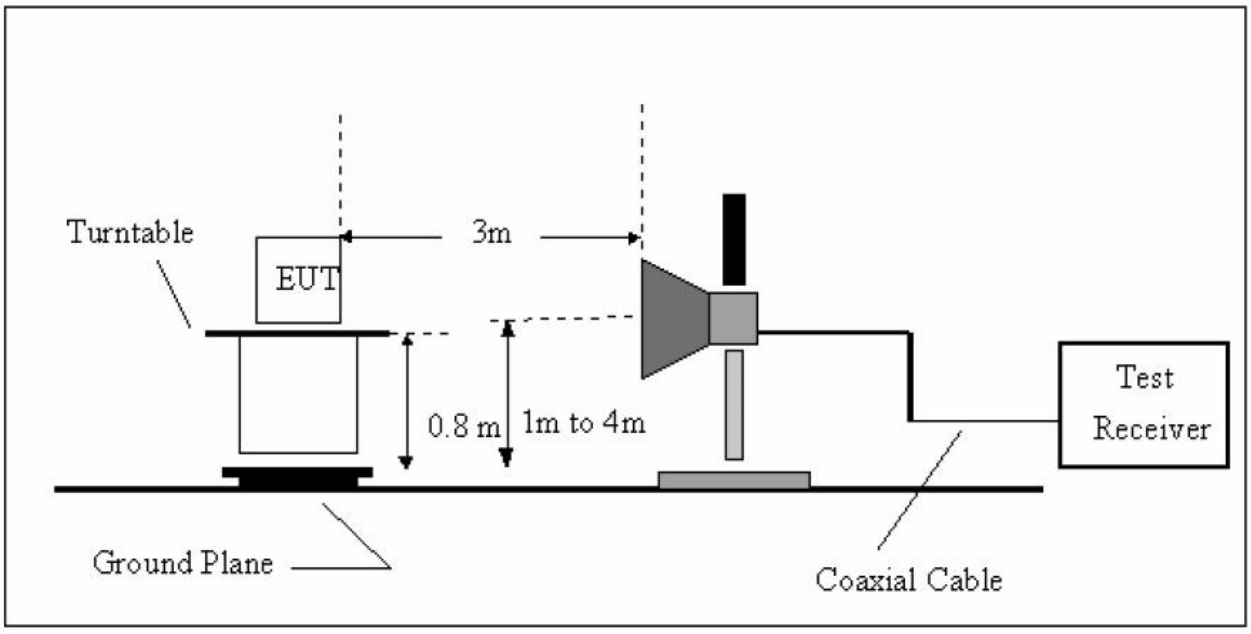
See the next page



Below 30MHZ Test Setup



Above 30MHZ Test Setup



Above 1GHZ Test Setup

5.2.3 Test Procedure

a) The measureing distance of 3m shall be used for measurements at frequency up to 1GHZ and above 1GHZ, The EUT was placed on a rotating 0.8 m high above ground,The table was rotated 360 degrees to determine the position of the highest radiation
b) The Test antenna shall vary between 1m and 4m,Both Horizontal and Vertical antenna are set ot make measurement.
c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range.Significent Peaks are then marked.and then Qusia Peak Detector mode remeasured
d) If Peak value comply with QP limit Below 1GHZ.The EUT deemed to comply with QP limit.But the Peak value and average value both need to comply with applicable limit above 1GHZ.
e) For the actual test configuration,please see the test setup photo.

5.2.4 Test Equipment Setting For emission test.est Result

9KHZ~150KHZ	RBW 200HZ	VBW1KHZ
150KHZ~30MHZ	RBW 9KHZ	VBW 30KHZ
30MHZ~1GHZ	RBW 120KHZ	VBW 300KHZ
Above 1GHZ	RBW 1MHZ	VBW 3MHZ

5.2.5 Test Condition

Continual Transmitting in maximum power(The new battery be used during Test)

5.2.6 Test Result

Detailed information please see the following page.

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limits 3m (dBuV/m)	Margin (dBuV/m)
102.450	V	Peak	46.34	-15.58	30.76	43.50	-12.74
129.450	V	Peak	52.03	-16.62	35.41	43.50	-8.09
276.150	V	Peak	46.82	-11.74	35.08	46.00	-10.92
652.333	V	Peak	42.30	-4.94	37.36	46.00	-8.64
662.833	V	Peak	43.70	-4.76	37.94	46.00	-7.06
798.166	V	Peak	41.59	-3.86	37.73	46.00	-8.27

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Factor (dB)	Actual FS (dBuV/m)	Limits 3m (dBuV/m)	Margin (dBuV/m)
91.200	H	Peak	51.18	-15.90	35.28	43.50	-8.22
160.050	H	Peak	49.78	-15.03	36.75	43.50	-8.75
247.800	H	Peak	49.46	-12.49	36.97	46.00	-9.03
350.166	H	Peak	46.70	-9.34	37.36	46.00	-8.64
715.333	H	Peak	42.63	-4.19	38.44	46.00	-7.56
797.000	H	Peak	40.96	-3.87	37.09	46.00	-8.91

Notes: Above is Below 1GHZ test data

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1060.00	V	58.10	---	-11.84	46.26	---	74.00	54.00	-8.89	Peak
1593.00	V	57.88	---	-9.05	48.83	---	74.00	54.00	-5.17	Peak
2766.66	V	51.13	---	-4.74	46.39	---	74.00	54.00	-7.61	Peak
4800.00	V	50.20	---	0.64	50.84	---	74.00	54.00	-4.79	Peak
N/A										

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX Low		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1060.00	H	57.61	---	-11.84	45.77	---	74.00	54.00	-8.23	Peak
1600.00	H	56.31	---	-9.03	47.28	---	74.00	54.00	-6.72	Peak
2766.67	H	48.58	---	-4.74	43.84	---	74.00	54.00	-10.16	Peak
4800.00	H	48.49	---	0.64	49.13	---	74.00	54.00	-4.87	Peak
N/A										

Notes: AV Means AV detector test data,Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1163.33	V	53.33	---	-11.27	42.06	---	74.00	54.00	-11.94	Peak
1593.33	V	57.59	---	-9.05	48.54	---	74.00	54.00	-5.46	Peak
1626.67	V	53.56	---	-8.92	44.64	---	74.00	54.00	-9.36	Peak
4833.33	V	50.50	---	0.78	51.28	---	74.00	54.00	-2.72	Peak

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX Mid		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1590.00	H	52.18	---	-9.07	43.11	---	74.00	54.00	-10.89	Peak
1626.66	H	57.24	---	-8.92	48.32	---	74.00	54.00	-5.68	Peak
2333.33	H	50.95	---	-6.14	44.81	---	74.00	54.00	-9.19	Peak
4883.33	H	45.94	---	0.78	46.72	---	74.00	54.00	-7.28	Peak

Notes: AV Means AV detector test data,Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Bluetooth headset	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1060.00	V	61.05	---	-11.84	49.21	---	74.00	54.00	-4.79	Peak
1596.66	V	58.24	---	-9.04	49.20	---	74.00	54.00	-4.80	Peak
1653.33	V	53.08	---	-8.82	44.26	---	74.00	54.00	-9.74	Peak
4958.33	V	47.91	---	0.91	48.82	---	74.00	54.00	-5.18	Peak

EUT	WIRELESS GUITAR	Model Name	G1-BT-01
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 3.7V
Test Mode	TX High		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1653.33	H	57.53	---	-8.82	48.71	---	74.00	54.00	-5.29	Peak
2296.66	H	50.39	---	-6.29	44.10	---	74.00	54.00	-9.90	Peak
2846.66	H	50.80	---	-4.52	46.28	---	74.00	54.00	-7.72	Peak
4958.33	H	46.78	---	0.91	47.69	---	74.00	54.00	-6.31	Peak

Notes: AV Means AV detector test data,Peak Means Peak detector test data.
Emissions attenuated more than 20 dB below the permissible value are not reported.

6 Peak Power

6.1 Test limit

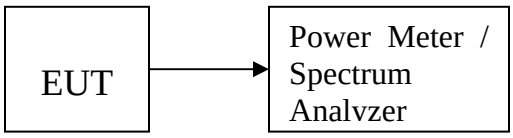
Please refer section15.247.

Regulation 15.247(b) The limit of Maximum Peak OutputPower Measurement is 1W(30dBm)

6.2 Test Procedure

The transmitter output is connected to the RF Power Meter. The RF Power Meter is set to the peak power detection.

6.3 Test Setup



6.4 Test Results

Channel	Frequency (MHz)	Reading Power (dBm)	Factor (dB)	Out put Power (dBm)	Out put Power (W)	Limit (W)	Result
Low	2402	-1.26	0.5	-0.76	0.00084	1	PASS
Mid	2441	-1.34	0.5	-0.84	0.00082		PASS
High	2480	-1.43	0.5	-0.93	0.00081		PASS

7 PEAK POWER SPECTRAL DENSITY

7.1 Test limit

7.1.1 Please refer section15.247.

7.1.2 For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

7.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

7.2 Method of measurement

7.2.1 Place the EUT on the table and set it in transmitting mode.

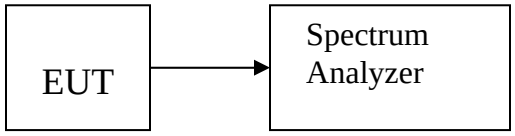
7.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

7.2.3 Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s.

7.2.4 Record the max. reading.

7.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

7.3 Test Setup



7.4 Test Results

The test is not applicable.

8 FREQUENCY SEPARATION

8.1 Test limit

Please refer section15.247

According to § 15.247(a)(1), Frequency hopping systems shall have hopping channel carrier frequencies separated by 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 the20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with anoutput power no greater than 125 mW.

The hopping channels defined within a hopping sequence shall be at least 1MHz apart(channel separation)

8.2 Method of measurement

a)The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

b)The test receiver RBW set 30KHZ,VBW set 30KHZ,Sweep time set auto.

