APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Guangdong Mixwell Technology Co., Ltd.

SMART WI-FI AIR PURIFIER

Model No.: MW1081, TP12S

FCC ID: 2AT8F-MW1081

Prepared for	:	Guangdong Mixwell Technology Co., Ltd.
Address	:	1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China.
Prepared by	:	Shenzhen Accurate Technology Co., Ltd.
Address	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China Tel: (0755) 26503290 Fax: (0755) 26503396

Report No.	:	ATE20191304
Date of Test	:	Aug. 20, 2019--Sep. 03, 2019
Date of Report	:	Sep. 04, 2019

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Description Page

Test Report Certification

Applicant	:	Guangdong Mixwell Technology Co., Ltd.
Address	:	1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China.
Manufacturer	:	Guangdong Mixwell Technology Co., Ltd.
Address	:	1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China.
Product	:	SMART WI-FI AIR PURIFIER
Model No.	:	MW1081, TP12S
Trade name	:	Tendomi

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of April 02, 2019 KDB558074 D01 DTS Meas Guidance v0502 for compliance to FCC 47CFR 15.247 requirements.

The device described above is tested by SHENZHEN ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and SHENZHEN ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	Aug. 20, 2019--Sep. 03, 2019
Date of Report :	Sep. 04, 2019
Prepared by :	(Tim Zhang, Engineer)
Approved & Authorized Signer :	(Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	SMART WI-FI AIR PURIFIER
Model Number	:	MW1081, TP12S
Frequency Range	:	802.11b/g/n(20MHz): 2412-2462MHz
Number of Channels	:	802.11b/g/n (20MHz):11
$G_{ANT\ MAX}$	:	2.51dBi
Type of Antenna	:	PCB Antenna
Power Supply	:	DC 12V(Powered by adapter)
Adapter information	:	Model: GQ12-120100-AU INPUT: AC 100-240V~50/60Hz 0.4A Max OUTPUT: DC 12V/1.0A
Data Rate	:	802.11b: 11, 5.5, 2, 1 Mbps 802.11g: 54, 48, 36, 24, 18, 12, 9, 6 Mbps 802.11n: up to 150Mbps
Modulation Type	:	DSSS, OFDM
Applicant	:	Guangdong Mixwell Technology Co., Ltd.
Address	:	1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China
Manufacturer	:	Guangdong Mixwell Technology Co., Ltd.
Address	:	1-4#F, A building, No.7, Yu Hua Street,138 Industrial Area, TangXia, DongGuan, China
Date of sample received	:	Aug. 20, 2019
Date of Test	:	Aug. 20, 2019--Sep. 03, 2019

1.2.Special Accessory and Auxiliary Equipment

PC	Manufacturer: LENOVO M/N: 4290-RT8 S/N: R9-FW93G 11/08

1.3.Model difference declaration

MW1081, TP12S are identical in interior structure, electrical circuits and components, and just model number is different for the marketing requirement.

1.4.Laboratory Accreditation and Relationship to Customer

EMC Lab : Recognition of accreditation by Federal Communications Commission (FCC)
The Designation Number is CN1189
The Registration Number is 708358

Listed by Innovation, Science and Economic Development Canada (ISEDC)
The Registration Number is 5077A-2

Accredited by China National Accreditation Service for Conformity Assessment (CNAS)
The Registration Number is CNAS L3193

Accredited by American Association for Laboratory Accreditation (A2LA)
The Certificate Number is 4297.01

Name of Firm : Shenzhen Accurate Technology Co., Ltd.
Site Location : 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.5.Measurement Uncertainty

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

2. MEASURING DEVICE AND TEST EQUIPMENT

2.1.For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan.05, 2019	1 Year
2.	Spectrum Analyzer	Rohde&Schwarz	FSV40	101495	Jan.05, 2019	1 Year
3.	Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
4.	Test Receiver	Rohde& Schwarz	ESPI	100396/003	Jan.05, 2019	1 Year
5.	Test Receiver	Rohde& Schwarz	ESPI	101526/003	Jan.05, 2019	1 Year
6.	Test Receiver	Rohde& Schwarz	ESR	101817	Jan.05, 2019	1 Year
7.	Bilog Antenna	Schwarzbeck	VULB9163	9163-194	Jan.05, 2019	1 Year
8.	Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan.05, 2019	1 Year
9.	Log.-Per.Antenna	Schwarzbeck	VUSLP 9111B	9111B-074	Jan.05, 2019	1 Year
10.	Biconical Broad Band Antenna	Schwarzbeck	VHBB 9124+BBA 9106	9124-617	Jan.05, 2019	1 Year
11.	Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan.05, 2019	1 Year
12.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan.05, 2019	1 Year
13.	Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan.05, 2019	1 Year
14.	Vertical Active Monopole Antenna	Schwarzbeck	VAMP 9243	9243-370	Jan.05, 2019	1 Year
15.	RF Switching Unit+PreAMP	Compliance Direction	RSU-M2	38322	Jan.05, 2019	1 Year
16.	Pre-Amplifier	Agilent	8447D	294A10619	Jan.05, 2019	1 Year
17.	Pre-Amplifier	Rohde&Schwarz	CBLU11835 40-01	3791	Jan.05, 2019	1 Year
18.	50 Coaxial Switch	Anritsu Corp	MP59B	6200237248	Jan.05, 2019	1 Year
19.	50 Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.05, 2019	1 Year
20.	RF Coaxial Cable	Schwarzbeck	N-5m	No.1	Jan.05, 2019	1 Year
21.	RF Coaxial Cable	Schwarzbeck	N-1m	No.6	Jan.05, 2019	1 Year
22.	RF Coaxial Cable	Schwarzbeck	N-1m	No.7	Jan.05, 2019	1 Year
23.	RF Coaxial Cable	SUHNER	N-3m	No.8	Jan.05, 2019	1 Year
24.	RF Coaxial Cable	RESENBERGER	N-3.5m	No.9	Jan.05, 2019	1 Year
25.	RF Coaxial Cable	SUHNER	N-6m	No.10	Jan.05, 2019	1 Year
26.	RF Coaxial Cable	RESENBERGER	N-12m	No.11	Jan.05, 2019	1 Year
27.	RF Coaxial Cable	RESENBERGER	N-0.5m	No.12	Jan.05, 2019	1 Year
28.	RF Coaxial Cable	SUHNER	N-2m	No.13	Jan.05, 2019	1 Year
29.	RF Coaxial Cable	SUHNER	N-0.5m	No.15	Jan.05, 2019	1 Year
30.	RF Coaxial Cable	SUHNER	N-2m	No.16	Jan.05, 2019	1 Year
31.	RF Coaxial Cable	RESENBERGER	N-6m	No.17	Jan.05, 2019	1 Year
Radiated Emission Measurement Software: EZ_EMC V1.1.4.2						

2.2.The Equipment Used to Measure Conducted Disturbance (L.I.S.N)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCS30	100307	Jan.05, 2019	1 Year
2.	Test Receiver	Rohde & Schwarz	ESPI3	100396/003	Jan.05, 2019	1 Year
3.	Test Receiver	Rohde & Schwarz	ESPI3	101526/003	Jan.05, 2019	1 Year
4.	L.I.S.N.	Schwarzbeck	NLSK8126	8126431	Jan.05, 2019	1 Year
5.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100305	Jan.05, 2019	1 Year
6.	L.I.S.N.	Rohde & Schwarz	ESH3-Z5	100310	Jan.05, 2019	1 Year
7.	L.I.S.N.	Rohde & Schwarz	ESH3-Z6	100132	Jan.05, 2019	1 Year
8.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100305	Jan.05, 2019	1 Year
9.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100312	Jan.05, 2019	1 Year
10.	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100815	Jan.05, 2019	1 Year
11.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283936	Jan.05, 2019	1 Year
12.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200283933	Jan.05, 2019	1 Year
13.	50Ω Coaxial Switch	Anritsu Corp	MP59B	6200506474	Jan.05, 2019	1 Year
14.	VOLTAGE PROBE	Schwarzbeck	TK9416	N/A	Jan.05, 2019	1 Year
15.	RF CURRENT PROBE	Rohde & Schwarz	EZ-17	100048	Jan.05, 2019	1 Year
16.	8-Wire Impedance Stabilisation Network	Schwarzbeck	CAT5 8158	8158-0035	Jan.05, 2019	1 Year
17.	RF Coaxial Cable	SUHNER	N-2m	No.2	Jan.05, 2019	1 Year
18.	RF Coaxial Cable	SUHNER	N-2m	No.3	Jan.05, 2019	1 Year
19.	RF Coaxial Cable	SUHNER	N-2m	No.14	Jan.05, 2019	1 Year
Conducted Emission Measurement Software: ES-K1 V1.71						

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **1.802.11b Transmitting mode**
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

2.802.11g Transmitting mode
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

3.802.11n (20MHz) Transmitting mode
Low Channel: 2412MHz
Middle Channel: 2437MHz
High Channel: 2462MHz

3.2.Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	---	---

3.3.Configuration and peripherals

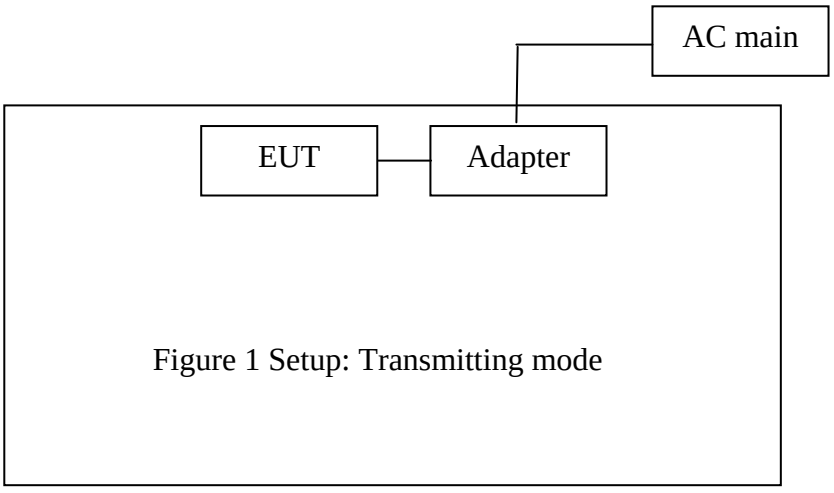


Figure 1 Setup: Transmitting mode

3.4.Test mode

Test Mode	Test Modes Description
11B	IEEE 802.11b with data rate of 1 Mbps
11G	IEEE 802.11g with data rate of 6 Mbps
11N20MHz	IEEE 802.11n with data date of MCS0 and bandwidth of 20 MHz

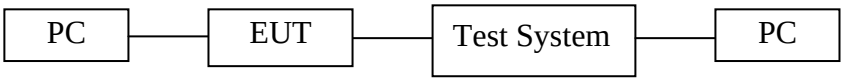
NOTE: Worst cases for each IEEE 802.11 mode are selected to perform tests.

4. TEST PROCEDURES AND RESULTS

FCC Rules	Description of Test	Result
Section 15.207	AC power Line Conducted Emission Test	Compliant
Section 15.247(a)(2)	6dB Occupied Bandwidth Test	Compliant
KDB558074 D01 DTS Meas Guidance v0502	Duty cycle	Compliant
KDB558074 D01 DTS Meas Guidance v0502	OBW	Compliant
Section 15.247(b)(3)	Maximum conducted (average) output power	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.205 Section 15.209	Radiated Spurious Emissions Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.203	Antenna Requirement	Compliant

5. 6DB OCCUPIED BANDWIDTH TEST

5.1.Block Diagram of Test Setup



5.2.The Requirement For Section 15.247(a)(1)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB band-width shall be at least 500 kHz

5.3.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

5.5.Test Procedure

5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

5.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

5.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.6.Test Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	10.08	> 0.5MHz
Middle	2437	9.56	> 0.5MHz
High	2462	9.20	> 0.5MHz

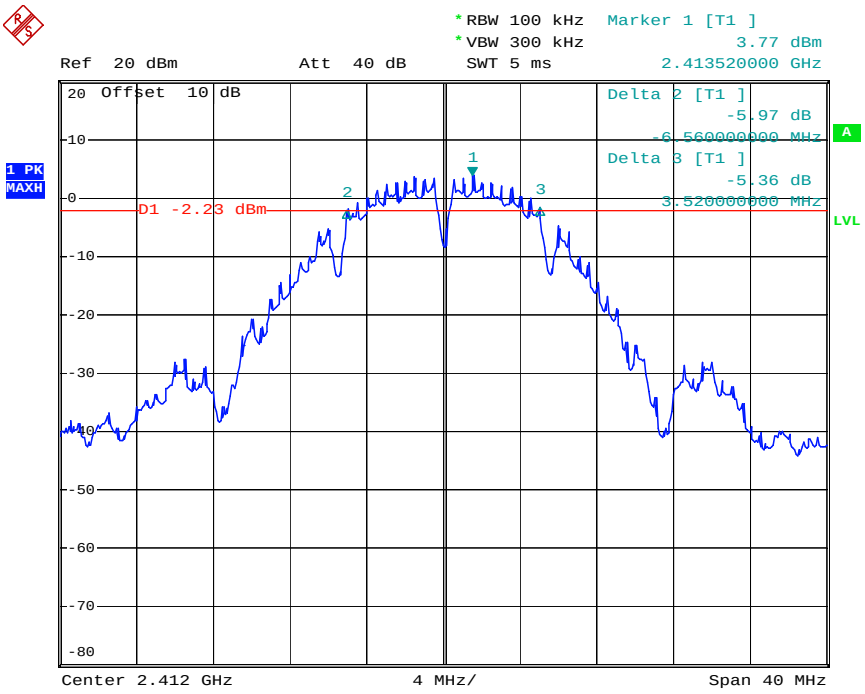
The test was performed with 802.11g			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	16.32	> 0.5MHz
Middle	2437	16.04	> 0.5MHz
High	2462	16.32	> 0.5MHz

The test was performed with 802.11n (Bandwidth: 20 MHz)			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	15.24	> 0.5MHz
Middle	2437	16.28	> 0.5MHz
High	2462	16.40	> 0.5MHz

The spectrum analyzer plots are attached as below.

6dB Bandwidth

802.11b Channel Low 2412MHz



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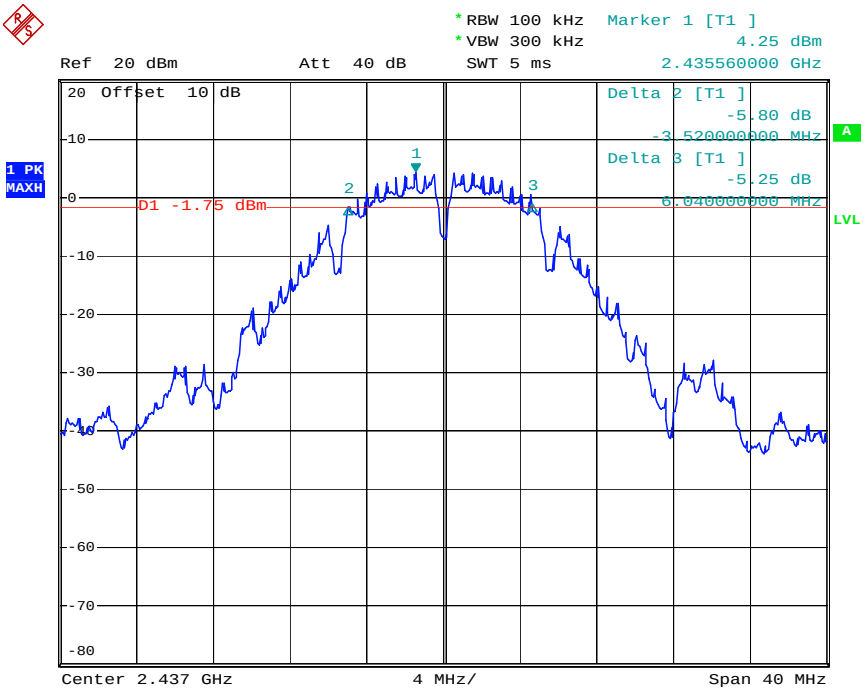
802.11b Channel Middle 2437MHz



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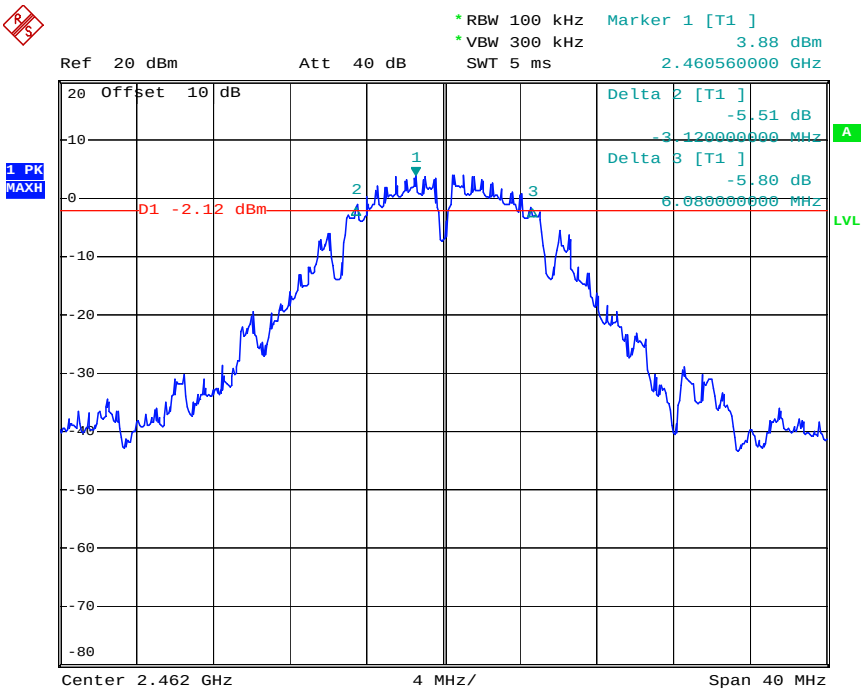
802.11b Channel High 2462MHz



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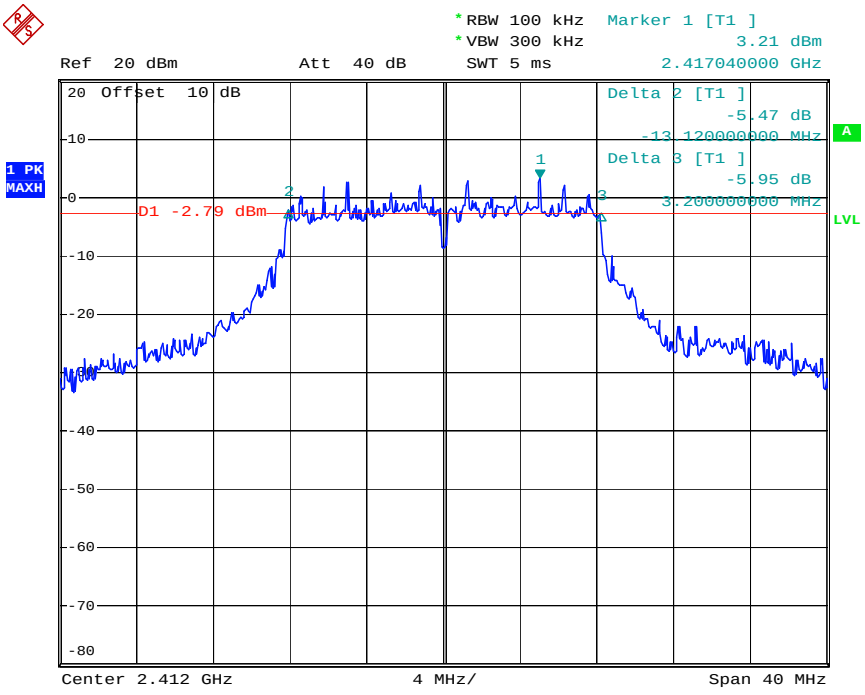
802.11g Channel Low 2412MHz



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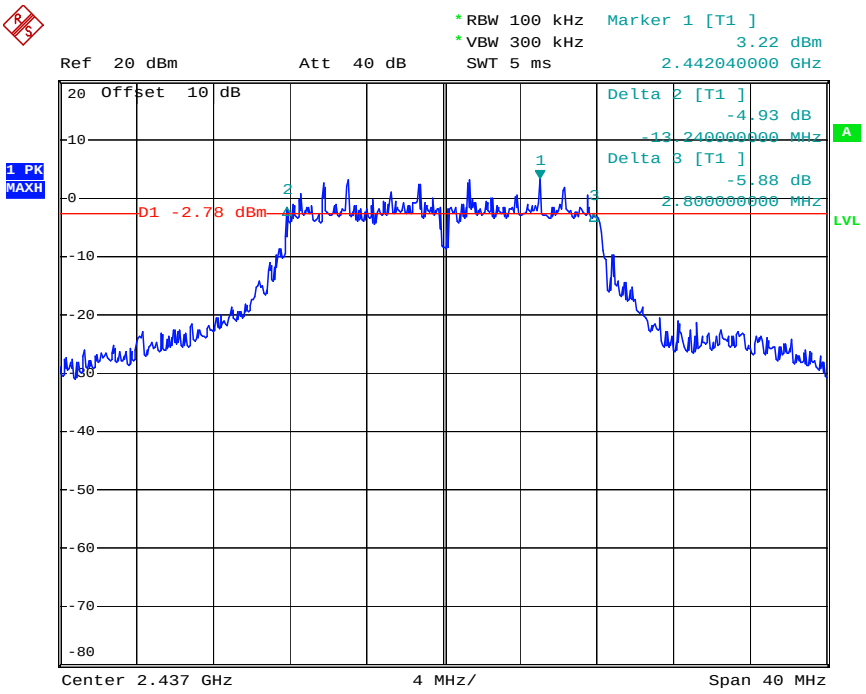
802.11g Channel Middle 2437MHz



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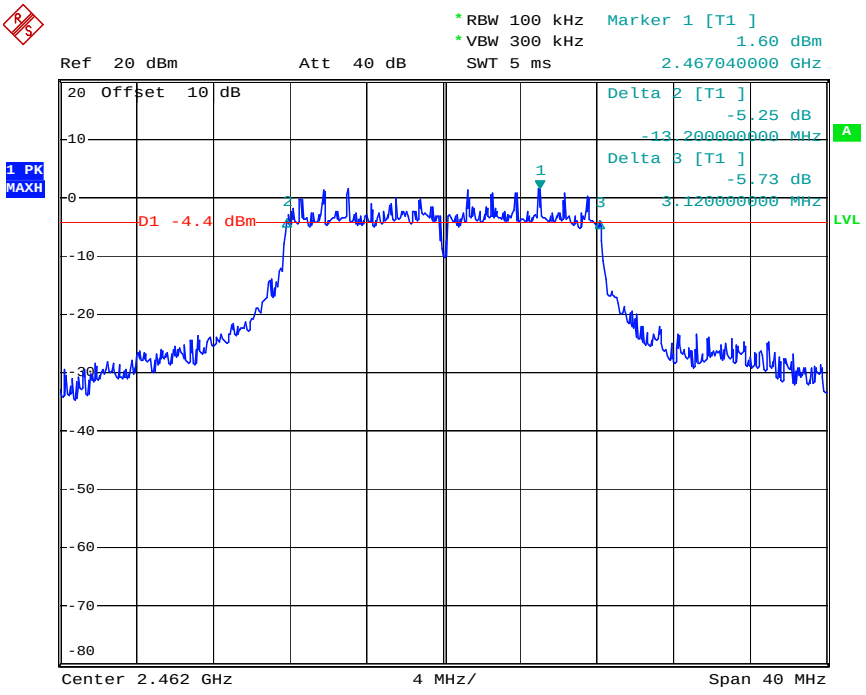
802.11g Channel High 2462MHz



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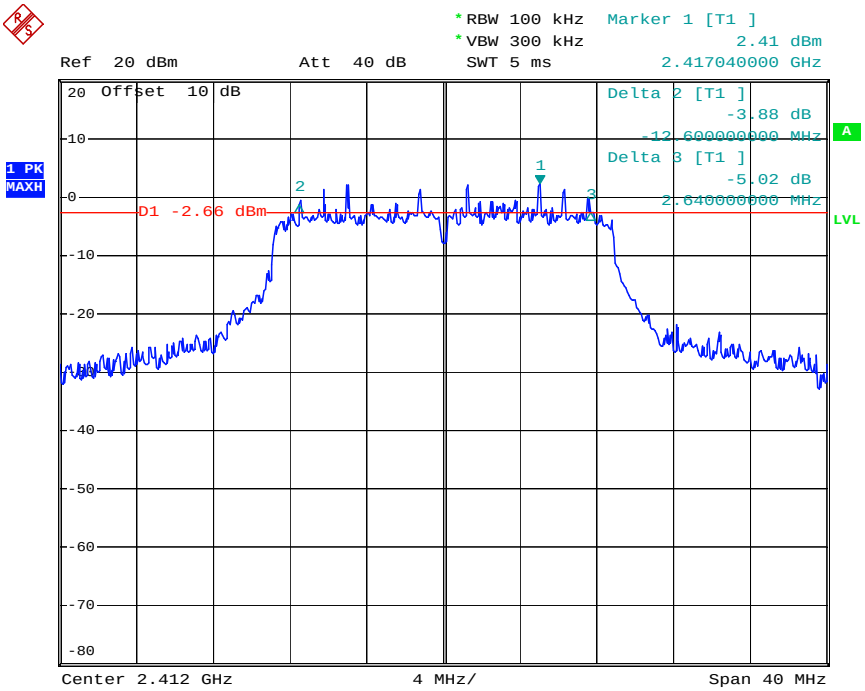
802.11n Channel Low 2412MHz (20MHz)



