

TEST REPORT

Applicant: Shenzhen AIX Video Technology Co., Ltd.
Address of Applicant: 603,Building C,NO.142,Xiangshan Avenue, Bao'an District, Shenzhen
Manufacturer/Factory: Shenzhen AIX Video Technology Co., Ltd.
Address of Manufacturer/Factory: 603,Building C,NO.142,Xiangshan Avenue, Bao'an District, Shenzhen
Equipment Under Test (EUT)
Product Name: HD Intelligent Network Set Top Box
Model No.: Hi96,H1,H2,H3,H4,H5,H6,H7,H8,H9,H10,H16,H18,H20,V1,V2,V3,V4,V5,V6,V7,V8,V9,V10,V16,V18,V20
Trade Mark: N/A
FCC ID: 2A272-HI96
Date of sample receipt: Sep.07, 2021
Date of Test: Sep.12, 2021-Oct.28, 2021
Date of report issued: Oct.29, 2021
Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Luo

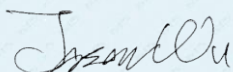
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	Oct.29, 2021	Original

Prepared By:

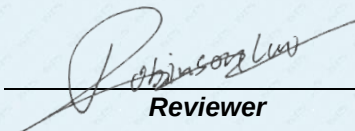


Project Engineer

Date:

Oct.28, 2021

Check By:



Reviewer

Date:

Oct.29, 2021

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION	5
5.1 GENERAL DESCRIPTION OF EUT	5
5.2 TEST MODE	7
5.3 DESCRIPTION OF SUPPORT UNITS	7
5.4 DEVIATION FROM STANDARDS	7
5.5 ABNORMALITIES FROM STANDARD CONDITIONS	7
5.6 TEST FACILITY	7
5.7 TEST LOCATION	7
5.8 ADDITIONAL INSTRUCTIONS	7
6 TEST INSTRUMENTS LIST	8
7 TEST RESULTS AND MEASUREMENT DATA	10
7.1 ANTENNA REQUIREMENT	10
7.2 CONDUCTED EMISSIONS	11
7.3 CONDUCTED PEAK OUTPUT POWER	14
7.4 CHANNEL BANDWIDTH	16
7.5 POWER SPECTRAL DENSITY	22
7.6 BAND EDGES	28
7.6.1 Conducted Emission Method	28
7.6.2 Radiated Emission Method	33
7.7 SPURIOUS EMISSION	38
7.7.1 Conducted Emission Method	38
7.7.2 Radiated Emission Method	47
8 TEST SETUP PHOTO	64
9 EUT CONSTRUCTIONAL DETAILS	64

4 Test Summary

Test Item	Section	Result
Antenna requirement	FCC part 15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	FCC part 15.207	Pass
Conducted Peak Output Power	FCC part 15.247 (b)(3)	Pass
Channel Bandwidth & 99% OCB	FCC part 15.247 (a)(2)	Pass
Power Spectral Density	FCC part 15.247 (e)	Pass
Band Edge	FCC part 15.247(d)	Pass
Spurious Emission	FCC part 15.205/15.209	Pass

Remark: Test according to ANSI C63.10:2013 and RSS-Gen

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz-30MHz	3.1dB	(1)
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	HD Intelligent Network Set Top Box
Model No.:	Hi96,H1,H2,H3,H4,H5,H6,H7,H8,H9,H10,H16,H18,H20,V1,V2,V3,V4,V5,V6,V7,V8,V9,V10,V16,V18,V20
Serial No.:	N/A
Hardware version:	HHV--TV--V3.1
Software version:	HHS-TUYA-V1.0.0.5
Test sample(s) ID:	GTSL202111000005-1
Sample(s) Status	Engineer sample
Operation Frequency:	802.11b/802.11g/802.11n(HT20): 2412MHz~2462MHz 802.11n(HT40): 2422MHz~2452MHz
Channel numbers:	802.11b/802.11g /802.11n(HT20): 11 802.11n(HT40):7
Channel separation:	5MHz
Modulation technology:	802.11b: Direct Sequence Spread Spectrum (DSSS) 802.11g/802.11n(H20)/802.11n(HT40): Orthogonal Frequency Division Multiplexing (OFDM)
Antenna Type:	PCB antenna
Antenna gain:	2dBi(Declare by applicant)
Power supply:	DC5V From adapter with 100-240VAC 50/60Hz
Test Model No.:	Hi96
Remark: All models differences are the product name and appearance colour, others are same	

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

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:

Test channel	Frequency (MHz)	
	802.11b/802.11g/802.11n(HT20)	802.11n(HT40)
Lowest channel	2412MHz	2422MHz
Middle channel	2437MHz	2437MHz
Highest channel	2462MHz	2452MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the dutycycle >98%, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

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:				
Pre-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.				
Mode	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Data rate	1Mbps	6Mbps	6.5Mbps	13Mbps

5.3 Description of Support Units

None

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations: ● FCC—Registration No.: 381383 Designation Number: CN5029 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. ● IC —Registration No.: 9079A CAB identifier: CN0091 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing ● NVLAP (LAB CODE:600179-0) Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).
--

5.7 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd. Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960

5.8 Additional Instructions

Test Software	Special test command provided by manufacturer
Power level setup	Default

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17 2021	Oct. 16 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17 2021	Oct. 16 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17 2021	Oct. 16 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 24 2021	June. 23 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 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, 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.	
15.247(c) (1)(i) requirement: (i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.	
EUT Antenna:	
<i>The antenna is PCB antenna, the best case gain of the antenna is 2dBi, Two antennas simultaneously transmitting, the Directional Gain is 5dBi, reference to the appendix II for details.</i>	

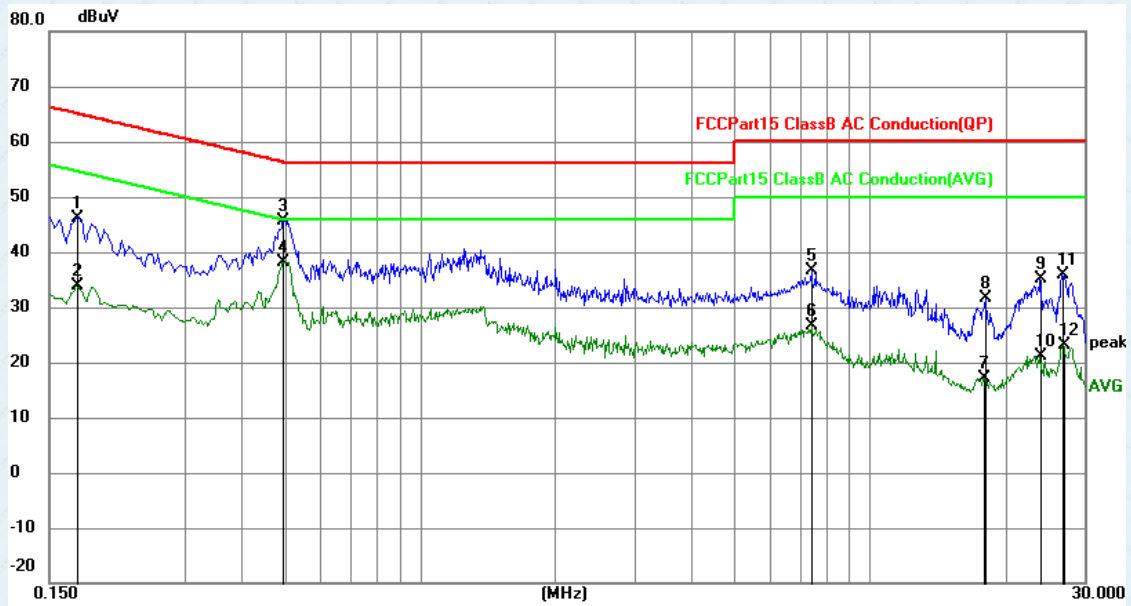
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak		Average	
	0.15-0.5		66 to 56*		56 to 46*	
	0.5-5		56		46	
	5-30		60		50	
* Decreases with the logarithm of the frequency.						
Test setup:	Reference Plane <i>Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</i>					
Test procedure:	1. The E.U.T and simulators are 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. 2. 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). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the 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 Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	23.6 °C	Humid.:	57%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