8.3 Test Setup

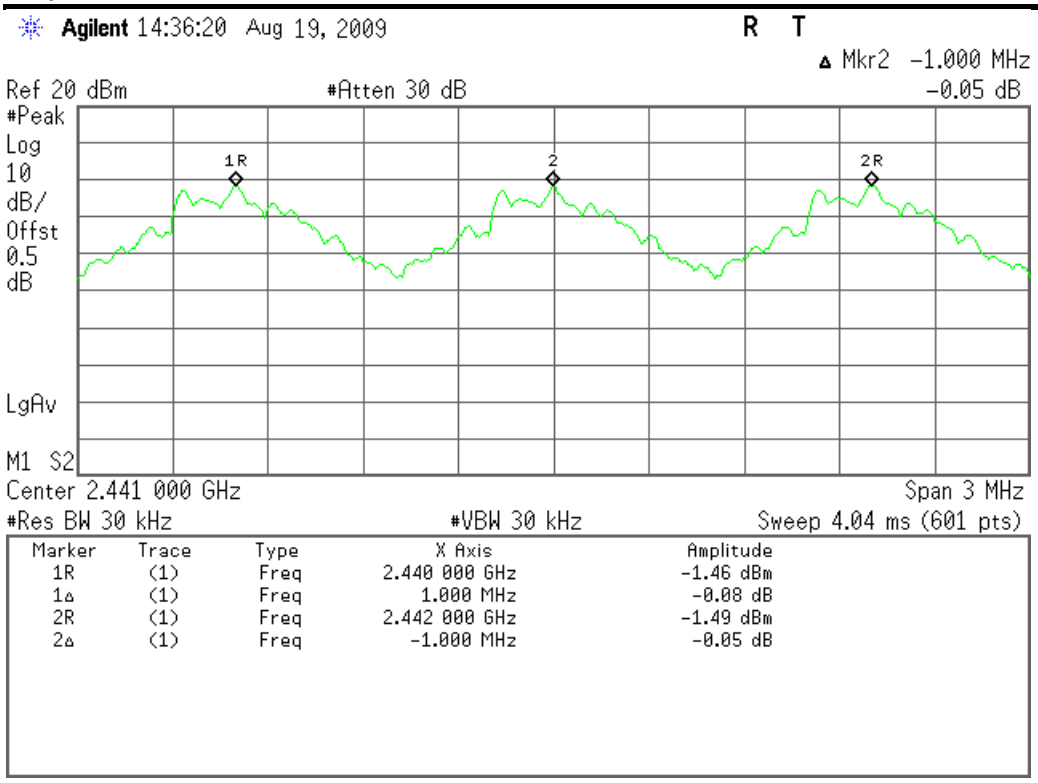
Same as 7.3

8.4 Test Results

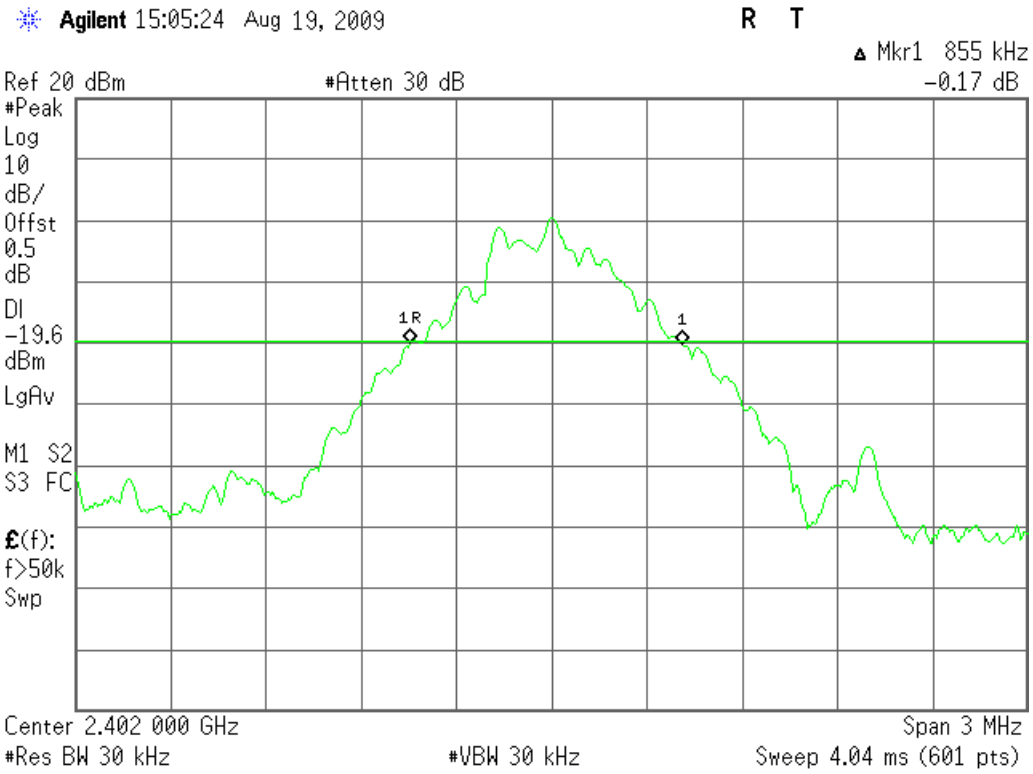
PASS.

Detailed information please see the following page.

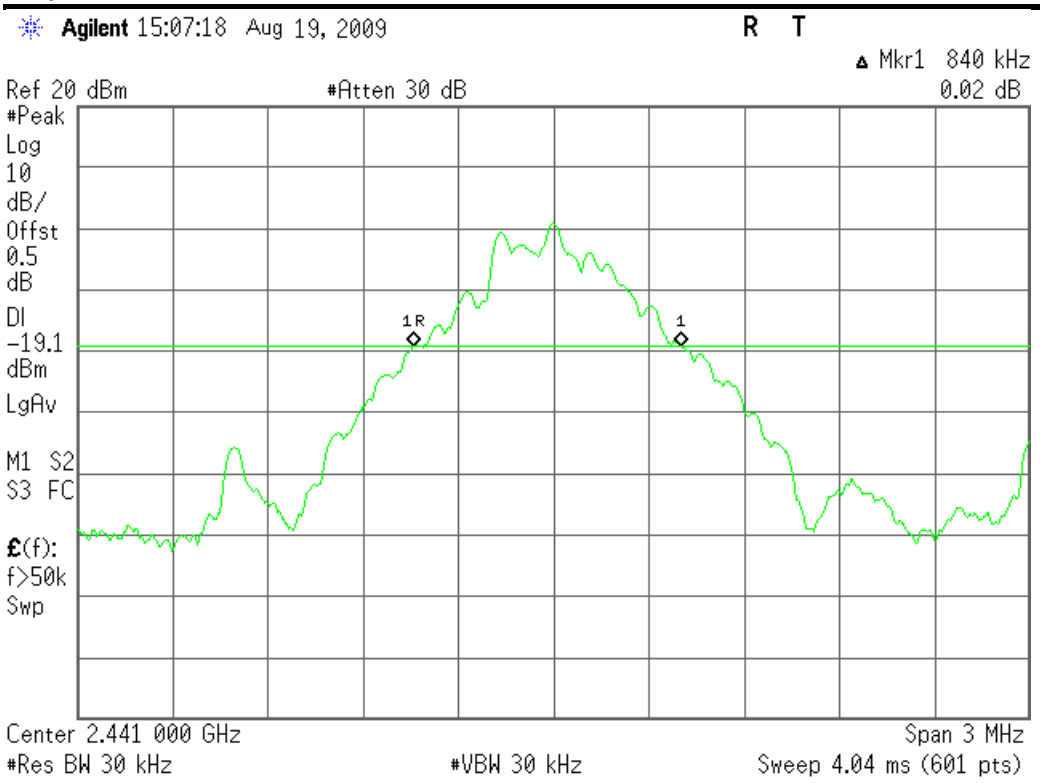
Measurement of Channel Separation :


Agilent 14:36:20 Aug 19, 2009
R T
Mkr2 -1.000 MHz
-0.05 dB
Ref 20 dBm
#Atten 30 dB
#Peak
Log
10
dB/
Offst
0.5
dB
1R
2
2R
LgAv
M1 S2
Center 2.441 000 GHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 4.04 ms (601 pts)
Marker Trace Type X Axis Amplitude
1R (1) Freq 2.440 000 GHz -1.46 dBm
1Δ (1) Freq 1.000 MHz -0.08 dB
2R (1) Freq 2.442 000 GHz -1.49 dBm
2Δ (1) Freq -1.000 MHz -0.05 dB

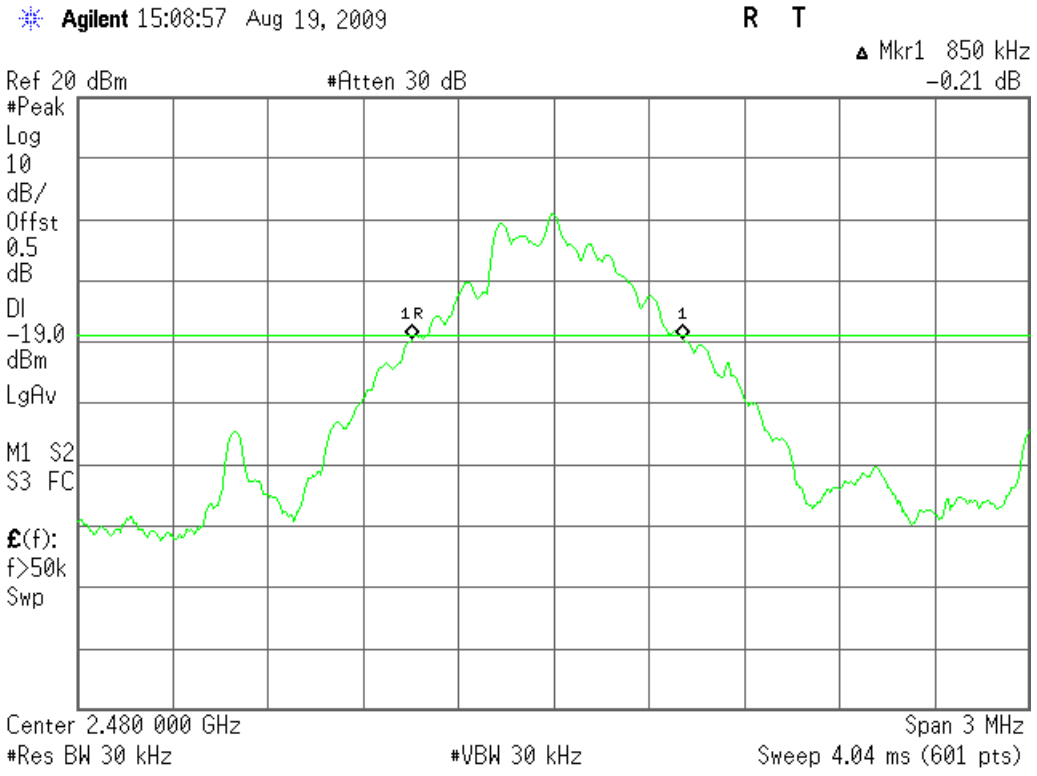
CH Low :


Agilent 15:05:24 Aug 19, 2009
R T
Mkr1 855 kHz
-0.17 dB
Ref 20 dBm
#Atten 30 dB
#Peak
Log
10
dB/
Offst
0.5
dB
Dl
-19.6
dBm
1R
1
LgAv
M1 S2
S3 FC
£(f):
f>50k
Swp
Center 2.402 000 GHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 4.04 ms (601 pts)

CH Mid :


Agilent 15:07:18 Aug 19, 2009
R T
Mkr1 840 kHz
0.02 dB
Ref 20 dBm
#Atten 30 dB
#Peak
Log
10
dB/
Offst
0.5
dB
Dl
-19.1
dBm
LgAv
M1 S2
S3 FC
£(f):
f>50k
Swp
1R
1
Center 2.441 000 GHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 4.04 ms (601 pts)

CH High :


Agilent 15:08:57 Aug 19, 2009
R T
Mkr1 850 kHz
-0.21 dB
Ref 20 dBm
#Atten 30 dB
#Peak
Log
10
dB/
Offst
0.5
dB
Dl
-19.0
dBm
LgAv
M1 S2
S3 FC
£(f):
f>50k
Swp
1R
1
Center 2.480 000 GHz
Span 3 MHz
#Res BW 30 kHz
#VBW 30 kHz
Sweep 4.04 ms (601 pts)

9 NUMBER OF HOPPING FREQUENCY

9.1 Test limit

Please refer section15.247

According to § 15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

9.2 Method of measurement

9.2.1. Place the EUT on the table and set it in transmitting mode.

9.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

9.2.3. Set spectrum analyzer Start=2400MHz, Stop = 2441.5MHz, Sweep = 1ms and Start=2441.5MHz, Stop = 2483.5MHz, Sweep = 1ms.

