

FCC REPORT

Applicant: Hobbico Inc

Address of Applicant: 2904 Research Road Champaign, Illinois, USA

Equipment Under Test (EUT)

Product Name: SKY CRUISER 2 EP GLIDER RTF

Model No.: Dromida Q415 DIDA1050

Trade mark: Dromida

FCC ID: IYF-DROMIDAQ415

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 10 May, 2016

Date of Test: 11 May, to 26 May, 2016

Date of report issued: 27 May, 2016

Test Result: PASS*

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

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. 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.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2 Version

Version No.	Date	Description
00	27 May, 2016	Original

Prepared by:



Test Engineer

Date:

27 May, 2016

Reviewed by:



Project Engineer

Date:

27 May, 2016

3 Contents

Page

1	COVER PAGE	1
2	VERSION	2
3	CONTENTS	3
4	TEST SUMMARY	4
5	GENERAL INFORMATION	5
5.1	CLIENT INFORMATION.....	5
5.2	GENERAL DESCRIPTION OF E.U.T.	5
5.3	TEST MODE.....	6
5.4	LABORATORY FACILITY.....	6
5.5	LABORATORY LOCATION.....	6
5.6	TEST INSTRUMENTS LIST.....	7
6	TEST RESULTS AND MEASUREMENT DATA	8
6.1	ANTENNA REQUIREMENT.....	8
6.2	CONDUCTED OUTPUT POWER.....	9
6.3	20dB OCCUPY BANDWIDTH.....	11
6.4	CARRIER FREQUENCIES SEPARATION.....	13
6.5	HOPPING CHANNEL NUMBER.....	15
6.6	DWELL TIME.....	16
6.7	PSEUDORANDOM FREQUENCY HOPPING SEQUENCE.....	17
6.8	BAND EDGE.....	18
6.8.1	Conducted Emission Method.....	18
6.8.2	Radiated Emission Method.....	20
6.9	SPURIOUS EMISSION.....	25
6.9.1	Conducted Emission Method.....	25
6.9.2	Radiated Emission Method.....	28
7	TEST SETUP PHOTO	34
8	EUT CONSTRUCTIONAL DETAILS	35

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.247 (b)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Radiated Emission	15.205/15.209	Pass
Band Edge	15.247(d)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty:

Items	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 30MHz)	2.14 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	4.24 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	4.35 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	4.44 dB (k=2)
Radiated Emission (18GHz ~ 26.5GHz)	4.56 dB (k=2)

5 General Information

5.1 Client Information

Applicant:	Hobbico Inc
Address of Applicant:	2904 Research Road Champaign, Illinois, USA
Manufacturer/Factory:	Shenzhen XK Innovations Technology Co.,Ltd
Address of Manufacturer/Factory:	Floor D, The Third Industrial Park, Dalang Street, LongHua New District, Shenzhen, China

5.2 General Description of E.U.T.

Product Name:	SKY CRUISER 2 EP GLIDER RTF
Model No.:	Dromida Q415 DIDA1050
Operation Frequency:	2404.0MHz~2447.5MHz
Transfer rate:	1.5 Mbits/s
Number of channel:	30
Modulation type:	2FSK
Modulation technology:	FHSS
Antenna Type:	Internal Antenna
Antenna gain:	2 dBi
Power supply:	DC 6V(4* 'AA' Battery)

Channel List							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2404.0MHz	8	2416.0MHz	16	2428.0MHz	24	2440.0MHz
1	2405.5MHz	9	2417.5MHz	17	2429.5MHz	25	2441.5MHz
2	2407.0MHz	10	2419.0MHz	18	2431.0MHz	26	2443.0MHz
3	2408.5MHz	11	2420.5MHz	19	2432.5MHz	27	2444.5MHz
4	2410.0MHz	12	2422.0MHz	20	2434.0MHz	28	2446.0MHz
5	2411.5MHz	13	2423.5MHz	21	2435.5MHz	29	2447.5MHz
6	2413.0MHz	14	2425.0MHz	22	2437.0MHz		
7	2414.5MHz	15	2426.5MHz	23	2438.5MHz		

Remark: Channel 0, 14 & 29 selected for test.

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation
<p>The sample was placed 0.8m above the ground plane of 3m chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working with a fresh battery, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.</p>	

5.4 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC - Registration No.: 817957 Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012. ● IC - Registration No.: 10106A-1 The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1. ● CNAS - Registration No.: CNAS L6048 Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.
--

5.5 Laboratory Location

<p>Shenzhen Zhongjian Nanfang Testing Co., Ltd. Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282 Fax: +86-755-23116366</p>

5.6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	03-25-2016	03-25-2017
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	03-25-2016	03-25-2017
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	04-01-2016	03-31-2017
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	04-01-2016	03-31-2017
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2016	03-31-2017
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	04-01-2016	03-31-2017
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	03-28-2016	03-28-2017
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	03-28-2016	03-28-2017
10	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2016	03-31-2017
11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

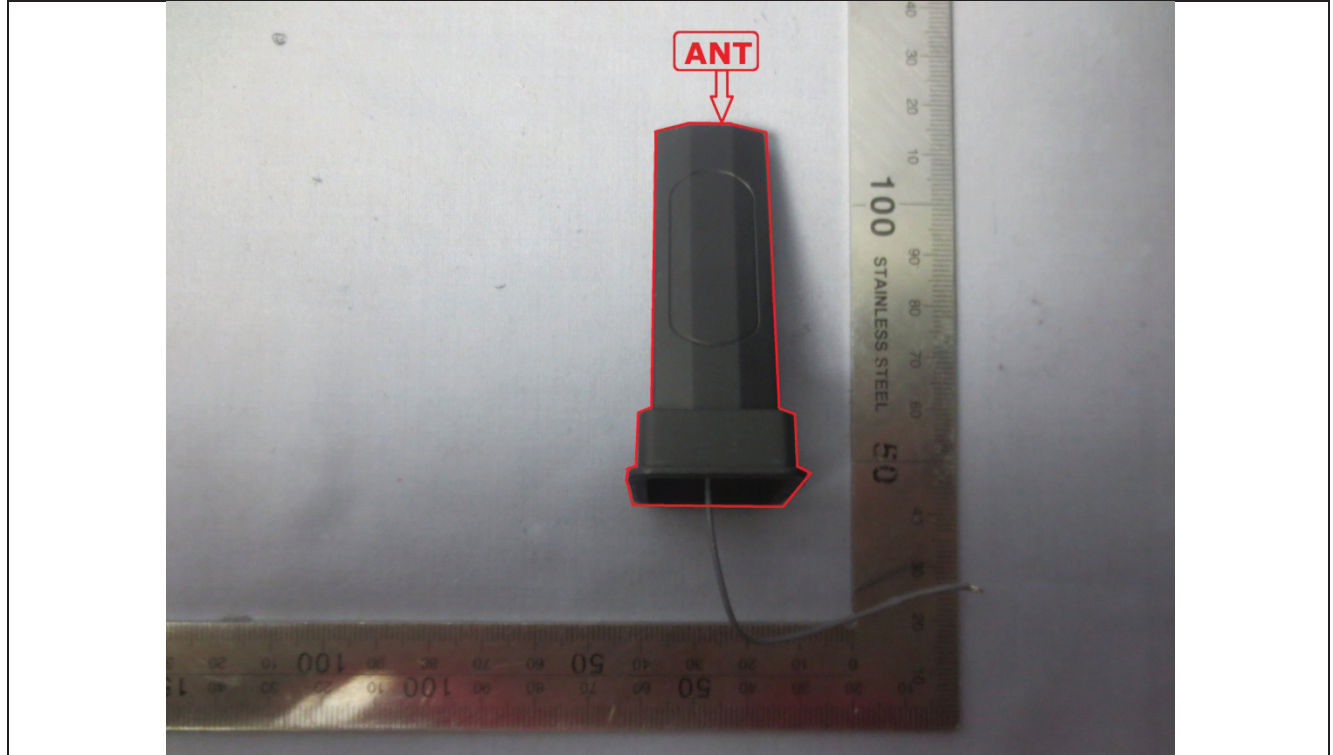
Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	08-23-2014	08-22-2017
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	03-24-2016	03-24-2017
3	LISN	CHASE	MN2050D	CCIS0074	03-26-2016	03-26-2017
4	Coaxial Cable	CCIS	N/A	CCIS0086	04-01-2016	03-31-2017
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A

