FCC REPORT
(WIFI)

Applicant:	HEFEI IFLYTEK TOYCLOUD TECHNOLOGY CO., LTD.
Address of Applicant:	FLOOR 13, XUNFEI BUILDING, NO.666 WANGJIANG ROAD, HIGH & NEW TECHNOLOGY DEVELOPMENT ZONE. HEFEI. CHINA

Equipment Under Test (EUT)

Product Name:	YiBei translating machine
Model No.:	TYFY1
Trade mark:	iFLYTEK
FCC ID:	2AOHC-TYFY1
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247
Date of sample receipt:	01 Dec., 2017
Date of Test:	01 Dec., 2017 to 23 Jan., 2018
Date of report issued:	24 Jan., 2018
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	24 Jan., 2018	*Original*

Tested by: Carey Chen ***Date:*** *24 Jan., 2018*

Test Engineer

Reviewed by: Winner Zhang ***Date:*** *24 Jan., 2018*

Project Engineer

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 ENVIRONMENT AND TEST MODE 6
5.4 DESCRIPTION OF SUPPORT UNITS 6
5.5 MEASUREMENT UNCERTAINTY 6
5.6 LABORATORY FACILITY 7
5.7 LABORATORY LOCATION 7
5.8 TEST INSTRUMENTS LIST 8
6 TEST RESULTS AND MEASUREMENT DATA 9
6.1 ANTENNA REQUIREMENT 9
6.2 CONDUCTED EMISSION 10
6.3 CONDUCTED OUTPUT POWER 13
6.4 OCCUPY BANDWIDTH 14
6.5 POWER SPECTRAL DENSITY 17
6.6 BAND EDGE 19
6.6.1 Conducted Emission Method 19
6.6.2 Radiated Emission Method 21
6.7 SPURIOUS EMISSION 30
6.7.1 Conducted Emission Method 30
6.7.2 Radiated Emission Method 32
7 TEST SETUP PHOTO 38
8 EUT CONSTRUCTIONAL DETAILS 40

4 Test Summary

Test Items	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Conducted and Radiated Spurious Emission	15.205/15.209	Pass
Pass: The EUT complies with the essential requirements in the standard.		

5 General Information

5.1 Client Information

Applicant:	HEFEI IFLYTEK TOYCLOUD TECHNOLOGY CO., LTD
Address:	FLOOR 13, XUNFEI BUILDING, NO.666 WANGJIANG ROAD, HIGH & NEW TECHNOLOGY DEVELOPMENT ZONE. HEFEI. CHINA
Manufacturer:	SHENZHEN SILICON ELECTRONICS CO,LTD DONGGUAN BRANCH OFFICE
Address:	5B, PiINGSHANYANTANG ROAD, TANGXIA TOWN, DONGGUAN, CHINA

5.2 General Description of E.U.T.

Product Name:	YiBei translating machine
Model No.:	TYFY1
Operation Frequency:	2412MHz~2462MHz (802.11b/802.11g)
Channel numbers:	11 for 802.11b/802.11g
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
Antenna Type:	PCB Antenna
Antenna gain:	1.2dBi
Power supply:	Rechargeable Li-ion Battery DC4.2V-1400mAh

Operation Frequency each of channel for 802.11b/g							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:
1. Channel 1, 6 & 11 selected for 802.11b/g as Lowest, Middle and Highest channel.

5.3 Test environment and test mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode	Keep the EUT in continuous transmitting with modulation

The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) 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, 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.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate, the follow list were the worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
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)

5.6 Laboratory Facility

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

- **FCC - Registration No.: 727551**

Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.

- **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.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.7 Laboratory Location

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
Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

5.8 Test Instruments list

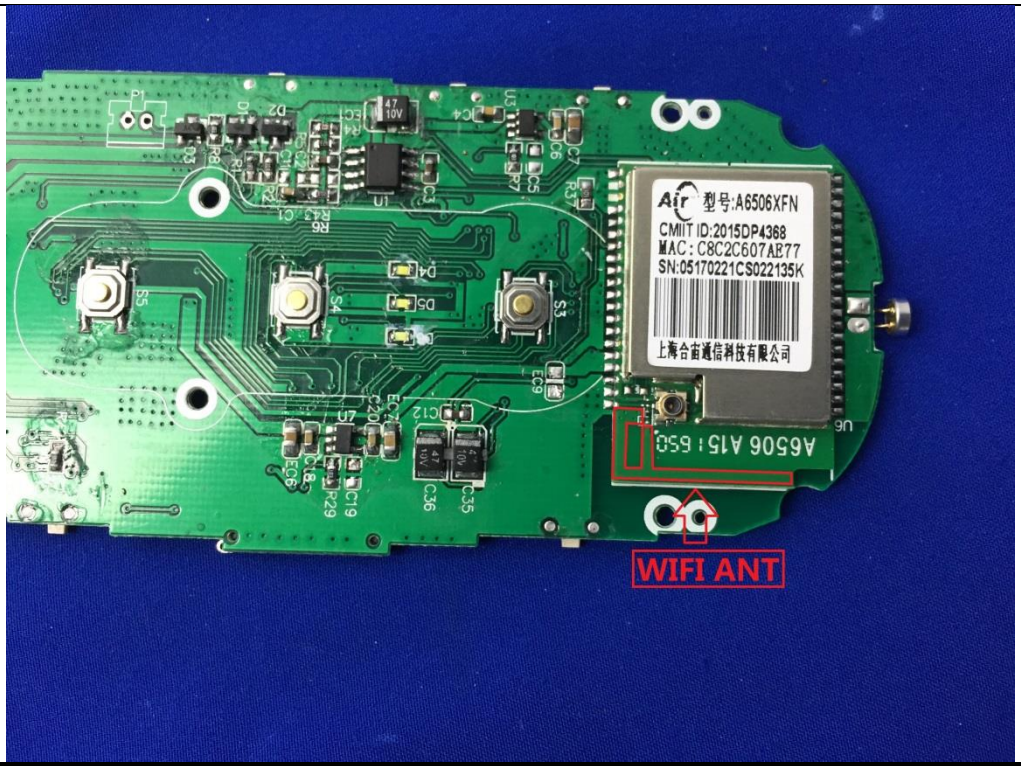
Radiated Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	02-25-2017	02-24-2018
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	02-25-2017	02-24-2018
Horn Antenna	SCHWARZBECK	BBHA9120D	916	02-25-2017	02-24-2018
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A
Pre-amplifier	HP	8447D	2944A09358	02-25-2017	02-24-2018
Pre-amplifier	CD	PAP-1G18	11804	02-25-2017	02-24-2018
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	02-25-2017	02-24-2018
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	02-25-2017	02-24-2018
Cable	ZDECL	Z108-NJ-NJ-81	1608458	02-25-2017	02-24-2018
Cable	MICRO-COAX	MFR64639	K10742-5	02-25-2017	02-24-2018
Cable	SUHNER	SUCOFLEX100	58193/4PE	02-25-2017	02-24-2018

Conducted Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	02-25-2017	02-24-2018
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	02-25-2017	02-24-2018
LISN	CHASE	MN2050D	1447	02-25-2017	02-24-2018
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2017	07-20-2018
Cable	HP	10503A	N/A	02-25-2017	02-24-2018
EMI Test Software	AUDIX	E3	6.110919b	N/A	N/A

6 Test results and Measurement Data

6.1 Antenna requirement

Standard requirement:	FCC Part 15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(c) (1)(i) requirement: (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.	
E.U.T Antenna:	
The WiFi antenna is an PCB antenna which cannot replace by end-user, the best case gain of the antenna is 1.2 dBi.	



6.2 Conducted Emission

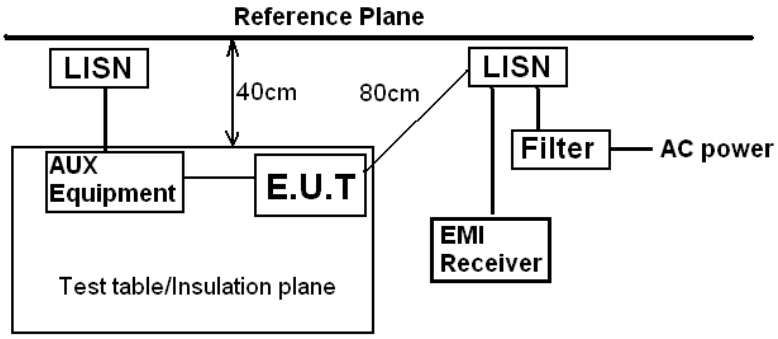
Test Requirement:	FCC Part 15 C Section 15.207
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	150 kHz to 30 MHz
Class / Severity:	Class B
Receiver setup:	RBW=9 kHz, VBW=30 kHz
Limit:	

Frequency range (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

Test procedure

1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment.
2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).
3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Test setup:

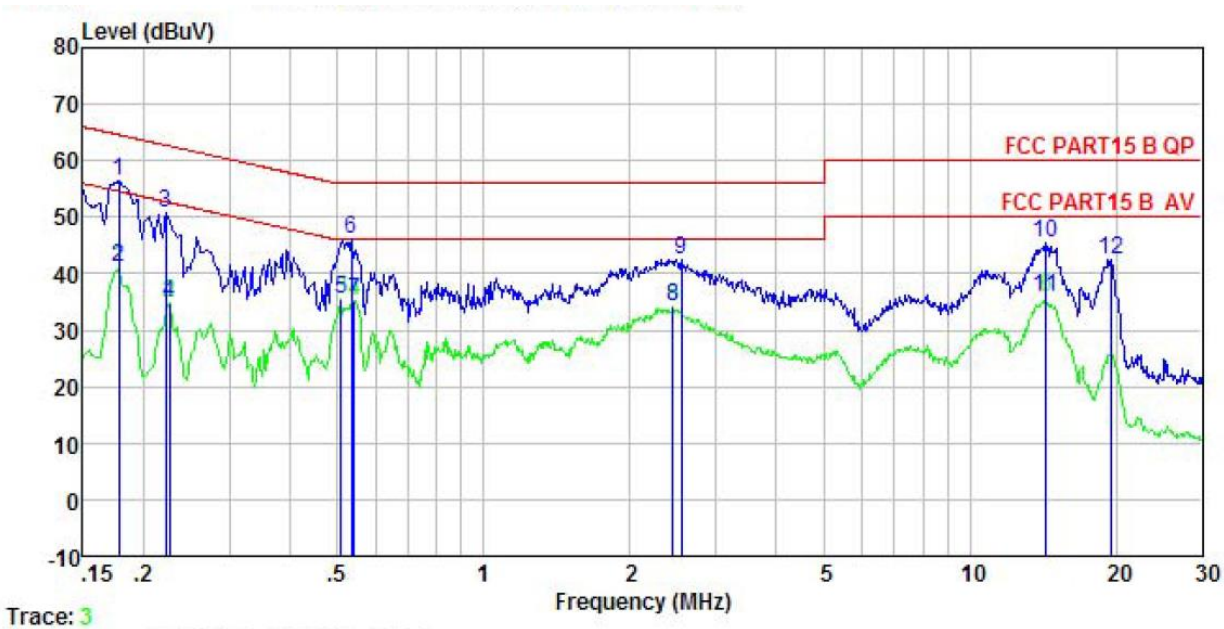


Remark:
E.U.T: Equipment Under Test
LISN: Line Impedence Stabilization Network
Test table height=0.8m

Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

Neutral:



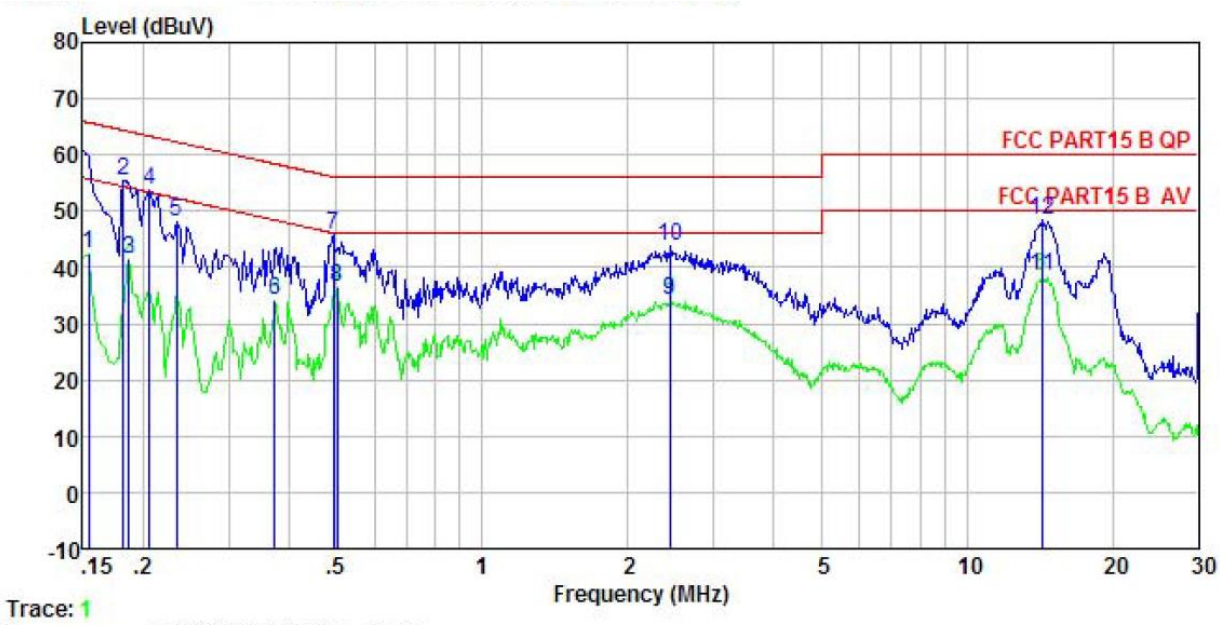
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN(RS) NEUTRAL
EUT : YiBei translating machine
Model : TYFY1
Test Mode : WIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Yaro
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.178	44.98	0.66	10.77	56.41	64.59	-8.18	QP
2	0.178	29.67	0.66	10.77	41.10	54.59	-13.49	Average
3	0.222	39.40	0.66	10.76	50.82	62.74	-11.92	QP
4	0.226	23.58	0.66	10.75	34.99	52.61	-17.62	Average
5	0.510	24.09	0.61	10.76	35.46	46.00	-10.54	Average
6	0.535	34.88	0.62	10.76	46.26	56.00	-9.74	QP
7	0.541	23.92	0.62	10.76	35.30	46.00	-10.70	Average
8	2.448	22.49	0.67	10.94	34.10	46.00	-11.90	Average
9	2.554	30.96	0.68	10.94	42.58	56.00	-13.42	QP
10	14.288	33.99	0.69	10.90	45.58	60.00	-14.42	QP
11	14.364	24.21	0.69	10.90	35.80	50.00	-14.20	Average
12	19.532	30.83	0.69	10.93	42.45	60.00	-17.55	QP

Notes:

1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

Line:



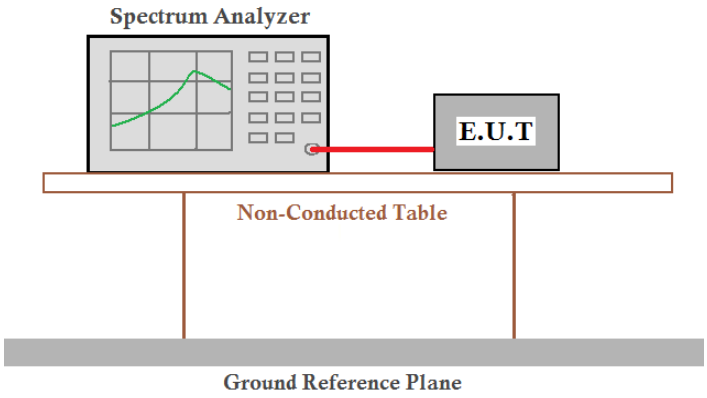
Site : CCIS Shielding Room
Condition : FCC PART15 B QP LISN(RS) LINE
EUT : YiBei translating machine
Model : TYFY1
Test Mode : WIFI mode
Power Rating : AC 120/60Hz
Environment : Temp: 23 ℃ Huni:56% Atmos:101KPa
Test Engineer: Yaro
Remark :

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	30.90	0.71	10.78	42.39	55.78	-13.39	Average
2	0.182	43.95	0.73	10.77	55.45	64.42	-8.97	QP
3	0.186	30.08	0.73	10.76	41.57	54.20	-12.63	Average
4	0.206	42.13	0.73	10.76	53.62	63.36	-9.74	QP
5	0.234	36.72	0.74	10.75	48.21	62.30	-14.09	QP
6	0.373	22.68	0.75	10.73	34.16	48.43	-14.27	Average
7	0.494	34.36	0.76	10.76	45.88	56.10	-10.22	QP
8	0.502	24.84	0.76	10.76	36.36	46.00	-9.64	Average
9	2.435	22.51	0.78	10.94	34.23	46.00	-11.77	Average
10	2.448	32.04	0.78	10.94	43.76	56.00	-12.24	QP
11	14.288	26.95	0.70	10.90	38.55	50.00	-11.45	Average
12	14.364	36.74	0.70	10.90	48.34	60.00	-11.66	QP

Notes:

1. *An initial pre-scan was performed on the live and neutral lines with peak detector.*
2. *Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.*
3. *Final Level =Receiver Read level + LISN Factor + Cable Loss.*

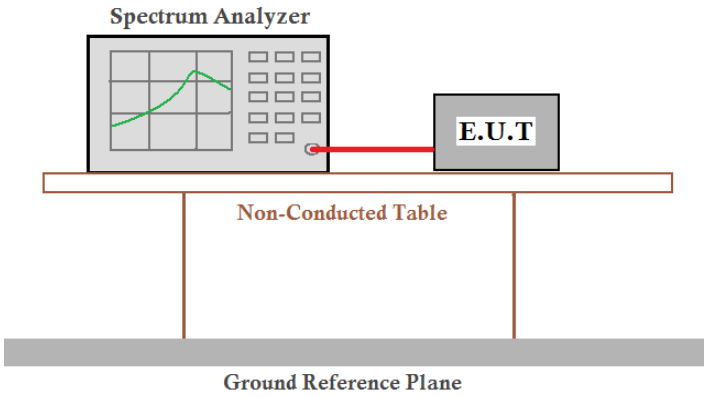
6.3 Conducted Output Power

Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 9.2.2.2
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

Test CH	Maximum Conducted Output Power (dBm)		Limit(dBm)	Result
	802.11b	802.11g		
Lowest	13.56	12.08	30.00	Pass
Middle	12.74	11.14		
Highest	11.95	10.31		

6.4 Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 8.1
Limit:	>500kHz
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

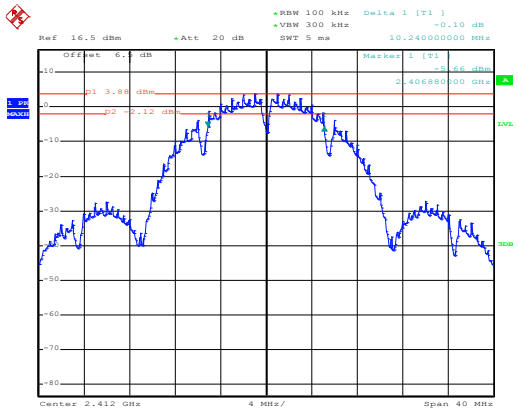
Measurement Data:

Test CH	6dB Emission Bandwidth (MHz)		Limit(kHz)	Result
	802.11b	802.11g		
Lowest	10.24	16.48	>500	Pass
Middle	10.24	16.48		
Highest	10.24	16.48		
Test CH	99% Occupy Bandwidth (MHz)		Limit(kHz)	Result
	802.11b	802.11g		
Lowest	15.60	16.48	N/A	N/A
Middle	15.52	16.64		
Highest	15.44	16.64		

Test plot as follows:

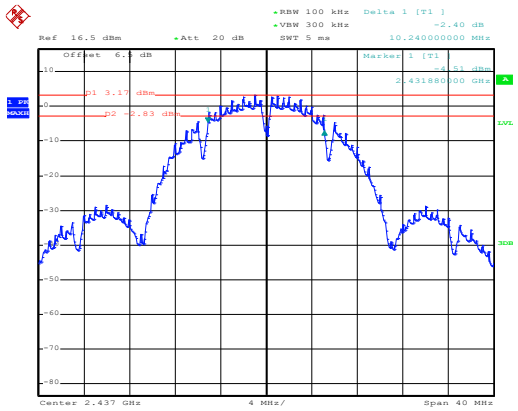
802.11b

6dB EBW



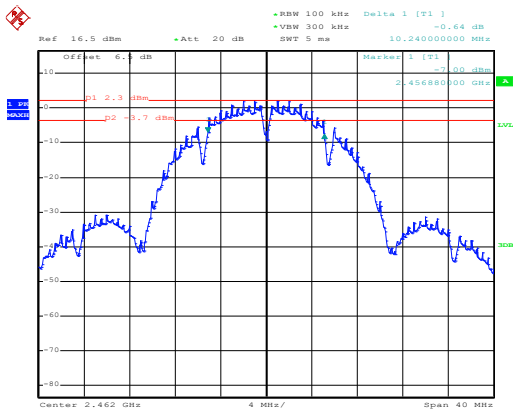
Date: 4.DEC.2017 10:25:25

Lowest channel



Date: 4.DEC.2017 10:29:22

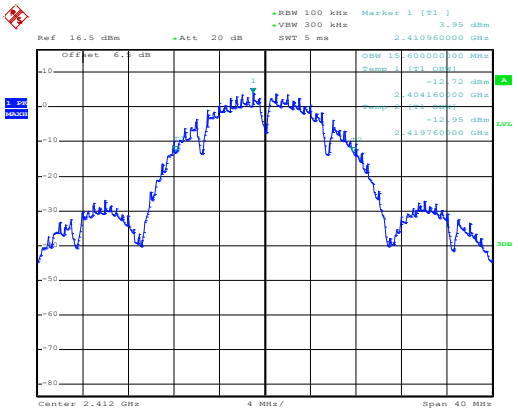
Middle channel



Date: 4.DEC.2017 10:32:32

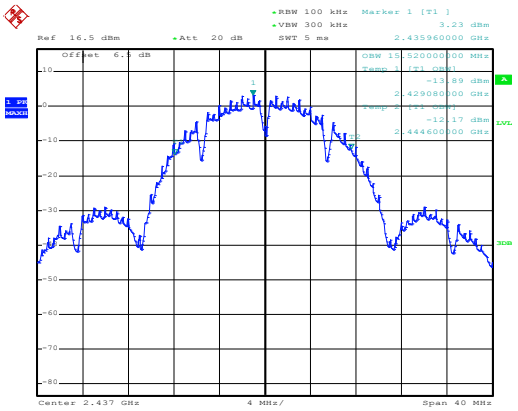
Highest channel

99% OBW



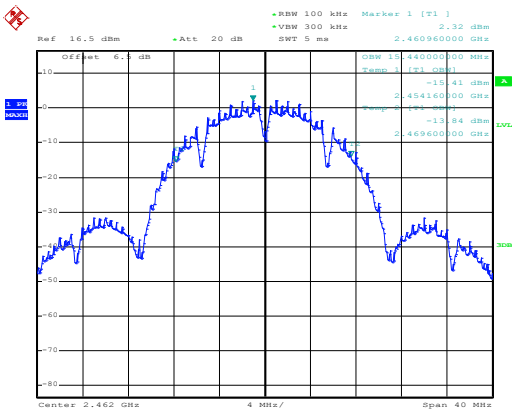
Date: 4.DEC.2017 10:14:49

Lowest channel



Date: 4.DEC.2017 10:16:42

Middle channel

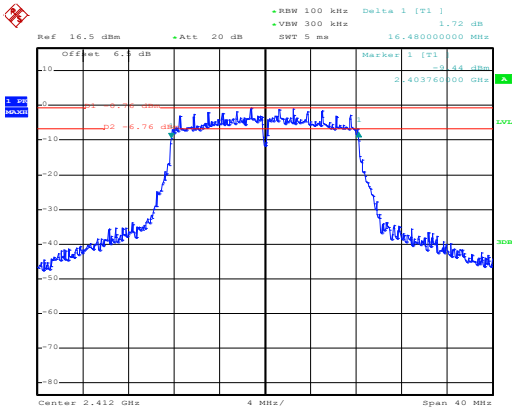


Date: 4.DEC.2017 10:17:22

Highest channel

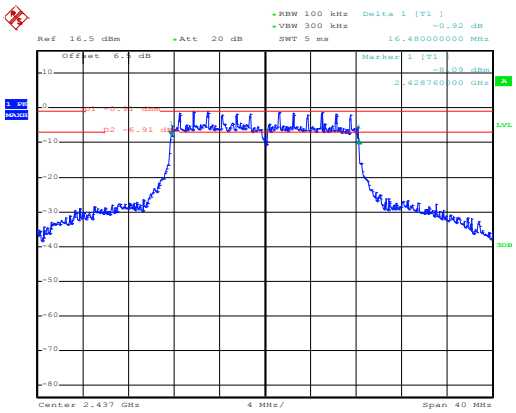
802.11g

6dB EBW



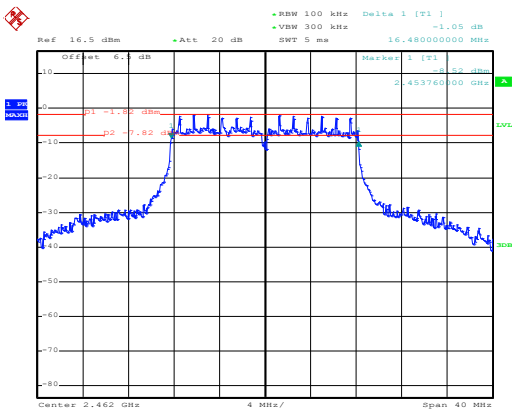
Date: 4.DEC.2017 10:26:28

Lowest channel



Date: 4.DEC.2017 10:23:11

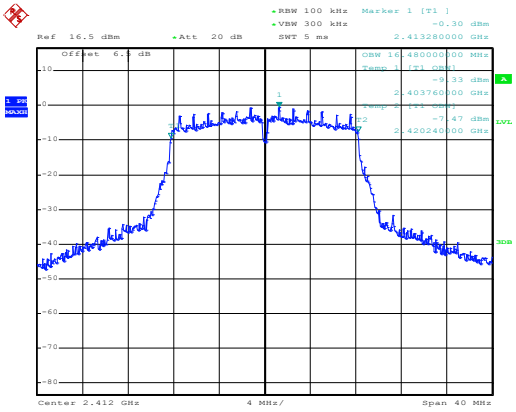
Middle channel



Date: 4.DEC.2017 10:20:33

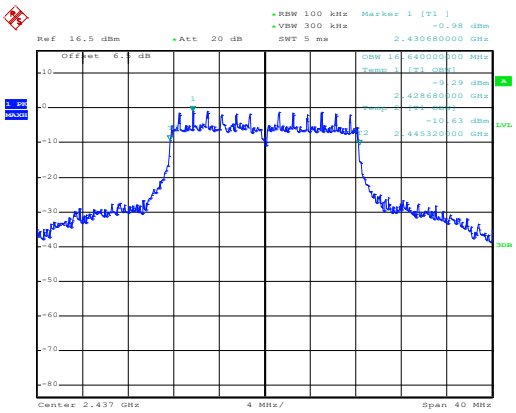
Highest channel

99% OBW



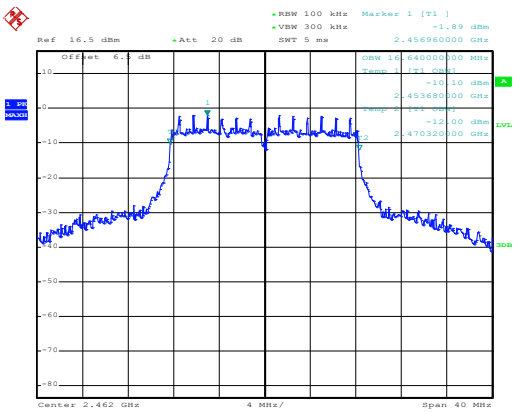
Date: 4.DEC.2017 10:27:00

Lowest channel



Date: 4.DEC.2017 10:18:28

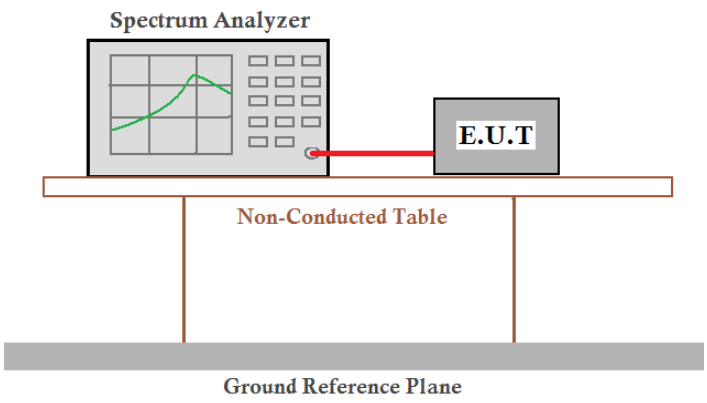
Middle channel



Date: 4.DEC.2017 10:18:58

Highest channel

6.5 Power Spectral Density

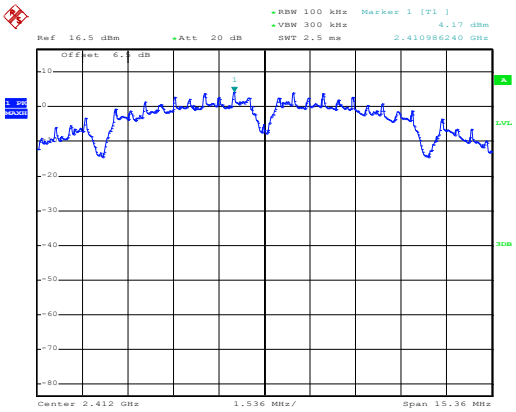
Test Requirement:	FCC Part 15 C Section 15.247 (e)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 10.2
Limit:	8dBm
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Measurement Data:

Test CH	Power Spectral Density (dBm)		Limit(dBm)	Result
	802.11b	802.11g		
Lowest	4.17	-0.02	8.00	Pass
Middle	3.47	-0.85		
Highest	2.54	-1.78		

