APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Zhongshan Langyu Model Co., Ltd.

T720 Trainer radio control airplane
Model No.: T720, S720

FCC ID: 2ATXM-T720

Prepared for	:	Zhongshan Langyu Model Co., Ltd.
Address	:	3F, No.82, Shengtang First Road, Third Industrial Zone, Tanzhou, Zhongshan, Guangdong, China
Prepared by	:	Shenzhen Accurate Technology Co., Ltd.
Address	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China. Tel: (0755) 26503290 Fax: (0755) 26503396

Report Number	:	ATE20191029
Date of Test	:	July 12, 2019
Date of Report	:	July 17, 2019

TABLE OF CONTENTS

Description Page

Test Report Certification
1. GENERAL INFORMATION 3
1.1. Description of Device (EUT) 4
1.2. Special Accessory and Auxiliary Equipment 5
1.3. Description of Test Facility 6
1.4. Measurement Uncertainty 6
2. MEASURING DEVICE AND TEST EQUIPMENT 7
3. OPERATION OF EUT DURING TESTING 8
3.1. Operating Mode 8
3.2. Configuration and peripherals 8
4. TEST PROCEDURES AND RESULTS 9
5. E.I.R.P TEST 10
5.1. The Requirement For Section 15.249(a) 10
5.2. Test Result 10
6. 20DB BANDWIDTH TEST 11
6.1. Block Diagram of Test Setup 11
6.2. The Requirement For Section 15.215(c) 11
6.3. Operating Condition of EUT 11
6.4. Test Procedure 11
6.5. Test Result 12
7. BAND EDGE COMPLIANCE TEST 14
7.1. Block Diagram of Test Setup 14
7.2. The Requirement For Section 15.249(d) 14
7.3. Restricted bands of operation 15
7.4. EUT Configuration on Measurement 15
7.5. Operating Condition of EUT 16
7.6. Test Procedure 16
7.7. Test Result 16
8. RADIATED SPURIOUS EMISSION TEST 21
8.1. Block Diagram of Test Setup 21
8.2. The Requirement For Section 15.249(d) 22
8.3. The Limit For Section 15.249(a) 22
8.4. Configuration of EUT on Measurement 22
8.5. Operating Condition of EUT 23
8.6. Test Procedure 23
8.7. Data Sample 24
8.8. Test Results 24
9. ANTENNA REQUIREMENT 37
9.1. The Requirement 37
9.2. Antenna Construction 37

Test Report Certification

Applicant	:	Zhongshan Langyu Model Co., Ltd.
Address	:	3F, No.82, Shengtang First Road, Third Industrial Zone, Tanzhou, Zhongshan, Guangdong, China
Product	:	T720 Trainer radio control airplane
Model No.	:	T720, S720

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 Shenzhen 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 Shenzhen 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 Shenzhen Accurate Technology Co., Ltd.

Date of Test :	July 12, 2019
Date of Report :	July 17, 2019
Test Engineer :	(Frank, Engineer)
Prepared by :	(Stone Yang, Engineer)
Approved & Authorized Signer :	(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	T720 Trainer radio control airplane
Model No.	:	T720, S720 (Note: We hereby state that these models are identical in interior structure, electrical circuits and components, Just model name is different. Therefore only model T720 is for tests.)
Operate Frequency	:	2413-2452MHz
Number of channel	:	40
Modulation mode	:	GFSK
Antenna Gain	:	0dBi
Antenna type	:	Wire Antenna
Software version	:	V1.0
Hardware version	:	V1.0
Power Supply	:	DC 6V
Trade Mark	:	SUNNYSKY
Applicant	:	Zhongshan Langyu Model Co., Ltd.
Address	:	3F, No.82, Shengtang First Road, Third Industrial Zone, Tanzhou, Zhongshan, Guangdong, China
Manufacturer	:	Zhongshan Langyu Model Co., Ltd.
Address	:	3F, No.82, Shengtang First Road, Third Industrial Zone, Tanzhou, Zhongshan, Guangdong, China

1.2. Channel list

Channel	Frequenc	Channel	Frequenc	Channel	Frequency
Channel	2413MHz	Channel	2427MHz	Channel	2441MHz
Channel	2414MHz	Channel	2428MHz	Channel	2442MHz
Channel	2415MHz	Channel	2429MHz	Channel	2443MHz
Channel	2416MHz	Channel	2430MHz	Channel	2444MHz
Channel	2417MHz	Channel	2431MHz	Channel	2445MHz
Channel	2418MHz	Channel	2432MHz	Channel	2446MHz
Channel	2419MHz	Channel	2433MHz	Channel	2447MHz
Channel	2420MHz	Channel	2434MHz	Channel	2448MHz
Channel	2421MHz	Channel	2435MHz	Channel	2449MHz
Channel	2422MHz	Channel	2436MHz	Channel	2450MHz
Channel	2423MHz	Channel	2437MHz	Channel	2451MHz
Channel	2424MHz	Channel	2438MHz	Channel	2452MHz
Channel	2425MHz	Channel	2439MHz		
Channel	2426MHz	Channel	2440MHz		

1.3.channel listSpecial Accessory and Auxiliary Equipment

N/A

1.4.Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISEDC) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.5.Measurement Uncertainty

Radiated Emission Expanded Uncertainty (9kHz-30MHz)	:	U=2.66dB, k=2
Radiated Emission Expanded Uncertainty (30MHz-1000MHz)	:	U=4.28dB, k=2
Radiated Emission Expanded Uncertainty (1G-18GHz)	:	U=4.98dB, k=2
Radiated Emission Expanded Uncertainty (18G-26.5GHz)	:	U=5.06dB, k=2
Conduction Emission Expanded Uncertainty (Mains ports, 9kHz-30MHz)	:	U=2.72dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Cal. Interval
Spectrum Analyzer	Rohde&Schwarz	FSV-40	101495	Jan. 05, 2019	One Year
Pre-Amplifier	Compliance Direction	RSU-M2	38322	Jan. 05, 2019	One Year
Pre-Amplifier	Agilent	8447D	294A10619	Jan. 05, 2019	One Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 05, 2019	One Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 05, 2019	One Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 05, 2019	One Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 05, 2019	One Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 05, 2019	One Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	RESENBERGER	N-12m	No.11	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	RESENBERGER	N-0.5m	No.12	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	SUHNER	N-2m	No.13	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	SUHNER	N-0.5m	No.15	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	SUHNER	N-2m	No.16	Jan. 05, 2019	One Year
RF Coaxial Cable (Radiated Emission)	RESENBERGER	N-6m	No.17	Jan. 05, 2019	One Year
Temporary antenna connector	NTGS	14AE	N/A	Jul. 15, 2019	N/A
Radiated Emission Measurement Software: EZ_EMC V1.1.4.2					

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 2413MHz
Middle Channel: 2439MHz
High Channel: 2452MHz

3.2.Configuration and peripherals

EUT

Figure 1 Setup: Transmitting mode

4. TEST PROCEDURES AND RESULTS

FCC&IC Rules	Description of Test	Result
Section 15.249(a)	E.I.R.P Test	Compliant
Section 15.215(c)	20dB Bandwidth Test	Compliant
Section 15.249(d)	Band Edge Compliance Test	Compliant
Section 15.205(a), Section 15.209(a), Section 15.249(a), 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 EUT is powered by DC 6V battery, so the conducted emission test is not applicable and skipped.

5. E.I.R.P TEST

5.1. The Requirement For Section 15.249(a)

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/ meter)	Field strength of harmonics (microvolts/ meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

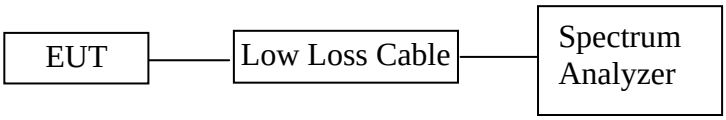
5.2. Test Result

Test Lab: 3m anechoic chamber
Test Engineer: Frank

Frequency (MHz)	PEAK E.I.R.P (dBuV/m)	AVG E.I.R.P (dBuV/m)	PEAK Limits (dBuV/m)	AVG Limits (dBuV/m)	Result
2413	100.09	90.48	114	94	Pass
2439	100.17	90.00	114	94	Pass
2452	101.80	91.45	114	94	Pass

6. 20DB BANDWIDTH TEST

6.1.Block Diagram of Test Setup



6.2.The Requirement For Section 15.215(c)

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.

6.3.Operating Condition of EUT

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

6.3.2.Turn on the power of all equipment.

6.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2413, 2439, 2452MHz.

6.4.Test Procedure

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

6.4.2.The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the EMI receiver or spectrum analyzer shall be between two times and five times the OBW.

6.4.3.RBW shall be in the range of 1% to 5% of the OBW and VBW shall be approximately three times RBW.