9.2.4. Set the spectrum analyzer as RBW, VBW=510kHz,

9.2.5. Max hold, view and count how many channel in the band.

9.3 Test Setup

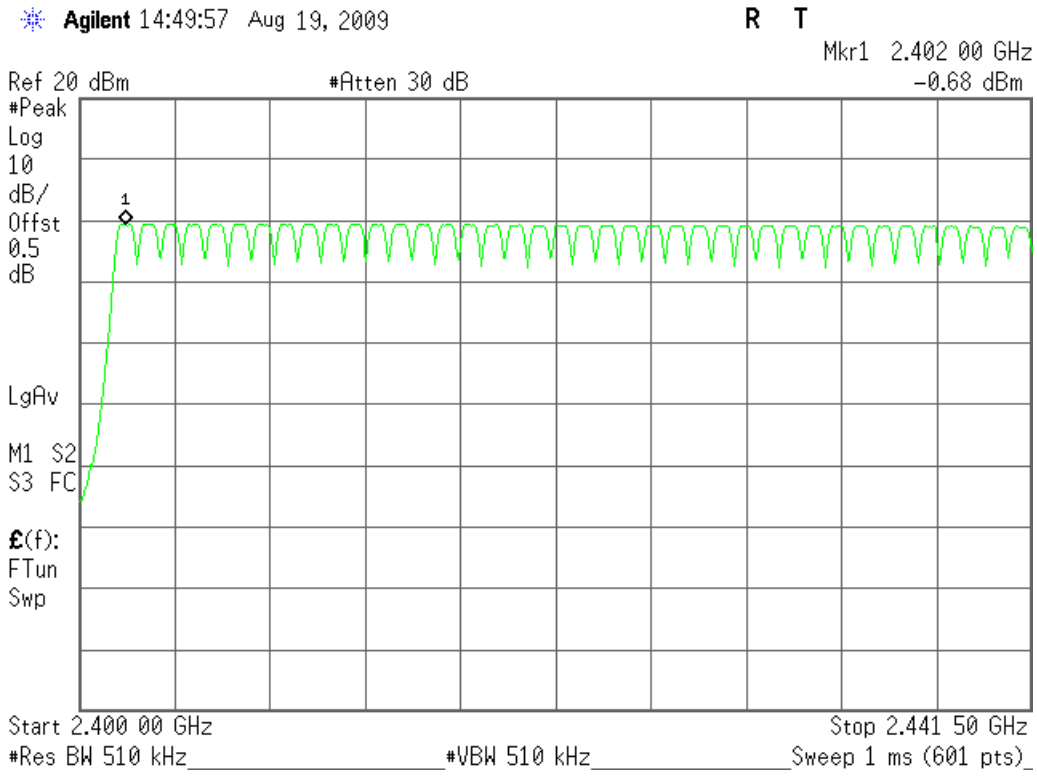
Same as 7.3

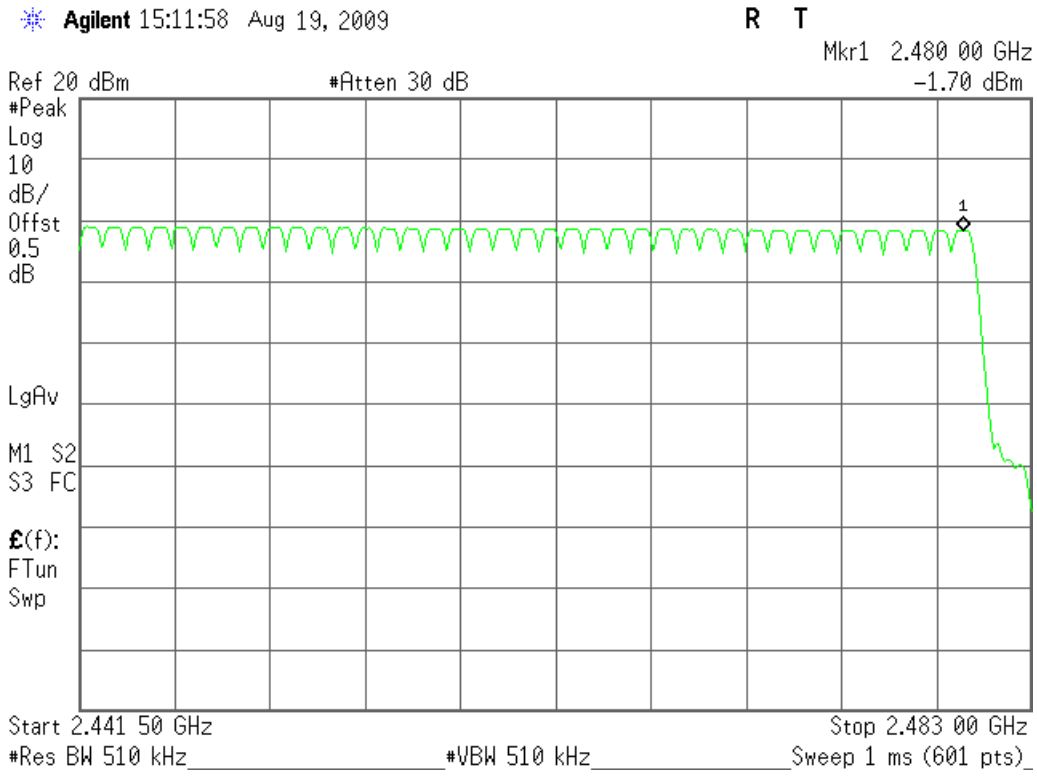
9.4 Test Results

PASS.

Detailed information please see the following page.

Channel Number: 2.4GHz-2.483GHz





10 DWELL TIME

10.1 Test limit

Please refer section15.247

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz. The average time of occupancy on any frequency shall not greater than 0.4 s within period of 0.4 sec- onds multiplied by the number of hopping channel employed.

10.2 Method of measurement

10.2.1. Place the EUT on the table and set it in transmitting mode.

10.2.2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

10.2.3. Set center frequency of spectrum analyzer = operating frequency.

10.2.4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.

10.2.5. Repeat above procedures until all frequency measured were complete.

10.3 Test Setup

Same as 7.3

10.4 Test Results

PASS.

A period time = 0.4 (s) * 79 = 31.6(s)

CH Low: DH1 time slot = 0.396 (ms) * (1600/(1*79)) * 31.6 = 253.4 (ms)

DH3 time slot = 1.630 (ms) * (1600/(3*79)) * 31.6 = 347.7 (ms)

DH5 time slot = 2.898 (ms) * (1600/(5*79)) * 31.6 = 370.9 (ms)

CH Mid: DH1 time slot = 0.396 (ms) * (1600/(1*79)) * 31.6 = 253.4 (ms)

DH3 time slot = 1.658 (ms) * (1600/(3*79)) * 31.6 = 353.7 (ms)

DH5 time slot = 2.898 (ms) * (1600/(5*79)) * 31.6 = 370.9 (ms)

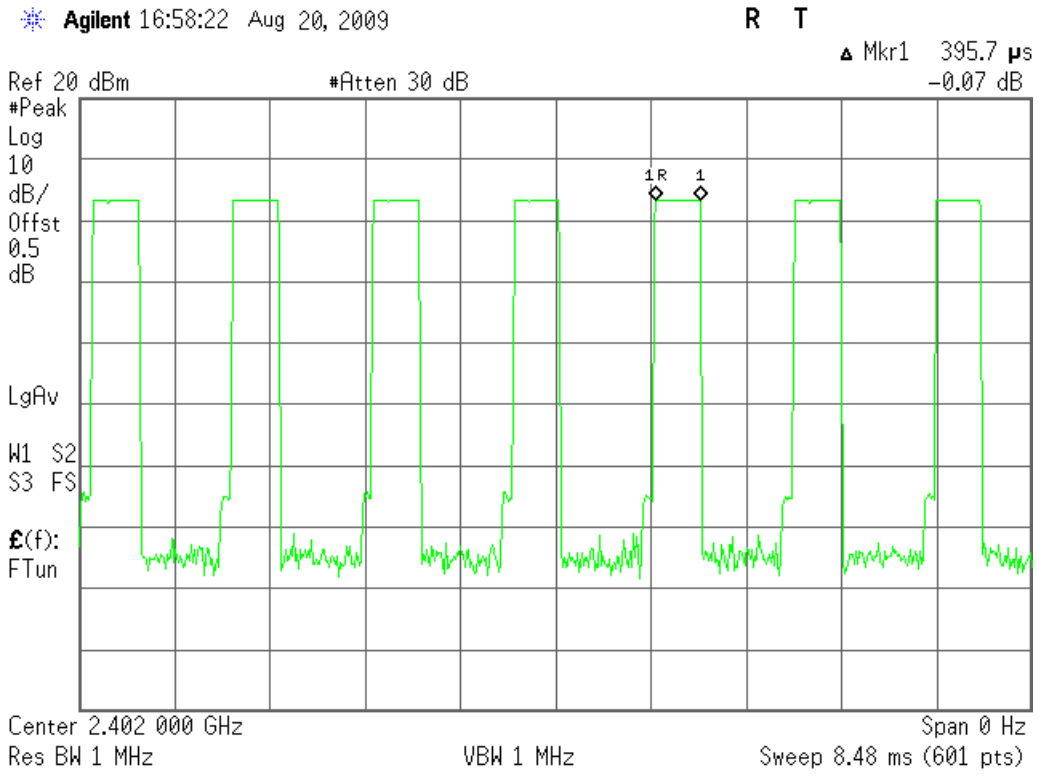
CH High: DH1 time slot = 0.390 (ms) * (1600/(1*79)) * 31.6 = 249.6 (ms)

DH3 time slot = 1.644 (ms) * (1600/(3*79)) * 31.6 = 350.7 (ms)

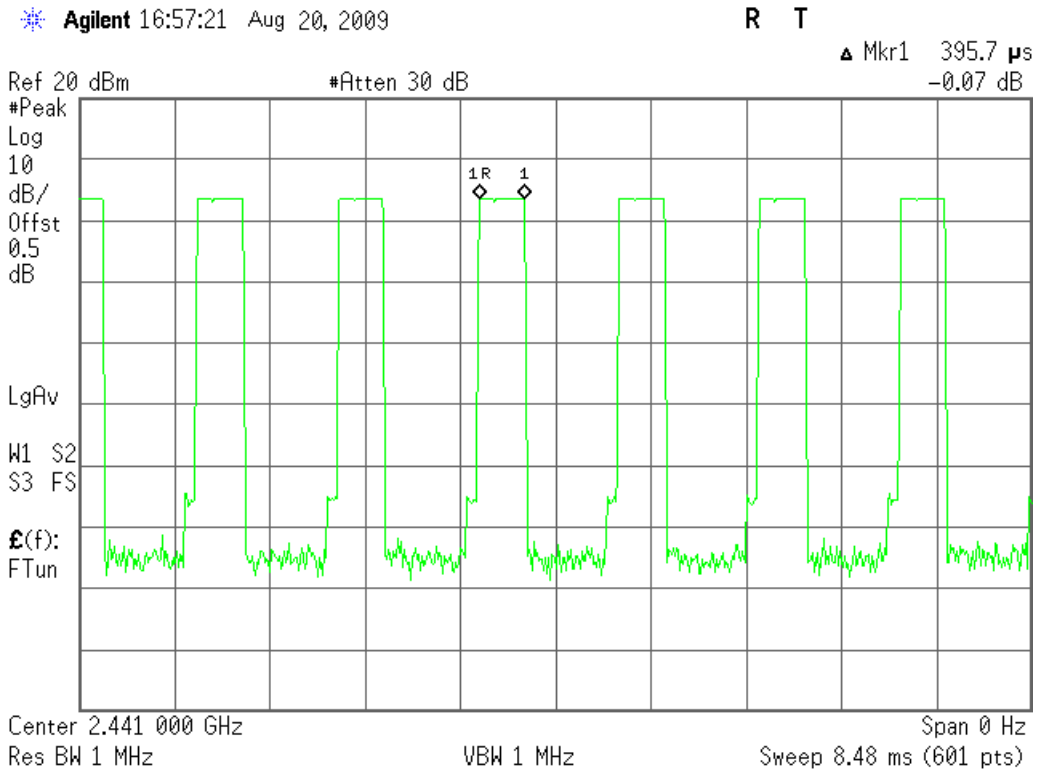
DH5 time slot = 2.898 (ms) * (1600/(5*79)) * 31.6 = 370.9 (ms)

Detailed information please see the following page.

