TEST REPORT

FCC ID: 2AC6E87040

Applicant	:	LRP electronic GmbH
Address	:	Hanfwiesenstrasse 15 73614 Schorndorf Germany

Equipment Under Test (EUT):

Name	:	B3-XTX Deluxe
Model	:	87040

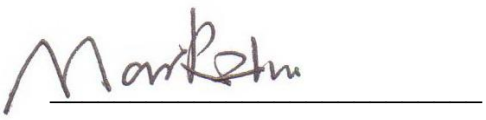
In Accordance with: FCC PART 15, SUBPART C : 2015 (Section 15.247)

Report No	:	T1851661 04
Date of Test	:	November 10 – November 25, 2015
Date of Issue	:	November 25, 2015

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 Alpha Product Testing Co., Ltd. Or test done by Shenzhen Alpha Product Testing Co., Ltd. Approvals in connection with, distribution or use of the product described in this report must be approved by Shenzhen Alpha Product Testing Co., Ltd. Approvals in writing.

Contents

1. General Information

1.1. Description of Device (EUT)

EUT	:	B3-XTX Deluxe
Model No.	:	87040
DIFF.	:	N/A
Trade mark	:	N/A
Power supply	:	DC 6V from battery, 4*1.5V AA battery
Radio Technology	:	2.4G ISM Band
Operation frequency	:	2405-2478MHz
Modulation	:	FHSS(FSK)
Antenna Type	:	Integrated Antenna, max gain 2.5dBi.
Applicant	:	LRP electronic GmbH
Address	:	Hanfwiesenstrasse 15 73614 Schorndorf Germany
Manufacturer		LRP electronic GmbH
Address		Hanfwiesenstrasse 15 73614 Schorndorf Germany

1.2. Accessories of device (EUT)

Accessories	:	N/A
Model		N/A
Input		N/A
Output		N/A
Accessories2	:	N/A
Model		N/A

1.3. Test Lab information

Shenzhen Alpha Product Testing Co., Ltd.
Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
Bao'an, Shenzhen, China

August 11, 2014 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2. Summary of test

2.1. Summary of test result

Description of Test Item	Standard	Results
Maximum Peak Output Power	FCC Part 15: 15.247(b)(1) ANSI C63.10 :2013	PASS
Bandwidth	FCC Part 15: 15.215 ANSI C63.10 :2013	PASS
Carrier Frequency Separation	FCC Part 15: 15.247(a)(1) ANSI C63.10 :2013	PASS
Number Of Hopping Channel	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2013	PASS
Dwell Time	FCC Part 15: 15.247(a)(1)(iii) ANSI C63.10 :2013	PASS
Radiated Emission	FCC Part 15: 15.209 FCC Part 15: 15.247(d) ANSI C63.10 :2013	PASS
Band Edge Compliance	FCC Part 15: 15.247(d) ANSI C63.10 :2013	PASS
Power Line Conducted Emissions	FCC Part 15: 15.207 ANSI C63.10 :2013	N/A
Antenna requirement	FCC Part 15: 15.203	PASS

2.2. Assistant equipment used for test

Description	:	N/A
Manufacturer	:	N/A
Model No.	:	N/A

2.3. Block Diagram

For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was set into test mode before test.

2.4. Test mode

EUT work in Continuous TX mode, and select test channel, wireless mode, New battery is used during all test

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
FHSS(FSK)	Low :CH1	2405
	Middle: CH37	2441
	High: CH74	2478

2.5. Test Conditions

Temperature range	21-25℃
Humidity range	40-75%
Pressure range	86-106kPa

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

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10-9	
Uncertainty for conducted RF Power	0.65dB	
Uncertainty for temperature	0.2℃	
Uncertainty for humidity	1%	
Uncertainty for DC and low frequency voltages	0.06%	

2.7. Test Equipment

Equipment	Manufacture	Model No.	Serial No.	Last Cal.	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	2015.01.19	1Year
Spectrum analyzer	Agilent	E4407B	MY49510055	2015.01.19	1Year
Receiver	R&S	ESCI	101165	2015.01.19	1Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	2015.01.21	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2015.01.21	2Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	2015.01.21	2Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	309972/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	329112/4	2015.01.19	1Year
Power Meter	Anritsu	ML2487A	6K00001491	2015.01.19	1Year
Power sensor	Anritsu	ML2491A	32516	2015.01.19	1Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	2015.01.19	1Year
Pre-amplifier	Quietek	AP-180C	CHM-0602012	2015.01.19	1Year

3. Maximum Peak Output power

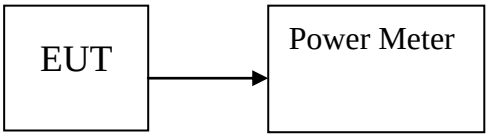
3.1. Limit

Please refer section15.247.
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

3.2. Test Procedure

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

3.3. Test Setup



3.4. Test Result

EUT: B3-XTX Deluxe M/N: 87040					
Test date: 2015-11-24		Test site: RF site Tested by: Peter			
Mode	Freq (MHz)	PK Output Power (dBm)	PK Output Power (mW)	Limit (dBm)	Margin (dB)
FHSS(FSK)	2405	14.512	28.262	30	15.488
	2441	16.708	46.860	30	13.292
	2478	16.2	41.687	30	13.800
Conclusion: PASS					

4. Bandwidth

4.1. Limit

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

4.2. Test Procedure

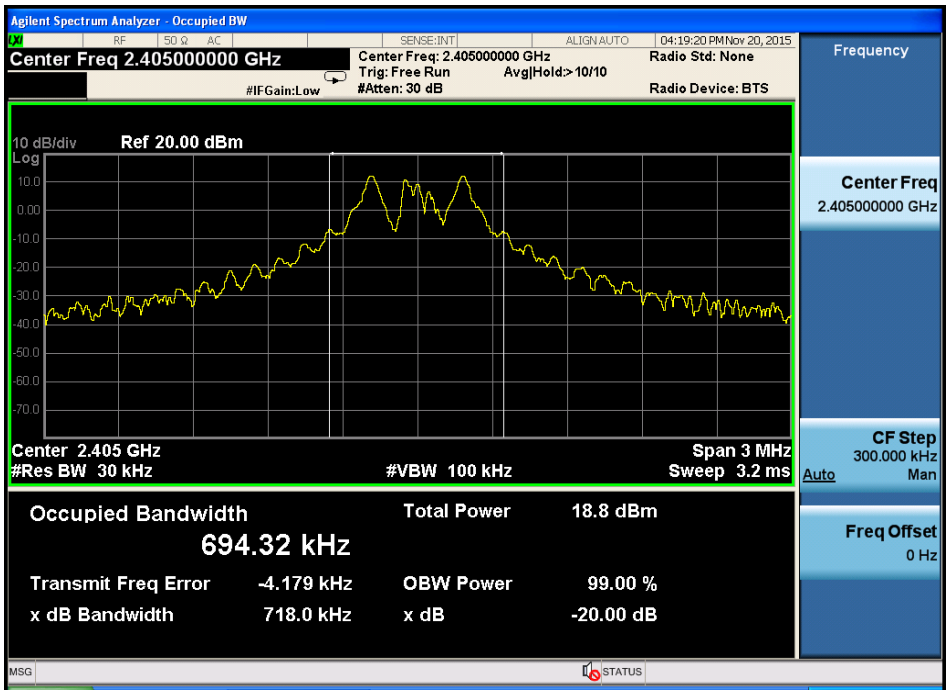
The transmitter output was coupled to a spectrum analyzer via a antenna. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 30kHz VBW, Peak Detector. The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