6 Test results and Measurement Data

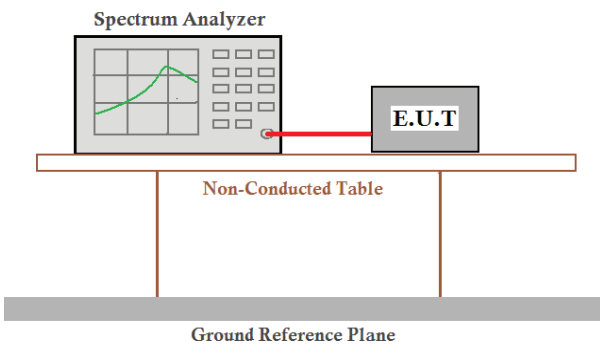
6.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
<p><i>15.203 requirement:</i> <i>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.</i></p> <p><i>15.247(c) (1)(i) requirement:</i> <i>(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</i></p>	

E.U.T Antenna:	
<p>The EUT'S antenna is an integral antenna which permanently attached, and the best case gain of the antenna is 2 dBi.</p>	



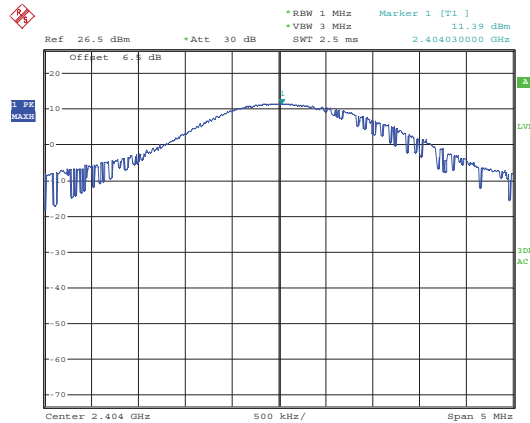
6.2 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤ 1 MHz) RBW=3MHz, VBW=10MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz)
Limit:	125 mW(21 dBm)
Test setup:	 <p>The diagram shows a Spectrum Analyzer on the left and an E.U.T. on the right, connected by a red cable. They are both on a table labeled 'Non-Conducted Table'. Below the table is a 'Ground Reference Plane'.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

Measurement Data

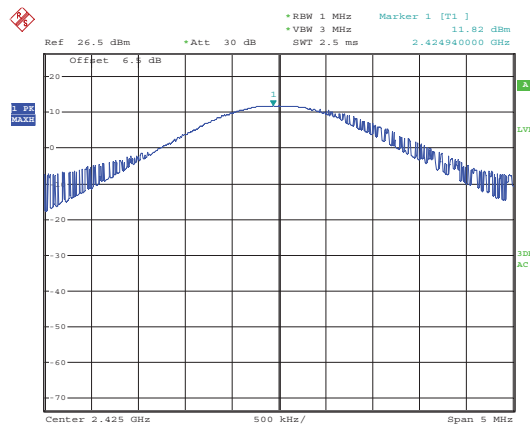
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	11.39	21.00	Pass
Middle	11.82	21.00	Pass
Highest	11.73	21.00	Pass

Test plot as follows:



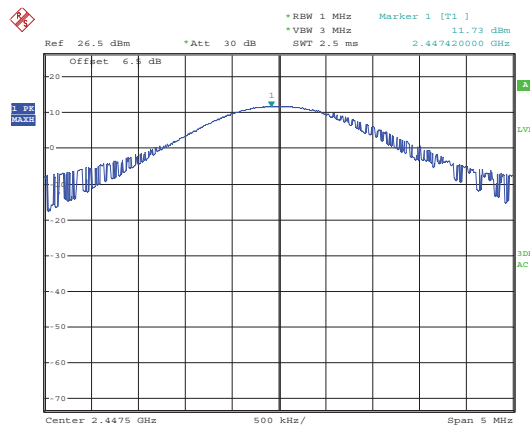
Date: 27.MAY.2016 17:29:03

Lowest channel



Date: 27.MAY.2016 17:35:14

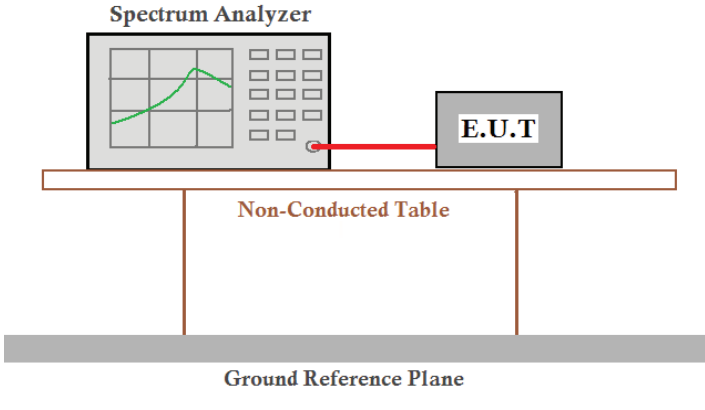
Middle channel



Date: 27.MAY.2016 17:34:52

Highest channel

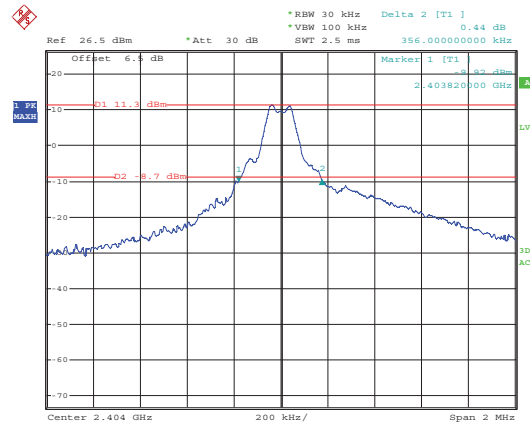
6.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak
Limit:	NA
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

