CENTRE OF TESTING SERVICE INTERNATIONAL

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID TEST REPORT

TEST REPORT NUMBER : CGZ3161123-02285-EF

CENTRE OF TESTING SERVICE CO., LTD.

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

TEST REPORT For FCC ID

47 CFR PART 15 OCT, 2016

Report Reference No.	CGZ3161123-02285-EF
Date of issue	08 December 2016
**Testing Laboratory Name ..... **	**CENTRE OF TESTING SERVICE CO., LTD.**
Address	A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Testing location/ procedure	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
**Applicant's name ..... **	Guangzhou Juan Optical & Electronical Tech Joint Stock Co.,LTD
Address	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
**Test specification ..... **	
Standard	**47 CFR PART 15 OCT, 2016**
Test Report Form No.	CTSEMC-1.0
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.
Master TRF	Dated 2009-01

**Test item description..... **	IP Camera
Trade Mark.....	JUAN
Manufacturer.....	Guangzhou Juan Optical & Electronical Tech Joint Stock Co.,LTD
Model/Type reference.....	P3
Ratings.....	DC 5V by adapter; Adapter Input:AC 100~240V, 50/60Hz; Output:DC 5V
Operating Frequency	802.11b/g/n(20M):2412.0 MHz~2462.0 MHz 802.11 n(40M):2422.0 MHz~2452.0 MHz
Result	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Kate zhang / Fileadministrators	Duke yang / Technique principal	Vincent yao / Manager

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

FCC ID -- T E S T R E P O R T

Test Report No. : CGZ3161123-02285-EF	08 December 2016 Date of issue

Type / Model.....	P3
EUT.....	IP Camera
Applicant……	Guangzhou Juan Optical & Electronical Tech Joint Stock Co.,LTD
Address.....	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
Telephone.....	+86-020-22275999
Fax.....	+86-020-22647897
Contact.....	WenhuangLi
Manufacturer……	Guangzhou Juan Optical & Electronical Tech Joint Stock Co.,LTD
Address.....	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
Telephone.....	+86-020-22275999
Fax.....	+86-020-22647897
Contact.....	WenhuangLi
Factory……	Guangzhou Juan Optical & Electronical Tech Joint Stock Co.,LTD
Address.....	NO.9, street 3, HengLing industrial zone, Tangdong, tianhe district, Guangzhou, China
Telephone.....	+86-020-22275999
Fax.....	+86-020-22647897
Contact.....	WenhuangLi

Test Result according to the standards on page 1: **PASSED**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

TABLE OF CONTENTS

Description **Page**

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

1.0 TEST STANDARDS

The tests were performed according to following standards:

■ **47 CFR PART 15 OCT, 2016**
■ **ANSI C63.10:2013**

2.0 SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	23 November 2016
Testing commenced on	23 November~08 December 2016
Testing concluded on	08 December 2016

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

■ - fulfilled.
☐ - **not** fulfilled.

The equipment under test
■ - fulfils the FCC requirements cited on page 1.
☐ - **does not** fulfil the FCC requirements cited on page 1.

3.0 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : ■ DC 5V by Adapter;
Adapter supply by AC 120V, 60Hz

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: **1**
Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:
☐ - Standby
☐ TX- Y position
☐ TX- Zposition
■ TX- X position
802.11b/g/n(20M):TX-X Position Low (2412.0 MHz)
TX-X Position Middle (2437.0 MHz)
TX-X Position High (2462.0 MHz)
802.11n(40M):TX-X Position Low (2422.0 MHz)
TX-X Position Middle (2437.0 MHz)
TX-X Position High (2452.0 MHz)

Note:Operation mode TX -X position of EUT is the radiated test worst case. So only these test results be recorded in the test report.

3.4 EUT configuration

3.4.1. Description of configuration (EUT)

Description	:	IP Camera
Model Number	:	P3
Operation frequency	:	802.11b/g/n(20M):2412.0 MHZ~2462.0 MHz
WiFi	:	802.11:b/g/n
Modulation Technology	:	DBPSK, DQPSK, CCK, OFDM, 16-QAM, 64QAM
Date Rate		802.11b: 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n20: 72Mbps 802.11n40: 135Mbps

3.4.2. Tested Supporting System Details

3.4.1. Notebook

M/N	:	F83VF
S/N	:	N/A
Manufacturer	:	ASUS
Power Cord	:	Unshielded, Detachabled, 1.5m , 3Pin
FCC	:	ID

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

4.0 TEST ENVIRONMENT

4.1 Address of the test laboratory

A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China

Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406

4.2 Test facility

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

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on May 22, 2014.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

■ - The black square indicates that the listed condition, standard or equipment is applicable for this report.

□ - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

(1).This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5.0 Summary of standards and results

5.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	**Standard**	**Results**
Conducted Emission Test	FCC Part 15 : 15.207 ANSI C63.10:2013	PASSED
6dB Bandwidth Measurement	FCC Part 15.247(a)(2) ANSI C63.10:2013	PASSED
Peak Power	FCC Part 15.247(b)(3)(4) ANSI C63.10:2013	PASSED
Peak Power Spectral Density	15.247(e) Power Density ANSI C63.10:2013	PASSED
Band edges measurement	FCC Part 15.247(d) ANSI C63.10:2013	PASSED
Spurious Emissions	FCC Part 15: 15.209 ANSI C63.10:2013	PASSED
Antenna Requirements	FCC Part 15: 15.203 ANSI C63.10:2013	PASSED
N/A is an abbreviation for Not Applicable.		

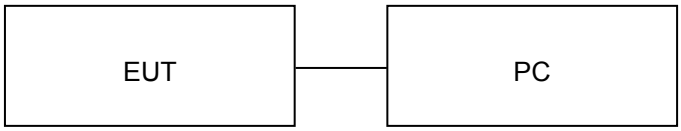
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

6.0 Power Line Conducted Emission Test

6.1.Test Equipment

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2016/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2016/11
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2016/11
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2016/11
5	EMI Test Software	EZ-EMC	Farad	N/A	N/A

6.2. Block Diagram of Test Setup



(EUT: IP Camera***)***

6.3. Power Line Conducted Emission Test Limits

Standard: FCC Part 15 : 15.207,ANSI C63.10-2013

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

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

6.4.Test Procedure

The Adapter Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

6.5. Power Line Conducted Emission Test Results

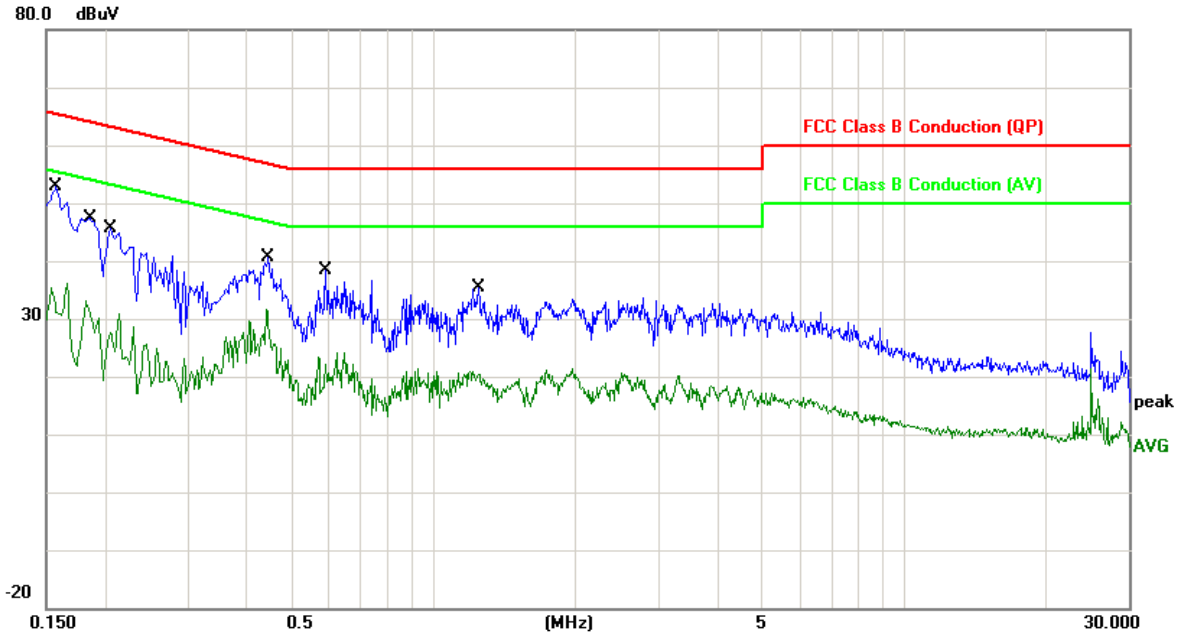
PASSED.

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Test point: L Frequency range: 0.15MHz~30MHz	Result: ■ - passed □ - not passed

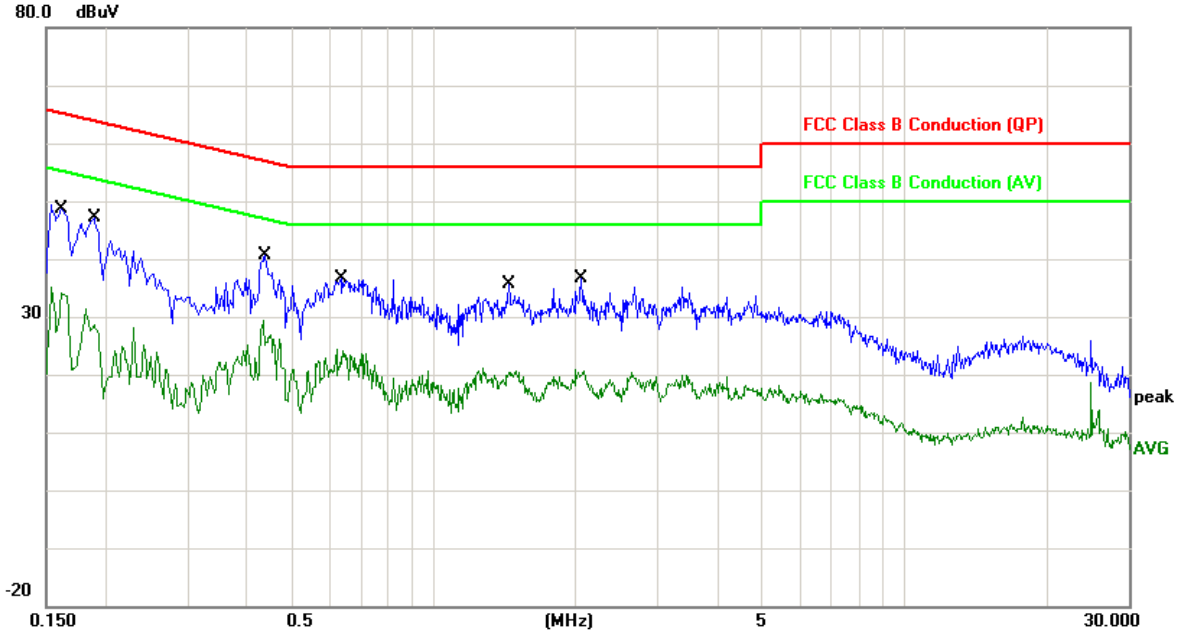
EUT	IP Camera
Operating Condition	TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	23~30 November 2016
Operator	**Duke**
MODEL NO	P3



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1580	10.82	35.75	46.57	65.57	-19.00	QP
2	0.1580	10.82	18.68	29.50	55.57	-26.07	AVG
3	0.1860	10.83	32.72	43.55	64.21	-20.66	QP
4	0.1860	10.83	15.93	26.76	54.21	-27.45	AVG
5	0.2060	10.83	29.78	40.61	63.37	-22.76	QP
6	0.2060	10.83	11.73	22.56	53.37	-30.81	AVG
7	0.4460	10.90	25.28	36.18	56.95	-20.77	QP
8	0.4460	10.90	14.97	25.87	46.95	-21.08	AVG
9	0.5900	10.91	19.67	30.58	56.00	-25.42	QP
10	0.5900	10.91	9.40	20.31	46.00	-25.69	AVG
11	1.2460	10.91	17.19	28.10	56.00	-27.90	QP
12	1.2460	10.91	8.20	19.11	46.00	-26.89	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test point:	N	Result:	■ - passed
Frequency range:	0.15MHz~30MHz		□ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1620	10.80	34.19	44.99	65.36	-20.37	QP
2	0.1620	10.80	17.24	28.04	55.36	-27.32	AVG
3	0.1900	10.81	31.14	41.95	64.04	-22.09	QP
4	0.1900	10.81	16.30	27.11	54.04	-26.93	AVG
5	0.4380	10.88	25.17	36.05	57.10	-21.05	QP
6	0.4380	10.88	14.89	25.77	47.10	-21.33	AVG
7	0.6340	10.90	21.06	31.96	56.00	-24.04	QP
8	0.6340	10.90	10.20	21.10	46.00	-24.90	AVG
9	1.4420	10.91	17.15	28.06	56.00	-27.94	QP
10	1.4420	10.91	7.23	18.14	46.00	-27.86	AVG
11	2.0620	10.93	17.11	28.04	56.00	-27.96	QP
12	2.0620	10.93	8.04	18.97	46.00	-27.03	AVG
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

7.0 6dB BANDWIDTH MEASUREMENT

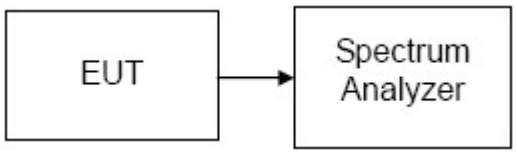
7.1 LIMITS

According to §15.247(a)(2), systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

7.2 MEASUREMENT EQUIPMENT USED

20dB Bandwidth					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03

7.3 TEST CONFIGURATION



7.4 TEST PROCEDURE

1. Place the EUT on the table and set it in the transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 300kHz, Span =1.5 times of bandwidth, Sweep = auto.
4. Mark the peak frequency and –6dB (upper and lower) frequency.
5. Repeat until all the rest channels are investigated

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

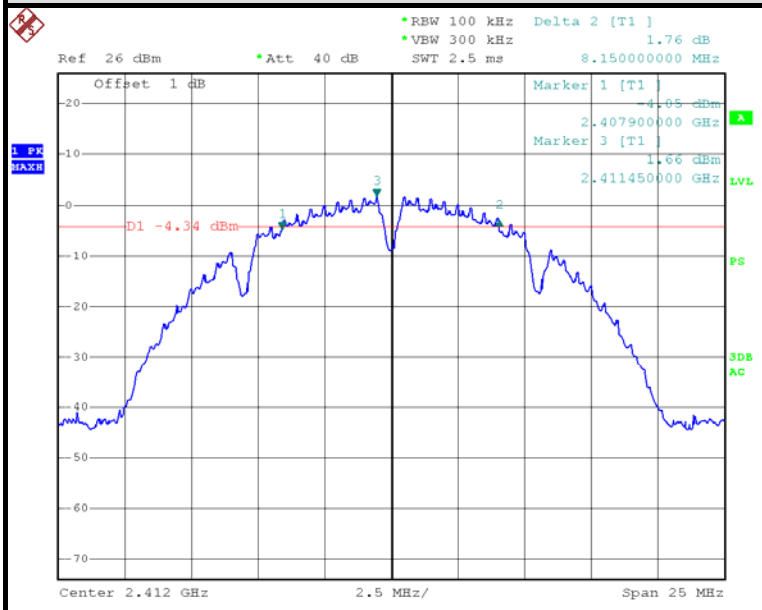
7.5 TEST RESULTS

Modulation Standard	Channel	Frequency (MHz)	Bandwidth (MHz)	Limit (KHz)	Result
802.11b: 5.5Mbps (Worst Case)	Low	2412	8.15	>500	PASSED
	Middle	2437	8.20		PASSED
	High	2462	8.20		PASSED
802.11g: 54Mbps (Worst Case)	Low	2412	16.55	>500	PASSED
	Middle	2437	16.60		PASSED
	High	2462	16.55		PASSED
802.11n(20): 72Mbps (Worst Case)	Low	2412	17.85	>500	PASSED
	Middle	2437	17.85		PASSED
	High	2462	17.85		PASSED
802.11n(40): 135Mbps (Worst Case)	Low	2422	36.51	>500	PASSED
	Middle	2437	36.57		PASSED
	High	2452	36.54		PASSED
Remark:The Bandwidth is Delta 2 of following the graph. And the Delta 2 is Marker 2 subtract Marker 1.					

