

FCC RF Test Report

APPLICANT : SHARP CORPORATION, IoT Communication BU
EQUIPMENT : Smart Phone
FCC ID : APYHRO00245
STANDARD : FCC Part 15 Subpart C §15.247
CLASSIFICATION : (DTS) Digital Transmission System

The product was received on Oct. 15, 2016 and testing was completed on Nov. 11, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.



Reviewed by: Joseph Lin / Supervisor



Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.



TABLE OF CONTENTS

REVISION HISTORY	3
SUMMARY OF TEST RESULT	4
1 GENERAL DESCRIPTION	5
1.1 Applicant	5
1.2 Manufacturer	5
1.3 Product Feature of Equipment Under Test	5
1.4 Product Specification of Equipment Under Test	6
1.5 Modification of EUT	6
1.6 Testing Location	7
1.7 Applicable Standards	7
2 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	8
2.1 Carrier Frequency and Channel	8
2.2 Test Mode	8
2.3 Connection Diagram of Test System	9
2.4 Support Unit used in test configuration and system	10
2.5 EUT Operation Test Setup	10
2.6 Measurement Results Explanation Example	10
3 TEST RESULT	11
3.1 6dB and 99% Bandwidth Measurement	11
3.2 Output Power Measurement	13
3.3 Power Spectral Density Measurement	14
3.4 Conducted Band Edges and Spurious Emission Measurement	16
3.5 Radiated Band Edges and Spurious Emission Measurement	26
3.6 AC Conducted Emission Measurement	30
3.7 Antenna Requirements	34
4 LIST OF MEASURING EQUIPMENT	35
5 UNCERTAINTY OF EVALUATION	36
APPENDIX A. CONDUCTED TEST RESULTS	
APPENDIX B. RADIATED SPURIOUS EMISSION	
APPENDIX C. RADIATED SPURIOUS EMISSION PLOTS	
APPENDIX D. DUTY CYCLE PLOTS	
APPENDIX E. SETUP PHOTOGRAPHS	



REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR6O1512C	Rev. 01	Initial issue of report	Dec. 08, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.247(a)(2)	6dB Bandwidth	$\geq 0.5\text{MHz}$	Pass	-
3.1	-	99% Bandwidth	-	Pass	-
3.2	15.247(b)	Power Output Measurement	$\leq 30\text{dBm}$	Pass	-
3.3	15.247(e)	Power Spectral Density	$\leq 8\text{dBm}/3\text{kHz}$	Pass	-
3.4	15.247(d)	Conducted Band Edges	$\leq 20\text{dBc}$	Pass	-
		Conducted Spurious Emission		Pass	-
3.5	15.247(d)	Radiated Band Edges and Radiated Spurious Emission	15.209(a) & 15.247(d)	Pass	Under limit 3.00 dB at 75.590 MHz
3.6	15.207	AC Conducted Emission	15.207(a)	Pass	Under limit 14.40 dB at 0.550 MHz
3.7	15.203 & 15.247(b)	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

SHARP CORPORATION, IoT Communication BU

2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi, Hiroshima pref. 739-0192, Japan

1.2 Manufacturer

SHARP CORPORATION, IoT Communication BU

2-13-1, Hachihonmatsu-lida, Higashi-hiroshima-shi, Hiroshima pref. 739-0192, Japan

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	Smart Phone
FCC ID	APYHRO00245
Sample 1	eMMC Brand Name : Samsung
Sample 2	eMMC Brand Name : hynix
EUT supports Radios application	GSM/GPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20 WLAN 11a/n HT20/HT40 WLAN 11ac VHT20/VHT40/VHT80 Bluetooth BR/EDR/LE
HW Version	PP1
SW Version	CA240
EUT Stage	Identical Prototype

Remark:

1. The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.
2. All tests were performed with sample 1.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx/Rx Channel Frequency Range	2412 MHz ~ 2462 MHz
Maximum (Peak) Output Power to antenna	802.11b : 16.63 dBm (0.0460 W) 802.11g : 22.42 dBm (0.1746 W) 802.11n HT20 : 22.11 dBm (0.1626 W)
99% Occupied Bandwidth	802.11b : 13.65MHz 802.11g : 18.35MHz 802.11n HT20 : 19.15MHz
Antenna Type / Gain	ILA Antenna type with gain 0.00 dBi
Type of Modulation	802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM)

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Testing Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	
	TH05-HY	CO05-HY

Note: The test site complies with ANSI C63.4 2014 requirement.

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.	
Test Site Location	No. 101, Complex Building C, Guanlong Village, Xili Town, Nanshan District, Shenzhen, Guangdong, P.R.C. TEL: +86-755-8637-9589	
Test Site No.	Sporton Site No. :	
	03CH03-SZ	

Note: The test site complies with ANSI C63.4 2014 requirement.

1.7 Applicable Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05
- ANSI C63.10-2013

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 kHz to 30 MHz) and radiated emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
2400-2483.5 MHz	1	2412	7	2442
	2	2417	8	2447
	3	2422	9	2452
	4	2427	10	2457
	5	2432	11	2462
	6	2437	-	-

2.2 Test Mode

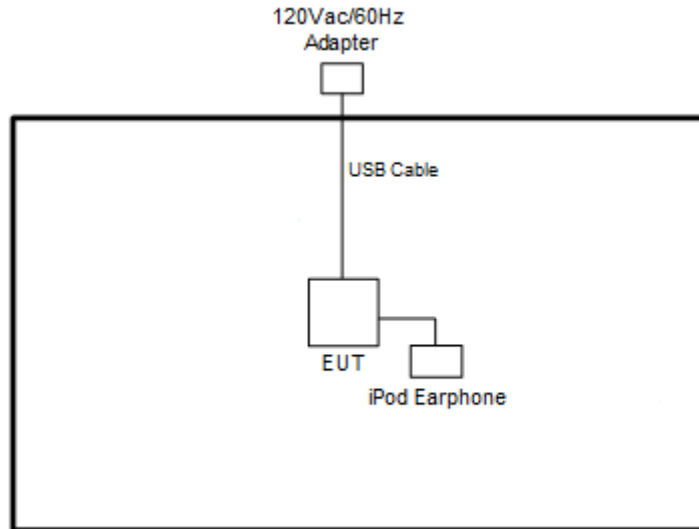
Final test mode of conducted test items and radiated spurious emissions are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11b	1 Mbps
802.11g	6 Mbps
802.11n HT20	MCS0

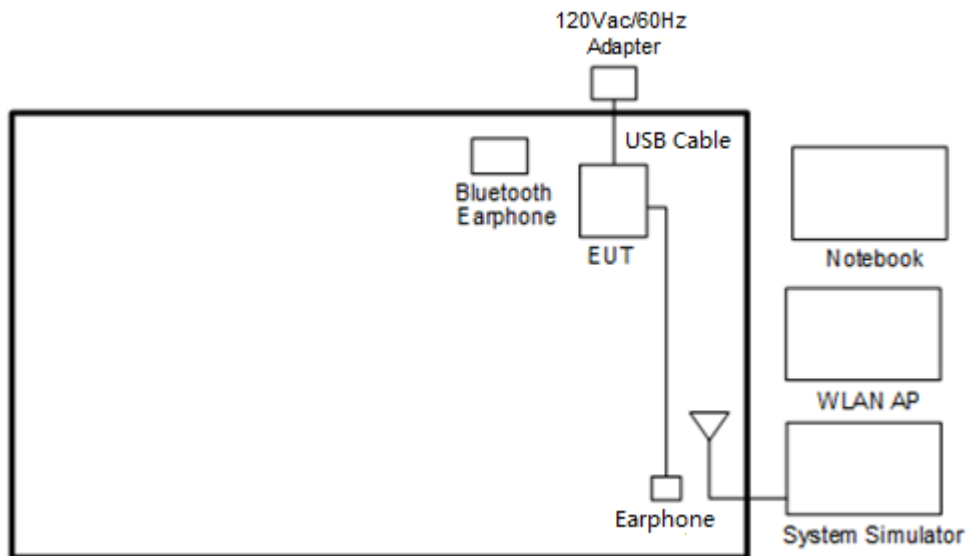
Test Cases	
AC Conducted Emission	Mode 1 : GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + Earphone + NFC On + USB Cable (Charging from Adapter)

2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



2.4 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
3.	WLAN AP	ASUS	RT-AC66U	MSQ-RTAC66U	N/A	Unshielded, 1.8 m
4.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
5.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
6.	iPod Earphone	Apple	MC690ZP/A	Verification	Unshielded, 1.6 m	N/A
7.	USB Cable	SHARP(P1X accessory)	CUBB01M-FA00 2-DH	N/A	Shielded, 0.9m	N/A
8.	Earphone	SONY	SHLDL1	N/A	Unshielded, 1.5m	N/A
9.	Adapter	SHARP	DSA-10PFL-05 FUS 050200	N/A	N/A	N/A

2.5 EUT Operation Test Setup

For WLAN function, programmed RF utility, “Tera Term” installed in the notebook make the EUT provide functions like channel selection and power level for continuous transmitting and receiving signals.

2.6 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

Example :

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

$$= 4.2 + 10 = 14.2 \text{ (dB)}$$

3 Test Result

3.1 6dB and 99% Bandwidth Measurement

3.1.1 Limit of 6dB and 99% Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

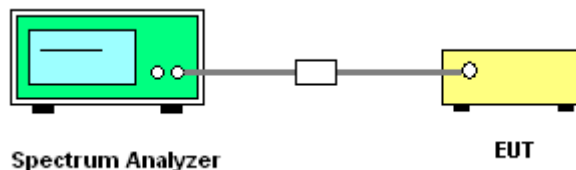
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6 dB bandwidth must be greater than 500 kHz.
5. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) = 1MHz and set the Video bandwidth (VBW) = 3MHz.
6. Measure and record the results in the test report.

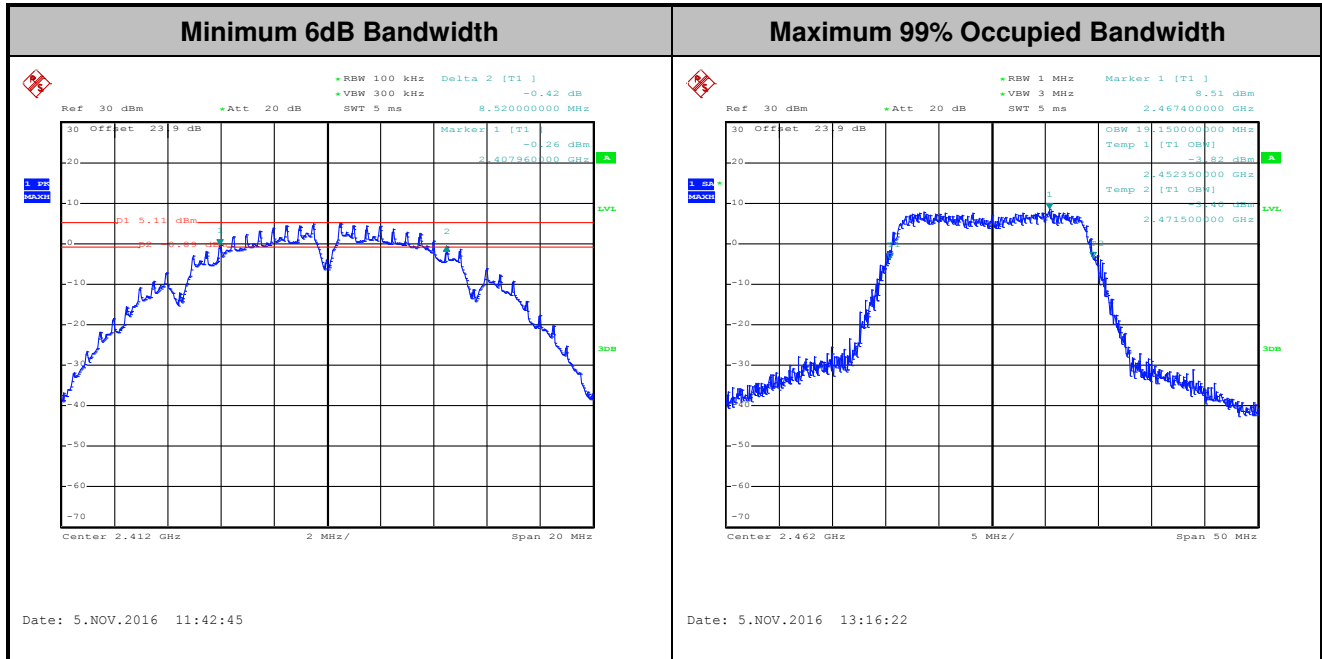
3.1.4 Test Setup





3.1.5 Test Result of 6dB and 99% Occupied Bandwidth

Please refer to Appendix A.



Note : The occupied channel bandwidth is maintained within the band of operation for all of the modulations.

3.2 Output Power Measurement

3.2.1 Limit of Output Power

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. If transmitting antenna of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

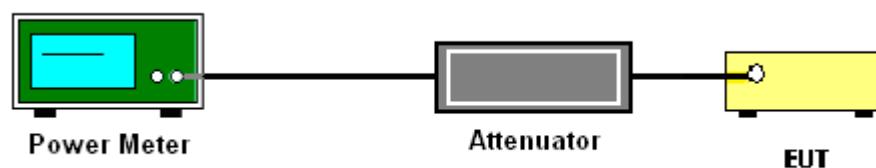
3.2.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.2.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 DTS D01 Meas. Guidance v03r05 section 9.1.2 PKPM1 Peak power meter method.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Measure the conducted output power and record the results in the test report.

3.2.4 Test Setup



3.2.5 Test Result of Peak Output Power

Please refer to Appendix A.

3.2.6 Test Result of Average output Power (Reporting Only)

Please refer to Appendix A.

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.

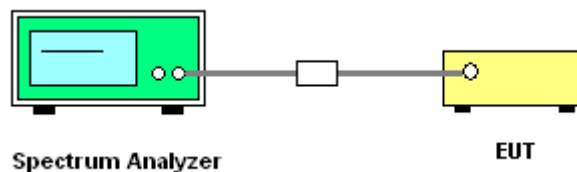
3.3.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.3.3 Test Procedures

1. The testing follows Measurement Procedure 10.2 Method PKPSD of FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 kHz. Video bandwidth VBW = 10 kHz In order to make an accurate measurement, set the span to 1.5 times DTS Channel Bandwidth. (6dB BW)
5. Detector = peak, Sweep time = auto couple, Trace mode = max hold, Allow trace to fully stabilize. Use the peak marker function to determine the maximum power level.
6. Measure and record the results in the test report.

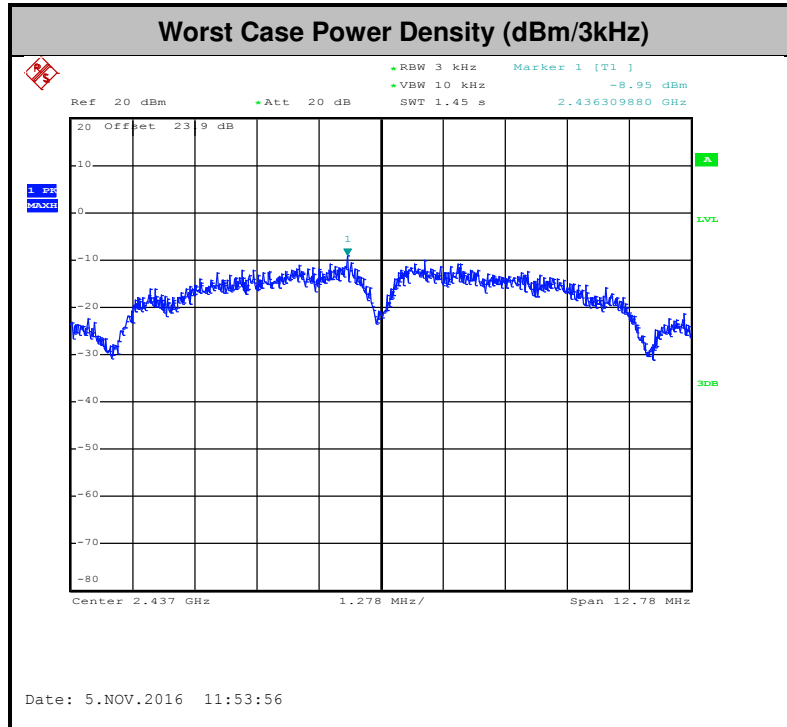
3.3.4 Test Setup





3.3.5 Test Result of Power Spectral Density

Please refer to Appendix A.