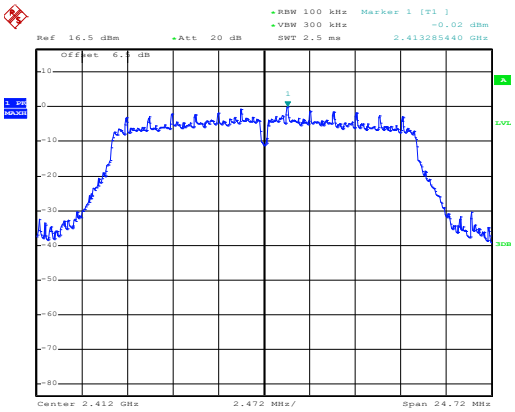
Test plot as follows:

Test mode: 802.11b



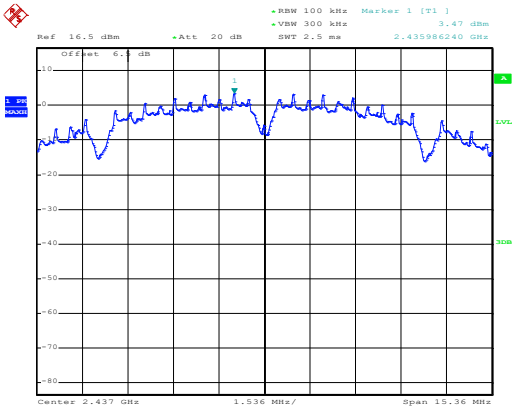
Date: 4.DEC.2017 10:41:03

Test mode: 802.11g



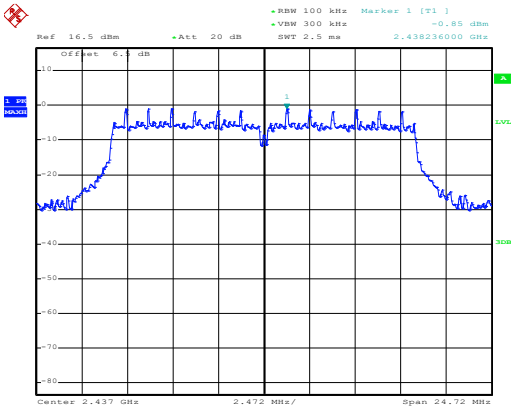
Date: 4.DEC.2017 10:28:18

Lowest channel



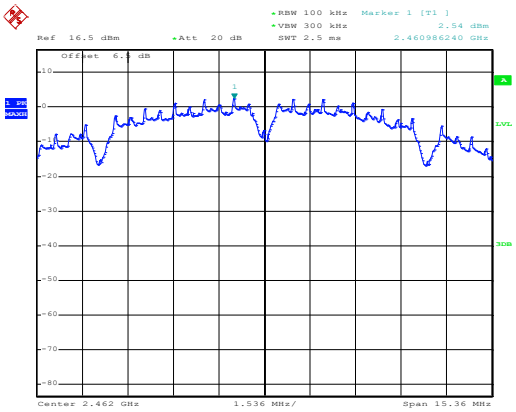
Date: 4.DEC.2017 10:41:18

Lowest channel



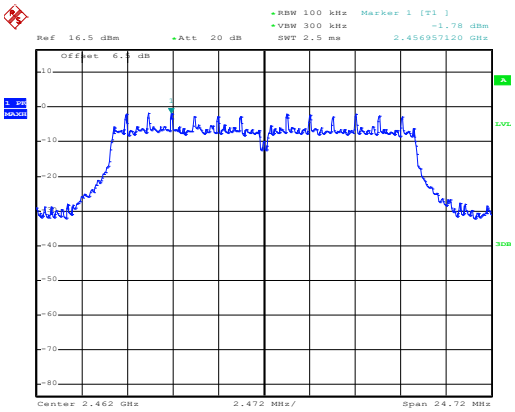
Date: 4.DEC.2017 10:43:30

Middle channel



Date: 4.DEC.2017 10:42:17

Middle channel



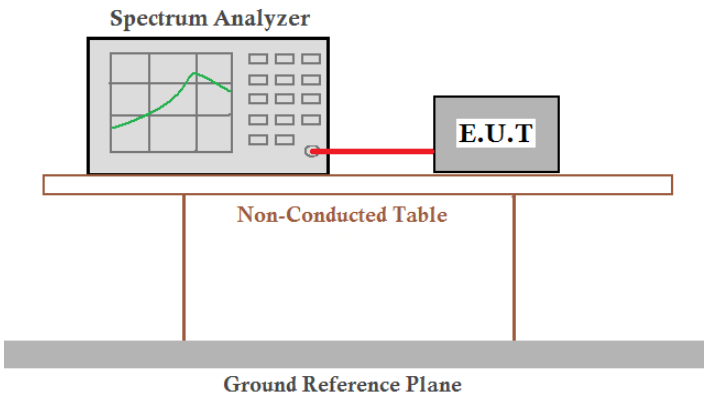
Date: 4.DEC.2017 10:43:54

Highest channel

Highest channel

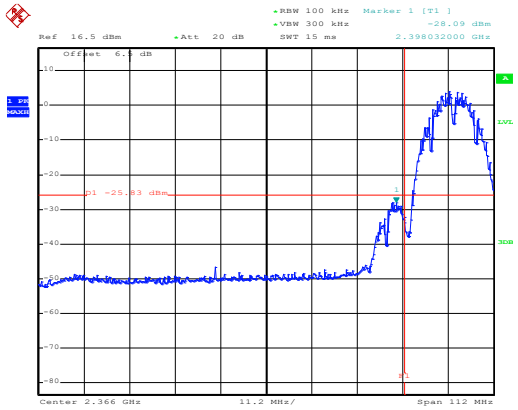
6.6 Band Edge

6.6.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 13
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 30 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:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

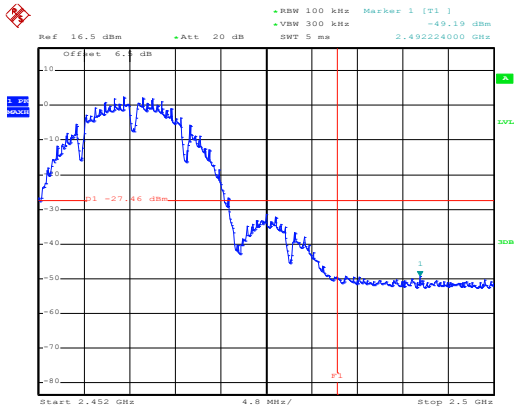
Test plot as follows:

802.11b



Date: 4.DEC.2017 10:52:01

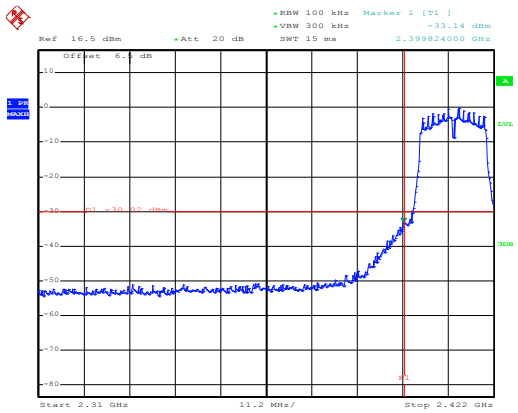
Lowest channel



Date: 4.DEC.2017 10:52:56

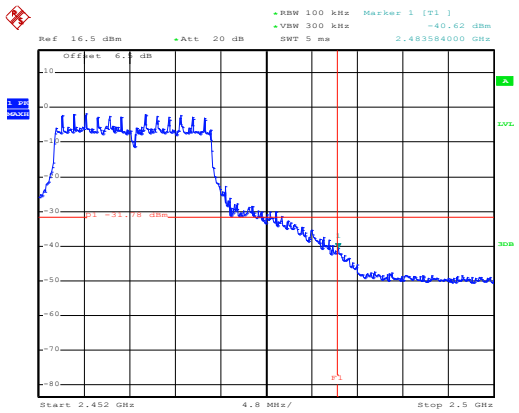
Highest channel

802.11g



Date: 4.DEC.2017 10:29:37

Lowest channel



Date: 4.DEC.2017 10:53:58

Highest channel

6.6.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013 and KDB558074 D01 DTS Meas Guidance v04 section 12.1
Test Frequency Range:	2.3GHz to 2.5GHz
Test Distance:	3m
Receiver setup:	

Frequency	Detector	RBW	VBW	Remark
Above 1GHz	Peak	1MHz	3MHz	Peak Value
	RMS	1MHz	3MHz	Average Value

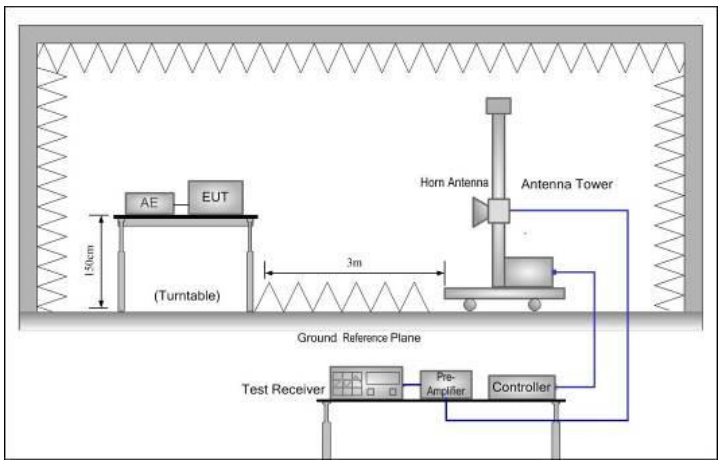
Limit:

Frequency	Limit (dBuV/m @3m)	Remark
Above 1GHz	54.00	Average Value
	74.00	Peak Value

Test Procedure:

1. The EUT was placed on the top of a rotating table 1.5 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 setup:

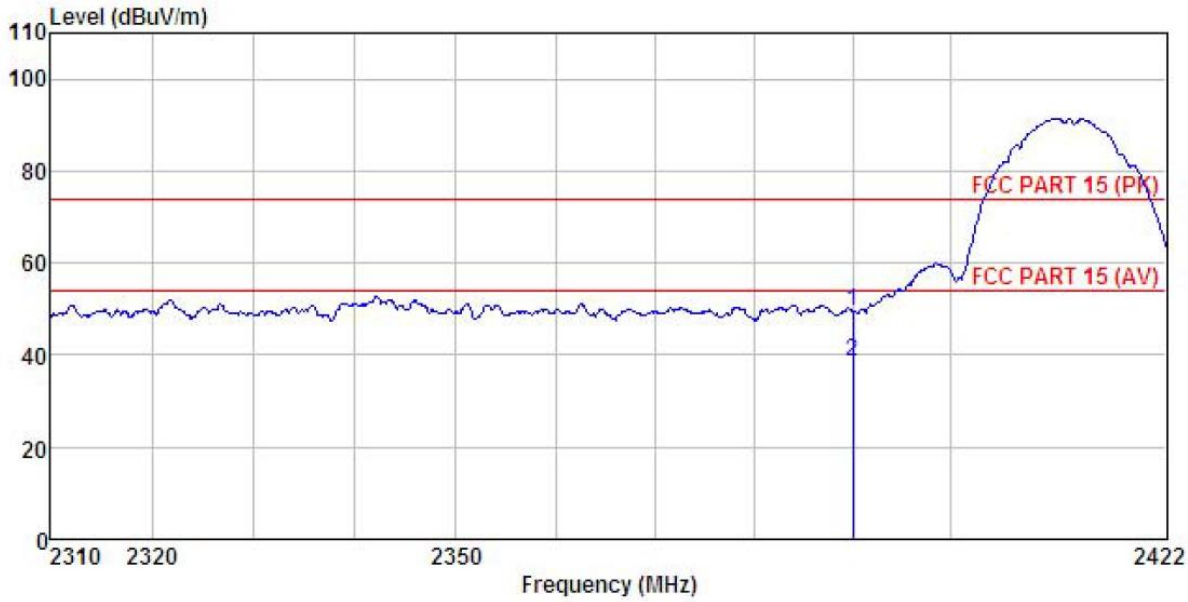


Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

802.11b

Test channel: Lowest

Horizontal:



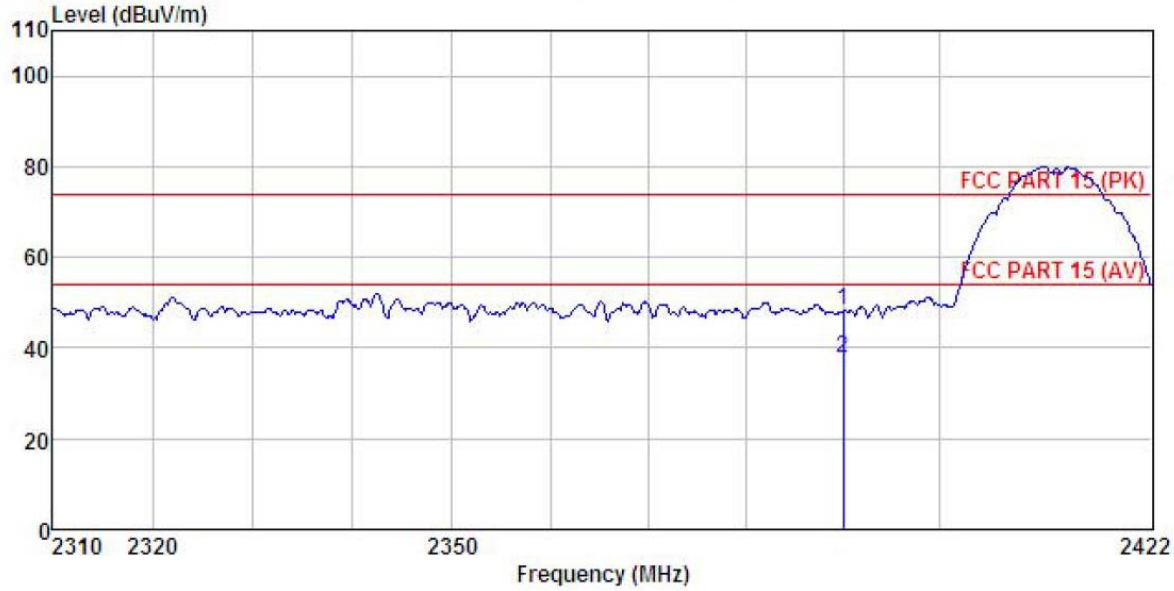

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11b-L   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
                  ReadAntenna  Cable    Aux Preamp         Limit   Over
           Freq  Level Factor   Loss Factor Factor  Level   Line  Limit Remark
      --------- ------ ------ ------ ------ ------ ------ ------ ------ ----------
            MHz   dBuV   dB/m     dB     dB     dB dBuV/m dBuV/m     dB

  1    2390.000  19.36  25.45   4.69   0.00   0.00  49.50  74.00 -24.50 Peak
  2    2390.000   8.45  25.45   4.69   0.00   0.00  38.59  54.00 -15.41 Average
```

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT : YiBei translating machine
Model : TYFY1
Test mode : 802.11b-L Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Yoar
REMARK :

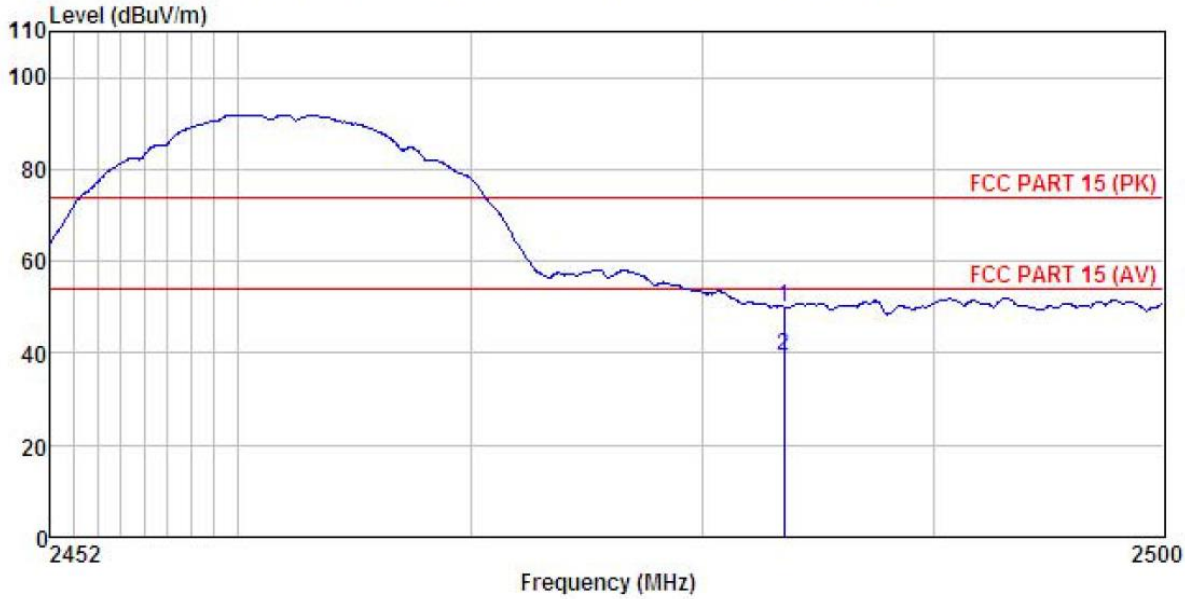
	Freq	ReadLevel	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	18.31	25.45	4.69	0.00	0.00	48.45	74.00	-25.55	Peak
2	2390.000	7.44	25.45	4.69	0.00	0.00	37.58	54.00	-16.42	Average

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel: Highest

Horizontal:

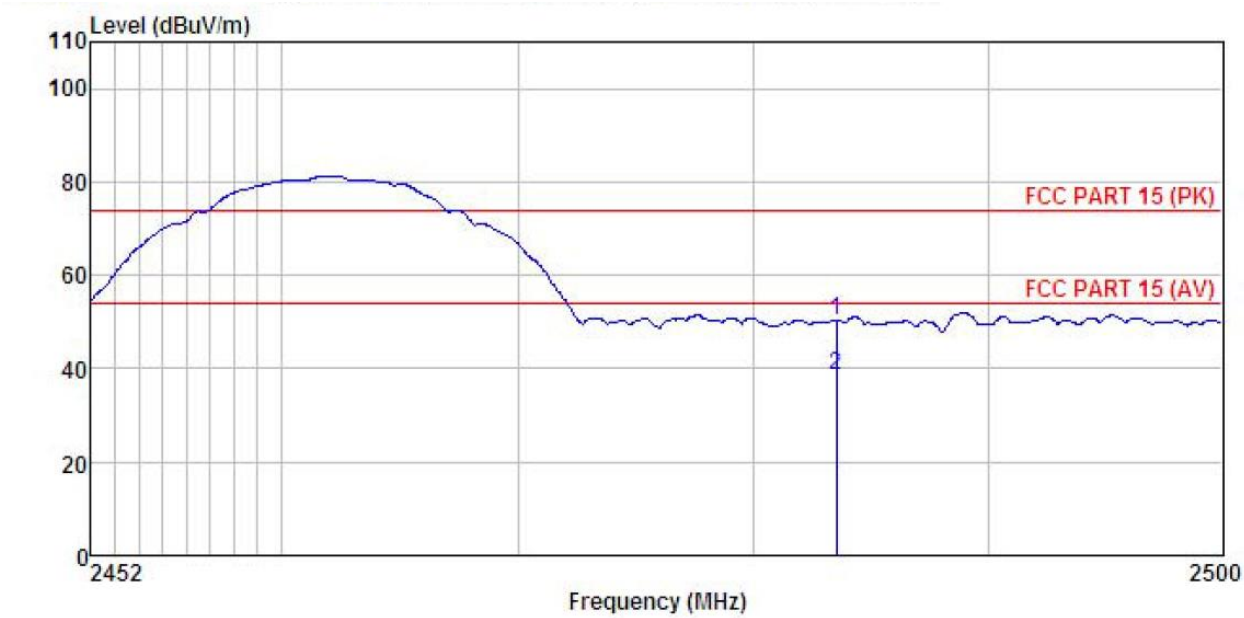



```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11b-H   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
                  ReadAntenna  Cable    Aux Preamp         Limit   Over
           Freq  Level Factor   Loss Factor Factor  Level   Line  Limit Remark
        --------- ------ ------ ------ ------ ------ ------ ------ ------ ----------
                MHz   dBuV   dB/m     dB     dB     dB dBuV/m dBuV/m     dB
  1    2483.500  19.57  25.66   4.81   0.00   0.00  50.04  74.00 -23.96 Peak
  2    2483.500   9.04  25.66   4.81   0.00   0.00  39.51  54.00 -14.49 Average
```

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Vertical:




```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11b-H   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
```

	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	19.81	25.66	4.81	0.00	0.00	50.28	74.00	-23.72	Peak
2	2483.500	7.99	25.66	4.81	0.00	0.00	38.46	54.00	-15.54	Average

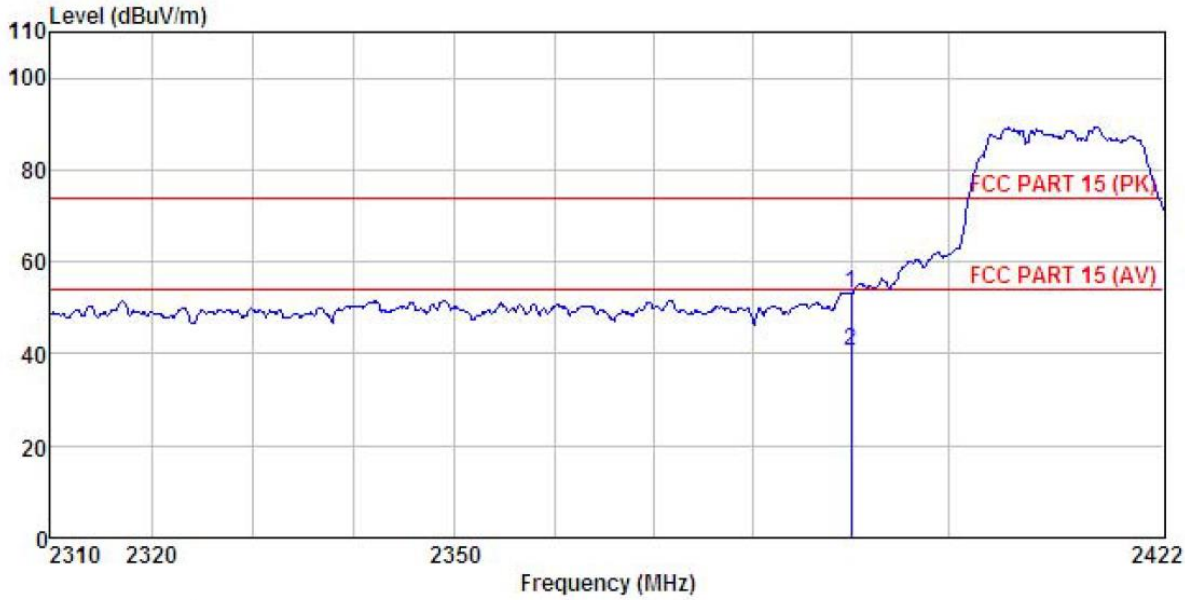
Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

802.11g

Test channel: Lowest

Horizontal:



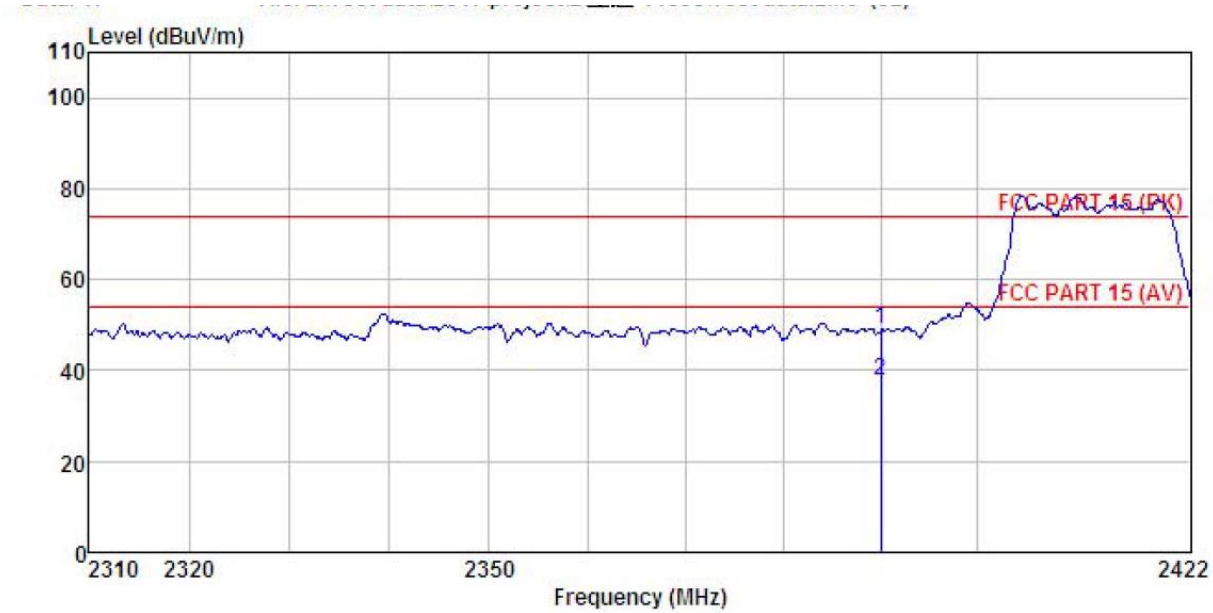

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11g-L   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
                 ReadAntenna  Cable    Aux Preamp         Limit   Over
          Freq  Level Factor   Loss Factor Factor  Level   Line  Limit Remark
     --------- ------ ------ ------ ------ ------ ------ ------ ------ ----------
           MHz   dBuV   dB/m     dB     dB     dB dBuV/m dBuV/m     dB

  1   2390.000  23.00  25.45   4.69   0.00   0.00  53.14  74.00 -20.86 Peak
  2   2390.000  10.61  25.45   4.69   0.00   0.00  40.75  54.00 -13.25 Average
```

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Vertical:



Site : 3m chamber
Condition : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT : YiBei translating machine
Model : TYFY1
Test mode : 802.11g-L Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Yoar
REMARK :

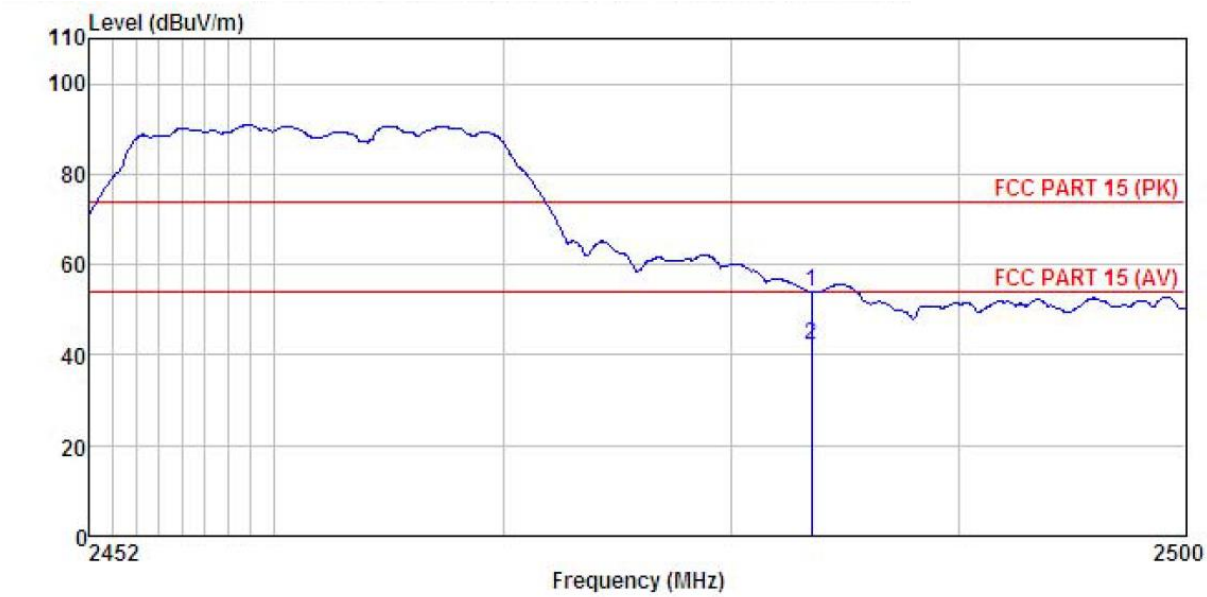
	Freq	ReadLevel	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	2390.000	18.83	25.45	4.69	0.00	0.00	48.97	74.00	-25.03	Peak
2	2390.000	7.71	25.45	4.69	0.00	0.00	37.85	54.00	-16.15	Average

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Test channel: Highest

Horizontal:

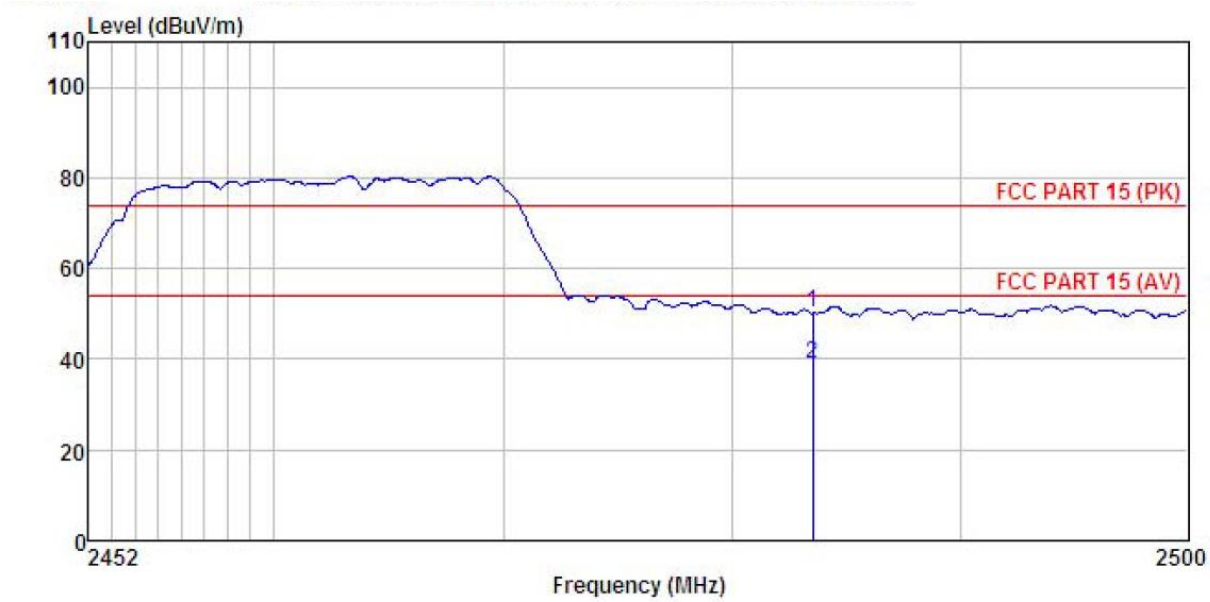



```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) HORIZONTAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11g-H   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
                  ReadAntenna  Cable    Aux Preamp         Limit   Over
           Freq  Level Factor   Loss Factor Factor  Level   Line  Limit Remark
        --------- ------ ------ ------ ------ ------ ------ ------ ------ ----------
               MHz   dBuV   dB/m     dB     dB     dB dBuV/m dBuV/m     dB
  1    2483.500  23.36  25.66   4.81   0.00   0.00  53.83  74.00 -20.17 Peak
  2    2483.500  11.89  25.66   4.81   0.00   0.00  42.36  54.00 -11.64 Average
```

