

FCC TEST REPORT

Test report On Behalf of Zhejiang Xunshi Technology Co.,Ltd. For Pro Wash/Dry

Model List : SRP2003A, SRP2003A-1, SRP2003A-2

FCC ID: 2AUE5-SRP2003A

Prepared for :Zhejiang Xunshi Technology Co.,Ltd.4th Floor, No.2 Qihang Building, Science and Technology Park, No.586
Xihuan Road, Shaoxing, Zhejiang, China

Prepared By :Shenzhen HUAK Testing Technology Co., Ltd.1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street,
Bao'an District, Shenzhen City, China

 Date of Test:
 Sep. 14, 2020 -- Oct. 15, 2020

 Date of Report:
 Oct. 15, 2020

 Report Number:
 HK2010152900-E



TEST RESULT CERTIFICATION

Applicant's name	Zhejiang Xunshi Technology Co.,Ltd.		
Address	4th Floor, No.2 Qihang Building, Science and Technology Park, No.586 Xihuan Road, Shaoxing, Zhejiang, China		
Manufacture's Name	Zhejiang Xunshi Technology Co.,Ltd.		
Address	4th Floor, No.2 Qihang Building, Science and Technology Park, No.586 Xihuan Road, Shaoxing, Zhejiang, China		
Product description			
Trade Mark :	N/A		
Product name:	Pro Wash/Dry		
Model and/or type reference .:	SRP2003A, SRP2003A-1, SRP2003A-2		
Standards	FCC Part 15 Subpart C Section 15.247		

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen HUAK Testing Technology Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen HUAK Testing Technology Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Date of Test	
Date (s) of performance of tests:	Sep. 14, 2020 Oct. 15, 2020
Date of Issue	Oct. 15, 2020
Test Result	Pass

2

Testing Engineer

Gorf Dian (Gary Qian)

Technical Manager

(Gary Grun, Edan Mur (Eden Hu)

Authorized Signatory :

Jason Zhou

(Jason Zhou)



TABLE OF CONTENTS

1. Test	t Result Summary4
1.1.	TEST PROCEDURES AND RESULTS
1.2.	TEST FACILITY
1.3.	Measurement Uncertainty5
2. EUT	Description6
2.1.	GENERAL DESCRIPTION OF EUT
2.2.	Carrier Frequency of Channels
2.3.	Operation of EUT during testing
2.4.	DESCRIPTION OF TEST SETUP
3. Gen	eral Information
3.1.	Test environment and mode
3.2.	Description of Support Units
4. Test	t Results and Measurement Data10
4.1.	Conducted Emission
4.2.	Maximum Conducted Output Power14
4.3.	Emission Bandwidth
4.4.	Power Spectral Density
4.5.	Conducted Band Edge and Spurious Emission Measurement
4.6.	Radiated Spurious Emission Measurement
4.7.	ANTENNA REQUIREMENT
4.8.	PHOTOGRAPH OF TEST
5. PHC	90 TOS OF THE EUT



1. Test Result Summary

1.1. TEST PROCEDURES AND RESULTS

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3)	PASS
6dB Emission Bandwidth	§15.247 (a)(2)	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	§5.247(d)	PASS
Spurious Emission	§15.205/§15.209	PASS

Note:

- 1. PASS: Test item meets the requirement.
- 2. Fail: Testitem does not meet the requirement.
- 3. N/A: Test case does not apply to the test object.
- 4. The test result judgment is decided by the limit of test standard.

1.2. TEST FACILITY

- Test Firm : Shenzhen HUAK Testing Technology Co., Ltd.
- Address 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Fuhai Street, Bao'an District, Shenzhen City, China



1.3. 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 %.

No.	ltem	MU
1	Conducted Emission	±2.56dB
2	RF power, conducted	±0.12dB
3	Spurious emissions, conducted	±0.11dB
4	All emissions, radiated(<1G)	±3.92dB
5	All emissions, radiated(>1G)	±4.28dB
6	Temperature	±0.1°C
7	Humidity	±1.0%



2. EUT Description

2.1. GENERAL DESCRIPTION OF EUT

Product Name:	Pro Wash/Dry
Model/Type reference:	SRP2003A
Serial Model:	SRP2003A-1, SRP2003A-2
Model difference:	The product has multiple models, but the electrical principles of PCB and circuit in all models are the same, only the name is different, so the test sample is: SRP2003A
Trade Mark	N/A
FCC ID	2AUE5-SRP2003A
Hardware Version:	V1.21
Software Version:	V1.8
Operation frequency	802.11b/g/n20: 2412~2462 MHz
Number of Channels	802.11b/g/n20: 11CH
Modulation Type	CCK/DSSS/OFDM
Antenna type:	Internal Antenna
Antenna gain:	1.8dBi
Power Source	AC 120V/60Hz

Note: 1. For more details, refer to the user's manual of the EUT.

2.2. Carrier Frequency of Channels

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

Note: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below.

2.3. Operation of EUT during testing

Operating Mode

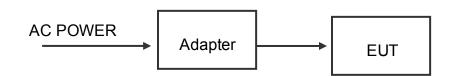
The mode is used: Transmitting mode for 802.11b/802.11g/802.11n(HT20)

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

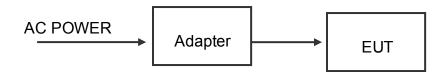


2.4. DESCRIPTION OF TEST SETUP

Operation of EUT during conducted testing:



Operation of EUT during Radiation and Above1GHz Radiation testing:





3. General Information

3.1. Test environment and mode

Operating Environment:			
Temperature:	25.0 °C		
Humidity:	56 % RH		
Atmospheric Pressure:	1010 mbar		
Test Mode:			
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations(The value of duty cycle is 100%)		
The sample was placed (0.8m below 1GHz, 1.5m above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were			

plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. For the full battery state and The output power to the maximum state.

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.

Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(H20)	MCS0
/	/

Final Test Mode:

Keep the EUT in continuous transmitting
with modulation

1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.

2.According to ANSI C63.10 standards, the test results are both the "worst case" and "worst setup" 1Mbps for 802.11b, 6Mbps for 802.11g, MCS0 for 802.11n(H20). Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.



3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Description	Information	Manufacturer	Remark	Certificate
AC-DC SWITCHING ADAPTOR	MODEL NO.: GST90A12	MEAN WELL	Provide by applicant	SDOC
/	/	1	1	/

Note:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
- 3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.



4. Test Results and Measurement Data

4.1. Conducted Emission

Test Specification

Test Requirement:	FCC Part15 C Section	15 207		
· ·				
Test Method:	ANSI C63.10:2013			
Frequency Range:	150 kHz to 30 MHz			
Receiver setup:	RBW=9 kHz, VBW=30	kHz, Sweep time	=auto	
Limits:	Frequency range (MHz)Limit (dBuV)Quasi-peakAverage0.15-0.566 to 56*56 to 46*			
	0.5-5 5-30	56 60	46 50	
Test Setup:	Reference Plane			
Test Mode:	Charging + transmitting with modulation			
Test Procedure:	 The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement. 			
Test Result:	PASS			



Test Instruments

Conducted Emission Shielding Room Test Site (843)						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Receiver	R&S	ESCI 7	HKE-010	Dec. 26, 2020		
LISN	R&S	ENV216	HKE-002	Dec. 26, 2020		
Conducted test software	Tonscend	TS+ Rev 2.5.0.0	HKE-081	N/A		

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

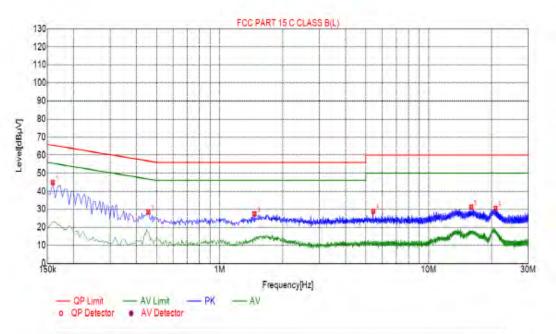


Test data

Note :

All the test modes completed for test. only the worst result of AC 120V/60Hz(802.11b at 2412MHz) was reported as below:

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Suspected List								
NO	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin (dB)	Reading [dBµV]	Detector	Туре
1	0.1590	44.86	20.01	65.52	20.66	24.85	PK	L.
2	0.4560	28.55	20.04	56.77	28.22	8.51	PK	L
3	1.4685	27.43	20.10	56.00	28.57	7.33	PK	L
4	5.4375	28.95	20.26	60.00	31.05	8.69	PK	Ĺ.
5	15.9810	31.34	19.98	60.00	28.66	11.36	PK	L
6	20.9220	30.55	20.13	60.00	29.45	10.42	PK	1 L

Remark: Margin = Limit – Level Correction factor = Cable lose + LISN insertion loss Level=Test receiver reading + correction factor



FCC PART 15 C CLASS B (N) 130 120 110 100 90 80 Level[dBµN] 70 60 50 40 30 20 10 BOK 1M 10M 30M Frequency[Hz] AV Limit - QP Limit -PK - AV o QP Detector AV Detector Suspected List Reading Freq. Level Factor Limit Margin NO. Detector Type [dBµV] [dBµV] [dB] [dBµV] [MHz] [dB]

65.52

56.44

56.00

56.00

60.00

60.00

20.73

27.37

28.33

29.38

28.47

26.28

24.78

9.03

7.57

6.38

11.51

13.65

PK.

PK

PK

PK

PK.