3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

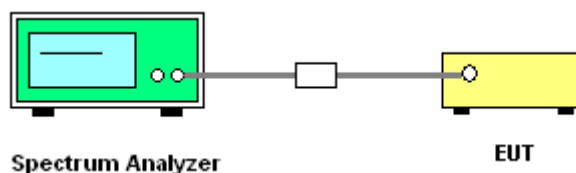
3.4.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.4.3 Test Procedures

1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d).
5. Measure and record the results in the test report.
6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

3.4.4 Test Setup



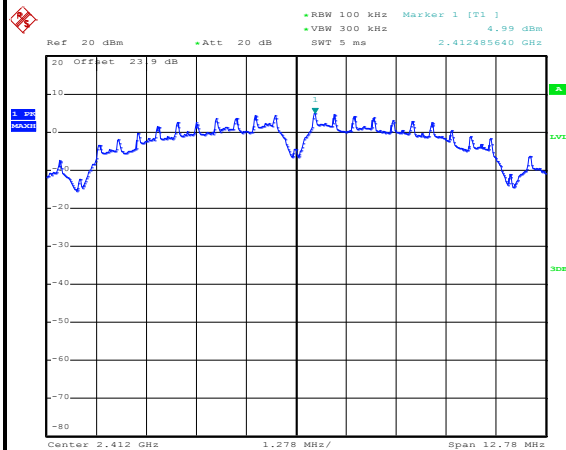


3.4.5 Test Result of Conducted Band Edges and Spurious Emission

Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	48~51%
Test Channel :	01	Test Engineer :	Tommy Lee

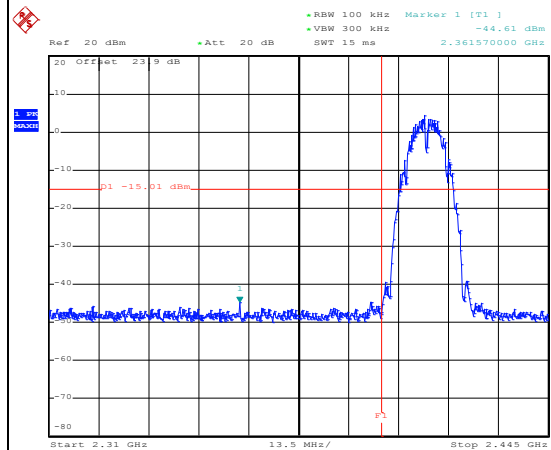
WLAN 802.11b Channel 01

100kHz PSD reference Level



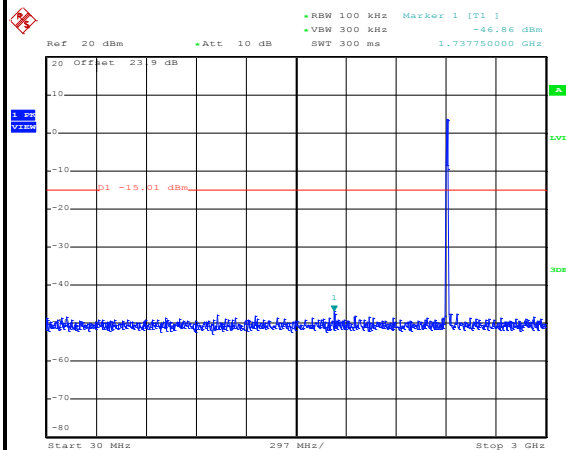
Date: 5.NOV.2016 11:43:51

Low Channel Plot



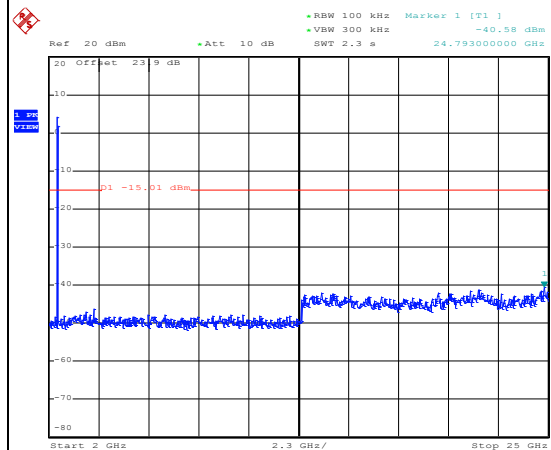
Date: 5.NOV.2016 11:44:14

Spurious Emission 30MHz~3GHz



Date: 5.NOV.2016 11:44:27

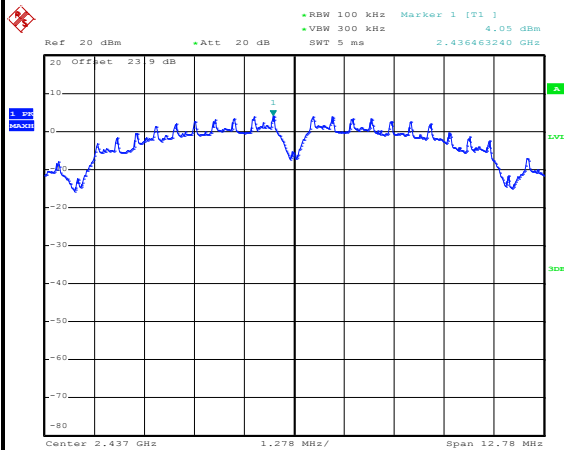
Spurious Emission 2GHz~25GHz



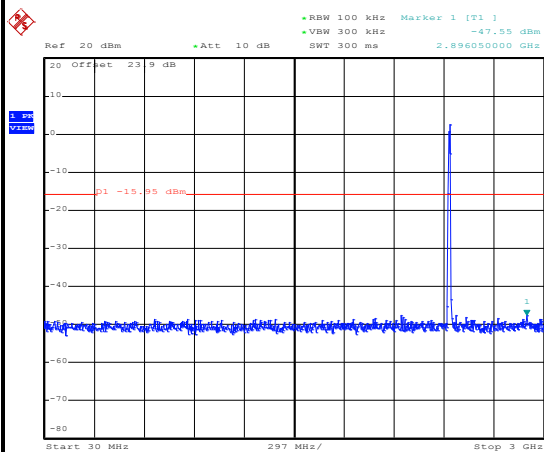
Date: 5.NOV.2016 11:44:36



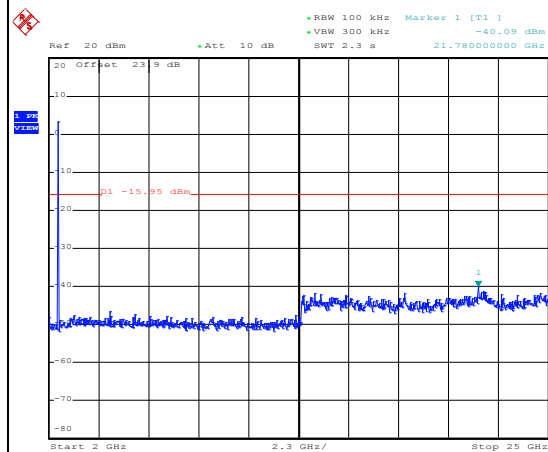
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	48~51%
Test Channel :	06	Test Engineer :	Tommy Lee

WLAN 802.11b Channel 06**100kHz PSD reference Level**

Date: 5.NOV.2016 11:54:13

Spurious Emission 30MHz~3GHz

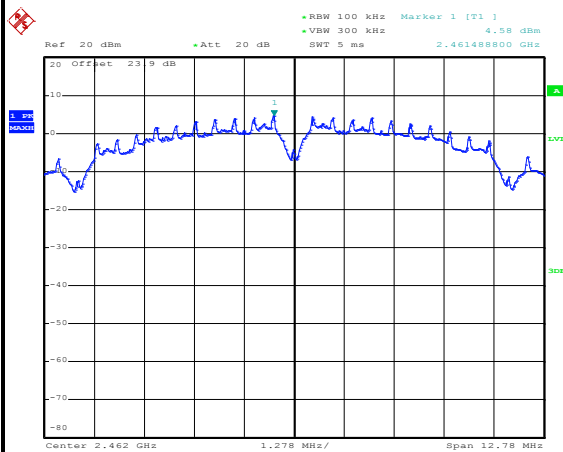
Date: 5.NOV.2016 11:54:28

Spurious Emission 2GHz~25GHz

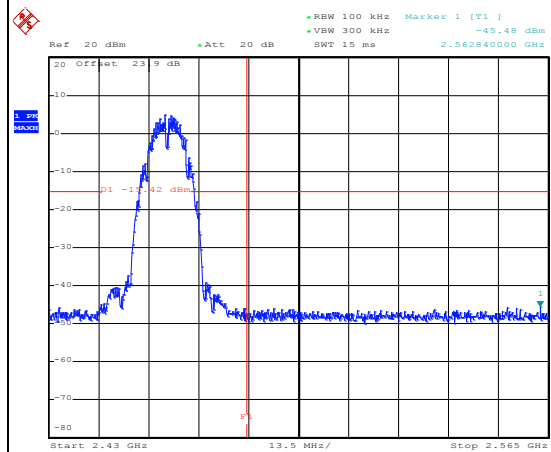
Date: 5.NOV.2016 11:54:37



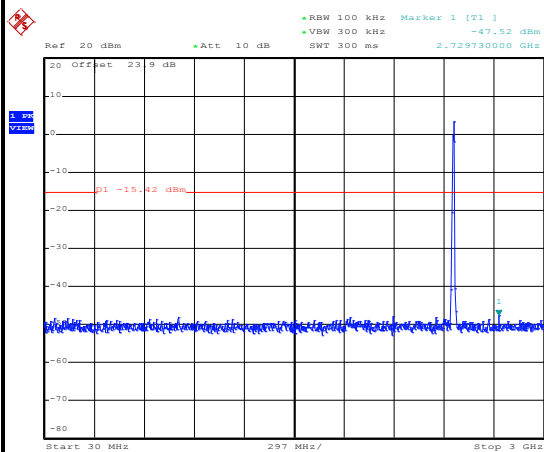
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	48~51%
Test Channel :	11	Test Engineer :	Tommy Lee

WLAN 802.11b Channel 11**100kHz PSD reference Level**

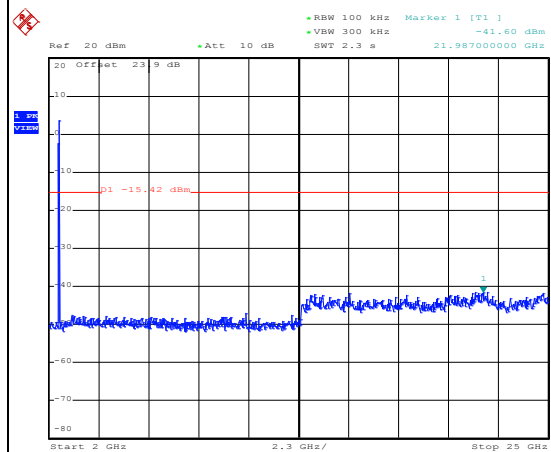
Date: 5.NOV.2016 12:18:59

High Channel Plot

Date: 5.NOV.2016 12:19:29

Spurious Emission 30MHz~3GHz

Date: 5.NOV.2016 12:19:44

Spurious Emission 2GHz~25GHz

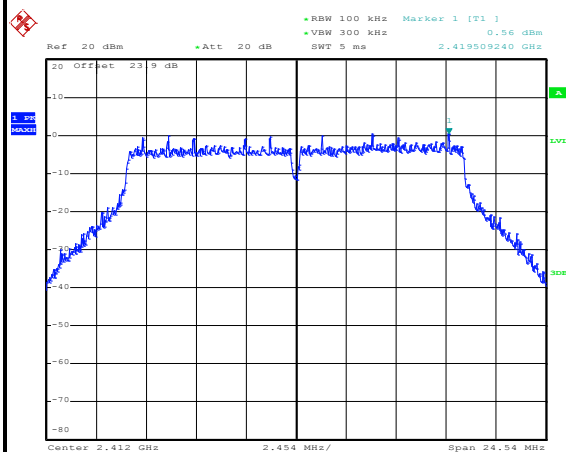
Date: 5.NOV.2016 12:19:52



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	48~51%
Test Channel :	01	Test Engineer :	Tommy Lee

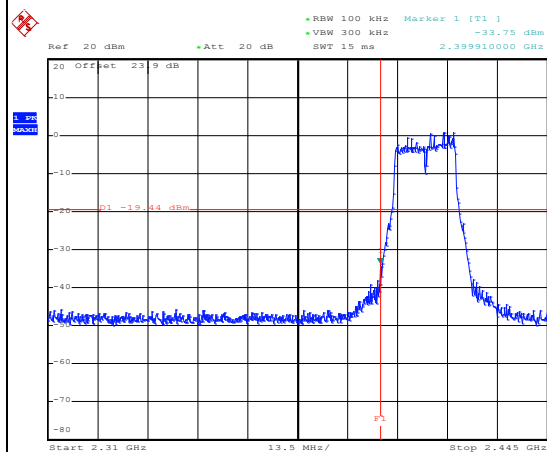
WLAN 802.11g Channel 01

100kHz PSD reference Level



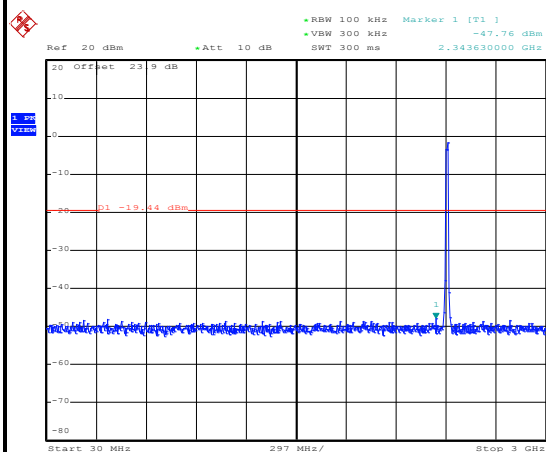
Date: 5.NOV.2016 12:23:27

Low Channel Plot



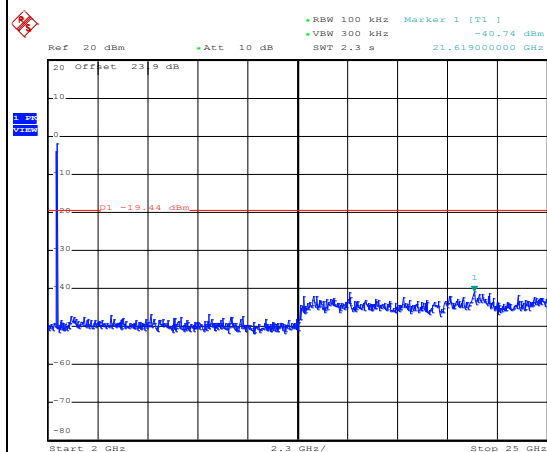
Date: 5.NOV.2016 12:23:42

Spurious Emission 30MHz~3GHz



Date: 5.NOV.2016 12:23:56

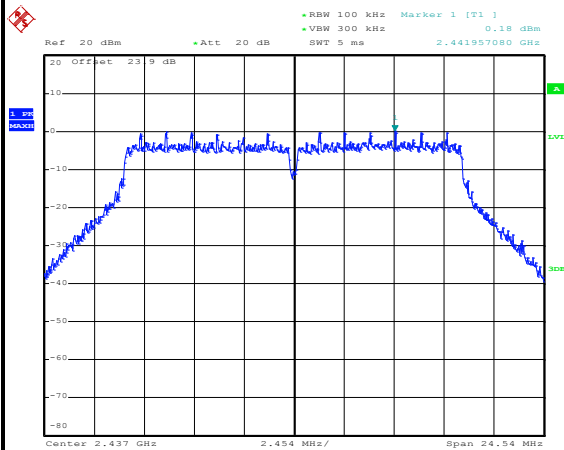
Spurious Emission 2GHz~25GHz



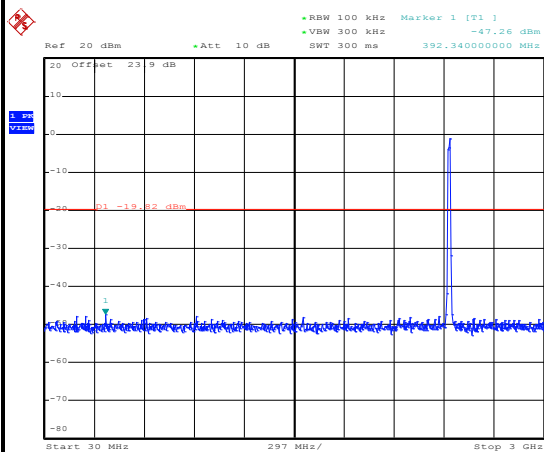
Date: 5.NOV.2016 12:24:04



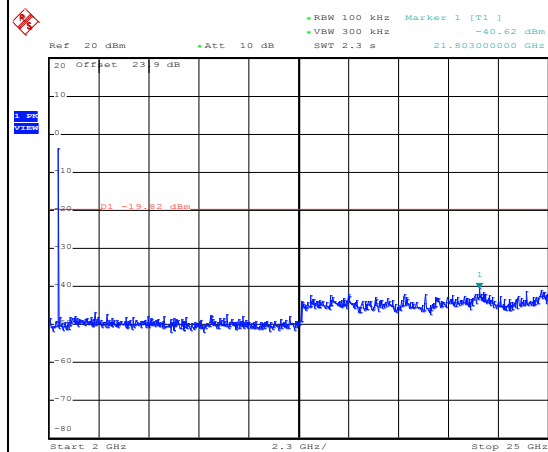
Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	48~51%
Test Channel :	06	Test Engineer :	Tommy Lee

WLAN 802.11g Channel 06**100kHz PSD reference Level**

Date: 5.NOV.2016 12:30:53

Spurious Emission 30MHz~3GHz

Date: 5.NOV.2016 12:31:24

Spurious Emission 2GHz~25GHz

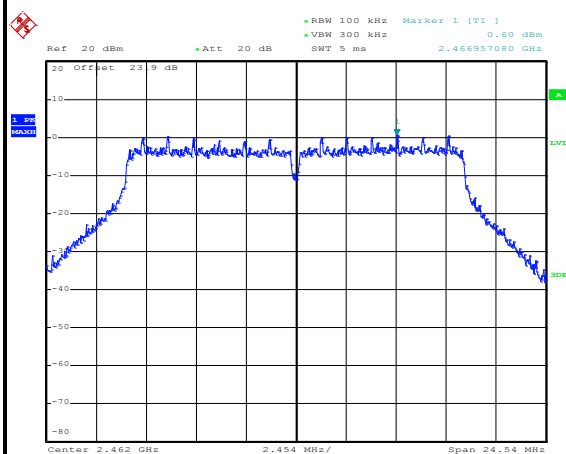
Date: 5.NOV.2016 12:31:33



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	48~51%
Test Channel :	11	Test Engineer :	Tommy Lee