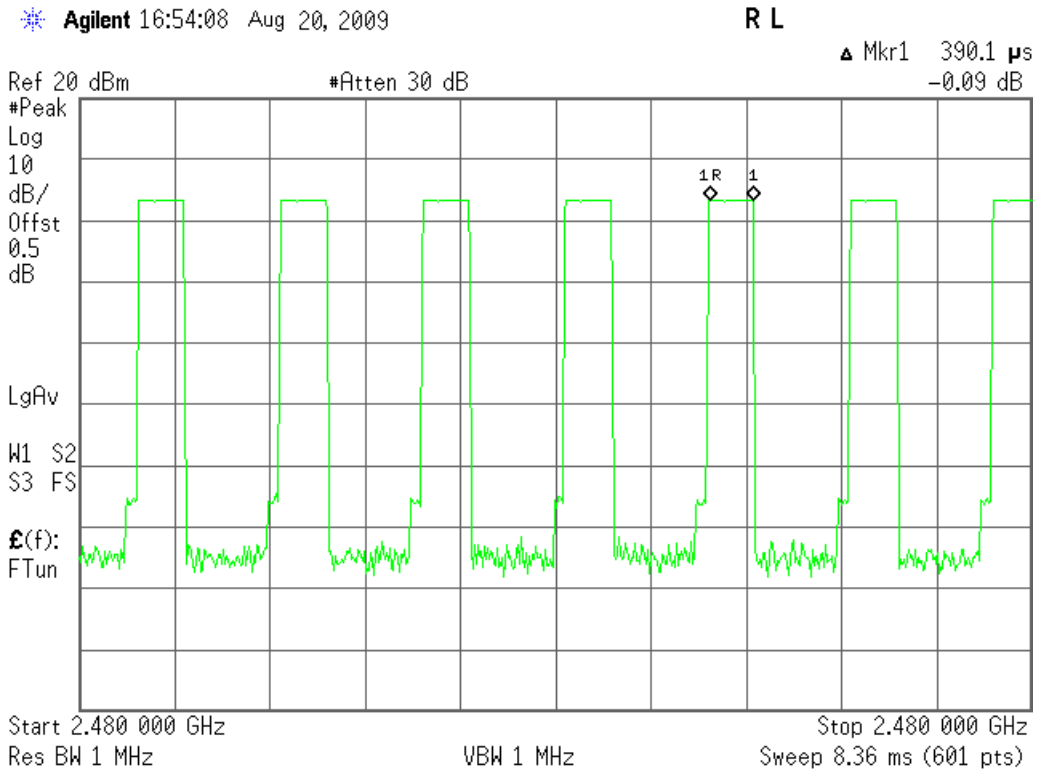
DH1: CH Low



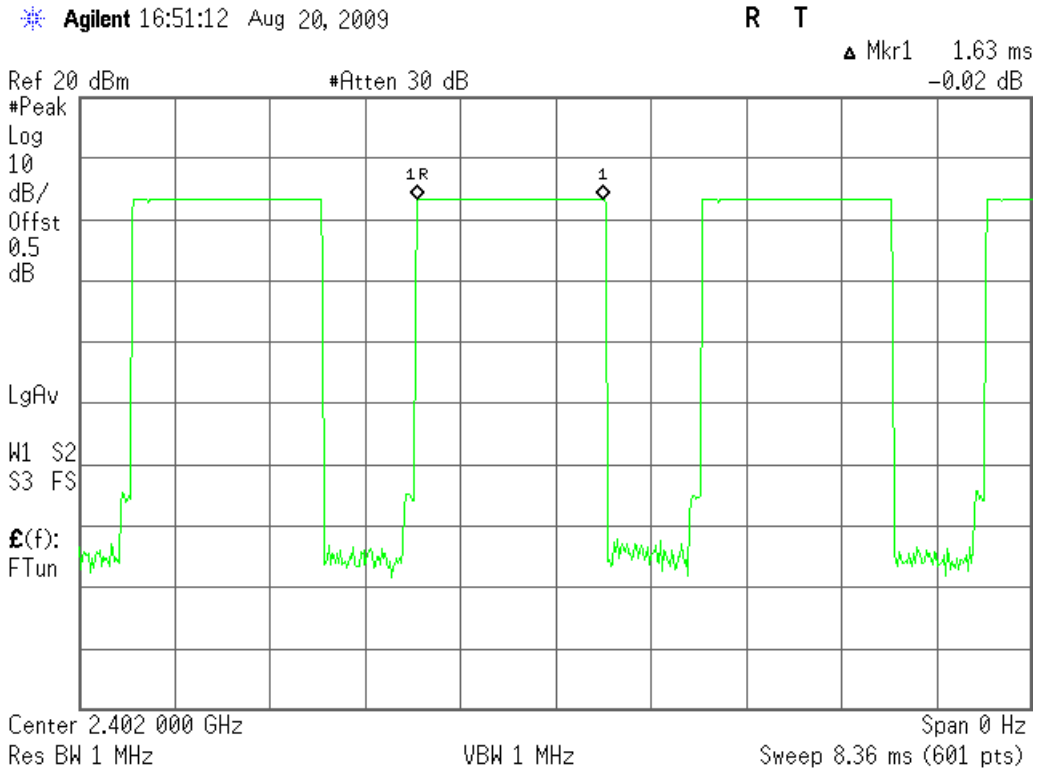
DH1: CH Mid



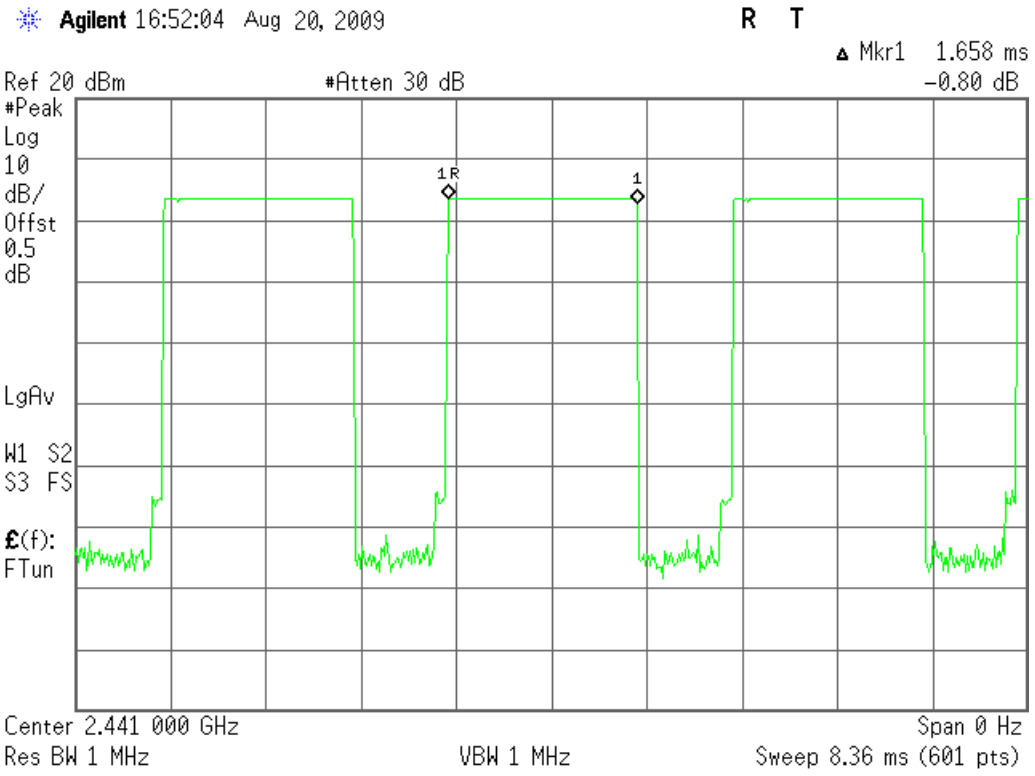
DH1: CH High



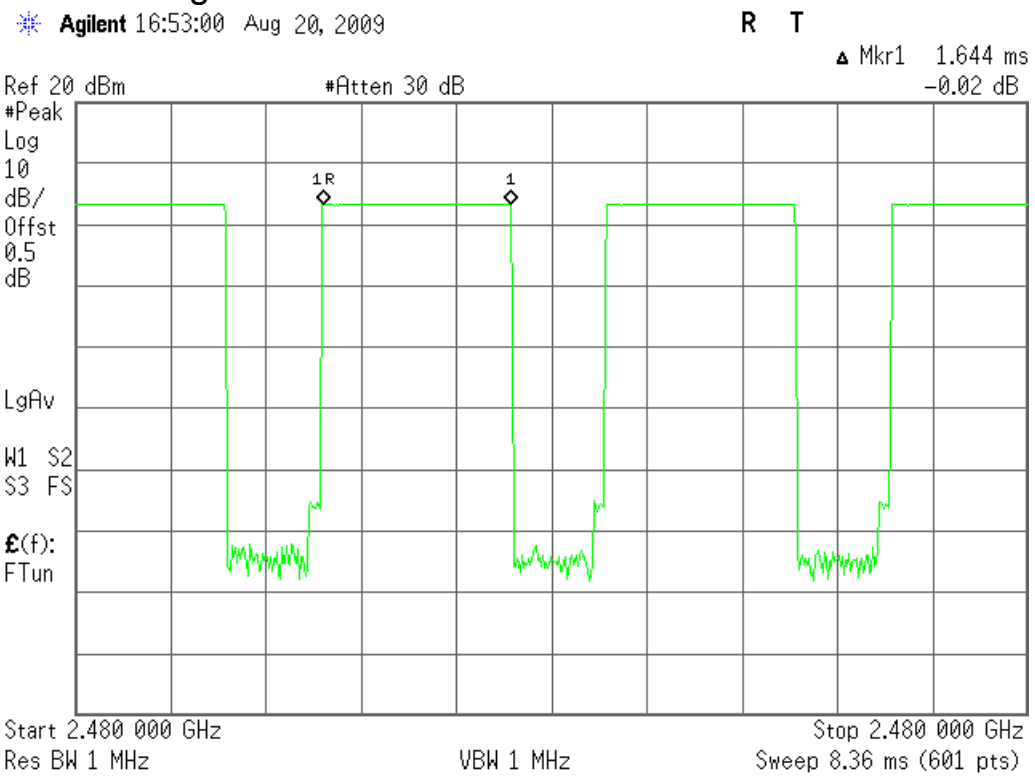
DH3: CH Low



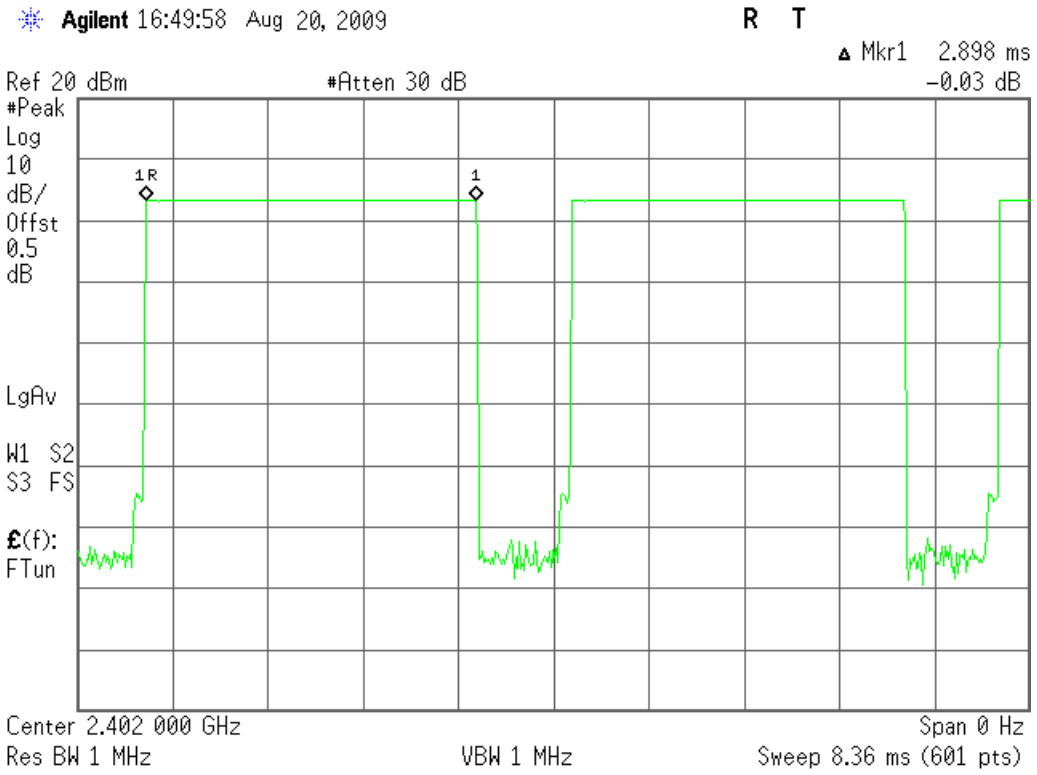
DH3: CH Mid



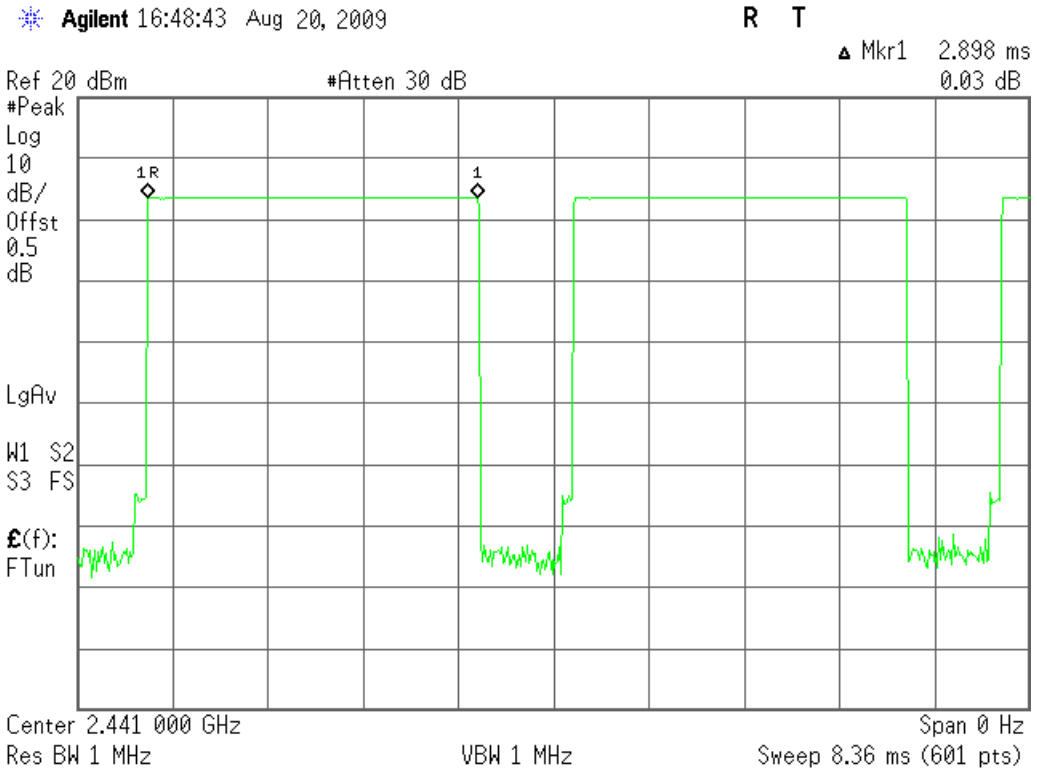
DH3 CH High



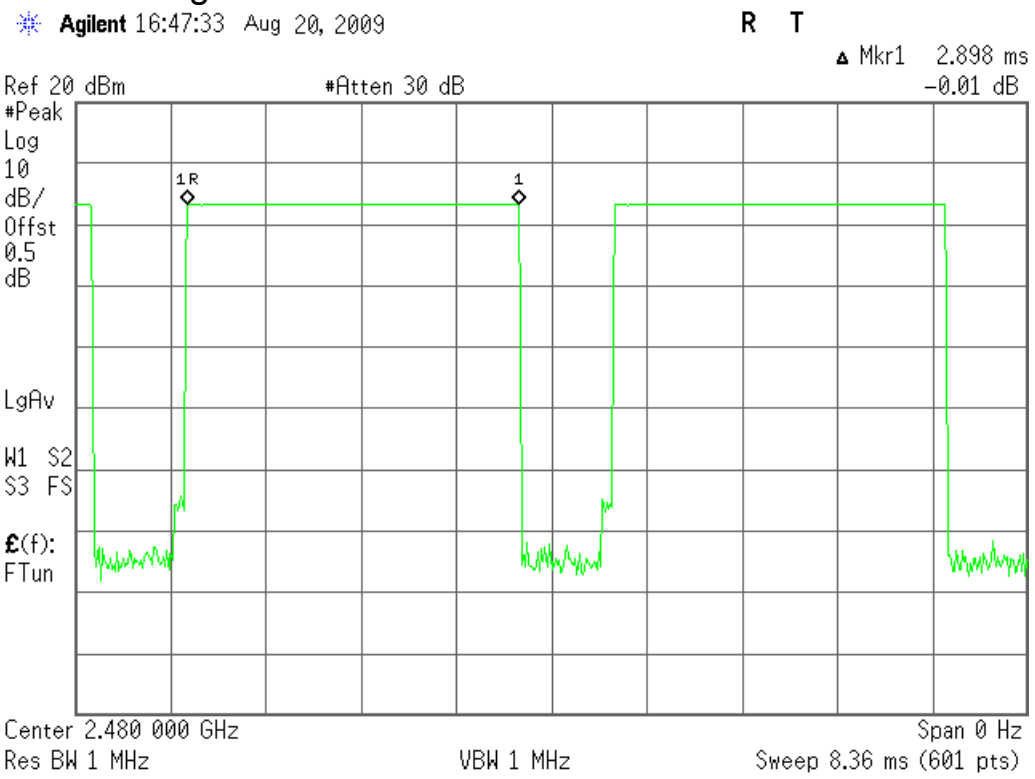
DH5 CH Low



DH5 CH Mid



DH5 CH High


Agilent 16:47:33 Aug 20, 2009
R T
Mkr1 2.898 ms
-0.01 dB
Ref 20 dBm
#Atten 30 dB
#Peak
Log
10
dB/
Offst
0.5
dB
1R
1
LgAv
W1 S2
S3 FS
£(f):
FTun
Center 2.480 000 GHz
Span 0 Hz
Res BW 1 MHz
VBW 1 MHz
