FCC PART 15.247

TEST REPORT

For

Fibocom Wireless Inc.

1101,Tower A, Building 6, Shenzhen International, Innovation Valley, Dashi 1st Rd, Nanshan,Shenzhen,China

FCC ID: ZMOSQ808NA

Report Type:	**Product Name:**
Class II Permissive Change Report	LTE Module

Report Number:	RXM210324051-00B
Report Date:	2021-05-12
Reviewed By:	Ivan Cao Assistant Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:		LTE Module
EUT Model:		SQ808-NA
Operation Frequency:		2412-2462 MHz(802.11b/g/n ht20) 2402-2480MHz(BLE)
Maximum Peak Output Power (Conducted):		17.57 dBm(802.11b/g/n) 2.25 dBm(BLE)
Modulation Type:		DSSS, OFDM(802.11b/g/n) GFSK(BLE)
Antenna Gain▲:		-0.90 dBi
Host Name:		Smart POS Terminal
Host Model:		AXIUM EX8000
Host Rated Input Voltage:		DC 3.85V from battery or DC 5V from adapter
Adapter#1 Information:	**Model:**	SW-0983
	Input:	100-240Vac 50/60Hz 0.5A
	Output:	5.0Vdc 2.0A
Adapter#2 Information:	**Model:**	A8-050200U-US3
	Input:	100-240Vac 50/60Hz 0.35A
	Output:	5.0Vdc 2.0A
Serial Number:		RXM210324051-RF-S1
EUT Received Date:		2021.03.24
EUT Received Status:		Good

Note: this Host have two configuration: with Scanner Reader or without Scanner Reader, the different of the two configuration please refer to Declaration Letter which was provided by manufacturer.
Per pre-test of FCC Part 15B test, the adapter#1+With Scanner Reader was the worst, and was performed the test items in this report.

Objective

This report is prepared on behalf of *Fibocom Wireless Inc.* in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules.

The tests were performed in order to determine the EUT compliance with FCC Rules Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

This is Class II Permissive Change report for the purpose of built in this Module into the host, the host FCC ID: XKB-EX8CL4GWBT, and other change as below:

Change the module`s Antennas.

The conducted output power was verified and close to the original data. The changes made to the device affected AC line conducted emissions test, and radiation supurious emissions test. Therefor only the two items data was recorded in this report.

Test Methodology

All measurements detailed in this test report were performed in accordance with ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices" and KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±0.61dB
Power Spectral Density, conducted	±0.61 dB
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB, 1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB, 18G~26.5G:5.47 dB,26.5G~40G:5.63 dB
Unwanted Emissions, conducted	±1.5 dB
Temperature	±1℃
Humidity	±5%
DC and low frequency voltages	±0.4%
Duty Cycle	1%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol "▲". Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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SUMMARY OF TEST RESULTS

Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
FCC§15.203	Antenna Requirement	Compliance
FCC§15.207 (a)	AC Line Conducted Emissions	Compliance
FCC§15.205, §15.209, FCC §15.247(d)	Spurious Emissions	Compliance
FCC§15.247 (a)(2)	6 dB Bandwidth	Compliance*
FCC§15.247(b)(3)	Maximum Conducted Output Power	Compliance*
FCC§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	Compliance*
FCC§15.247(e)	Power Spectral Density	Compliance*

Compliance*: Please refer to the module original report: ZR/2020/6002802 for 802.11b/g/n and ZR/2020/6002803 for BLE, which was issued by SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Engineering Mode, which was provided by the manufacturer.

For 2.4GHz band, total 11 channels are provided:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437	/	/

For 802.11b, 802.11g, and 802.11n ht20 modes were test with channel 1,6,11.

The worst-case data rates are determined to be as follows for each mode based upon investigations by measuring the average power and PSD across all data rates, bandwidths, and modulations.

For Bluetooth LE mode, 40 channels are provided for testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	…	…
…	…	…	…
…	…	…	…
..	…	38	2478
19	2440	39	2480

EUT was tested with channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

EUT Exercise Software

The software “QRCT3.exe” was used for testing, which was provided by manufacturer. The maximum power was configured as below table, that provided by the manufacturer▲:

Mode	Channel	Frequency (MHz)	Data rate	Power level Setting
802.11 b	Low	2412	1 Mbps	18
	Middle	2437	1 Mbps	18
	High	2462	1 Mbps	18
802.11 g	Low	2412	6 Mbps	15
	Middle	2437	6 Mbps	15
	High	2462	6 Mbps	15
802.11n ht20	Low	2412	MCS0	13
	Middle	2437	MCS0	13
	High	2462	MCS0	13
BLE	Low	2402	1 Mbps	Default
	Middle	2440	1 Mbps	Default
	High	2480	1 Mbps	Default

