



Hong Kong

FCC - TEST REPORT

Report Number : **60/790.12.030.01** Date of Issue: 18th April 2013

Model : **BTP05**

Product Type : **WAE Bluetooth Portable Speaker**

Applicant : **Guillemot Corporation S.A.**

Address : **Place du Granier, B.P. 97143, Chantepie 35171, France**

Test Result : **Positive** **Negative**

Total pages including
Appendices : 48

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2. Details about the Test Laboratory

Details about the Test Laboratory

Test site 1:

Company name: TÜV SÜD HONG KONG LTD.
3/F, West Wing, Lakeside 2,
10 Science Park West Avenue,
Science Park, Shatin
HK.

Telephone: 852 2776 1323

Fax: 852 2776 1372

Test site 2:

Company name: TMC-Telecommunication Metrology Center of M.I.I.T
No 52 Hua Yuanbei Road, Haidian District, Beijing, P.R.China

3. Description of the Equipment Under Test

Description of the Equipment Under Test

Product: WAE Bluetooth Portable Speaker

Model no.: BTP05

Serial number: NIL

Options and accessories: 100-240VAC to 12VDC 1500mA adaptor
Model: S018KM1200150

Rated Voltage: 7.4VDC rechargeable battery
DC-in 12V

Rated Current: NIL

Rated Power: NIL

Frequency: 50 / 60 Hz (Adaptor)

Modulation type: GFSK, $\pi/4$ DQPSK and 8DPSK

Antenna gain: 0 dBi

RF Transmission
Frequency: 2402MHz-2480MHz

Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
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4. Summary of Test Standards

Test Standards	
FCC Part 15 Subpart C, Intentional Radiators, 10-1-12 Edition	PART 15 – RADIO FREQUENCY DEVICES Subpart C – Intentional Radiators

All the test methods were according to Public Notice DA 00-705 -Frequency Hopper Spread Spectrum Test Procedure released by FCC on March 30, 2000.

5. Summary of Test Results

Technical Requirements					
FCC Part 15 Subpart C					
Test Condition	Pages	Test site	Test Result		
			Pass	Fail	N/A
15.207 Conducted Emission AC Power Port	8	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247 (b) (1) Conducted peak output power	12	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) band edge compliance of RF radiated emission	15	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) Spurious RF conducted emissions	21	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(d) 15.209 Spurious radiated emissions	26	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(a)(1) 20dB bandwidth	34	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(a)(1) Carrier frequency separation	37	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(a)(1)(iii) Number of hopping frequencies	40	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15.247(a)(1)(iii) Dwell Time	43	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. General Remarks

Remarks

This submittal(s) (test report) is intended for FCC ID: NAM5059681 complies with Section 15.207, 15.209, 15.247 of the FCC Part 15, Subpart C Rules.

All the configurations of the product were tested and only the worst test results are listed in the report.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- Not Performed

The Equipment Under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: 21st November 2012

Testing Start Date: 21st November 2012

Testing End Date: 31st January 2013

- TÜV SÜD HONG KONG LTD. -

Reviewed by:



Edmond FUNG
EMC Test Engineer



Prepared by:



CHAN Kwong Ngai
EMC Test Engineer

7. Technical Requirement

7.1 Conducted Emission

Test Method

- 1 The EUT was placed on a table, which is 0.8m above ground plane
- 2 The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.).
- 3 Maximum procedure was performed to ensure EUT compliance
- 4 A EMI test receiver is used to test the emissions from both sides of AC line

Limit

Frequency MHz	QP Limit dB μ V	AV Limit dB μ V
0.150-0.500	66-56*	56-46*
0.500-5	56	46
5-30	60	50