Sweep 8.36 ms (601 pts)

11 Band Edge Check

11.1 Test limit

Please refer section15.247

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

11.2 Test Procedure

11.2.1 Put the EUT on a 0.8m high table,power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees,Find the maximum Emission

11.2.2 Turning to Low and High frequency,then reduced 50dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency.

11.2.3 Check the spurious emissions out of band.

11.2.4 RBW,VBW Setting, please see the following test plot.

11.3 Test Setup

Same as 5.2.2.

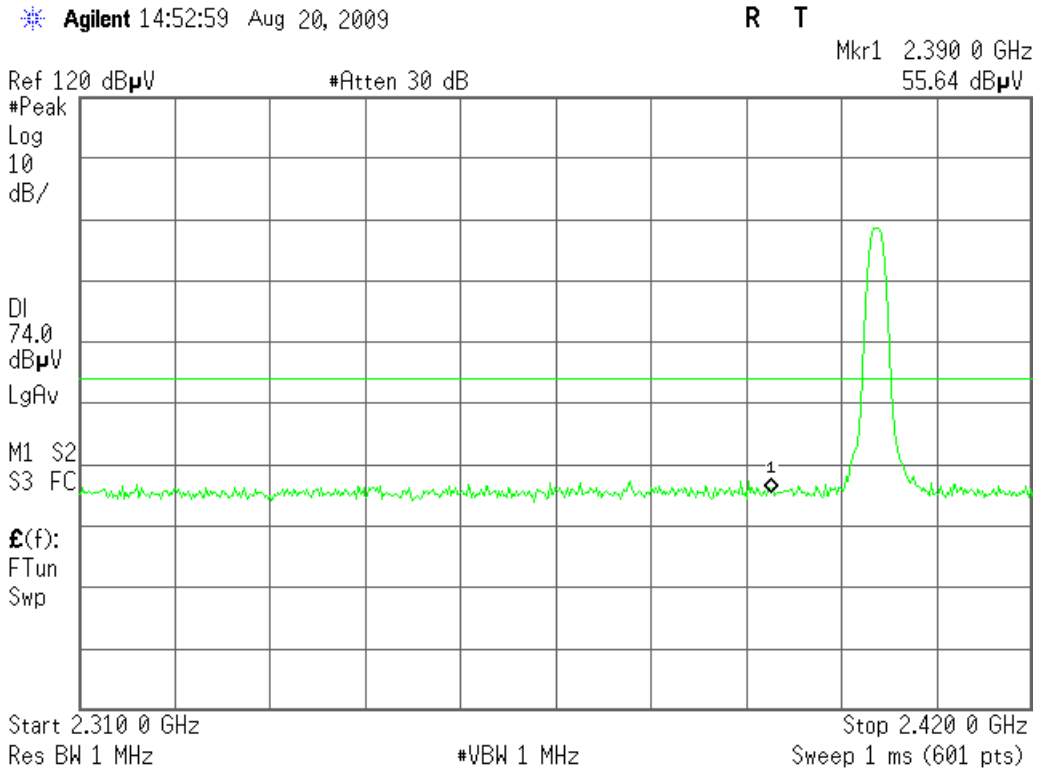
11.4 Test Result

PASS.