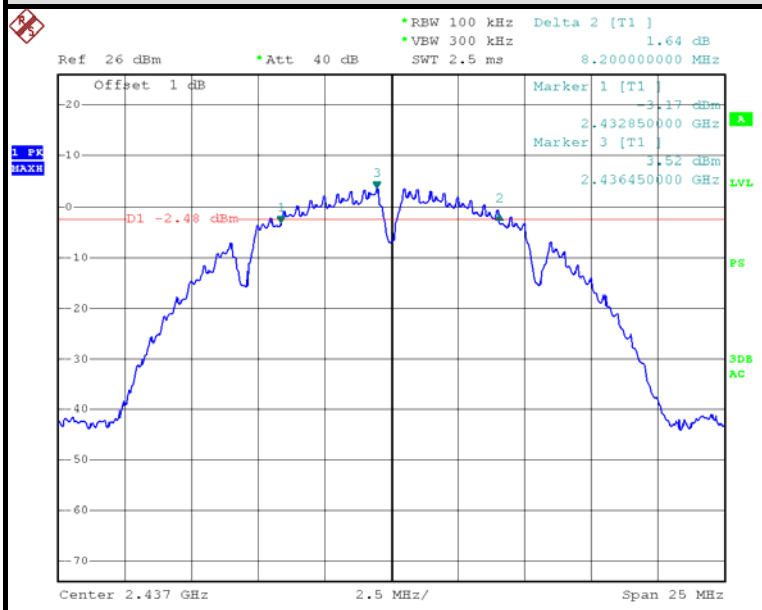
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Test Plot

Modulation Standard: 802.11b 6dB Bandwidth CH Low

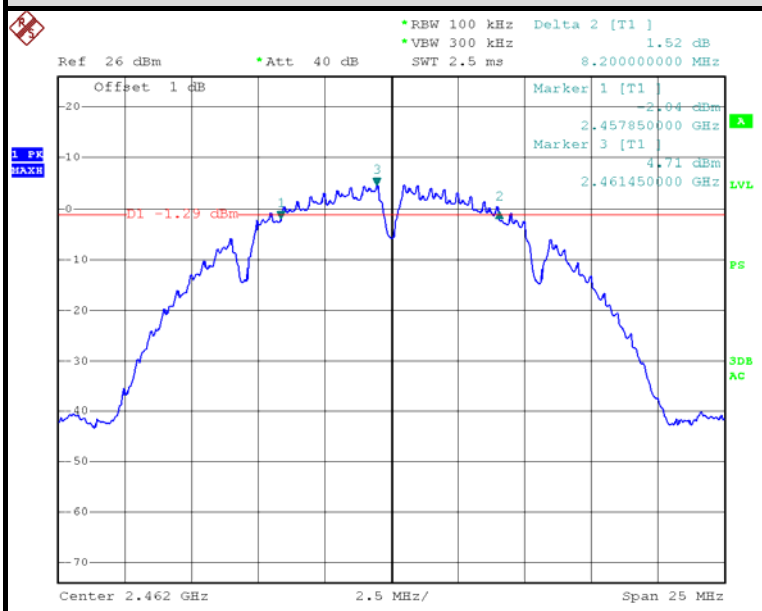


Modulation Standard: 802.11b 6dB Bandwidth CH Middle

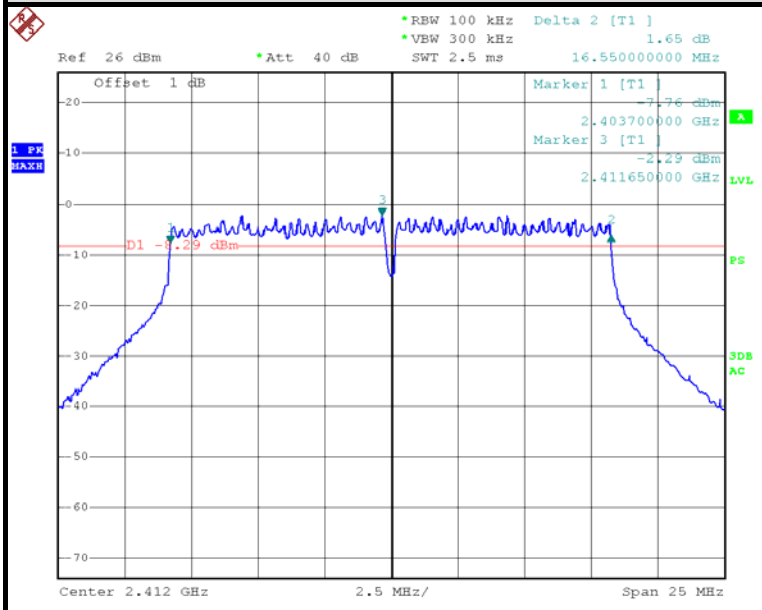


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11b 6dB Bandwidth CH High

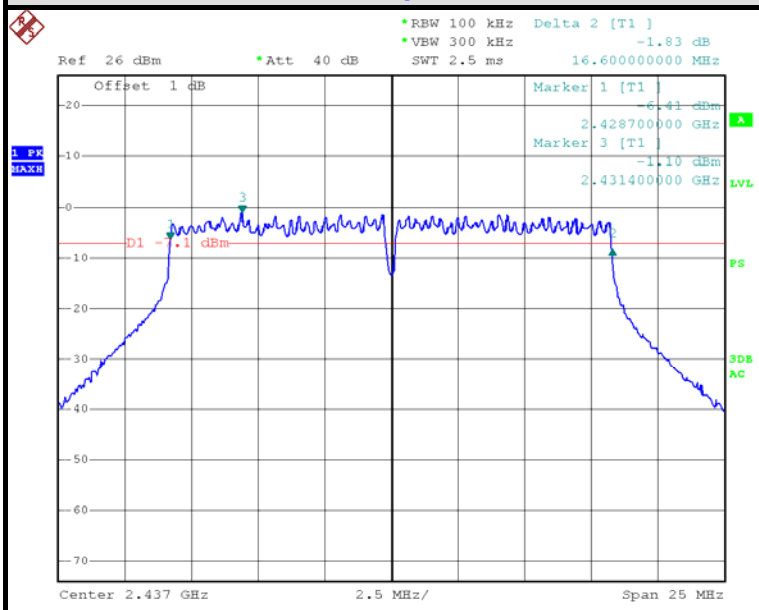


Modulation Standard: 802.11g 6dB Bandwidth CH Low

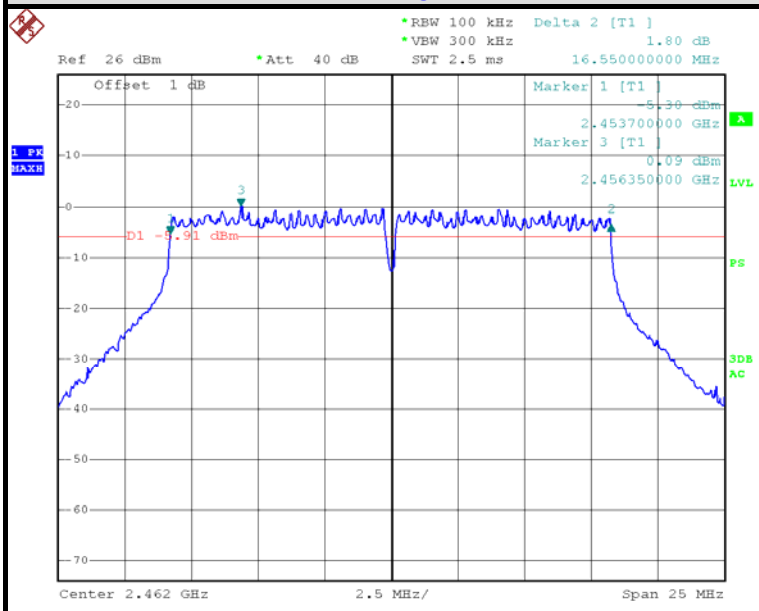


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11g **6dB Bandwidth CH Middle**

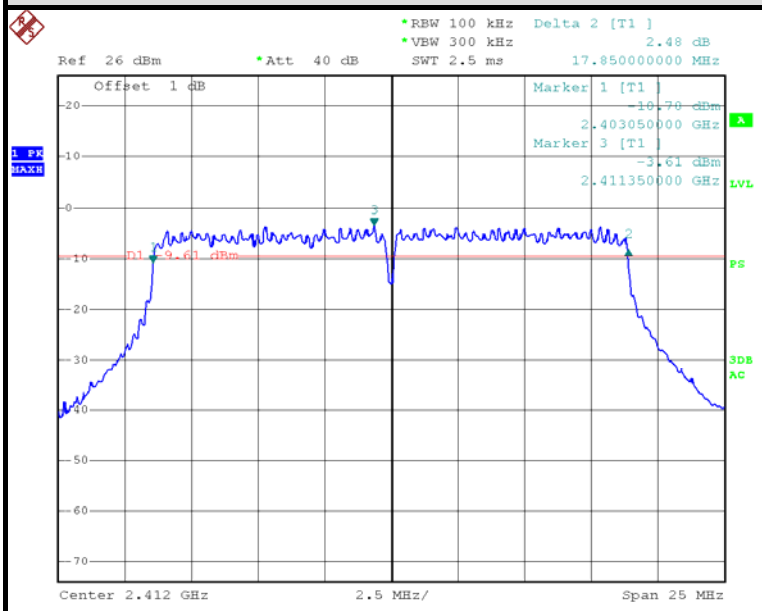


Modulation Standard: 802.11g **6dB Bandwidth CH High**

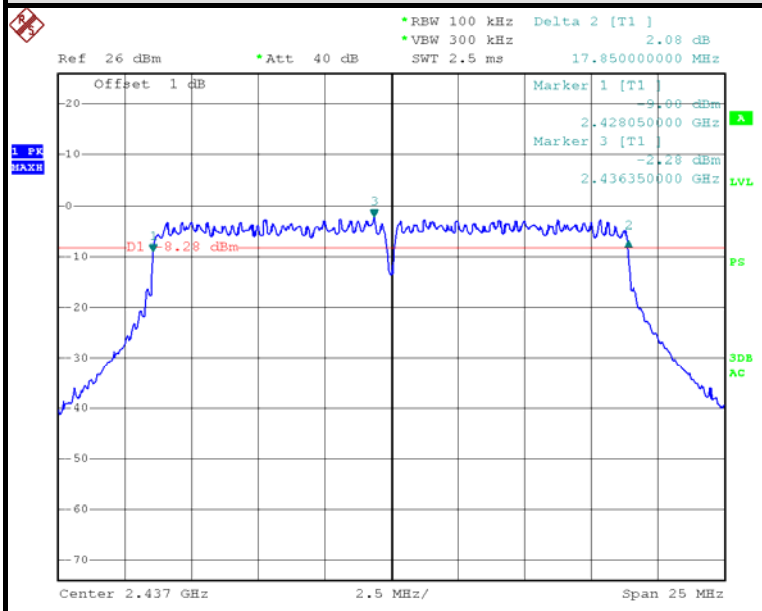


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11n HT-20 6dB Bandwidth CH Low

