TEST REPORT

Product	:	POCKET
Trade mark	:	N/A
Model/Type reference	:	RWOLSPv1
Serial Number	:	N/A
Report Number	:	EED32K000744
FCC ID	:	2APO400001
Date of Issue	:	Jun. 04, 2018
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

Beijing Hope Tech Global Co., Ltd.
No.29 Yongda Rd, Bioengineering & Pharmaceutical Industrial Park, Beijing, 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:	Peter	Compiled by:	Tom- chen
	Peter (Test Project)		Tom chen (Project Engineer)
Reviewed by:	Kevin Yang	Approved by:	Sheek. Luo
	Kevin yang (Reviewer)		Sheek Luo (Lab supervisor)
Date:	Jun. 04, 2018		Check No.:2447670187

CENTRE TESTING INTERNATIONAL GROUP CO.,LTD. CTI Report Seal

2 Version

Version No.	Date	Description
00	Jun. 04, 2018	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.

The POCKET has two printing patterns, the electrical circuit design, layout, and operational principle were identical for two printing patterns, with difference being the screen printing patterns.

4 Content

1 COVER PAGE 1

2 VERSION 2

3 TEST SUMMARY 3

4 CONTENT 4

5 TEST REQUIREMENT 5

5.1 TEST SETUP 5
5.1.1 For Conducted test setup 5
5.1.2 For Radiated Emissions test setup 5
5.1.3 For Conducted Emissions test setup 6
5.2 TEST ENVIRONMENT 6
5.3 TEST CONDITION 6

6 GENERAL INFORMATION 8

6.1 CLIENT INFORMATION 8
6.2 GENERAL DESCRIPTION OF EUT 8
6.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD 8
6.4 DESCRIPTION OF SUPPORT UNITS 9
6.5 TEST LOCATION 9
6.6 DEVIATION FROM STANDARDS 9
6.7 ABNORMALITIES FROM STANDARD CONDITIONS 9
6.8 OTHER INFORMATION REQUESTED BY THE CUSTOMER 9
6.9 MEASUREMENT UNCERTAINTY (95% CONFIDENCE LEVELS, K=2) 9

7 EQUIPMENT LIST 10

8 RADIO TECHNICAL REQUIREMENTS SPECIFICATION 12

Appendix A): Conducted Peak Output Power 13
Appendix B): 6dB Occupied Bandwidth 31
Appendix C): Band-edge for RF Conducted Emissions 44
Appendix D): RF Conducted Spurious Emissions 53
Appendix E): Power Spectral Density 78
Appendix F): Antenna Requirement 92
Appendix G): AC Power Line Conducted Emission 94
Appendix H): Restricted bands around fundamental frequency (Radiated) 97

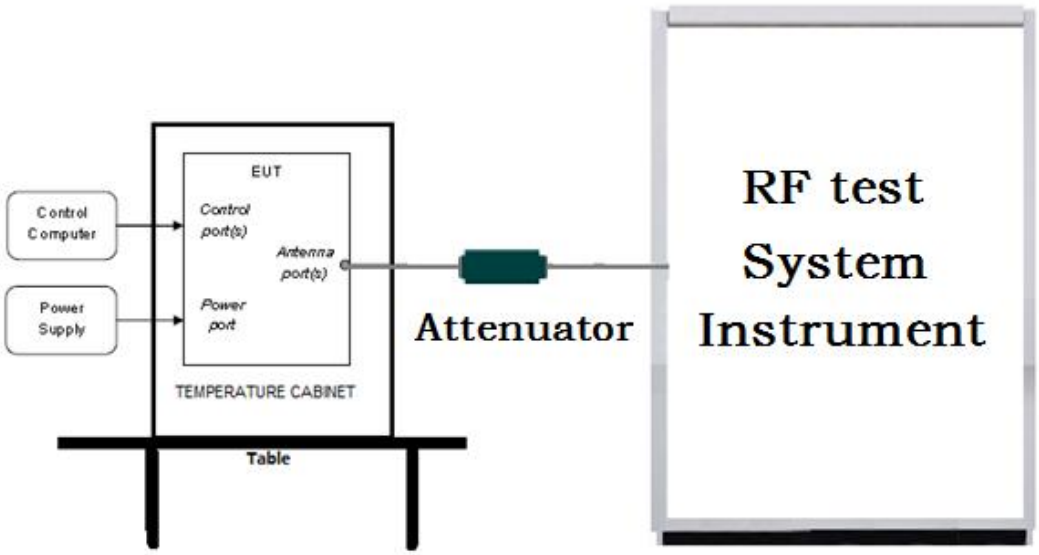
PHOTOGRAPHS OF TEST SETUP 133

PHOTOGRAPHS OF EUT CONSTRUCTIONAL DETAILS 135

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:

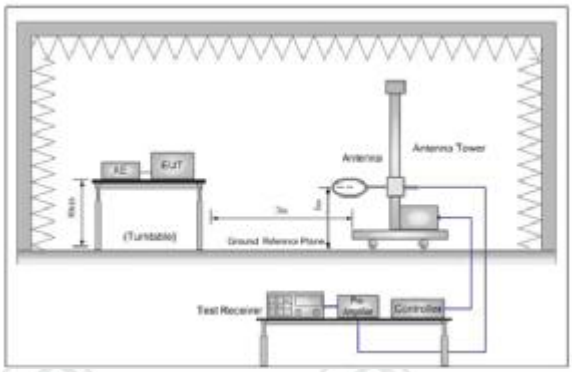


Figure 1. Below 30MHz

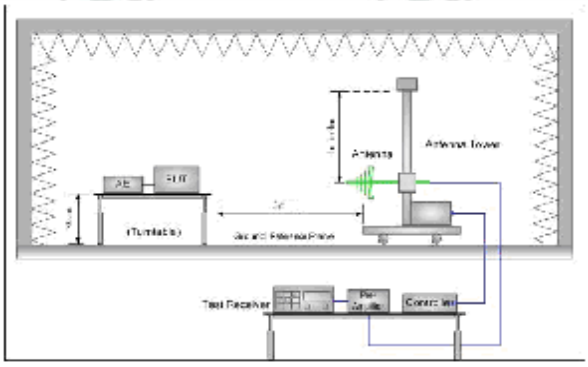


Figure 2. 30MHz to 1GHz

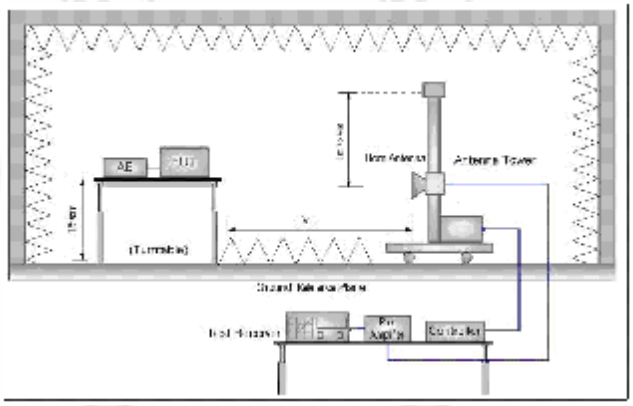
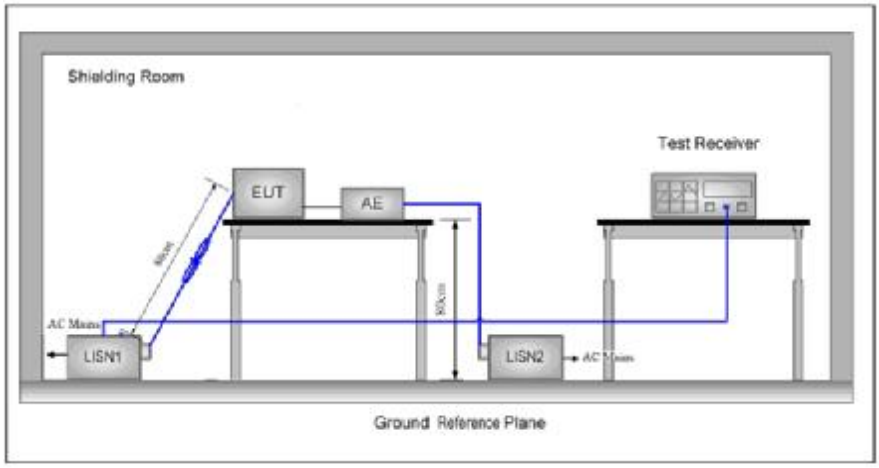


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	22 °C
Humidity:	62 % 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
Transmitting mode:	The EUT transmitted the continuous signal at the specific channel(s).			

Test mode:

Pre-scan under all rate at lowest channel 1 in Ant1

Mode	**802.11b**			
Data Rate	**1Mbps**	**2Mbps**	**5.5Mbps**	**11Mbps**
Power(dBm)	19.54	19.85	20.12	20.48

Mode	**802.11g**							
Data Rate	**6Mbps**	**9Mbps**	**12Mbps**	**18Mbps**	**24Mbps**	**36Mbps**	**48Mbps**	**54Mbps**
Power(dBm)	21.09	21.00	20.87	20.65	20.44	19.84	19.55	19.31

Mode	**802.11n (HT20)**							
Data Rate	**6.5Mbps**	**13Mbps**	**19.5Mbps**	**26Mbps**	**39Mbps**	**52Mbps**	**58.5Mbps**	**65Mbps**
Power(dBm)	21.04	20.95	20.75	20.57	20.42	19.85	19.65	19.27

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).

6 General Information

6.1 Client Information

Applicant:	Beijing Hope Tech Global Co., Ltd.
Address of Applicant:	No.29 Yongda Rd, Bioengineering & Pharmaceutical Industrial Park, Beijing, China
Manufacturer:	Beijing Hope Tech Global Co., Ltd.
Address of Manufacturer:	No.29 Yongda Rd, Bioengineering & Pharmaceutical Industrial Park, Beijing, China
Factory:	Ningbo Hope Tech Global Co., Ltd.
Address of Factory:	Building 4,NO.502-1,Wenshui Road, Shounan STR, YinZhou DIS, NINGBO, ZHEJIANG CHINA

6.2 General Description of EUT

Product Name:	POCKET
Model No.(EUT):	RWOLSPv1
Trade Mark:	N/A
EUT Supports Radios application:	Wi-Fi: 802.11 b/g/n(20M) , 2412MHz-2462MHz
Power Supply:	DC 5V
Sample Received Date:	Apr. 04, 2018
Sample tested Date:	Apr. 04, 2018 to May 29, 2018

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20) : OFDM (64QAM, 16QAM, QPSK,BPSK)
Sample Type:	Portable production
Test Power Grade:	N/A (manufacturer declare)
Test Software of EUT:	N/A (manufacturer declare)
Antenna Type and Gain:	Type: FPC Antenna, External Antenna Gain: 2dBi
Power Source:	Battery: 3.7V, 5200mAh
Test Voltage:	DC 5V and AC 120V/60Hz
Hardware Version:	Pocket V1.0(manufacturer declare)
Firmware Version:	4.4.13(manufacturer declare)

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Associated equipment name		Manufacture	serial number	Supplied by	Certification
AE1	AC adapter	KSA29B0500200D5	----	CTI	FCC

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China 518101
Telephone: +86 (0) 755 3368 3668 Fax:+86 (0) 755 3368 3385
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	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

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	03-13-2018	03-12-2019
Spectrum Analyzer	Keysight	N9010A	MY54510339	03-13-2018	03-12-2019
Signal Generator	Keysight	N5182B	MY53051549	03-13-2018	03-12-2019
High-pass filter	Sinoscite	FL3CX03WG 18NM12-0398-002	---	01-10-2018	01-09-2019
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-10-2018	01-09-2019
DC Power	Keysight	E3642A	MY54426035	03-13-2018	03-12-2019
power meter & power sensor	R&S	OSP120	101374	03-13-2018	03-12-2019
RF control unit	JS Tonscend	JS0806-2	158060006	03-13-2018	03-12-2019
BT&WI-FI Automatic test software	JS Tonscend	JS1120-2	---	03-13-2018	03-12-2019

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	---	06-04-2016	06-03-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	06-09-2017	06-08-2018
Preamplifier	JS Tonscend	EMC051845 SE	980380	01-19-2018	01-18-2019
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-18-2018
Loop Antenna	ETS	6502	00071730	06-22-2017	06-21-2019
Spectrum Analyzer	R&S	FSP40	100416	06-13-2017	06-12-2018
Receiver	R&S	ESCI	100435	06-14-2017	06-13-2018
Signal Generator	Keysight	E8257D	MY53401106	03-13-2018	03-12-2019
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-02-2018	05-01-2019
Communication test set	Agilent	E5515C	GB47050534	03-16-2018	03-15-2019
Cable line	Fulai(7M)	SF106	5219/6A	01-10-2018	01-09-2019
Cable line	Fulai(6M)	SF106	5220/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5216/6A	01-10-2018	01-09-2019
Cable line	Fulai(3M)	SF106	5217/6A	01-10-2018	01-09-2019
Communication test set	R&S	CMW500	152394	03-16-2018	03-15-2019
High-pass filter	Sinoscite	FL3CX03WG 18NM12-0398-002	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA 09CL12-0395-001	---	01-10-2018	01-09-2019
band rejection filter	Sinoscite	FL5CX01CA 08CL12-0393-001	---	01-10-2018	01-09-2019

Conducted disturbance Test					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100009	06-14-2017	06-13-2018
Temperature/ Humidity Indicator	TAYLOR	1451	1905	05-02-2018	05-01-2019
LISN	schwarzbeck	NNLK8121	8121-529	06-13-2017	06-12-2018

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	FCC Part15C (2015)	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)

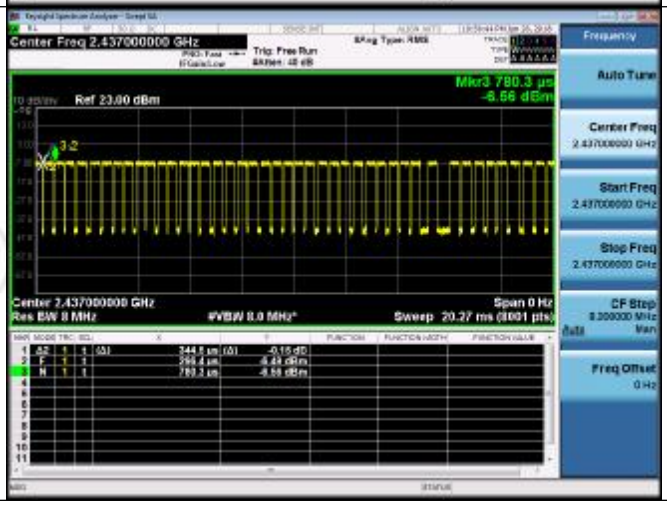
Appendix A): Conducted Peak Output Power

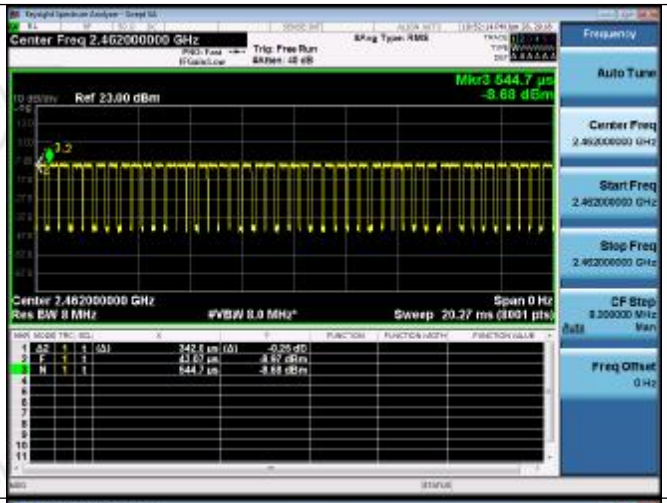
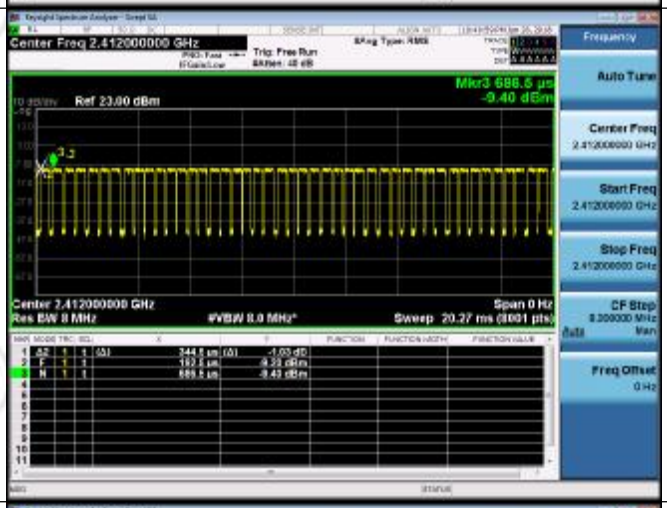
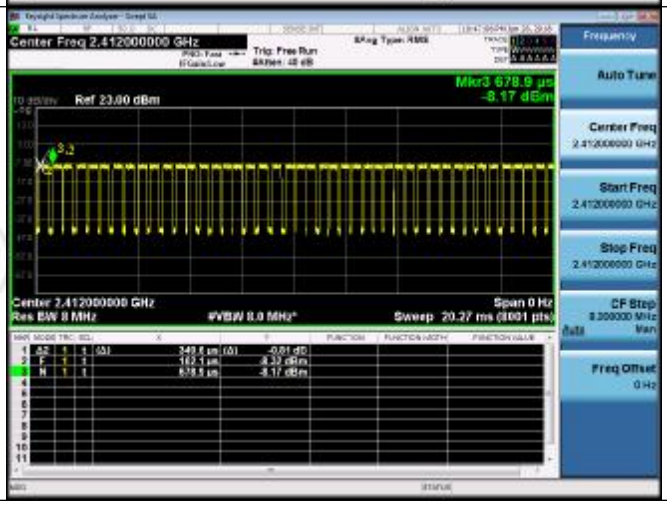
Duty Cycle