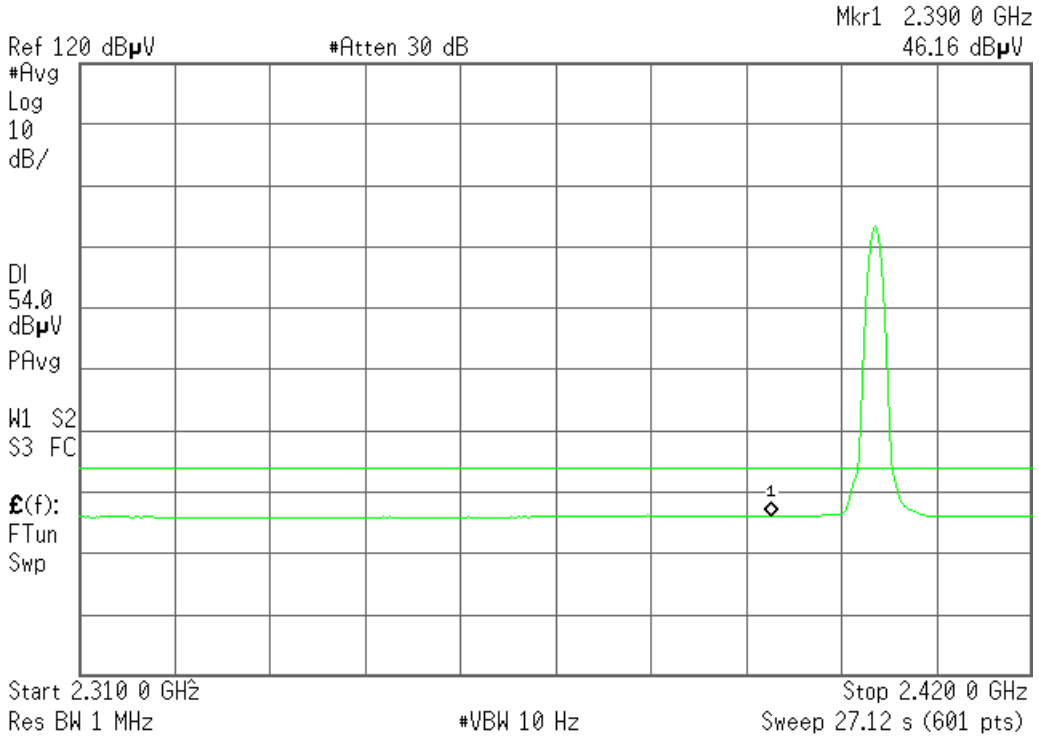
Detailed information please see the following page.

CH LOW :

Detector mode: Peak **Polarity: Horizontal**

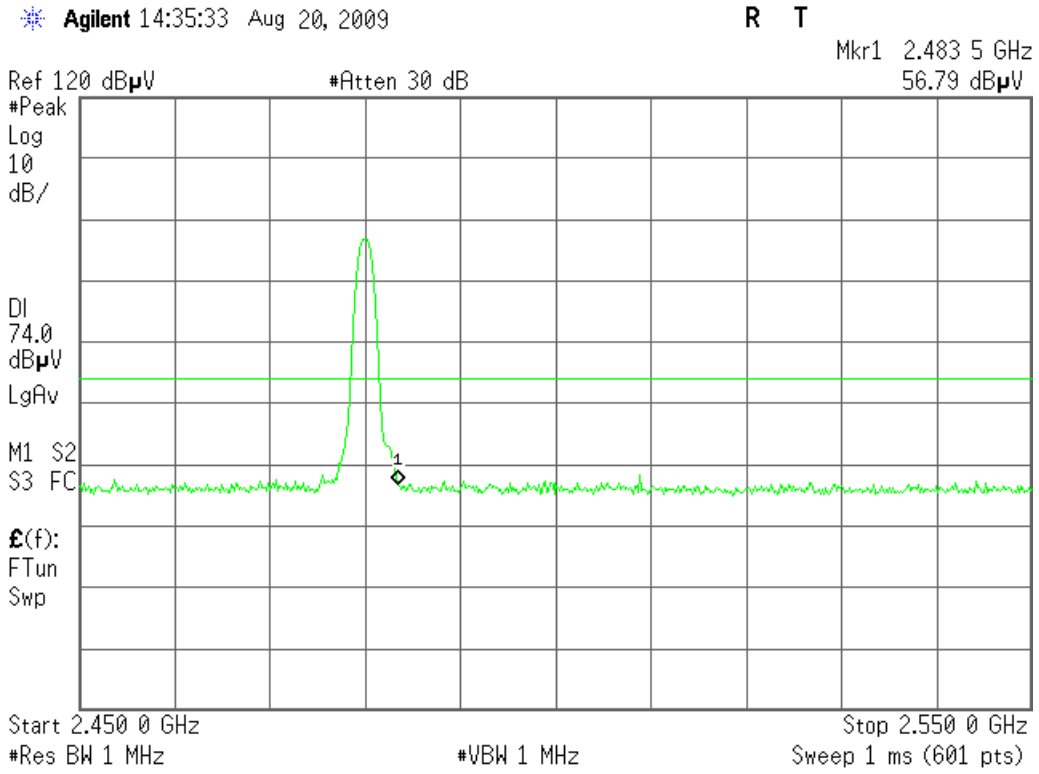


Detector mode: Average **Polarity: Horizontal**

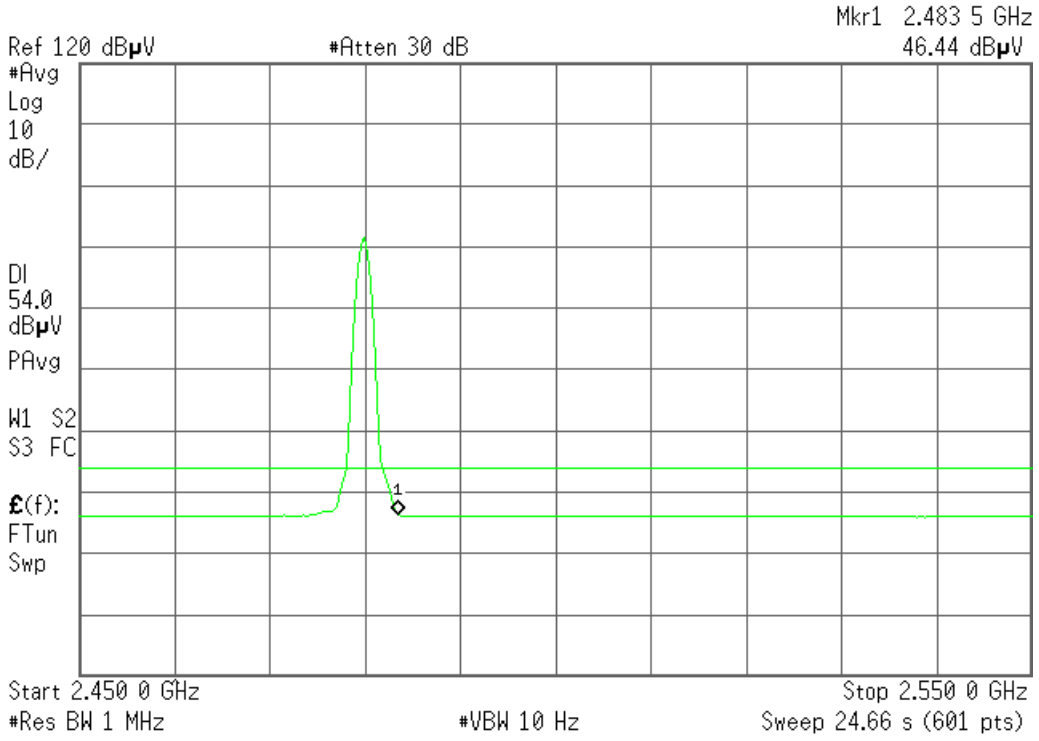


CH High :

Detector mode: Peak **Polarity: Horizontal**

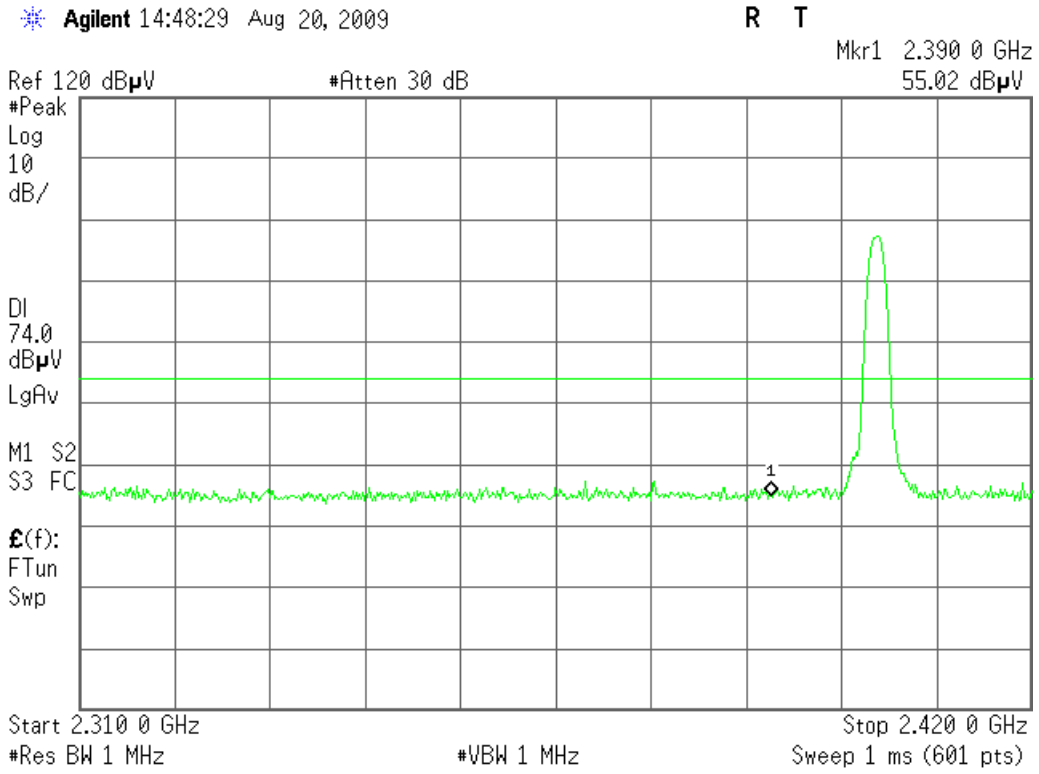


Detector mode: Average **Polarity: Horizontal**

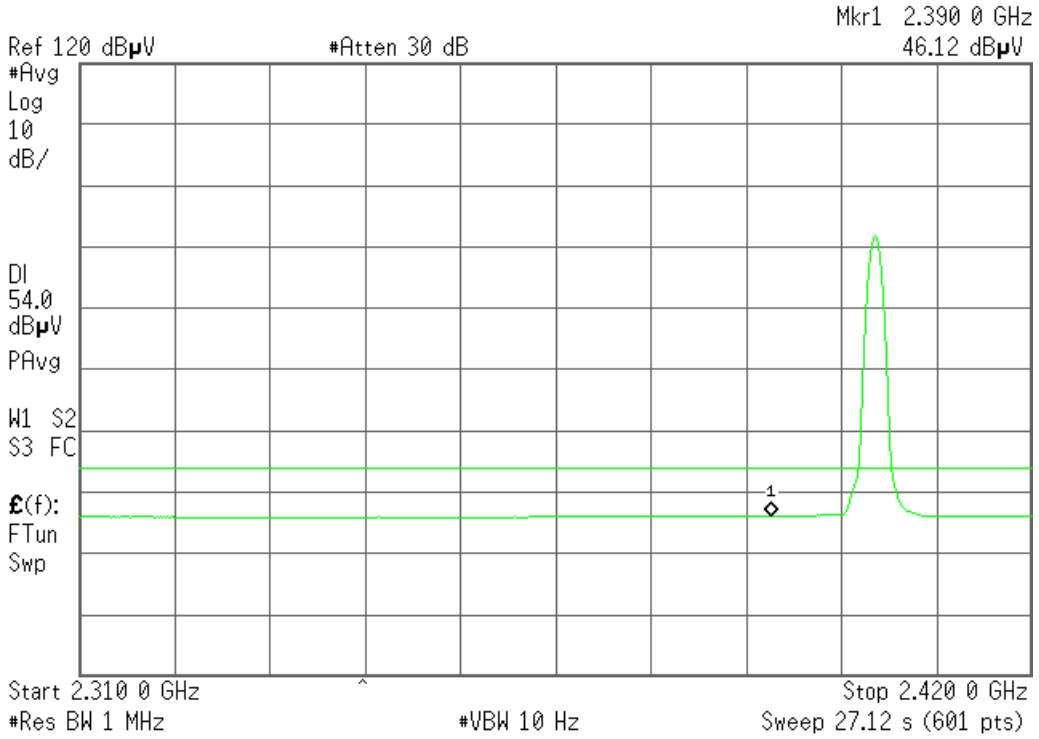


CH LOW :