PK

N

N

N

N

N

N

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)

Remark: Margin = Limit – Level Correction factor = Cable lose + LISN insertion loss Level=Test receiver reading + correction factor

1

2

3

4

5

6

0.1590

0.4740

1.4595

3.3135

10.9410

19.1805

44.79

29.07

27.67

26.62

31.53

33.72

20.01

20.04

20,10

20.24

20.02

20.07



4.2. Maximum Conducted Output Power

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)			
Test Method:	KDB 558074			
Limit:	30dBm			
Test Setup:	Power meter EUT			
Test Mode:	Transmitting mode with modulation			
Test Procedure:	 The testing follows the Measurement Procedure of FCC KDB 558074 D01 guidance V05r02 The RF output of EUT was connected to the power meter by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Measure the Peak output power and record the results in the test report. 			
Test Result:	PASS			

Test Instruments

RF Test Room						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Power meter	Agilent	E4417B	HKE-107	Dec. 26, 2020		
Power Sensor	Agilent	U2021X	HKE-113	Dec. 26, 2020		
RF cable	Times	1-40G	HKE-034	Dec. 26, 2020		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2020		

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



Test Data

	TX 802.11b Mode						
Test Channe	Frequency	Maximum Peak Conducted Output Power	Average Output Power	LIMIT			
	(MHz)	(dBm)	(dBm)	dBm			
CH01	2412	12.68	7.07	30			
CH06	2437	11.52	5.99	30			
CH11	2462	11.87	6.33	30			
	TX 802.11g Mode						
CH01	2412	14.47	8.77	30			
CH06	2437	14.21	8.49	30			
CH11	2462	14.67	8.93	30			
		TX 802.11n2	0 Mode				
CH01	2412	14.32	8.47	30			
CH06	2437	14.09	8.30	30			
CH11	2462	14.56	8.80	30			

4.3. Emission Bandwidth

Test Specification

	Γ_{CC} Dort 15 C Section 15 247 (a)(2)			
Test Requirement:	FCC Part15 C Section 15.247 (a)(2)			
Test Method:	KDB 558074			
Limit:	>500kHz			
Test Setup:	Spectrum Analyzer EUT			
Test Mode:				
Test Mode:	Transmitting mode with modulation			
Test Procedure:	 The testing follows FCC KDB Publication No. 558074 DTS D01 Meas. Guidance v05r02. Set to the maximum power setting and enable the EUT transmit continuously. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. Measure and record the results in the test report. 			
Test Result:	PASS			

Test Instruments

RF Test Room						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2020		
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2020		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2020		

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



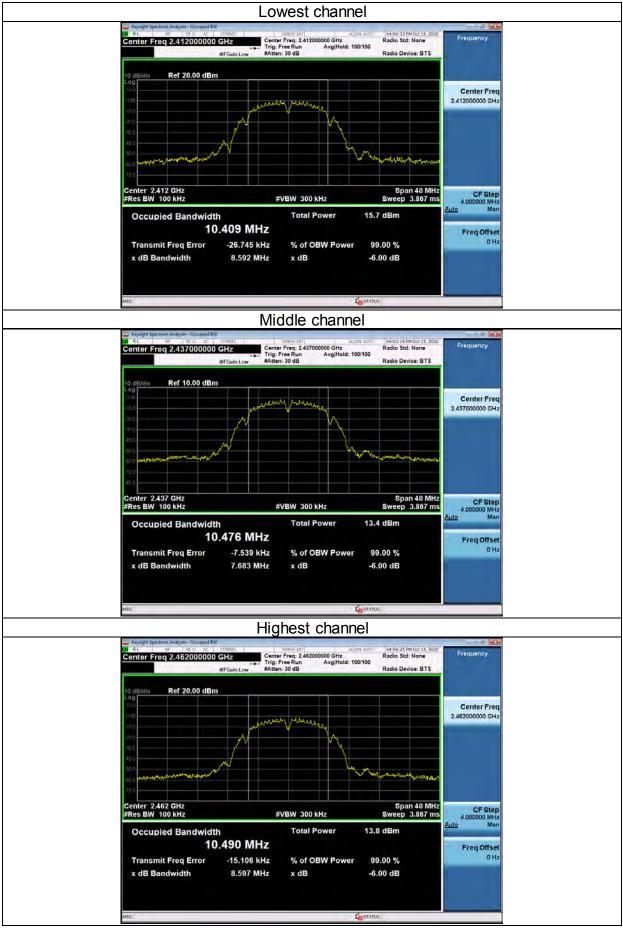
Test data

Test channel	6dB Emission Bandwidth (MHz)					
	802.11b	802.11g	802.11n(H20)	/		
Lowest	8.592	16.312	15.795	/		
Middle	7.683	16.324	15.837	/		
Highest	8.597	16.341	15.524	/		
Limit:	>500kHz					
Test Result:	PASS					

Test plots as follows:

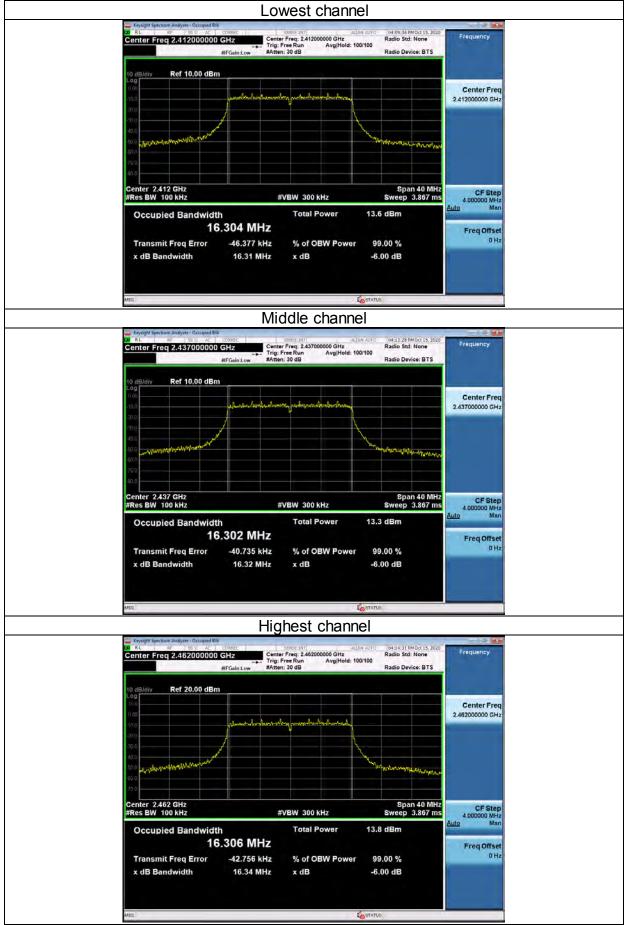


802.11b Modulation



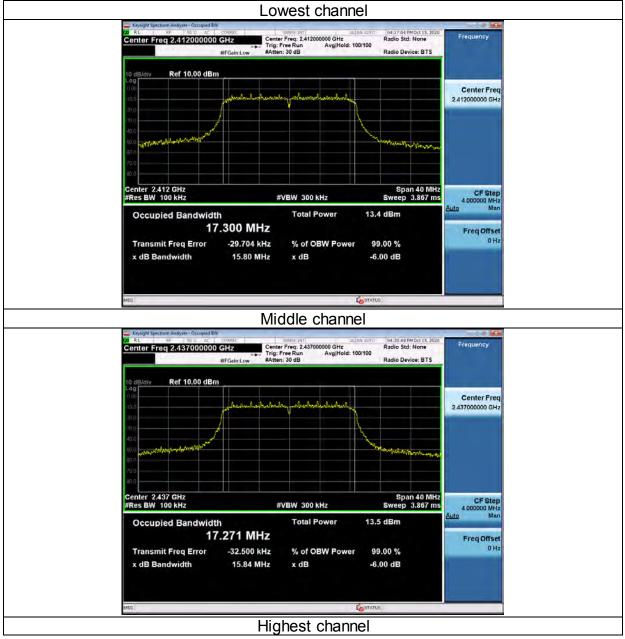


802.11g Modulation





802.11n (HT20) Modulation





10 dB/div Ref 10.00 dBm	#FGain:Low #Atten	ree Run Avg Hold: 1 30 dB		Radio Device: BTS	
1000	Mulphissulal	a walname for the second			Center Freq 2.462000000 GHz
-300 -42 0 -50 0 -50 0 -50 0			A A A A	and the state of t	
800 Center 2.462 GHz #Res BW 100 kHz		/BW 300 kHz		Span 40 MHz Sweep 3.867 ms	CF Step 4.000000 MHz Auto Man
Occupied Bandwidti 17 Transmit Freg Error	h .302 MHz -26.922 kHz	Total Power	13.7	dBm .00 %	Freq Offset 0 Hz
x dB Bandwidth	15.52 MHz	x dB		00 dB	



4.4. Power Spectral Density

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)			
Test Method:	KDB 558074			
Limit:	The average power spectral density shall not be greated than 8dBm in any 3kHz band at any time interval continuous transmission.			
Test Setup:	Spectrum Analyzer EUT			
Test Mode:	Transmitting mode with modulation			
Test Procedure:	 The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication No.558074 D01 DTS Meas. Guidance v05r02 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW. Detector = Peak, Sweep time = auto couple. Employ trace a veraging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. Measure and record the results in the test report. 			
Test Result:	PASS			

Test Instruments

RF Test Room						
Equipment	Manufacturer	Model	Serial Number	Calibration Due		
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2020		
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2020		
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2020		