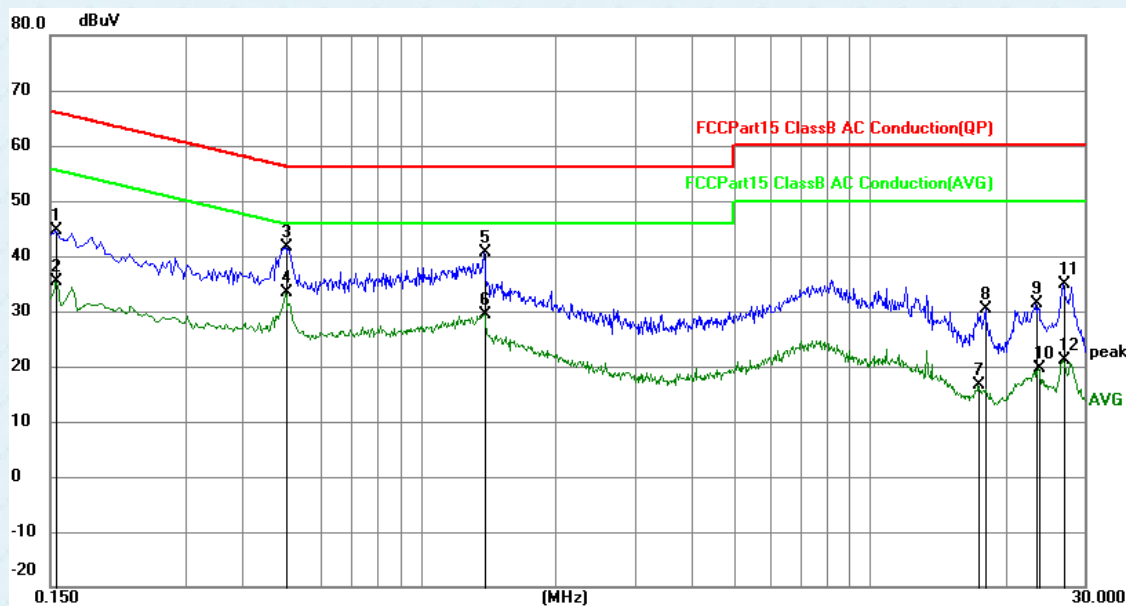
Measurement data

Line:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1724	33.63	12.47	46.10	64.84	-18.74	QP
2	0.1724	21.35	12.47	33.82	54.84	-21.02	AVG
3	0.4965	33.37	12.36	45.73	56.06	-10.33	QP
4	0.4965	25.88	12.36	38.24	46.06	-7.82	AVG
5	7.4355	24.30	12.37	36.67	60.00	-23.33	QP
6	7.4355	14.20	12.37	26.57	50.00	-23.43	AVG
7	17.9250	4.68	12.51	17.19	50.00	-32.81	AVG
8	18.0734	19.11	12.51	31.62	60.00	-28.38	QP
9	23.9054	22.51	12.61	35.12	60.00	-24.88	QP
10	23.9054	8.50	12.61	21.11	50.00	-28.89	AVG
11	26.7630	23.13	12.66	35.79	60.00	-24.21	QP
12	26.8440	10.47	12.66	23.13	50.00	-26.87	AVG

Neutral:

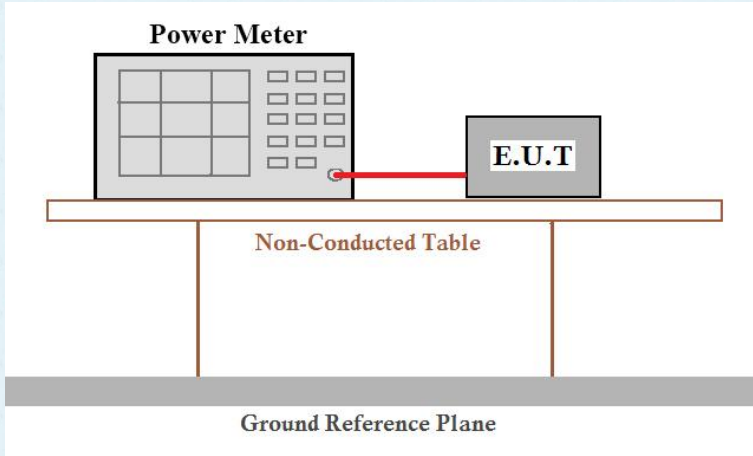


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1544	32.21	12.49	44.70	65.76	-21.06	QP
2	0.1544	22.99	12.49	35.48	55.76	-20.28	AVG
3	0.5010	29.38	12.36	41.74	56.00	-14.26	QP
4	0.5010	20.91	12.36	33.27	46.00	-12.73	AVG
5	1.3872	28.23	12.29	40.52	56.00	-15.48	QP
6	1.3918	17.21	12.29	29.50	46.00	-16.50	AVG
7	17.4390	4.20	12.49	16.69	50.00	-33.31	AVG
8	18.0600	17.86	12.51	30.37	60.00	-29.63	QP
9	23.4465	18.78	12.60	31.38	60.00	-28.62	QP
10	23.6580	7.01	12.61	19.62	50.00	-30.38	AVG
11	26.9205	22.28	12.66	34.94	60.00	-25.06	QP
12	26.9205	8.40	12.66	21.06	50.00	-28.94	AVG

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Conducted Peak Output Power

Test Requirement :	FCC Part15 C Section 15.247 (b)(3)
Test Method :	KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	30dBm
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

ANT1

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	12.85	13.47	13.69	10.11	30.00	Pass
Middle	13.22	13.85	13.78	10.55		
Highest	12.68	13.78	13.90	10.27		

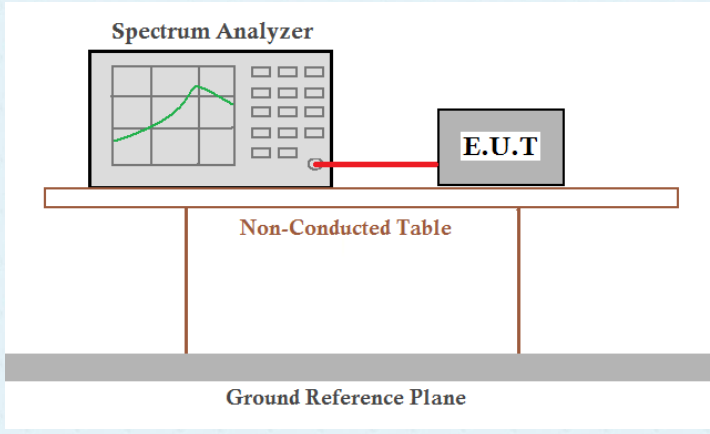
ANT2

Test CH	Peak Output Power (dBm)				Limit(dBm)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	11.98	12.13	11.65	8.36	30.00	Pass
Middle	11.78	12.21	11.80	8.53		
Highest	12.07	12.32	11.86	8.47		

MIMO Mode

Modulation	Test CH	Peak Output Power (dBm)		Sum Output Power (dBm)	Limit (dBm)	Result
802.11b	Lowest	ANT 1	12.85	15.45	30	Pass
		ANT 2	11.98			
	Middle	ANT 1	13.22	15.57		
		ANT 2	11.78			
	Highest	ANT 1	12.68	15.40		
		ANT 2	12.07			
802.11g	Lowest	ANT 1	13.47	15.86	30	Pass
		ANT 2	12.13			
	Middle	ANT 1	13.85	16.12		
		ANT 2	12.21			
	Highest	ANT 1	13.78	16.12		
		ANT 2	12.32			
802.11n(HT20)	Lowest	ANT 1	13.69	15.80	30	Pass
		ANT 2	11.65			
	Middle	ANT 1	13.78	15.91		
		ANT 2	11.80			
	Highest	ANT 1	13.90	16.01		
		ANT 2	11.86			
802.11n(HT40)	Lowest	ANT 1	10.11	12.33	30	Pass
		ANT 2	8.36			
	Middle	ANT 1	10.55	12.67		
		ANT 2	8.53			
	Highest	ANT 1	10.27	12.47		
		ANT 2	8.47			

7.4 Channel Bandwidth

Test Requirement :	FCC Part15 C Section 15.247 (a)(2)
Test Method :	KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	>500KHz
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

ANT1

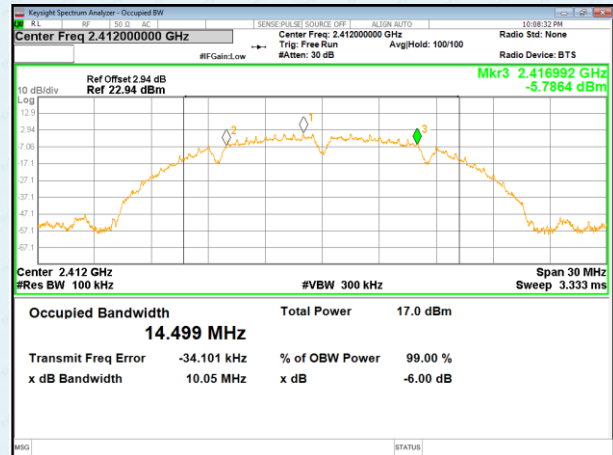
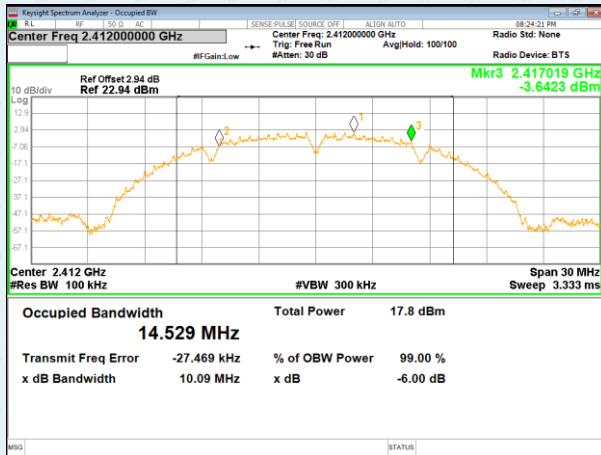
Test CH	Channel Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	10.09	16.39	17.63	36.08	>500	Pass
Middle	9.077	16.07	17.35	35.30		
Highest	9.560	16.32	17.57	35.32		