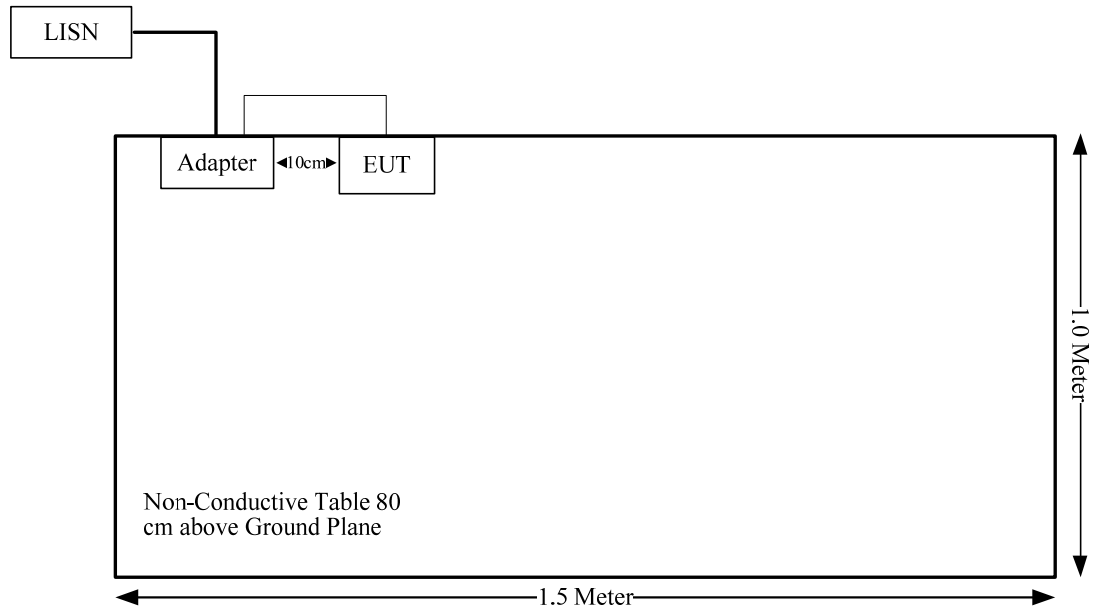
Equipment Modifications

No modification was made to the EUT.

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	yes	No	0.8	Adapter	EUT

Block Diagram of Test Setup



FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

Applicable Standard

According to§15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB447498 D01 General RF Exposure Guidance v06:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

Measurement Result

For BLE:
The max conducted power including tune-up tolerance is 2.5 dBm (1.78 mW).
[(max. power of channel, mW)/(min. test separation distance, mm)][√f(GHz)]
=1.78/5*(√2.480) = 0.6<3.0

So the stand-alone SAR evaluation is not necessary.

For WiFi:
Please refer to the SAR report: RXM210324051-20A.

FCC §15.203- ANTENNA REQUIREMENT

Applicable Standard

According to FCC§ 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. 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 provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

Antenna Information And Connector Construction

The EUT has one internal antenna arrangement, fulfill the requirement of this section. Please refer to below information and the EUT photos:

Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range
FPC	50	-0.90 dBi/2.4~2.5GHz

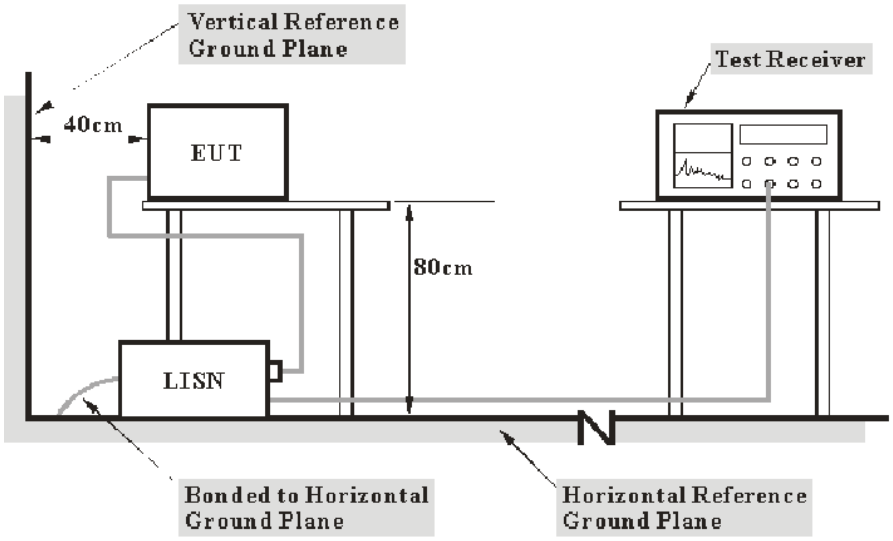
Result: Compliance.

FCC §15.207 (a)– AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207(a).

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to the main lisn with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the first LISN.

The frequency and amplitude of the six highest ac power-line conducted emissions relative to the limit, measured over all the current-carrying conductors of the EUT power cords, and the operating frequency or frequency to which the EUT is tuned (if appropriate), should be reported, unless such emissions are more than 20 dB below the limit. AC power-line conducted emissions measurements are to be separately carried out only on each of the phase ("hot") line(s) and (if used) on the neutral line(s), but not on the ground [protective earth] line(s). If less than six emission frequencies are within 20 dB of the limit, then the noise level of the measuring instrument at representative frequencies should be reported. The specific conductor of the power-line cord for each of the reported emissions should be identified. Measure the six highest emissions with respect to the limit on each current-carrying conductor of each power cord associated with the EUT (but not the power cords of associated or peripheral equipment that are part of the test configuration). Then, report the six highest emissions with respect to the limit from among all the measurements identifying the frequency and specific current-carrying conductor identified with the emission. The six highest emissions should be reported for each of the current-carrying conductors, or the six highest emissions may be reported over all the current-carrying conductors.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$
$C_f = A_C + VDF$

Herein,
V_C (cord. Reading): corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN
C_f: Correction Factor

The "**Margin**" column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	LISN	ENV 216	101614	2020-09-12	2021-09-12
R&S	EMI Test Receiver	ESCI	101121	2020-07-07	2021-07-07
MICRO-COAX	Coaxial Cable	C-NJNJ-50	C-0200-01	2020-09-05	2021-09-05
R&S	Test Software	EMC32	Version 9.10.00	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