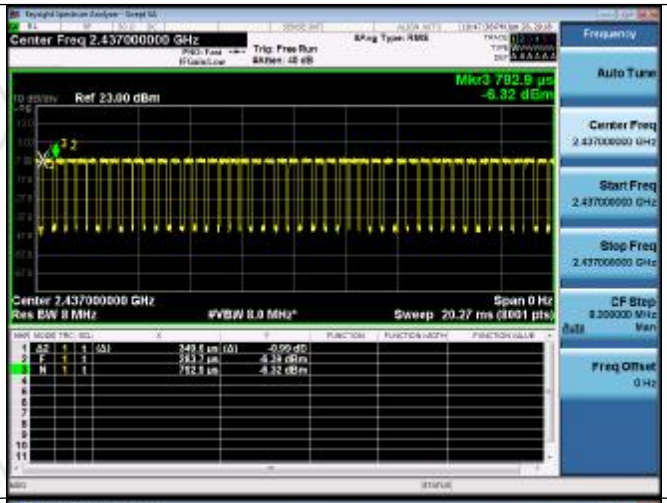
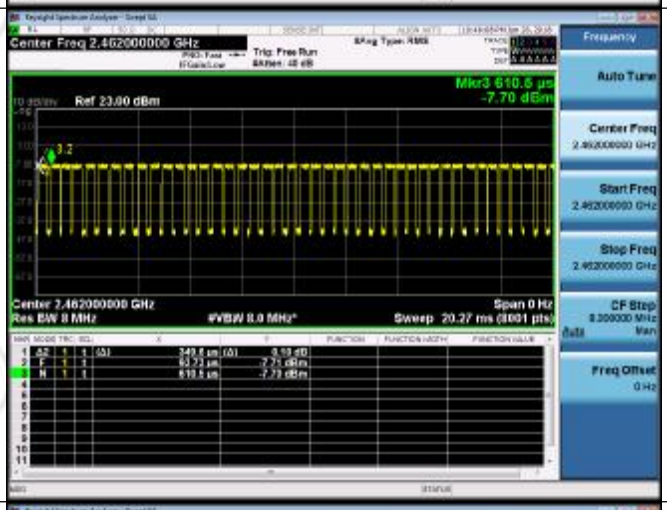
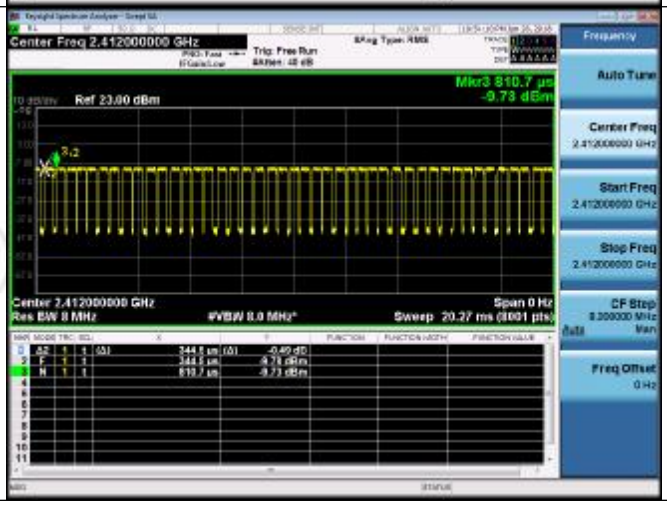
Test Mode	Channel	Duty Cycle[%]	Verdict
11B	2412	98.95	PASS
11B	2437	98.80	PASS
11B	2462	99.03	PASS
11G	2412	71.20	PASS
11G	2437	68.18	PASS
11G	2462	69.74	PASS
11N20SISO	2412	67.65	PASS
11N20SISO	2437	68.66	PASS
11N20SISO	2462	67.65	PASS
11N20MIMO	2412	73.91	PASS
11N20MIMO	2437	76.84	PASS
11N20MIMO	2462	76.84	PASS

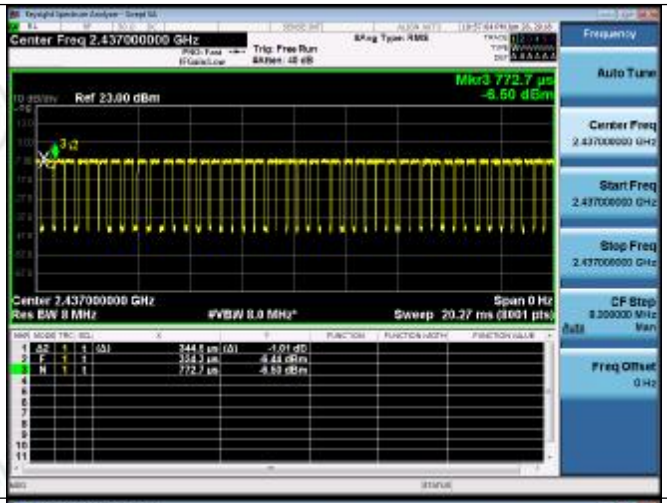
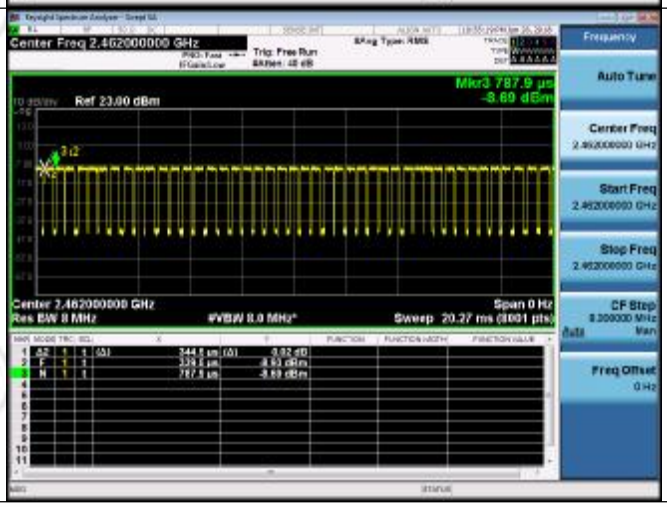
Duty Cycle Test Graph

Graphs	
11B/LCH	

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

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

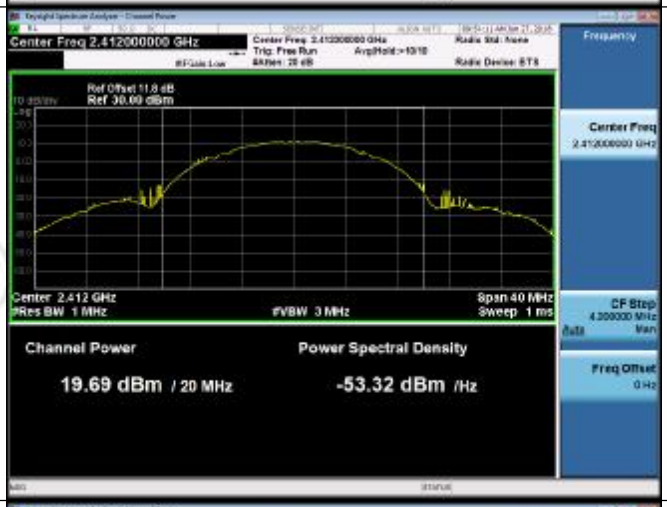
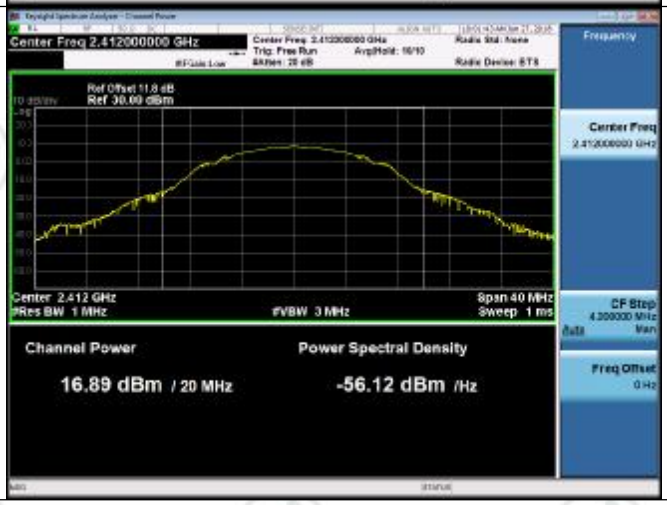
11N20SISO/MCH			
11N20SISO/HCH			
11N20MIMO/LCH			

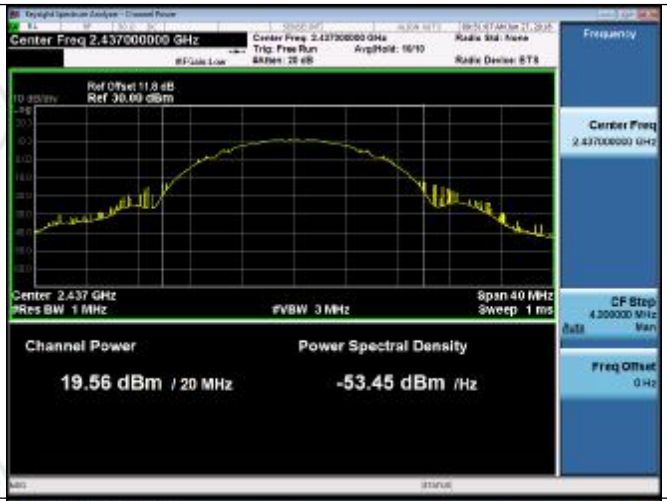
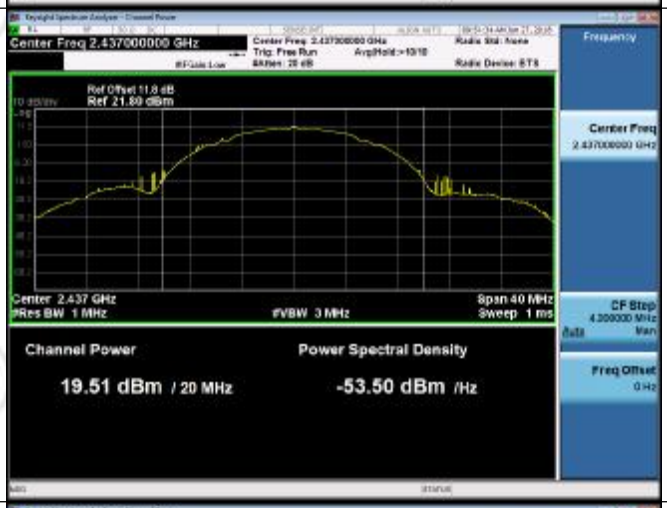
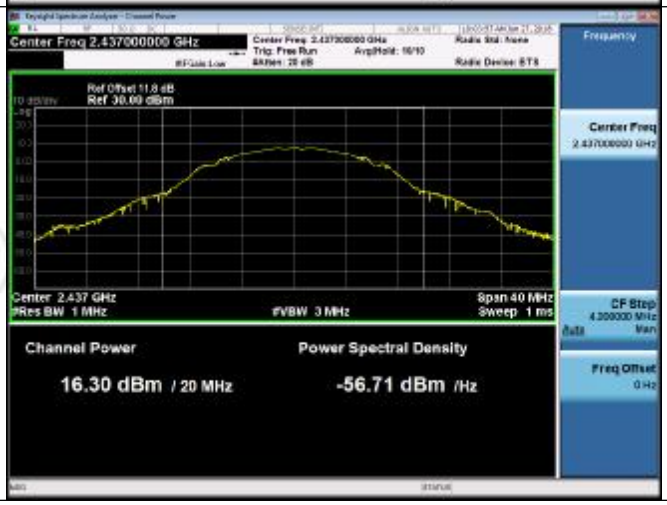
11N20MIMO/MCH			
11N20MIMO/HCH			

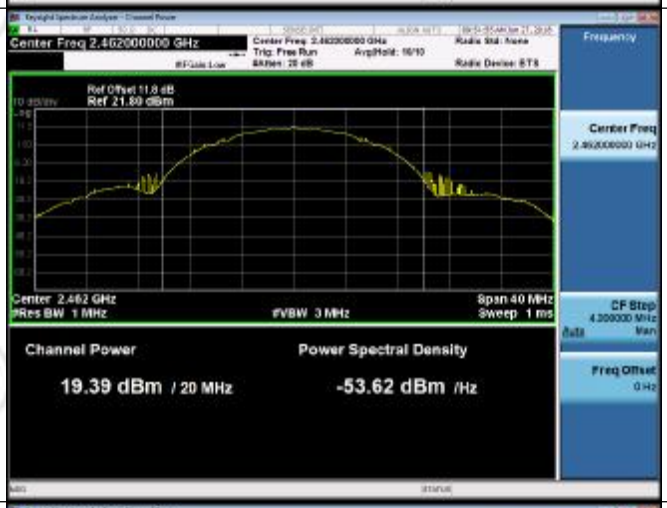
Result Table

Test Mode	Antenna	Channel	Conducted Peak Output Power	Av.Power [dBm]	Verdict
11B	Ant1	LCH	19.70	19.70	PASS
11B	Ant2	LCH	19.69	19.69	PASS
11B	Ant3	LCH	16.89	16.89	PASS
11B	Ant1	MCH	19.56	19.56	PASS
11B	Ant2	MCH	19.51	19.51	PASS
11B	Ant3	MCH	16.30	16.30	PASS
11B	Ant1	HCH	19.47	19.47	PASS
11B	Ant2	HCH	19.39	19.39	PASS
11B	Ant3	HCH	16.55	16.55	PASS
11G	Ant1	LCH	21.09	19.61	PASS
11G	Ant2	LCH	20.54	19.06	PASS
11G	Ant3	LCH	17.59	16.11	PASS
11G	Ant1	MCH	21.32	19.65	PASS
11G	Ant2	MCH	20.57	18.90	PASS
11G	Ant3	MCH	17.74	16.07	PASS
11G	Ant1	HCH	21.26	19.69	PASS
11G	Ant2	HCH	20.34	18.77	PASS
11G	Ant3	HCH	18.26	16.69	PASS
11N20SISO	Ant1	LCH	21.04	19.34	PASS
11N20SISO	Ant2	LCH	20.69	18.99	PASS
11N20SISO	Ant3	LCH	17.59	16.01	PASS
11N20SISO	Ant1	MCH	21.26	19.62	PASS
11N20SISO	Ant2	MCH	20.64	19.01	PASS
11N20SISO	Ant3	MCH	17.72	16.08	PASS
11N20SISO	Ant1	HCH	21.13	19.43	PASS
11N20SISO	Ant2	HCH	20.42	18.72	PASS
11N20SISO	Ant3	HCH	18.33	16.63	PASS
11N20MIMO	Ant1	LCH	17.34	16.03	PASS
11N20MIMO	Ant2	LCH	17.35	16.04	PASS
11N20MIMO	Ant3	LCH	14.87	13.56	PASS
11N20MIMO	Ant1+2+3	LCH	21.43	20.12	PASS
11N20MIMO	Ant1	MCH	17.12	16.01	PASS
11N20MIMO	Ant2	MCH	17.02	15.91	PASS
11N20MIMO	Ant3	MCH	15.26	14.12	PASS
11N20MIMO	Ant1+2+3	MCH	21.32	20.23	PASS
11N20MIMO	Ant1	HCH	17.70	16.56	PASS
11N20MIMO	Ant2	HCH	17.00	15.86	PASS
11N20MIMO	Ant3	HCH	15.11	13.97	PASS
11N20MIMO	Ant1+2+3	HCH	21.51	20.36	PASS

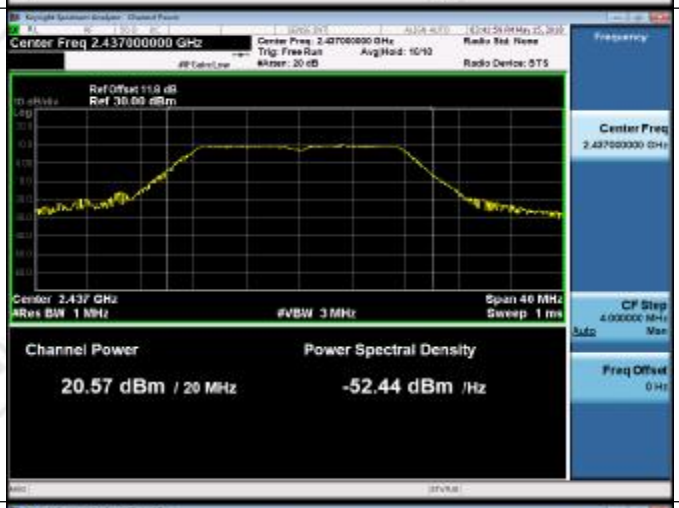
Test Graph

Graphs			
11B/LCH_Ant1			
11B/LCH_Ant2			
11B/LCH_Ant3			

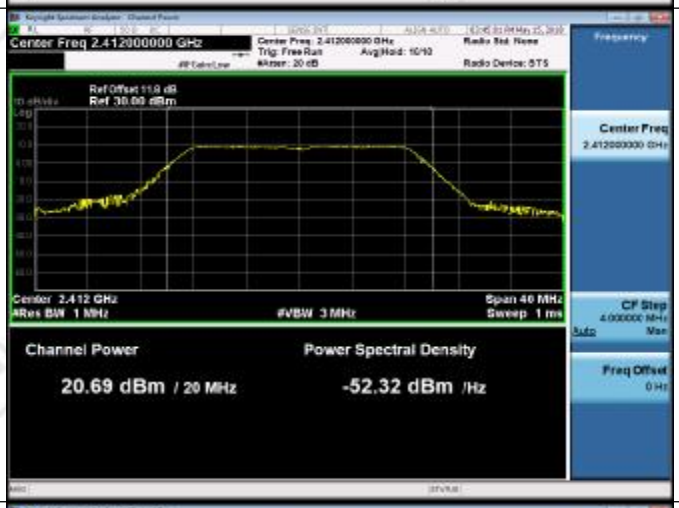
11B/MCH_Ant1			
11B/MCH_Ant2			
11B/MCH_Ant3			

