

APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
ZEGO ELECTRONIC COMPANY LIMITED

Z-Wings
Model No.: 2206

FCC ID: 2ACS621TX

Prepared for : ZEGO ELECTRONIC COMPANY LIMITED
Address : ROOM 703, KOWLOON BUILDING, 555 NATHAN
ROAD, KOWLOON, Hong Kong

Prepared by : ACCURATE TECHNOLOGY CO., LTD
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Report Number : ATE20170480
Date of Test : April 15-17, 2017
Date of Report : April 21, 2017

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Test Report Certification

Applicant : ZEGO ELECTRONIC COMPANY LIMITED
Address : ROOM 703, KOWLOON BUILDING, 555 NATHAN ROAD,
KOWLOON, Hong Kong
Manufacturer : Shenzhen Yangri Electronic Company Limited
Address : The Third Industrial Area, Luotian community, Songgang town,
Shenzhen City, China.
Product : Z-Wings
Model No. : 2206

Measurement Procedure Used:

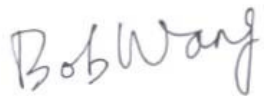
FCC Rules and Regulations Part 15 Subpart C Section 15.249
ANSI C63.10: 2013


The EUT was tested according to FCC 47CFR 15.249 for compliance to FCC 47CFR 15.249 requirements

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.249 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test : April 15-17, 2017
Date of Report : April 21, 2017

Prepared by : 
(Bob Wang, Engineer)

Approved & Authorized Signer : 
(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Z-Wings
Model Number	:	2206
Power Supply	:	DC 4.5V
Operate Frequency	:	2420-2460MHz
Modulation mode	:	GFSK
Antenna Gain	:	1dBi
Antenna type	:	Integral Antenna
Applicant	:	ZEGO ELECTRONIC COMPANY LIMITED
Address	:	ROOM 703, KOWLOON BUILDING, 555 NATHAN ROAD, KOWLOON, Hong Kong
Manufacturer	:	Shenzhen Yangri Electronic Company Limited
Address	:	The Third Industrial Area, Luotian community, Songgang town, Shenzhen City, China.
Date of sample received	:	April 12, 2017
Date of Test	:	April 15-17, 2017

1.2. Special Accessory and Auxiliary Equipment

N/A

1.3. Description of Test Facility

EMC Lab	:	Accredited by TUV Rheinland Shenzhen
		Listed by FCC
		The Registration Number is 752051
		Listed by Industry Canada
		The Registration Number is 5077A-2
		Accredited by China National Accreditation Committee for Laboratories
		The Certificate Registration Number is L3193
Name of Firm	:	ACCURATE TECHNOLOGY CO. LTD
Site Location	:	F1, Bldg. A, Changyuan New Material Port, Keyuan Rd. Science & Industry Park, Nanshan, Shenzhen, Guangdong P.R. China

1.4. Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Cal. Interval
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 07, 2017	One Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 07, 2017	One Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 07, 2017	One Year
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 07, 2017	One Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 13, 2017	One Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 13, 2017	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 13, 2017	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 13, 2017	One Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 07, 2017	One Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 07, 2017	One Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 07, 2017	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 07, 2017	One Year

3. OPERATION OF EUT DURING TESTING

3.1. Operating Mode

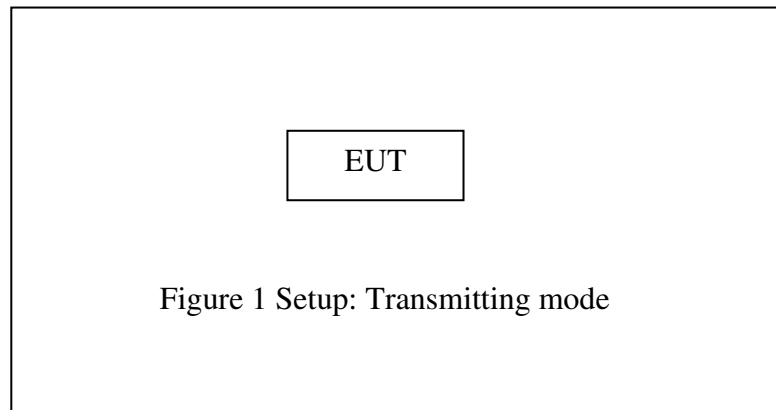
The mode is used: **Transmitting mode**

Low Channel: 2420MHz

Middle Channel: 2440MHz

High Channel: 2460MHz

3.2. Configuration and peripherals



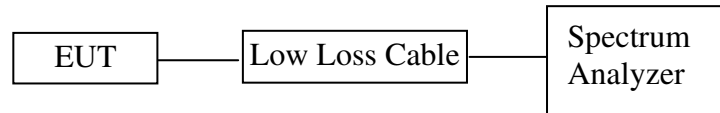
4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.215(c)	20dB Bandwidth	Compliant
Section 15.249(d)	Band Edge Compliance Test	Compliant
Section 15.205(a), Section 15.209(a), Section 15.249, Section 15.35	Radiated Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	N/A
Section 15.203	Antenna Requirement	Compliant

Note: The power supply mode of the EUT is DC 4.5V, According to the FCC standard requirements, conducted emission is not applicable.

5. 20DB BANDWIDTH MEASUREMENT

5.1. Block Diagram of Test Setup



5.2. The Requirement For Section 15.215(c)

The bandwidth of a frequency hopping channel is the 20 dB emission bandwidth, measured with the hopping stopped. The system RF bandwidth is equal to the channel bandwidth multiplied by the number of channels in the hopset. The hopset shall be such that the near-term distribution of frequencies appears random, with sequential hops randomly distributed in both direction and magnitude of change in the hopset while the long-term distribution appears evenly distributed.

5.3. Operating Condition of EUT

5.3.1. Setup the EUT and simulator as shown as Section 5.1.

5.3.2. Turn on the power of all equipment.

5.3.3. Let the EUT work in TX modes measure it. The transmit frequency are 2420, 2440, 2460MHz.

5.4. Test Procedure

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

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

5.4.3. Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz, Detector function=peak, Trace=max hold, Sweep=auto.

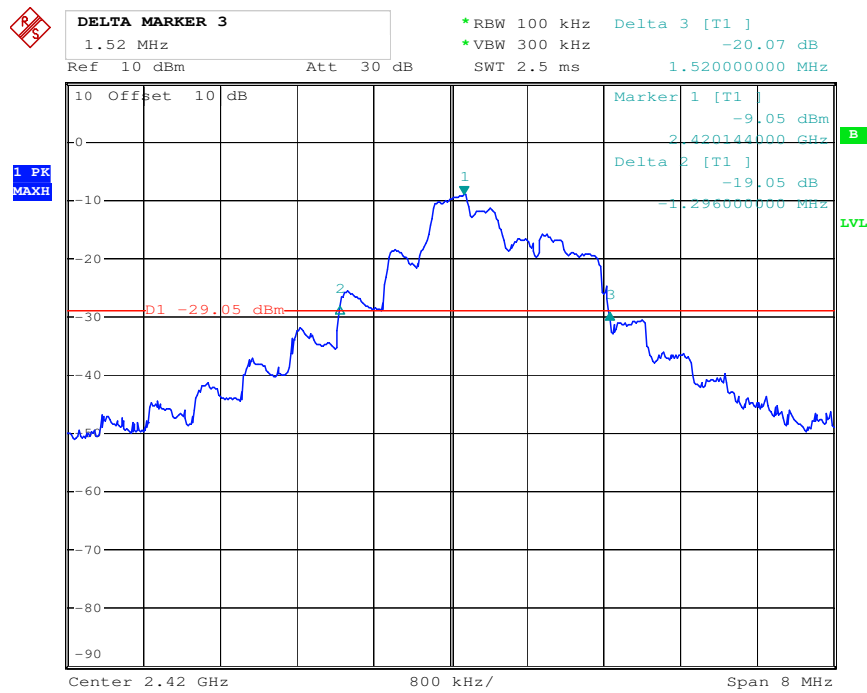
5.4.4. Set the measured low, middle and high frequency and test 20dB bandwidth with spectrum analyzer.

5.5. Test Result

Channel	Frequency(MHz)	20 dB Bandwidth(MHz)
Low	2420	2.816
Middle	2440	3.168
High	2460	3.152

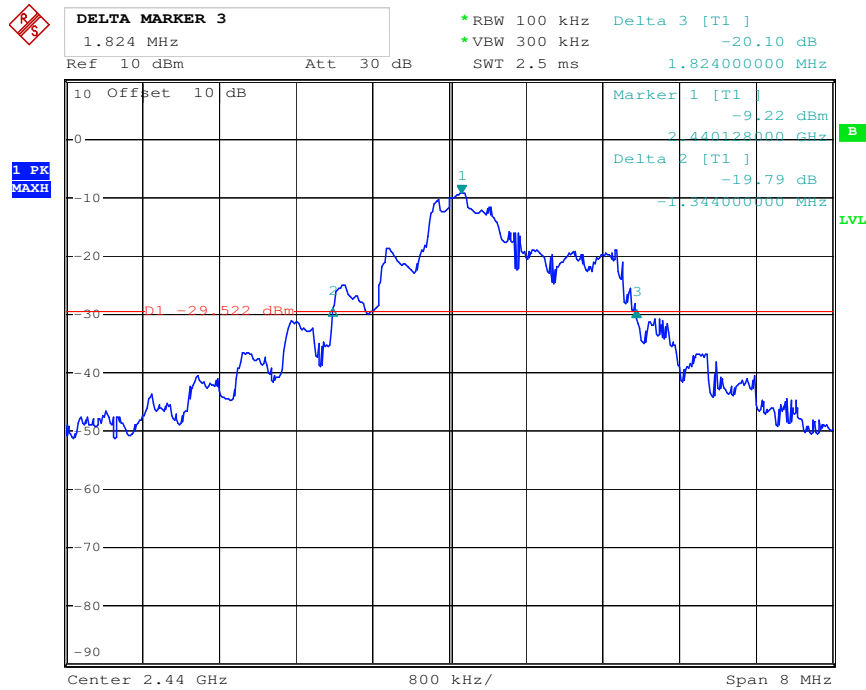
The spectrum analyzer plots are attached as below.

