

Shenzhen Toby Technology Co., Ltd.

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# FCC Radio Test Report FCC ID: 2APMB-X2P

# **Original Grant**

Report No.	:	TB-FCC159329
Applicant	15	Shenzhen Hysiry Technology Co.,Ltd.
Equipment Under 1	Test	(EUT)
EUT Name	:	Wifi Smart Plug
Model No.	:	X2P
Series Model No.	197	N/A
Brand Name	-	HUSIRU 汇思锐
Receipt Date	0.8	2018-04-10
Test Date	:	2018-04-11 to 2018-04-19
Issue Date		2018-04-20
Standards	:	FCC Part 15, Subpart C (15.247: 2017)
Test Method	:	ANSI C63.10: 2013
Conclusions	-	PASS
		In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC and IC requirements

Test/Witness Engineer

Approved& Authorized



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0



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# **Revision History**

Report No.	Version	Description	Issued Date
TB-FCC159329	Rev.01	Initial issue of report	2018-04-19
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# 1. General Information about EUT

# 1.1 Client Information

Applicant	190	Shenzhen Hysiry Technology Co.,Ltd.
Address		Room 406, Fourth floor, Buliding 1, Area D, Huameiju Decoration Materials City, Xinhu Road, Xin'an street, Bao'an District, Shenzhen, China
Manufacturer	-	Shenzhen Hysiry Technology Co.,Ltd.
Address	BI	Room 406, Fourth floor, Buliding 1, Area D, Huameiju Decoration Materials City, Xinhu Road, Xin'an street, Bao'an District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Wifi Smart Plug	Wifi Smart Plug			
Models No.	-	X2P				
4000		Operation Frequency:	802.11b/g/n(HT20): 2412MHz~2462MHz			
		Number of Channel:	802.11b/g/n(HT20):11 channels see note(3)			
		RF Output Power:	802.11b: 19.80dBm 802.11g: 16.42dBm 802.11n (HT20): 16.47dBm			
Product		Antenna Gain:	1dBi PCB Antenna			
Description	2	Modulation Type:	802.11b: DSSS(CCK, DQPSK, DBPSK) 802.11g/n: OFDM(BPSK,QPSK,16QAM, 64QAM)			
		Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps			
Power Supply		AC Voltage supplied				
Power Rating		Input: AC 100-240V, 50/60Hz, 10A				
Connecting I/O Port(S)	5	Please refer to the User's Manual				

#### Note:

(1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v04.

(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

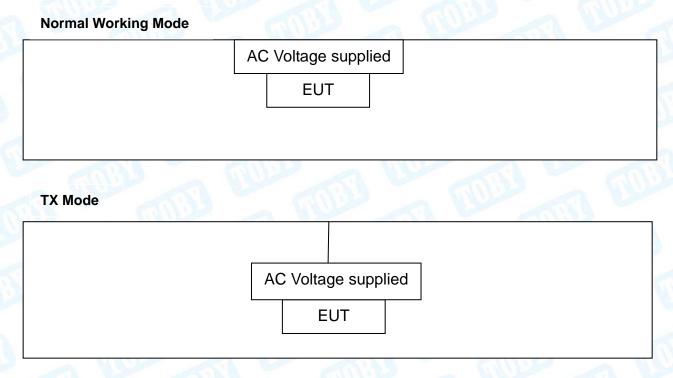


#### (3) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	08	2447		
Note: CH 01~CH 11 for 802.11b/g/n(HT20)					

(4) The Antenna information about the equipment is provided by the applicant.

## 1.3 Block Diagram Showing the Configuration of System Tested



## 1.4 Description of Support Units

The EUT has been tested as an independent unit.

### 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.



For Conducted Test			
Final Test Mode	Description		
Mode 1	Normal Working with TX B Mode		

For Radiated Test			
Final Test Mode Description			
Mode 2 TX Mode B Mode Channel 01/06/11			
Mode 3 TX Mode G Mode Channel 01/06/11			
Mode 4	TX Mode N(HT20) Mode Channel 01/06/11		

#### Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, Middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK (1 Mbps)

802.11g Mode: OFDM (6 Mbps)

802.11n (HT20) Mode: MCS 0 (6.5 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a portable unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



## 1.6 Description of Test Software Setting

During testing channel & Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version		SecureCRT.exe	
Channel	CH 01	CH 06	CH 11
IEEE 802.11b DSSS	DEF	DEF	DEF
IEEE 802.11g OFDM	DEF	DEF	DEF
IEEE 802.11n (HT20)	DEF	DEF	DEF

#### 1.7 Measurement Uncertainty

The reported uncertainty of measurement y  $\pm$  U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U <sub>Lab</sub> )
	Level Accuracy:	
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Radiated Emission	Level Accuracy:	14 C0 dD
	9kHz to 30 MHz	±4.60 dB
Dedicted Emission	Level Accuracy:	14 40 dB
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Dedicted Emission	Level Accuracy:	±4.20 dB
Radiated Emission	Above 1000MHz	±4.20 ub



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#### 1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

#### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

#### A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01.

#### IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

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# 2. Test Summary

FCC Part 15 Subpart C(15.247)/ RSS 247 Issue 1					
Standard Section		Test Hom		<u> </u>	
FCC	IC	Test Item	Judgment	Remark	
15.203	1	Antenna Requirement	PASS	N/A	
15.207	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A	
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A	
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A	
15.247(b)	RSS 247 5.4 (4)	Peak Output Power	PASS	N/A	
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A	
15.247(d)	RSS 247 5.5	Band Edge	PASS	N/A	
15.247(d)& 15.209	RSS 247 5.5	Transmitter Radiated Spurious Emission	PASS	N/A	

**Note:** "/" for no requirement for this test item.

N/A is an abbreviation for Not Applicable.



# 3. Test Equipment

<b>Conducted Emiss</b>	ion Test				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 20, 2017	Jul. 19, 2018
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 20, 2017	Jul. 19, 2018
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 20, 2017	Jul. 19, 2018
LISN	Rohde & Schwarz	ENV216	101131	Jul. 20, 2017	Jul. 19, 2018
Radiation Emissio	n Test	-		-	
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 20, 2017	Jul. 19, 2018
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 20, 2017	Jul. 19, 2018
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.16, 2018	Mar. 15, 2019
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.16, 2018	Mar. 15, 2019
Loop Antenna	Laplace instrument	RF300	0701	Mar.16, 2018	Mar. 15, 2019
Pre-amplifier	Sonoma	310N	185903	Mar.16, 2018	Mar. 15, 2019
Pre-amplifier	HP	8449B	3008A00849	Mar.16, 2018	Mar. 15, 2019
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.16, 2018	Mar. 15, 2019
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducte	ed Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 20, 2017	Jul. 19, 2018
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 20, 2017	Jul. 19, 2018
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Oct. 26, 2017	Oct. 25, 2018
Vector Signal Generator	Agilent	N5182A	MY50141294	Oct. 26, 2017	Oct. 25, 2018
Analog Signal Generator	Agilent	N5181A	MY50141953	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO26	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO29	Oct. 26, 2017	Oct. 25, 2018
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO31	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO33	Oct. 26, 2017	Oct. 25, 2018



# 4. Conducted Emission Test

- 4.1 Test Standard and Limit
  - 4.1.1Test Standard FCC Part 15.207
  - 4.1.2 Test Limit

Conducted	Emission	Test	Limit

Fraguanay	Maximum RF Lin	e Voltage (dBµV)
Frequency	Quasi-peak Level	Average Level
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *
500kHz~5MHz	56	46
5MHz~30MHz	60	50

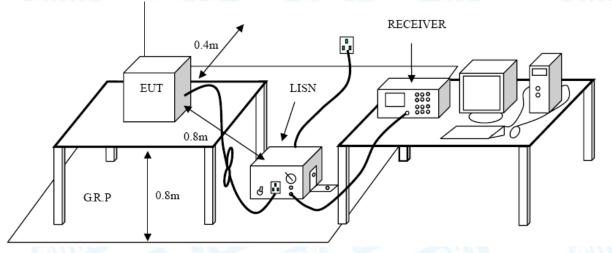
Notes:

(1) \*Decreasing linearly with logarithm of the frequency.

(2) The lower limit shall apply at the transition frequencies.

(3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

4.2 Test Setup



## 4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 EUT Operating Mode

Please refer to the description of test mode.

4.5 Test Data

Please refer to the Attachment A.



# 5. Radiated Emission Test

- 5.1 Test Standard and Limit
  - 5.1.1 Test Standard
  - FCC Part 15.209
  - 5.1.2 Test Limit

#### Radiated Emission Limits (9 kHz~1000 MHz)

Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~9 <mark>6</mark> 0	200	3
Above 960	500	3

Radiated Emission Limit (Above 1000MHz)				
Frequency	Distance of 3	3m (dBuV/m)		
(MHz)	Peak	Average		
Above 1000	74	54		

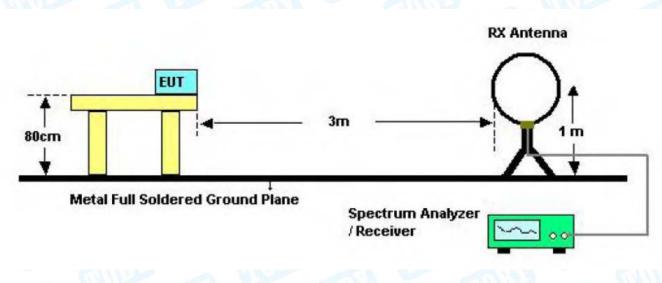
#### Note:

(1) The tighter limit applies at the band edges.

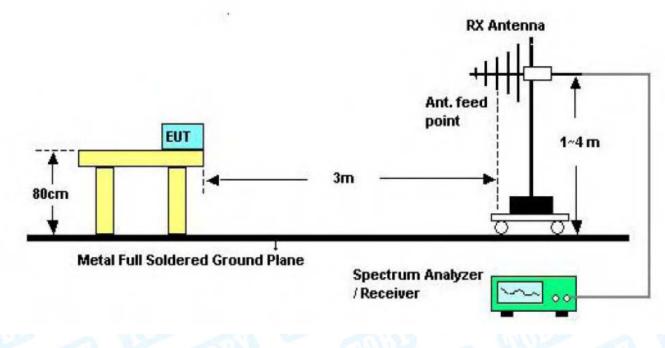
(2) Emission Level(dBuV/m)=20log Emission Level(uV/m)



5.2 Test Setup

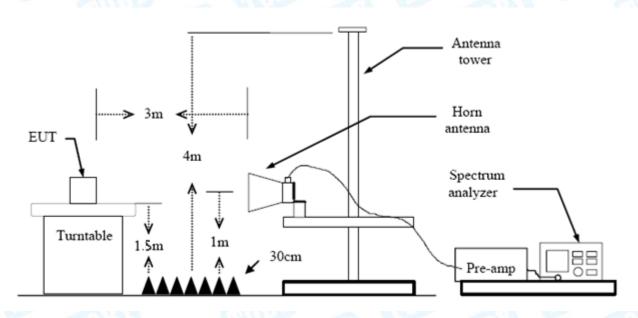


Below 30MHz Test Setup



Below 1000MHz Test Setup





Above 1GHz Test Setup

### 5.3 Test Procedure

- (1) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.