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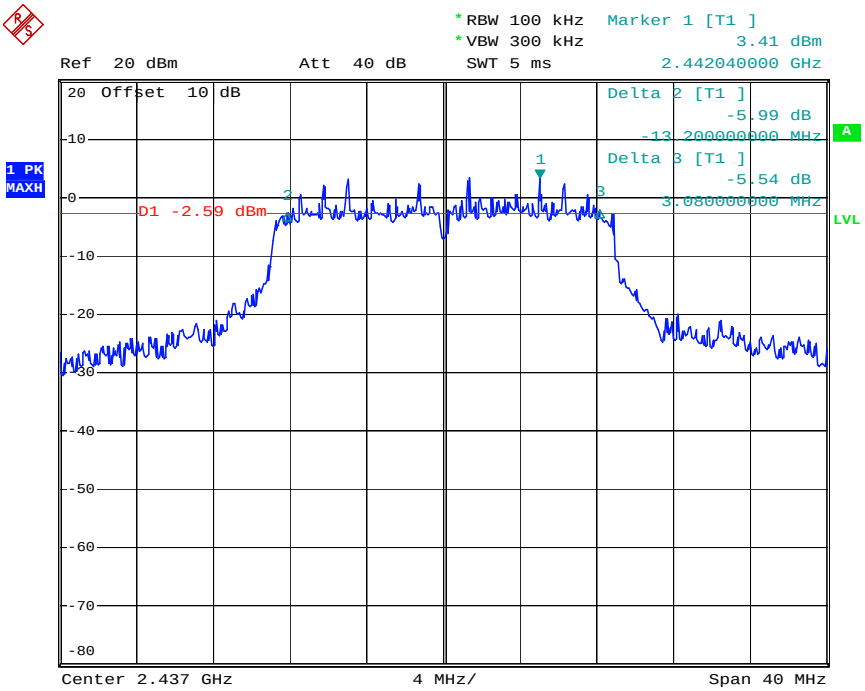
802.11n Channel Middle 2437MHz(20MHz)



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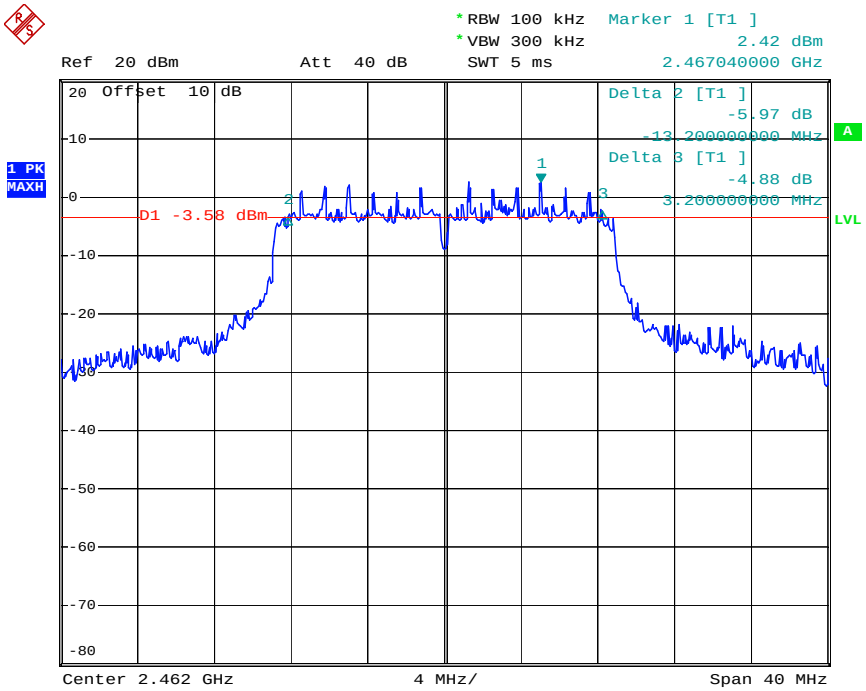
802.11n Channel High 2462MHz(20MHz)



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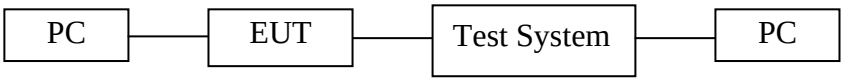
6. 99% OCCUPIED BANDWIDTH

6.1.Block Diagram of Test Setup



6.2.EUT Configuration on Measurement

The following equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

6.3.Operating Condition of EUT

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

6.3.2.Turn on the power of all equipment.

6.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

6.4.Test Procedure

6.4.1.The transmitter output was connected to the spectrum analyzer through a low loss cable. The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts.

6.4.2.The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the occupied bandwidth (OBW) and video bandwidth (VBW) shall be approximately 3x RBW.

6.4.3.A peak, or peak hold, may be used in place of the sampling detector as this may produce a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold may be necessary to determine the occupied bandwidth if the device is not transmitting continuously.

6.4.4.Set SPA “Meas” function, Select “Occupied Bandwidth” function, Select “99% Power Bandwidth”. The frequency of the upper and lower markers indicating the edges of the transmitters “99% Power” emission bandwidth shall be recorded to automate by SPA.

6.5.Measurement Result

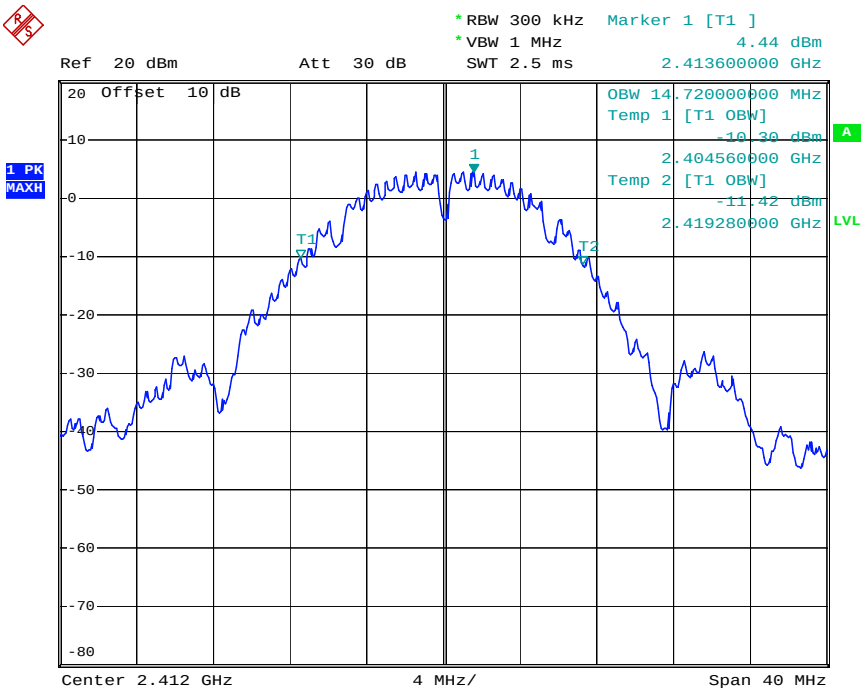
The test was performed with 802.11b		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
Low	2412	14.72
Middle	2437	14.48
High	2462	14.08

The test was performed with 802.11g		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
Low	2412	18.80
Middle	2437	19.76
High	2462	18.48

The test was performed with 802.11n (Bandwidth: 20 MHz)		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
Low	2412	19.04
Middle	2437	19.60
High	2462	18.88

The spectrum analyzer plots are attached as below.

802.11b Low Channel 2412MHz



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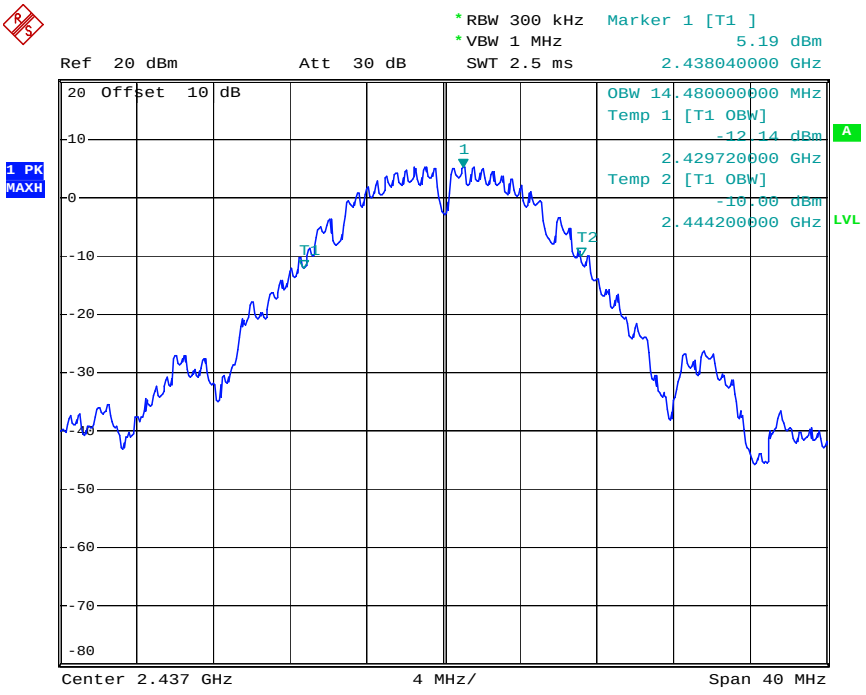
802.11b Middle Channel 2437MHz



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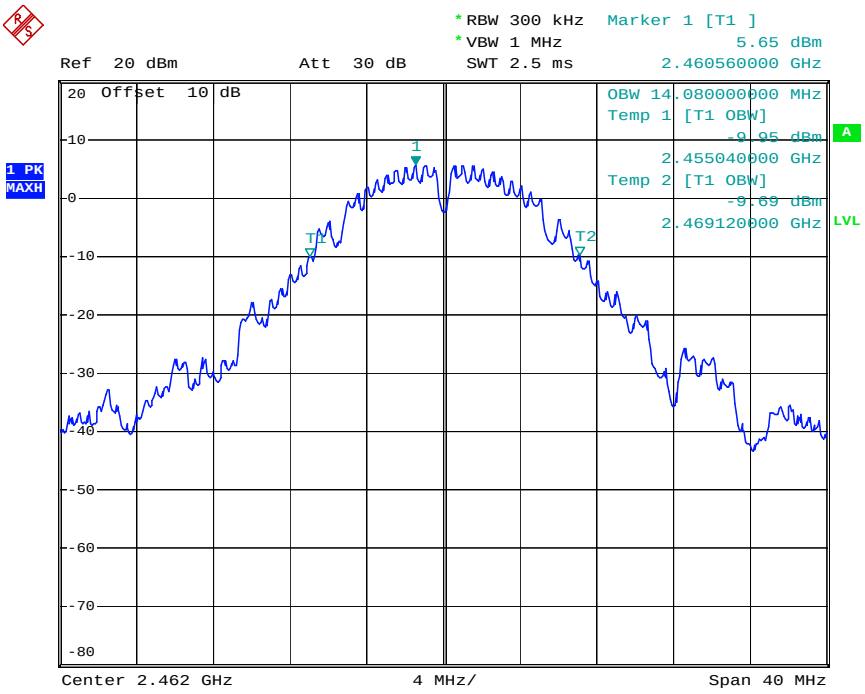
802.11b High Channel 2462MHz



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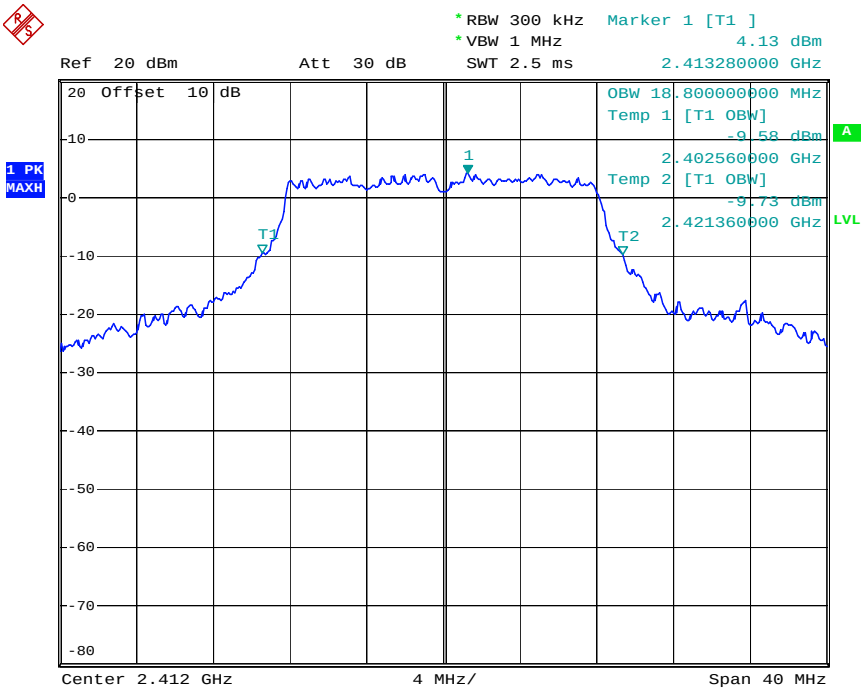
802.11g Channel Low 2412MHz



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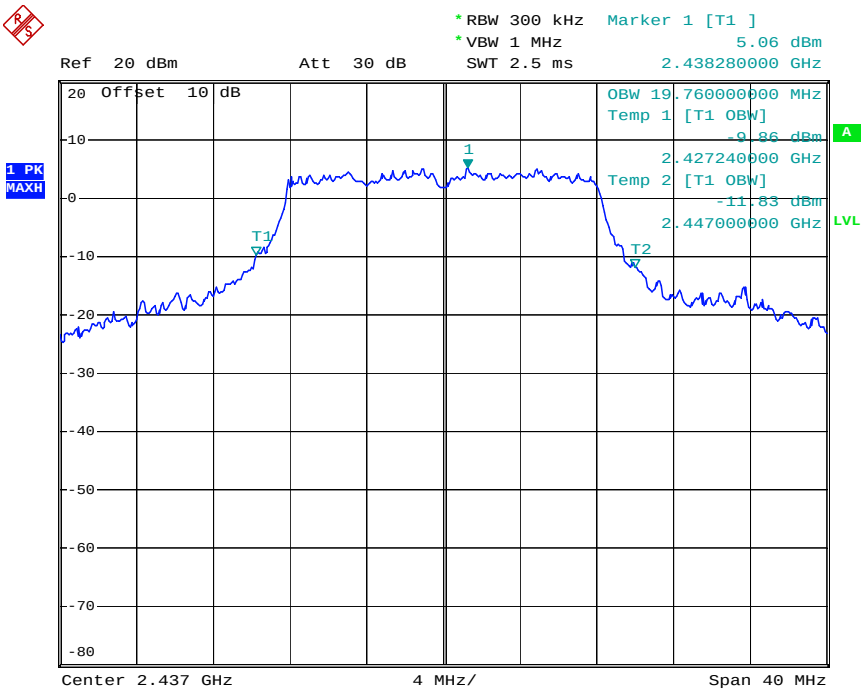
802.11g Middle Channel 2437MHz



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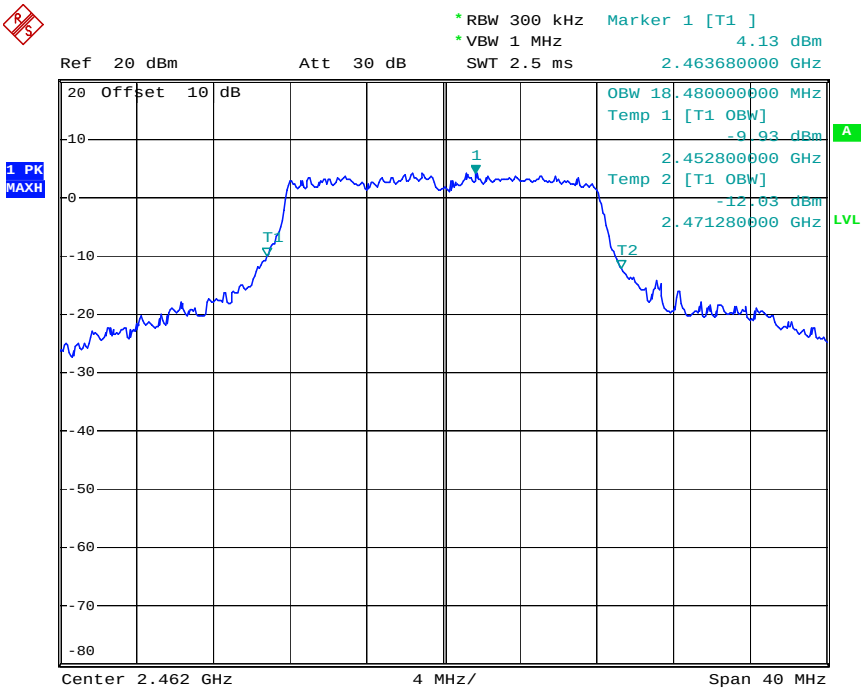
802.11g High Channel 2462MHz



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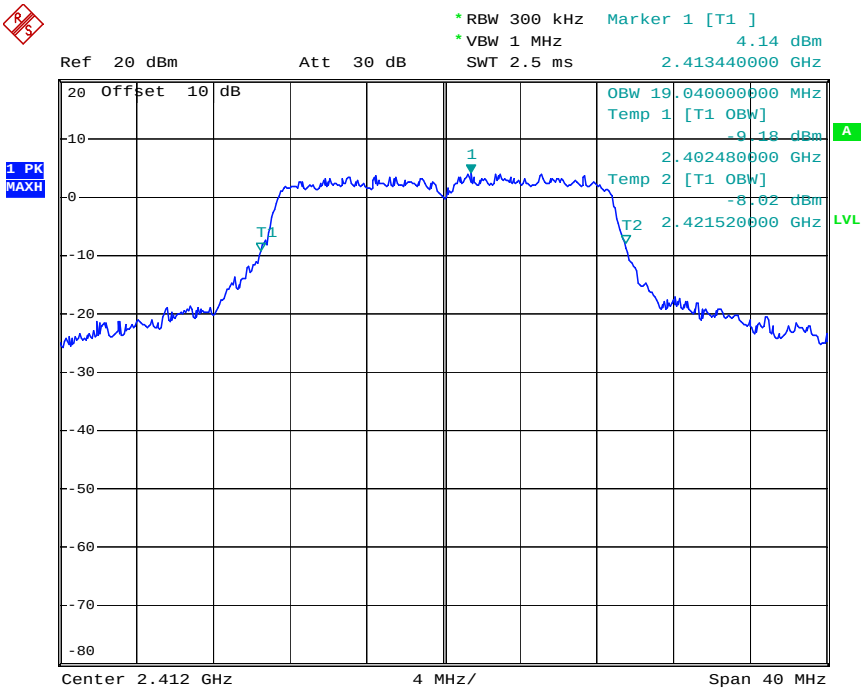
802.11n(20MHz) Low Channel 2412MHz



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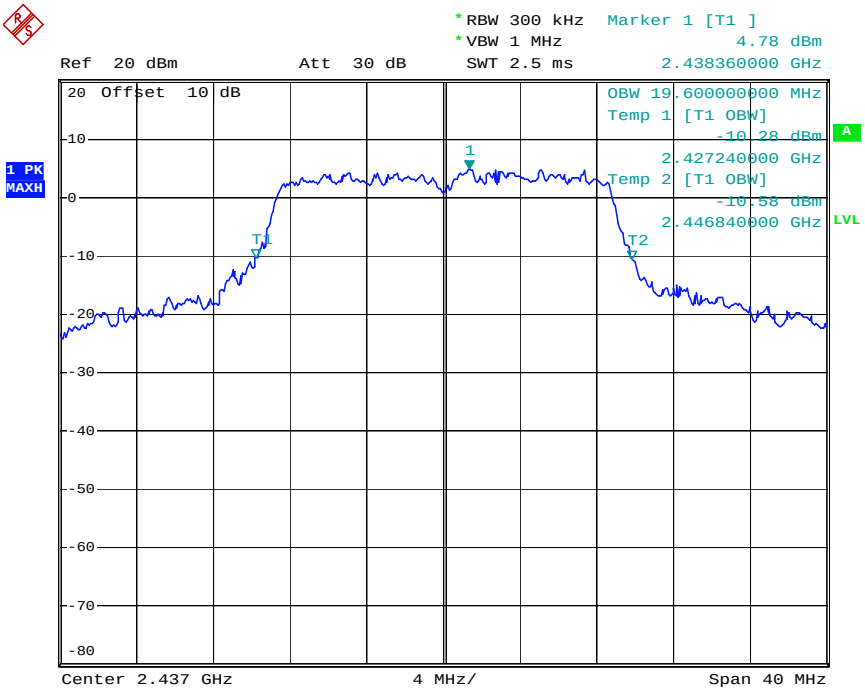
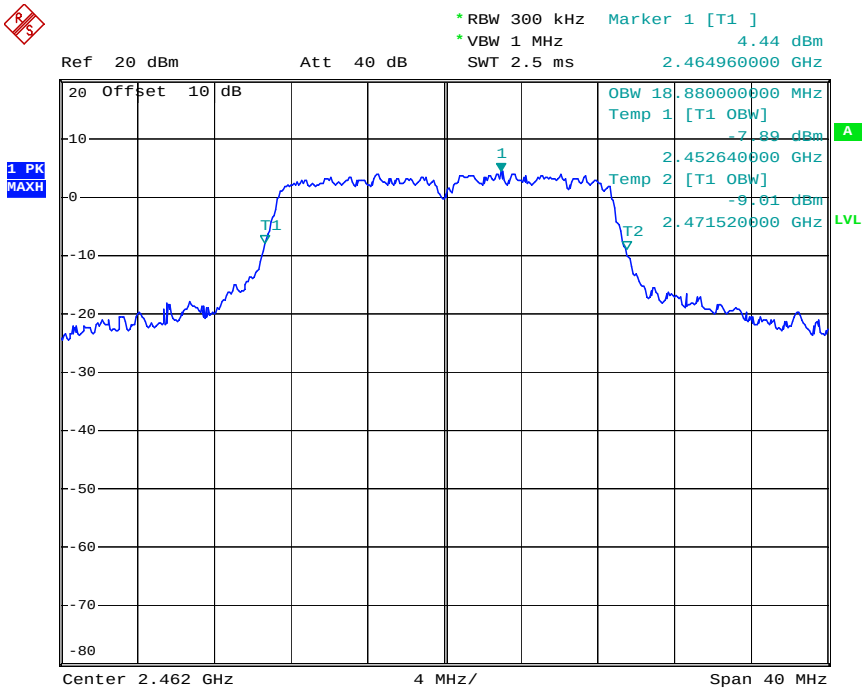
802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 18:40:30

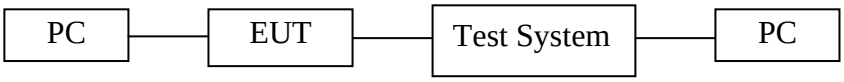
802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:40:03

7. DUTY CYCLE MEASUREMENT

7.1.Block Diagram of Test Setup



7.2.EUT Configuration on Measurement

The equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

7.3.Operating Condition of EUT

7.3.1.Setup the EUT and simulator as shown as Section 7.1.

7.3.2.Turn on the power of all equipment.

7.3.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2437MHz TX frequency to transmit.

7.4.Test Procedure

Measurements of duty cycle and transmission duration shall be performed using one of the following techniques:
1. A diode detector and an oscilloscope that together have sufficiently short response time to permit accurate measurements of the on- and off-times of the transmitted signal.
2. The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on- and off-times of the transmitted signal
a. Set the center frequency of the instrument to the centre frequency of the transmission
b. Set RBW ≥ OBW if possible; otherwise, set RBW to the largest available value(10MHz).
c. Set detector = Peak or average.
d. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100.
(For example, if VBW and/or RBW are limited to 3MHz, then the zero-span method of measuring duty cycle shall not be used if T≤16.7 microseconds.)

7.5.Test Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Middle	2437	88.14%	0.55

The test was performed with 802.11g			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Middle	2437	80.00%	0.97

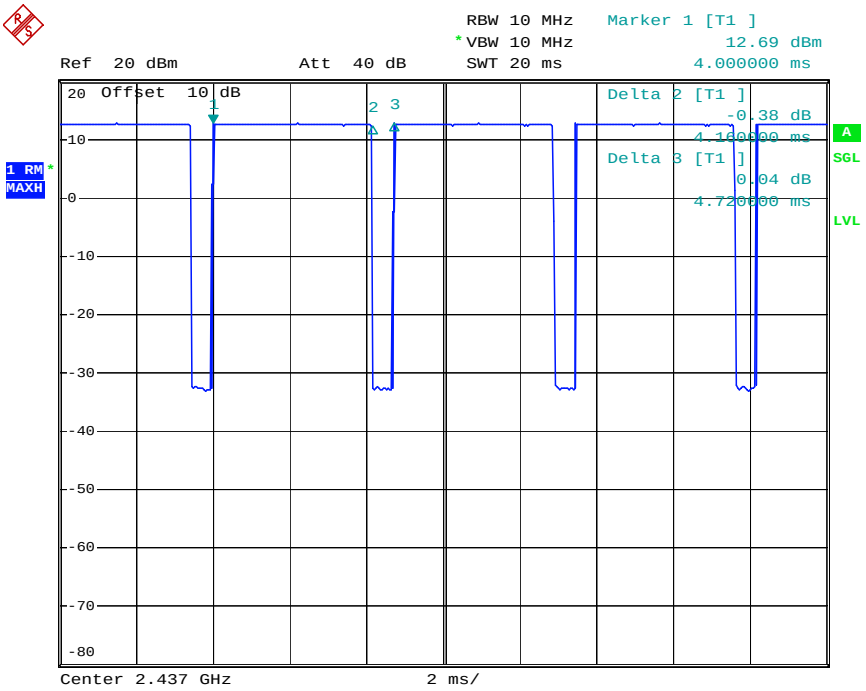
The test was performed with 802.11n20			
Channel	Frequency (MHz)	duty cycle(x)	10log(1/x)
Middle	2437	78.95%	1.03

Note: The duty cycle's parameter settings for each mode(802.11b,g,n) are the same, Therefore, other channels can refer to the test data of the middle channel.

The spectrum analyzer plots are attached as below.