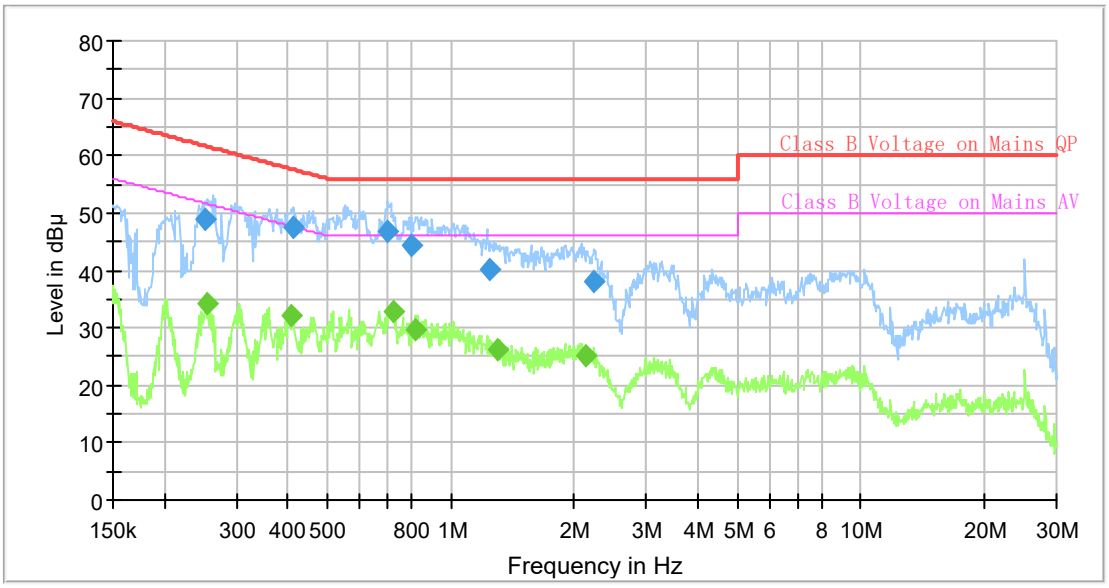
Test Data

Environmental Conditions

Temperature:	24.9℃
Relative Humidity:	65 %
ATM Pressure:	100.7 kPa
Test by:	Walker Chen
Test Date:	2021-04-15

Test Mode: Transmitting (802.11b middle channel was the worst)

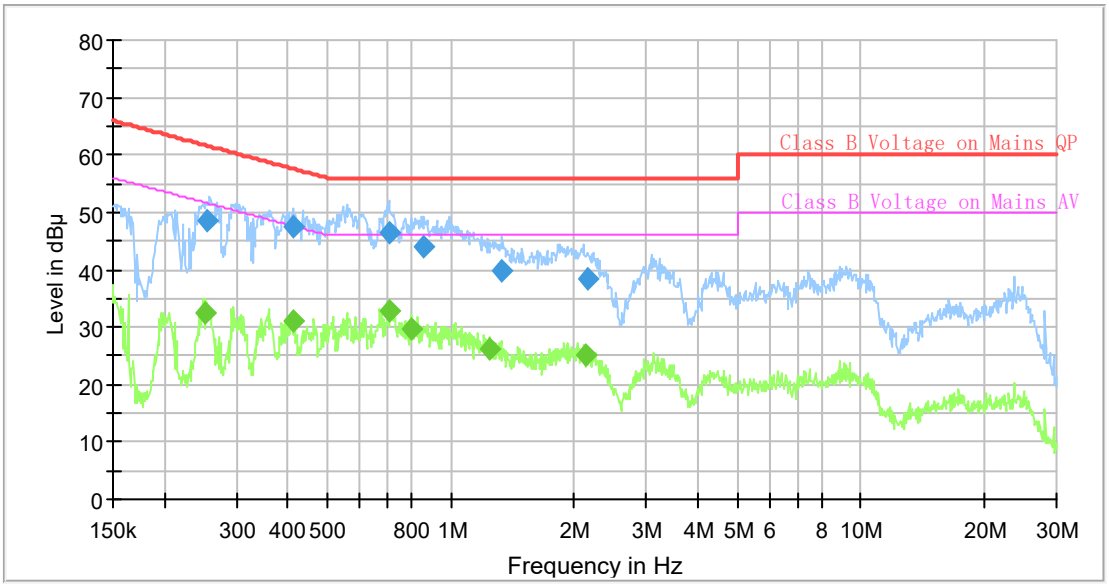
AC120 V, 60 Hz, Line:



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ V)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.250724	48.75	---	61.73	12.98	9.000	L1	9.6
0.253237	---	34.09	51.65	17.56	9.000	L1	9.6
0.408761	---	32.05	47.67	15.62	9.000	L1	9.6
0.414923	47.52	---	57.55	10.03	9.000	L1	9.6
0.703996	46.77	---	56.00	9.23	9.000	L1	9.7
0.721773	---	32.93	46.00	13.07	9.000	L1	9.7
0.801471	44.44	---	56.00	11.56	9.000	L1	9.7
0.821710	---	29.82	46.00	16.18	9.000	L1	9.7
1.249302	40.10	---	56.00	15.90	9.000	L1	9.7
1.300158	---	26.07	46.00	19.93	9.000	L1	9.7
2.140929	---	25.06	46.00	20.94	9.000	L1	9.7
2.239220	38.11	---	56.00	17.89	9.000	L1	9.7

AC120 V, 60 Hz, Neutral:



Final_Result

Frequency (MHz)	QuasiPeak (dB µ V)	Average (dB µ V)	Limit (dB µ V)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.251977	---	32.47	51.69	19.22	9.000	N	9.6
0.254504	48.60	---	61.61	13.01	9.000	N	9.6
0.412859	---	31.06	47.59	16.53	9.000	N	9.6
0.412859	47.49	---	57.59	10.10	9.000	N	9.6
0.707516	46.57	---	56.00	9.43	9.000	N	9.6
0.711054	---	32.72	46.00	13.28	9.000	N	9.6
0.801471	---	29.65	46.00	16.35	9.000	N	9.6
0.859435	44.09	---	56.00	11.91	9.000	N	9.6
1.249302	---	26.03	46.00	19.97	9.000	N	9.6
1.332988	39.95	---	56.00	16.05	9.000	N	9.6
2.130277	---	25.19	46.00	20.81	9.000	N	9.6
2.151633	38.48	---	56.00	17.52	9.000	N	9.6

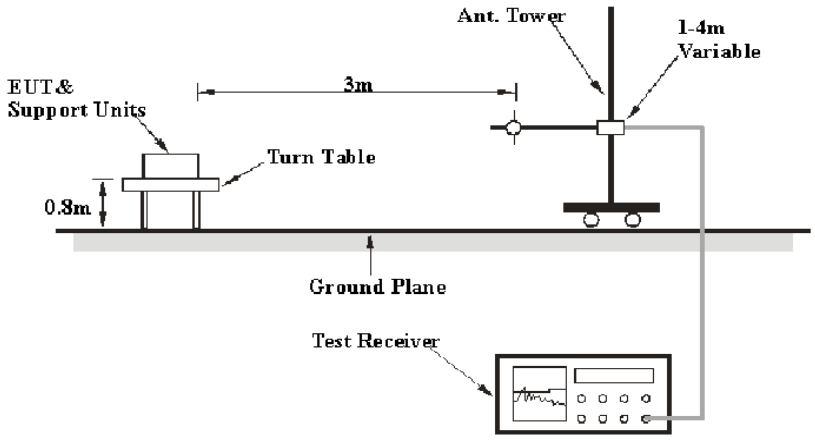
FCC §15.209, §15.205, §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

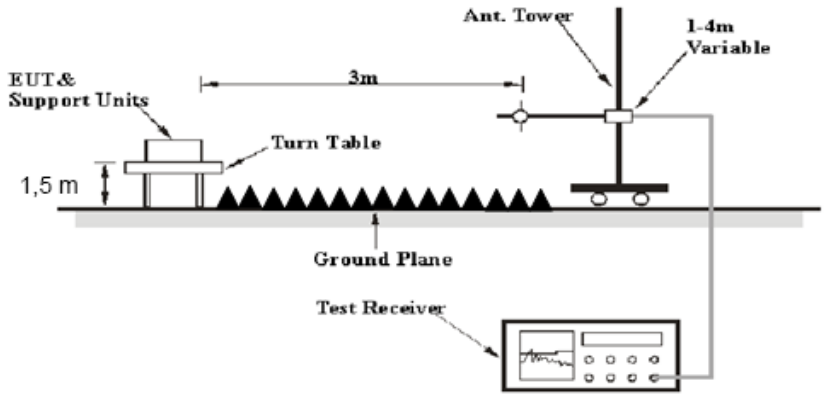
FCC §15.247 (d); §15.209; §15.205.

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters chamber test site A for the range 30MHz to 1GHz and the 3 meters chamber B test site for above 1GHz, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits..

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

30MHz-1000MHz:

Measurement	RBW	Video B/W	IF B/W
QP	120 kHz	300 kHz	120kHz

1GHz- 26.5GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
Ave.	>98%	1MHz	10 Hz
	<98%	1MHz	1/T

Note: T is minimum transmission duration

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit –Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiation Below 1GHz					
Sunol Sciences	Antenna	JB3	A060611-1	2020-11-10	2023-11-10
R&S	EMI Test Receiver	ESR3	102453	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2020-05-06	2021-05-06
HP	Amplifier	8447D	2727A05902	2020-09-05	2021-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Radiation Above 1GHz					
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2020-12-05	2023-12-04
Agilent	Spectrum Analyzer	E4440A	SG43360054	2020-07-07	2021-07-07
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2020-06-27	2021-06-27
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2020-09-05	2021-09-05
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2020-06-27	2021-06-27
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
E-Microwave	Band-stop Filters	OBSF-2400-2483.5-S	OE01601525	2020-06-16	2021-06-16
Mini Circuits	High Pass Filter	VHF-6010+	31118	2020-06-16	2021-06-16