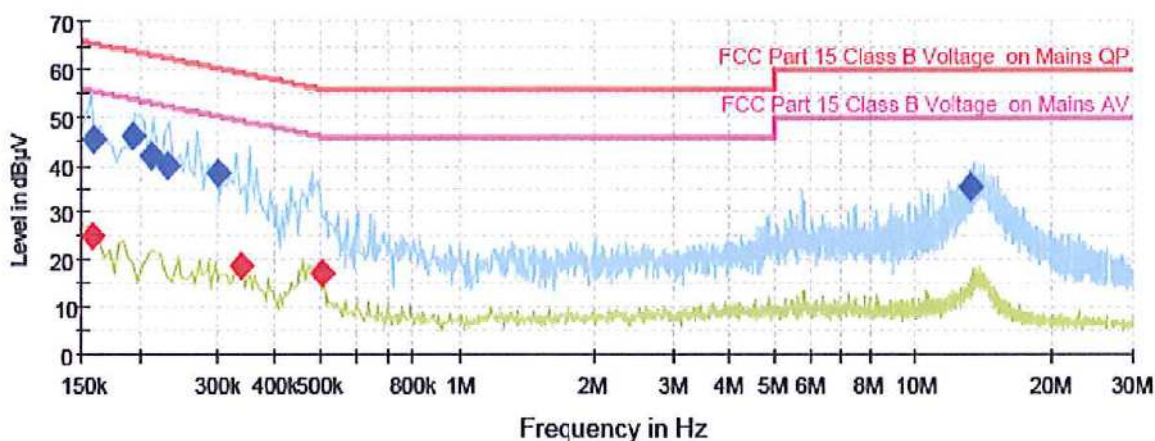
Decreasing linearly with logarithm of the frequency

Remark: This test was carried out in all the test modes, here only the worst test result was shown.

Conducted Emission

Date of test : 29th January 2013
 Test requirement : FCC Part 15
 Test method : ANSI C63.4:2009
 Operating mode : Normal link
 Tested on : Adaptor AC Mains, Live
 Remarks : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



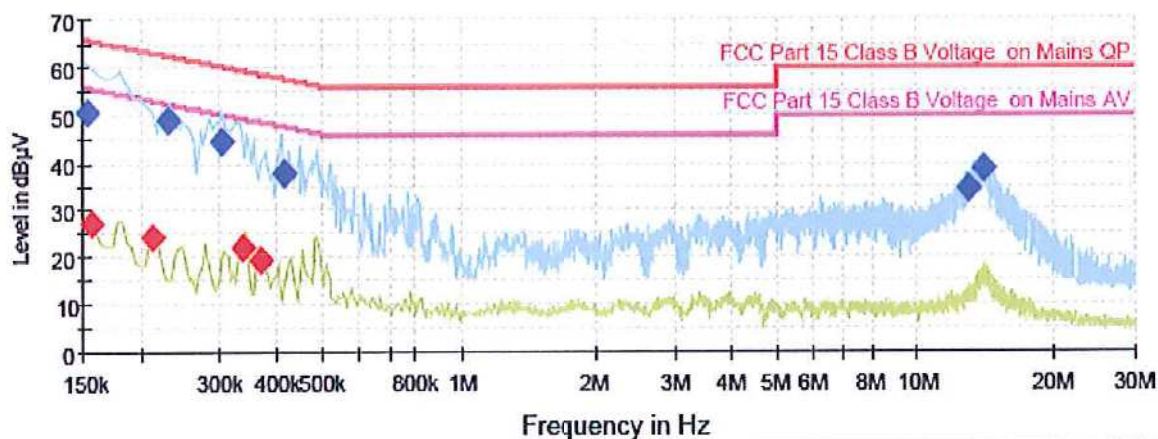
Frequency (MHz)	Result (QP)	Limit (QP)	Margin (dB)
0.156200	45.5	65.6	-20.1
0.195000	46.3	63.8	-17.5
0.212400	41.4	63.2	-21.8
0.231000	40.3	62.4	-22.1
0.302000	37.3	60.1	-22.8
14.93800	35.7	60.0	-24.3

