



# SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

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Report No.: SHEM131100225301

Page: 1 of 38

## 1 Cover Page

# FCC Part 15C TEST REPORT

Application No.:	SHEM1311002253RF
Applicant:	Linquet Technologies Inc
Manufacturer:	Brio Technology Ltd.
FCC ID:	QY3LNQTBLE01
<b>Equipment Under Test (EUT):</b> <b>NOTE:</b> The following sample(s) submitted was/were identified on behalf of the client as	
Product Name:	Bluetooth Key Chain
Model No.(EUT):	Linquet-BLE1
Standards:	FCC PART 15 Subpart C: 2012
Date of Receipt:	November 13, 2013
Date of Test:	December 11, 2013 to December 12, 2013
Date of Issue:	December 16, 2013
Test Result:	<b>Pass*</b>

\*In the configuration tested, the EUT detailed in this report complied with the standards specified above.



Tony Wu

E&E Section Manager

SGS-CSTC (Shanghai) Co., Ltd.

The manufacturer should ensure that all 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.



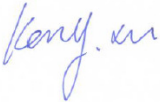
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	December 16, 2013	/	Original

Authorized for issue by:			
Engineer		Eddy Zong _____ Print Name	 _____
Clerk		Susie Liu _____ Print Name	 _____
Reviewer		Kenx Xu _____ Print Name	 _____



### 3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	FCC Part 15, Subpart C Section 15.203/15.247 (c)	---	PASS
AC Power Line Conducted Emission	FCC Part 15, Subpart C Section 15.207	ANSI C63.10 (2009) Section 6.2	N/A
Minimum 6dB Bandwidth	FCC Part 15, Subpart C Section 15.247 (a)(2)	ANSI C63.10 (2009) Section 6.9.1	PASS
Conducted Peak Output Power	FCC Part 15, Subpart C Section 15.247 (b)(3)	ANSI C63.10 (2009) Section 6.10.2	PASS
Power Spectrum Density	FCC Part 15, Subpart C Section 15.247 (e)	ANSI C63.10 (2009) Section 6.11.2	PASS
RF Conducted Spurious Emissions and Band-edge	FCC Part 15, Subpart C Section 15.247(d)	ANSI C63.10 (2009) Section 7.7.9&7.7.10	PASS
Radiated Spurious emissions and Band-edge	FCC Part 15, Subpart C Section 15.209 and Section 15.205	ANSI C63.10 (2009) Section 6.5&6.6&6.7	PASS

## 4 Contents

	Page
<b>1 COVER PAGE.....</b>	<b>1</b>
<b>2 VERSION.....</b>	<b>2</b>
<b>3 TEST SUMMARY.....</b>	<b>3</b>
<b>4 CONTENTS.....</b>	<b>4</b>
<b>5 GENERAL INFORMATION.....</b>	<b>5</b>
5.1 CLIENT INFORMATION.....	5
5.2 GENERAL DESCRIPTION OF E.U.T.....	5
5.3 TECHNICAL SPECIFICATIONS:.....	5
5.4 DESCRIPTION OF SUPPORT UNITS.....	5
5.5 DETAILS OF TEST MODE .....	6
5.6 TEST LOCATION .....	6
5.7 TEST FACILITY .....	6
<b>6 EQUIPMENTS LIST.....</b>	<b>7</b>
<b>7 ANTENNA REQUIREMENT.....</b>	<b>8</b>
7.1 E.U.T. TEST CONDITIONS .....	8
7.2 ANTENNA REQUIREMENT.....	9
7.3 CONDUCTED EMISSIONS ON MAINS TERMINALS .....	10
7.4 6dB OCCUPIED BANDWIDTH.....	12
7.5 CONDUCTED PEAK OUTPUT POWER .....	15
7.6 PEAK POWER SPECTRAL DENSITY.....	18
7.7 CONDUCTED SPURIOUS EMISSIONS AND BAND EDGE.....	21
7.7.1 Conducted Spurious Emissions Test Result:.....	22
7.7.2 Conducted Band-edge:.....	25
7.8 RADIATED SPURIOUS EMISSIONS AND BAND-EDGE.....	26
7.8.1 Radiated Spurious Emissions.....	29
7.8.2 Radiated Band-edge.....	33
<b>8 TEST SETUP PHOTOGRAPHS.....</b>	<b>38</b>
<b>9 EUT CONSTRUCTIONAL DETAILS .....</b>	<b>38</b>

## 5 General Information

### 5.1 Client Information

Applicant: Linquet Technologies Inc  
Address of Applicant: 950 Cambie St, Vancouver, BC, Canada – V6B 5X5  
Manufacturer: Brio Technology Ltd.  
Address of Manufacturer: 8988 Fraserton Court, Burnaby, BC V5J 5H8  
Factory: Beijing Brio Technology Co., Ltd.  
Address of Factory: No 10, 5th Bo Xing Road, Beijing Economical & Technology Development Zone CINA 100176

### 5.2 General Description of E.U.T.

Product Name: Bluetooth Key Chain  
Model No.(EUT): Linquet-BLE1  
Brand Name: N/A  
Product Description: Portable product

### 5.3 Technical Specifications:

Operation Frequency: 2402MHz-2480MHz  
Bluetooth Version: BT 4.0  
Modulation Type: GFSK  
Number of Channel: 40  
Antenna Type: Integral  
Antenna Gain: 0dBi  
Power Supply: DC 3V (The new Button Cell is used for the EUT during the test)  
Transmitting mode: Using test software to control EUT working in continuous transmitting, and select channel and modulation type.

### 5.4 Description of Support Units

The EUT has been tested independently. Or The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
Laptop	Lenovo	ThinkPad X100e
Software name	Manufacturer	Supplied By
SmartRF_Studio	TI	SGS

## 5.5 Details of Test Mode

Test Mode	Description of Test Mode
Engineering Mode:	Using test software to control EUT working in continuous transmitting, and select channel and modulation type

## 5.6 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab  
No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

## 5.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2014-07-26.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2015-02-22.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2014-09-20.

- **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868 and C-4336 respectively. Date of Registration: 2012-05-29. Date of Expiry: 2015-05-28.

## 6 Equipments List

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
1	Spectrum Analyzer	Rohde & Schwarz	FSP-30	2705121009	2013-02-23	2014-02-22
2	EMI test receiver	Rohde & Schwarz	ESU40	100109	2013-02-23	2014-02-22
3	Horn Antenna (1GHz to 18GHz)	SCHWARZBECK	BBHA9120D	9120D-679	2013-03-07	2014-03-06
4	Horn Antenna (14GHz to 40GHz)	SCHWARZBECK	BBHA 9170	BBHA91703 73	2013-03-07	2014-03-06
5	ANTENNA (25MHz to 2GHz)	SCHWARZBECK	VULB9168	9168-313	2013-03-07	2014-03-06
6	Ultra broadband antenna (30MHz to 3GHz)	Rohde & Schwarz	HL562	100227	2013-10-09	2014-10-08
7	Horn Antenna (1GHz to 18GHz)	Rohde & Schwarz	HF906	100284	2013-06-02	2014-06-01
8	Active Loop Antenna (9kHz to 30MHz)	Rohde & Schwarz	FMZB 1519	1519-034	2013-07-28	2014-07-27
9	High-low temperature cabinet	Suzhou Zhihe	TL-40	50110050	2013-04-13	2014-04-12
10	Tunable Notch Filter	Wainwright instruments Gmbh	WRCT800.0/8 80.0-0.2/40- 5SSK	9	2013-06-02	2014-06-01
11	High pass Filter	FSCW	HP 12/2800- 5AA2	19A45-02	2013-06-02	2014-06-01
12	Low noise amplifier	TESEQ	LNA6900	70133	2013-02-23	2014-02-22
13	Attenuator	HUAXIANG	TS2-6dB	11051002	/	/
14	Attenuator	HUAXIANG	TS2-6dB	11051001	/	/
15	AC power stabilizer	WOCEN	6100	51122	2013-06-02	2014-06-01
16	DC power	QJE	QJ30003SII	611145	2013-06-02	2014-06-01

## 7 Antenna Requirement

### 7.1 E.U.T. test conditions

<b>Test Power:</b>	DC 3V
<b>Requirements:</b>	15.31(e) For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.
<b>Temperature:</b>	20.0 -25.0 °C
<b>Humidity:</b>	35-75 % RH
<b>Atmospheric Pressure:</b>	99.2 -102.0 kPa
<b>Test frequencies:</b>	According to the 15.31(m) Measurements on intentional radiators or receivers, other than TV broadcast receivers, shall be performed and. if required. reported for each band in which the device can be operated with the device operating at the number of frequencies in each band specified in the following table:

Frequency range over which device operates	Number of frequencies	Location in the range of operation
1 MHz or less	1	Middle
1 to 10 MHz	2	1 near top and 1 near bottom
More than 10 MHz	3	1 near top. 1 near middle and 1 near bottom

Pursuant to Part 15.31(c) For swept frequency equipment, measurements shall be made with the frequency sweep stopped at those frequencies chosen for the measurements to be reported.

Test frequency is the lowest channel: 0 channel (2402MHz), middle channel: 19 channel (2440MHz) and highest channel: 40 channel (2480MHz) with fixed at channel.



## 7.2 Antenna Requirement

### Standard requirement:

#### 15.203 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, 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.

