TEST REPORT

Product	:	WIFI+BT Module
Trade mark	:	GSD
Model/Type reference	:	WCT3TM2311
Serial Number	:	N/A
Report Number	:	EED32L00127303
FCC ID	:	2AC23-WCT3T
Date of Issue	:	Aug. 16, 2019
Test Standards	:	47 CFR Part 15Subpart C
Test result	:	PASS

Prepared for:

Hui Zhou Gaoshengda Technology Co., LTD
NO.75 Zhongkai Development Area Huizhou, Guangdong, China

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385

Tested By:	Jay Zheng	Compiled by:	Alex Wu
Reviewed by:	Ware Xin	Approved by:	Kevin Yang
Date:	Aug. 16, 2019	Check No.:	3096342577

2 Version

Version No.	Date	Description
00	2019-08-16	Original

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203/15.247 (c)	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Conducted Peak Output Power	47 CFR Part 15 Subpart C Section 15.247 (b)(3)	ANSI C63.10-2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013	PASS
Radiated Spurious Emissions	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.205/15.209	ANSI C63.10-2013	PASS

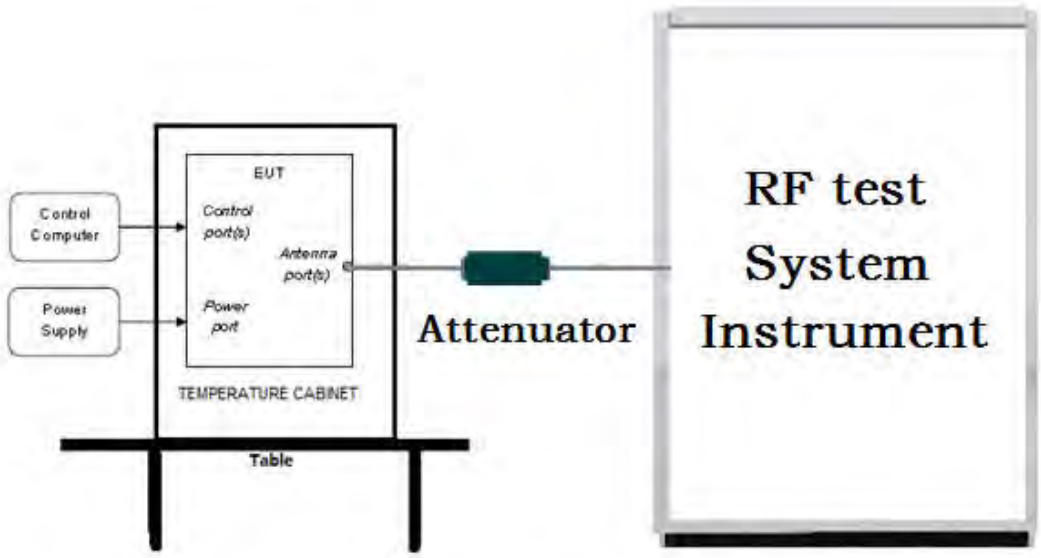
Remark:
Test according to ANSI C63.4-2014 & ANSI C63.10-2013.
The tested sample(s) and the sample information are provided by the client.

4 Content

5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

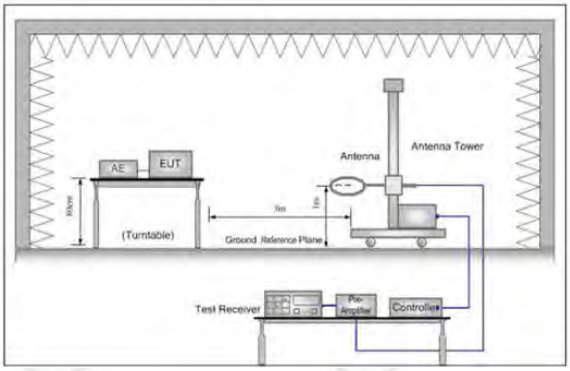


Figure 1. Below 30MHz

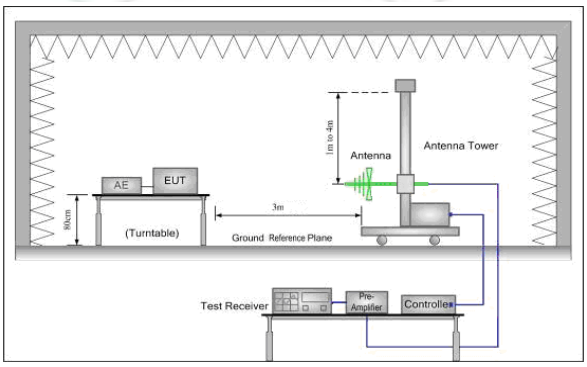


Figure 2. 30MHz to 1GHz

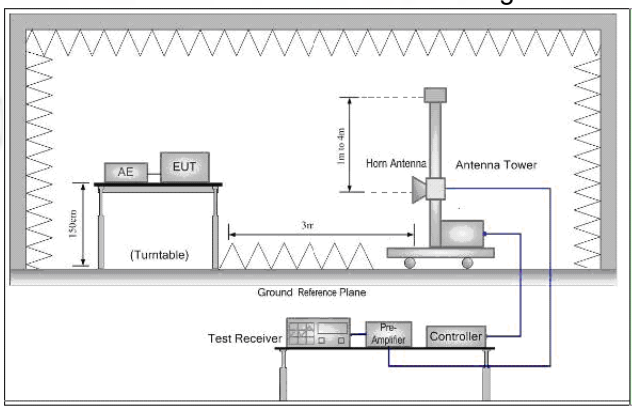
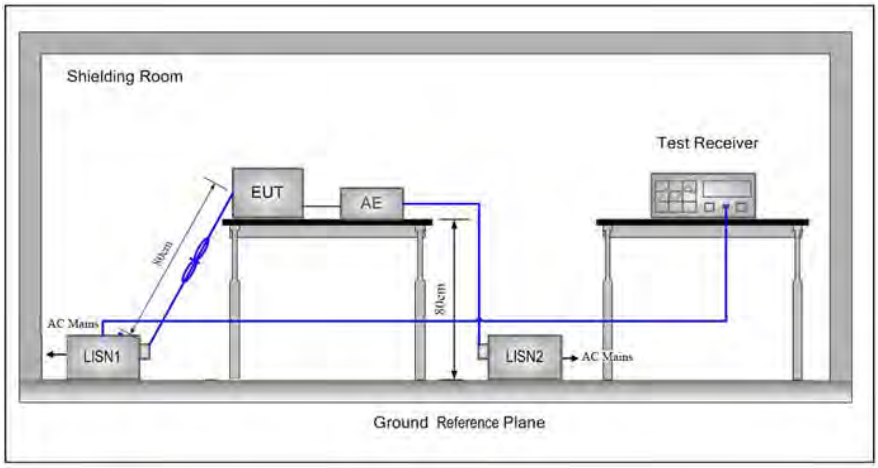


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	24.0 °C
Humidity:	58 % RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
802.11b/g/n(HT20)	2412MHz ~2462 MHz	Channel 1	Channel 6	Channel11
		2412MHz	2437MHz	2462MHz
802.11n(HT40)	2422MHz ~2452 MHz	Channel 1	Channel 4	Channel7
		2422MHz	2437MHz	2452MHz
Transmitting mode:	Keep the EUT in transmitting mode with all kind of modulation and all kind of data rate.			

Test mode:

Pre-scan under all rate at lowest channel 1

Mode	802.11b			
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps
Power(dBm)	17.87	17.82	17.76	17.71

Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Power(dBm)	17.36	17.32	17.29	17.24	17.21	17.67	17.65	17.59

Mode	802.11n (HT20)							
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
Power(dBm)	16.7	16.56	16.54	16.51	16.48	16.43	16.38	16.35
Mode	802.11n (HT40)							
Data Rate	13.5Mbps	27Mbps	40.5Mbps	54Mbps	81Mbps	108Mbps	121.5Mbps	135Mbps
Power(dBm)	15.65	15.62	15.59	15.52	15.49	15.47	15.43	15.41

Through Pre-scan, 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20); 13.5Mbps of rate is the worst case of 802.11n(HT40).

6 General Information

6.1 Client Information

Applicant:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Applicant:	NO.75 Zhongkai Development Area Huizhou, Guangdong, China
Manufacturer:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Manufacturer:	NO.75 Zhongkai Development Area Huizhou, Guangdong, China
Factory:	Hui Zhou Gaoshengda Technology Co., LTD
Address of Factory:	NO.75 Zhongkai Development Area Huizhou, Guangdong, China

6.2 General Description of EUT

Product Name:	WIFI+BT Module
Model No.(EUT):	WCT3TM2311
Trade Mark:	GSD
EUT Supports Radios application:	2.4G WiFi, 802.11b/g/n(20MHz), 2412-2462MHz
Power Supply:	DC 5V
Sample Received Date:	May. 23, 2019
Sample tested Date:	May. 23, 2019 to Aug. 15, 2019

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	OFDM,DSSS
Test Power Grade:	Ant 0 802.11b 1E/1E/1D 802.11g 14/12/12 802.11n20 14/12/12 802.11n40 10/10/11 Ant 1 802.11b 1E 802.11g 14/13/13 802.11n20 13 802.11n40 10/10/11
Test Software of EUT:	MT7662 & V1.0.3.14
Antenna Type and Gain:	Type: PIFA Antenna, Gain: 1.53dBi
Test Voltage:	DC 5V

Operation Frequency each of channel(802.11b/g/n HT20)							
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		

Operation Frequency each of channel(802.11n HT40)					
Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2422MHz	4	2437MHz	7	2452MHz
2	2427MHz	5	2442MHz		
3	2432MHz	6	2447MHz		

6.4 Description of Support Units

The EUT has been tested independently

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

6.6 Deviation from Standards

None.

6.7 Abnormalities from Standard Conditions

None.

6.8 Other Information Requested by the Customer

None.

6.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.3dB (30MHz-1GHz)
		4.5dB (1GHz-12.75GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

7 Equipment List

RF test system					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. Date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	02-28-2020
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-01-2019	02-28-2020
Signal Generator	Keysight	N5182B	MY53051549	03-01-2019	02-28-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
DC Power	Keysight	E3642A	MY54426035	03-01-2019	02-28-2020
PC-1	Lenovo	R4960d	---	03-01-2019	02-28-2020
BT&WI-FI Automatic control	R&S	OSP120	101374	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-2	15860006	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-1	15860004	03-01-2019	02-28-2020
RF control unit	JS Tonscend	JS0806-4	158060007	03-01-2019	02-28-2020
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	biaozhi	HM10	1804186	10-12-2018	10-11-2019

Conducted disturbance Test					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100435	05-20-2019	05-18-2020
Temperature/ Humidity Indicator	Defu	TH128	/	06-14-2019	06-12-2020
Communication test set	Agilent	E5515C	GB47050534	03-01-2019	02-28-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
LISN	R&S	ENV216	100098	05-08-2019	05-06-2020
LISN	schwarzbeck	NNLK8121	8121-529	05-08-2019	05-06-2020
Voltage Probe	R&S	ESH2-Z3 0299.7810.56	100042	06-13-2017	06-11-2020
Current Probe	R&S	EZ-17 816.2063.03	100106	05-20-2019	05-18-2020
ISN	TESEQ	ISN T800	30297	01-16-2019	01-15-2020
Barometer	changchun	DYM3	1188	06-20-2019	06-18-2020

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05-24-2019	05-22-2020
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-401	12-21-2018	12-20-2019
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	07-26-2019	07-24-2020
Microwave Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Microwave Preamplifier	Tonscend	EMC051845SE	980380	01-16-2019	01-15-2020
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1869	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057410	06-05-2018	06-03-2021
Double ridge horn antenna	A.H.SYSTEMS	SAS-574	374	06-05-2018	06-04-2021
Pre-amplifier	A.H.SYSTEMS	PAP-1840-60	6041.6041	07-26-2019	07-24-2020
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-24-2021
Spectrum Analyzer	R&S	FSP40	100416	04-28-2019	04-26-2020
Receiver	R&S	ESCI	100435	05-20-2019	05-18-2020
Receiver	R&S	ESCI7	100938-003	11-23-2018	11-22-2019
Multi device Controller	maturo	NCD/070/10711112	---	01-09-2019	01-08-2020
Signal Generator	Agilent	E4438C	MY45095744	03-01-2019	02-28-2020
Signal Generator	Keysight	E8257D	MY53401106	03-01-2019	02-28-2020
Temperature/ Humidity Indicator	Shanghai qixiang	HM10	1804298	10-12-2018	10-11-2019
Communication test set	Agilent	E5515C	GB47050534	03-01-2019	02-28-2020
Cable line	Fulai(7M)	SF106	5219/6A	01-09-2019	01-08-2020
Cable line	Fulai(6M)	SF106	5220/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5216/6A	01-09-2019	01-08-2020
Cable line	Fulai(3M)	SF106	5217/6A	01-09-2019	01-08-2020
Communication test set	R&S	CMW500	104466	01-18-2019	01-17-2020
High-pass filter	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-09-2019	01-08-2020
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-09-2019	01-08-2020
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-09-2019	01-08-2020

3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	06-19-2019	06-17-2020
Receiver	Keysight	N9038A	MY57290136	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9020B	MY57111112	03-27-2019	03-25-2020
Spectrum Analyzer	Keysight	N9030B	MY57140871	03-27-2019	03-25-2020
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-075	04-25-2018	04-23-2021
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-25-2018	04-23-2021
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-25-2018	04-23-2021
Horn Antenna	Schwarzbeck	BBHA 9170	9170-829	04-25-2018	04-23-2021
Communication Antenna	Schwarzbeck	CLSA 0110L	1014	02-14-2019	02-13-2020
Biconical antenna	Schwarzbeck	VUBA 9117	9117-381	04-25-2018	04-23-2021
Horn Antenna	ETS-LINDGREN	3117	00057407	07-10-2018	07-08-2021
Preamplifier	EMCI	EMC184055SE	980596	05-22-2019	05-20-2020
Communication test set	R&S	CMW500	102898	01-18-2019	01-17-2020
Preamplifier	EMCI	EMC001330	980563	05-08-2019	05-06-2020
Preamplifier	Agilent	8449B	3008A02425	08-21-2018	08-20-2019
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	05-01-2019	04-30-2020
Signal Generator	KEYSIGHT	E8257D	MY53401106	03-01-2019	02-28-2020
Fully Anechoic Chamber	TDK	FAC-3	---	01-17-2018	01-15-2021
Filter bank	JS Tonscend	JS0806-F	188060094	04-10-2018	04-08-2021
Cable line	Times	SFT205-NMSM-2.50M	394812-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	01-09-2019	01-08-2020
Cable line	Times	EMC104-NMNM-1000	SN160710	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	01-09-2019	01-08-2020
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	01-09-2019	01-08-2020
Cable line	Times	HF160-KMKM-3.00M	393493-0001	01-09-2019	01-08-2020

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C	Subpart C-Intentional Radiators
2	ANSI C63.10-2013	American National Standard for Testing Unlicesed Wireless Devices

Test Results List:

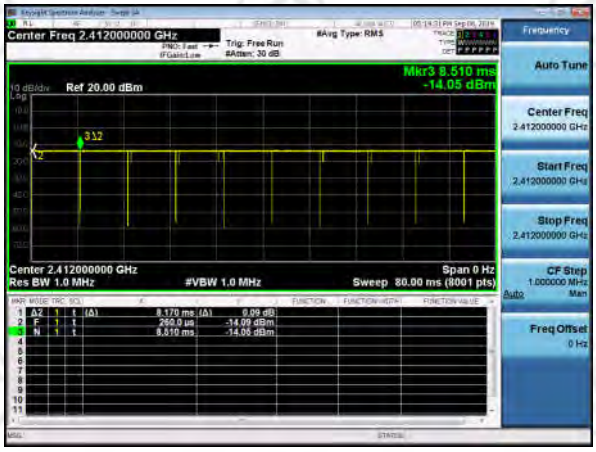
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10	Power Spectral Density	PASS	Appendix E)
Part15C Section 15.203/15.247 (c)	ANSI C63.10	Antenna Requirement	PASS	Appendix F)
Part15C Section 15.207	ANSI C63.10	AC Power Line Conducted Emission	PASS	Appendix G)
Part15C Section 15.205/15.209	ANSI C63.10	Restricted bands around fundamental frequency (Radiated Emission)	PASS	Appendix H)
Part15C Section 15.205/15.209	ANSI C63.10	Radiated Spurious Emissions	PASS	Appendix I)

EUT Duty Cycle

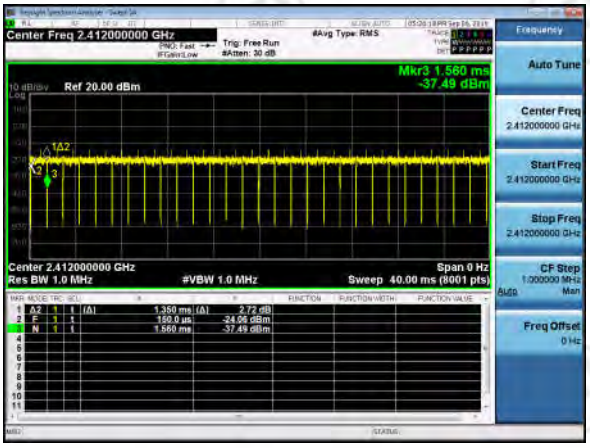
Ant1:

Duty Cycle			
Configuration	TX ON(ms)	TXALL(ms)	Duty Cycle(%)
802.11b	8.170	8.25	99.03%
802.11g	1.350	1.410	95.74%
802.11n HT20	1.260	1.325	95.09%
802.11n HT40	0.6016	0.6768	88.89%

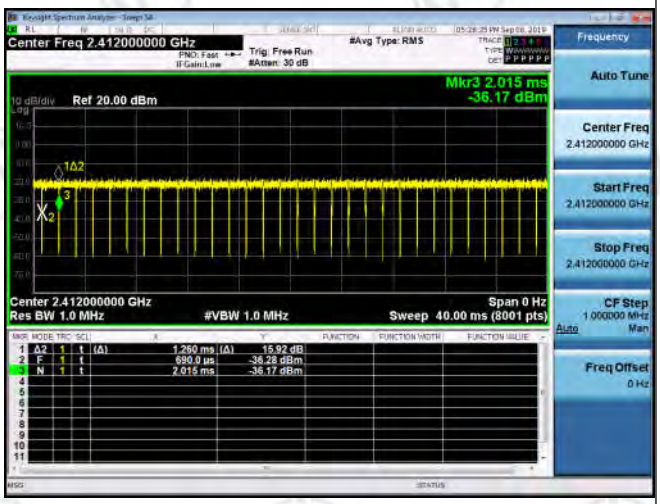
802.11b



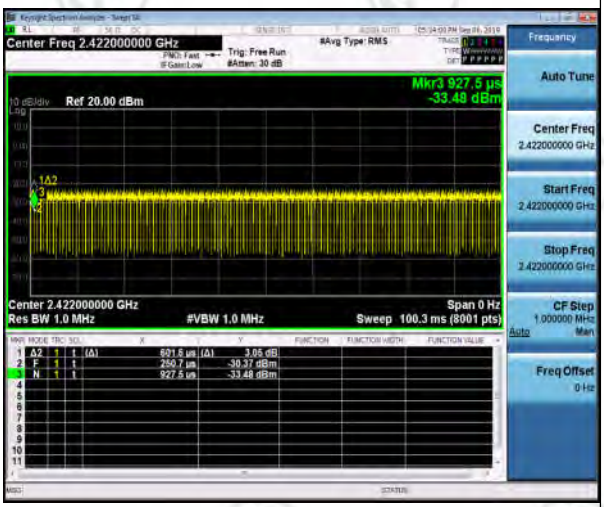
802.11g



802.11n HT20



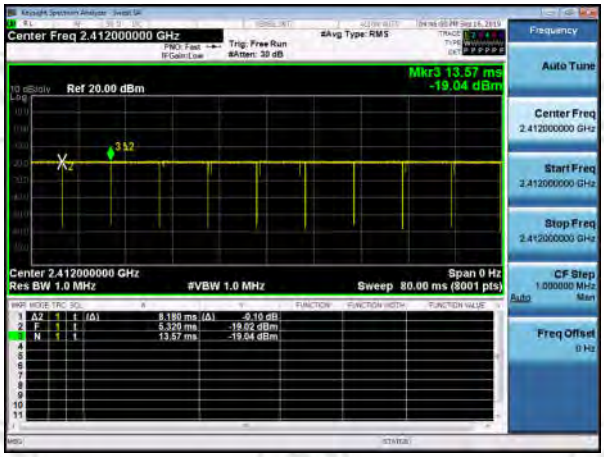
802.11n HT40



Ant2:

Duty Cycle			
Configuration	TX ON(ms)	TX ALL(ms)	Duty Cycle(%)
802.11b	8.180	8.250	99.2%
802.11g	1.350	1.41	95.7%
802.11n HT20	1.265	1.325	95.5%
802.11n HT40	0.62	0.685	90.5%

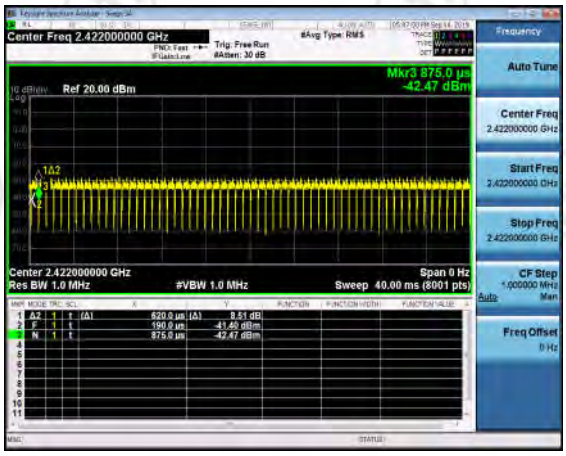
802.11b



802.11g

802.11n HT20

802.11n HT40



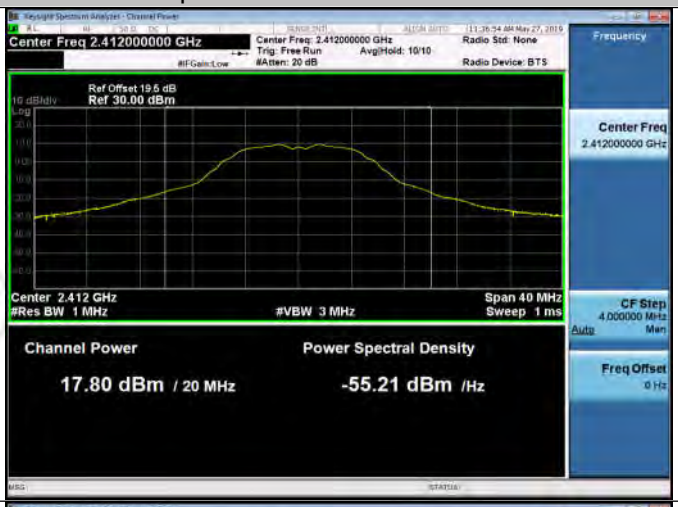
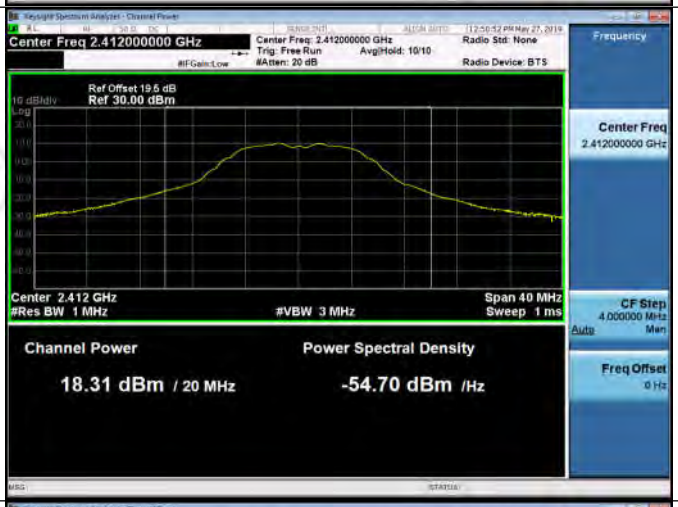
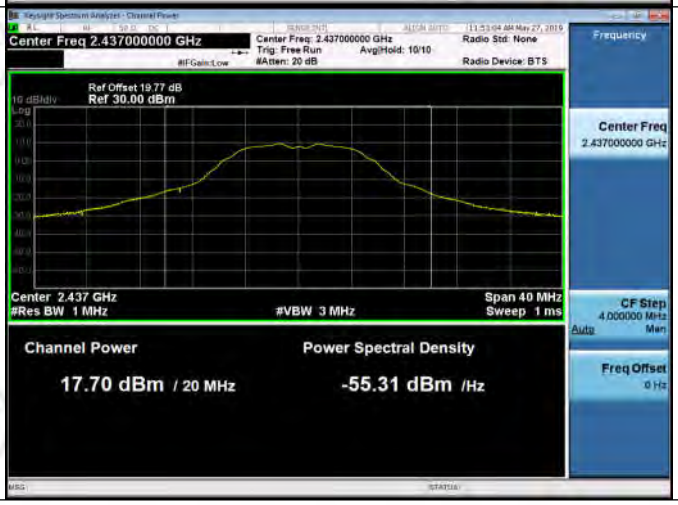
Appendix A): Conducted Peak Output Power

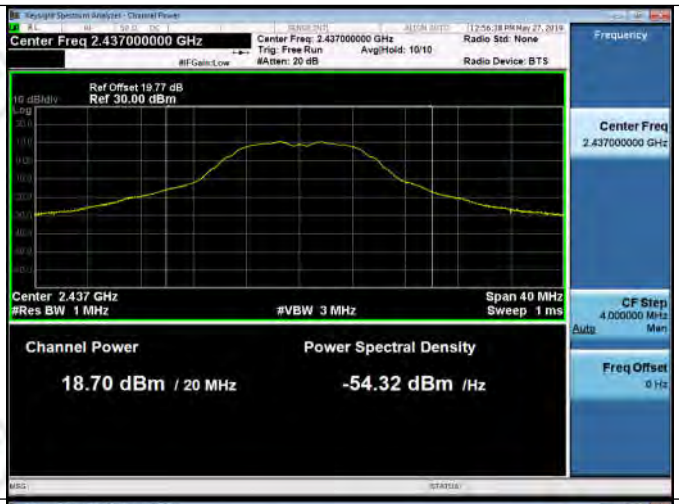
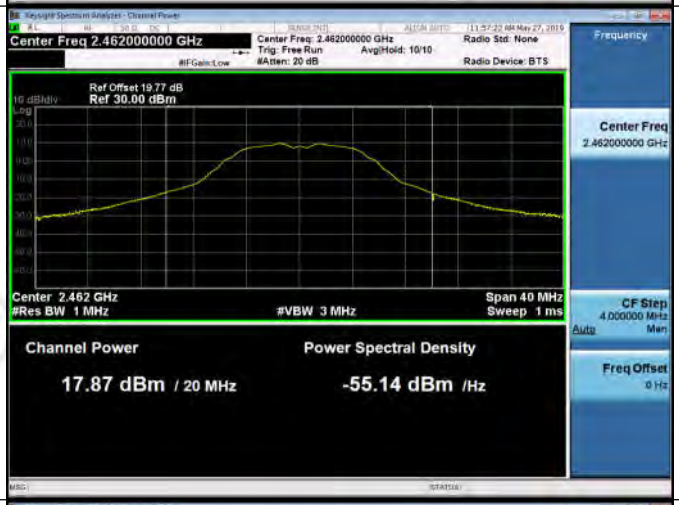
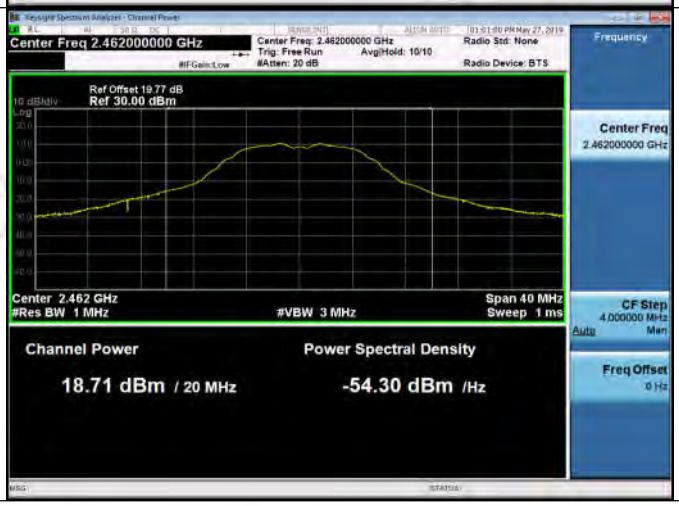
Result Table