6.4.4.The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

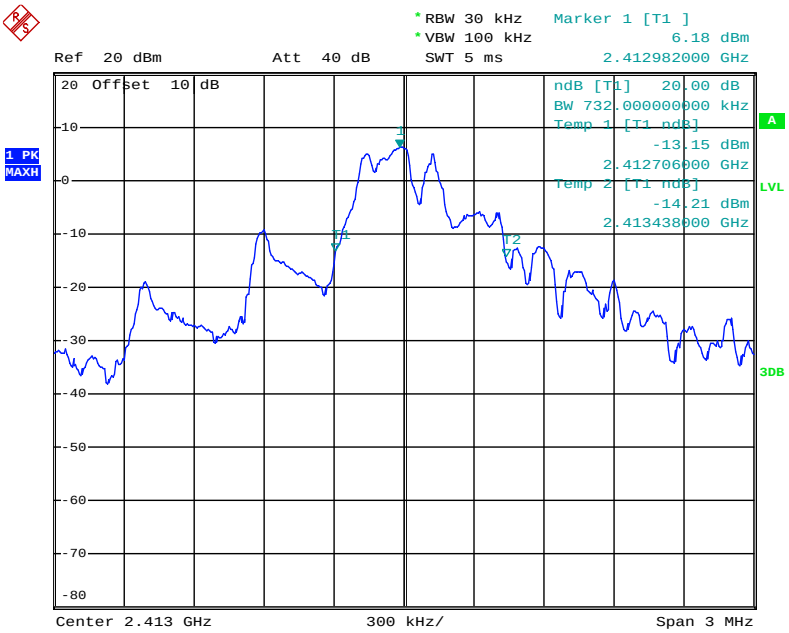
6.5.Test Result

Test Lab: Shielding room
Test Engineer: Frank

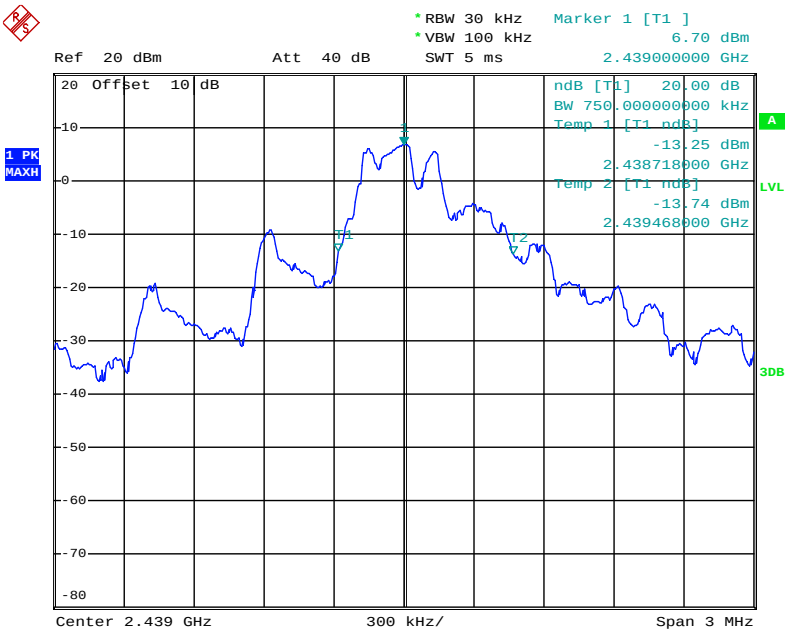
Channel	Frequency(MHz)	20 dB Bandwidth(MHz)
Low	2413	0.732
Middle	2439	0.750
High	2452	0.462

The spectrum analyzer plots are attached as below.

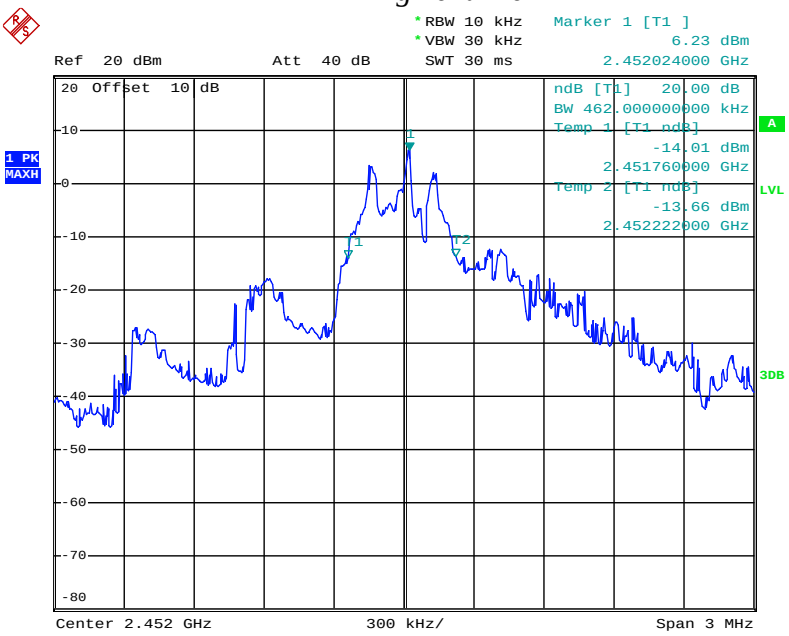
Low channel



Middle channel



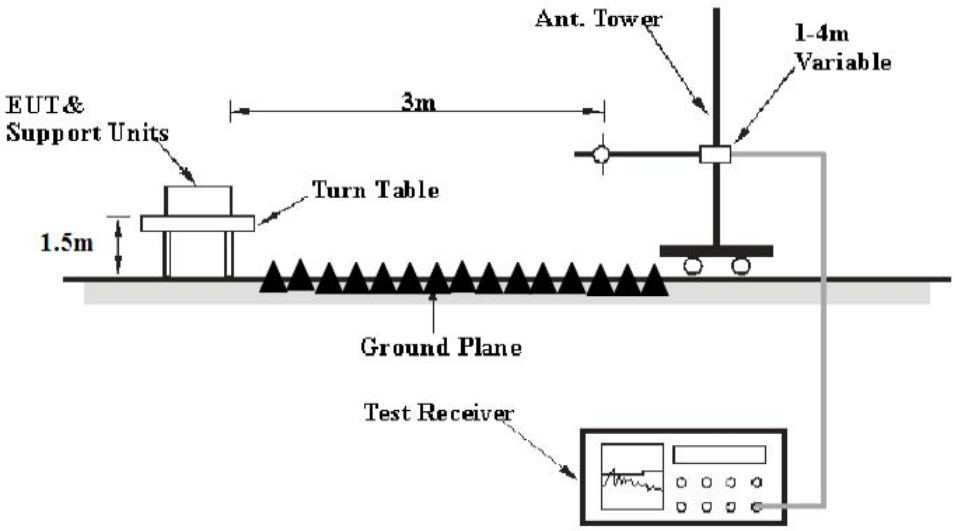
High channel



7. BAND EDGE COMPLIANCE TEST

7.1.Block Diagram of Test Setup

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



7.2.The Requirement For Section 15.249(d)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

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			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 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 Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

7.4.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.

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 measure it. The transmit frequency are 2413, 2452MHz.

7.6.Test Procedure

Radiate Band Edge:

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

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

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

7.6.4. 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

7.6.5.The band edges was measured and recorded.

7.7.Test Result

PASS.

Test Lab: 3m Anechoic chamber
Test Engineer: Frank

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

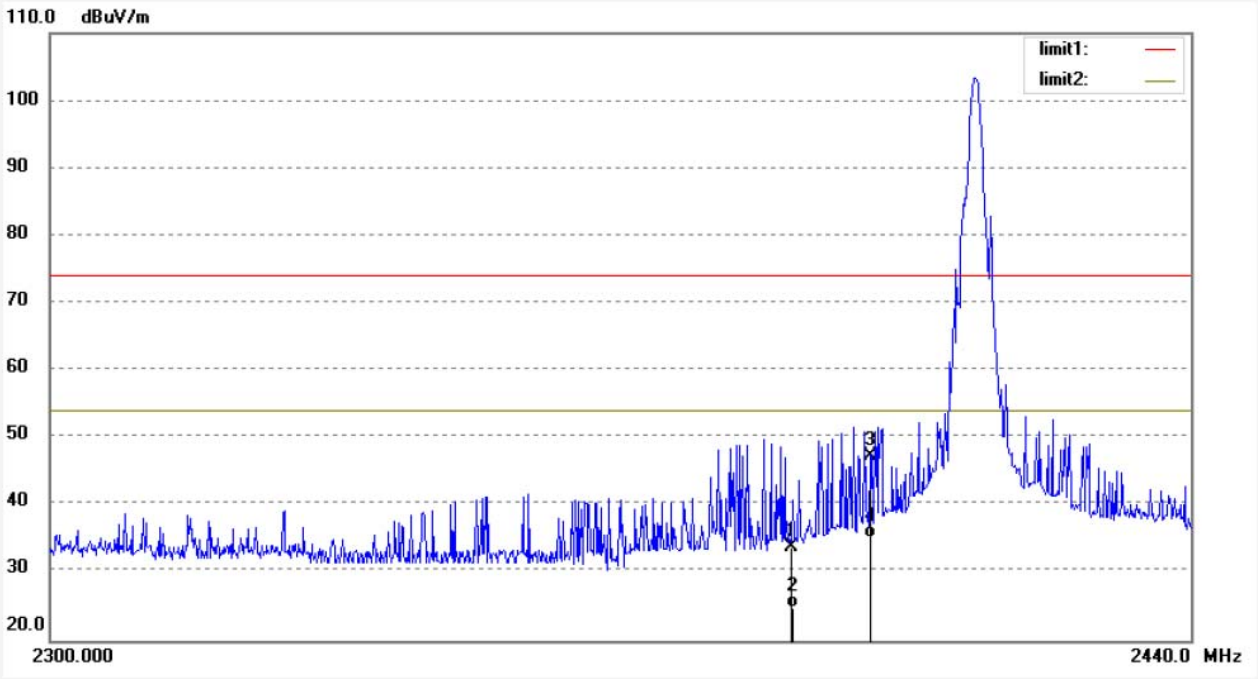
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows: Result = Reading + Corrected Factor
3. Display the measurement of peak values.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

The spectrum analyzer plots are attached as below.