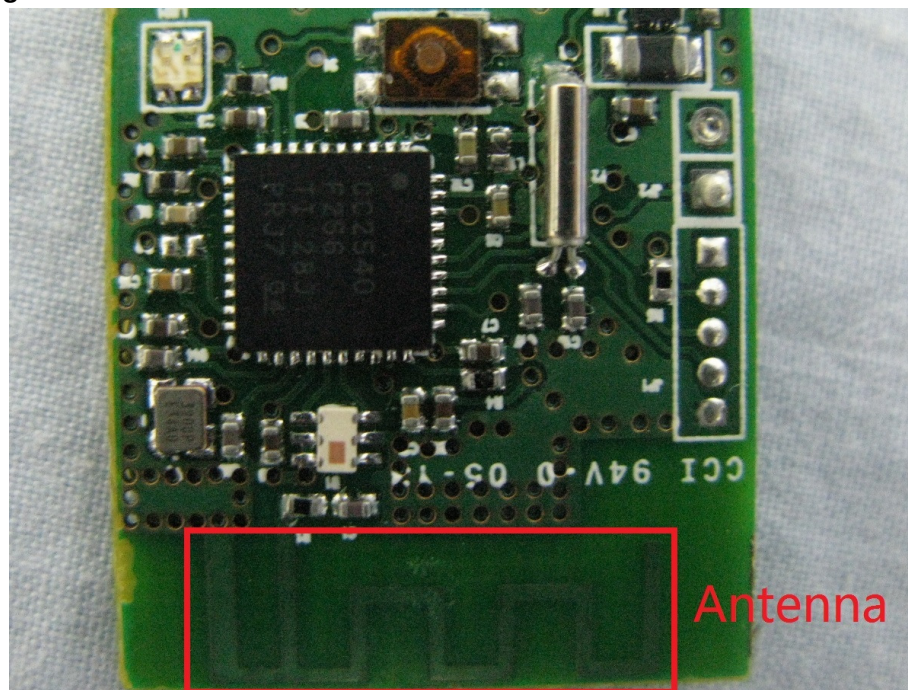
#### 15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The gain of the antenna is less than 0 dBi.

### Antenna Configuration:

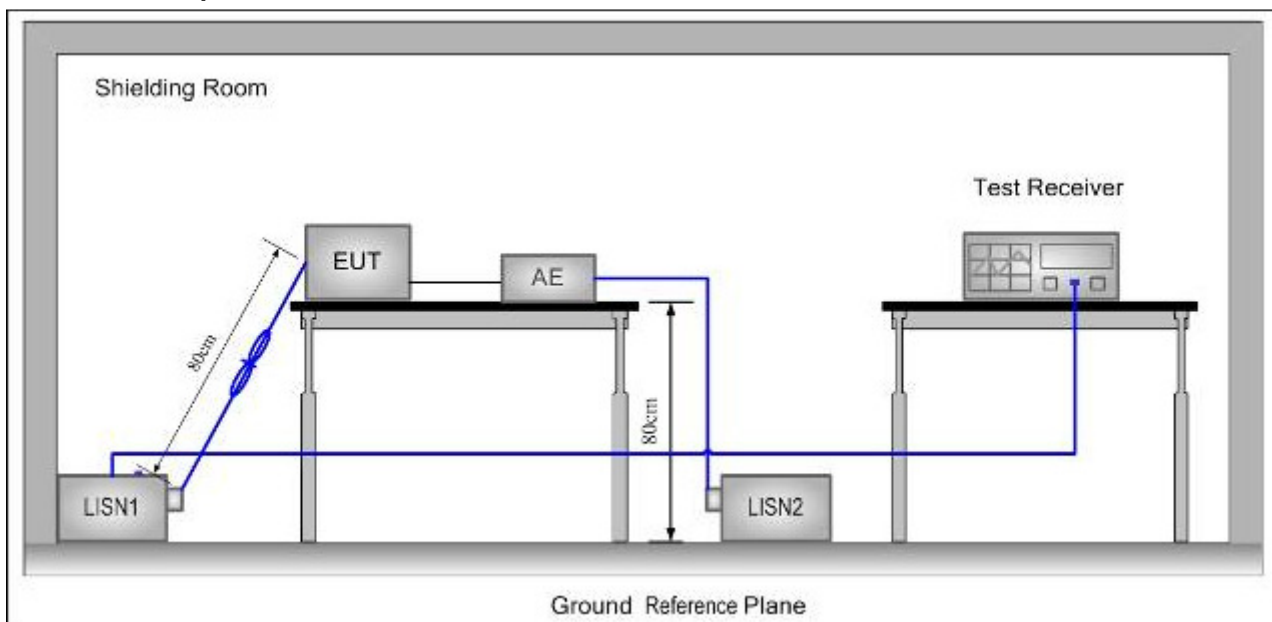


### 7.3 Conducted Emissions on Mains Terminals

**Test Requirement:** FCC Part 15C, Section 15.207  
**Test Method:** ANSI C63.10:2009 Section 6.2  
**Test Result:** N/A  
**Test Voltage:** AC 120V 60Hz  
**Frequency Range:** 150 KHz to 30 MHz  
**Class/Severity:** Class B  
**Limit:**

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Quasi-peak
0.15 to 0.50	66 to 56*	66 to 56*
0.50 to 5	56	56
5 to 30	60	60
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.		
Note2: The lower limit is applicable at the transition frequency.		

#### Test Setup:



#### **Test Procedure:**

1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides  $50\Omega/50\mu\text{H} + 5\Omega$  linear impedance. The power cables of all other units of the EUT were connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0,8 m from the LISN.

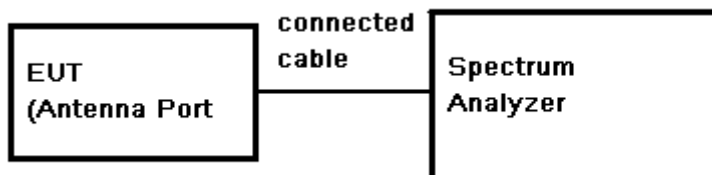
#### **Measurement Data:**

This EUT is powered by battery only; therefore the AC Conducted Emission test is not applicable.

#### 7.4 6dB Occupied Bandwidth

**Test Requirement:** FCC Part 15 C Section 15.247 (a)(2)  
**Test Method:** ANSI C63.10:2009 Section 6.9.1  
**Test Result:** Pass  
**Test Mode:** Transmitting mode

**Test Configuration:**



**Limit:**  $\geq 500$  kHz

**Test Procedure:**

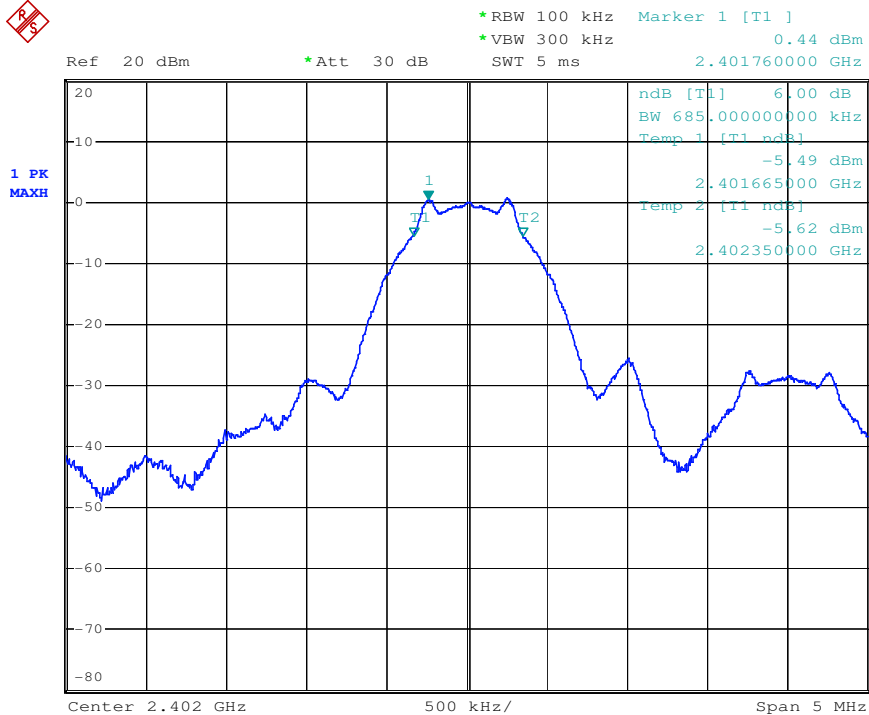
1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW=100KHz, VBW =3\* RBW, Span=5MHz, Sweep=auto
4. Mark the peak frequency and -6dB (upper and lower) frequency.
5. Repeat above procedures until all frequency measured was complete.

**Test date:**

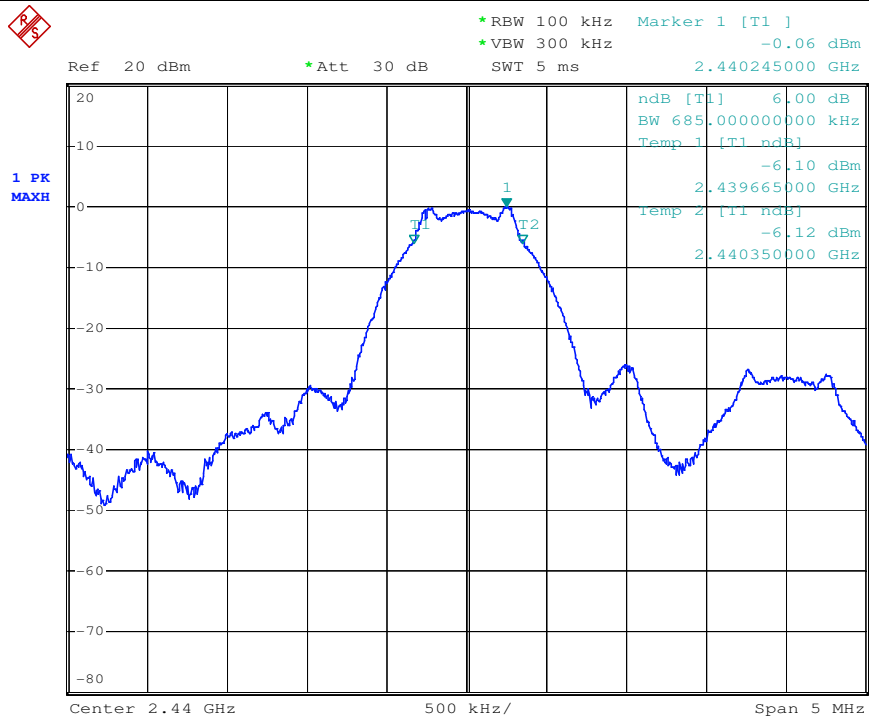
Test Channel	Channel Frequency (MHz)	Bandwidth (MHz)
Low	2402	0.685
Middle	2440	0.685
High	2480	0.675