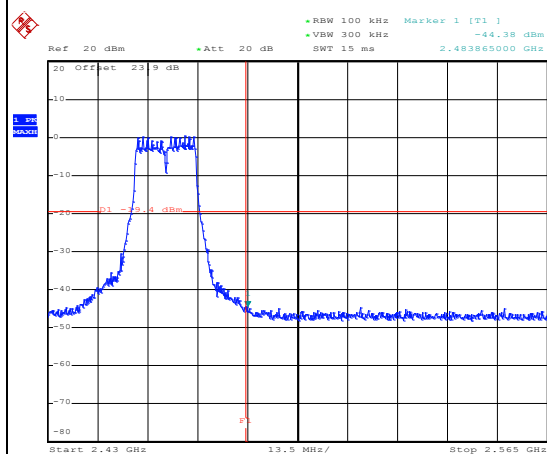
WLAN 802.11g Channel 11

100kHz PSD reference Level



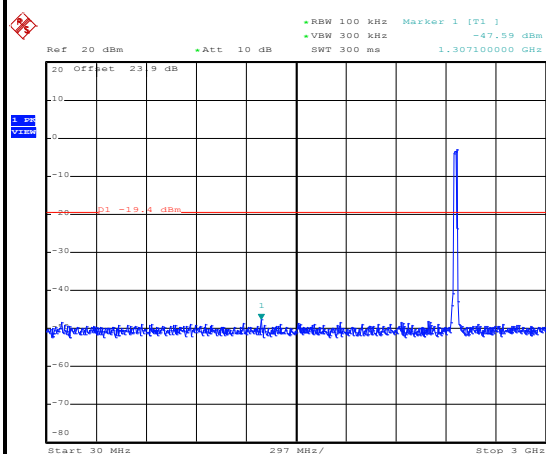
Date: 5.NOV.2016 12:37:13

High Channel Plot



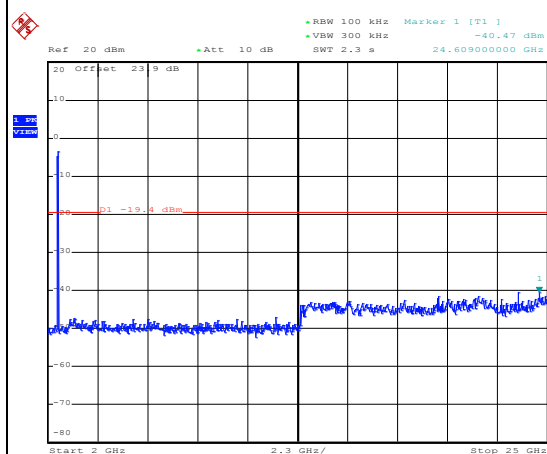
Date: 5.NOV.2016 12:39:03

Spurious Emission 30MHz~3GHz



Date: 5.NOV.2016 12:39:34

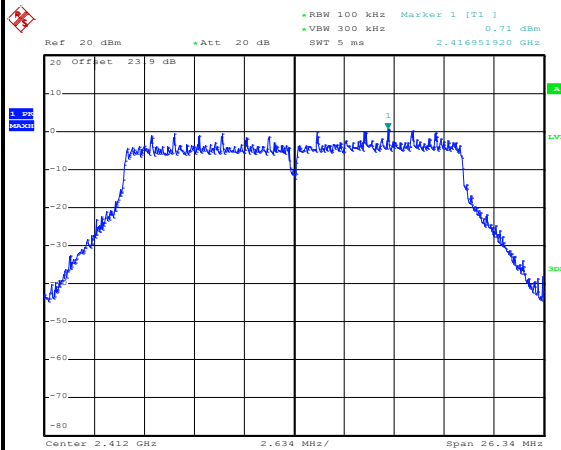
Spurious Emission 2GHz~25GHz



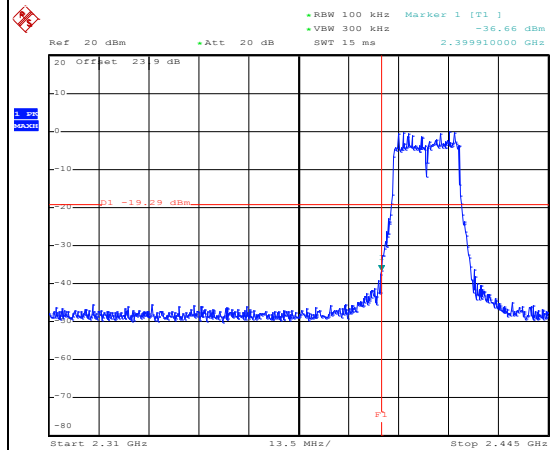
Date: 5.NOV.2016 12:39:42



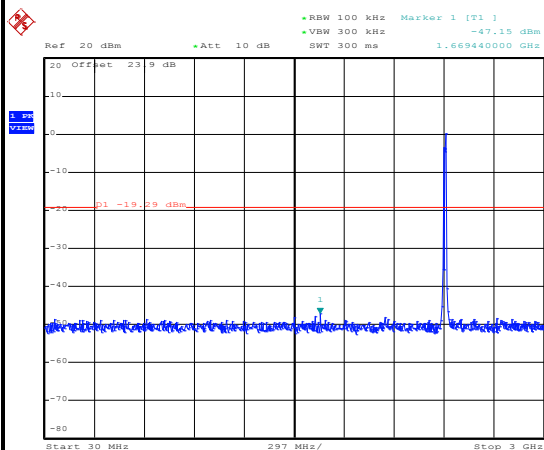
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Low	Relative Humidity :	48~51%
Test Channel :	01	Test Engineer :	Tommy Lee

WLAN 802.11n HT20 Channel 01**100kHz PSD reference Level**

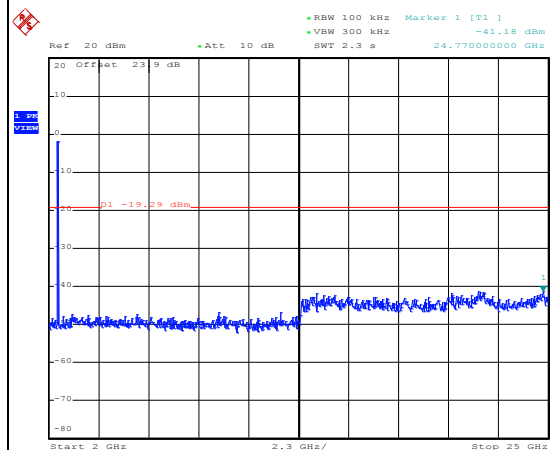
Date: 5.NOV.2016 13:04:15

Low Channel Plot

Date: 5.NOV.2016 13:04:51

Spurious Emission 30MHz~3GHz

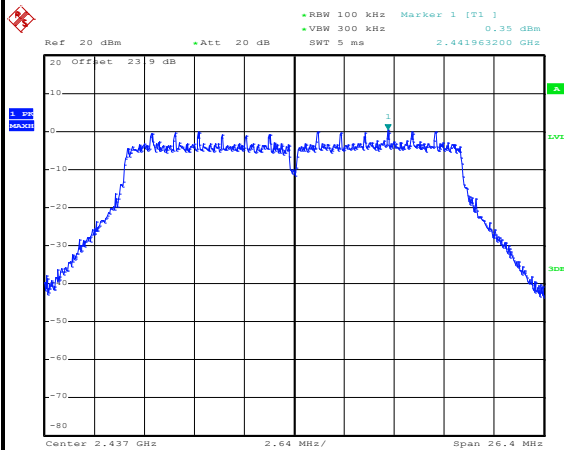
Date: 5.NOV.2016 13:05:04

Spurious Emission 2GHz~25GHz

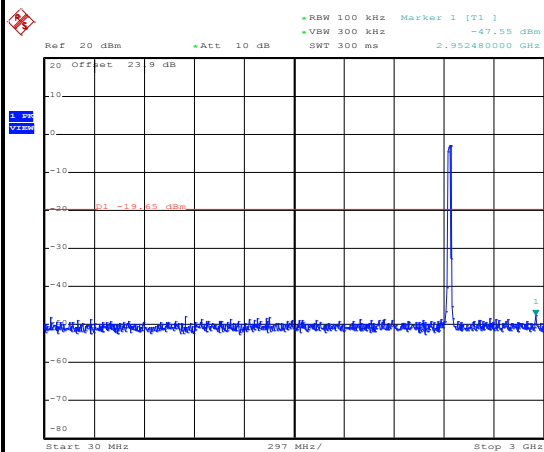
Date: 5.NOV.2016 13:05:13



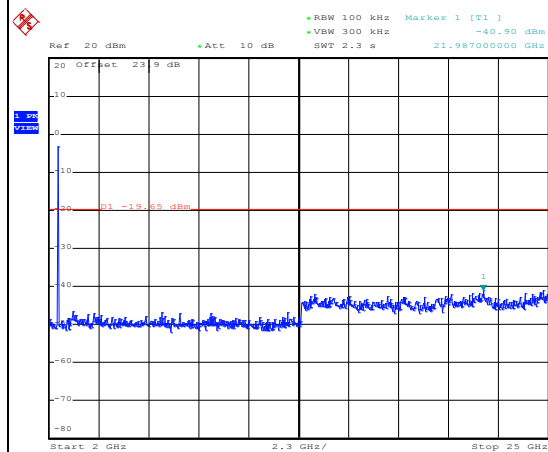
Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz Mid	Relative Humidity :	48~51%
Test Channel :	06	Test Engineer :	Tommy Lee

WLAN 802.11n HT20 Channel 06**100kHz PSD reference Level**

Date: 5.NOV.2016 13:08:30

Spurious Emission 30MHz~3GHz

Date: 5.NOV.2016 13:09:03

Spurious Emission 2GHz~25GHz

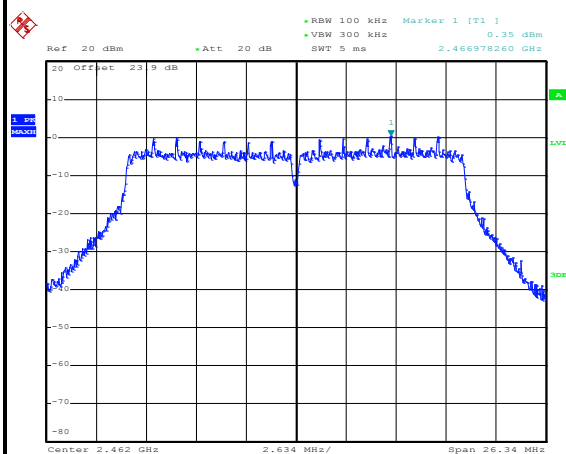
Date: 5.NOV.2016 13:09:11



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	2.4GHz High	Relative Humidity :	48~51%
Test Channel :	11	Test Engineer :	Tommy Lee

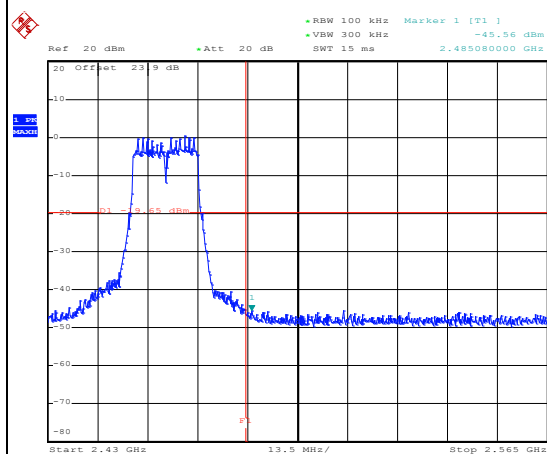
WLAN 802.11n HT20 Channel 11

100kHz PSD reference Level



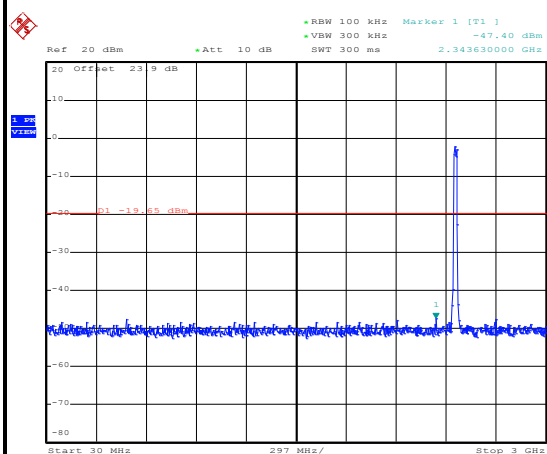
Date: 5.NOV.2016 13:14:30

High Channel Plot



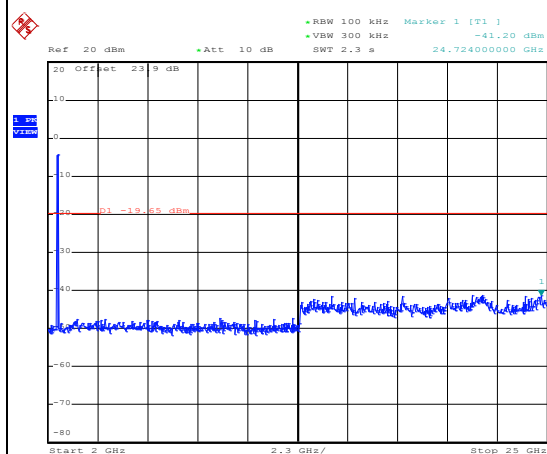
Date: 5.NOV.2016 13:15:30

Spurious Emission 30MHz~3GHz



Date: 5.NOV.2016 13:15:44

Spurious Emission 2GHz~25GHz



Date: 5.NOV.2016 13:15:52

3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated band edge and Spurious Emission Measurement

In any 100 kHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.5.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.5.3 Test Procedures

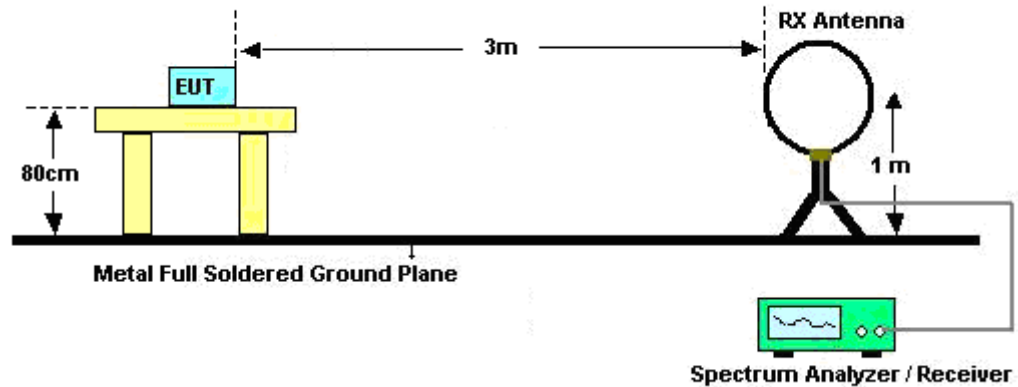
1. The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v03r05.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
3. The EUT was placed on a turntable with 0.8 meter for frequency below 1GHz and 1.5 meter for frequency above 1GHz respectively above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.

For average measurement:

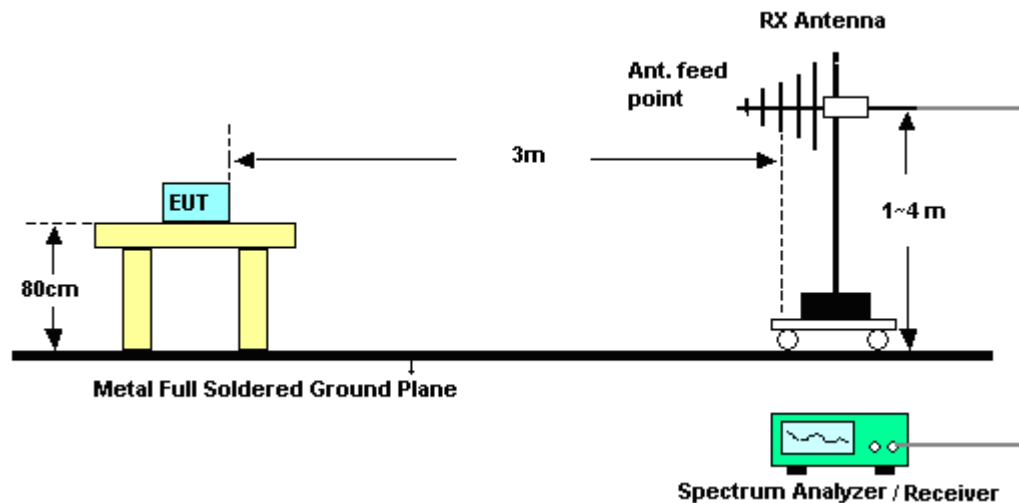
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

3.5.4 Test Setup

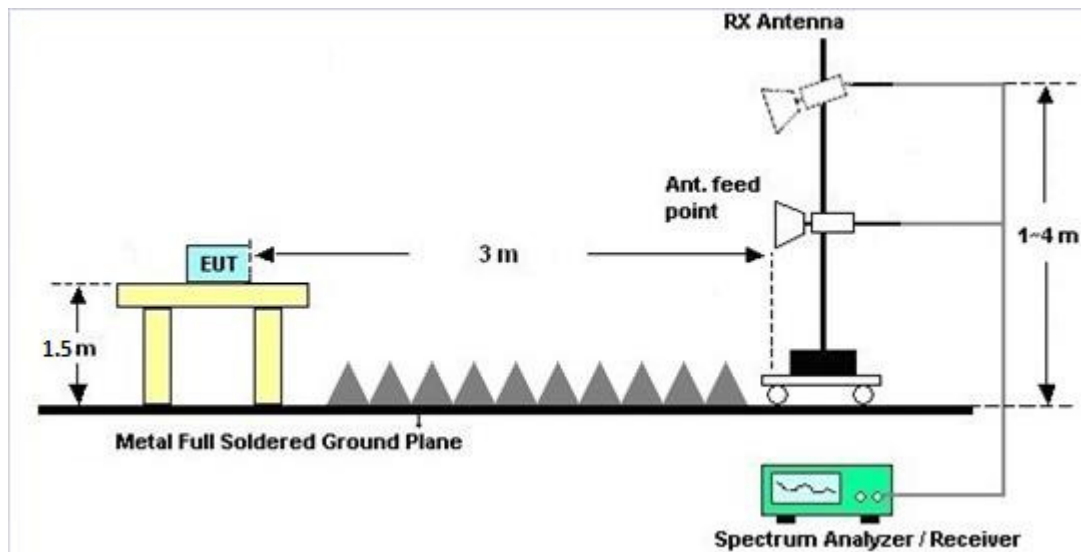
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emissions (9kHz ~ 30MHz)

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

3.5.6 Test Result of Radiated Spurious at Band Edges

Please refer to Appendix B and C.