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.: FRANK2019 #1254	Polarization: Horizontal
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 11/07/10
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2413MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029



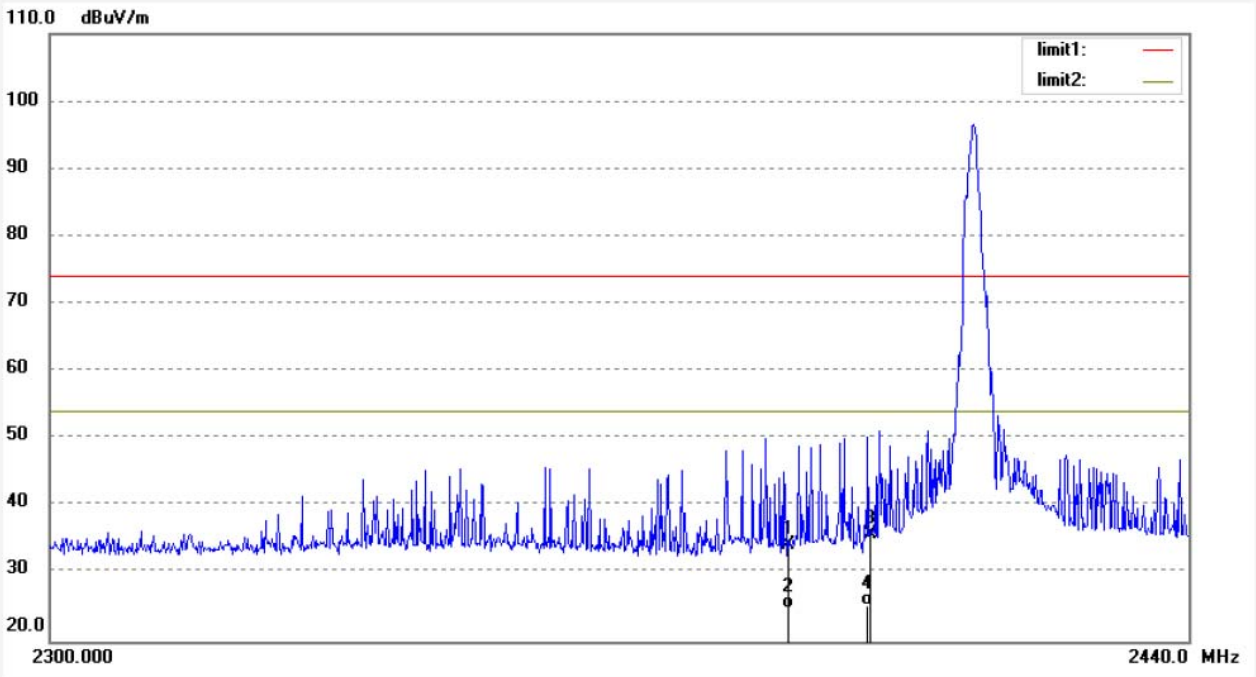
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.11	-6.32	33.79	74.00	-40.21	peak	200	221	
2	2390.000	31.15	-6.32	24.83	54.00	-29.17	AVG	200	63	
3	2400.000	53.54	-6.27	47.27	74.00	-26.73	peak	200	196	
4	2400.029	41.57	-6.27	35.30	54.00	-18.70	AVG	200	123	

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.: FRANK2019 #1255
Standard: FCC Part 15C 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: T720 Trainer radio conctrol airplane
Mode: TX 2413MHz
Model: T720
Manufacturer: Zhongshan Langyu Model Co.,Ltd

Polarization: Vertical
Power Source: DC 6V
Date: 19/07/12/
Time: 11/08/53
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20191029



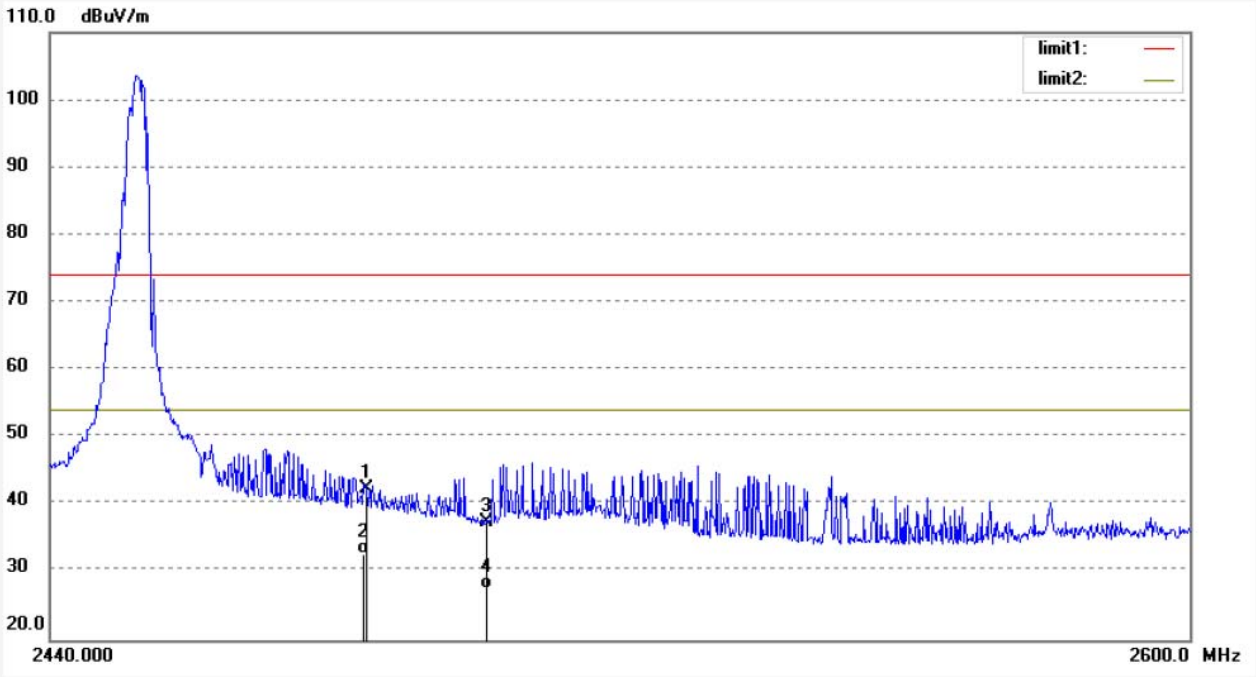
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	40.63	-6.32	34.31	74.00	-39.69	peak	150	201	
2	2390.000	31.12	-6.32	24.80	54.00	-29.20	AVG	150	192	
3	2400.000	42.11	-6.27	35.84	74.00	-38.16	peak	150	96	
4	2400.000	31.54	-6.27	25.27	54.00	-28.73	AVG	150	103	

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.: FRANK2019 #1253
Standard: FCC Part 15C 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: T720 Trainer radio conctrol airplane
Mode: TX 2452MHz
Model: T720
Manufacturer: Zhongshan Langyu Model Co.,Ltd

Polarization: Horizontal
Power Source: DC 6V
Date: 19/07/12/
Time: 11/05/13
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20191029



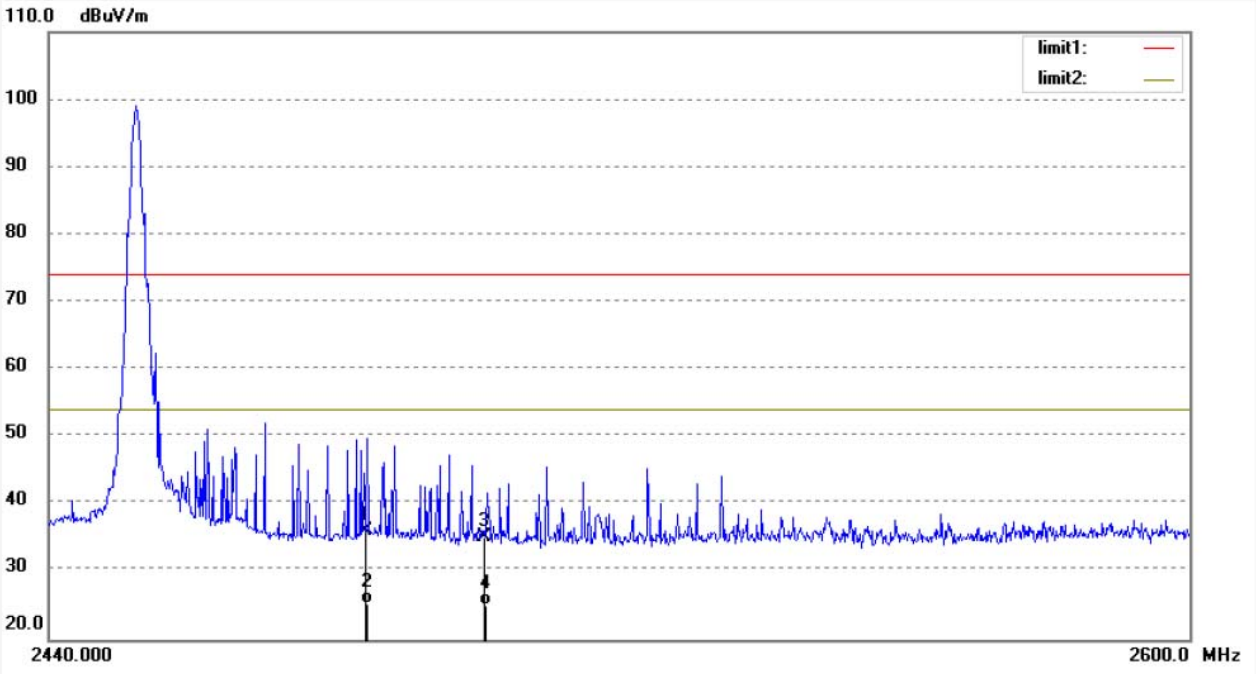
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	48.29	-5.89	42.40	74.00	-31.60	peak	200	210	
2	2483.500	38.49	-5.89	32.60	54.00	-21.40	AVG	200	51	
3	2500.000	43.32	-5.81	37.51	74.00	-36.49	peak	200	93	
4	2500.000	33.45	-5.81	27.64	54.00	-26.36	AVG	200	211	

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.: FRANK2019 #1252
Standard: FCC Part 15C 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: T720 Trainer radio conctrol airplane
Mode: TX 2452MHz
Model: T720
Manufacturer: Zhongshan Langyu Model Co.,Ltd

Polarization: Vertical
Power Source: DC 6V
Date: 19/07/12/
Time: 11/03/05
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20191029