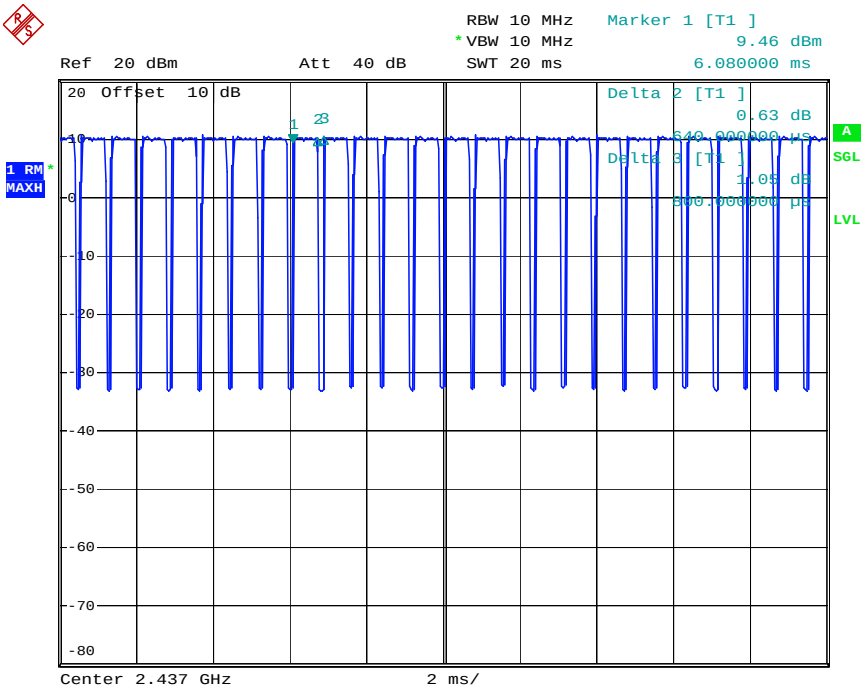
Duty cycle

802.11b Channel Middle 2437MHz



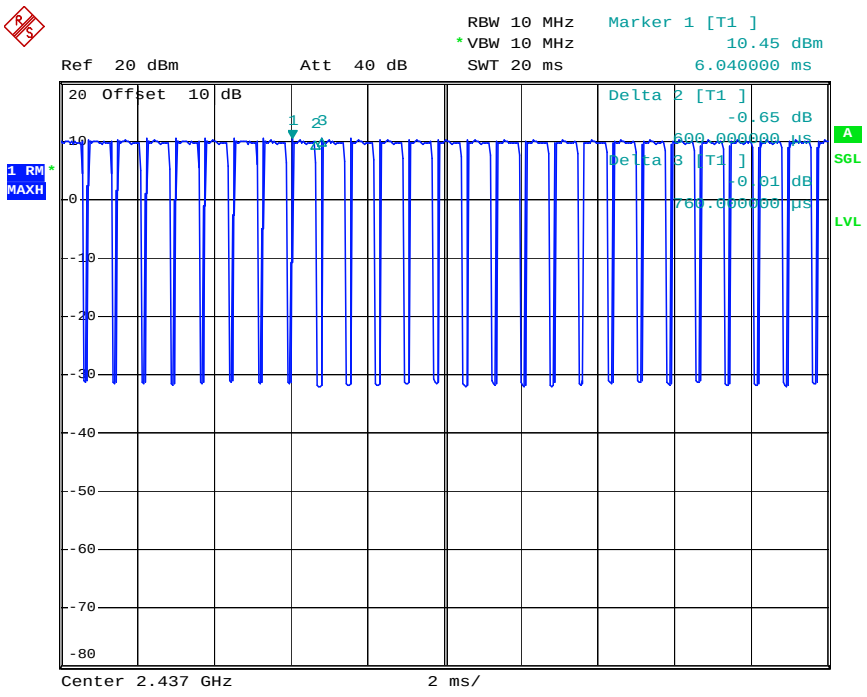
Date: 28.AUG.2019 18:51:40

802.11g Channel Middle 2437MHz



Date: 28.AUG.2019 18:51:03

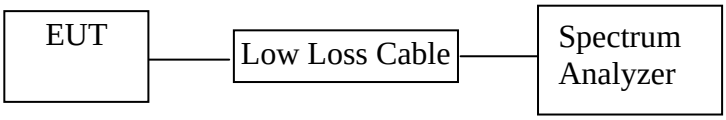
802.11n20 Channel Middle 2437MHz



Date: 28.AUG.2019 18:50:22

8. POWER SPECTRAL DENSITY TEST

8.1.Block Diagram of Test Setup



8.2.The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

8.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

8.4.Operating Condition of EUT

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

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

8.5.Test Procedure

8.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.

8.5.2.Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW 3 kHz $\leqslant$ RBW $\leqslant$ 100 kHz.

4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

8.5.3.Measurement the maximum power spectral density.

8.6.Test Result

PASS

Note: Single antenna transmit in 820.11b and 802.11g mode

Both antennas are transmitted at the same time in 802.11n mode.

We have recorded the worst case value in the report.

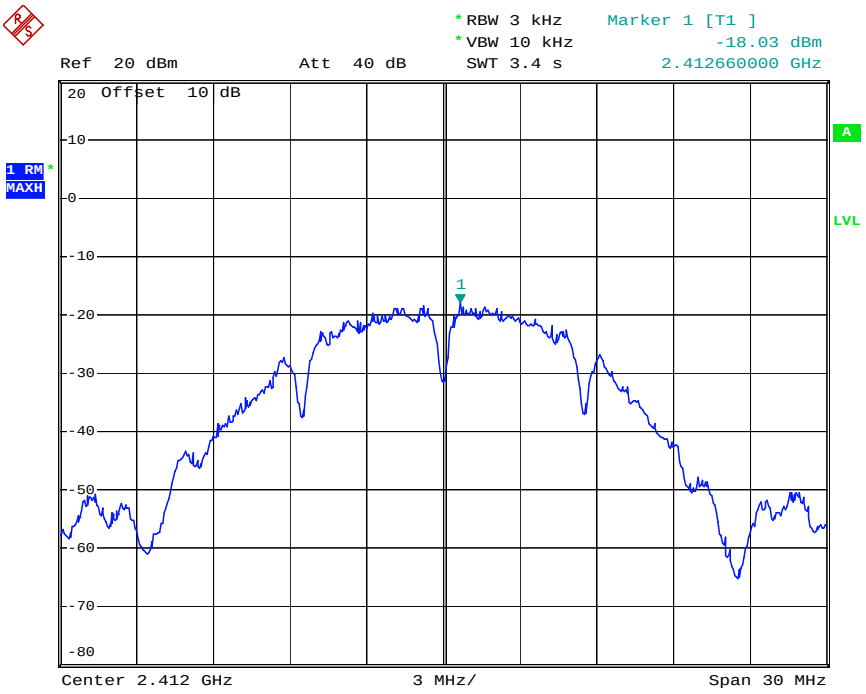
The test was performed with 802.11b					
Channel	Frequency (MHz)	Power Spectral Density(dBm)	10log(1/ duty cycle)	Final Power Spectral Density(dBm)	Limits (dBm)
Low	2412	-18.03	0.55	-17.48	8 dBm
Middle	2437	-17.49	0.55	-16.94	8 dBm
High	2462	-17.62	0.55	-17.07	8 dBm

The test was performed with 802.11g					
Channel	Frequency (MHz)	Power Spectral Density(dBm)	10log(1/ duty cycle)	Final Power Spectral Density(dBm)	Limits (dBm)
Low	2412	-20.75	0.97	-19.78	8 dBm
Middle	2437	-21.52	0.97	-20.55	8 dBm
High	2462	-21.30	0.97	-20.33	8 dBm

The test was performed with 802.11n(20MHz)					
Channel	Frequency (MHz)	Power Spectral Density(dBm)	10log(1/ duty cycle)	Final Power Spectral Density(dBm)	Limits (dBm)
Low	2412	-21.51	1.03	-20.48	8 dBm
Middle	2437	-21.27	1.03	-20.24	8 dBm
High	2462	-22.81	1.03	-21.78	8 dBm

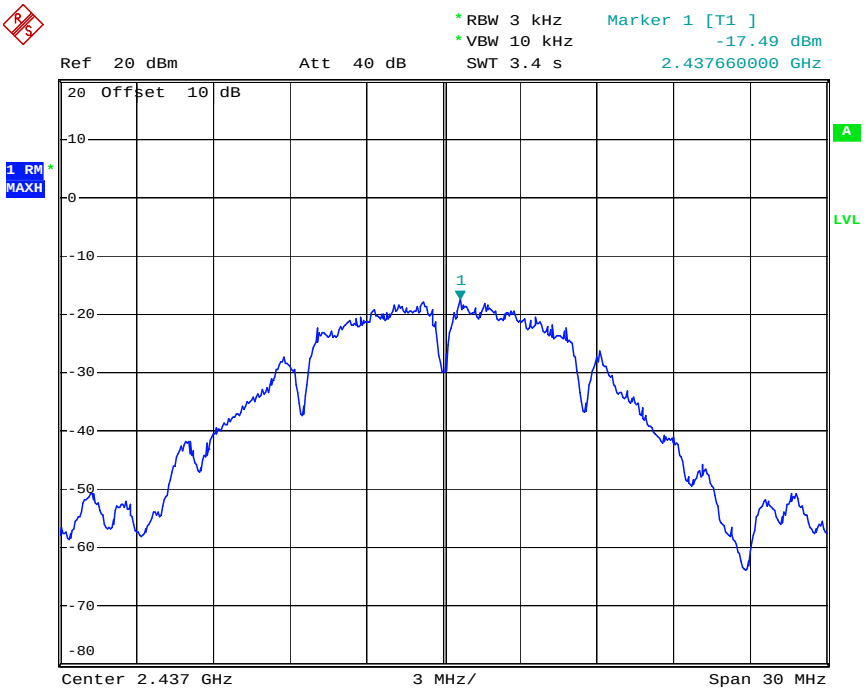
The spectrum analyzer plots are attached as below.

802.11b Low Channel 2412MHz



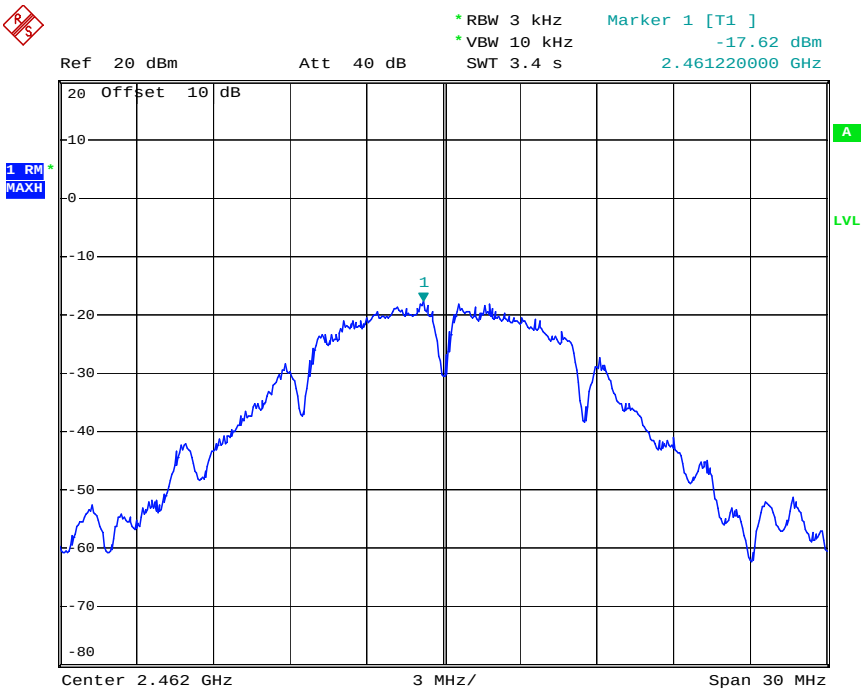
Date: 28.AUG.2019 18:53:04

802.11b Middle Channel 2437MHz



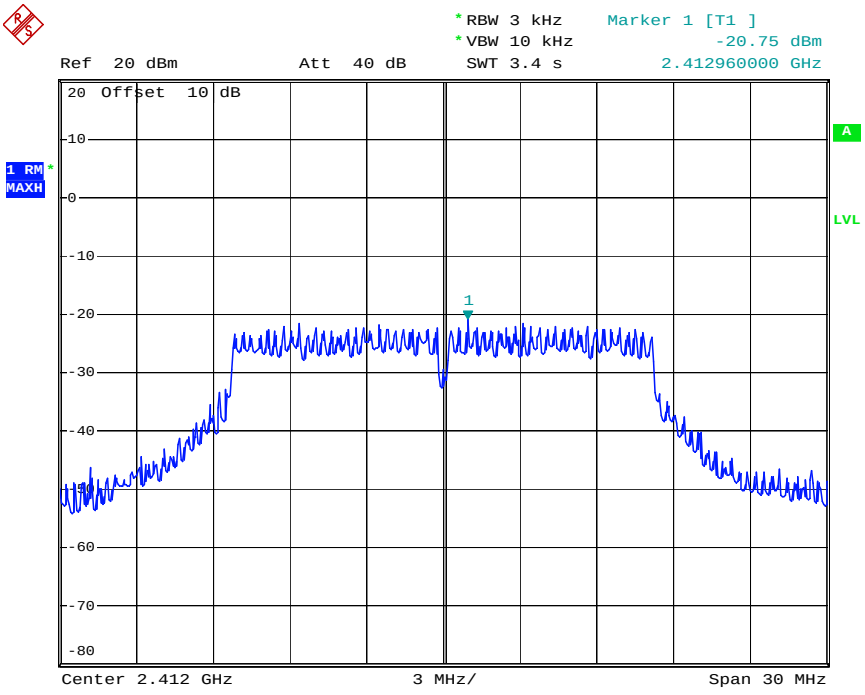
Date: 28.AUG.2019 18:52:40

802.11b High Channel 2462MHz



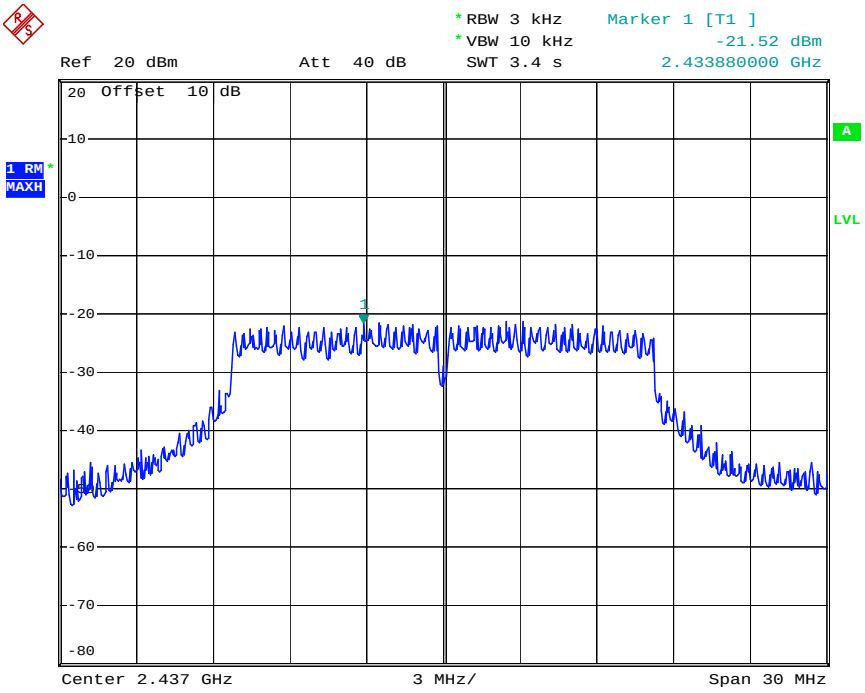
Date: 28.AUG.2019 18:53:36

802.11g Low Channel 2412MHz



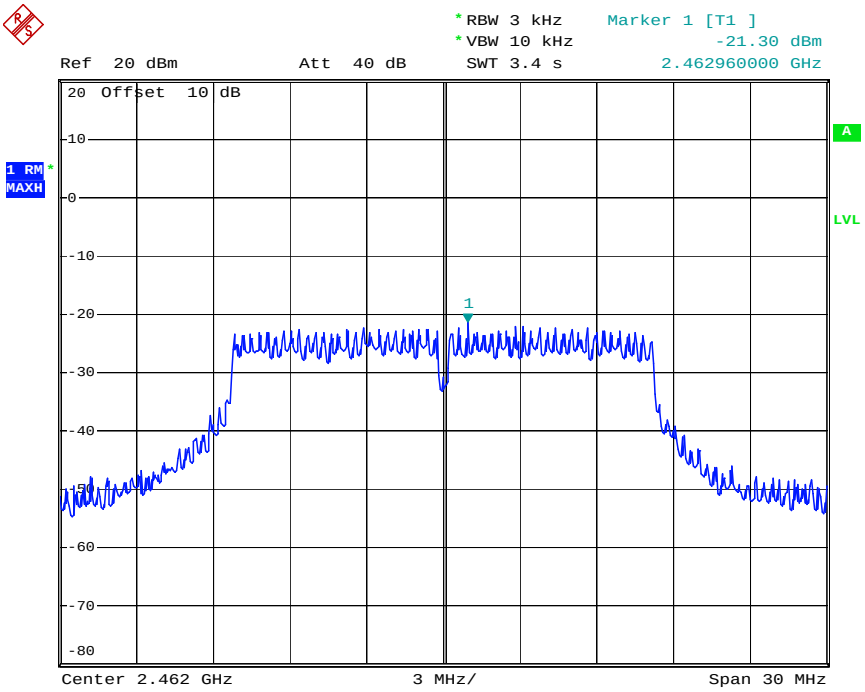
Date: 28.AUG.2019 18:55:10

802.11g Middle Channel 2437MHz



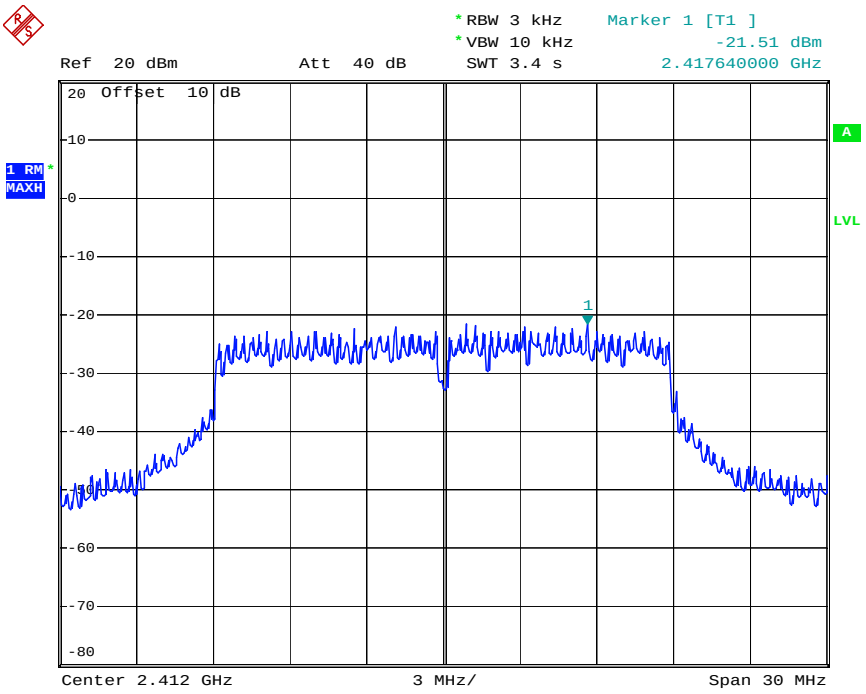
Date: 28.AUG.2019 18:54:45

802.11g High Channel 2462MHz



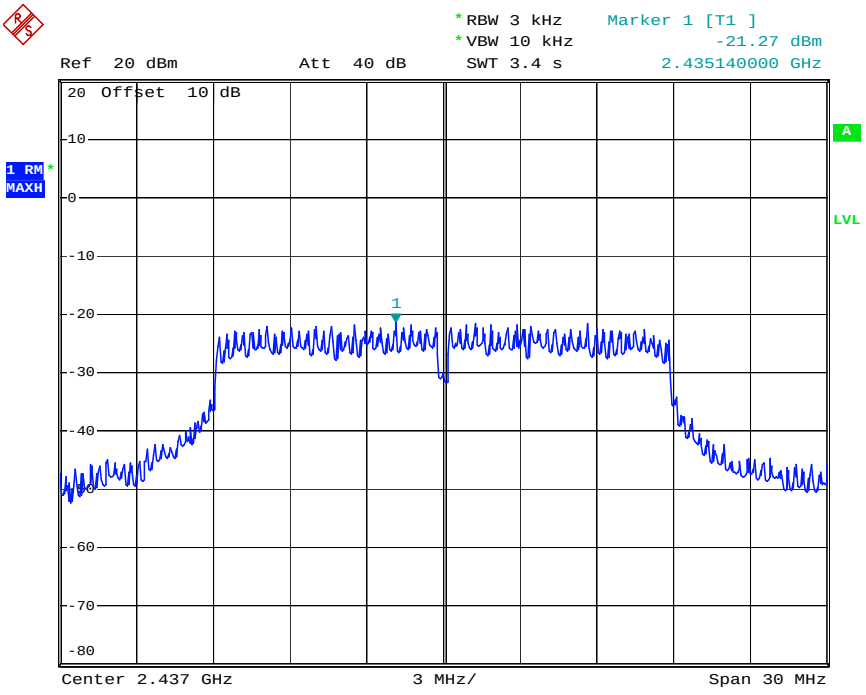
Date: 28.AUG.2019 18:54:17

802.11n(20MHz) Low Channel 2412MHz



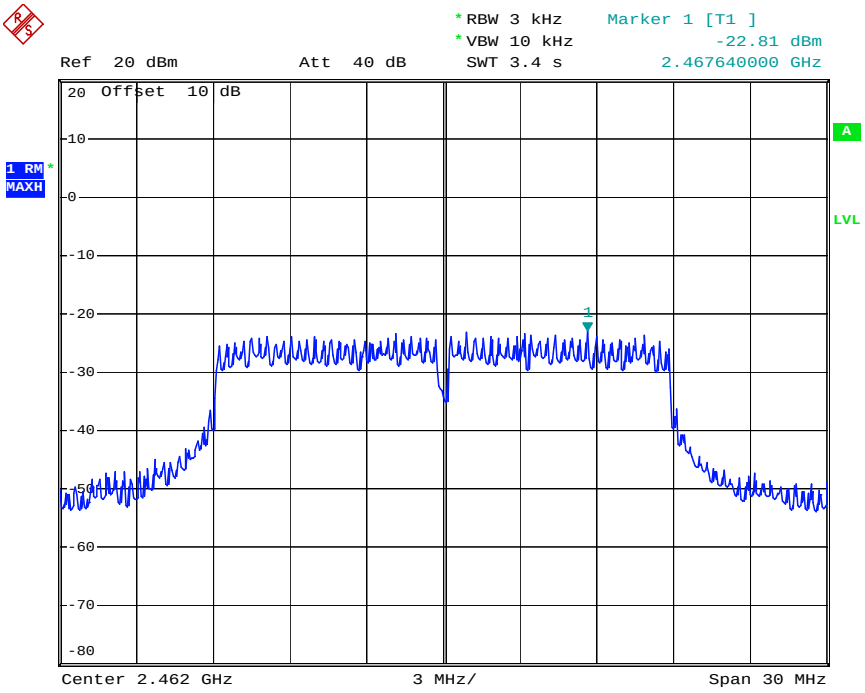
Date: 28.AUG.2019 18:55:46

802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 18:56:17

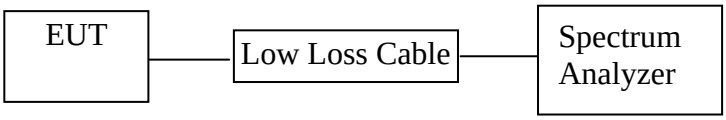
802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:56:50

9. MAXIMUM CONDUCTED (AVERAGE) OUTPUT POWER

9.1.Block Diagram of Test Setup



9.2.The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

9.3.EUT Configuration on Measurement

The equipment is installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 9.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

9.5.Test Procedure

9.5.1.The EUT was tested according to DTS test procedure of April 02, 2019 KDB558074 D01 DTS Meas Guidance v0502 for compliance to FCC 47CFR 15.247 requirements.

9.5.2.The transmitter output was connected to the spectrum analyzer through a low loss cable.

9.5.3.Set RBW = 1-5% of the OBW, not to exceed 1 MHz, VBW $\geqslant$ 3 x RBW, Sweep time = auto, Set span to at least 1.5 times the OBW, Detector = RMS.

9.5.4.Measurement the Maximum conducted (average) output power.