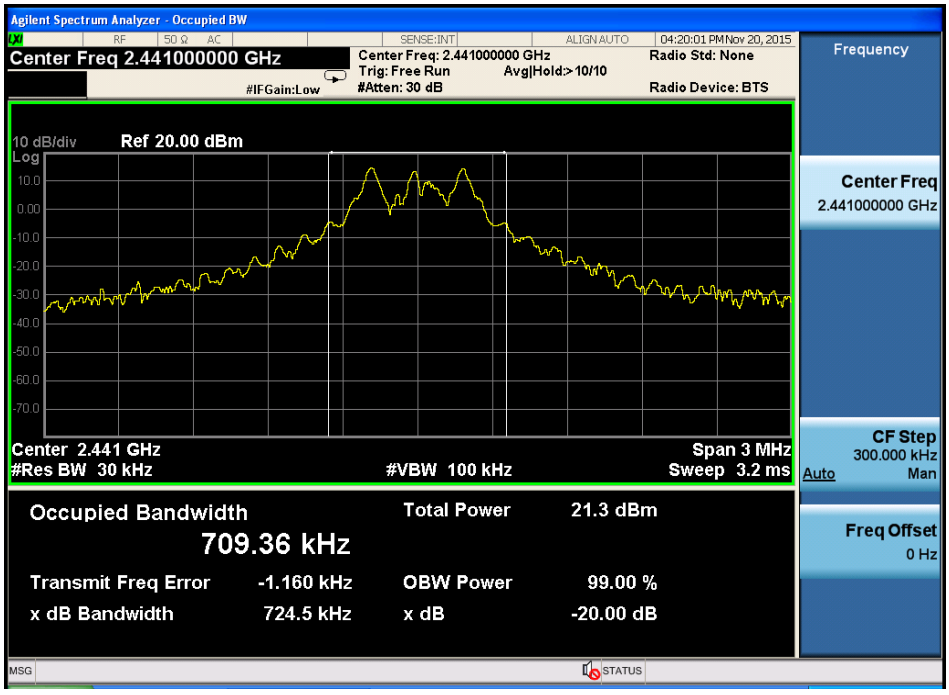
4.3. Test Result

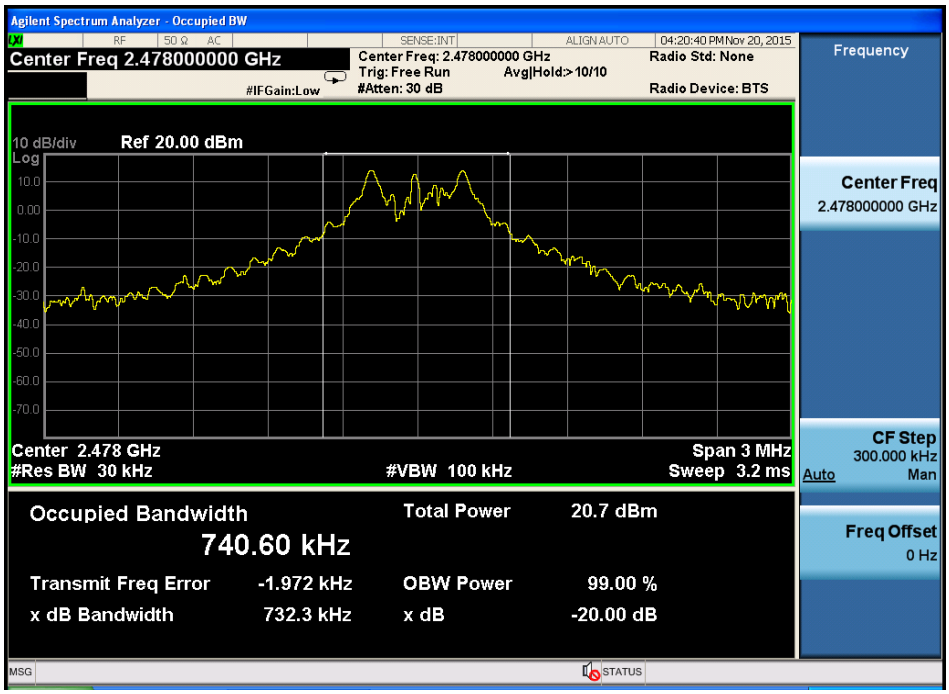
EUT: B3-XTX Deluxe		M/N: 87040		
Test date: 2015-11-24		Test site: RF site	Tested by: Peter	
Mode	Freq (MHz)	20dB Bandwidth (MHz)	Limit (kHz)	Conclusion
FHSS(FSK)	2405	0.718	/	PASS
	2441	0.725	/	PASS
	2478	0.732	/	PASS

Orginal Test data For 20dB bandwidth

FHSS(FSK):






Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
04:20:40 PM Nov 20, 2015
Center Freq 2.478000000 GHz
Center Freq: 2.478000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#IFGain:Low
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.478000000 GHz
Center 2.478 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 3 MHz
Sweep 3.2 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
740.60 kHz
Total Power
20.7 dBm
Freq Offset
0 Hz
Transmit Freq Error
-1.972 kHz
OBW Power
99.00 %
x dB Bandwidth
732.3 kHz
x dB
-20.00 dB
MSG
STATUS

5. Carrier Frequency Separation

5.1. Limit

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

5.2. Test Procedure

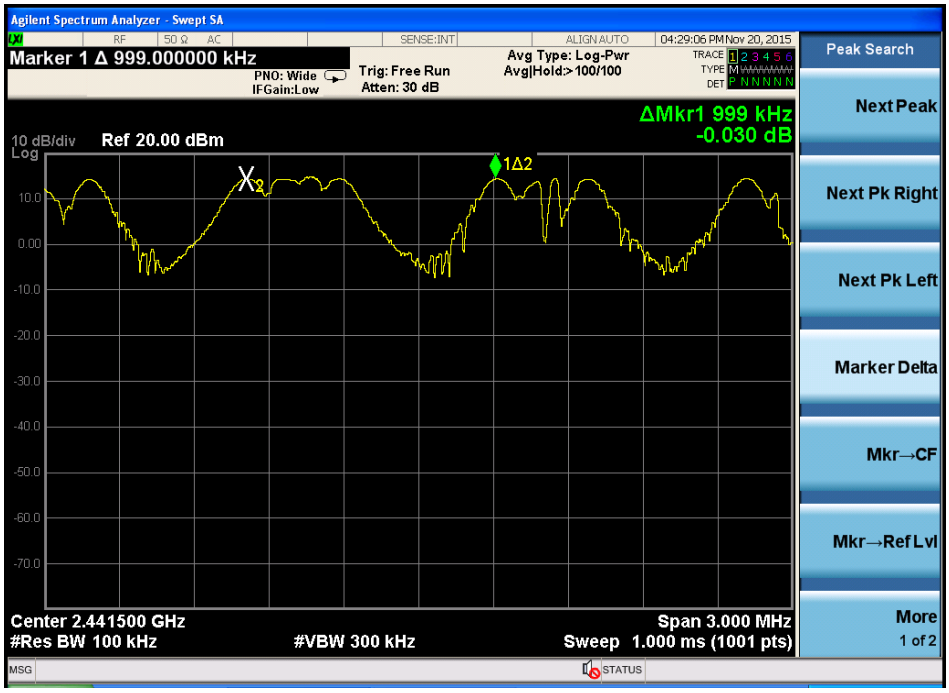
The transmitter output was coupled to a spectrum analyzer via a antenna. The carrier frequency was measured by spectrum analyzer with 30kHz RBW and 30kHz VBW.