11B/HCH_Ant1			
11B/HCH_Ant2			
11B/HCH_Ant3			

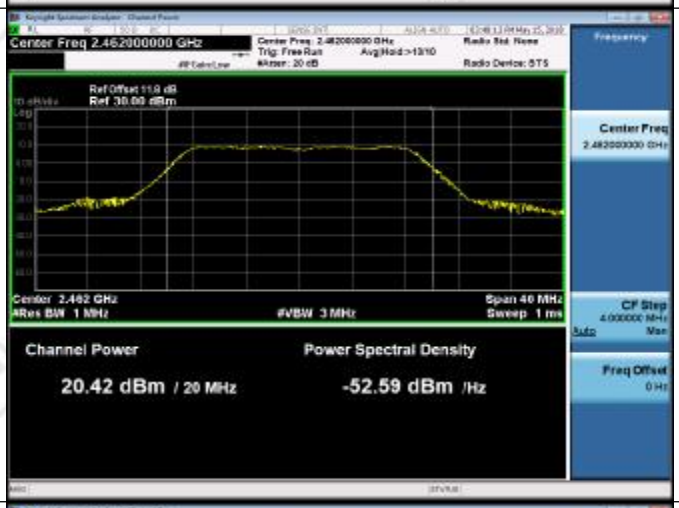
11G/LCH_Ant1			
11G/LCH_Ant2			
11G/LCH_Ant3			

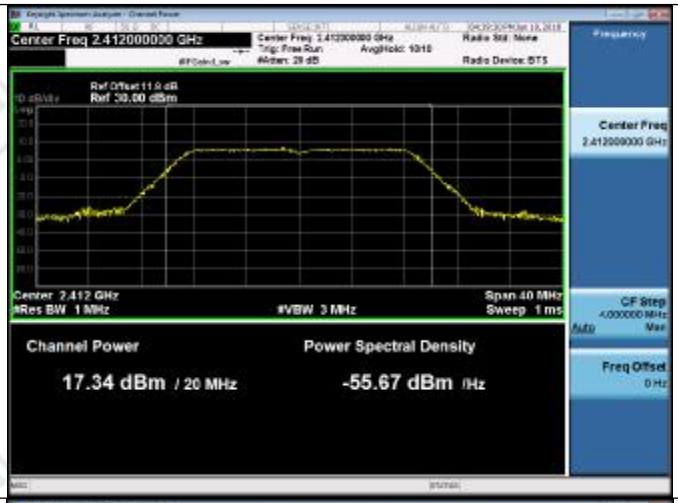
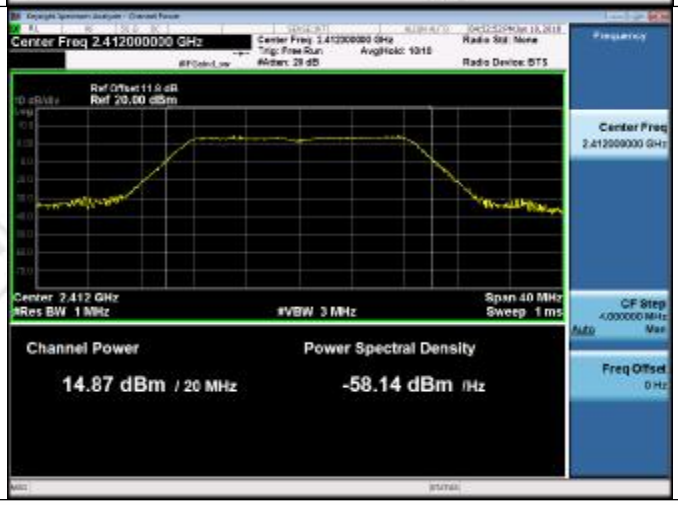
11G/MCH_Ant1			
11G/MCH_Ant2			
11G/MCH_Ant3			

11G/HCH_Ant1			
11G/HCH_Ant2			
11G/HCH_Ant3			

11N20SISO/LCH_Ant1			
11N20SISO/LCH_Ant2			
11N20SISO/LCH_Ant3			

11N20SISO/MCH_Ant1			
11N20SISO/MCH_Ant2			
11N20SISO/MCH_Ant3			

11N20SISO/HCH_Ant1			
11N20SISO/HCH_Ant2			
11N20SISO/HCH_Ant3			

11N20MIMO/LCH_Ant1			
11N20MIMO/LCH_Ant2			
11N20MIMO/LCH_Ant3			

11N20MIMO/MCH_Ant1			
11N20MIMO/MCH_Ant2			
11N20MIMO/MCH_Ant3			

11N20MIMO/HCH_Ant1			
11N20MIMO/HCH_Ant2			
11N20MIMO/HCH_Ant3			

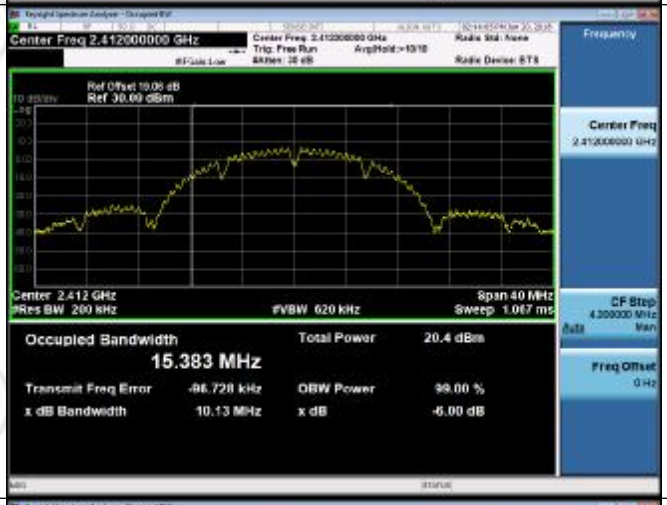
Appendix B): 6dB Occupied Bandwidth

Result Table

Mode	Antenna	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict	Remark
11B	Ant1	LCH	10.12	15.309	PASS	Peak detector
11B	Ant2	LCH	10.13	15.383	PASS	
11B	Ant3	LCH	10.13	15.560	PASS	
11B	Ant1	MCH	10.12	15.294	PASS	
11B	Ant2	MCH	10.13	15.506	PASS	
11B	Ant3	MCH	10.12	15.515	PASS	
11B	Ant1	HCH	10.13	15.351	PASS	
11B	Ant2	HCH	10.13	15.528	PASS	
11B	Ant3	HCH	10.14	15.656	PASS	
11G	Ant1	LCH	16.50	16.877	PASS	
11G	Ant2	LCH	16.47	16.814	PASS	
11G	Ant3	LCH	16.43	16.812	PASS	
11G	Ant1	MCH	16.53	16.860	PASS	
11G	Ant2	MCH	16.55	16.815	PASS	
11G	Ant3	MCH	16.41	16.794	PASS	
11G	Ant1	HCH	16.54	16.865	PASS	
11G	Ant2	HCH	16.45	16.818	PASS	
11G	Ant3	HCH	16.45	16.895	PASS	
11N20SISO	Ant1	LCH	17.64	17.868	PASS	
11N20SISO	Ant2	LCH	17.68	17.853	PASS	
11N20SISO	Ant3	LCH	17.62	17.912	PASS	
11N20SISO	Ant1	MCH	17.63	17.838	PASS	
11N20SISO	Ant2	MCH	17.65	17.856	PASS	
11N20SISO	Ant3	MCH	17.65	17.908	PASS	
11N20SISO	Ant1	HCH	17.64	17.854	PASS	
11N20SISO	Ant2	HCH	17.65	17.850	PASS	
11N20SISO	Ant3	HCH	17.68	17.976	PASS	
11N20MIMO	Ant1	LCH	17.63	17.842	PASS	
11N20MIMO	Ant2	LCH	17.68	17.863	PASS	
11N20MIMO	Ant3	LCH	17.67	17.866	PASS	
11N20MIMO	Ant1	MCH	17.64	17.827	PASS	
11N20MIMO	Ant2	MCH	17.64	17.861	PASS	

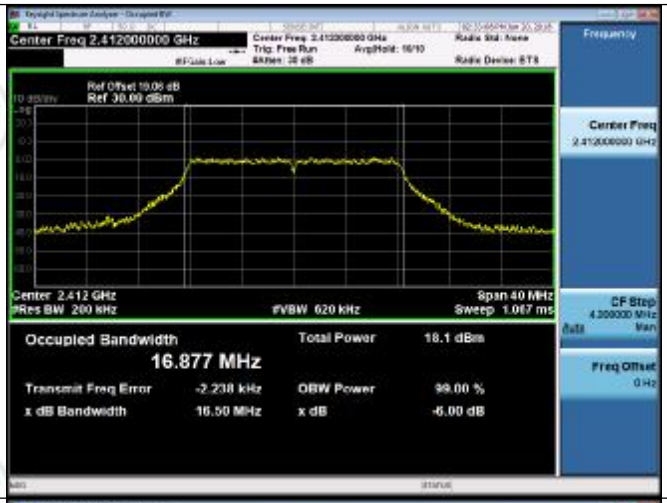
11N20MIMO	Ant3	MCH	17.68	17.841	PASS	
11N20MIMO	Ant1	HCH	17.62	17.841	PASS	
11N20MIMO	Ant2	HCH	17.68	17.854	PASS	
11N20MIMO	Ant3	HCH	17.64	17.868	PASS	

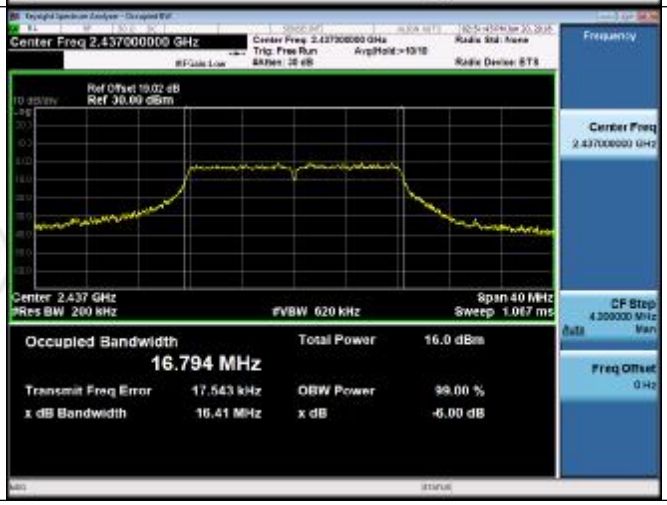
Test Graph

Graphs			
11B/LCH_Ant1			
11B/LCH_Ant2			
11B/LCH_Ant3			

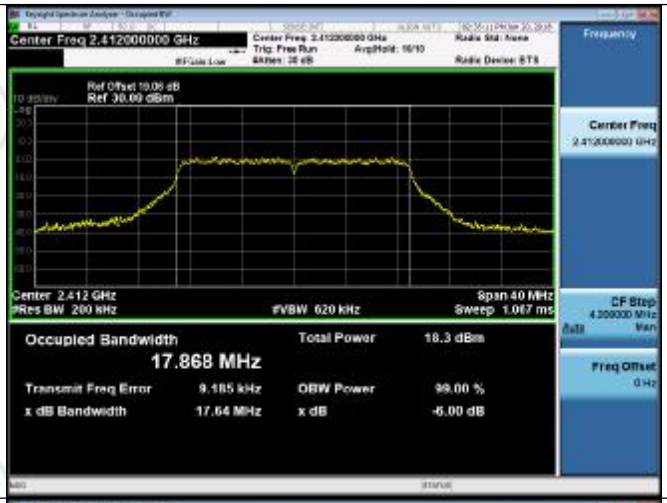
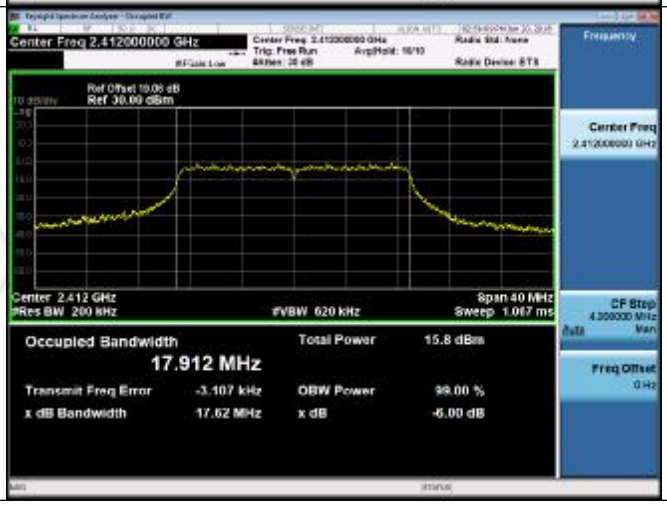
11B/MCH_Ant1			
11B/MCH_Ant2			
11B/MCH_Ant3			

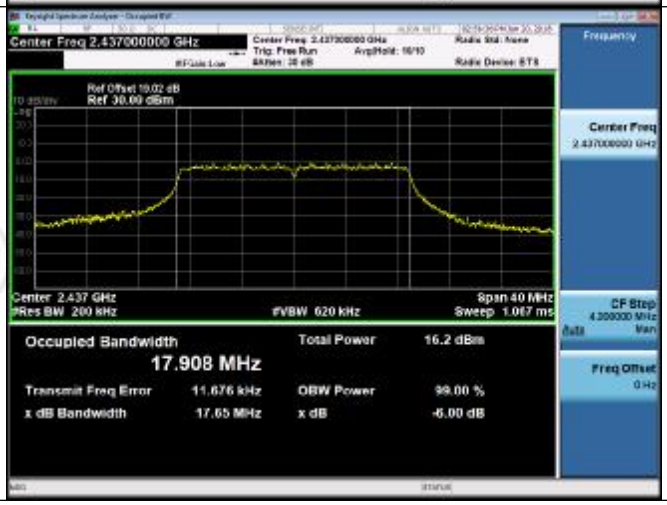
11B/HCH_Ant1			
11B/HCH_Ant2			
11B/HCH_Ant3			

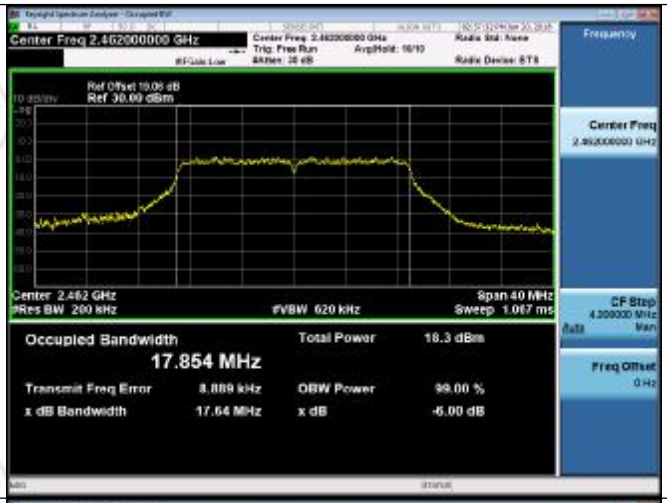
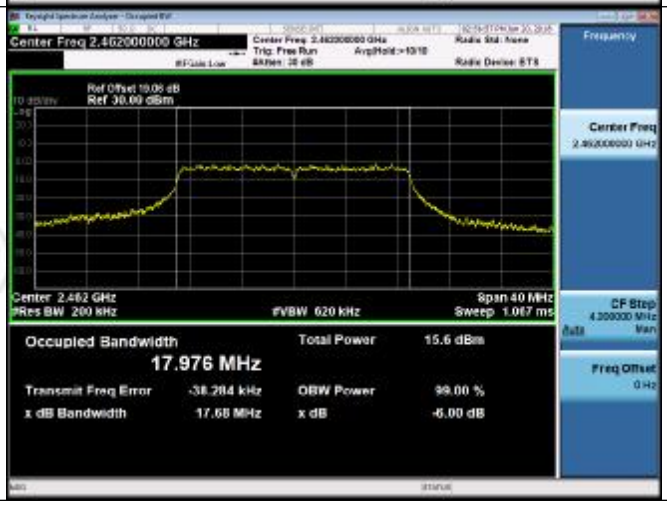
11G/LCH_Ant1			
11G/LCH_Ant2			
11G/LCH_Ant3			

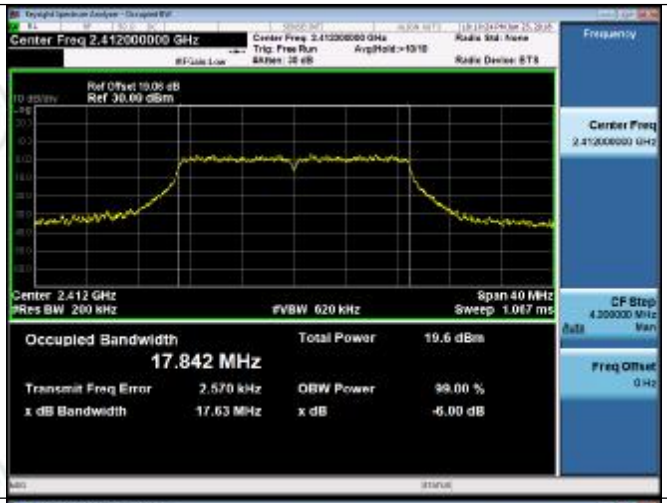
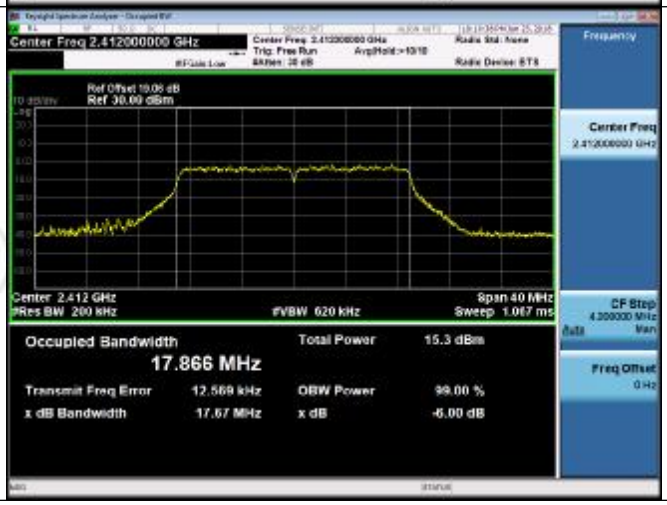
11G/MCH_Ant1			
11G/MCH_Ant2			
11G/MCH_Ant3			