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### 5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values. Please refer to the Attachment B.

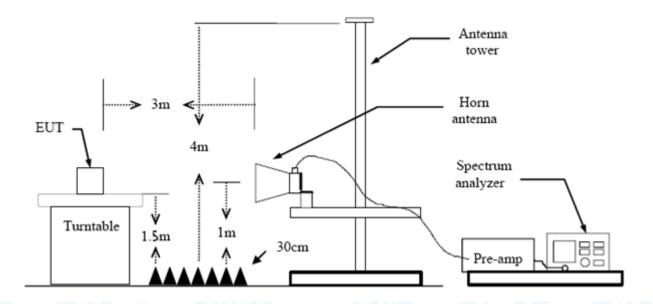


# 6. Restricted Bands Requirement

- 6.1 Test Standard and Limit
  - 6.1.1 Test Standard FCC Part 15.247(d) FCC Part 15.209 FCC Part 15.205 6.1.2 Test Limit

Restricted Frequency	Distance of	3m (dBuV/m)
Band (MHz)	Peak	Average
310 ~2390	74	54
483.5 ~2500	74	54

### 6.2 Test Setup



#### 6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.



- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

#### 6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

#### 6.5 Test Data

Please refer to the Attachment C.

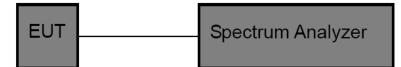


# 7. Bandwidth Test

- 7.1 Test Standard and Limit
  - 7.1.1 Test Standard
    - FCC Part 15.247 (a)(2)
  - 7.1.2 Test Limit

FCC	FCC Part 15 Subpart C(15.247)/RSS-210					
Test Item	Limit	Frequency Range(MHz)				
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5				

7.2 Test Setup



## 7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

## 7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Digital photo framesdle and high channel for the test.

7.5 Test Data

Please refer to the Attachment D.

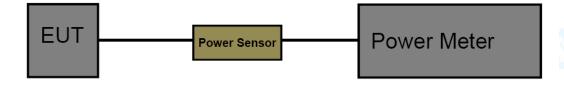


# 8. Peak Output Power Test

- 8.1 Test Standard and Limit
  - 8.1.1 Test Standard
    - FCC Part 15.247 (b)
  - 8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210					
Test Item	Limit	Frequency Range(MHz)			
Peak Output Power	1 Watt or 30 dBm	2400~2483.5			

## 8.2 Test Setup



#### 8.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v04. The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

## 8.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.

#### 8.5 Test Data

Please refer to the Attachment E.

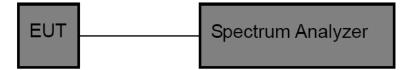


# 9. Power Spectral Density Test

- 9.1 Test Standard and Limit
  - 9.1.1 Test Standard
    - FCC Part 15.247 (e)
  - 9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)					
Test Item	Frequency Range(MHz)				
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5			

### 9.2 Test Setup



## 9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v04.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz
- (5) Set the VBW to: 10 kHz
- (6) Detector: peak
- (7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

## 9.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Digital photo framesdle and high channel for the test.

#### 9.5 Test Data

Please refer to the Attachment F.



# 10. Antenna Requirement

#### 10.1 Standard Requirement

#### 10.1.1 Standard

FCC Part 15.203

#### 10.1.2 Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator 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 use of a standard antenna jack or electrical connector is prohibited.

#### 10.2 Antenna Connected Construction

The gains of the antenna used for transmitting is 1dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

#### Result

The EUT antenna is a PCB Antenna. It complies with the standard requirement.

	Antenna Type	
The	Permanent attached antenna	N
3	Unique connector antenna	ā
	Professional installation antenna	

# **Attachment A-- Conducted Emission Test Data**

Temperature	e: 25 ℃		Rela	ative Humidity	: 5	5%	Mar 1
Test Voltage	: AC 12	20V/60Hz	-		6.1	132	
Terminal:	Line		M.M.S.	-	U		120
Test Mode:	Norm	al working wi	th TX B Mod	de		a W	UE
Remark:	Only	worse case is	s reported		an is		
80.0 dBuV 30 -20 0.150			(MHz)				peak AVG
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
110. 111.	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1 *	0.5460	35.64	0.00	35.64	56.00	-20.36	QP
2	0.5460	19.19	0.00	19.19 4	46.00	-26.81	AVG
3	0.5899	34.92	0.00	34.92	56.00	-21.08	QP
4	0.5899	18.76	0.00			-27.24	AVG
5	0.7340	34.86	0.00			-21.14	QP
6	0.7340	19.44	0.00	19.44	46.00	-26.56	AVG
7 1	3.3940	32.94	0.00	32.94 (	60.00	-27.06	QP
8 1	3.3940	26.61	0.00	26.61	50.00	-23.39	AVG
9 1	5.8820	33.60	0.00	33.60 (	60.00	-26.40	QP
10 1	5.8820	27.36	0.00	27.36	50.00	-22.64	AVG
11 1	7.7820	33.70	0.00	33.70 (	60.00	-26.30	QP
12 1	7.7820	28.39	0.00	28.39	50.00	-21.61	AVG



Temperature:	<b>25</b> ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60Hz	I AUDE	100		
Terminal:	Neutral		anis a		
Test Mode:	Normal working with	Normal working with TX B Mode			
Remark:	Only worse case is I	reported	2 194		
30	What when the work of the second seco		P: AVG: 		
			30.000		
-20 0.150	0.5	(MHz) 5			

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.5620	34.89	9.58	44.47	56.00	-11.53	QP
2		0.5620	26.22	9.58	35.80	46.00	-10.20	AVG
3		0.6860	35.16	9.59	44.75	56.00	-11.25	QP
4	*	0.6860	27.46	9.59	37.05	46.00	-8.95	AVG
5		0.7780	35.10	9.59	44.69	56.00	-11.31	QP
6		0.7780	27.03	9.59	36.62	46.00	-9.38	AVG
7		2.1340	32.27	9.62	41.89	56.00	-14.11	QP
8		2.1340	26.70	9.62	36.32	46.00	-9.68	AVG
9		2.4660	28.34	9.64	37.98	56.00	-18.02	QP
10		2.4660	17.17	9.64	26.81	46.00	-19.19	AVG
11		5.3380	29.62	9.97	39.59	60.00	-20.41	QP
12		5.3380	21.24	9.97	31.21	50.00	-18.79	AVG
-								



Temperature	: <b>25</b> ℃			Relative Hu	umidity:	55%	
Fest Voltage:	AC 24	40V/50Hz		a QU		-	1 Ber
Ferminal:	Line		-		(AL	139	
Fest Mode:	Norm	al working wi	ith TX B Mod	de		0	ARL I
Remark:	Only	worse case is	s reported	<b>MUP</b>	2	$\sim$	
80.0 dBuV							
						QP: AVG:	
		> •	XXX				
ANNA	MANNA	<b>MEANNING AN</b>	And Street St	and the second second	participation of the second states	phill March Married	MAT ANAL
30	1 4 14 1	4. i 11111111111111	ll m		$\sim \sim$	$\sim$	my Wy
	a mark Alle	And the second sec	hadden and the second	$\langle \langle V \rangle$	Y		pea
WW	"to Manual to a		-	/ V			AV
			¥				
0.150	0.5		(MHz)	5			30.000
0.150		Reading	Correct	Measure-			30.000
	0.5 Freq.				Limit	Over	30.000
0.150		Reading	Correct	Measure-		Over dB	
0.150	Freq.	Reading Level	Correct Factor	Measure- ment	Limit dBuV		
0.150 No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	dB	Detector QP
No. Mk. 1	Freq. MHz 0.9780	Reading Level dBuV 28.14	Correct Factor dB 9.60	Measure- ment dBuV 37.74	Limit dBuV 56.00 46.00	dB -18.26	Detector QP
0.150 No. Mk. 1 2	Freq. MHz 0.9780 0.9780	Reading Level dBuV 28.14 15.43	Correct Factor dB 9.60 9.60	Measure- ment dBuV 37.74 25.03 37.75	Limit dBuV 56.00 46.00 56.00	dB -18.26 -20.97	Detector QP AVC QP
0.150 No. Mk. 1 2 3	Freq. MHz 0.9780 0.9780 1.1380	Reading Level dBuV 28.14 15.43 28.15	Correct Factor dB 9.60 9.60 9.60	Measure- ment dBuV 37.74 25.03 37.75	Limit dBuV 56.00 46.00 56.00 46.00	dB -18.26 -20.97 -18.25	Detector QP AVC QP AVC
0.150 No. Mk. 1 2 3 4	Freq. MHz 0.9780 0.9780 1.1380 1.1380	Reading Level dBuV 28.14 15.43 28.15 15.94	Correct Factor dB 9.60 9.60 9.60 9.60	Measure- ment dBuV 37.74 25.03 37.75 25.54	Limit dBuV 56.00 46.00 56.00 46.00 56.00	dB -18.26 -20.97 -18.25 -20.46	Detector QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5	Freq. MHz 0.9780 0.9780 1.1380 1.1380 1.2500	Reading Level dBuV 28.14 15.43 28.15 15.94 28.81	Correct Factor dB 9.60 9.60 9.60 9.60 9.60	Measure- ment dBuV 37.74 25.03 37.75 25.54 38.41	Limit dBuV 56.00 46.00 56.00 46.00 46.00	dB -18.26 -20.97 -18.25 -20.46 -17.59	Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6	Freq. MHz 0.9780 0.9780 1.1380 1.1380 1.2500 1.2500	Reading Level dBuV 28.14 15.43 28.15 15.94 28.81 16.71	Correct Factor dB 9.60 9.60 9.60 9.60 9.60 9.60	Measure- ment dBuV 37.74 25.03 37.75 25.54 38.41 26.31	Limit dBuV 56.00 46.00 56.00 46.00 56.00 56.00	dB -18.26 -20.97 -18.25 -20.46 -17.59 -19.69	Detector QP AVC QP AVC QP AVC