Low channel



Date: 17.APR.2017 10:02:47

Middle channel



Date: 17.APR.2017 10:04:49

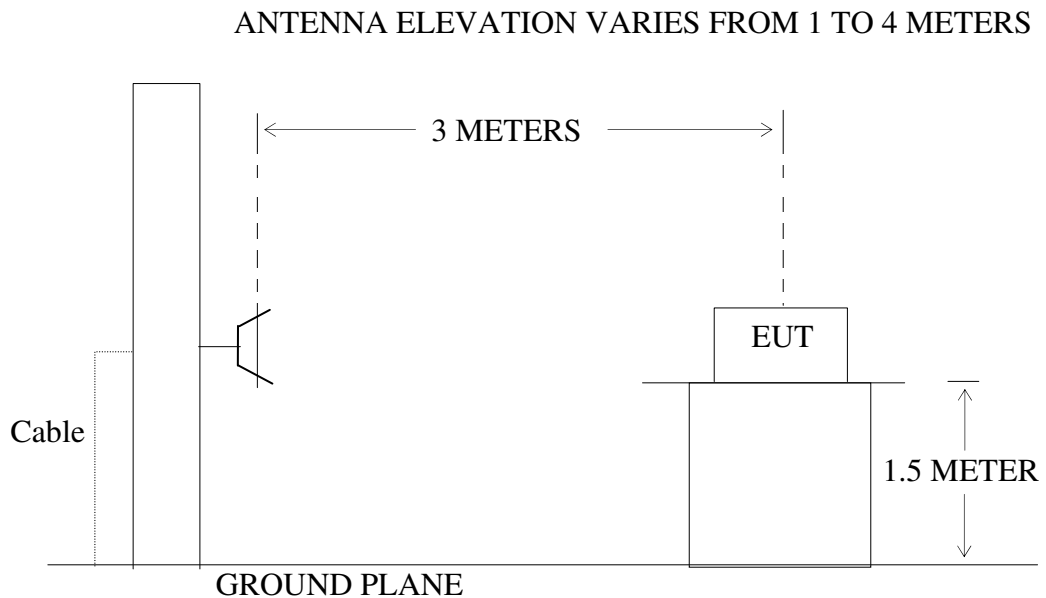
High channel



Date: 17.APR.2017 10:18:51

6. BAND EDGE COMPLIANCE TEST

6.1. Block Diagram of Test Setup



6.2. The Requirement For Section 15.249

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

6.3. EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.4. Operating Condition of EUT

6.4.1. Setup the EUT and simulator as shown as Section 6.1.

6.4.2. Turn on the power of all equipment.

6.4.3. Let the EUT work in TX modes measure it. The transmit frequency are 2420, 2460MHz.

6.5. Test Procedure

Radiate Band Edge:

6.5.1. The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

6.5.2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.

6.5.3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

6.5.4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

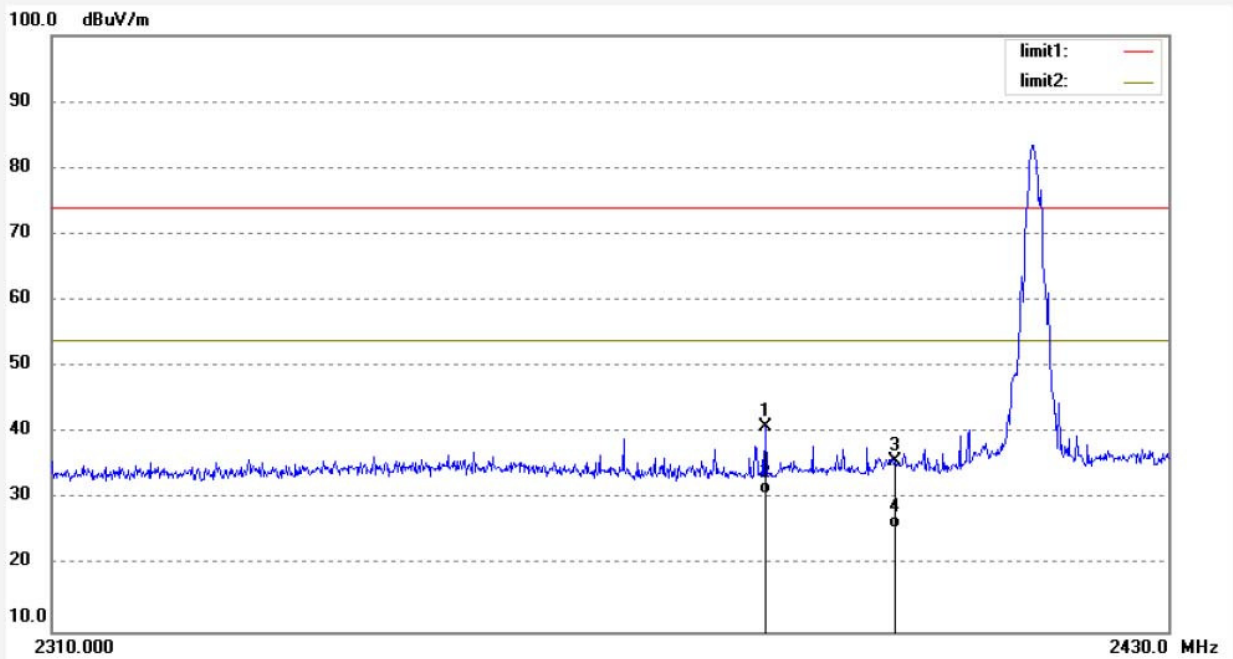
RBW=1MHz, VBW=1MHz

6.5.5. The band edges was measured and recorded.

6.6. Test Result

Job No.: DING #3466	Polarization: Horizontal
Standard: FCC PK	Power Source: DC 4.5V
Test item: Radiation Test	Date: 17/04/17/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/01/05
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2420MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.011	46.76	-5.93	40.83	74.00	-33.17	peak			
2	2386.011	36.75	-5.93	30.82	54.00	-23.18	AVG			
3	2400.000	41.48	-5.80	35.68	74.00	-38.32	peak			
4	2400.000	31.54	-5.80	25.74	54.00	-28.26	AVG			



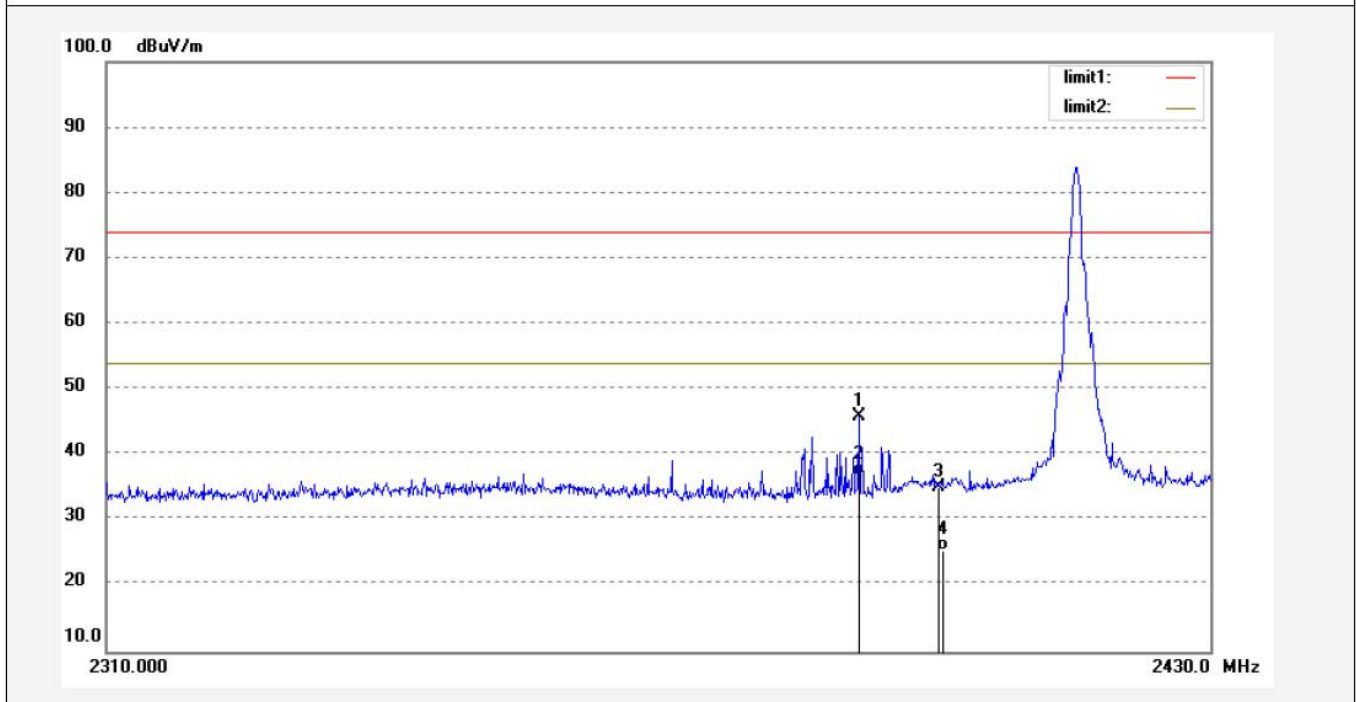
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3467	Polarization: Vertical
Standard: FCC PK	Power Source: DC 4.5V
Test item: Radiation Test	Date: 17/04/17/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/03/09
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2420MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2391.102	51.84	-5.88	45.96	74.00	-28.04	peak			
2	2391.102	42.67	-5.88	36.79	54.00	-17.21	AVG			
3	2400.000	40.98	-5.80	35.18	74.00	-38.82	peak			
4	2400.000	31.24	-5.80	25.44	54.00	-28.56	AVG			