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



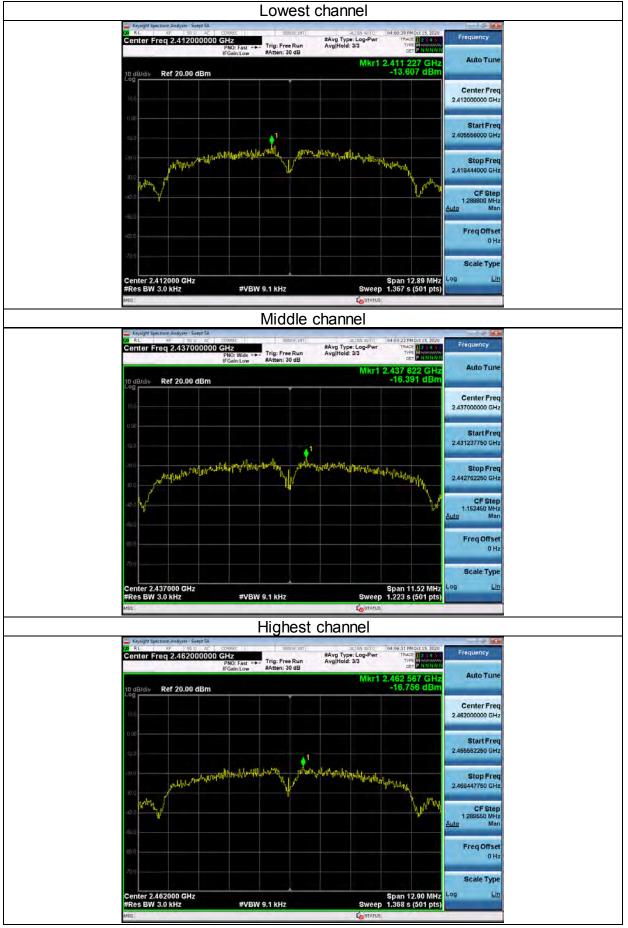
Test data

EUT Set Mode	Channel	Result (dBm/3kHz)	
	Lowest	-13.607	
802.11b	Middle	-16.391	
	Highest	-16.756	
	Lowest	-18.54	
802.11g	Middle	-18.713	
	Highest	-17.972	
	Lowest	-18.48	
802.11n(H20)	Middle	-20.205	
	Highest	-18.749	
Limit:	8dBm/3kHz		
Test Result:	PASS		

Test plots as follows:

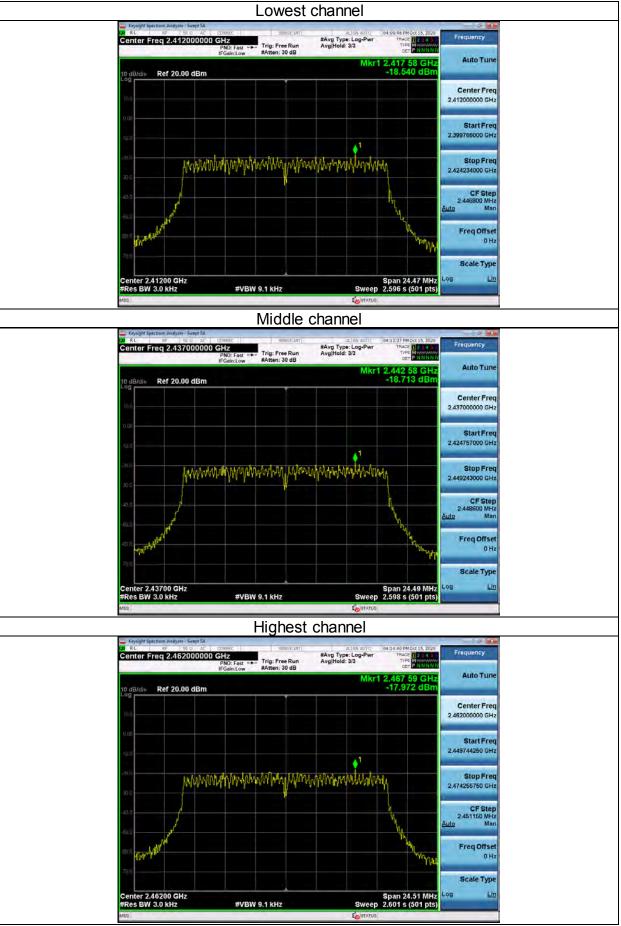


802.11b Modulation



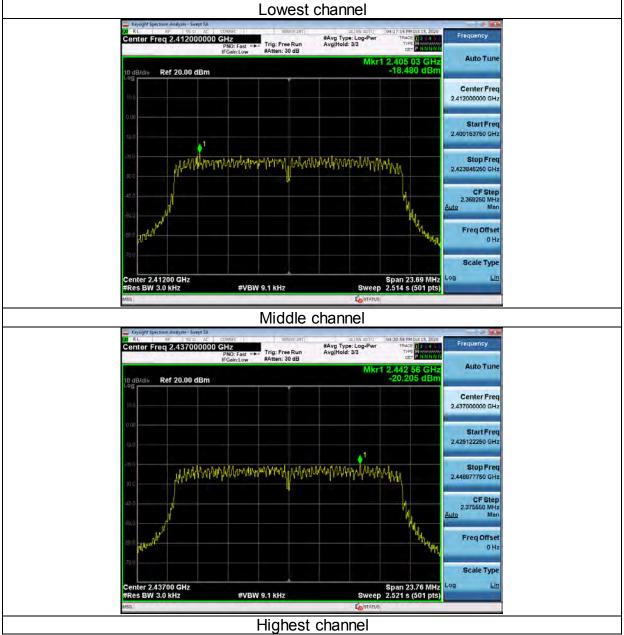


802.11g Modulation





802.11n (HT20) Modulation



Page 27 of 75

Report No.: HK2010152900-E







4.5. Conducted Band Edge and Spurious Emission Measurement

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)			
Test Method:	KDB558074			
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).			
Test Setup:				
Test Mode:	Spectrum Analyzer EUT Transmitting mode with modulation			
Test Procedure:	 The testing follows FCC KDB Publication No. 558074 D01 DTS Meas. Guidance v05r02. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d). Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency band. 			
Test Result:	PASS			



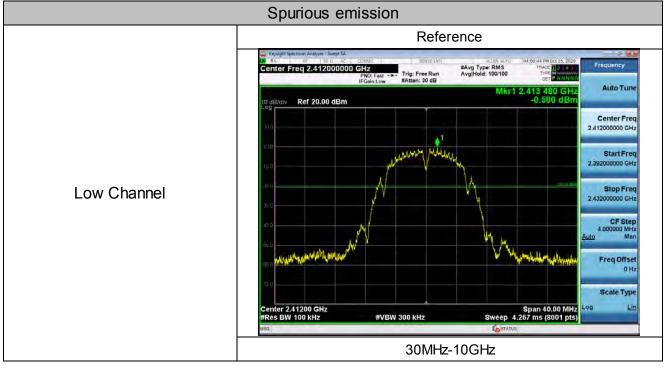
Test Instruments

RF Test Room							
Equipment	Manufacturer	Model	Serial Number	Calibration Due			
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2020			
Signal generator	Agilent	N5183A	HKE-071	Dec. 26, 2020			
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Dec. 26, 2020			
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Dec. 26, 2020			

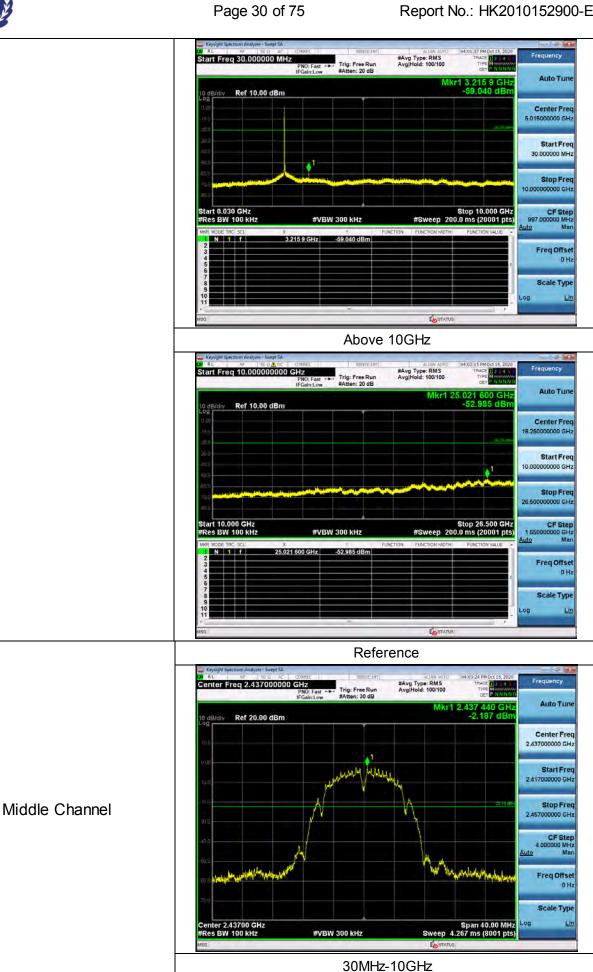
Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