3.5.7 Duty Cycle

Please refer to Appendix D.

3.5.8 Test Result of Radiated Spurious Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.

3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dB μ V)	
	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.

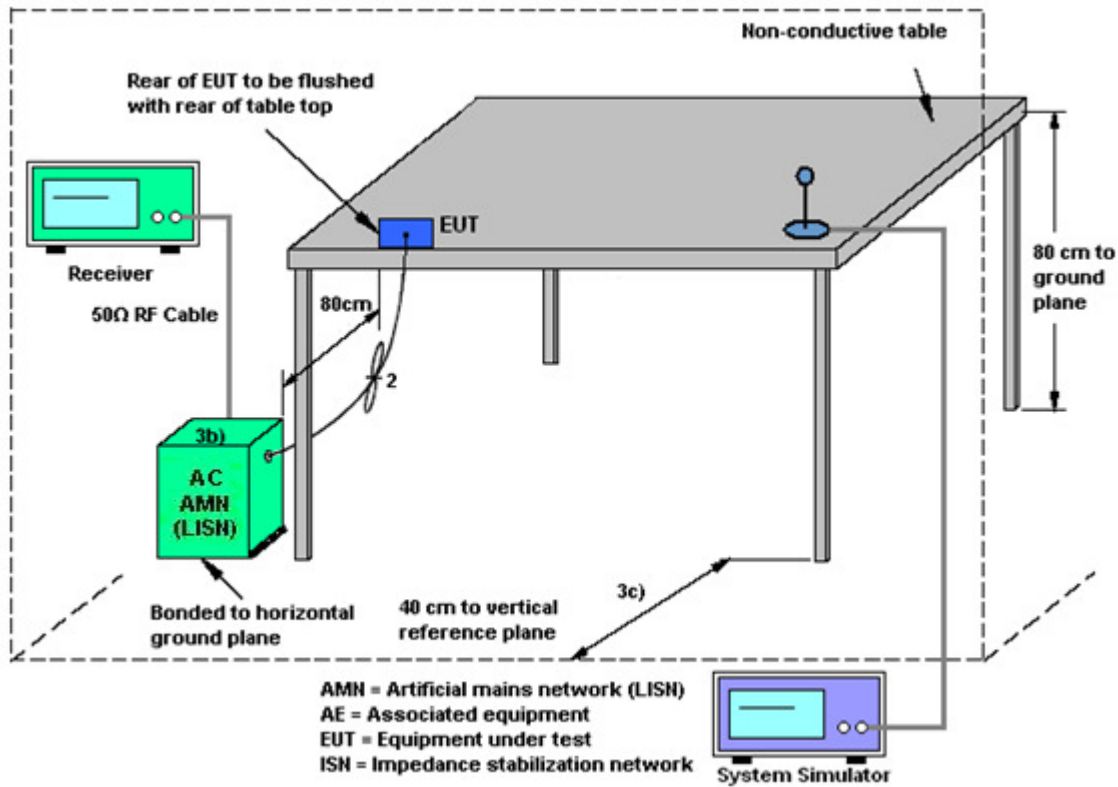
3.6.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.6.3 Test Procedures

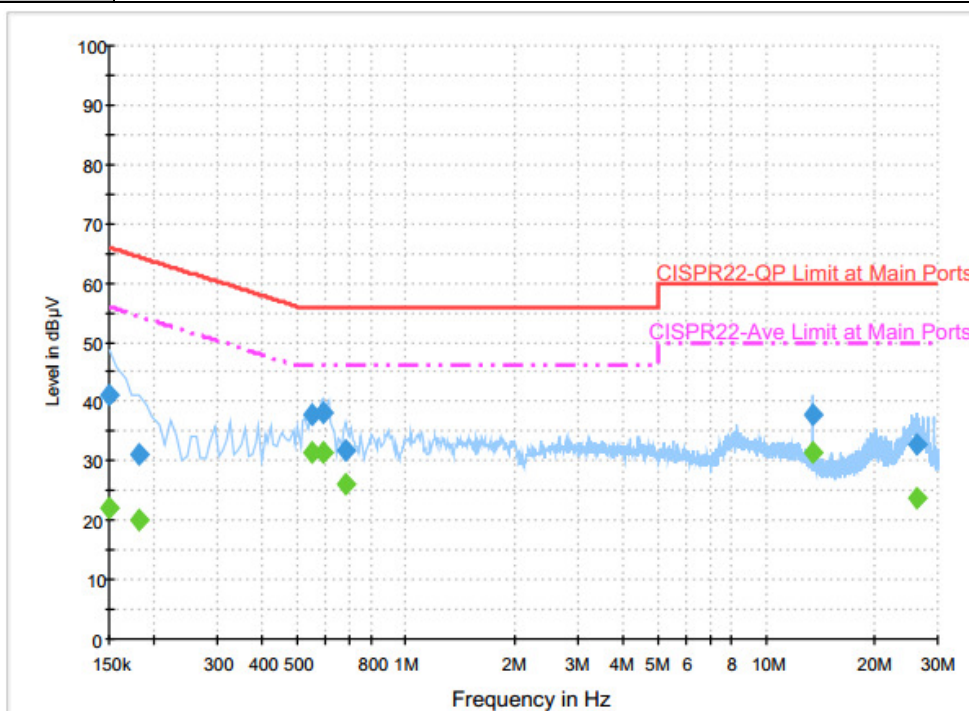
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF bandwidth = 9kHz) with Maximum Hold Mode.

3.6.4 Test Setup



3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	50~52%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + Earphone + NFC On + USB Cable (Charging from Adapter)		



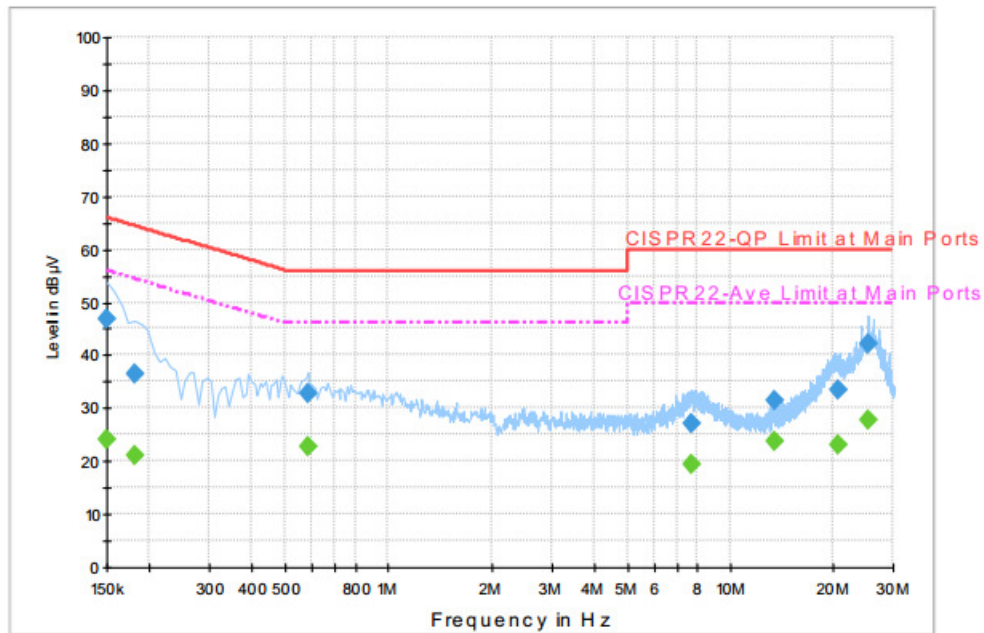
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	41.3	Off	L1	19.6	24.7	66.0
0.182000	31.0	Off	L1	19.6	33.4	64.4
0.550000	37.7	Off	L1	19.6	18.3	56.0
0.590000	38.0	Off	L1	19.6	18.0	56.0
0.678000	31.9	Off	L1	19.6	24.1	56.0
13.558000	37.8	Off	L1	20.3	22.2	60.0
26.278000	32.7	Off	L1	21.0	27.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	22.2	Off	L1	19.6	33.8	56.0
0.182000	20.1	Off	L1	19.6	34.3	54.4
0.550000	31.6	Off	L1	19.6	14.4	46.0
0.590000	31.5	Off	L1	19.6	14.5	46.0
0.678000	26.1	Off	L1	19.6	19.9	46.0
13.558000	31.5	Off	L1	20.3	18.5	50.0
26.278000	23.6	Off	L1	21.0	26.4	50.0

Test Mode :	Mode 1	Temperature :	23~25°C
Test Engineer :	Arthur Hsieh	Relative Humidity :	50~52%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN (2.4GHz) Link + Earphone + NFC On + USB Cable (Charging from Adapter)		


Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	46.7	Off	N	19.6	19.3	66.0
0.182000	36.5	Off	N	19.6	27.9	64.4
0.582000	32.8	Off	N	19.6	23.2	56.0
7.734000	27.0	Off	N	20.0	33.0	60.0
13.558000	31.5	Off	N	20.4	28.5	60.0
20.718000	33.5	Off	N	20.8	26.5	60.0
25.302000	42.0	Off	N	21.1	18.0	60.0

Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.150000	24.0	Off	N	19.6	32.0	56.0
0.182000	21.0	Off	N	19.6	33.4	54.4
0.582000	22.6	Off	N	19.6	23.4	46.0
7.734000	19.5	Off	N	20.0	30.5	50.0
13.558000	23.7	Off	N	20.4	26.3	50.0
20.718000	23.0	Off	N	20.8	27.0	50.0
25.302000	27.6	Off	N	21.1	22.4	50.0



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting Antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the Antenna exceeds 6 dBi. The use of a permanently attached Antenna or of an Antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the FCC rule.

3.7.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Power Meter	Anritsu	ML2495A	0932001	300MHz~40GHz	Sep. 29, 2016	Nov. 02, 2016 ~ Nov. 06, 2016	Sep. 28, 2017	Conducted (TH05-HY)
Power Sensor	Anritsu	MA2411B	0846202	300MHz~40GHz	Sep. 29, 2016	Nov. 02, 2016 ~ Nov. 06, 2016	Sep. 28, 2017	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100057	9kHz-40GHz	Nov. 23, 2015	Nov. 02, 2016 ~ Nov. 06, 2016	Nov. 22, 2016	Conducted (TH05-HY)
Programmable Power Supply	GW Instek	PSS-2005	GEO821763	N/A	Nov. 13, 2015	Nov. 02, 2016 ~ Nov. 06, 2016	Nov. 12, 2016	Conducted (TH05-HY)
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	Nov. 08, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 30, 2016	Nov. 08, 2016	Aug. 29, 2017	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	Nov. 08, 2016	Dec. 01, 2016	Conduction (CO05-HY)
EMI Test Receiver&SA	KEYSIGHT	N9038A	MY54450083	20Hz~8.4GHz	May 07, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	May 06, 2017	Radiation (03CH03-SZ)
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY55150246	10Hz~44GHz;	May 07, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	May 06, 2017	Radiation (03CH03-SZ)
Loop Antenna	R&S	HFH2-Z2	100354	9kHz~30MHz	May 07, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	May 06, 2017	Radiation (03CH03-SZ)
Bilog Antenna	TeseQ	CBL6112D	35408	30MHz-2GHz	May 21, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	May 20, 2017	Radiation (03CH03-SZ)
Double Ridge Horn Antenna	SCHWARZBECK	BBHA9120D	9120D-1355	1GHz~18GHz	May 07, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	May 06, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	TTA1840-35-HG	1871923	18GHz~40GHz	Jul. 16, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	Jul. 15, 2017	Radiation (03CH03-SZ)
SHF-EHF Horn	com-power	AH-840	101071	18GHz-40GHz	Aug. 10, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	Aug. 09, 2017	Radiation (03CH03-SZ)
Amplifier	Burgeon	BPA-530	102210	0.01Hz~3000MHz	Oct. 11, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	Oct. 10, 2017	Radiation (03CH03-SZ)
HF Amplifier	MITEQ	AMF-7D-00101800-30-10P-R	1943528	1GHz~18GHz	Oct. 11, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	Oct. 10, 2017	Radiation (03CH03-SZ)
Amplifier	Agilent Technologies	83017A	MY39501302	500MHz~26.5GHz	Jan. 12, 2016	Nov. 05, 2016 ~ Nov. 11, 2016	Jan. 11, 2017	Radiation (03CH03-SZ)
AC Power Source	Chroma	61601	616010001985	N/A	N/A	Nov. 05, 2016 ~ Nov. 11, 2016	N/A	Radiation (03CH03-SZ)
Turn Table	EM	EM1000	N/A	0~360 degree	N/A	Nov. 05, 2016 ~ Nov. 11, 2016	N/A	Radiation (03CH03-SZ)
Antenna Mast	EM	EM1000	N/A	1 m~4 m	N/A	Nov. 05, 2016 ~ Nov. 11, 2016	N/A	Radiation (03CH03-SZ)

5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.7
---	-----

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.1
---	-----

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 18000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0
---	-----

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	5.0
---	-----



Appendix A. Conducted Test Results

A1 - DTS Part

Test Engineer:	Tommy Lee	Temperature:	21~25	°C
Test Date:	2016/11/2~2016/11/6	Relative Humidity:	51~54	%

TEST RESULTS DATA
6dB and 99% Occupied Bandwidth

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	99% Occupied BW (MHz)	6dB BW (MHz)	6dB BW Limit (MHz)	Pass/Fail
11b	1Mbps	1	1	2412	13.45	8.52	0.50	Pass
11b	1Mbps	1	6	2437	13.50	8.52	0.50	Pass
11b	1Mbps	1	11	2462	13.65	8.52	0.50	Pass
11g	6Mbps	1	1	2412	18.35	16.36	0.50	Pass
11g	6Mbps	1	6	2437	18.30	16.36	0.50	Pass
11g	6Mbps	1	11	2462	18.35	16.36	0.50	Pass
HT20	MCS0	1	1	2412	18.85	17.56	0.50	Pass
HT20	MCS0	1	6	2437	19.00	17.60	0.50	Pass
HT20	MCS0	1	11	2462	19.15	17.56	0.50	Pass

TEST RESULTS DATA
Peak Power Table

2.4GHz Band										
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak Conducted Power (dBm)	Conducted Power Limit (dBm)	DG (dBi)	EIRP Power (dBm)	EIRP Power Limit (dBm)	Pass /Fail
11b	1Mbps	1	1	2412	16.63	30.00	0.00	16.63	36.00	Pass
11b	1Mbps	1	6	2437	16.01	30.00	0.00	16.01	36.00	Pass
11b	1Mbps	1	11	2462	16.38	30.00	0.00	16.38	36.00	Pass
11g	6Mbps	1	1	2412	22.42	30.00	0.00	22.42	36.00	Pass
11g	6Mbps	1	6	2437	21.80	30.00	0.00	21.80	36.00	Pass
11g	6Mbps	1	11	2462	22.34	30.00	0.00	22.34	36.00	Pass
HT20	MCS0	1	1	2412	22.11	30.00	0.00	22.11	36.00	Pass
HT20	MCS0	1	6	2437	21.84	30.00	0.00	21.84	36.00	Pass
HT20	MCS0	1	11	2462	21.95	30.00	0.00	21.95	36.00	Pass

TEST RESULTS DATA
Average Power Table
(Reporting Only)

2.4GHz Band						
Mod.	Data Rate	NTx	CH.	Freq. (MHz)	Duty Factor (dB)	Average Conducted Power (dBm)
11b	1Mbps	1	1	2412	0.00	13.81
11b	1Mbps	1	6	2437	0.00	13.07
11b	1Mbps	1	11	2462	0.00	13.67
11g	6Mbps	1	1	2412	0.06	12.43
11g	6Mbps	1	6	2437	0.06	12.03
11g	6Mbps	1	11	2462	0.06	12.14
HT20	MCS0	1	1	2412	0.07	12.40
HT20	MCS0	1	6	2437	0.07	12.00
HT20	MCS0	1	11	2462	0.07	12.19

TEST RESULTS DATA
Peak Power Density

2.4GHz Band								
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Peak PSD (dBm /3kHz)	DG (dBi)	Peak PSD Limit (dBm /3kHz)	Pass/Fail
11b	1Mbps	1	1	2412	-9.35	0.00	8.00	Pass
11b	1Mbps	1	6	2437	-8.95	0.00	8.00	Pass
11b	1Mbps	1	11	2462	-9.07	0.00	8.00	Pass
11g	6Mbps	1	1	2412	-13.21	0.00	8.00	Pass
11g	6Mbps	1	6	2437	-13.94	0.00	8.00	Pass
11g	6Mbps	1	11	2462	-13.54	0.00	8.00	Pass
HT20	MCS0	1	1	2412	-14.08	0.00	8.00	Pass
HT20	MCS0	1	6	2437	-13.94	0.00	8.00	Pass
HT20	MCS0	1	11	2462	-14.05	0.00	8.00	Pass