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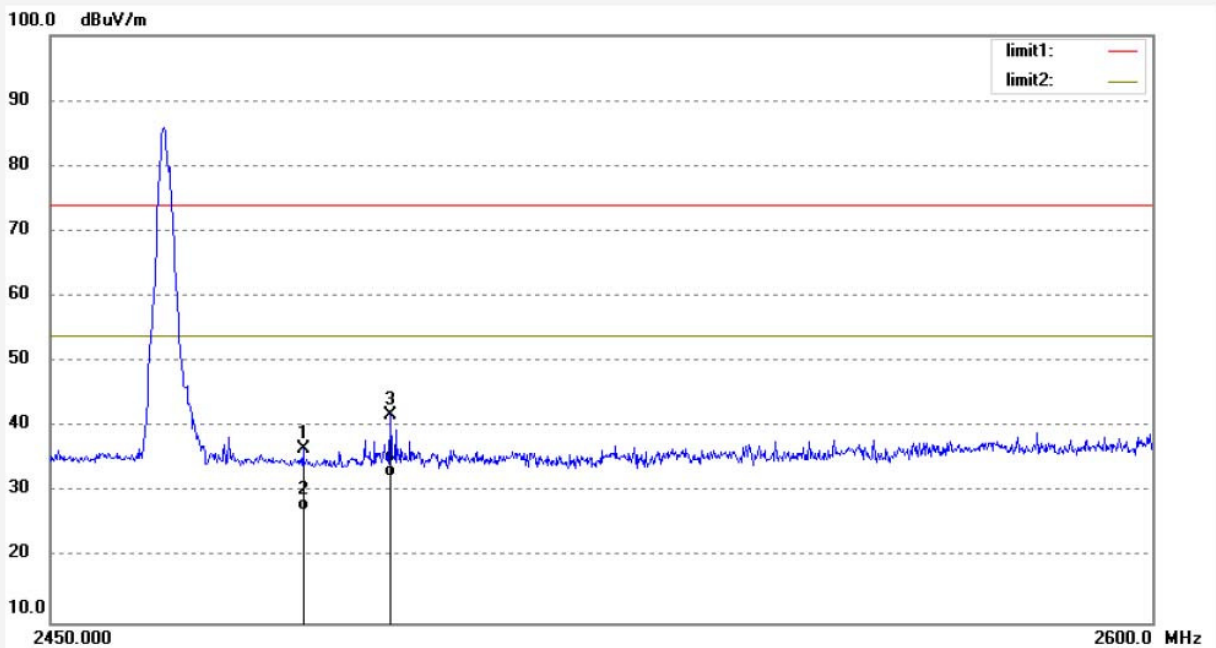
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3468
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Z-Wings
Mode: TX 2460MHz
Model: 2206
Manufacturer: YANGRI

Polarization: Vertical
Power Source: DC 4.5V
Date: 17/04/17/
Time: 10/05/14
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	42.17	-5.51	36.66	74.00	-37.34	peak			
2	2483.500	32.65	-5.51	27.14	54.00	-26.86	AVG			
3	2495.345	47.37	-5.50	41.87	74.00	-32.13	peak			
4	2495.345	37.84	-5.50	32.34	54.00	-21.66	AVG			



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Site: 1# Chamber

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Fax:+86-0755-26503396

Job No.: DING #3469

Standard: FCC PK

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2460MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Horizontal

Power Source: DC 4.5V

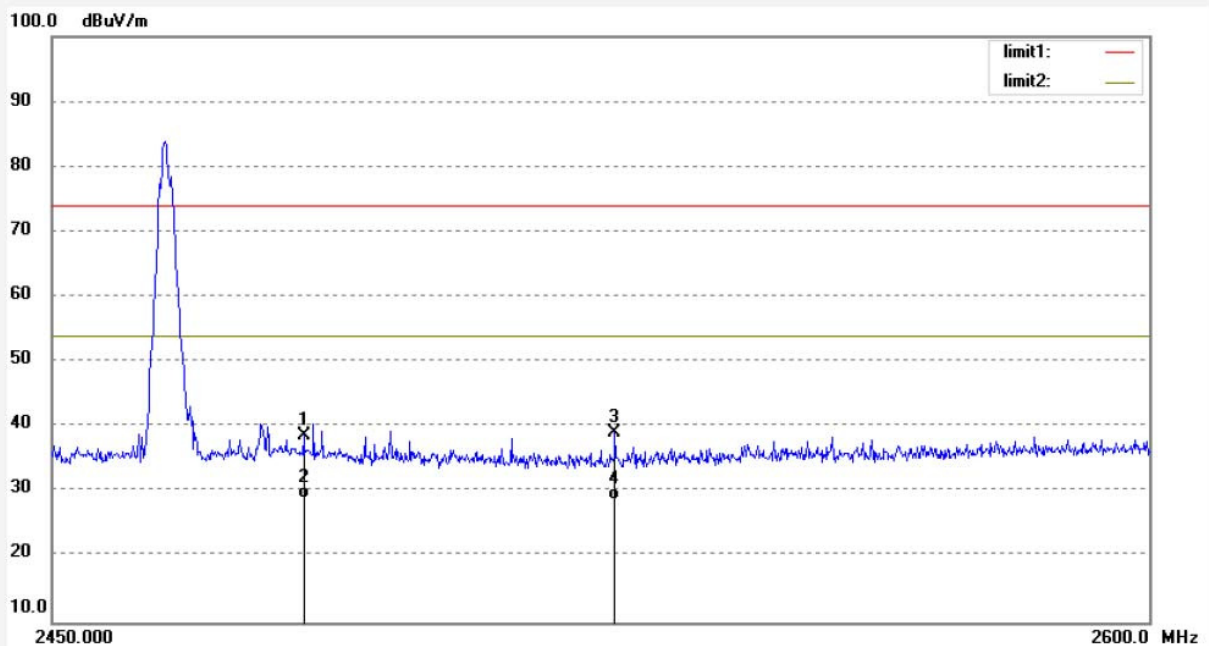
Date: 17/04/17/

Time: 10/06/18

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	44.17	-5.51	38.66	74.00	-35.34	peak			
2	2483.500	34.59	-5.51	29.08	54.00	-24.92	AVG			
3	2525.840	44.36	-5.26	39.10	74.00	-34.90	peak			
4	2525.840	34.15	-5.26	28.89	54.00	-25.11	AVG			

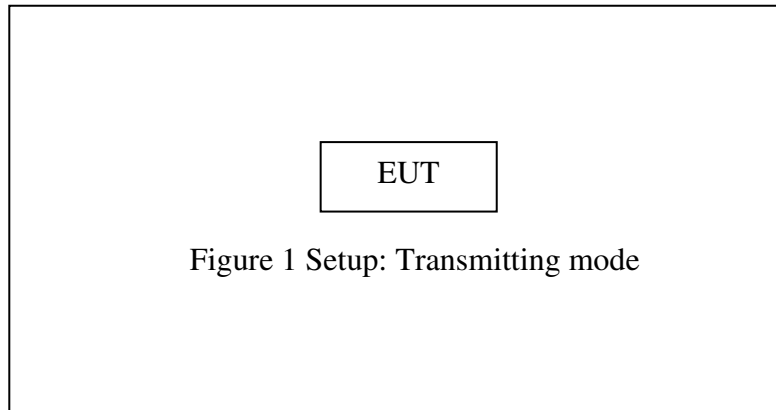
Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:
Result = Reading + Corrected Factor
3. Display the measurement of peak values.
4. The average measurement was not performed when peak measured data under the limit of average detection.