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

Vertical:



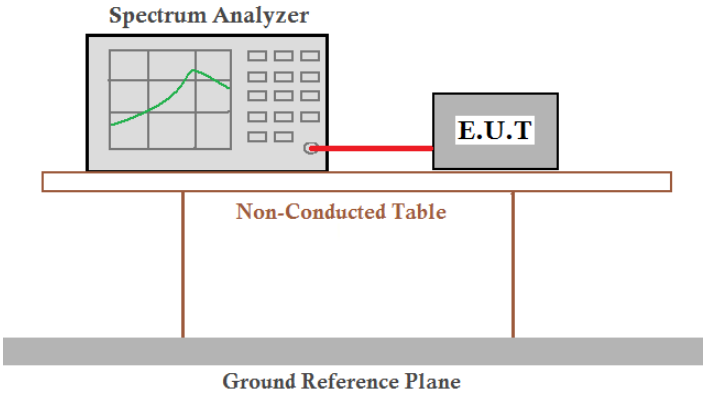

```
Site          : 3m chamber
Condition     : FCC PART 15 (PK) 3m BBHA9120(1G18G) VERTICAL
EUT           : YiBei translating machine
Model         : TYFY1
Test mode     : 802.11g-H   Mode
Power Rating  : AC 120V/60Hz
Environment   : Temp:25.5℃  Huni:55%
Test Engineer: Yoar
REMARK        :
                 ReadAntenna  Cable    Aux Preamp         Limit   Over
           Freq  Level Factor   Loss Factor Factor  Level   Line  Limit Remark
        --------- ------ ------ ------ ------ ------ ------ ------ ------ ----------
               MHz   dBuV   dB/m     dB     dB     dB dBuV/m dBuV/m     dB
  1    2483.500  19.67  25.66   4.81   0.00   0.00  50.14  74.00 -23.86 Peak
  2    2483.500   8.37  25.66   4.81   0.00   0.00  38.84  54.00 -15.16 Average
```

Remark:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

6.7 Spurious Emission

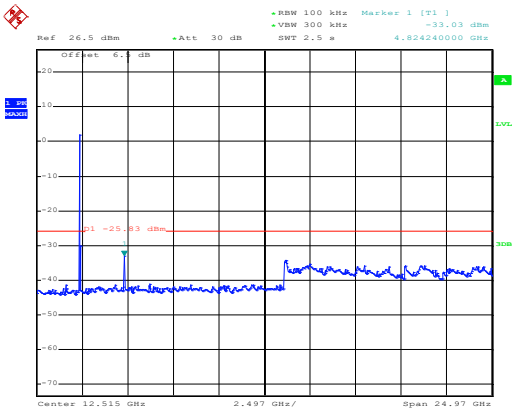
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 DTS Meas Guidance v04 section 11
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. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph(b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.
Test setup:	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

Test plot as follows:

Test mode: 802.11b

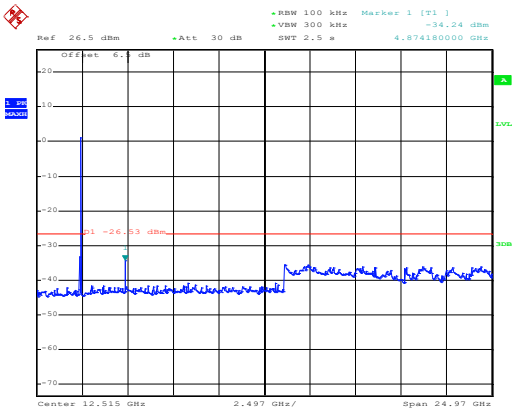
Lowest channel



Date: 4.DEC.2017 11:12:36

30MHz~25GHz

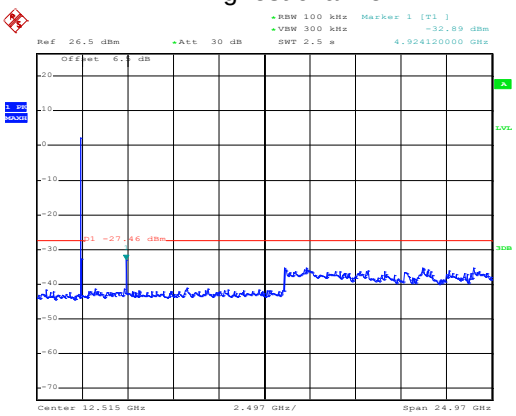
Middle channel



Date: 4.DEC.2017 11:13:16

30MHz~25GHz

Highest channel

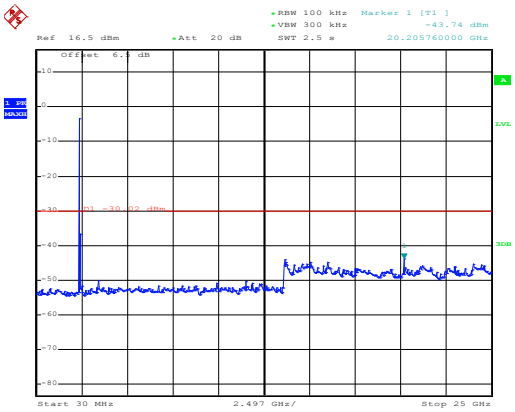


Date: 4.DEC.2017 11:13:47

30MHz~25GHz

Test mode: 802.11g

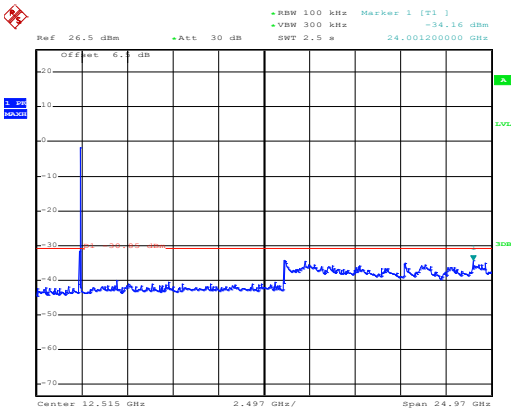
Lowest channel



Date: 4.DEC.2017 10:30:29

30MHz~25GHz

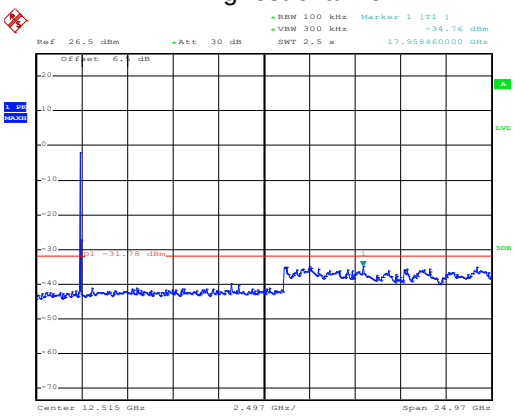
Middle channel



Date: 4.DEC.2017 11:16:18

30MHz~25GHz

Highest channel



Date: 4.DEC.2017 11:14:59

30MHz~25GHz

6.7.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205
Test Method:	ANSI C63.10:2013
Test Frequency Range:	9kHz to 25GHz
Test 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
	RMS	1MHz	3MHz	Average Value

Limit:

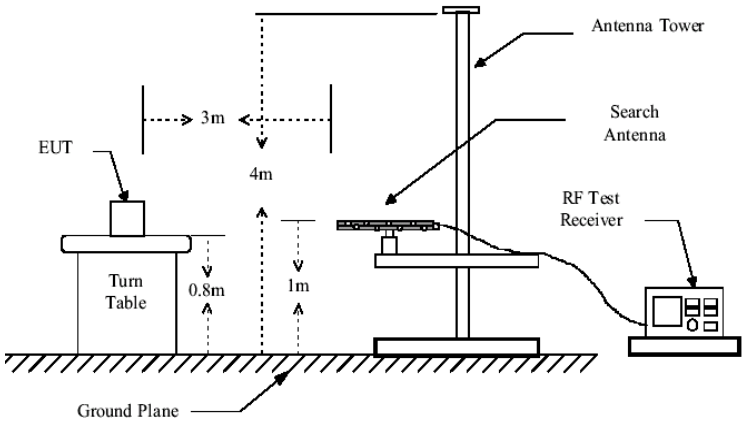
Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

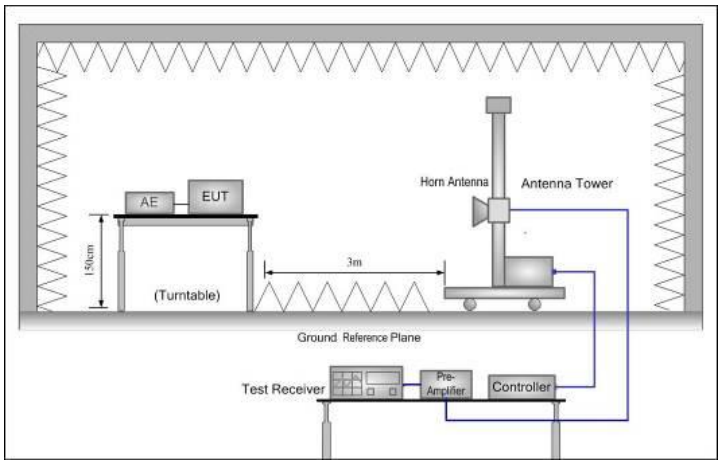
Test Procedure:

1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. 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 setup:

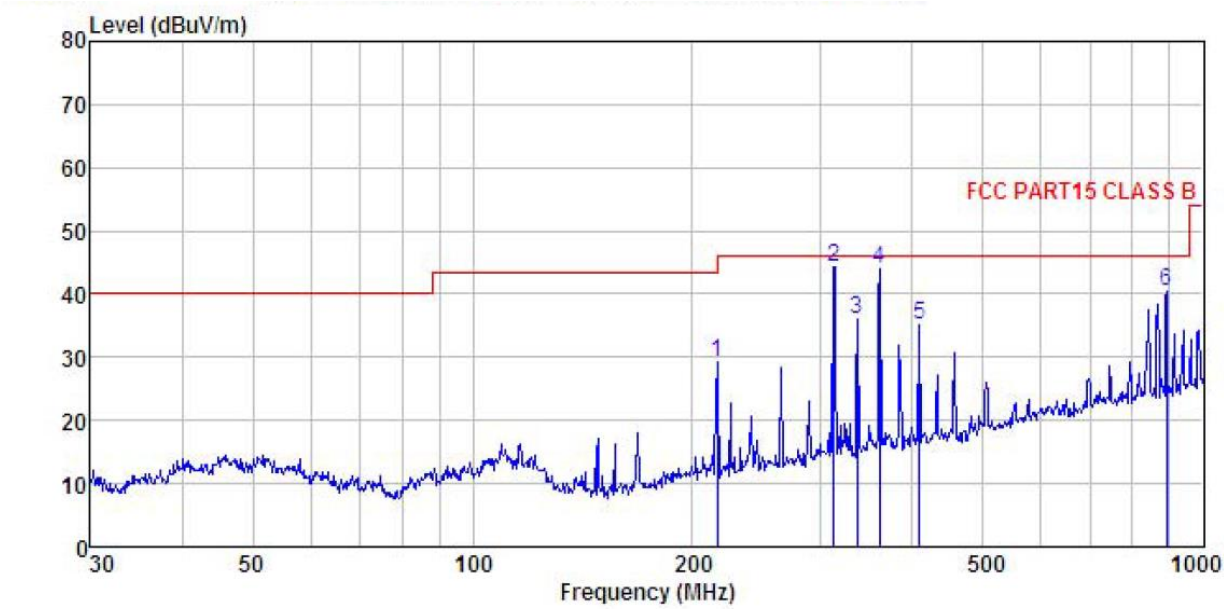
Below 1GHz



	Above 1GHz 
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
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. 2. 9 kHz to 30MHz is too low, so only shows the data of above 30MHz in this report.

Below 1GHz

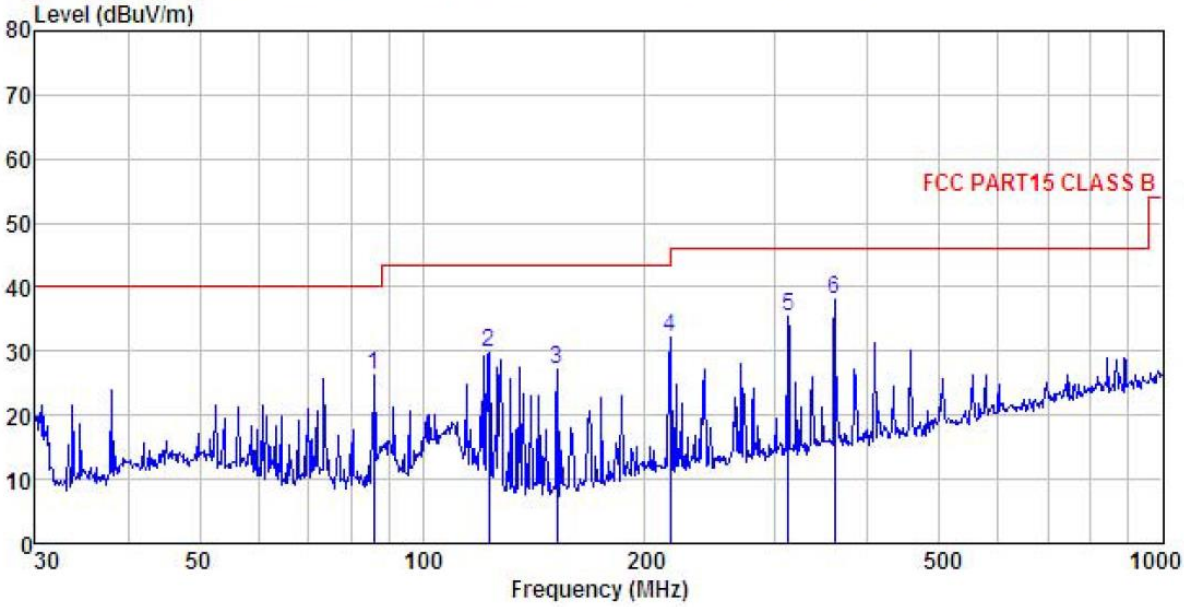
Horizontal:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) HORIZONTAL
EUT : YiBei translating machine
Model : TYFY1
Test mode : WIFI Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Yoar
REMARK :

	Freq	ReadLevel	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	216.024	43.73	11.30	2.85	0.00	28.73	29.15	46.00	-16.85	QP
2	312.179	56.32	13.49	2.98	0.00	28.48	44.31	46.00	-1.69	QP
3	336.035	47.44	14.10	3.05	0.00	28.53	36.06	46.00	-9.94	QP
4	360.448	55.00	14.64	3.10	0.00	28.61	44.13	46.00	-1.87	QP
5	408.946	45.81	15.05	3.10	0.00	28.80	35.16	46.00	-10.84	QP
6	890.728	43.73	20.85	3.80	0.00	27.90	40.48	46.00	-5.52	QP

Vertical:



Site : 3m chamber
Condition : FCC PART15 CLASS B 3m VULB9163(30M2G) VERTICAL
EUT : YiBei translating machine
Model : TYFY1
Test mode : WIFI Mode
Power Rating : AC 120V/60Hz
Environment : Temp:25.5℃ Huni:55%
Test Engineer: Yoar
REMARK :

	Freq	Read Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	85.898	44.30	9.76	1.87	0.00	29.59	26.34	40.00	-13.66	QP
2	122.834	47.14	9.96	2.20	0.00	29.37	29.93	43.50	-13.57	QP
3	152.130	45.30	8.52	2.53	0.00	29.20	27.15	43.50	-16.35	QP
4	216.024	46.76	11.30	2.85	0.00	28.73	32.18	46.00	-13.82	QP
5	312.179	47.39	13.49	2.98	0.00	28.48	35.38	46.00	-10.62	QP
6	360.448	48.97	14.64	3.10	0.00	28.61	38.10	46.00	-7.90	QP

Above 1GHz

Test mode: 802.11b			Test channel: Lowest			Remark: 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)	Polar.
4824.00	47.76	36.06	6.81	41.82	48.81	74.00	-25.19	Vertical
4824.00	47.30	36.06	6.81	41.82	48.35	74.00	-25.65	Horizontal
Test mode: 802.11b			Test channel: Lowest			Remark: Average		
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)	Polar.
4824.00	38.52	36.06	6.81	41.82	39.57	54.00	-14.43	Vertical
4824.00	38.13	36.06	6.81	41.82	39.18	54.00	-14.82	Horizontal

Test mode: 802.11b			Test channel: Middle			Remark: 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)	Polar.
4874.00	46.64	36.32	6.85	41.84	47.97	74.00	-26.03	Vertical
4874.00	46.54	36.32	6.85	41.84	47.87	74.00	-26.13	Horizontal
Test mode: 802.11b			Test channel: Middle			Remark: Average		
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)	Polar.
4874.00	37.43	36.32	6.85	41.84	38.76	54.00	-15.24	Vertical
4874.00	37.51	36.32	6.85	41.84	38.84	54.00	-15.16	Horizontal

Test mode: 802.11b			Test channel: Highest			Remark: 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)	Polar.
4924.00	46.87	36.58	6.89	41.86	48.48	74.00	-25.52	Vertical
4924.00	47.10	36.58	6.89	41.86	48.71	74.00	-25.29	Horizontal
Test mode: 802.11b			Test channel: Highest			Remark: Average		
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)	Polar.
4924.00	37.45	36.58	6.89	41.86	39.06	54.00	-14.94	Vertical
4924.00	38.57	36.58	6.89	41.86	40.18	54.00	-13.82	Horizontal

Remark:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Test mode: 802.11g			Test channel: Lowest			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.
4824.00	47.62	36.06	6.81	41.82	48.67	74.00	-25.33	Vertical
4824.00	47.19	36.06	6.81	41.82	48.24	74.00	-25.76	Horizontal
Test mode: 802.11g			Test channel: Lowest			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.
4824.00	38.43	36.06	6.81	41.82	39.48	54.00	-14.52	Vertical
4824.00	38.56	36.06	6.81	41.82	39.61	54.00	-14.39	Horizontal

Test mode: 802.11g			Test channel: Middle			Remark: Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.
4874.00	46.57	36.32	6.85	41.84	47.90	74.00	-26.10	Vertical
4874.00	46.85	36.32	6.85	41.84	48.18	74.00	-25.82	Horizontal
Test mode: 802.11g			Test channel: Middle			Remark: Average		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/)	Limit Line (dBuV/m)	Over Limit (dB)	Polar.
4874.00	37.38	36.32	6.85	41.84	38.71	54.00	-15.29	Vertical
4874.00	37.16	36.32	6.85	41.84	38.49	54.00	-15.51	Horizontal

Test mode: 802.11g			Test channel: Highest			Remark: 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)	Polar.
4924.00	47.15	36.58	6.89	41.86	48.76	74.00	-25.24	Vertical
4924.00	47.92	36.58	6.89	41.86	49.53	74.00	-24.47	Horizontal
Test mode: 802.11g			Test channel: Highest			Remark: Average		
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)	Polar.
4924.00	37.33	36.58	6.89	41.86	38.94	54.00	-15.06	Vertical
4924.00	38.46	36.58	6.89	41.86	40.07	54.00	-13.93	Horizontal

Remark:
1. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.