Test Data

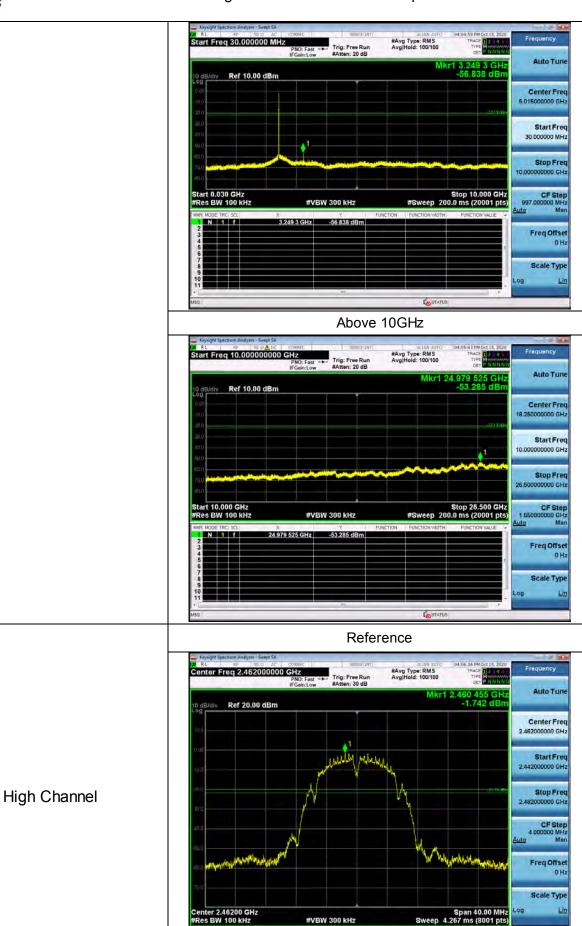
802.11b Modulation











30MHz-10GHz



Start Freq 30.000000 M	PNO: Fast +++ Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	04:07:34 PM Oct 15, 2020 TRACE 2 4 5 6 TYPE MUSEUM NNNN	Frequency
	IFGain:Low #Atten: 20 dB	Mkr	1 3.282 7 GHz	Auto T
10 dB/div Ref 10.00 dBn			-56.949 dBm	
0.09				Center F 5.015000000
-38.0			of the Action	
-20.0				Start F 30.000000 1
50.0	• • • • • • • • • • • • • • • • • • •			
-500 70.0	Contraction of the second second	Manager a Select address		Stop F
en é				10,0000000000
Start 0.030 GHz #Res BW 100 kHz	#VBW 300 kHz	#Sweep 200	Stop 10.000 GHz 0 ms (20001 pts)	CF S 997.000000 M
		UNCTION EUNCTION WIDTH	FUNCTION VALUE	Auto N
2 3	3.282 / GHZ -50.949 dBm			Freq Off
4			E	0
7				Scale Ty
10 11				Log
+ C	m	Costatus.		_
	Above	10GHz		
		10GHz		
Keysight Spectrum Analyzer - Sweet SA RL	CONNEC SENCE LINT	#Avg Type: RMS	04:08:18 PM Oct 15, 2020 TRACE 12, 4	Frequency
keysight Spectrum Änulym - Swept SA DFRL PP SSPALOC Start Freq 10.00000000	COWNEC SENSE INT	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency
or 8L Start Freq 10.00000000	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency
C RL RF 30 9 ADC	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	THACE 12 44 3 6	Frequency Auto Tu
0 RL 80 24.00 Start Freq 10.00000000 0 dB/div Ref 10.00 dBm	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency Auto Tu Center Fr
B RL SF 156 S & 0.000 Start Freq 10.00000000 000000000000000000000000000000000000	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency Auto Tu Center Fr 18.250000000 0
Old RL Se Date Start Freq 10.00000000 0 10 dB/div Ref 10.00 dBm 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0 0.00 0	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency Auto Tu Center Fr 18.25000000 c Start Fr
Og RL se 150 pace Start Freq 10.00000000 100 dB/div Ref 10.00 dBn 10 dB/div Ref 10.00 dBn 100 dBn 0.00 100 dBn 100 dBn	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency Auto TL Center Fr 18.25000000 c Start Fr 10.00000000 c
No. RL No. Statuc Start Freq 10.00000000 Image: Statuc Image: Statuc Image: Statuc 10 dB/div Ref 10.00 dBm Image: Statuc Image: Statuc Image: Statuc 0 dB/div Ref 10.00 dBm Image: Statuc	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	#Ligh AUTO #Avg Type: RMS Avg[Hold: 100/100	TRACE 2 4 5 0 TYPE MANAGEMENT DET PINNINN	Frequency Auto Tu Center Fr 18.25000000 0 Start Fr 10.00000000 0 Stop Fr
No RL No 150 pALoc Start Freq 10.00000000 0	OCHEZ PRO: Fast ++- Trig: Free Run If Gain:Low #Atten: 20 dB	Augrand #Avg Type: RMS AvgHold: 100100 Mkr1 25	1 1 1 1 1 1 1 1 1 1 1 1 1 1	Auto Tu Center Fr 18 25000000 G Start Fr 10.00000000 G Stop Fr 26,50000000 G
No. RL No. Statuc Start Freq 10.00000000 Image: Statuc Image: Statuc Image: Statuc 10 dB/div Ref 10.00 dBm Image: Statuc Image: Statuc Image: Statuc 0 dB/div Ref 10.00 dBm Image: Statuc	COMPC SEMICIANT D GHZ PNO: FAst + IFGelin-Low Fatten: 20 dB	#Avg Type: RMS AvgHold: 100/00 Mkr1 20	51024 900 GHz -52,720 dBm	Frequency Auto Tu Center Fr 18.25000000 0 Start Fr 10.00000000 0 Stop Fr 26.50000000 0 CF St 1.550000000 0
RL PE S0 pA bc Start Freq 10.00000000 Start Freq 10.000000000 0 dB/elv Ref 10.00 dBm 0.00 Start 10.00 dBm 000 Start 10.000 GHz #Res BW 100 KHz MMI WOOT THC SCL MMI WOOT THC SCL 25	COMPC SEMICIANT D GHZ PNO: FAst + IFGelin-Low Fatten: 20 dB	AUGUARTO #Avg Type: RMS AvgHold: 100/100 Mkr1 20	1 Stop 26.500 GHz 0 024 900 GHz -52.720 dBm 1 1 500 06 100 000 0	Frequency Auto TL Center Fr 18.250000000 0 Start Fr 10.000000000 0 Stop Fr 26.500000000 0 CF St 1.550000000 0
No. RL No. State Control Start Freq 10.00000000 0	CORREC D GHZ PROLEAST ++- IFGainLow #Atten: 20 dB	#Aug Type: RMS AvgHold: 100/00 Mkr1 20	51024 900 GHz -52,720 dBm	Frequency Auto TL Center Fr 18.250000000 C Start Fr 10.00000000 C Stop Fr 26.50000000 C CF St 1.650000000 C Auto A
No RL No So particle Start Freq 10.00000000 Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle Iso particle Iso particle Iso particle 0.0 Iso particle Iso particle <td>CORREC D GHZ PROLEAST ++- IFGainLow #Atten: 20 dB</td> <td>#Aug Type: RMS AvgHold: 100/00 Mkr1 20</td> <td>51024 900 GHz -52,720 dBm</td> <td>Frequency Auto TL Center Fr 18.250000000 C Start Fr 10.00000000 C Stop Fr 26.50000000 C CF St 1.650000000 C Auto A</td>	CORREC D GHZ PROLEAST ++- IFGainLow #Atten: 20 dB	#Aug Type: RMS AvgHold: 100/00 Mkr1 20	51024 900 GHz -52,720 dBm	Frequency Auto TL Center Fr 18.250000000 C Start Fr 10.00000000 C Stop Fr 26.50000000 C CF St 1.650000000 C Auto A
N N So particle Start Freq 10.00000000 000000000000000000000000000000000000	CORREC D GHZ PROLEAST ++- IFGainLow #Atten: 20 dB	#Aug Type: RMS AvgHold: 100/00 Mkr1 20	51024 900 GHz -52,720 dBm	Frequency Auto TL Center F 18.250000000 C Start F 10.000000000 C Stop F 26.500000000 C Stop F 1.5500000000 C Freq Off
N N 100 pt / 100000000000000000000000000000000000	CORREC D GHZ PROLEAST ++- IFGainLow #Atten: 20 dB	#Aug Type: RMS AvgHold: 100/00 Mkr1 20	1 1 1 1 1 1 1 1 1 1 5top 26.500 GHz 1 0 ms (20001 pts) 1	Frequency Auto Tu Center Fr 18.25000000 0 Start Fr 10.00000000 0 Stop Fr 26.50000000 0 CF St 1.550000000 0



Lowest Channel	Highest Channel	Highest Channel		
Band Edge	Band Edge			
Marge Spans S	Frequency Or. R.L. Style: Low Coverse C	uency uto Tune		
	Center Freq	nter Freq 00000 GHz		
32 30 40 50 50 50 50 50 50 50 50 50 50 50 50 50	2.310000000 GH2 2.43200 300 Stop Freq 2.43200 Stop Freq 300 Stop Freq 300 St	tart Freq 00000 GHz		
XED Stop 2.44200 GHz #Res BW 100 KHz #VBW 300 KHz Sweep 12.67 ms (2001 pts) WR NOGE TRC SCL X Y Praction Punction worth Praction worth 1 1 1 1 2390 000 GHz Skide data	CF Step Start 2.43200 GHz Stop 2.50000 GHz	CF Step 00000 MHz Man		
N 1 f 2400 000 GHz 33975 dBm N 1 f 2410 452 GHz - 0.107 dBm	2 N 1 1 2 500 000 CHz 57 836 dBm	eq Offset 0 Hz		
	Scale Type Scale Type Log Log Log	ale Type		
MSQ Contractor	Mog Contrartos			