7. RADIATED SPURIOUS EMISSION TEST

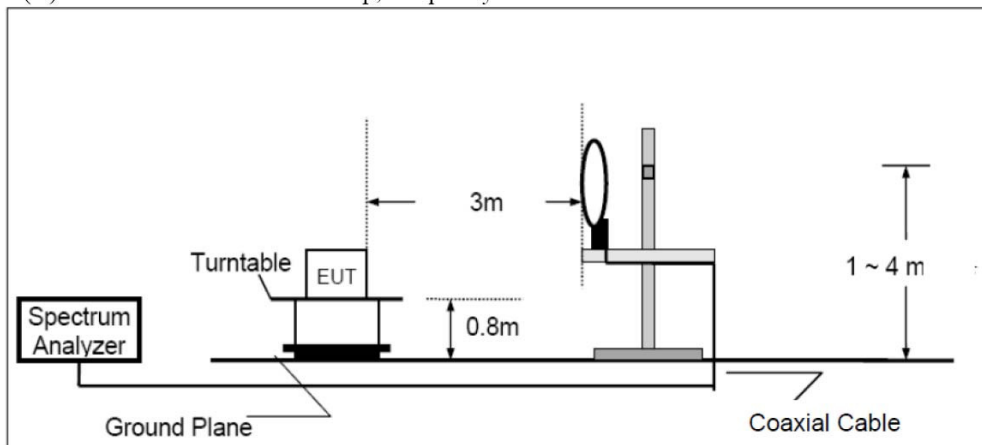
7.1. Block Diagram of Test Setup

7.1.1. Block diagram of connection between the EUT and peripherals

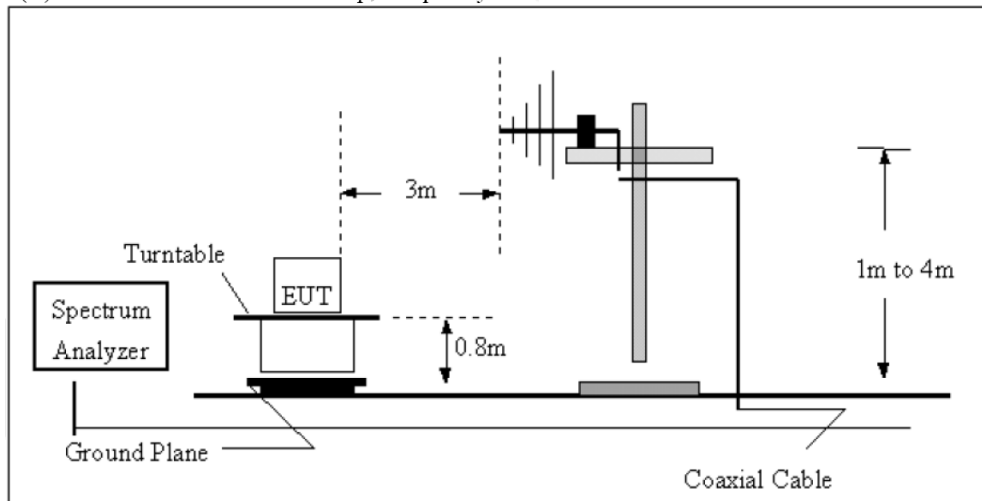


7.1.2. Semi-Anechoic Chamber Test Setup Diagram

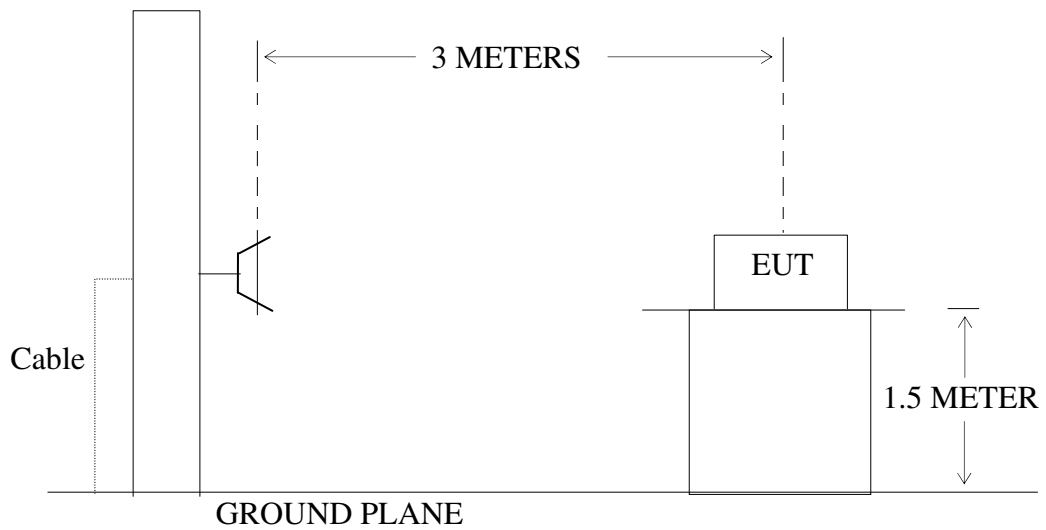
(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



7.2.The Limit For Section 15.249

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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph A8.4(4), the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

7.3.Restricted bands of operation

7.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) 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
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)
13.36-13.41			

¹Until February 1, 1999, this restricted band shall be 0.490-0.510

²Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

7.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.5. Operating Condition of EUT

7.5.1. Setup the EUT and simulator as shown as Section 7.1.

7.5.2. Turn on the power of all equipment.

7.5.3. Let the EUT work in TX modes and measure it. The transmit frequency are 2420, 2440, 2460MHz.

7.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter (Below 1GHz) and 1.5m (above 1GHz) high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The frequency range from 9 kHz to 25GHz is checked.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz

Peak detector above 1GHz

RBW (1 MHz), VBW (3MHz) for Peak measurement

RBW (1 MHz), VBW (10Hz) for AV measurement

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

7.7. The Field Strength of Radiation Emission Measurement Results

PASS.

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

2. *: Denotes restricted band of operation.

3. The EUT is tested radiation emission in three axes. The worst emissions are reported in all channels.

4. The radiation emissions from 9KHz-30MHz and 18GHz-25GHz are not reported, because the test values lower than the limits of 20dB.

5. The average measurement was not performed when peak measured data under the limit of average detection.

Below 1GHz



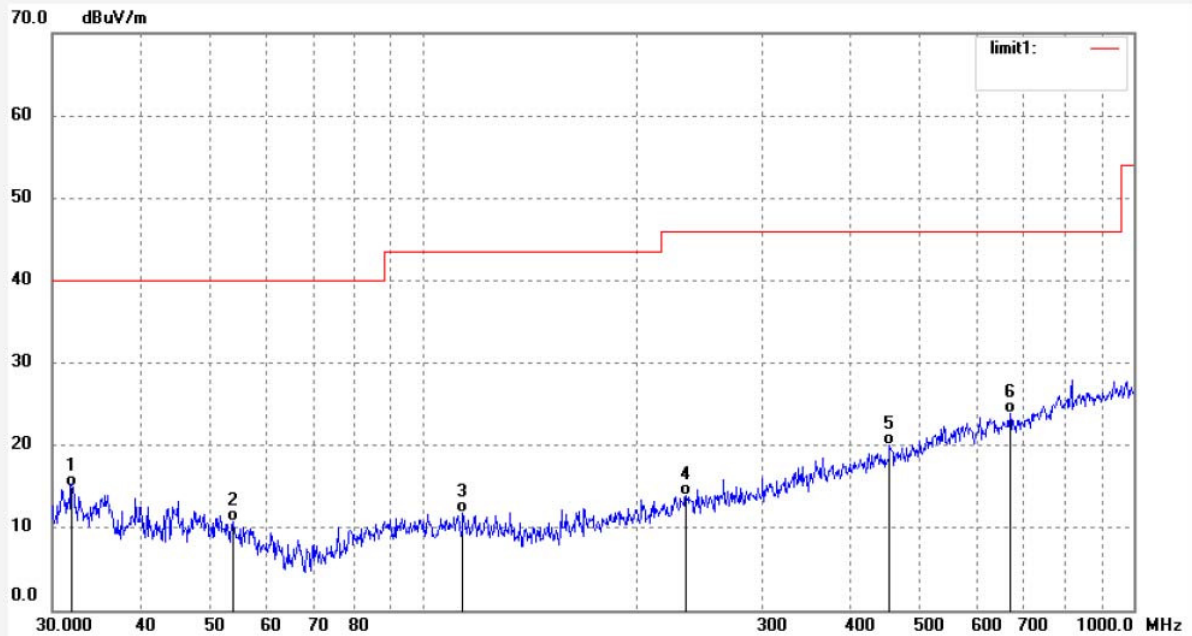
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3475	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 4.5V
Test item: Radiation Test	Date: 17/04/17/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/56/47
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2420MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.0711	31.02	-16.14	14.88	40.00	-25.12	QP			
2	53.9451	31.26	-20.57	10.69	40.00	-29.31	QP			
3	113.6185	31.97	-20.18	11.79	43.50	-31.71	QP			
4	234.3099	31.79	-17.96	13.83	46.00	-32.17	QP			
5	453.5922	31.85	-11.89	19.96	46.00	-26.04	QP			
6	669.9523	31.71	-7.80	23.91	46.00	-22.09	QP			

Job No.: DING #3474

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2420MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Vertical