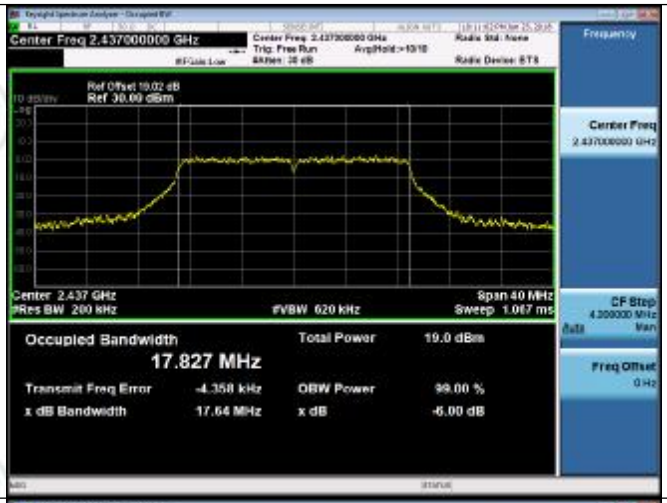
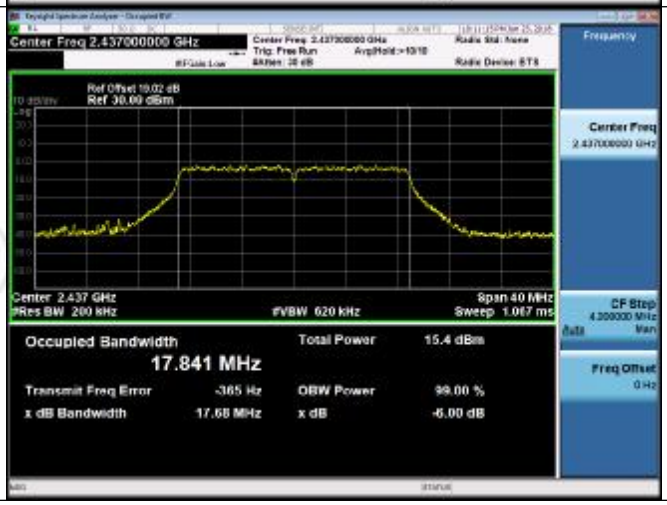
11G/HCH_Ant1			
11G/HCH_Ant2			
11G/HCH_Ant3			

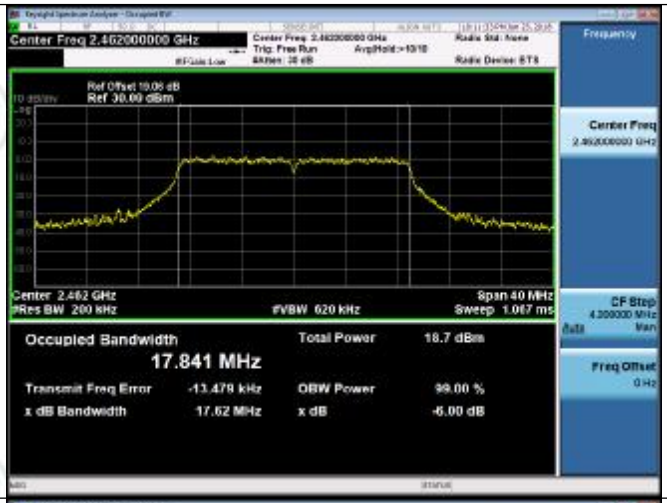
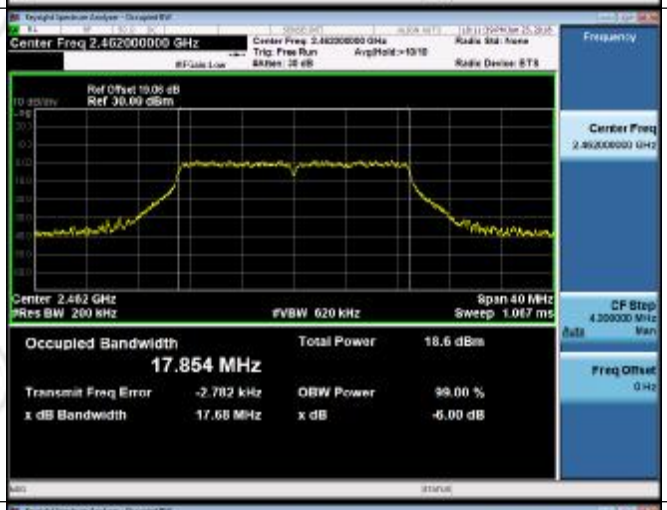
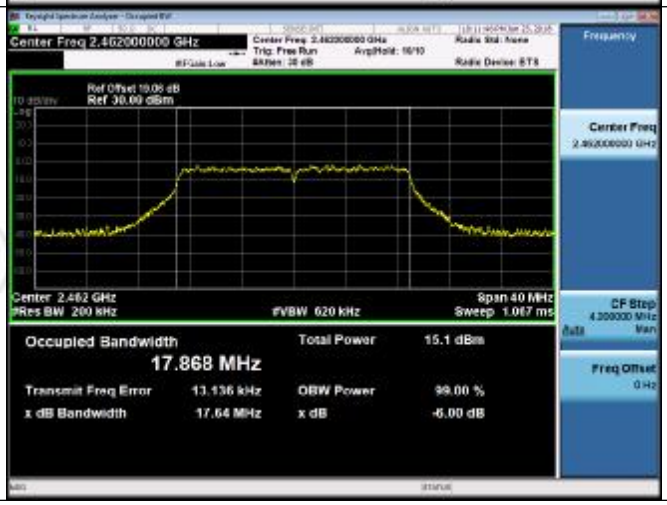
11N20SISO/LCH_Ant1			
11N20SISO/LCH_Ant2			
11N20SISO/LCH_Ant3			

11N20SISO/MCH_Ant1			
11N20SISO/MCH_Ant2			
11N20SISO/MCH_Ant3			

11N20SISO/HCH_Ant1			
11N20SISO/HCH_Ant2			
11N20SISO/HCH_Ant3			

11N20MIMO/LCH_Ant1			
11N20MIMO/LCH_Ant2			
11N20MIMO/LCH_Ant3			

11N20MIMO/MCH_Ant1			
11N20MIMO/MCH_Ant2			
11N20MIMO/MCH_Ant3			

11N20MIMO/HCH_Ant1			
11N20MIMO/HCH_Ant2			
11N20MIMO/HCH_Ant3			

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	8.087	-53.374	-11.91	PASS
11B	Ant2	LCH	7.977	-48.915	-12.02	PASS
11B	Ant3	LCH	4.441	-52.038	-15.56	PASS
11B	Ant1	HCH	7.899	-52.645	-12.1	PASS
11B	Ant2	HCH	7.622	-47.064	-12.38	PASS
11B	Ant3	HCH	4.749	-51.083	-15.25	PASS
11G	Ant1	LCH	1.841	-47.648	-18.16	PASS
11G	Ant2	LCH	0.928	-46.940	-19.07	PASS
11G	Ant3	LCH	-1.701	-45.162	-21.7	PASS
11G	Ant1	HCH	2.114	-43.406	-17.89	PASS
11G	Ant2	HCH	0.956	-43.490	-19.04	PASS
11G	Ant3	HCH	-0.957	-46.494	-20.96	PASS
11N20SISO	Ant1	LCH	1.982	-46.831	-18.02	PASS
11N20SISO	Ant2	LCH	1.352	-41.239	-18.65	PASS
11N20SISO	Ant3	LCH	-1.309	-40.270	-21.31	PASS
11N20SISO	Ant1	HCH	1.922	-43.877	-18.08	PASS
11N20SISO	Ant2	HCH	1.388	-40.695	-18.61	PASS
11N20SISO	Ant3	HCH	-0.746	-45.343	-20.75	PASS
11N20MIMO	Ant1	LCH	0.740	-46.132	-19.26	PASS
11N20MIMO	Ant2	LCH	1.942	-41.569	-18.06	PASS
11N20MIMO	Ant3	LCH	-2.359	-47.766	-22.36	PASS
11N20MIMO	Ant1	HCH	0.760	-43.918	-19.24	PASS
11N20MIMO	Ant2	HCH	1.388	-37.343	-18.61	PASS
11N20MIMO	Ant3	HCH	-2.051	-44.977	-22.05	PASS

Test Graph

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

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

11N20MIMO/LCH			
11N20MIMO/HCH			

Graphs_Ant2			
11B/LCH			

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

11N20SISO/LCH			
11N20SISO/HCH			
11N20MIMO/LCH			

11N20MIMO/HCH			

Graphs_Ant3			
11B/LCH			
11B/HCH			

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

11N20SISO/HCH			
11N20MIMO/LCH			
11N20MIMO/HCH			

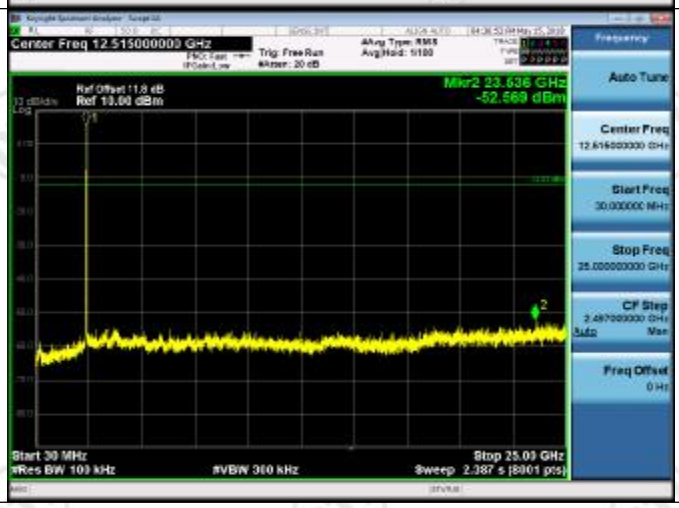
Appendix D): RF Conducted Spurious Emissions

Result Table

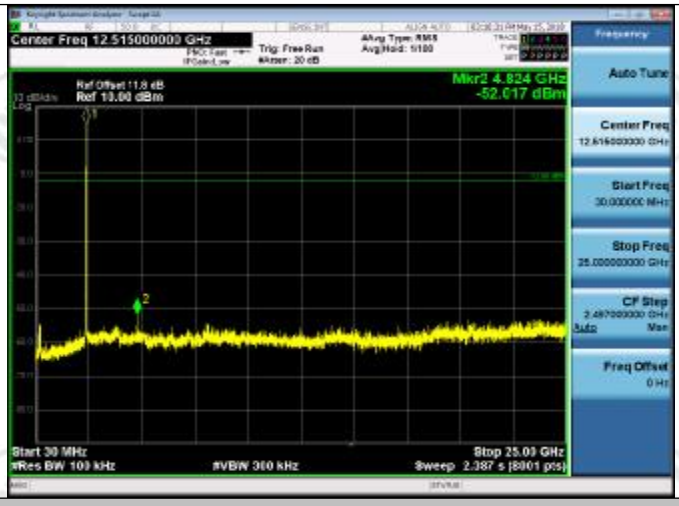
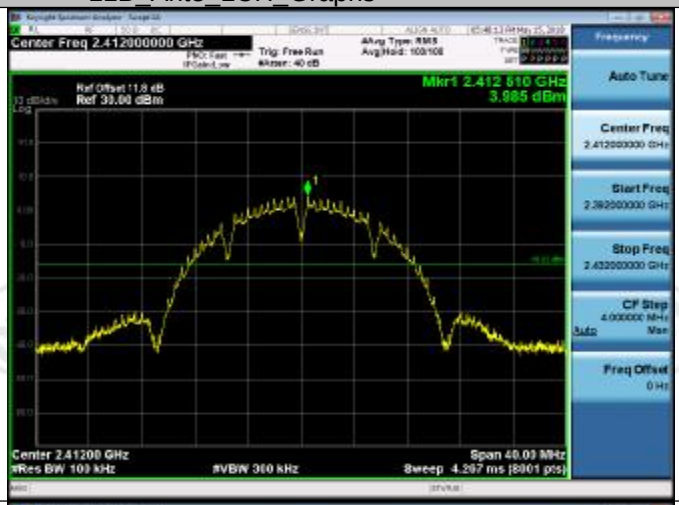
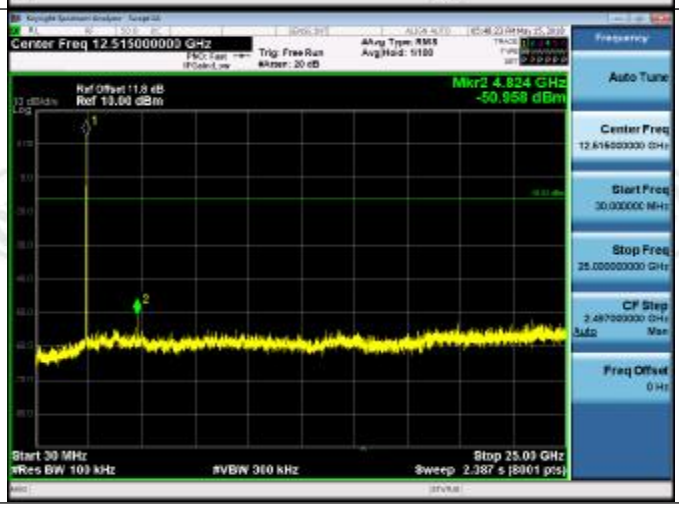
Mode	Antenna	Channel	Pref [dBm]	Puw[dBm]	Verdict
11B	Ant1	LCH	7.97	<Limit	PASS
11B	Ant2	LCH	7.945	<Limit	PASS
11B	Ant3	LCH	3.985	<Limit	PASS
11B	Ant1	MCH	8.053	<Limit	PASS
11B	Ant2	MCH	7.351	<Limit	PASS
11B	Ant3	MCH	4.527	<Limit	PASS
11B	Ant1	HCH	7.904	<Limit	PASS
11B	Ant2	HCH	7.484	<Limit	PASS
11B	Ant3	HCH	4.645	<Limit	PASS
11G	Ant1	LCH	1.766	<Limit	PASS
11G	Ant2	LCH	1.374	<Limit	PASS
11G	Ant3	LCH	-1.609	<Limit	PASS
11G	Ant1	MCH	1.789	<Limit	PASS
11G	Ant2	MCH	1.444	<Limit	PASS
11G	Ant3	MCH	-1.208	<Limit	PASS
11G	Ant1	HCH	1.935	<Limit	PASS
11G	Ant2	HCH	1.105	<Limit	PASS
11G	Ant3	HCH	-0.735	<Limit	PASS
11N20SISO	Ant1	LCH	1.61	<Limit	PASS
11N20SISO	Ant2	LCH	1.495	<Limit	PASS
11N20SISO	Ant3	LCH	-1.314	<Limit	PASS
11N20SISO	Ant1	MCH	2.157	<Limit	PASS
11N20SISO	Ant2	MCH	1.523	<Limit	PASS
11N20SISO	Ant3	MCH	-1.277	<Limit	PASS
11N20SISO	Ant1	HCH	1.879	<Limit	PASS
11N20SISO	Ant2	HCH	1.37	<Limit	PASS
11N20SISO	Ant3	HCH	-0.77	<Limit	PASS
11N20MIMO	Ant1	LCH	0.344	<Limit	PASS
11N20MIMO	Ant2	LCH	1.987	<Limit	PASS
11N20MIMO	Ant3	LCH	-2.753	<Limit	PASS
11N20MIMO	Ant1	MCH	0.477	<Limit	PASS
11N20MIMO	Ant2	MCH	1.789	<Limit	PASS
11N20MIMO	Ant3	MCH	-2.231	<Limit	PASS
11N20MIMO	Ant1	HCH	0.478	<Limit	PASS