### Test plot as follows:

Test mode:	GFSK	Test channel:	Lowest
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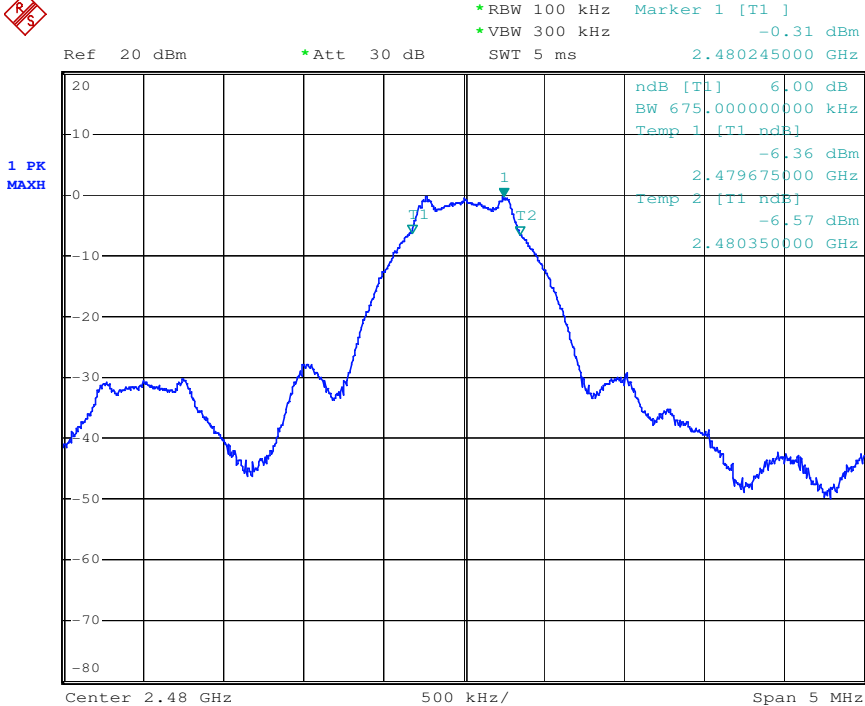


Test mode:	GFSK	Test channel:	Middle
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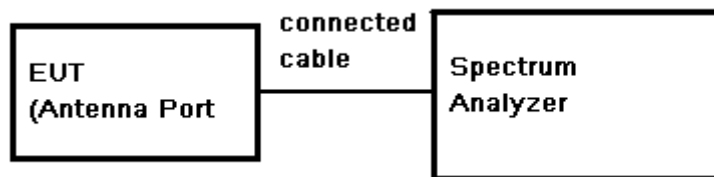


Test mode:	GFSK	Test channel:	Highest
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## 7.5 Conducted Peak Output Power

**Test Requirement:** FCC Part 15.247 Section 15.247(b)(3)  
**Test Method:** ANSI C63.10:2009 Section 6.10.2  
**Test Result:** Pass  
**Test Limit:** 30dBm  
**Test Mode:** Transmitting mode  
**Test Configuration:**



### Test Procedure:

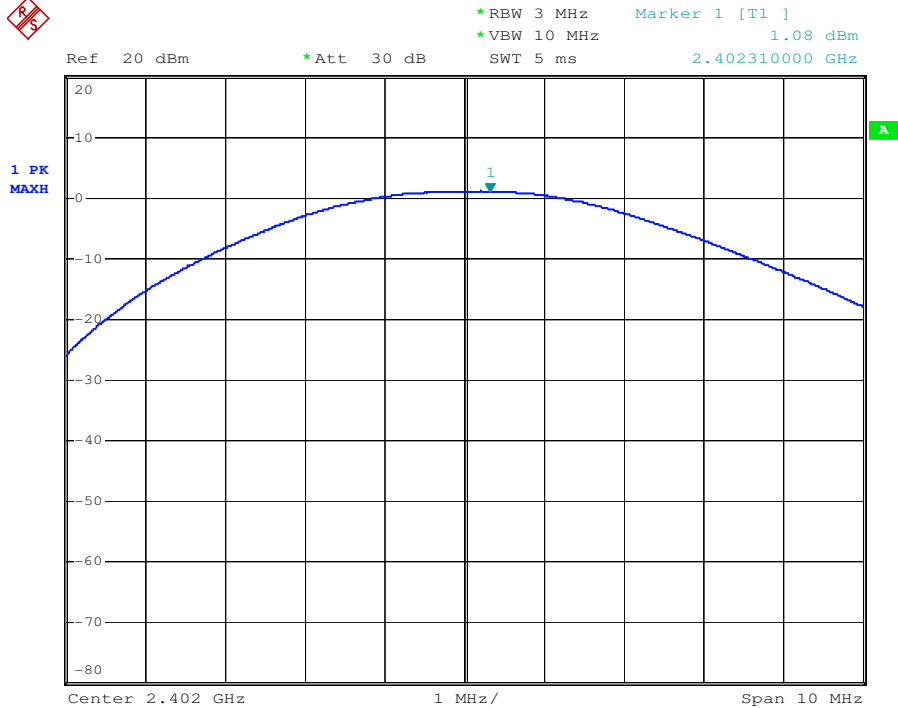
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 3 MHz, VBW = 10 MHz, Span= fully encompass the bandwidth, Sweep = auto; Detector Function = Peak Trace mode=max hold
3. Use the spectrum analyzer's channel power measurement function with the band limits set equal to the bandwidth edges.
4. Keep the EUT in transmitting at lowest, middle and highest channel individually. Record the max value.

### Test data:

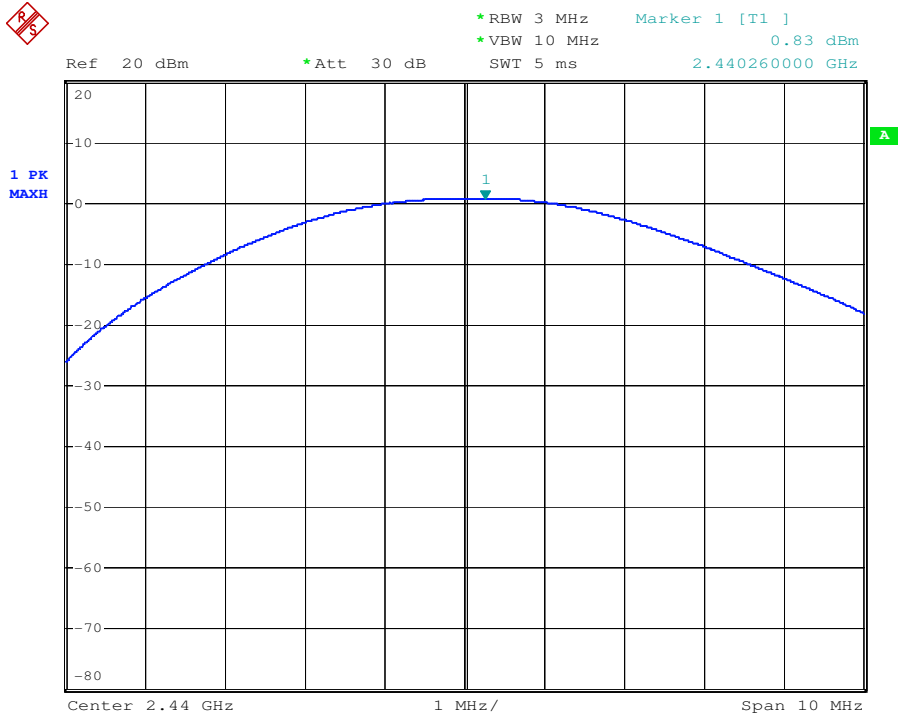
Test Channel	Fundamental Frequency (MHz)	Reading Power (dBm)	Cable Loss (dB)	Output Power (dBm)	Limit (dBm)	Margin (dB)
Lowest	2402	1.08	0.5	1.58	30	31.15
Middle	2440	0.83	0.5	1.33	30	31.28
Highest	2480	0.38	0.5	0.88	30	31.83

### Test result plot as follows:

Test mode:	GFSK	Test channel:	Lowest
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Test mode:	GFSK	Test channel:	Middle
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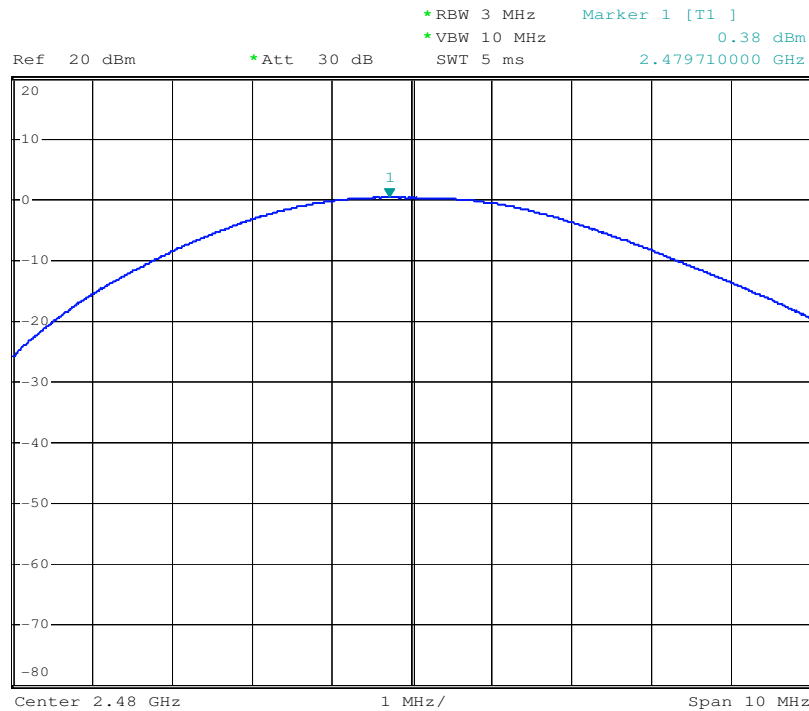




Test mode:	GFSK	Test channel:	Highest
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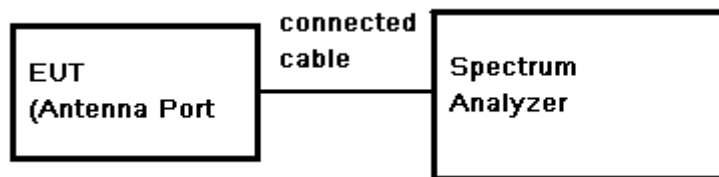
1 PK  
MAXH