Power Source: DC 4.5V

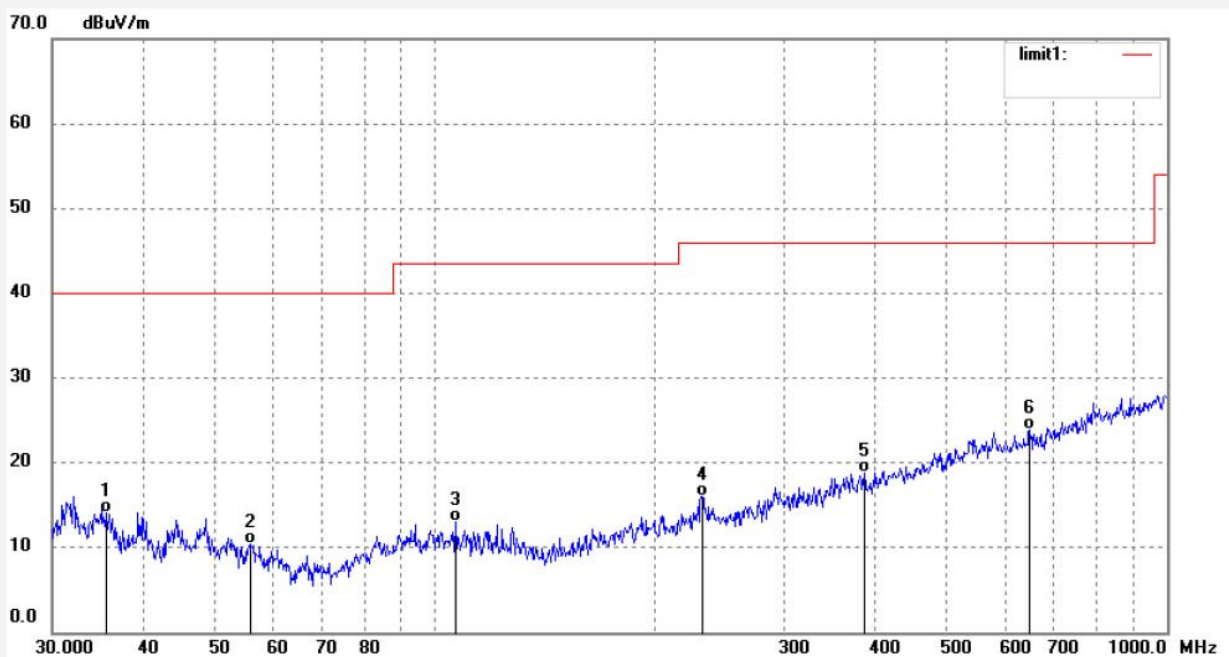
Date: 17/04/17/

Time: 17/56/03

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.5112	31.09	-16.92	14.17	40.00	-25.83	QP			
2	56.0708	31.57	-21.21	10.36	40.00	-29.64	QP			
3	106.6552	33.18	-20.19	12.99	43.50	-30.51	QP			
4	231.8531	34.16	-18.08	16.08	46.00	-29.92	QP			
5	385.8982	32.50	-13.70	18.80	46.00	-27.20	QP			
6	649.0984	32.04	-8.13	23.91	46.00	-22.09	QP			



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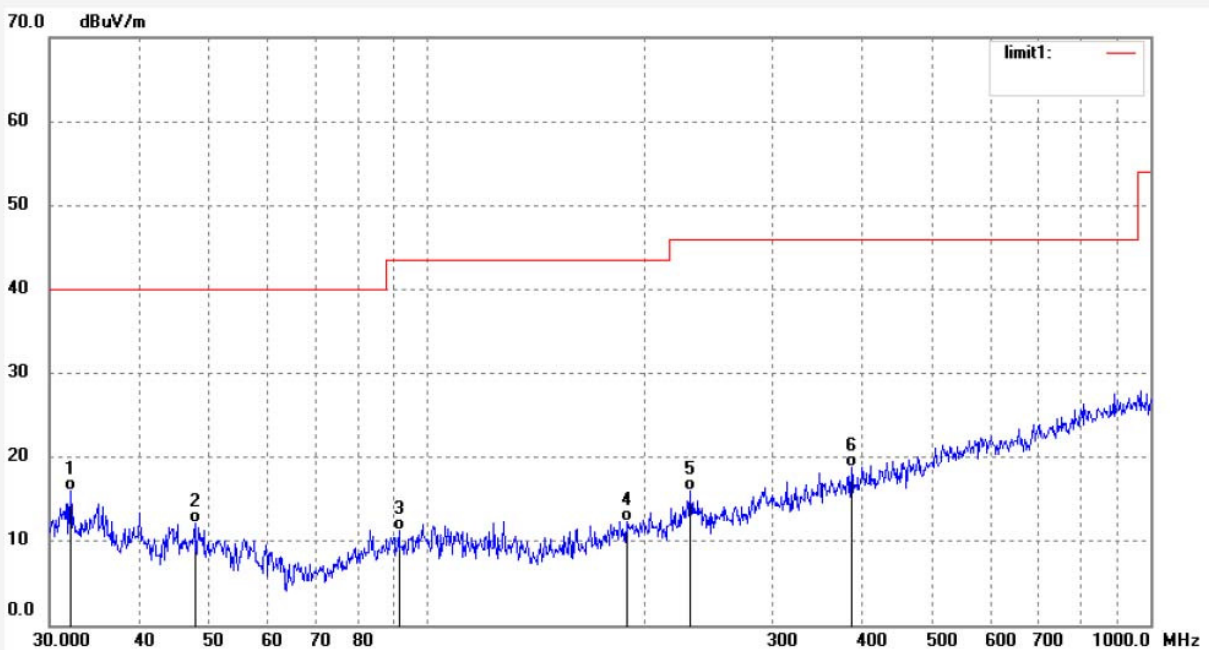
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3473
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Z-Wings
Mode: TX 2440MHz
Model: 2206
Manufacturer: YANGRI

Polarization: Vertical
Power Source: DC 4.5V
Date: 17/04/17/
Time: 17/55/31
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	32.0711	32.15	-16.14	16.01	40.00	-23.99	QP			
2	47.7028	31.73	-19.49	12.24	40.00	-27.76	QP			
3	91.3779	32.57	-21.21	11.36	43.50	-32.14	QP			
4	188.4443	31.45	-19.19	12.26	43.50	-31.24	QP			
5	231.0399	34.10	-18.12	15.98	46.00	-30.02	QP			
6	385.8982	32.50	-13.70	18.80	46.00	-27.20	QP			

Job No.: DING #3472

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2440MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Horizontal

Power Source: DC 4.5V

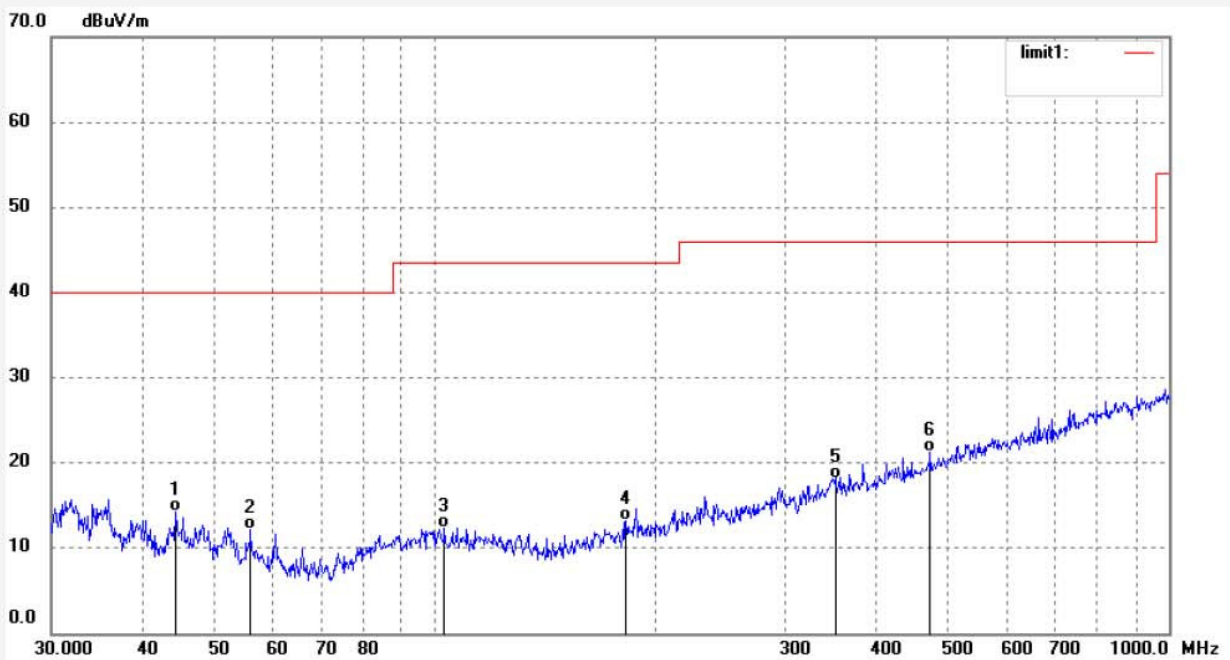
Date: 17/04/17/

Time: 17/54/52

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	44.3098	33.36	-19.07	14.29	40.00	-25.71	QP			
2	56.0708	33.22	-20.99	12.23	40.00	-27.77	QP			
3	102.9729	32.29	-19.95	12.34	43.50	-31.16	QP			
4	181.9381	32.95	-19.66	13.29	43.50	-30.21	QP			
5	348.5145	32.32	-14.21	18.11	46.00	-27.89	QP			
6	473.1260	32.85	-11.53	21.32	46.00	-24.68	QP			