Measurement Data:

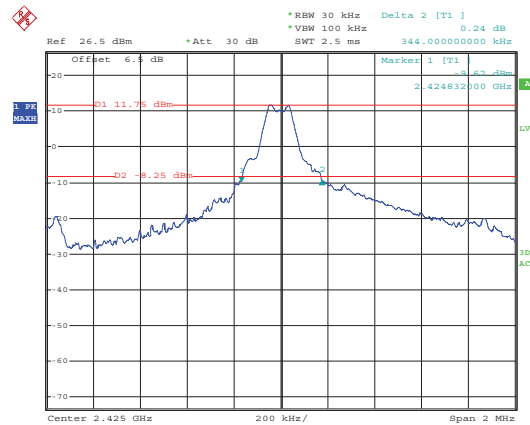
Test channel	20dB Occupy Bandwidth (kHz)
Lowest	356
Middle	344
Highest	336

Test plot as follows:



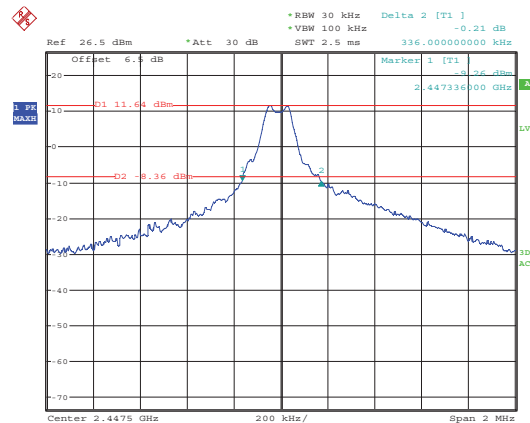
Date: 27.MAY.2016 17:30:08

Lowest channel



Date: 27.MAY.2016 17:32:51

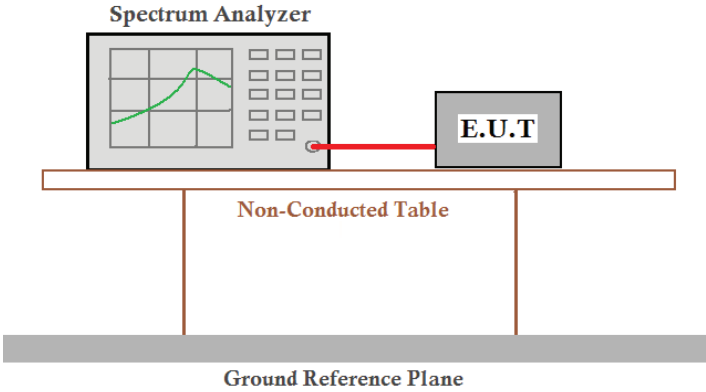
Middle channel



Date: 27.MAY.2016 17:34:33

Highest channel

6.4 Carrier Frequencies Separation

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, detector=Peak
Limit:	0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

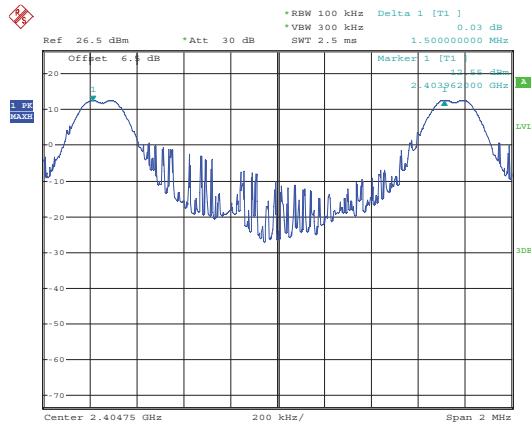
Measurement Data:

Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result
Lowest	1500	237.33	Pass
Middle	1500	237.33	Pass
Highest	1500	237.33	Pass

Note: According to section 6.3

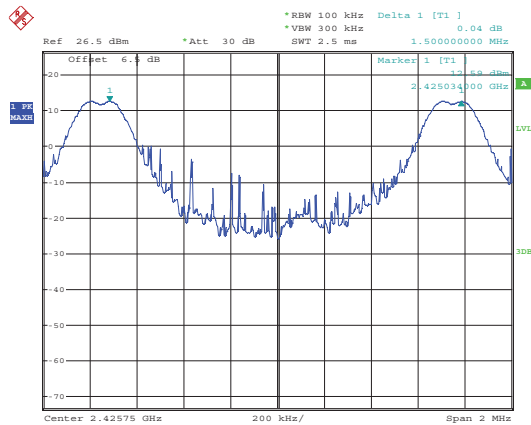
Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
2FSK	356	237.33

Test plot as follows:



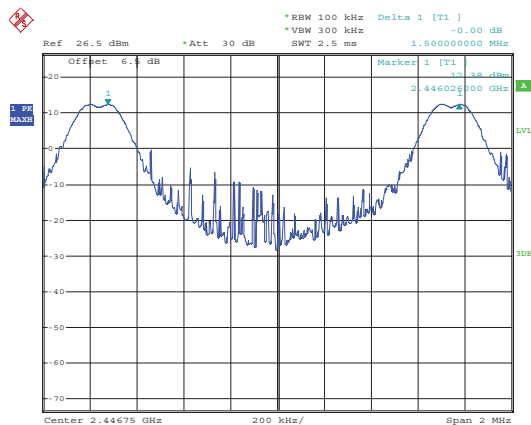
Date: 11.MAY.2016 21:43:10

Lowest channel



Date: 11.MAY.2016 21:43:46

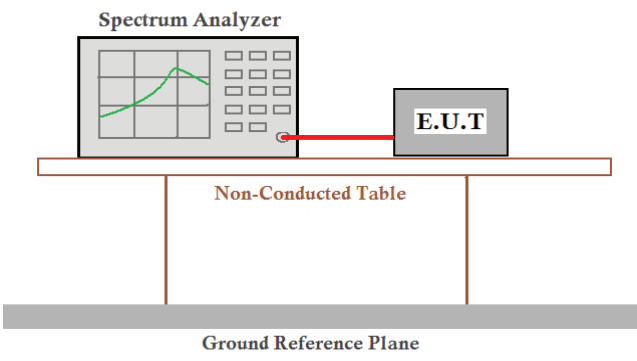
Middle channel



Date: 11.MAY.2016 21:45:08

Highest channel

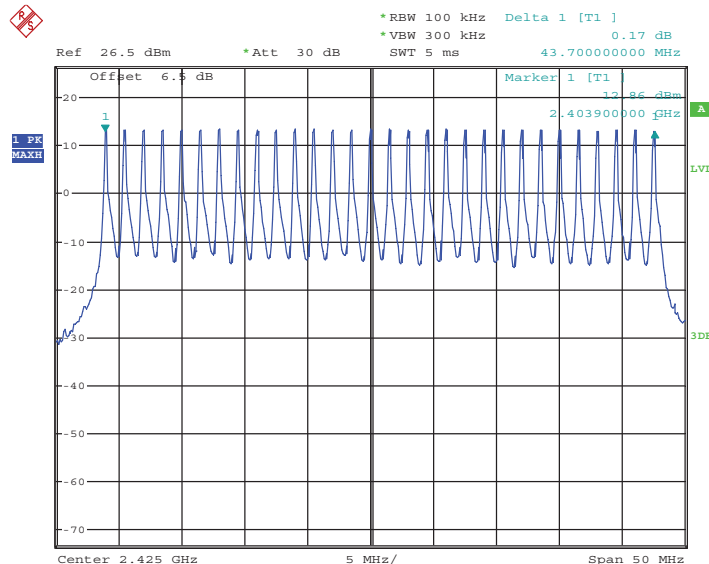
6.5 Hopping Channel Number

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak
Limit:	15 channels
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

Measurement Data:

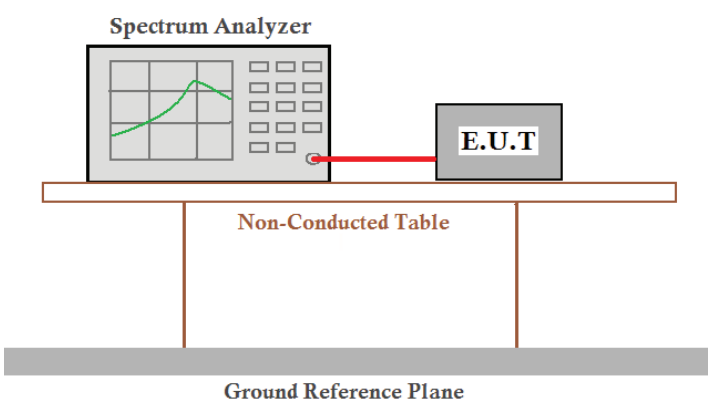
Hopping channel numbers	Limit	Result
30	≥15	Pass

Test plot as follows:



Date: 11.MAY.2016 22:26:59

6.6 Dwell Time

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak
Limit:	0.4 Second
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Hopping mode
Test results:	Pass

Measurement Data (Worse case)

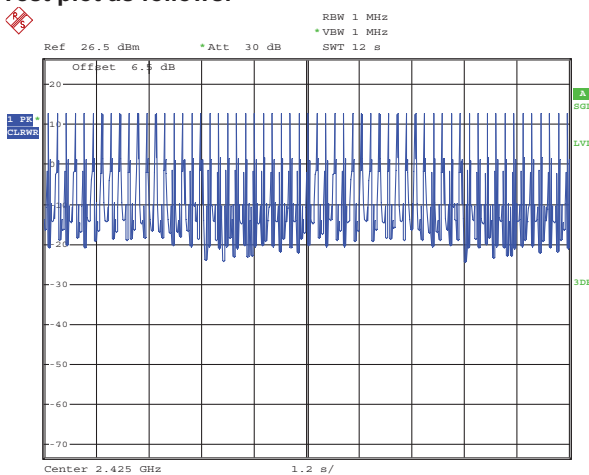
Dwell time per hop (Second)	Hopping numbers	Dwell time in one period (Second)	Limit (Second)	Result
0.00298	59	0.17582	0.4	Pass

Remark:

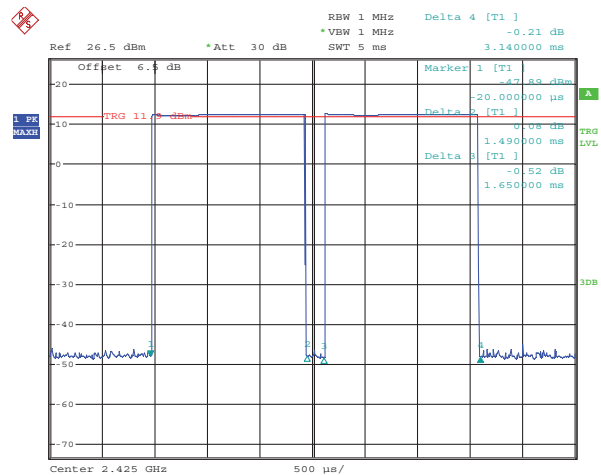
The test period: $T = 0.4 \text{ Second/Channel} \times 30 \text{ Channel} = 12 \text{ s}$

$$[(3.14 - 1.65) + 1.49] = 2.98 \text{ms}$$

Test plot as follows:



Date: 12.MAY.2016 17:20:43



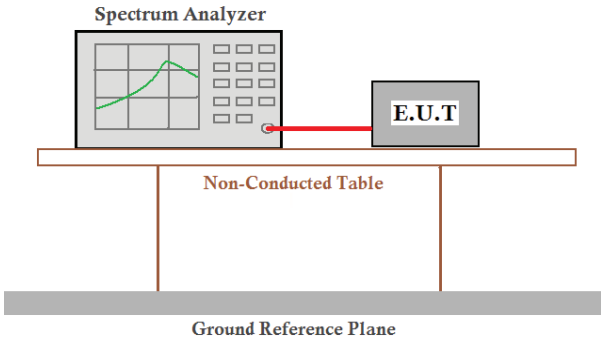
Date: 12.MAY.2016 17:40:29

6.7 Pseudorandom Frequency Hopping Sequence

Test Requirement:	FCC Part15 C Section 15.247 (a)(1) requirement:
<p>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.</p> <p>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. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.</p>	
EUT Pseudorandom Frequency Hopping Sequence	
<p>The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.</p> <ul style="list-style-type: none"> • Number of shift register stages: 9 • Length of pseudo-random sequence: $2^9 - 1 = 511$ bits • Longest sequence of zeros: 8 (non-inverted signal) 	
<p><i>Linear Feedback Shift Register for Generation of the PRBS sequence</i></p> <p>An example of Pseudorandom Frequency Hopping Sequence as follow:</p>	
<p>Each frequency used equally on the average by each transmitter.</p> <p>The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.</p>	