Detector mode: Peak **Polarity: Vertical**

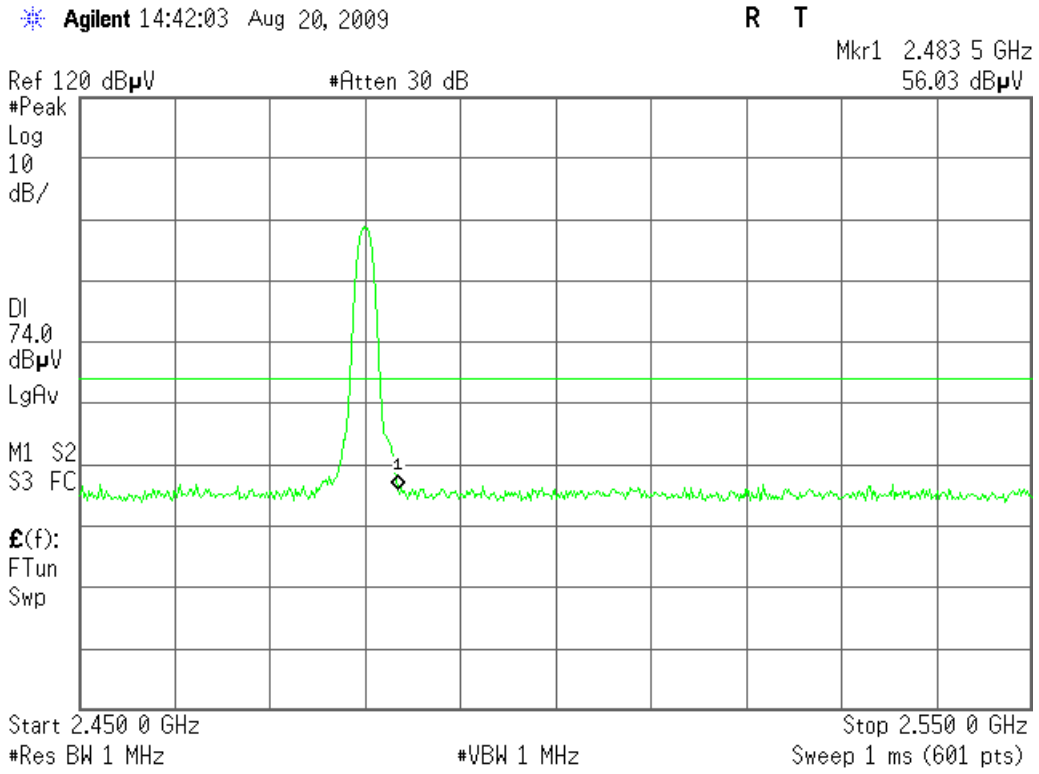


Detector mode: Average **Polarity: Vertical**

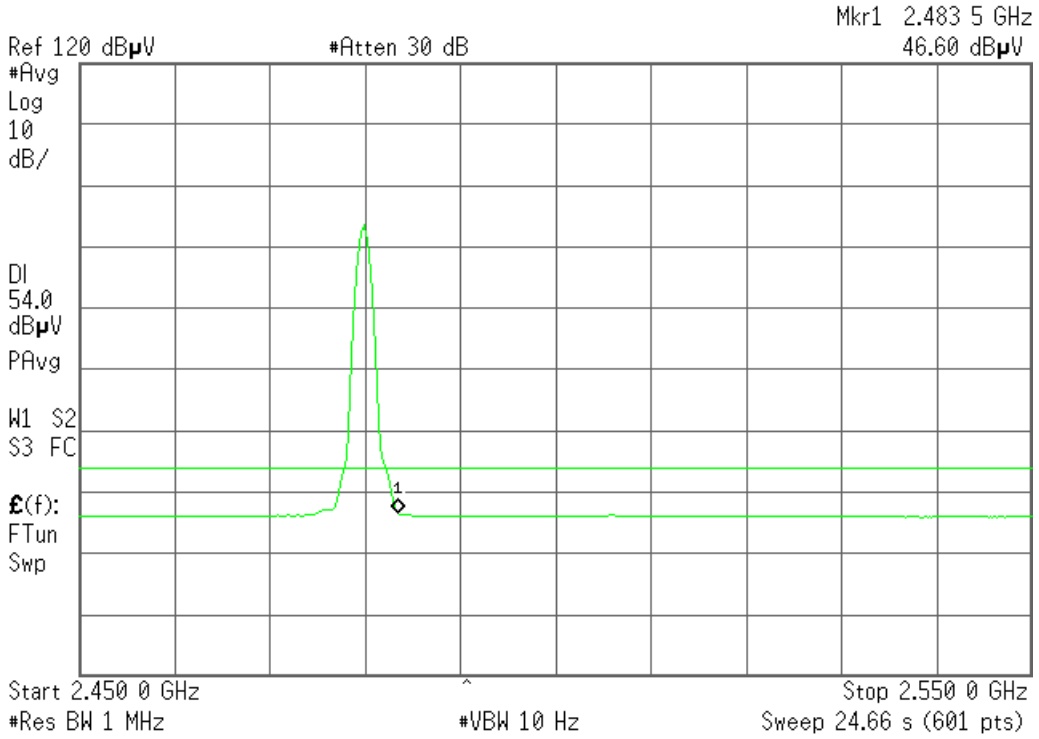


CH High :

Detector mode: Peak **Polarity: Vertical**



Detector mode: Average **Polarity: Vertical**



12 Antenna Requirement

12.1 Standard Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

12.2 Antenna Connected Construction

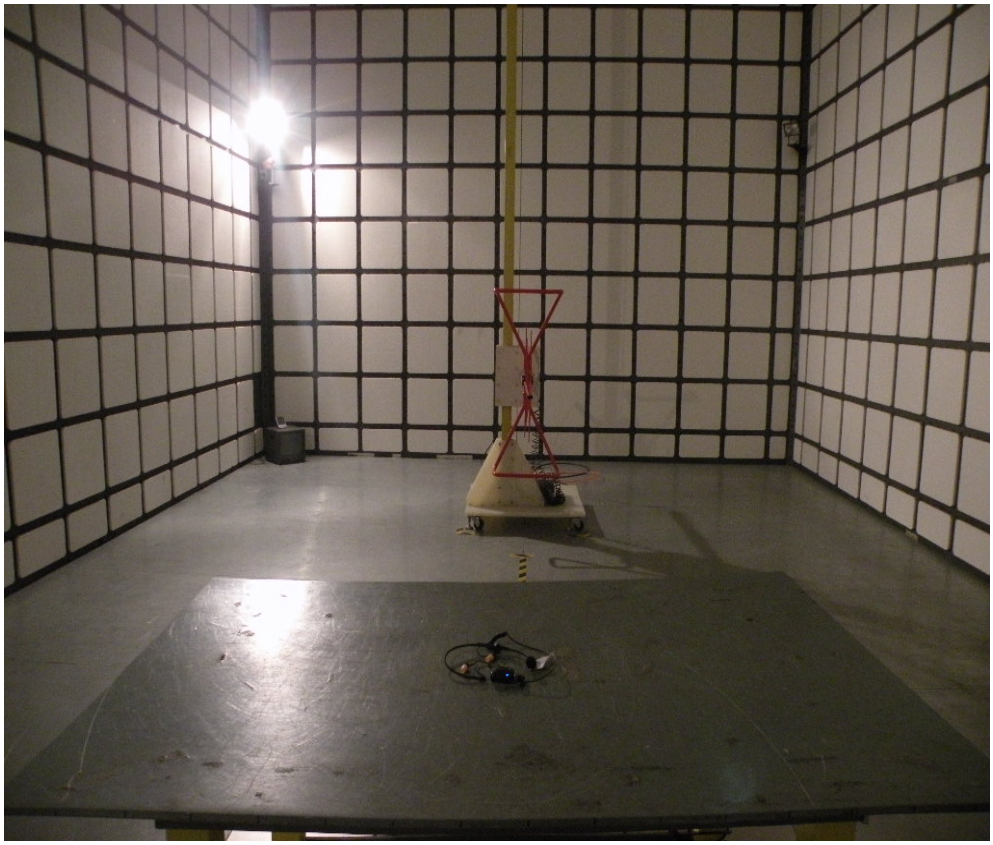
The directional gains of antenna used for transmitting is 0 dBi, and the antenna connector is de- signed with permanent attachment and no consideration of replacement. Please see EUT photo for details.

12.3 Result

The EUT antenna is integral Antenna.It comply with the standard requirement.

13 Photographs of Test Setup

Photographs-Radiated Emission Test Setup in Chamber



14 Photographs of EUT

Figure 1

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [√]

Bottom View[ ]

Left View [ ]

Right View [ ]

Full View [ ]

Figure 2

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[√]

Left View [ ]

Right View [ ]

Full View [ ]

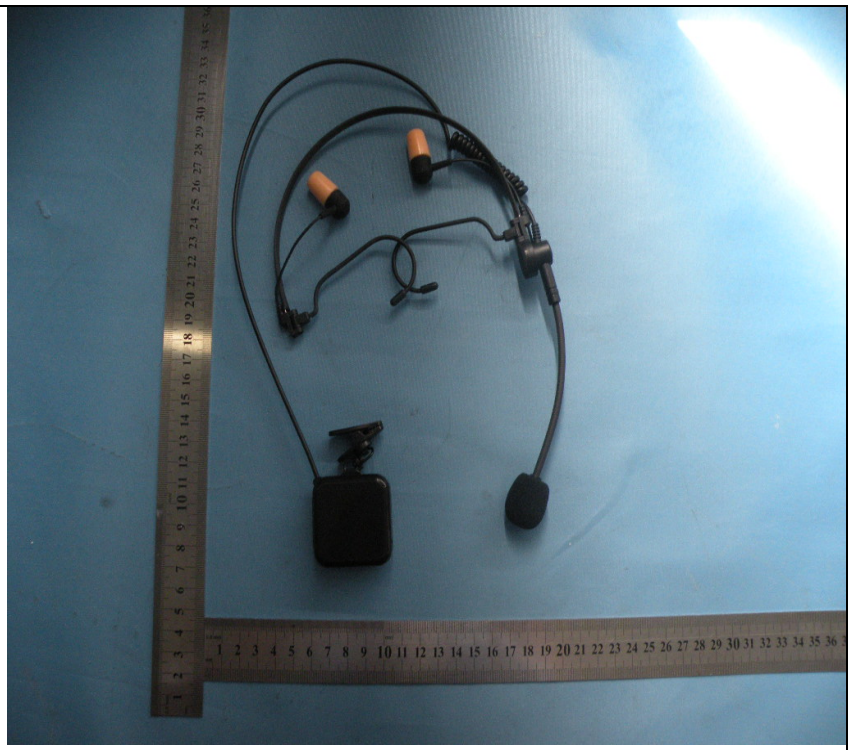


Figure 3

Photo of EUT

Front View [√]