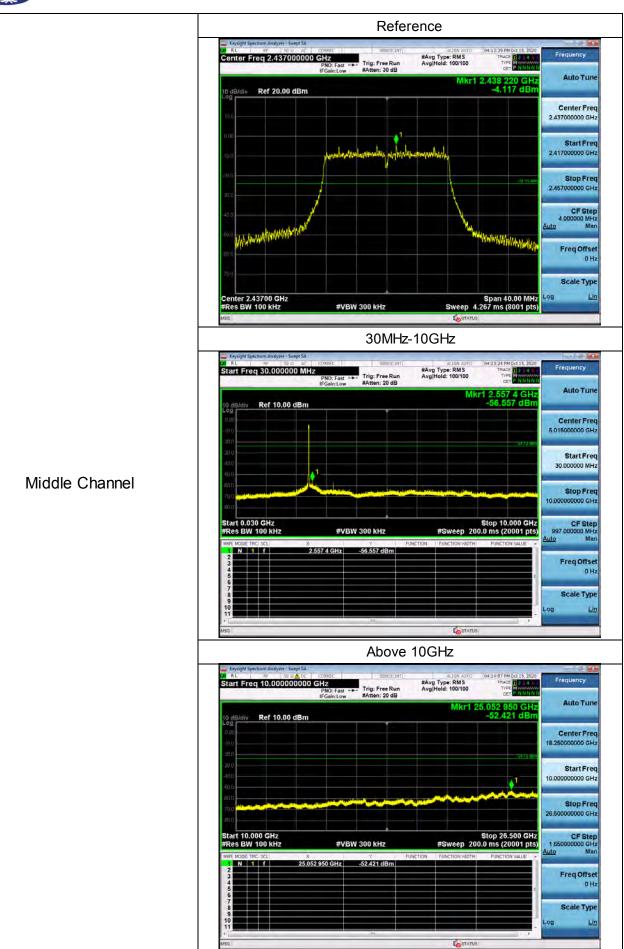


802.11g Modulation

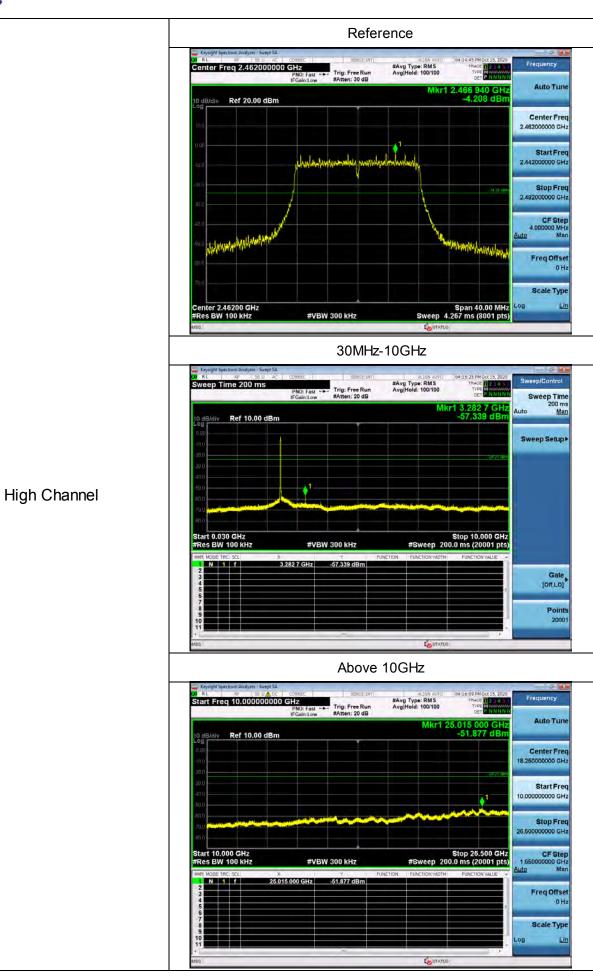
Spurious emission Reference
 Offset
 FF
 16 S2
 AC
 OWNER
 Trig: Free Run

 Center Freq 2.412000000
 PK0: Fast +++
 Trig: Free Run
 IFGeint.tow
 #Atten: 30 dB
 7:51 FM Frequency #Avg Type: RMS Avg[Hold: 100/100 Auto Tun Ref 20.00 dBm Center Freq 2.412000000 GHz - . budy budy de d Start Freq Individualization 2.392000000 GHz Stop Freq 2.432000000 GHz CF Step 4.000000 MHz Man Auto P ALL Freq Offset 0 Hz Scale Type Center 2.41200 GHz #Res BW 100 kHz Span 40.00 MHz Sweep 4.267 ms (8001 pts) Lit Log #VBW 300 kHz 30MHz-10GHz Start Freq 30.00000 MHz #Avg Type: RMS Avg Hold: 100/100 PNO: Fast --- Trig: Free Run IFGain:Low #Atten: 20 dB Auto Tune 3.215 9 GI Ref 10.00 dBm Center Freq 5.015000000 GHz Start Freq 30.000000 MHz Low Channel Stop Freq 10.00000000 GHz CF Step 997.000000 MHz to Man Start 0.030 GHz #Res BW 100 kHz Stop 10.000 GHz #Sweep 200.0 ms (20001 pts) #VBW 300 kHz uto 3.215 9 GHz -58,808 d N 1 f Freq Offset 0 Hz Scale Type Lin E.c Above 10GHz RL RL Fre Start Freq 10.000000000 GHz #Avg Type: RMS Avg Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 20 dB Auto Tune 4 Mkr1 24.992 725 GH -52.780 dBi Ref 10.00 dBm Center Freq 18.25000000 GHz Start Freq 10.00000000 GHz Stop Freq 26.50000000 GHz CF Step 1.65000000 GHz uto Man Start 10.000 GHz #Res BW 100 kHz Stop 26.500 GHz #Sweep 200.0 ms (20001 pts) #VBW 300 kHz 24.992 725 GHz -52,780 Freq Offse 0 Hz Scale Type Lin .09 STATUS







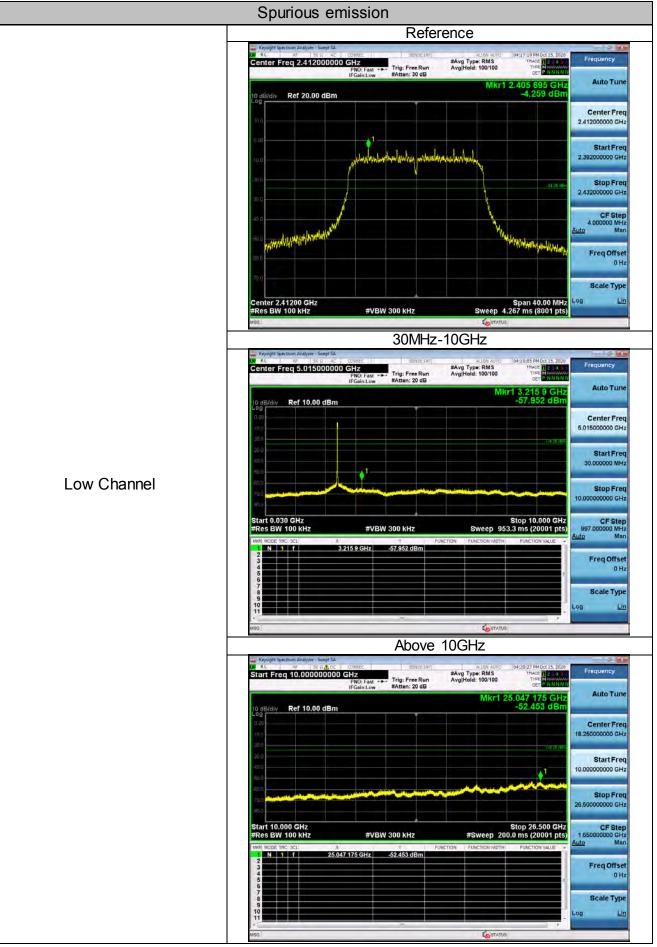




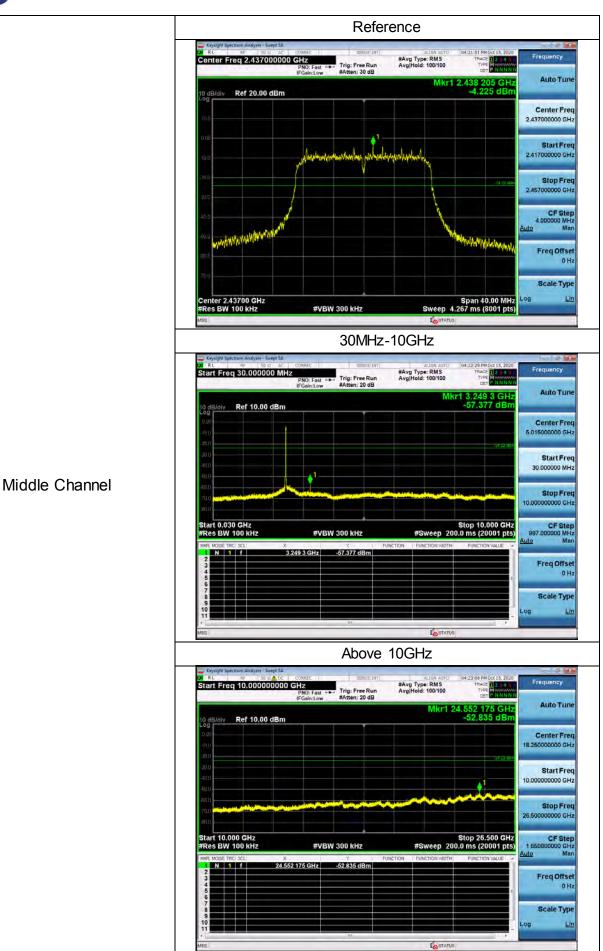
Lowest Channel	Highest Channel
Band Edge	Band Edge
Bit Mark State	Of AL SF IND AC GROME SPAREDMY MUMRATIO Deleteration Deleteration <thdeleteration< th=""> Deleteration</thdeleteration<>
10 dBidiv Ref 20.00 dBm -45.456 dBm 10045.456 dBm Center F 100	reg to dBidly Ref 20.00 dBm -57.683 dBm Center Freq
100	req 30 Start Freq
Stop F 200 martely a constrained and a standard and a	
Start 2.31000 GHz #VBW 300 kHz Sveep 12.67 ms (2001 GHz 13.20000 Hz 300 GHz 300 GHz 31.2000 Hz 31.20000 Hz 31.2000 Hz 31.	
1 N 1 f 2.390 000 GHz -55 219 dBm 8 N 1 f 2.400 000 GHz -45 466 dBm 3 Freq Off	1 N 1 f 2483 500 GHz -55 189 4Bm
Scale Ty Log	pe 5 Lin 10 Log Lin
NSG Contraction	Nog Contratus