16.01

27.25

20.88

9.61

9.68

9.68

25.62

36.93

30.56

1.8500

4.0380

4.0380

10

11

12 \*

AVG

QP

AVG

46.00 -20.38

56.00 -19.07

46.00 -15.44



Temperature:	<b>25</b> ℃		Relative Hun	nidity:	55%	
Test Voltage:	AC 240V/50Hz		a QU		-	1 Star
Terminal:	Neutral	- AT		A	CC III	
Test Mode:	Normal working	with TX B Mo	de		C	631
Remark:	Only worse case	is reported	MID	2		
80.0 dBuV		1				
					QP: AVG:	
		and the second second	XX	with a		
	Mary Mary Mary Mary Mary Mary Mary Mary	www.www.www.			And March March	17-MANANA
And a com	m of MANNAMANNA MANNAMAN	The second se		$\gamma$	m	- May
30 ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	1 Mr 1		/ V		•	bon 1
V ·			V			AV
20						
0.150	0.5	(MHz)	5			30.000
No. Mk. F	Reading	Correct	Measure-	Limit	Over	
	Freq. Level	Factor	ment			Data
	MHz dBu∨	dB	dBuV	dBuV	dB	Detector
	3700 40.68	9.60	50.28	56.00	-5.72	QP
2 * 1.3	3700 34.65	9.60	44.25	46.00	-1.75	AVG
3 1.	7060 39.26	9.60	48.86	56.00	-7.14	QP
4 1.	7060 33.78	9.60	43.38	46.00	-2.62	AVG
5 1.	8100 38.87	9.61	48.48	56.00	-7.52	QP
6 1.	8100 33.07	9.61	42.68	46.00	-3.32	AVG
7 4.3	2619 38.55	9.77	48.32	56.00	-7.68	QP
8 4.3	2619 33.16	9.77	42.93	46.00	-3.07	AVG
	6260 36.46	9.84	46.30		-9.70	QP
		9.84	40.68		-5.32	AVG
	6260 30.84					
10 4.0			36.92	60.00	-23.08	QP
10 4.0   11 5.2	2140     26.97       2140     19.67	9.95 9.95	36.92 29.62		-23.08 -20.38	QP AVG



# **Attachment B-- Radiated Emission Test Data**

#### 9KHz~30MHz

From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

#### 30MHz~1GHz

4

5

6

IHZ~1GHZ	111					0
Temperature:	<b>25</b> ℃		Relativ	e Humidity:	55%	
Test Voltage:	AC 120V/6	0HZ	-			
Ant. Pol.	Horizontal					-0
Test Mode:	TX B Mode	2412MHz		(MAD)		
Remark:	Only worse	case is repo	rted		COD!	
80.0 dBu∀/m		1	,			
				(RF)FCC	15C 3M Radiation	
					Margin -6	dB
40						
10				6		
1 March	2 X	Å		M	Manu make man	durme
	heren with water	/ Y \v				
0.0 30.000 40 50	60 70 80	(	MHz)	300 400	500 600 700	1000.000
	Rea	ding Cor	ect Measu	ire-		
No. Mk. Fi			tor men		Over	
M	IHz dE	BuV dB/	m dBuV/	/m dBuV/m	dB	Detector
1 * 34.1	1561 43	.11 -16.	02 27.0	9 40.00	-12.91	QP
2 54.2	2610 49	.28 -23.	85 25.4	3 40.00	-14.57	QP
3 145.	8611 46	.95 -20.	86 26.0	9 43.50	-17.41	QP

25.01

29.13

30.89

\*:Maximum data x:Over limit !:over margin

191.0738

223.7334

319.9370

Emission Level= Read Level+ Correct Factor

44.97

47.50

46.10

-19.96

-18.37

-15.21

-18.49

-16.87

-15.11

QP

QP

QP

43.50

46.00

46.00



Temperature:	25 °C		R	elative Humi	dity: 58	5%	
Test Voltage:	AC 1	20V/60HZ		- AU			Charles of the second
Ant. Pol.	Vertic	cal	-	11	100	133	-
Test Mode:	TX B	Mode 2412	MHz			d	RU
Remark:	Only	worse case	is reported	MUD	2	$a \sim 10$	
80.0 dBu∀/m							
					(RF)FCC 1	5C 3M Radiation	
						Margin -6	
1	2						
40	*			5	e X		
		$\Box \Lambda_{\Lambda}$		4 ×			
			m	LA A	1. m	1. marthum	whenthe
	V		Y	W WW	V.	Weither	
0.0							
30.000 40	50 60 70	80	(MHz)	300	400 50	0 600 700	1000.000
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 ! 34	4.5173	56.02	-16.24	39.78	40.00	-0.22	QP
2 * 52	2.7600	63.63	-23.83	39.80	40.00	-0.20	QP
3 10	0.9339	56.16	-21.25	34.91	43.50	-8.59	QP
4 22	4.5193	46.40	-18.34	28.06	46.00	-17.94	QP
5 31	9.9370	48.08	-15.21	32.87	46.00	-13.13	QP
6 40	0.4319	49.08	-11.80	37.28	46.00	-8.72	QP

\*:Maximum data x:Over limit !:over margin

## Above 1GHz

Tem	perature:	<b>25</b> ℃		a	Relative H	umidity:	55%	
Test	Voltage:	AC 120	0V/60HZ		1	N. S.		N.S.
Ant.	Pol.	Horizo	ntal	1	0.1	6	20105	
Test	Mode:	TXBM	lode 2412N	1Hz	1			
Rem	nark:     No report for the emission which more than 10 dB below the press       limit.							
110.0	dBuV/m							
						(0.5)	500 DADT 450	
		-				(RF)	FCC PART 15C	[PEAK]
60		1 X						
		2 X				(BF	F) FCC PART 150	(AVG)
		•						
10.0								
10	00.000 3575.00	6150.00	8725.00 113	00.00 138	75.00 16450.00	19025.00	21600.00	26750.00 MH

No.	Mk.	Freq.	Reading Correct Mea Freq. Level Factor m			Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4824.138	48.72	16.04	64.76	74.00	-9.24	peak
2	*	4825.185	34.23	16.05	50.28	54.00	-3.72	AVG



1 2

	rature:	25 °	Ϋ́C			Rel	ative Hu	umidity:	55%	
Fest Vo	ltage:	AC <sup>2</sup>	120V/	/60HZ			141	L'AN		C. C.
Ant. Po	ol.	Verti	ical	199		12		100	139	
Test Mo	ode:	TX E	3 Moc	de 2412	2MHz	1	-	10		192
Remarl	<b>K</b> :			for the d limit.	emissior	n which	more th	an 10 dB l	below the	9
110.0 dB	uV/m									
								(RE) ECC I	PART 15C (PE	
								(nr) ruu i		
	1 X									
60	2							(RF) FCC	PART 15C (A	VG)
	×									
10.0										
	0 3575.00	6150.00	8725.	.00 113	300.00 1387	5.00 164	150.00 190	025.00 21600	0.00	26750.00 MH

#### Emission Level= Read Level+ Correct Factor

34.22

16.06

50.28

4825.500

AVG

-3.72

54.00



Temperature:		<b>25</b> ℃			Relative	e Humidity:	55%	
Fest Voltage:		AC 120\	//60HZ	5		RUDS	-	A CONTRACT
nt. Pol.		Horizont	al	-	2.6	6	0.00	
est Mode:		TX B Mo	de 2437	MHz			~	193
Remark:		No repor prescribe		emissior	n which mo	ore than 10 d	B below th	ne
110.0 dBuV/m								
60	1 X 2 X						CC PART 15C (P	
10.0	6	150.00 872	5.00 1130	0.00 1387	5.00 16450.0	0 19025.00 21	600.0D	26750.00 M

No.	Mk.	Freq.			Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4874.996	48.95	16.47	65.42	74.00	-8.58	peak
2	*	4875.185	34.63	16.48	51.11	54.00	-2.89	AVG



emp	erature:		<b>25 ℃</b>		Relative Humidity:55%						
est V	Voltage:		AC 12	0V/60HZ				1000	-	The second	
nt. I	Pol.		Vertica	al		2		6	182		
est l	Mode:		TXB	Node 243	37MHz						
ema	ark:			oort for th		ion whi	ch more	than 10 dl	B below t	he	
110.0	dBuV/m										
			_								
-								(BE) EC	C PART 15C (	(PEAK)	
		2									
60		x									
-		1 X						(RF) F	CC PART 150	(AVG)	
		^									
10.0											
100	0.000 3575.00	61	50.00	8725.00	1300.00	13875.00	16450.00	19025.00 21	600.00	26750.00 MI	
				Reading	Cor		leasure				

N	lo.	Mk.	Freq.	Level	Factor	ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4874.711	34.64	16.46	51.10	54.00	-2.90	AVG
2			4875.350	48.37	16.48	64.85	74.00	-9.15	peak



emperature:	25 ℃ Relative Humidity:		lity: 55	55%				
est Voltage:	AC 120V/	60HZ						
nt. Pol.	Horizonta		123	(AII)	39			
est Mode:	TX B Mod	le 2462MHz						
lemark:		Io report for the emission which more than 10 dB below the rescribed limit.						
110.0 dBu¥/m								
				(RF) FCC PAI	RT 15C (PEAK)			
1 X								
60				(RF) FCC P/	ART 15C (AVG)			
×								
10.0								

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.634	50.38	14.19	64.57	74.00	-9.43	peak
2	*	4924.552	36.52	14.19	50.71	54.00	-3.29	AVG



empe	erature:	<b>25 ℃</b>			Relative Hun	nidity:	55%		
est V	oltage:	AC 12	AC 120V/60HZ						
nt. P	ol.	Vertica	ıl		21	GA	680		
est M	lode:	TXBM	/lode 2462	2MHz			-	621	
lemar	rk:		ort for the ibed limit.	emission	which more that	an 10 dE	3 below th	е	
10.0 d	lBu¥/m								
						(RF) FC	C PART 15C (PE	AK)	
	1 X								
60	^					(BE) F	CC PART 15C (A	VGI	
	2 X								
0.0									
	00 3575.00	6150.00 8	3725.00 113	300.00 13875					

74.00

54.00

64.80

50.73

-9.20

-3.27

peak

AVG

50.61

36.53

14.19

14.20

#### Emission Level= Read Level+ Correct Factor

4922.893

4925.500

1

2

\*



Tempe	erature:	<b>25</b> ℃		Relative Hu	umidity: 559	%			
Test V	oltage:	AC 120	AC 120V/60HZ						
Ant. P	ol.	Horizor	ntal		(III)				
Test Mode: TX G Mode 2412MHz									
Rema	rk:		ort for the emis	sion which more t	han 10 dB bel	ow the			
110.0	dBuV/m								
_					(RF) FCC PART 1	5C (PEAK)			
	1 ×								
60	2				(RF) FCC PART	15C (AVG)			
	×								
10.0									

No.	Mk.	Freq.		Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.001	49.57	13.69	63.26	74.00	-10.74	peak
2	*	4825.500	35.44	13.70	49.14	54.00	-4.86	AVG



Tempera	ture:	<b>25</b> ℃			Relative I	lumidity:	55%	
Fest Volt	age:	AC 120	0V/60HZ			N PROVINCE	-	1 Con
Ant. Pol.		Vertica			21	6	0.22	
Fest Mod	le:	TXGN	/lode 241	2MHz			2	
Remark:			ort for the bed limit.	emissio	n which more	e than 10 dl	B below tl	he
110.0 dBu\	'/m							
	1					(RF) Fi	C PART 15C (I	PEAK]
60	×					(BE) I	CC PART 15C	(AVG)
	X							
10.0	3575.00 6	6150.00 8	725.00 11:	300.00 138	75.00 16450.00	19025.00 21	600.00	26750.00 M