Appendix B. Radiated Spurious Emission

Test Engineer :	Jeff Yao	Temperature :	23~25°C
		Relative Humidity :	48~52%

2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		2368.59	51.39	-22.61	74	54.29	27.26	4.86	35.02	214	337	P	H
		2390.00	38.5	-15.5	54	41.35	27.29	4.86	35	214	337	A	H
	*	2412	101.24	-	-	104.03	27.33	4.88	35	214	337	P	H
	*	2412	97.47	-	-	100.26	27.33	4.88	35	214	337	A	H
													H
													H
		2364.18	51.25	-22.75	74	54.26	27.22	4.82	35.05	151	295	P	V
		2389.485	38.17	-15.83	54	41.04	27.29	4.86	35.02	151	295	A	V
	*	2412	95.85	-	-	98.64	27.33	4.88	35	151	295	P	V
	*	2412	91.95	-	-	94.74	27.33	4.88	35	151	295	A	V
													V
													V
802.11b CH 06 2437MHz		2385.6	53.01	-20.99	74	55.88	27.29	4.86	35.02	156	358	P	H
		2383.5	39.13	-14.87	54	42.03	27.26	4.86	35.02	156	358	A	H
	*	2437	100.11	-	-	102.8	27.4	4.88	34.97	156	358	P	H
	*	2437	96.24	-	-	98.93	27.4	4.88	34.97	156	358	A	H
		2489.22	52.68	-21.32	74	55.18	27.5	4.92	34.92	156	358	P	H
		2489.85	39.39	-14.61	54	41.89	27.5	4.92	34.92	156	358	A	H
		2370.62	52.78	-21.22	74	55.68	27.26	4.86	35.02	152	28	P	V
		2389.94	38.94	-15.06	54	41.79	27.29	4.86	35	152	28	A	V
	*	2437	92.37	-	-	95.06	27.4	4.88	34.97	152	28	P	V
	*	2437	88.46	-	-	91.15	27.4	4.88	34.97	152	28	A	V
		2499.58	52.23	-21.77	74	54.71	27.5	4.92	34.9	152	28	P	V
		2492.86	39.22	-14.78	54	41.7	27.5	4.92	34.9	152	28	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 11 2462MHz	*	2462	100.35	-	-	102.97	27.43	4.9	34.95	155	11	P	H
	*	2462	96.62	-	-	99.24	27.43	4.9	34.95	155	11	A	H
		2488.92	52.83	-21.17	74	55.33	27.5	4.92	34.92	155	11	P	H
		2485.28	39.55	-14.45	54	42.1	27.47	4.9	34.92	155	11	A	H
													H
													H
	*	2462	97.3	-	-	99.92	27.43	4.9	34.95	214	148	P	V
	*	2462	93.46	-	-	96.08	27.43	4.9	34.95	214	148	A	V
		2492.24	53.25	-20.75	74	55.73	27.5	4.92	34.9	214	148	P	V
		2483.6	39.41	-14.59	54	41.96	27.47	4.9	34.92	214	148	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11b (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11b CH 01 2412MHz		4824	43.08	-30.92	74	61.94	32.56	6.97	58.39	150	360	P	H
													H
													H
													H
		4824	42.75	-31.25	74	61.61	32.56	6.97	58.39	150	360	P	V
													V
													V
													V
802.11b CH 06 2437MHz		4874	41.89	-32.11	74	60.9	32.66	6.99	58.66	150	360	P	H
		7311	48.2	-25.8	74	60.23	37.66	8.93	58.62	174	100	P	H
													H
													H
		4874	41.71	-32.29	74	60.72	32.66	6.99	58.66	150	360	P	V
		7311	48.14	-25.86	74	60.17	37.66	8.93	58.62	174	100	P	V
													V
													V
802.11b CH 11 2462MHz		4924	42.38	-31.62	74	61.14	32.76	7	58.52	150	347	P	H
		7386	49.28	-24.72	74	60.99	37.68	9.15	58.54	150	274	P	H
													H
													H
		4924	43.04	-30.96	74	61.8	32.76	7	58.52	178	320	P	V
		7386	48.22	-25.78	74	59.93	37.68	9.15	58.54	178	320	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		2389.695	53.81	-20.19	74	56.68	27.29	4.86	35.02	156	358	P	H
		2390	40.47	-13.53	54	43.32	27.29	4.86	35	156	358	A	H
	*	2412	100.77	-	-	103.56	27.33	4.88	35	156	358	P	H
	*	2412	91.03	-	-	93.82	27.33	4.88	35	156	358	A	H
													H
													H
		2376.15	52.52	-21.48	74	55.42	27.26	4.86	35.02	150	124	P	V
		2390	39.34	-14.66	54	42.19	27.29	4.86	35	150	124	A	V
	*	2412	95.69	-	-	98.48	27.33	4.88	35	150	124	P	V
	*	2412	85.07	-	-	87.86	27.33	4.88	35	150	124	A	V
													V
													V
802.11g CH 06 2437MHz		2384.62	52.52	-21.48	74	55.42	27.26	4.86	35.02	156	1	P	H
		2384.62	39.77	-14.23	54	42.67	27.26	4.86	35.02	156	1	A	H
	*	2437	100.3	-	-	102.99	27.4	4.88	34.97	156	1	P	H
	*	2437	90.53	-	-	93.22	27.4	4.88	34.97	156	1	A	H
		2489.36	53.21	-20.79	74	55.71	27.5	4.92	34.92	156	1	P	H
		2489.36	39.83	-14.17	54	42.33	27.5	4.92	34.92	156	1	A	H
		2350.32	52.28	-21.72	74	55.32	27.19	4.82	35.05	192	166	P	V
		2384.9	39.11	-14.89	54	42.01	27.26	4.86	35.02	192	166	A	V
	*	2437	95.93	-	-	98.62	27.4	4.88	34.97	192	166	P	V
	*	2437	86.06	-	-	88.75	27.4	4.88	34.97	192	166	A	V
		2487.96	53.47	-20.53	74	55.99	27.5	4.9	34.92	192	166	P	V
		2489.43	39.33	-14.67	54	41.83	27.5	4.92	34.92	192	166	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 11 2462MHz	*	2462	99.85	-	-	102.47	27.43	4.9	34.95	152	1	P	H
	*	2462	89.9	-	-	92.52	27.43	4.9	34.95	152	1	A	H
		2484.12	55.62	-18.38	74	58.17	27.47	4.9	34.92	152	1	P	H
		2483.52	41.13	-12.87	54	43.68	27.47	4.9	34.92	152	1	A	H
													H
													H
	*	2462	96.4	-	-	99.02	27.43	4.9	34.95	186	171	P	V
	*	2462	86.3	-	-	88.92	27.43	4.9	34.95	186	171	A	V
		2488.56	52.95	-21.05	74	55.45	27.5	4.92	34.92	186	171	P	V
		2483.52	40.04	-13.96	54	42.59	27.47	4.9	34.92	186	171	A	V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11g (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11g CH 01 2412MHz		4824	40.83	-33.17	74	59.69	32.56	6.97	58.39	250	0	P	H
													H
													H
													H
		4824	41.95	-32.05	74	60.81	32.56	6.97	58.39	250	0	P	V
													V
													V
													V
802.11g CH 06 2437MHz		4874	41.58	-32.42	74	60.59	32.66	6.99	58.66	150	360	P	H
		7311	47.54	-26.46	74	59.57	37.66	8.93	58.62	174	100	P	H
													H
													H
		4874	41.87	-32.13	74	60.88	32.66	6.99	58.66	150	360	P	V
		7311	48.1	-25.9	74	60.13	37.66	8.93	58.62	174	100	P	V
													V
													V
802.11g CH 11 2462MHz		4924	41.58	-32.42	74	60.34	32.76	7	58.52	150	347	P	H
		7386	47.85	-26.15	74	59.56	37.68	9.15	58.54	150	274	P	H
													H
													H
		4924	41.91	-32.09	74	60.67	32.76	7	58.52	150	347	P	V
		7386	48.55	-25.45	74	60.26	37.68	9.15	58.54	150	274	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		2388.54	53.4	-20.6	74	56.27	27.29	4.86	35.02	158	1	P	H
		2390	40.19	-13.81	54	43.04	27.29	4.86	35	158	1	A	H
	*	2412	100.32	-	-	103.11	27.33	4.88	35	158	1	P	H
	*	2412	90.53	-	-	93.32	27.33	4.88	35	158	1	A	H
													H
													H
		2389.905	53.73	-20.27	74	56.58	27.29	4.86	35	150	80	P	V
		2390	39.85	-14.15	54	42.7	27.29	4.86	35	150	80	A	V
	*	2412	96.03	-	-	98.82	27.33	4.88	35	150	80	P	V
	*	2412	86.21	-	-	89	27.33	4.88	35	150	80	A	V
													V
													V
802.11n HT20 CH 06 2437MHz		2349.48	53.18	-20.82	74	56.22	27.19	4.82	35.05	232	300	P	H
		2385.32	40.68	-13.32	54	43.58	27.26	4.86	35.02	232	300	A	H
	*	2437	103.68	-	-	106.37	27.4	4.88	34.97	232	300	P	H
	*	2437	93.7	-	-	96.39	27.4	4.88	34.97	232	300	A	H
		2489.01	52.63	-21.37	74	55.13	27.5	4.92	34.92	232	300	P	H
		2488.8	40.64	-13.36	54	43.14	27.5	4.92	34.92	232	300	A	H
		2315.46	52.43	-21.57	74	55.59	27.12	4.79	35.07	239	350	P	V
		2385.32	39.59	-14.41	54	42.49	27.26	4.86	35.02	239	350	A	V
	*	2437	101.04	-	-	103.73	27.4	4.88	34.97	239	350	P	V
	*	2437	91.2	-	-	93.89	27.4	4.88	34.97	239	350	A	V
		2490	52.25	-21.75	74	54.75	27.5	4.92	34.92	239	350	P	V
		2489.01	39.94	-14.06	54	42.44	27.5	4.92	34.92	239	350	A	V



WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 11 2462MHz	*	2462	102.67	-	-	105.29	27.43	4.9	34.95	236	302	P	H
	*	2462	92.99	-	-	95.61	27.43	4.9	34.95	236	302	A	H
		2483.96	58.5	-15.5	74	61.05	27.47	4.9	34.92	236	302	P	H
		2483.52	42.67	-11.33	54	45.22	27.47	4.9	34.92	236	302	A	H
													H
													H
	*	2462	100.45	-	-	103.07	27.43	4.9	34.95	207	350	P	V
	*	2462	90.48	-	-	93.1	27.43	4.9	34.95	207	350	A	V
		2484.96	55.71	-18.29	74	58.26	27.47	4.9	34.92	207	350	P	V
		2483.52	41.77	-12.23	54	44.32	27.47	4.9	34.92	207	350	A	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												



2.4GHz 2400~2483.5MHz

WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI Ant. 1	Note	Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Peak Avg. (P/A)	Pol. (H/V)
802.11n HT20 CH 01 2412MHz		4824	41.63	-32.37	74	60.49	32.56	6.97	58.39	150	360	P	H
													H
													H
													H
		4824	41.18	-32.82	74	60.04	32.56	6.97	58.39	150	360	P	V
													V
													V
													V
802.11n HT20 CH 06 2437MHz		4874	42.33	-31.67	74	61.34	32.66	6.99	58.66	150	360	P	H
		7311	47.65	-26.35	74	59.68	37.66	8.93	58.62	174	100	P	H
													H
													H
		4874	41.72	-32.28	74	60.73	32.66	6.99	58.66	150	360	P	V
		7311	48.26	-25.74	74	60.29	37.66	8.93	58.62	174	100	P	V
													V
													V
802.11n HT20 CH 11 2462MHz		4924	41.47	-32.53	74	60.23	32.76	7	58.52	150	347	P	H
		7386	47.69	-26.31	74	59.4	37.68	9.15	58.54	150	274	P	H
													H
													H
		4924	41.14	-32.86	74	59.9	32.76	7	58.52	150	347	P	V
		7386	47.29	-26.71	74	59	37.68	9.15	58.54	150	274	P	V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against Peak and Average limit line.												

Emission below 1GHz

2.4GHz WIFI 802.11n HT20 (LF)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
2.4GHz 802.11n HT20 LF		76.56	31.36	-8.64	40	47.54	14.67	0.83	31.68	100	0	P	H
		108.57	32.36	-11.14	43.5	44.29	18.63	0.99	31.55	-	-	P	H
		217.21	34.07	-11.93	46	47.5	16.43	1.4	31.26	-	-	P	H
		236.61	34.12	-11.88	46	46.65	17.35	1.4	31.28	-	-	P	H
		706.09	30.94	-15.06	46	32.07	27.65	2.44	31.22	-	-	P	H
		990.3	33.96	-20.04	54	31.82	30.21	3.19	31.26	-	-	P	H
													H
													H
													H
													H
													H
													H
		45.52	35.44	-4.56	40	47.46	19.1	0.62	31.74	100	64	QP	V
		75.59	37	-3	40	53.47	14.38	0.83	31.68	100	13	QP	V
		120.21	29.69	-13.81	43.5	41.81	18.4	0.99	31.51	-	-	P	V
		193.93	31.67	-11.83	43.5	45.8	15.86	1.28	31.27	-	-	P	V
		838.98	32.04	-13.96	46	32.7	27.95	2.65	31.26	-	-	P	V
		939.86	32.76	-13.24	46	31.93	29.22	2.88	31.27	-	-	P	V
													V
													V
													V
													V
													V
													V
Remark	1. No other spurious found. 2. All results are PASS against limit line.												



Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical

A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBμV/m)	(dB)	(dBμV/m)	(dBμV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	P	H
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	A	H

1. Level(dBμV/m) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)

= 55.45 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 55.45(dBμV/m) – 74(dBμV/m)

= -18.55(dB)

For Average Limit @ 2390MHz:

1. Level(dBμV/m)

= Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)

= 32.22(dB/m) + 4.58(dB) + 42.6(dBμV) – 35.86 (dB)

= 43.54 (dBμV/m)

2. Over Limit(dB)

= Level(dBμV/m) – Limit Line(dBμV/m)

= 43.54(dBμV/m) – 54(dBμV/m)

= -10.46(dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix C. Radiated Spurious Emission Plots

Test Engineer :	Jeff Yao	Temperature :	23~25°C
		Relative Humidity :	48~52%

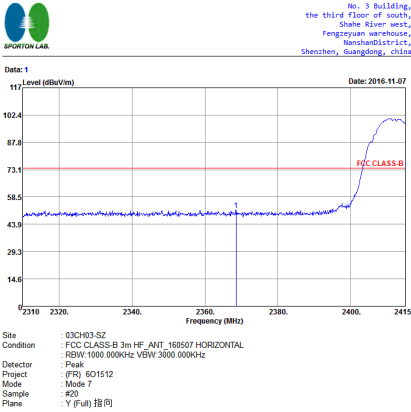
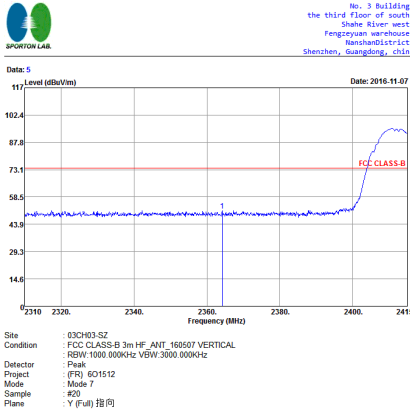
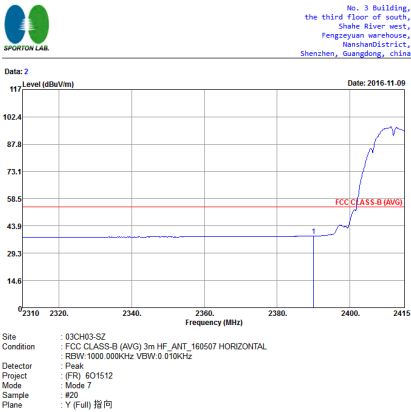
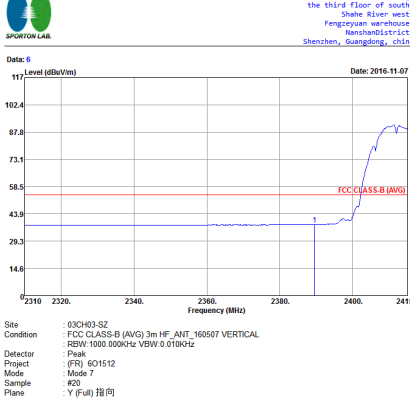
Note symbol

-L	Low channel location
-R	High channel location

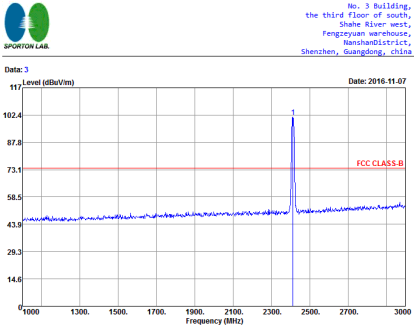
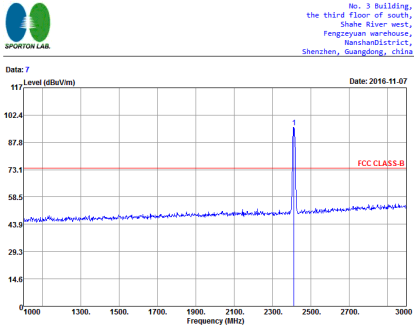
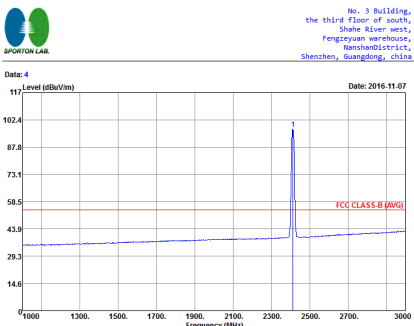
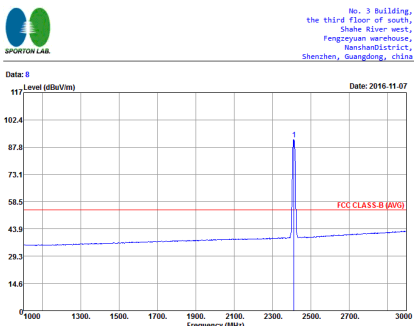