## 7.6 Peak Power Spectral Density

**Test Requirement:** FCC Part 15, Subpart C Section 15.247 (e)  
**Test Method:** ANSI C63.10:2009 Section 6.11.2  
**Test Result:** Pass  
**Test Limit:** 8dBm/3kHz  
**Test Mode:** Transmitting mode

**Test Configuration:**



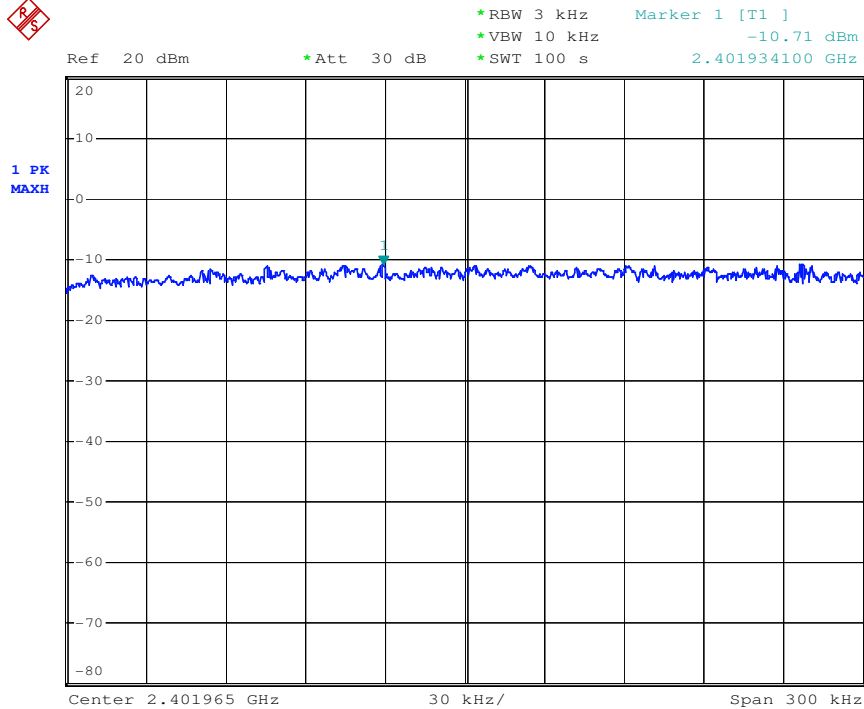
- Measurement Procedure:**
1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
  2. Set the spectrum analyzer: Center Frequency= Channel Frequency, RBW = 3 kHz VBW = 10 kHz. Span= fully encompass the bandwidth, Sweep = auto; Detector Function = Peak Trace mode=max hold,
  3. Set MKR=Center Frequency, Trace=Clear Write.
  4. Adjust the Span = 300 kHz, Sweep Time=100s, Trace=Max Hold, MKR=Peak Search.
  5. Record the marker level for the particular mode.
  6. Repeat these steps for other channel and device modes.

**Test data:**

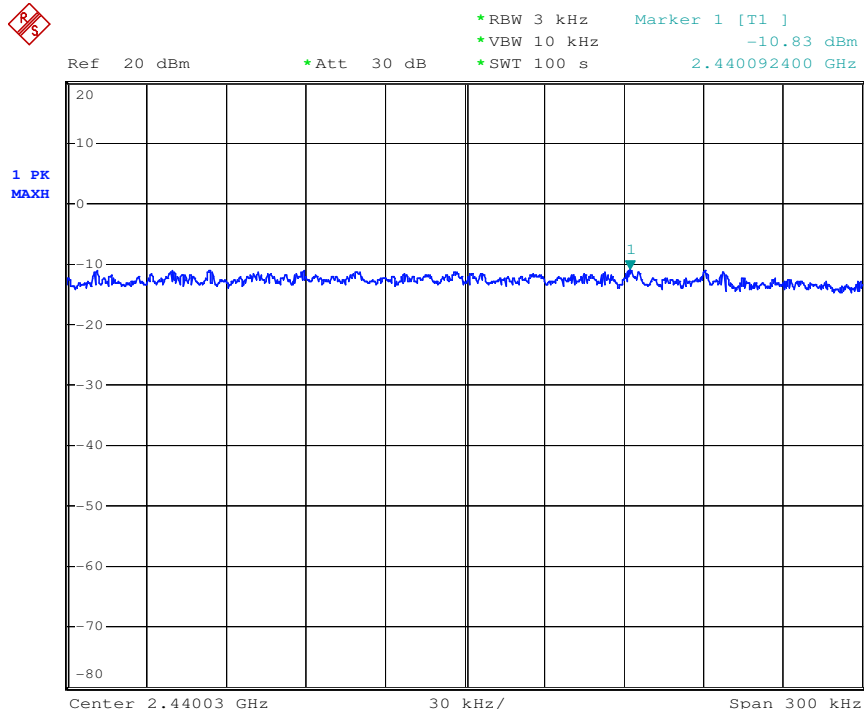
Channel	Reading (dBm)	Cable Loss (dB)	RF Power Density (dBm)	Peak Power Limit (dBm)	Result
Low	-10.71	0.5	-10.21	8	PASS
Mid	-10.83	0.5	-10.33	8	PASS
High	-11.42	0.5	-10.92	8	PASS

### Test plot as follows:

Test mode:	GFSK	Test channel:	Lowest
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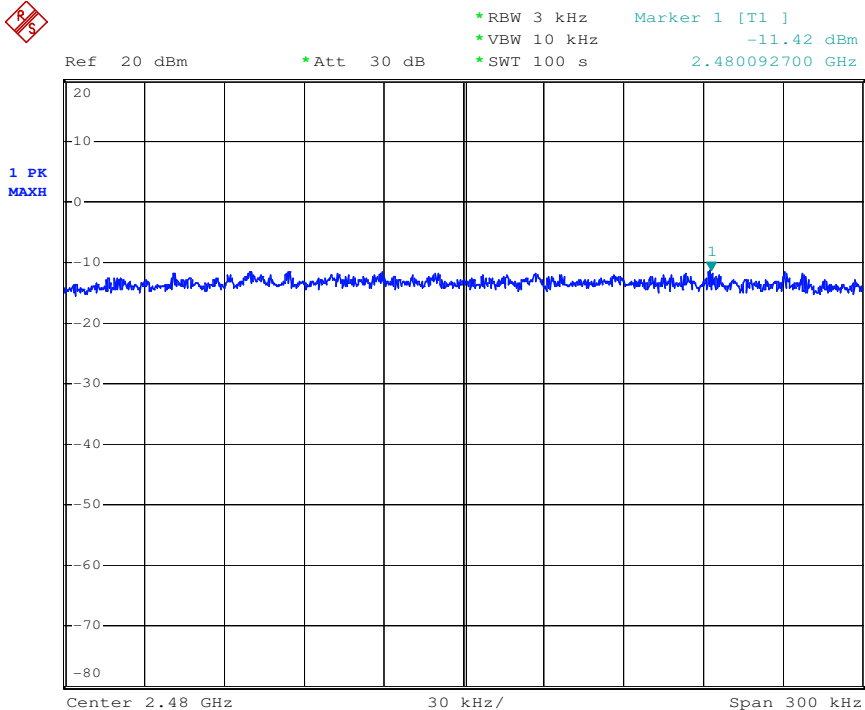


Test mode:	GFSK	Test channel:	Middle
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Test mode:	GFSK	Test channel:	Highest
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## 7.7 Conducted Spurious Emissions and Band edge

**Test Requirement:** FCC Part 15 Section 15.247(d)

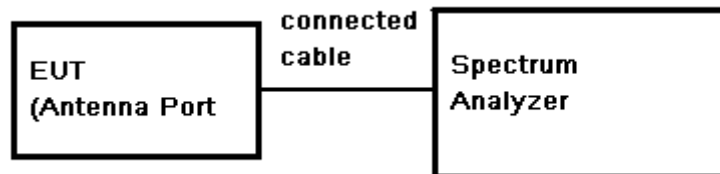
**Test Method:** ANSI C63.10:2009 Section 6.10.2

**Test Result:** Pass

**Limit:** (d) 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. Provided the transmitter demonstrates compliance with the peak conducted power limits.

**Test Mode:** Transmitting mode

**Test Configuration:**



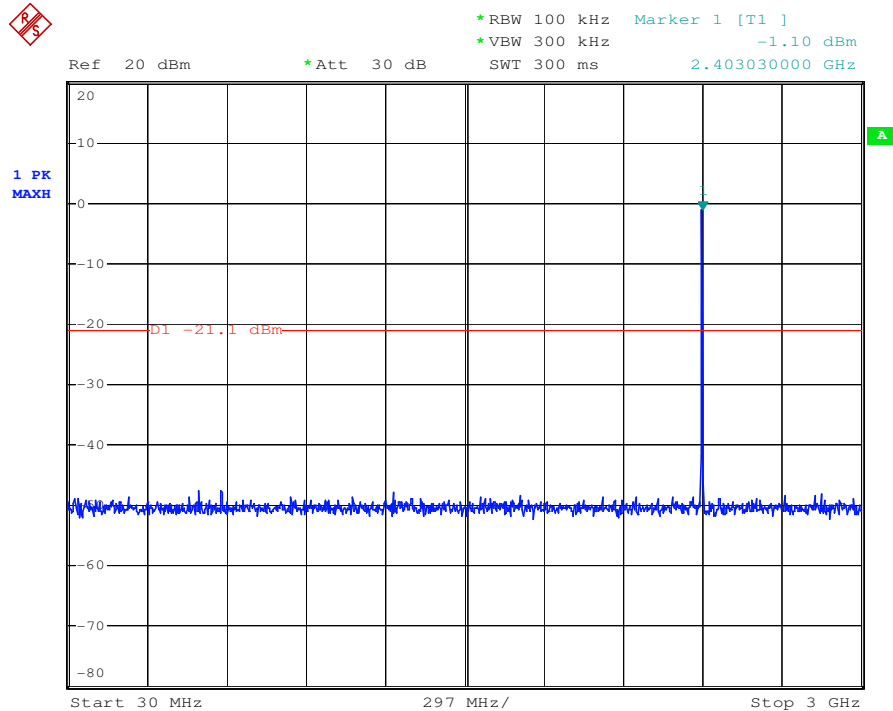
**Test Procedure:**

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.
2. Set the spectrum analyzer: RBW = 100KHz. VBW  $\geq$  RBW. Sweep = auto; Detector Function = Peak (Max. hold).