11N20MIMO	Ant2	HCH	1.236	<Limit	PASS
11N20MIMO	Ant3	HCH	-2.063	<Limit	PASS

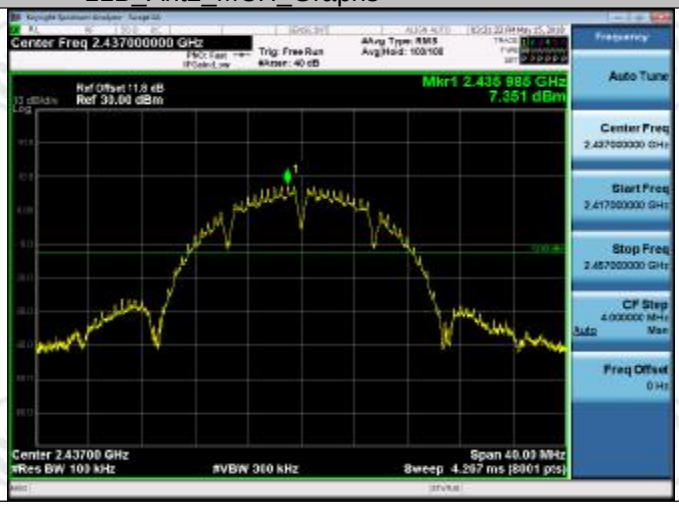
Test Graph

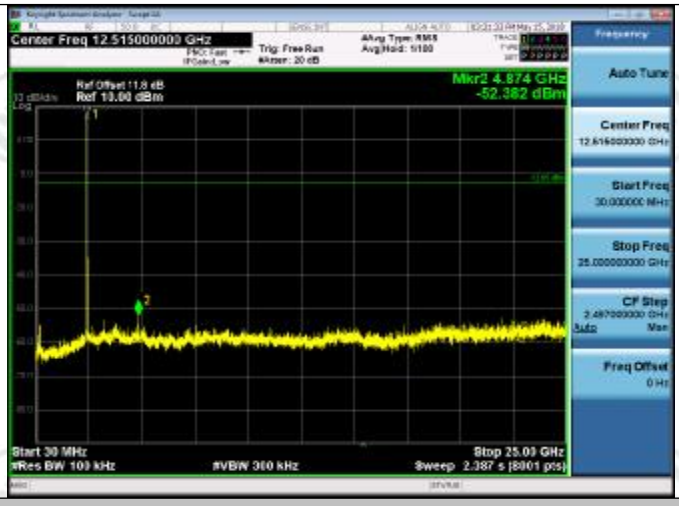
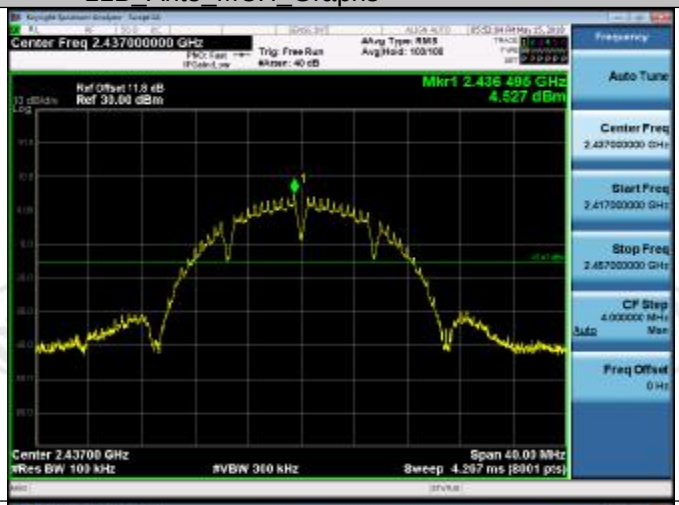
11B_Ant1_LCH_Graphs			
Pref/11B/LCH			
Puw/11B/LCH			

11B_Ant2_LCH_Graphs			
Pref/11B/LCH			

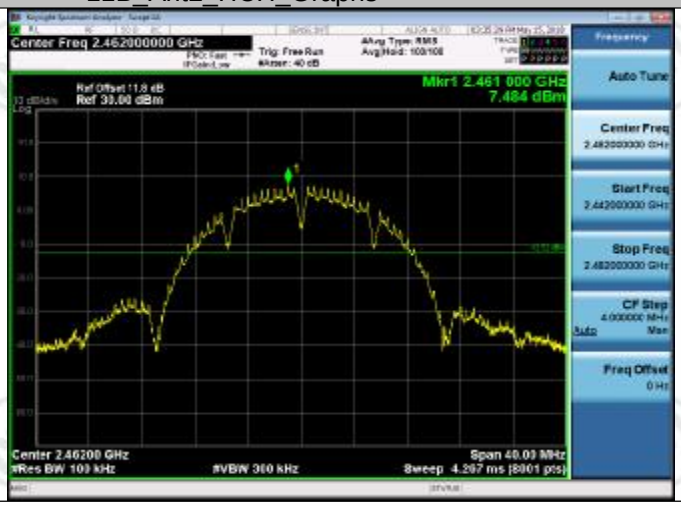
Puw/11B/LCH		
11B_Ant3_LCH_Graphs		
Pref/11B/LCH		
Puw/11B/LCH		

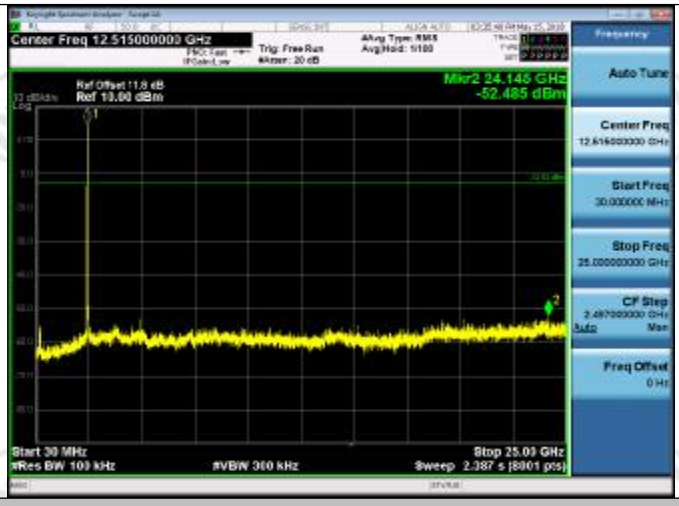
11B_Ant1_MCH_Graphs		
Pref/11B/MCH		
Puw/11B/MCH		

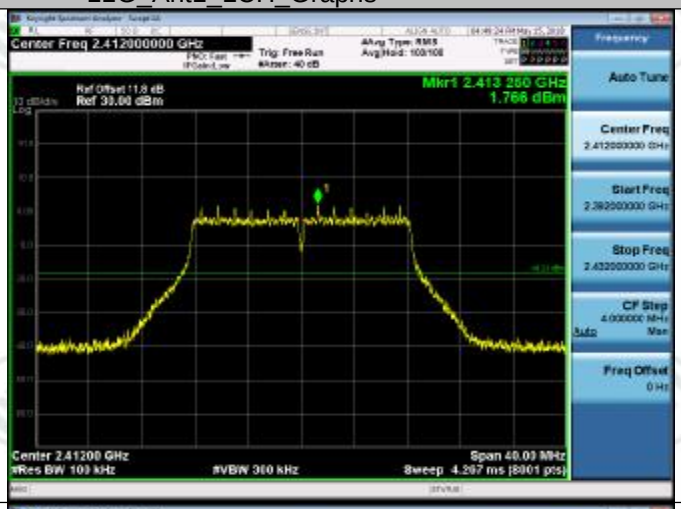
11B_Ant2_MCH_Graphs		
Pref/11B/MCH		

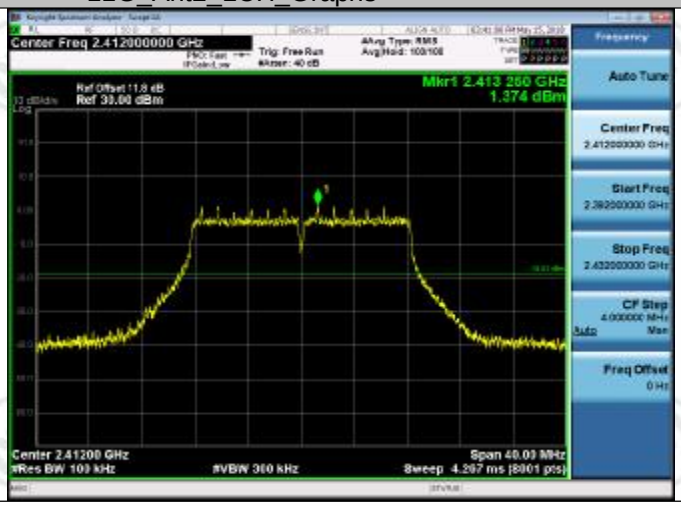
Puw/11B/MCH	
11B_Ant3_MCH_Graphs	
Pref/11B/MCH	
Puw/11B/MCH	

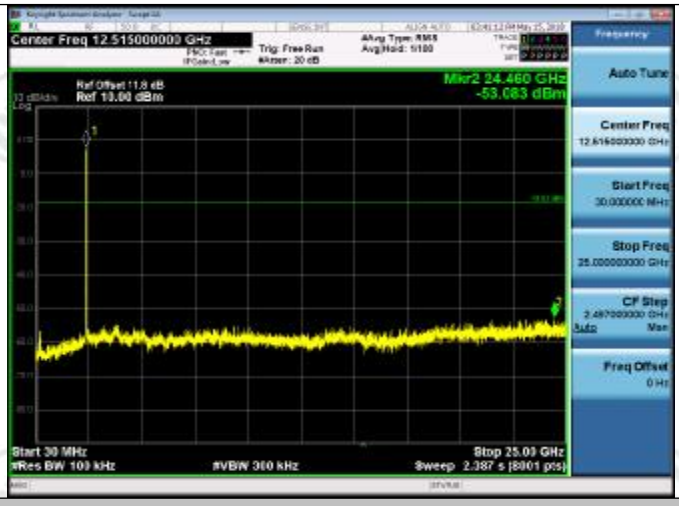
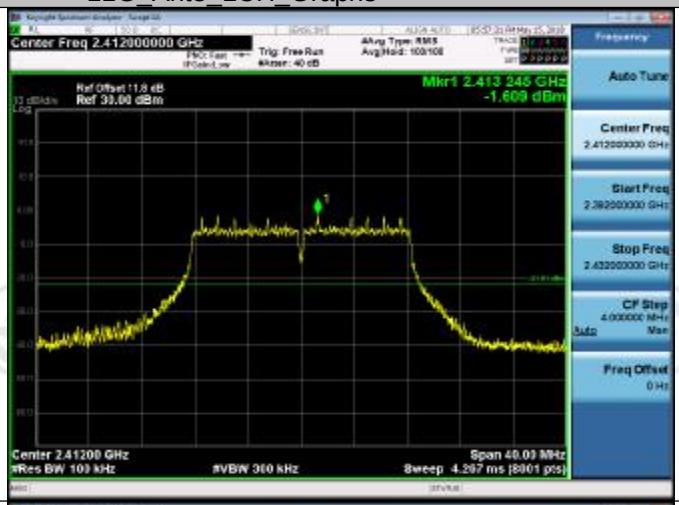
11B_Ant1_HCH_Graphs		
Pref/11B/HCH		
Puw/11B/HCH		

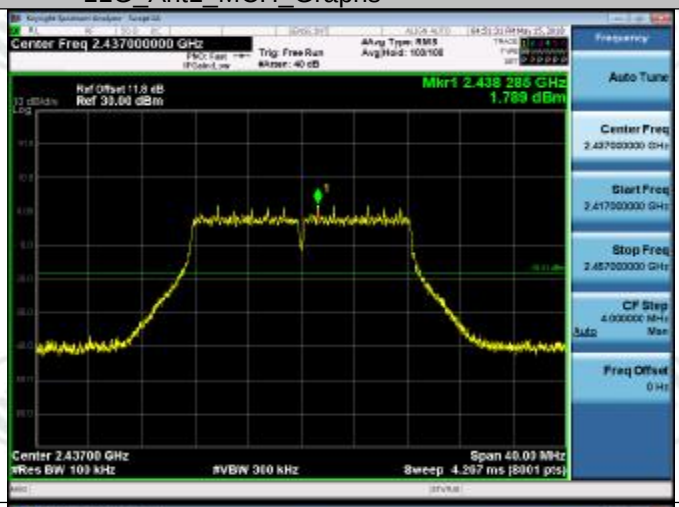
11B_Ant2_HCH_Graphs		
Pref/11B/HCH		

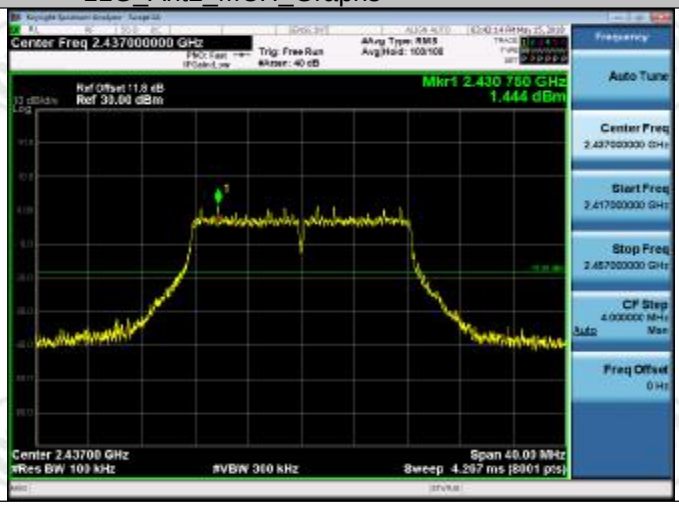
Puw/11B/HCH		
11B_Ant3_HCH_Graphs		
Pref/11B/HCH		
Puw/11B/HCH		

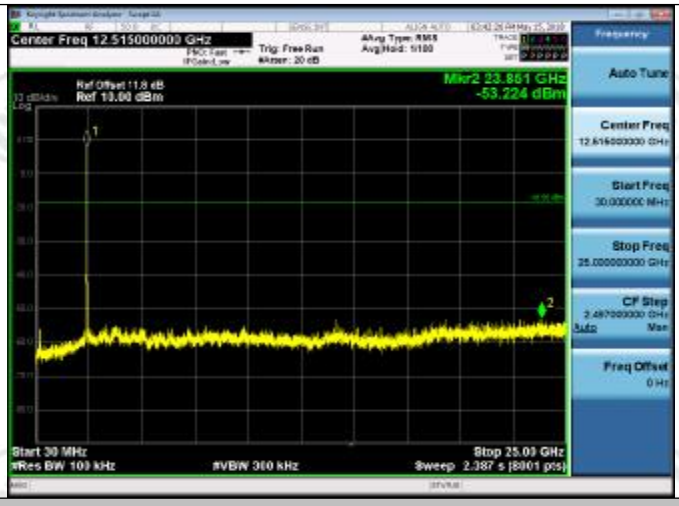
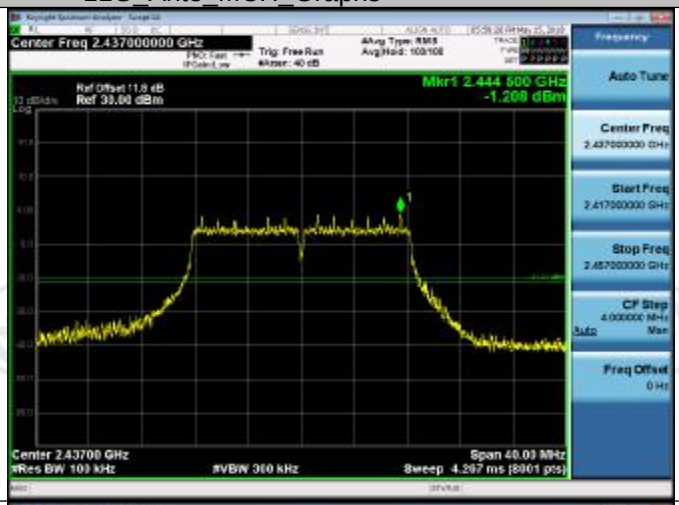
11G_Ant1_LCH_Graphs		
Pref/11G/LCH		
Puw/11G/LCH		

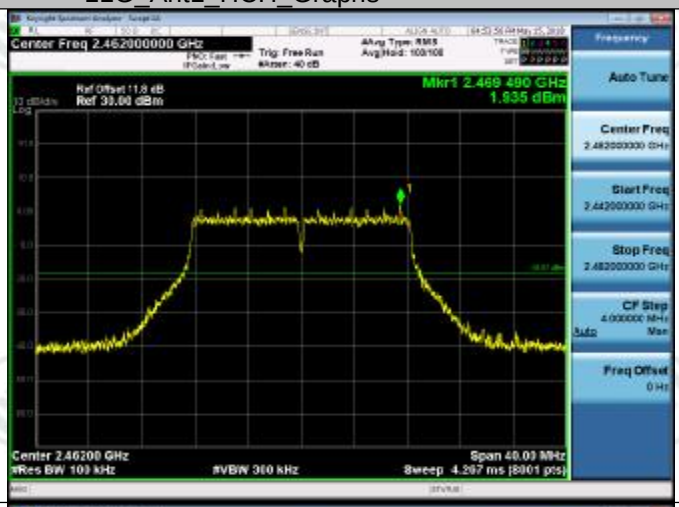
11G_Ant2_LCH_Graphs		
Pref/11G/LCH		

Puw/11G/LCH	
11G_Ant3_LCH_Graphs	
Pref/11G/LCH	
Puw/11G/LCH	

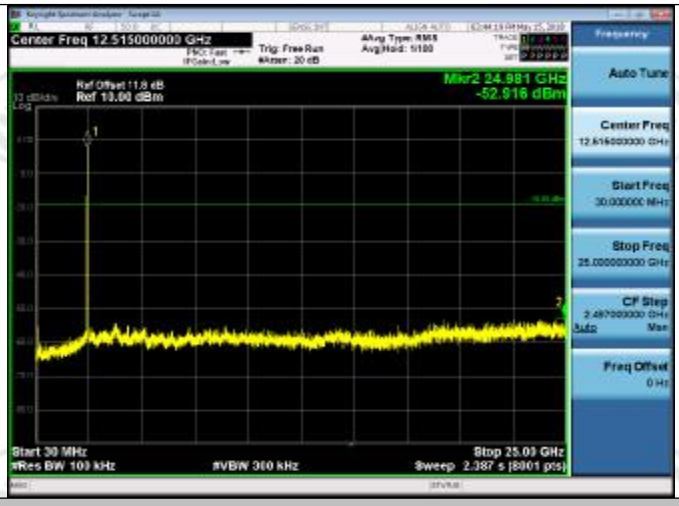
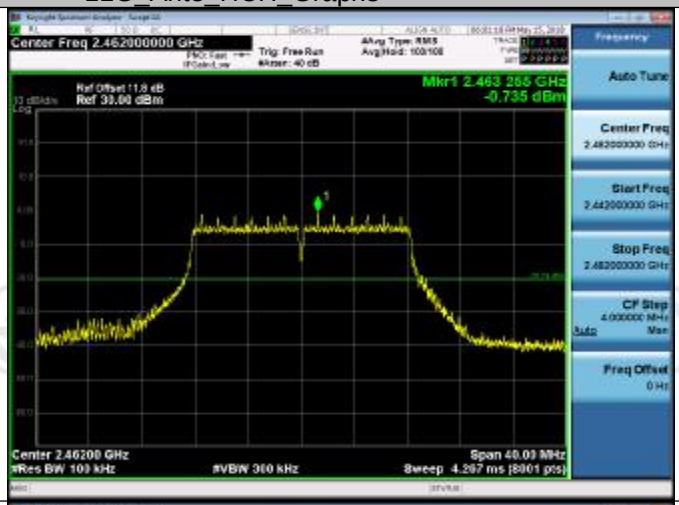
11G_Ant1_MCH_Graphs		
Pref/11G/MCH		
Puw/11G/MCH		