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	42.02	-5.89	36.13	74.00	-37.87	peak	150	45	
2	2483.500	31.15	-5.89	25.26	54.00	-28.74	AVG	150	120	
3	2500.000	41.02	-5.81	35.21	74.00	-38.79	peak	150	33	
4	2500.000	30.78	-5.81	24.97	54.00	-29.03	AVG	150	109	

8. RADIATED SPURIOUS EMISSION TEST

8.1.Block Diagram of Test Setup

8.1.1.Block diagram of connection between the EUT and peripherals

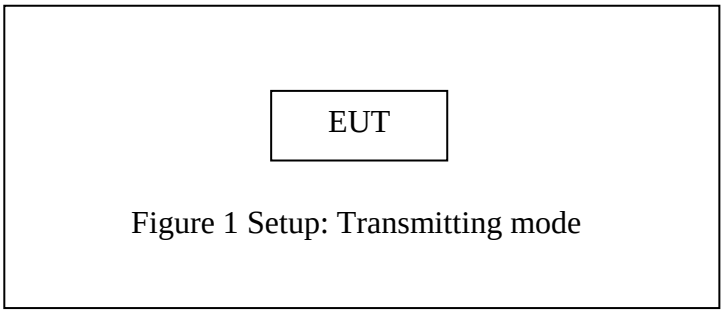
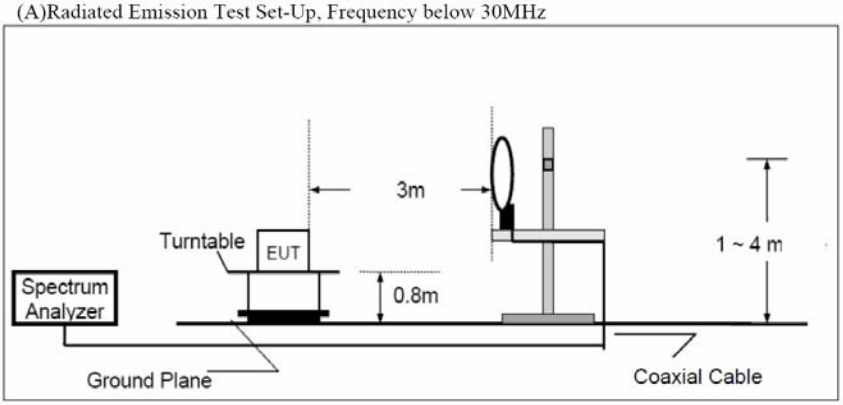


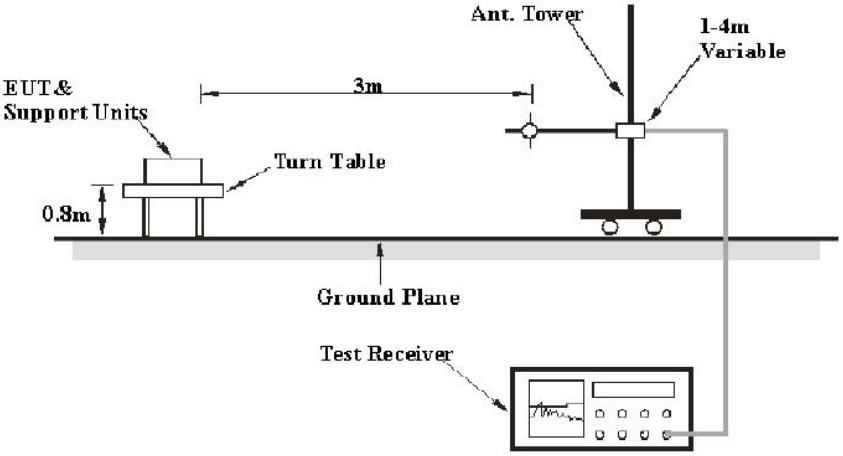
Figure 1 Setup: Transmitting mode

8.1.2.Semi-Anechoic Chamber Test Setup Diagram

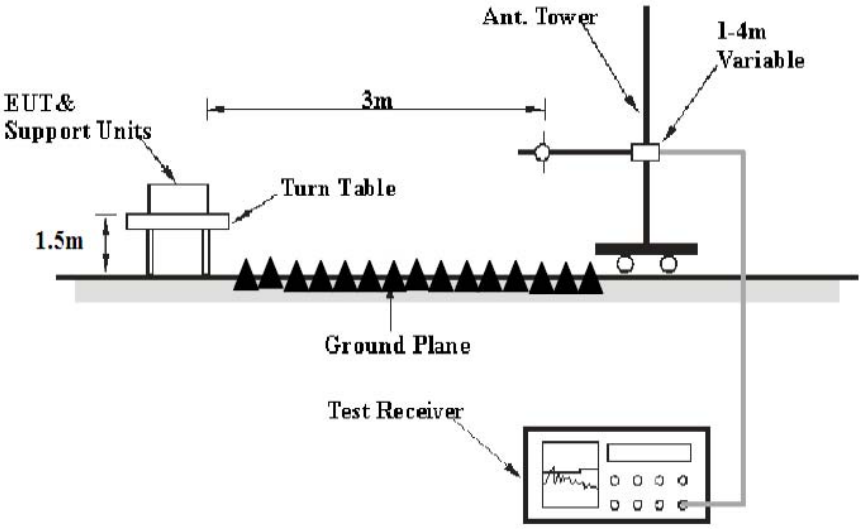
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



(B)Radiated Emission Test Set-Up, Frequency 30MHz-1GHz



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



8.2. The Requirement For Section 15.249(d)

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in § 15.209, whichever is the lesser attenuation.

8.3. The Limit For Section 15.249(a)

The field strength of fundamental and harmonic emissions, measured at 3 m, shall not exceed 50 mV/m and 0.5 mV/m respectively

8.4. 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.

8.5.Operating Condition of EUT

8.5.1.Setup the EUT and simulator as shown as Section 8.1.

8.5.2.Turn on the power of all equipment.

8.5.3.Let the EUT work in TX modes and measure it. The transmit frequency are 2413, 2439, 2452MHz.

8.6.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. This EUT was tested in 3 orthogonal positions and the worst case position data was reported.

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 26.5GHz 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

8.7.Data Sample

Frequency (MHz)	Reading (dBμv)	Factor (dB/m)	Result (dBμv/m)	Limit (dBμv/m)	Margin (dB)	Remark
X.XX	48.69	-13.35	35.34	46	-7	QP

Frequency(MHz) = Emission frequency in MHz
Reading(dBμv) = Uncorrected Analyzer/Receiver reading
Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain
Result(dBμv/m) = Reading(dBμv) + Factor(dB/m)
Limit (dBμv/m) = Limit stated in standard
Margin (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

Calculation Formula:
Margin(dB) = Result (dBμV/m)–Limit(dBμV/m)
Result(dBμV/m)= Reading(dBμV)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

8.8.Test Results

PASS.

Test Lab: 3m anechoic chamber
Test Engineer: Frank

Note: 1. the frequency range from 9kHz to 26.5GHz is checked.

The radiation emissions from 9kHz-30MHz and 18-26.5GHz are not reported, because the test values lower than the limits of 20dB.

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

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

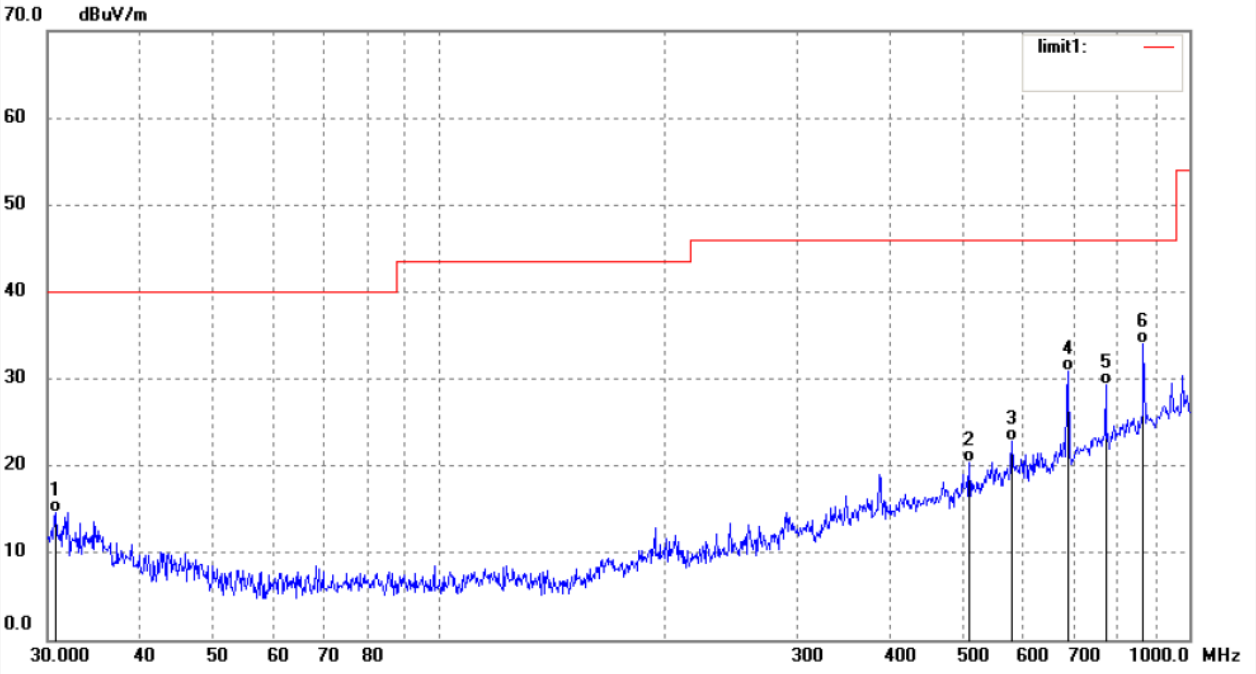
The spectrum analyzer plots are attached as below.