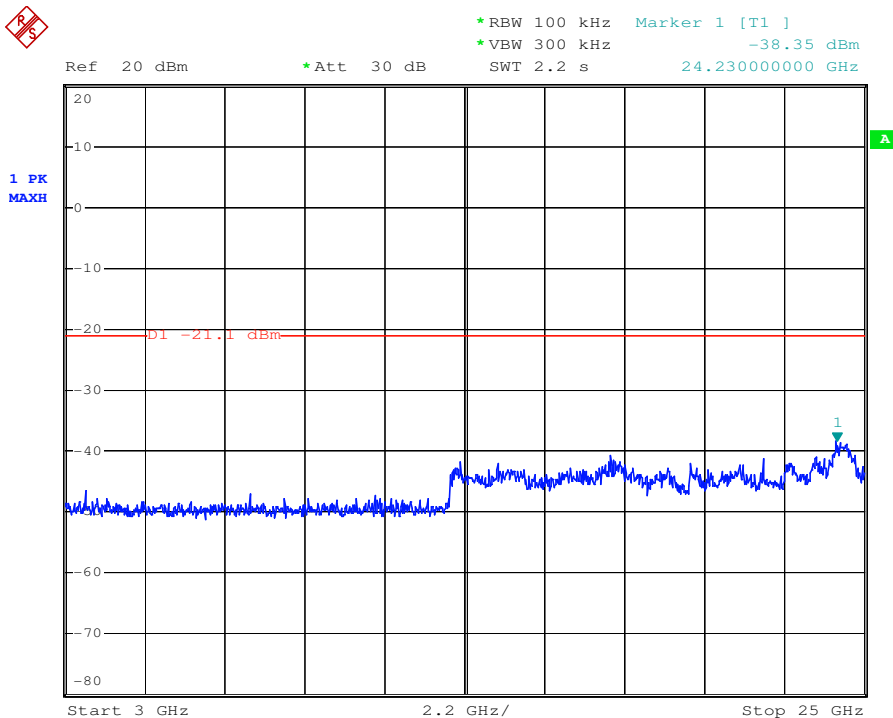
### 7.7.1 Conducted Spurious Emissions Test Result:

Test mode:	GFSK	Test channel:	Lowest
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30MHz to 3GHz

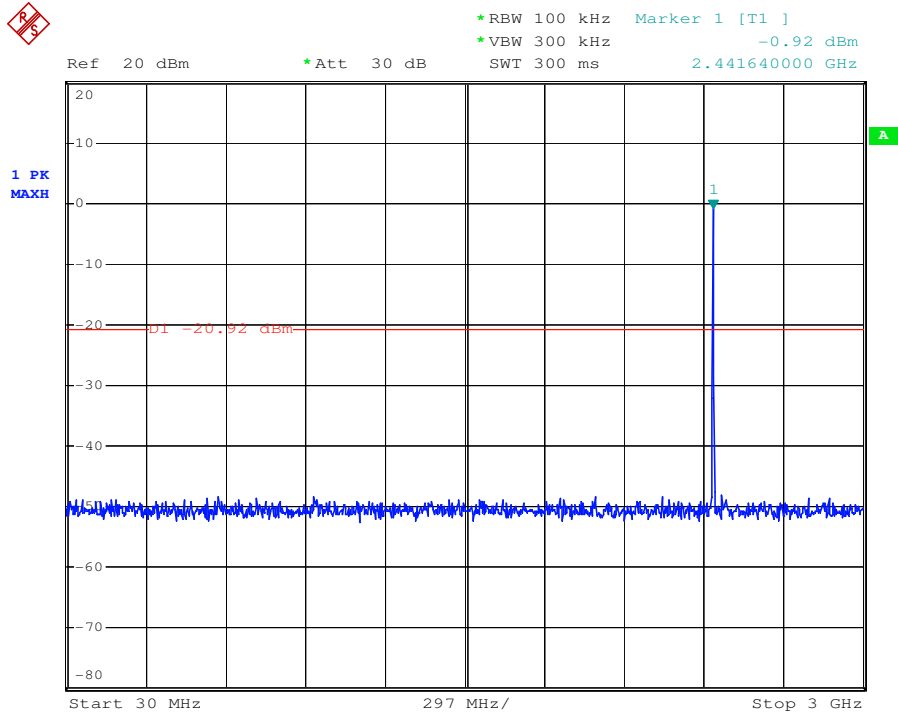


3GHz to 25GHz

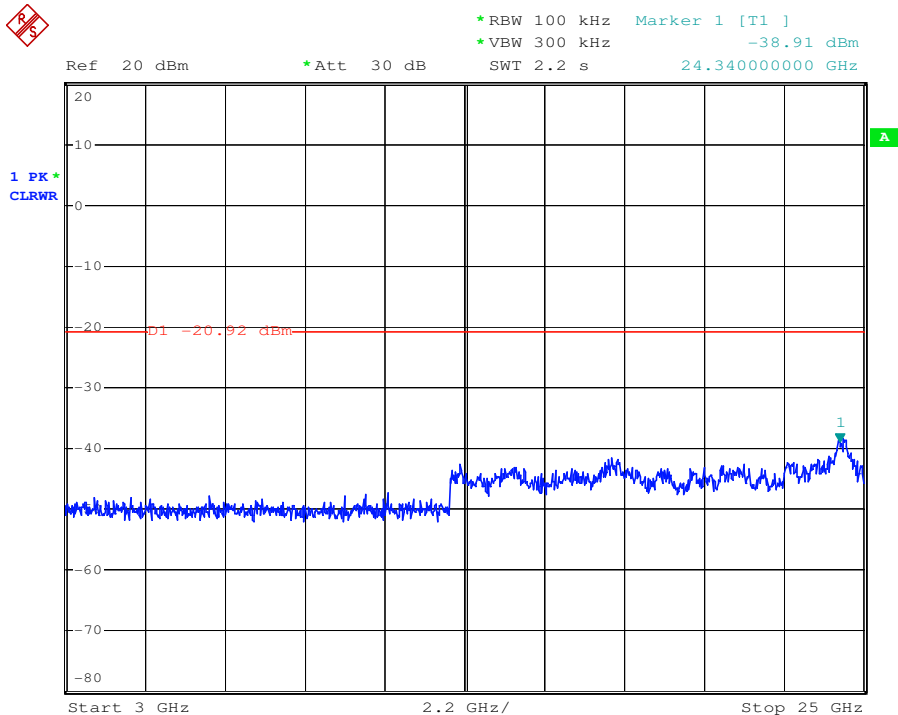


Test mode:	GFSK	Test channel:	Middle
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30MHz to 3GHz

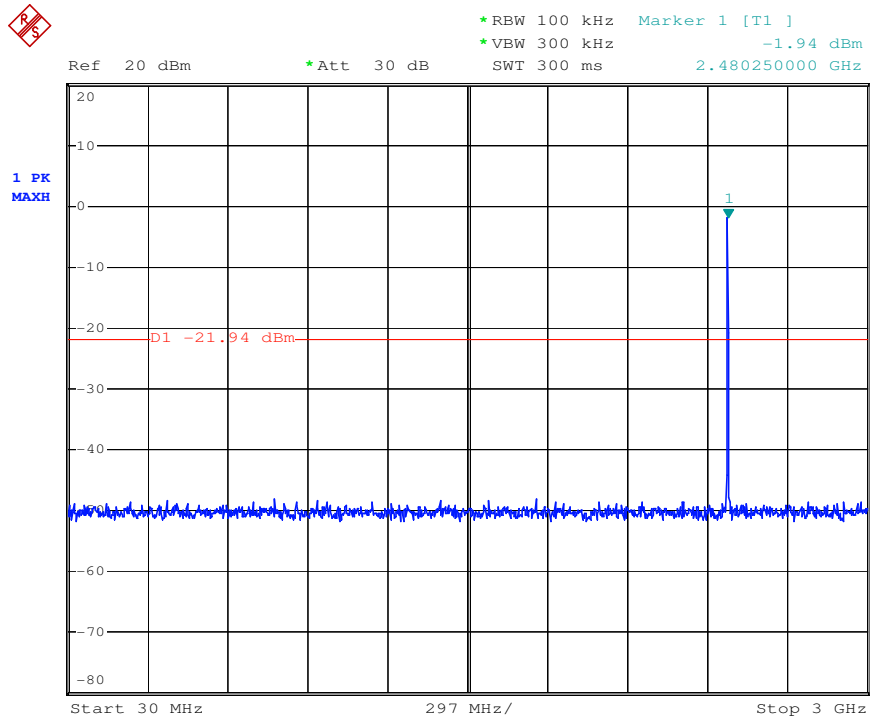


3GHz to 25GHz

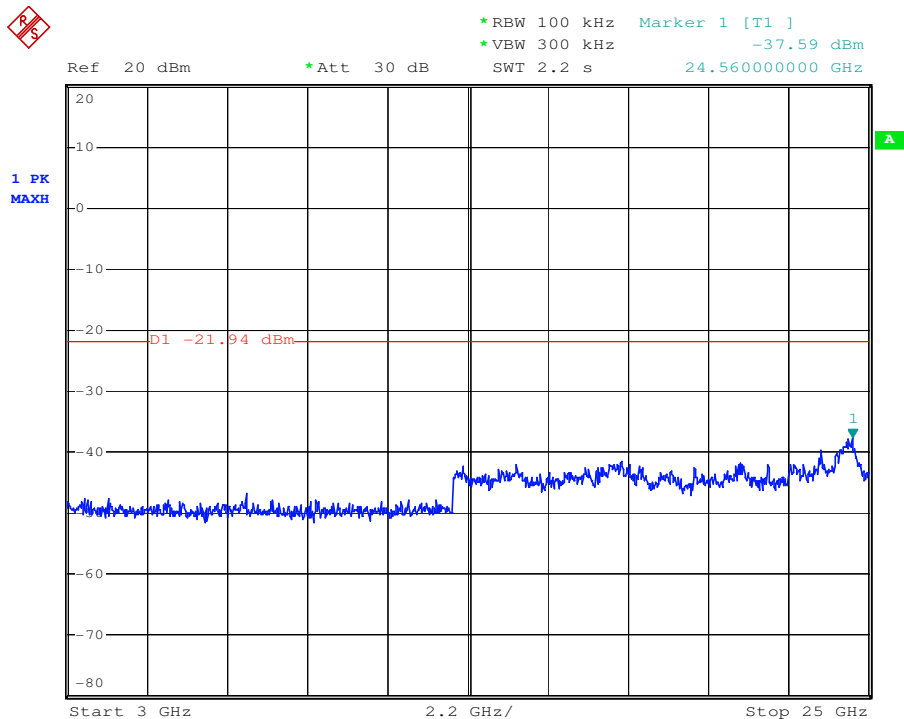


Test mode:	GFSK	Test channel:	Highest
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30MHz to 3GHz;