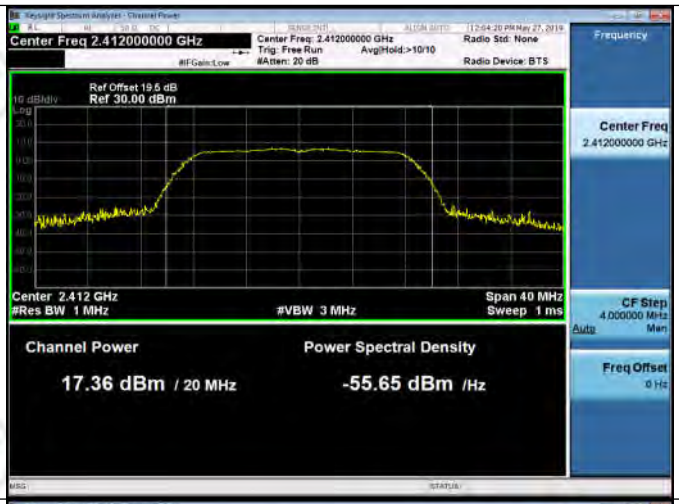
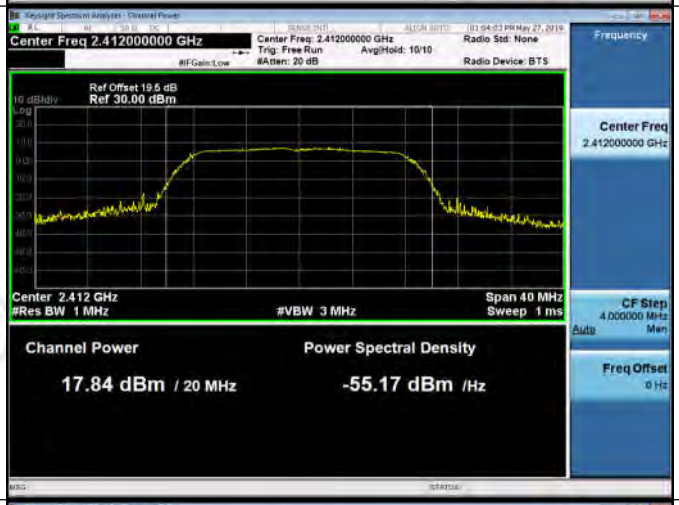
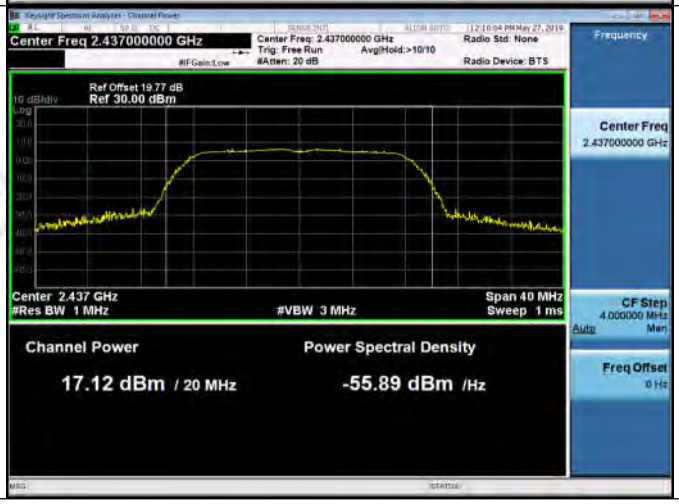
Mode	Antenna	Channel	Conducted Peak Output Power [dBm]	Verdict
11B	Ant1	LCH	17.8	PASS
11B	Ant2	LCH	18.31	PASS
11B	Ant1	MCH	17.7	PASS
11B	Ant2	MCH	18.7	PASS
11B	Ant1	HCH	17.87	PASS
11B	Ant2	HCH	18.71	PASS
11G	Ant1	LCH	17.36	PASS
11G	Ant2	LCH	17.84	PASS
11G	Ant1	MCH	17.12	PASS
11G	Ant2	MCH	17.72	PASS
11G	Ant1	HCH	17.03	PASS
11G	Ant2	HCH	17.63	PASS
11N20SISO	Ant1	LCH	16.7	PASS
11N20SISO	Ant2	LCH	16.9	PASS
11N20SISO	Ant1	MCH	16.65	PASS
11N20SISO	Ant2	MCH	16.59	PASS
11N20SISO	Ant1	HCH	16.43	PASS
11N20SISO	Ant2	HCH	16.61	PASS
11N20MIMO	Ant1	LCH	13.16	PASS
11N20MIMO	Ant2	LCH	13.03	PASS
11N20MIMO	Ant1+2	LCH	16.11	PASS
11N20MIMO	Ant1	MCH	13.12	PASS
11N20MIMO	Ant2	MCH	12.85	PASS
11N20MIMO	Ant1+2	MCH	16.00	PASS
11N20MIMO	Ant1	HCH	13.38	PASS
11N20MIMO	Ant2	HCH	12.53	PASS
11N20MIMO	Ant1+2	HCH	15.99	PASS
11N40SISO	Ant1	LCH	15.58	PASS
11N40SISO	Ant2	LCH	15	PASS
11N40SISO	Ant1	MCH	15.62	PASS
11N40SISO	Ant2	MCH	15	PASS

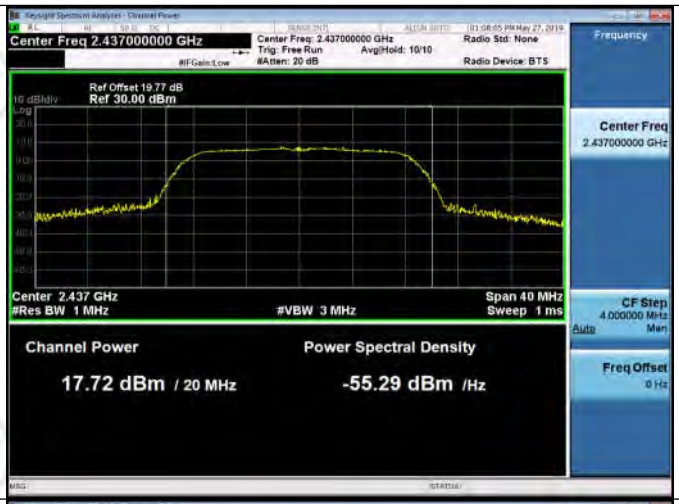
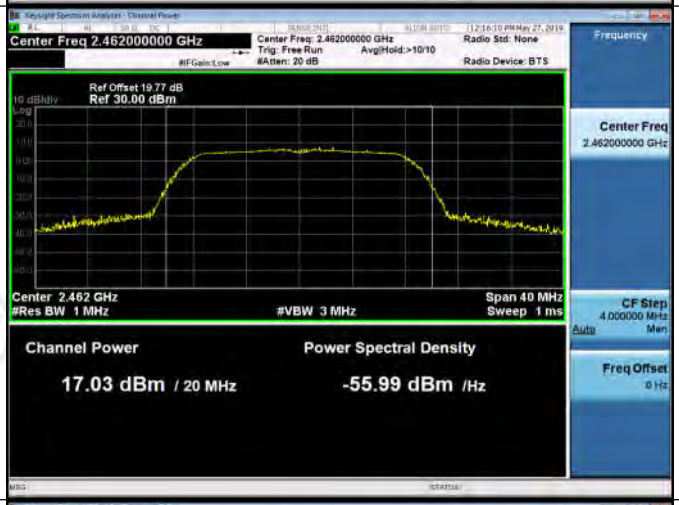
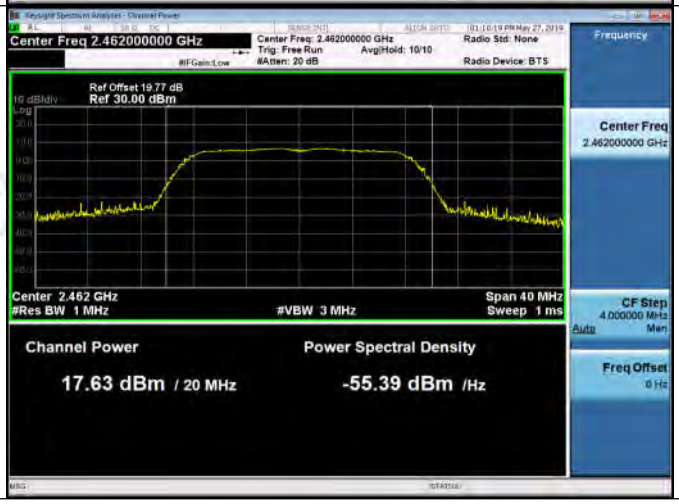
11N40SISO	Ant1	HCH	15.65	PASS
11N40SISO	Ant2	HCH	15.62	PASS
11N40MIMO	Ant1	LCH	12.37	PASS
11N40MIMO	Ant2	LCH	12.31	PASS
11N40MIMO	Ant1+2	LCH	15.35	PASS
11N40MIMO	Ant1	MCH	12.43	PASS
11N40MIMO	Ant2	MCH	13.2	PASS
11N40MIMO	Ant1+2	MCH	15.84	PASS
11N40MIMO	Ant1	HCH	12.78	PASS
11N40MIMO	Ant2	HCH	12.19	PASS
11N40MIMO	Ant1+2	HCH	15.51	PASS

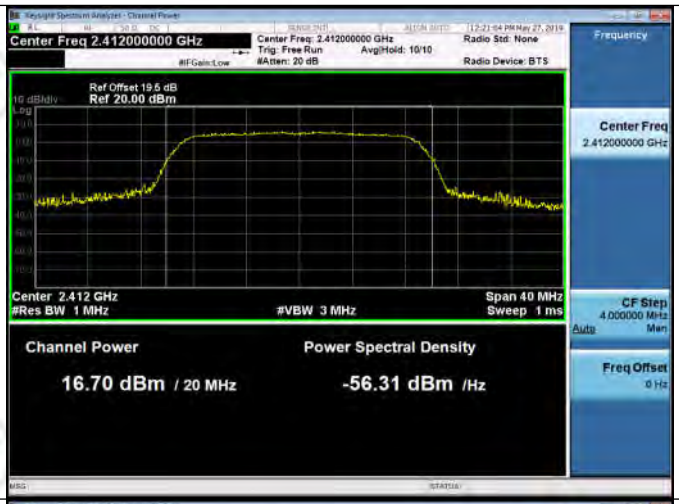
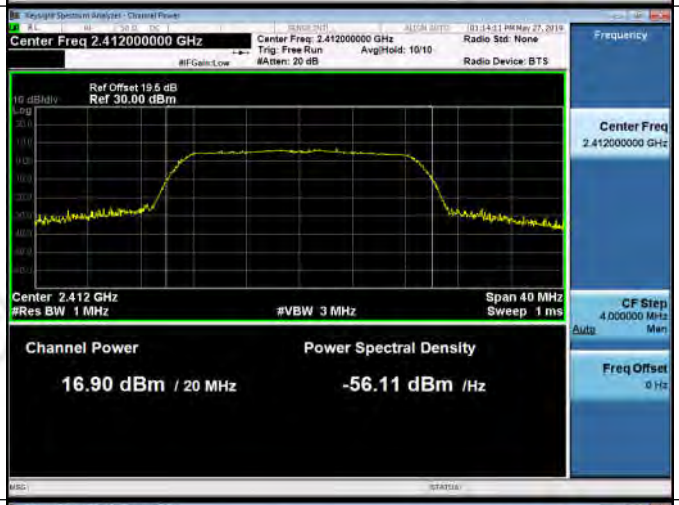
Test Graph

Graphs		
11B/LCH_Ant1		
11B/LCH_Ant2		
11B/MCH_Ant1		

11B/MCH_Ant2		
11B/HCH_Ant1		
11B/HCH_Ant2		

11G/LCH_Ant1		
11G/LCH_Ant2		
11G/MCH_Ant1		

11G/MCH_Ant2		
11G/HCH_Ant1		
11G/HCH_Ant2		

11N20SISO/LCH_Ant1		
11N20SISO/LCH_Ant2		
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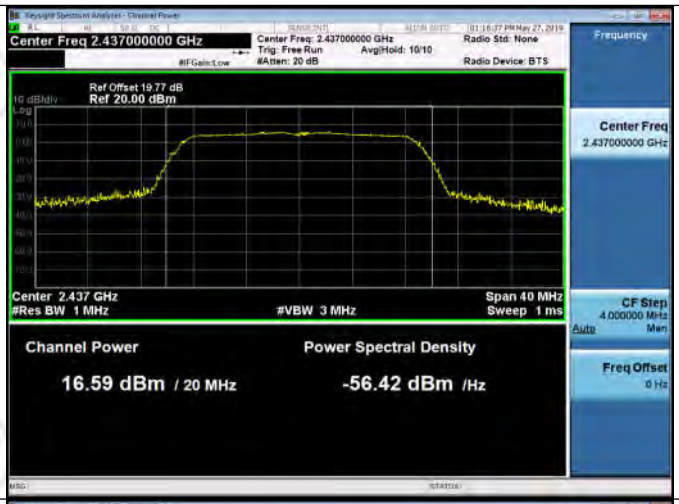
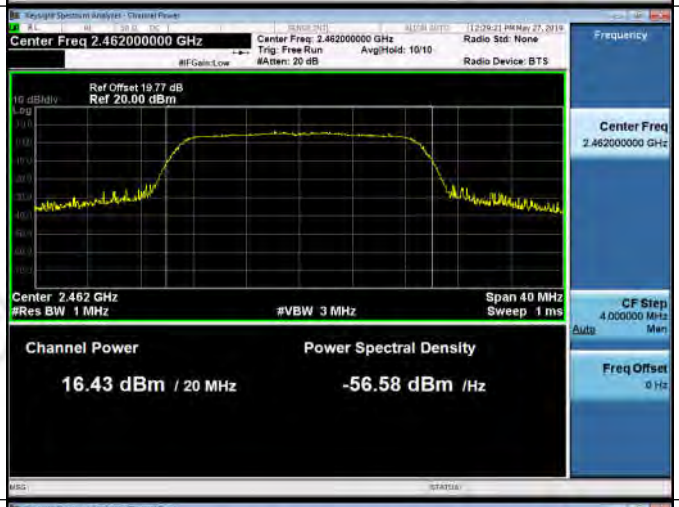
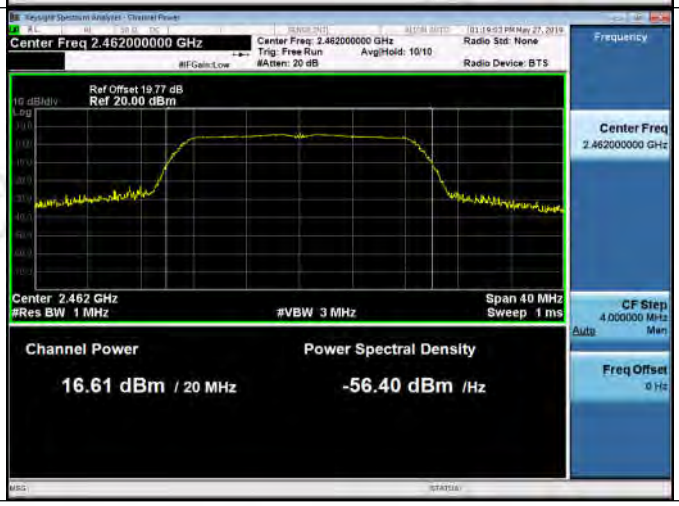
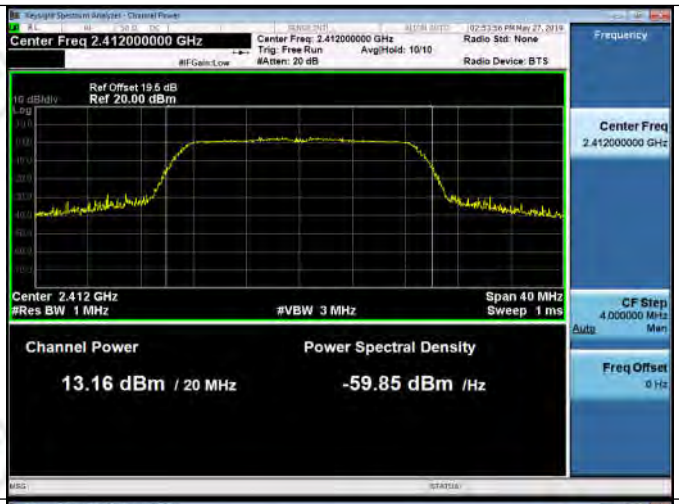
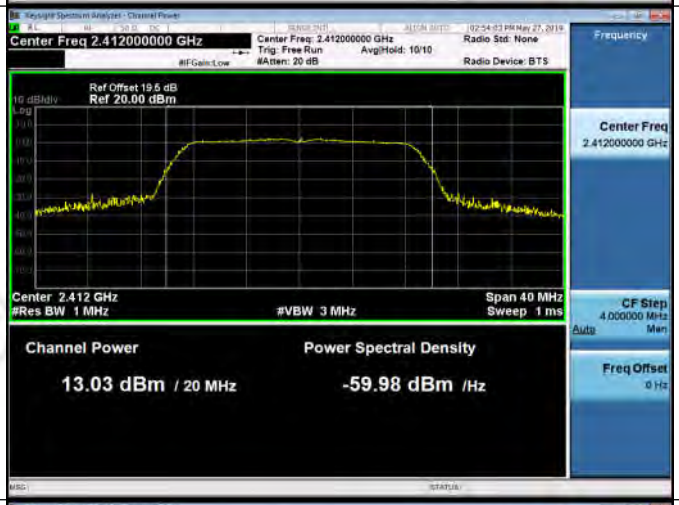
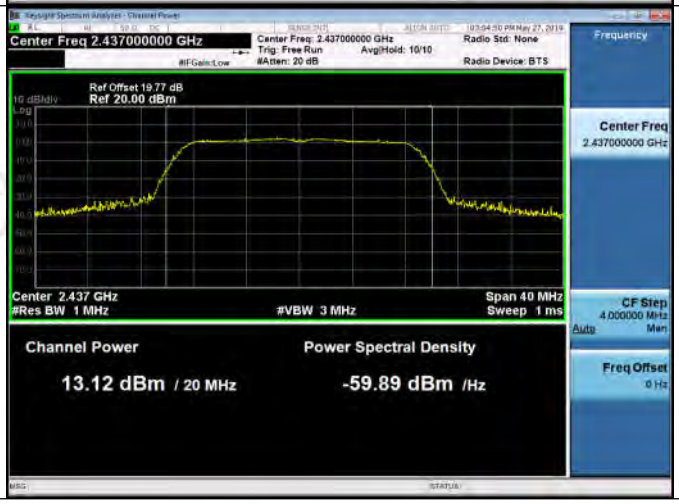
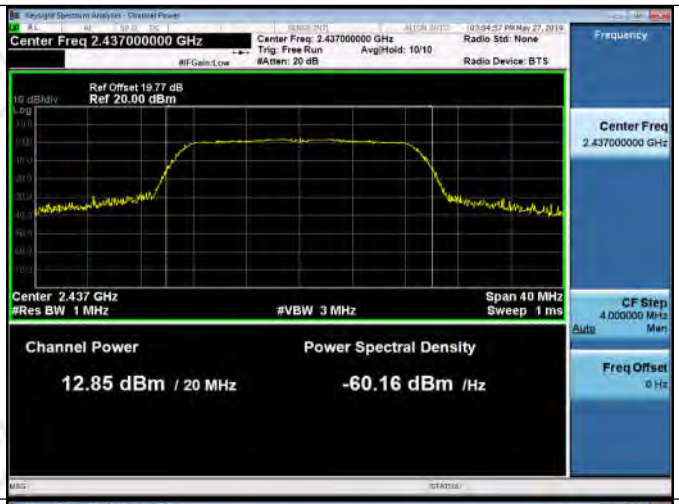
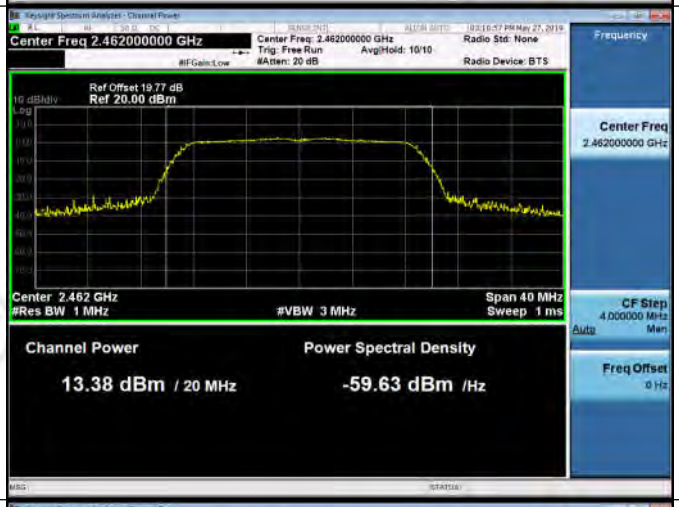
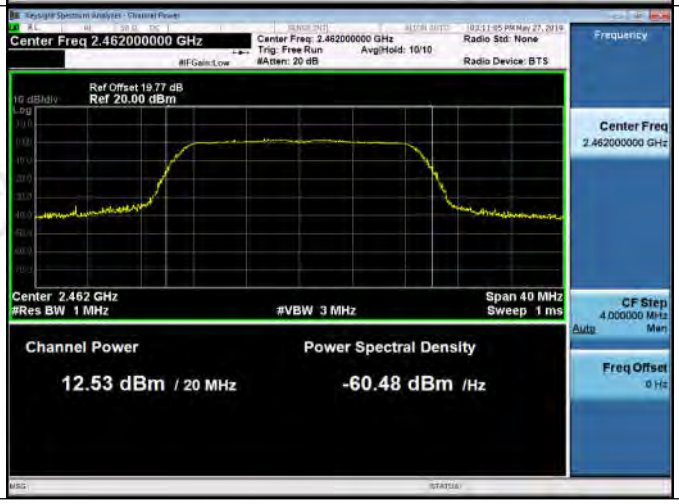
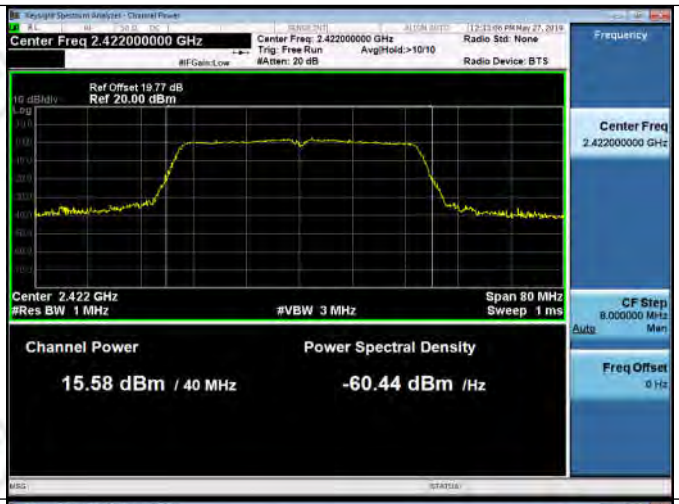
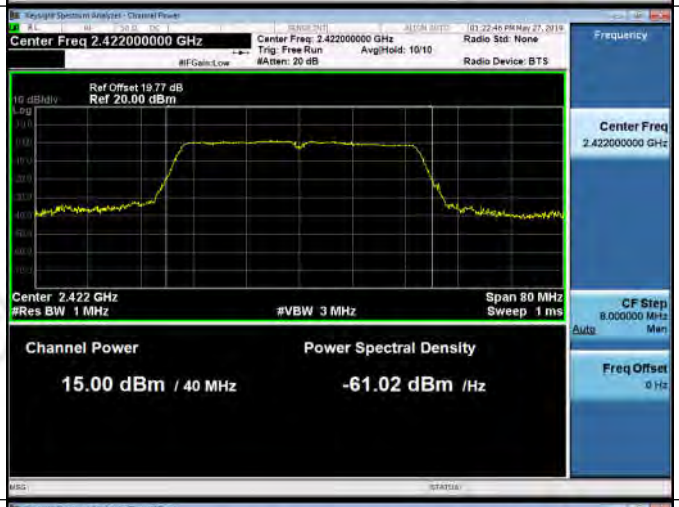
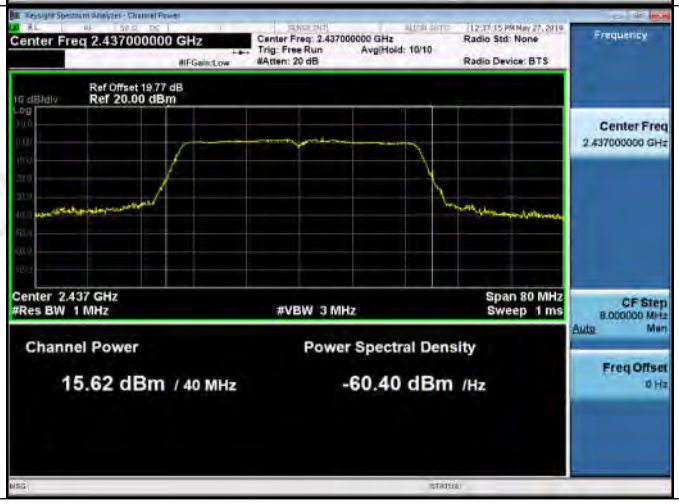
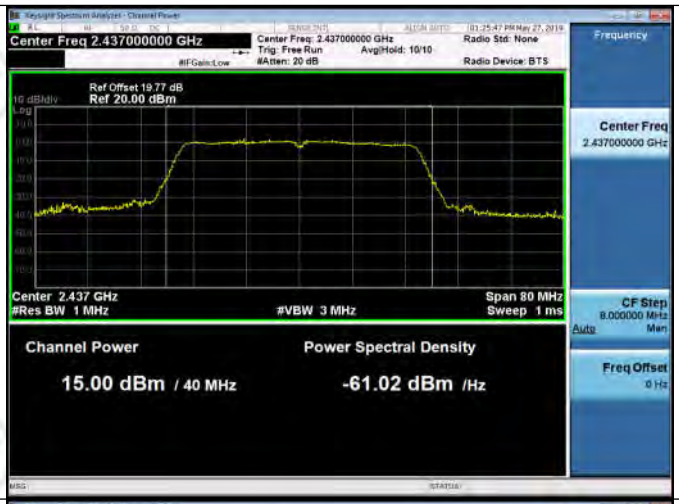
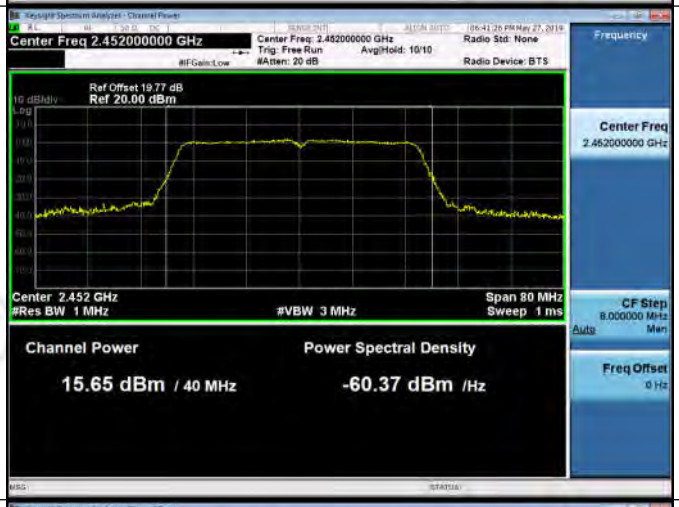
11N20SISO/MCH_Ant2		
11N20SISO/HCH_Ant1		
11N20SISO/HCH_Ant2		