30MHz-1GHz test data

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.: FRANK2019 #1240	Polarization: Horizontal
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/34/11
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2413MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

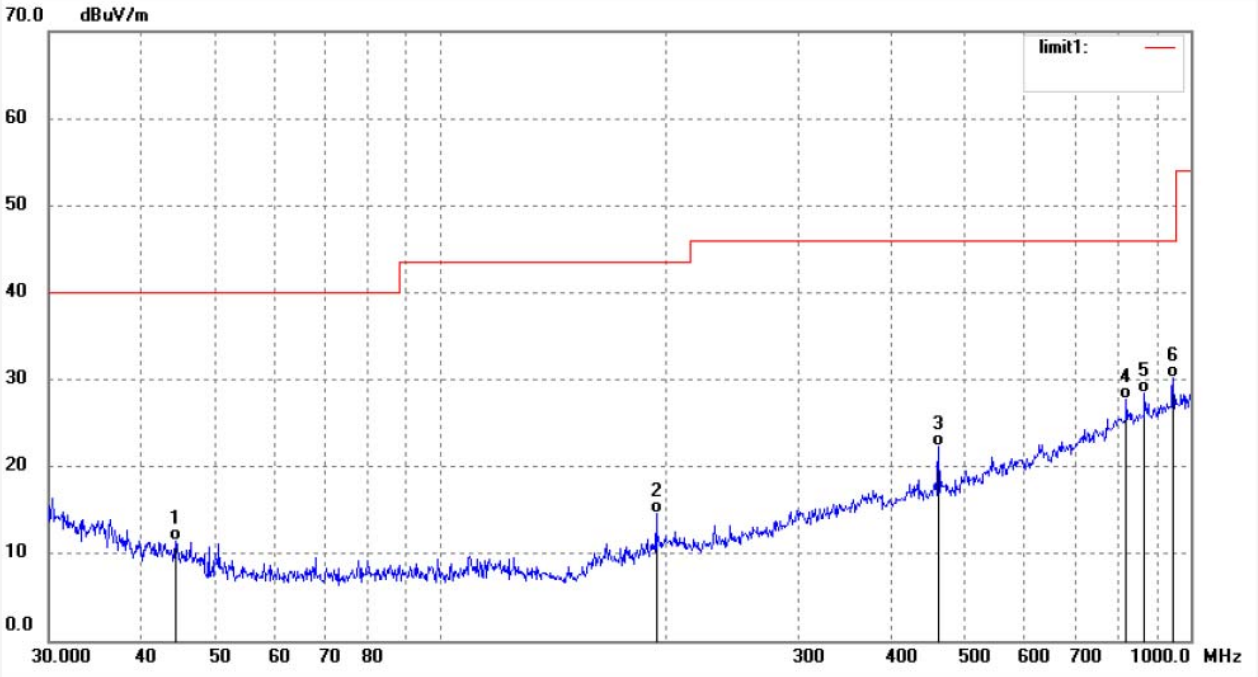


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.7469	34.98	-20.39	14.59	40.00	-25.41	QP	200	103	
2	509.3559	36.49	-16.02	20.47	46.00	-25.53	QP	200	96	
3	580.0705	36.94	-14.11	22.83	46.00	-23.17	QP	200	112	
4	689.0510	42.61	-11.72	30.89	46.00	-15.11	QP	200	201	
5	773.7612	38.96	-9.71	29.25	46.00	-16.75	QP	200	339	
6	868.8859	41.72	-7.72	34.00	46.00	-12.00	QP	200	62	

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.: FRANK2019 #1241	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/37/15
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2413MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

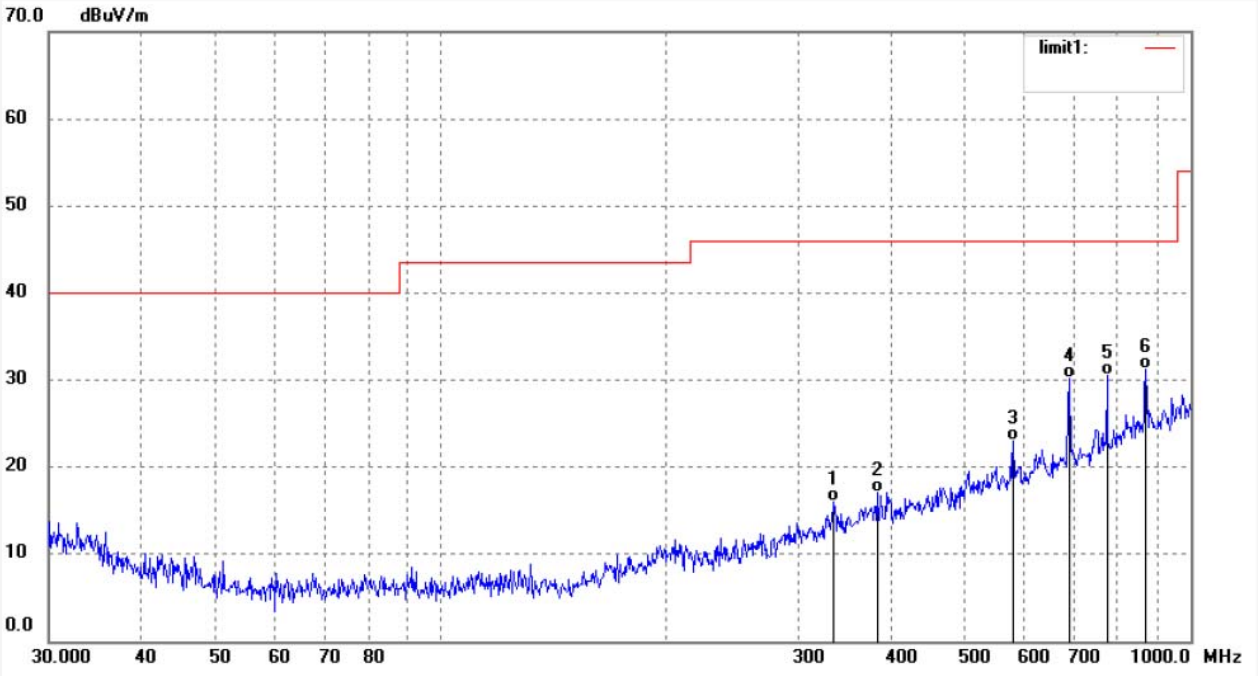


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	44.3098	35.77	-24.31	11.46	40.00	-28.54	QP	100	193	
2	193.8163	39.32	-24.75	14.57	43.50	-28.93	QP	100	221	
3	461.6313	39.22	-16.91	22.31	46.00	-23.69	QP	100	201	
4	821.3871	36.38	-8.58	27.80	46.00	-18.20	QP	100	96	
5	868.8859	36.17	-7.72	28.45	46.00	-17.55	QP	100	31	
6	948.6609	36.56	-6.35	30.21	46.00	-15.79	QP	100	221	

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.: FRANK2019 #1243	Polarization: Horizontal
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/38/06
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2439MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

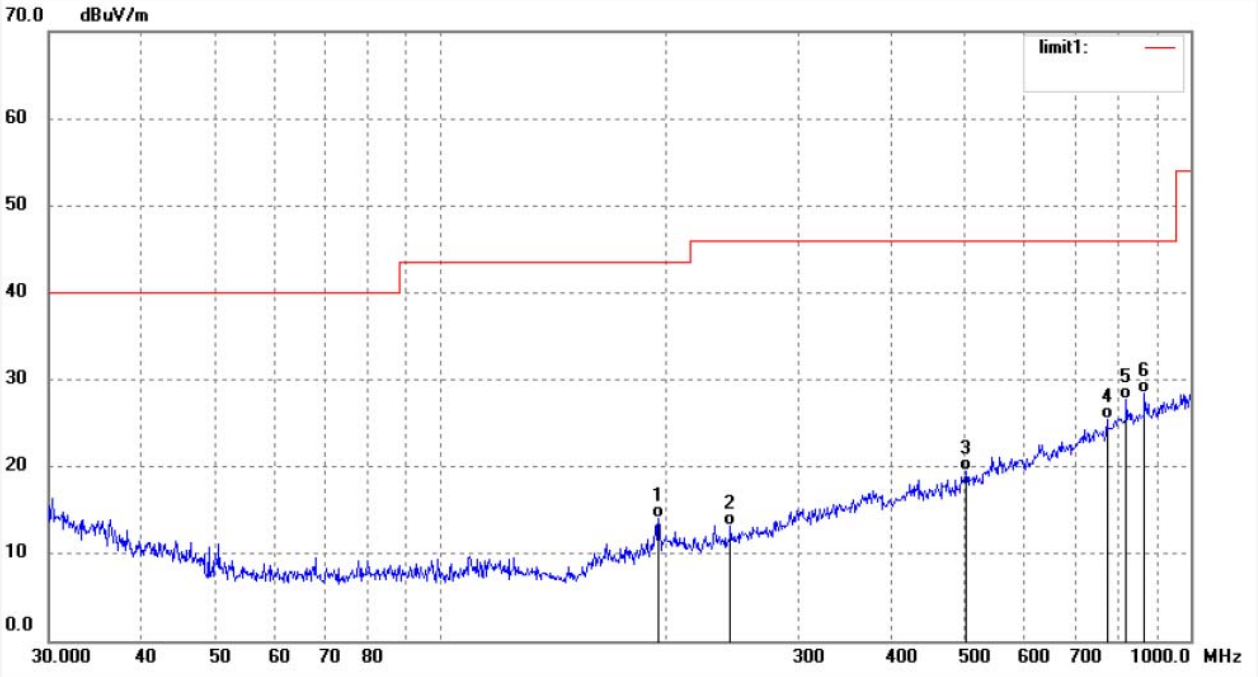


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	334.1254	35.99	-19.94	16.05	46.00	-29.95	QP	200	201	
2	381.8519	35.67	-18.60	17.07	46.00	-28.93	QP	200	33	
3	580.0705	37.04	-14.11	22.93	46.00	-23.07	QP	200	146	
4	689.0510	41.94	-11.72	30.22	46.00	-15.78	QP	200	152	
5	773.7612	40.23	-9.71	30.52	46.00	-15.48	QP	200	66	
6	871.9442	38.83	-7.67	31.16	46.00	-14.84	QP	200	193	