9.6.Test Result

Final power= Ave output power+10log(1/ duty cycle)

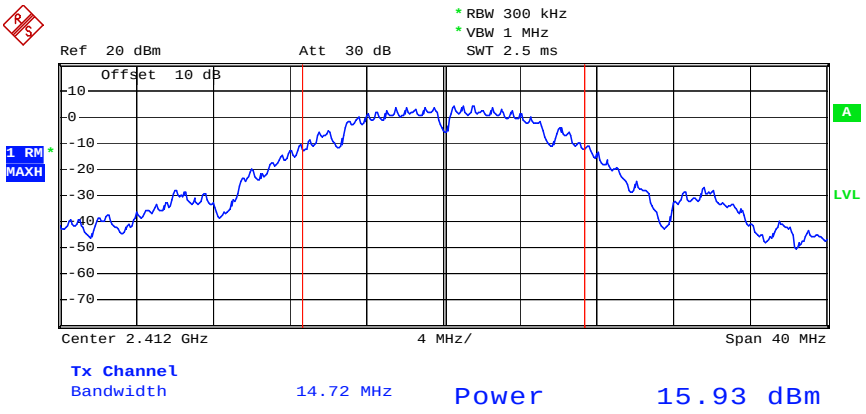
The test was performed with 802.11b					
Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (W)	FCC Limits dBm / W
2412	15.93	0.55	16.48	0.0445	30 dBm / 1 W
2437	14.35	0.55	14.90	0.0309	30 dBm / 1 W
2462	14.89	0.55	15.44	0.0350	30 dBm / 1 W

The test was performed with 802.11g					
Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (W)	FCC Limits dBm / W
2412	16.23	0.97	17.20	0.0525	30 dBm / 1 W
2437	15.28	0.97	16.25	0.0422	30 dBm / 1 W
2462	14.95	0.97	15.92	0.0391	30 dBm / 1 W

The test was performed with 802.11n(20MHz)					
Frequency (MHz)	Ave output power (dBm)	10log(1/ duty cycle)	Final power (dBm)	Final power (W)	FCC Limits dBm / W
2412	15.28	1.03	16.31	0.0428	30 dBm / 1 W
2437	15.86	1.03	16.89	0.0489	30 dBm / 1 W
2462	15.48	1.03	16.51	0.0448	30 dBm / 1 W

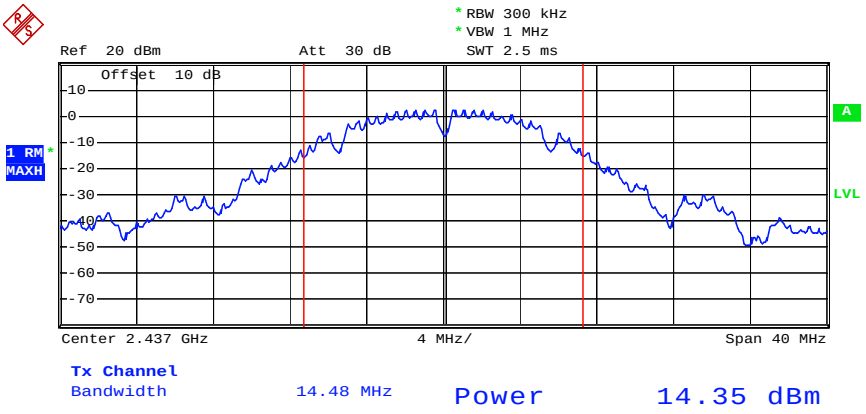
The spectrum analyzer plots are attached as below.

802.11b Low Channel 2412MHz



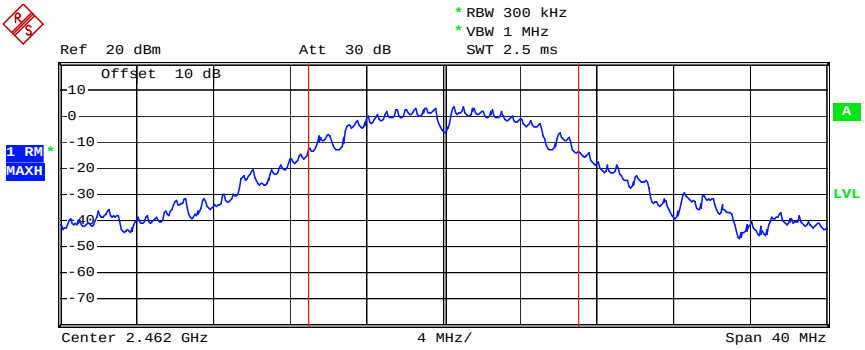
Date: 28.AUG.2019 19:21:18

802.11b Middle Channel 2437MHz



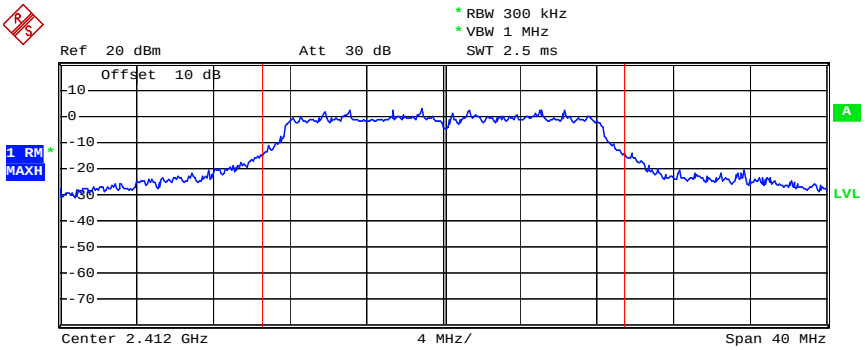
Date: 28.AUG.2019 19:22:44

802.11b High Channel 2462MHz



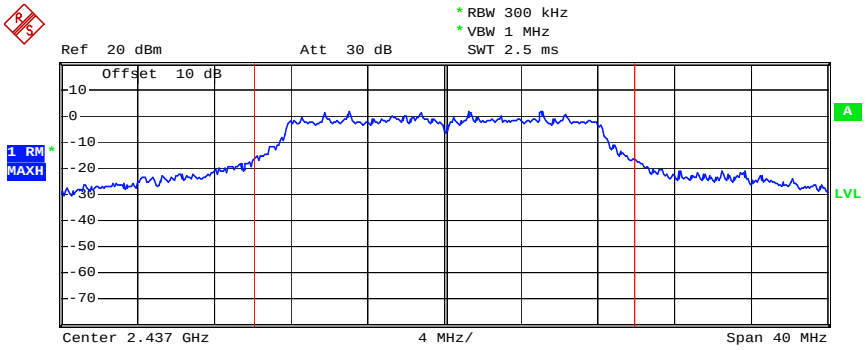
Date: 28.AUG.2019 19:24:19

802.11g Low Channel 2412MHz



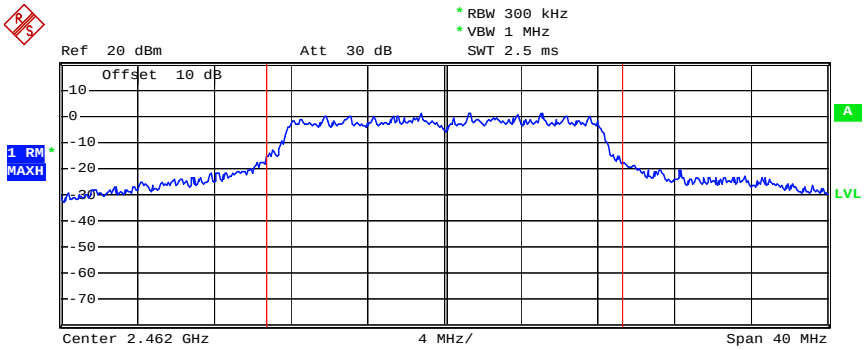
Date: 28.AUG.2019 19:29:26

802.11g Middle Channel 2437MHz



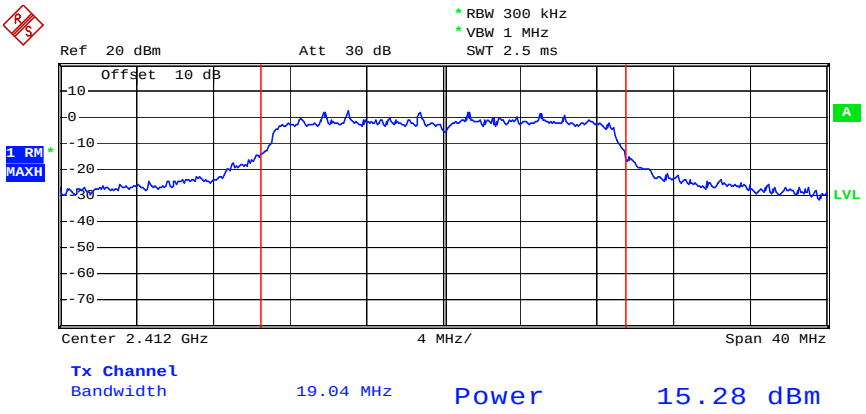
Date: 28.AUG.2019 19:28:04

802.11g High Channel 2462MHz



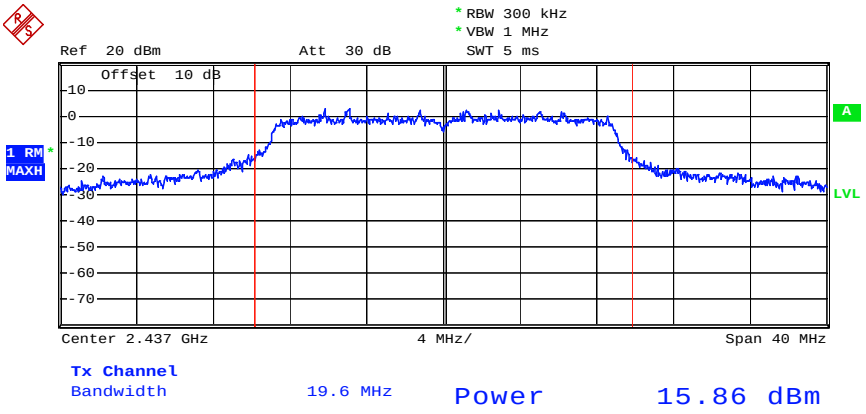
Date: 28.AUG.2019 19:26:18

802.11n(20MHz) Low Channel 2412MHz



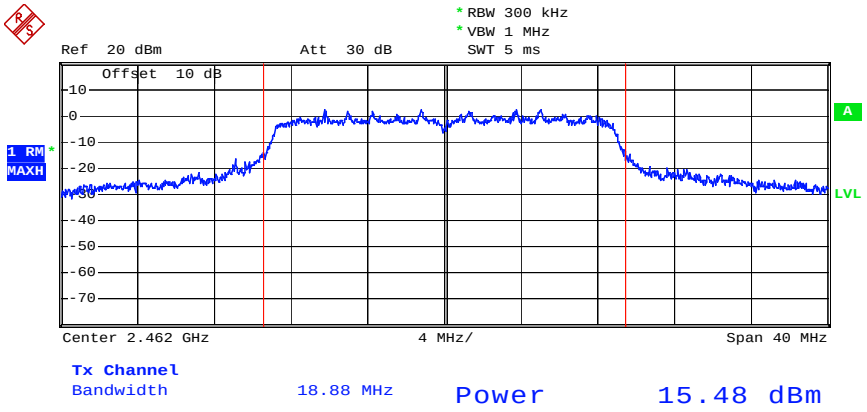
Date: 28.AUG.2019 19:30:19

802.11n(20MHz) Middle Channel 2437MHz



Date: 28.AUG.2019 19:31:06

802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 19:31:39

10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

10.1.1.Block diagram of connection between the EUT and peripherals

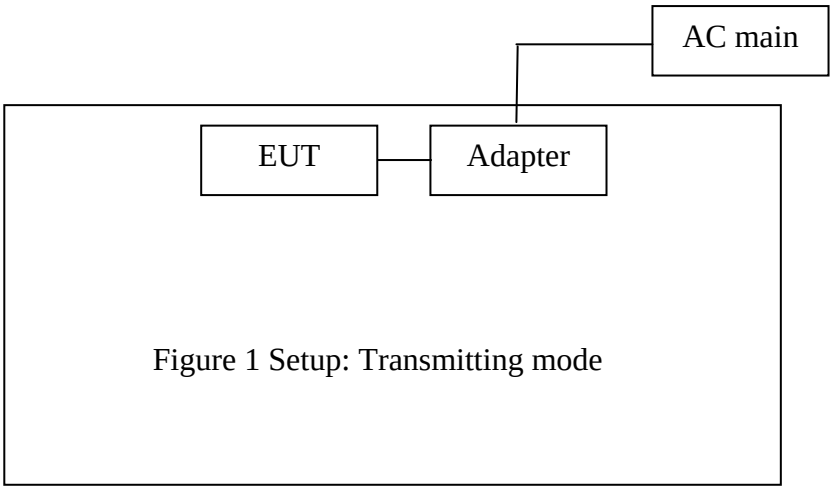
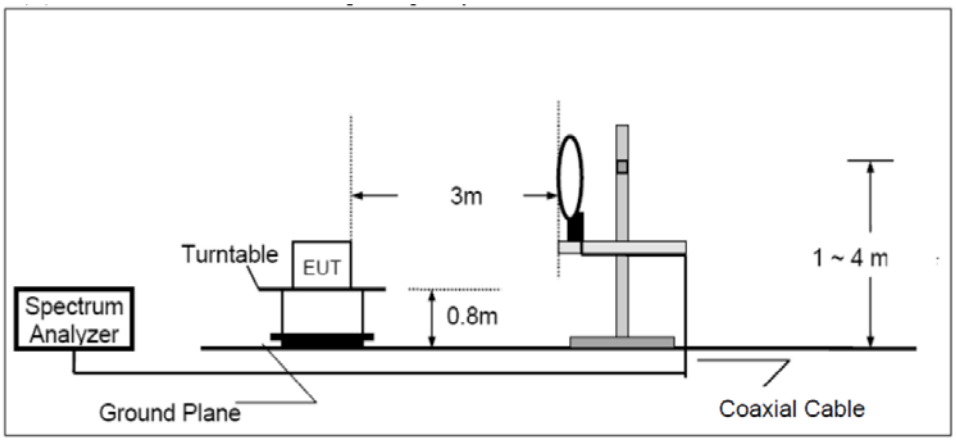


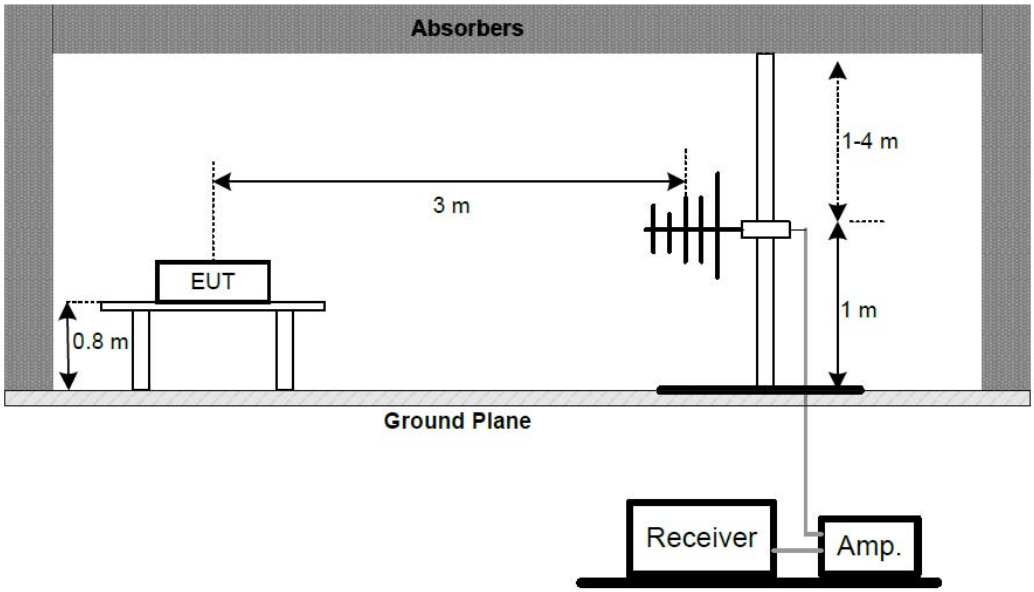
Figure 1 Setup: Transmitting mode

10.1.2.Semi-Anechoic Chamber Test Setup Diagram

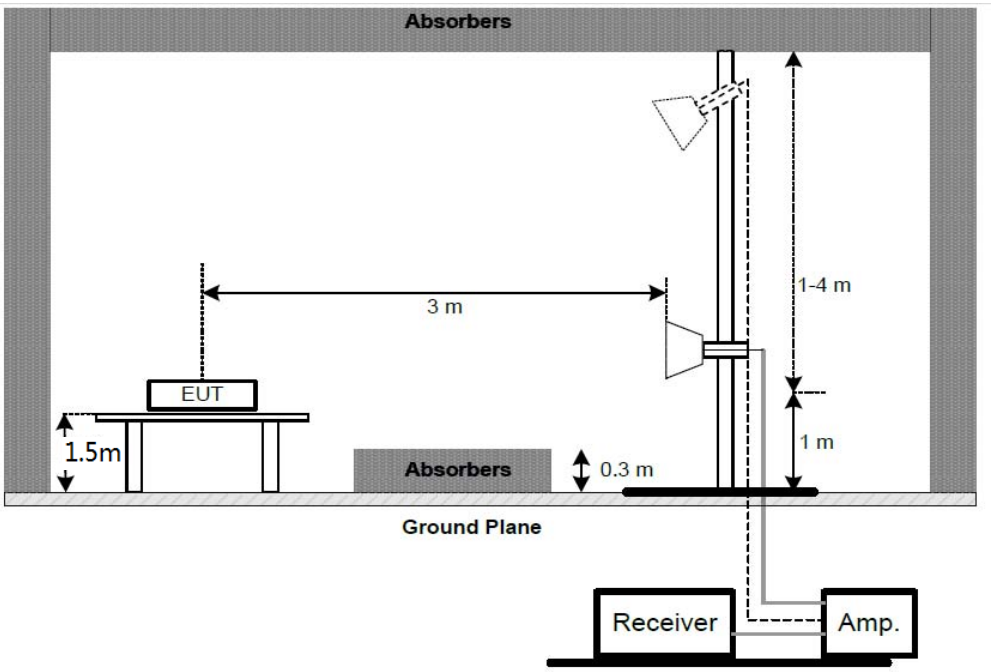
(A) Radiated Emission Test Set-Up, Frequency below 30MHz



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



Above 1GHz:



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, 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).

10.3.Restricted bands of operation

10.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

10.4.Configuration of EUT on Measurement

The equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

10.5.Operating Condition of EUT

10.5.1.Setup the EUT and simulator as shown as Section 10.1.

10.5.2.Turn on the power of all equipment.

10.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz and 2462MHz TX frequency to transmit.

10.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The frequency range from 30MHz to 25000MHz is checked.
Result = Reading + Corrected Factor
Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain
During the radiated emission test, the spectrum analyzer was set with the following configurations:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz for peak measurement with peak detector at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 10Hz for Average measurement with peak detection at frequency above 1GHz.
4. All modes of operation were investigated and the worst-case emissions

are reported.

10.7.The Field Strength of Radiation Emission Measurement Results

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

2. *: Denotes restricted band of operation.

3. The EUT is tested radiation emission at each test mode (802.11b/g/n) in three axes. The worst emissions are reflected in the following plots.

4. The radiation emissions from 18-25GHz are not reported, because the test values lower than the limits of 20dB

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

Below 1G

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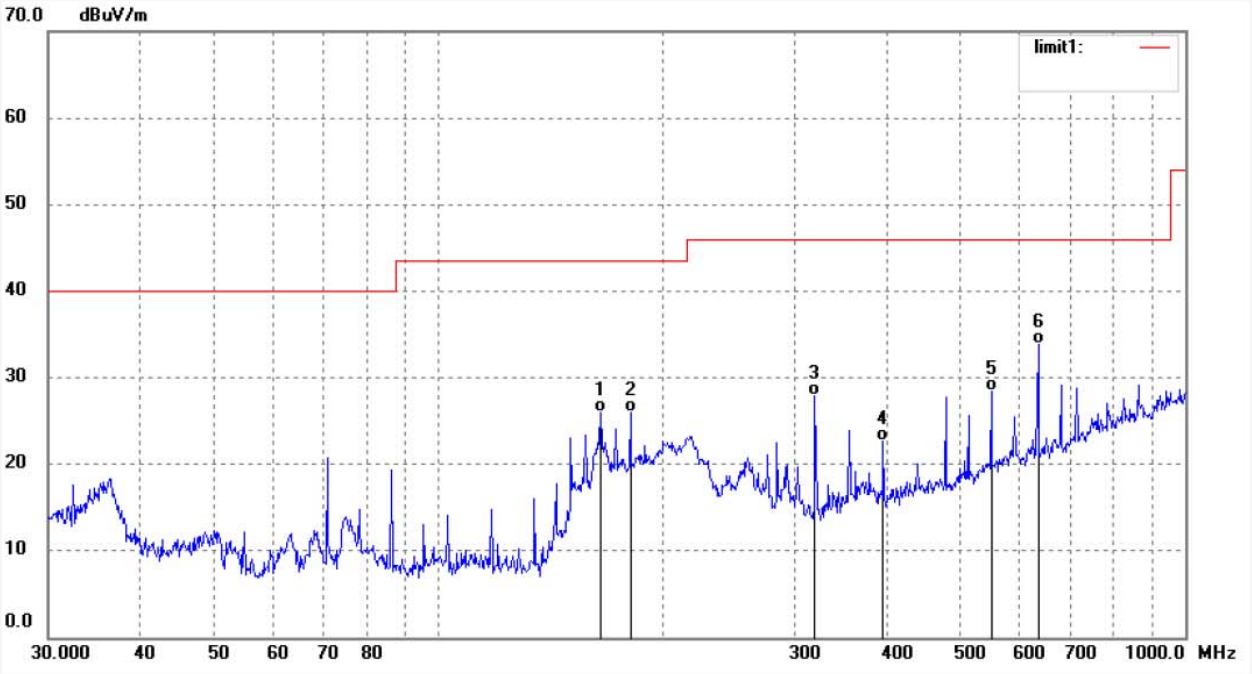
Job No.: FRANK2019-W #158	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/30
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:24:16
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 1	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	164.8911	52.56	-26.55	26.01	43.50	-17.49	QP	200	320	
2	180.6640	52.01	-25.97	26.04	43.50	-17.46	QP	200	142	
3	319.2071	48.48	-20.65	27.83	46.00	-18.17	QP	200	93	
4	394.1198	41.15	-18.41	22.74	46.00	-23.26	QP	200	110	
5	550.2902	43.30	-14.79	28.51	46.00	-17.49	QP	200	22	
6	635.5576	46.86	-12.96	33.90	46.00	-12.10	QP	200	193	

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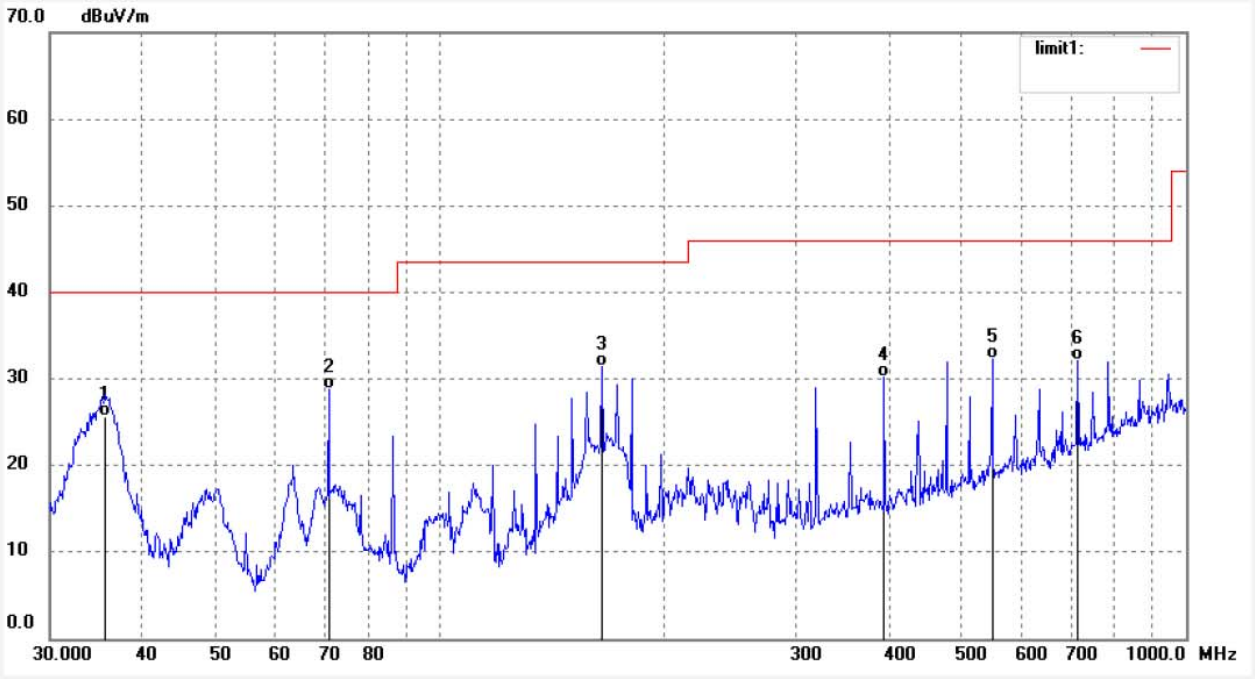
Job No.: FRANK2019-W #159	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/30
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:25:25
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 1	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.7616	47.35	-21.77	25.58	40.00	-14.42	QP	100	211	
2	70.9535	56.26	-27.52	28.74	40.00	-11.26	QP	100	33	
3	164.8910	58.00	-26.55	31.45	43.50	-12.05	QP	100	112	
4	394.1197	48.56	-18.41	30.15	46.00	-15.85	QP	100	32	
5	550.2902	47.04	-14.79	32.25	46.00	-13.75	QP	100	66	
6	716.2038	43.25	-11.09	32.16	46.00	-13.84	QP	100	149	