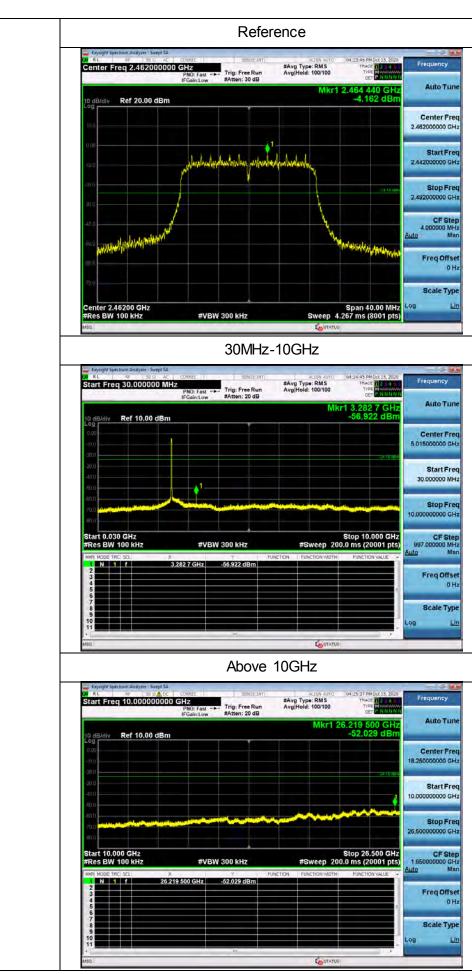
802.11n (HT20) Modulation











High Channel





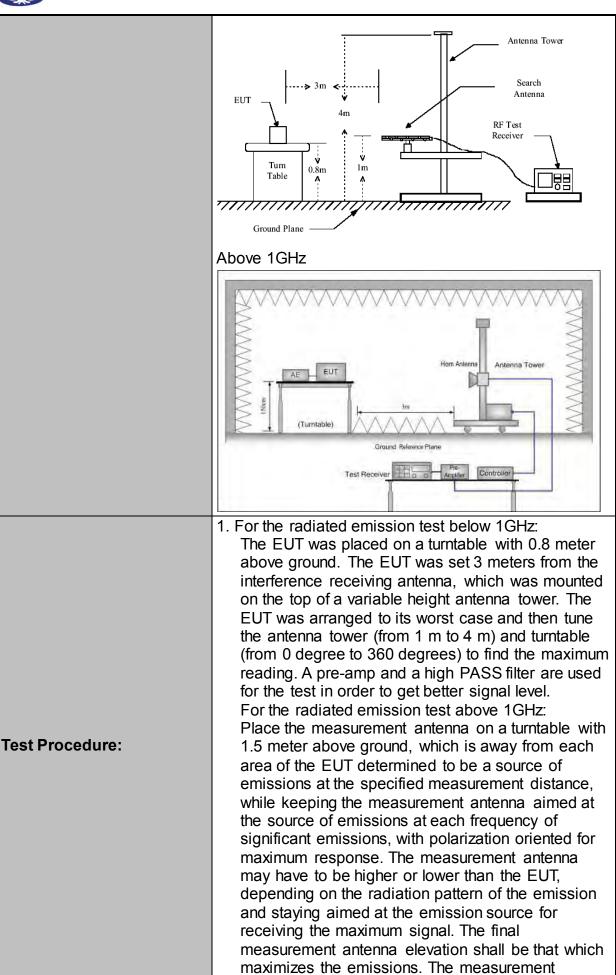


4.6. Radiated Spurious Emission Measurement

Test Specification

Test Requirement:	FCC Part15	FCC Part15 C Section 15.209						
Test Method:	ANSI C63.10) [.] 20	13					
Frequency Range:	9 kHz to 25 (
Measurement Distance:	3 m							
Antenna Polarization:	Horizontal &	Vor	lical					
				the second starts				
Operation mode:	Transmitting	moc	ae wi			•		
	Frequency		tector		VBW		Remark	
	9kHz- 150kHz		si-pea		1kHz		si-peak Value	
Receiver Setup:	150kHz- 30MHz	Qua	si-pea	ak 9kHz	30kHz	Quas	si-peak Value	
	30MHz-1GHz		si-pea	ak 120KHz	300KHz		si-peak Value	
	Above 1GHz		Peak	1MHz	3MHz		eak Value	
		F	Peak	1MHz	10Hz	Ave	rage Value	
				Field Stre	enath	Mea	asurement	
	Frequer	су		(microvolts			Distance (meters)	
	0.009-0.490		2400/F(I					
	0.490-1.705			24000/F(KHz)		30		
	1.705-30			30		30		
	30-88			100 150		3		
Limit:	88-216 216-960			200			3	
	Above 9			500			3	
	1.0010 0	00					<u> </u>	
			F :-	Id Strongth Measur		ment		
	Frequency		Field Strength (microvolts/meter)		Distan	се	Detector	
			((meter	rs)		
	Above 1GHz	z		500	3		Average	
	<u> </u>			5000	3		Peak	
	For radiated	emis	ssion	ns below 30)MHz			
							100	
	Di	stance =	3m			Comput	let	
	i.				Prest	Amplifier	1 I I	
Test setup:		2	1/			- of inter		
	EUT		()Ŧ				
	0.8m.	Turn tab	ole	1m		- L.		
	*					eceiver		
	0.0124-014		Groun	nd Plane]	
			Should					
	30MHz to 10	SHz						







	 antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. Use the following spectrum analyzer settings: Span shall wide enough to fully capture the emission being measured; Set RBW=100 kHz for f < 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; Set RBW = 1 MHz, VBW= 3MHz for f 1 GHz for peak measurement. For average measurement: VBW = 10 Hz, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test results:	PASS



Test Instruments

	Radiated Em	nission Test Sit	te (966)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Receiver	R&S	ESCI-7	HKE-010	Dec. 26, 2020
Spectrum analyzer	Agilent	N9020A	HKE-048	Dec. 26, 2020
Preamplifier	EMCI	EMC051845S E	HKE-015	Dec. 26, 2020
Preamplifier	Agilent	83051A	HKE-016	Dec. 26, 2020
Loop antenna	Schwarzbeck	FMZB 1519 B	HKE-014	Dec. 26, 2020
Broadband antenna	Schwarzbeck	VULB 9163	HKE-012	Dec. 26, 2020
Horn antenna	Schwarzbeck	9120D	HKE-013	Dec. 26, 2020
Antenna Mast	Keleto	CC-A-4M	N/A	N/A
Position controller	Taiwan MF	MF7802	HKE-011	Dec. 26, 2020
Radiated test software	Tonscend	TS+ Rev 2.5.0.0	HKE-082	N/A
RF cable (9KHz-1GHz)	Times	381806-001	N/A	N/A
RF cable	Times	1-40G	HKE-034	Dec. 26, 2020
High Gain Antenna	Schewarzbeck	LB-180400KF	HKE-054	Dec. 26, 2020

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



Test Data

All the test modes completed for test. only the worst result of AC 120V/60Hz(802.11b at 2412MHz) was reported as below:

Below 1GHz

Horizontal



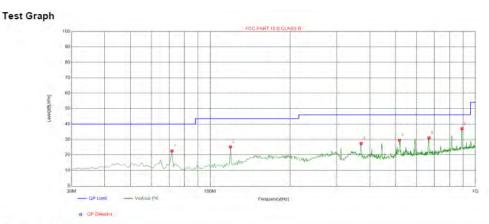
Suspected List

Suspected List											
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity		
1	215.4555	-14.67	42.58	27.91	43.50	15.59	100	72	Horizontal		
2	311.5816	-12.53	41.99	29.46	46.00	16.54	100	274	Horizontal		
3	369.8398	-11.01	44.34	33.33	46.00	12.67	100	303	Horizontal		
4	665.9860	-4.81	39.11	34.30	46.00	11.70	100	92	Horizontal		
5	813.5736	-2.87	40.75	37.88	46.00	8.12	100	278	Horizontal		
6	891.2513	-1.87	40.63	38.76	46.00	7.24	100	278	Horizontal		

Remark: Margin = Limit – Level Correction Factor= Antenna Factor + Cable loss – Pre-amplifier Level=Test receiver reading + correction factor



Vertical



Suspected List

Suspected List										
NO.	Freq. [MHz]	Factor [dB]	Reading [dBµV/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity	
1	71.7518	-17.99	40.50	22.51	40.00	17.49	100	269	Vertical	
2	119.3293	-16.99	42.19	25.20	43.50	18.30	100	25	Vertical	
3	370.8108	-10.99	38.41	27.42	46.00	18.58	100	357	Vertical	
4	517.4274	-7.80	37.34	29.54	46.00	16.46	100	201	Vertical	
5	668.8989	-4.63	35.65	31.02	46.00	14.98	100	214	Vertical	
6	891.2513	-1.87	38.82	36.95	46.00	9.05	100	50	Vertical	