5.3. Test Result

EUT: B3-XTX Deluxe M/N: 87040				
Test date: 2015-11-24		Test site: RF site	Tested by: Simple	
Mode/Channel	Channel separation (MHz)	20dB Bandwidth (MHz)	Limit (MHz) 2/3 20dB bandwidth	Conclusion
FHSS(FSK)	0.999	0.725	0.483	PASS

Orginal test data for channel separation

FHSS(FSK)



6. Number Of Hopping Channel

6.1. Limit

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

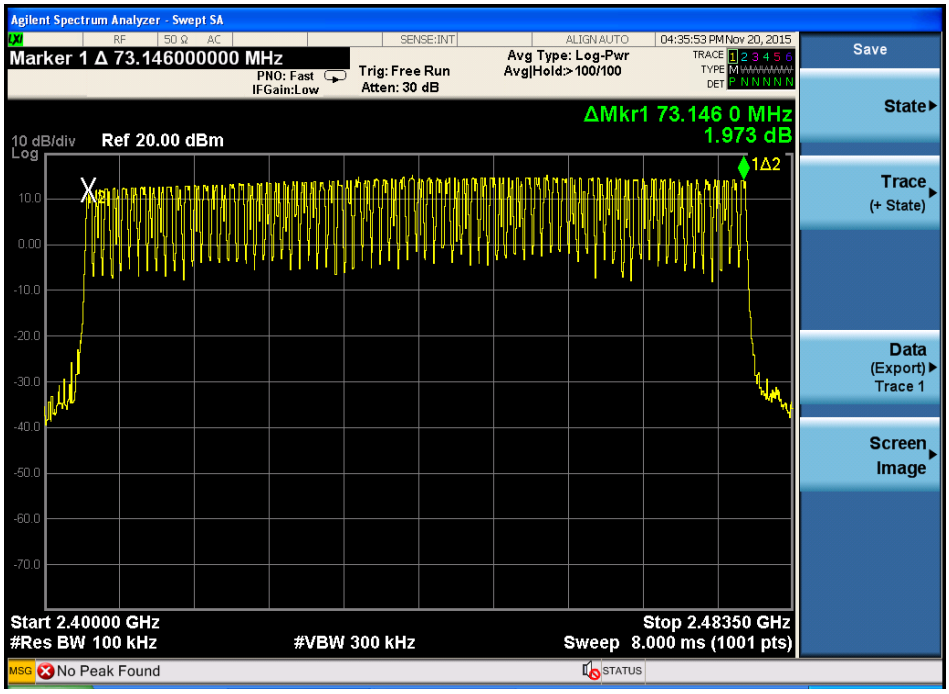
6.2. Test Procedure

The transmitter output was coupled to a spectrum analyzer via a antenna. The number of hopping channel was measured by spectrum analyzer with 300kHz RBW and 1MHz VBW.

6.3. Test Result

EUT: B3-XTX Deluxe M/N: 87040			
Test date: 2015-11-24	Test site: RF site	Tested by: Peter	
Mode	Number of hopping channel	Limit	Conclusion
FHSS(FSK)	74	>15	PASS

Original test data for hopping channel number
FHSS(FSK)



7. Dwell Time

7.1. 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.

7.2. Test Procedure

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 center frequency of spectrum analyzer = operating frequency.

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

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

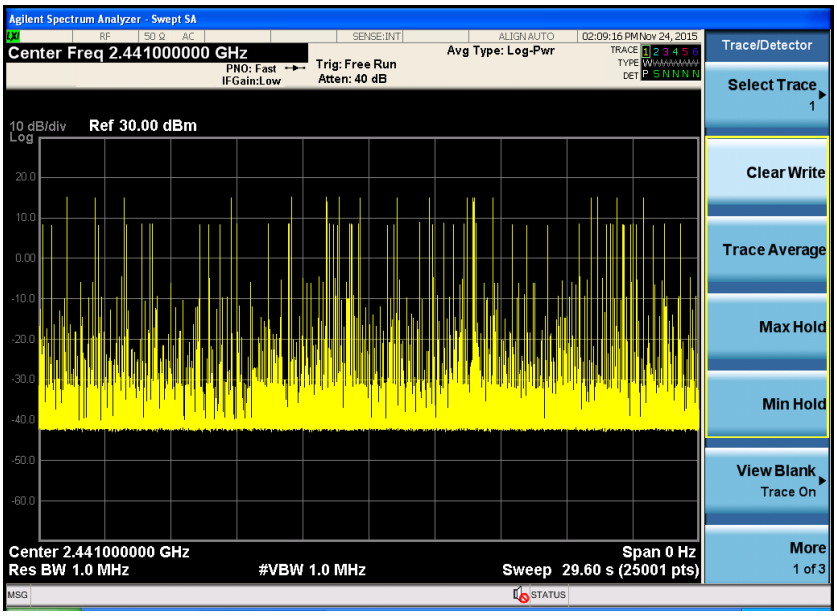
7.3. Test Results

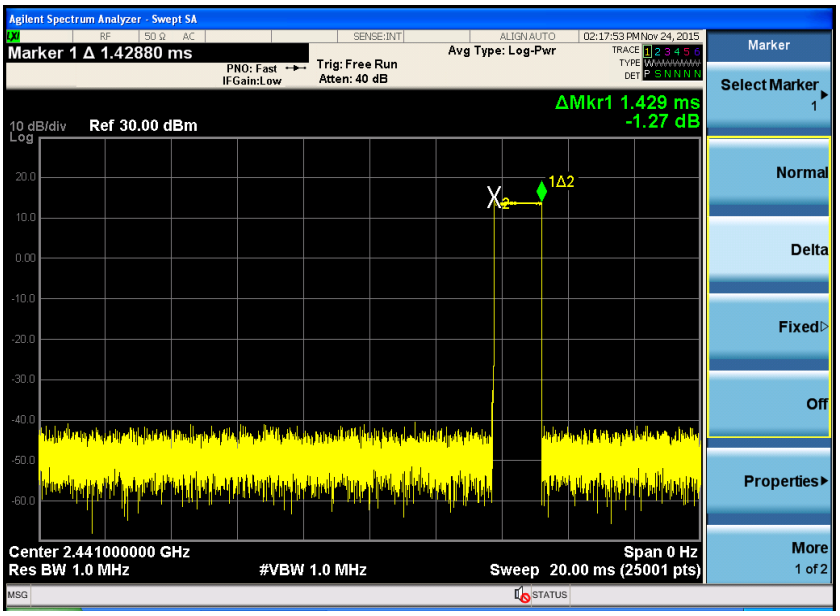
PASS.