11N20MIMO/LCH_Ant1		
11N20MIMO/LCH_Ant2		
11N20MIMO/MCH_Ant1		

11N20MIMO/MCH_Ant2		
11N20MIMO/HCH_Ant1		
11N20MIMO/HCH_Ant2		

11N40SISO/LCH_Ant1		
11N40SISO/LCH_Ant2		
11N40SISO/MCH_Ant1		

11N40SISO/MCH_Ant2		
11N40SISO/HCH_Ant1		
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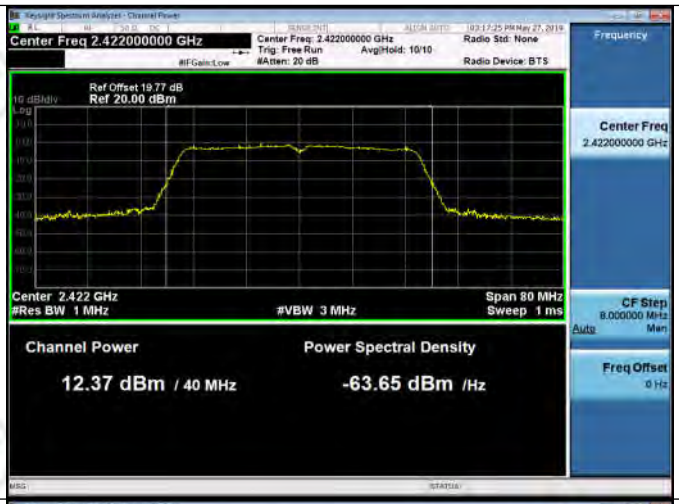
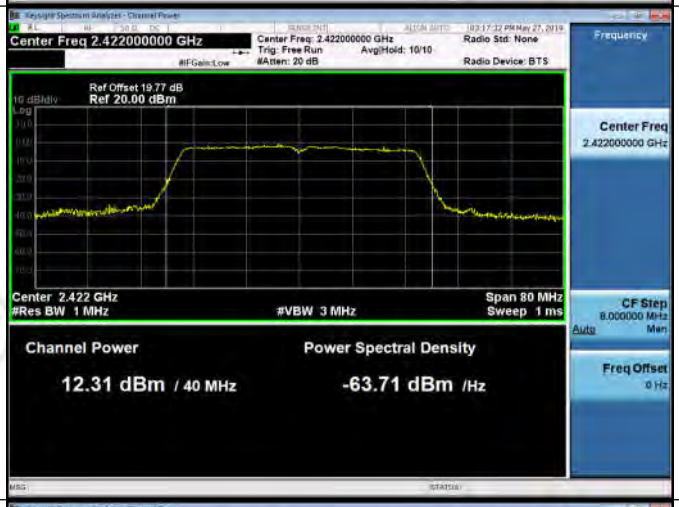
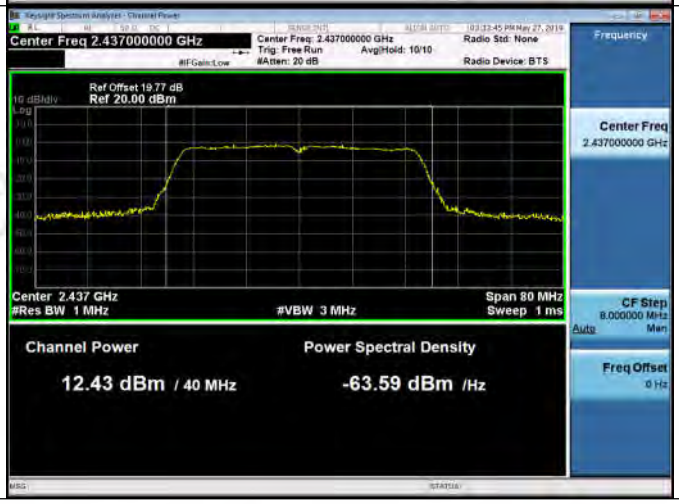
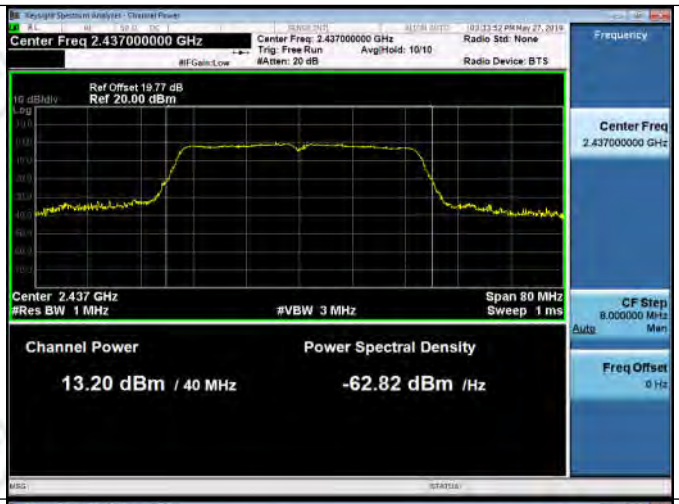
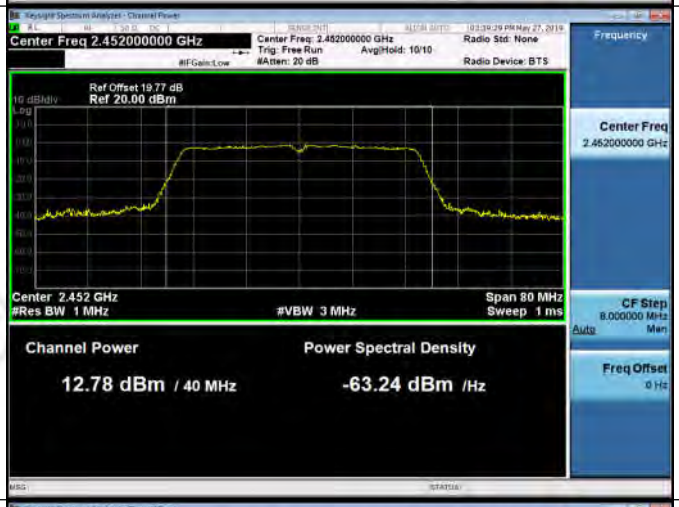
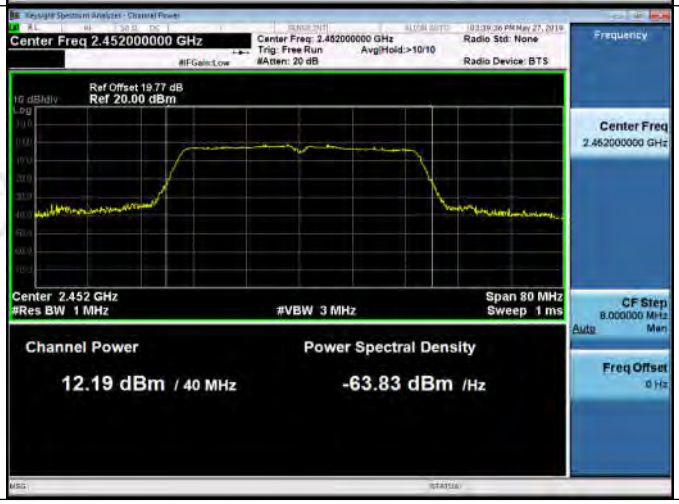
11N40MIMO/LCH_Ant1		
11N40MIMO/LCH_Ant2		
11N40MIMO/MCH_Ant1		

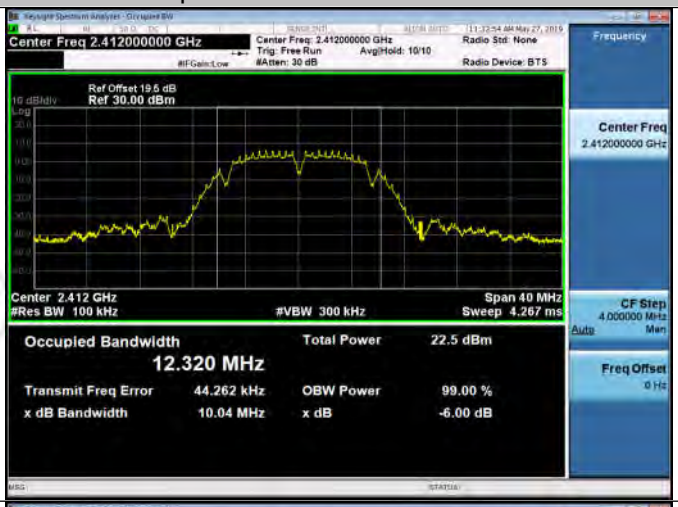
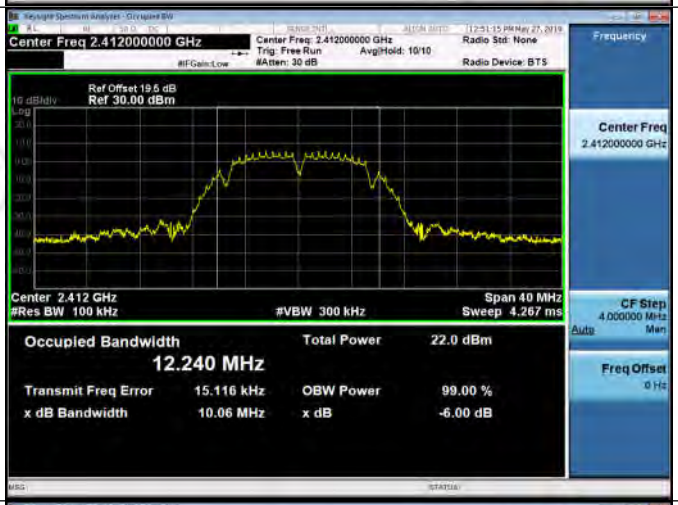
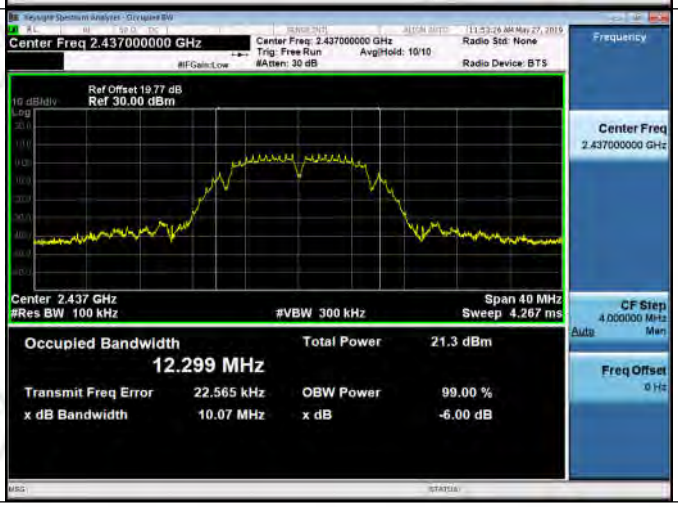
11N40MIMO/MCH_Ant2		
11N40MIMO/HCH_Ant1		
11N40MIMO/HCH_Ant2		

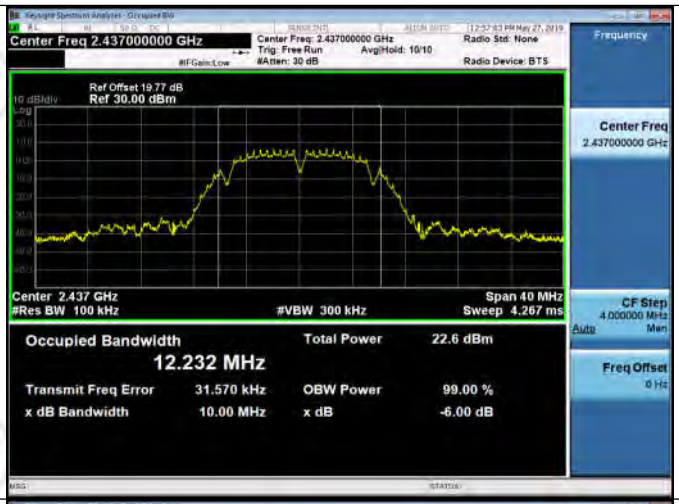
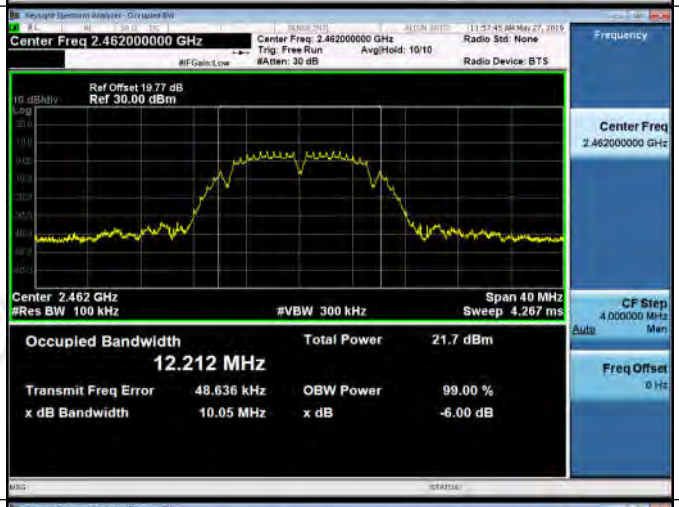
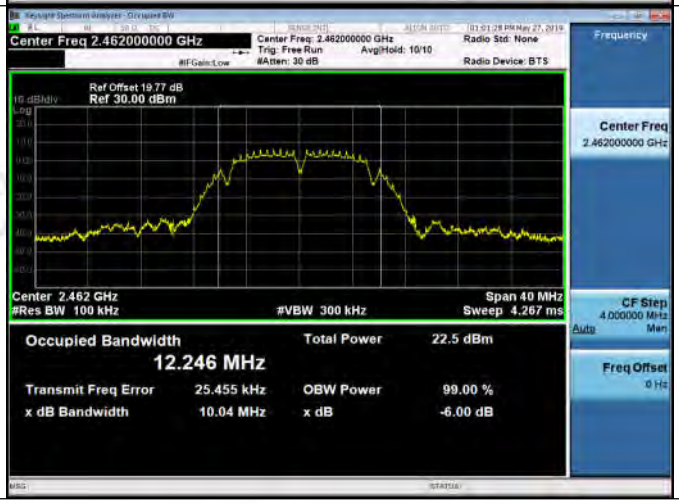
Appendix B): 6dB Occupied Bandwidth

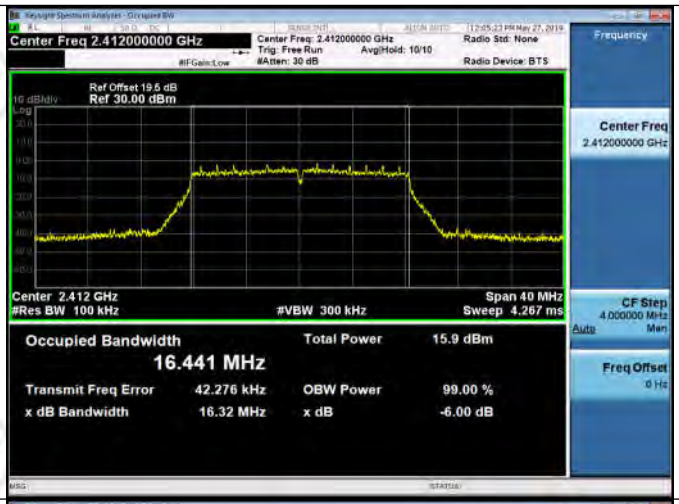
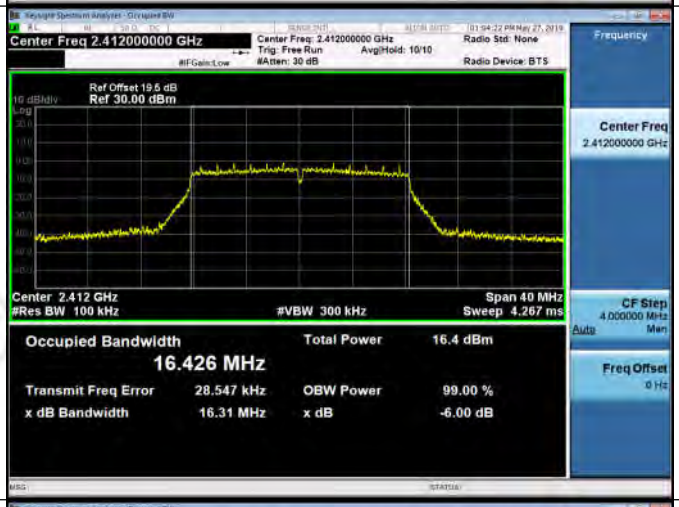
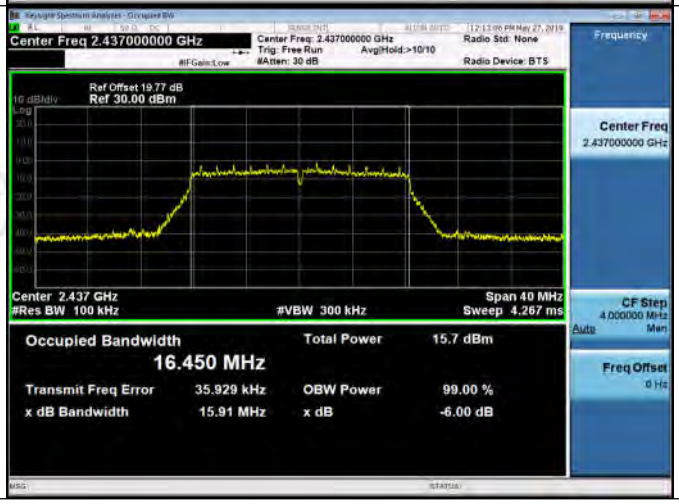
Result Table

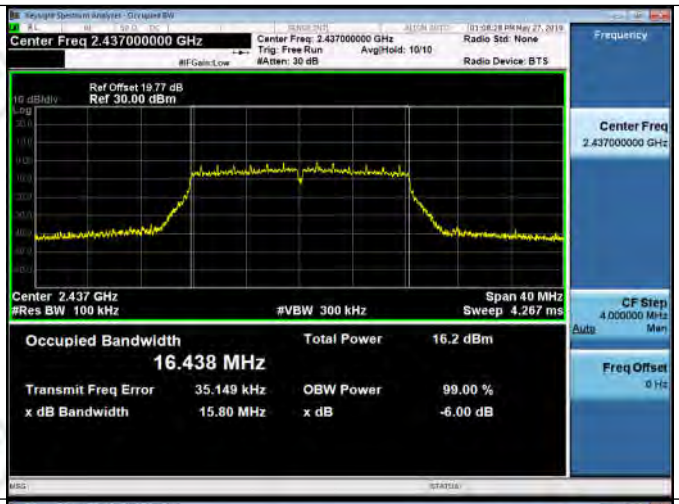
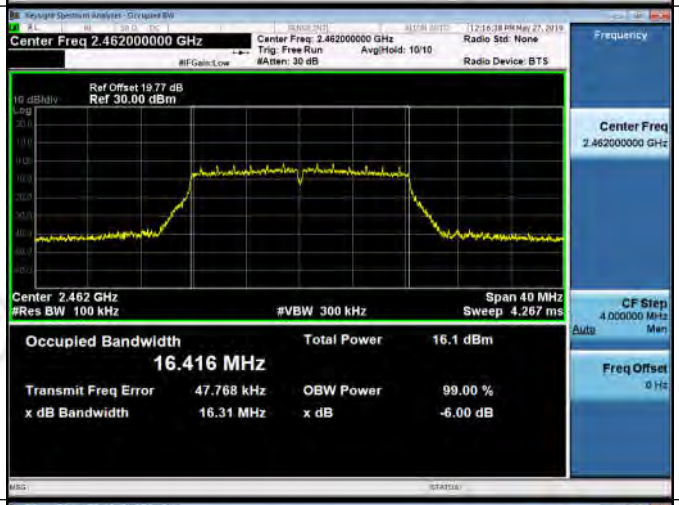
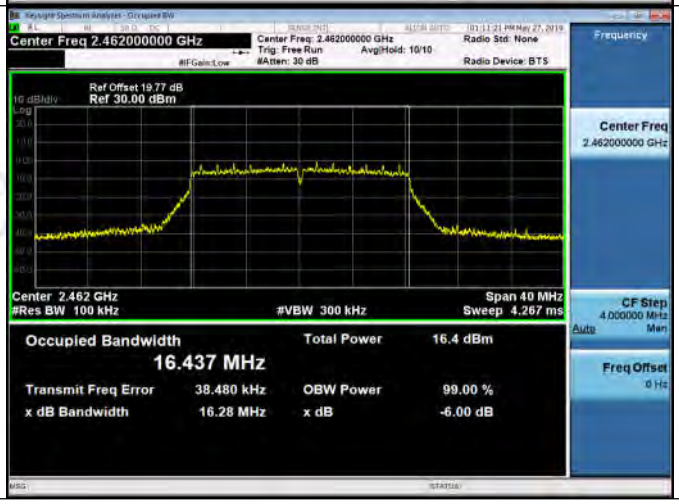
Mode	Antenna	Channel	6dB Bandwidth [MHz]	Verdict
11B	Ant1	LCH	10.04	PASS
11B	Ant2	LCH	10.06	PASS
11B	Ant1	MCH	10.07	PASS
11B	Ant2	MCH	10.00	PASS
11B	Ant1	HCH	10.05	PASS
11B	Ant2	HCH	10.04	PASS
11G	Ant1	LCH	16.32	PASS
11G	Ant2	LCH	16.31	PASS
11G	Ant1	MCH	15.91	PASS
11G	Ant2	MCH	15.80	PASS
11G	Ant1	HCH	16.31	PASS
11G	Ant2	HCH	16.28	PASS
11N20SISO	Ant1	LCH	17.31	PASS
11N20SISO	Ant2	LCH	16.93	PASS
11N20SISO	Ant1	MCH	17.28	PASS
11N20SISO	Ant2	MCH	16.92	PASS
11N20SISO	Ant1	HCH	16.92	PASS
11N20SISO	Ant2	HCH	16.93	PASS
11N40SISO	Ant1	LCH	35.47	PASS
11N40SISO	Ant2	LCH	35.35	PASS
11N40SISO	Ant1	MCH	35.46	PASS
11N40SISO	Ant2	MCH	35.47	PASS
11N40SISO	Ant1	HCH	35.15	PASS
11N40SISO	Ant2	HCH	35.15	PASS

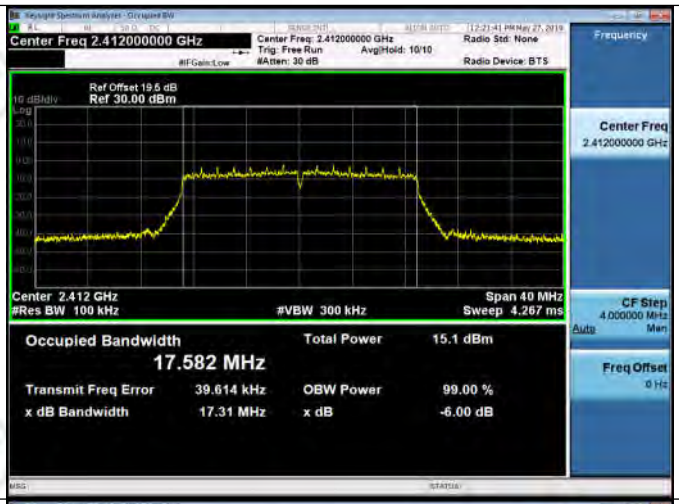
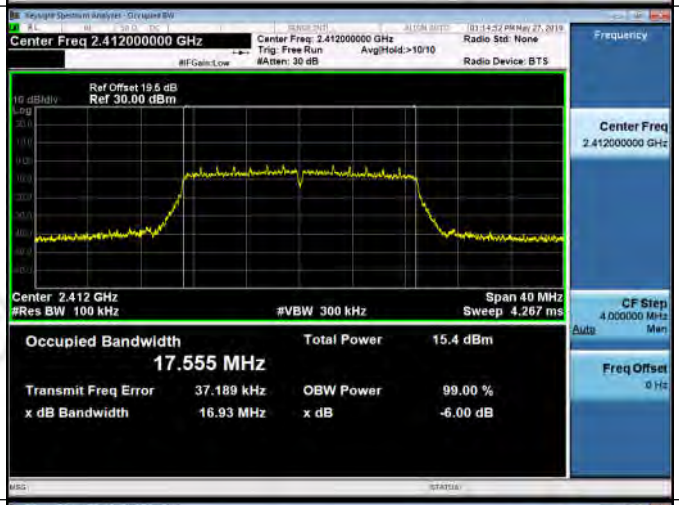
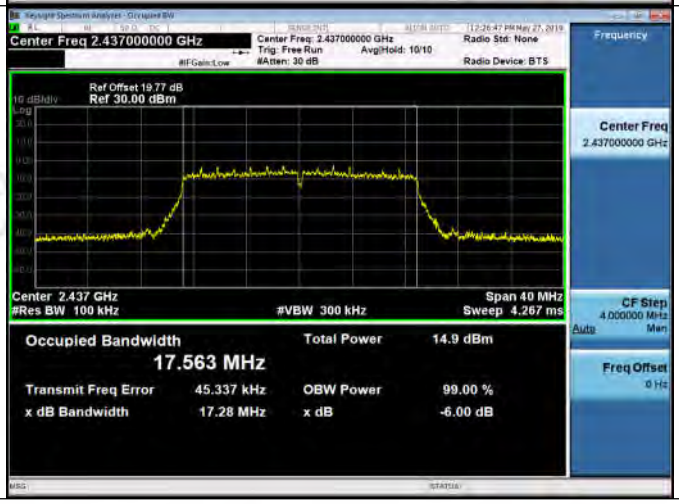
Test Graph

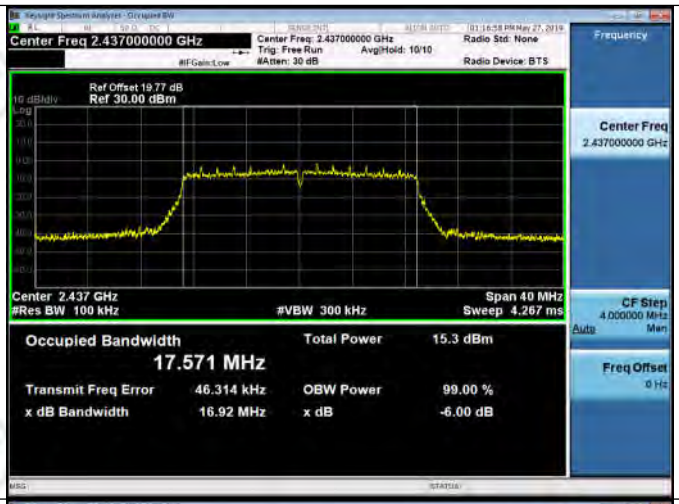
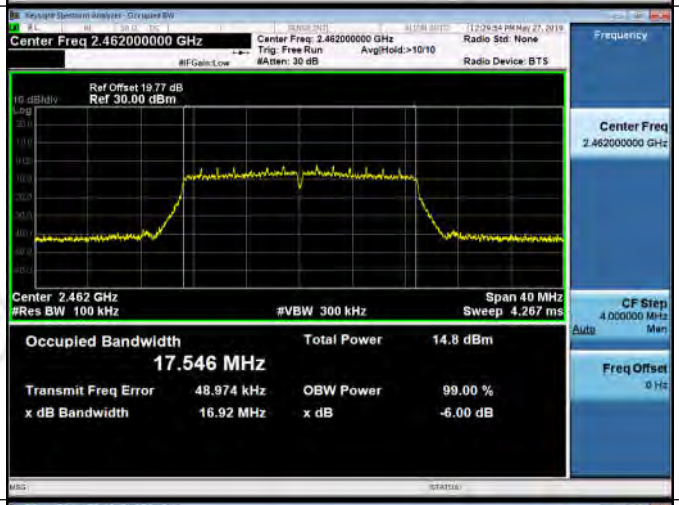
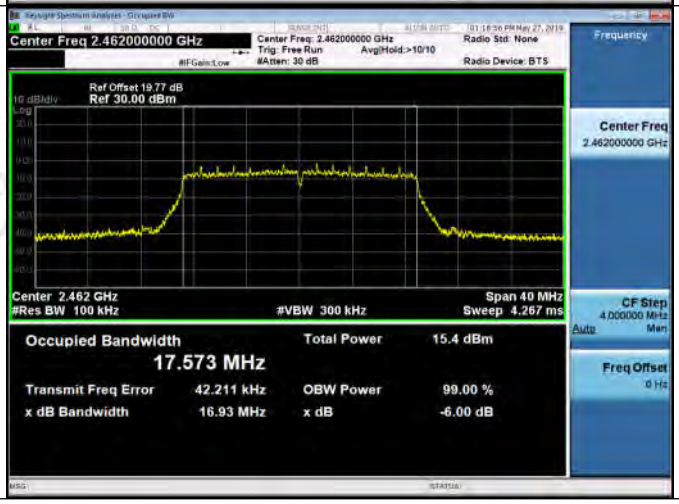
Graphs		
11B/LCH_Ant1		
11B/LCH_Ant2		
11B/MCH_Ant1		