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.: FRANK2019 #1242	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/37/31
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2439MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029



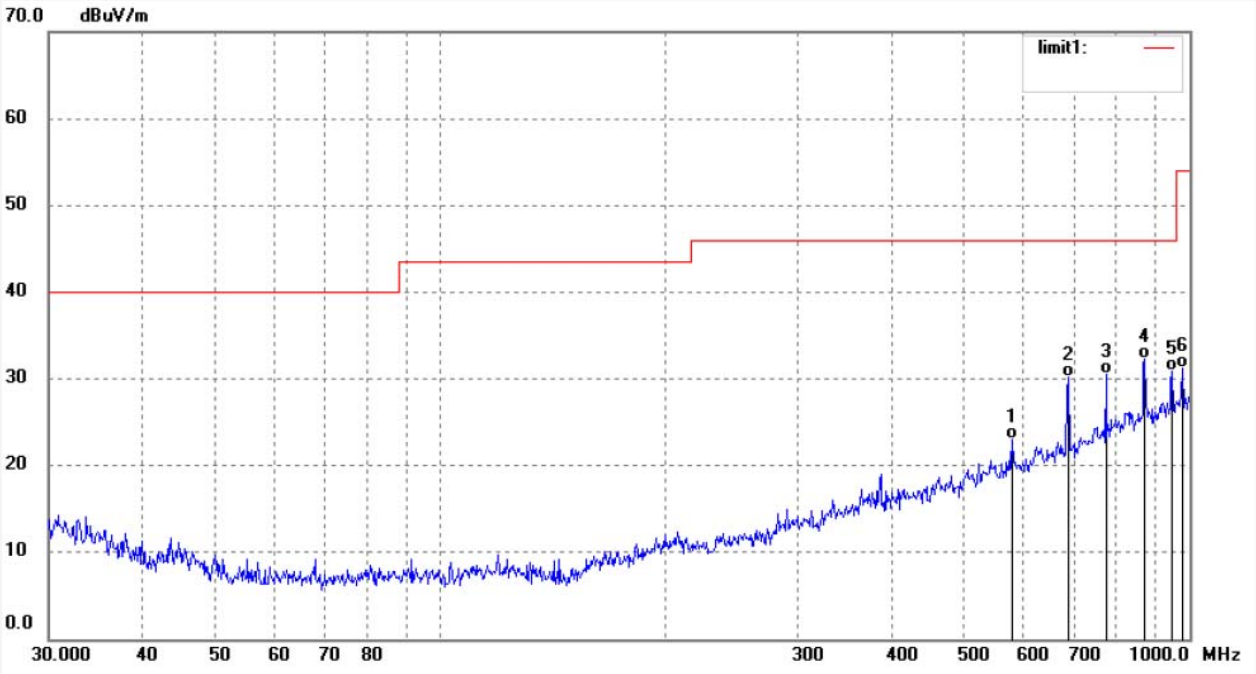
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	195.1830	38.68	-24.62	14.06	43.50	-29.44	QP	100	331	
2	243.5431	36.85	-23.69	13.16	46.00	-32.84	QP	100	96	
3	502.2472	35.82	-16.26	19.56	46.00	-26.44	QP	100	21	
4	773.7612	35.23	-9.71	25.52	46.00	-20.48	QP	100	221	
5	821.3871	36.38	-8.58	27.80	46.00	-18.20	QP	100	63	
6	868.8859	36.17	-7.72	28.45	46.00	-17.55	QP	100	103	

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.: FRANK2019 #1244
Standard: FCC Part 15C 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: T720 Trainer radio conctrol airplane
Mode: TX 2452MHz
Model: T720
Manufacturer: Zhongshan Langyu Model Co.,Ltd

Polarization: Horizontal
Power Source: DC 6V
Date: 19/07/12/
Time: 10/39/06
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20191029

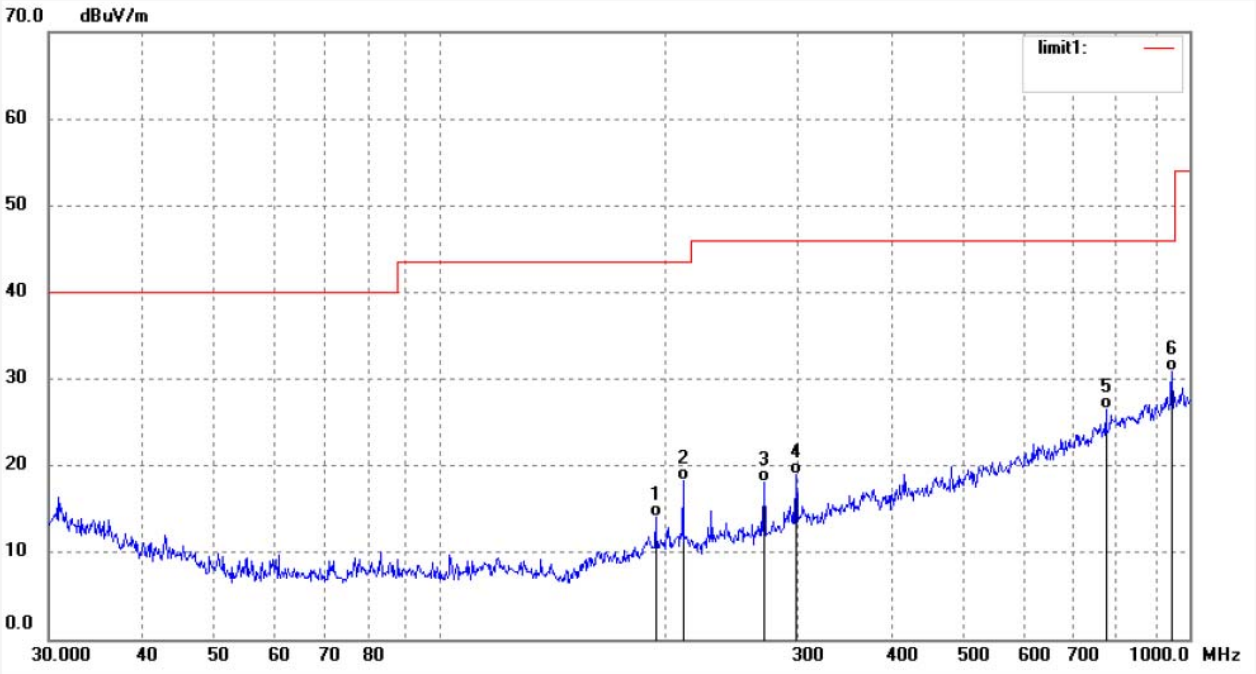


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	580.0705	37.04	-14.11	22.93	46.00	-23.07	QP	200	207	
2	689.0510	41.94	-11.72	30.22	46.00	-15.78	QP	200	301	
3	773.7612	40.23	-9.71	30.52	46.00	-15.48	QP	200	10	
4	871.9442	39.99	-7.67	32.32	46.00	-13.68	QP	200	201	
5	948.6609	37.32	-6.35	30.97	46.00	-15.03	QP	200	52	
6	979.1391	36.87	-5.58	31.29	54.00	-22.71	QP	200	193	

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.: FRANK2019 #1245	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/42/13
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2452MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029



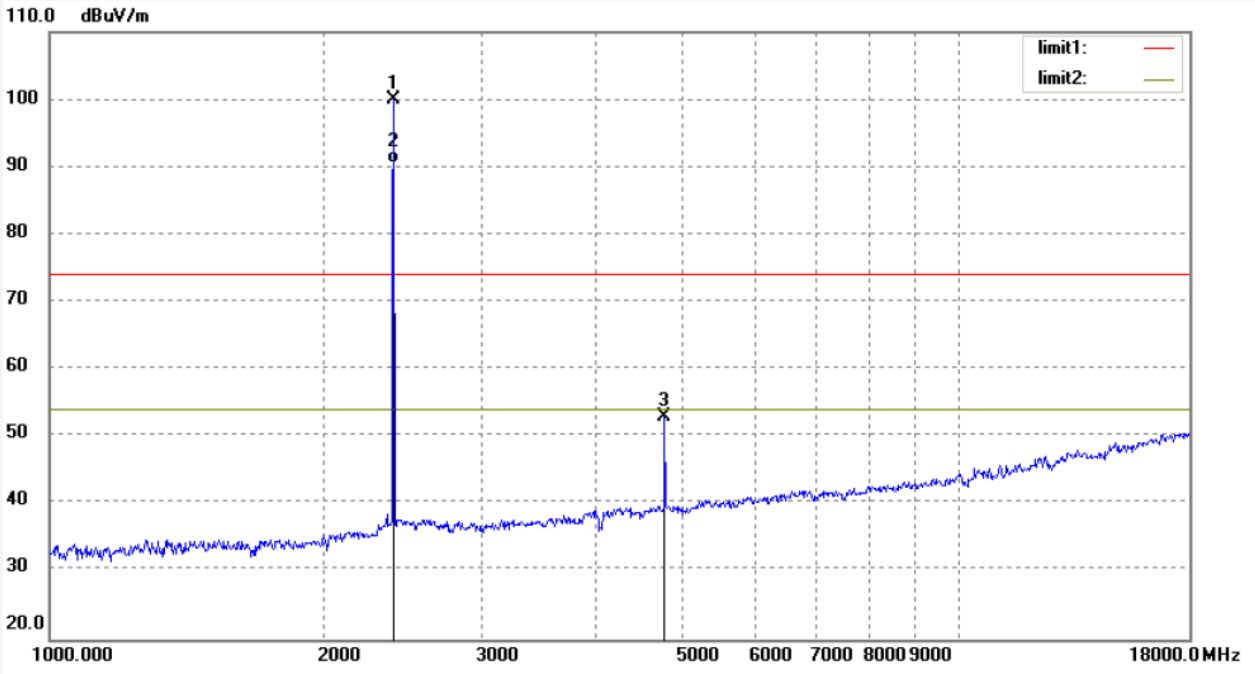
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	193.8163	38.86	-24.75	14.11	43.50	-29.39	QP	100	109	
2	210.8689	42.38	-24.10	18.28	43.50	-25.22	QP	100	33	
3	270.6161	40.69	-22.55	18.14	46.00	-27.86	QP	100	166	
4	298.5932	40.20	-21.28	18.92	46.00	-27.08	QP	100	360	
5	773.7612	36.28	-9.71	26.57	46.00	-19.43	QP	100	212	
6	948.6609	37.22	-6.35	30.87	46.00	-15.13	QP	100	231	