Detailed information please see the following page.

EUT: B3-XTX Deluxe M/N: 87040					
Test date: 2015-11-24	Test site: RF site Tested by: Peter				
Mode	Frequency (MHz)	Total Pulse Duration (ms)	Total Dwell Time (s)	Limit (s)	Conclusion
FHSS(FSK)	2441	69*1.429=98.601	0.098601	<0.4	PASS
Note1: A period time = 0.4 (s) * 74 = 29.6(s)					

FHSS(FSK)





8. Radiated emissions

8.1. Limit

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.

15.205 Restricted frequency band

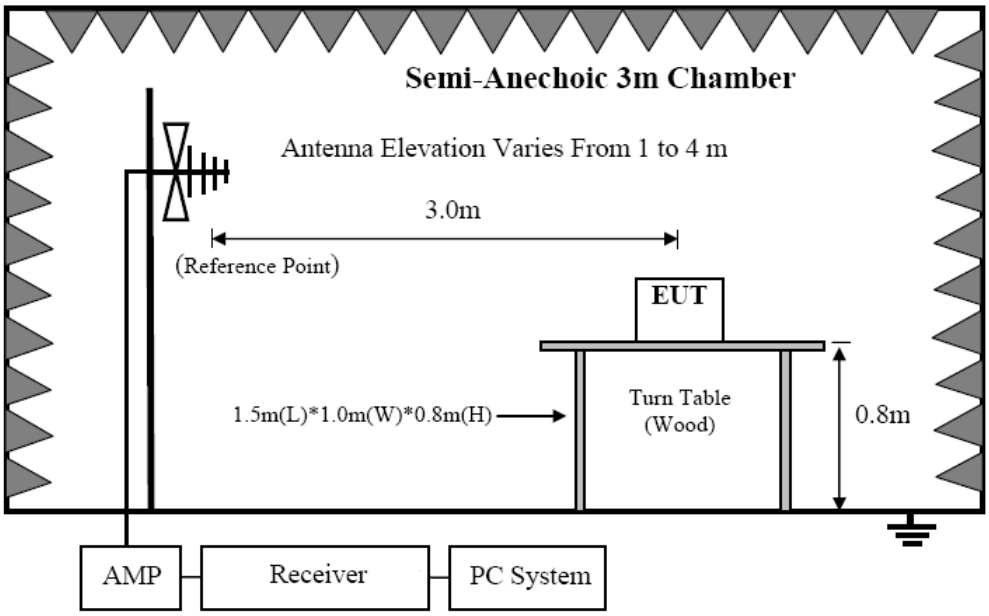
MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 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])

15.209 Limit

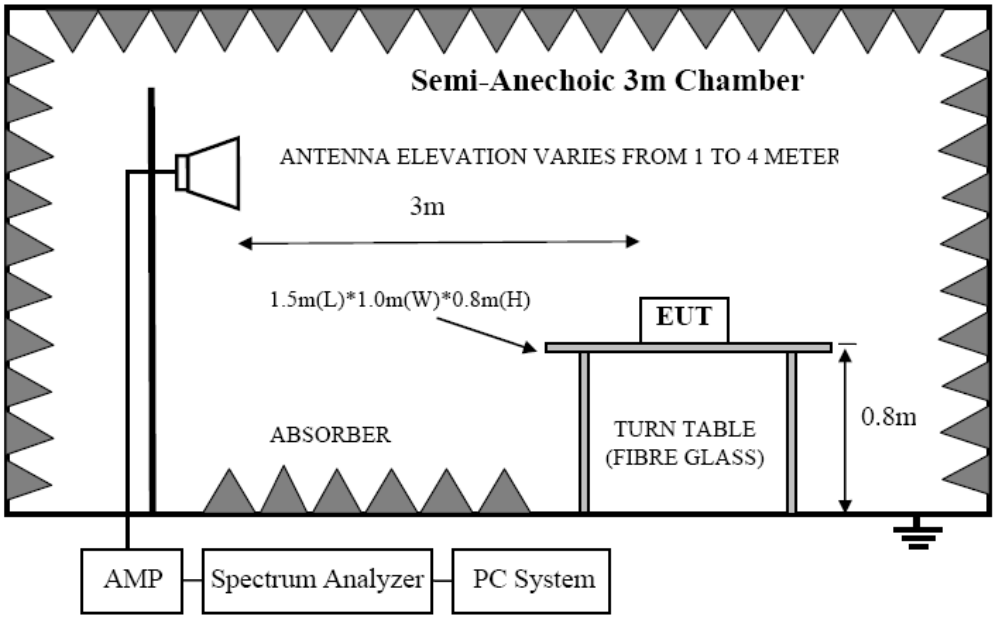
FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
0.009-0.490	300	2400/F(KHz)	/
0.490-1.705	30	24000/F(KHz)	/
1.705-30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	

8.2. Block Diagram of Test setup

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



8.2.2 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. Test Procedure

(1) EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber for below 1GHz testing, and 150cm for above 1GHz testing.

(2) Setup EUT and simulator as shown in section 1.4 and 6.1
(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) Rotated EUT though three orthogonal axes to determine the attitude of EUT arrangement produces highest emissions
(4) Spectrum frequency from 9KHz to 25GHz (tenth harmonic of fundamental frequency) was investigated
(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 C63.4 2003 on Radiated Emission test.
(6) 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; RBW is set at 1MHz, VBW is set at 10Hz for Average measure.