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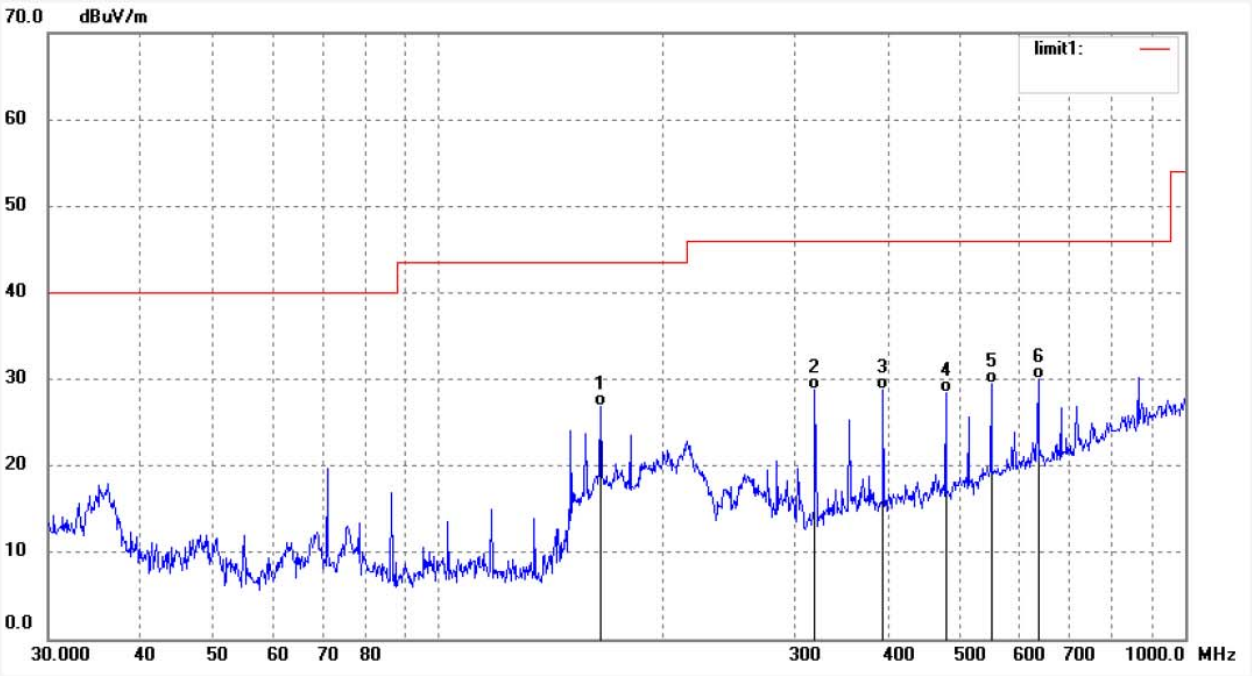
Job No.: FRANK2019-W #161
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 6
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/30
Time: 17:27:06
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	164.8911	53.48	-26.55	26.93	43.50	-16.57	QP	200	302	
2	319.2071	49.37	-20.65	28.72	46.00	-17.28	QP	200	56	
3	394.1198	47.24	-18.41	28.83	46.00	-17.17	QP	200	63	
4	478.1394	45.10	-16.65	28.45	46.00	-17.55	QP	200	159	
5	550.2902	44.36	-14.79	29.57	46.00	-16.43	QP	200	22	
6	635.5576	43.06	-12.96	30.10	46.00	-15.90	QP	200	193	

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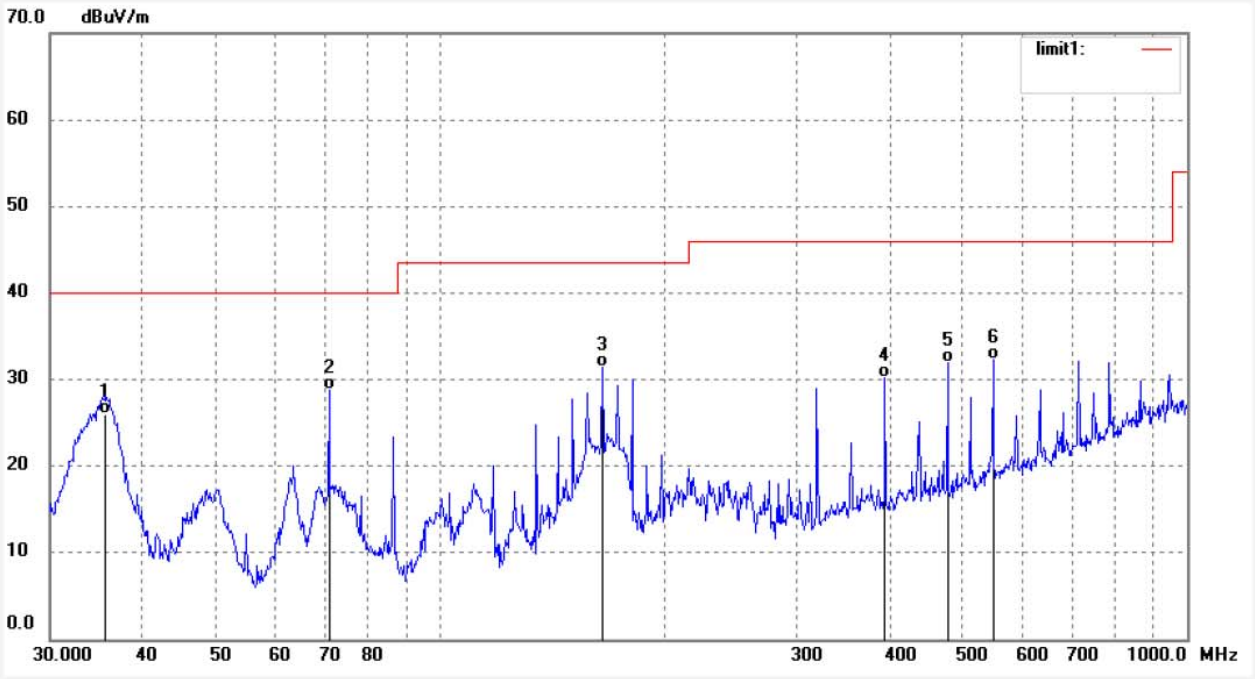
Job No.: FRANK2019-W #160	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/30
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:25:37
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 6	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.6362	47.64	-21.72	25.92	40.00	-14.08	QP	100	221	
2	70.9535	56.33	-27.52	28.81	40.00	-11.19	QP	100	210	
3	164.8910	58.00	-26.55	31.45	43.50	-12.05	QP	100	33	
4	394.1197	48.56	-18.41	30.15	46.00	-15.85	QP	100	93	
5	478.1394	48.54	-16.65	31.89	46.00	-14.11	QP	100	321	
6	550.2902	47.04	-14.79	32.25	46.00	-13.75	QP	100	193	

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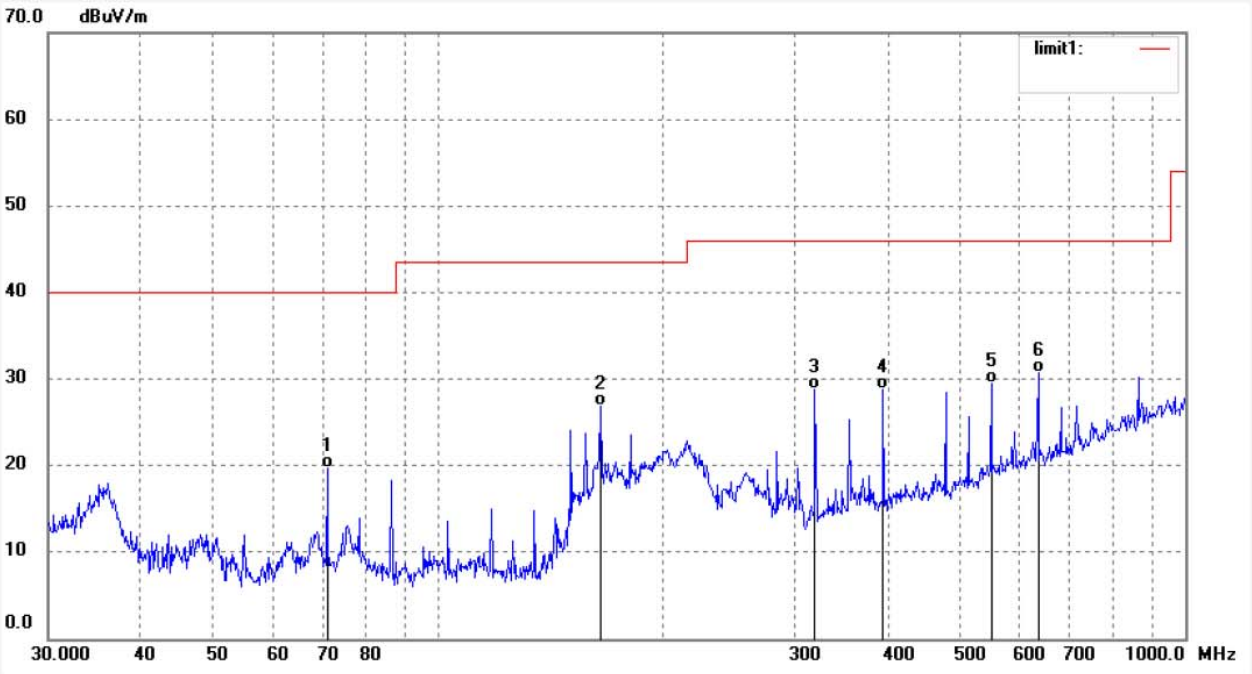
Job No.: FRANK2019-W #162
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 11
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/30
Time: 17:27:15
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	70.9535	47.26	-27.52	19.74	40.00	-20.26	QP	200	201	
2	164.8911	53.48	-26.55	26.93	43.50	-16.57	QP	200	63	
3	319.2071	49.37	-20.65	28.72	46.00	-17.28	QP	200	118	
4	394.1198	47.24	-18.41	28.83	46.00	-17.17	QP	200	41	
5	550.2902	44.36	-14.79	29.57	46.00	-16.43	QP	200	22	
6	635.5576	43.76	-12.96	30.80	46.00	-15.20	QP	200	193	

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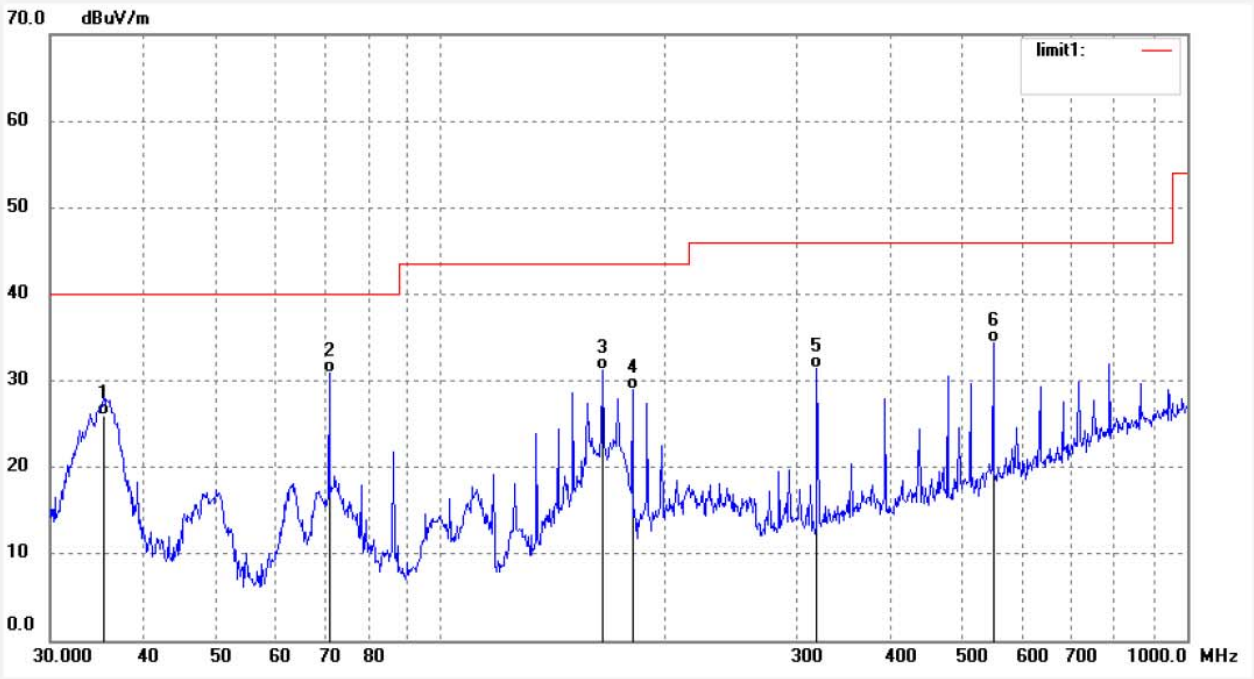
Job No.: FRANK2019-W #163	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/30
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:28:21
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 11	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	35.3866	47.68	-21.62	26.06	40.00	-13.94	QP	100	92	
2	70.9535	58.46	-27.52	30.94	40.00	-9.06	QP	100	100	
3	164.8911	57.75	-26.55	31.20	43.50	-12.30	QP	100	321	
4	180.6640	54.85	-25.97	28.88	43.50	-14.62	QP	100	59	
5	319.2071	52.02	-20.65	31.37	46.00	-14.63	QP	100	332	
6	550.2902	49.13	-14.79	34.34	46.00	-11.66	QP	100	106	

Above 1G

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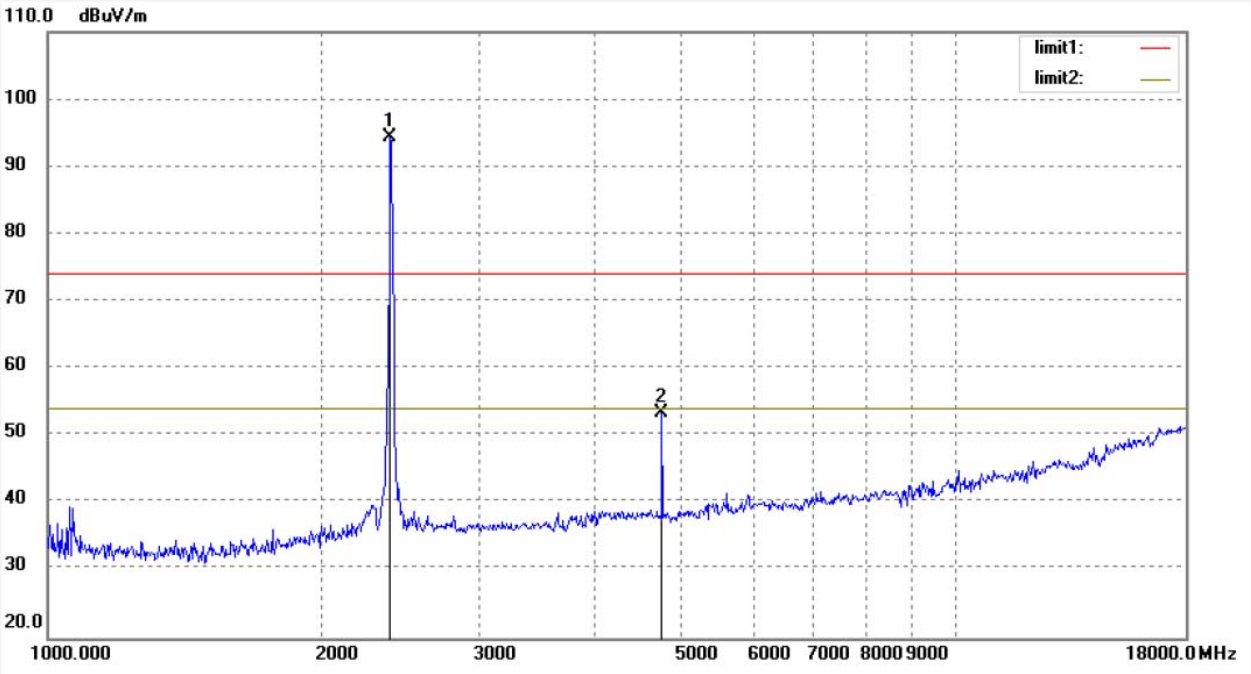
Job No.: FRANK2019-W #125	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:34:31
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 1	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.259	100.73	-6.33	94.40			peak	200	21	
2	4824.584	52.53	0.82	53.35	74.00	-20.65	peak	200	196	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

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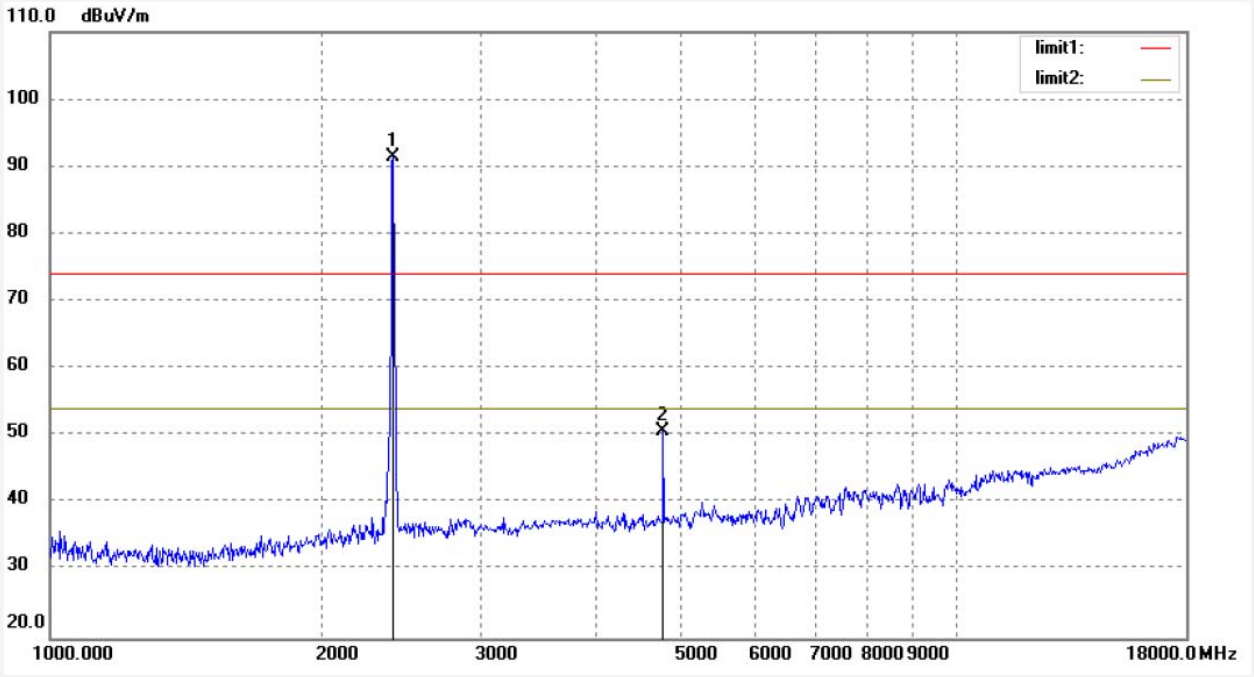
Job No.: FRANK2019-W #126	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:35:45
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 1	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.219	97.73	-6.29	91.44			peak	150	221	
2	4824.584	49.92	0.82	50.74	74.00	-23.26	peak	150	185	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

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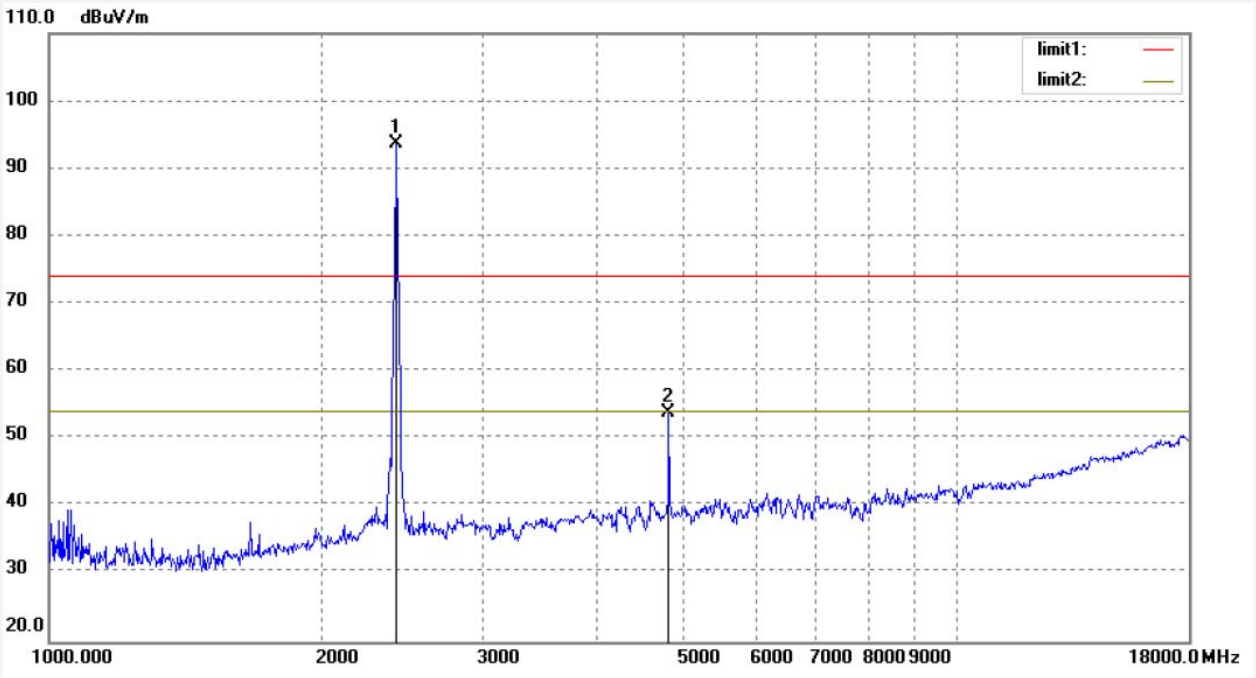
Job No.: FRANK2019-W #128
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 6
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:41:36
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2437.121	99.81	-6.20	93.61			peak	250	63	
2	4874.324	52.74	1.07	53.81	74.00	-20.19	peak	200	211	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

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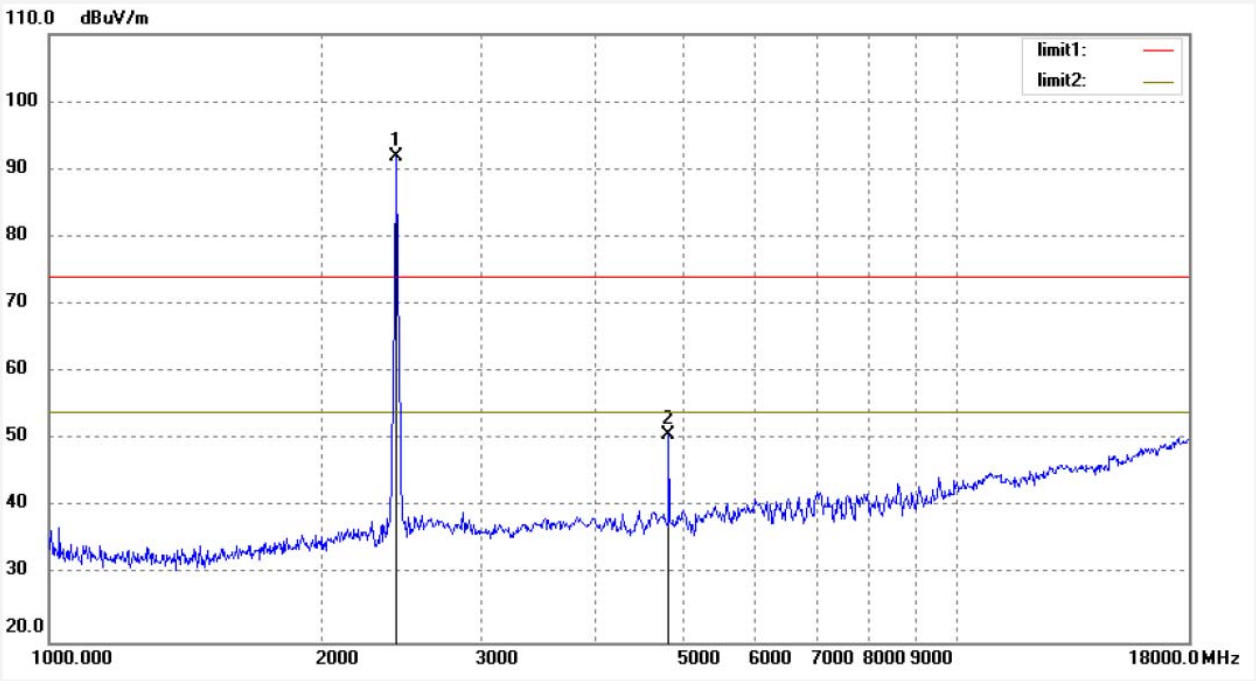
Job No.: FRANK2019-W #127
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 6
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:40:20
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2437.121	98.00	-6.20	91.80			peak	150	332	
2	4874.324	49.67	1.07	50.74	74.00	-23.26	peak	150	196	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

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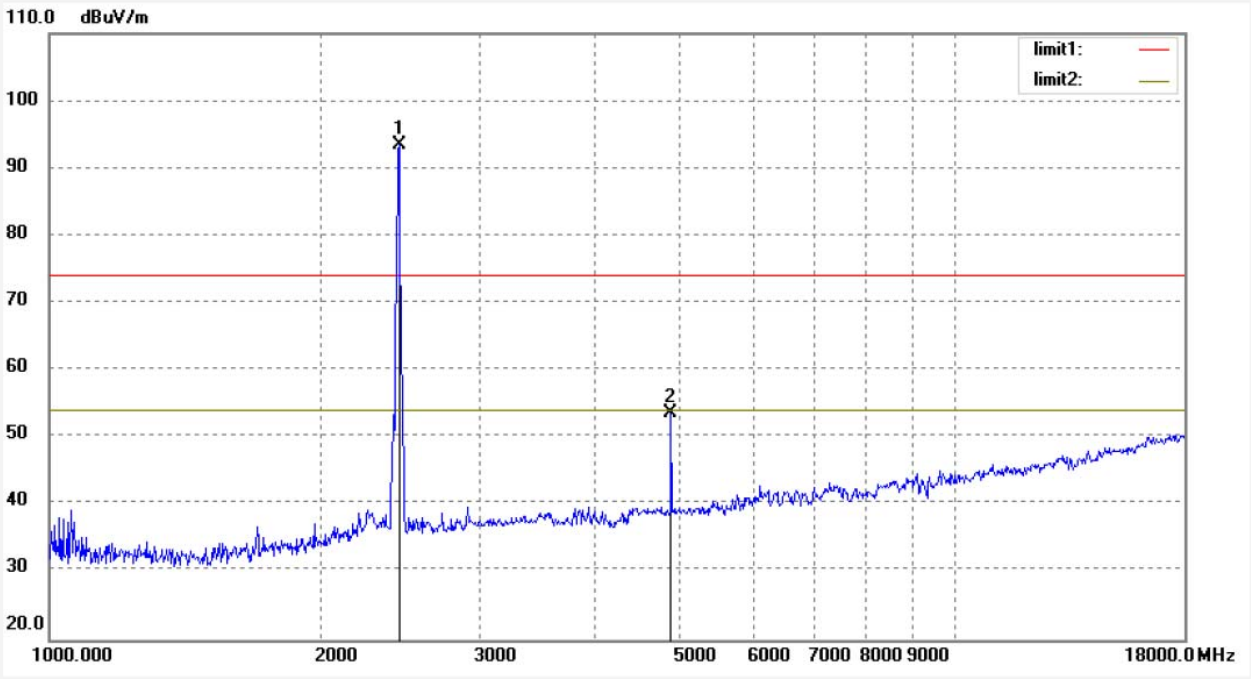
Job No.: FRANK2019-W #129	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:43:04
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 11	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.307	99.63	-6.10	93.53			peak	200	145	
2	4924.717	52.21	1.32	53.53	74.00	-20.47	peak	200	158	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