Rear View [ ]

Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Internal View [ ]

Figure 4

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[ ]

Left View [√]

Right View [ ]

Internal View [ ]

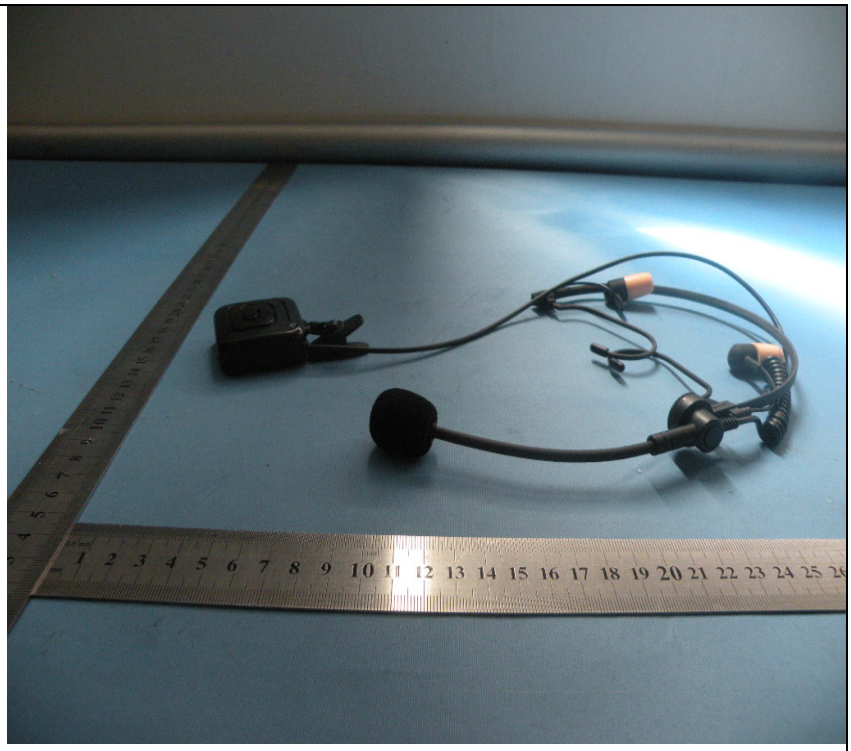


Figure 5

Photo of EUT

Front View [ ]

Rear View [√]

Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Internal View [ ]

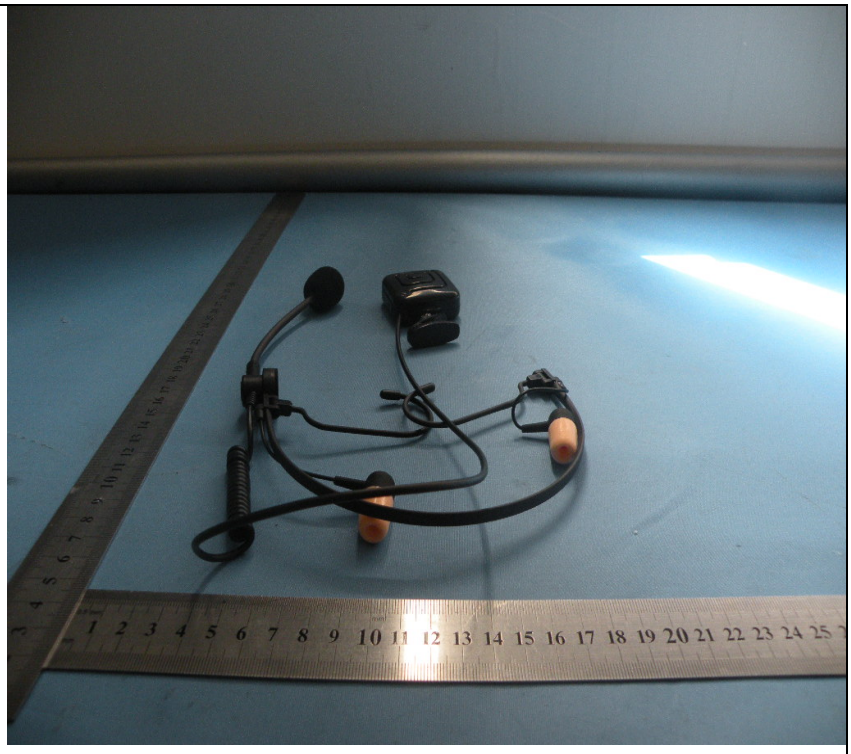


Figure 6

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [√]

Internal View [ ]

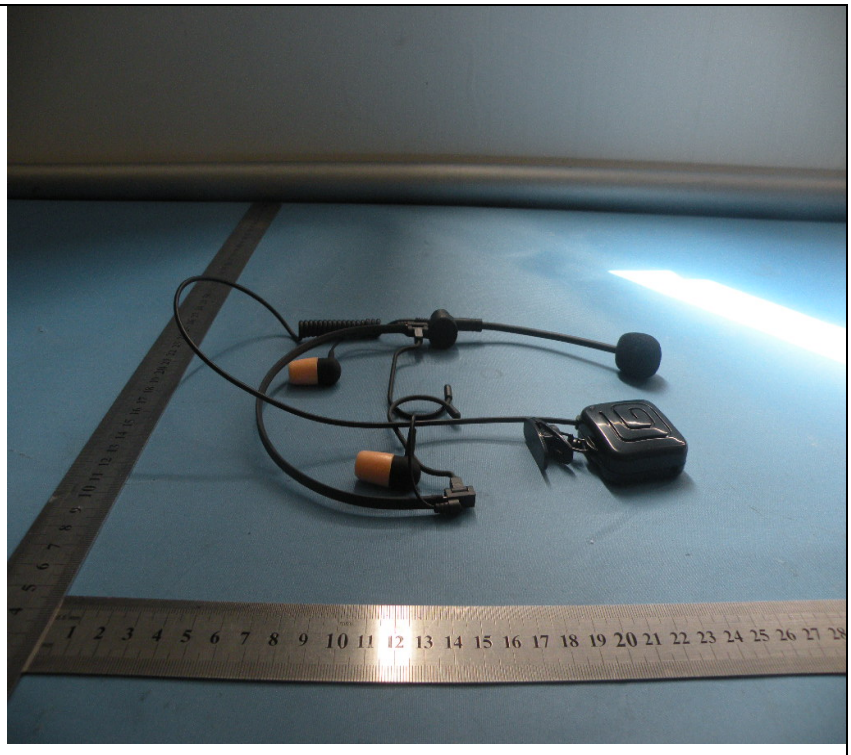


Figure 7

Photo of EUT

Front View [ ]

Rear View [ ]

Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Internal View [√]

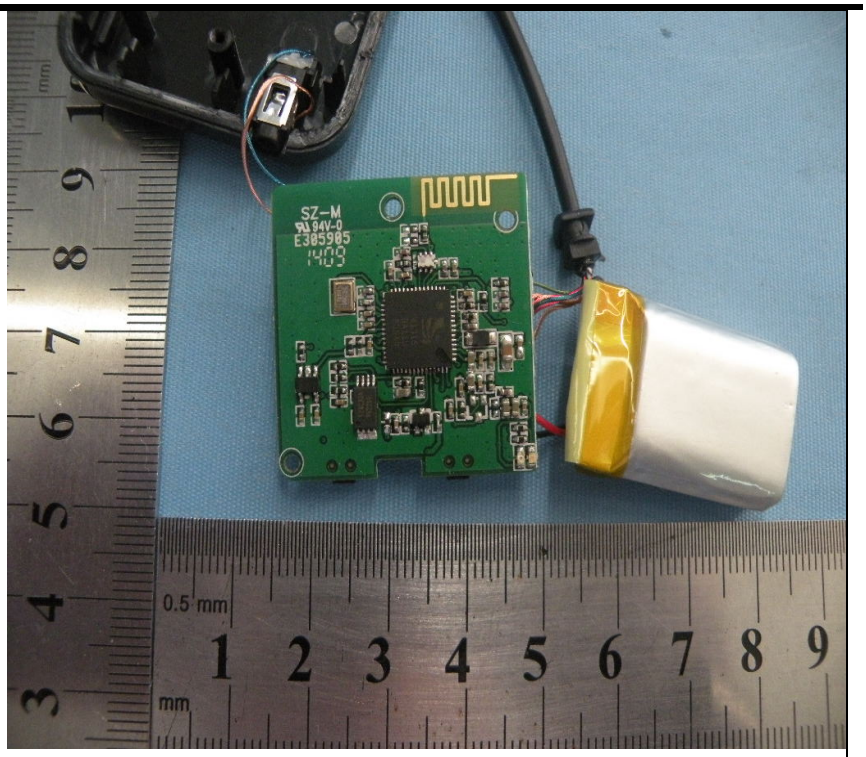


Figure 8

Photo of EUT

Front View [ ]

Rear View [ ]

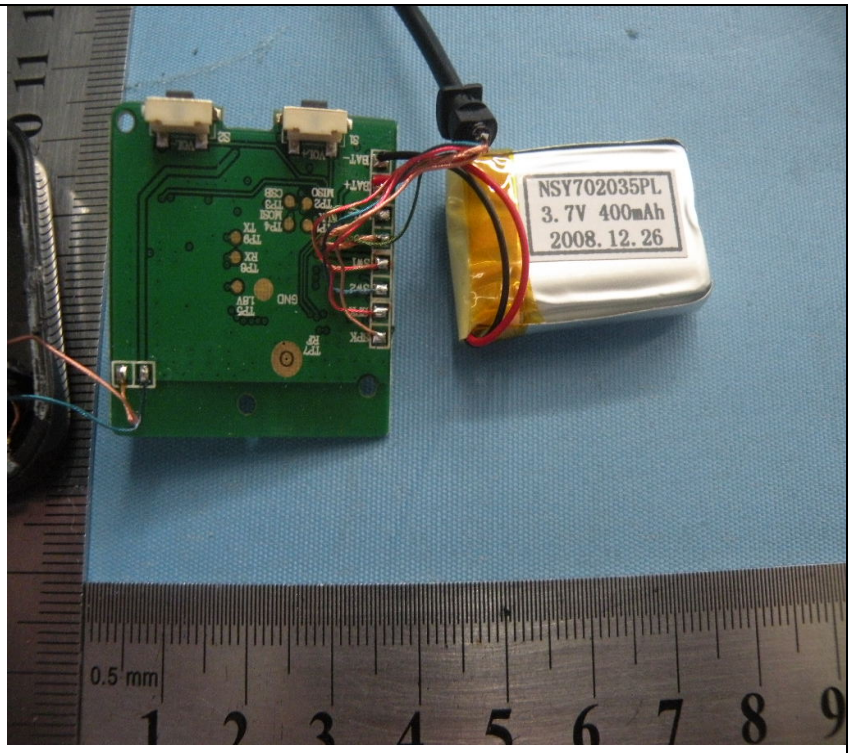
Top View [ ]

Bottom View[ ]

Left View [ ]

Right View [ ]

Internal View [√]



-------END OF THE REPORT-------