Frequency (MHz)	Result (AV)	Limit (AV)	Margin (dB)
0.156000	25.1	55.8	-30.7
0.334500	20.2	49.3	-29.1
0.510500	18.4	46.0	-27.6

Conducted Emission

Date of test : 29th January 2013
 Test requirement : FCC Part 15
 Test method : ANSI C63.4:2009
 Operating mode : Normal link
 Tested on : Adaptor AC Mains, Neutral
 Remarks : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Frequency (MHz)	Result (QP)	Limit (QP)	Margin (dB)
0.155000	50.4	66.0	-16.8
0.231000	48.3	62.4	-14.1
0.325000	44.7	60.0	-15.3
0.415000	37.5	57.5	-20.0
14.86000	34.9	60.0	-25.1
15.67000	38.8	60.0	-21.2

Frequency (MHz)	Result (AV)	Limit (AV)	Margin (dB)
0.162000	28.1	55.8	-27.7
0.214000	25.7	53.1	-27.4
0.334000	22.3	49.4	-27.1
0.372500	19.8	48.3	-28.5



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Conducted Emission

Test Equipment List

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	LISN	R&S	ENV216	101112	Aug. 05, 2013
2	LISN	R&S	ENV216	101113	Aug. 05, 2013
4	50Ω Terminator	N/A	N/A	N/A	Jul. 01, 2013
5	Test Cable	N/A	C01	N/A	Jul. 01, 2013
6	EMI Test Receiver	R&S	ESCI	100920	Aug. 04, 2013



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7.2 Conducted peak output power

Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

Limits for conducted peak output power measurements

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤ 1.0	≤ 30.0



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Conducted peak output power

Date of test : 28th January 2013

Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Remarks : NIL

Test Result

Passed

Not Passed

Type	Channel		
	2402	2441	2480
GFSK	-0.53dBm	-0.14dBm	1.08dBm
$\pi/4$ DQPSK	-1.56dBm	-1.03dBm	0.07dBm
8PSK	-1.33dBm	-0.89dBm	0.03dBm



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Conducted peak output power

Test Equipment

DESCRIPTION	Type No.	Serial No.	Calibrated until
Antenna	VULB9163	9163 330	2014.02.24
Antenna	3164-05	85724	2014.02.17
Loop Antenna	6512	29604	2013.09.24
Spectrum Analyzer	FSP 40	100378	2013.12.22
EMI Test Receiver	ESCI	100701	2013.08.03
Spectrum Analyzer	FSV40	100903	2014.01.26
Test Cable	SUCOFLEX 104	MY2320/4	2014.02.17
Amplifier	150A250	323446	2014.03.17
Temp. & Humid. Chamber	FACT5-2.0	4166	2013.11.21



7.3 Conducted RF band edge

Test Method

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW and VBW to 1MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.

The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW and VBW to 100kHz, to measure the conducted peak band edge.

Limits

According to §15.247(d), in any 100 kHz 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 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, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Frequency MHz	Limit Average dBuV/m	Limit Peak dBuV/m
Below 2390 Above 2483.5	54	74