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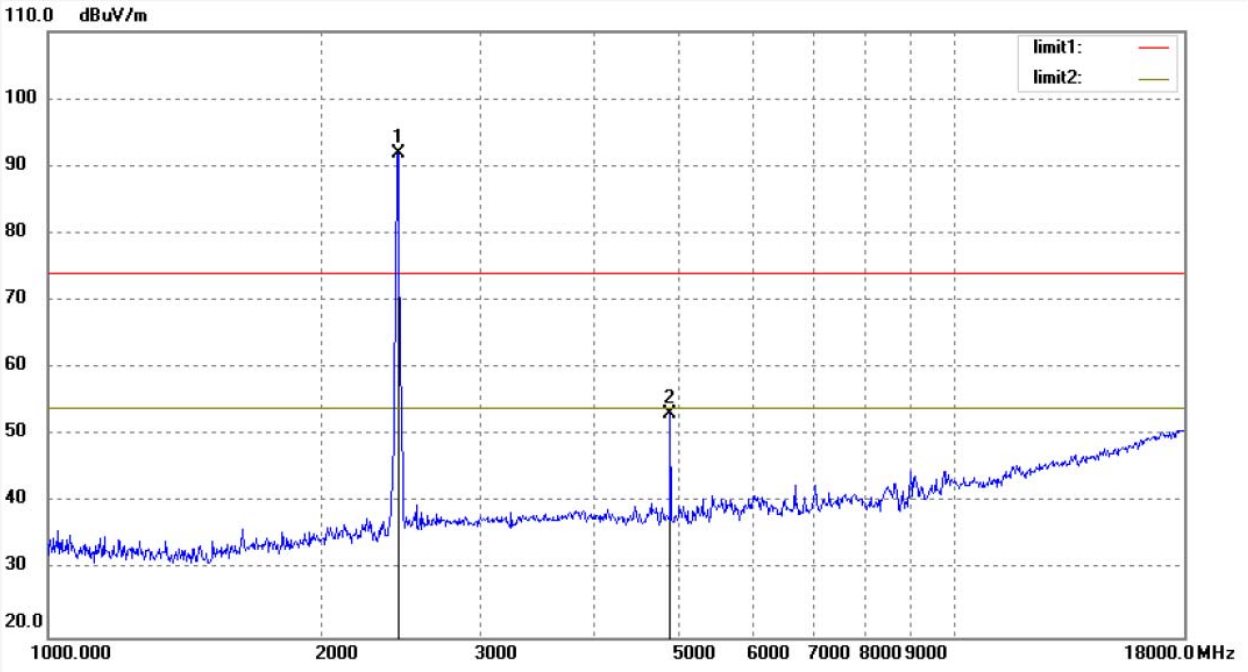
Job No.: FRANK2019-W #130	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 16:44:38
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 11(802.11B)	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304

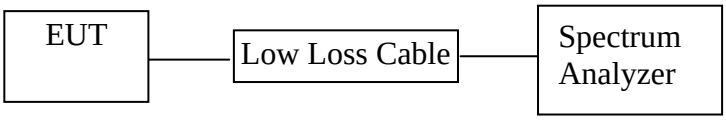


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2462.307	98.08	-6.10	91.98			peak	150	219	
2	4924.717	51.92	1.32	53.24	74.00	-20.76	peak	150	130	

Note: The fundamental radiated emissions were reduced by Band Reject Filter in the plot.

11.BAND EDGE COMPLIANCE TEST

11.1.Block Diagram of Test Setup



11.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, 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).

11.3.EUT Configuration on Measurement

The equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

11.4.Operating Condition of EUT

11.4.1.Setup the EUT and simulator as shown as Section 11.1.

11.4.2.Turn on the power of all equipment.

11.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz and 2462MHz TX frequency to transmit.

11.5.Test Procedure

Conducted Band Edge:

11.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

11.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

Radiate Band Edge:

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

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

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

11.5.6.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

11.5.7.RBW=1MHz, VBW=1MHz

11.5.8.The band edges was measured and recorded.

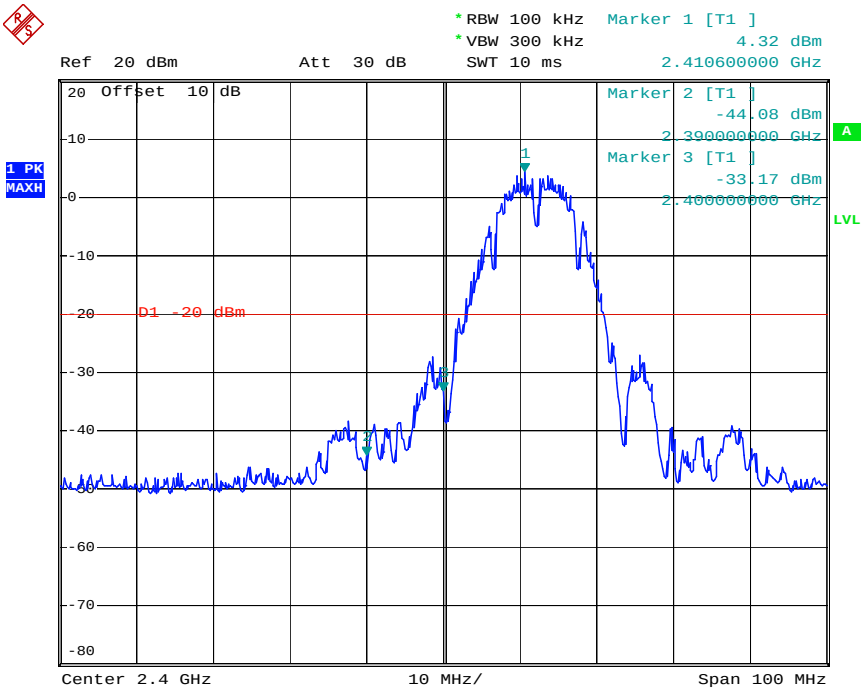
11.6.Test Result

The test was performed with 802.11b		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400.0	37.49	> 20dBc
2483.5	45.24	> 20dBc

The test was performed with 802.11g		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400.0	25.47	> 20dBc
2483.5	36.05	> 20dBc

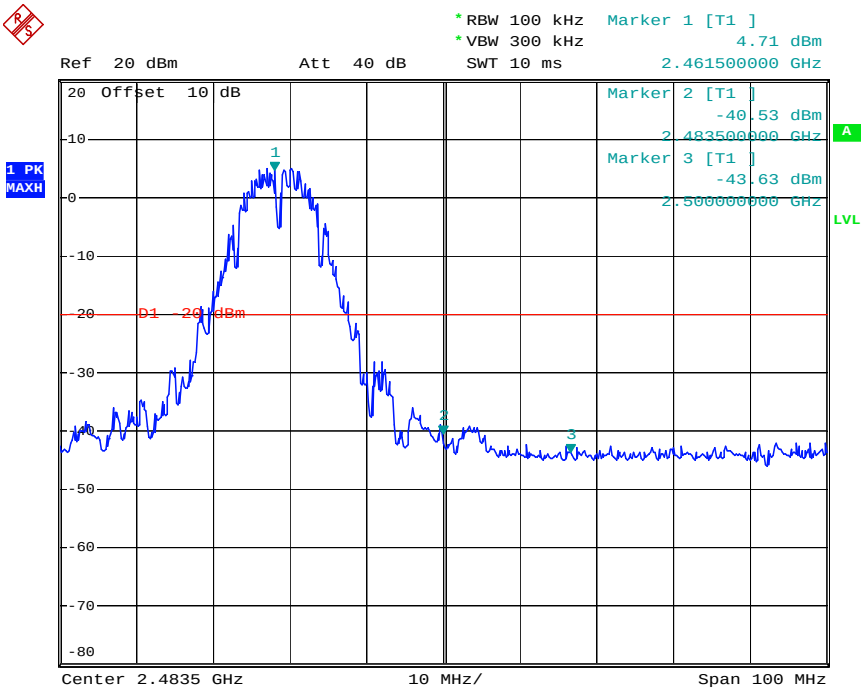
The test was performed with 802.11n (20MHz)		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2400.0	27.34	> 20dBc
2483.5	34.09	> 20dBc

802.11b Low Channel 2412MHz



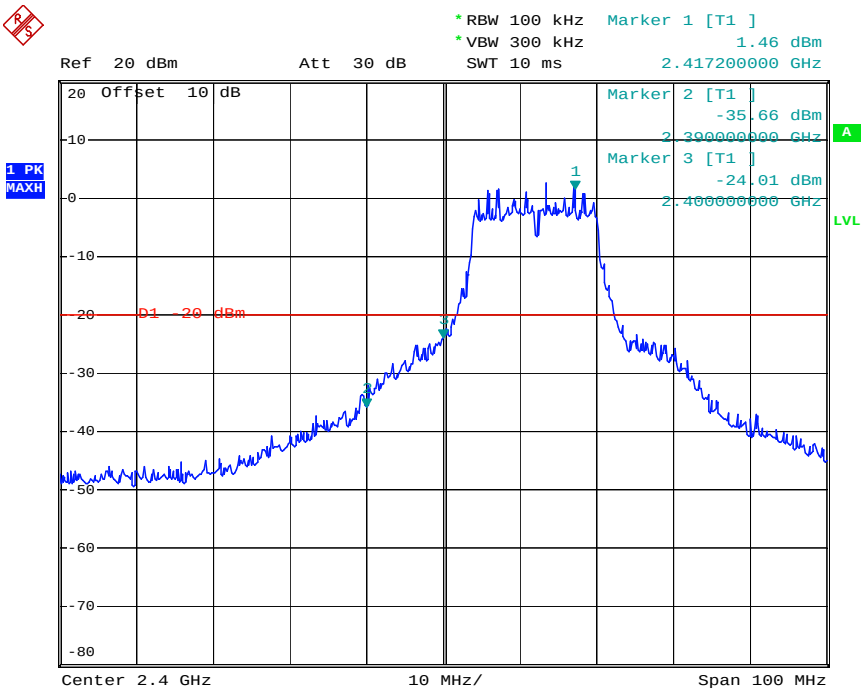
Date: 28.AUG.2019 18:47:16

802.11b High Channel 2462MHz



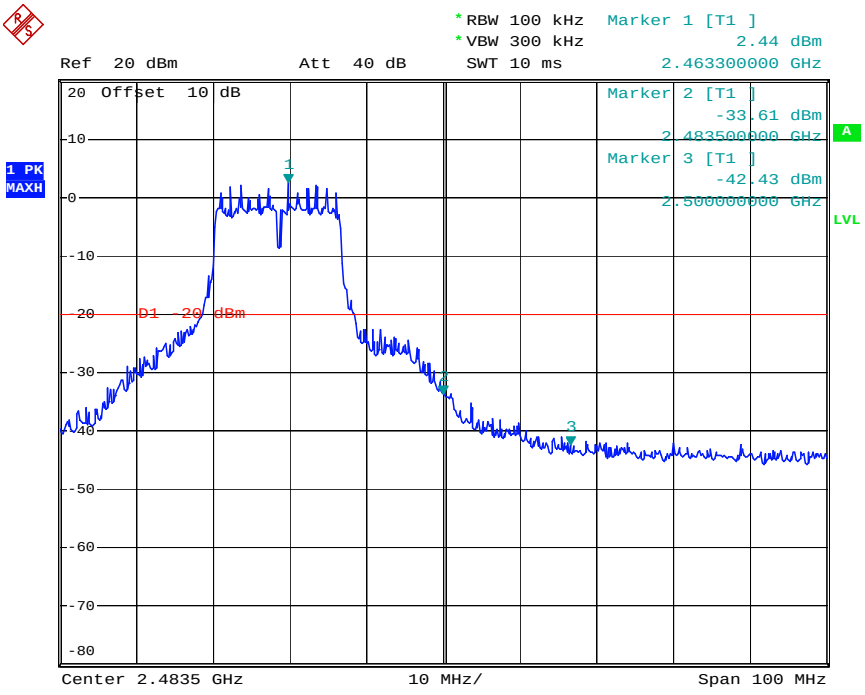
Date: 28.AUG.2019 18:47:55

802.11g Low Channel 2412MHz



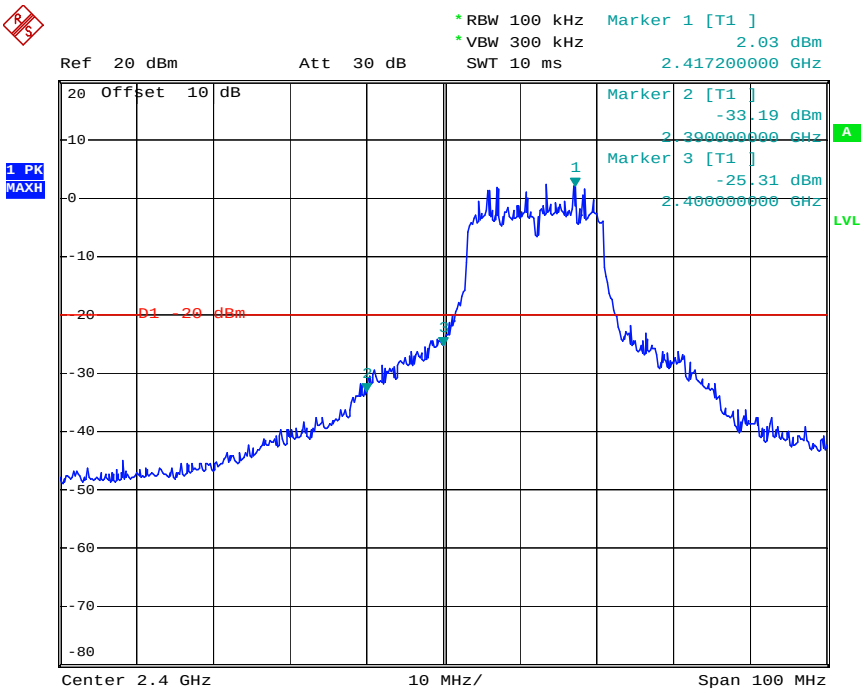
Date: 28.AUG.2019 18:46:50

802.11g High Channel 2462MHz



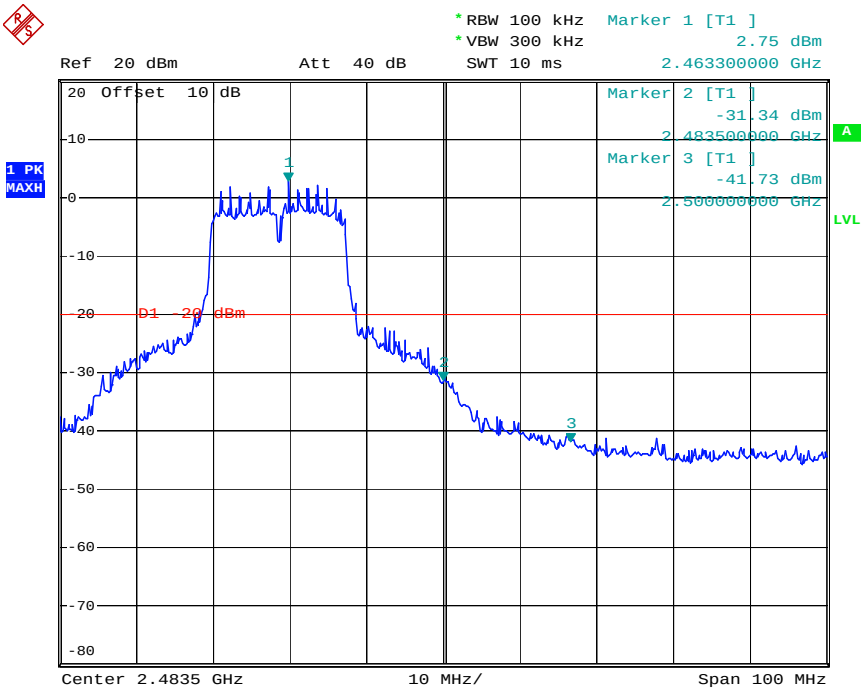
Date: 28.AUG.2019 18:48:16

802.11n(20MHz) Low Channel 2412MHz



Date: 28.AUG.2019 18:46:01

802.11n(20MHz) High Channel 2462MHz



Date: 28.AUG.2019 18:48:39

Radiated Band Edge Result

Note:

1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

   Result = Reading + Corrected Factor
3. Display the measurement of peak values.
4. The EUT is tested radiation emission at each test mode (802.11b/g/n) in three axes. The worst emissions are reflected in the following plots.
5. The average measurement was not performed when peak measured data under the limit of average detection.

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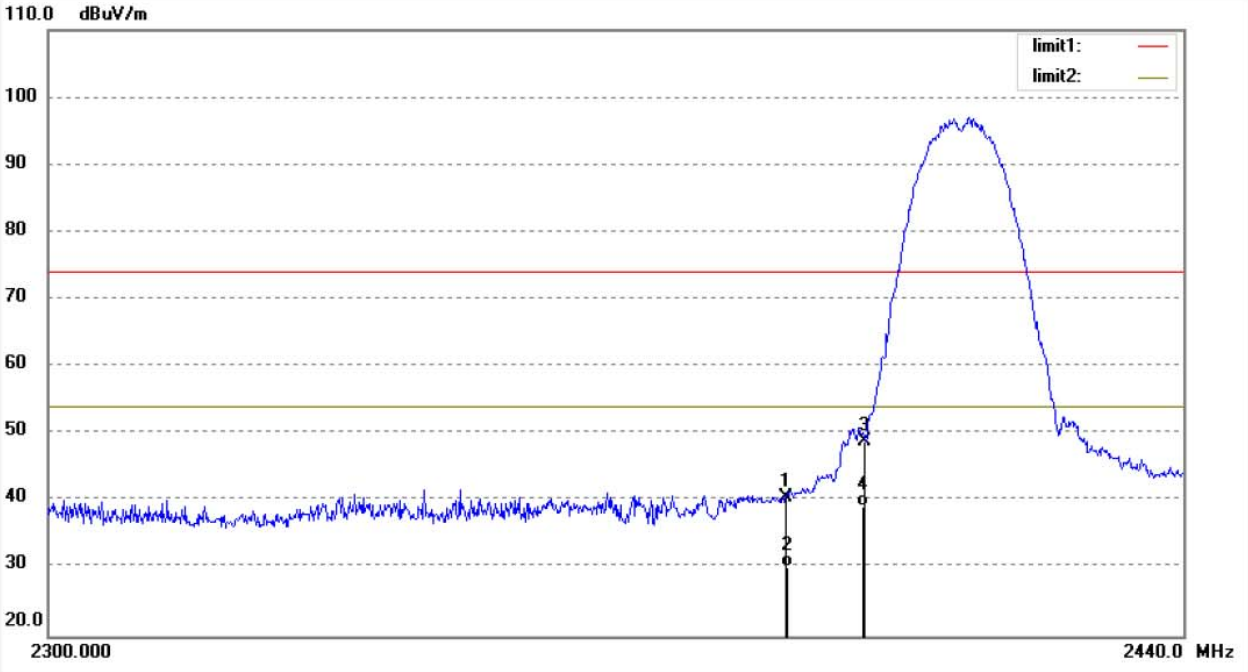
Job No.: FRANK2019-W #132
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11B)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:54:13
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.83	-6.32	40.51	74.00	-33.49	peak	200	224	
2	2390.000	36.49	-6.32	30.17	54.00	-23.83	AVG	200	93	
3	2400.000	55.26	-6.27	48.99	74.00	-25.01	peak	200	221	
4	2400.000	45.46	-6.27	39.19	54.00	-14.81	AVG	200	193	

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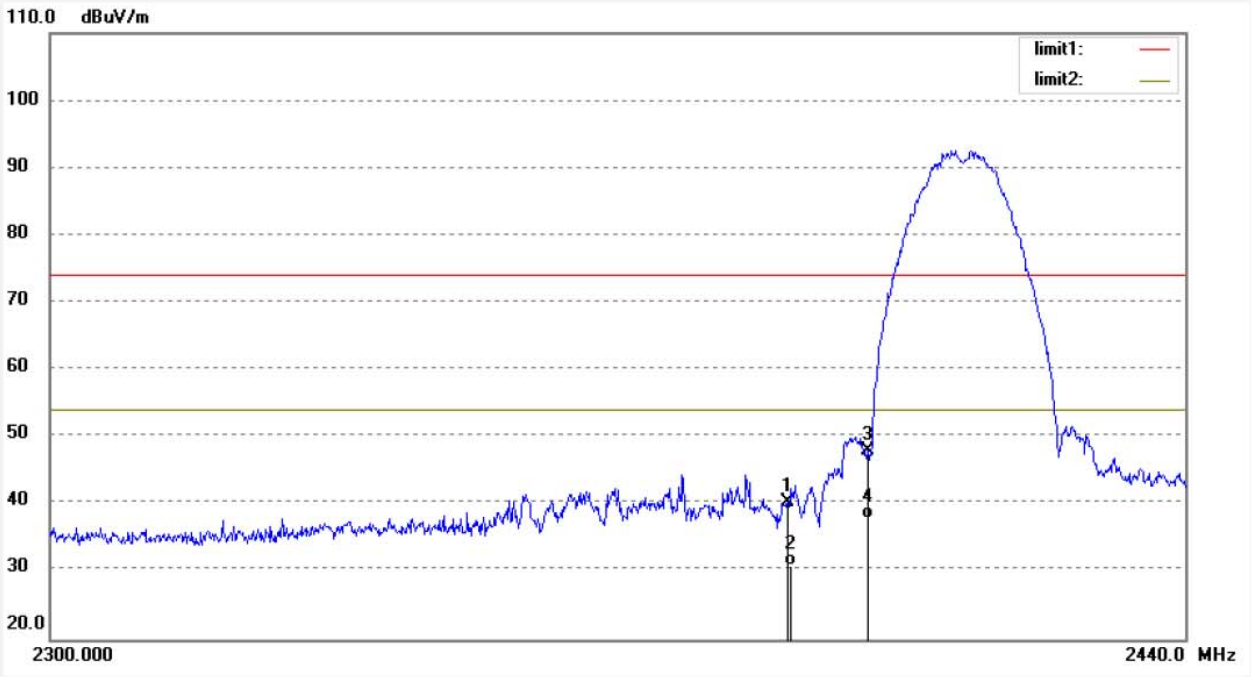
Job No.: FRANK2019-W #131
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11B)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:52:12
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	46.79	-6.32	40.47	74.00	-33.53	peak	150	82	
2	2390.000	37.16	-6.32	30.84	54.00	-23.16	AVG	150	118	
3	2400.000	54.20	-6.27	47.93	74.00	-26.07	peak	150	332	
4	2400.000	44.19	-6.27	37.92	54.00	-16.08	AVG	150	196	

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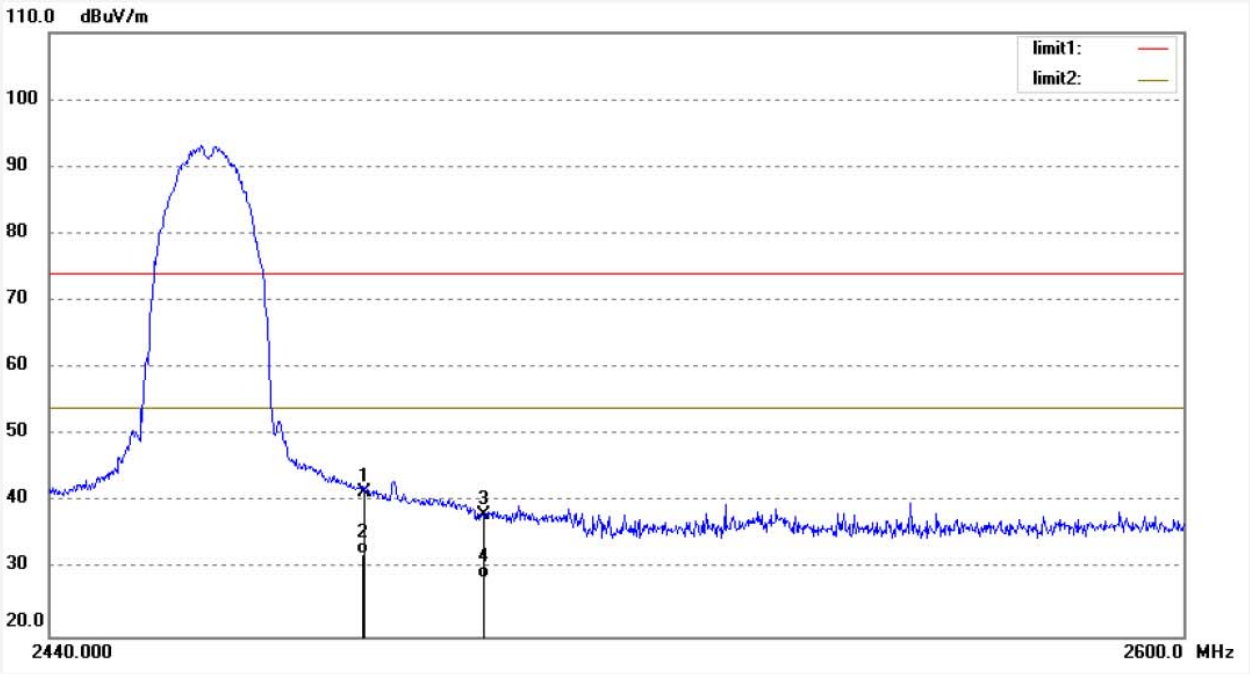
Job No.: FRANK2019-W #141
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 11(802.11B)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:11:21
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	47.47	-5.89	41.58	74.00	-32.42	peak	200	110	
2	2483.500	38.16	-5.89	32.27	54.00	-21.73	AVG	250	332	
3	2500.000	43.97	-5.81	38.16	74.00	-35.84	peak	200	55	
4	2500.000	34.49	-5.81	28.68	54.00	-25.32	AVG	250	174	