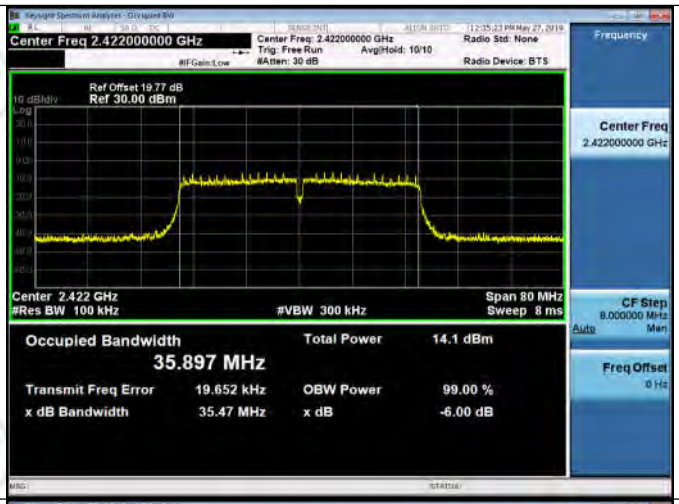
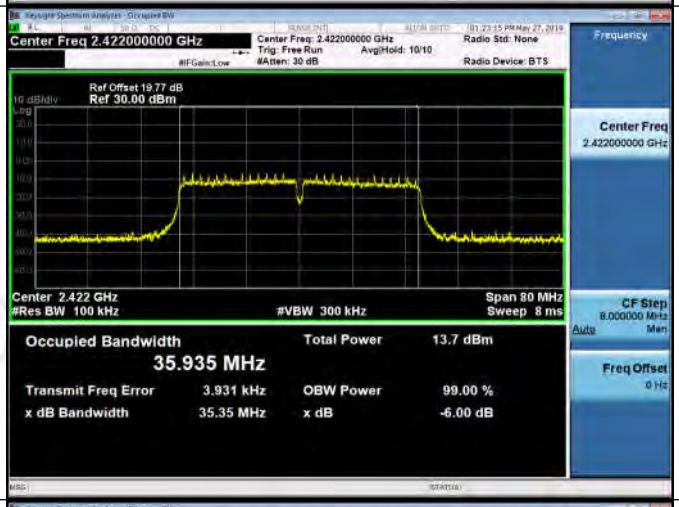
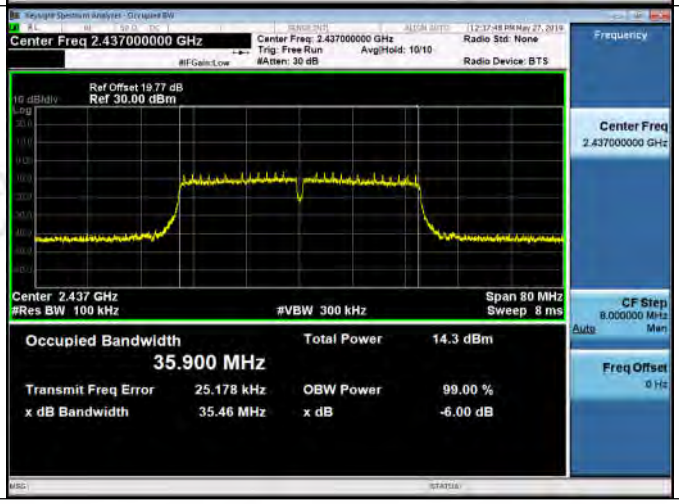
11B/MCH_Ant2		
11B/HCH_Ant1		
11B/HCH_Ant2		

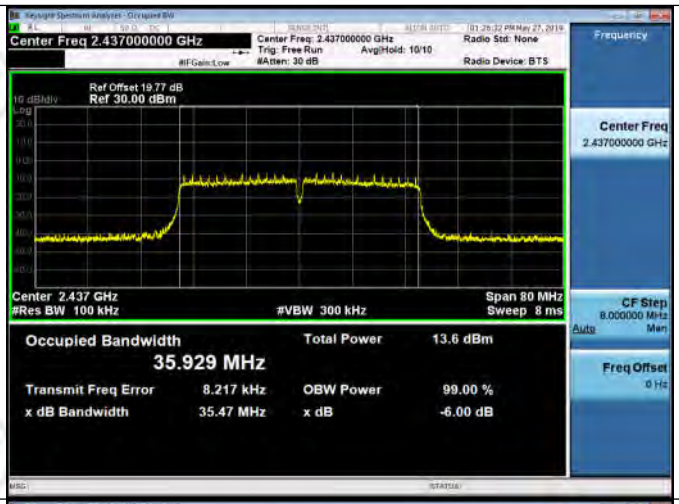
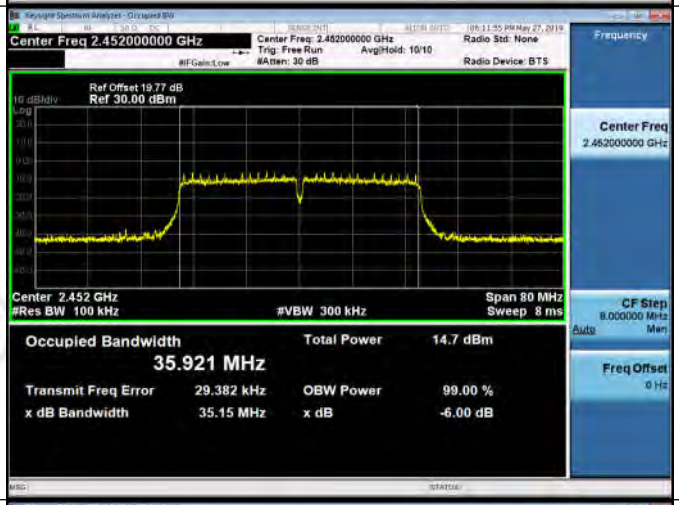
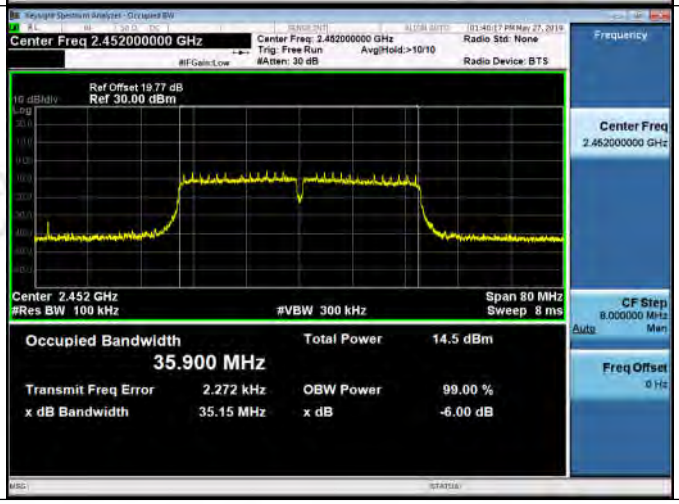
11G/LCH_Ant1		
11G/LCH_Ant2		
11G/MCH_Ant1		

11G/MCH_Ant2		
11G/HCH_Ant1		
11G/HCH_Ant2		

11N20SISO/LCH_Ant1		
11N20SISO/LCH_Ant2		
11N20SISO/MCH_Ant1		

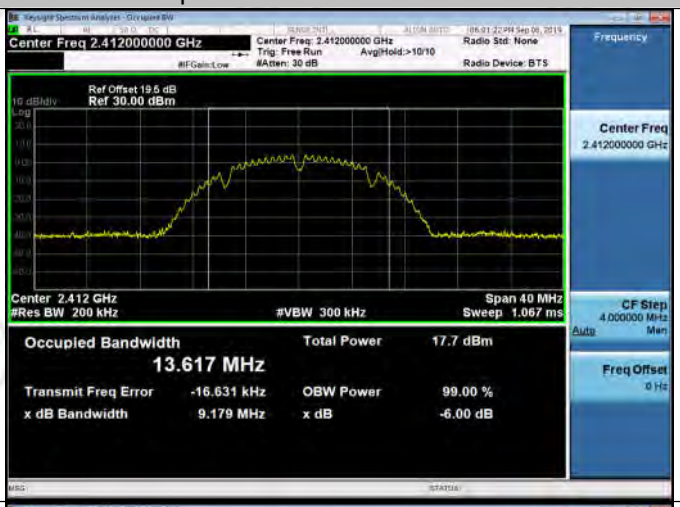
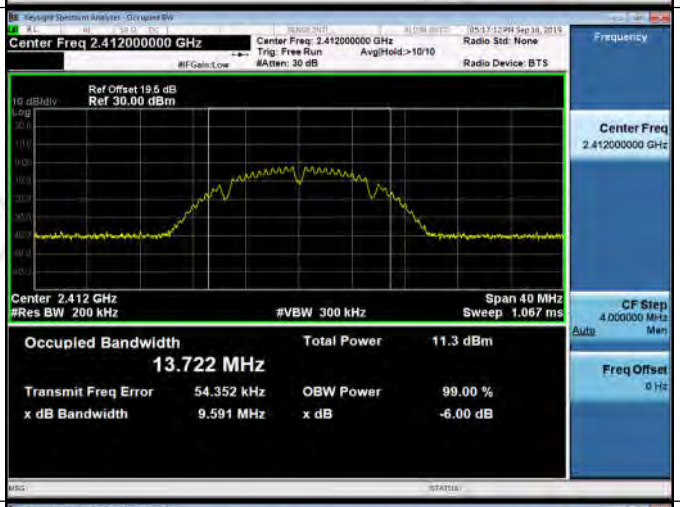
11N20SISO/MCH_Ant2		
11N20SISO/HCH_Ant1		
11N20SISO/HCH_Ant2		

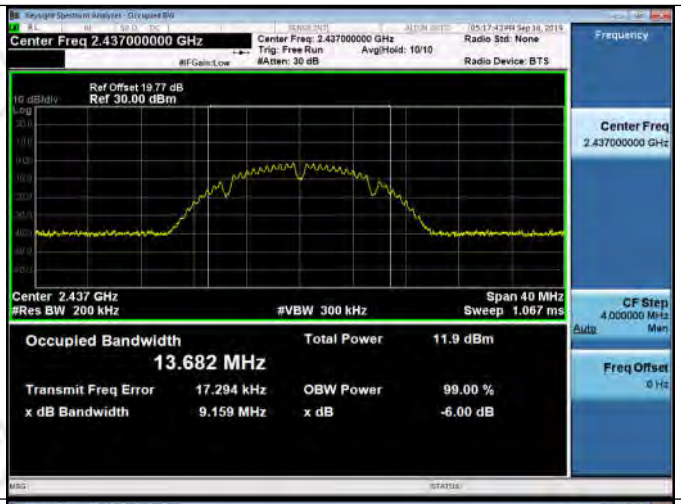
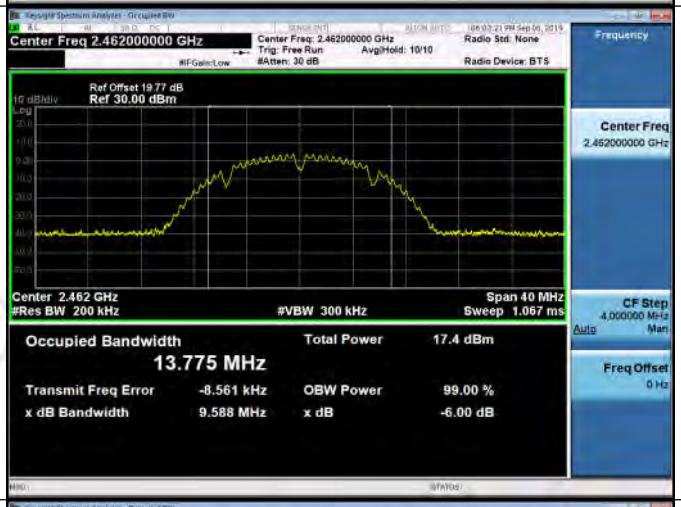
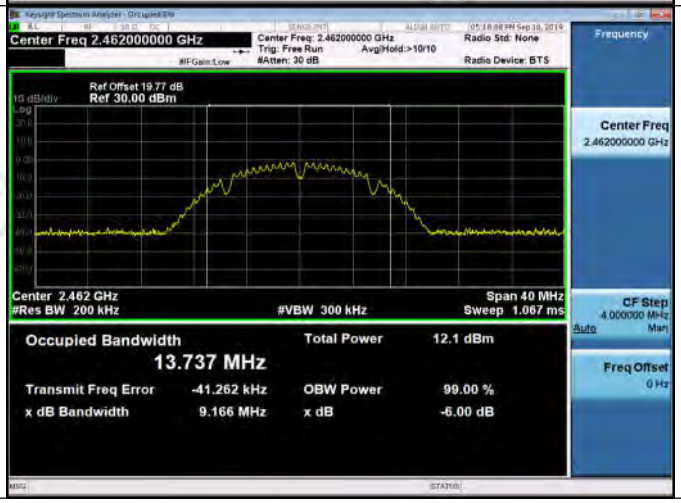
11N40SISO/LCH_Ant1		
11N40SISO/LCH_Ant2		
11N40SISO/MCH_Ant1		

11N40SISO/MCH_Ant2		
11N40SISO/HCH_Ant1		
11N40SISO/HCH_Ant2		

Occupied Bandwidth(99%)

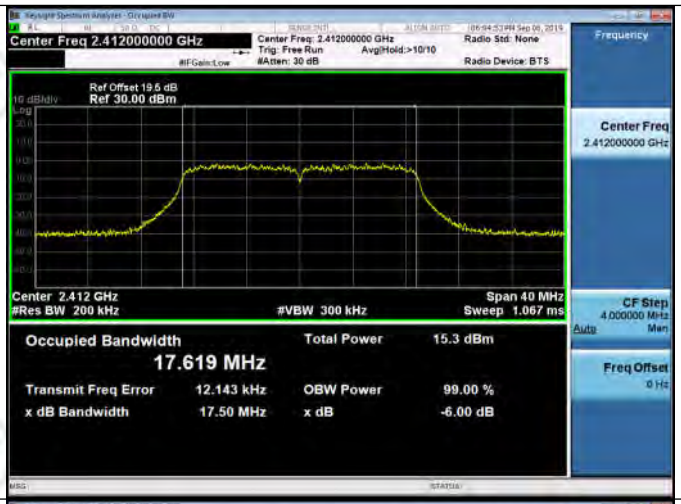
Mode	Antenna	Channel	99% OBW [MHz]	Verdict
11B	Ant1	LCH	13.617	PASS
11B	Ant2	LCH	13.722	PASS
11B	Ant1	MCH	13.688	PASS
11B	Ant2	MCH	13.682	PASS
11B	Ant1	HCH	13.775	PASS
11B	Ant2	HCH	13.737	PASS
11G	Ant1	LCH	16.547	PASS
11G	Ant2	LCH	16.596	PASS
11G	Ant1	MCH	16.558	PASS
11G	Ant2	MCH	16.580	PASS
11G	Ant1	HCH	16.539	PASS
11G	Ant2	HCH	16.591	PASS
11N20SISO	Ant1	LCH	17.619	PASS
11N20SISO	Ant2	LCH	17.663	PASS
11N20SISO	Ant1	MCH	17.615	PASS
11N20SISO	Ant2	MCH	17.665	PASS
11N20SISO	Ant1	HCH	17.618	PASS
11N20SISO	Ant2	HCH	17.658	PASS
11N40SISO	Ant1	LCH	36.516	PASS
11N40SISO	Ant2	LCH	36.615	PASS
11N40SISO	Ant1	MCH	36.517	PASS
11N40SISO	Ant2	MCH	36.619	PASS
11N40SISO	Ant1	HCH	36.502	PASS
11N40SISO	Ant2	HCH	36.627	PASS

Graphs			
11B/LCH_Ant1			
11B/LCH_Ant2			
11B/MCH_Ant1			

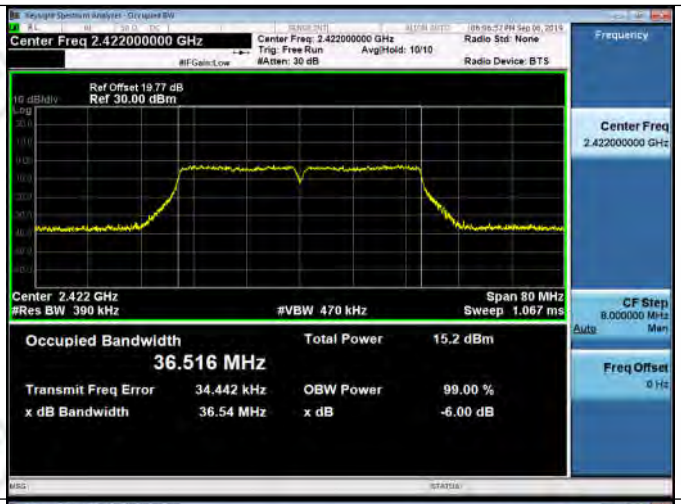
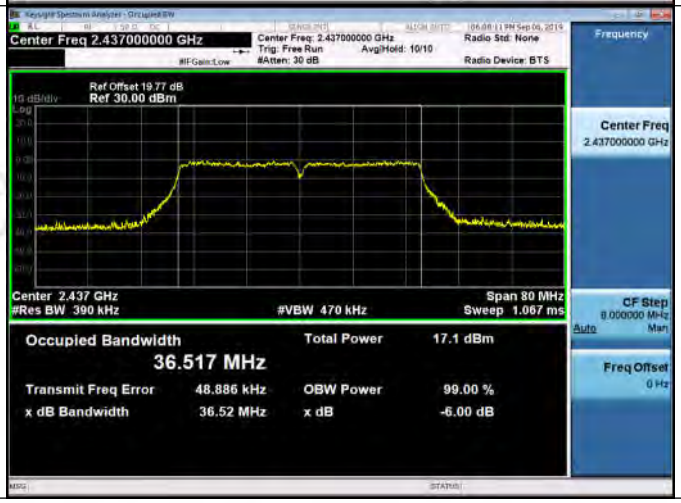
11B/MCH_Ant2		
11B/HCH_Ant1		
11B/HCH_Ant2		

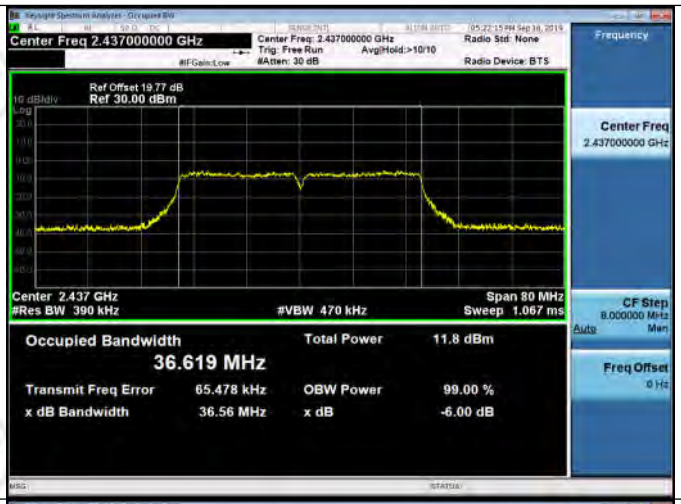
11G/LCH_Ant1		
11G/LCH_Ant2		
11G/MCH_Ant1		

11G/MCH_Ant2		
11G/HCH_Ant1		
11G/HCH_Ant2		

11N20SISO/LCH_Ant1		
11N20SISO/LCH_Ant2		
11N20SISO/MCH_Ant1		

11N20SISO/MCH_Ant2		
11N20SISO/HCH_Ant1		
11N20SISO/HCH_Ant2		

11N40SISO/LCH_Ant1		
11N40SISO/LCH_Ant2		
11N40SISO/MCH_Ant1		

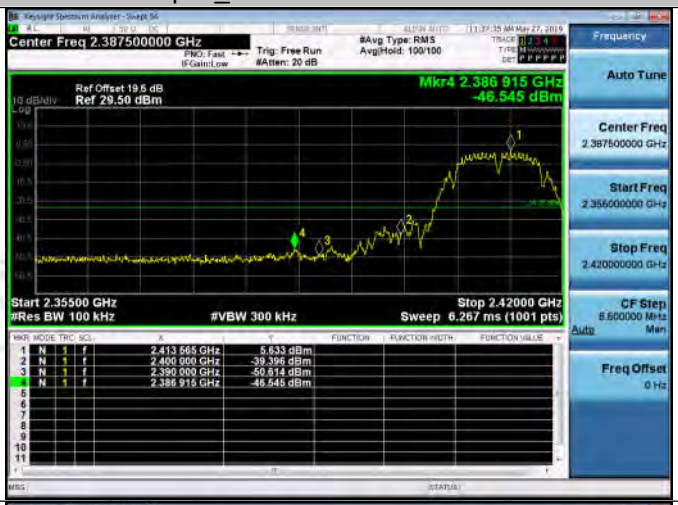
11N40SISO/MCH_Ant2		
11N40SISO/HCH_Ant1		
11N40SISO/HCH_Ant2		

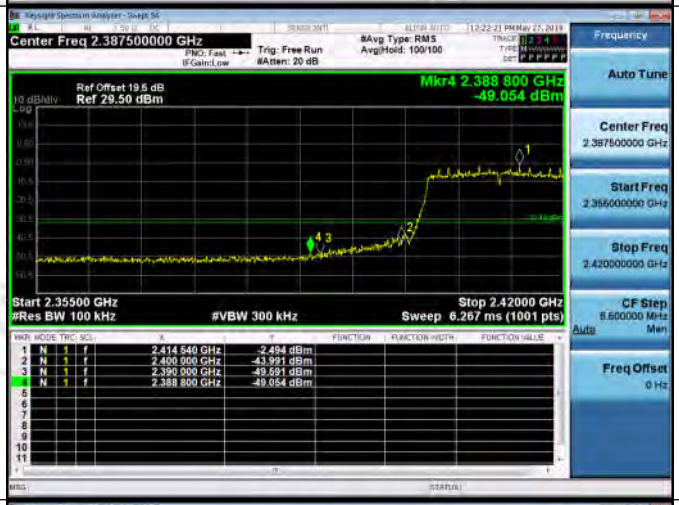
Appendix C): Band-edge for RF Conducted Emissions

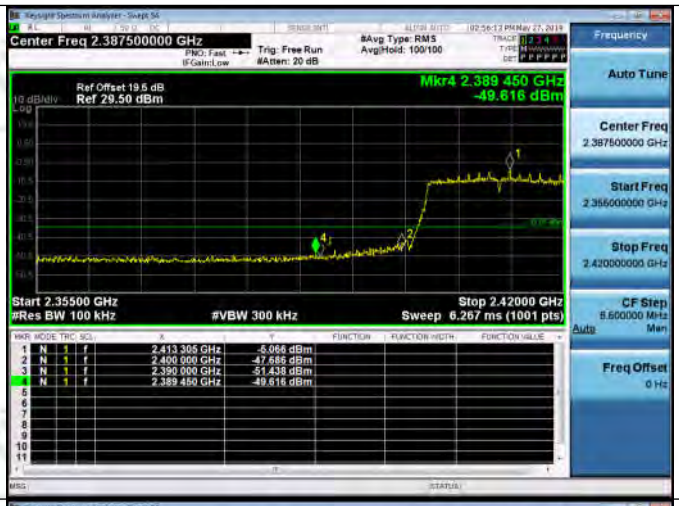
Result Table

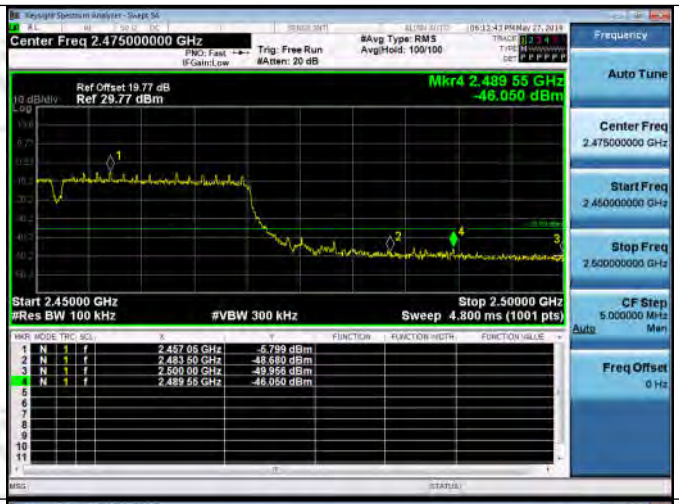
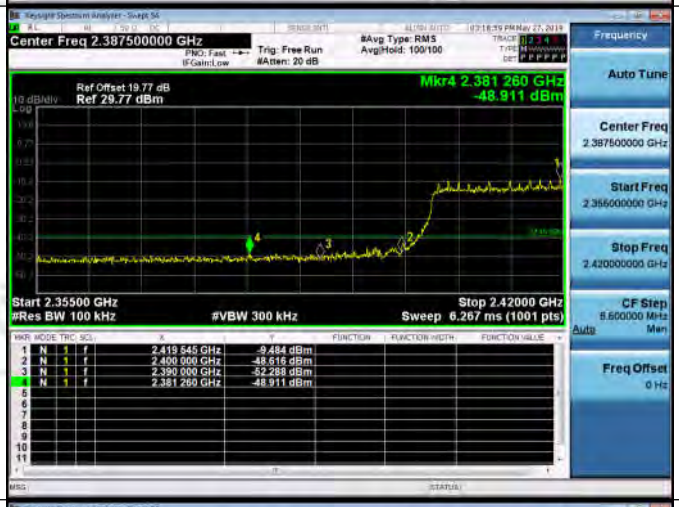
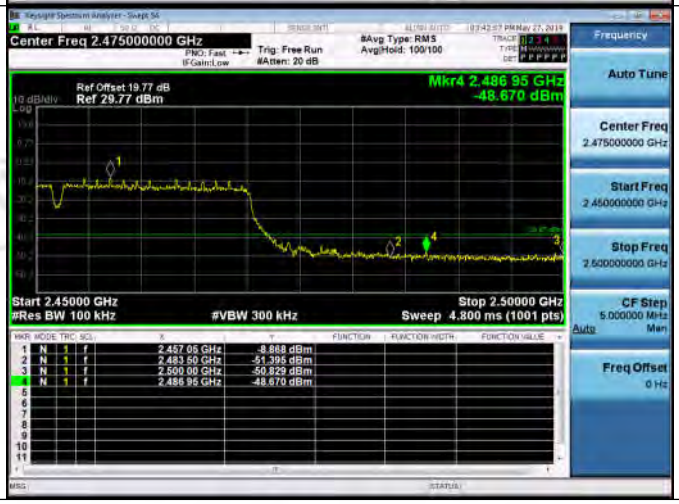
Mode	Antenna	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	Ant1	LCH	5.633	-46.545	-24.37	PASS
11B	Ant2	LCH	5.737	-48.721	-24.26	PASS
11B	Ant1	HCH	5.564	-48.493	-24.44	PASS
11B	Ant2	HCH	6.004	-47.677	-24	PASS
11G	Ant1	LCH	-0.897	-48.923	-30.9	PASS
11G	Ant2	LCH	-0.618	-46.286	-30.62	PASS
11G	Ant1	HCH	-0.999	-48.519	-31	PASS
11G	Ant2	HCH	-0.253	-47.281	-30.25	PASS
11N20SISO	Ant1	LCH	-2.494	-49.054	-32.49	PASS
11N20SISO	Ant2	LCH	-2.103	-48.097	-32.1	PASS
11N20SISO	Ant1	HCH	-1.983	-48.799	-31.98	PASS
11N20SISO	Ant2	HCH	-1.864	-47.738	-31.86	PASS
11N20MIMO	Ant1	LCH	-5.066	-49.616	-35.07	PASS
11N20MIMO	Ant2	LCH	-5.351	-48.661	-35.35	PASS
11N20MIMO	Ant1	HCH	-5.340	-49.698	-35.34	PASS
11N20MIMO	Ant2	HCH	-5.687	-49.915	-35.69	PASS
11N40SISO	Ant1	LCH	-6.197	-47.218	-36.2	PASS
11N40SISO	Ant2	LCH	-6.725	-44.799	-36.73	PASS
11N40SISO	Ant1	HCH	-5.799	-46.050	-35.8	PASS
11N40SISO	Ant2	HCH	-6.180	-44.135	-36.18	PASS
11N40MIMO	Ant1	LCH	-9.484	-48.911	-39.48	PASS
11N40MIMO	Ant2	LCH	-9.333	-47.088	-39.33	PASS
11N40MIMO	Ant1	HCH	-8.868	-48.670	-38.87	PASS
11N40MIMO	Ant2	HCH	-9.851	-48.704	-39.85	PASS