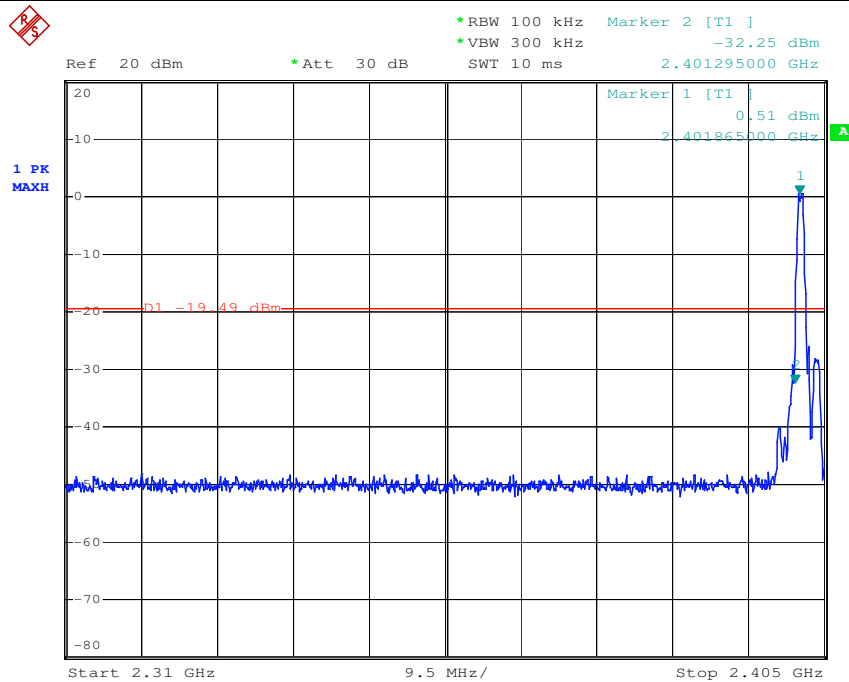
3GHz to 25GHz



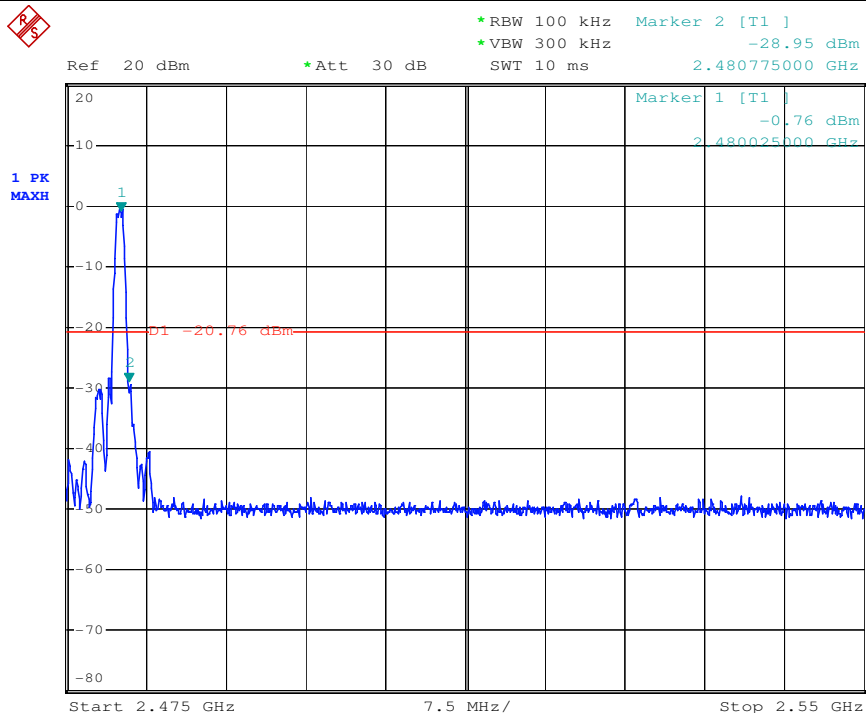


### 7.7.2 Conducted Band-edge: Measurement Result:

Test mode:	GFSK	Test channel:	Lowest
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Test mode:	GFSK	Test channel:	Highest
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## 7.8 Radiated Spurious Emissions and Band-edge

**Test Requirement:** FCC Part 15 Section 15.205 & 15.209

**Test Method:** ANSI C63.10:2009 Clause 6.5&6.6&6.7

**Test Result:** Pass

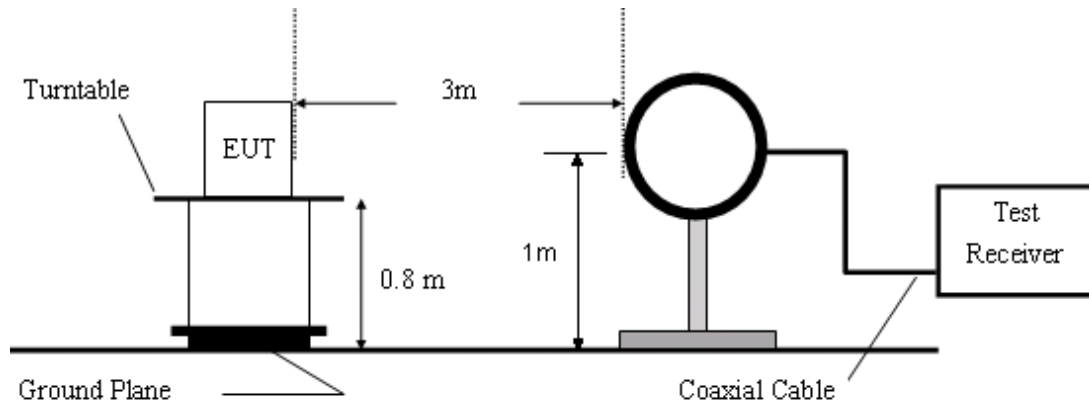
**Receiver Setup:**

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	QP
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	QP
30MHz-1GHz	Quasi-peak	100kHz	300kHz	QP
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average
Frequency	Field strength (mV/m)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	QP	3
88MHz-216MHz	150	43.5	QP	3
216MHz-960MHz	200	46.0	QP	3
960MHz-1GHz	500	54.0	QP	3
Above 1GHz	500	54.0	Average	3

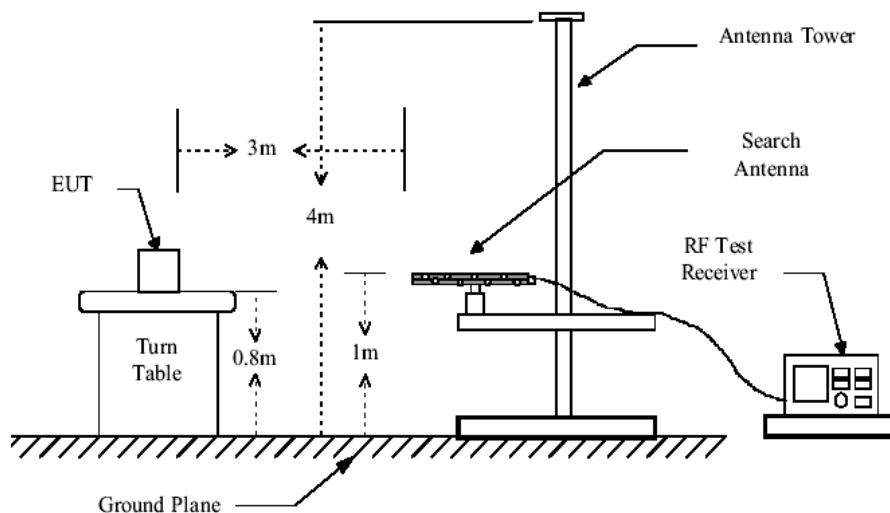
**Limit:**

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

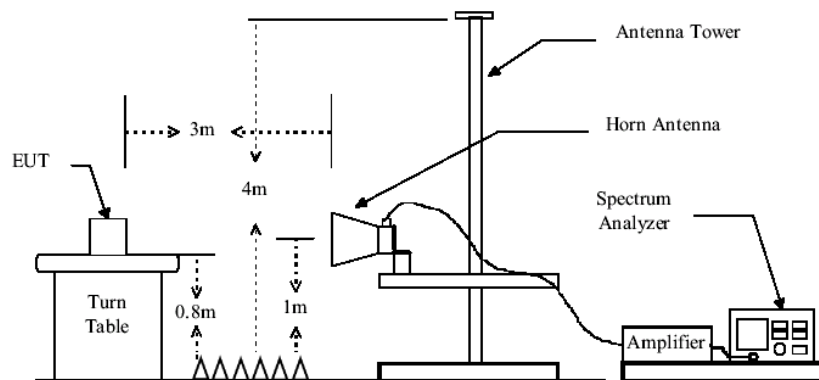
**Test Configuration:** Receive antenna scan height 1 m - 4 m. polarization Vertical / Horizontal



**Figure1. Below 30MHz radiated emissions test configuration**



**Figure 2. 30MHz to 1GHz radiated emissions test configuration**



**Figure 3. Above 1GHz radiated emissions test configuration**

**Test Procedure:**

The procedure used was ANSI Standard C63.10:2009. The receiver was scanned from 9KHz to 25GHz. When an emission was found, the table was rotated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

Low noise amplifier was used below 1GHz, High pass Filter was used above 3GHz. Between 1G and 3GHz; we did not use any amplifier or filter.