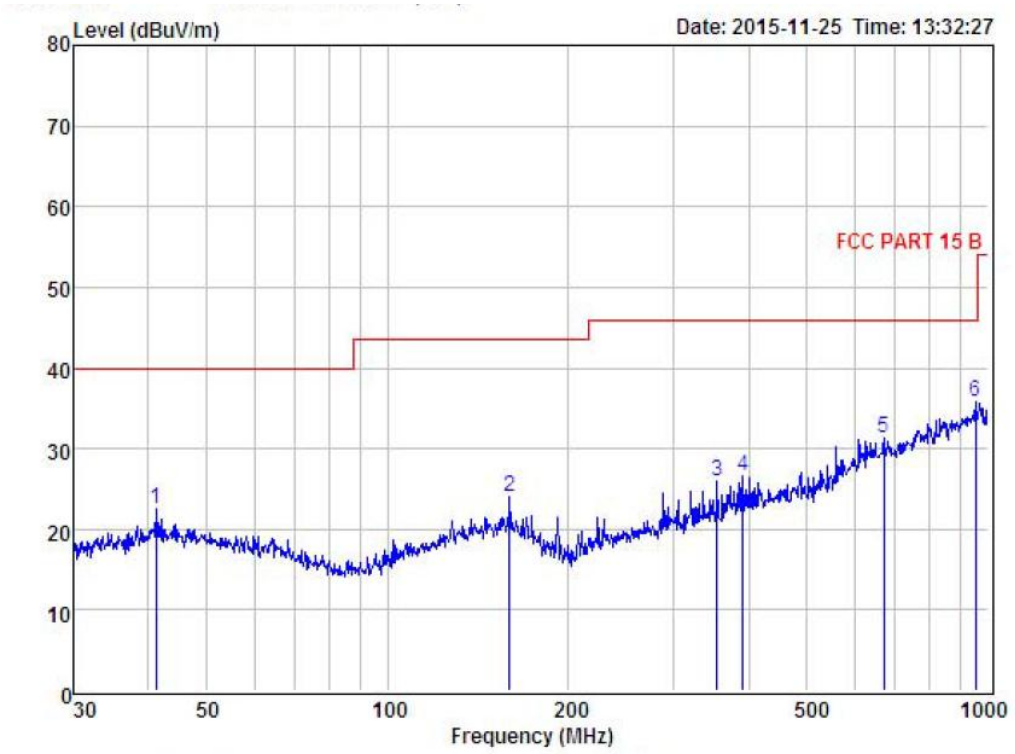
8.4. Test Result

We have scanned the 10th harmonic from 9KHz to the EUT.
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

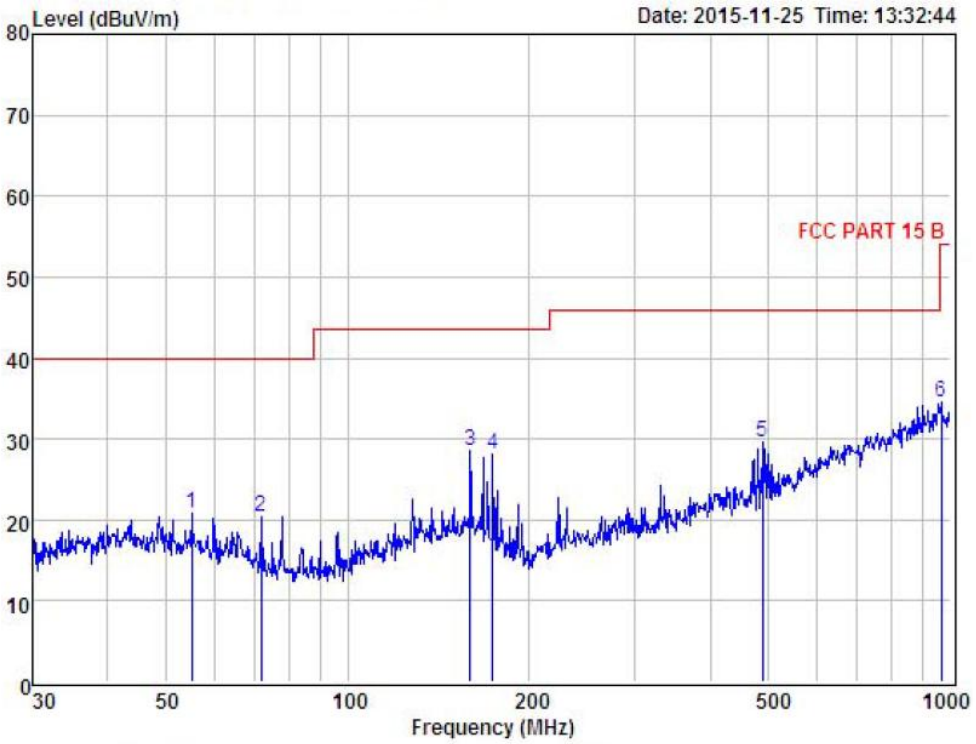
From 30MHz to 1000MHz: Conclusion: PASS



Condition : FCC PART 15 B 3m POL: HORIZONTAL
EUT :
Model No :
Test Mode :
Power :
Test Engineer :
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	41.13	39.30	13.93	30.85	0.18	22.56	40.00	-17.44	Peak
2	159.78	38.57	14.14	29.17	0.44	23.98	43.50	-19.52	Peak
3	354.18	39.21	13.91	27.75	0.64	26.01	46.00	-19.99	Peak
4	390.72	38.44	14.58	27.38	0.86	26.50	46.00	-19.50	Peak
5	670.49	36.45	19.35	25.72	1.14	31.22	46.00	-14.78	Peak
6	952.09	36.54	22.15	24.97	1.99	35.71	46.00	-10.29	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



Condition : FCC PART 15 B 3m POL: VERTICAL
EUT :
Model No :
Test Mode :
Power :
Test Engineer :
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	55.03	38.33	13.07	30.87	0.18	20.71	40.00	-19.29	Peak
2	71.83	39.86	10.51	30.12	0.19	20.44	40.00	-19.56	Peak
3	159.78	43.16	14.14	29.17	0.44	28.57	43.50	-14.93	Peak
4	173.81	44.10	12.58	29.08	0.52	28.12	43.50	-15.38	Peak
5	487.32	39.53	16.35	27.19	0.94	29.63	46.00	-16.37	Peak
6	965.54	35.34	22.19	25.04	1.97	34.46	54.00	-19.54	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Remark: All modes have been tested, and only worst data of FHSS(FSK) mode, Channel 2405MHz was listed in this report.

1GHz—25GHz Radiated emissison Test result									
EUT: B3-XTX Deluxe M/N: 87040									
Power: DC 6.0V From battery									
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter									
Test mode: FHSS(FSK) Tx CH1 2405MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4810	49.87	31.25	5.7	34.2	52.62	74	21.38	PK
2	4810	39.19	31.25	5.7	34.2	41.94	54	12.06	AV
3	7215	/							
4	/	/							
5	/	/							
Antenna Polarity: Horizontal									
1	4810	52.49	31.25	5.7	34.2	55.24	74	18.76	PK
2	4810	40.69	31.25	5.7	34.2	43.44	54	10.56	AV
3	7215	/							
4	/	/							
5	/	/							

Note:
1, Measuring frequency from 1GHz to 25GHz
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emission Test result									
EUT: B3-XTX Deluxe M/N: 87040									
Power: DC 6.0V From battery									
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter									
Test mode: FHSS(FSK) Tx CH40 2441MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882	52.61	31.68	5.75	34.29	55.75	74	18.25	PK
2	4882	42.11	31.68	5.75	34.29	45.25	54	8.75	AV
3	7323	/							
4	9764	/							
5	12205	/							
Antenna Polarity: Horizontal									
1	4882	55.13	31.68	5.75	34.29	58.27	74	15.73	PK
2	4882	43.38	31.68	5.75	34.29	46.52	54	7.48	AV
3	7323	/							
4	9764	/							
5	12205	/							

Note:

1, Measuring frequency from 1GHz to 25GHz

2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK

2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK

3, Result = Read level + Antenna factor + cable loss-Amp factor

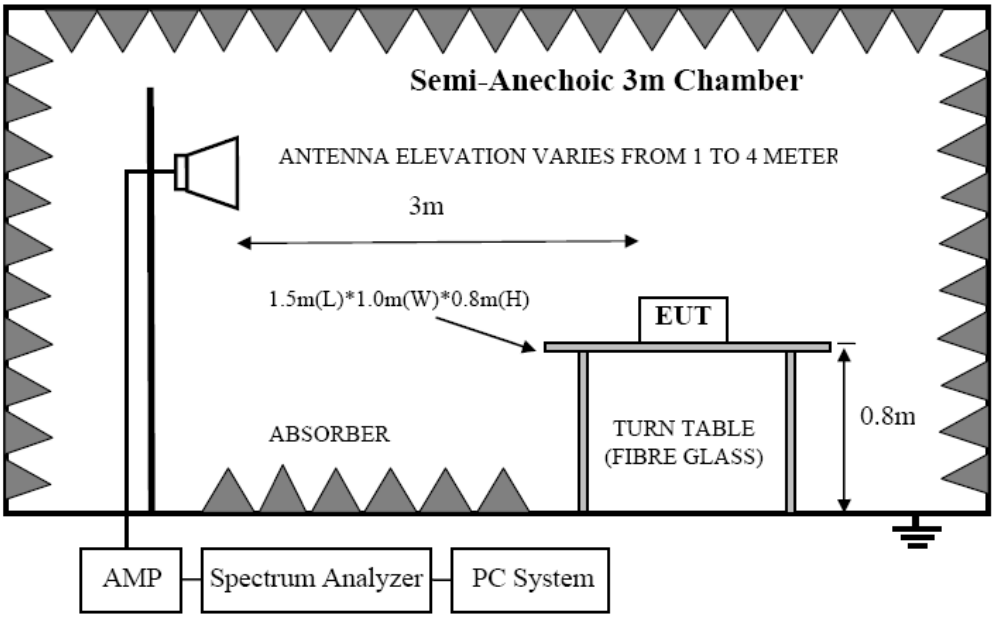
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

1GHz—25GHz Radiated emissison Test result									
EUT: B3-XTX Deluxe M/N: 87040									
Power: DC 6.0V From battery									
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter									
Test mode: FHSS(FSK) Tx CH79 2478MHz									
Antenna polarity: Vertical									
No	Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4956	56.63	31.5	5.79	34.06	59.86	74	14.14	PK
2	4956	43.88	31.5	5.79	34.06	47.11	54	6.89	AV
3	7434	/							
4	/	/							
5	/	/							
Antenna Polarity: Horizontal									
1	4956	54.65	31.5	5.79	34.06	57.88	74	16.12	PK
2	4956	43.02	31.5	5.79	34.06	46.25	54	7.75	AV
3	7434	/							
4	/	/							
5	/	/							

Note:
1, Measuring frequency from 1GHz to 25GHz
2, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

9. Band Edge Compliance

9.1. Block Diagram of Test Setup



9.2. Limit

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

9.3. Test Procedure

All restriction band and non- restriction band have been tested ， only worse case is reported.

9.4. Test Result

PASS. (See below detailed test data)

Radiated Method

FHSS(FSK)

CH LOW :

Band Edge Test result								
EUT: B3-XTX Deluxe M/N: 87040								
Power: DC 6.0V From battery								
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter								
Test mode: Tx CH1 2405MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	41.76	27.62	3.92	34.97	38.33	74	35.67	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	60.22	27.62	3.94	34.97	56.81	74	17.19	PK
2400	49.38	27.62	3.94	34.97	45.97	54	8.03	AV
Antenna Polarity: Horizontal								
2390	40.43	27.62	3.92	34.97	37.00	74	37.00	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	59.68	27.62	3.94	34.97	56.27	74	17.73	PK
2400	49.26	27.62	3.94	34.97	45.85	54	8.15	AV
Note: 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK 3, Result = Read level + Antenna factor + cable loss-Amp factor 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: B3-XTX Deluxe M/N: 87040								
Power: DC 6.0V From battery								
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter								
Test mode: Tx CH74 2478MHz								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	61.43	27.59	4.00	34.97	58.05	74	15.95	PK
2483.5	50.27	27.59	4.00	34.97	46.89	54	7.11	AV
Antenna Polarity: Horizontal								
2483.5	60.32	27.59	4.00	34.97	56.94	74	17.06	PK
2483.5	49.55	27.59	4.00	34.97	46.17	54	7.83	AV
Note: 1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK 2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK 3, Result = Read level + Antenna factor + cable loss-Amp factor 4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.								

Band Edge Test result								
EUT: B3-XTX Deluxe M/N: 87040								
Power: DC 6.0V From battery								
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter								
Test mode: Hopping								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2390	41.33	27.62	3.92	34.97	37.90	74	36.10	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	60.52	27.62	3.94	34.97	57.11	74	16.89	PK
2400	49.77	27.62	3.94	34.97	46.36	54	7.64	AV
Antenna Polarity: Horizontal								
2390	42.63	27.62	3.92	34.97	39.20	74	34.80	PK
2390	/	27.62	3.92	34.97	/	54	/	AV
2400	59.77	27.62	3.94	34.97	56.36	74	17.64	PK
2400	49.35	27.62	3.94	34.97	45.94	54	8.06	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

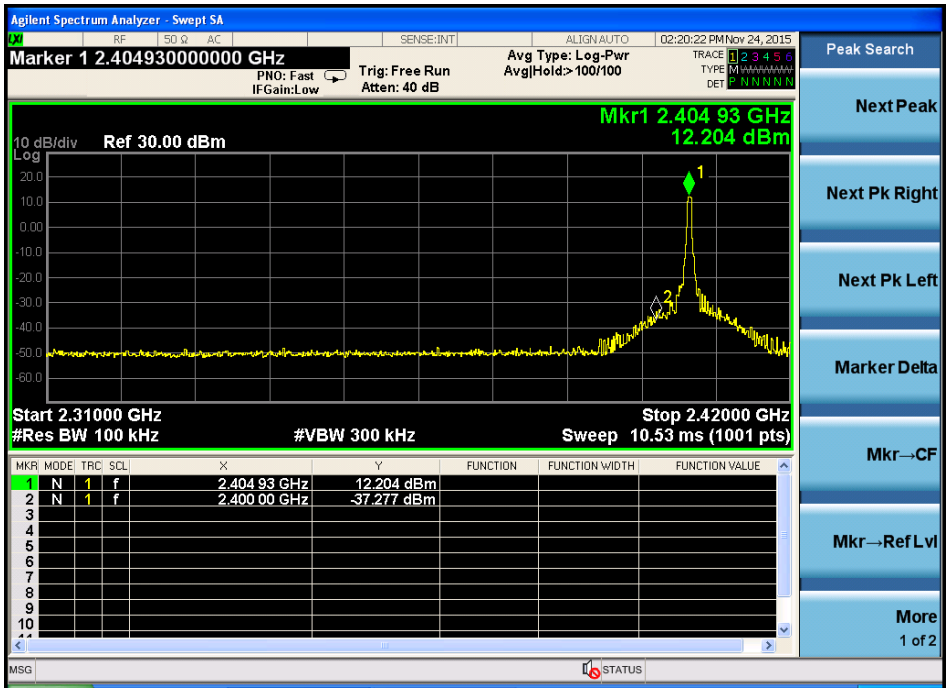
Band Edge Test result								
EUT: B3-XTX Deluxe M/N: 87040								
Power: DC 6.0V From battery								
Test date: 2015-11-24 Test site: 3m Chamber Tested by: Peter								
Test mode: Hopping								
Antenna polarity: Vertical								
Freq (MHz)	Read Level (dBuV/m)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
2483.5	60.24	27.59	4.00	34.97	56.86	74	17.14	PK
2483.5	49.41	27.59	4.00	34.97	46.03	54	7.97	AV
Antenna Polarity: Horizontal								
2483.5	58.46	27.59	4.00	34.97	55.08	74	18.92	PK
2483.5	47.39	27.59	4.00	34.97	44.01	54	9.99	AV