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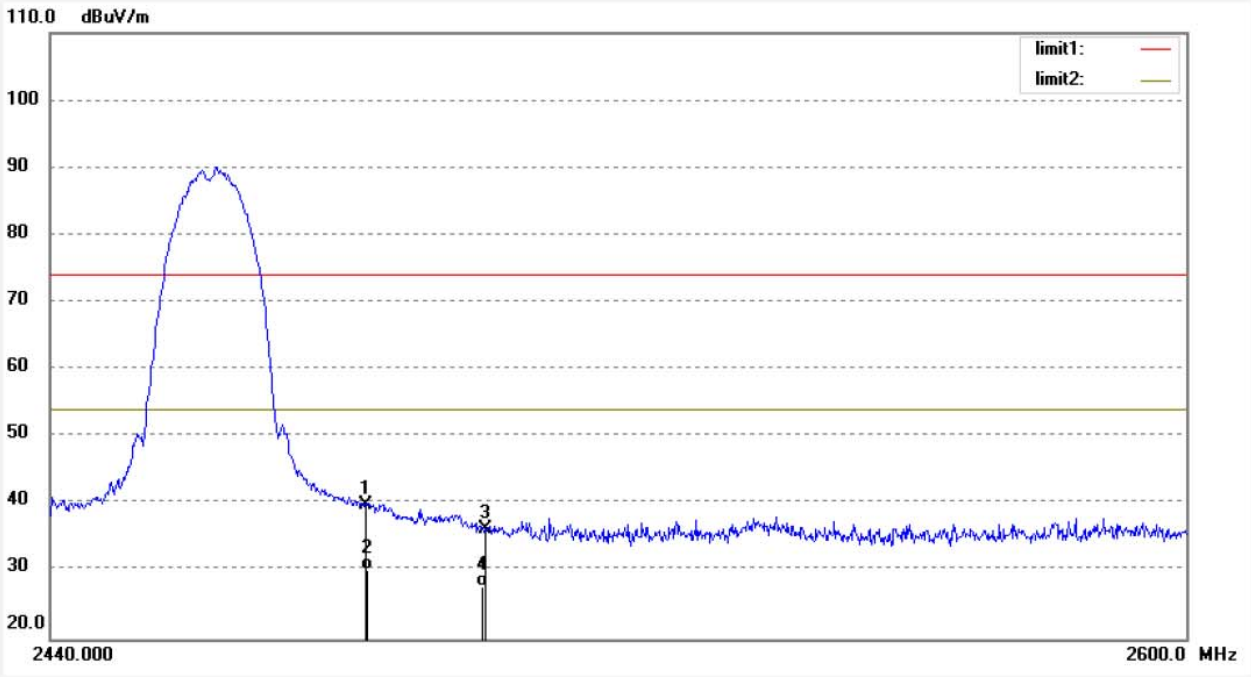
Job No.: FRANK2019-W #142	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:12:16
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 11(802.11B)	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	45.78	-5.89	39.89	74.00	-34.11	peak	150	93	
2	2483.500	36.15	-5.89	30.26	54.00	-23.74	AVG	150	221	
3	2500.000	42.11	-5.81	36.30	74.00	-37.70	peak	150	55	
4	2500.000	33.48	-5.81	27.67	54.00	-26.33	AVG	150	175	

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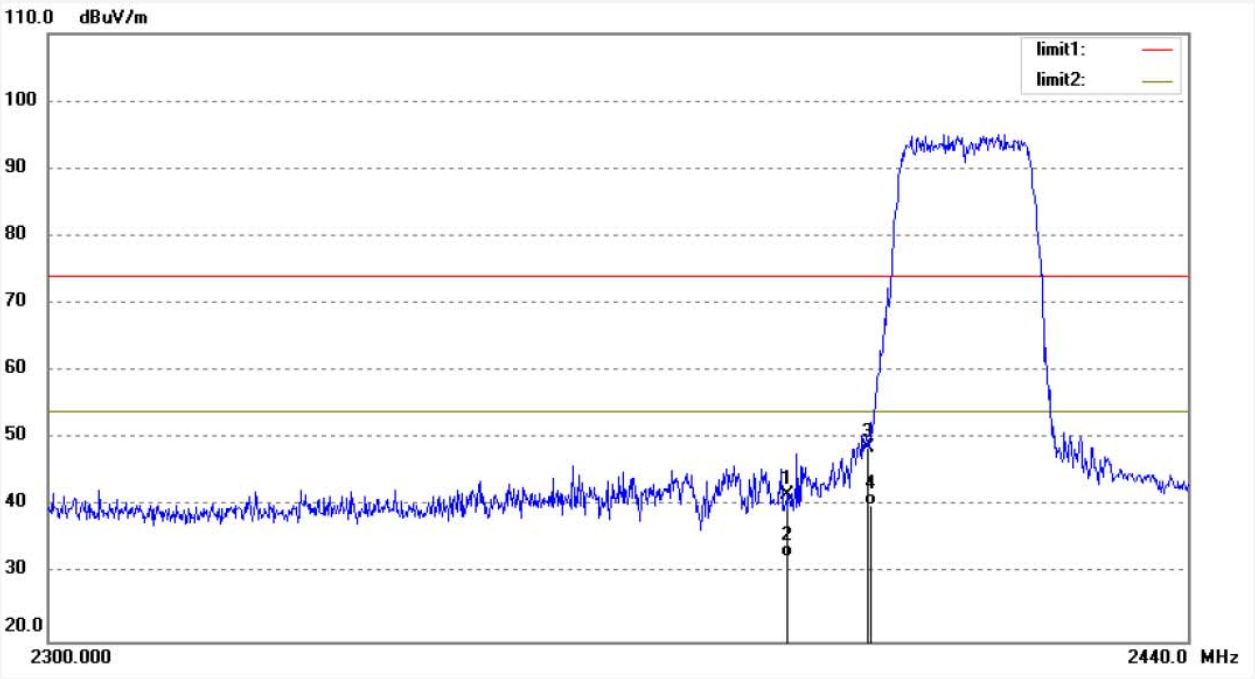
Job No.: FRANK2019-W #133
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11G)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:56:17
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	48.02	-6.32	41.70	74.00	-32.30	peak	200	214	
2	2390.000	38.90	-6.32	32.58	54.00	-21.42	AVG	200	221	
3	2400.000	55.07	-6.27	48.80	74.00	-25.20	peak	200	93	
4	2400.000	46.48	-6.27	40.21	54.00	-13.79	AVG	200	136	

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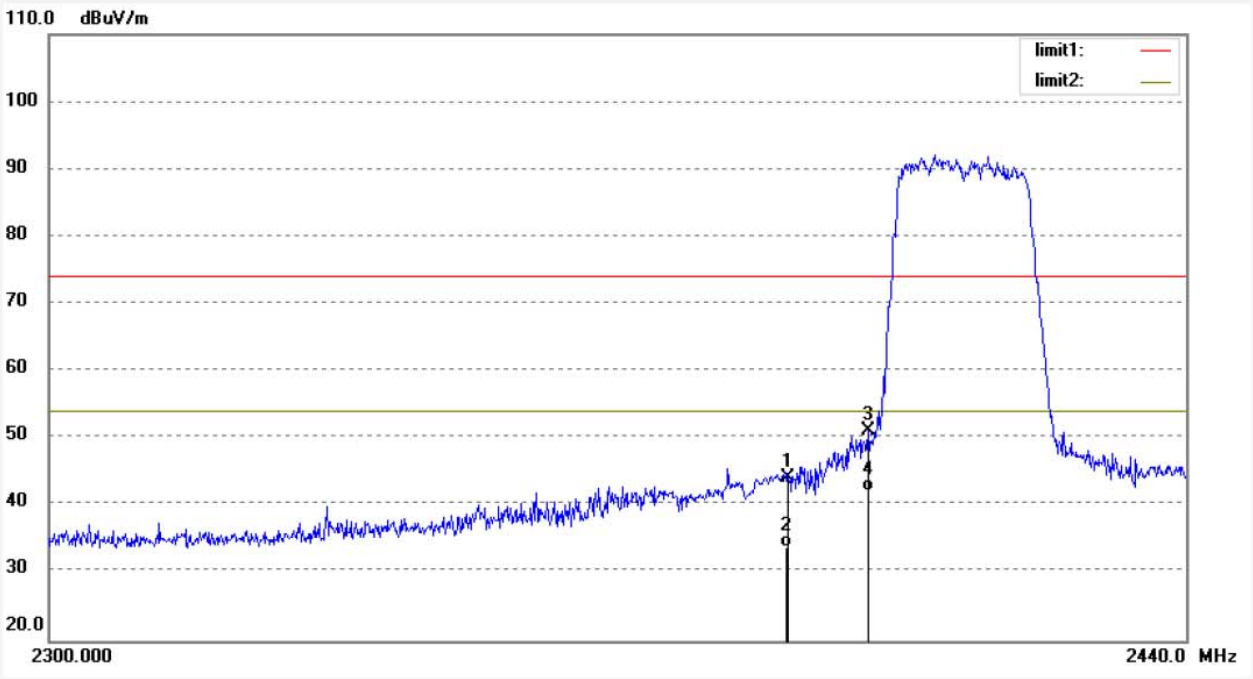
Job No.: FRANK2019-W #134
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11G)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 16:58:15
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	50.41	-6.32	44.09	74.00	-29.91	peak	150	154	
2	2390.000	40.13	-6.32	33.81	54.00	-20.19	AVG	150	66	
3	2400.000	57.43	-6.27	51.16	74.00	-22.84	peak	150	93	
4	2400.000	48.42	-6.27	42.15	54.00	-11.85	AVG	150	219	

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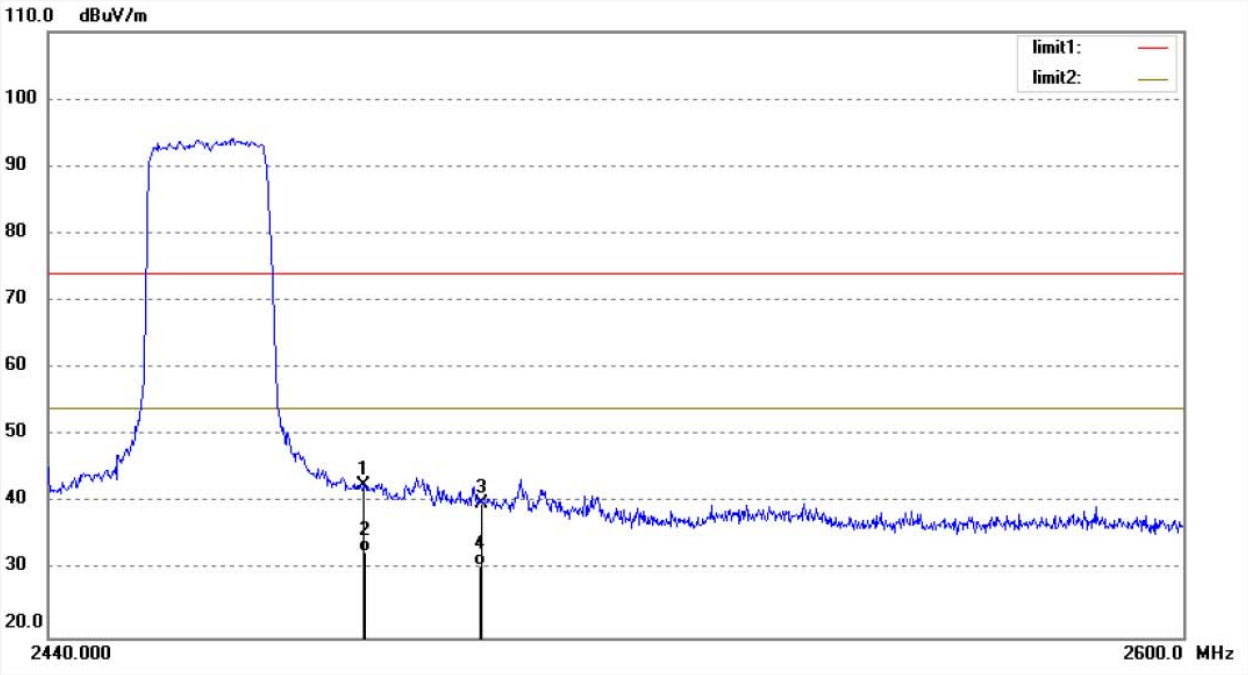
Job No.: FRANK2019-W #140
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 11(802.11G)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:09:52
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	48.46	-5.89	42.57	74.00	-31.43	peak	200	112	
2	2483.500	38.49	-5.89	32.60	54.00	-21.40	AVG	250	26	
3	2500.000	45.74	-5.81	39.93	74.00	-34.07	peak	200	221	
4	2500.000	36.42	-5.81	30.61	54.00	-23.39	AVG	250	163	

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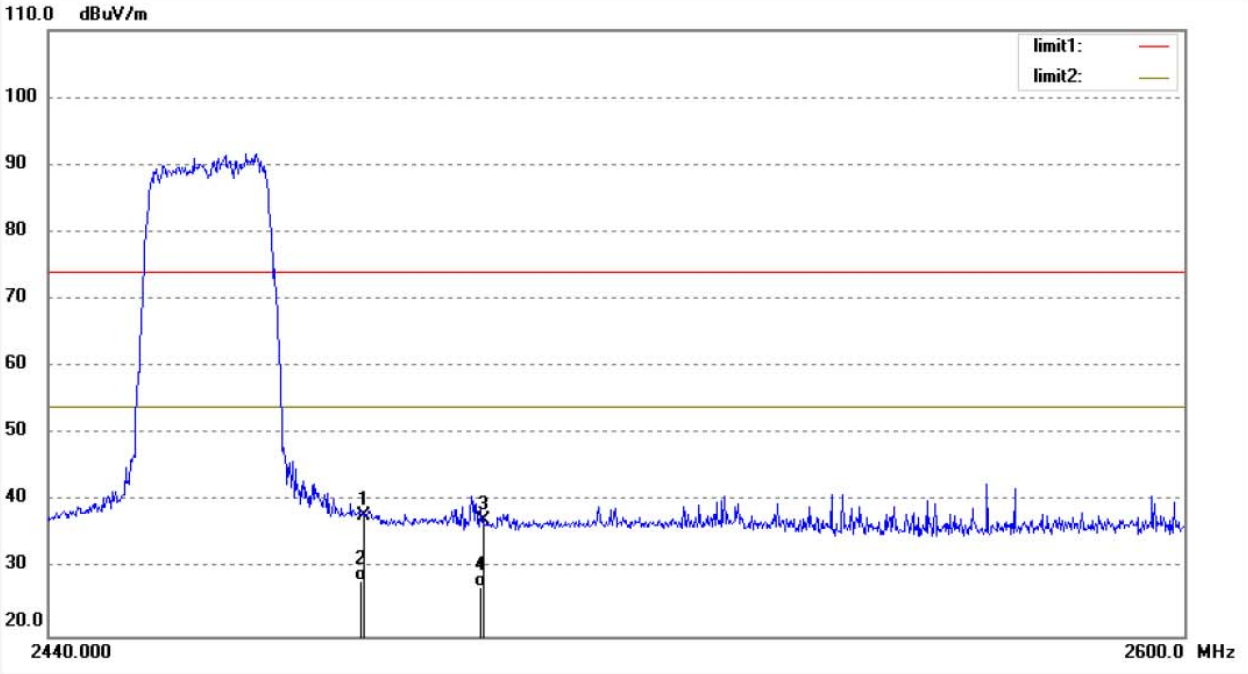
Job No.: FRANK2019-W #139
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 11(802.11G)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:08:06
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	43.75	-5.89	37.86	74.00	-36.14	peak	150	93	
2	2483.500	34.16	-5.89	28.27	54.00	-25.73	AVG	150	52	
3	2500.000	42.97	-5.81	37.16	74.00	-36.84	peak	150	222	
4	2500.000	33.18	-5.81	27.37	54.00	-26.63	AVG	150	110	

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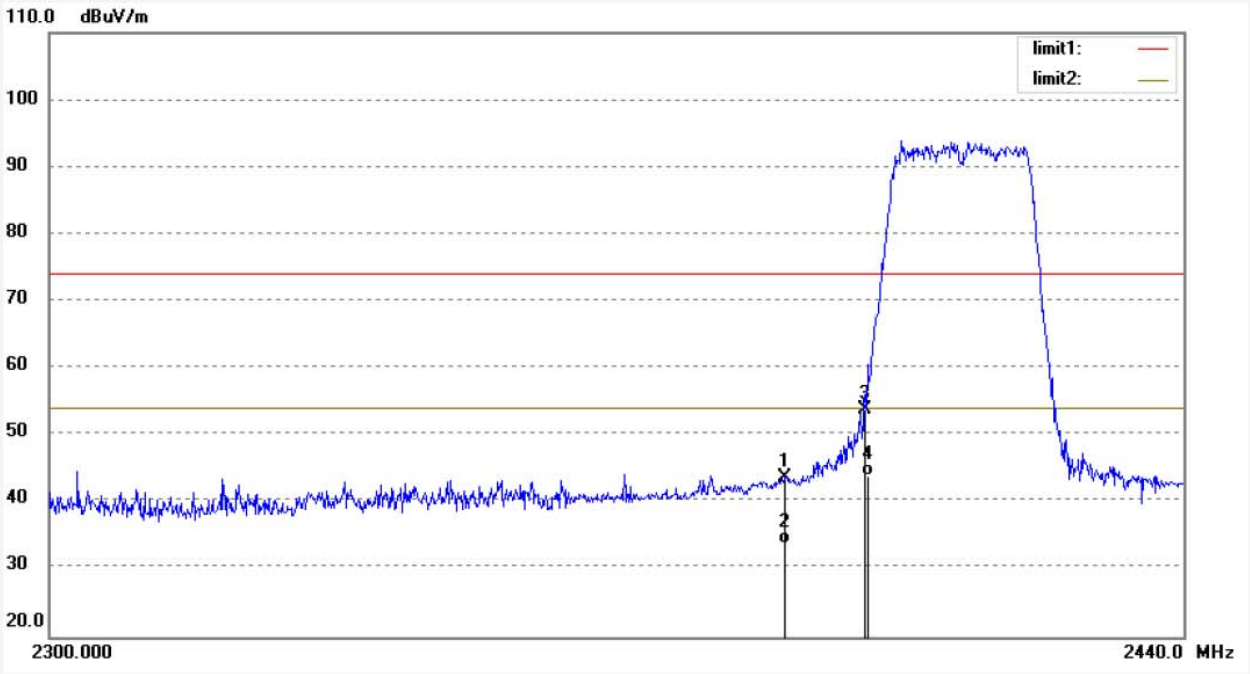
Job No.: FRANK2019-W #136
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11N20)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:01:57
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	50.09	-6.32	43.77	74.00	-30.23	peak	200	126	
2	2390.000	40.14	-6.32	33.82	54.00	-20.18	AVG	250	55	
3	2400.000	60.13	-6.27	53.86	74.00	-20.14	peak	200	14	
4	2400.000	50.15	-6.27	43.88	54.00	-10.12	AVG	250	178	

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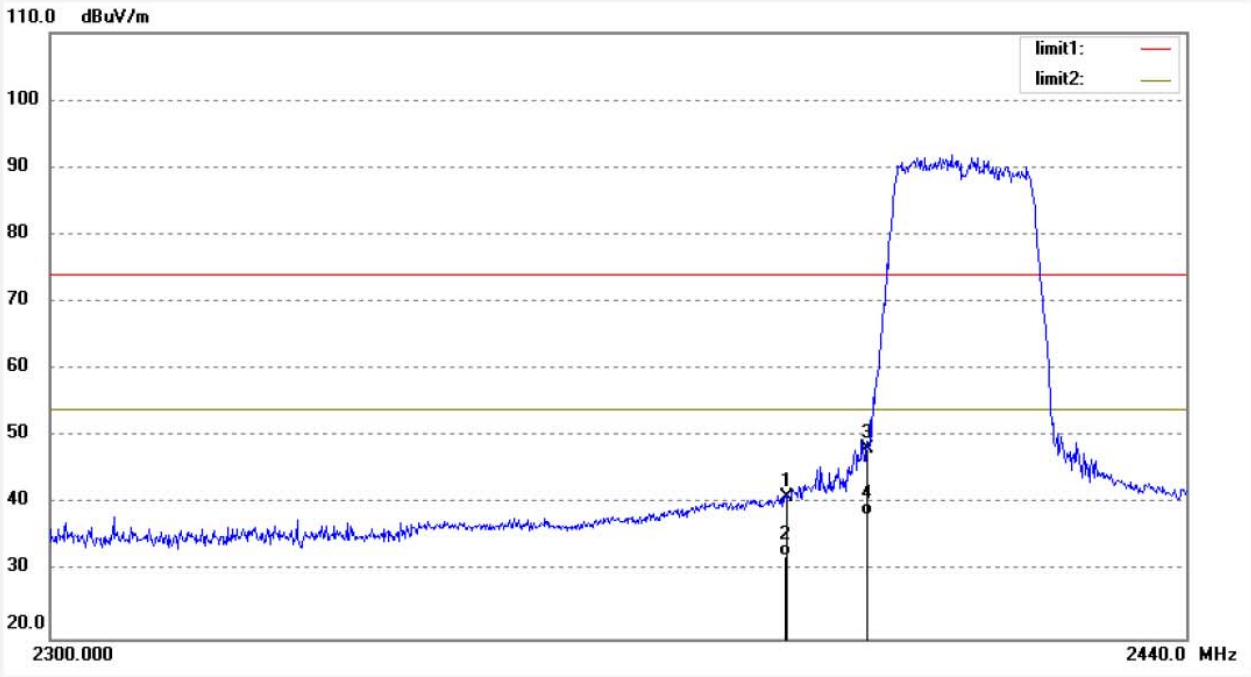
Job No.: FRANK2019-W #135
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 1(802.11N20)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:00:36
Engineer Signature: CHARLEY
Distance: 3m

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	47.29	-6.32	40.97	74.00	-33.03	peak	150	221	
2	2390.000	38.49	-6.32	32.17	54.00	-21.83	AVG	150	210	
3	2400.000	54.50	-6.27	48.23	74.00	-25.77	peak	150	33	
4	2400.000	44.68	-6.27	38.41	54.00	-15.59	AVG	150	196	

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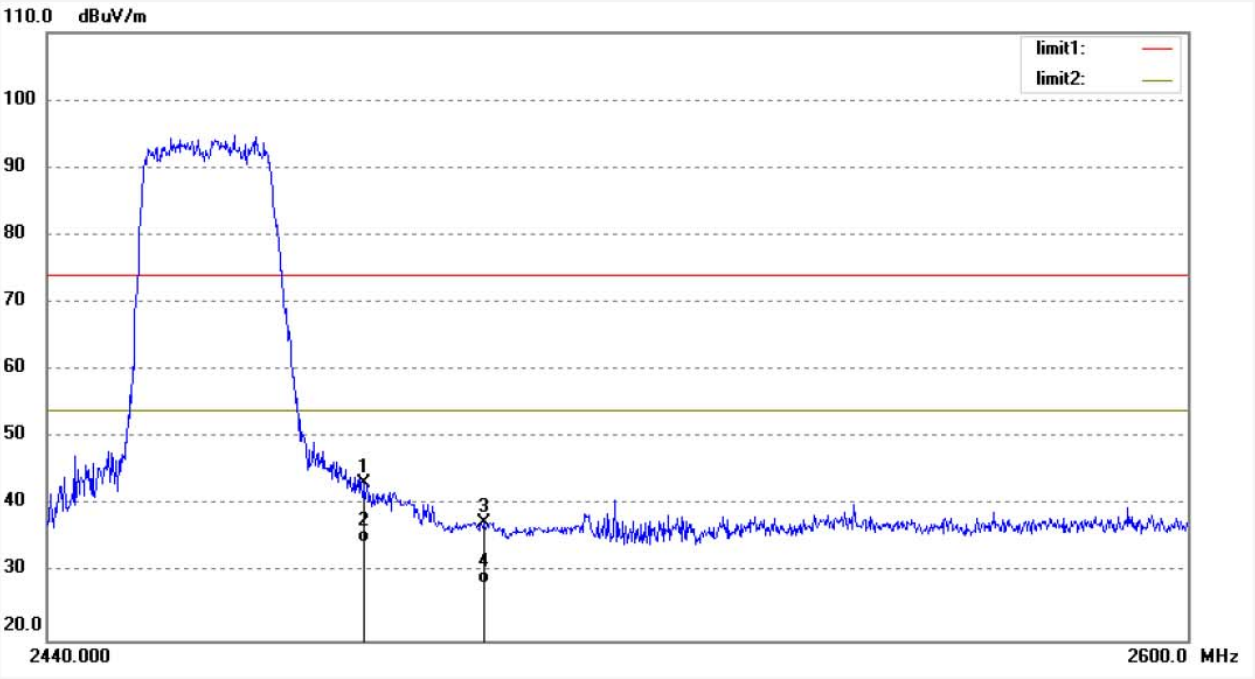
Job No.: FRANK2019-W #137	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2019/08/29
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 17:04:10
EUT: SMART WI-FI AIR PURIFIER	Engineer Signature: CHARLEY
Mode: TX Channel 11(802.11N20)	Distance: 3m
Model: MW1081	
Manufacturer: Guangdong Mixwell Technology Co., Ltd.	

Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.24	-5.89	43.35	74.00	-30.65	peak	200	58	
2	2483.500	40.32	-5.89	34.43	54.00	-19.57	AVG	200	201	
3	2500.000	43.18	-5.81	37.37	74.00	-36.63	peak	200	322	
4	2500.000	34.16	-5.81	28.35	54.00	-25.65	AVG	250	166	

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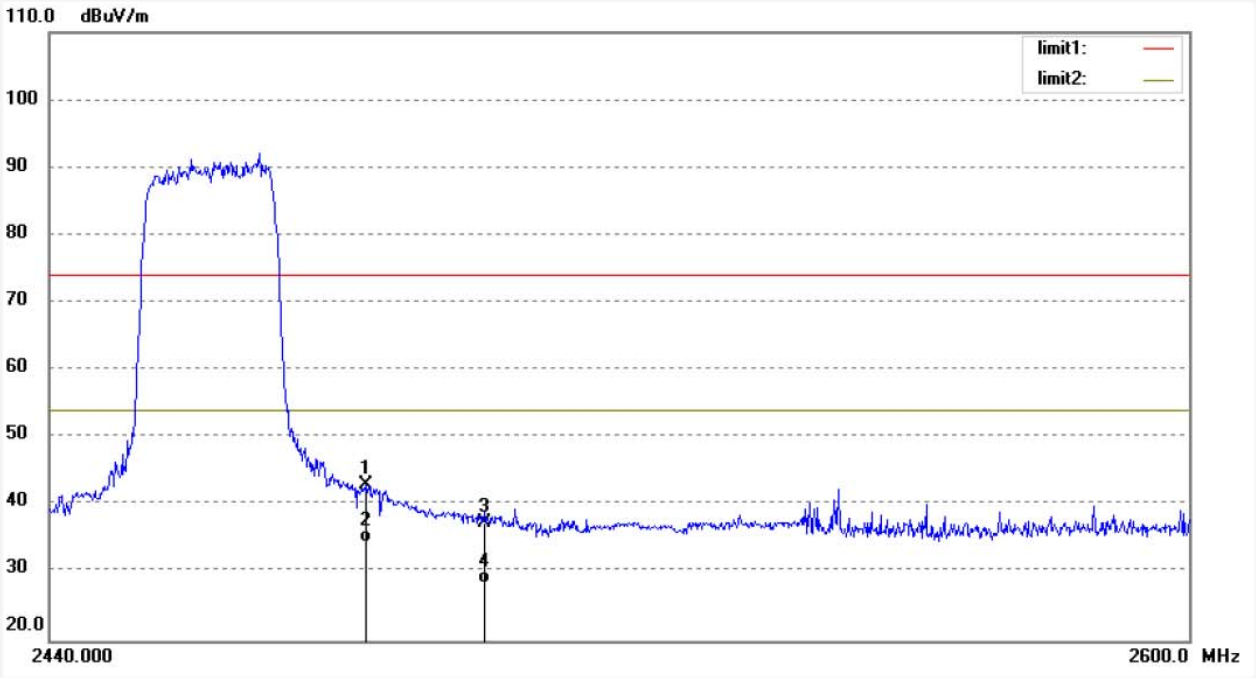
Job No.: FRANK2019-W #138
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: SMART WI-FI AIR PURIFIER
Mode: TX Channel 11(802.11N20)
Model: MW1081
Manufacturer: Guangdong Mixwell Technology Co., Ltd.

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2019/08/29
Time: 17:06:25
Engineer Signature: CHARLEY
Distance: 3m

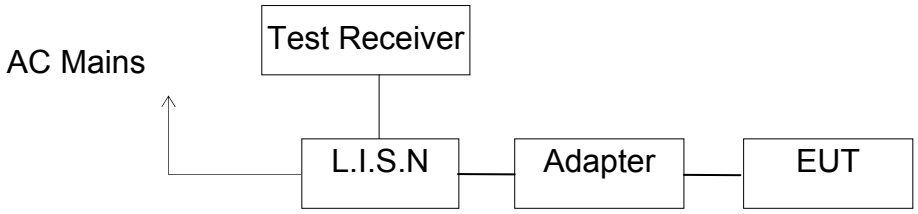
Note: Report NO.:ATE20191304



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.00	-5.89	43.11	74.00	-30.89	peak	150	331	
2	2483.500	40.31	-5.89	34.42	54.00	-19.58	AVG	150	11	
3	2500.000	43.31	-5.81	37.50	74.00	-36.50	peak	150	52	
4	2500.000	34.15	-5.81	28.34	54.00	-25.66	AVG	150	185	

12.POWER LINE CONDUCTED MEASUREMENT

12.1.Block Diagram of Test Setup



(EUT: SMART WI-FI AIR PURIFIER)

12.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies. NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

12.3.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

12.4.Operating Condition of EUT

12.4.1.Setup the EUT and simulator as shown as Section 12.1.

12.4.2.Turn on the power of all equipment.

12.4.3.Let the EUT work in test mode and measure it.

12.5.Test Procedure

The EUT is put on the plane 0.8 m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10: 2013 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

12.6.DATA SAMPLE

Frequency (MHz)	Quasi Peak Level (dBμv)	Average Level (dBμv)	Transducer value (dB)	QuasiPeak Result (dBμv)	Average Result (dBμv)	Quasi Peak Limit (dBμv)	Average Limit (dBμv)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XX	29.4	18.3	11.1	40.5	29.4	56.0	56.0	15.5	16.6	Pass

Transducer value = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Level/Average Level + Transducer value
Limit = Limit stated in standard

Calculation Formula:

Margin = Limit – Reading level value – Transducer value

12.7.Power Line Conducted Emission Measurement Results

PASS.

The frequency range from 150kHz to 30MHz is checked.

Test mode : WIFI operation (worse case)
Test Voltage: 120V/60Hz

MEASUREMENT RESULT: "F-1302-4_fin"

2019-8-27 11:36

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.154000	42.50	10.8	66	23.3	QP	L1	GND
0.400000	34.50	11.0	58	23.4	QP	L1	GND
0.890000	26.90	11.1	56	29.1	QP	L1	GND
2.215000	22.50	11.3	56	33.5	QP	L1	GND
8.000000	29.10	11.5	60	30.9	QP	L1	GND
24.005000	31.50	11.7	60	28.5	QP	L1	GND

MEASUREMENT RESULT: "F-1302-4_fin2"

2019-8-27 11:36

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.192000	29.60	10.8	54	24.3	AV	L1	GND
0.400000	26.90	11.0	48	21.0	AV	L1	GND
1.800000	21.20	11.2	46	24.8	AV	L1	GND
2.145000	16.40	11.3	46	29.6	AV	L1	GND
8.000000	23.10	11.5	50	26.9	AV	L1	GND
24.005000	24.30	11.7	50	25.7	AV	L1	GND

MEASUREMENT RESULT: "F-1302-3_fin"

2019-8-27 11:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.156000	42.40	10.8	66	23.3	QP	N	GND
0.424000	36.50	11.0	57	20.9	QP	N	GND
1.850000	24.50	11.2	56	31.5	QP	N	GND
2.310000	21.60	11.3	56	34.4	QP	N	GND
8.005000	22.90	11.5	60	37.1	QP	N	GND
24.005000	26.70	11.7	60	33.3	QP	N	GND

MEASUREMENT RESULT: "F-1302-3_fin2"

2019-8-27 11:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	30.80	10.8	56	25.2	AV	N	GND
0.420000	27.30	11.0	47	20.1	AV	N	GND
1.800000	20.70	11.2	46	25.3	AV	N	GND
2.235000	15.20	11.3	46	30.8	AV	N	GND
8.005000	18.60	11.5	50	31.4	AV	N	GND
24.005000	22.00	11.7	50	28.0	AV	N	GND

Test mode : WIFI operation (worse case)
Test Voltage: 240V/60Hz

MEASUREMENT RESULT: "F-1302-2_fin"

2019-8-27 11:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.174000	48.30	10.8	65	16.5	QP	N	GND
0.420000	39.10	11.0	57	18.3	QP	N	GND
1.672000	26.20	11.2	56	29.8	QP	N	GND
2.475000	22.40	11.3	56	33.6	QP	N	GND
5.680000	21.30	11.5	60	38.7	QP	N	GND
24.010000	26.80	11.7	60	33.2	QP	N	GND

MEASUREMENT RESULT: "F-1302-2_fin2"

2019-8-27 11:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.174000	31.70	10.8	55	23.1	AV	N	GND
0.418000	29.40	11.0	48	18.1	AV	N	GND
1.554000	19.50	11.2	46	26.5	AV	N	GND
2.305000	16.30	11.3	46	29.7	AV	N	GND
8.005000	20.10	11.5	50	29.9	AV	N	GND
24.010000	21.80	11.7	50	28.2	AV	N	GND

MEASUREMENT RESULT: "F-1302-1_fin"

2019-8-27 11:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.188000	46.50	10.8	64	17.6	QP	L1	GND
0.522000	34.80	11.0	56	21.2	QP	L1	GND
1.194000	32.10	11.2	56	23.9	QP	L1	GND
2.635000	30.10	11.3	56	25.9	QP	L1	GND
8.005000	31.00	11.5	60	29.0	QP	L1	GND
24.010000	30.70	11.7	60	29.3	QP	L1	GND

MEASUREMENT RESULT: "F-1302-1_fin2"

2019-8-27 11:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	46.70	10.8	56	9.3	AV	L1	GND
0.418000	30.00	11.0	48	17.5	AV	L1	GND
2.025000	20.00	11.3	46	26.0	AV	L1	GND
2.635000	19.50	11.3	46	26.5	AV	L1	GND
8.005000	24.90	11.5	50	25.1	AV	L1	GND
24.015000	23.60	11.7	50	26.4	AV	L1	GND

Emissions attenuated more than 20 dB below the permissible value are not reported.
The spectral diagrams are attached as below.

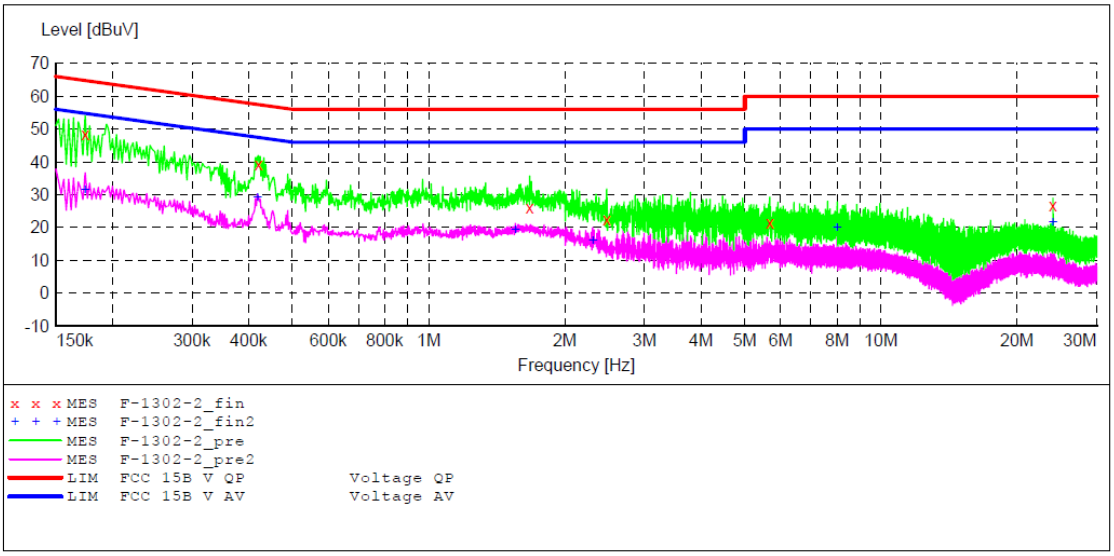
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                    SMART WI-FI AIR PURIFIER M/N:MW1081
Manufacturer:           Guangdong Mixwell Technology Co.,Ltd
Operating Condition:    WIFI OPERATION
Test Site:              2#Shielding Room
Operator:               Frank
Test Specification:     N   240V/60Hz
Comment:                Report NO.:ATE20191304
Start of Test:          2019-8-27 / 11:29:31
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:              SUB STD VTERM2 1.70
  Start       Stop        Step      Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width               Time      Bandw.
  150.0 kHz   30.0 MHz    4.5 kHz   QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                    Average
```



MEASUREMENT RESULT: "F-1302-2_fin"

2019-8-27 11:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.174000	48.30	10.8	65	16.5	QP	N	GND
0.420000	39.10	11.0	57	18.3	QP	N	GND
1.672000	26.20	11.2	56	29.8	QP	N	GND
2.475000	22.40	11.3	56	33.6	QP	N	GND
5.680000	21.30	11.5	60	38.7	QP	N	GND
24.010000	26.80	11.7	60	33.2	QP	N	GND

MEASUREMENT RESULT: "F-1302-2_fin2"

2019-8-27 11:31

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.174000	31.70	10.8	55	23.1	AV	N	GND
0.418000	29.40	11.0	48	18.1	AV	N	GND
1.554000	19.50	11.2	46	26.5	AV	N	GND
2.305000	16.30	11.3	46	29.7	AV	N	GND
8.005000	20.10	11.5	50	29.9	AV	N	GND
24.010000	21.80	11.7	50	28.2	AV	N	GND

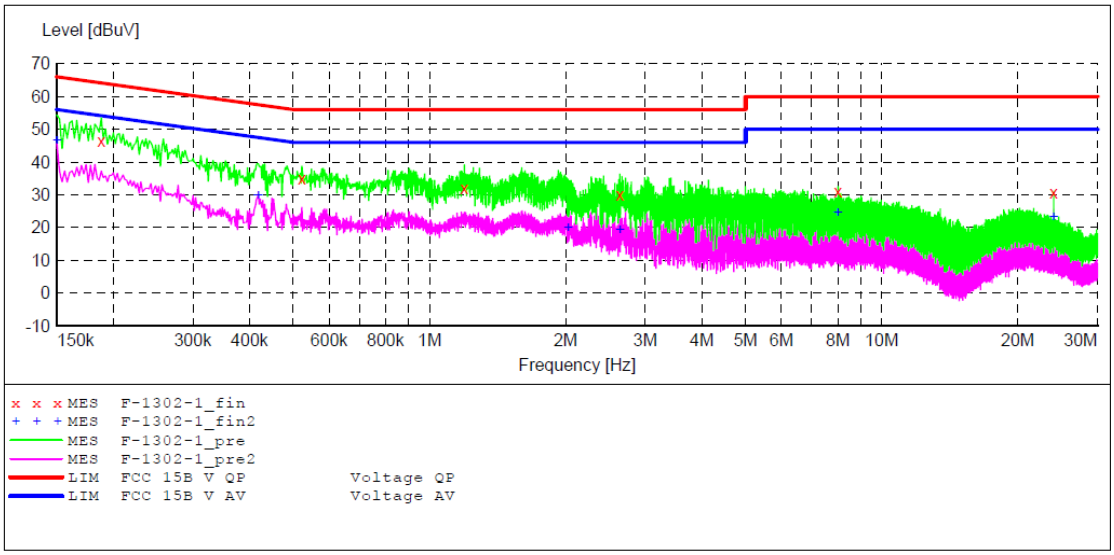
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  SMART WI-FI AIR PURIFIER M/N:MW1081
Manufacturer:         Guangdong Mixwell Technology Co.,Ltd
Operating Condition:  WIFI OPERATION
Test Site:            2#Shielding Room
Operator:             Frank
Test Specification:   L  240V/60Hz
Comment:              Report NO.:ATE20191304
Start of Test:        2019-8-27 / 11:27:13
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:              SUB STD VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF      Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz   QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "F-1302-1_fin"

2019-8-27 11:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.188000	46.50	10.8	64	17.6	QP	L1	GND
0.522000	34.80	11.0	56	21.2	QP	L1	GND
1.194000	32.10	11.2	56	23.9	QP	L1	GND
2.635000	30.10	11.3	56	25.9	QP	L1	GND
8.005000	31.00	11.5	60	29.0	QP	L1	GND
24.010000	30.70	11.7	60	29.3	QP	L1	GND

MEASUREMENT RESULT: "F-1302-1_fin2"

2019-8-27 11:28

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	46.70	10.8	56	9.3	AV	L1	GND
0.418000	30.00	11.0	48	17.5	AV	L1	GND
2.025000	20.00	11.3	46	26.0	AV	L1	GND
2.635000	19.50	11.3	46	26.5	AV	L1	GND
8.005000	24.90	11.5	50	25.1	AV	L1	GND
24.015000	23.60	11.7	50	26.4	AV	L1	GND

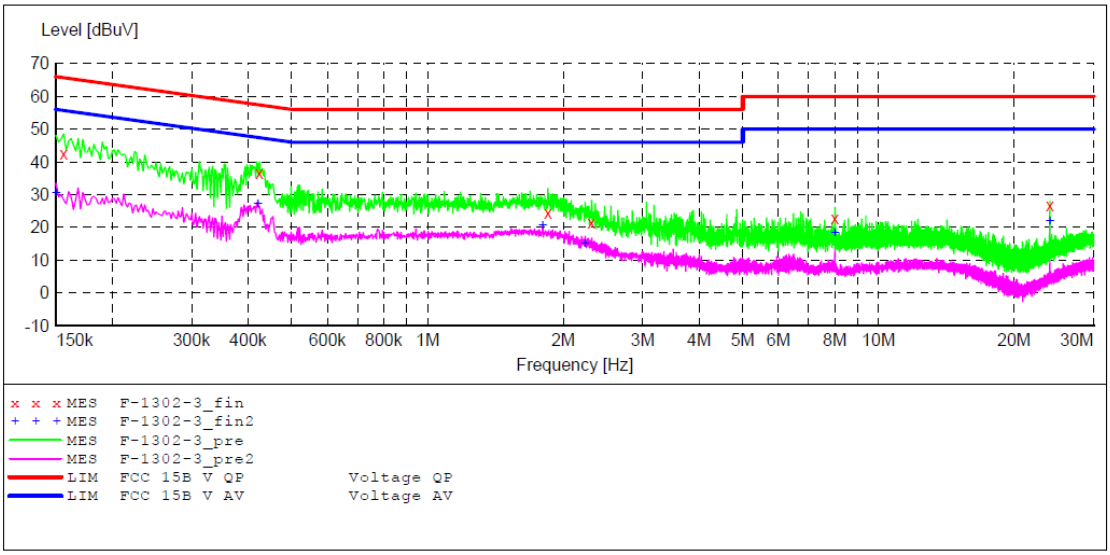
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  SMART WI-FI AIR PURIFIER M/N:MW1081
Manufacturer:         Guangdong Mixwell Technology Co.,Ltd
Operating Condition:  WIFI OPERATION
Test Site:            2#Shielding Room
Operator:             Frank
Test Specification:   N  120V/60Hz
Comment:              Report NO.:ATE20191304
Start of Test:        2019-8-27 / 11:32:05
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:                SUB STD VTERM2 1.70
  Start      Stop       Step        Detector  Meas.     IF       Transducer
  Frequency  Frequency  Width                 Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz     QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                    Average
```



MEASUREMENT RESULT: "F-1302-3_fin"

2019-8-27 11:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.156000	42.40	10.8	66	23.3	QP	N	GND
0.424000	36.50	11.0	57	20.9	QP	N	GND
1.850000	24.50	11.2	56	31.5	QP	N	GND
2.310000	21.60	11.3	56	34.4	QP	N	GND
8.005000	22.90	11.5	60	37.1	QP	N	GND
24.005000	26.70	11.7	60	33.3	QP	N	GND

MEASUREMENT RESULT: "F-1302-3_fin2"

2019-8-27 11:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.150000	30.80	10.8	56	25.2	AV	N	GND
0.420000	27.30	11.0	47	20.1	AV	N	GND
1.800000	20.70	11.2	46	25.3	AV	N	GND
2.235000	15.20	11.3	46	30.8	AV	N	GND
8.005000	18.60	11.5	50	31.4	AV	N	GND
24.005000	22.00	11.7	50	28.0	AV	N	GND

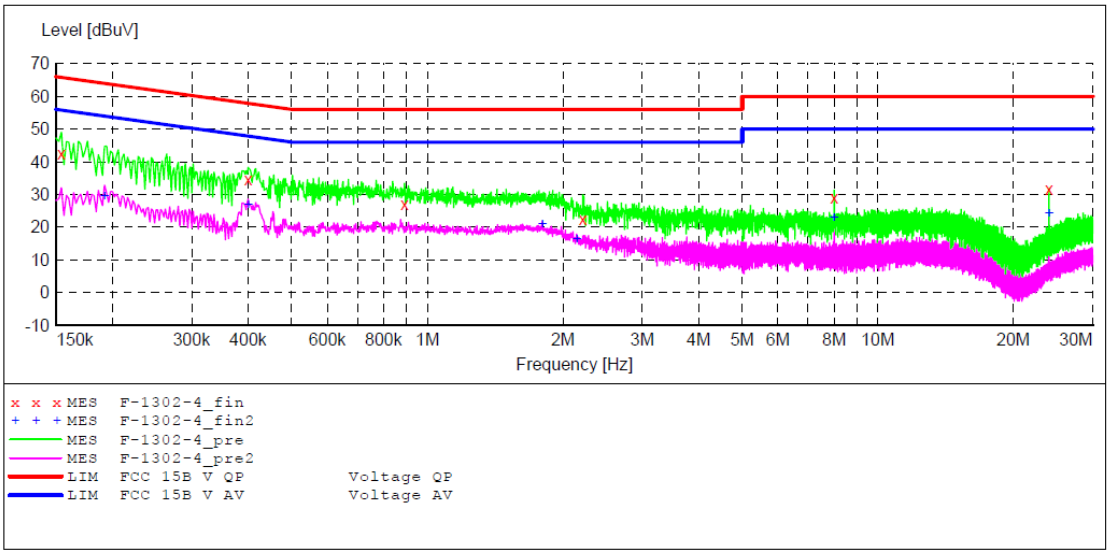
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  SMART WI-FI AIR PURIFIER M/N:MW1081
Manufacturer:         Guangdong Mixwell Technology Co.,Ltd
Operating Condition:  WIFI OPERATION
Test Site:            2#Shielding Room
Operator:             Frank
Test Specification:   L  120V/60Hz
Comment:              Report NO.:ATE20191304
Start of Test:        2019-8-27 / 11:34:22
```

SCAN TABLE: "V 150K-30MHz fin"

```
  Short Description:              SUB STD VTERM2 1.70
  Start      Stop       Step      Detector  Meas.     IF      Transducer
  Frequency  Frequency  Width               Time      Bandw.
  150.0 kHz  30.0 MHz   4.5 kHz   QuasiPeak 1.0 s     9 kHz   NSLK8126 2008
                                  Average
```



MEASUREMENT RESULT: "F-1302-4_fin"

2019-8-27 11:36

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.154000	42.50	10.8	66	23.3	QP	L1	GND
0.400000	34.50	11.0	58	23.4	QP	L1	GND
0.890000	26.90	11.1	56	29.1	QP	L1	GND
2.215000	22.50	11.3	56	33.5	QP	L1	GND
8.000000	29.10	11.5	60	30.9	QP	L1	GND
24.005000	31.50	11.7	60	28.5	QP	L1	GND

MEASUREMENT RESULT: "F-1302-4_fin2"

2019-8-27 11:36

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.192000	29.60	10.8	54	24.3	AV	L1	GND
0.400000	26.90	11.0	48	21.0	AV	L1	GND
1.800000	21.20	11.2	46	24.8	AV	L1	GND
2.145000	16.40	11.3	46	29.6	AV	L1	GND
8.000000	23.10	11.5	50	26.9	AV	L1	GND
24.005000	24.30	11.7	50	25.7	AV	L1	GND

13. ANTENNA REQUIREMENT

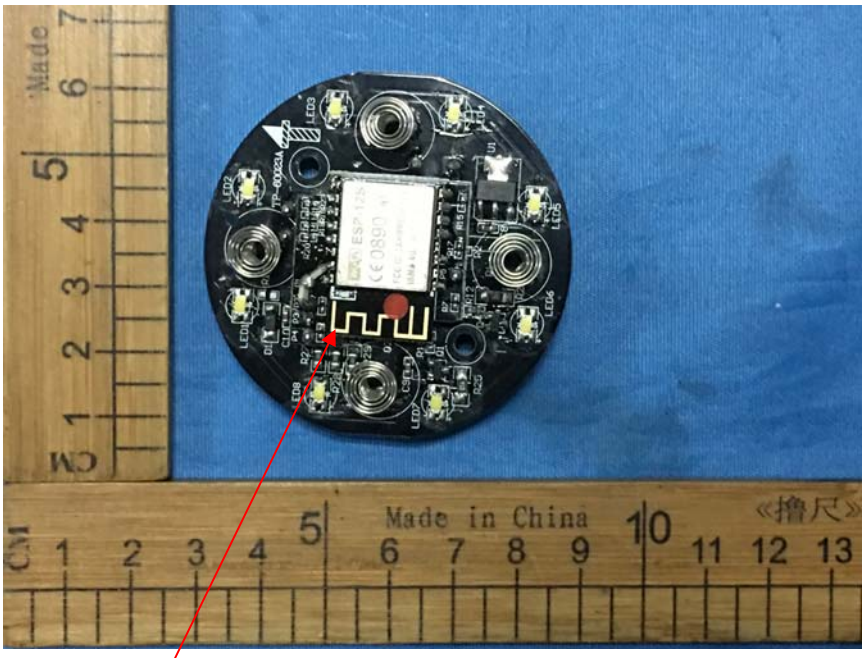
13.1. The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

13.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 2.51dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.

.



Antenna