ANT2

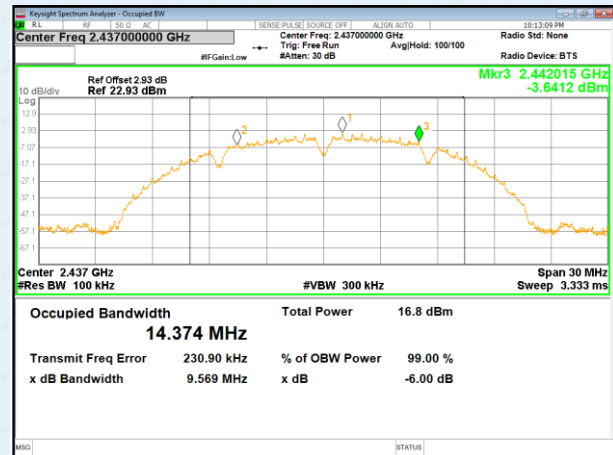
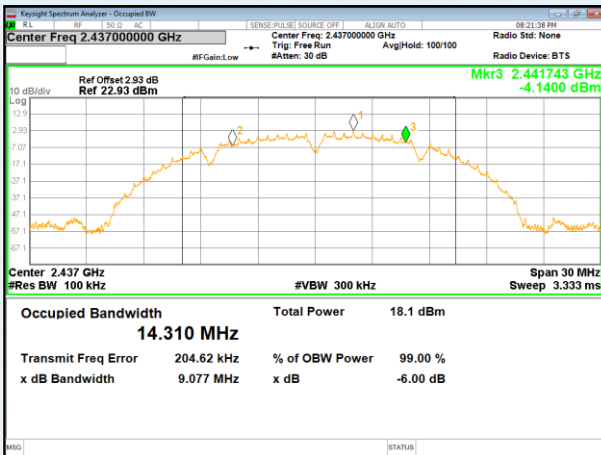
Test CH	Channel Bandwidth (MHz)				Limit(KHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	10.05	16.39	17.61	36.06	>500	Pass
Middle	9.569	15.71	17.17	35.10		
Highest	9.590	16.39	17.59	33.88		

Test plot as follows:

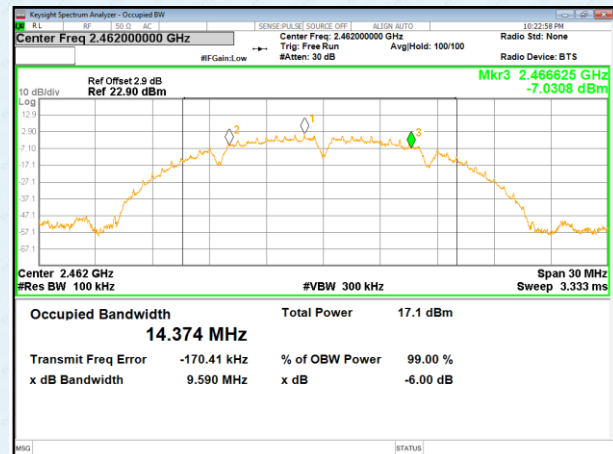
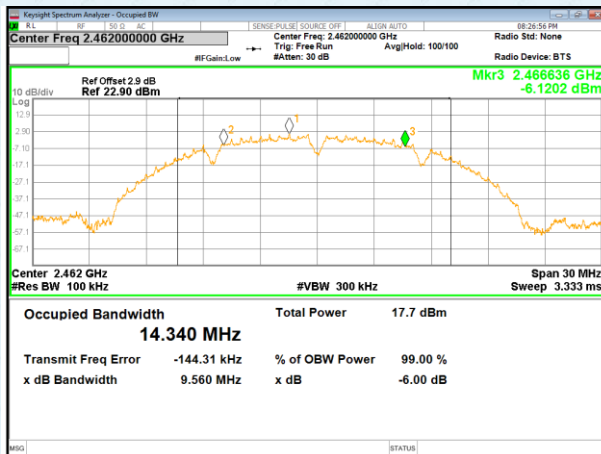
802.11b	ANT1	802.11b	ANT2
---------	------	---------	------