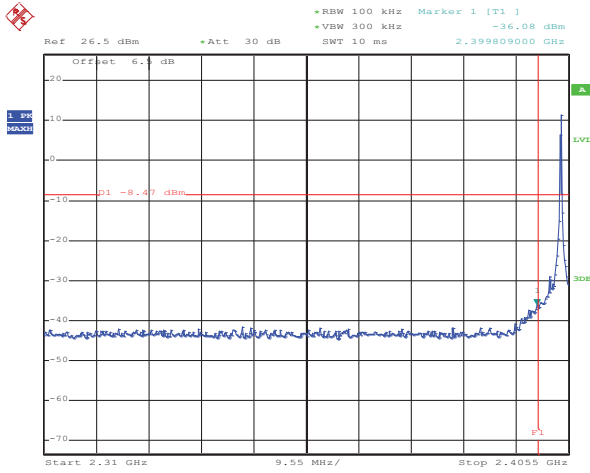
6.8 Band Edge

6.8.1 Conducted Emission Method

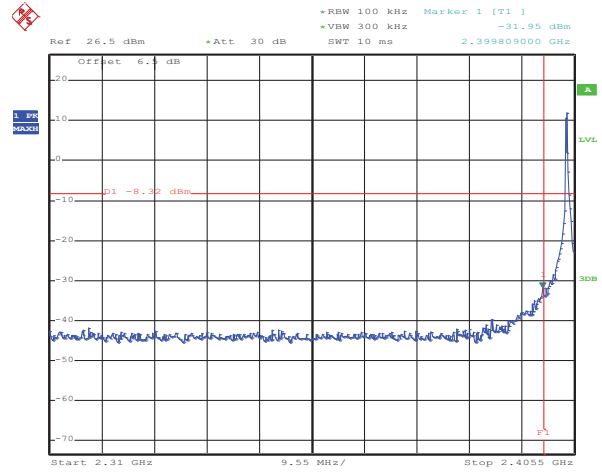
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009 and DA00-705
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Detector=Peak
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that 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.
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode and hopping mode
Test results:	Pass

Test plot as follows:

Lowest Channel

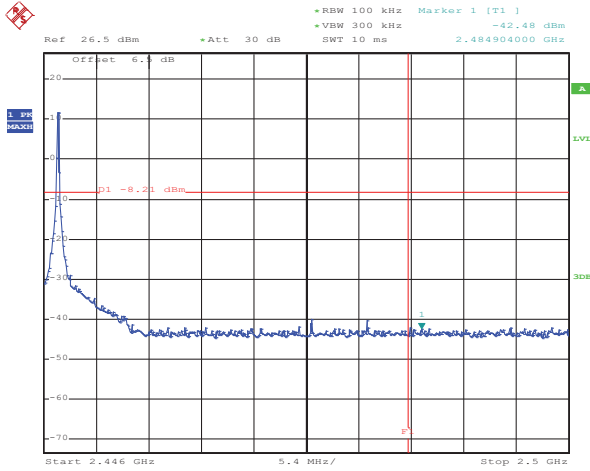


No-hopping mode

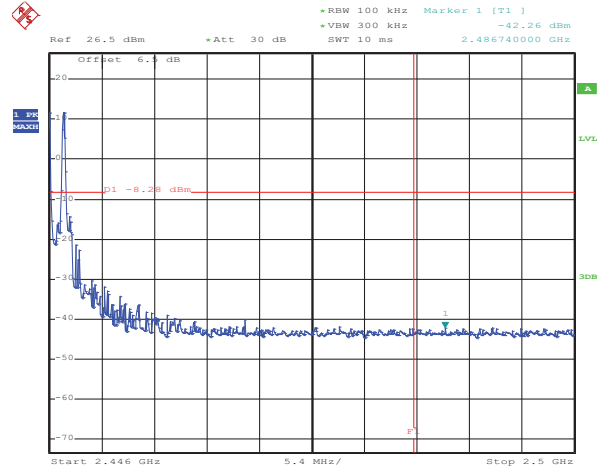


Hopping mode

Highest Channel



No-hopping mode



Hopping mode

6.8.2 Radiated Emission Method

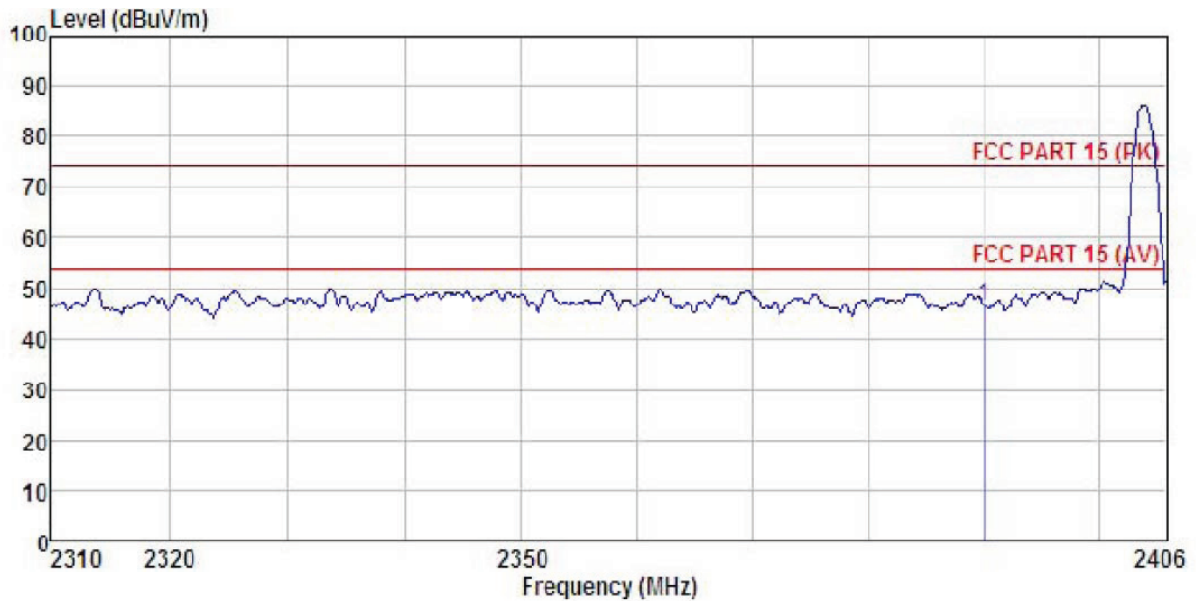
Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.4: 2009				
Test Frequency Range:	2.3GHz to 2.5GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Limit (dBuV/m @3m)		Remark
	Above 1GHz		54.00		Average Value
			74.00		Peak Value
Test setup:					
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Non-hopping mode				
Test results:	Passed				

Remark:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.