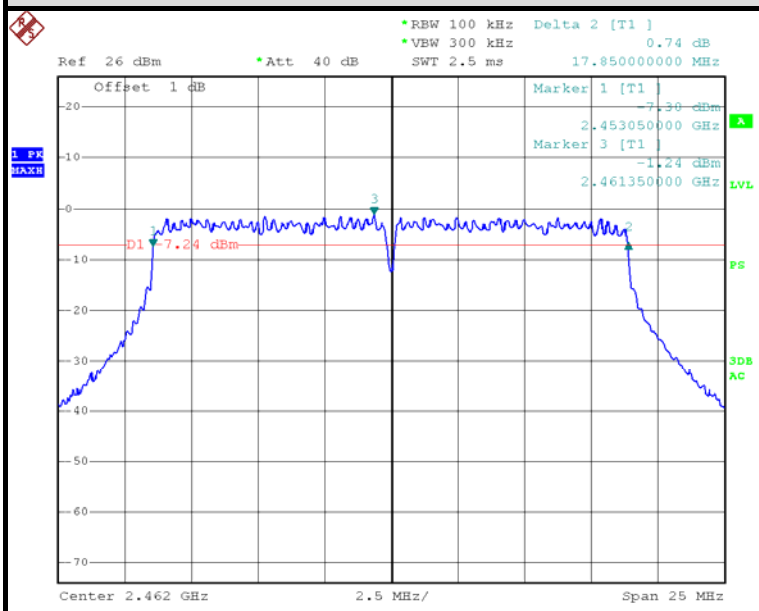


Modulation Standard: 802.11 n HT-20 6dB Bandwidth CH Middle

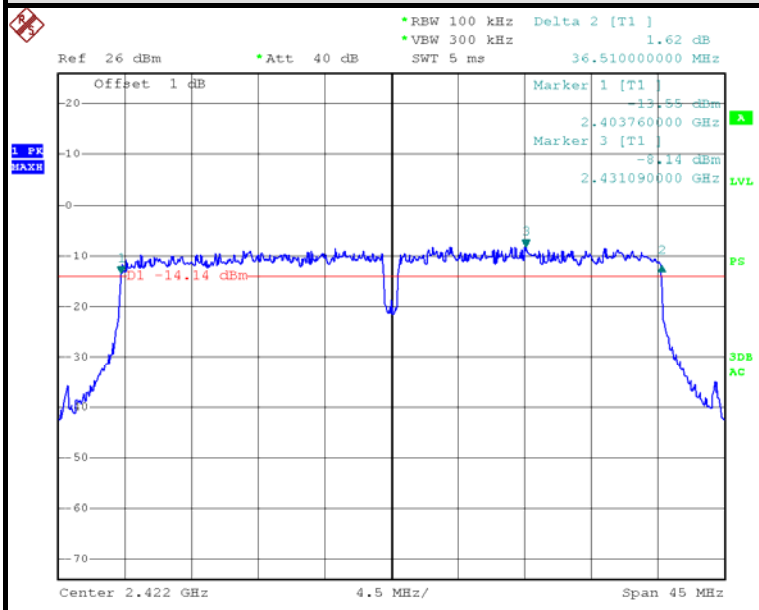


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-20 6dB Bandwidth CH High

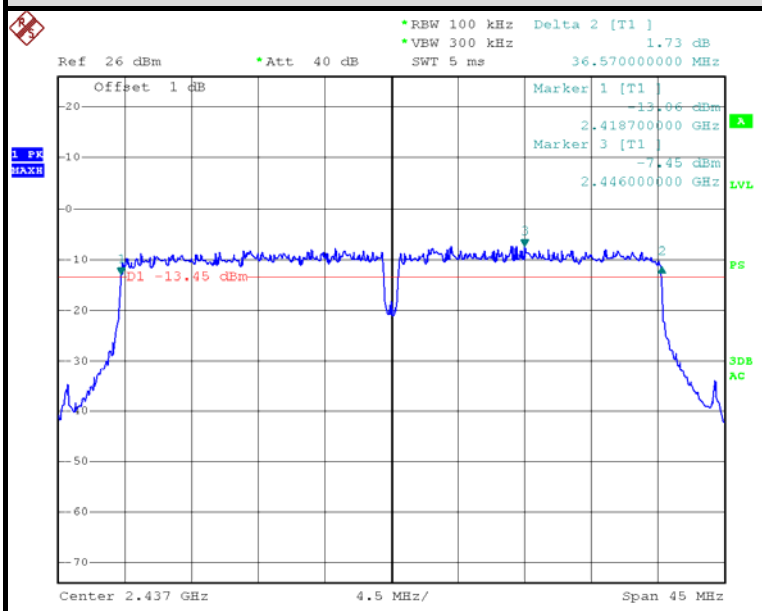


Modulation Standard: 802.11n HT-40 6dB Bandwidth CH Low

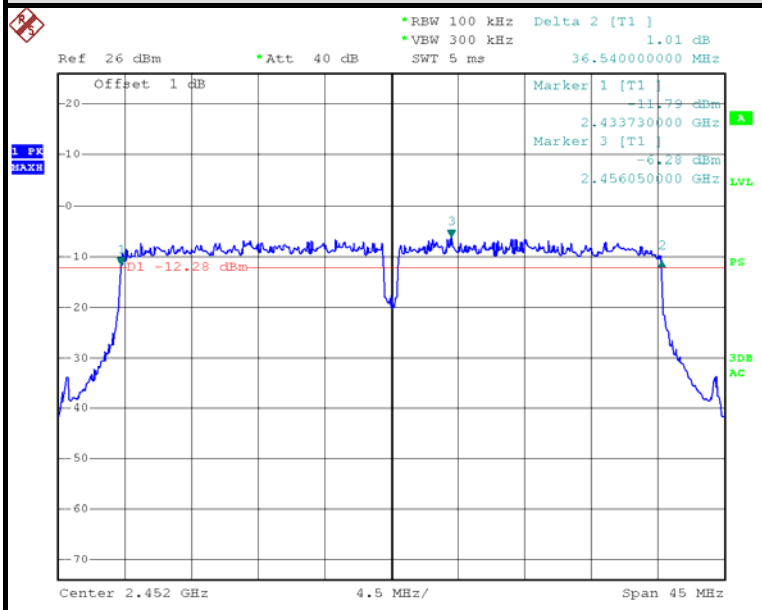


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-40 6dB Bandwidth CH Middle



Modulation Standard: 802.11 n HT-40 6dB Bandwidth CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

8.0 PEAK POWER

8.1 LIMIT

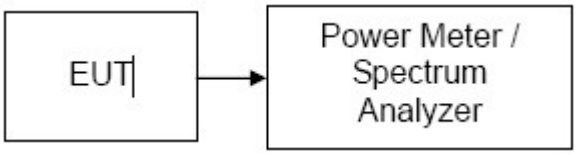
The maximum peak output power of the intentional radiator shall not exceed the following:

1. According to §15.247(b)(3), for systems using digital modulation in the bands of 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz: 1 Watt.
2. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 MEASUREMENT EQUIPMENT USED

Peak Power					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03
2	Power meter	ROHDE & SCHWARZ	NRVS	842856/049	2016/03

8.3 TEST CONDIGURATION



8.4 TEST PROCEDURE

1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
2. Set RBW = 1MHz.
3. Set VBW ≥ 3MHz.
4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power Intervals, the trigger may be set to “free run”.
6. Trace average 100 traces in power averaging mode.
7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer’s band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

8.5 TEST RESULTS

Passed

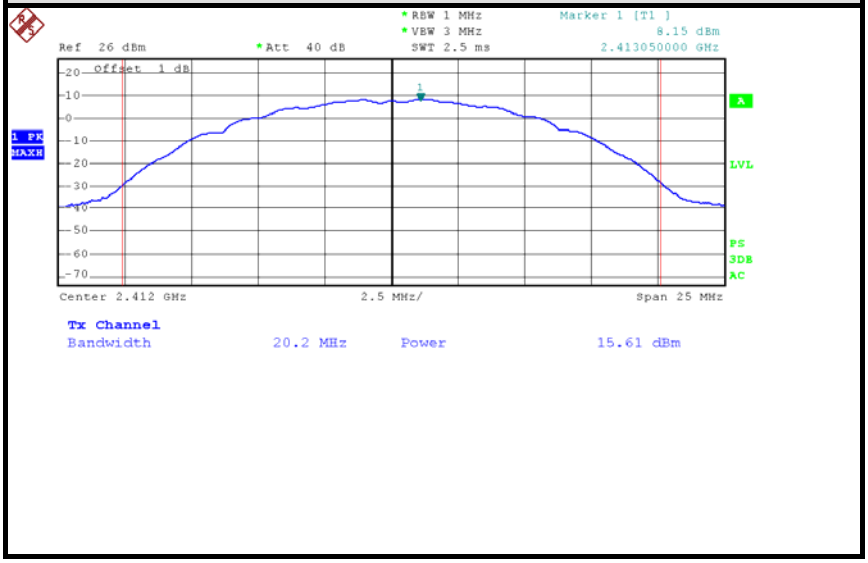
Test Data

Modulation Standard	Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
802.11b: 5.5Mbps (Worst Case)	Low	2412	15.61	30dBm	PASSED
	Middle	2437	17.50		PASSED
	High	2462	18.73		PASSED
802.11g: 54Mbps (Worst Case)	Low	2412	19.21		PASSED
	Middle	2437	20.69		PASSED
	High	2462	21.90		PASSED
802.11n(20): 72Mbps (Worst Case)	Low	2412	18.39		PASSED
	Middle	2437	19.57		PASSED
	High	2462	20.34		PASSED
802.11n(40): 135Mbps (Worst Case)	Low	2422	16.31		PASSED
	Middle	2437	17.08		PASSED
	High	2452	18.09		PASSED

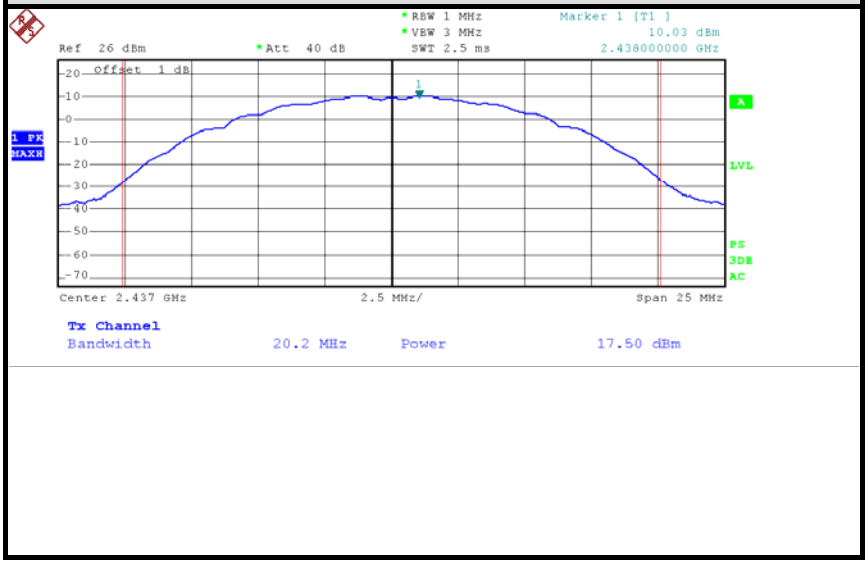
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Plot