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

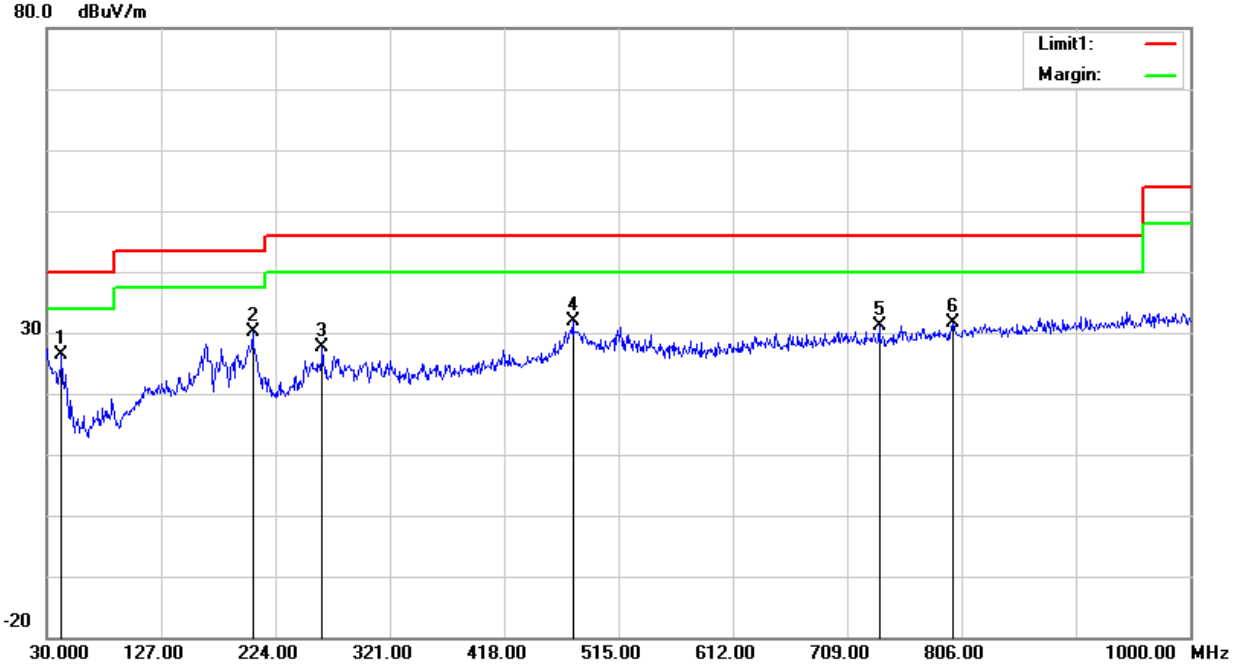
Test Items	Radiation Below 1GHz	Radiation Above 1GHz
Temperature:	22.7°C	26.4 °C
Relative Humidity:	65%	47 %
ATM Pressure:	101.6 kPa	101.8 kPa
Tester:	Alex Hu	Jeremy Liang
Test Date:	2021-04-17	2021-04-09

Test Mode: Transmitting

Test Result: Compliance. Please refer to the following table and plots.

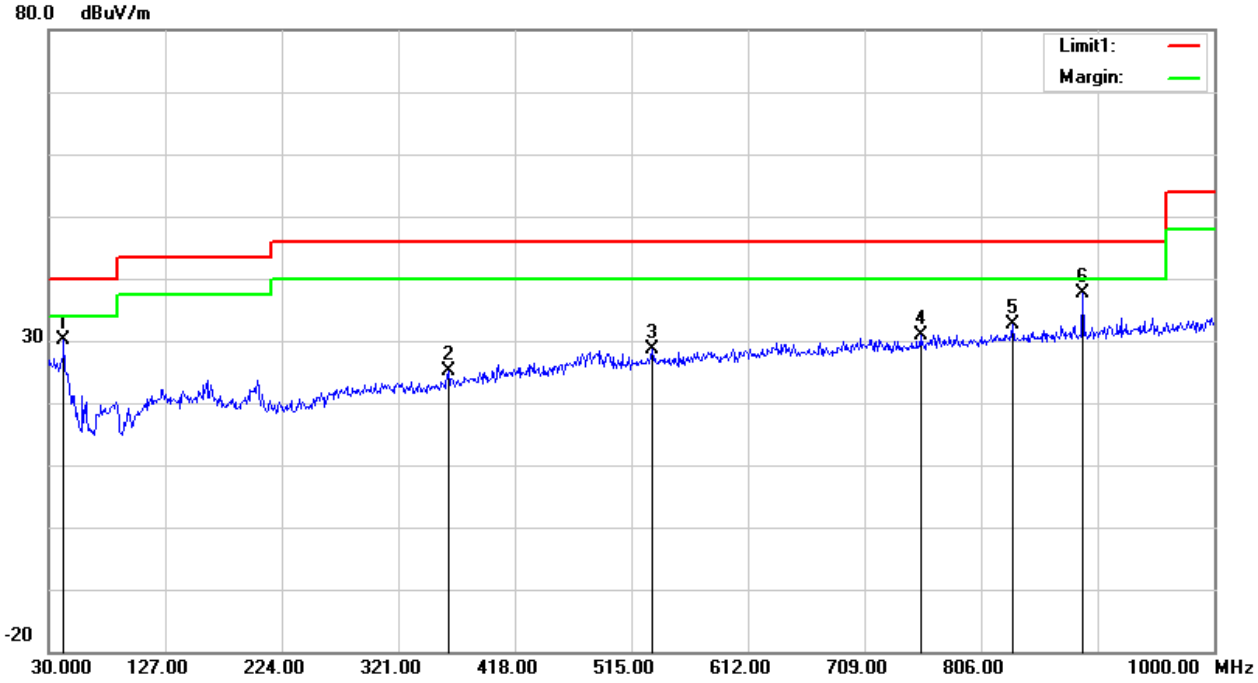
1) 30MHz-1GHz(802.11g high channel was the worst)

Horizontal:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
42.6100	34.21	peak	-7.86	26.35	40.00	13.65
204.6000	36.66	peak	-6.51	30.15	43.50	13.35
263.7700	32.16	peak	-4.55	27.61	46.00	18.39
476.2000	32.24	peak	-0.45	31.79	46.00	14.21
736.1600	28.52	peak	2.67	31.19	46.00	14.81
799.2100	27.83	peak	3.71	31.54	46.00	14.46

Vertical:



Frequency (MHz)	Receiver Reading (dBuV)	Detector	Correction Factor (dB/m)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
42.6100	38.10	peak	-7.86	30.24	40.00	9.76
362.7100	27.92	peak	-2.75	25.17	46.00	20.83
532.4600	28.56	peak	0.10	28.66	46.00	17.34
755.5600	27.51	peak	3.35	30.86	46.00	15.14
832.1900	28.24	peak	4.36	32.60	46.00	13.40
890.3900	38.49	peak	-0.91	37.58	46.00	8.42

2) 1-25GHz:

802.11b Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2390.00	25.27	PK	H	28.08	1.80	0.00	55.15	74.00	18.85
2390.00	13.67	AV	H	28.08	1.80	0.00	43.55	54.00	10.45
4824.00	34.05	PK	H	32.95	3.19	25.62	44.57	74.00	29.43
4824.00	22.32	AV	H	32.95	3.19	25.62	32.84	54.00	21.16
7236.00	35.04	PK	H	35.81	4.77	25.64	49.98	74.00	24.02
7236.00	23.54	AV	H	35.81	4.77	25.64	38.48	54.00	15.52
Middle Channel: 2437 MHz									
4874.00	34.21	PK	H	33.05	3.26	25.65	44.87	74.00	29.13
4874.00	20.01	AV	H	33.05	3.26	25.65	30.67	54.00	23.33
7311.00	34.48	PK	H	36.01	4.64	25.71	49.42	74.00	24.58
7311.00	24.11	AV	H	36.01	4.64	25.71	39.05	54.00	14.95
High Channel: 2462 MHz									
2483.50	25.36	PK	H	28.27	1.84	0.00	55.47	74.00	18.53
2483.50	14.50	AV	H	28.27	1.84	0.00	44.61	54.00	9.39
4924.00	34.43	PK	H	33.15	3.27	25.65	45.20	74.00	28.80
4924.00	22.85	AV	H	33.15	3.27	25.65	33.62	54.00	20.38
7386.00	33.87	PK	H	36.20	4.51	25.79	48.79	74.00	25.21
7386.00	21.78	AV	H	36.20	4.51	25.79	36.70	54.00	17.30

802.11g Mode:

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2390.00	25.28	PK	H	28.08	1.80	0.00	55.16	74.00	18.84
2390.00	12.44	AV	H	28.08	1.80	0.00	42.32	54.00	11.68
4824.00	34.25	PK	H	32.95	3.19	25.62	44.77	74.00	29.23
4824.00	22.89	AV	H	32.95	3.19	25.62	33.41	54.00	20.59
7236.00	34.24	PK	H	35.81	4.77	25.64	49.18	74.00	24.82
7236.00	22.13	AV	H	35.81	4.77	25.64	37.07	54.00	16.93
Middle Channel: 2437 MHz									
4874.00	34.85	PK	H	33.05	3.26	25.65	45.51	74.00	28.49
4874.00	22.78	AV	H	33.05	3.26	25.65	33.44	54.00	20.56
7311.00	34.38	PK	H	36.01	4.64	25.71	49.32	74.00	24.68
7311.00	23.69	AV	H	36.01	4.64	25.71	38.63	54.00	15.37
High Channel: 2462 MHz									
2483.50	26.78	PK	H	28.27	1.84	0.00	56.89	74.00	17.11
2483.50	13.45	AV	H	28.27	1.84	0.00	43.56	54.00	10.44
4924.00	35.23	PK	H	33.15	3.27	25.65	46.00	74.00	28.00
4924.00	23.56	AV	H	33.15	3.27	25.65	34.33	54.00	19.67
7386.00	36.11	PK	H	36.20	4.51	25.79	51.03	74.00	22.97
7386.00	24.56	AV	H	36.20	4.51	25.79	39.48	54.00	**14.52**

802.11n ht20 Mode:

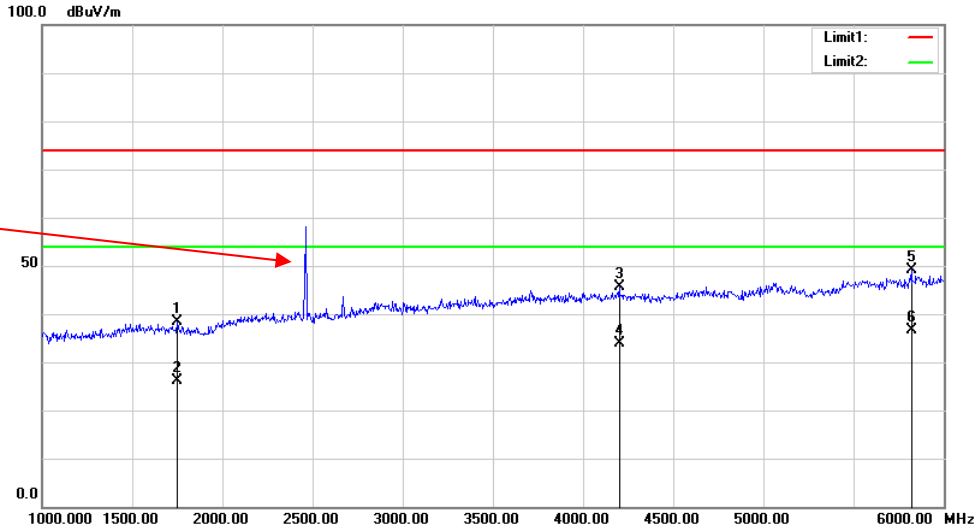
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2412 MHz									
2390.00	27.63	PK	H	28.08	1.80	0.00	57.51	74.00	16.49
2390.00	13.67	AV	H	28.08	1.80	0.00	43.55	54.00	10.45
4824.00	34.45	PK	H	32.95	3.19	25.62	44.97	74.00	29.03
4824.00	23.44	AV	H	32.95	3.19	25.62	33.96	54.00	20.04
7236.00	34.62	PK	H	35.81	4.77	25.64	49.56	74.00	24.44
7236.00	23.11	AV	H	35.81	4.77	25.64	38.05	54.00	15.95
Middle Channel: 2437 MHz									
4874.00	34.48	PK	H	33.05	3.26	25.65	45.14	74.00	28.86
4874.00	22.56	AV	H	33.05	3.26	25.65	33.22	54.00	20.78
7311.00	34.69	PK	H	36.01	4.64	25.71	49.63	74.00	24.37
7311.00	22.54	AV	H	36.01	4.64	25.71	37.48	54.00	16.52
High Channel: 2462 MHz									
2483.50	27.68	PK	H	28.27	1.84	0.00	57.79	74.00	16.21
2483.50	14.04	AV	H	28.27	1.84	0.00	44.15	54.00	9.85
4924.00	33.91	PK	H	33.15	3.27	25.65	44.68	74.00	29.32
4924.00	21.46	AV	H	33.15	3.27	25.65	32.23	54.00	21.77
7386.00	34.31	PK	H	36.20	4.51	25.79	49.23	74.00	24.77
7386.00	22.58	AV	H	36.20	4.51	25.79	37.50	54.00	16.50