11G_Ant2_MCH_Graphs		
Pref/11G/MCH		

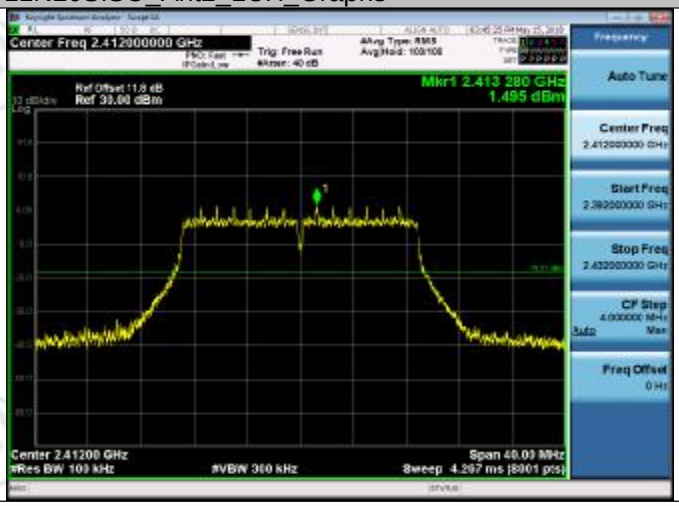
Puw/11G/MCH		
11G_Ant3_MCH_Graphs		
Pref/11G/MCH		
Puw/11G/MCH		

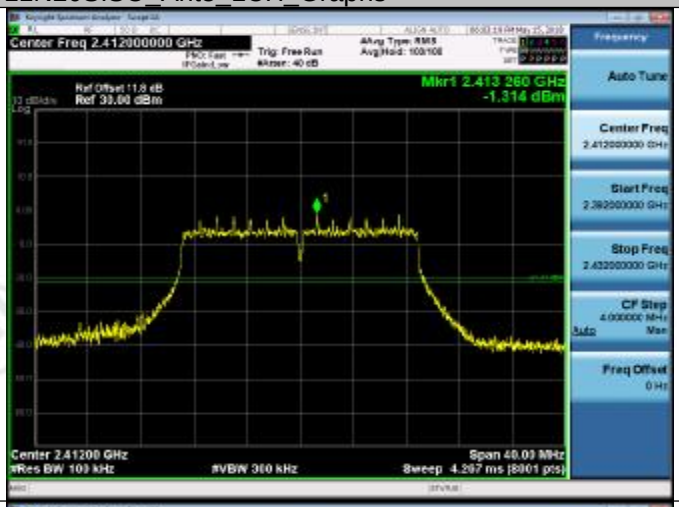
11G_Ant1_HCH_Graphs		
Pref/11G/HCH		
Puw/11G/HCH		

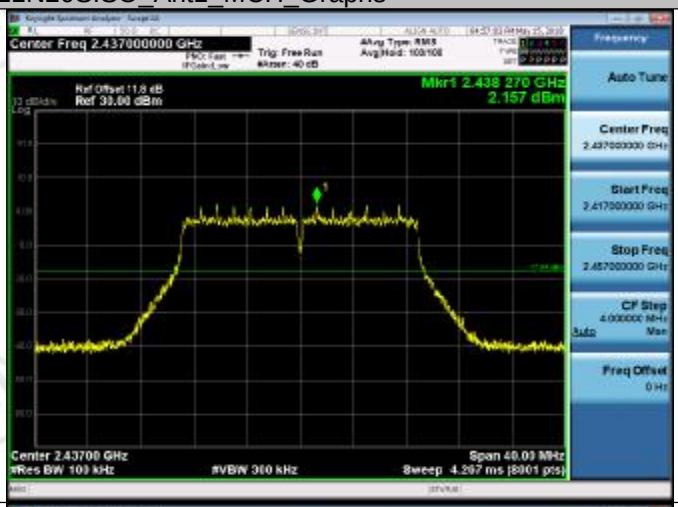
11G_Ant2_HCH_Graphs		
Pref/11G/HCH		

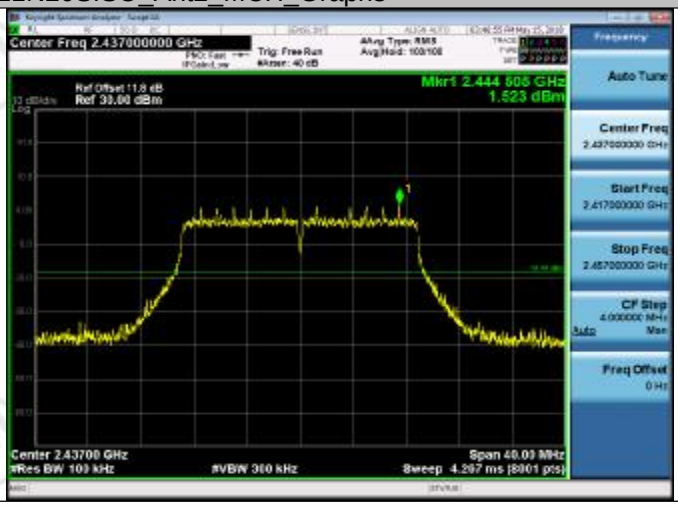
Puw/11G/HCH		
11G_Ant3_HCH_Graphs		
Pref/11G/HCH		
Puw/11G/HCH		

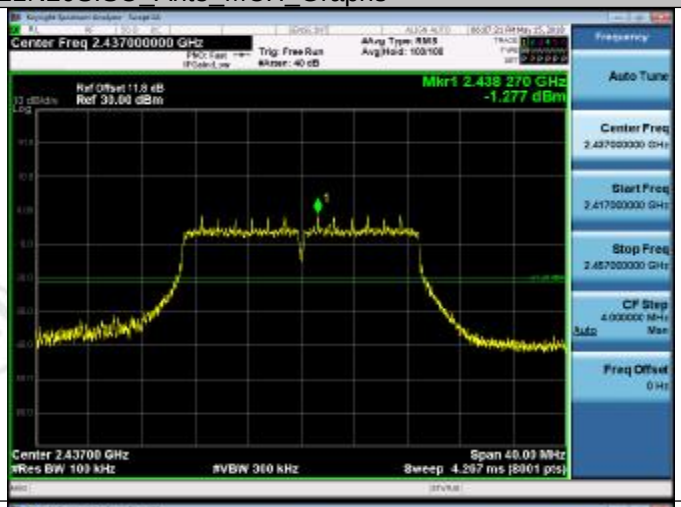
11N20SISO_Ant1_LCH_Graphs		
Pref/11N20SISO/LCH		
Puw/11N20SISO/LCH		

11N20SISO_Ant2_LCH_Graphs		
Pref/11N20SISO/LCH		

Puw/11N20SISO/LCH			
11N20SISO_Ant3_LCH_Graphs			
Pref/11N20SISO/LCH			
Puw/11N20SISO/LCH			

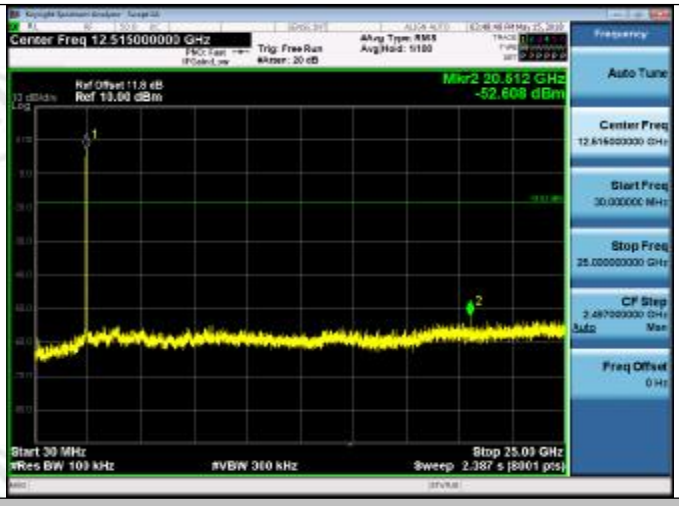
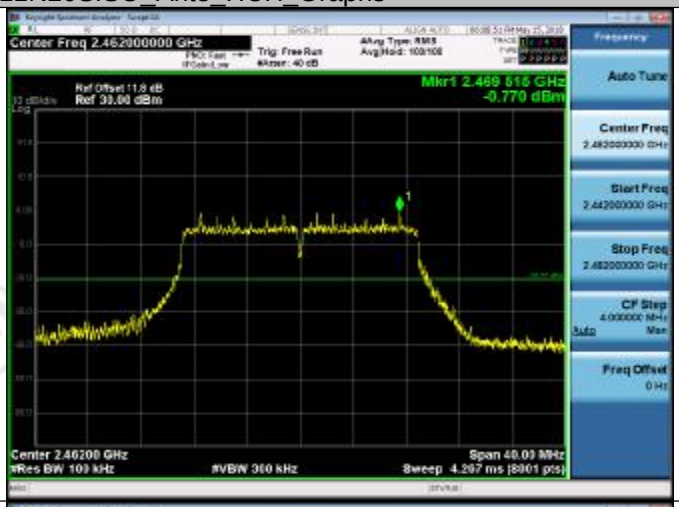
11N20SISO_Ant1_MCH_Graphs		
Pref/11N20SISO/MCH		
Puw/11N20SISO/MCH		

11N20SISO_Ant2_MCH_Graphs		
Pref/11N20SISO/MCH		

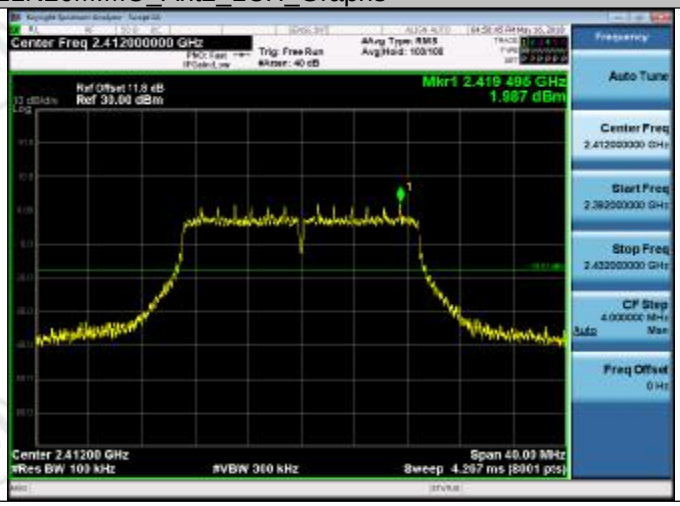
Puw/11N20SISO/MCH			
11N20SISO_Ant3_MCH_Graphs			
Pref/11N20SISO/MCH			
Puw/11N20SISO/MCH			

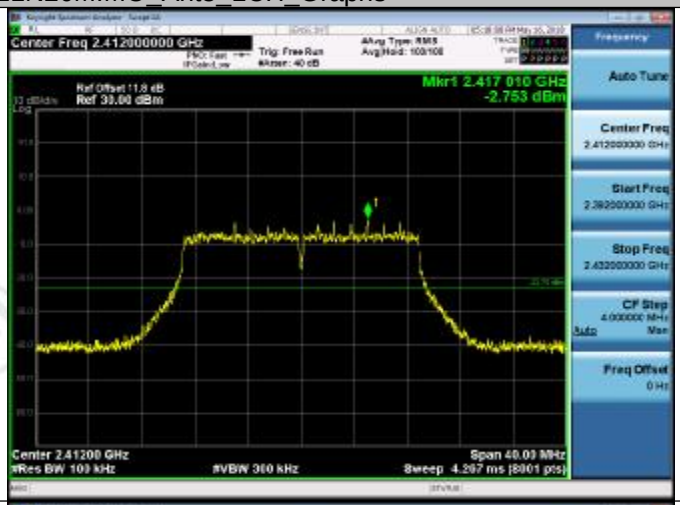
11N20SISO_Ant1_HCH_Graphs			
Pref/11N20SISO/HCH			
Puw/11N20SISO/HCH			

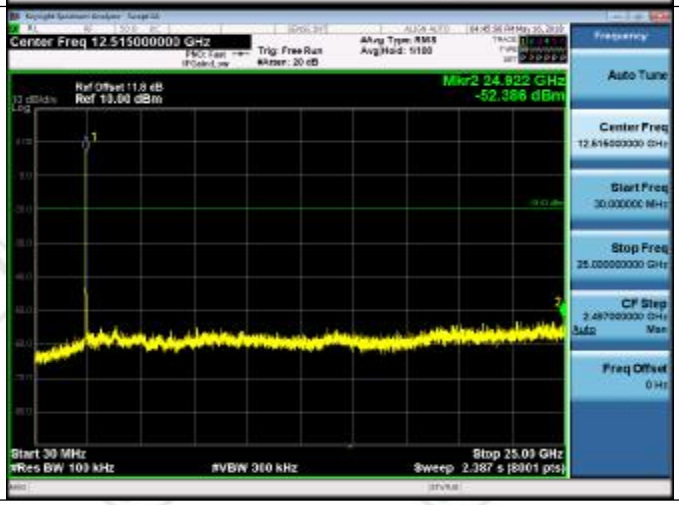
11N20SISO_Ant2_HCH_Graphs			
Pref/11N20SISO/HCH			

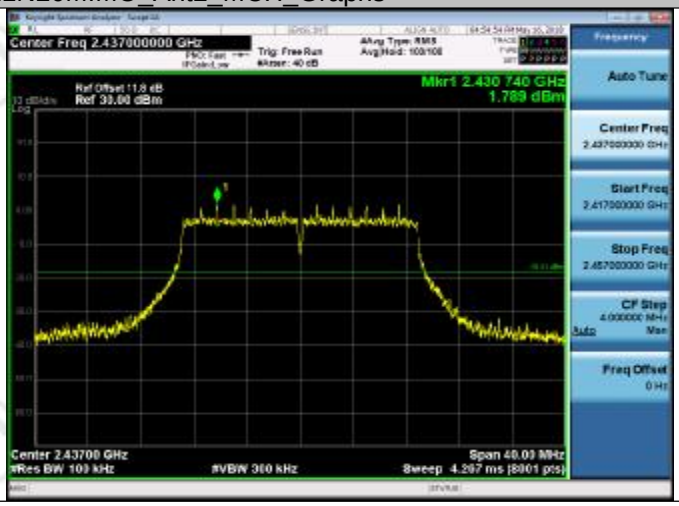
Puw/11N20SISO/HCH			
11N20SISO_Ant3_HCH_Graphs			
Pref/11N20SISO/HCH			
Puw/11N20SISO/HCH			

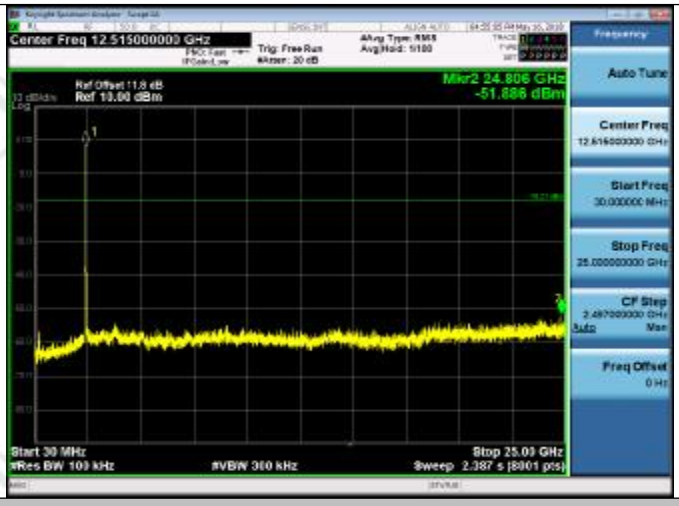
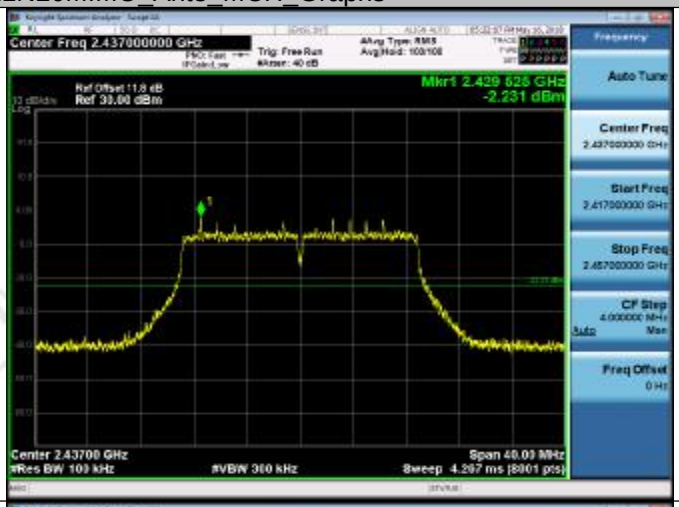
11N20MIMO_Ant1_LCH_Graphs			
Pref/11N20MIMO/LCH			
Puw/11N20MIMO/LCH			