Test channel: Lowest

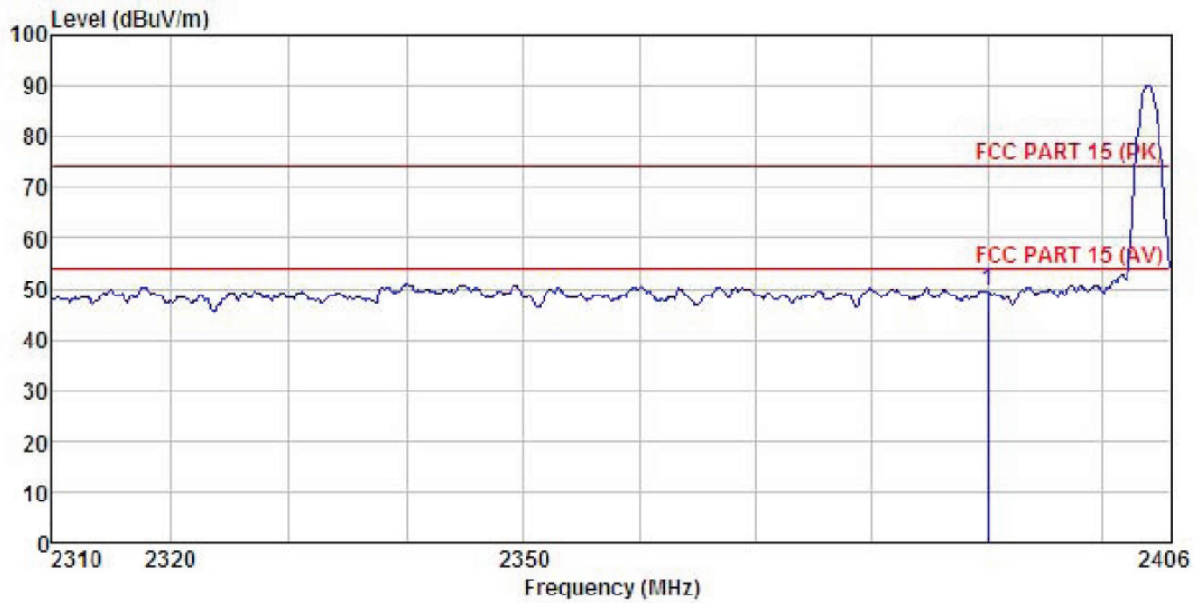
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 EUT : SKY CRUISER 2 EP GLIDER RTF
 Model : Dromida Q415 DIDA1050
 Test mode : 2404 Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: steven
 REMARK :

	Freq	ReadLevel	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	16.09	23.68	6.63	0.00	46.40	74.00	-27.60	Peak

Vertical:



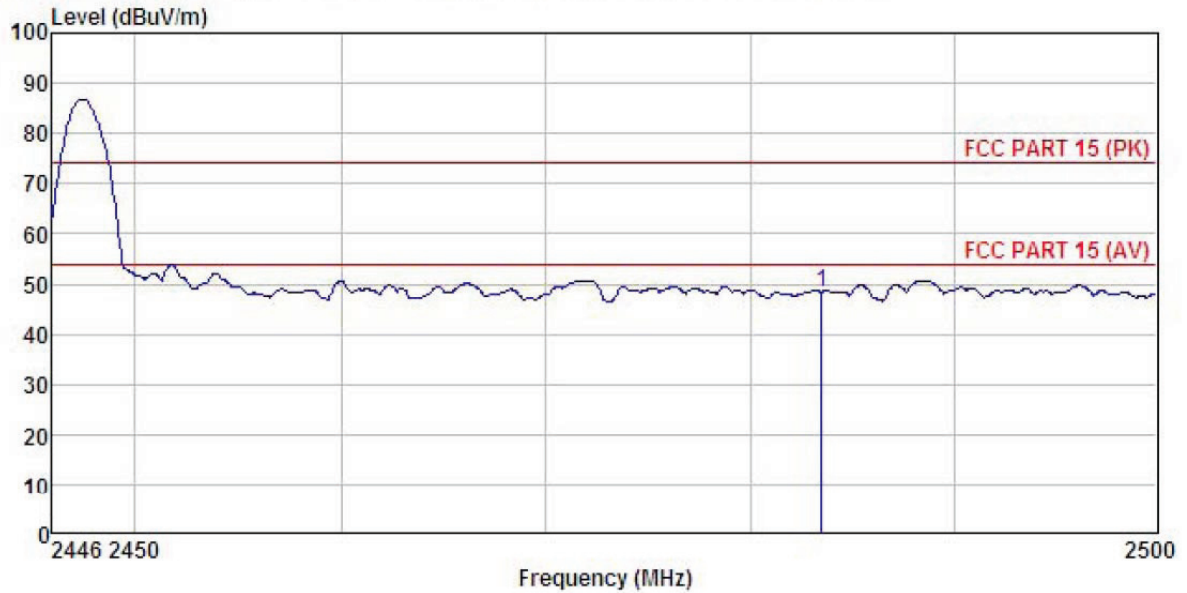
```

Site       : 3m chamber
Condition  : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
EUT       : SKY CRUISER 2 EP GLIDER RTF
Model      : Dromida Q415 DIDA1050
Test mode  : 2404 Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5°C Humi:55%
Test Engineer: steven
REMARK    :
    
```

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 2390.000	19.10	23.68	6.63	0.00	49.41	74.00	-24.59 Peak

Test channel: Highest

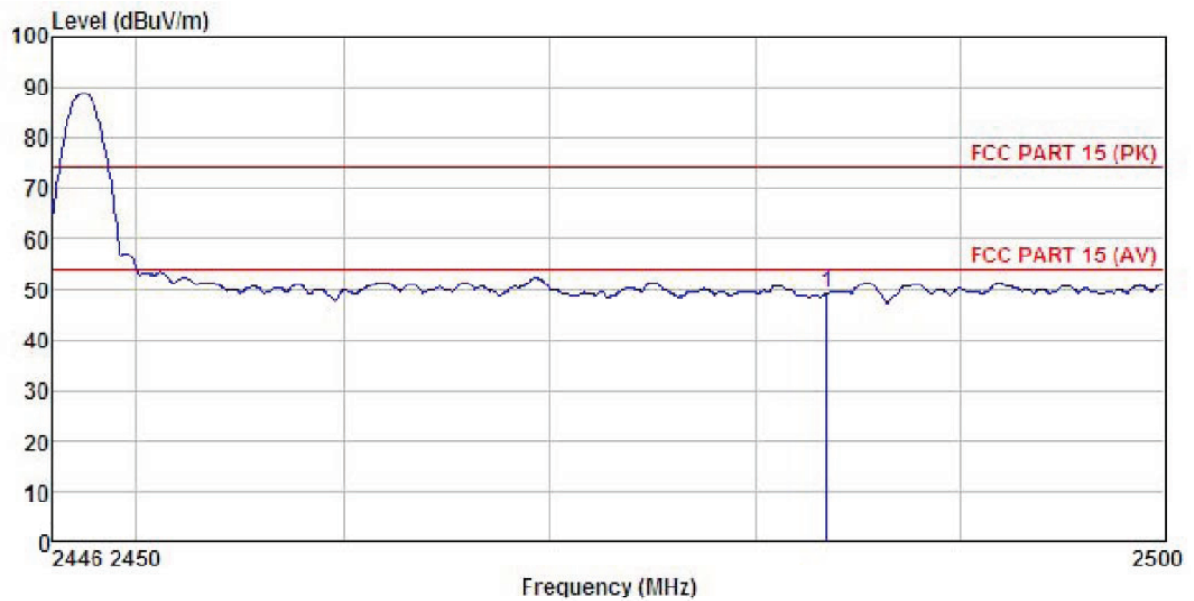
Horizontal:



Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL
 EUT : SKY CRUISER 2 EP GLIDER RTF
 Model : Dromida Q415 DIDA1050
 Test mode : 2447.5 Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: steven
 REMARK :