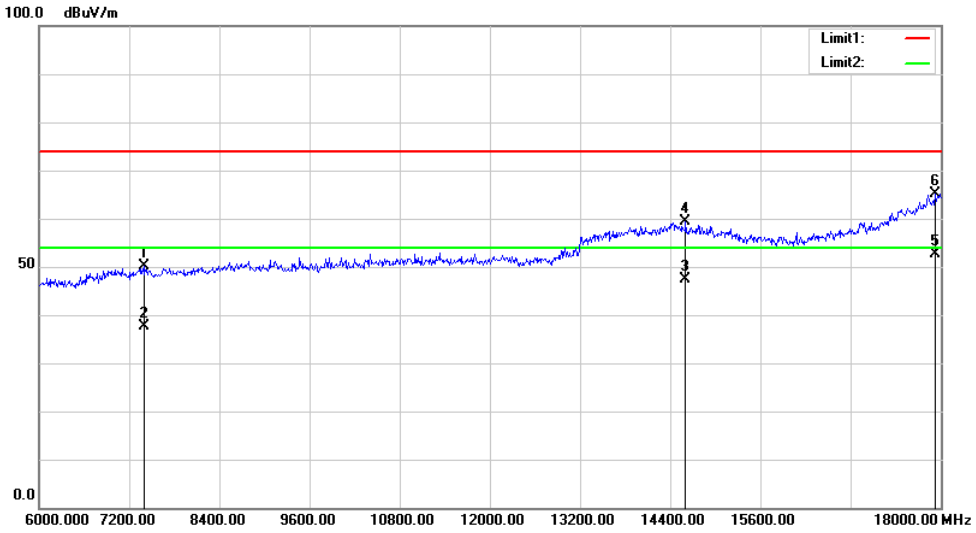
BLE:

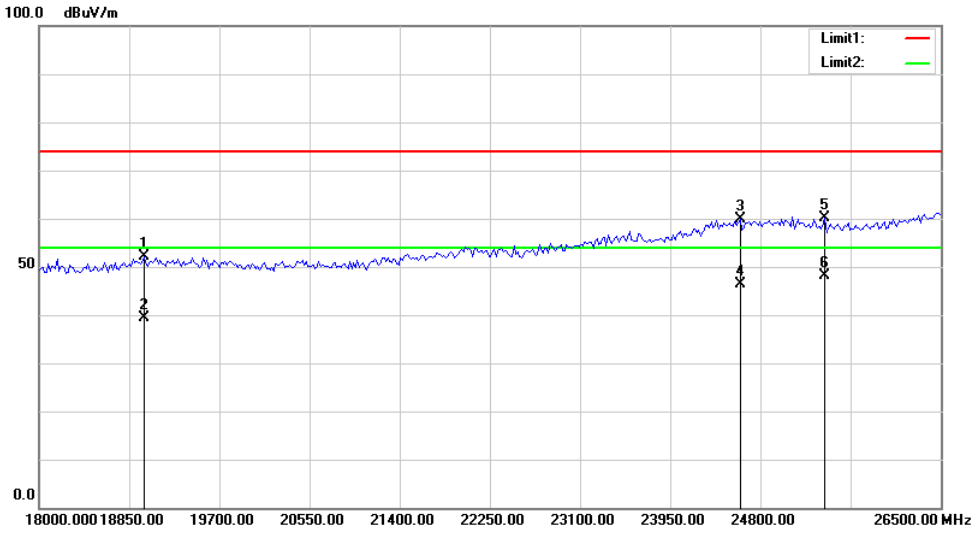
Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	Detector	Polar (H/V)	Factor (dB/m)					
Low Channel: 2402 MHz									
2390.00	26.21	PK	H	28.08	1.80	0.00	56.09	74.00	17.91
2390.00	13.37	AV	H	28.08	1.80	0.00	43.25	54.00	10.75
4804.00	34.44	PK	H	32.91	3.17	25.60	44.92	74.00	29.08
4804.00	22.56	AV	H	32.91	3.17	25.60	33.04	54.00	20.96
7206.00	34.81	PK	H	35.74	4.82	25.60	49.77	74.00	24.23
7206.00	22.12	AV	H	35.74	4.82	25.60	37.08	54.00	16.92
Middle Channel: 2440 MHz									
4880.00	34.35	PK	H	33.06	3.27	25.66	45.02	74.00	28.98
4880.00	22.01	AV	H	33.06	3.27	25.66	32.68	54.00	21.32
7320.00	35.23	PK	H	36.03	4.62	25.72	50.16	74.00	23.84
7320.00	23.11	AV	H	36.03	4.62	25.72	38.04	54.00	15.96
High Channel: 2480 MHz									
2483.50	27.15	PK	H	28.27	1.84	0.00	57.26	74.00	16.74
2483.50	14.35	AV	H	28.27	1.84	0.00	44.46	54.00	9.54
4960.00	34.66	PK	H	33.22	3.23	25.63	45.48	74.00	28.52
4960.00	22.89	AV	H	33.22	3.23	25.63	33.71	54.00	20.29
7440.00	34.81	PK	H	36.34	4.41	25.85	49.71	74.00	24.29
7440.00	22.13	AV	H	36.34	4.41	25.85	37.03	54.00	16.97