Modulation Standard: 802.11b Peak Power CH Low

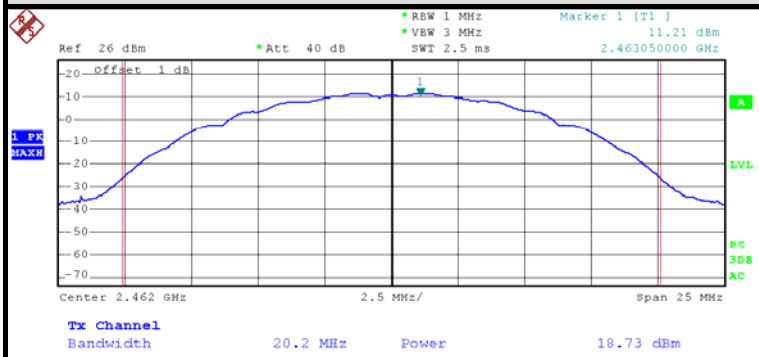


Modulation Standard: 802.11b Peak Power CH Middle

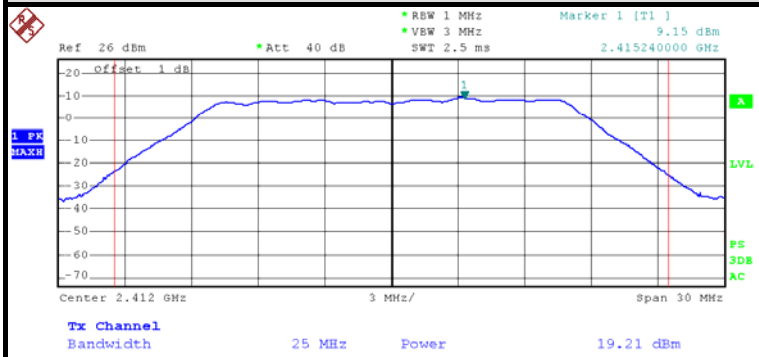


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11b **Peak Power CH High**

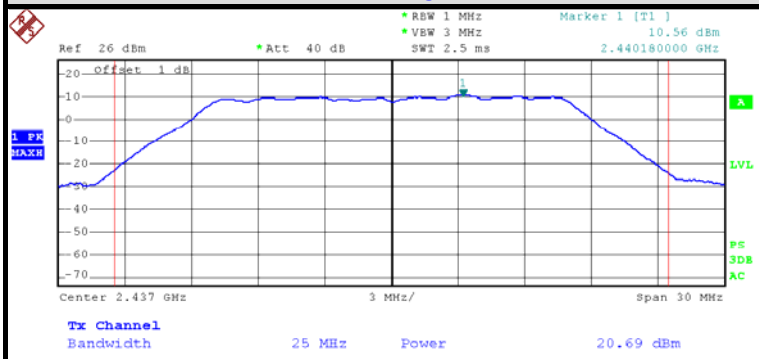


Modulation Standard: 802.11g **Peak Power CH Low**

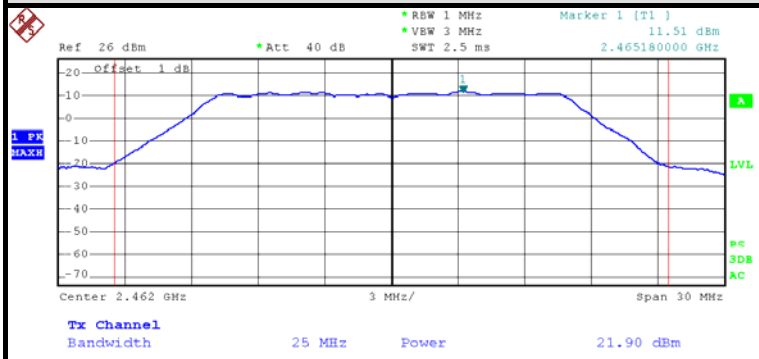


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

Modulation Standard: 802.11g **Peak Power CH Middle**

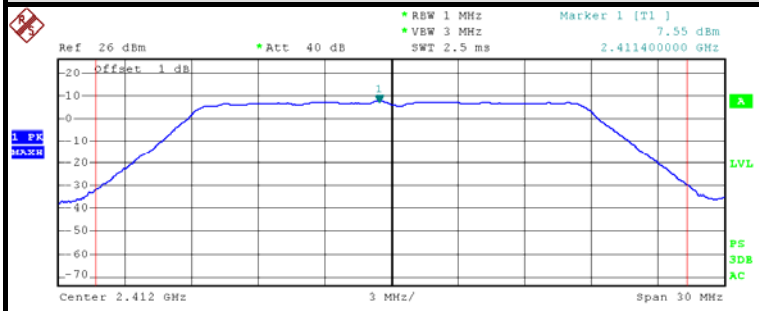


Modulation Standard: 802.11g **Peak Power CH High**

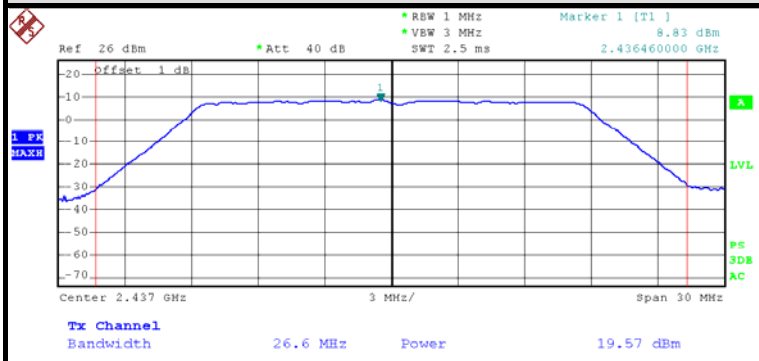


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11n HT-20 Peak Power CH Low

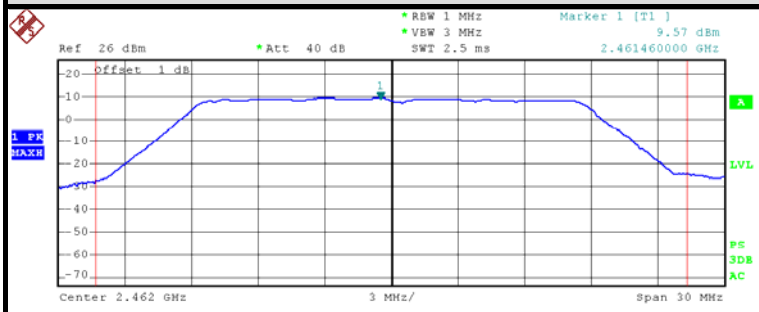


Modulation Standard: 802.11 n HT-20 Peak Power CH Middle

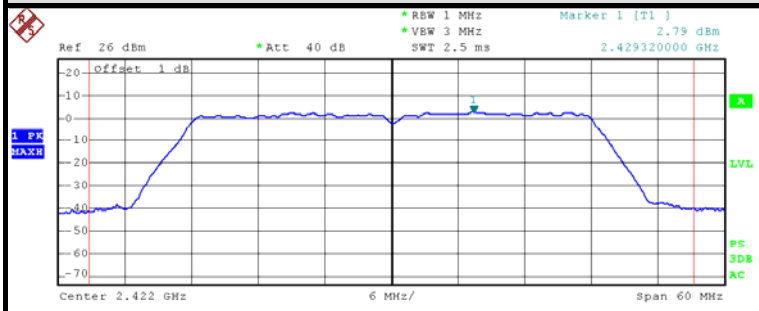


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-20 Peak Power CH High

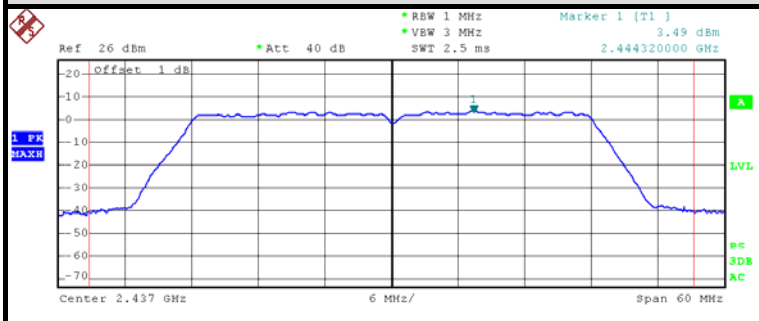


Modulation Standard: 802.11n HT-40 Peak Power CH Low

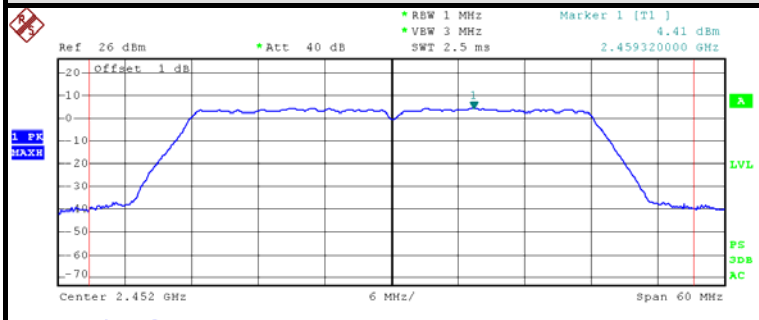


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-40 Peak Power CH Middle



Modulation Standard: 802.11 n HT-40 Peak Power CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

9.0 PEAK POWER SPECTRAL DENSITY

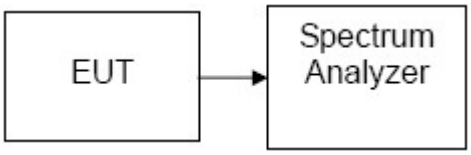
9.1 LIMIT

1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section

9.2 MEASUREMENT EQUIPMENT USED

Peak Power Spectral Density					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03

9.3 TEST CONFIGURATION



9.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 10kHz, VBW = 30kHz, Span = 1.5 times the bandwidth, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are completed.

9.5 TEST RESULTS

PASSED

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

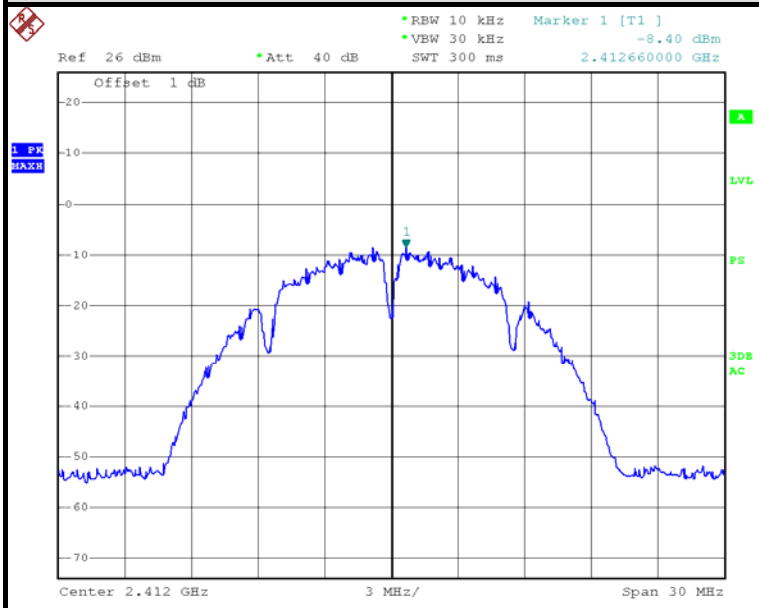
Test Data

Modulation Standard	Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Result
802.11b: 5.5Mbps (Worst Case)	Low	2412	-8.40	8	PASSED
	Middle	2437	-6.20		PASSED
	High	2462	-5.19		PASSED
802.11g: 54Mbps (Worst Case)	Low	2412	-11.41		PASSED
	Middle	2437	-10.27		PASSED
	High	2462	-9.37		PASSED
802.11n(20): 72Mbps (Worst Case)	Low	2412	-11.07		PASSED
	Middle	2437	-10.09		PASSED
	High	2462	-9.29		PASSED
802.11n(40): 135Mbps (Worst Case)	Low	2422	-16.06		PASSED
	Middle	2437	-15.27		PASSED
	High	2452	-14.31		PASSED

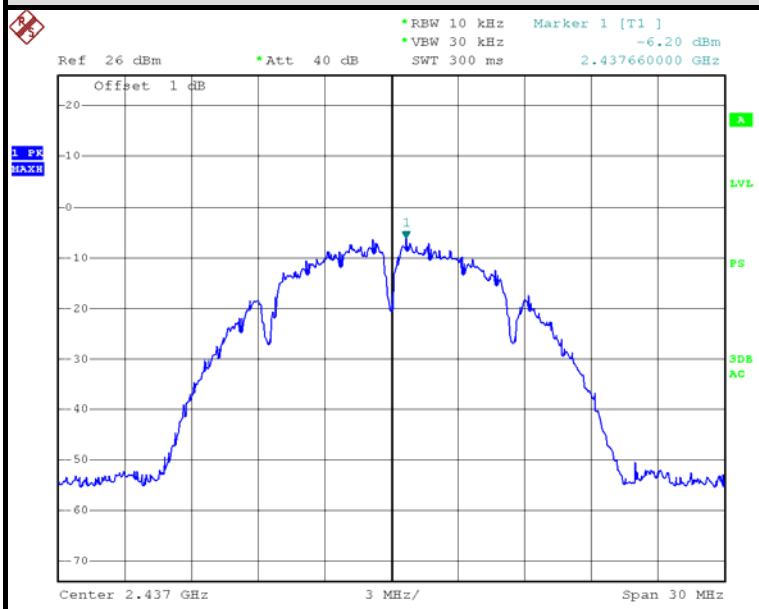
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Plot