	No. M	k. Freq.			Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.148	49.47	13.69	63.16	74.00	-10.84	peak
2	*	4825.500	35.41	13.70	49.11	54.00	-4.89	AVG



Iem	perature:		<b>25 °</b> ℃			Relative	Humidity:	55%	
Test	Voltage:		AC 120	)V/60HZ			RUPS		
Ant.	Pol.		Horizor	ntal	-	531	6	0.82	
Test	Mode:		TXGN	/lode 243	37MHz			2	693
Rem	ark:			ort for th bed limit		on which mo	ore than 10 d	B below th	ie
110.0	dBuV/m								
-							(RF) FC	C PART 15C (PI	EAK)
		2							
60		×					(BE) E	CC PART 15C (/	WG1
		1 X							
10.0									
L	00.000 3575.00	615	50.00 8	725.00 1	1300.00 138	375.00 16450.00	0 19025.00 21	600.00	26750.00 MI

No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4874.078			50.05	54.00	-3.95	AVG
2		4874.375	50.43	13.94	64.37	74.00	-9.63	peak



Tempera	ture:	<b>25 ℃</b>		Relative Humidit	<b>y:</b> 55%
Test Volt	age:	AC 120	V/60HZ	AUD:	
Ant. Pol.		Vertical			2000
Test Mod	le:	TXGM	ode 2437MHz		-
Remark:		No repo prescrib		ssion which more than 1	0 dB below the
110.0 dBu¥	7m				
				(R	F) FCC PART 15C (PEAK)
	1				
60	×				RF) FCC PART 15C (AVG)
	2 X				
10.0	0535.00	<b>\$150.00 87</b>	25.00 11300.00	13875.00 16450.00 19025.00	21600.00 267

No	. Mk.	Freq.			Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.316	50.20	13.94	64.14	74.00	-9.86	peak
2	*	4874.714	36.12	13.94	50.06	54.00	-3.94	AVG



Temperatu	lre:	<b>25</b> ℃			Relative	Humidity:	55%			
est Volta	ge:	AC 120	V/60HZ	30		UP-		1		
nt. Pol.		Horizon	tal		0.1	In	132	à		
est Mode	):	TX G M	ode 2462	2MHz	1					
Remark:			ort for the bed limit.	emissior	nission which more than 10 dB below the					
110.0 dBuV/r	n									
						(BF) FC	PART 15C (PEAK)			
	2					()				
60	×									
	1					(RF) FC	C PART 15C (AVG)			
	×									
0.0										
1000.000 3	575.00 6	6150.00 87	25.00 113	300.00 138	75.00 16450.00	19025.00 216	00.00 26750	.00 MI		

No	. Mk	Freq.			Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.607	36.54	14.19	50.73	54.00	-3.27	AVG
2		4923.988	50.14	14.19	64.33	74.00	-9.67	peak



iem	perature:	<b>25 ℃</b>			Relative	Humidity:	55%	
Test	Voltage:	AC 12	20V/60HZ		- 5	HOP -		
Ant.	Pol.	Vertica	al		21	6	0.00	
Test	Mode:	TX G	Mode 24	62MHz			-	
Rem	nark:		oort for th ribed limit		n which mor	e than 10 dl	B below th	1e
110.0	dBuV/m							
						(RF) FC	C PART 15C (P	'EAK)
	2 ×							
60	×					(BE) E	CC PART 15C	(AVG)
	1 X							
10.0 100	0.000 3575.00	6150.00	8725.00 1	1300.00 138	75.00 16450.00	19025.00 21	600.00	26750.00 MH

No	o. Mi	k. Freq.			ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.133	36.53	14.19	50.72	54.00	-3.28	AVG
2		4924.561	50.17	14.19	64.36	74.00	-9.64	peak



Гетре	rature:	<b>25 ℃</b>			Relative H	umidity:	55%	
est Vo	oltage:	AC 120	V/60HZ			(D) - C	-	ALC: N
Ant. Po	ol.	Horizor	ital	-			6610	
est M	ode:	TX N(H	T20) Mod	e 2412M	Hz			
Remar	k:		ort for the bed limit.	emission	which more	than 10 dl	3 below t	ne
110.0 d	Bu¥/m							
						(RF) FC	C PART 15C (	PEAK)
	2 X							
60	^					(RF) F	CC PART 15C	(AVG)
	X							
10.0								
1000.0	00 3575.00	6150.00 87	725.00 1130	0.00 1387	5.00 16450.00	19025.00 21	600.00	26750.00 M

No	). Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4824.078	35.44	13.69	49.13	54.00	-4.87	AVG
2		4824.531	49.85	13.69	63.54	74.00	-10.46	peak



Temper	ature:	<b>25 ℃</b>			Relativ	ve Humidity:	55%	
Test Vo	Itage:	AC 120	V/60HZ			RUPS		100
Ant. Po	l.	Vertical	100		21	6	Can	
Test Mo	ode:	TX N(H	T20) Moc	de 2412M	Hz			621
Remarl	<b>K</b> :		ort for the bed limit.	emission	which n	nore than 10 c	dB below th	ie
110.0 dB	uV/m							
						(RF) F	FCC PART 15C (P	EAK]
	2							
60	×					(BF)	FCC PART 15C (	AVG1
	I X							
10.0								
	0 3575.00 6	6150.00 87	25.00 1130	00.00 13875	i.00 16450	.00 19025.00 2	21600.00	26750.00 M

35.45

49.20

13.69

13.69

49.14

62.89

4824.552

4824.942

1

2

-4.86

-11.11

54.00

74.00

AVG

peak



Гетр	erature:	<b>25 ℃</b>			Relative H	umidity:	55%	
Fest V	oltage:	AC 12	0V/60HZ	3.5	1	0.000	-	ALC: N
Ant. P	ol.	Horizo	ntal		281	G	680	
Fest N	lode:	TX N(I	HT20) Mo	de 2437M	Hz			199
Rema	rk:		oort for the	emission	which more	than 10 dl	B below th	ne
110.0	dBuV/m							
						(RF) FC	C PART 15C (P	EAK)
	1							
60	×					(BF) F	CC PART 15C	AVG1
	2 X							
10.0								
	000 3575.00	6150.00	8725.00 11	300.00 13879	5.00 16450.00	19025.00 21	600.00	26750.00 M

50.02

36.10

13.94

13.95

63.96

50.05

4873.733

4875.341

1

\*

-10.04

-3.95

peak

AVG

74.00

54.00



Temperature:		<b>25</b> ℃			Relativ	e Humidity:	55%	
Test Voltage:	tage:   AC 120V/60HZ     Vertical     de:   TX N(HT20) Mode 2437MHz     :   No report for the emission which more than 10 dB below the prescribed limit.							
Ant. Pol.		Vertica			20	6	0.32	
Test Mode:		TX N(H	IT20) Mo	de 2437	MHz		1	
Remark:				emissio	n which m	ore than 10 d	B below the	
110.0 dBuV/m								
						(RF) FC	C PART 15C (PEAK)	
	1							
60	×					(BE) E	CC PART 15C (AVG)	
	2 X							
10.0		50.00 8	725.00 11	300.00 138	75.00 16450.	00 19025.00 21	600.00 26750.1	

No	. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.403	50.09	13.94	64.03	74.00	-9.97	peak
2	*	4875.185	36.10	13.95	50.05	54.00	-3.95	AVG



emperature:	<b>25</b> ℃		Relative Humidity:	55%
est Voltage:	AC 120\	//60HZ	AUDA	
nt. Pol.	Horizont	al		133
est Mode:	TX N(HT	[20) Mode 2462	MHz	- DE
emark:	No repor prescribe		on which more than 10 dB	below the
10.0 dBuV/m				
			(RF) FCC	PART 15C (PEAK)
60	{			
	2			PART 15C (AVG)
0.0	6150.00 872	25.00 11300.00 138	375.00 16450.00 19025.00 2160	0.00 26750.00 MH

	No.	Mk.	Freq.			Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4923.544	51.13	14.19	65.32	74.00	-8.68	peak
2	2	*	4925.500	36.53	14.20	50.73	54.00	-3.27	AVG



empera	ature:	<b>25</b> ℃			Rela	tive Humidity:	55%	
Fest Vol	tage:	AC 120	0V/60HZ	3.5		GUD -		
Ant. Pol	•	Vertica			110	61	661	
Fest Mo	de:	TX N(F	HT20) Mod	de 2462M	IHz		-	
Remark	:		ort for the bed limit.	emission	which r	more than 10 dB	3 below th	ıe
110.0 dBu	√/m							
						(RF) FCC	PART 15C (P	EAK)
	2							
60	×					(95) 50	C PART 15C (	
	1 X					(nr) ru	C FANT ISC	Avaj
10.0	3575.00 6	150.00 83	725.00 113	00.00 1387	5.00 1645	0.00 19025.00 216	00.00	26750.00 MI

		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4924.237	36.51	14.19	50.70	54.00	-3.30	AVG
2		4924.438	50.50	14.19	64.69	74.00	-9.31	peak



# **Attachment C-- Restricted Bands Requirement Test Data**

Temperatu	ure: 25 °	0	-	Relative Hu	midity:	55%	
Test Volta	ge: AC 1	120V/60HZ				-	5
Ant. Pol.	Hori	zontal		6000	2	19 .	
Test Mode	: TX E	3 Mode 2412	2MHz				
Remark:	N/A		CAN DE	-	1995		
110.0 dBuV/	/m						
						4 ×	
						3	
						×	
					(RF) FCC F	PART 15C (PEAK	]
					/		$\overline{\Box}$
60				1	(BF) FCC	PART 15C (AVG	1
				×2			+
			_	X			<i>ر</i>
			<u> </u>				
10.0							
2325.000 2	2335.00 2345.00	2355.00 236	365.00 2375.00	2385.00 239	95.00 2405.0	00 2	425.0
		Reading	Correct	Measure-			
No. Mk	. Freq.	Level	Factor	ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	De
1	2390.000	53.46	0.91	54.37	74.00	-19.63	ķ
•	2390.000	42.64	0.91	43.55	54.00	-10.45	-
2		74.01	0.01	40.00	04.00	-10.10	
2 3 *	2412.800	89.34	1.02	90.36	Fundamental		1



emp	peratu	re:	25 °C	2	AV	Relati	ive Hun	nidity:	55%	
'est '	Voltag	je:	AC 1	120V/60HZ	33		611			
Ant. I	Pol.		Verti	cal				100		
est	Mode:		TX B	3 Mode 2412	2MHz				4	
Rema	ark:		N/A	Sall			1110	2	a 13	
110.0	dBuV/m	- 1								
									з Х	
									4	
									×	
								(RF) FCC	PART 15C (PEAK)	J
-			-							
60		_					1		2 2427 150 (AVC	
					++		×	(Hr) rp.	C PART 15C (AVG)	<u>}</u>
							2 X	$\left[ \right]$		$\mathbb{Z}^{+}$
F										
-										
		_	_							
10.0	25.000 23	835 00 2°	345.00	2355.00 236	65.00 2375.	.00 2385	5 00 23	95.00 2405	nn 2,	425.00 MH
	). Mk.			Reading Level	Correc Factor	t Mea	asure- ient	Limit	Over	
		MH	z	dBuV	dB/m	dB	BuV/m	dBuV/m	n dB	Detect
1		2390.0	000	53.17	0.91	54	4.08	74.00	-19.92	pea
2		2390.0	000	41.69	0.91	42	2.60	54.00	-11.40	AVG
	Х	2412.2	200	100.56	1.02	10	)1.58	Fundament	al Frequency	pea
3										