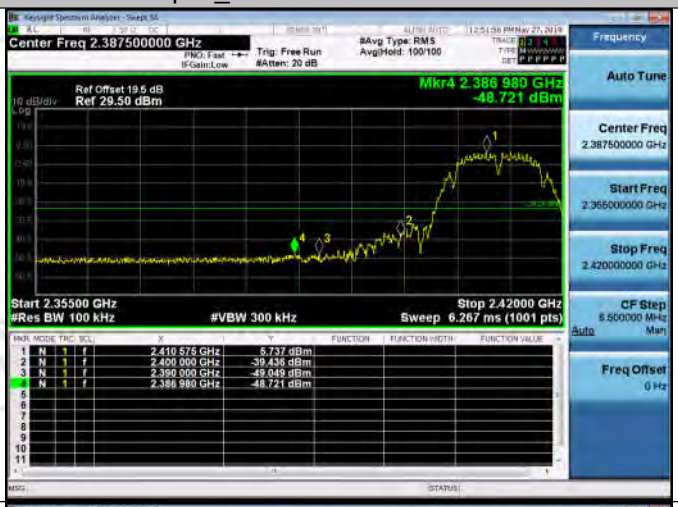
Test Graph

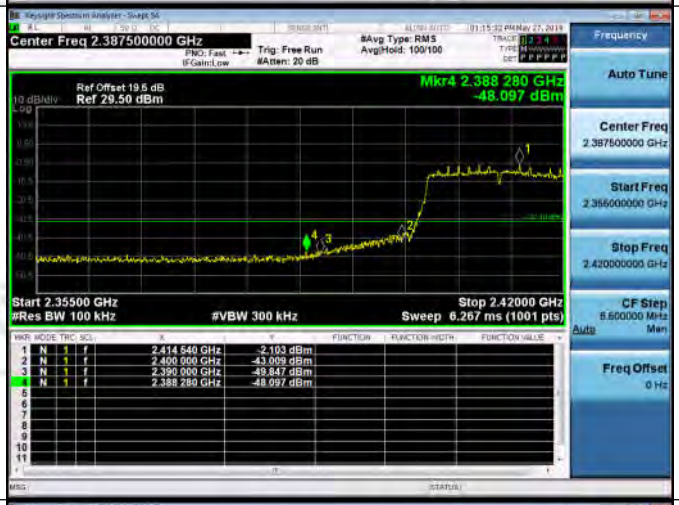
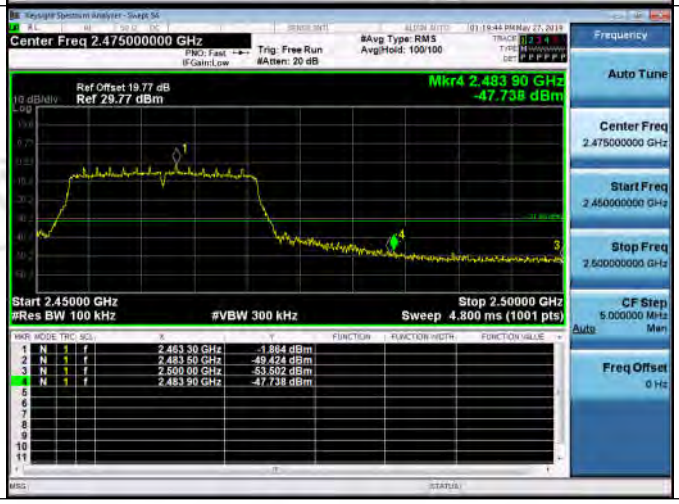
Graphs_Ant1			
11B/LCH			
11B/HCH			
11G/LCH			

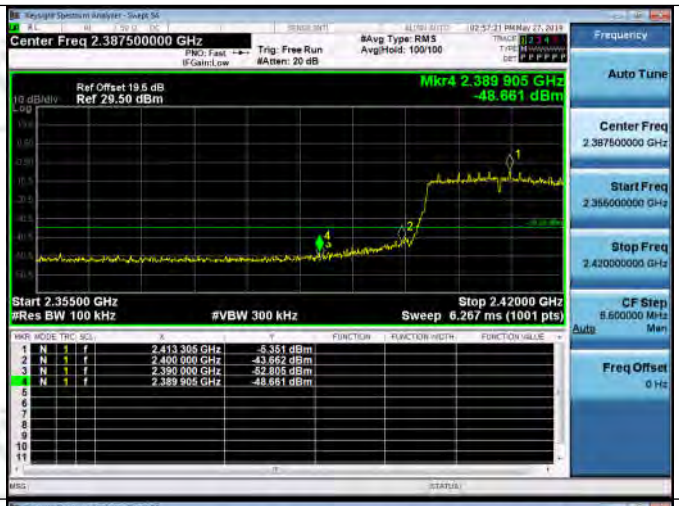
11G/HCH			
11N20SISO/LCH			
11N20SISO/HCH			

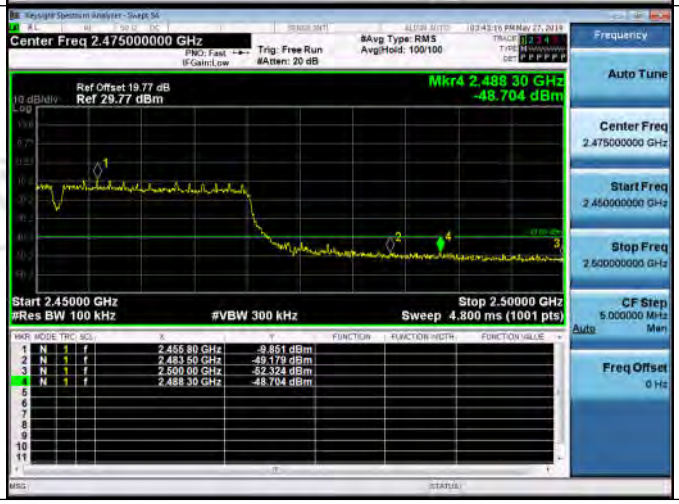
11N20MIMO/LCH			
11N20MIMO/HCH			
11N40SISO/LCH			

11N40SISO/HCH			
11N40MIMO/LCH			
11N40MIMO/HCH			

Graphs_Ant2			
11B/LCH			
11B/HCH			
11G/LCH			

11G/HCH			
11N20SISO/LCH			
11N20SISO/HCH			

11N20MIMO/LCH			
11N20MIMO/HCH			
11N40SISO/LCH			

11N40SISO/HCH			
11N40MIMO/LCH			
11N40MIMO/HCH			

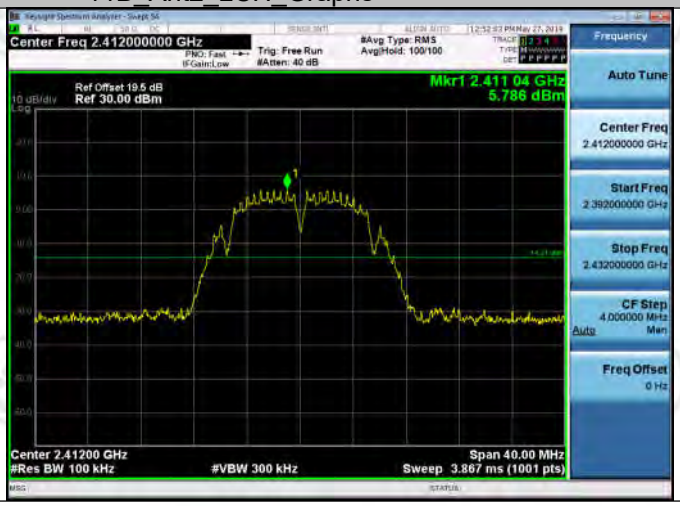
Appendix D): RF Conducted Spurious Emissions

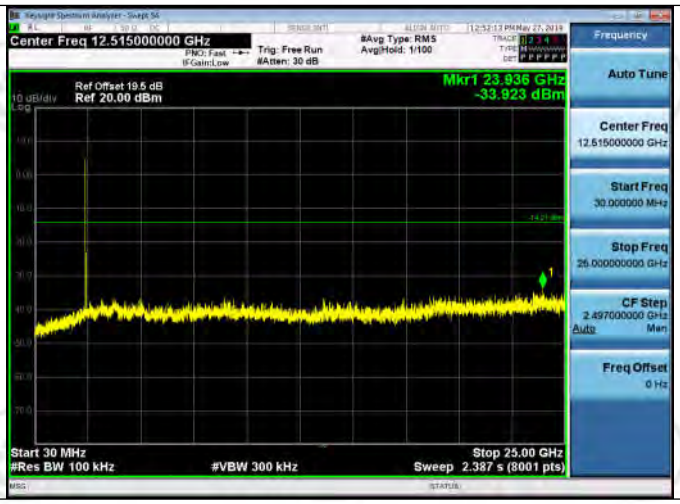
Result Table

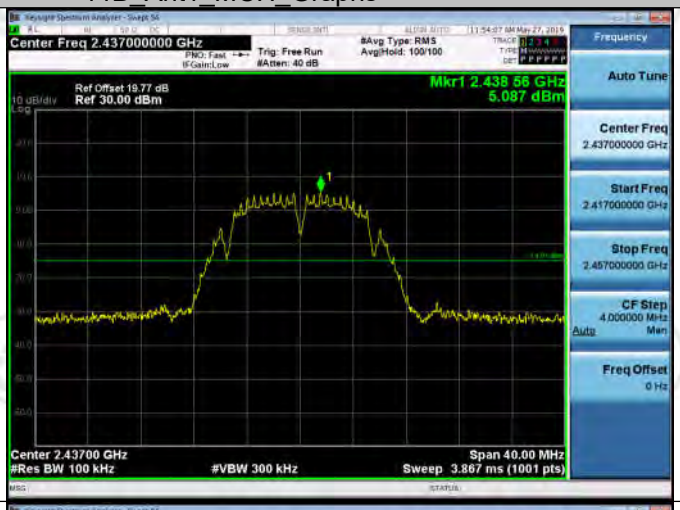
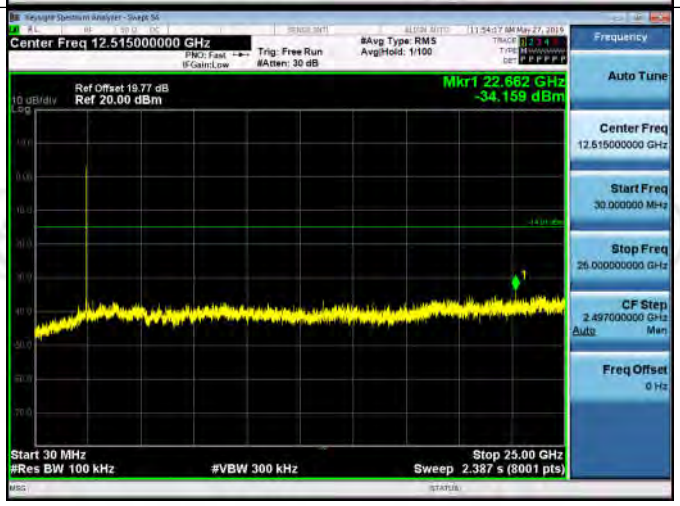
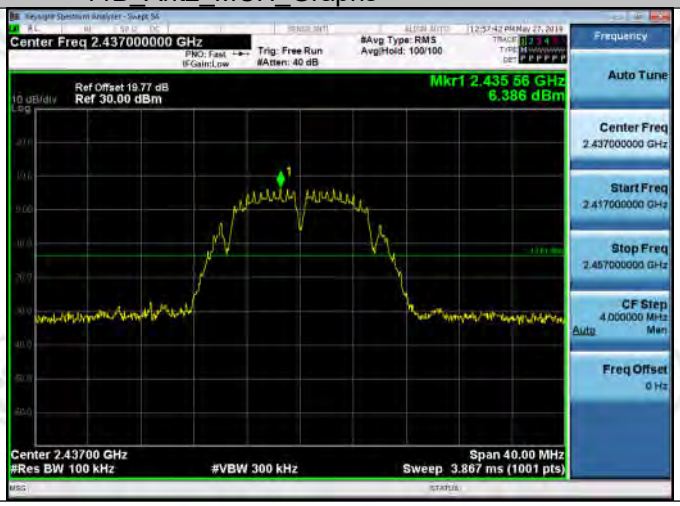
Mode	Antenna	Channel	Power Spectral Density [dBm]	Verdict
11B	Ant1	LCH	-7.211	PASS
11B	Ant2	LCH	-7.815	PASS
11B	Ant1	MCH	-8.788	PASS
11B	Ant2	MCH	-7.142	PASS
11B	Ant1	HCH	-8.187	PASS
11B	Ant2	HCH	-7.604	PASS
11G	Ant1	LCH	-14.632	PASS
11G	Ant2	LCH	-14.576	PASS
11G	Ant1	MCH	-14.471	PASS
11G	Ant2	MCH	-14.461	PASS
11G	Ant1	HCH	-14.664	PASS
11G	Ant2	HCH	-14.863	PASS
11N20SISO	Ant1	LCH	-15.872	PASS
11N20SISO	Ant2	LCH	-15.152	PASS
11N20SISO	Ant1	MCH	-15.866	PASS
11N20SISO	Ant2	MCH	-15.804	PASS
11N20SISO	Ant1	HCH	-15.456	PASS
11N20SISO	Ant2	HCH	-16.268	PASS
11N20MIMO	Ant1	LCH	-19.442	PASS
11N20MIMO	Ant2	LCH	-19.183	PASS
11N20MIMO	Ant1+2	LCH	-16.30	PASS
11N20MIMO	Ant1	MCH	-19.322	PASS
11N20MIMO	Ant2	MCH	-18.838	PASS
11N20MIMO	Ant1+2	MCH	-16.06	PASS
11N20MIMO	Ant1	HCH	-19.615	PASS
11N20MIMO	Ant2	HCH	-19.126	PASS
11N20MIMO	Ant1+2	HCH	-16.35	PASS
11N40SISO	Ant1	LCH	-21.029	PASS
11N40SISO	Ant2	LCH	-21.629	PASS
11N40SISO	Ant1	MCH	-18.916	PASS
11N40SISO	Ant2	MCH	-20.266	PASS

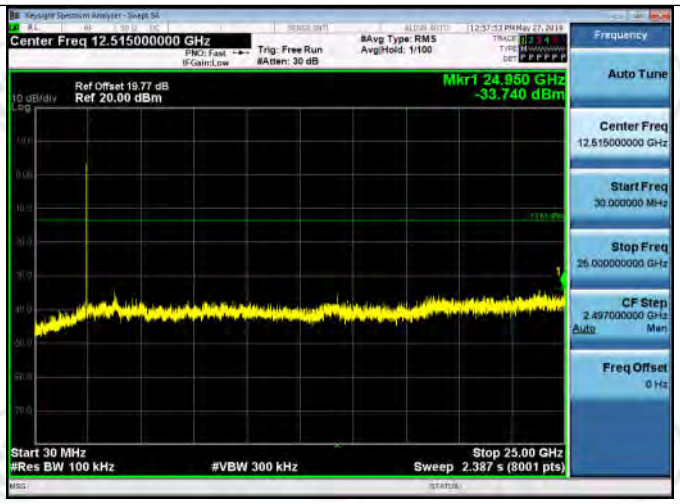
11N40SISO	Ant1	HCH	-20.131	PASS
11N40SISO	Ant2	HCH	-20.603	PASS
11N40MIMO	Ant1	LCH	-23.791	PASS
11N40MIMO	Ant2	LCH	-24.205	PASS
11N40MIMO	Ant1+2	LCH	-20.98	PASS
11N40MIMO	Ant1	MCH	-24.018	PASS
11N40MIMO	Ant2	MCH	-23.060	PASS
11N40MIMO	Ant1+2	MCH	-20.50	PASS
11N40MIMO	Ant1	HCH	-22.771	PASS
11N40MIMO	Ant2	HCH	-22.429	PASS
11N40MIMO	Ant1+2	HCH	-19.59	PASS

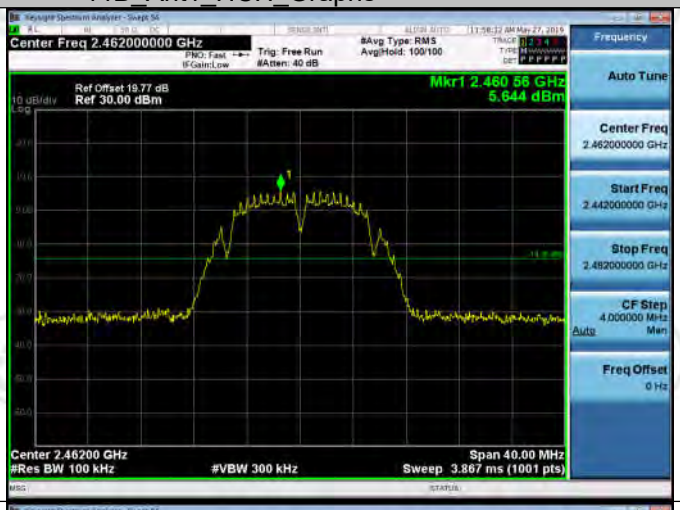
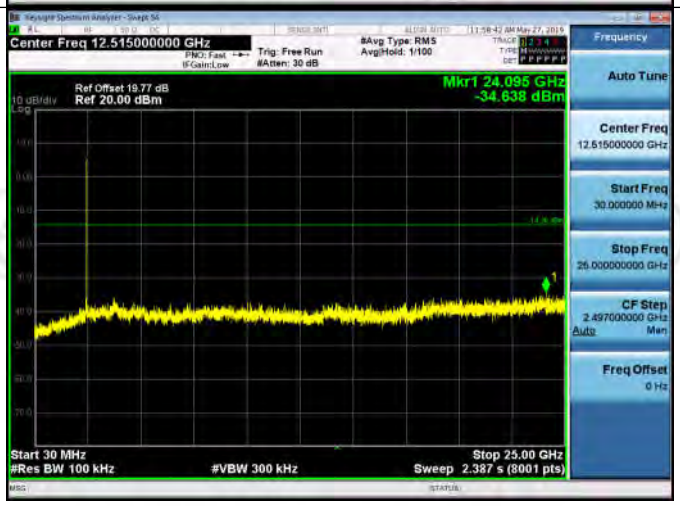
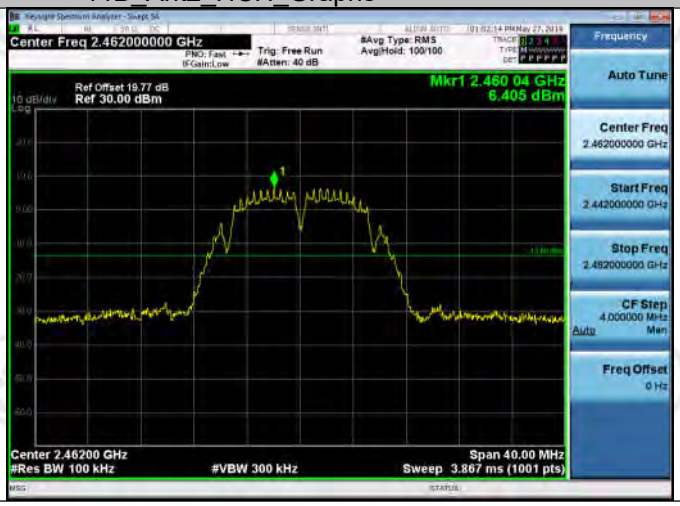
Test Graph

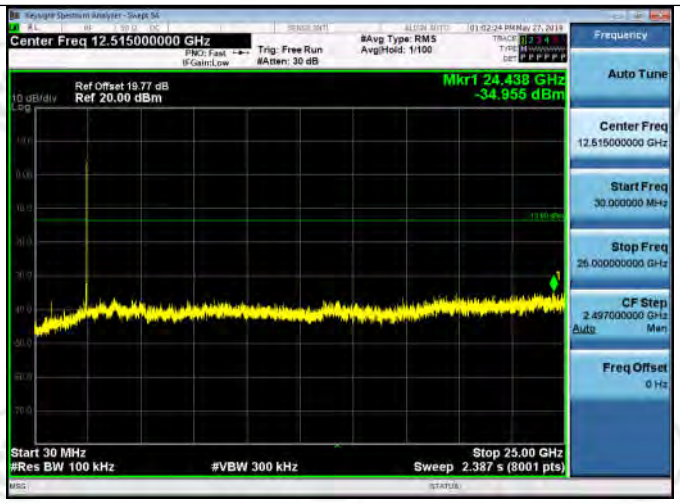
11B_Ant1_LCH_Graphs		
Pref/11B/LCH		
Puw/11B/LCH		
11B_Ant2_LCH_Graphs		
Pref/11B/LCH		

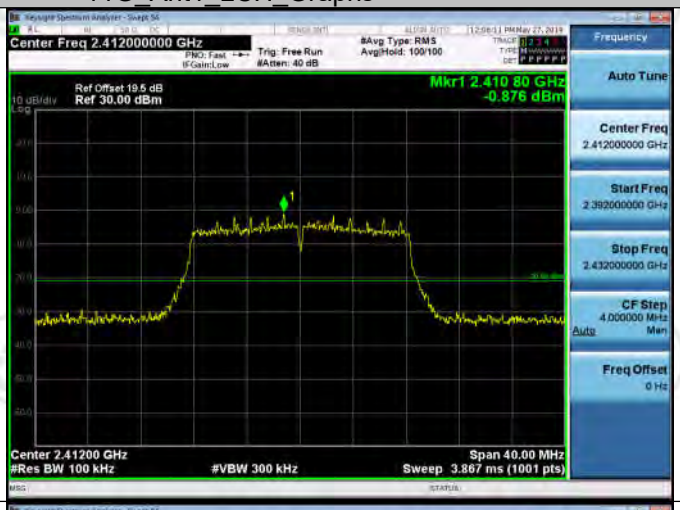
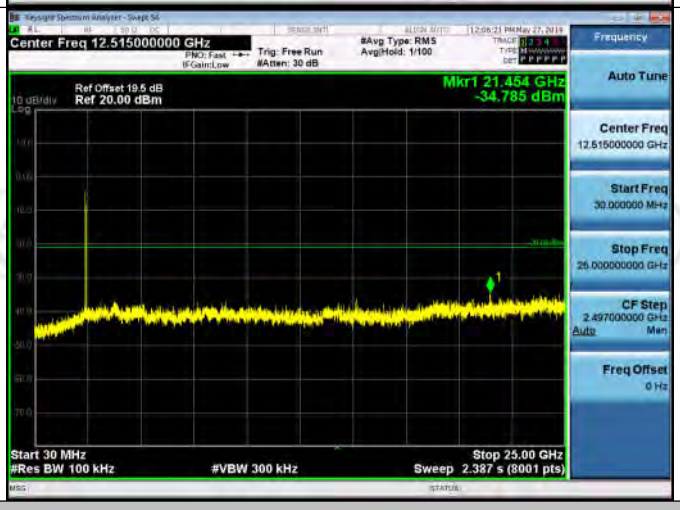
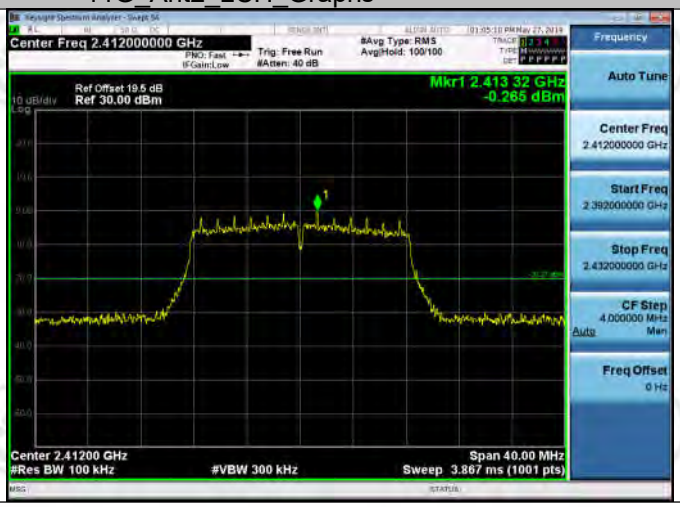
Puw/11B/LCH		 Center Freq 12.515000000 GHz Trig: Free Run #Atten: 30 dB #Avg Type: RMS Avg|Hold: 1/100 Ref Offset 19.5 dB 10 dB/div Ref 20.00 dBm Mkr1 23.936 GHz -33.923 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	

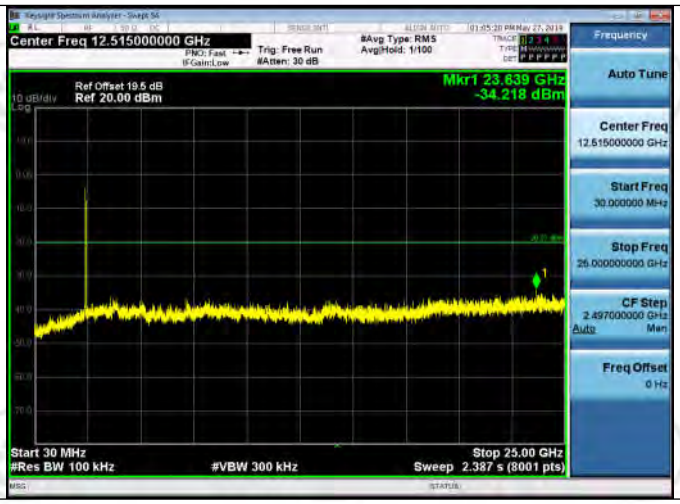
11B_Ant1_MCH_Graphs			
Pref/11B/MCH			
Puw/11B/MCH			
11B_Ant2_MCH_Graphs			
Pref/11B/MCH			

Puw/11B/MCH	 Center Freq 12.515000000 GHz Trig: Free Run #Atten: 30 dB #Avg Type: RMS Avg|Hold: 1/100 Ref Offset 19.77 dB 10 dB/div Ref 20.00 dBm Mkr1 24.950 GHz -33.740 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz

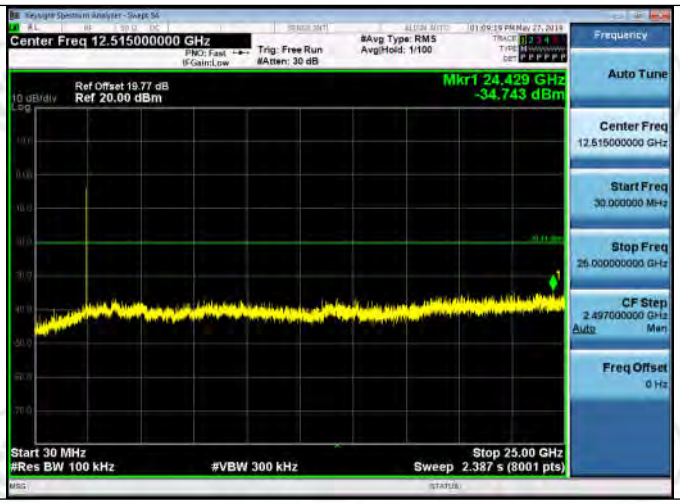
11B_Ant1_HCH_Graphs			
Pref/11B/HCH			
Puw/11B/HCH			
11B_Ant2_HCH_Graphs			
Pref/11B/HCH			