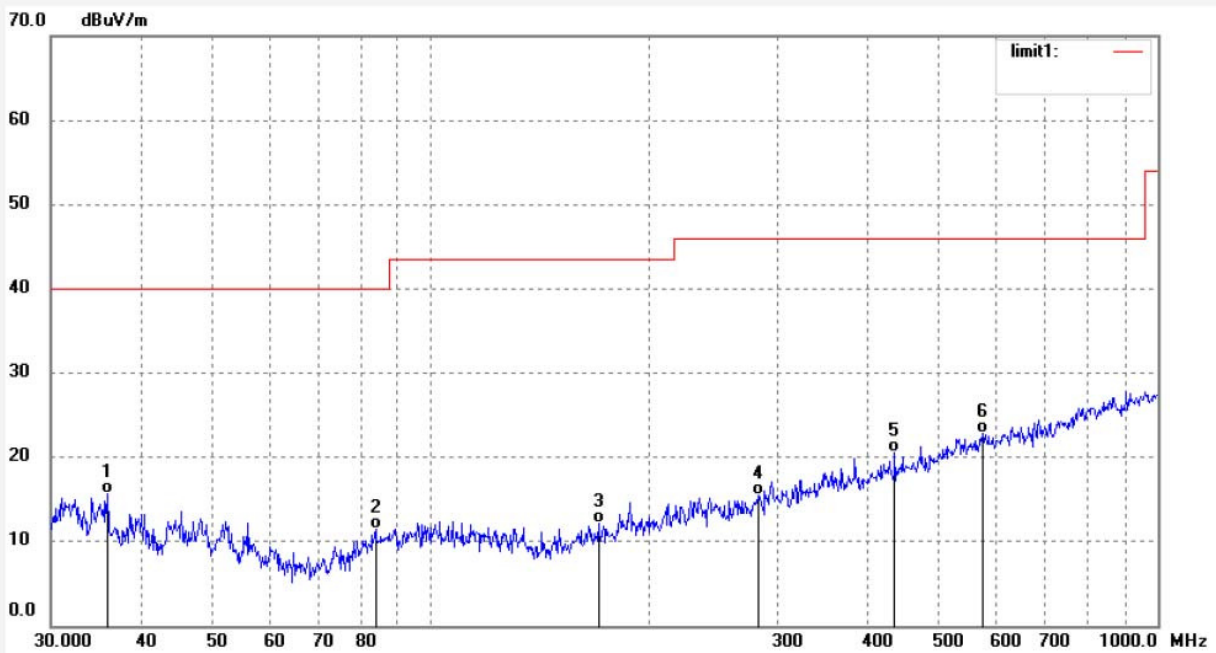
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F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3471	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 4.5V
Test item: Radiation Test	Date: 17/04/17/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/54/14
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2460MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.8875	32.67	-17.06	15.61	40.00	-24.39	QP			
2	83.9882	32.82	-21.34	11.48	40.00	-28.52	QP			
3	170.1887	32.20	-20.11	12.09	43.50	-31.41	QP			
4	282.2701	32.31	-16.84	15.47	46.00	-30.53	QP			
5	434.8650	32.79	-12.20	20.59	46.00	-25.41	QP			
6	573.9882	31.86	-9.05	22.81	46.00	-23.19	QP			



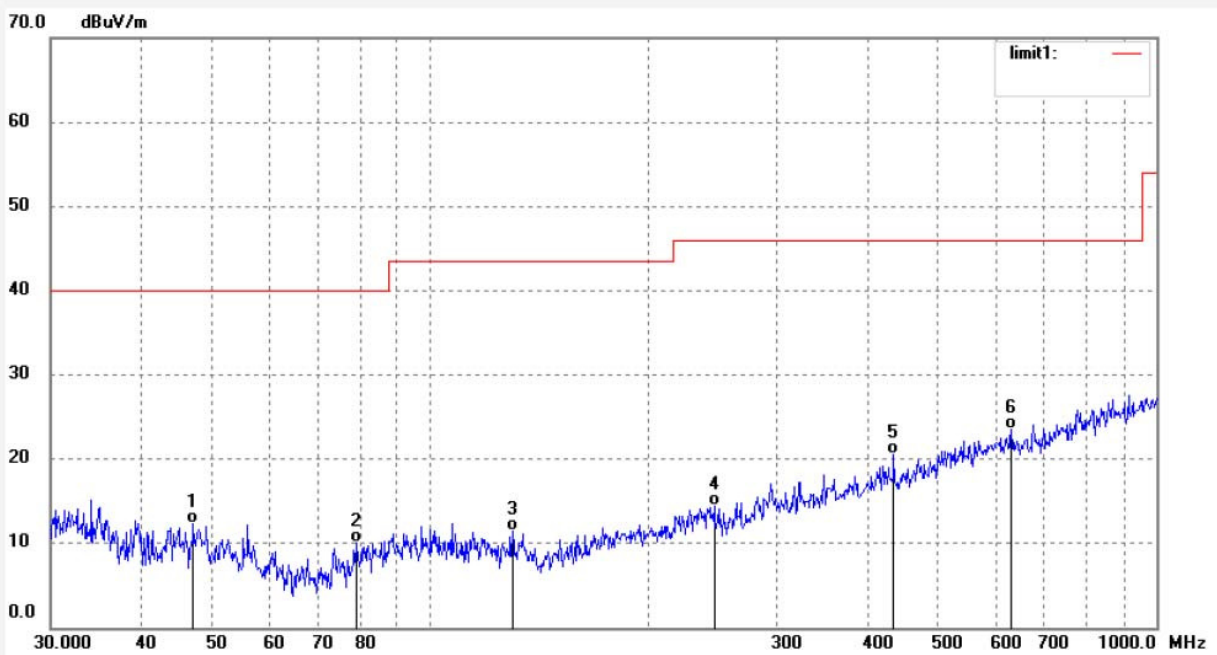
ACCURATE TECHNOLOGY CO., LTD.

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3470	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: DC 4.5V
Test item: Radiation Test	Date: 17/04/17/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17/53/41
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2460MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	47.2026	31.80	-19.42	12.38	40.00	-27.62	QP			
2	79.1185	33.62	-23.60	10.02	40.00	-29.98	QP			
3	129.8477	32.10	-20.61	11.49	43.50	-32.01	QP			
4	246.1238	32.22	-17.75	14.47	46.00	-31.53	QP			
5	434.8650	32.79	-12.20	20.59	46.00	-25.41	QP			
6	631.1070	31.85	-8.28	23.57	46.00	-22.43	QP			

Above 1GHz


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Site: 1# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: DING #3460

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2420MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Horizontal

Power Source: DC 4.5V

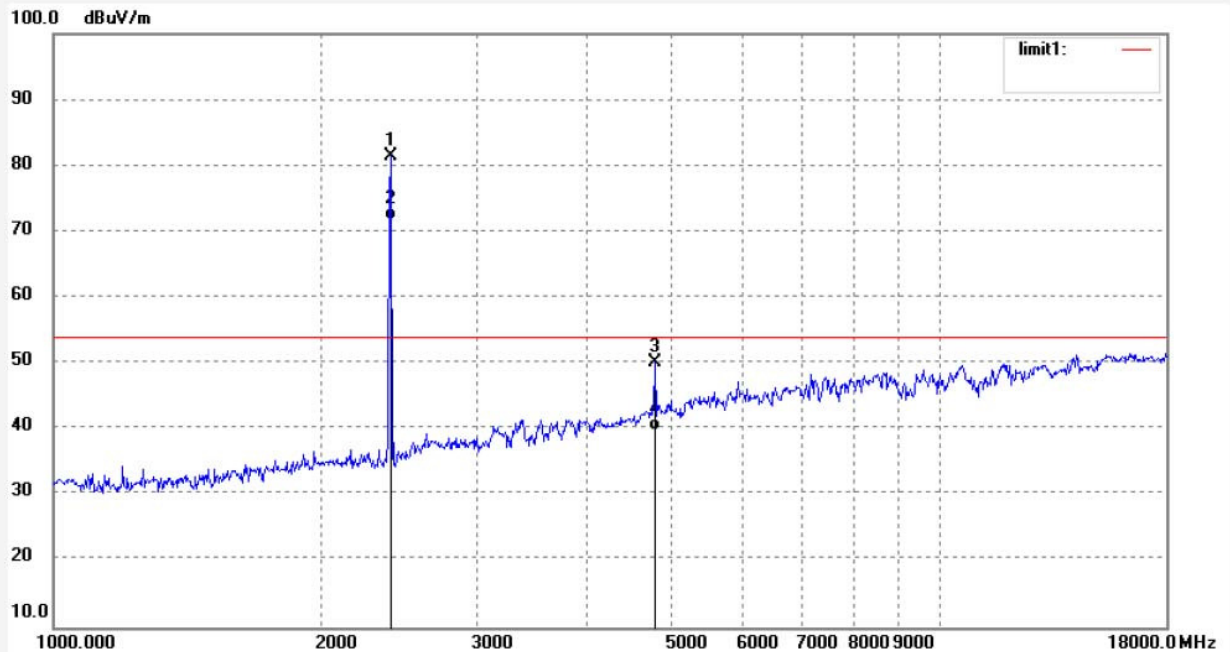
Date: 2017/04/15

Time: 15:20:52

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2420.000	87.22	-5.80	81.42	114.00	-32.58	peak			
2	2420.000	77.52	-5.80	71.72	94.00	-22.28	AVG			
3	4840.000	46.69	3.37	50.06	74.00	-23.94	peak			
4	4840.000	36.49	3.37	39.86	54.00	-14.14	AVG			