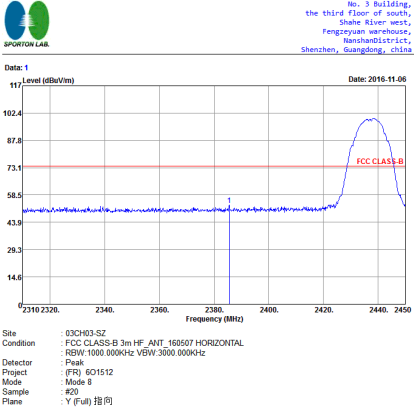
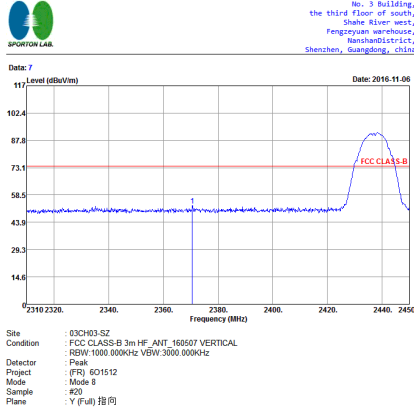
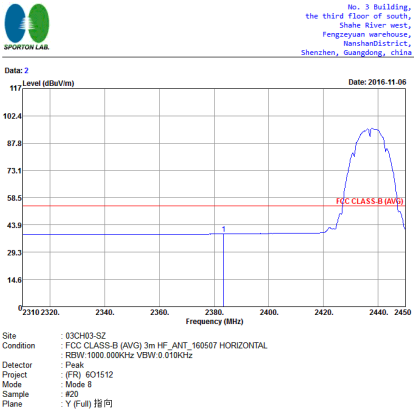
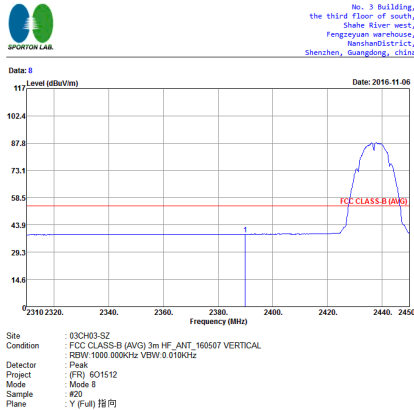
2.4GHz 2400~2483.5MHz

WIFI 802.11b (Band Edge @ 3m)

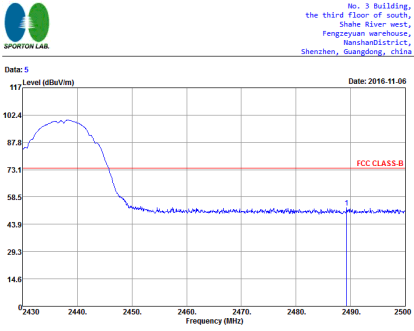
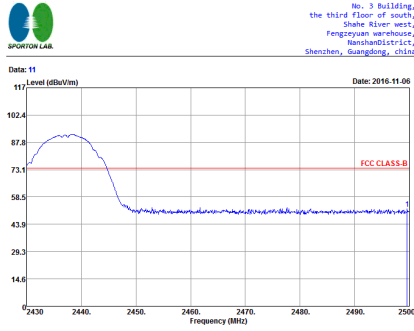
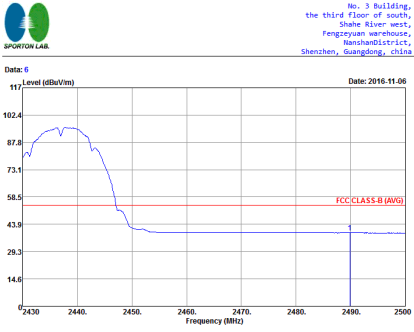
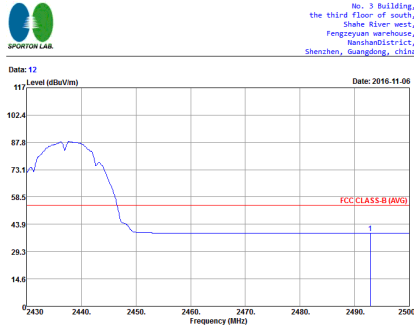
WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site Condition : 03CH03-SZ FCC CLASS-B 3m HF ANT_160507 HORIZONTAL RBW: 1000.000kHz VSW: 3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site Condition : 03CH03-SZ FCC CLASS-B 3m HF ANT_160507 VERTICAL RBW: 1000.000kHz VSW: 3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-09 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL RBW: 1000.000kHz VSW: 0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL RBW: 1000.000kHz VSW: 0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向



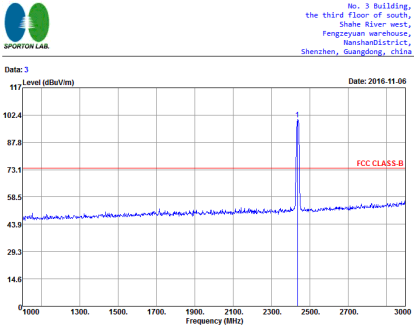
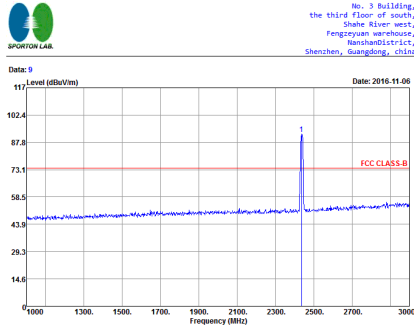
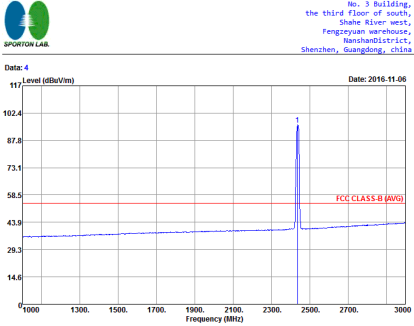
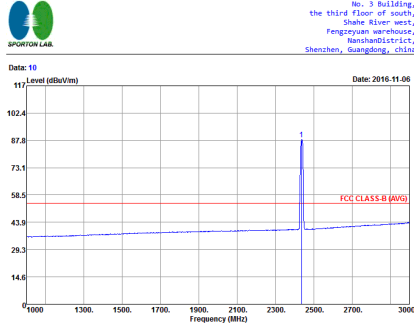
WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT, 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT, 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT, 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-07 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT, 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - L	
1	Horizontal	Vertical
Peak	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向
	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向

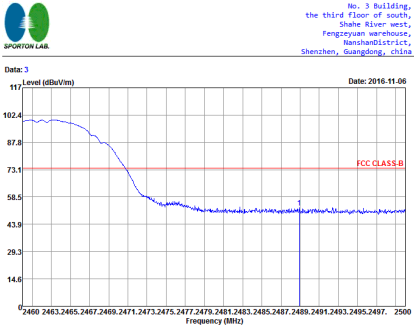
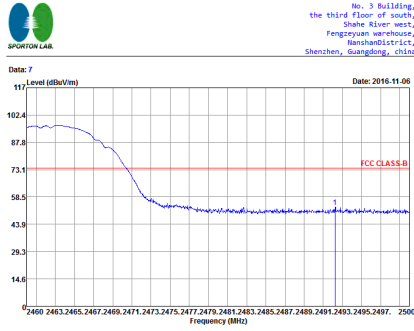
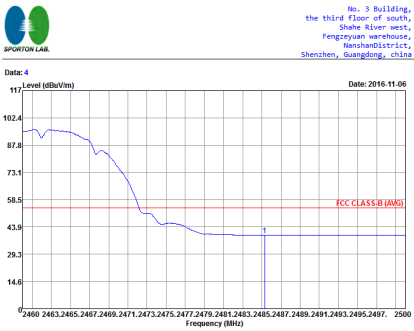
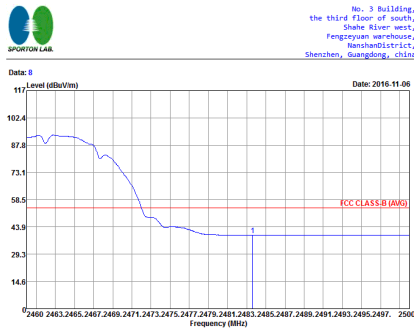


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH06 2437MHz - R	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 5 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 11 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 6 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 12 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向

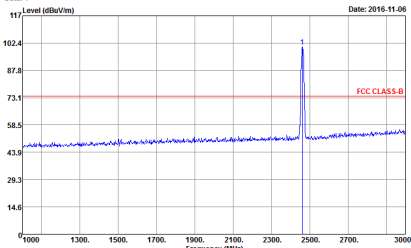
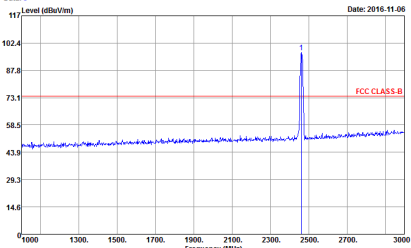
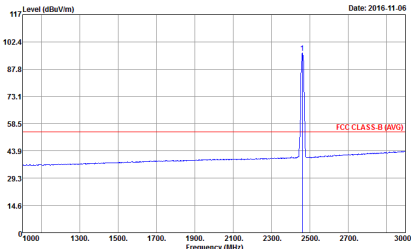
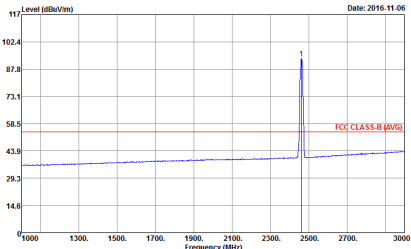


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT, 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT, 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT, 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT, 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向

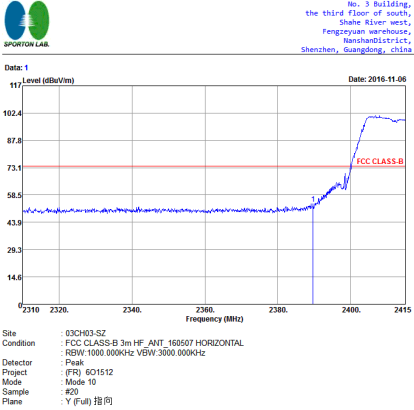
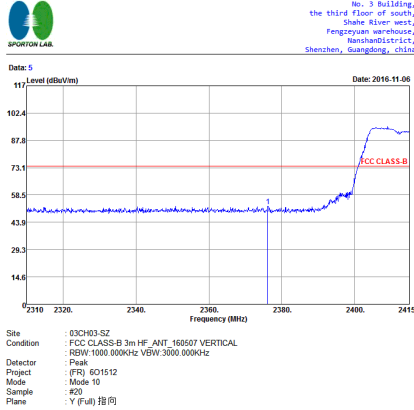
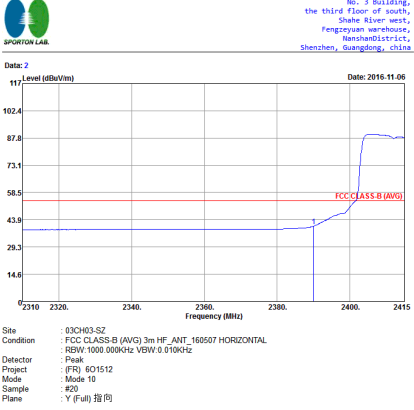
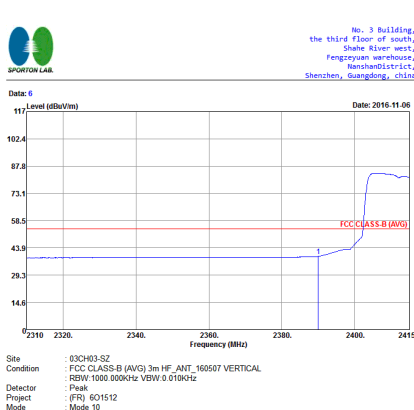


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 3 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 2460 2463.2465 2467.2469 2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 7 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 2460 2463.2465 2467.2469 2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 4 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 2460 2463.2465 2467.2469 2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 8 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 2460 2463.2465 2467.2469 2471.2473.2475.2477.2479.2481.2483.2485.2487.2489.2491.2493.2495.2497. 2500 Frequency (MHz) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向

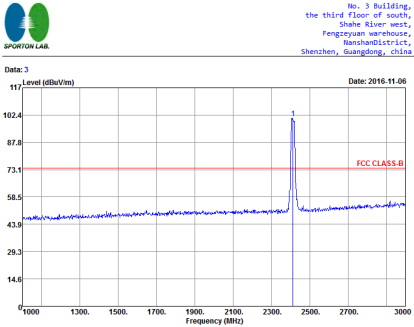
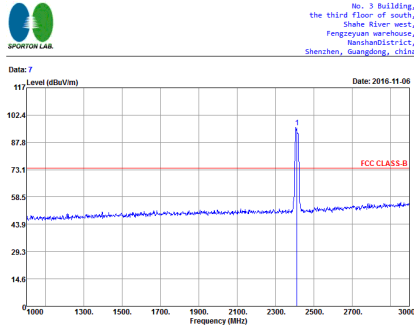
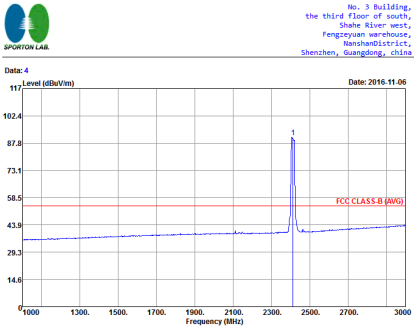
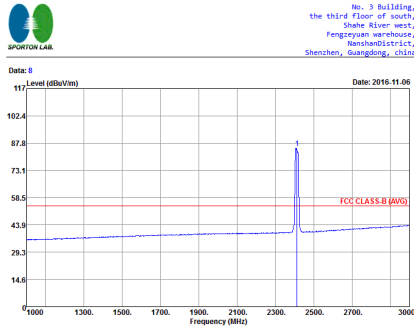


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 1 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B 3m HF ANT_160507 HORIZONTAL : RBW:1000.000kHz VSW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 5 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B 3m HF ANT_160507 VERTICAL : RBW:1000.000kHz VSW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 2 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL : RBW:1000.000kHz VSW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 6 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL : RBW:1000.000kHz VSW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向

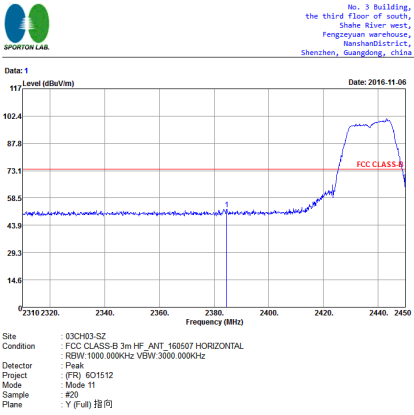
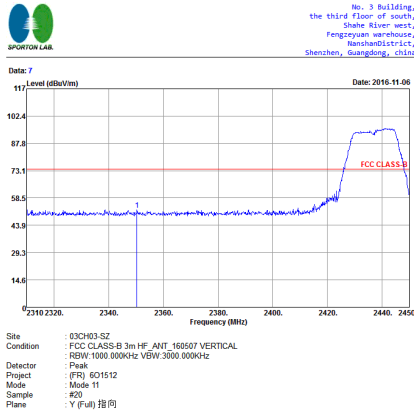
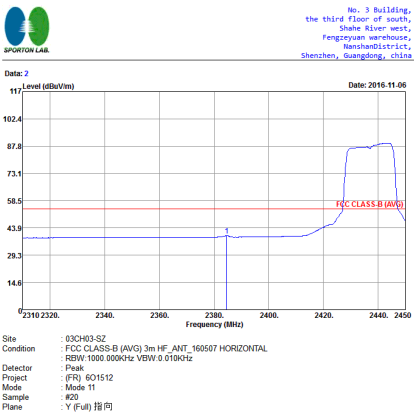
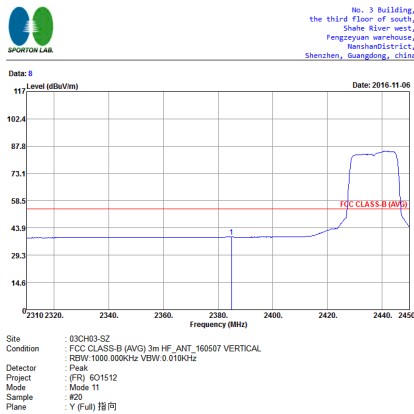
2.4GHz 2400~2483.5MHz
WIFI 802.11g (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向
	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向

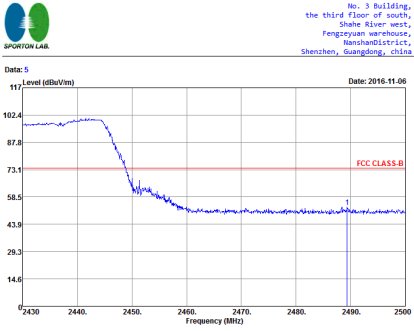
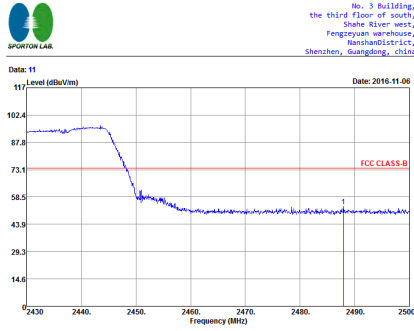
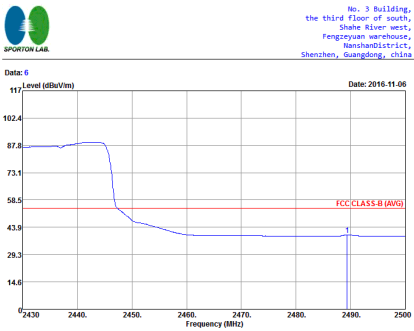
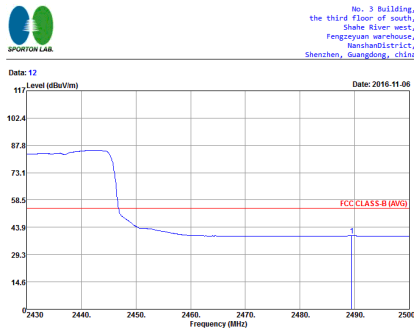