1GHz-18GHz test data

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.: FRANK2019 #1246	Polarization: Horizontal
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/46/18
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2413MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

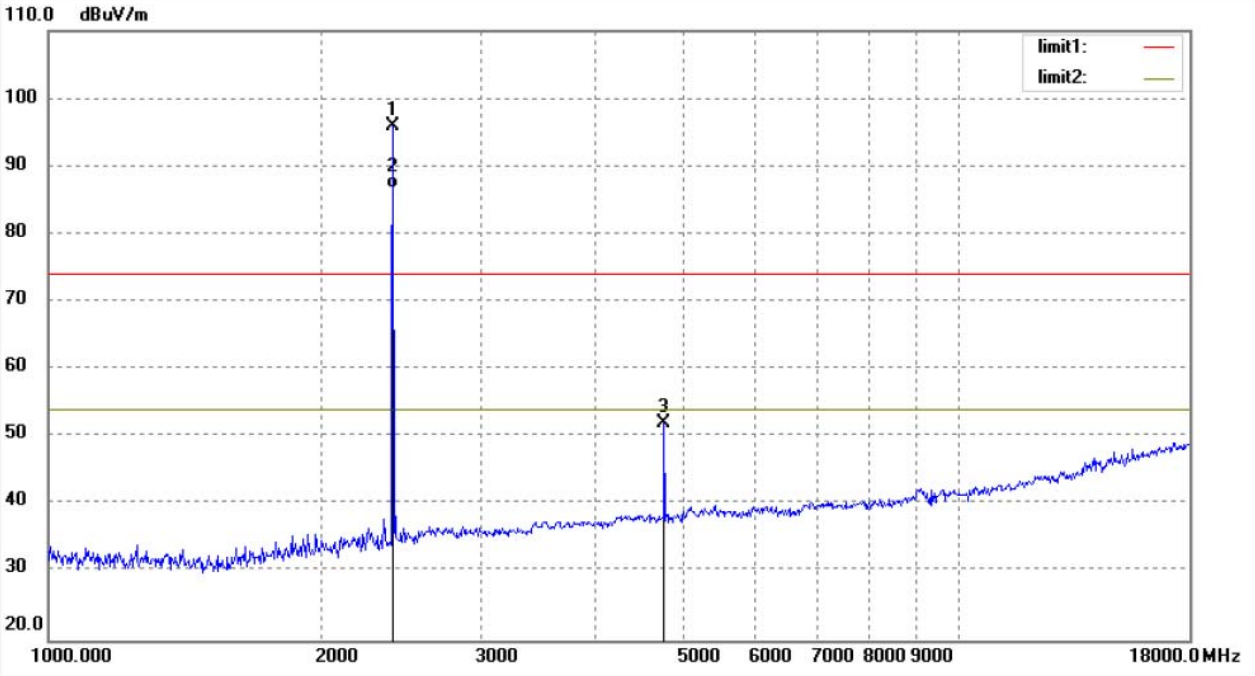


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2413.019	106.38	-6.29	100.09	114.00	-13.91	peak	200	120	
2	2413.019	96.77	-6.29	90.48	94.00	-3.52	AVG	200	341	
3	4759.584	52.22	0.82	53.04	74.00	-20.96	peak	200	331	

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.: FRANK2019 #1247	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/47/13
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2413MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029



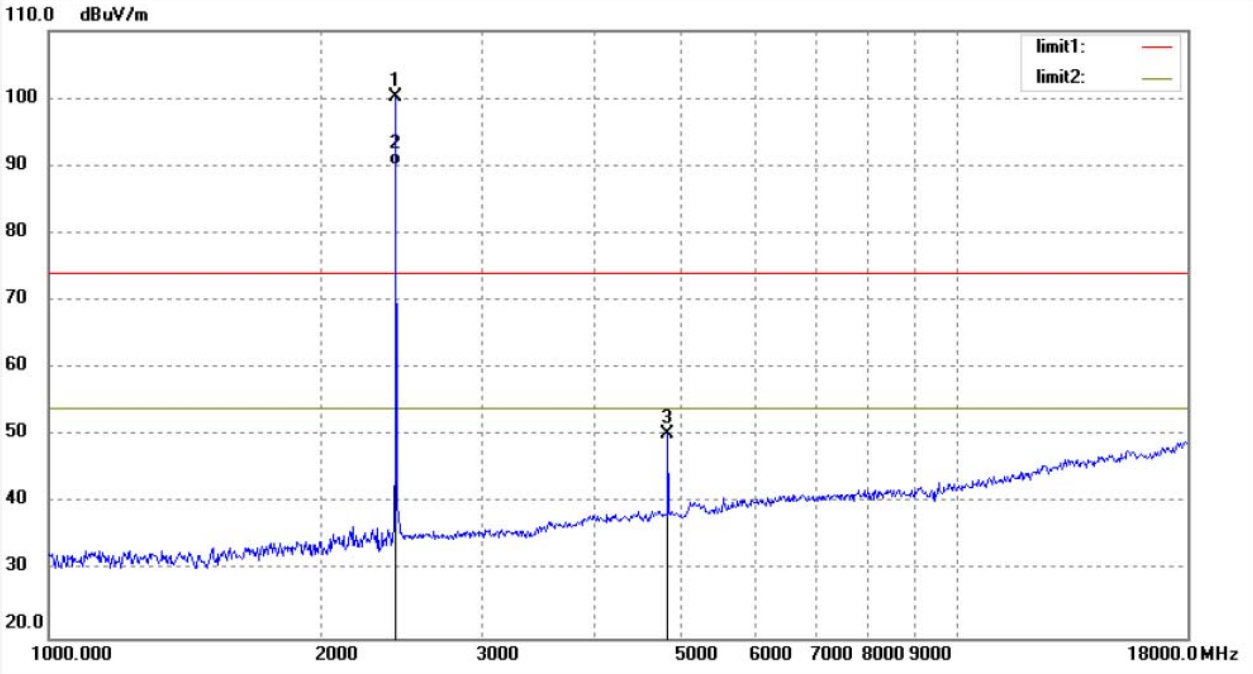
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2413.019	102.30	-6.29	96.01	114.00	-17.99	peak	150	196	
2	2413.001	93.00	-6.29	86.71	94.00	-7.29	AVG	150	315	
3	4759.584	51.25	0.82	52.07	74.00	-21.93	peak	150	63	

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.: FRANK2019 #1248
Standard: FCC Part 15C 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: T720 Trainer radio conctrol airplane
Mode: TX 2439MHz
Model: T720
Manufacturer: Zhongshan Langyu Model Co.,Ltd

Polarization: Horizontal
Power Source: DC 6V
Date: 19/07/12/
Time: 10/48/34
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20191029

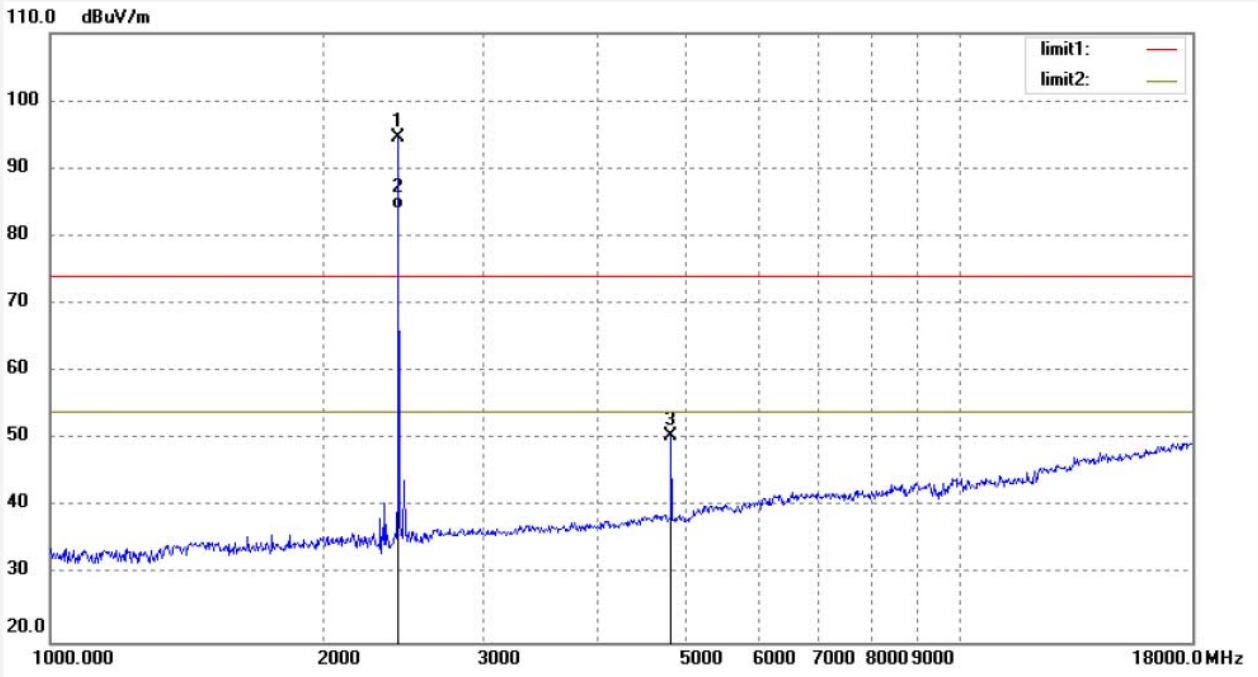


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2439.021	106.37	-6.20	100.17	114.00	-13.83	peak	150	251	
2	2439.002	96.20	-6.20	90.00	94.00	-4.00	AVG	150	341	
3	4815.324	49.16	1.07	50.23	74.00	-23.77	peak	150	193	