Remark: Margin = Limit – Level

Correction Factor= Antenna Factor + Cable loss - Pre-amplifier Level=Test receiver reading + correction factor

Harmonics and Spurious Emissions

Frequency Range (9 kHz-30MHz)

Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)

Note: 1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor

2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement



LOW CH1 (802.11b Mode)/2412MHz

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824.00	57.68	-3.64	54.04	74	-19.96	Peak
4824.00	41.46	-3.64	37.82	54	-16.18	AVG
7236.00	54.75	-0.95	53.80	74	-20.20	Peak
7236.00	37.35	-0.95	36.40	54	-17.60	AVG

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Vertical: Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824.00	56.17	-3.64	52.53	74	-21.47	Peak
4824.00	40.67	-3.64	37.03	54	-16.97	AVG
7236.00	54.67	-0.95	53.72	74	-20.28	Peak
7236.00	37.64	-0.95	36.69	54	-17.31	AVG

MID CH6 (802.11b Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874.00	57.59	-3.51	54.08	74	-19.92	57.59
4874.00	40.94	-3.51	37.43	54	-16.57	40.94
7311.00	54.06	-0.82	53.24	74	-20.76	54.06
7311.00	37.57	-0.82	36.75	54	-17.25	37.57
Remark :Fact	or= Antenna Facto	r + Cable Los	s - Pre-amplifier			

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
4874.00	55.84	-3.51	52.33	74	-21.67	Peak			
4874.00	38.76	-3.51	35.25	54	-18.75	AVG			
7311.00	54.39	-0.82	53.57	74	-20.43	Peak			
7311.00	36.51	-0.82	35.69	54	-18.31	AVG			
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								



HIGH CH11 (802.11b Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924.00	56.08	-3.43	52.65	74	-21.35	Peak
4924.00	41.17	-3.43	37.74	54	-16.26	AVG
7386.00	52.99	-0.75	52.24	74	-21.76	Peak
7386.00	36.27	-0.75	35.52	54	-18.48	AVG
Remark :Fact	tor= Antenna Facto	r + Cable Los	s - Pre-amplifier			

Vertical:

Limits Margin Detecto	Limits	Emission Level	Factor	Meter Reading	Frequency
IBµV/m) (dB) Type	(dBµV/m	(dBµV/m)	(dB)	(dBµV)	(MHz)
74 -20.42 Peak	74	53.58	-3.43	57.01	4924.00
54 -18.39 AVG	54	35.61	-3.43	39.04	4924.00
74 -21.36 Peak	74	52.64	-0.75	53.39	7386.00
54 -18.21 AVG	54	35.79	-0.75	36.54	7386.00
		35.79	-0.75		7386.00

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4)The other emissions are 20 dB below the limit value, which are not reported. It is deemed to comply with the requireme.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH1 (802.11g Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4824.00	58.06	-3.43	54.63	74	-19.37	Peak		
4824.00	40.20	-3.43	36.77	54	-17.23	AVG		
7236.00	53.36	-0.75	52.61	74	-21.39	Peak		
7236.00	36.24	-0.75	35.49	54	-18.51	AVG		
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824.00	57.05	-3.43	53.62	74	-20.38	Peak
4824.00	40.51	-3.43	37.08	54	-16.92	AVG
7236.00	52.75	-0.75	52.00	74	-22.00	Peak
7236.00	37.40	-0.75	36.65	54	-17.35	AVG

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier



MID CH6 (802.11g Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4874.00	57.79	-3.51	54.28	74	-19.72	Peak		
4874.00	39.56	-3.51	36.05	54	-17.95	AVG		
7311.00	55.42	-0.82	54.60	74	-19.40	Peak		
7311.00	36.75	-0.82	35.93	54	-18.07	AVG		
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
4874.00	57.08	-3.51	53.57	74	-20.43	56.67			
4874.00	40.37	-3.51	36.86	54	-17.14	34.78			
7311.00	53.35	-0.82	52.53	74	-21.47	52.01			
7311.00	36.22	-0.82	35.40	54	-18.60	33.01			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								



HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
4924.00	55.72	-3.43	52.29	74	-21.71	Peak			
4924.00	39.06	-3.43	35.63	54	-18.37	AVG			
7386.00	52.78	-0.75	52.03	74	-21.97	Peak			
7386.00	37.26	-0.75	36.51	54	-17.49	AVG			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
4924.00	57.22	-3.43	53.79	74	-20.21	Peak			
4924.00	38.85	-3.43	35.42	54	-18.58	AVG			
7386.00	53.63	-0.75	52.88	74	-21.12	Peak			
7386.00	36.75	-0.75	36.00	54	-18.00	AVG			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4)The other emissions are 20 dB below the limit value, which are not reported. It is deemed to comply with the requireme.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4824.00	55.86	-3.64	52.22	74	-21.78	Peak		
4824.00	39.53	-3.64	35.89	54	-18.11	AVG		
7236.00	53.14	-0.95	52.19	74	-21.81	Peak		
7236.00	36.25	-0.95	35.30	54	-18.70	AVG		
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4824.00	56.37	-3.64	52.73	74	-21.27	Peak		
4824.00	39.58	-3.64	35.94	54	-18.06	AVG		
7236.00	55.53	-0.95	54.58	74	-19.42	Peak		
7236.00	37.87	-0.95	36.92	54	-17.08	AVG		
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							

MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
4874.00	56.43	-3.51	52.92	74	-21.08	Peak			
4874.00	38.94	-3.51	35.43	54	-18.57	AVG			
7311.00	54.57	-0.82	53.75	74	-20.25	Peak			
7311.00	37.76	-0.82	36.94	54	-17.06	AVG			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
4874.00	56.45	-3.51	52.94	74	-21.06	Peak		
4874.00	41.40	-3.51	37.89	54	-16.11	AVG		
7311.00	55.35	-0.82	54.53	74	-19.47	Peak		
7311.00	37.81	-0.82	36.99	54	-17.01	AVG		
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							



HIGH CH11 (802.11n/H20 Mode)/2462

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924.00	57.88	-3.43	54.45	74	-19.55	Peak
4924.00	39.97	-3.43	36.54	54	-17.46	AVG
7386.00	53.01	-0.75	52.26	74	-21.74	Peak
7386.00	37.77	-0.75	37.02	54	-16.98	AVG
Remark :Fact	tor= Antenna Facto	r + Cable Los	s - Pre-amplifier			

Vertical:

Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
57.68	-3.43	54.25	74	-19.75	Peak
41.31	-3.43	37.88	54	-16.12	AVG
54.56	-0.75	53.81	74	-20.19	Peak
37.60	-0.75	36.85	54	-17.15	AVG
	(dBµV) 57.68 41.31 54.56	(dBµV) (dB) 57.68 -3.43 41.31 -3.43 54.56 -0.75	(dBµV) (dB) (dBµV/m) 57.68 -3.43 54.25 41.31 -3.43 37.88 54.56 -0.75 53.81	(dBµV) (dB) (dBµV/m) (dBµV/m) 57.68 -3.43 54.25 74 41.31 -3.43 37.88 54 54.56 -0.75 53.81 74	(dBµV) (dB) (dBµV/m) (dBµV/m) (dB) 57.68 -3.43 54.25 74 -19.75 41.31 -3.43 37.88 54 -16.12 54.56 -0.75 53.81 74 -20.19

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz $_{\circ}$

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency. "E" denotes band edge frequency.

(3) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4)The other emissions are 20 dB below the limit value, which are not reported. It is deemed to comply with the requireme.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.



Test Result of Radiated Spurious at Band edges

Operation Mode: 802.11b Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2310	60.26	-5.81	54.45	74	-19.55	Peak
2310	37.78	-5.81	31.97	54	-22.03	AVG
2390	58.93	-5.84	53.09	74	-20.91	Peak
2390	38.75	-5.84	32.91	54	-21.09	AVG
Remark ·Fact	or= Antenna Fac	tor + Cable Los	s - Pre-amplifier		•	•

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2310	59.22	-5.81	53.41	74	-20.59	Peak
2310	38.48	-5.81	32.67	54	-21.33	AVG
2390	58.50	-5.84	52.66	74	-21.34	Peak
2390	37.06	-5.84	31.22	54	-22.78	AVG
Remark :Fact	or= Antenna Fac	tor + Cable Los	s - Pre-amplifier			



Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2483.5	61.05	-6.04	55.01	74	-18.99	Peak
2483.5	36.76	-6.04	30.72	54	-23.28	AVG
2500	59.09	-6.06	53.03	74	-20.97	Peak
2500	38.37	-6.06	32.31	54	-21.69	AVG
			Due energliffere		•	•

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
2483.5	59.96	-6.04	53.92	74	-20.08	Peak			
2483.5	38.17	-6.04	32.13	54	-21.87	AVG			
2500	59.52	-6.06	53.46	74	-20.54	Peak			
2500	37.64	-6.06	31.58	54	-22.42	AVG			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								



Operation Mode: 802.11g Mode TX CH Low (2412MHz)

TIONZONIA						
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310	60.74	-5.81	54.93	74	-19.07	Peak
2310	38.91	-5.81	33.10	54	-20.90	AVG
2390	59.47	-5.84	53.63	74	-20.37	Peak
2390	37.96	-5.84	32.12	54	-21.88	AVG
Remark :Fact	or= Antenna Fac	tor + Cable Los	s - Pre-amplifier			