Conducted RF band edge

Date of test : 28th January 2013

Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

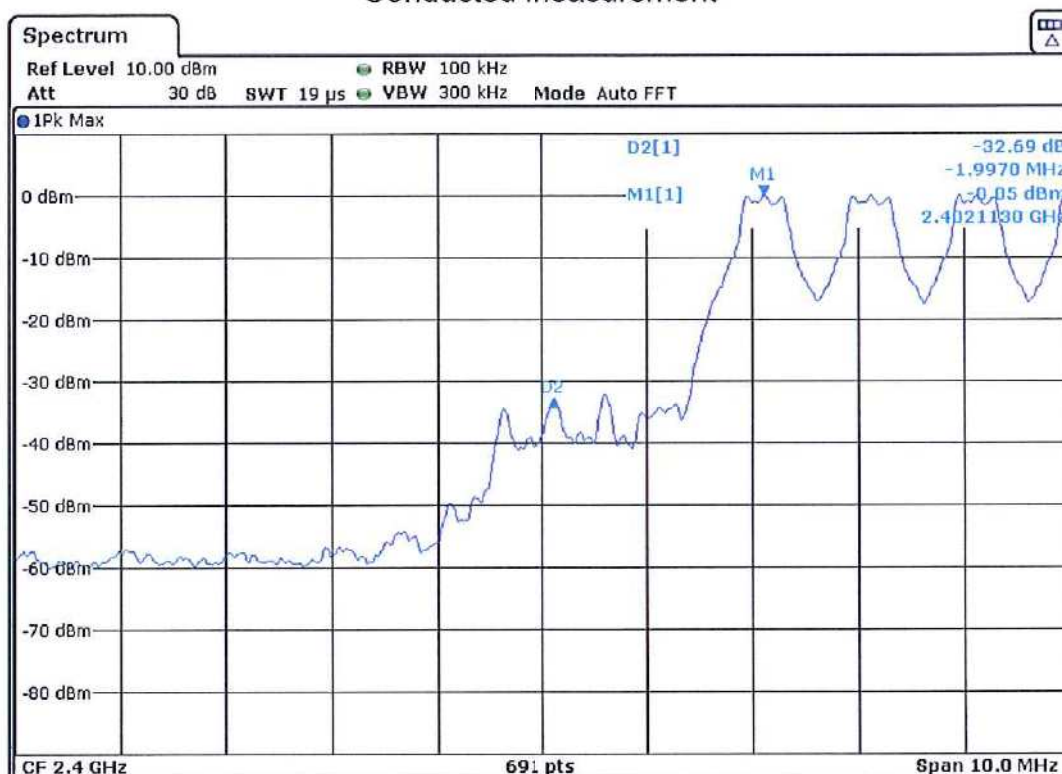
Remarks : The EUT has been tested under all modulation modes, only the worst case (GFSK, Hopping on) modulation test result are listed in the report.

Test Result

Passed

Not Passed

Conducted measurement



Frequency (MHz)	Reading (dBm)	Limit (-20dBc)	Margin (dB)
2394.000	-33.42	-20.05	-13.37
2400.000	-39.60	-20.05	-19.55
2400.116	-32.74	-20.05	-12.69
2402.000	-0.05	-	-

Conducted RF band edge

Date of test : 28th January 2013

Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Remarks : The EUT has been tested under all modulation modes, only the worst case (GFSK, Hopping on) modulation test result are listed in the report.

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Conducted measurement



Frequency (MHz)	Reading (dBm)	Limit (-20dBc)	Margin (dB)
2479.115	0.77	-	-
2483.500	-59.39	-20.77	-38.62