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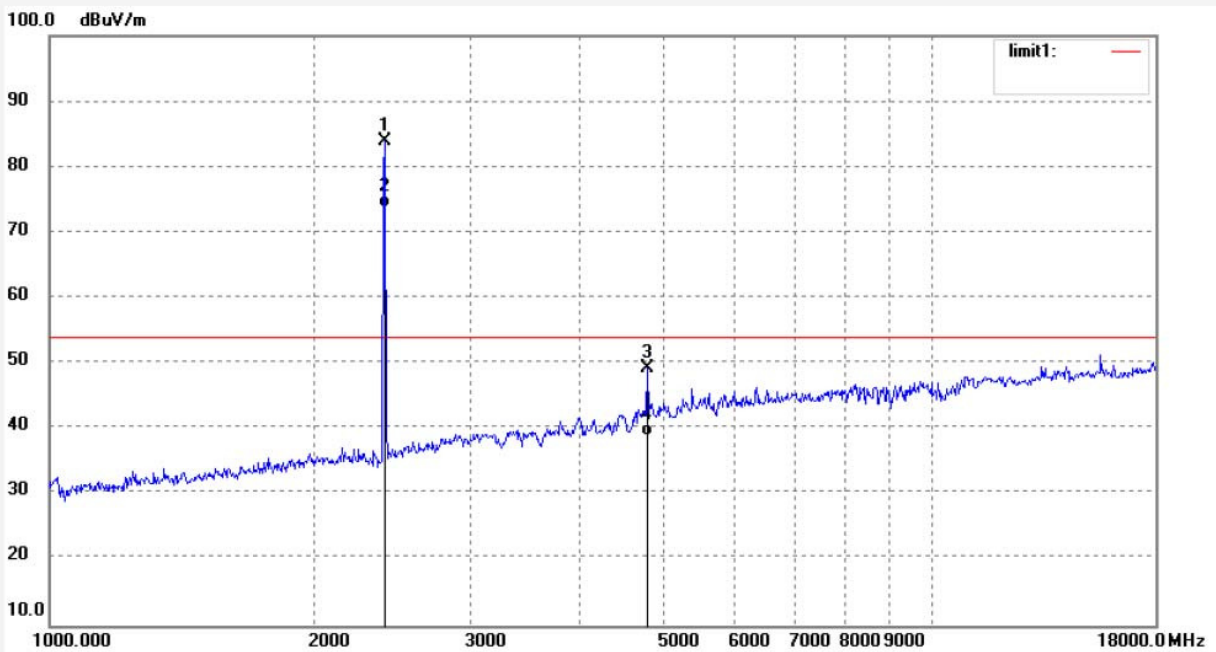
F1,Bldg.A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3461
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Z-Wings
Mode: TX 2420MHz
Model: 2206
Manufacturer: YANGRI

Polarization: Vertical
Power Source: DC 4.5V
Date: 2017/04/15
Time: 15:24:19
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2420.000	89.61	-5.80	83.81	114.00	-30.19	peak			
2	2420.000	79.58	-5.80	73.78	94.00	-20.22	AVG			
3	4840.000	45.96	3.37	49.33	74.00	-24.67	peak			
4	4840.000	35.47	3.37	38.84	54.00	-15.16	AVG			

Job No.: DING #3462

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2440MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Vertical

Power Source: DC 4.5V

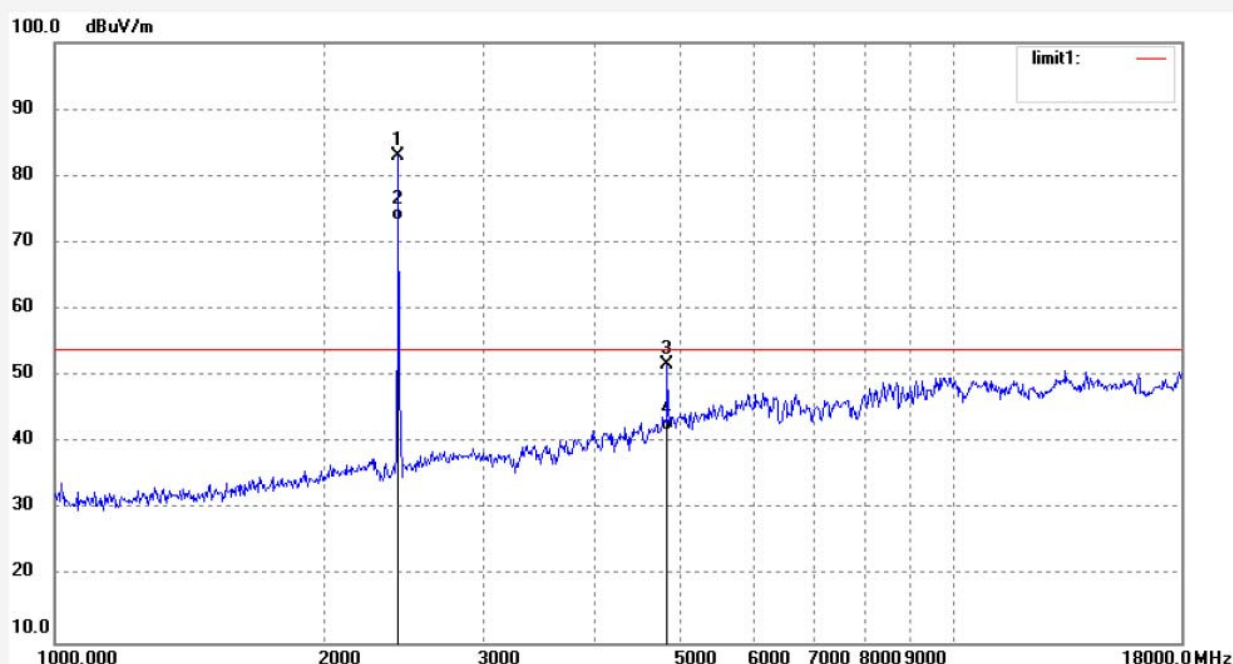
Date: 2017/04/15

Time: 15:27:00

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	88.81	-5.72	83.09	114.00	-30.91	peak			
2	2440.000	78.95	-5.72	73.23	94.00	-20.77	AVG			
3	4880.000	48.00	3.67	51.67	74.00	-22.33	peak			
4	4880.000	38.23	3.67	41.90	54.00	-12.10	AVG			

Job No.: DING #3463

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.(C)/Hum.(%) 25 C / 55 %

EUT: Z-Wings

Mode: TX 2440MHz

Model: 2206

Manufacturer: YANGRI

Polarization: Horizontal

Power Source: DC 4.5V

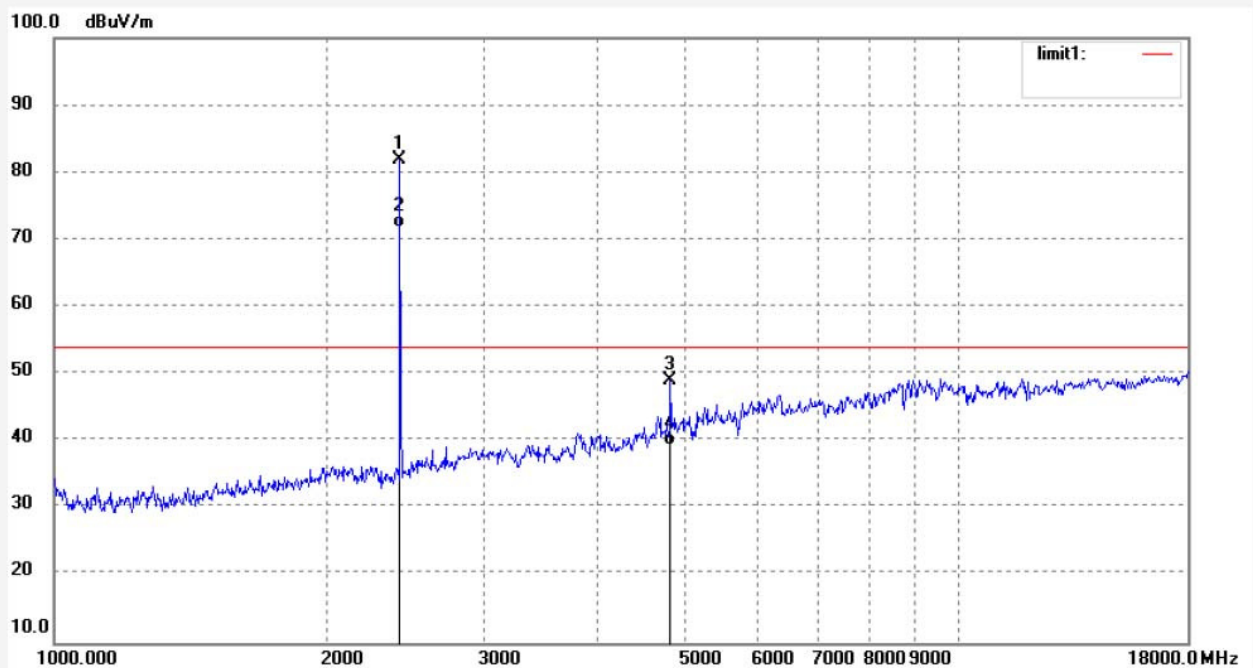
Date: 2017/04/15

Time: 15:29:30

Engineer Signature: DING

Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2440.000	87.64	-5.72	81.92	114.00	-32.08	peak			
2	2440.000	77.45	-5.72	71.73	94.00	-22.27	AVG			
3	4880.000	45.48	3.67	49.15	74.00	-24.85	peak			
4	4880.000	35.68	3.67	39.35	54.00	-14.65	AVG			