Note:
1, Spectrum Set for PK measure: RBW=1MHz, VBW=1MHz, Sweep time=Auto, Detector: PK
2, Spectrum Set for AV measure: RBW=1MHz, VBW=10Hz, Sweep time=Auto, Detector: PK
3, Result = Read level + Antenna factor + cable loss-Amp factor
4, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

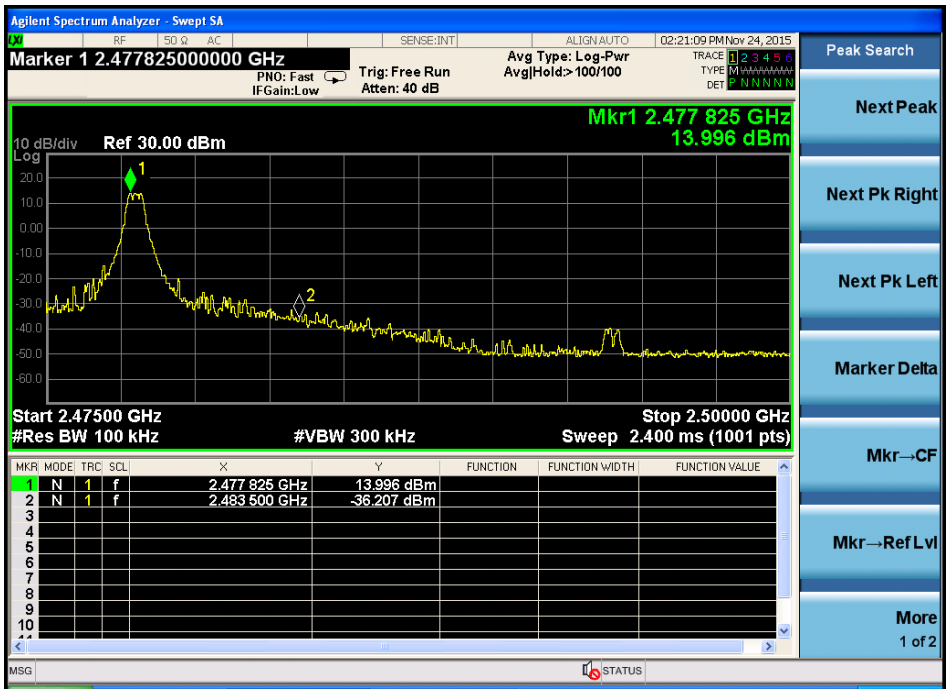
Conducted Method

FHSS(FSK)

CH LOW :

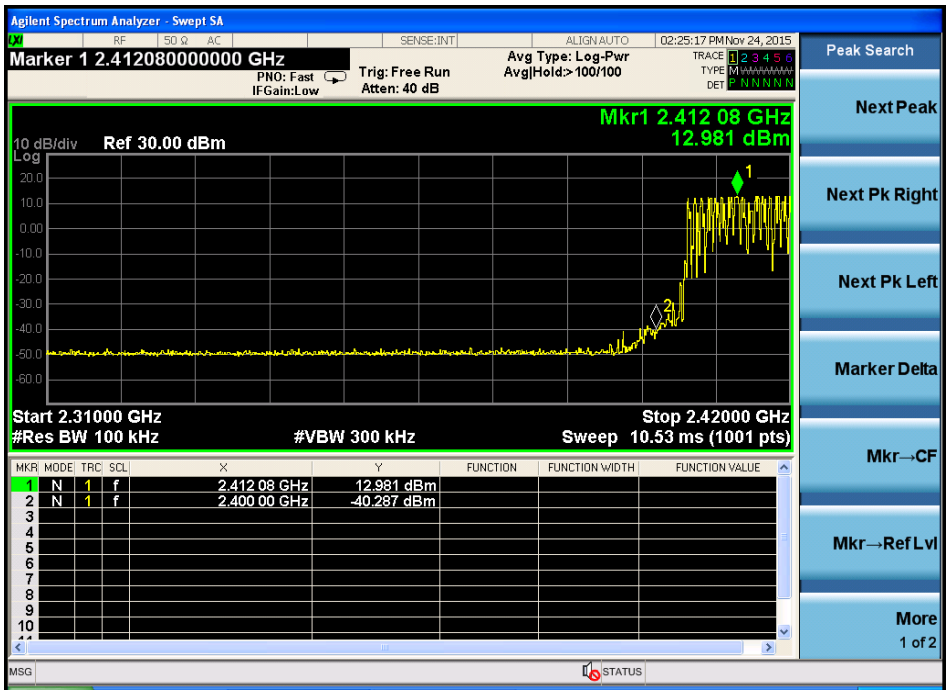


CH High :