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 2483.500	17.87	23.70	6.85	0.00	48.42	74.00	-25.58 Peak

Vertical:

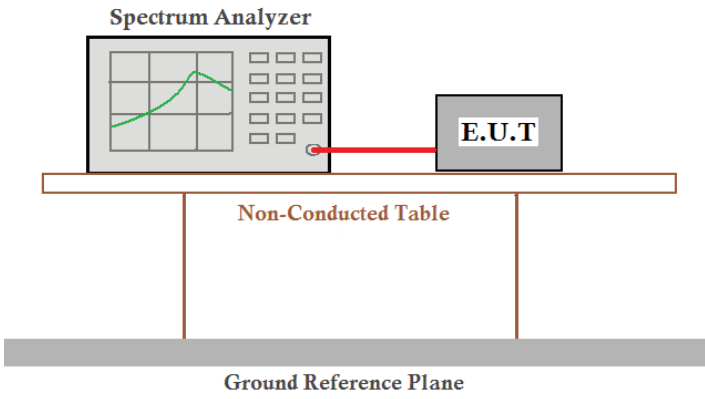


Site : 3m chamber
 Condition : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL
 EUT : SKY CRUISER 2 EP GLIDER RTF
 Model : Dromida Q415 DIDA1050
 Test mode : 2447.5 Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: steven
 REMARK :

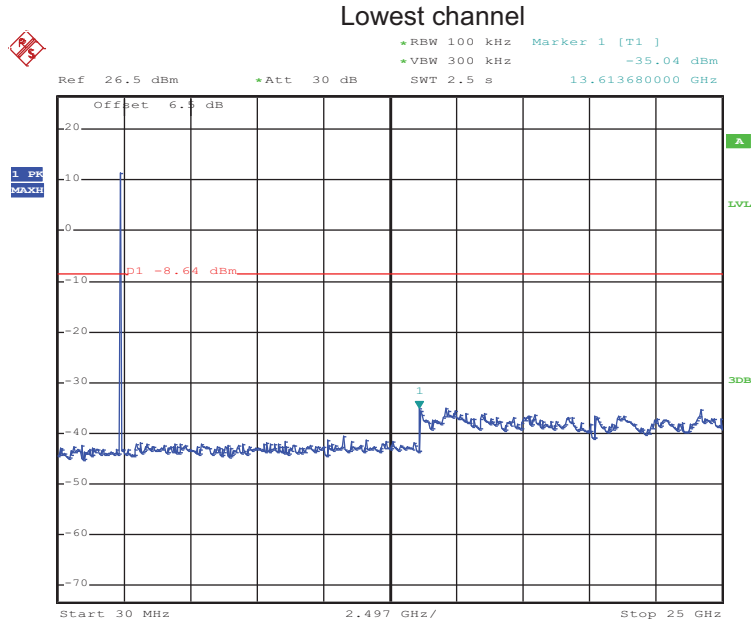
	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1 2483.500	18.62	23.70	6.85	0.00	49.17	74.00	-24.83 Peak

6.9 Spurious Emission

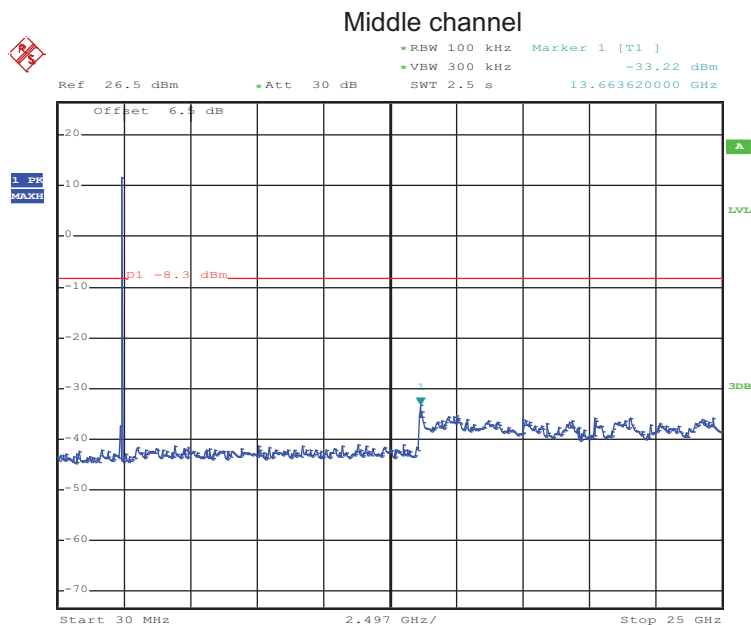
6.9.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2009 and DA00-705
Limit:	In any 100 kHz bandwidth outside the frequency band 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.
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs and sits on a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Non-hopping mode
Test results:	Pass

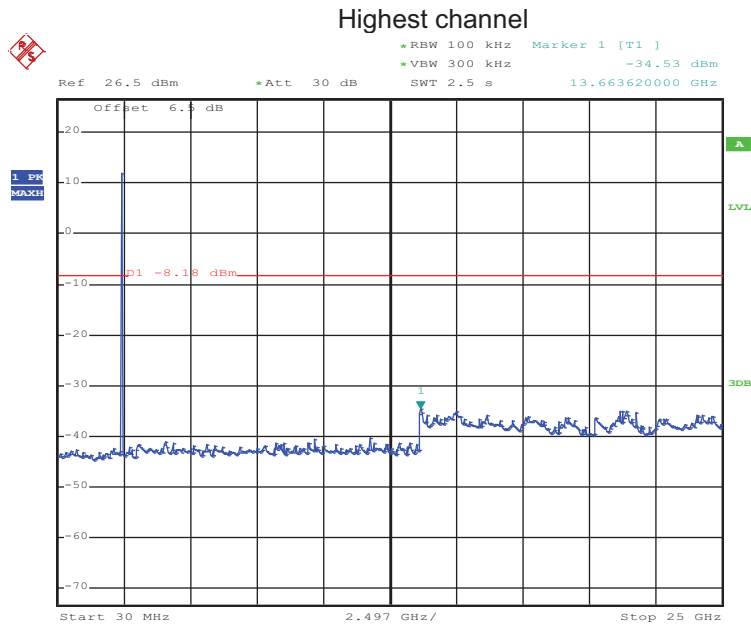
Test plot as follows:



30MHz~25GHz



30MHz~25GHz



30MHz~25GHz

6.9.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10: 2009				
Test Frequency Range:	9 kHz to 25 GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Peak		1MHz	10Hz	Average Value	
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.0		Quasi-peak Value	
	88MHz-216MHz	43.5		Quasi-peak Value	
	216MHz-960MHz	46.0		Quasi-peak Value	
	960MHz-1GHz	54.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
74.0		Peak Value			
Test setup:	Below 1GHz				
Test setup:	Above 1GHz				

<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
<p>Test Instruments:</p>	<p>Refer to section 5.7 for details</p>
<p>Test mode:</p>	<p>Non-hopping mode</p>
<p>Test results:</p>	<p>Pass</p>