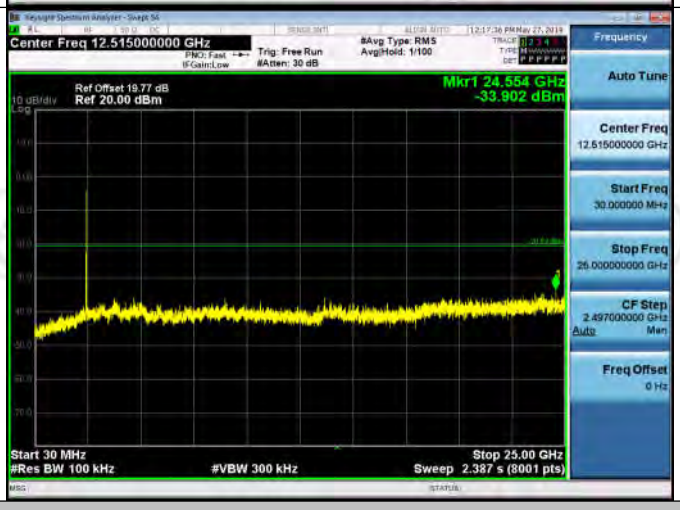
Puw/11B/HCH	 Center Freq 12.515000000 GHz Trig: Free Run #Avg Type: RMS Avg|Hold: 1/100 #Atten: 30 dB Ref Offset 19.77 dB 10 dB/div Ref 20.00 dBm Mkr1 24.438 GHz -34.955 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz

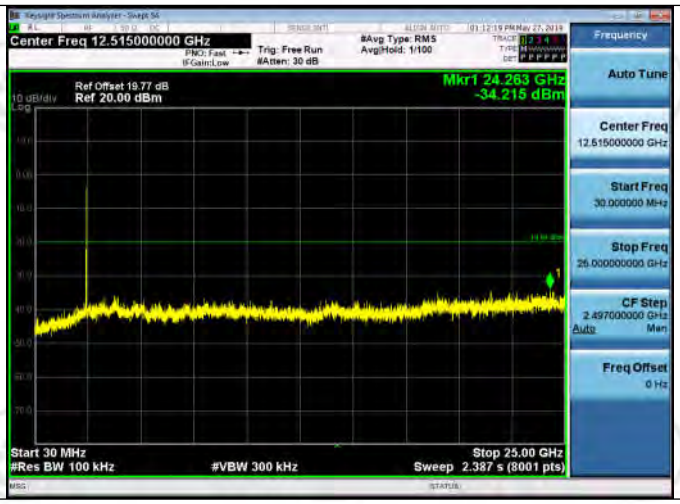
11G_Ant1_LCH_Graphs			
Pref/11G/LCH			
Puw/11G/LCH			
11G_Ant2_LCH_Graphs			
Pref/11G/LCH			

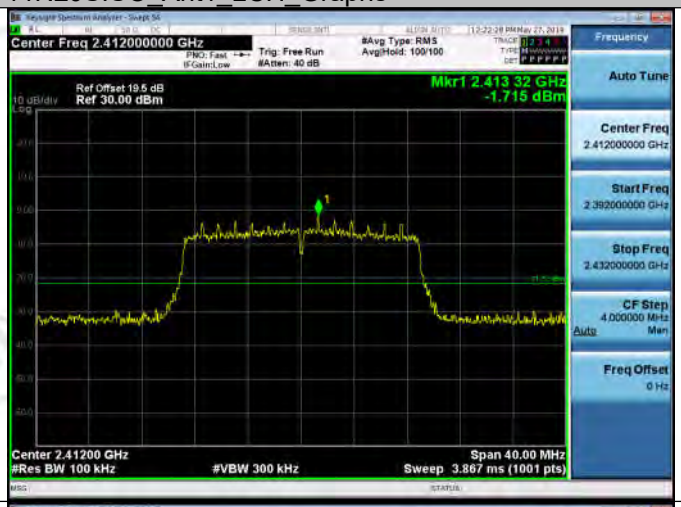
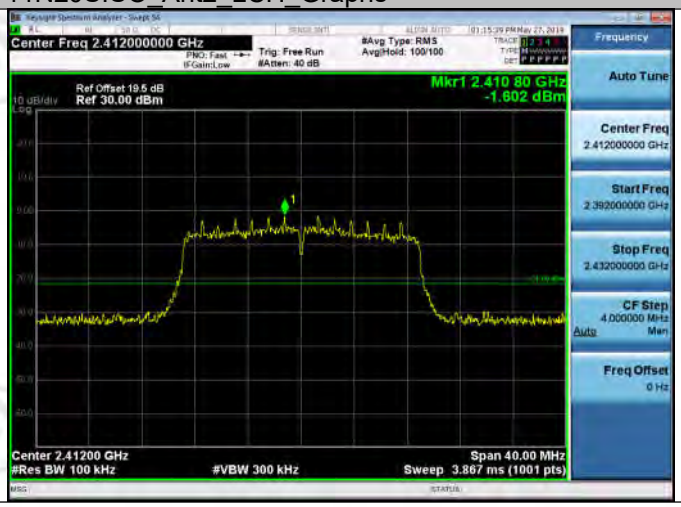
Puw/11G/LCH		 Center Freq 12.515000000 GHz Trig: Free Run #Avg Type: RMS Avg|Hold: 1/100 #Atten: 30 dB Ref Offset 19.5 dB 10 dB/div Ref 20.00 dBm Mkr1 23.639 GHz -34.218 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	

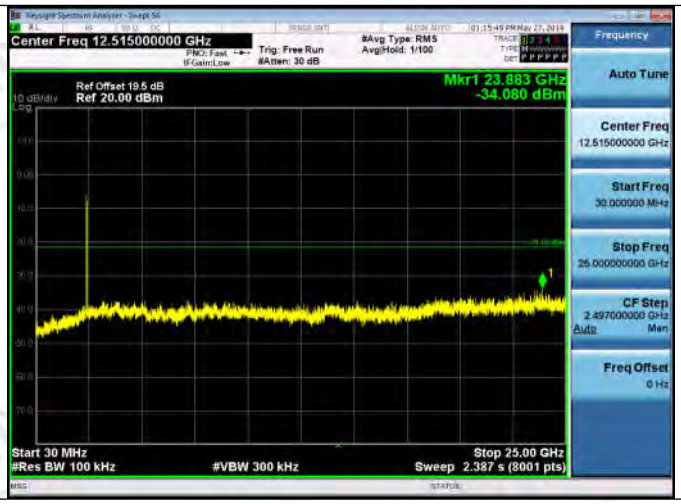
11G_Ant1_MCH_Graphs			
Pref/11G/MCH			
Puw/11G/MCH			
11G_Ant2_MCH_Graphs			
Pref/11G/MCH			

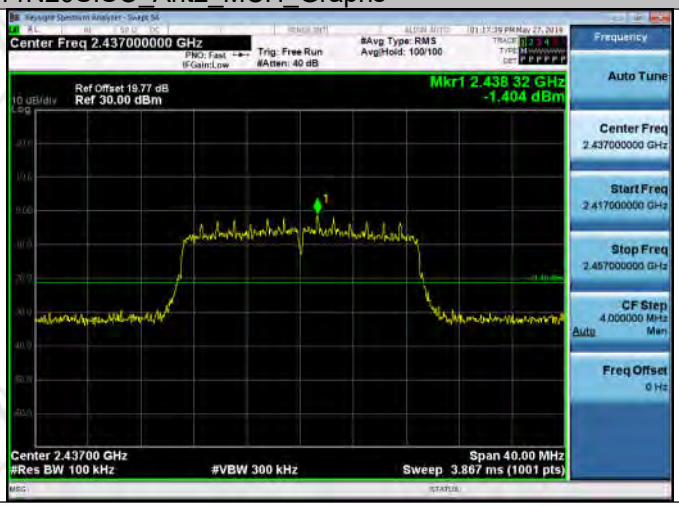
Puw/11G/MCH		 Center Freq 12.515000000 GHz Trig: Free Run #Avg Type: RMS Avg|Hold: 1/100 #Atten: 30 dB Ref Offset 19.77 dB 10 dB/div Ref 20.00 dBm Mkr1 24.429 GHz -34.743 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	

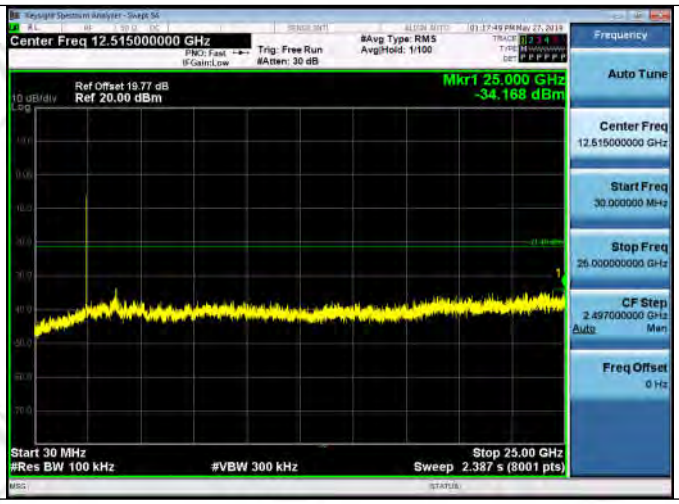
11G_Ant1_HCH_Graphs			
Pref/11G/HCH			
Puw/11G/HCH			
11G_Ant2_HCH_Graphs			
Pref/11G/HCH			

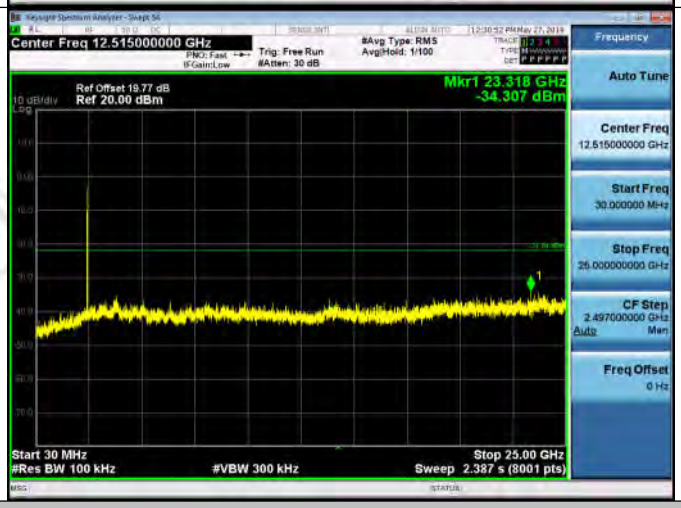
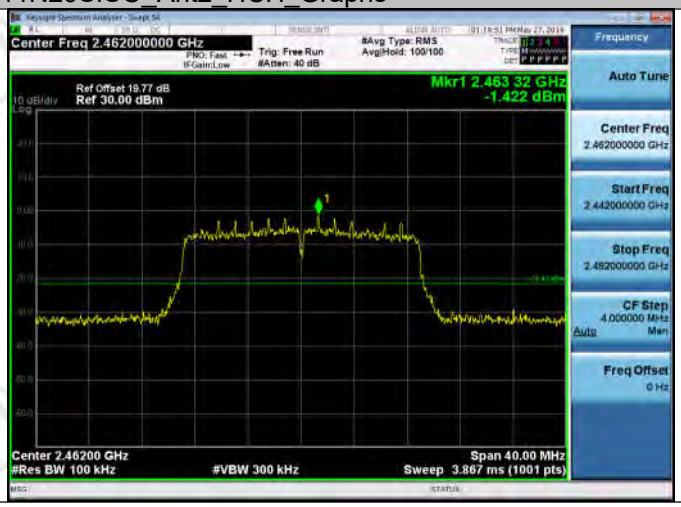
Puw/11G/HCH		 Center Freq 12.515000000 GHz Trig: Free Run #Avg Type: RMS Avg|Hold: 1/100 #Atten: 30 dB Ref Offset 19.77 dB 10 dB/div Ref 20.00 dBm Mkr1 24.263 GHz -34.215 dBm Start 30 MHz #Res BW 100 kHz #VBW 300 kHz Stop 25.00 GHz Sweep 2.387 s (8001 pts) Frequency Auto Tune Center Freq 12.515000000 GHz Start Freq 30.000000 MHz Stop Freq 25.000000000 GHz CF Step 2.497000000 GHz Auto Man Freq Offset 0 Hz	

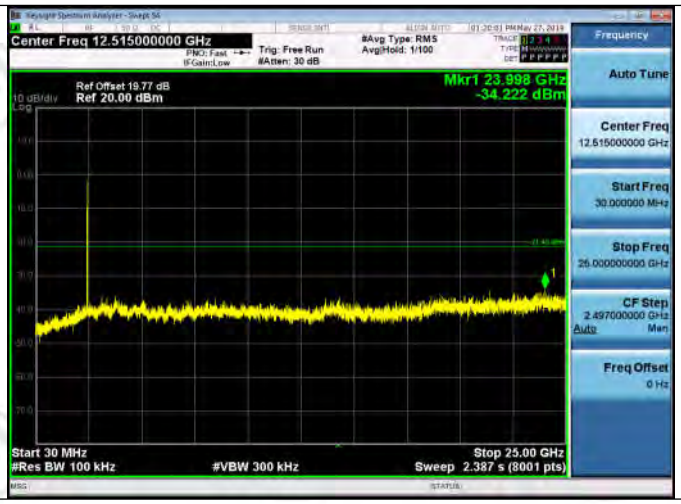
11N20SISO_Ant1_LCH_Graphs		
Pref/11N20SISO/LCH		
Puw/11N20SISO/LCH		
11N20SISO_Ant2_LCH_Graphs		
Pref/11N20SISO/LCH		

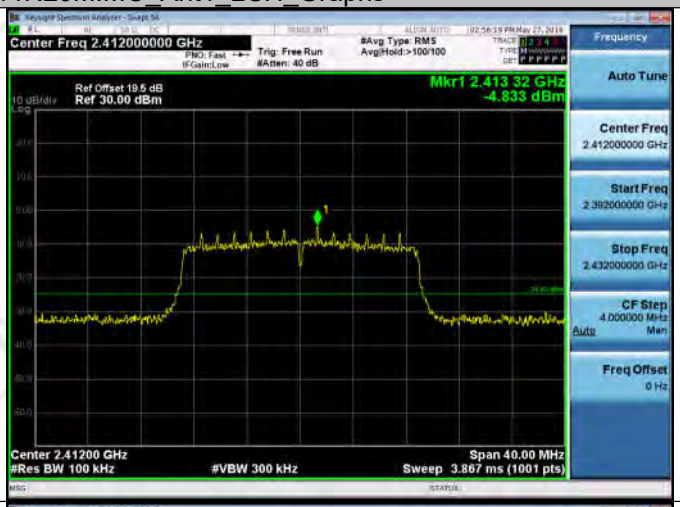
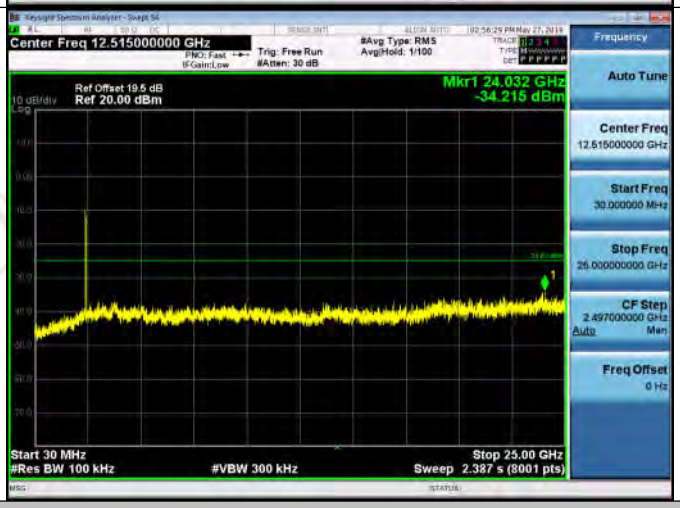
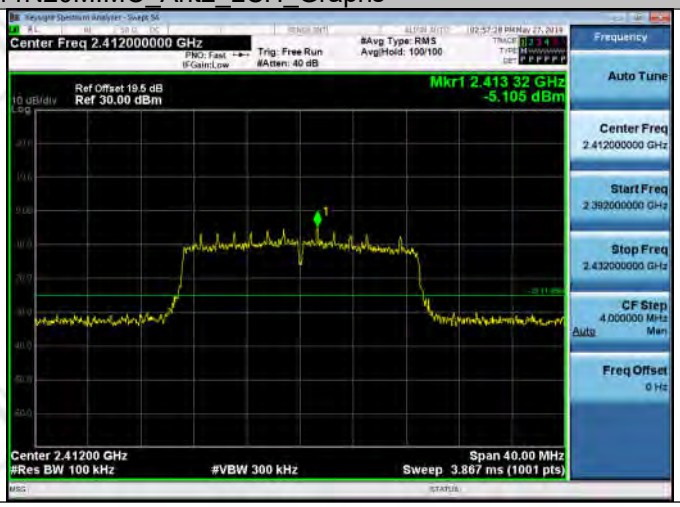
Puw/11N20SISO/LCH	

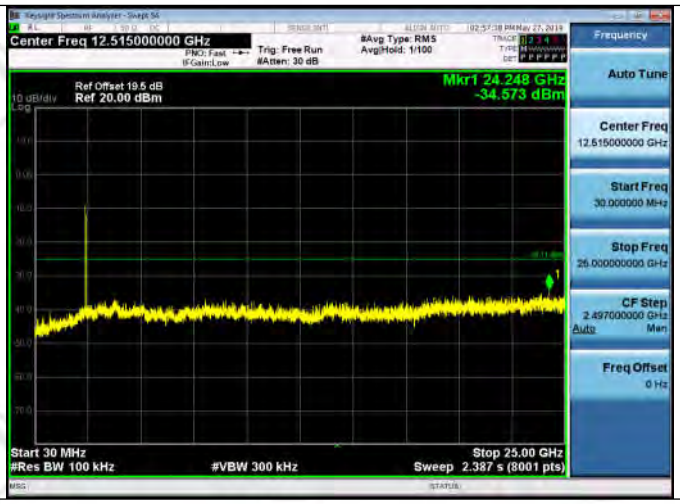
11N20SISO_Ant1_MCH_Graphs		
Pref/11N20SISO/MCH		
Puw/11N20SISO/MCH		
11N20SISO_Ant2_MCH_Graphs		
Pref/11N20SISO/MCH		

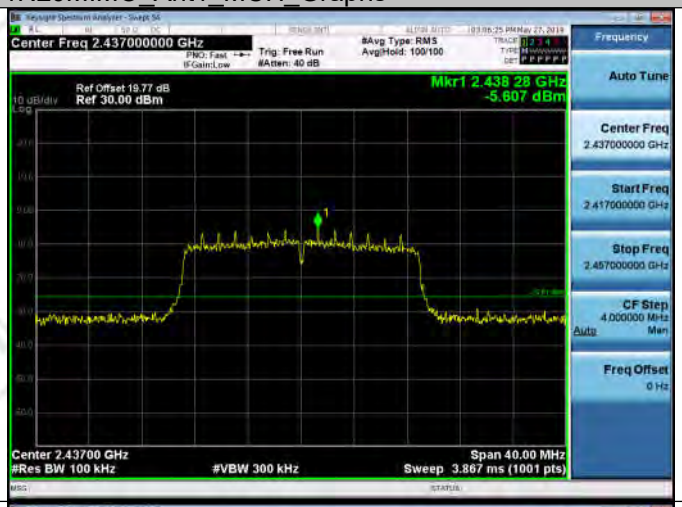
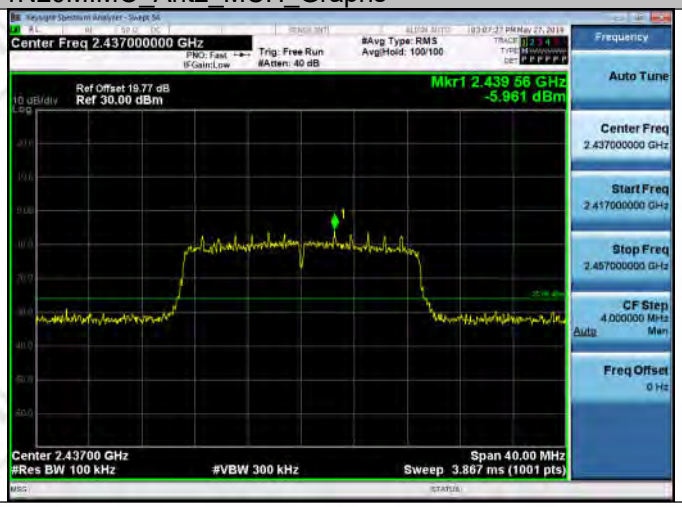
Puw/11N20SISO/MCH		

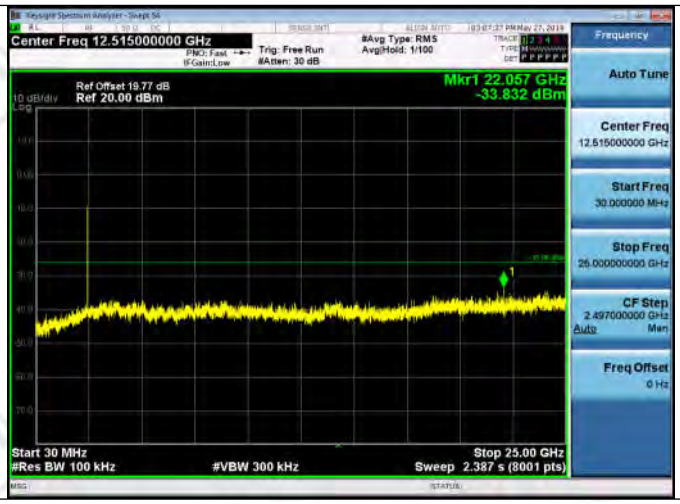
11N20SISO_Ant1_HCH_Graphs		
Pref/11N20SISO/HCH		
Puw/11N20SISO/HCH		
11N20SISO_Ant2_HCH_Graphs		
Pref/11N20SISO/HCH		

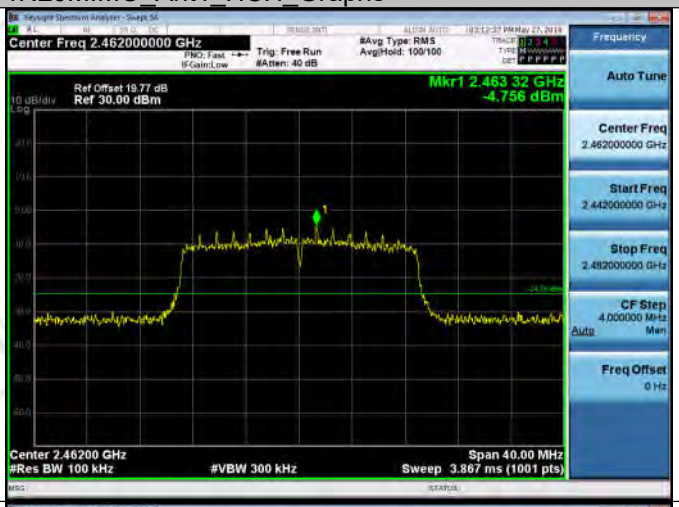
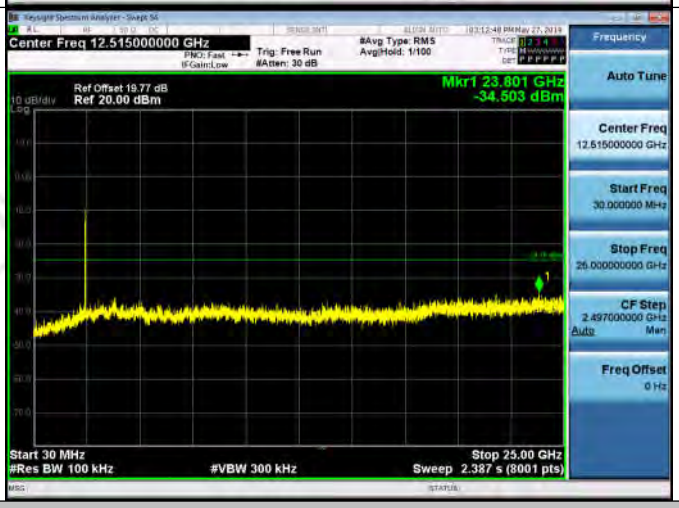
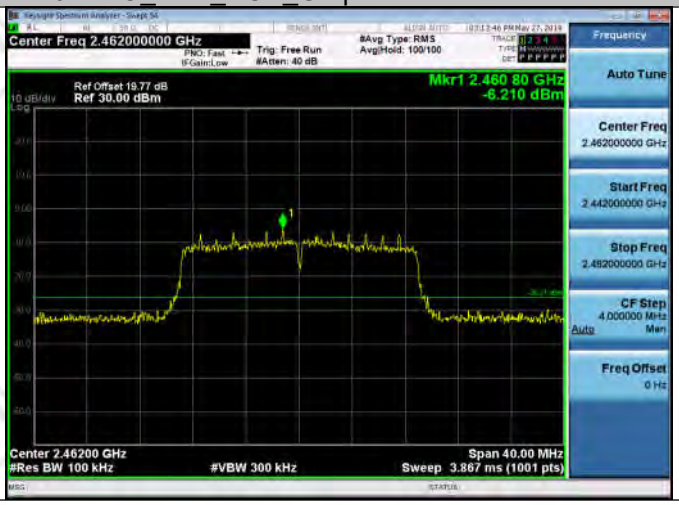
Puw/11N20SISO/HCH		

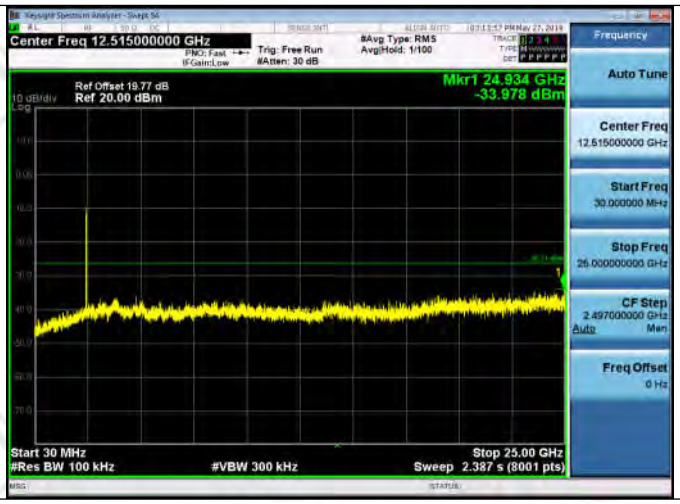
11N20MIMO_Ant1_LCH_Graphs		
Pref/11N20MIMO/LCH		
Puw/11N20MIMO/LCH		
11N20MIMO_Ant2_LCH_Graphs		
Pref/11N20MIMO/LCH		