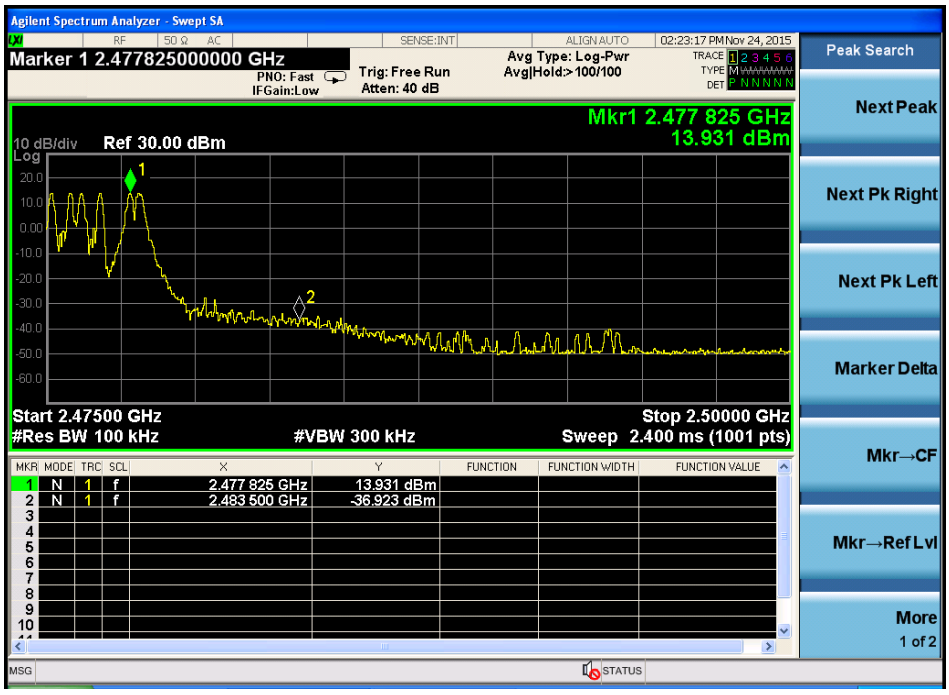


Hopping

Low

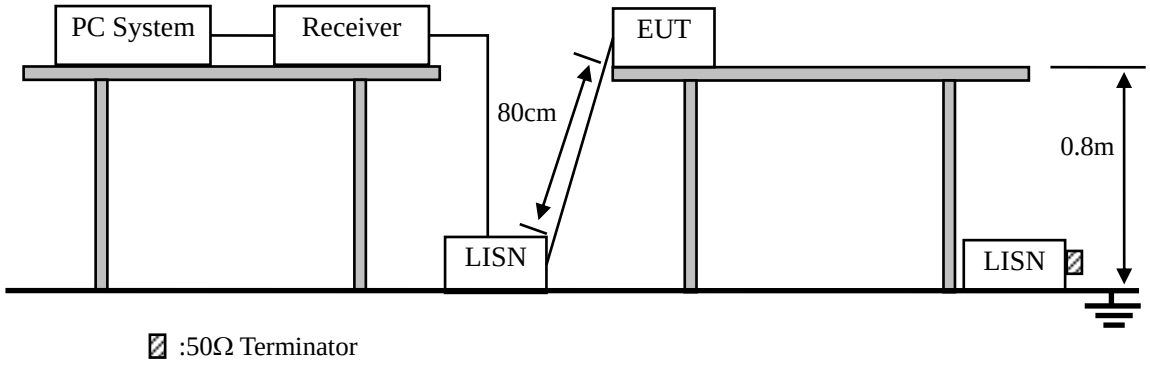


High



10. Power Line Conducted Emissions

10.1. Block Diagram of Test Setup



:50Ω Terminator

10.2. Limit

Frequency	Maximum RF Line Voltage	
	Quasi-Peak Level dB(μV)	Average Level dB(μV)
150kHz ~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz ~ 5MHz	56	46
5MHz ~ 30MHz	60	50

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

10.3. Test Procedure

(1) The EUT was placed on a non-metallic table, 80cm above the ground plane.
(2) Setup the EUT and simulator as shown in 10.1
(3) The EUT Power connected to the power mains through a power adapter and a line impedance stabilization network (L.I.S.N1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N2), this provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). Both sides of power line were checked for maximum conducted interference. 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 2013 on conducted Emission test.
(4) The bandwidth of test receiver is set at 10KHz.
(5) The frequency range from 150 KHz to 30MHz is checked.

10.4. Test Result

Not Apply to battery operated product.

11. Antenna Requirements

11.1. Limit

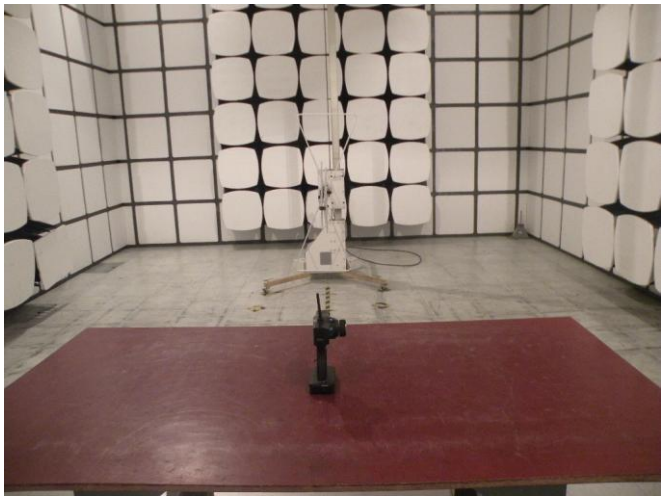
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional 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.

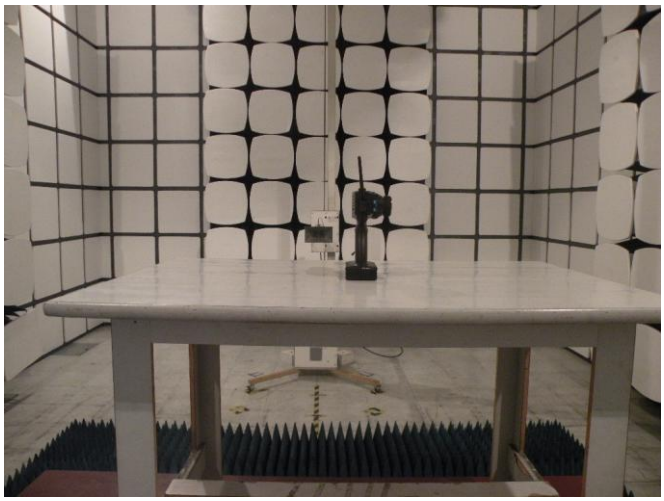
11.2. Result

The antenna used for this product is Antenna soldered on PCB, 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 2.5dBi .

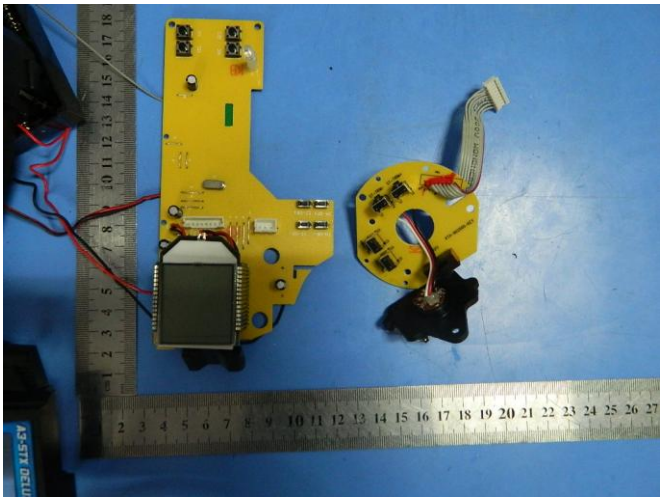
12. Test setup photo

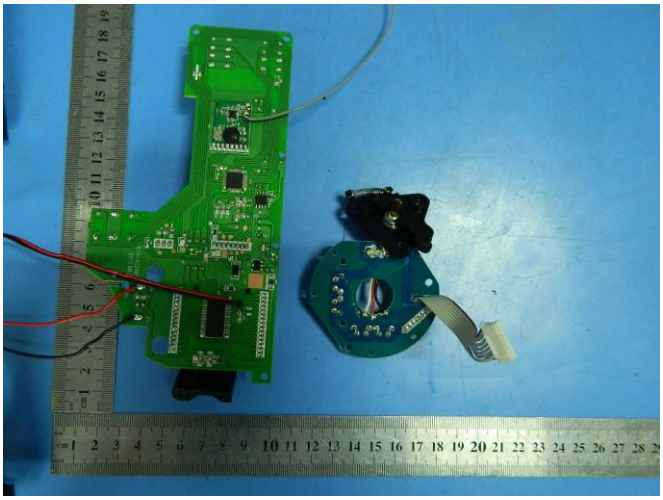
Photos of Radiated emission





13. Photos of EUT





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