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向
Avg.	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向

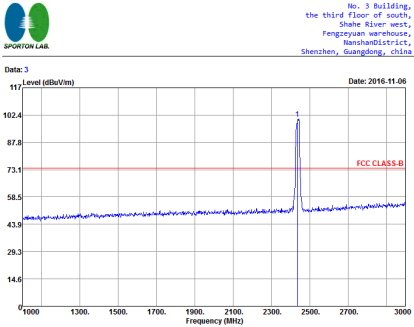
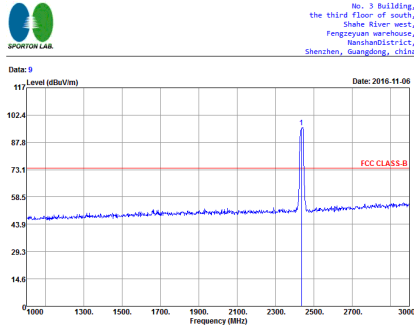
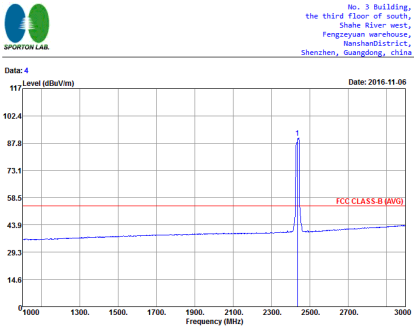
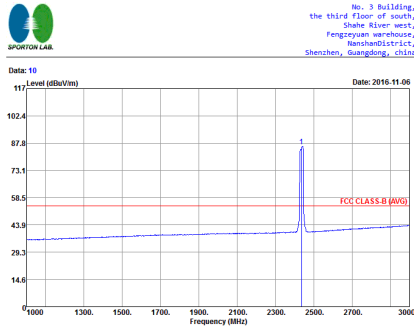


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - L	
1	Horizontal	Vertical
Peak	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向
Avg.	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向

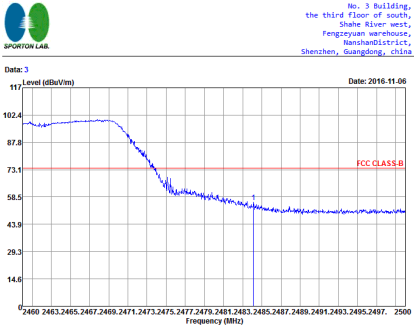
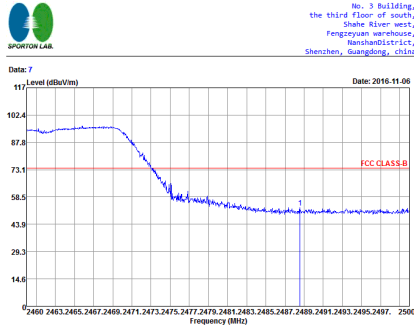
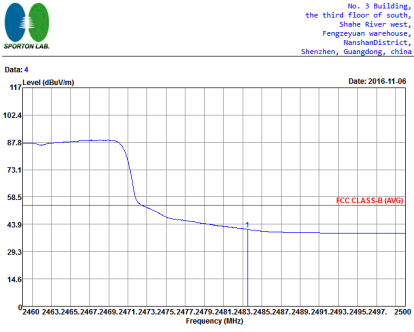
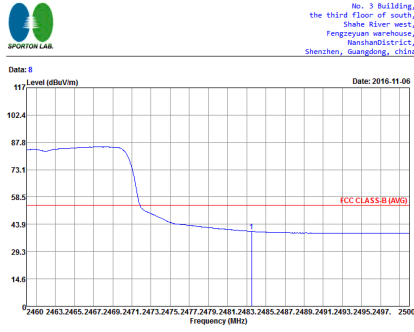


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH06 2437MHz - R	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 5 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 11 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 8 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 12 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向

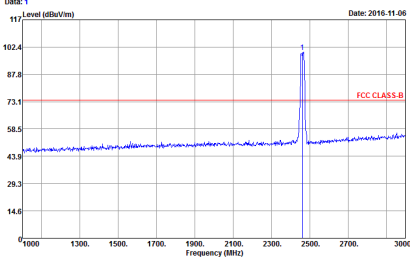
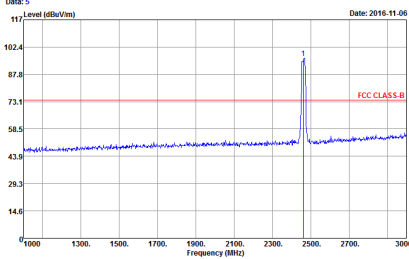
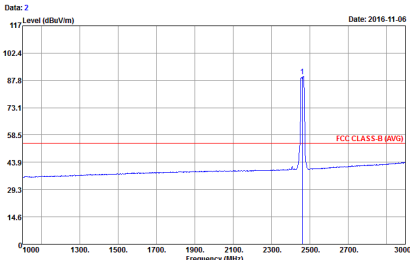
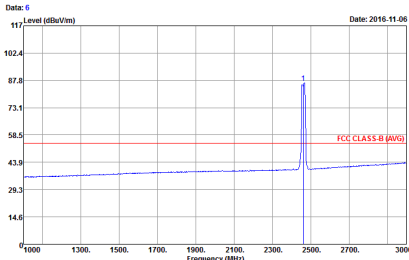


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak	The plot shows a single sharp peak at 2437 MHz. The y-axis is Level (dBuV/m) from 0 to 117, and the x-axis is Frequency (MHz) from 1000 to 3000. A red line indicates the FCC CLASS-B limit at approximately 73.1 dBuV/m. The peak reaches approximately 102.4 dBuV/m. Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	The plot shows a single sharp peak at 2437 MHz. The y-axis is Level (dBuV/m) from 0 to 117, and the x-axis is Frequency (MHz) from 1000 to 3000. A red line indicates the FCC CLASS-B limit at approximately 73.1 dBuV/m. The peak reaches approximately 102.4 dBuV/m. Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向
Avg.	The plot shows a single sharp peak at 2437 MHz. The y-axis is Level (dBuV/m) from 0 to 117, and the x-axis is Frequency (MHz) from 1000 to 3000. A red line indicates the FCC CLASS-B (AVG) limit at approximately 73.1 dBuV/m. The peak reaches approximately 102.4 dBuV/m. Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	The plot shows a single sharp peak at 2437 MHz. The y-axis is Level (dBuV/m) from 0 to 117, and the x-axis is Frequency (MHz) from 1000 to 3000. A red line indicates the FCC CLASS-B (AVG) limit at approximately 73.1 dBuV/m. The peak reaches approximately 102.4 dBuV/m. Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 3 Date: 2016-11-06 Level (dBuV/m) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 7 Date: 2016-11-06 Level (dBuV/m) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 4 Date: 2016-11-06 Level (dBuV/m) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 8 Date: 2016-11-06 Level (dBuV/m) FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向

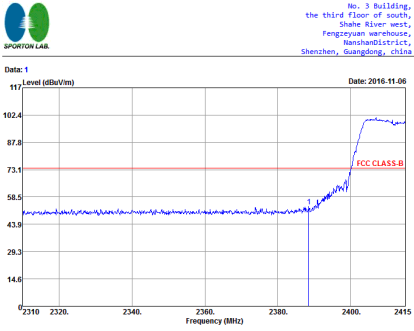
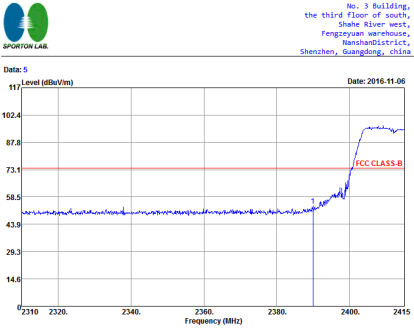
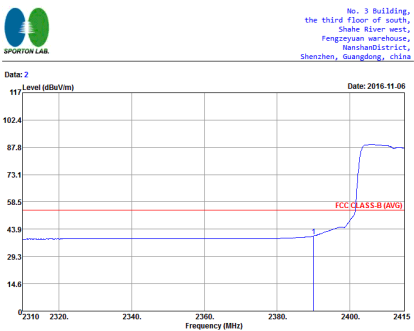
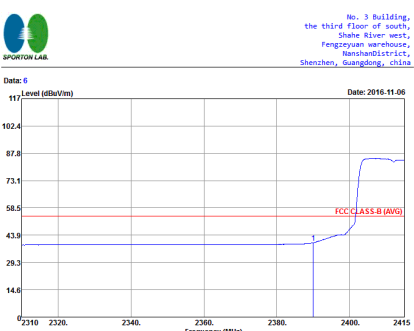


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanhai District, Shenzhen, Guangdong, China Date: 1 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanhai District, Shenzhen, Guangdong, China Date: 5 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanhai District, Shenzhen, Guangdong, China Date: 2 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanhai District, Shenzhen, Guangdong, China Date: 6 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向

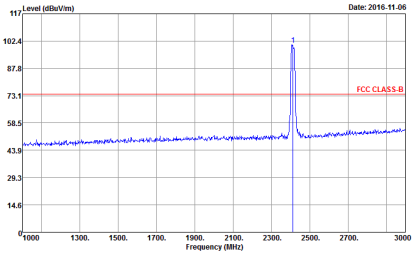
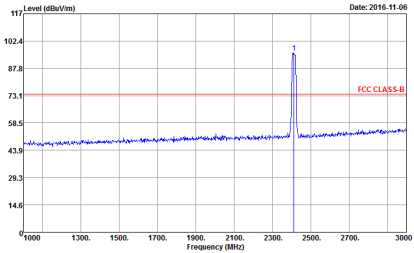
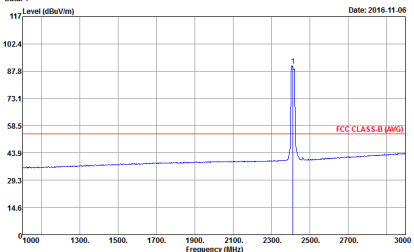
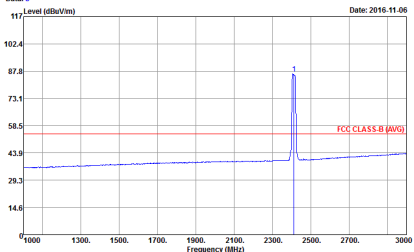


2.4GHz 2400~2483.5MHz

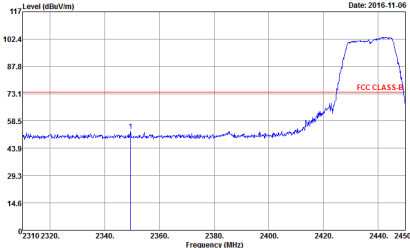
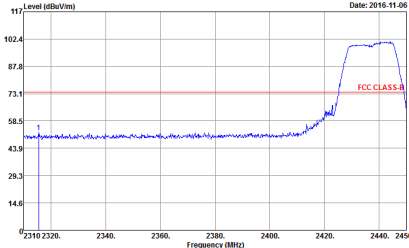
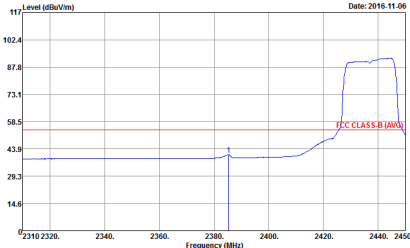
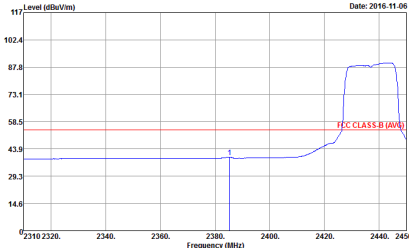
WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 1 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT: 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 5 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT: 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT: 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 6 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT: 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向

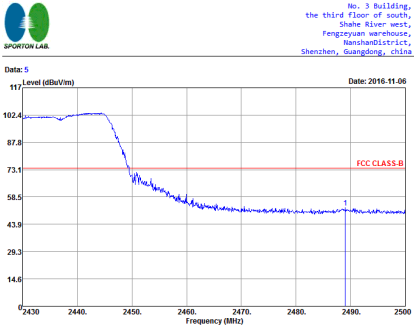
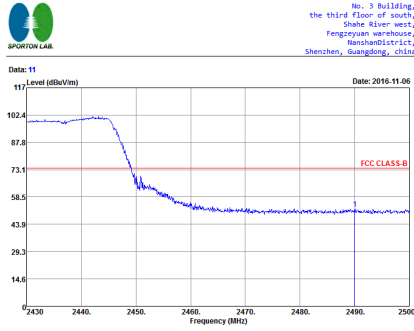
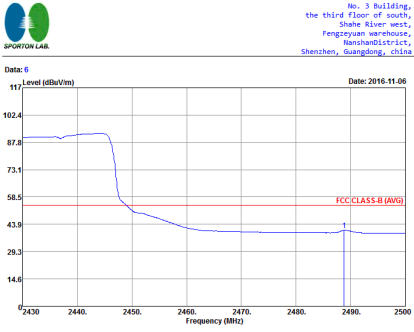
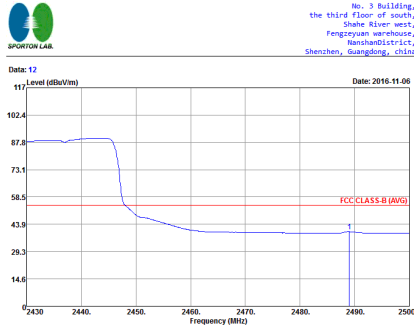


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 3 Date: 2016-11-06  Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site Condition : 03CH03-SZ FCC CLASS-B 3m HF ANT_160507 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 7 Date: 2016-11-06  Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site Condition : 03CH03-SZ FCC CLASS-B 3m HF ANT_160507 VERTICAL RBW:1000.000kHz VBW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 4 Date: 2016-11-06  Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL RBW:1000.000kHz VBW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 8 Date: 2016-11-06  Level (dBuV/m) Frequency (MHz) FCC CLASS-B (AVG) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL RBW:1000.000kHz VBW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向

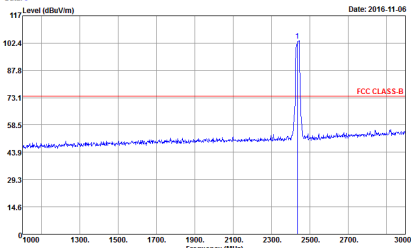
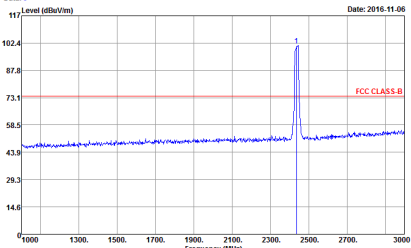
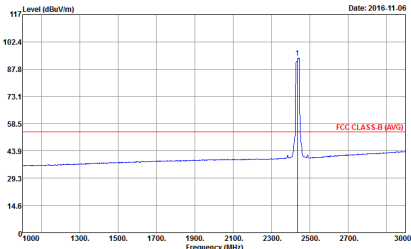
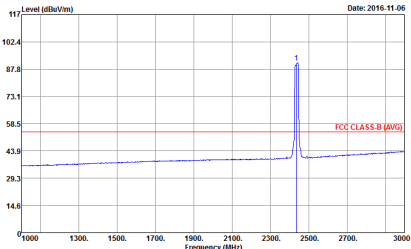


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - L	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, NanshanDistrict, Shenzhen, Guangdong, China Date: 1 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, NanshanDistrict, Shenzhen, Guangdong, China Date: 7 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, NanshanDistrict, Shenzhen, Guangdong, China Date: 2 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, NanshanDistrict, Shenzhen, Guangdong, China Date: 8 Date: 2016-11-06  Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向

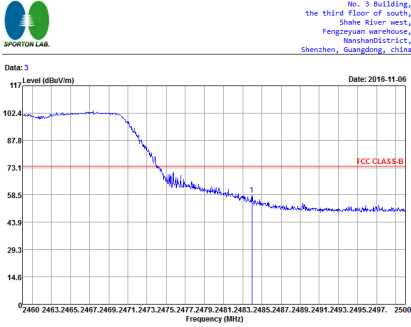
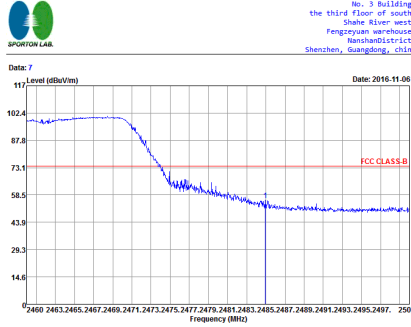
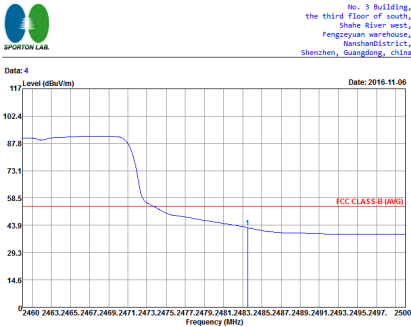
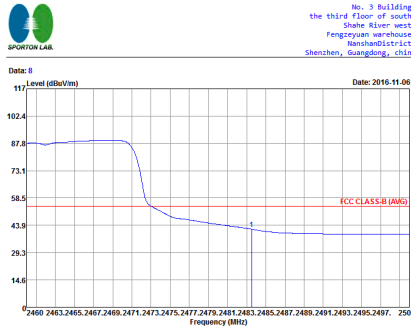


WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH06 2437MHz - R	
1	Horizontal	Vertical
Peak	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 5 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 Frequency (MHz) 2430 2440 2450 2460 2470 2480 2490 2500 FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 11 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 Frequency (MHz) 2430 2440 2450 2460 2470 2480 2490 2500 FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向
Avg.	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 6 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 Frequency (MHz) 2430 2440 2450 2460 2470 2480 2490 2500 FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	No. 3 Building, the third floor of south, Shake River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 12 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 Frequency (MHz) 2430 2440 2450 2460 2470 2480 2490 2500 FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B (AVG) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向

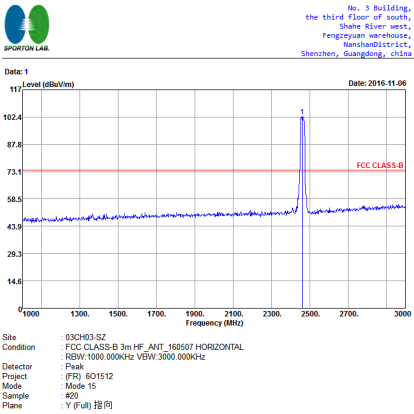
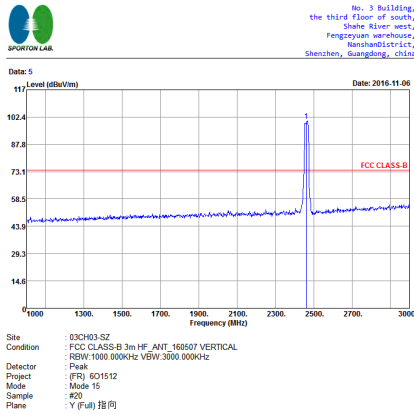
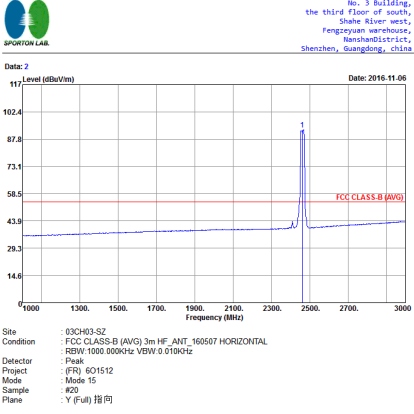
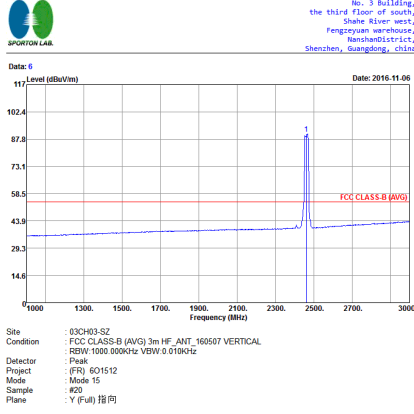


WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 3 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B 3m HF ANT_160507 HORIZONTAL : RBW:1000.000kHz VSW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 9 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B 3m HF ANT_160507 VERTICAL : RBW:1000.000kHz VSW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 4 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B (AVG) 3m HF ANT_160507 HORIZONTAL : RBW:1000.000kHz VSW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengzhen warehouse, NanshanDistrict, Shenzhen, Guangdong, china Date: 10 Level (dBuV/m) Date: 2016.11.06  Site Condition : 03CH03-SZ : FCC CLASS-B (AVG) 3m HF ANT_160507 VERTICAL : RBW:1000.000kHz VSW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 14 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Band Edge @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向
	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (Ave) Site : 03CH03-SZ Condition : FCC CLASS-B (Ave) 3m HF ANT 160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B (Ave) Site : 03CH03-SZ Condition : FCC CLASS-B (Ave) 3m HF ANT 160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向
Avg.		



WIFI	2.4GHz 2400~2483.5MHz Fundamental @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 1 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 1000 1300 1500 1700 1900 2100 2300 2500 2700 3000 Frequency (MHz) Site Condition : 03CH03-SZ FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL RBW:1000.000kHz VBW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 5 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 1000 1300 1500 1700 1900 2100 2300 2500 2700 3000 Frequency (MHz) Site Condition : 03CH03-SZ FCC CLASS-B 3m HF_ANT_160507 VERTICAL RBW:1000.000kHz VBW:3000.000kHz Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向
Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 2 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 1000 1300 1500 1700 1900 2100 2300 2500 2700 3000 Frequency (MHz) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF_ANT_160507 HORIZONTAL RBW:1000.000kHz VBW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 6 Level (dBuV/m) Date: 2016-11-06 117 102.4 87.8 73.1 58.5 43.9 29.3 14.6 0 1000 1300 1500 1700 1900 2100 2300 2500 2700 3000 Frequency (MHz) Site Condition : 03CH03-SZ FCC CLASS-B (AVG) 3m HF_ANT_160507 VERTICAL RBW:1000.000kHz VBW:0.010kHz Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向



2.4GHz 2400~2483.5MHz

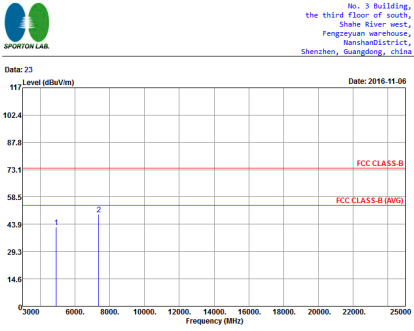
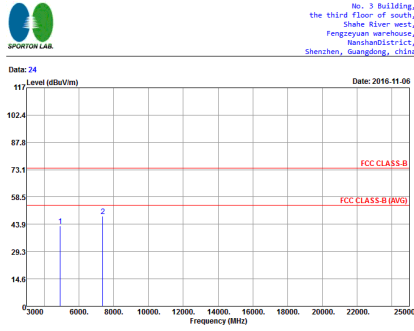
WIFI 802.11b (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 7 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向
	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Avg Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Avg Project : (FR) 601512 Mode : Mode 8 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11b CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 23 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 24 Date: 2016-11-06 Level (dBuV/m) Frequency (MHz) FCC CLASS-B FCC CLASS-B (AVG) Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 9 Sample : #20 Plane : Y (Full) 指向



2.4GHz 2400~2483.5MHz

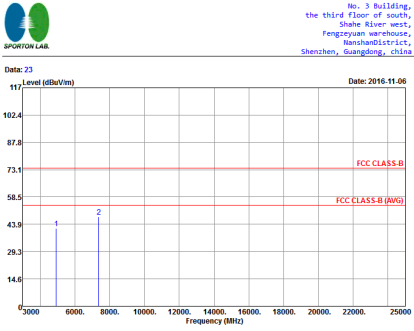
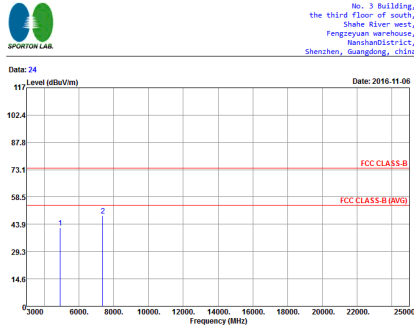
WIFI 802.11g (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FIR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FIR) 601512 Mode : Mode 10 Sample : #20 Plane : Y (Full) 指向

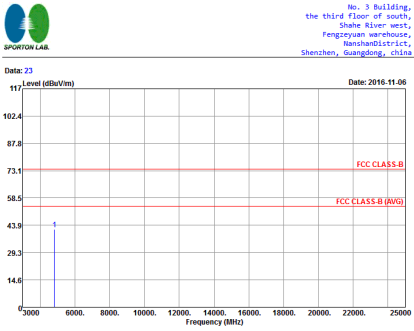
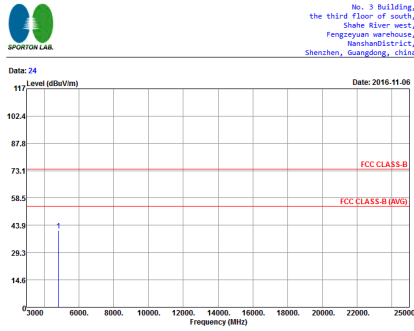


WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向
	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Avg Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向	Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Avg Project : (FR) 601512 Mode : Mode 11 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11g CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 23 Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Date: 24 Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 12 Sample : #20 Plane : Y (Full) 指向

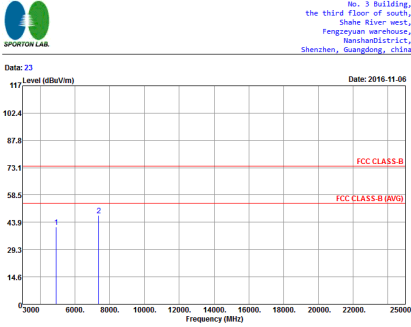
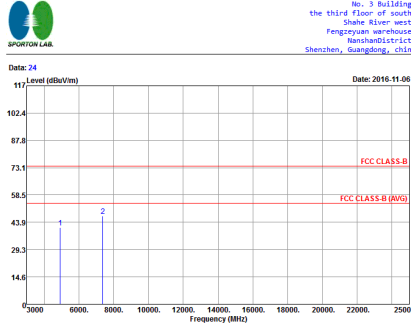
2.4GHz 2400~2483.5MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH01 2412MHz	
1	Horizontal	Vertical
Peak Avg.	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Data: 23 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shale River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Data: 24 Level (dBuV/m) Date: 2016-11-06 Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 13 Sample : #20 Plane : Y (Full) 指向



WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH06 2437MHz	
1	Horizontal	Vertical
Peak Avg.	Horizontal Peak Spectrum Plot showing two peaks at approximately 5.5 GHz and 6.5 GHz. The y-axis is Level (dBuV/m) from 14.6 to 117. The x-axis is Frequency (MHz) from 3000 to 25000. Two red horizontal lines indicate FCC CLASS-B limits at 73.1 dBuV/m and 58.5 dBuV/m (avg). The plot is labeled 'Data: 27' and 'Date: 2016-11-06'.	Vertical Peak Spectrum Plot showing two peaks at approximately 5.5 GHz and 6.5 GHz. The y-axis is Level (dBuV/m) from 14.6 to 117. The x-axis is Frequency (MHz) from 3000 to 25000. Two red horizontal lines indicate FCC CLASS-B limits at 73.1 dBuV/m and 58.5 dBuV/m (avg). The plot is labeled 'Data: 28' and 'Date: 2016-11-06'.
	Horizontal Average Spectrum Plot showing two peaks at approximately 5.5 GHz and 6.5 GHz. The y-axis is Level (dBuV/m) from 14.6 to 117. The x-axis is Frequency (MHz) from 3000 to 25000. Two red horizontal lines indicate FCC CLASS-B limits at 73.1 dBuV/m and 58.5 dBuV/m (avg). The plot is labeled 'Data: 29' and 'Date: 2016-11-06'.	Vertical Average Spectrum Plot showing two peaks at approximately 5.5 GHz and 6.5 GHz. The y-axis is Level (dBuV/m) from 14.6 to 117. The x-axis is Frequency (MHz) from 3000 to 25000. Two red horizontal lines indicate FCC CLASS-B limits at 73.1 dBuV/m and 58.5 dBuV/m (avg). The plot is labeled 'Data: 30' and 'Date: 2016-11-06'.



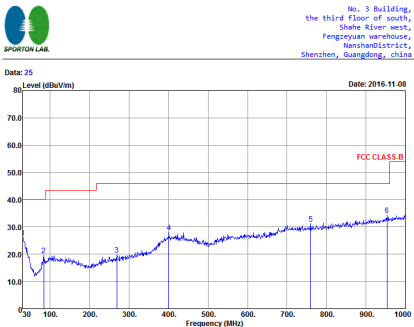
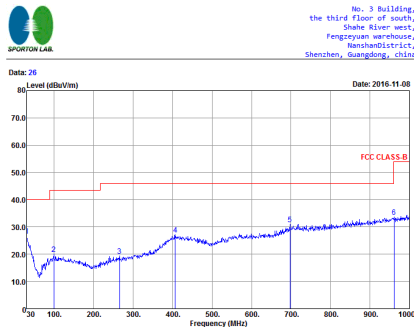
WIFI	2.4GHz 2400~2483.5MHz Harmonic @ 3m	
ANT	802.11n HT20 CH11 2462MHz	
1	Horizontal	Vertical
Peak Avg.	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengze Yuan warehouse, Nanshan District, Shenzhen, Guangdong, China Site : 03CH03-SZ Condition : FCC CLASS-B 3m HF_ANT_160507 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : Y (Full) 指向



2.4GHz 2400~2483.5MHz

Emission below 1GHz

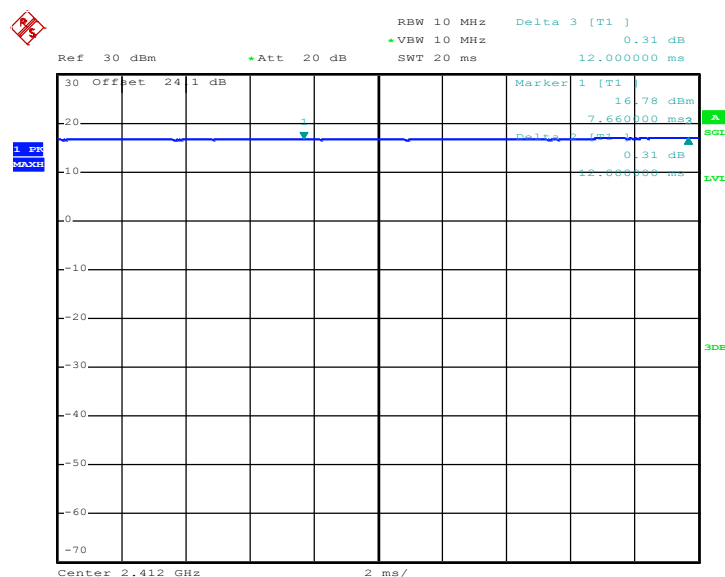
2.4GHz WIFI 802.11n HT20 (LF)

WIFI	2.4GHz 2400~2483.5MHz	
ANT	802.11n HT20 LF	
1	Horizontal	Vertical
QP / Peak	 No. 3 Building, the third floor of south, Shahe River west, Fengteyuan warehouse, HenshanDistrict, Shenzhen, Guangdong, china Date: 25 Level (dBuV/m) Date: 2016-11-08 FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m LF35408CBL6112D_6 HORIZONTAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : -Y (Full) 指向	 No. 3 Building, the third floor of south, Shahe River west, Fengteyuan warehouse, HenshanDistrict, Shenzhen, Guangdong, china Date: 26 Level (dBuV/m) Date: 2016-11-08 FCC CLASS-B Site : 03CH03-SZ Condition : FCC CLASS-B 3m LF35408CBL6112D_6 VERTICAL Detector : Peak Project : (FR) 601512 Mode : Mode 15 Sample : #20 Plane : -Y (Full) 指向

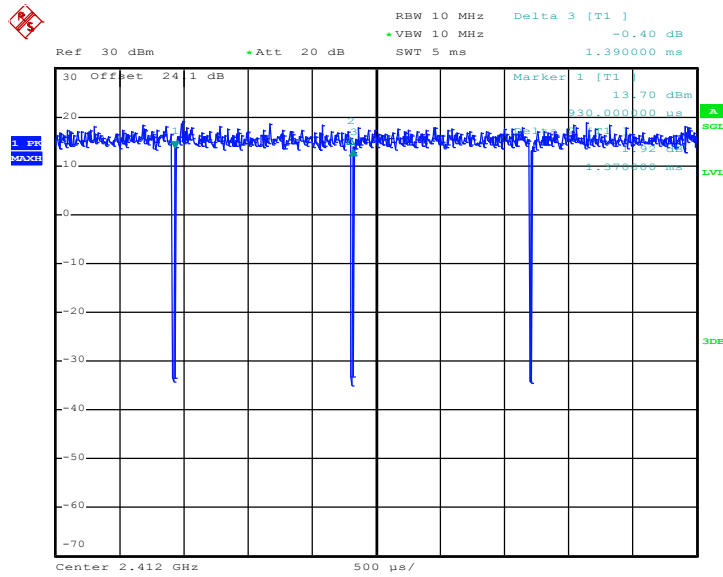
Appendix D. Duty Cycle Plots

Band	Duty Cycle(%)	T(us)	1/T(kHz)	VBW Setting
802.11b	100.00	-	-	10Hz
802.11g	98.56	-	-	10Hz
2.4GHz 802.11n HT20	98.46	-	-	10Hz

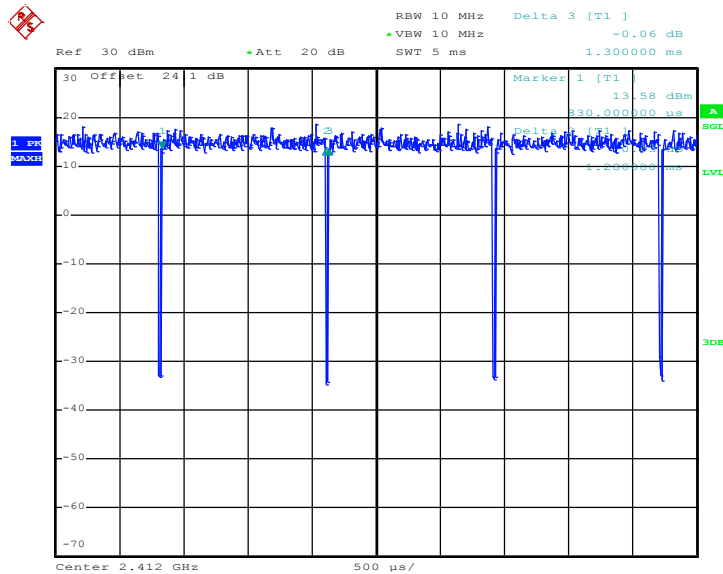
802.11b



Date: 2.NOV.2016 16:01:19

802.11g


Date: 2.NOV.2016 16:03:13

802.11g HT20


Date: 2.NOV.2016 16:04:57