Test were performed for their spatial orthogonal(X, Y, Z), the worst test data (X orthogonal) was submitted.

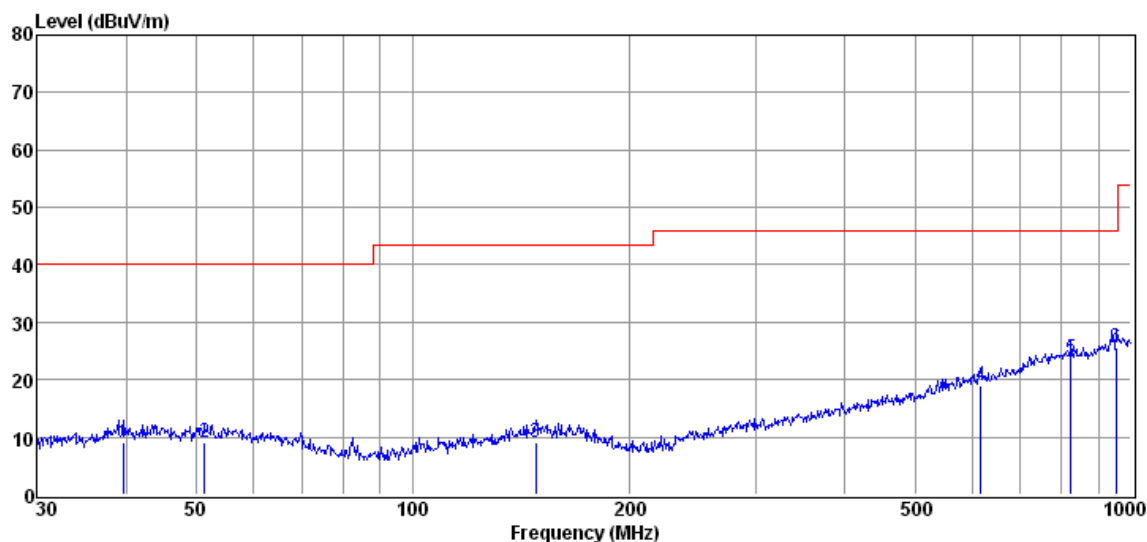
- 1) For this intentional radiator operates below 25 GHz. the spectrum shall be investigated to the tenth harmonic of the highest fundamental frequency. And above the third harmonic of this intentional radiator, the disturbance is very low. So the test result only displays to 5rd harmonic.
- 2) As shown in Section, for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

The test only perform the EUT in transmitting status since the test frequencies were over 1GHz only required transmitting status.

## 7.8.1 Radiated Spurious Emissions

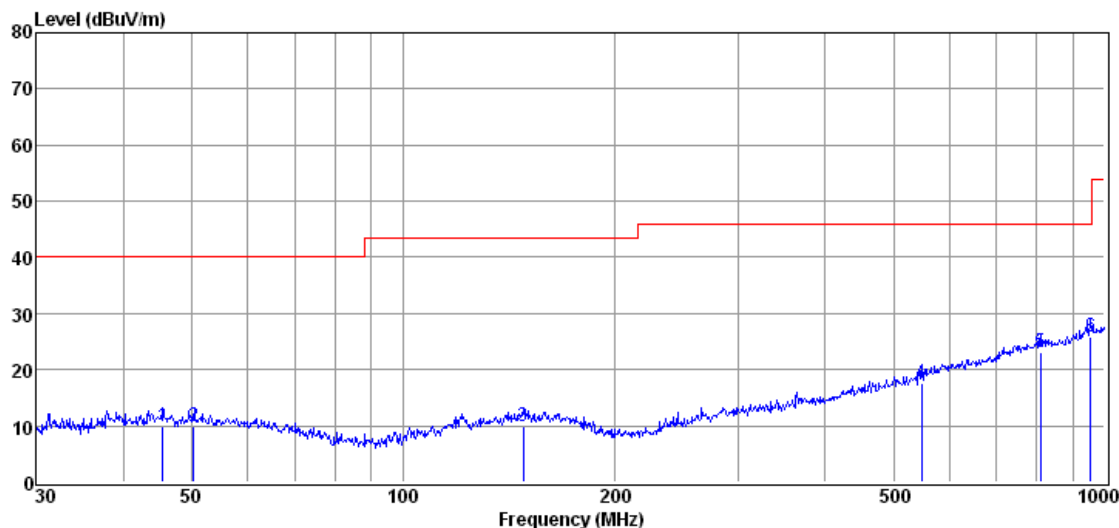
30MHz-1GHz:

Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	39.58	19.98	13.22	24.70	0.55	9.05	40.00	-30.95	QP
2	51.30	20.50	12.72	24.70	0.66	9.18	40.00	-30.82	QP
3	148.44	19.82	12.61	24.70	1.26	8.99	43.50	-34.51	QP
4	617.53	20.77	19.55	24.20	2.96	19.08	46.00	-26.92	QP
5	824.43	21.61	22.40	23.90	3.50	23.61	46.00	-22.39	QP
6	952.59	21.54	23.92	23.79	3.81	25.48	46.00	-20.52	QP

Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	45.44	21.02	13.07	24.70	0.60	9.99	40.00	-30.01	QP
2	50.28	21.17	12.78	24.70	0.65	9.90	40.00	-30.10	QP
3	148.29	20.68	12.60	24.70	1.26	9.84	43.50	-33.66	QP
4	548.72	21.32	17.86	24.30	2.75	17.63	46.00	-28.37	QP
5	811.08	21.41	22.29	23.96	3.47	23.21	46.00	-22.79	QP
6	955.61	21.80	23.94	23.78	3.81	25.77	46.00	-20.23	QP

# 1GHz-12GHz:

Test in **Channel Low** in transmitting status

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	polarization
1	1787.25	50.13	-8.81	41.32	74	-32.68	peak	Horizontal
2	4807.00	46.33	-0.16	46.17	74	-27.83	peak	Horizontal
3	7204.00	47.05	6.23	53.28	74	-20.72	peak	Horizontal
4	9859.50	37.66	11.38	49.04	74	-24.96	peak	Horizontal
5	1834.25	54.64	-8.44	46.20	74	-27.80	peak	Vertical
6	4807.00	47.31	-0.16	47.15	74	-26.85	peak	Vertical
7	7204.00	47.57	6.23	53.80	74	-20.20	peak	Vertical
8	9847.75	38.4	11.39	49.79	74	-24.21	peak	Vertical

Test in **Channel Middle** in transmitting status

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	polarization
1	2010.50	49.95	-7.11	42.84	74	-31.16	peak	Horizontal
2	4877.50	43.63	0.12	43.75	74	-30.25	peak	Horizontal
3	7544.75	40.32	7.73	48.05	74	-25.95	peak	Horizontal
4	9777.25	37.58	11.49	49.07	74	-24.93	peak	Horizontal
5	1987.00	52.05	-7.23	44.82	74	-29.18	peak	Vertical
6	4877.50	45.59	0.12	45.71	74	-28.29	peak	Vertical
7	7591.75	39.92	7.74	47.66	74	-26.34	peak	Vertical
8	9859.50	37.54	11.38	48.92	74	-25.08	peak	Vertical

Test in **Channel High** in transmitting status

Mark	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Emission (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	polarization
1	1658.00	47.13	-9.83	37.3	74	-36.70	peak	Horizontal
2	4959.75	46.57	0.45	47.02	74	-26.98	peak	Horizontal
3	7603.50	40.15	7.73	47.88	74	-26.12	peak	Horizontal
4	9753.75	38.17	11.54	49.71	74	-24.29	peak	Horizontal
5	1810.75	50.20	-8.63	41.57	74	-32.43	peak	Vertical
6	4959.75	47.62	0.45	48.07	74	-25.93	peak	Vertical
7	7627.00	40.68	7.73	48.41	74	-25.59	peak	Vertical
8	9589.25	38.13	11.78	49.91	74	-24.09	peak	Vertical

Remark: 1. Test Level = Receiver Reading + Antenna Factor + Cable Loss – Preamplifier Factor.

2. No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

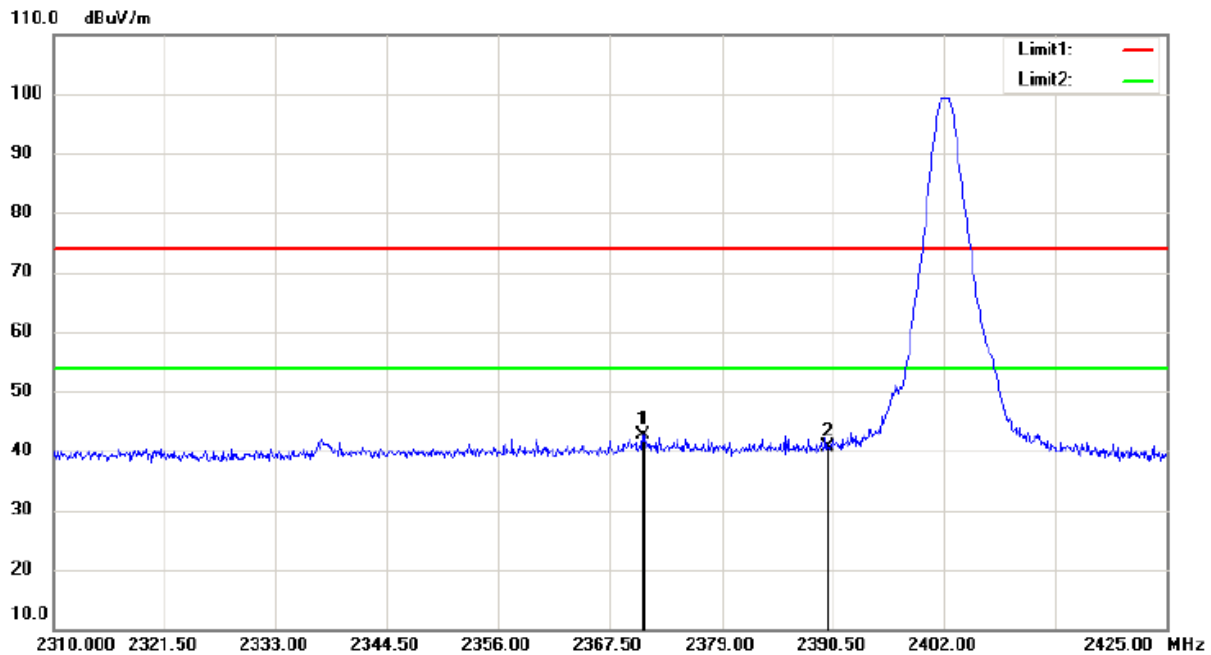
3. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.