Modulation Standard: 802.11b PPSD CH Low

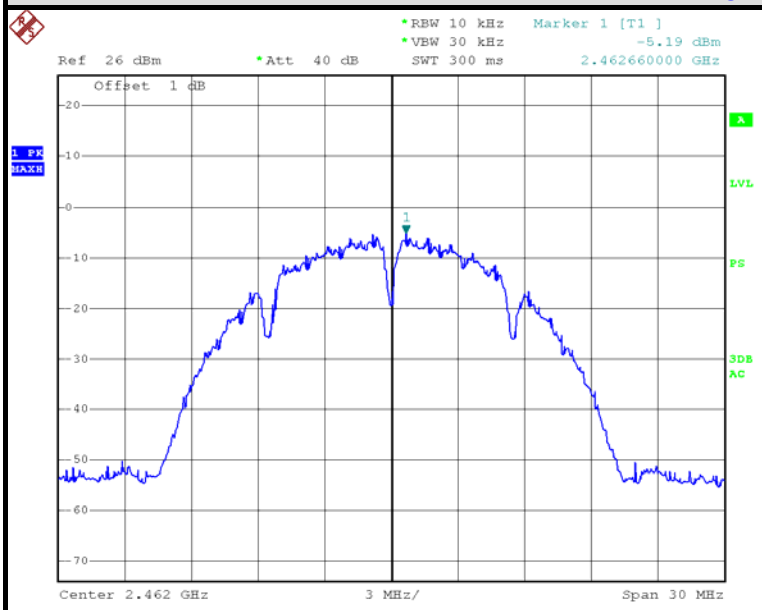


Modulation Standard: 802.11b PPSD CH Middle

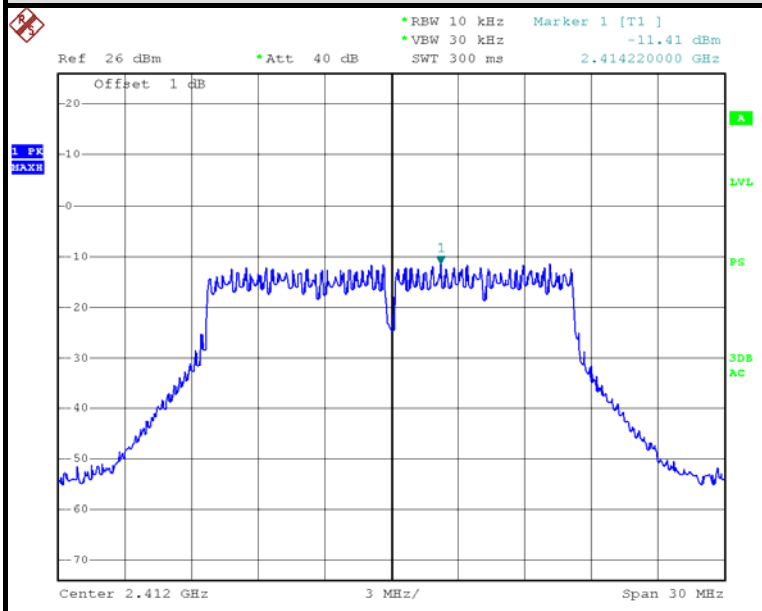


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11b PPSD CH High

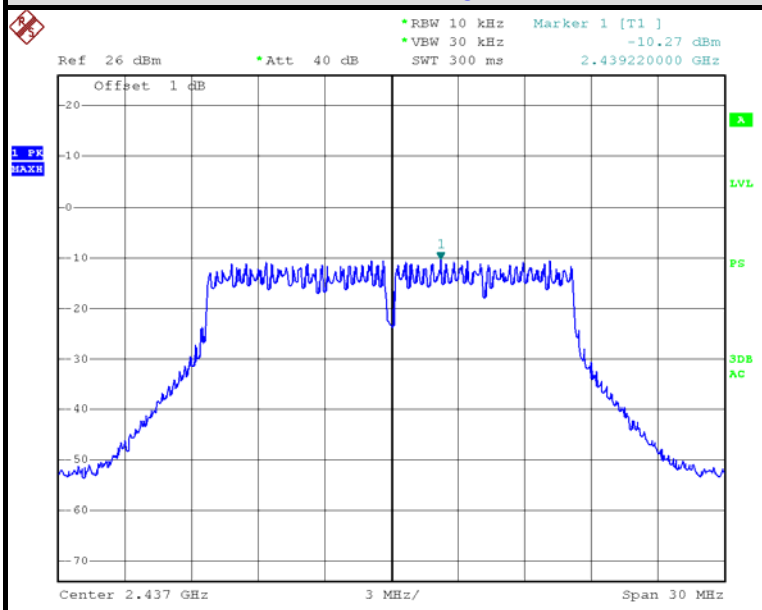


Modulation Standard: 802.11g PPSD CH Low

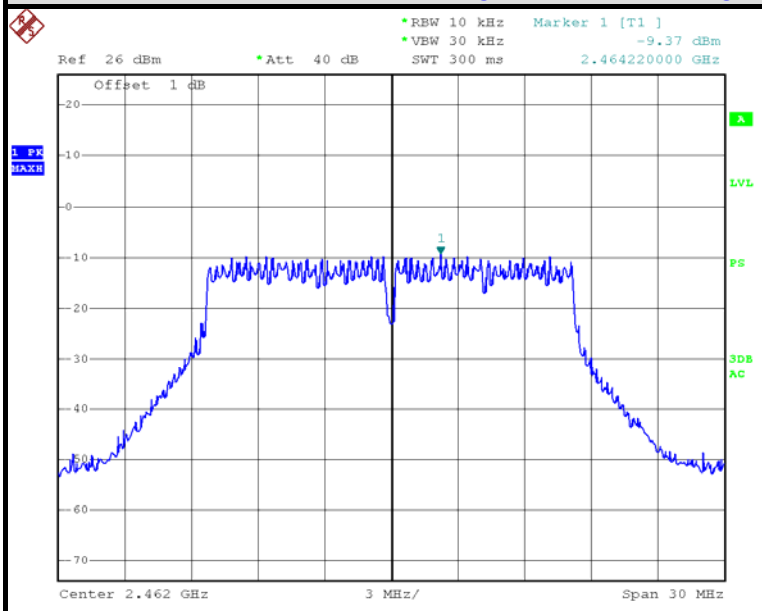


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11g PPSD CH Middle

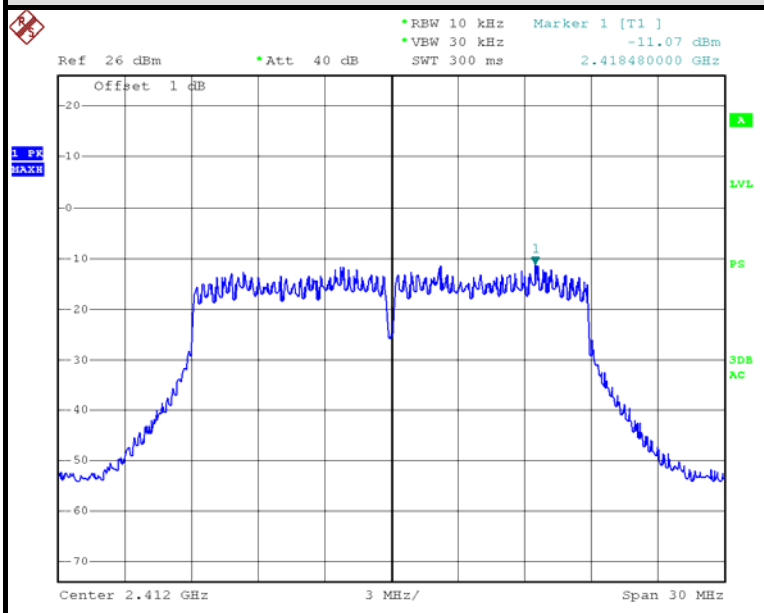


Modulation Standard: 802.11g PPSD CH High

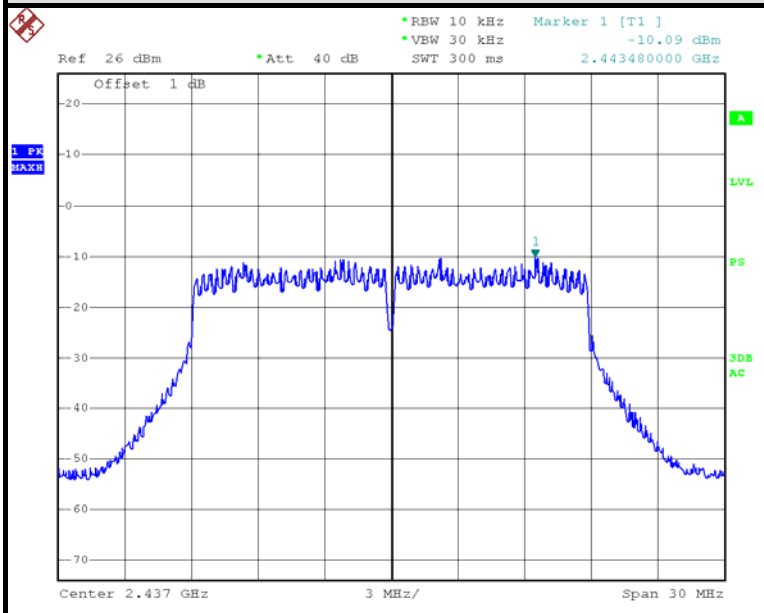


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11n HT-20 PPSD CH Low

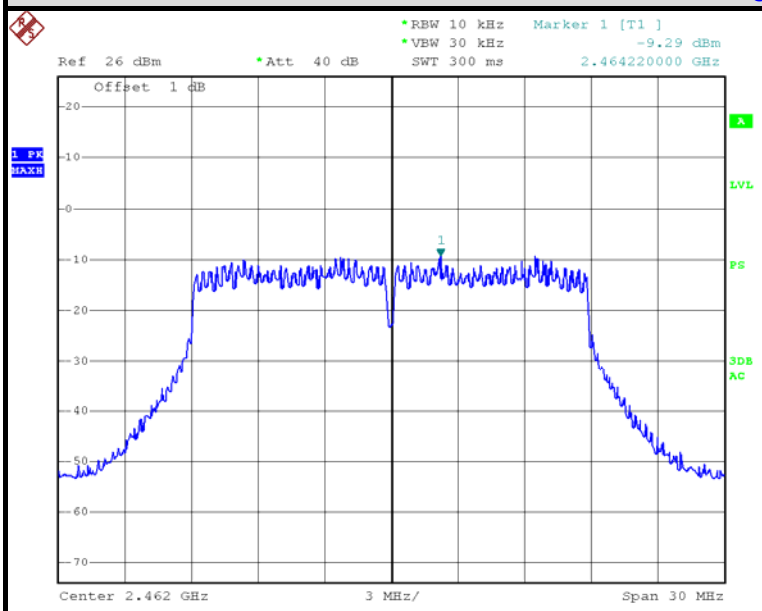


Modulation Standard: 802.11 n HT-20 PPSD CH Middle

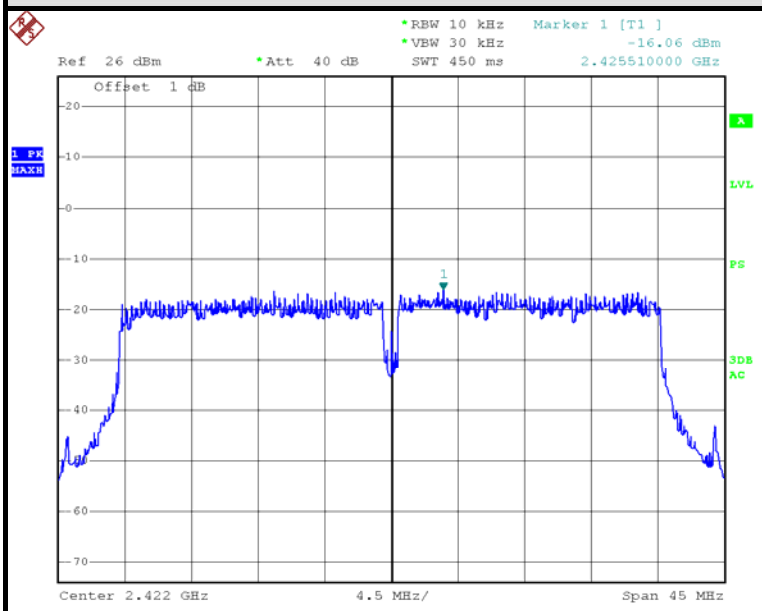


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-20 PPSD CH High

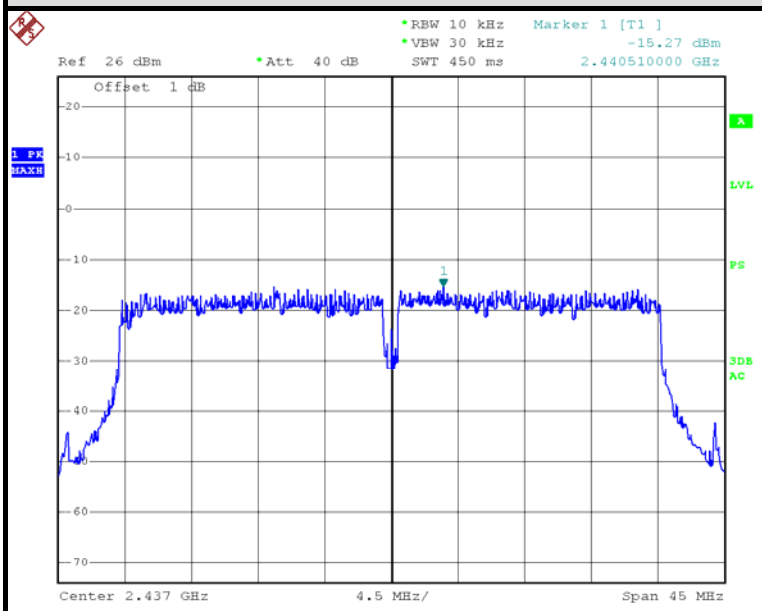


Modulation Standard: 802.11n HT-40 PPSD CH Low

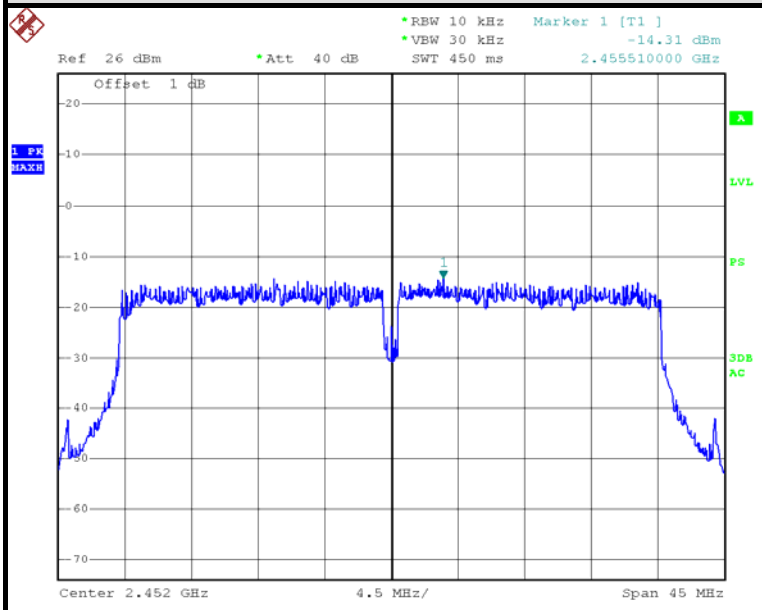


CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard: 802.11 n HT-40 PPSD CH Middle



Modulation Standard: 802.11 n HT-20 PPSD CH High



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

10.0 BAND EDGES MEASUREMENT

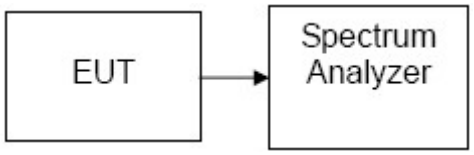
10.1 LIMIT

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in 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. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

10.2 MEASUREMENT EQUIPMENT USED

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03

10.3 Test Configuration



10.4 TEST PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer as RBW = 100kHz, VBW = 100kHz, Sweep=Auto couple
4. Record the max. reading.
5. Repeat the above procedure until the measurements for all frequencies are

10.5 TEST RESULTS

Refer to attach spectrum analyzer data chart.

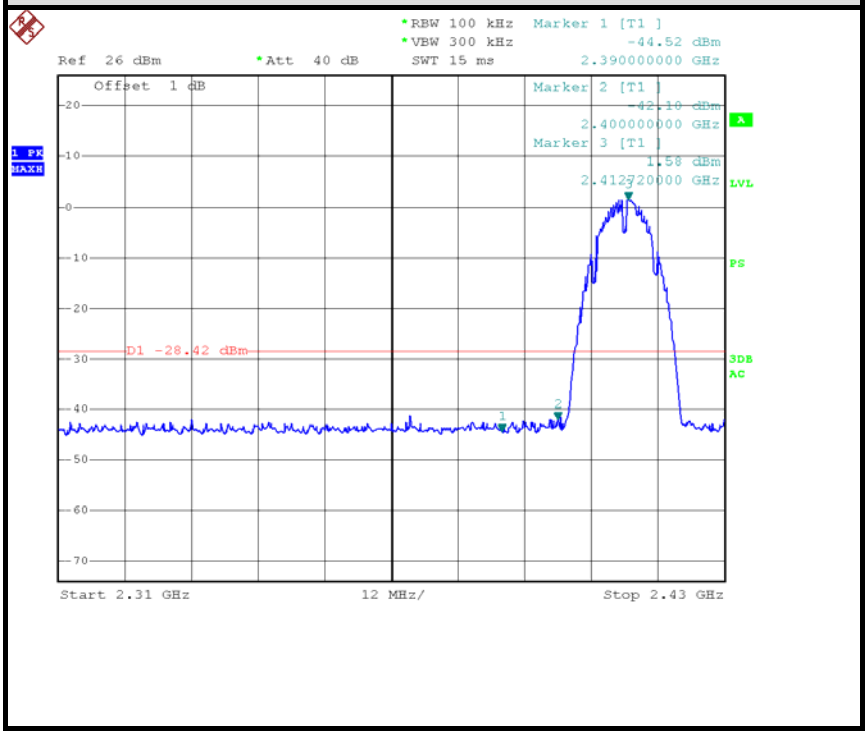
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Test Polt:

Band-edge Conducted Measurment:

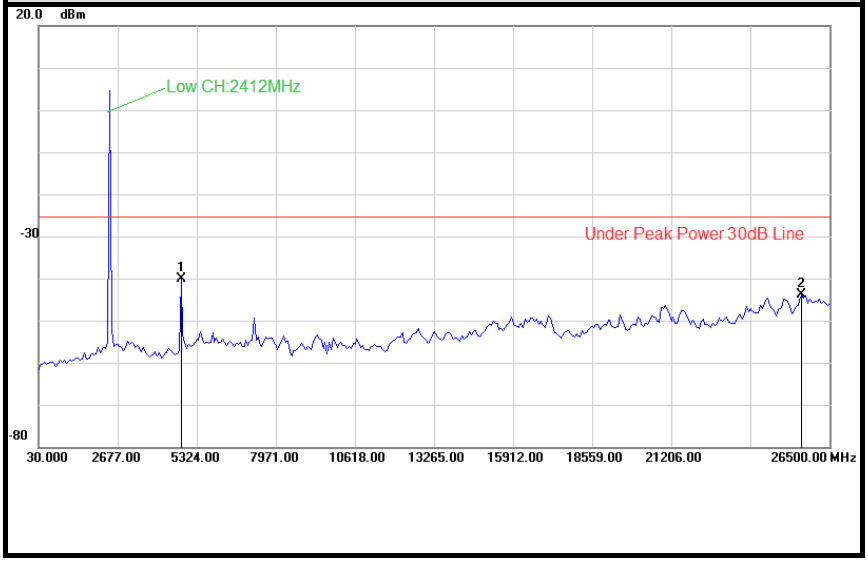
Band-edge Conducted Measurment

Modulation Standard: 802.11 b CH-Low:2412MHz



Spurious Emission Conducted Measurment

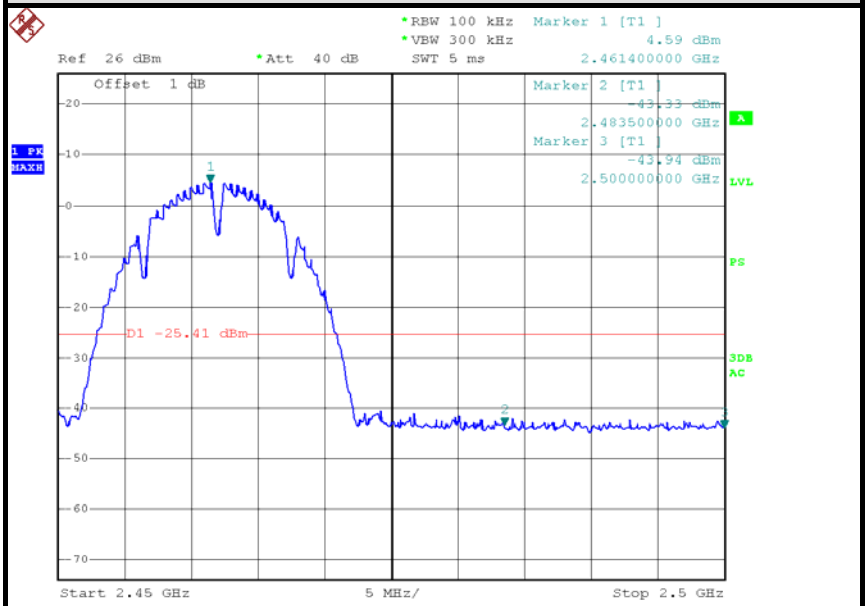
Modulation Standard: 802.11 b CH-Low:2412MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