11N20MIMO_Ant2_LCH_Graphs			
Pref/11N20MIMO/LCH			

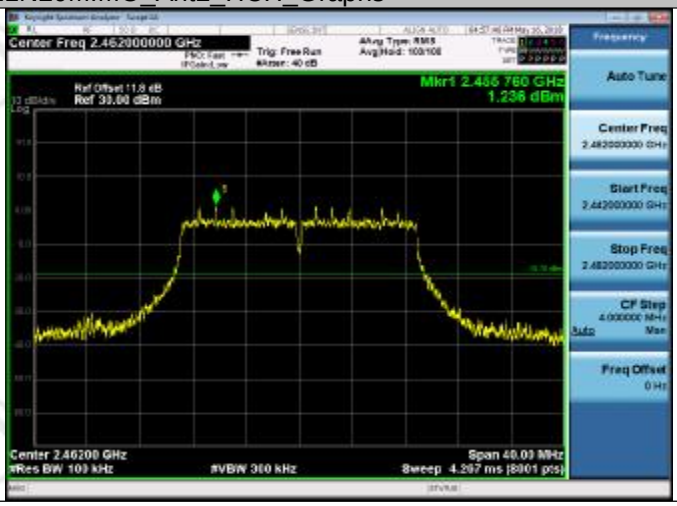
Puw/11N20MIMO/LCH			
11N20MIMO_Ant3_LCH_Graphs			
Pref/11N20MIMO/LCH			
Puw/11N20MIMO/LCH			

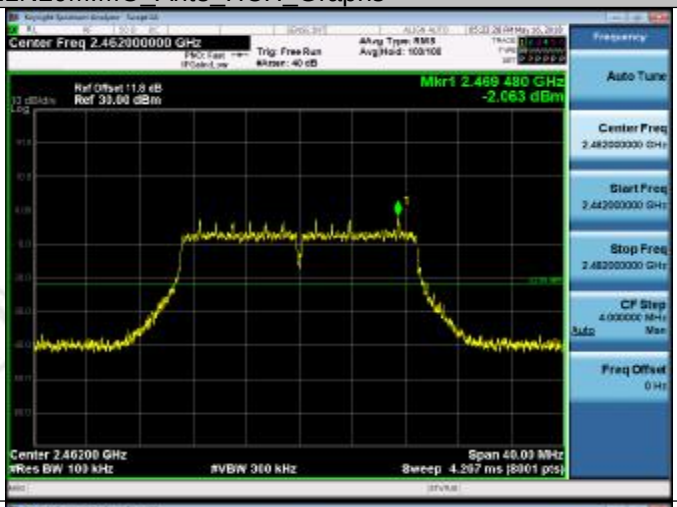
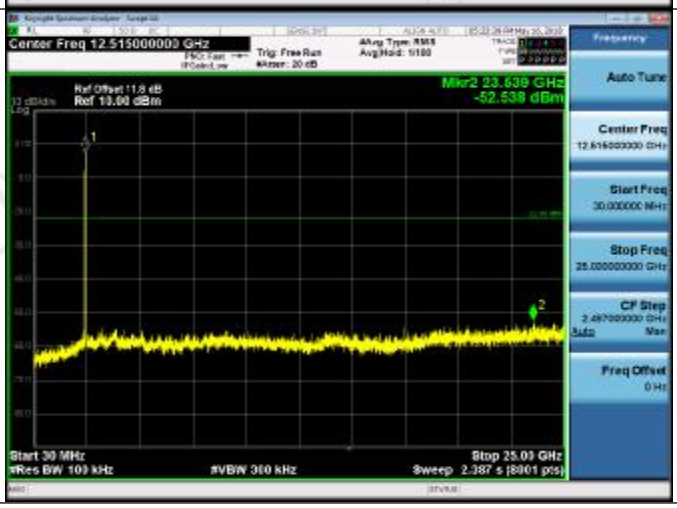
11N20MIMO_Ant1_MCH_Graphs		
Pref/11N20MIMO/MCH		
Puw/11N20MIMO/MCH		

11N20MIMO_Ant2_MCH_Graphs		
Pref/11N20MIMO/MCH		

Puw/11N20MIMO/MCH			
11N20MIMO_Ant3_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			
11N20MIMO_Ant3_HCH_Graphs			
Pref/11N20MIMO/HCH			
Puw/11N20MIMO/HCH			

Appendix E): Power Spectral Density

Result Table

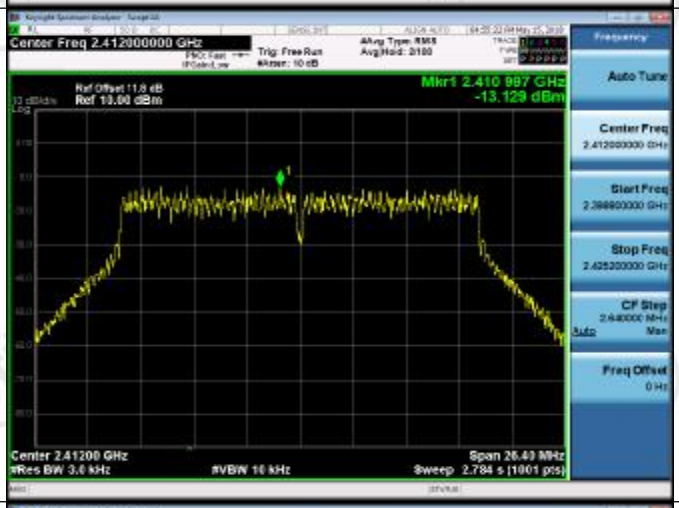
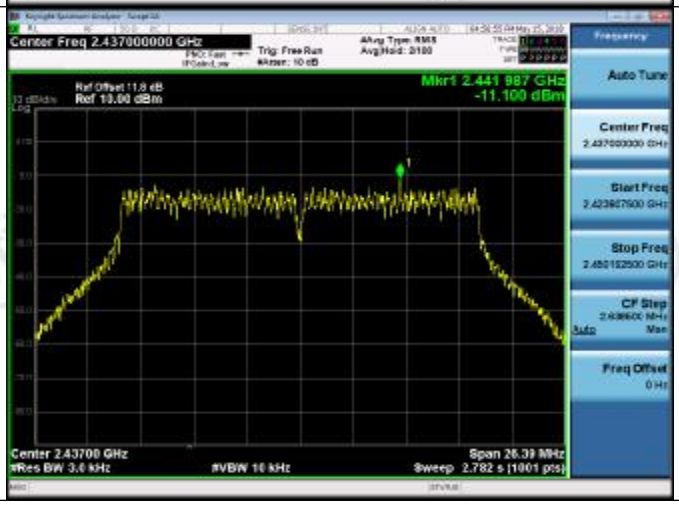
Mode	Antenna	Channel	Power Spectral Density [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	Ant1	LCH	-6.839	8	PASS
11B	Ant2	LCH	-6.883	8	PASS
11B	Ant3	LCH	-9.979	8	PASS
11B	Ant1	MCH	-6.170	8	PASS
11B	Ant2	MCH	-6.960	8	PASS
11B	Ant3	MCH	-9.939	8	PASS
11B	Ant1	HCH	-6.352	8	PASS
11B	Ant2	HCH	-7.705	8	PASS
11B	Ant3	HCH	-9.156	8	PASS
11G	Ant1	LCH	-12.735	8	PASS
11G	Ant2	LCH	-13.311	8	PASS
11G	Ant3	LCH	-14.912	8	PASS
11G	Ant1	MCH	-12.089	8	PASS
11G	Ant2	MCH	-12.487	8	PASS
11G	Ant3	MCH	-15.689	8	PASS
11G	Ant1	HCH	-11.852	8	PASS
11G	Ant2	HCH	-13.172	8	PASS
11G	Ant3	HCH	-14.493	8	PASS
11N20SISO	Ant1	LCH	-13.129	8	PASS
11N20SISO	Ant2	LCH	-13.000	8	PASS
11N20SISO	Ant3	LCH	-15.780	8	PASS
11N20SISO	Ant1	MCH	-11.100	8	PASS
11N20SISO	Ant2	MCH	-13.727	8	PASS
11N20SISO	Ant3	MCH	-15.183	8	PASS
11N20SISO	Ant1	HCH	-12.471	8	PASS
11N20SISO	Ant2	HCH	-12.596	8	PASS
11N20SISO	Ant3	HCH	-15.733	8	PASS
11N20MIMO	Ant1	LCH	-14.704	8	PASS
11N20MIMO	Ant2	LCH	-11.773	8	PASS
11N20MIMO	Ant3	LCH	-17.831	8	PASS
11N20MIMO	Ant1+2+3	LCH	-9.32	8	PASS
11N20MIMO	Ant1	MCH	-13.833	8	PASS
11N20MIMO	Ant2	MCH	-13.152	8	PASS

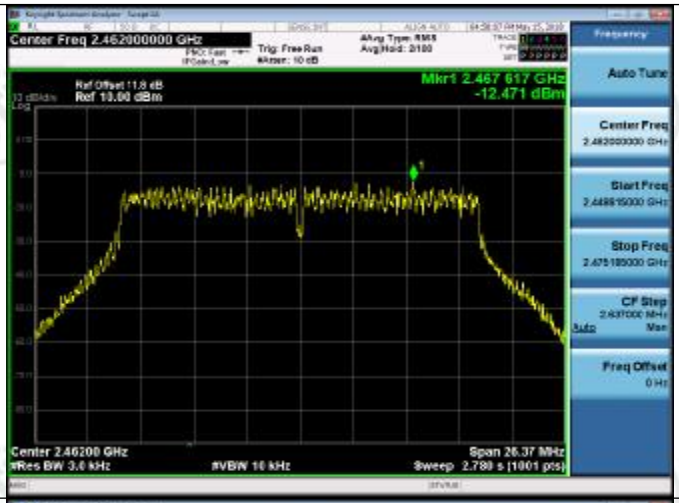
11N20MIMO	Ant3	MCH	-17.120	8	PASS
11N20MIMO	Ant1+2+3	MCH	-9.62	8	PASS
11N20MIMO	Ant1	HCH	-14.303	8	PASS
11N20MIMO	Ant2	HCH	-13.052	8	PASS
11N20MIMO	Ant3	HCH	-17.479	8	PASS
11N20MIMO	Ant1+2+3	HCH	-9.81	8	PASS

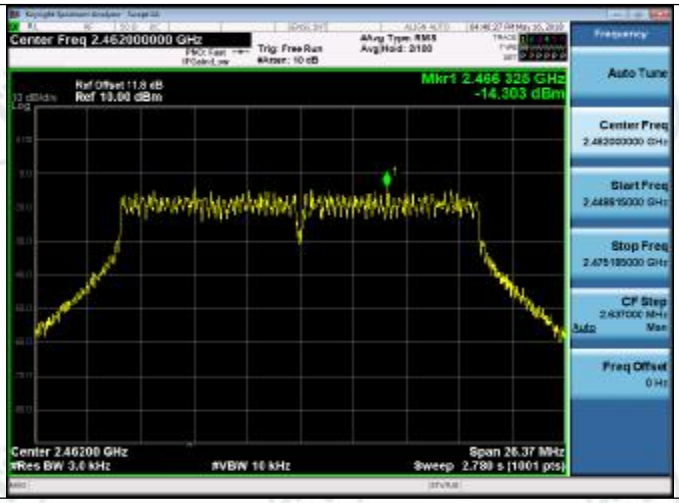
Test Graph

Graphs_Ant1			
11B/LCH			
11B/MCH			

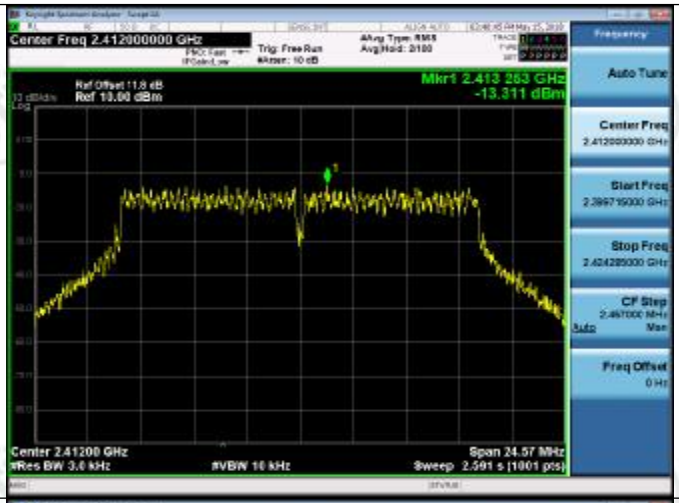
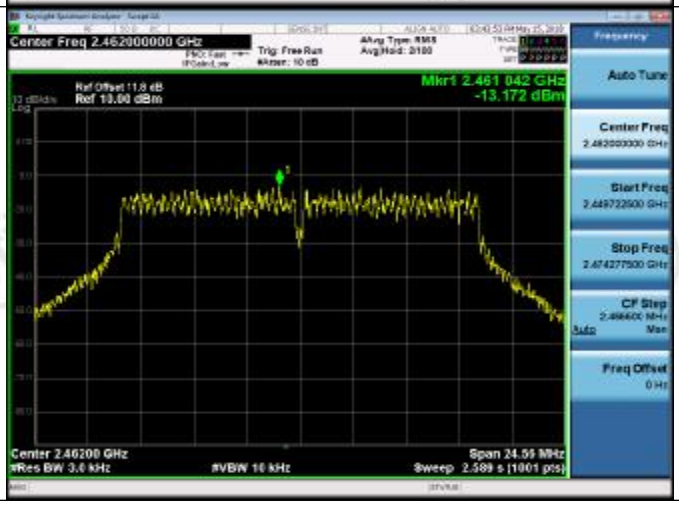
11B/HCH			
11G/LCH			
11G/MCH			

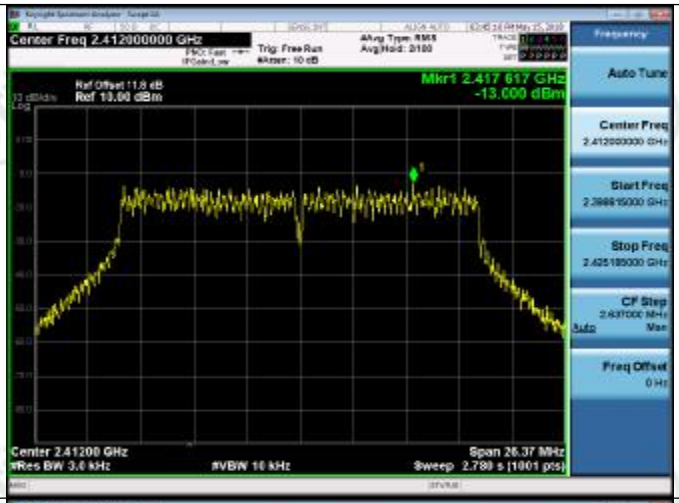
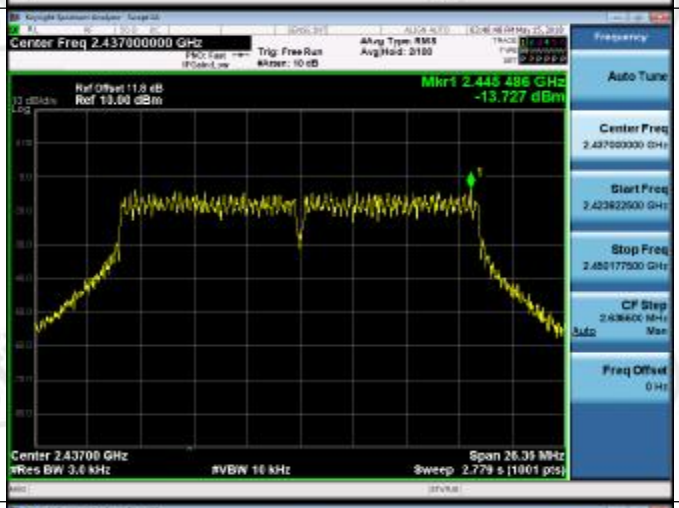
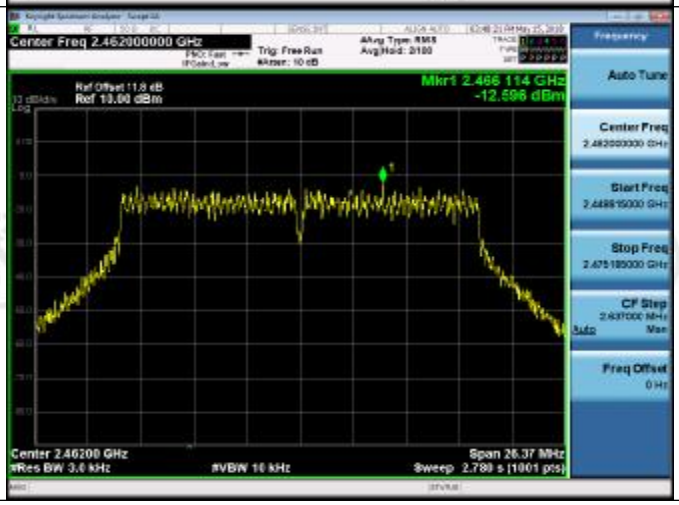
11G/HCH			
11N20SISO/LCH			
11N20SISO/MCH			