Worst Test plots(802.11g high channel)
Horizontal:

Fundamental
Test with Band
Rejection Filter

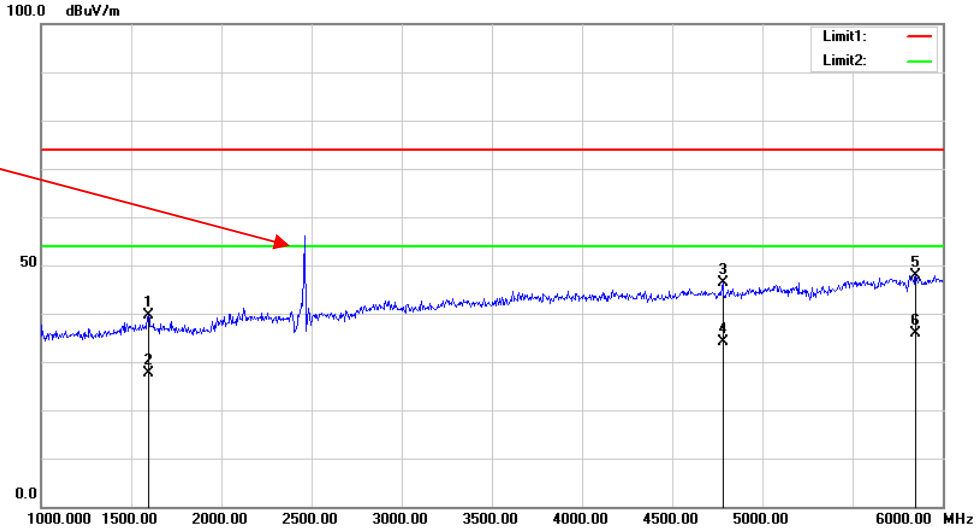


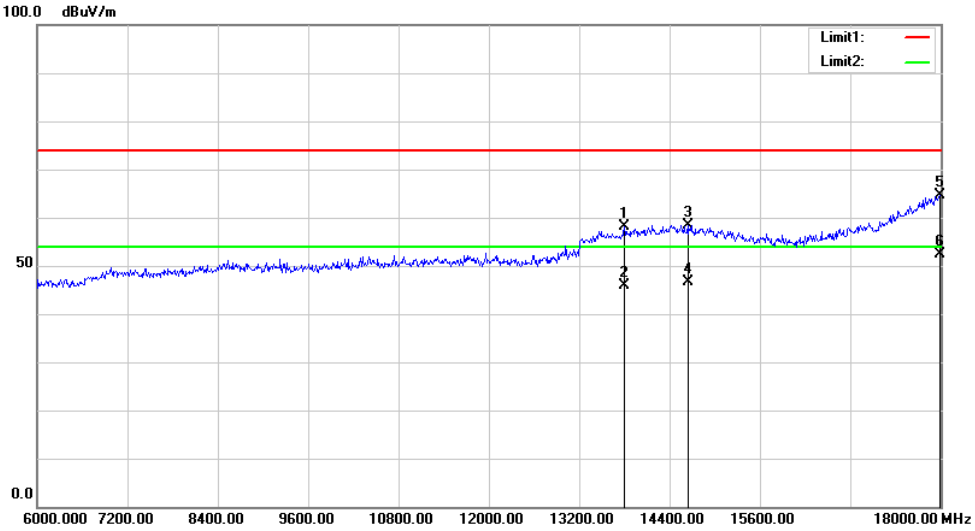


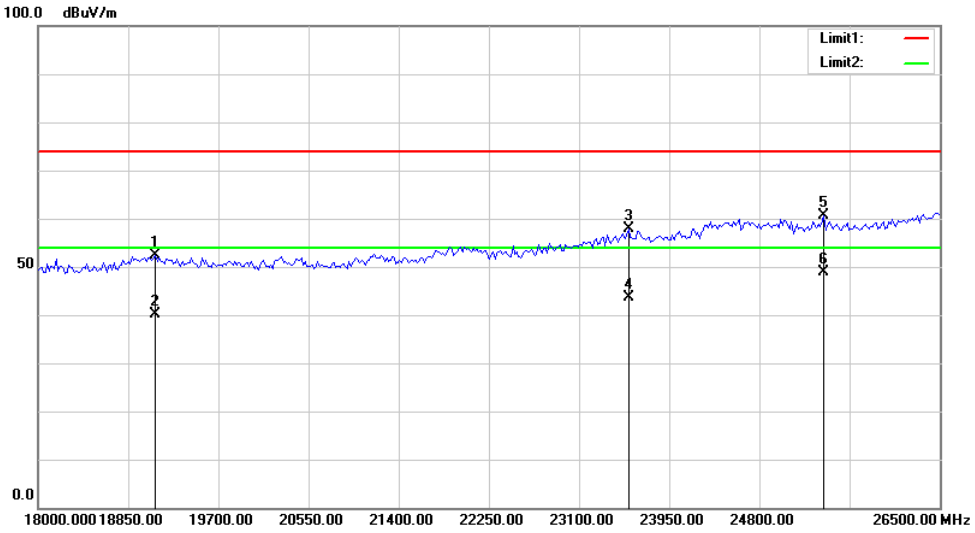


Vertical:

Fundamental Test with Band Rejection Filter







******* END OF REPORT *******