Temperature	e: 25	°C		Relative Hu	midity:	55%	
Test Voltage	: AC	120V/60HZ		- 611			
Ant. Pol.	Hori	zontal	-	20 -	100	139	
Test Mode:	TXI	3 Mode 2462	MHz			al a	
Remark:	N/A	(SOR)		mile	2	a 14	J.
110.0 dBuV/m	H						
60	2 X 1 X	3 × 4 ×				PART 15C (PEA)	
10.0	.00 2470.00	2480.00 245	0.00 2500.00	2510.00 2	520.00 2530.	00 2	2550.00 MH
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
1 * 2	2462.700	88.38	1.24	89.62	Fundamental	Frequency	AVG
2 X 2	2463.500	97.84	1.24	99.08	Fundamental	Frequency	peak
3 2	2483.500	46.88	1.34	48.22	74.00	-25.78	peak
	2483.500	34.70	1.34	36.04	54.00	-17.96	AVG



Temperature:	25 °C	2		Relative Hu	midity:	55%	
Test Voltage:	AC 1	20V/60HZ		- 11	1 de la		
Ant. Pol.	Verti	cal	-	118	611	132	
Test Mode:	TX B	Mode 2462	MHz			1	
Remark:	N/A	AND I		400	9	2 1	y and the second
110.0 dBuV/m							
	1 ×						
	2						
	×						
	$\longrightarrow$				(RF) FCC	PART 15C (PEAK	]
							·
60							
		3			(RF) FCI	C PART 15C (AVG	1
		X					
		*	~				
10.0	0400.00	0.170.00 0.10		2500.00	-10.00 0500		
2446.000 2456.00	2466.00	2476.00 248	6.00 2496.00	2506.00 25	516.00 2526	.00 2	546.00 MHz
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
NO. WIK.	-						Datasta
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
	61.900	99.59	1.24	100.83	Fundamenta	I Frequency	peak
2 * 24	62.600	87.55	1.24	88.79	Fundamenta	I Frequency	AVG
3 24	83.500	45.40	1.34	46.74	74.00	-27.26	peak
4 24	83.500	34.54	1.34	35.88	54.00	-18.12	AVG



emp	eratu	ire:	25 °	С		Relati	ive Hu	midity:	55%	
est \	Volta	ge:	AC 1	20V/60HZ	3.		640		~	
Ant. I	Pol.		Horiz	zontal		120	~	11.0	661	
est l	Mode	:	TX C	Mode 241	2MHz		~		-	501
Rema	ark:		N/A	100			110	9	N C	N.
110.0	dBuV/	m								
Γ										
									4 ×	
									<u> </u>	
-								(RF) FCC P	ART 15C (PEA	K)
60						1 X			PART 15C (AV	
ŀ						<u>^</u>			PART ISC AV	a)
						2		/		
						X	_			
10.0	3.000 2	343.00	2353.00	2363.00 23	73.00 2383.	.00 2393	3.00 24	403.00 2413.0	DO	2433.00 MH
No	. MIL	. Г.		Reading	Correct		sure-	Limit	Over	
NO	). Mk		eq.	Level	Factor		ent			
			Hz	dBuV	dB/m		uV/m	dBuV/m	dB	Detecto
1		2390	.000	56.75	0.91	57	.66	74.00	-16.34	peak
2		2390	.000	37.77	0.91	38	8.68	54.00	-15.32	AVG
3	*	2413	300	74.61	1.02	75	5.63	E		AVG
3		2410	.000	74.01	1.02	10	0.05	Fundamenta	requency	



Temp	eratur	e:	25 °(	2		all	Rela	tive H	lumidity:	55%	20		
Test V	Voltage	):	AC 1	20V/6	0HZ			24				5	
Ant. F	Pol.		Verti	cal	1	-	18		61	132			
Test I	Mode:		TX G Mode 2412MHz										
Rema	ark:		N/A	-				110	9				
110.0	dBuV/m											_	
										4 ×		1	
-										~			
-									(RF) FC	C PART 15C (PE	AK)		
-									-				
60								1			1		
ŀ								×	(BF) F	CC PART 15C (A		-	
								2			$\overline{\langle}$		
	_							×			<b>`</b>	۲	
-													
-													
10.0													
	8.000 233	8.00	2348.00	2358.0		8.00 2378.				08.00	2428.00	_	
	N.41.	<b>F</b>		Read	-	Correct		sure-	Limit	Over			
N.L.		Fre	eq.	Lev	el	Factor		ent					
No	. IVIN.								ID 1//	n dB	Dete	ct	
No		MH		dBu		dB/m		uV/m	dBuV/r				
No.				dBu 55.4		dB/m 0.91		uV/m 5.34	74.00				
		MH	000		43		56			-17.66	b pe	al	
1	:	мн 2390.	000	55.	43 89	0.91	56 37	6.34	74.00 54.00	-17.66	) AV	al /C	



Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ	RUU	
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz		
Remark:	N/A	MILL P	2



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Х	2455.500	91.36	1.21	92.57	Fundamental	Frequency	peak
2	*	2456.300	73.56	1.21	74.77	Fundamental	Frequency	AVG
3		2483.500	54.19	1.34	55.53	74.00	-18.47	peak
4		2483.500	34.11	1.34	35.45	54.00	-18.55	AVG



Tempe	ratu	re:	25 °	3		Relative H	lumidity:	55%	
Test V	oltag	e:	AC 1	20V/60HZ		A GI			1 Marco
Ant. P	ol.		Verti	cal	-	12	11.0	132	-
Test M	ode:		TX C	Mode 246	62MHz			-	21
Remar	k:		N/A	anna a		110	2		
110.0	dBuV/m								
			2						
			2 X						
		1					(RF) FCC P	ART 15C (PEAK)	
	- <u>_</u>	×-	$\neg$						
60									
-				3 X			(RF) FCC	PART 15C (AVG	
	/								
				1 ×					
_									
10.0									
2448.0	000 24	8.00 2	<b>!468.0</b> 0	2478.00 2	488.00 2498.00	2508.00 2	518.00 2528.0	10 2:	548.00 MHz
				Reading	Correct	Measure-			
No.	Mk.	Fre	eq.	Level	Factor	ment	Limit	Over	
		MF	łz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
1	*	2463.	200	72.75	1.24	73.99	Fundamental	Frequency	AVG
2	Х	2467.	400	89.26	1.27	90.53	Fundamental	Frequency	peak
3		2483.	500	53.92	1.34	55.26	74.00	-18.74	peak
4		2483.	500	33.72	1.34	35.06	54.00	-18.94	AVG



Temp	peratu	re:	25 °	С		a		Rela	tive H	lumidit	y:	55%	A	
Test	Voltag	je:	AC 1	120V/	50HZ									
Ant.	Pol.		Hori	zontal	1		1		~	(	115	133		~
Test	Mode		TXN	I(HT2	0) Mo	de 2412N	1Hz		-				5	
Rema	ark:		N/A	a	193			5	110	19	1	3 1	22	
110.0	dBu∀/m													
												3 X		
_										(05)		PART 15C (PE		
										(nr)				
60														
00									1 X	(B	F) FCC	PART 15C (AV	/6)	
									2				)	
-						· · · · · · · · · · · · · · · · · · ·	~	~~~	X					
-														
10.0 232	6.000 23	36.00 2	2346.00	2356.	00 23	66.00 2370	6.00	2386	.00 2	396.00	2406.	00	2426.	00 MH
No	. Mk.	Fre	eq.		ding vel	Correc Facto		Meas me	sure- ent	Lim	it	Over		
		MH	z	dB	ωV	dB/m		dBu	V/m	dBu	//m	dB	De	tecto
1		2390.	000	54	.98	0.91		55	.89	74.	00	-18.11	p	eak
2		2390.	000	37	.06	0.91		37	.97	54.	00	-16.03	A	١VG
3	Х	2417.	100	89	.46	1.04		90	.50	Fundan	nental	Frequency	p	eak
4	*	2417.	200	72	.74	1.04		73	.78	Fundar	nental	Frequency	A	١VG



Temp	peratur	'e:	25 °	С	<u>, 1</u>	a	Rela	ative Hu	imidity:	55%	
Test	Voltage	e:	AC 1	120V/	/60HZ	33		199		-	
Ant.	Pol.		Verti	cal			5		6	<u>CED</u>	
Test	Mode:		1 XT	1(HT2	20) Mo	de 2412N	ЛНz				
Rem	ark:		N/A					400	2		
110.0	dBu∀/m									_	
										3	
-										×	
_									(RF) FC	C PART 15C (PE	EAK)
			+							<b>*</b>	
60								1		CC 0407 150 (4	
			<u> </u>					×		CC PART 15C (A	<u>, , , , , , , , , , , , , , , , , , , </u>
								2			
Ļ	~							×.			
-								_			
10.0 232	28.000 233	IR.00 23	48.00	2358.0	00 23	68.00 2378	8.00 2;	388.00 23	398.00 240	08.00	2428.00 MH
	0.0				50			00			
				Reg	ading	Correc	~t Me	asure-			
No	. Mk.	Free	q.		evel	Facto		nent	Limit	Over	
		MHz	· .	dE	BuV	dB/m		BuV/m	dBuV/n	n dB	Detecto
1		2390.0	00	53	3.74	0.91	Ę	54.65	74.00	-19.35	5 peak
2		2390.0			5.22	0.91		37.13	54.00		· ·
3		2417.0			3.67	1.04		39.71	Fundame	ntal Frequency	
4	*	2417.2	/00	71	.96	1.04	7	73.00	Fundamo	ntal Frequency	AVG