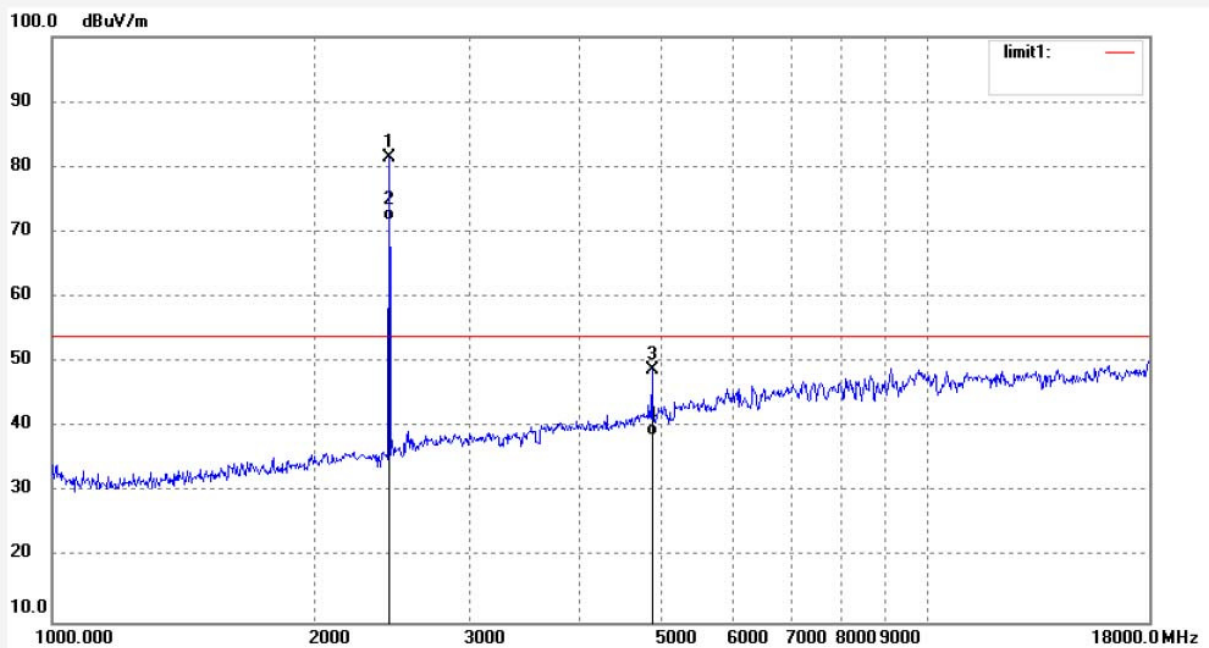
ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: DING #3464	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: DC 4.5V
Test item: Radiation Test	Date: 2017/04/15
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 15:32:14
EUT: Z-Wings	Engineer Signature: DING
Mode: TX 2460MHz	Distance: 3m
Model: 2206	
Manufacturer: YANGRI	

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2460.000	87.10	-5.65	81.45	114.00	-32.55	peak			
2	2460.000	77.42	-5.65	71.77	94.00	-22.23	AVG			
3	4920.000	44.78	4.06	48.84	74.00	-25.16	peak			
4	4920.000	34.59	4.06	38.65	54.00	-15.35	AVG			



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Site: 1# Chamber

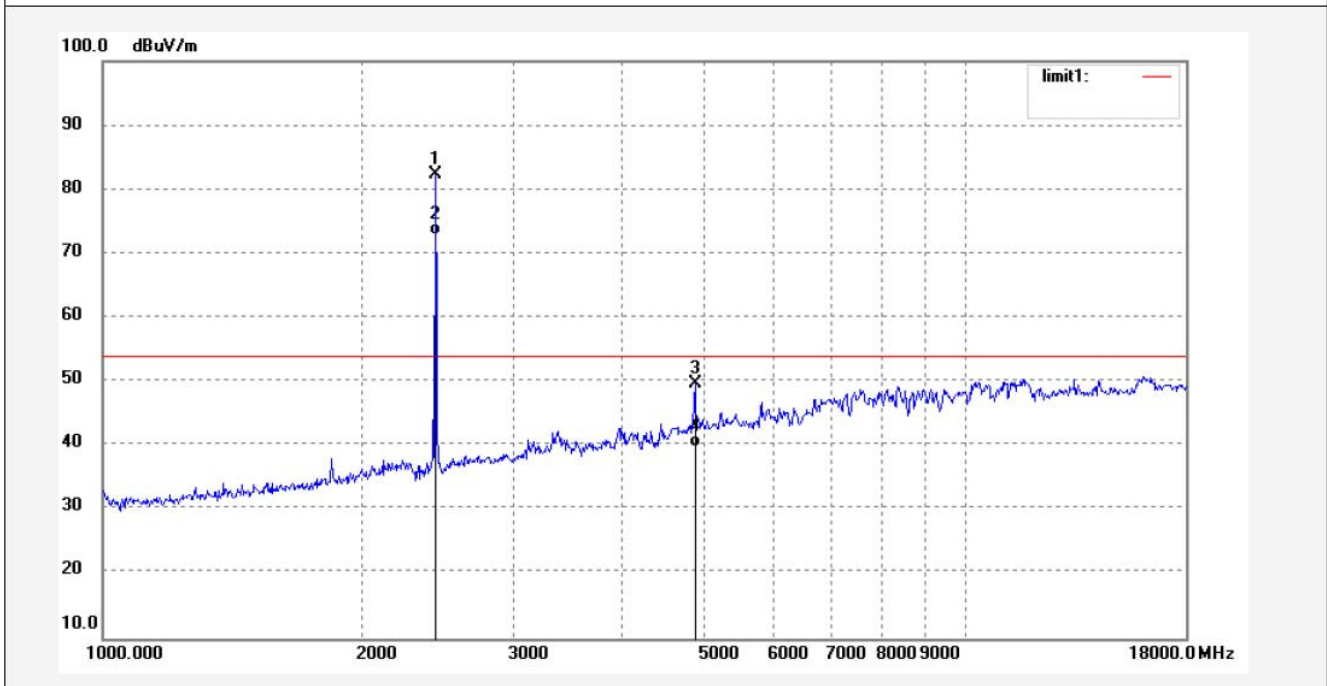
Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: DING #3465
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: Z-Wings
Mode: TX 2460MHz
Model: 2206
Manufacturer: YANGRI

Polarization: Vertical
Power Source: DC 4.5V
Date: 2017/04/15
Time: 15:35:56
Engineer Signature: DING
Distance: 3m

Note: Report NO.:ATE20170480



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2460.000	88.04	-5.65	82.39	114.00	-31.61	peak			
2	2460.000	78.63	-5.65	72.98	94.00	-21.02	AVG			
3	4920.000	45.55	4.06	49.61	74.00	-24.39	peak			
4	4920.000	35.84	4.06	39.90	54.00	-14.10	AVG			

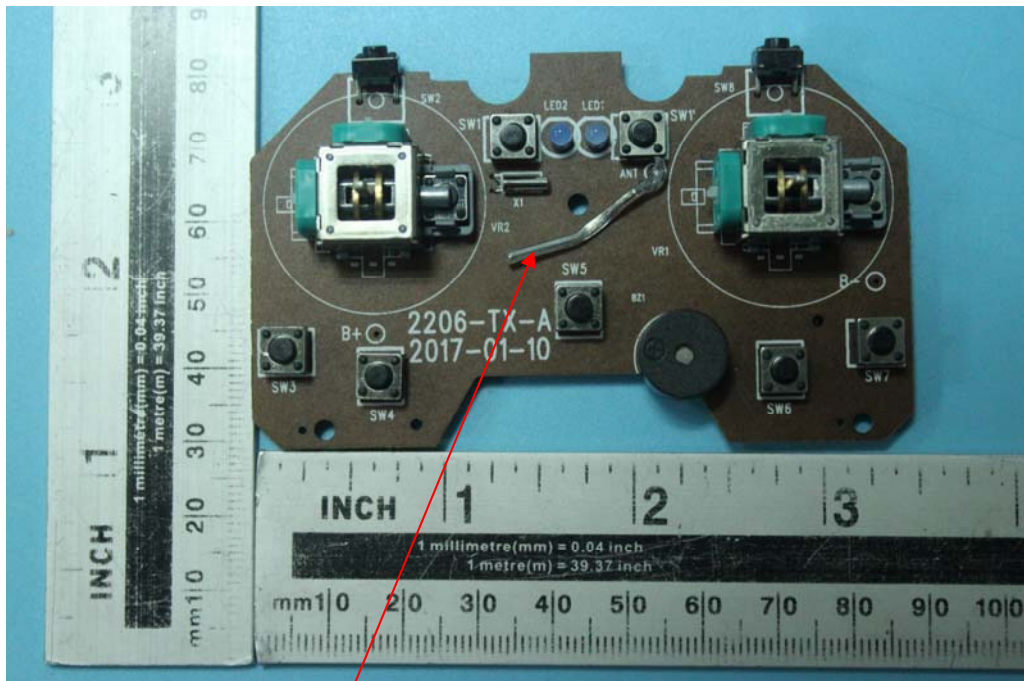
8. ANTENNA REQUIREMENT

8.1.The Requirement

According to 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.

8.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 1dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



Antenna