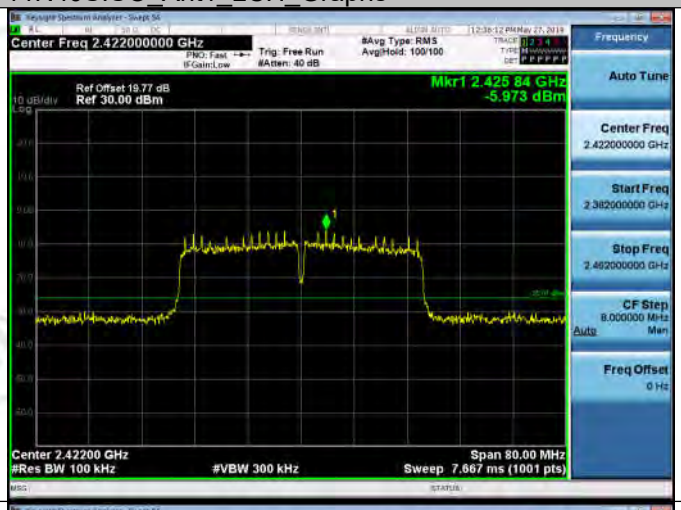
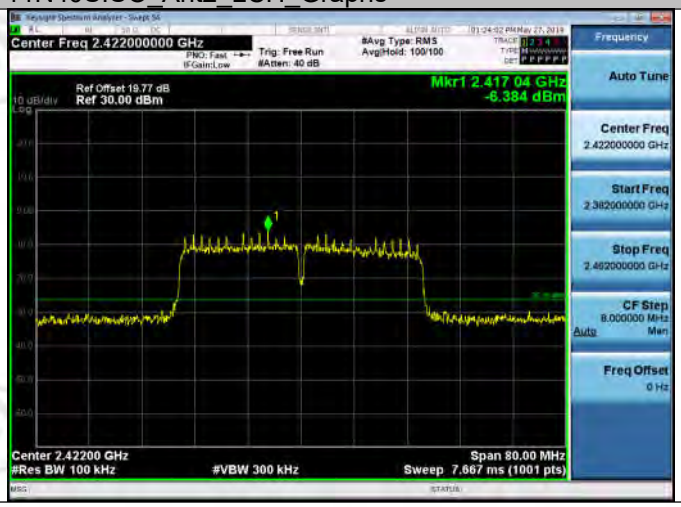
Puw/11N20MIMO/LCH		

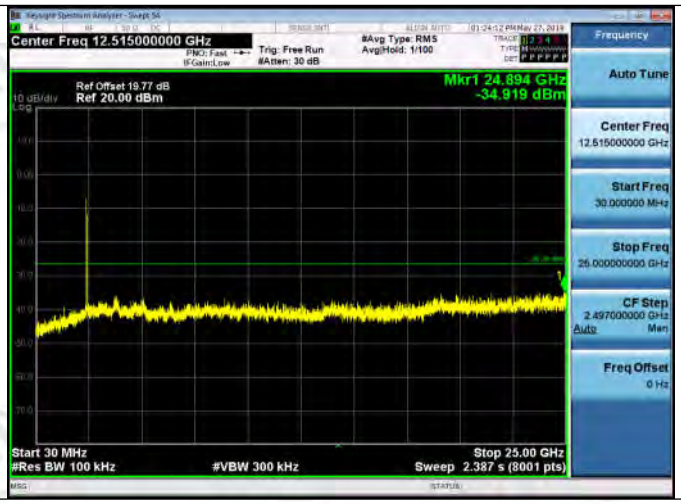
11N20MIMO_Ant1_MCH_Graphs		
Pref/11N20MIMO/MCH		
Puw/11N20MIMO/MCH		
11N20MIMO_Ant2_MCH_Graphs		
Pref/11N20MIMO/MCH		

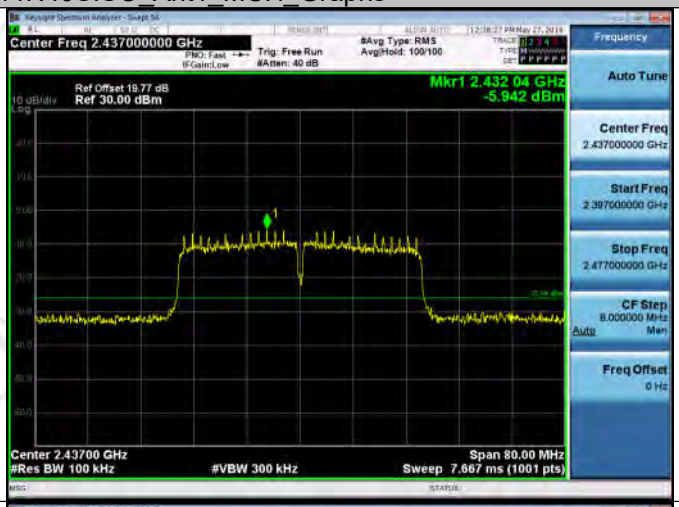
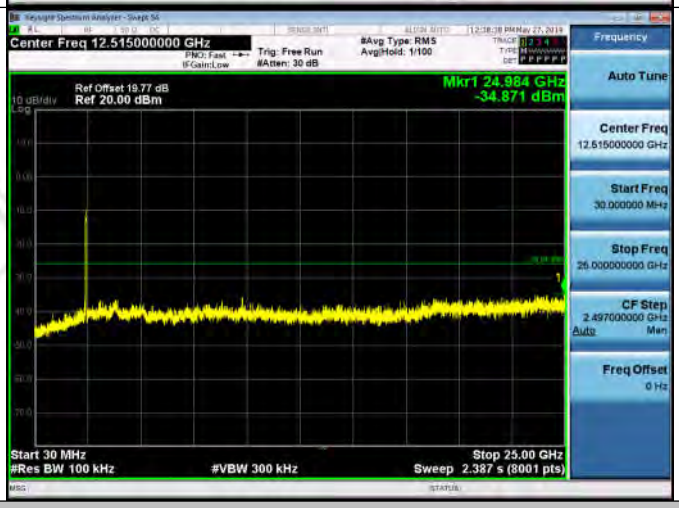
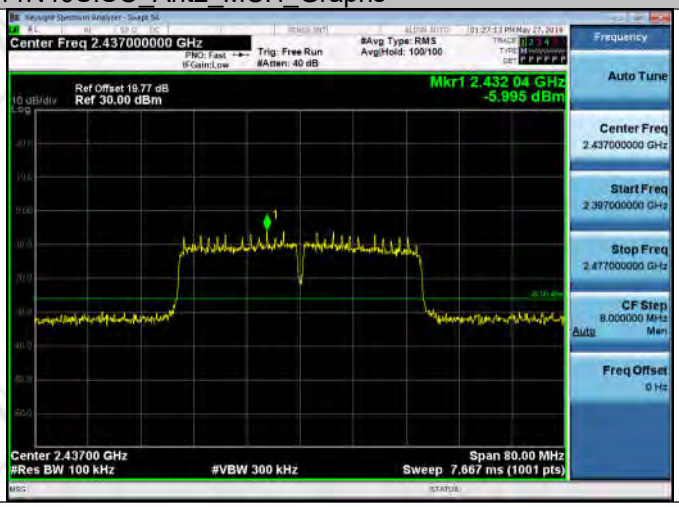
Puw/11N20MIMO/MCH		

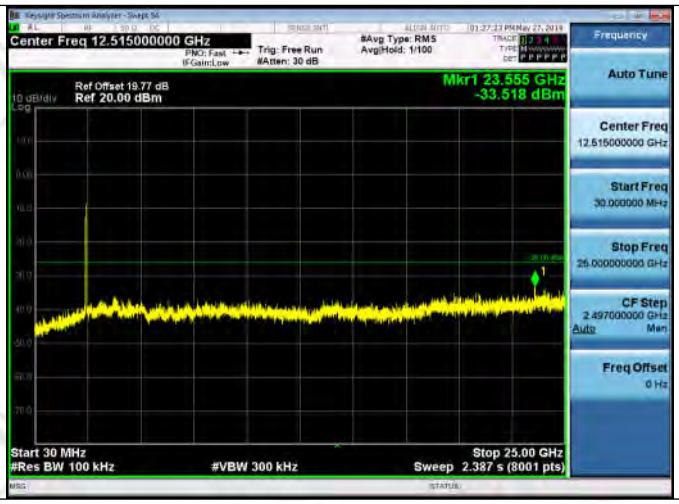
11N20MIMO_Ant1_HCH_Graphs			
Pref/11N20MIMO/HCH			
Puw/11N20MIMO/HCH			
11N20MIMO_Ant2_HCH_Graphs			
Pref/11N20MIMO/HCH			

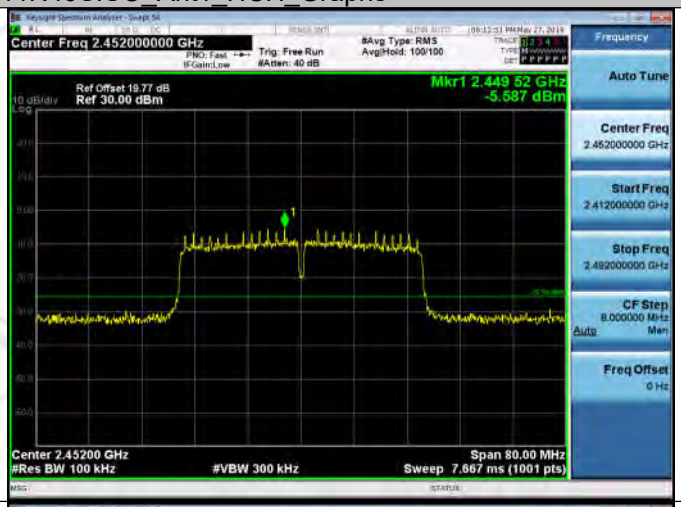
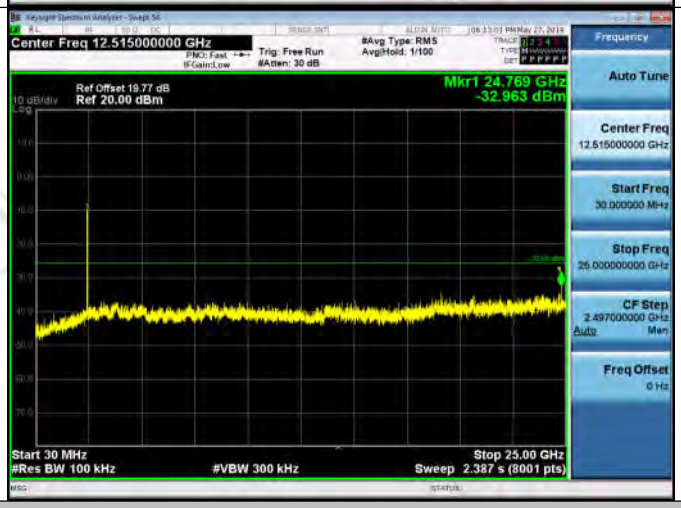
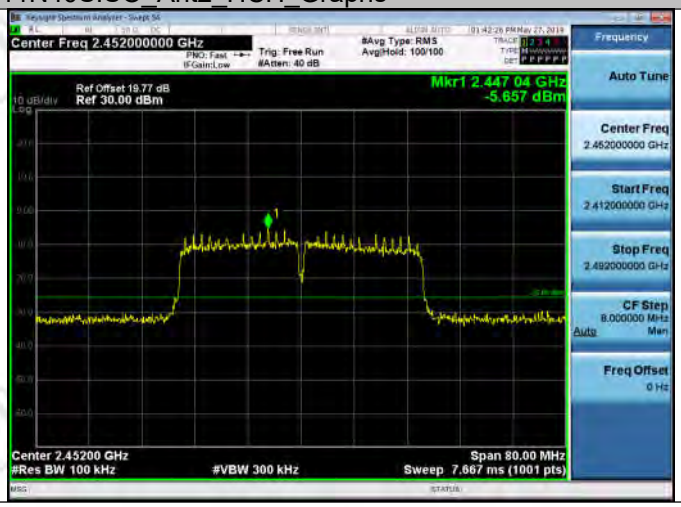
Puw/11N20MIMO/HCH		

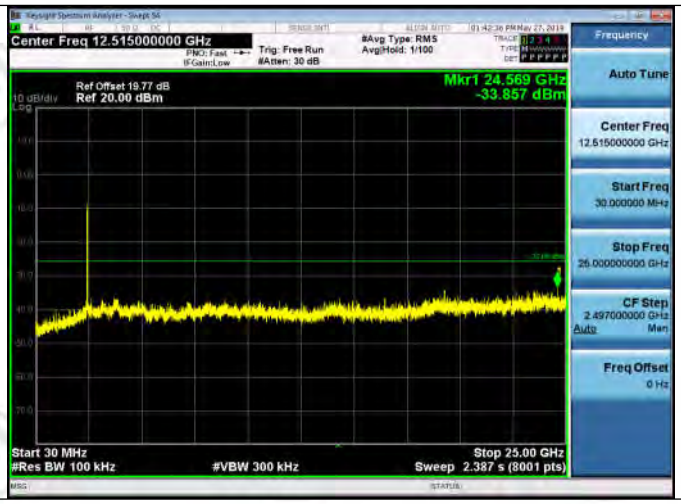
11N40SISO_Ant1_LCH_Graphs			
Pref/11N40SISO/LCH			
Puw/11N40SISO/LCH			
11N40SISO_Ant2_LCH_Graphs			
Pref/11N40SISO/LCH			

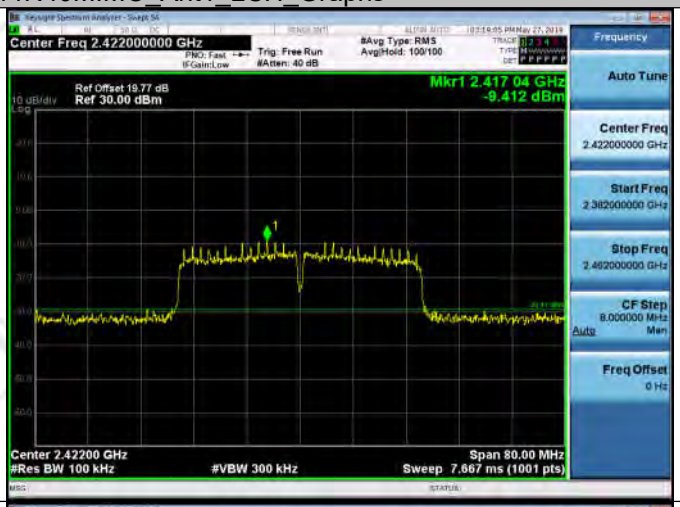
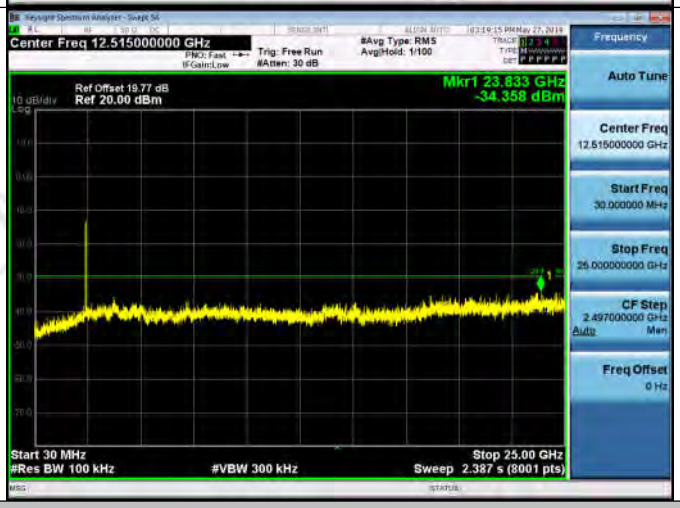
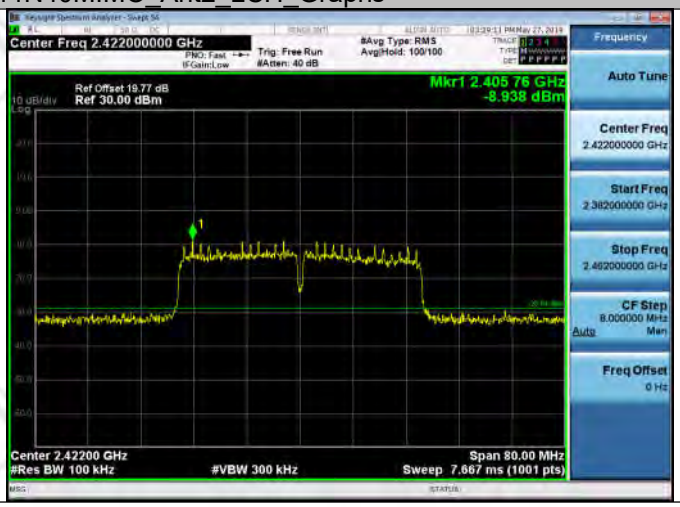
Puw/11N40SISO/LCH		

11N40SISO_Ant1_MCH_Graphs		
Pref/11N40SISO/MCH		
Puw/11N40SISO/MCH		
11N40SISO_Ant2_MCH_Graphs		
Pref/11N40SISO/MCH		

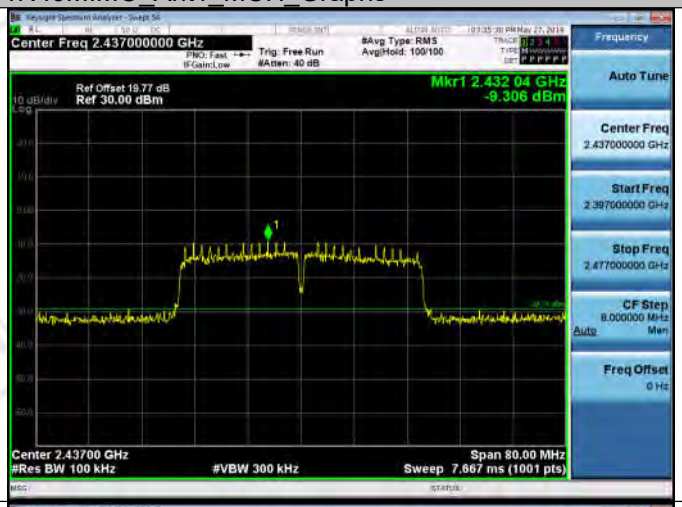
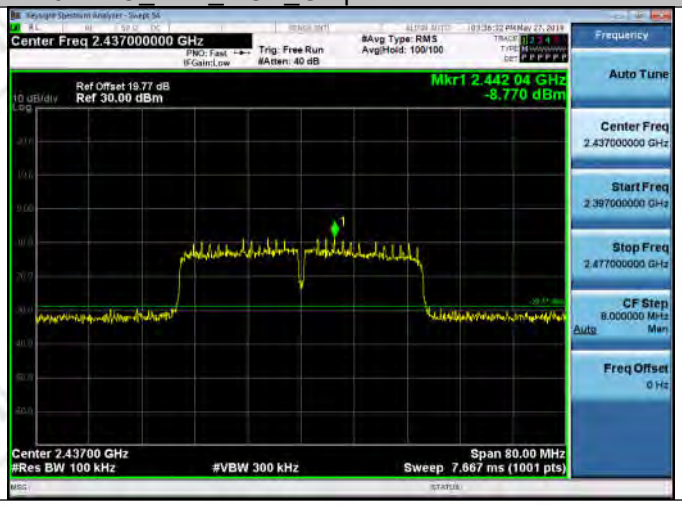
Puw/11N40SISO/MCH	

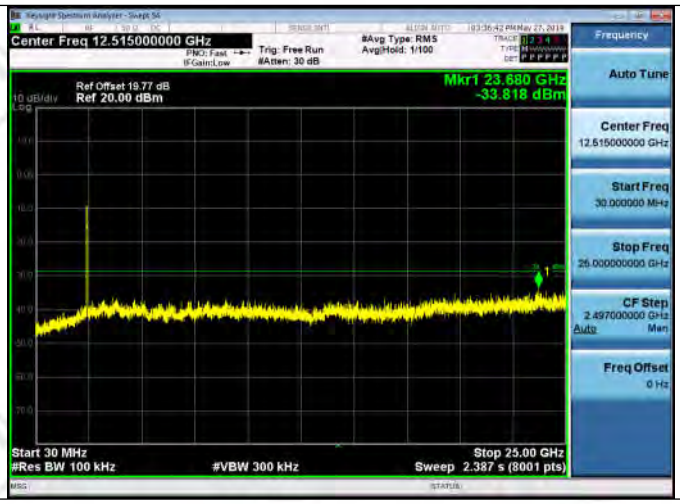
11N40SISO_Ant1_HCH_Graphs		
Pref/11N40SISO/HCH		
Puw/11N40SISO/HCH		
11N40SISO_Ant2_HCH_Graphs		
Pref/11N40SISO/HCH		

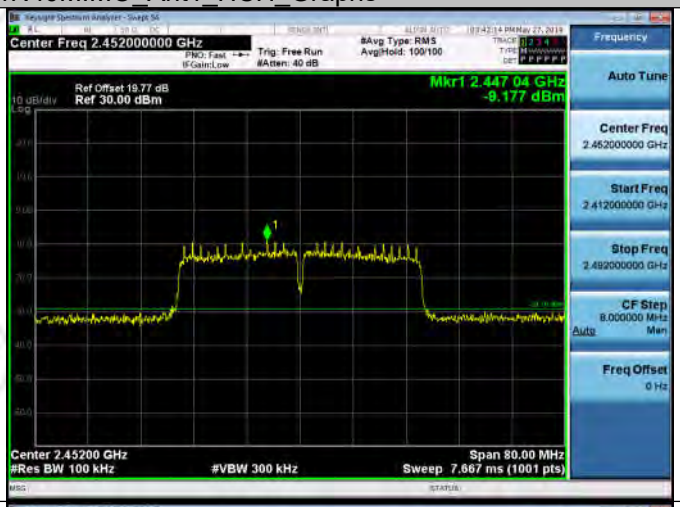
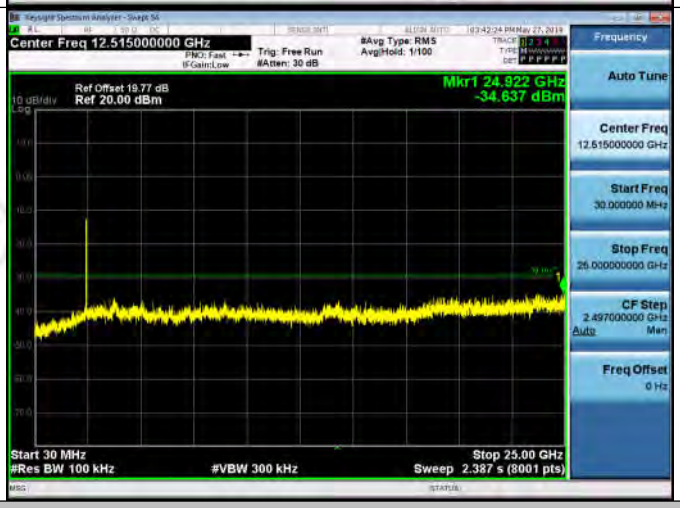
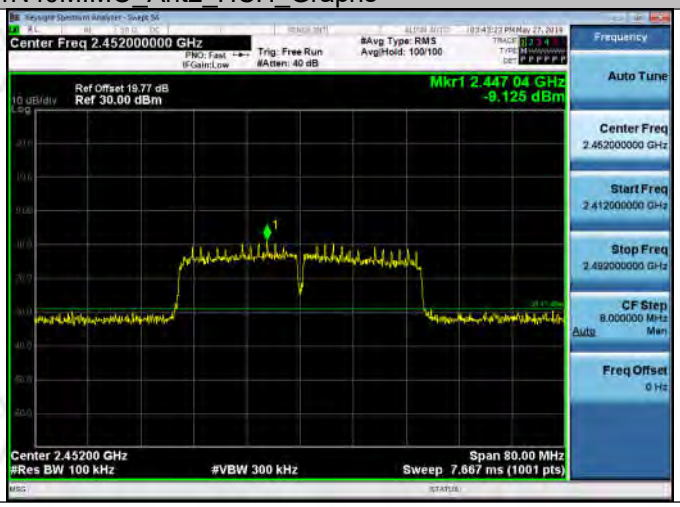
Puw/11N40SISO/HCH		

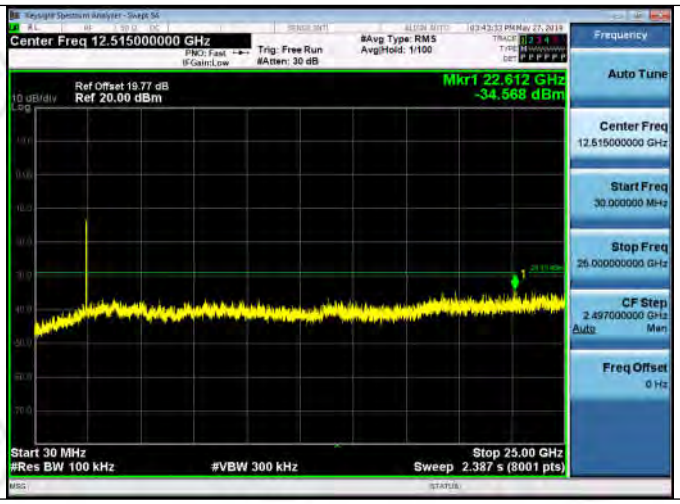
11N40MIMO_Ant1_LCH_Graphs			
Pref/11N40MIMO/LCH			
Puw/11N40MIMO/LCH			
11N40MIMO_Ant2_LCH_Graphs			
Pref/11N40MIMO/LCH			

Puw/11N40MIMO/LCH			

11N40MIMO_Ant1_MCH_Graphs		
Pref/11N40MIMO/MCH		
Puw/11N40MIMO/MCH		
11N40MIMO_Ant2_MCH_Graphs		
Pref/11N40MIMO/MCH		

Puw/11N40MIMO/MCH		

11N40MIMO_Ant1_HCH_Graphs		
Pref/11N40MIMO/HCH		
Puw/11N40MIMO/HCH		
11N40MIMO_Ant2_HCH_Graphs		
Pref/11N40MIMO/HCH		

Puw/11N40MIMO/HCH		

Appendix E): Power Spectral Density

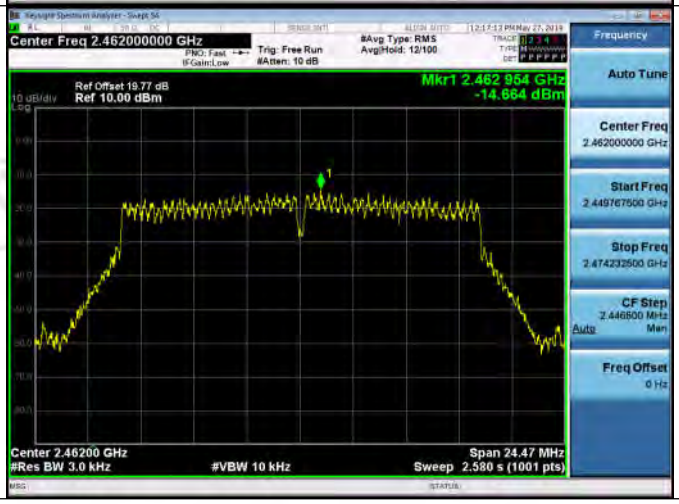
Result Table

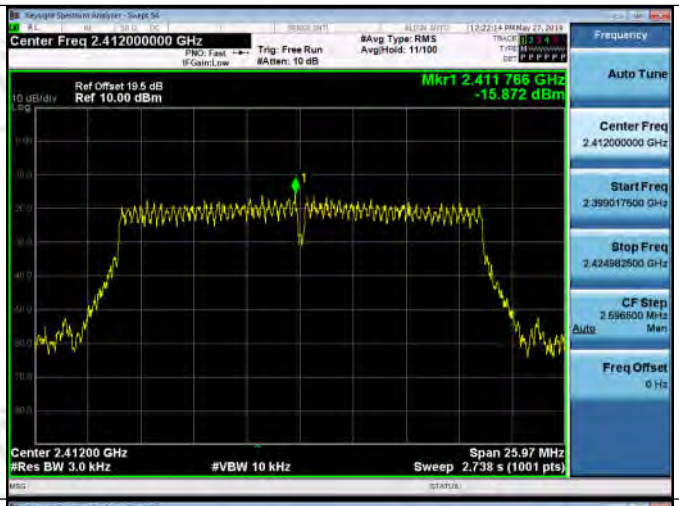
Mode	Antenna	Channel	Power Spectral Density [dBm]	Verdict
11B	Ant1	LCH	-7.211	PASS
11B	Ant2	LCH	-7.815	PASS
11B	Ant1	MCH	-8.788	PASS
11B	Ant2	MCH	-7.142	PASS
11B	Ant1	HCH	-8.187	PASS
11B	Ant2	HCH	-7.604	PASS
11G	Ant1	LCH	-14.632	PASS
11G	Ant2	LCH	-14.576	PASS
11G	Ant1	MCH	-14.471	PASS
11G	Ant2	MCH	-14.461	PASS
11G	Ant1	HCH	-14.664	PASS
11G	Ant2	HCH	-14.863	PASS
11N20SISO	Ant1	LCH	-15.872	PASS
11N20SISO	Ant2	LCH	-15.152	PASS
11N20SISO	Ant1	MCH	-15.866	PASS
11N20SISO	Ant2	MCH	-15.804	PASS
11N20SISO	Ant1	HCH	-15.456	PASS
11N20SISO	Ant2	HCH	-16.268	PASS
11N20MIMO	Ant1	LCH	-19.442	PASS
11N20MIMO	Ant2	LCH	-19.183	PASS
11N20MIMO	Ant1+2	LCH	-16.30	PASS
11N20MIMO	Ant1	MCH	-19.322	PASS
11N20MIMO	Ant2	MCH	-18.838	PASS
11N20MIMO	Ant1+2	MCH	-16.06	PASS
11N20MIMO	Ant1	HCH	-19.615	PASS
11N20MIMO	Ant2	HCH	-19.126	PASS
11N20MIMO	Ant1+2	HCH	-16.35	PASS
11N40SISO	Ant1	LCH	-21.029	PASS
11N40SISO	Ant2	LCH	-21.629	PASS
11N40SISO	Ant1	MCH	-18.916	PASS
11N40SISO	Ant2	MCH	-20.266	PASS
11N40SISO	Ant1	HCH	-20.131	PASS