Temp	peratu	re:	25 °C	2				Relativ	e Hu	imidity:	55%	
lest '	Voltag	je:	AC 1	20V/6	OHZ			~ 5	10		-	A Des
Ant. I	Pol.		Horiz	ontal		-	5	88.		R	Con Con	
est	Mode	:	TXN	I(HT20	) Moc	le 2462	MHz	z	~			AR!
Rema	ark:		N/A	65	19			511	10			
110.0	dBu∀/m											
		2										
		×										
-		1								(RF) FC	C PART 15C (PE	AK)
	- (	-*										
60					3					(BE) E	CC PART 15C (A	VGI
					×							
				$\searrow$	<u> </u>							
ſ					×							
10.0												
	5.000 24	55.00	2465.00	2475.0	0 248	5.00 24	95.00	2505.00	251	15.00 252	25.00	2545.00 MH
				Rea	ding	Corre	ect	Measu	re-			
No	). Mk	. Fr	eq.	Lev	/el	Fact	or	ment	t	Limit	Over	
		M	Ηz	dB	uV	dB/m	1	dBuV/r	m	dBuV/r	n dB	Detecto
1	*	2456	.800	72.	10	1.21		73.3	1	Fundamen	tal Frequency	AVG
2	Х	2460	.300	88.	49	1.23	}	89.72	2		tal Frequency	
3		2483	.500	53.	53	1.34	-	54.8	7	74.00		
4		2483		34.	~~	1.34		35.34		54.00		



Temp	eratu	re:	25 °C	2			Relat	ive H	umidity:	55%	
Test \	/oltag	je:	AC 1	20V/60	HZ			19	1000		
Ant. F	Pol.		Verti	cal	Y	-	120	6	Gal	132	
Test I	Mode	:	TXN	I(HT20)	Mod	e 2462M	Hz				
Rema	ark:		N/A	-				1010	20		Store State
110.0	dBu¥∕m	I									
		1									
		×									
_		2							(RF) FCC	PART 15C (PEA	(K)
		×									
60	[			$\rightarrow$							
					3				(RF) FL	C PART 15C (AV	6)
				$\mathcal{A}$	×						
P					4 ×						
10.0	5.000 24	55.00 2	2465.00	2475.00	248	5.00 2495.	00 250	5.00	2515.00 252	5.00	2545.00 MI
211	5.005 E1	00.00	-100.00	2110.00	210	2.00	00 200	0.00	2010.00 202	5.00	2010.00 11
				Readi	na	Correct	Mea	sure-			
No	. Mk	Fre	eq.	Leve		Factor		ent	Limit	Over	
		MH	lz	dBu∖	/	dB/m	dB	uV/m	dBuV/m	dB	Detecto
1	Х	2460.	500	87.4	1	1.23	88	8.64	Fundamenta	al Frequency	peak
2	*	2460.	600	70.8	9	1.23	72	2.12		al Frequency	AVG
		2483.	500	45.3	0	1.34	46	6.64	74.00		peak
3											-



# (2) Conducted Test

mperature:	<b>25</b> ℃	Rela	tive Humidity:	55%				
st Voltage:	AC 120V/60HZ	1 and		833				
st Mode:	TX B Mode 2412	MHz / TX B Mode	e 2462MHz	d.				
mark:	The EUT is programed in continuously transmitting mode							
Keysight Spectrum A		SENSE:INT ALIG	N AUTO	10:51:58 AM Apr12, 2018				
	2.377000000 GHz PNO: Fast IFGain:Low		Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N				
	Offset 3.63 dB	Allen. 00 dB	Mkr	2.411 5 GHz 8.200 dBm				
10 dB/div Ref	23.63 dBm			1				
3.63			a a a a a a a a a a a a a a a a a a a					
-16.4			/V	-11.77 dBm				
-26.4			4 3 3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	W WW				
-46.4	anton almander and the contraction	nonmont		<u> </u>				
-66.4								
Start 2.32700 0 #Res BW 100		/BW 300 kHz		op 2.42700 GHz 00 ms (1001 pts)				
MKR MODE TRC SCL		FUNCTION FUNCTION	IN WIDTH FUNCTION	VALUE				
2 N 1 f 3 N 1 f 4 N 1 f	2.390 0 GHz -36.6	012 dBm 032 dBm 044 dBm						
5 6 7				E				
8 9 10								
8 9 10 11 <								
8 9 10			STATUS					
8 9 9 10 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1	50 Ω AC	III ALIGI	N AUTO	,				
8 9 9 10 11 11 1 1 1 1 1 1 1 1 1 1 1 1 1		T						
8 9 10 11 11 MSG MSG MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 2.497000000 GHz PNO: Fast	🕤 Trig: Free Run	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr 12, 2018 TRACE 1 2 3 4 5 6 TYPE M WWWWWW				
8 9 10 11 4 MSG MSG MSG MSG MSG MSG MSG MSG MSG MSG	S0 Ω AC   2.497000000 GHz IFGain:Low Offset 3.6 dB 23.60 dBm	🕤 Trig: Free Run	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr12, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWW DET PNNNNN 2.461 5 GHZ				
8 9 10 11 4 MSG MSG MSG MSG MSG MSG MSG MSG MSG MSG	59 2 AC 2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB	🕤 Trig: Free Run	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr12, 2018 TRACE 11 2 3 4 5 6 Type Mint With With With DET P NNN N N 2.461 5 GHz 7.789 dBm				
8 9 10 11 11 MSS MSS MSS MSS MSS MSS MSS MSS M	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm	🕤 Trig: Free Run	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr12, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWW DET PNNNNN 2.461 5 GHZ				
8 9 10 11 11 11 11 11 11 11 11 11 11 11 11	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm 1 	Trig: Free Run Atten: 30 dB	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr12, 2018 TRACE 11 2 3 4 5 6 Type Mint With With With DET P NNN N N 2.461 5 GHz 7.789 dBm				
8 9 10 11 1 4 MSG MSG MSG MSG MSG MSG MSG MSG MSG MSG	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm	Trig: Free Run Atten: 30 dB	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100	10:58:07 AM Apr12, 2018 TRACE 11 2 3 4 5 6 Type Mint With With With DET P NNN N N 2.461 5 GHz 7.789 dBm				
8     9     10       10     11     14       MSG     MSG     RF       Center Freq 2     Image: Center Freq 2     Image: Center Freq 2       13.6     3.60     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       13.6     Image: Center Freq 2     Image: Center Freq 2       14.4     Image: Center Freq 2     Image: Center Freq 2       14.4     Image: Center Freq 2     Image: Center Freq 2       15.6     Image: Center Freq 2     Image: Center Freq 2       16.4     Image: Center Freq 2     Image: Center Freq 2       16.4     Image: Center Fr	2.497000000 GHz PNO: Fest IFGain:Low Offset 3.6 dB 23.60 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Trig: Free Run Atten: 30 dB	N AUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr'	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET P NNNNN 2.461 5 GHz 7.789 dBm 				
8     9     10       10     11     11       11     11     11       11     11     11       Keysight Spectrum A     RF       Center Freq 2     13.6       13.6     13.6       -6.40     -6.4       -16.4     -6.4       -66.4     -66.4       Start 2.44700 d     #Res BW 100 I	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm 1 0 0 0 0 0 0 0 0 0 0 0 0 0	Trig: Free Run Atten: 30 dB	NAUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm 				
8 9 10 11 11 MSG MSG MSG MSG MSG MSG MSG MSG MSG MSG	2.497000000 GHz PNO: Fest IFGain:Low Offset 3.6 dB 23.60 dBm	Trig: Free Run       Atten: 30 dB	NAUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm 				
8     9     10       10     11     11       MSG     Ref     Ref       10     dB/div     Ref       13     6     -       360     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -640     -     -       -654     -     -       -664     -     -       -7     -     -     - <t< td=""><td>2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm</td><td>/ Trig: Free Run Atten: 30 dB</td><td>NAUTO Avg Type: Log-Pwr Avg Hold:&gt;100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur</td><td>10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm </td></t<>	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm	/ Trig: Free Run Atten: 30 dB	NAUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm 				
8     9     10       10     11     11       11     11     11       MSG     MSG	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm	Trig: Free Run Atten: 30 dB       4       4       4       4       4       5       7       WWWWWAMANANA ANA ANA ANA ANA ANA ANA ANA ANA	NAUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm 				
8     9     10       10     11     11       MSG     R     RE       Center Freq 2     13.6     3.60       13.6     3.60     -       14.4     -     -       15.6     -     -       16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4     -     -       -16.4	2.497000000 GHz PNO: Fast IFGain:Low Offset 3.6 dB 23.60 dBm	Trig: Free Run Atten: 30 dB       4       4       4       4       4       5       7       WWWWWAMANANA ANA ANA ANA ANA ANA ANA ANA ANA	NAUTO Avg Type: Log-Pwr Avg Hold:>100/100 Mkr' Mkr' Mkr' Mkr' Signature Signatur	10:58:07 AM Apri2, 2018 TRACE[1 2 4 5 6 TYPE] MWWWWW DET]P NNNNN 2.461 5 GHz 7.789 dBm 				



nperature:	<b>25</b> ℃	Relative Humidity:	55%
st Voltage:	AC 120V/60HZ	NUL	
st Mode:	TX G Mode 2412MHz / TX C	G Mode 2462MHz	33
mark:	The EUT is programed in co	ntinuously transmitting r	node
Keysight Spectrum Ar       R     RF       Center Freq 2       10 dB/div     Ref       13.6     3.63       -6.37     -16.4       -36.4     -36.4	seyzer - Sweet SA 50 Q AC 50 Q AC PNO: Fast PNO: Fast PNO: Fast PNO: Fast PNO: Fast PNO: Fast PNO: Fast PNO: Fast Atten: 30 dB 23.63 dBm PNO: Fast Atten: 30 dB PNO: Fast Atten: 40	ALIGN AUTO 11:0 Avg Type: Log-Pwr Avg Hold:>100/100 Mkr1 2	2.422700 GHz (1001 pts)
	497000000 GHz PNO: Fast IFGain:Low Trig: Free Run Atten: 30 dB	Avg Type: Log-Pwr Avg Hold:>100/100	1151 AM Apr12, 2018 TRACE [2 3 4 5 6 TYPE M WWWWW DET P NNNN 463 3 GHZ
10 dB/div     Ref       13.6     -       3.60     -       -6.40     -       -16.4     -       -36.4     -       -46.4     -       -56.4     -       -66.4     -		3 3 3 3	0.285 dBm
Start 2.44700 C #Res BW 100 F 1 N 1 f 2 N 1 f 3 N 1 f 4 N 1 f 4 N 1 f 5 6	Hz #VBW 300 kHz	Stop Sweep 9.600	
6 7 8 9 10 11 11 ×		STATUS	



Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60HZ	GILLE	A 102
Test Mode:	TX N(HT20) Mode 2412MH	z / TX N(HT20) Mode 24	162MHz
Remark:	The EUT is programed in co	ntinuously transmitting	mode
Keynight Spectrum       R     R       Center Freq       10 dB/div     Re       13.6	Analyzer - Swept SA F 50 Ω AC SENSE:INT 2.377000000 GHz PN0: Fast PN0: F	ALIGN AUTO Avg Type: Log-Pwr Avg]Hold:>100/100 Mkr1	Comparize 2018 Compariz
	2.381 0 GHz -40.017 dBm	Avg Type: Log-Pwr un Avg Hold:>100/100 3	11:30:13 AM Apr12, 2018 TRACE [1 2 3 4 5 6 TYPEE NWAWWAW DET P NNNN 2.463 3 GHZ
Log 13.6 3.60 -6.40 -16.4 -26.4 -36.4 -46.4 -56.4 -66.4	ef 23.60 dBm	3 3 3 3 3 3 3 3 3 3 3 3 3 3	
Start 2.44700       #Res BW 100       Mcs Mode Inde Sci       1     f       2     N     1     f       3     N     1     f       4     N     1     f       5     6     6     6       7     N     1     f       8     8     8     8	X     Y     FUNC       2.463.3 GHz     -0.298 dBm     -0.298 dBm       2.483.5 GHz     -46.183 dBm     -0.298 dBm		op 2.54700 GHz D0 ms (1001 pts)
9 10 11 < MSG	π	STATUS	•

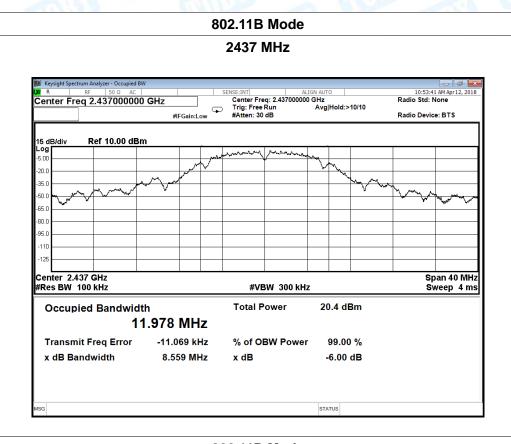
# Attachment D-- Bandwidth Test Data

Temperature:	25	°C	Relative Humidity:	55%
Test Voltage:	AC	C 120V/60HZ		et in
Test Mode:	ТХ	( 802.11B Mode		
Channel frequen	су	6dB Bandwidth	99% Bandwidth	Limit
(MHz)		(MHz)	(MHz)	(MHz)
2412		9.054	12.056	
2437		8.559	11.978	>=0.5
2462		9.047	11.944	
		000 44 B	Mede	<u> </u>

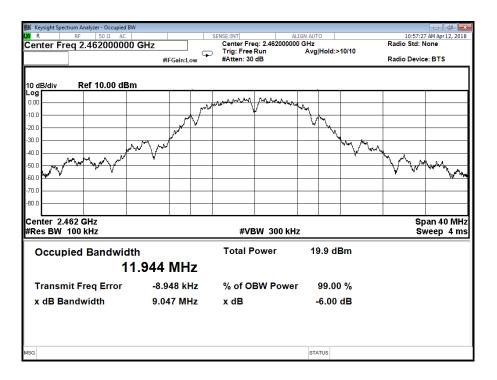
## 802.11B Mode

Keysight Spectrum Analyzer - Occupied BV       R     RF     50 Ω     AC	v	SENSE:INT	ALT	GN AUTO		10:51	💷 🗗 🗾
enter Freq 2.412000000	GHz	Center Fr	eq: 2.412000000	GHz		Radio Std	
	#IFGain:Low	Trig: Free #Atten: 30		Avg Hold:>	>10/10	Radio Dev	vice: BTS
5 dB/div Ref 10.00 dBn							
5.0							
125							
enter 2.412 GHz Res BW 100 kHz		#V	BW 300 kHz		1		Span 40 MH: Sweep 4 m
Occupied Bandwidt	<sup>h</sup> 2.056 MHz	Total F	Power	20.5 d	Bm		
Transmit Freq Error	-50.134 kHz	% of O	BW Power	99.0	0 %		
x dB Bandwidth	9.054 MHz	x dB		-6.00	dB		





### 802.11B Mode

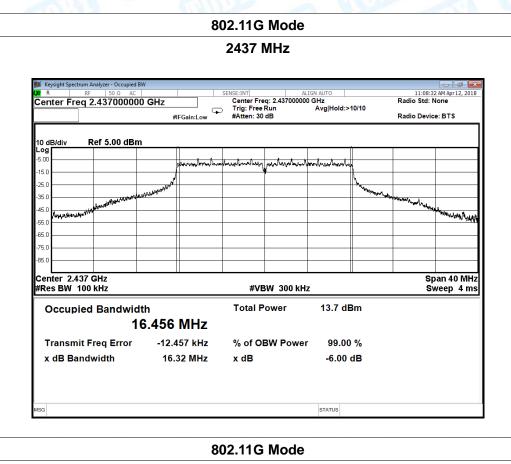




Temperature:	25	°C	Relative Humidity:	55%
Test Voltage:	AC	C 120V/60HZ	ALL DE	
Test Mode:	ТХ	(802.11G Mode		139
Channel frequen	су	6dB Bandwidth	99% Bandwidth	Limit
(MHz)		(MHz)	(MHz)	(MHz)
2412		16.33	16.485	
2437		16.32	16.456	>=0.5
2462		16.36	16.471	
		802.11G	Mode	

Keysight Spectrum Analyzer - Occupied B	3W				
R RF 50 Ω AC		SENSE:INT A Center Freq: 2.4120000	ALIGN AUTO	11:05:15 Radio Std: N	AM Apr 12, 2018
enter Freq 2.41200000		🕤 Trig: Free Run	Avg Hold:>10/10	Raulo 3tu. N	one
	#IFGain:Low	#Atten: 30 dB		Radio Device	BTS
Addiv Ref 20.00 dB	nhadradri	alsolader portenting			
					LO
1.0 Australiant					· ····································
0.0					
D.O					
enter 2.412 GHz Res BW 100 kHz		#VBW 300 kH	Iz		an 40 MHz /eep 4 ms
Occupied Bandwid	th	Total Power	13.5 dBm		
1	6.485 MHz				
	-14.668 kHz	% of OBW Powe	r 99.00 %		
Transmit Freq Error					
	16.33 MHz	x dB	-6.00 dB		
Transmit Freq Error x dB Bandwidth		x dB	-6.00 dB		





Keysight Spectrum Analyzer - Occupied BW       R     RF     50 Ω     AC		SENSE:INT ALI	GN AUTO	11:11:13 AM Apr12, 2018
enter Freq 2.462000000	GHz	Center Freq: 2.462000000	GHz	Radio Std: None
	#IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
	#IFGain:Low	#Atten: 30 dB		Radio Device. B13
dB/div Ref 0.00 dBm				
.0	pahandan	amandrostary marksonthand	mantentin	
1.0	/	W	l	
			When a	
1.0 Magantan and the	and tables -			Man Martine
1.0 1. Harris alighter alighter and alighter ali				and the second s
0.0 0.0 0.0 0.0 0.0 0.0 0 0.0 0 0 0 0 0				Man March
0.0				
0.0				
0.0				
enter 2.462 GHz				Span 40 MHz
Res BW 100 kHz		#VBW 300 kHz		Sweep 4 ms
		#1211 000 kitz		
<b>Occupied Bandwidt</b>	h	Total Power	13.2 dBm	
	.471 MHz			
16				
16 Transmit Freq Error	-8.463 kHz	% of OBW Power	99.00 %	
Transmit Freq Error	-8.463 kHz 16.36 MHz	% of OBW Power x dB	99.00 % -6.00 dB	
Transmit Freq Error				
Transmit Freq Error				
Transmit Freq Error				

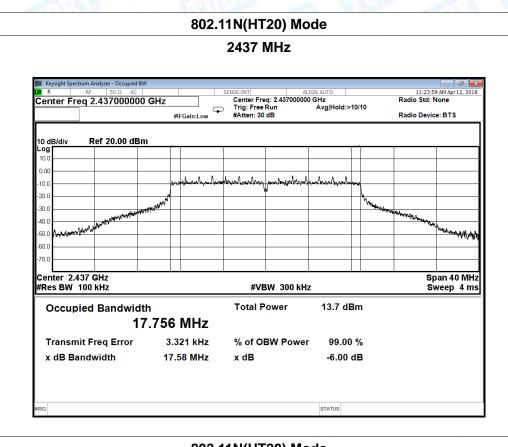


Temperature:	25	5°C	Relative Humidity:	55%
Test Voltage:	A	C 120V/60HZ	A MUDE	
Test Mode:	Т	K 802.11N(HT20) Mode		139
Channel frequen	су	6dB Bandwidth	99% Bandwidth	Limit
(MHz)		(MHz)	(MHz)	(MHz)
2412		17.58	17.781	
2437		17.58	17.756	>=0.5
2462		17.58	17.779	
			·	1

## 802.11N(HT20) Mode

Keysight Spectrum Analyzer - Occupied BW R RF 50 Ω AC		SENSE:INT ALI	GN AUTO	11:19:20 AM Apr 12, 2018
enter Freq 2.412000000	GHz	Center Freq: 2.412000000	GHz	Radio Std: None
	#IFGain:Low	⊃ Trig: Free Run #Atten: 30 dB	Avg Hold:>10/10	Radio Device: BTS
0 dB/div Ref 5.00 dBm				
<b>9</b> 00				
5.0	mound	Www.handlowedlaw.	whenhandnun	
	المر.	T T	4	
5.0	Nº TRUNY		AN ANY ANY ANY ANY ANY ANY ANY ANY ANY A	We Martine .
5.0				and the second s
5.0 5.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7.0 7				welkenerstone with the weather the the
5.0				
5.0				
5.0				
enter 2.412 GHz				Span 40 MHz
Res BW 100 kHz		#VBW 300 kHz		Sweep 4 ms
Occupied Bandwidth	า	Total Power	13.7 dBm	
17	.781 MHz			
Transmit Freq Error	-3.159 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	17.58 MHz	x dB	-6.00 dB	
G			STATUS	
-			0.7100	





### 802.11N(HT20) Mode

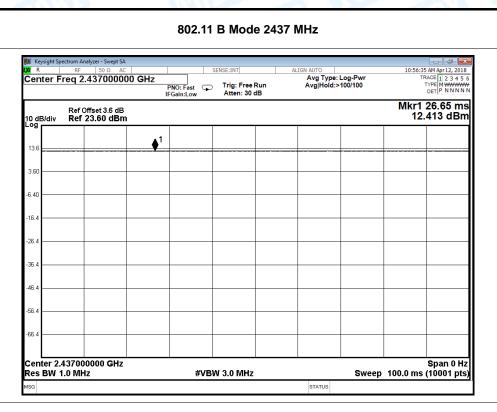
	50 Ω AC			SENSE:INT		IGN AUTO			0 AM Apr 12, 2018
enter Freq 2.462	2000000 GH		Gain:Low			Avg Hold:>	10/10	Radio Std: I Radio Devid	
	.00 dBm								
og .00			A	Analysia	montengelpennedy				
5.0			1.00.000	أركبهم فالمتعاط مستخطر بنا	lower weller for the second	ባት የትዋት እስለ እስለ እስ			
5.0	- hadrest	m <sup>n</sup>					Verentravier	Au	
5.0 Jaking	Martin Martin								1
5.0 5.0 5.0 5.0 5.0								National Astronomy of the second s	Hinere was with y / a/
5.0									
5.0									
5.0									
enter 2.462 GHz									) Dan 40 MHz
				#VE	300 kHz	2			weep 4 ms
Res BW 100 kHz									
Occupied Ba	ndwidth			Total P	ower	13.3 dE	Зm		
	ndwidth 17.7	'79 I	ИНz	Total P	ower	13.3 di	Bm		
Res BW 100 kHz Occupied Ba Transmit Freq	17.7		MHz 8 kHz		'ower BW Power				
Occupied Ba	17.7 Error	1.38					%		
Occupied Ba	17.7 Error	1.38	8 kHz	% of O		99.00	%		