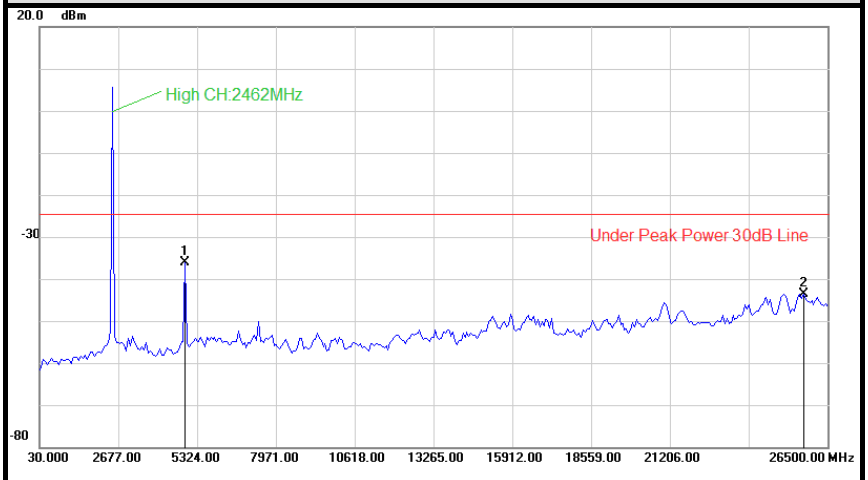
Band-edge Conducted Measurment

Modulation Standard: 802.11 b CH-High:2462MHz



Spurious Emission Conducted Measurment

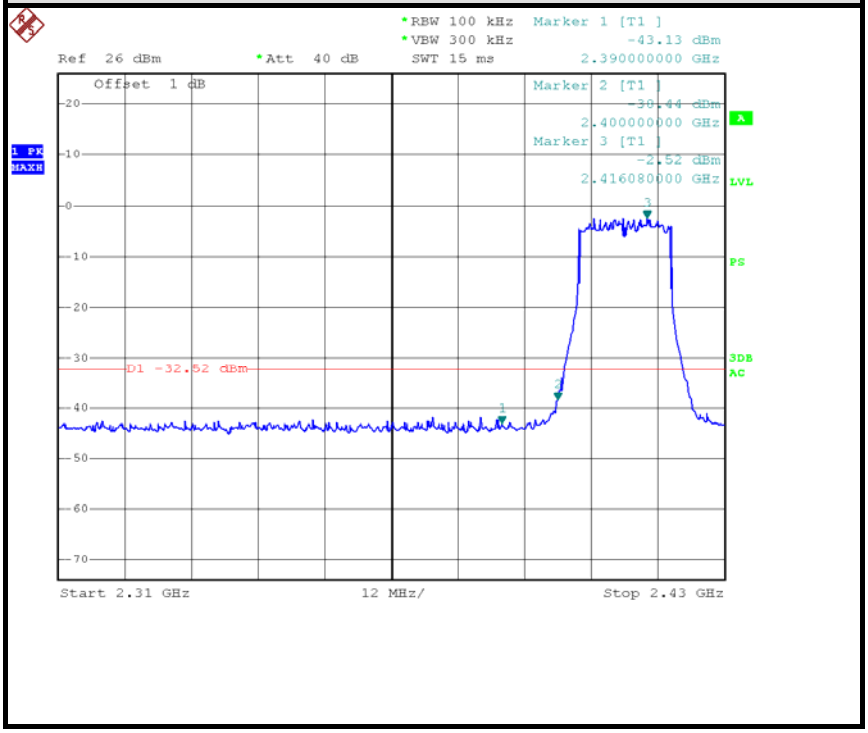
Modulation Standard: 802.11 b CH-High:2462MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

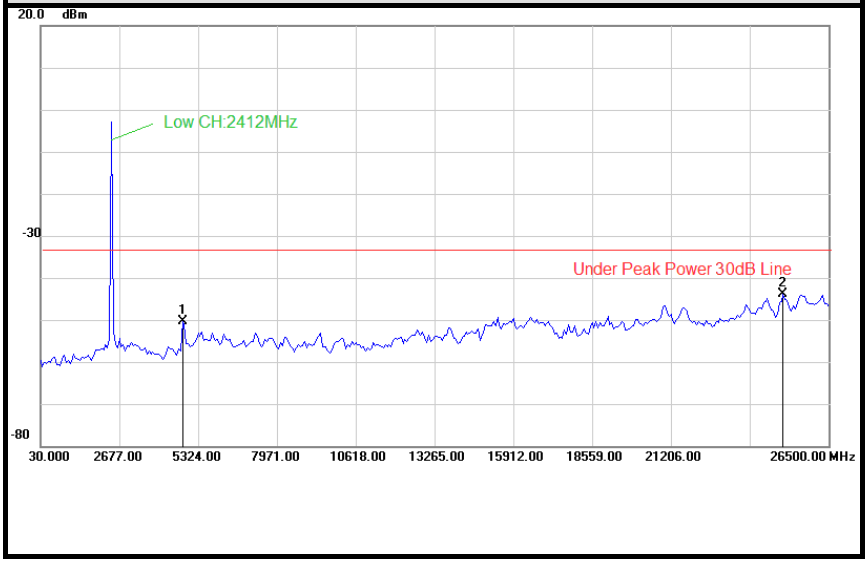
Band-edge Conducted Measurment

Modulation Standard: 802.11 g CH-Low:2412MHz



Spurious Emission Conducted Measurment

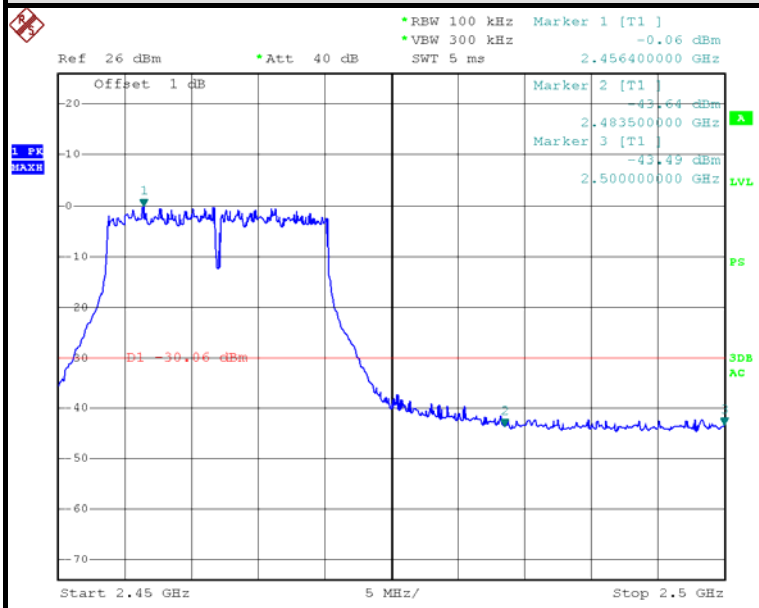
Modulation Standard: 802.11 g CH-Low:2412MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

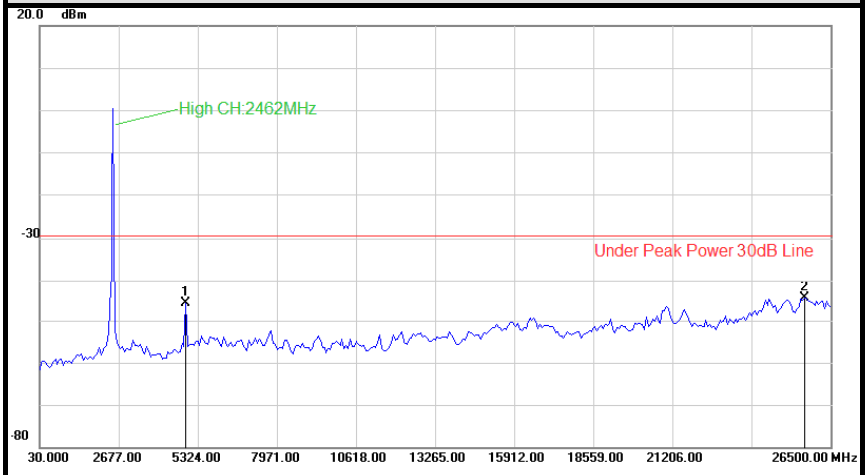
Band-edge Conducted Measurment

Modulation Standard: 802.11 g CH-High:2462MHz



Spurious Emission Conducted Measurment

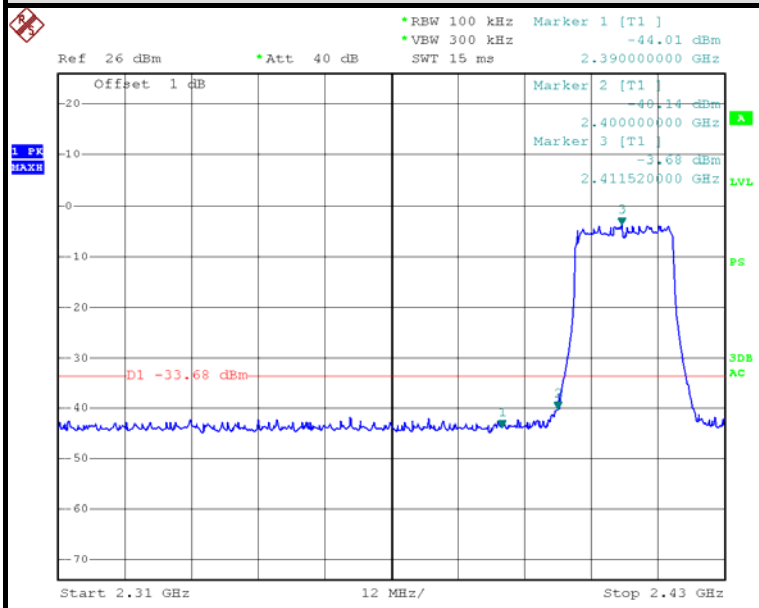
Modulation Standard: 802.11 g CH-High:2462MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

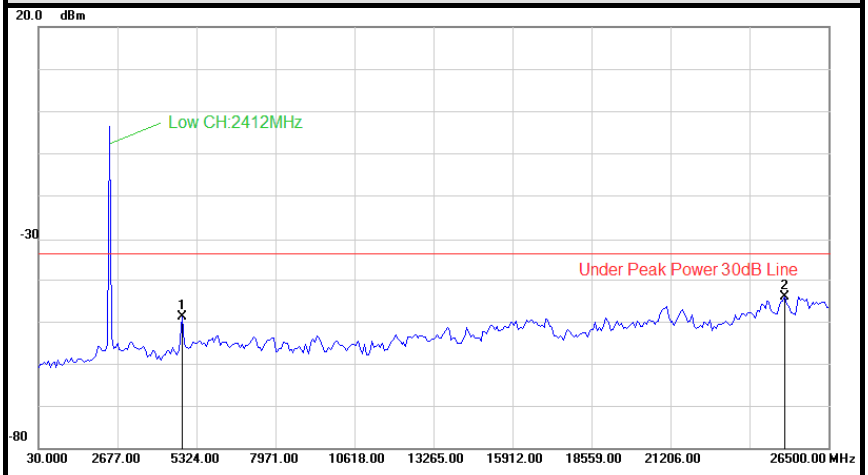
Band-edge Conducted Measurment

Modulation Standard: 802.11 n-HT20 CH-Low:2412MHz



Spurious Emission Conducted Measurment

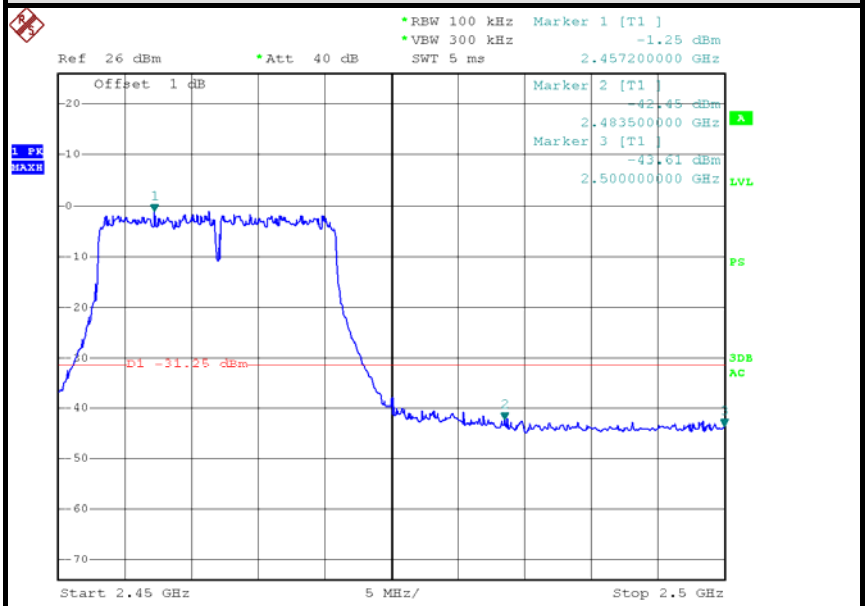
Modulation Standard: 802.11 n-HT20 CH-Low:2412MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn See Reverse For Terms And Conditions of Service

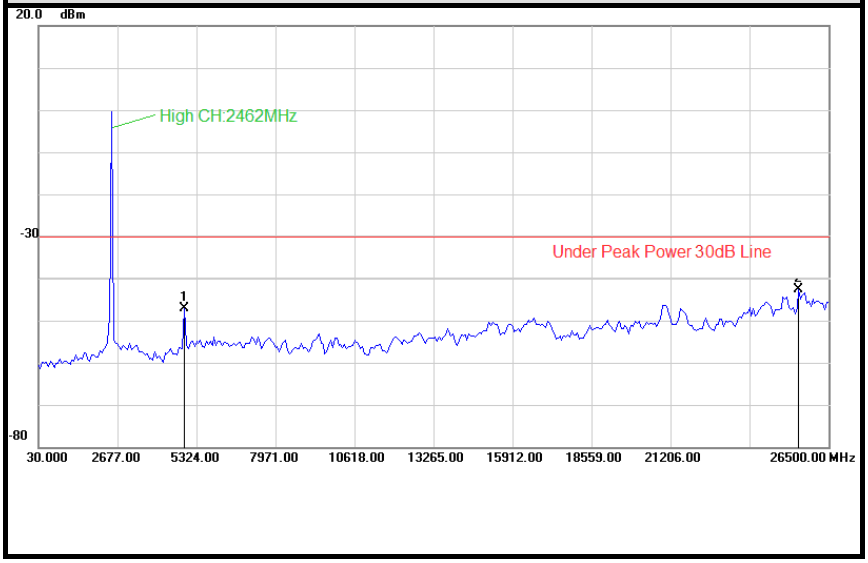
Band-edge Conducted Measurment

Modulation Standard: 802.11 n-HT20 CH-High:2462MHz



Spurious Emission Conducted Measurment

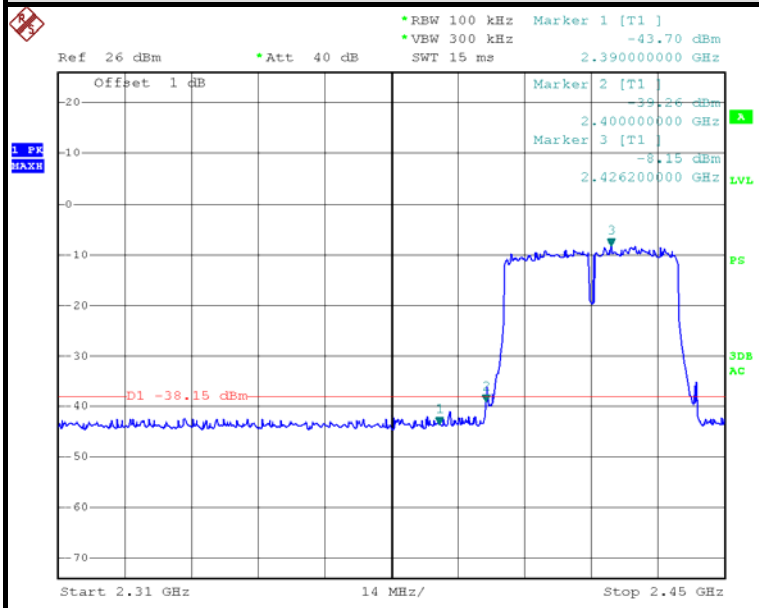
Modulation Standard: 802.11 n-HT20 CH-High:2462MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