Lowest channel

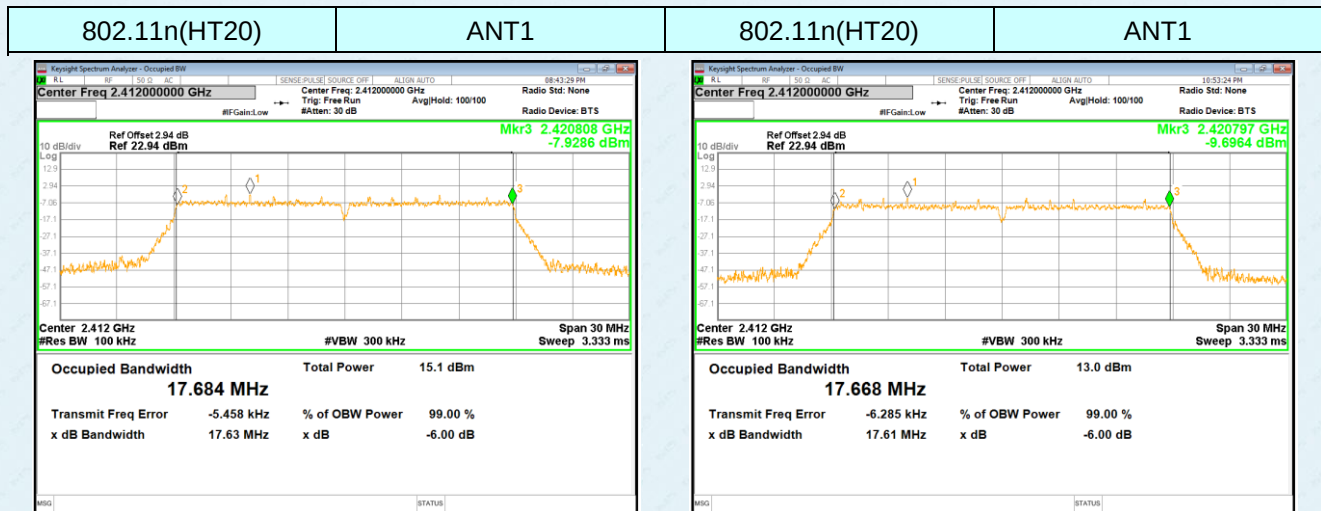


Middle channel

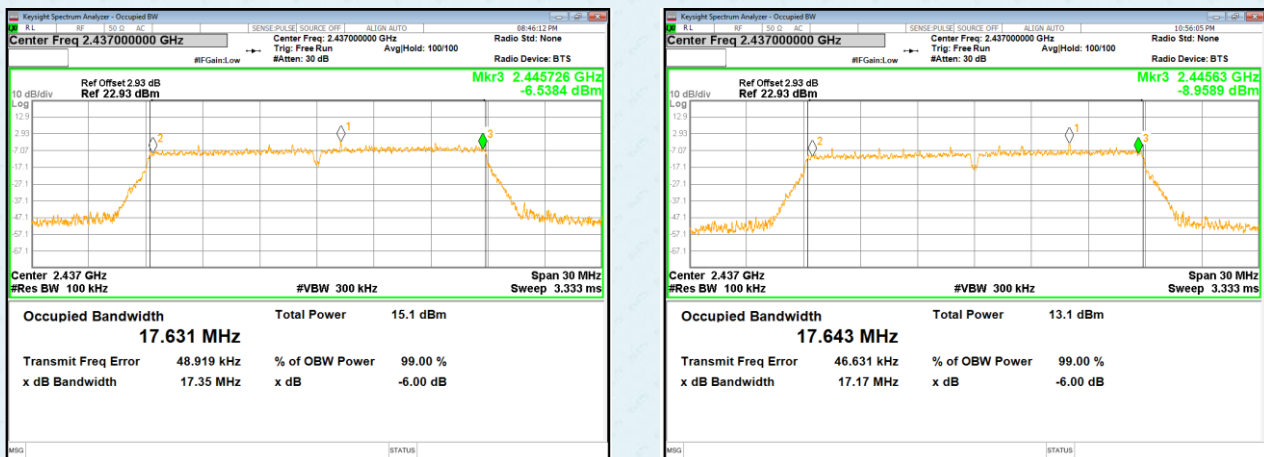


Highest channel

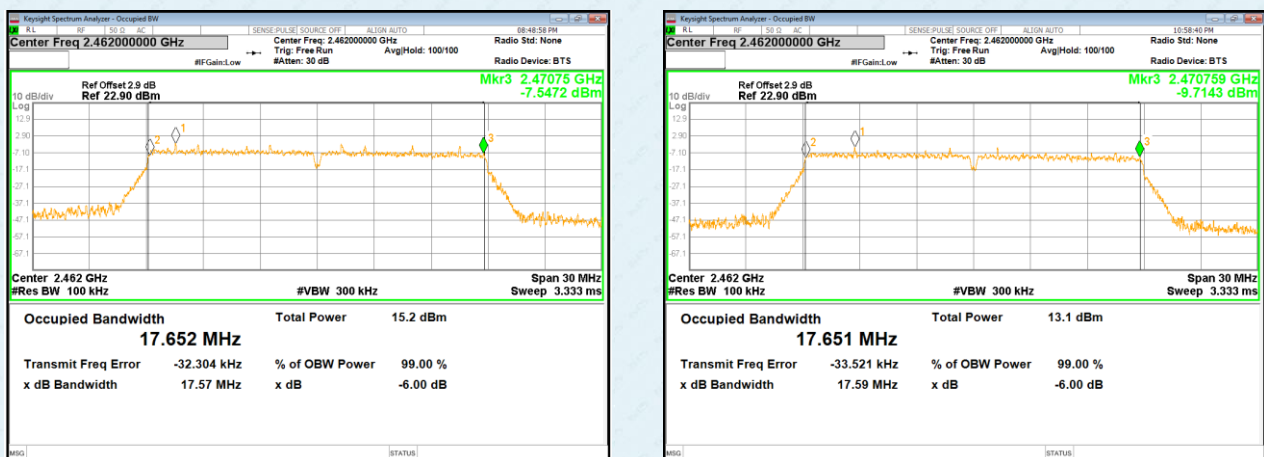




Lowest channel

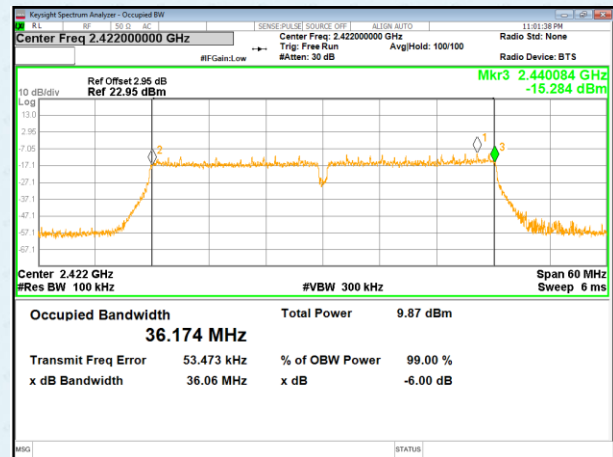
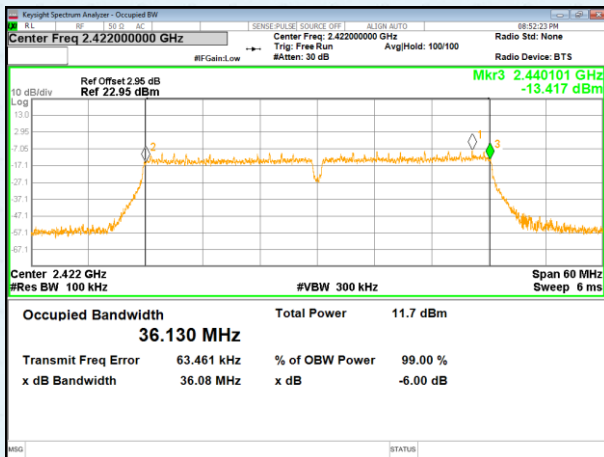


Middle channel

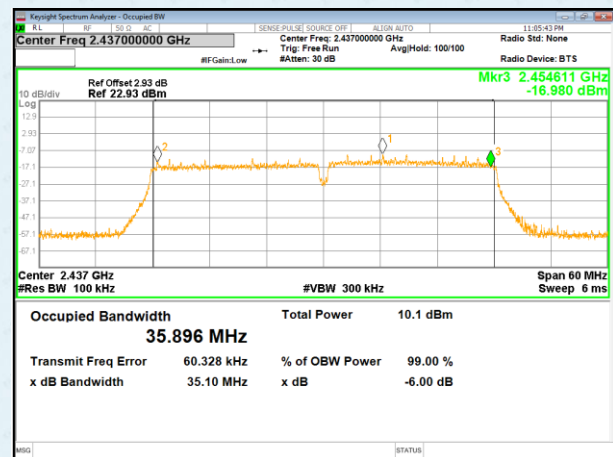
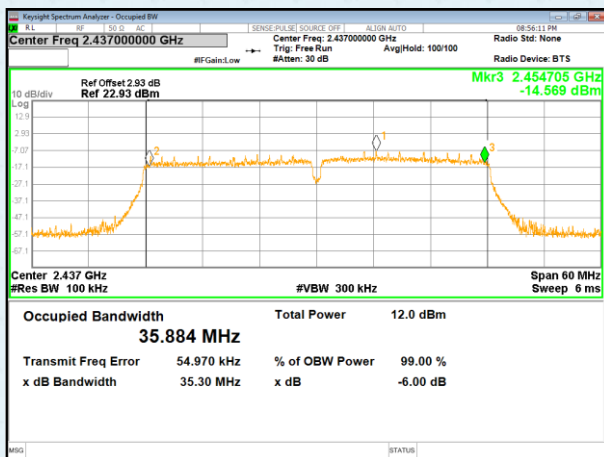


Highest channel

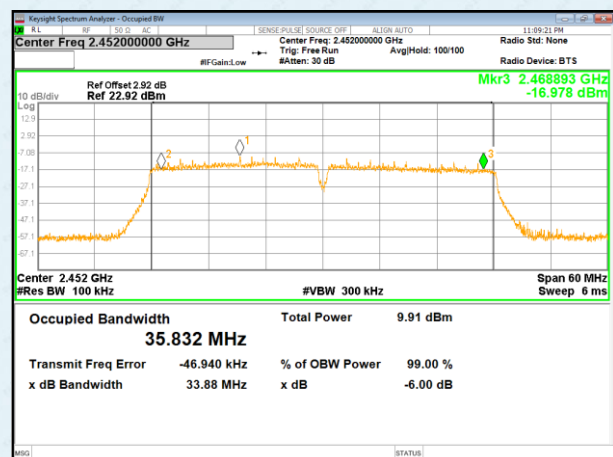
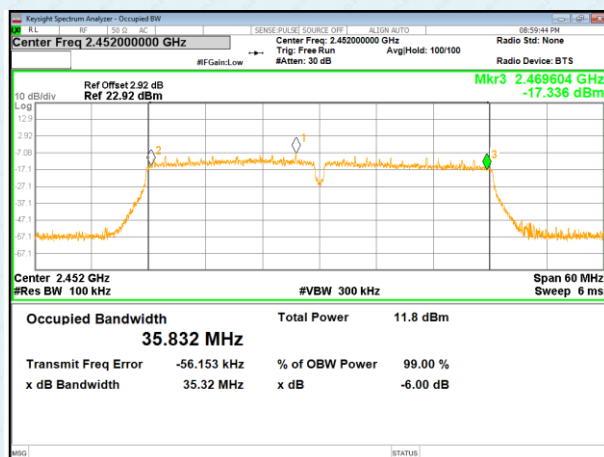
802.11n(HT40)	ANT1	802.11n(HT40)	ANT2
---------------	------	---------------	------



Lowest channel

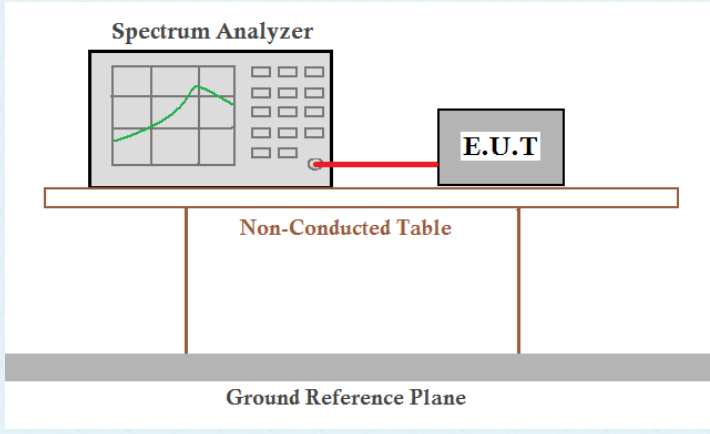


Middle channel



Highest channel

7.5 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	8dBm/3kHz
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

ANT1

Test CH	Power Spectral Density (dBm/3kHz)				Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	-11.189	-15.960	-15.591	-21.330	8.00	Pass
Middle	-10.999	-14.721	-15.175	-20.481		
Highest	-10.526	-14.756	-14.527	-21.335		