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.: FRANK2019 #1249	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/49/39
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2439MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

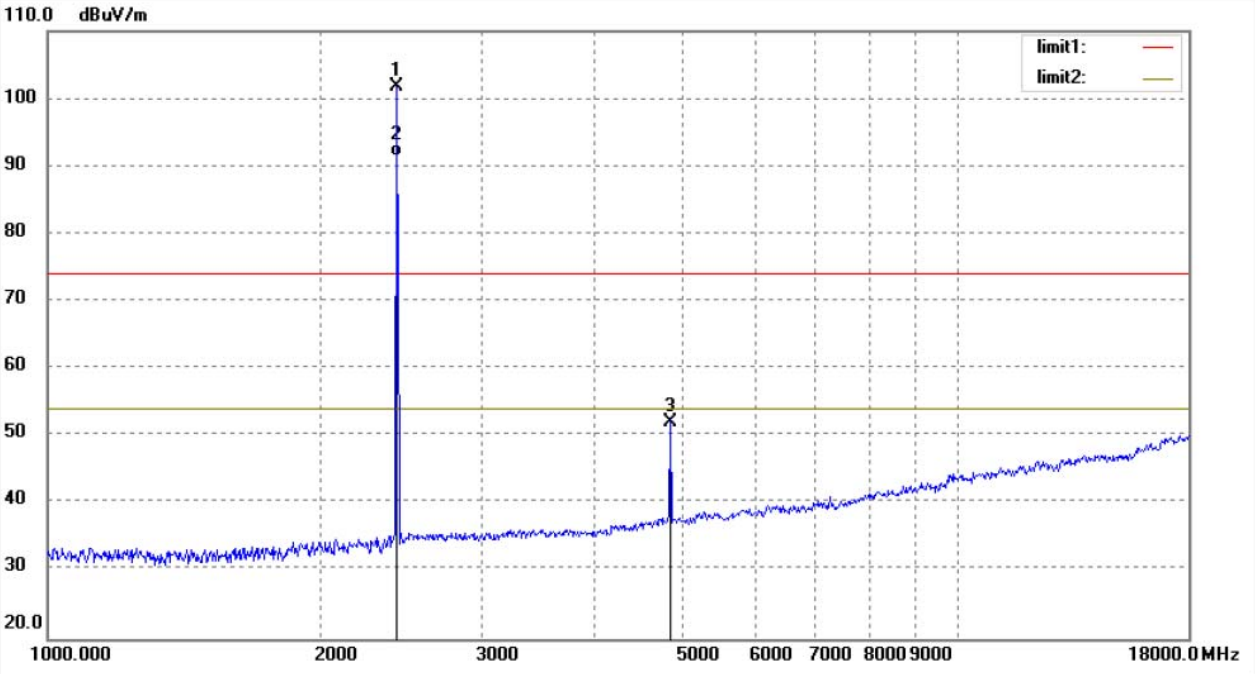


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2439.021	100.77	-6.20	94.57	114.00	-19.43	peak	250	109	
2	2439.001	90.32	-6.20	84.12	94.00	-9.88	AVG	200	135	
3	4815.324	49.45	1.07	50.52	74.00	-23.48	peak	200	66	

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.: FRANK2019 #1250	Polarization: Horizontal
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/51/12
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2452MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029

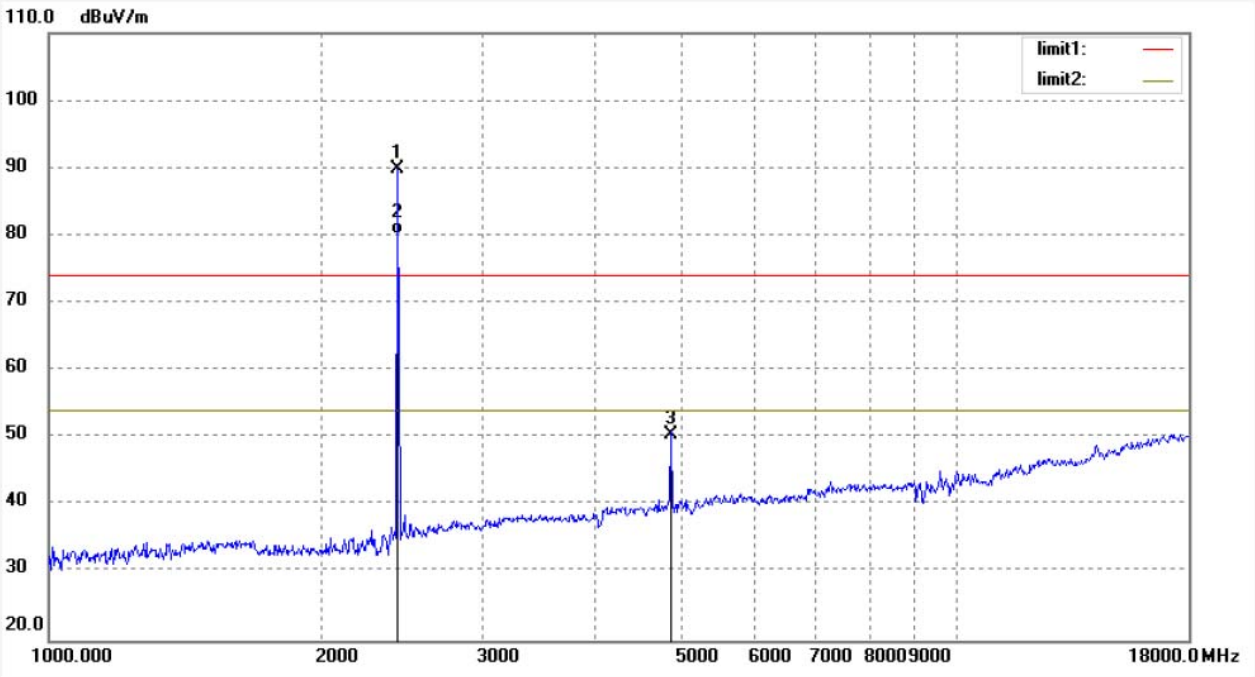


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2452.062	107.97	-6.17	101.80	114.00	-12.20	peak	200	112	
2	2452.002	97.62	-6.17	91.45	94.00	-2.55	AVG	200	188	
3	4843.438	50.90	1.19	52.09	74.00	-21.91	peak	200	193	

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.: FRANK2019 #1251	Polarization: Vertical
Standard: FCC Part 15C 3M Radiated	Power Source: DC 6V
Test item: Radiation Test	Date: 19/07/12/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 10/52/52
EUT: T720 Trainer radio conctrol airplane	Engineer Signature:
Mode: TX 2452MHz	Distance: 3m
Model: T720	
Manufacturer: Zhongshan Langyu Model Co.,Ltd	

Note: Report NO.:ATE20191029



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2452.002	96.03	-6.17	89.86	114.00	-24.14	peak	150	33	
2	2452.001	86.32	-6.17	80.15	94.00	-13.85	AVG	150	315	
3	4843.438	49.30	1.19	50.49	74.00	-23.51	peak	150	109	

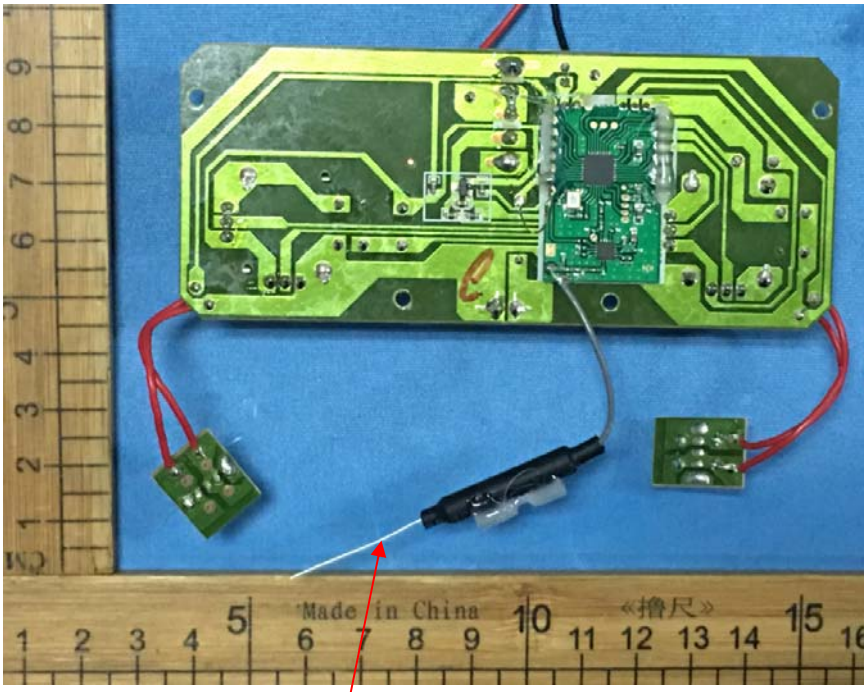
9. ANTENNA REQUIREMENT

9.1.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.

9.2.Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



2.4G Antenna

******* End of Test Report *******