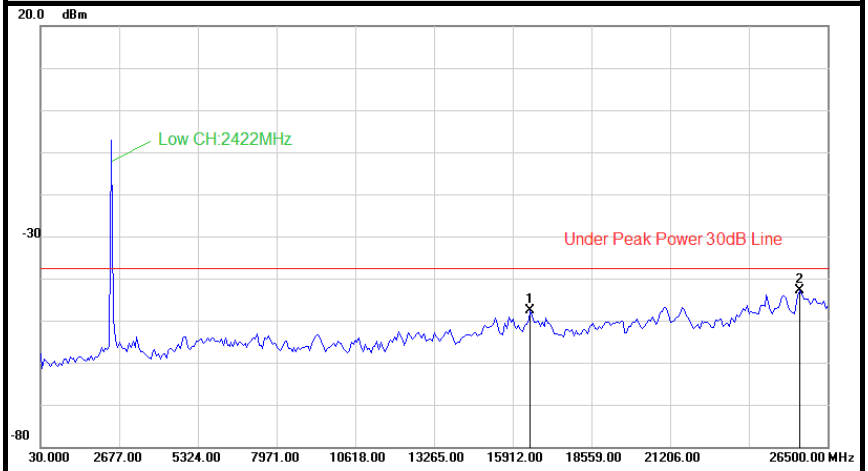
Band-edge Conducted Measurment

Modulation Standard: 802.11 n-HT40 CH-Low:2422MHz



Spurious Emission Conducted Measurment

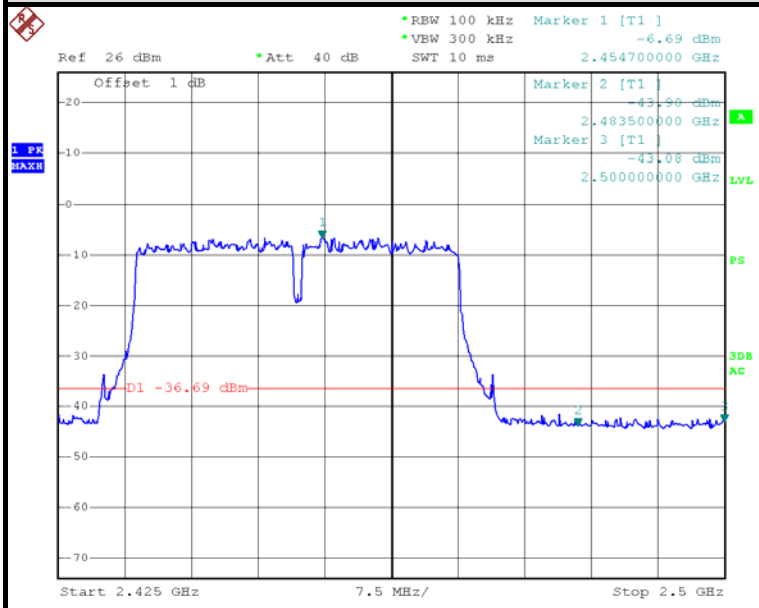
Modulation Standard: 802.11 n-HT40 CH-Low:2422MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

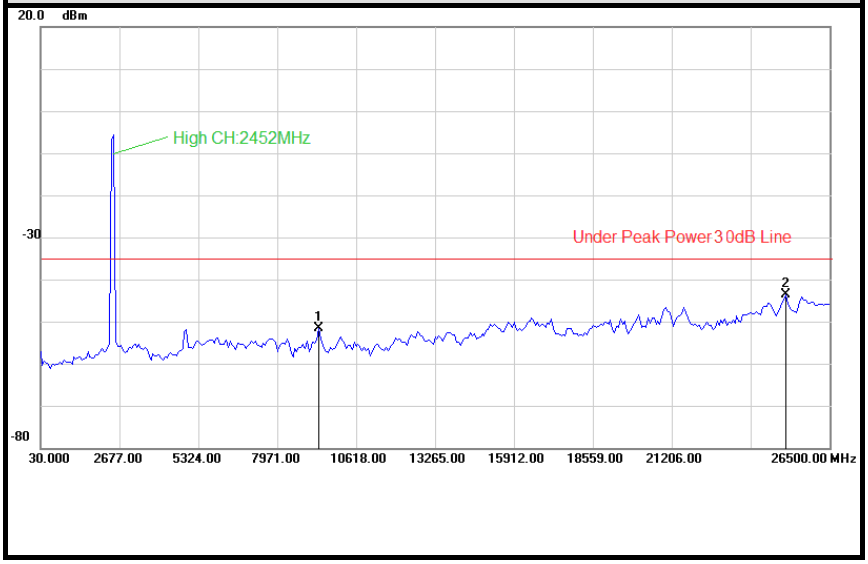
Band-edge Conducted Measurment

Modulation Standard: 802.11 n-HT40 CH-High:2452MHz



Spurious Emission Conducted Measurment

Modulation Standard: 802.11 n-HT40 CH-High:2452MHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

11.0 SPURIOUS EMISSIONS

11.1 LIMIT

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

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

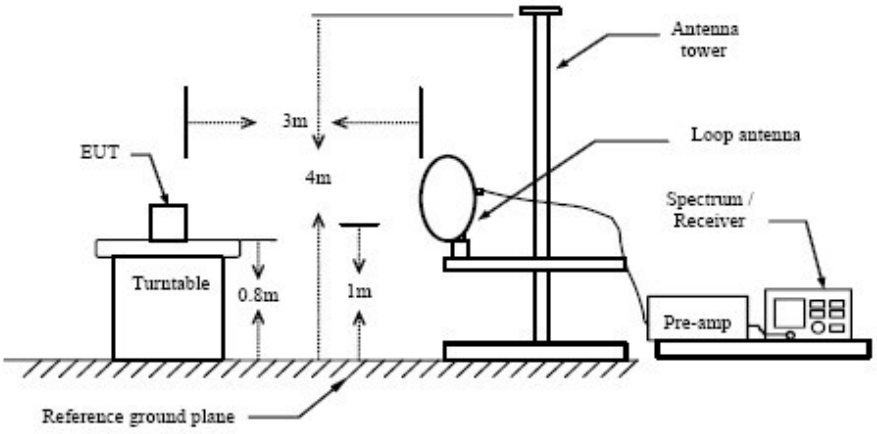
Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

11.2 Test Equipment

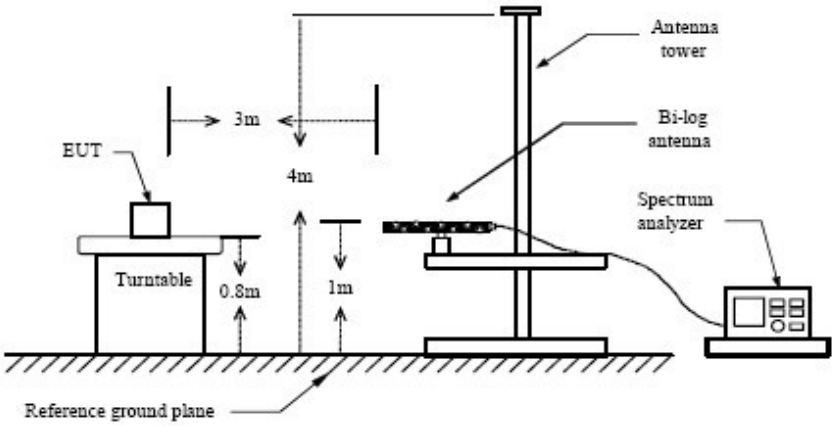
Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2016/11
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2016/03
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2016/03
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2016/03
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2016/03
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2016/11
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A

11.3 TEST CONFIGURATION

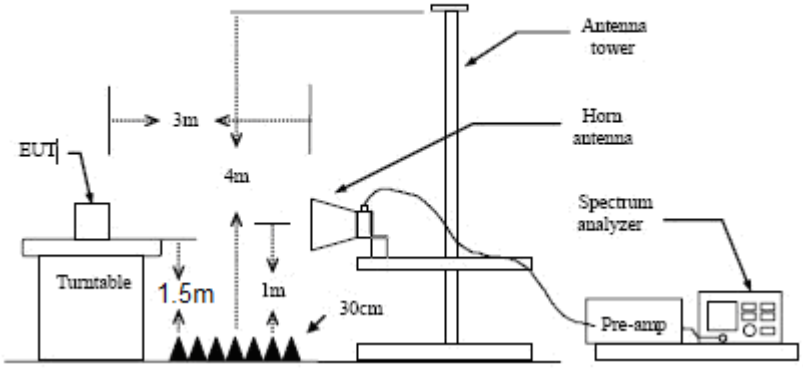
Below 30MHz



Below 1 GHz



Above 1 GHz



CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

11.4 TEST PROCEDURE

1. The EUT is placed on a turntable, which is 0.8m for below 1GHz and 1.5m for Above 1GHz above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

11.5 TEST RESULTS

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

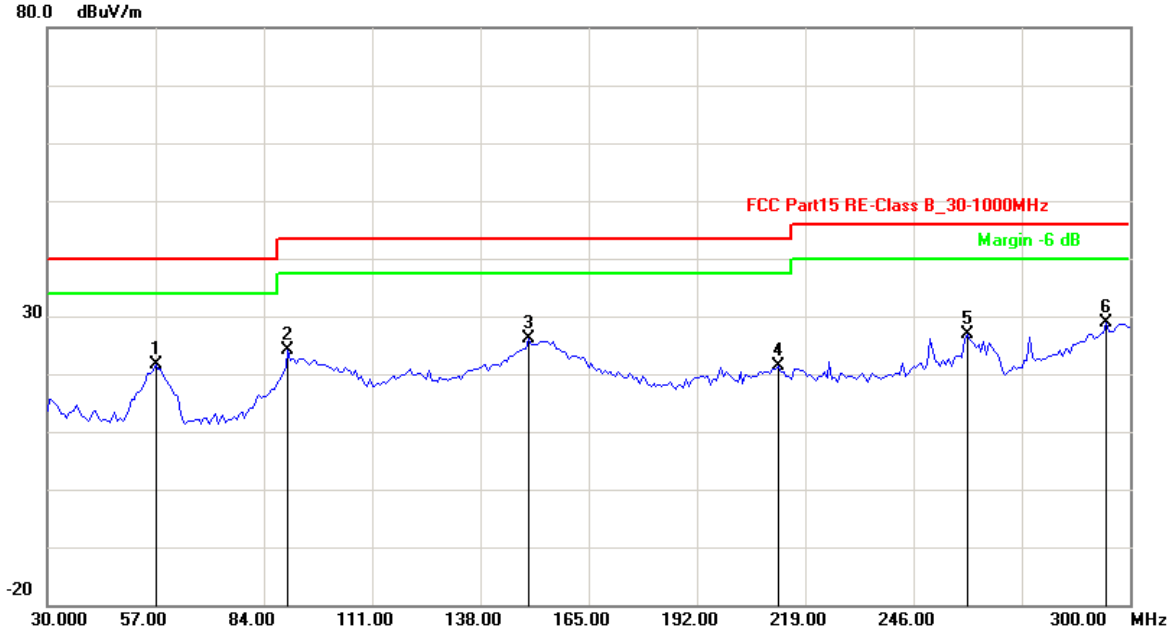
Test Mode: Frequency range:	TX –X Position Mode 9KHz~30MHz	Result:	■ - passed □ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Remark: The test result reading value is to low, margin all > 20dB of the limit.							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

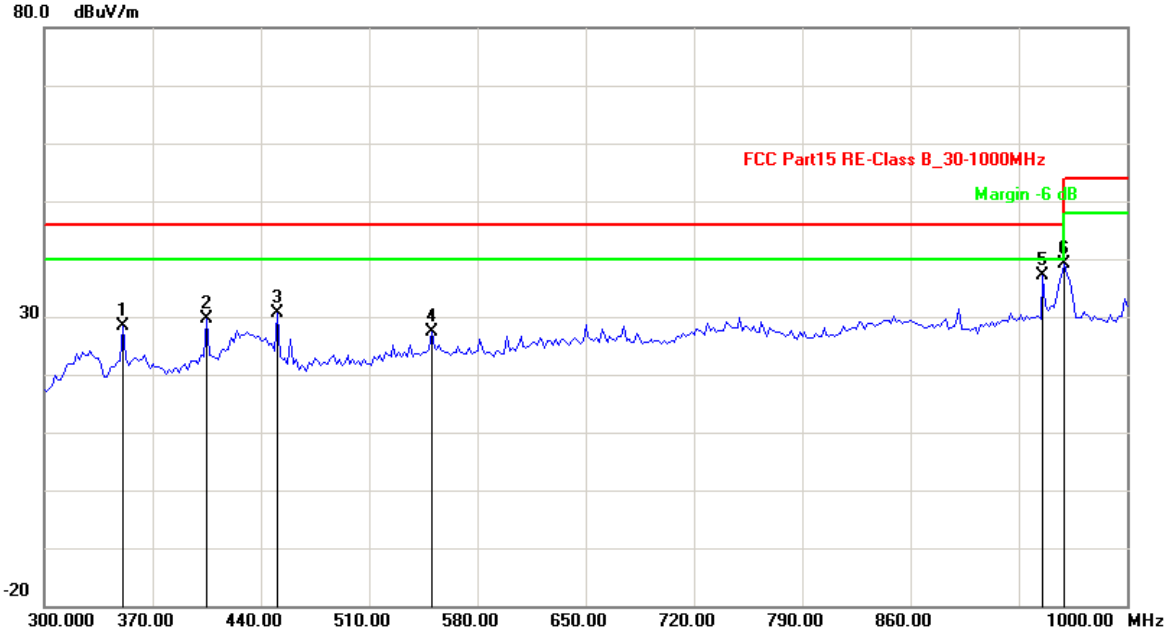
EUT	IP Camera
Operating Condition	DC 12V by adapter
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	23~30 November 2016
Operator	**Duke**
MODEL NO	P3