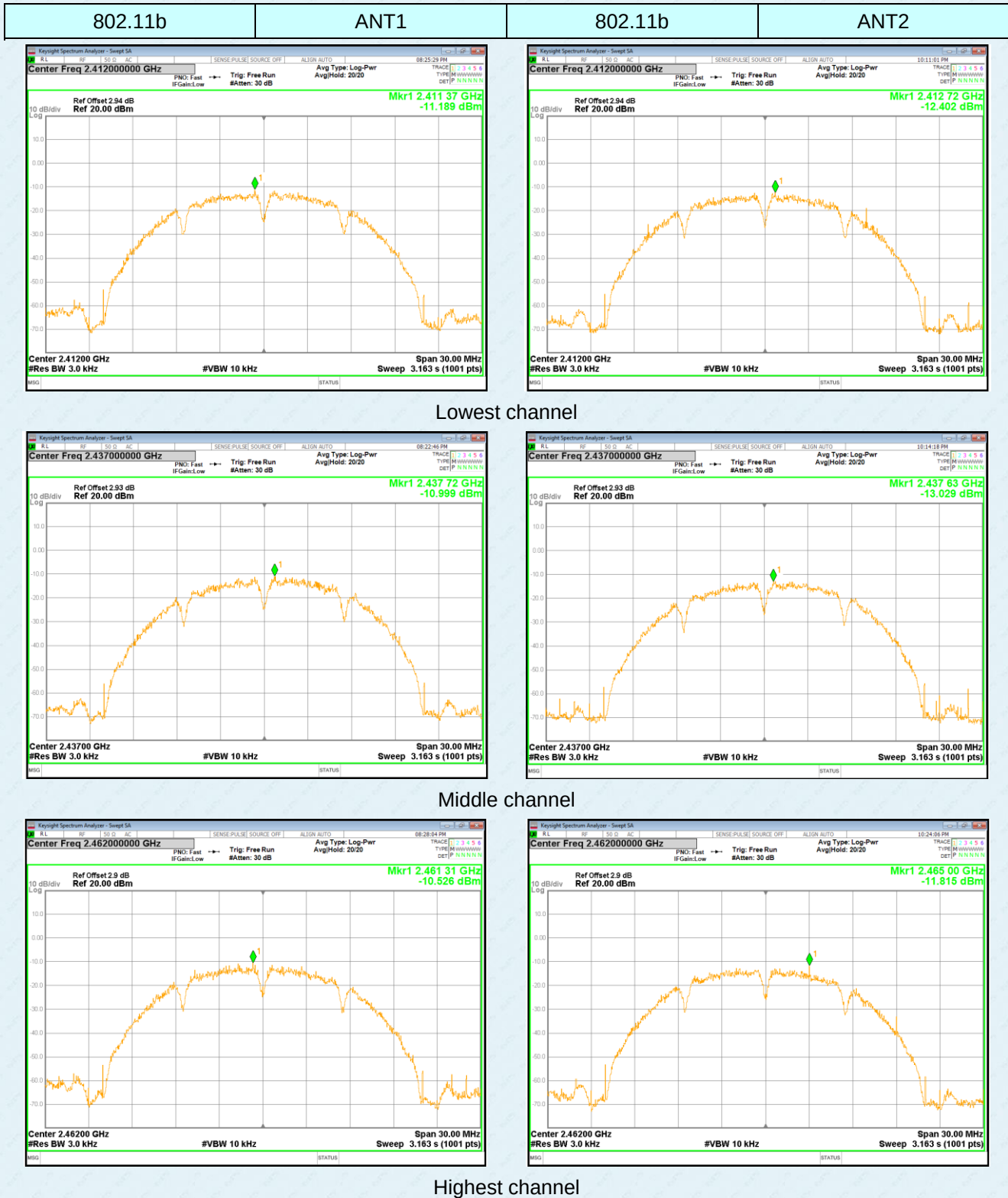
ANT2

Test CH	Power Spectral Density (dBm/3kHz)				Limit (dBm/3kHz)	Result
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)		
Lowest	-12.402	-16.840	-17.193	-24.121	8.00	Pass
Middle	-13.029	-16.580	-15.889	-23.425		
Highest	-11.815	-16.352	-17.234	-22.721		

MIMO Mode

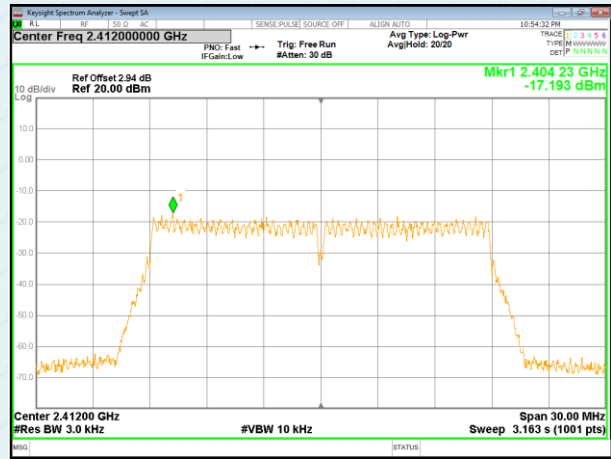
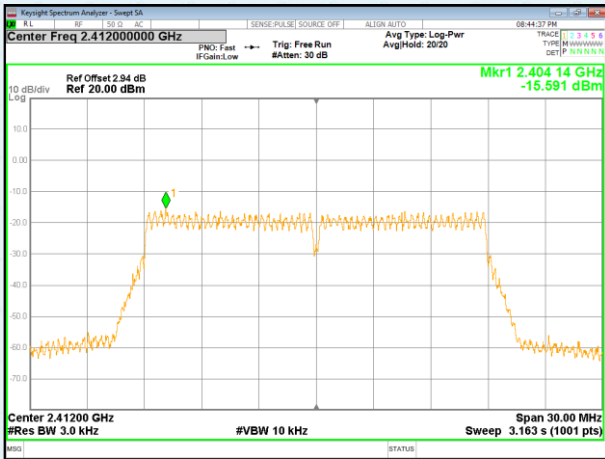
Modulation	Test CH	Power Spectral Density (dBm/3kHz)		Sum Output Power(dBm)	Limit (dBm/3kHz)	Result
802.11b	Lowest	ANT 1	-11.189	-8.74	8	Pass
		ANT 2	-12.402			
	Middle	ANT 1	-10.999	-8.89		
		ANT 2	-13.029			
	Highest	ANT 1	-10.526	-8.11		
		ANT 2	-11.815			
802.11g	Lowest	ANT 1	-15.960	-13.37	8	Pass
		ANT 2	-16.840			
	Middle	ANT 1	-14.721	-12.54		
		ANT 2	-16.580			
	Highest	ANT 1	-14.756	-12.47		
		ANT 2	-16.352			
802.11n(HT20)	Lowest	ANT 1	-15.591	-13.31	8	Pass
		ANT 2	-17.193			
	Middle	ANT 1	-15.175	-12.51		
		ANT 2	-15.889			
	Highest	ANT 1	-14.527	-12.66		
		ANT 2	-17.234			
802.11n(HT40)	Lowest	ANT 1	-21.330	-19.50	8	Pass
		ANT 2	-24.121			
	Middle	ANT 1	-20.481	-18.70		
		ANT 2	-23.425			
	Highest	ANT 1	-21.335	-18.96		
		ANT 2	-22.721			

Test plot as follows:

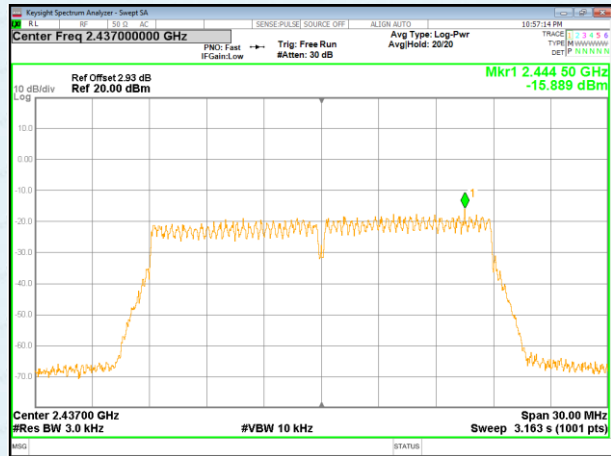
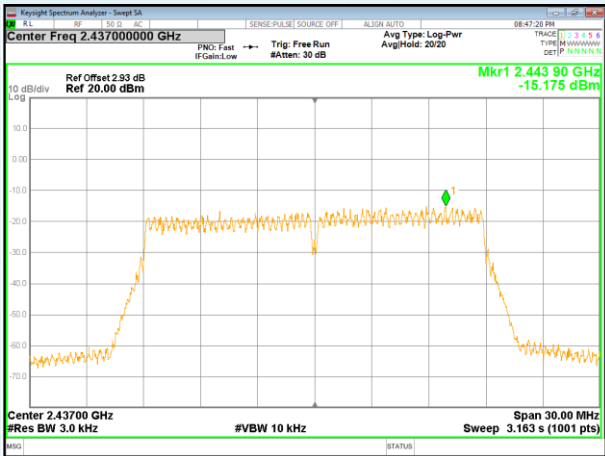