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
2310	59.60	-5.81	53.79	74	-20.21	Peak		
2310	36.60	-5.81	30.79	54	-23.21	AVG		
2390	58.10	-5.84	52.26	74	-21.74	Peak		
2390	37.80	-5.84	31.96	54	-22.04	AVG		
Remark :Fact	or= Antenna Fac	tor + Cable Los	s - Pre-amplifier					

Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)				
2483.5	58.93	-6.04	52.89	74	-21.11	Peak			
2483.5	36.35	-6.04	30.31	54	-23.69	AVG			
2500	59.41	-6.06	53.35	74	-20.65	Peak			
2500	37.62	-6.06	31.56	54	-22.44	AVG			
Remark : Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector			
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре			
2483.5	59.95		53.91	74	-20.09	Peak			
2483.5	38.29		32.25	54	-21.75	AVG			
2500	58.95		52.89	74	-21.11	Peak			
2500	38.89		32.83	54	-21.17	AVG			
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier								

Operation Mode: 802.11n/H20 Mode TX CH Low (2412MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector		
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре		
2310	61.62	-5.81	55.81	74	-18.19	Peak		
2310	37.48	-5.81	31.67	54	-22.33	AVG		
2390	58.22	-5.84	52.38	74	-21.62	Peak		
2390	37.28	-5.84	31.44	54	-22.56	AVG		
Remark :Fact	Remark :Factor= Antenna Factor + Cable Loss - Pre-amplifier							

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2310	59.84	-5.81	54.03	74	-19.97	Peak
2310	36.80	-5.81	30.99	54	-23.01	AVG
2390	59.83	-5.84	53.99	74	-20.01	Peak
2390	37.00	-5.84	31.16	54	-22.84	AVG
Remark :Fact	or= Antenna Fac	tor + Cable Los	s - Pre-amplifier			



Operation Mode: TX CH High (2462MHz)

Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
2483.5	61.58	-6.04	55.54	74	-18.46	Peak
2483.5	38.18	-6.04	32.14	54	-21.86	AVG
2500	58.63	-6.06	52.57	74	-21.43	Peak
2500	38.80	-6.06	32.74	54	-21.26	AVG
Dama and a Cast	or- Antonno Foo		Due energliffere		•	

Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.5	61.67	-6.04	55.63	74	-18.37	Peak
2483.5	36.59	-6.04	30.55	54	-23.45	AVG
2500	59.58	-6.06	53.52	74	-20.48	Peak
2500	38.01	-6.06	31.95	54	-22.05	AVG
Remark : Factor= Antenna Factor + Cable Loss - Pre-amplifier						



4.7. ANTENNA REQUIREMENT

Standard Applicable

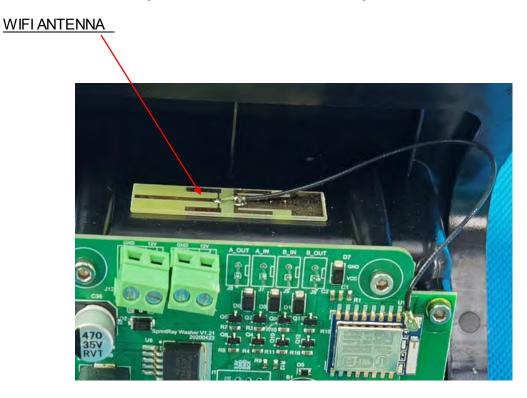
For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain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

Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

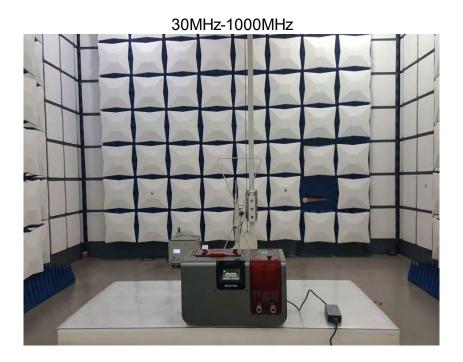
Antenna Connected Construction

The Internal Antenna used in the product is a permanently connected antenna that complies with the provisions of part 15.203 requirement in this section. The antenna used in this product is a Internal Antenna, The directional gains of antenna used for transmitting is 1.8dbi.





4.8. PHOTOGRAPHOF TEST



Above 1000MHz





Conducted Emission





PHOTOS OF THE EUT 5.



















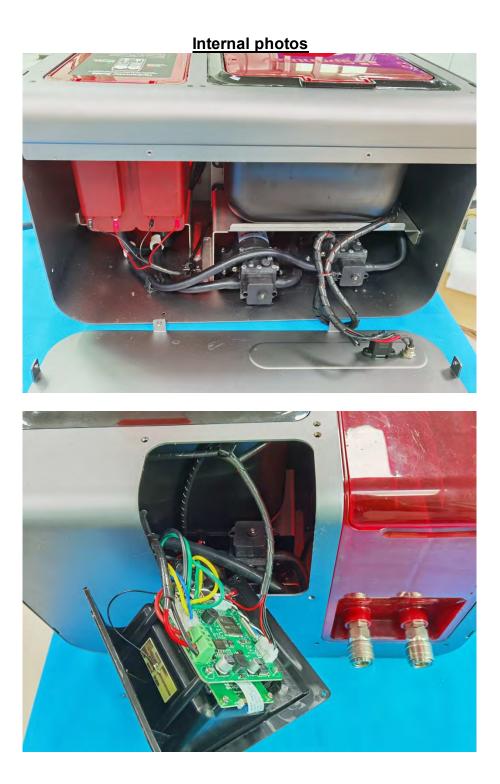






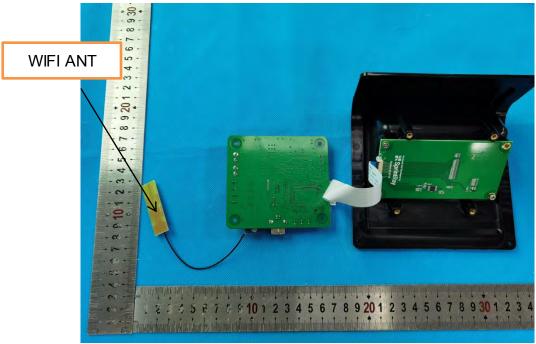




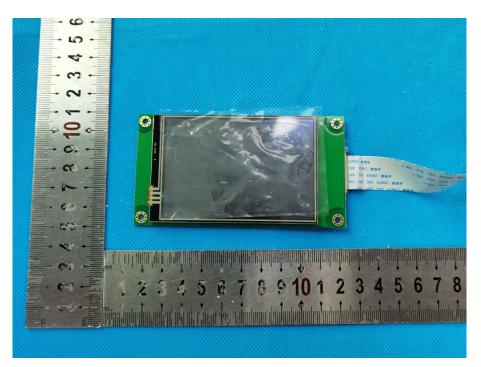


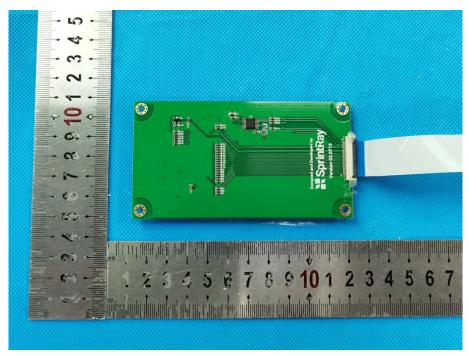




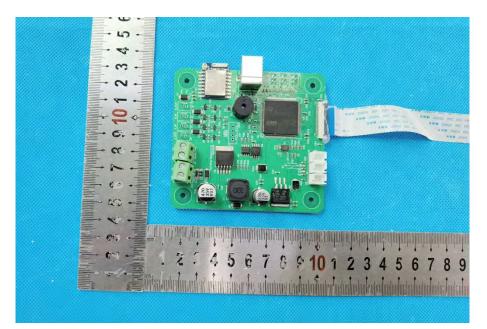


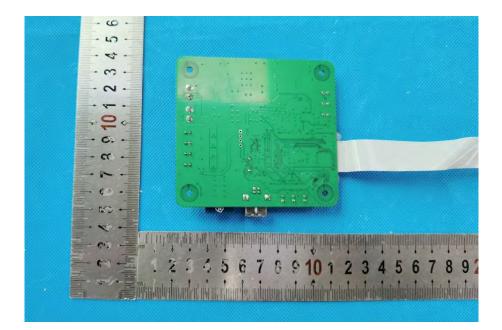




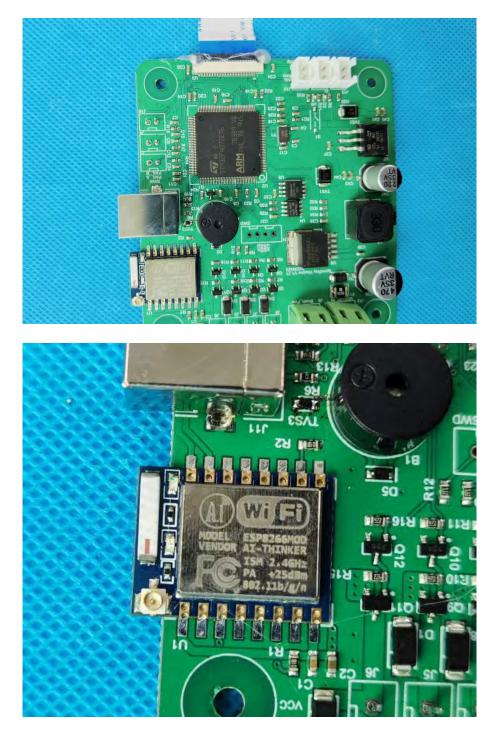












END