Channel: Test point: Frequency range:	TX –X Position Horizontal 30MHz-1GHz	Result:	■ - passed □ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	57.0000	-19.37	41.01	21.64	40.00	-18.36	QP
2	90.0750	-19.13	43.28	24.15	43.50	-19.35	QP
3	150.1500	-15.96	41.98	26.02	43.50	-17.48	QP
4	212.2500	-10.35	31.83	21.48	43.50	-22.02	QP
5	259.5000	-10.84	37.63	26.79	46.00	-19.21	QP
6	293.9250	-3.03	31.80	28.77	46.00	-17.23	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	350.7500	-11.34	39.77	28.43	46.00	-17.57	QP
2	405.0000	-10.30	39.88	29.58	46.00	-16.42	QP
3	450.5000	-8.46	38.99	30.53	46.00	-15.47	QP
4	550.2500	-5.68	32.94	27.26	46.00	-18.74	QP
5	945.7500	0.23	36.97	37.20	46.00	-8.80	QP
6	959.7500	0.33	38.90	39.23	46.00	-6.77	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3585.000	3.41	39.04	42.45	74.00	-31.55	peak
2	3585.000	3.41	26.43	29.84	54.00	-24.16	AVG
3	5922.500	8.65	41.85	50.50	74.00	-23.50	peak
4	5922.500	8.65	29.97	38.62	54.00	-15.38	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3062.500	4.47	39.12	43.59	74.00	-30.41	peak
2	3062.500	4.47	25.94	30.41	54.00	-23.59	AVG
3	5537.500	7.52	40.21	47.73	74.00	-26.27	peak
4	5537.500	7.52	26.76	34.28	54.00	-19.72	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3062.500	4.47	39.56	44.03	74.00	-29.97	peak
2	3062.500	4.47	26.78	31.25	54.00	-22.75	AVG
3	5510.000	7.43	40.82	48.25	74.00	-25.75	peak
4	5510.000	7.43	27.65	35.08	54.00	-18.92	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3612.500	3.36	38.84	42.20	74.00	-31.80	peak
2	3612.500	3.36	26.05	29.41	54.00	-24.59	AVG
3	4932.500	5.70	42.68	48.38	74.00	-25.62	peak
4	4932.500	5.70	29.74	35.44	54.00	-18.56	AVG
Remark: Other frequency mini margin all >20dB of Limit							

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1192.500	-0.99	46.74	45.75	74.00	-28.25	peak
2	1192.500	-0.99	33.40	32.41	54.00	-21.59	AVG
3	4932.500	5.70	40.98	46.68	74.00	-27.32	peak
4	4932.500	5.70	27.94	33.64	54.00	-20.36	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2017.500	4.82	41.99	46.81	74.00	-27.19	peak
2	2017.500	4.82	28.75	33.57	54.00	-20.43	AVG
3	4382.500	3.86	40.88	44.74	74.00	-29.26	peak
4	4382.500	3.86	27.76	31.62	54.00	-22.38	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3117.500	4.36	39.97	44.33	74.00	-29.67	peak
2	3117.500	4.36	27.26	31.62	54.00	-22.38	AVG
3	6252.500	9.52	41.16	50.68	74.00	-23.32	peak
4	6252.500	9.52	27.99	37.51	54.00	-16.49	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3062.500	4.47	39.69	44.16	74.00	-29.84	peak
2	3062.500	4.47	26.81	31.28	54.00	-22.72	AVG
3	6005.000	8.89	41.37	50.26	74.00	-23.74	peak
4	6005.000	8.89	28.25	37.14	54.00	-16.86	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2017.500	4.82	41.59	46.41	74.00	-27.59	peak
2	2017.500	4.82	28.70	33.52	54.00	-20.48	AVG
3	4547.500	4.41	39.40	43.81	74.00	-30.19	peak
4	4547.500	4.41	26.23	30.64	54.00	-23.36	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3860.000	2.85	39.16	42.01	74.00	-31.99	peak
2	3860.000	2.85	26.93	29.78	54.00	-24.22	AVG
3	6252.500	9.52	40.07	49.59	74.00	-24.41	peak
4	6252.500	9.52	27.14	36.66	54.00	-17.34	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

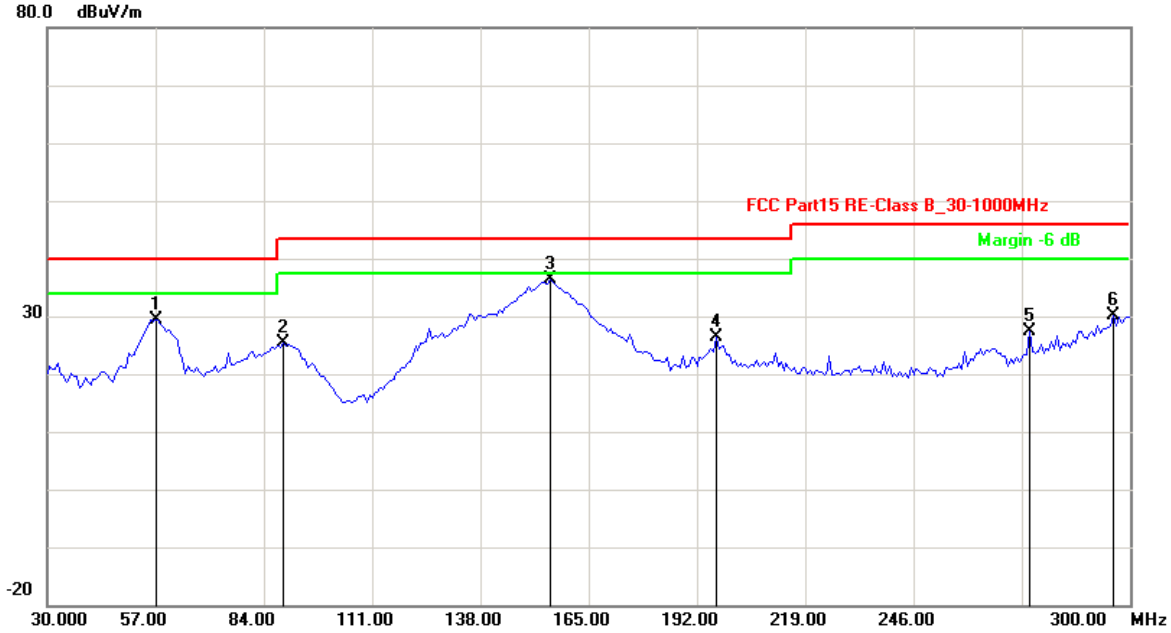
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2017.500	4.82	39.86	44.68	74.00	-29.32	peak
2	2017.500	4.82	26.92	31.74	54.00	-22.26	AVG
3	4905.000	5.61	39.41	45.02	74.00	-28.98	peak
4	4905.000	5.61	26.93	32.54	54.00	-21.46	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4382.500	3.86	38.56	42.42	74.00	-31.58	peak
2	4382.500	3.86	25.25	29.11	54.00	-24.89	AVG
3	6335.000	9.73	40.84	50.57	74.00	-23.43	peak
4	6335.000	9.73	27.79	37.52	54.00	-16.48	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

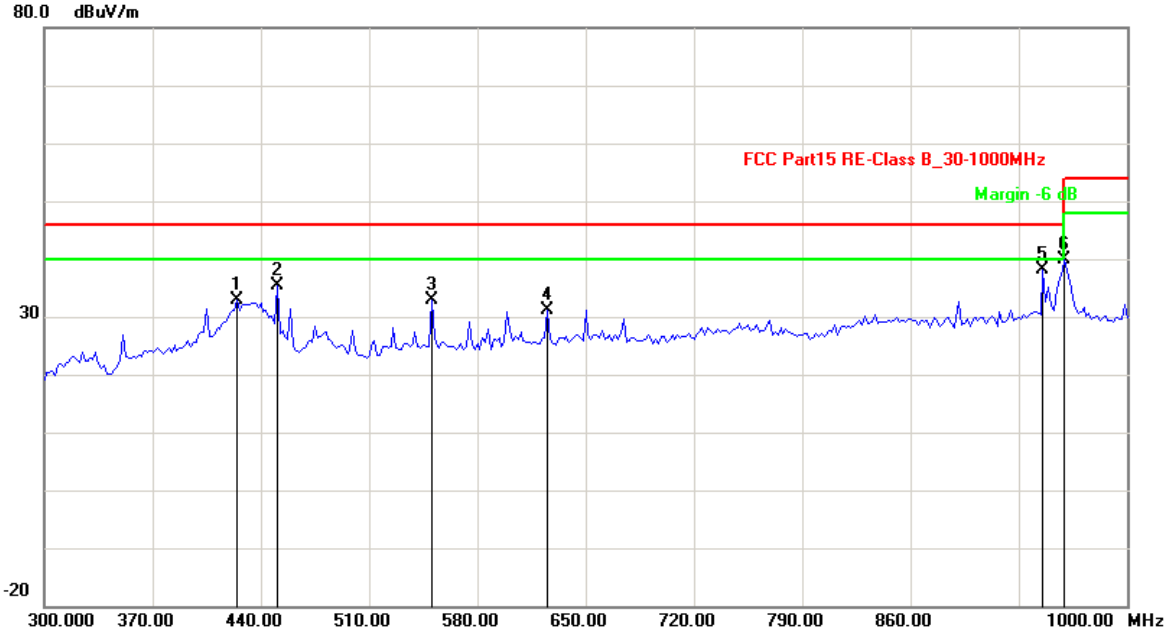
CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Channel:	TX –X Position	Result:	■ - passed □ - not passed
Test point:	Vertical		
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	57.0000	-19.37	48.80	29.43	40.00	-10.57	QP
2	88.7250	-19.24	44.54	25.30	43.50	-18.20	QP
3	155.5500	-15.97	52.43	36.46	43.50	-7.04	QP
4	196.7250	-12.97	39.36	26.39	43.50	-17.11	QP
5	275.0250	-8.61	35.88	27.27	46.00	-18.73	QP
6	295.9500	-2.49	32.52	30.03	46.00	-15.97	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	424.2500	-9.52	42.31	32.79	46.00	-13.21	QP
2	450.5000	-8.46	43.88	35.42	46.00	-10.58	QP
3	550.2500	-5.68	38.56	32.88	46.00	-13.12	QP
4	625.5000	-4.37	35.54	31.17	46.00	-14.83	QP
5	945.7500	0.23	37.92	38.15	46.00	-7.85	QP
6	959.7500	0.33	39.46	39.79	46.00	-6.21	QP
Remark: Other frequency mini margin all >6 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3530.000	3.52	38.88	42.40	74.00	-31.60	peak
2	3530.000	3.52	26.76	30.28	54.00	-23.72	AVG
3	5950.000	8.73	41.67	50.40	74.00	-23.60	peak
4	5950.000	8.73	29.88	38.61	54.00	-15.39	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3145.000	4.31	40.22	44.53	74.00	-29.47	peak
2	3145.000	4.31	27.16	31.47	54.00	-22.53	AVG
3	5785.000	8.25	40.84	49.09	74.00	-24.91	peak
4	5785.000	8.25	28.00	36.25	54.00	-17.75	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 b	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3172.500	4.25	38.68	42.93	74.00	-31.07	peak
2	3172.500	4.25	24.69	28.94	54.00	-25.06	AVG
3	5977.500	8.81	41.27	50.08	74.00	-23.92	peak
4	5977.500	8.81	28.84	37.65	54.00	-16.35	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1990.000	4.66	42.47	47.13	74.00	-26.87	peak
2	1990.000	4.66	29.62	34.28	54.00	-19.72	AVG
3	5345.000	6.95	41.26	48.21	74.00	-25.79	peak
4	5345.000	6.95	28.67	35.62	54.00	-18.38	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3915.000	2.74	38.80	41.54	74.00	-32.46	peak
2	3915.000	2.74	25.67	28.41	54.00	-25.59	AVG
3	5922.500	8.65	41.57	50.22	74.00	-23.78	peak
4	5922.500	8.65	28.53	37.18	54.00	-16.82	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11 g	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3145.000	4.31	40.08	44.39	74.00	-29.61	peak
2	3145.000	4.31	27.21	31.52	54.00	-22.48	AVG
3	5895.000	8.57	41.73	50.30	74.00	-23.70	peak
4	5895.000	8.57	28.84	37.41	54.00	-16.59	AVG
Remark: Other frequency mini margin all >20dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3640.000	3.30	38.45	41.75	74.00	-32.25	peak
2	3640.000	3.30	25.11	28.41	54.00	-25.59	AVG
3	6087.500	9.10	42.01	51.11	74.00	-22.89	peak
4	6087.500	9.10	28.94	38.04	54.00	-15.96	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3145.000	4.31	39.99	44.30	74.00	-29.70	peak
2	3145.000	4.31	27.31	31.62	54.00	-22.38	AVG
3	6775.000	10.85	41.36	52.21	74.00	-21.79	peak
4	6775.000	10.85	28.22	39.07	54.00	-14.93	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT20	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3695.000	3.19	38.33	41.52	74.00	-32.48	peak
2	3695.000	3.19	25.22	28.41	54.00	-25.59	AVG
3	5867.500	8.49	41.91	50.40	74.00	-23.60	peak
4	5867.500	8.49	28.58	37.07	54.00	-16.93	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	Low Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3585.000	3.41	38.12	41.53	74.00	-32.47	peak
2	3585.000	3.41	26.00	29.41	54.00	-24.59	AVG
3	6142.500	9.24	40.67	49.91	74.00	-24.09	peak
4	6142.500	9.24	27.33	36.57	54.00	-17.43	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	Middle Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3970.000	2.63	37.89	40.52	74.00	-33.48	peak
2	3970.000	2.63	25.01	27.64	54.00	-26.36	AVG
3	6252.500	9.52	39.67	49.19	74.00	-24.81	peak
4	6252.500	9.52	26.95	36.47	54.00	-17.53	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Modulation Standard:	802.11n-HT40	Result:	■ - passed □ - not passed
Channel:	High Channel		
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1412.500	1.02	39.00	40.02	74.00	-33.98	peak
2	1412.500	1.02	26.33	27.35	54.00	-26.65	AVG
3	4547.500	4.41	38.39	42.80	74.00	-31.20	peak
4	4547.500	4.41	24.92	29.33	54.00	-24.67	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn

12.0 Antenna Requirements

12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

12.2 Antenna Construction and Directional Gain

Antenna type: Internal antenna
Antenna Gain: 3dBi

13.0 Deviation to test specifications

The following identical model(s):

P1, P2, PQ4020, P4, P6, P8, P720

Belong to the tested device:

Product description: **IP Camera**
Model name: **P3**

CENTRE OF TESTING SERVICE CO., LTD.
A101，No.65，Zhuji Highway,Tianhe District，Guangzhou, China
Tel：+86-20-85543113 (32 lines) Fax：+86-20-38780406
Complaint line：+86-20-85533471 E-mail：cts@cts-lab.com.cn