Conducted RF band edge

Date of test : 28th January 2013

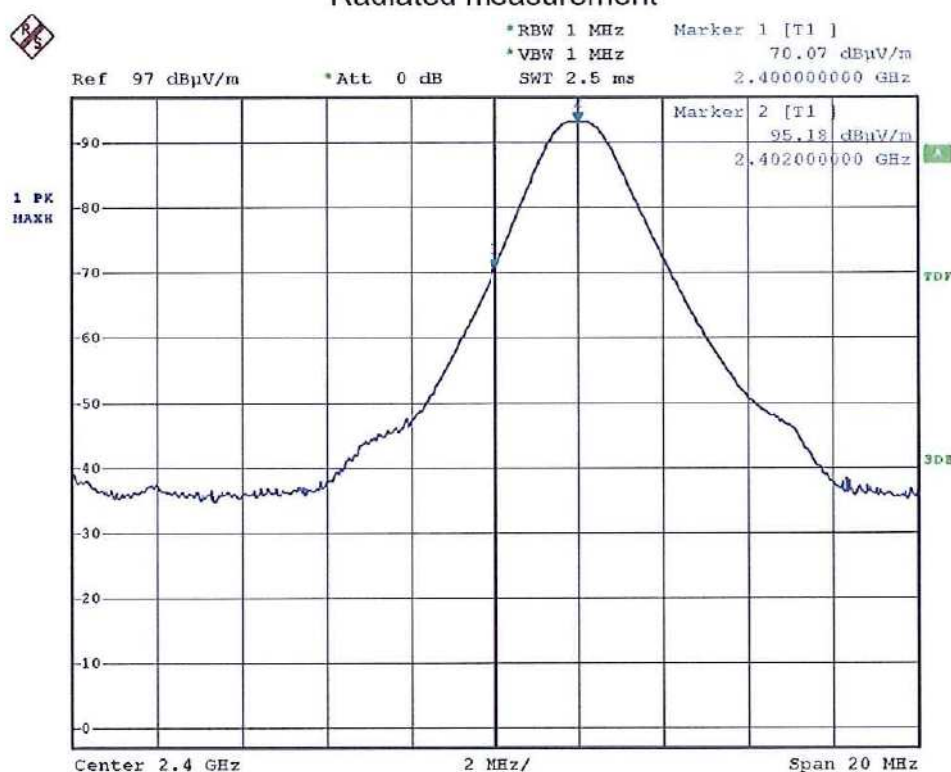
Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Remarks : The EUT has been tested under all modulation modes, only the worst case (GFSK, Hopping off) modulation test result are listed in the report.

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Radiated measurement



Frequency (MHz)	Reading (dB μ V)	Corr. (dB/m)	Reading (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Detector
2400.000	77.77	-7.7	70.07	-74.0	-3.93	Peak
2400.000	58.45	-7.7	50.75	-54.0	-3.25	Average

Conducted RF band edge

Date of test : 28th January 2013

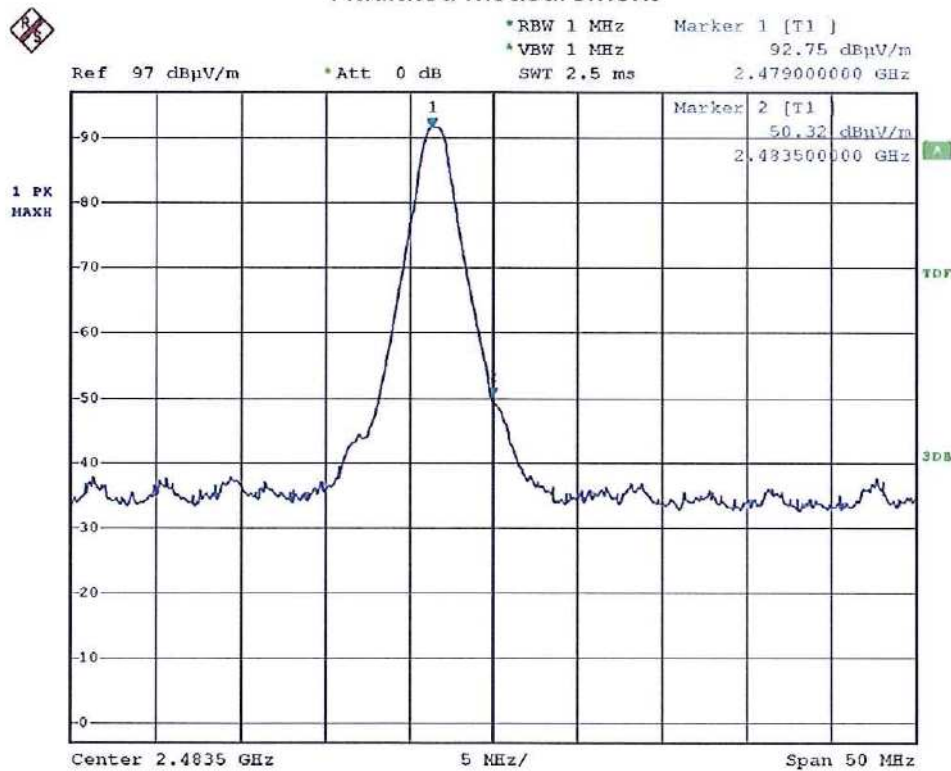
Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Remarks : The EUT has been tested under all modulation modes, only the worst case (GFSK, Hopping off) modulation test result are listed in the report.