# Attachment E-- Peak Output Power Test Data

Test Conditions	: Continuous transm	itting Mode		
Temperature:	<b>25</b> ℃	Relative Humidity:	55%	
Test Voltage:	AC 120V/60HZ			
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)	
	2412	19.80		
802.11b	2437	19.20		
	2462	18.78		
	2412	16.28		
802.11g	2437	16.42	30	
	2462	15.79		
000 44-	2412	16.47		
802.11n	2437	16.40		
(HT20)	2462	15.98		
L	Resi	ult: PASS		

Duty Cycle							
Mode	Channel frequency (MHz)	Test Result					
	2412						
802.11b	2437						
	2462						
	2412						
802.11g	2437	>98%					
	2462						
000.44	2412						
802.11n (UT20)	2437						
(HT20)	2462						





#### 802.11 G Mode 2437 MHz

larker 1	74.8300 ms	PNO: Fast	Trig: Free Run Atten: 30 dB	Avg Type: Log-Pw Avg Hold:>100/100	TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N
) dB/div	Ref Offset 3.59 dB Ref 23.59 dBm	in dum.cow			Mkr1 74.83 m 7.765 dBn
3.6					1
.59					
.41					
6.4					
6.4					
6.4					
6.4					
6.4					
5.4					
enter 2.4 es BW 1	437000000 GHz	#V	BW 3.0 MHz		Span 0 Hz weep 100.0 ms (10001 pts



鵙 Keysight Sp LXI R	RF 50 Ω AC		SENSE:INT	ALIGN AUTO	11:23:35 AM Apr12, 2018
	52.8400 ms	PNO: Fast G		Avg Type: Log-Pwr Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N
10 dB/div	Ref Offset 3.59 dB Ref 23.59 dBm				Mkr1 52.84 ms 5.478 dBm
13.6			↓ <sup>1</sup>		
3.59					
-6.41					
-16.4					
-26.4					
-36.4					
-46.4					
-56.4					
-66.4					

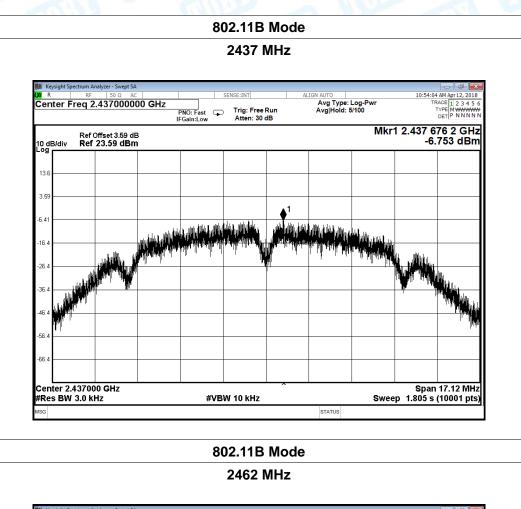
# TB-RF-074-1.0

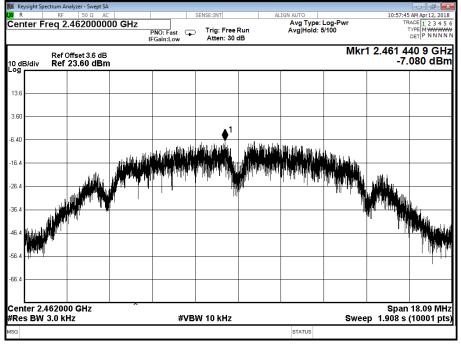
# **Attachment F-- Power Spectral Density Test Data**

TOBY

	1							
erature:	<b>25</b> ℃			Relat	ive Hu	midity:	55%	%
Voltage:	AC 120V	/60HZ						
Mode:	TX 802.1	1B Mode	an	1 al	1	1		
hannel Freq	uency	Power Density			Limit			
(MHz)		(c	dBm/3	kHz)		(dBm)		
2412			-6.69	97				
2437			-6.75	53		8		
2462		-	-7.08	80		-		
		80	2.11B	Mode				
			2412 N	/IHz				
10 dB/div <b>Ref</b> : Log	23.63 dBm						-0.	697 dBm
3.63	·							
-6.37		i a di na kata a di kata a di kata a di kata A program kata a di kata a A program kata a di k	1 	, )	illig addis ) addra 100 a 1911 softwar 11 san an	and the part of th	A CHIMAN .	
-6.37 -16.4 -26.4		i dan san san san san san san san san san s	1 Hor Wildler Plang Tyrshaw W		litig adat yalay yalay ni vajeo je sa jiti na na	alla i da an In 1999 magnata		
-6.37					1994 (1994) y 1994 (1994) 1994 - Y 1994 (1994) 1994 - Y 1994 (1994)	laille i de la traince In Theorem Annue In Theorem Annue		
-6.37 -16.4 -26.4 -36.4			1 ku vi vi vi provi ta stati vi vi vi vi vi vi vi vi vi vi vi vi vi		1999 - 19	laille u dub to ta In Chyester Investor In Chyester Investor In Chyester Investor In Chyester Investor		
-6.37 -16.4 -26.4 -36.4 -45.4 -56.4			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1999 - 1999 - 1999 - 1999 1999 - 1999 - 1999 - 1999 1999 - 1999 - 1999 - 1999 - 1999 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 1999 - 199	la Maria da		18.11 MHz (10001 pts)

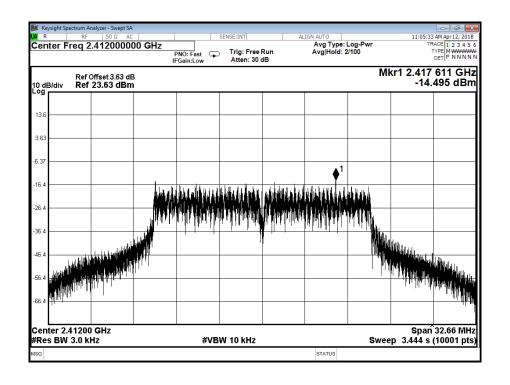




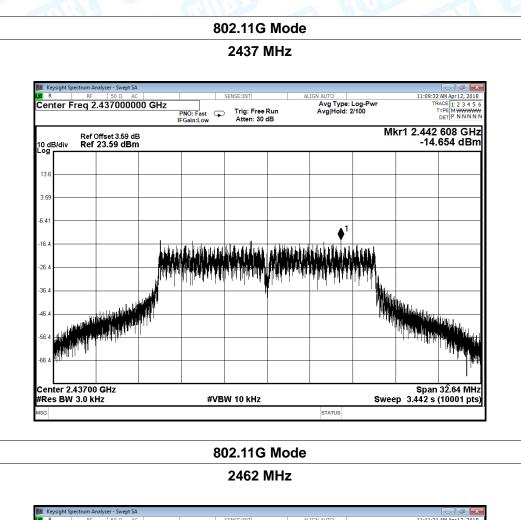


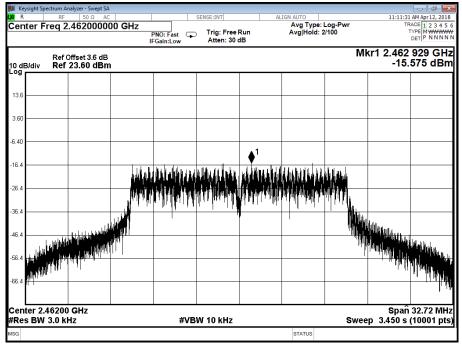


Temperature: 25 ℃		Temperature:		<b>25</b> ℃			
Test Voltage:	AC 120V/						
Test Mode:	TX 802.11G Mode						
Channel Frequency		Power Density			Limit		
(MHz)		(dBm/3 kHz)		(dBm)			
2412		-14	1.495				
2437 2462		-14.654 -15.575		8			
		802.11	G Mode				





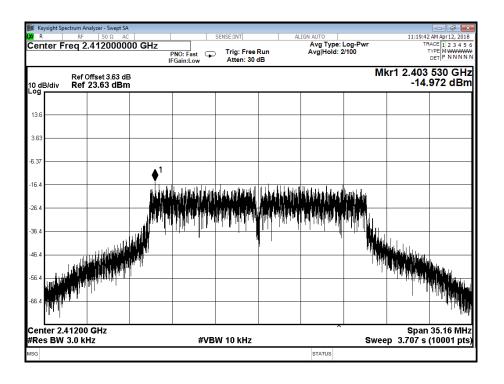






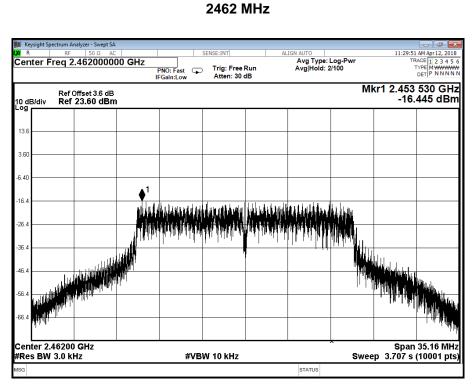
Temperature:	<b>25</b> ℃		Temperature:	<b>25</b> ℃	21	
Test Voltage:	AC 120V/60HZ					
Test Mode:	TX 802.11N(HT20) Mode					
Channel Frequency		Power Density		Limit		
(MHz)		(dBm/3 kHz)		(dBm)		
2412		-14.97	72			
2437		-15.651		8		
2462		-16.445				
		1				

## 802.11N(HT20) Mode

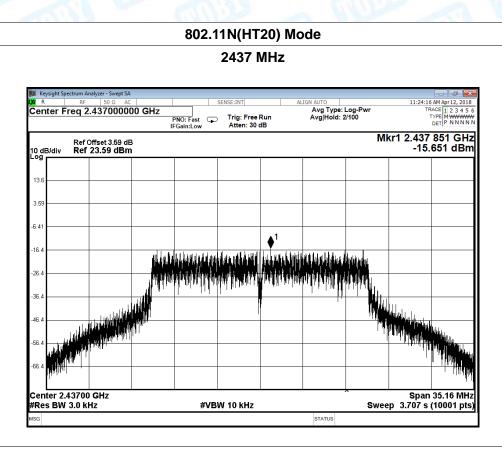




-----END OF REPORT-----



# 802.11N(HT20) Mode



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