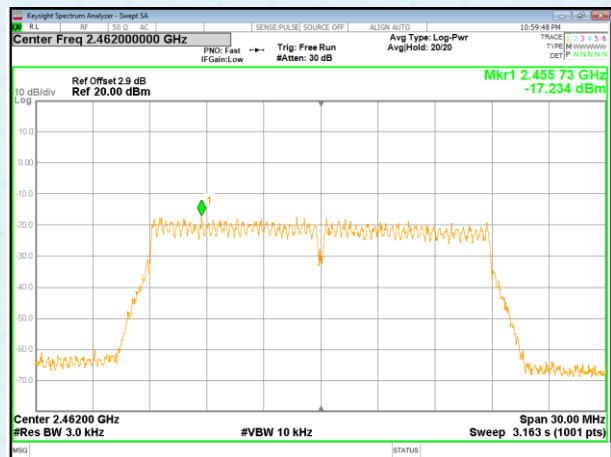
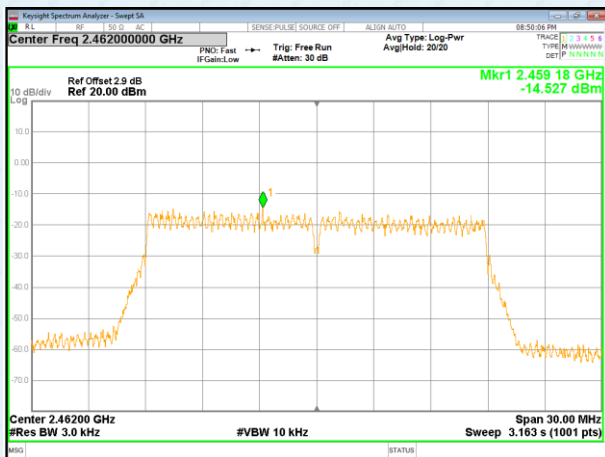
802.11n(HT20)	ANT1	802.11n(HT20)	ANT2
---------------	------	---------------	------



Lowest channel

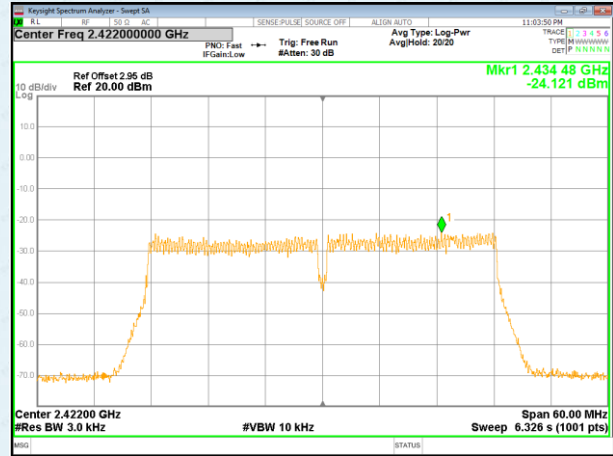
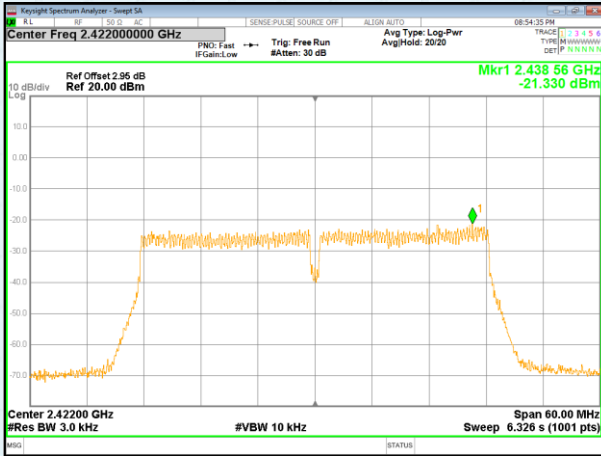


Middle channel

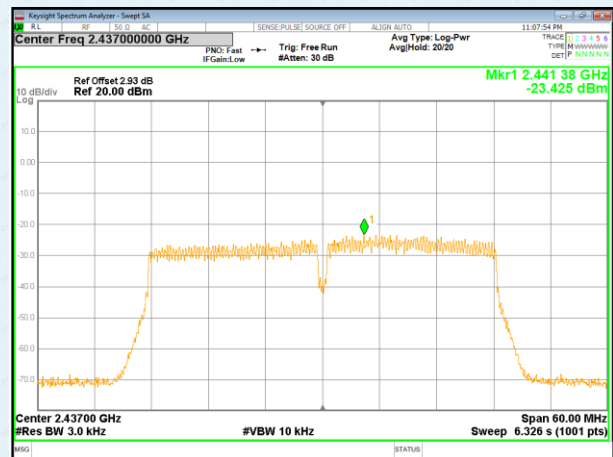
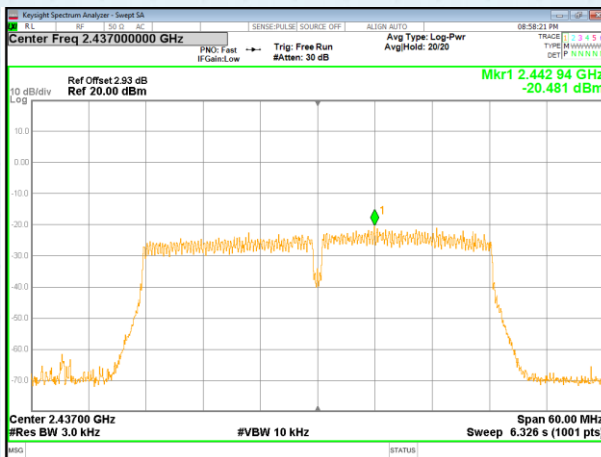


Highest channel

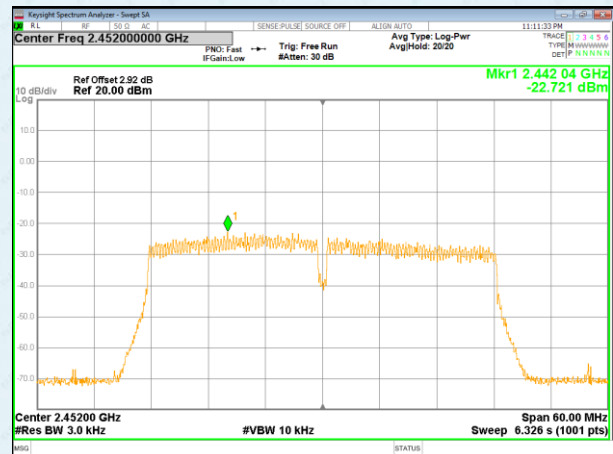
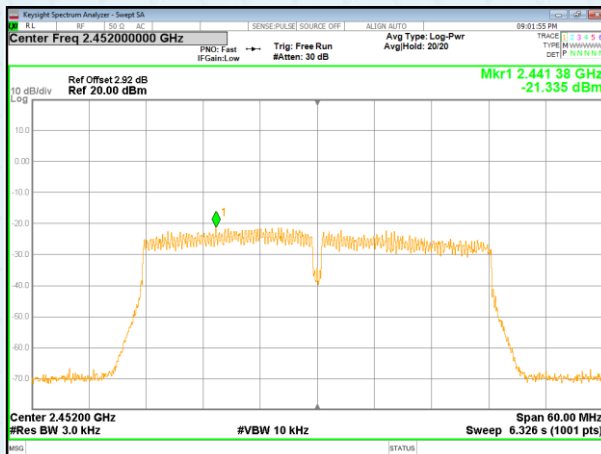
802.11n(HT40)	ANT1	802.11n(HT40)	ANT2
---------------	------	---------------	------



Lowest channel



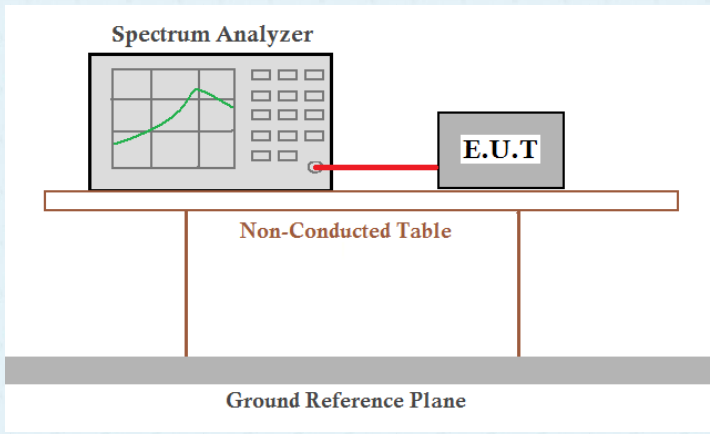
Middle channel



Highest channel

7.6 Band edges

7.6.1 Conducted Emission Method

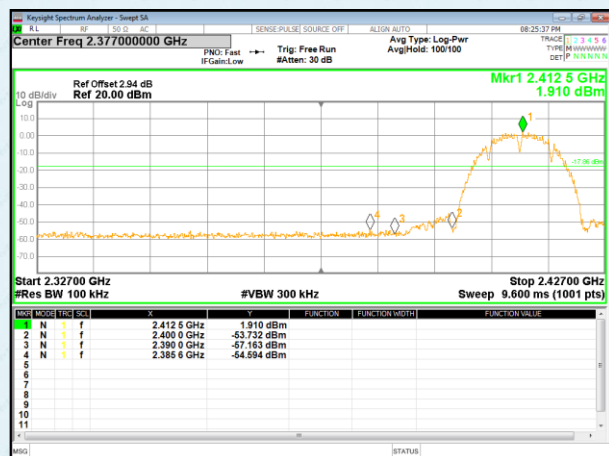
Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB558074 D01 15.247 Meas Guidance v05r02
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs and sits on a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Test plot as follows:

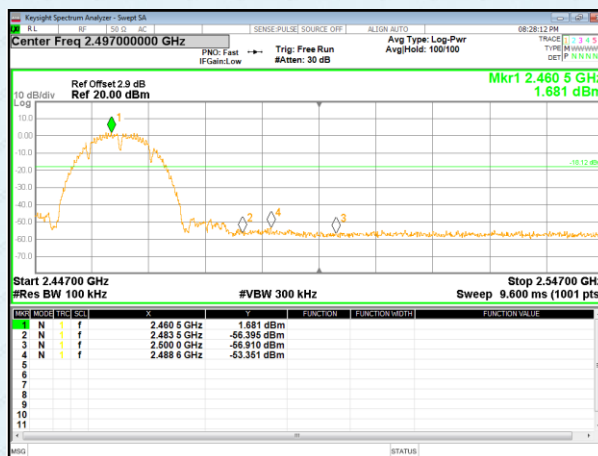
ANT1

Test mode:

802.11b



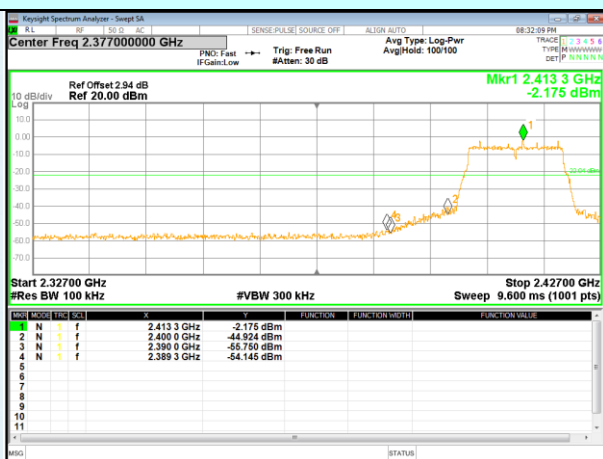
Lowest channel



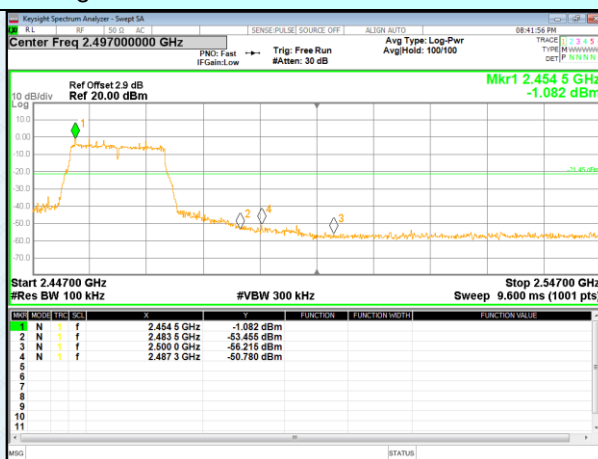
Highest channel

Test mode:

802.11g



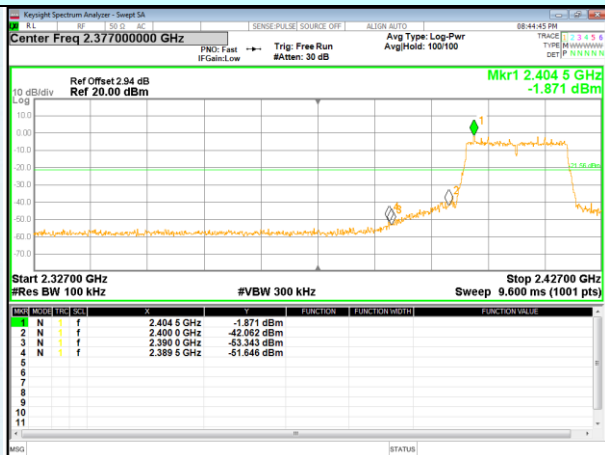
Lowest channel



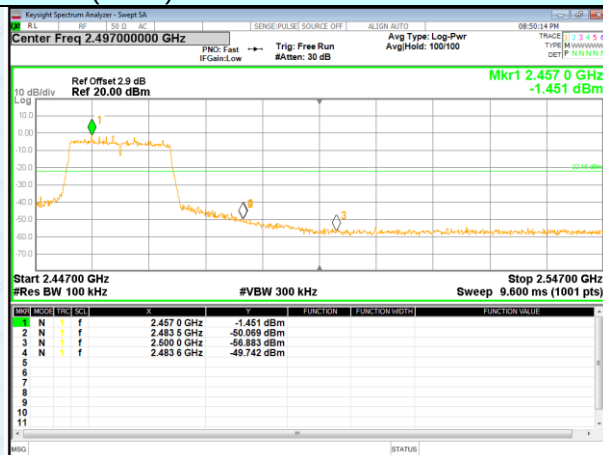
Highest channel

Test mode:

802.11n(HT20)



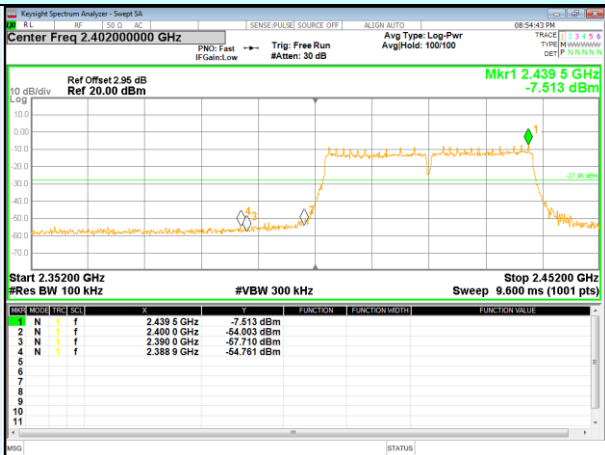
Lowest channel



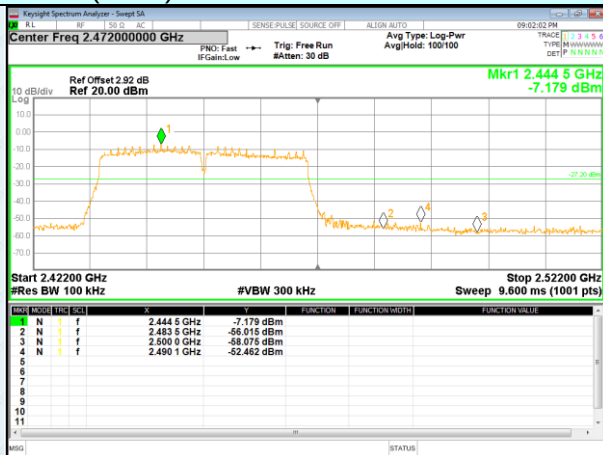
Highest channel

Test mode:

802.11n(HT40)



Lowest channel

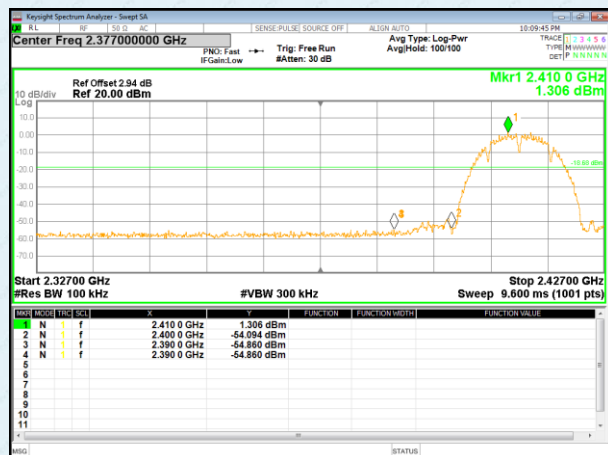


Highest channel

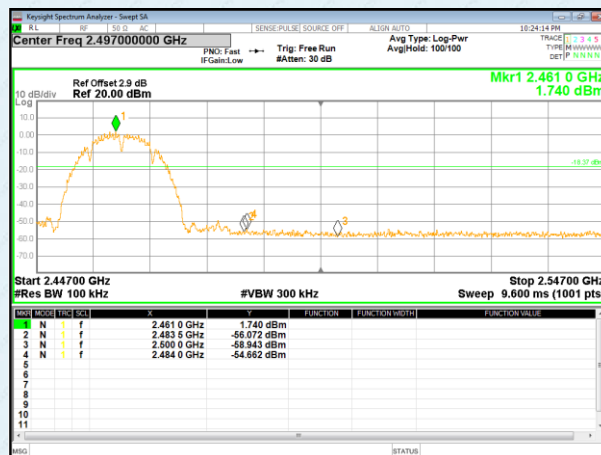
ANT2

Test mode:

802.11b



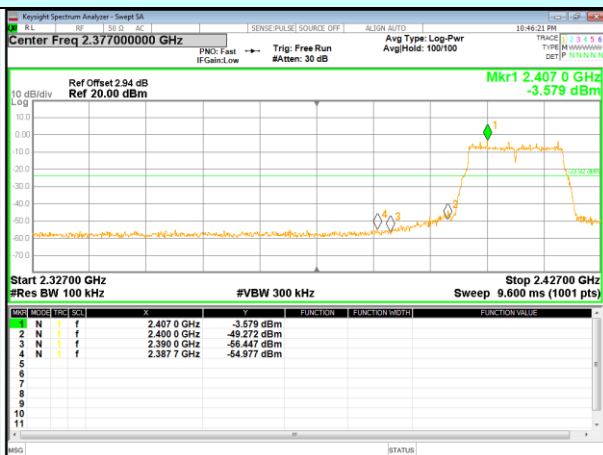
Lowest channel



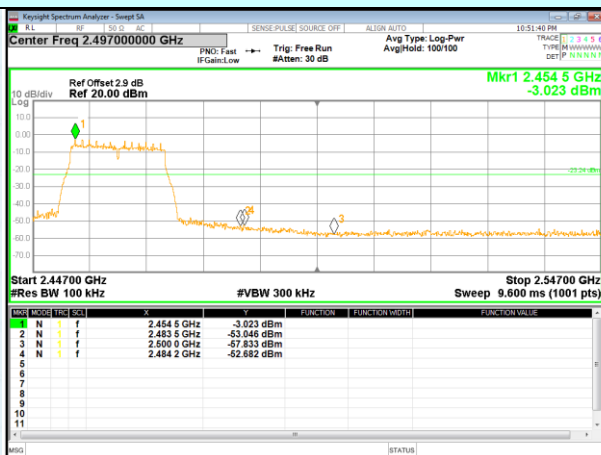
Highest channel

Test mode:

802.11g

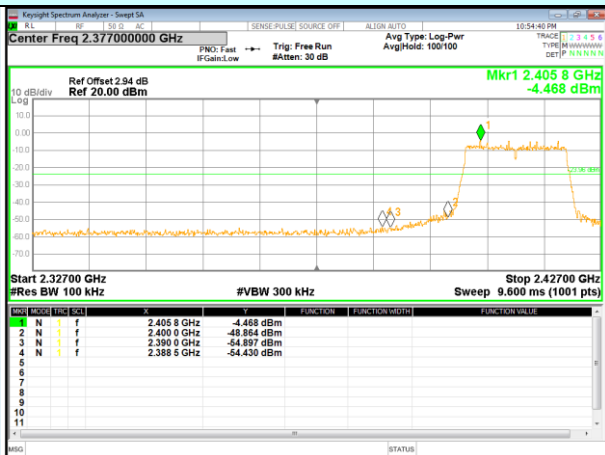


Lowest channel

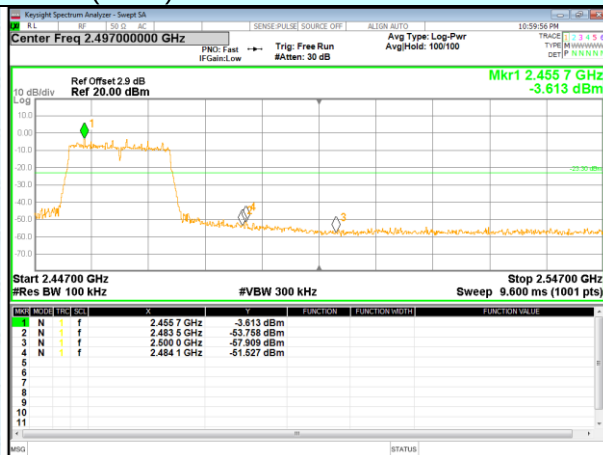


Highest channel

Test mode: 802.11n(HT20)

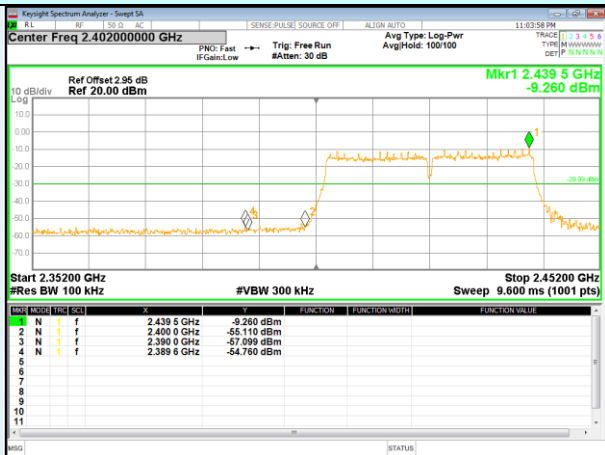


Lowest channel

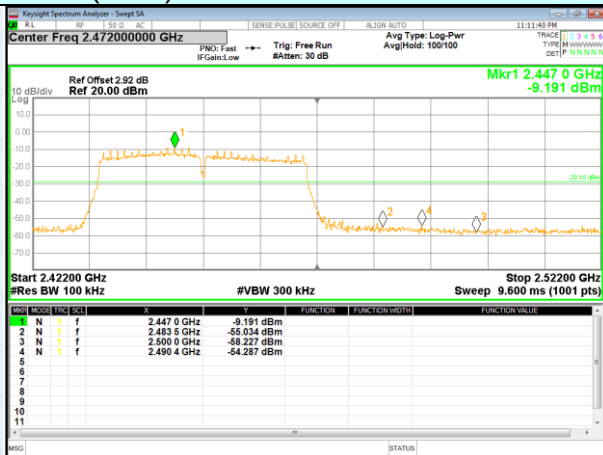


Highest channel

Test mode: 802.11n(HT40)

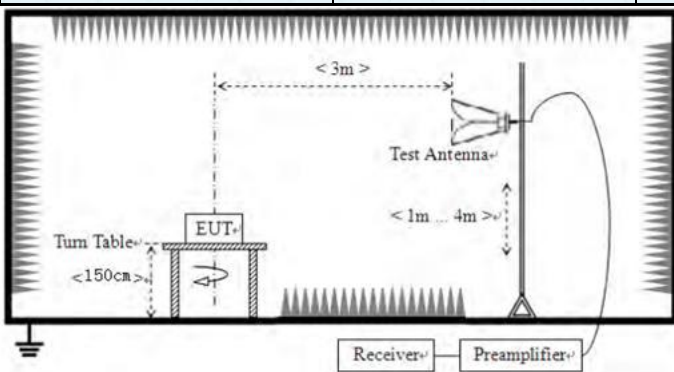


Lowest channel



Highest channel

7.6.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.20				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	All of the restrict bands were tested, only the worst band's (2310MHz to 2500MHz) data was showed.				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Average	1MHz	3MHz	Average
Limit:	Frequency		Limit (dBuV/m @3m)		Value
	Above 1GHz		54.00		Average
			74.00		Peak
Test setup:					
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the Y axis positioning which it is worse case, only the test worst case mode is recorded in the report.				
Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test results:	Pass				

Measurement data:

All antennas have test, only the worst case ANT 1 +ANT2 show report.

Test mode:	802.11b	Test channel:	Lowest
------------	---------	---------------	--------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	54.38	27.14	6.19	42.04	45.67	74.00	-28.33	Horizontal
2390.00	58.12	27.37	6.31	42.11	49.69	74.00	-24.31	Horizontal
2310.00	53.75	27.14	6.19	42.04	45.04	74.00	-28.96	Vertical
2390.00	59.48	27.37	6.31	42.11	51.05	74.00	-22.95	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2310.00	36.82	27.14	6.19	42.04	28.11	54.00	-25.89	Horizontal
2390.00	42.16	27.37	6.31	42.11	33.73	54.00	-20.27	Horizontal
2310.00	38.63	27.14	6.19	42.04	29.92	54.00	-24.08	Vertical
2390.00	43.97	27.37	6.31	42.11	35.54	54.00	-18.46	Vertical

Test mode:	802.11b	Test channel:	Highest
------------	---------	---------------	---------

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	60.62	27.66	6.45	42.01	52.72	74.00	-21.28	Horizontal
2500.00	52.47	27.70	6.47	42.00	44.64	74.00	-29.36	Horizontal
2483.50	59.84	27.66	6.45	42.01	51.94	74.00	-22.06	Vertical
2500.00	53.69	27.70	6.47	42.00	45.86	74.00	-28.14	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	48.46	27.66	6.45	42.01	40.56	54.00	-13.44	Horizontal
2500.00	45.37	27.70	6.47	42.00	37.54	54.00	-16.46	Horizontal
2483.50	49.15	27.66	6.45	42.01	41.25	54.00	-12.75	Vertical
2500.00	45.55	27.70	6.47	42.00	37.72	54.00	-16.28	Vertical