## 7.8.2 Radiated Band-edge

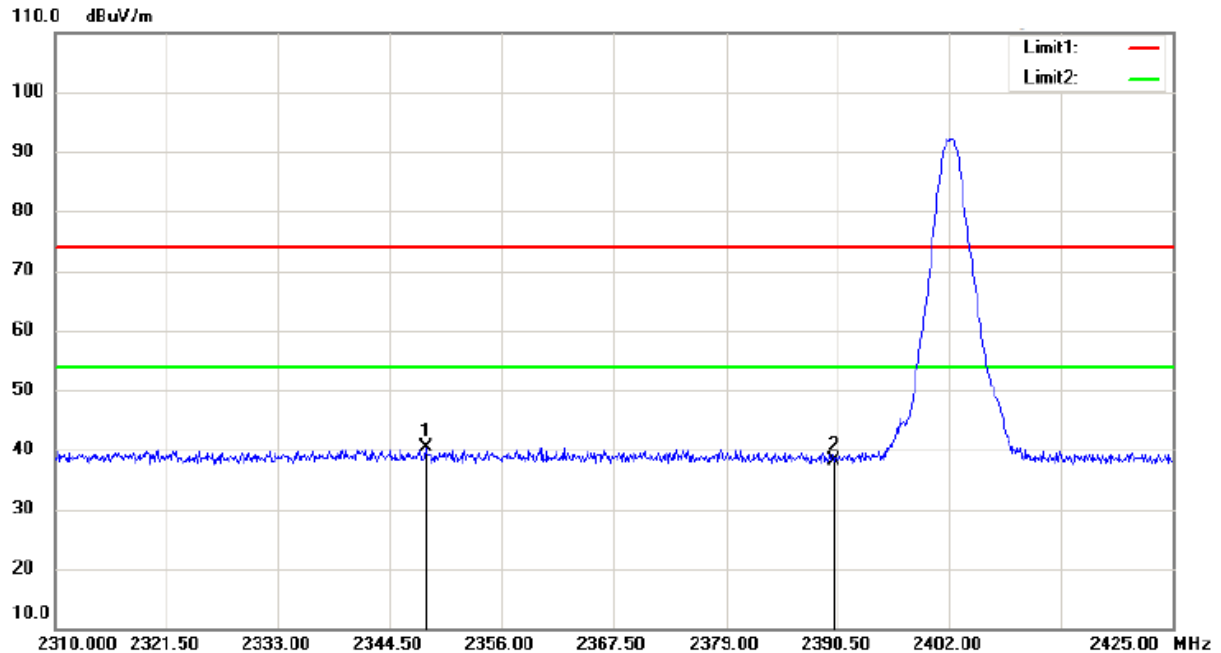
Test mode:	GFSK	Test channel:	Lowest
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Horizontal, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2370.950	49.32	peak	-6.58	42.74	74.00	-31.26
2	2389.925	47.07	peak	-6.55	40.52	74.00	-33.48

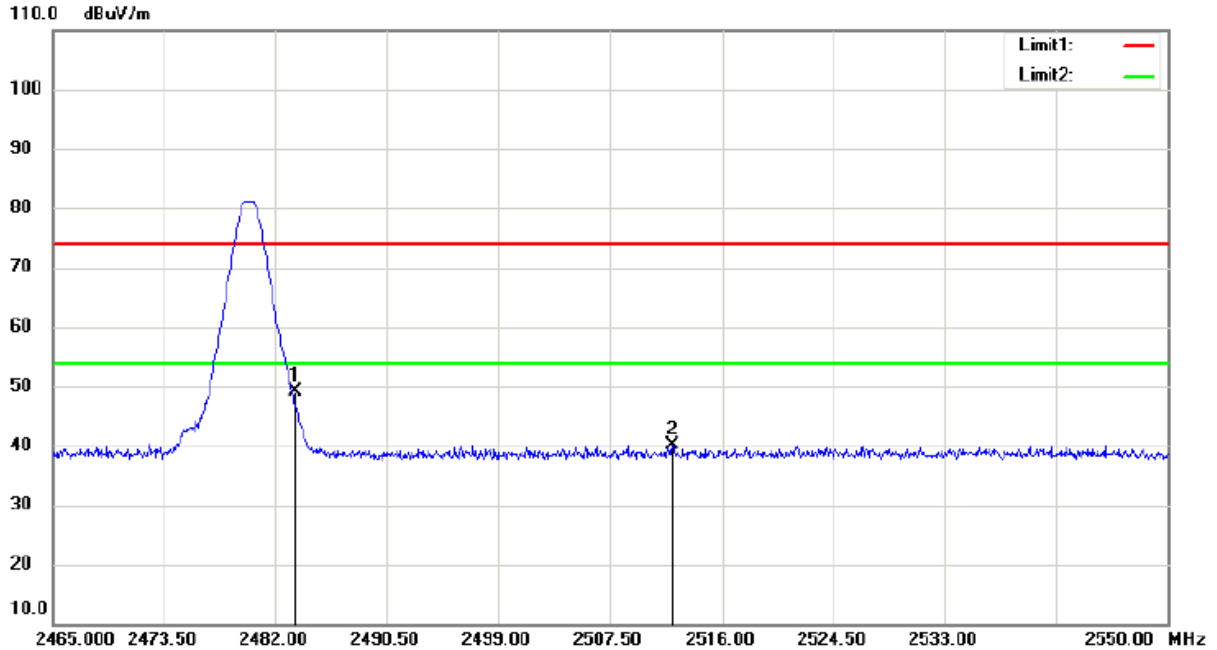
### Vertical, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2348.180	47.05	peak	-6.61	40.44	74.00	-33.56
2	2390.155	44.71	peak	-6.55	38.16	74.00	-35.84

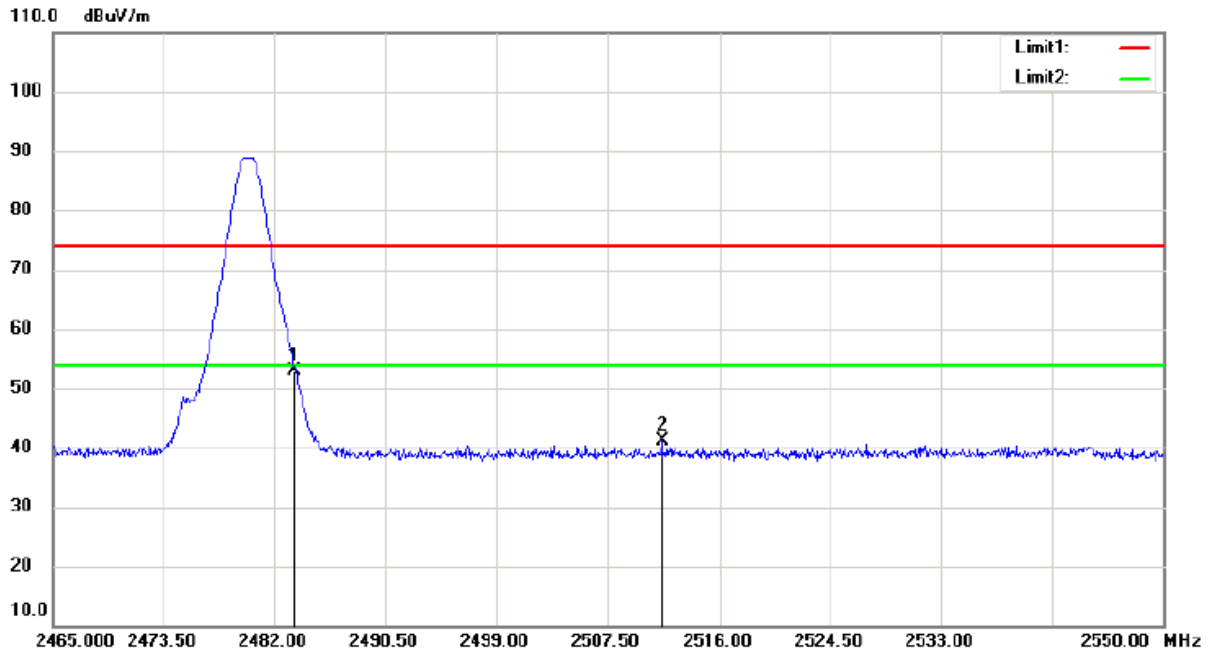
Test mode:	GFSK	Test channel:	Highest
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### Horizontal, Peak Detector:



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2483.500	55.55	peak	-6.41	49.14	74.00	-24.86
2	2512.175	46.47	peak	-6.36	40.11	74.00	-33.89

**Vertical, Peak Detector:**



Mk.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2483.500	59.33	peak	-6.41	52.92	74.00	-21.08
2	2511.580	47.44	peak	-6.36	41.08	74.00	-32.92

Remark: 1. Test Level = Receiver Reading + Antenna Factor + Cable Loss – Preamplifier Factor.

2. No any other emissions level which are attenuated less than 20dB below the limit.

According to 15.31(o), the amplitude of spurious emissions from intentional radiators and emissions from unintentional radiators which are attenuated more than 20 dB below the permissible value need not be reported unless specifically required elsewhere in this Part. Hence there no other emissions have been reported.

3. If the Peak value below the AV Limit, the AV test doesn't perform for this submission.

All frequencies within the "Restricted bands" have been evaluated to compliance. Section 15.205 Restricted bands of operation.

Except as shown in paragraph of this section. Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 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 -	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.52525	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	156.7 - 156.9	3260 - 3267	23.6 - 24.0
12.29 - 12.293	162.0125 - 167.17	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	167.72 - 173.2	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	240 - 285	3600 - 4400	
13.36 - 13.41	322 - 335.4		



## **8 Test Setup Photographs**

Refer to the < Linquet-BLE1\_Test Setup photos-FCC>.

## **9 EUT Constructional Details**

Refer to the < Linquet-BLE1\_External Photos-FCC> & < Linquet-BLE1\_Internal Photos-FCC>.

**--End of the Report--**