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Radiated measurement



Frequency (MHz)	Reading (dBµV)	Corr. (dB/m)	Reading (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Detector
2483.500	57.0	-6.7	50.3	-74.0	-23.7	Peak
2483.500	48.5	-6.7	41.8	-54.0	-12.2	Average



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Conducted RF band edge

Test Equipment List

DESCRIPTION	Type No.	Serial No.	Calibrated until
Antenna	VULB9163	9163 330	2014.02.24
Antenna	3164-05	85724	2014.02.17
Loop Antenna	6512	29604	2013.09.24
Spectrum Analyzer	FSP 40	100378	2013.12.22
EMI Test Receiver	ESCI	100701	2013.08.03
Spectrum Analyzer	FSV40	100903	2014.01.26
Test Cable	SUCOFLEX 104	MY2320/4	2014.02.17
Amplifier	150A250	326446	2014.03.17
Temp. & Humid. Chamber	FACT5-2.0	4166	2013.11.21

7.4 Spurious RF conducted emissions

Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

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 resolution bandwidth(RBW) and the video bandwidth (VBW) of the spectrum analyzer were respectively set to 100kHz and 100kHz.

Limit

Frequency Range MHz	Limit (dBc)
1000-25000	-20

Spurious RF conducted emissions

Date of test : 28th January 2013

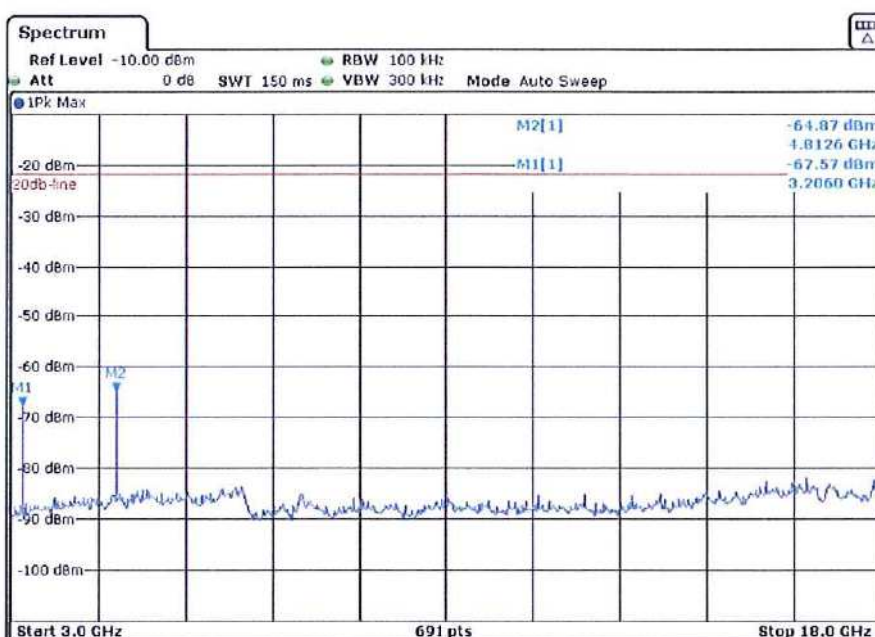
Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Channel : 2402MHz (GFSK)

Remark : The EUT has been tested under all modulation modes, only the worst case GFSK modulation test result are listed in the report.