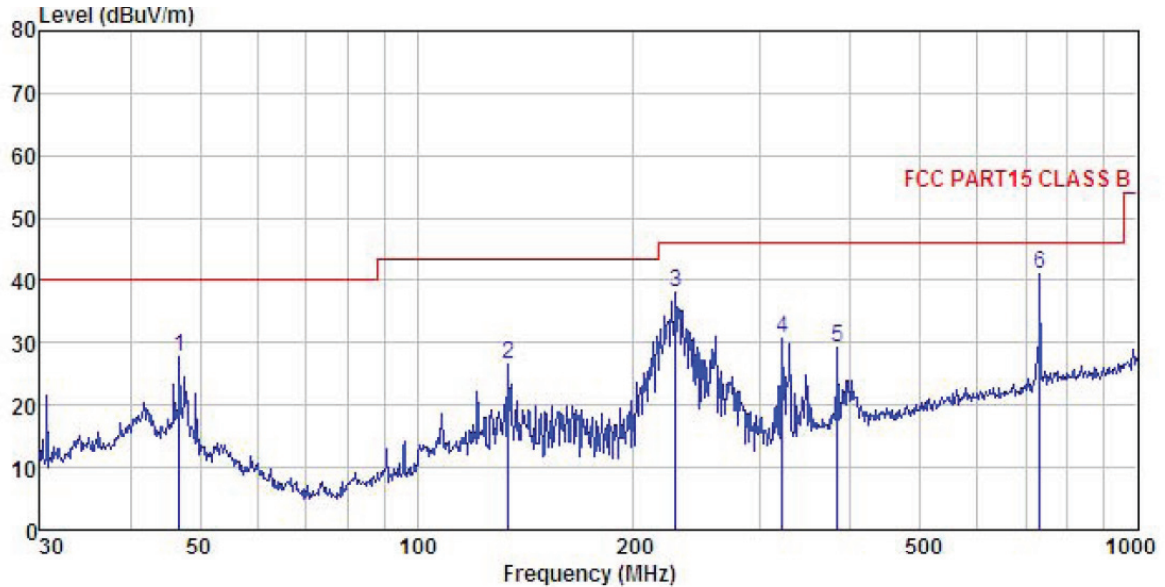
Remark:

1. *Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.*
2. *9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report.*

Measurement data:

Below 1GHz

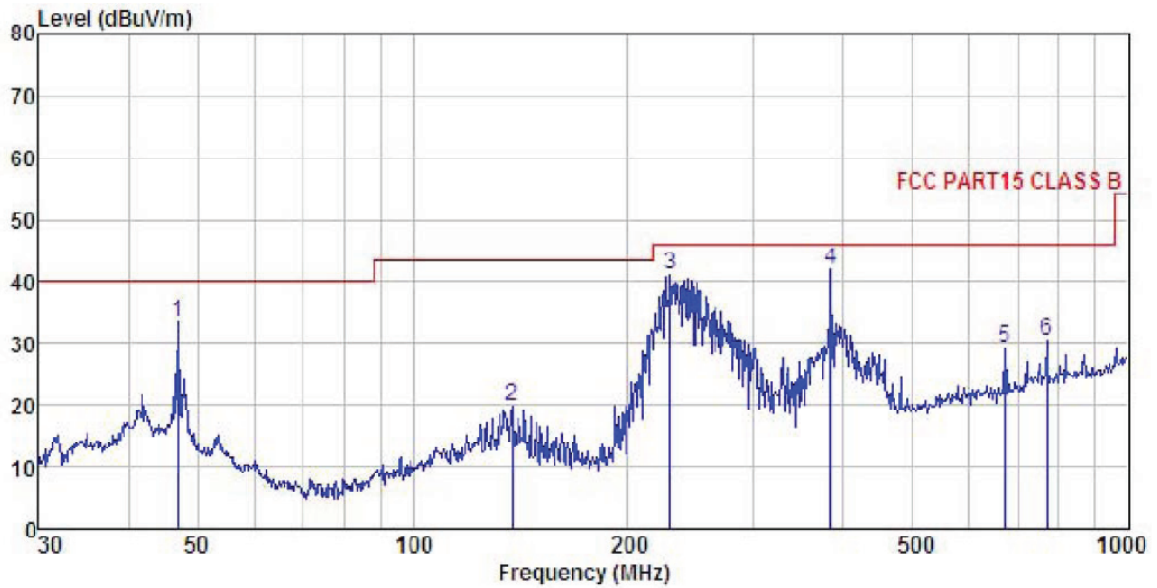
Vertical:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) VERTICAL
 EUT : SKY CRUISER 2 EP GLIDER RTF
 Model : Dromida Q415 DIDA1050
 Test mode : TX Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: steven
 REMARK :

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	46.830	39.72	16.71	1.28	29.85	27.86	40.00 -12.14 QP
2	134.088	41.51	12.05	2.33	29.31	26.58	43.50 -16.92 QP
3	228.490	52.19	11.59	2.84	28.66	37.96	46.00 -8.04 QP
4	321.061	42.73	13.34	3.01	28.50	30.58	46.00 -15.42 QP
5	383.932	39.46	15.40	3.09	28.71	29.24	46.00 -16.76 QP
6	731.920	45.33	20.00	4.29	28.55	41.07	46.00 -4.93 QP

Horizontal:



Site : 3m chamber
 Condition : FCC PART15 CLASS B 3m VULB9163(30M3G) HORIZONTAL
 EUT : SKY CRUISER 2 EP GLIDER RTF
 Model : Dromida Q415 DIDA1050
 Test mode : TX Mode
 Power Rating : AC 120V/60Hz
 Environment : Temp:25.5°C Humi:55%
 Test Engineer: steven
 REMARK :

	Read	Antenna	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	46.995	45.13	16.71	1.27	29.84	33.27	40.00 -6.73 QP
2	137.420	34.77	11.88	2.37	29.29	19.73	43.50 -23.77 QP
3	228.490	55.20	11.59	2.84	28.66	40.97	46.00 -5.03 QP
4	383.932	52.28	15.40	3.09	28.71	42.06	46.00 -3.94 QP
5	672.845	34.85	18.98	4.00	28.73	29.10	46.00 -16.90 QP
6	768.748	34.04	20.47	4.36	28.37	30.50	46.00 -15.50 QP

Above 1GHz:

Test channel:		Lowest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4808.00	44.54	35.99	10.57	40.24	50.86	74.00	-23.14	Vertical
4808.00	44.77	35.99	10.57	40.24	51.09	74.00	-22.91	Horizontal

Test channel:		Middle			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4850.00	45.03	36.19	10.61	40.19	51.64	74.00	-22.36	Vertical
4850.00	45.15	36.19	10.61	40.19	51.76	74.00	-22.24	Horizontal

Test channel:		Highest			Level:		Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4895.00	44.22	36.38	10.66	40.12	51.14	74.00	-22.86	Vertical
4895.00	44.85	36.38	10.66	40.12	51.77	74.00	-22.23	Horizontal