11N40SISO	Ant2	HCH	-20.603	PASS
11N40MIMO	Ant1	LCH	-23.791	PASS
11N40MIMO	Ant2	LCH	-24.205	PASS
11N40MIMO	Ant1+2	LCH	-20.98	PASS
11N40MIMO	Ant1	MCH	-24.018	PASS
11N40MIMO	Ant2	MCH	-23.060	PASS
11N40MIMO	Ant1+2	MCH	-20.50	PASS
11N40MIMO	Ant1	HCH	-22.771	PASS
11N40MIMO	Ant2	HCH	-22.429	PASS
11N40MIMO	Ant1+2	HCH	-19.59	PASS

Test Graph

Graphs_Ant1			
11B/LCH			
11B/MCH			
11B/HCH			

11G/LCH			
11G/MCH			
11G/HCH			

11N20SISO/LCH			
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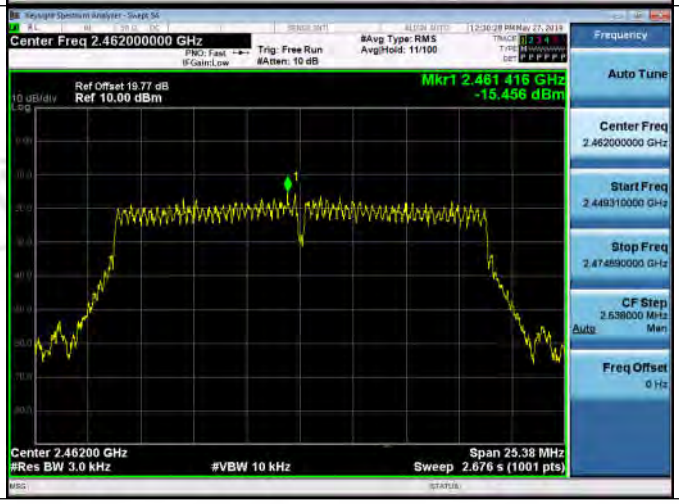
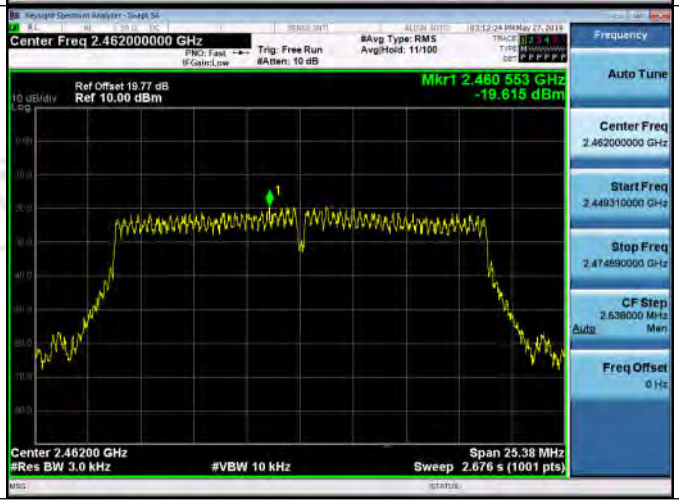
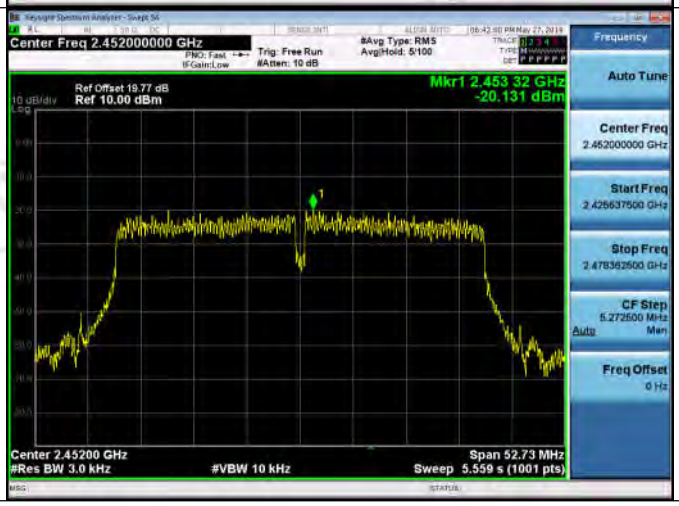
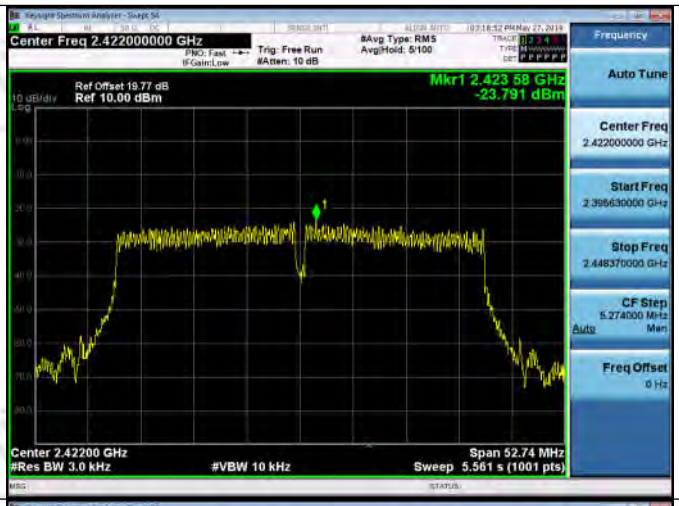
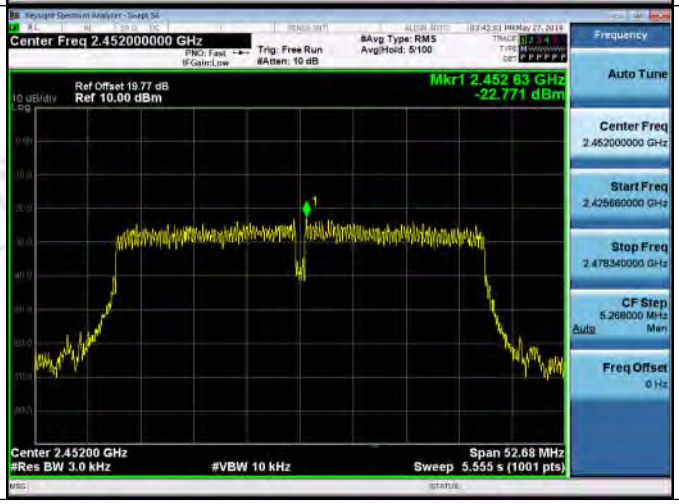
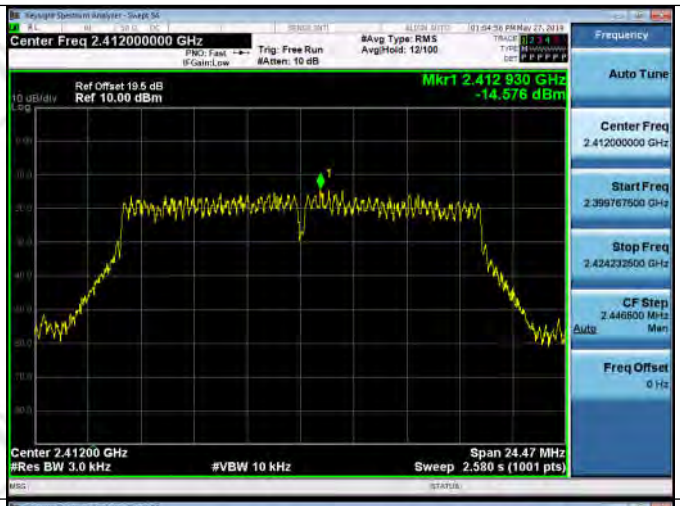
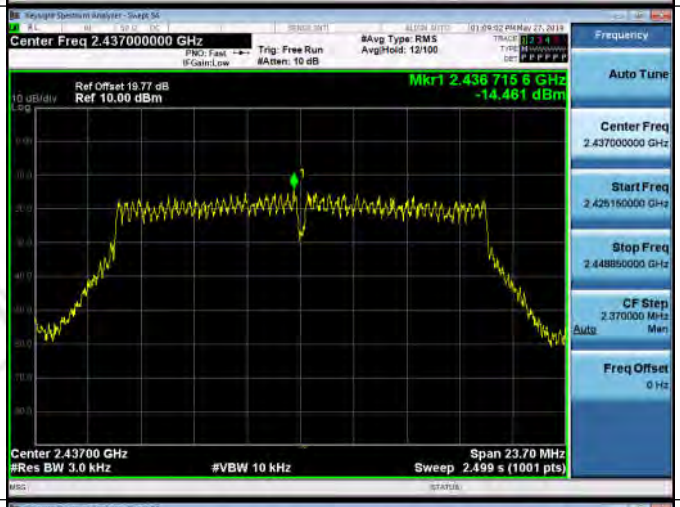
11N20SISO/HCH			

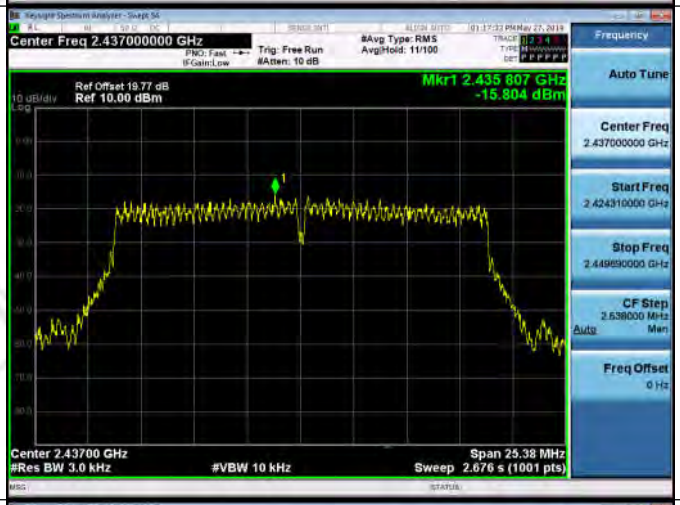
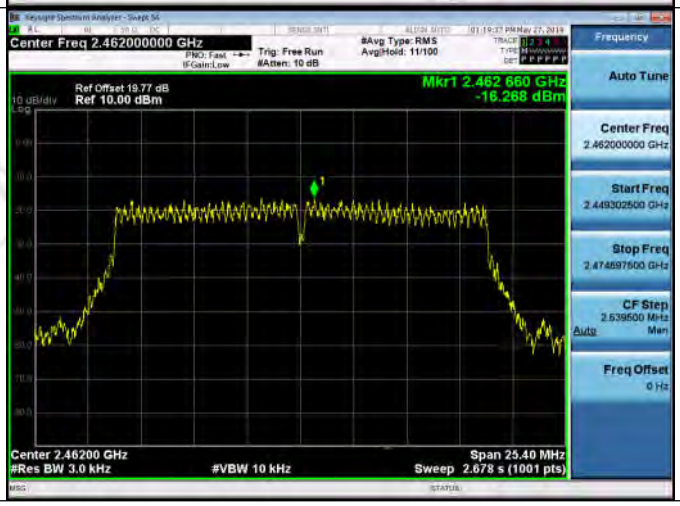
11N20MIMO/LCH			
11N20MIMO/MCH			
11N20MIMO/HCH			

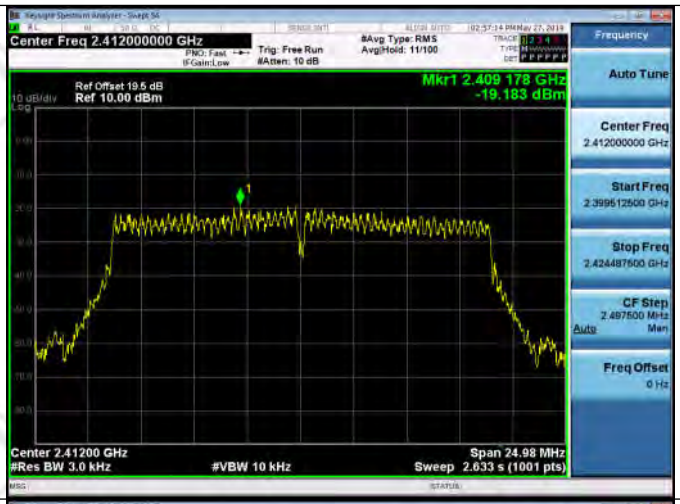
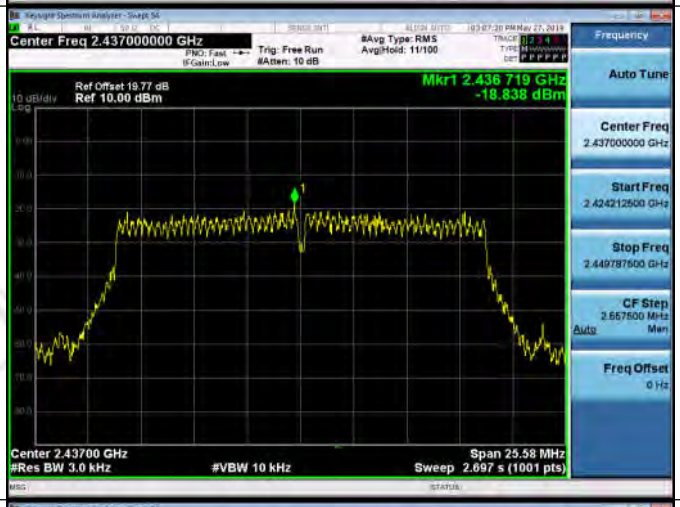
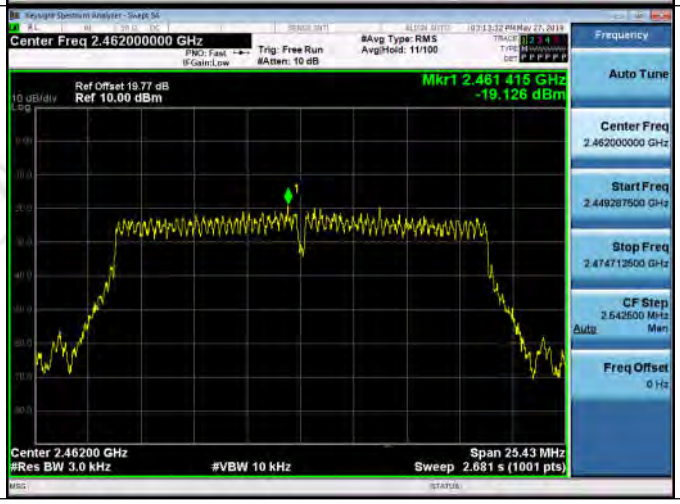
11N40SISO/LCH			
11N40SISO/MCH			
11N40SISO/HCH			

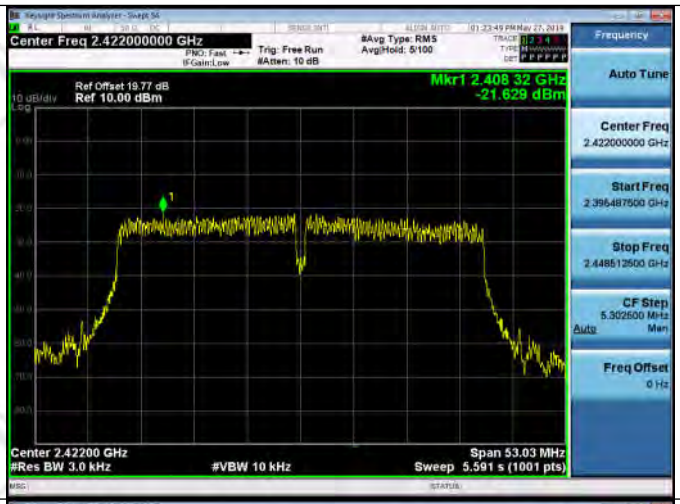
11N40MIMO/LCH			
11N40MIMO/MCH			
11N40MIMO/HCH			

Graphs_Ant2			
11B/LCH			
11B/MCH			
11B/HCH			

11G/LCH			
11G/MCH			
11G/HCH			

11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

11N20MIMO/LCH			
11N20MIMO/MCH			
11N20MIMO/HCH			

11N40SISO/LCH			
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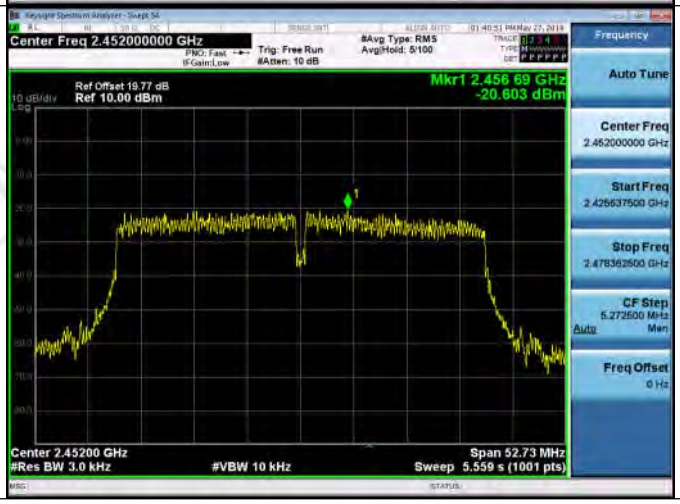
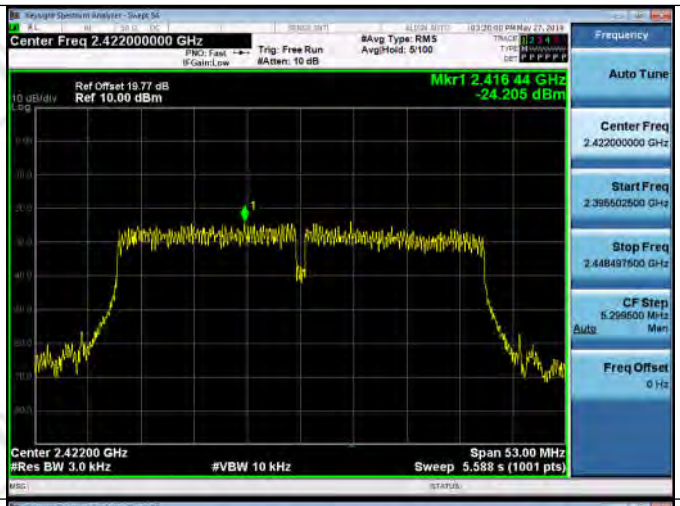
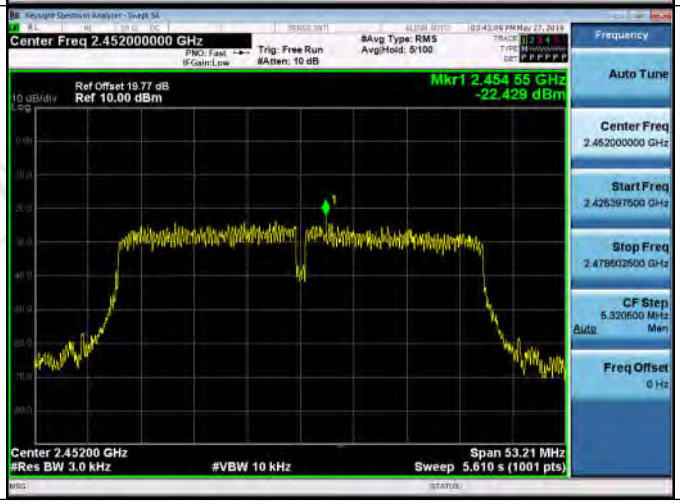
11N40SISO/HCH			

11N40MIMO/LCH			
11N40MIMO/MCH			
11N40MIMO/HCH			

Appendix F): Antenna Requirement

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(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:	

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.53 dBi.

Appendix G): AC Power Line Conducted Emission

<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1)The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3)The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) 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 on conducted measurement.</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr>
<tr><th>Quasi-peak</th><th>Average</th></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.
NOTE : The lower limit is applicable at the transition frequency</td></tr>
</table>

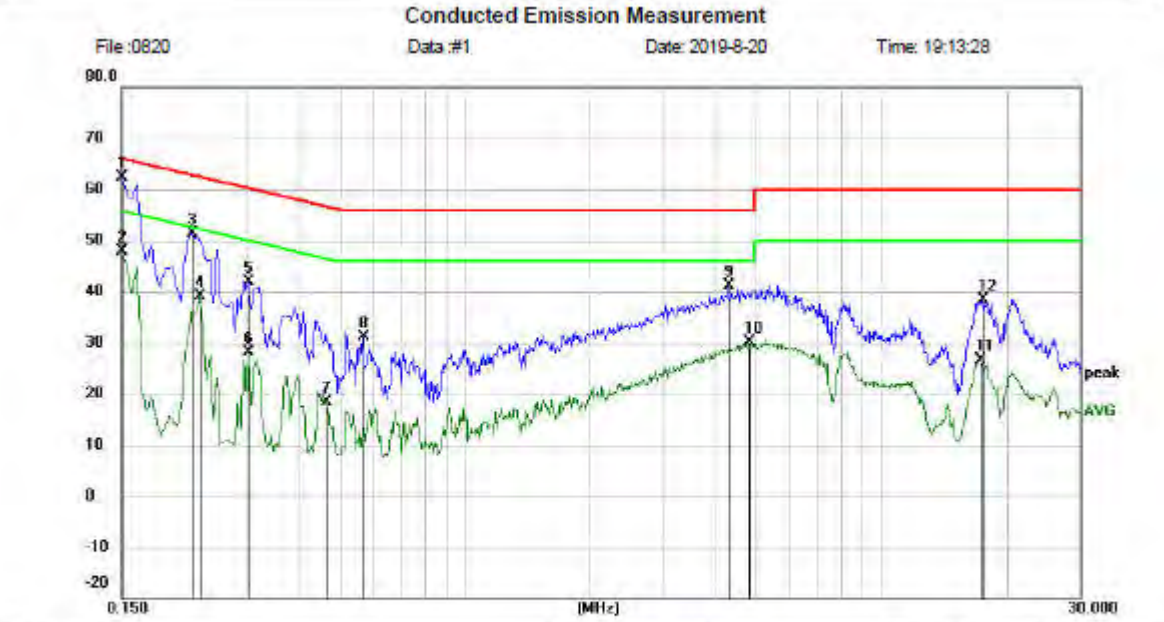
Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Product	:	WIFI+BT Module	**Model/Type reference**	:	
Temperature	:	21℃	**Humidity**	:	51%

Live line:



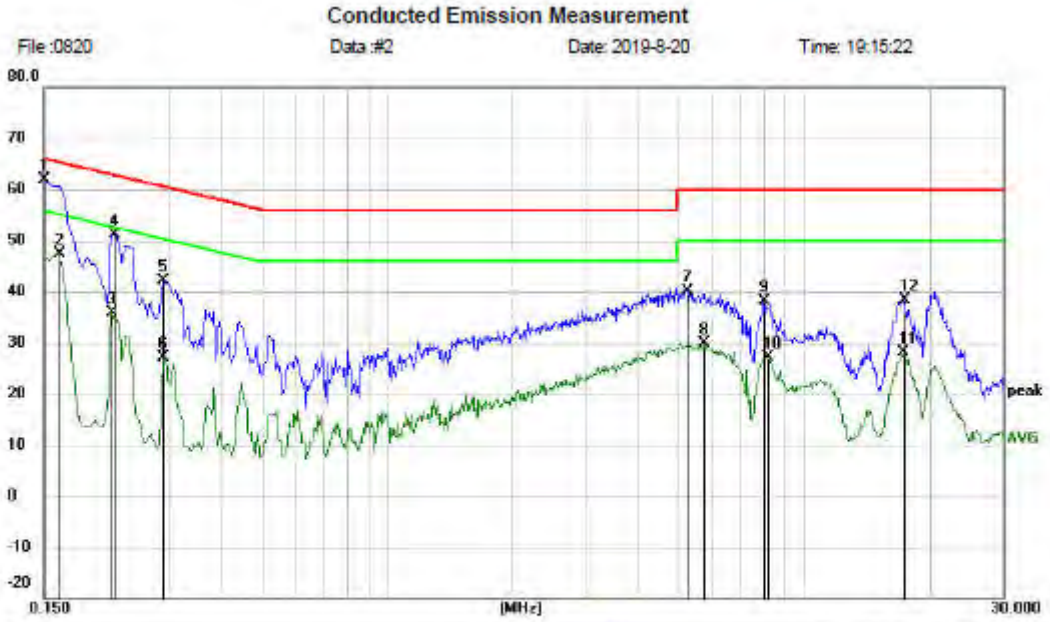
Site LAB Phase: L1 Temperature: 21
Limit: FCC Class B CE(QP) Power: AC120/60Hz Humidity: 51 %
EUT:
M/N:
Mode: ON
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	52.48	9.97	62.45	66.00	-3.55	peak	
2		0.1500	37.92	9.97	47.89	56.00	-8.11	AVG	
3		0.2220	41.36	10.04	51.40	62.74	-11.34	peak	
4		0.2310	29.21	10.04	39.25	52.41	-13.16	AVG	
5		0.3030	31.87	10.10	41.97	60.16	-18.19	peak	
6		0.3030	18.14	10.10	28.24	50.16	-21.92	AVG	
7		0.4650	8.29	10.00	18.29	46.60	-28.31	AVG	
8		0.5685	21.04	10.08	31.12	56.00	-24.88	peak	
9		4.2945	31.20	9.83	41.03	56.00	-14.97	peak	
10		4.8210	20.34	9.83	30.17	46.00	-15.83	AVG	
11		17.2455	16.61	9.96	26.57	50.00	-23.43	AVG	
12		17.5605	28.43	9.95	38.38	60.00	-21.62	peak	

*:Maximum data x:Over limit !:over margin Reference Only

File :0820\Data :#1 Page: 1 Engineer Signature:

Neutral line:



Site LAB
Limit: FCC Class B CE(QP)
EUT:
M/N:
Mode: ON
Note:

Phase: N
Power: AC120/60Hz

Temperature: 21
Humidity: 51 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	51.88	9.97	61.85	66.00	-4.15	peak	
2		0.1635	37.28	9.99	47.27	55.28	-8.01	AVG	
3		0.2175	25.86	10.03	35.89	52.91	-17.02	AVG	
4		0.2220	41.12	10.04	51.16	62.74	-11.58	peak	
5		0.2895	32.16	10.09	42.25	60.54	-18.29	peak	
6		0.2895	17.05	10.09	27.14	50.54	-23.40	AVG	
7		5.2215	30.33	9.83	40.16	60.00	-19.84	peak	
8		5.7525	20.05	9.84	29.89	50.00	-20.11	AVG	
9		7.9980	28.36	9.89	38.25	60.00	-21.75	peak	
10		8.1555	17.28	9.89	27.17	50.00	-22.83	AVG	
11		17.3220	18.05	9.96	28.01	50.00	-21.99	AVG	
12		17.4435	28.31	9.96	38.27	60.00	-21.73	peak	

*:Maximum data x:Over limit !:over margin Reference Only

File :0820\Data :#2 Page: 1 Engineer Signature:

Notes:

1. *The following Quasi-Peak and Average measurements were performed on the EUT:*
2. *Final Test Level =Receiver Reading + LISN Factor + Cable Loss.*