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Spurious RF conducted emissions

Date of test : 28th January 2013

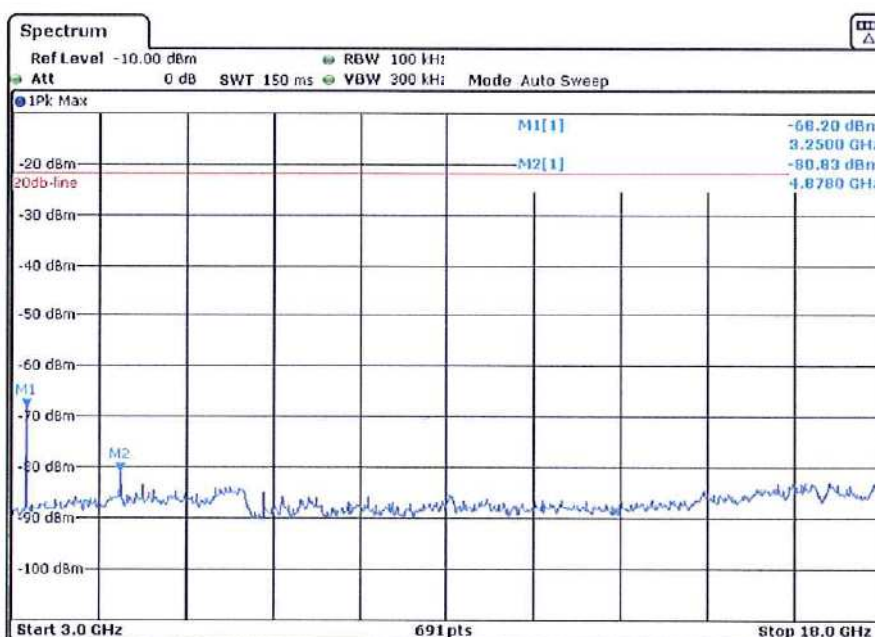
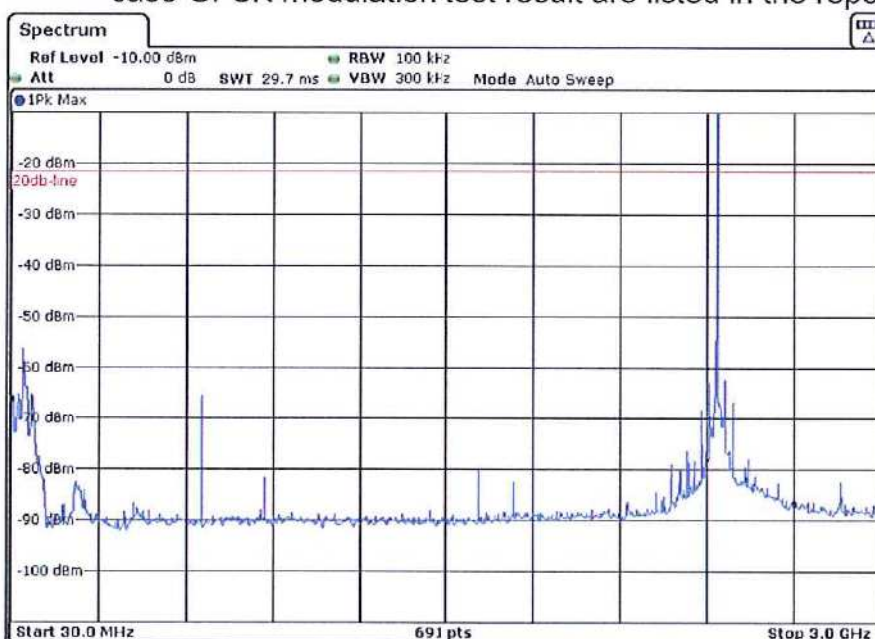
Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Channel : 2441MHz (GFSK)

Remark : The EUT has been tested under all modulation modes, only the worst case GFSK modulation test result are listed in the report.

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Spurious RF conducted emissions

Date of test : 28th January 2013

Test requirement : FCC Part 15

Test method : ANSI C63.4:2009

Channel : 2480MHz (GFSK)

Remark : The EUT has been tested under all modulation modes, only the worst case GFSK modulation test result are listed in the report.

Test Result

Passed

Not Passed