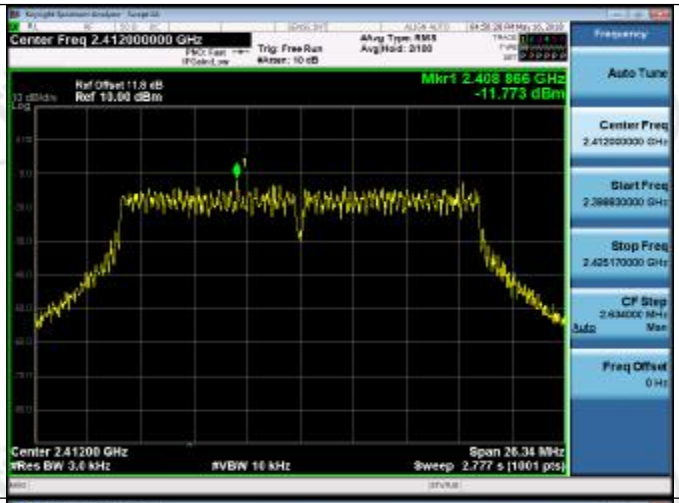
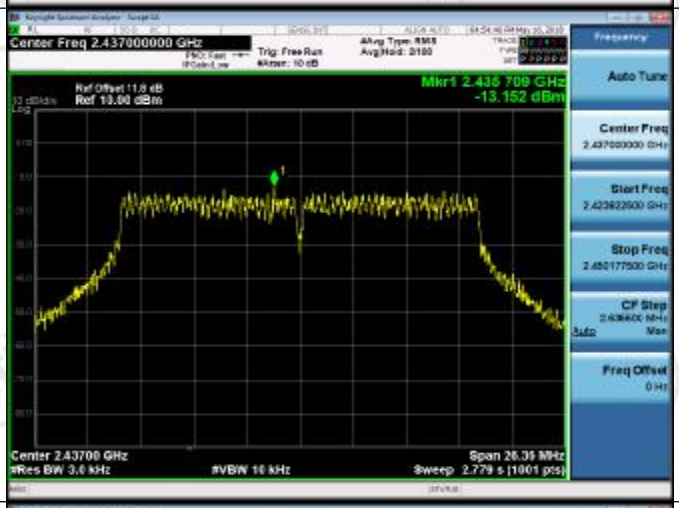
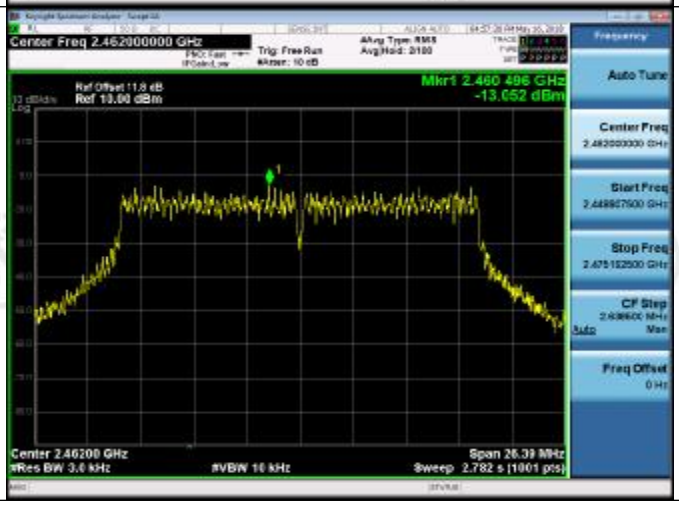
11N20SISO/HCH			
11N20MIMO/LCH			
11N20MIMO/MCH			

11N20MIMO/HCH			

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

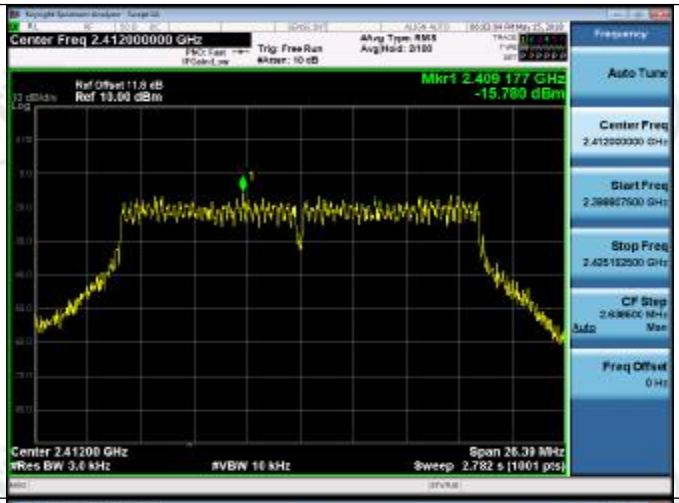
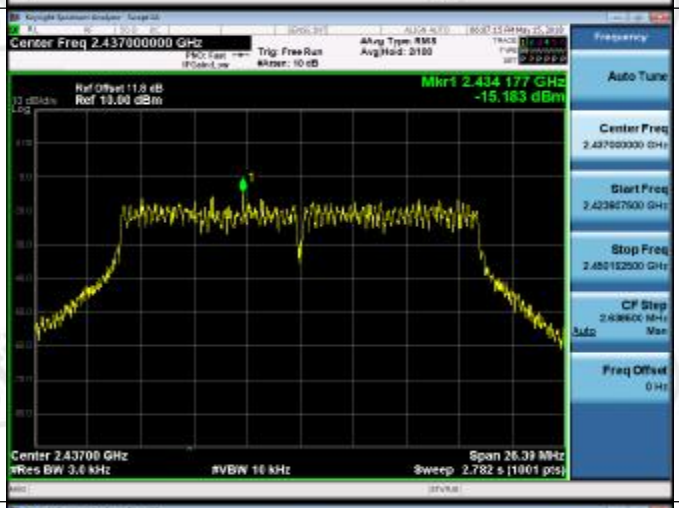
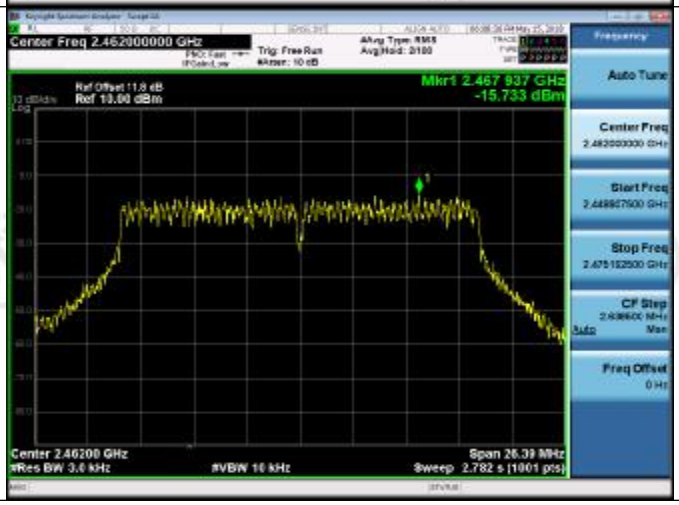
11G/LCH			
11G/MCH			
11G/HCH			

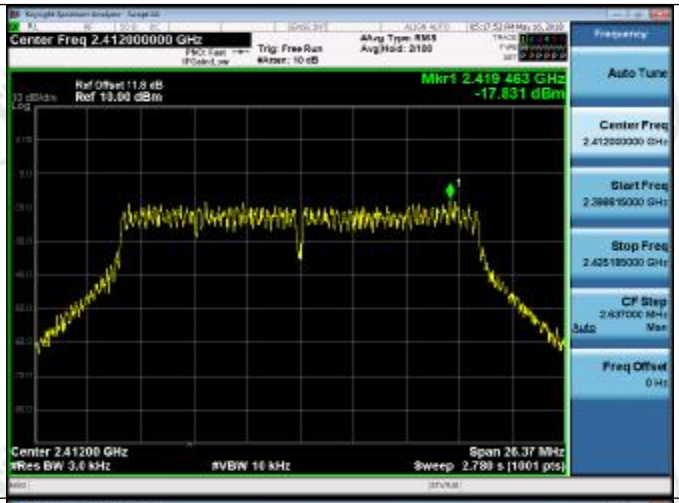
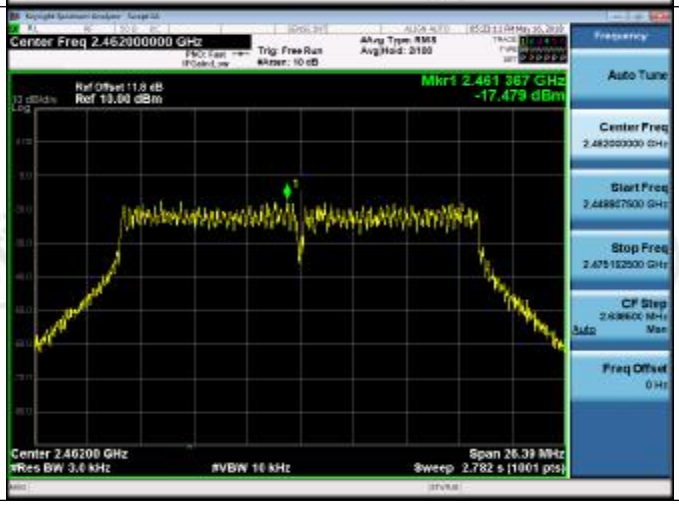
11N20SISO/LCH			
11N20SISO/MCH			
11N20SISO/HCH			

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

Graphs_Ant3			
11B/LCH			
11B/MCH			
11B/HCH			

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

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

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

Appendix F): Antenna Requirement

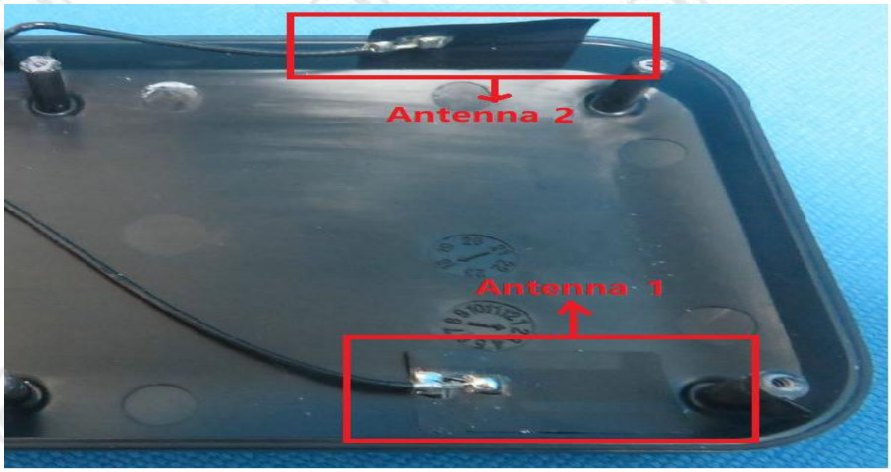
15.203 requirement:

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 1 and 2 are attached to the inner shell of the EUT and no consideration of replacement. The best case gain of the antenna is 2dBi. The antenna 3 is special connect with EUT and no consideration of replacement. The best max gain of the antenna is 2dBi.	

Appendix G): AC Power Line Conducted Emission

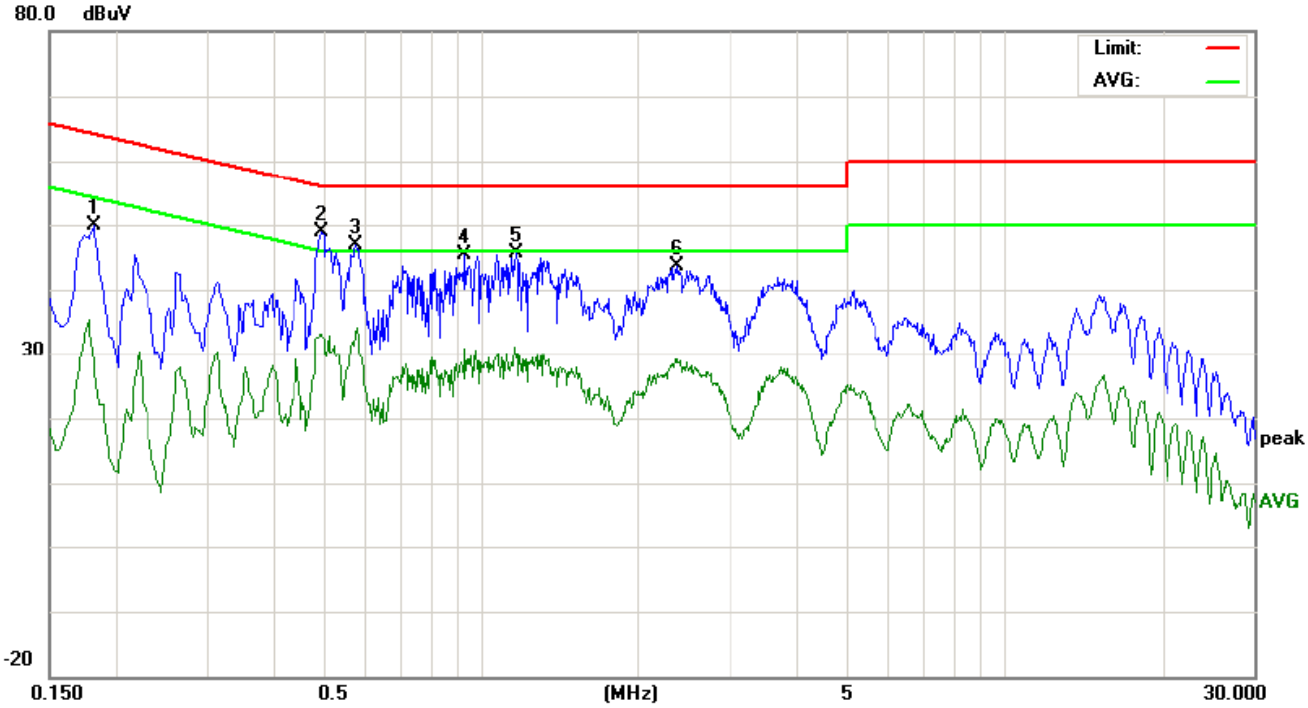
<table>
<tr><td>Test Procedure:</td><td>Test frequency range :150KHz-30MHz
1)The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. 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><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBμV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></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.

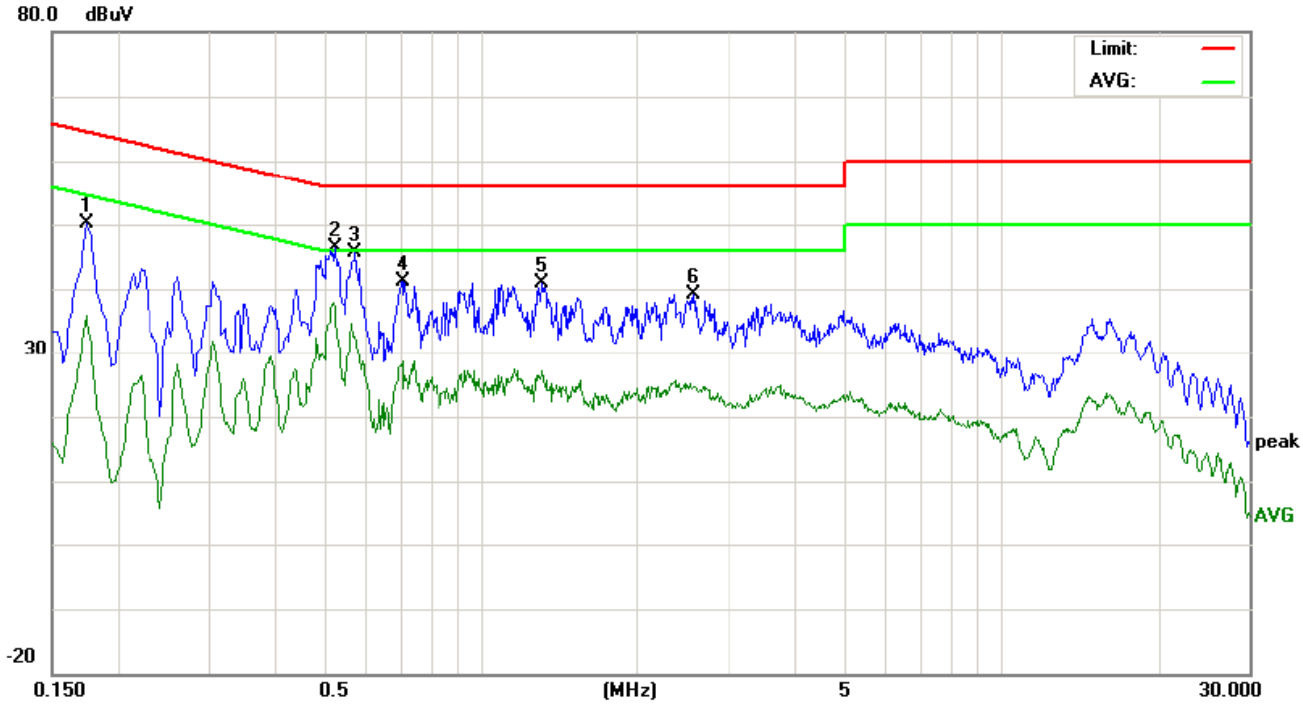
Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

Live line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1819	40.06	37.18	19.00	9.73	49.79	46.91	28.73	64.39	54.39	-17.48	-25.66	P	
2	0.4980	39.08	36.42	23.34	9.71	48.79	46.13	33.05	56.03	46.03	-9.90	-12.98	P	
3	0.5780	37.17	34.58	23.30	9.74	46.91	44.32	33.04	56.00	46.00	-11.68	-12.96	P	
4	0.9340	35.69	32.17	21.08	9.74	45.43	41.91	30.82	56.00	46.00	-14.09	-15.18	P	
5	1.1660	35.85	32.58	19.64	9.72	45.57	42.30	29.36	56.00	46.00	-13.70	-16.64	P	
6	2.3740	34.04	31.42	18.88	9.71	43.75	41.13	28.59	56.00	46.00	-14.87	-17.41	P	

Neutral line:



No.	Freq.	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)			
	MHz	Peak	QP	AVG	dB	peak	QP	AVG	QP	AVG	QP	AVG	P/F	Comment
1	0.1740	40.50	38.15	26.12	9.74	50.24	47.89	35.86	64.76	54.76	-16.87	-18.90	P	
2	0.5260	36.60	34.24	27.41	9.72	46.32	43.96	37.13	56.00	46.00	-12.04	-8.87	P	
3	0.5740	35.76	33.47	22.88	9.74	45.50	43.21	32.62	56.00	46.00	-12.79	-13.38	P	
4	0.7060	31.45	29.12	18.96	9.75	41.20	38.87	28.71	56.00	46.00	-17.13	-17.29	P	
5	1.3099	31.20	29.45	17.31	9.72	40.92	39.17	27.03	56.00	46.00	-16.83	-18.97	P	
6	2.5620	29.49	27.36	15.03	9.70	39.19	37.06	24.73	56.00	46.00	-18.94	-21.27	P	

Notes:

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

Appendix H): Restricted bands around fundamental frequency (Radiated)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel

Above 1GHz test procedure as below:

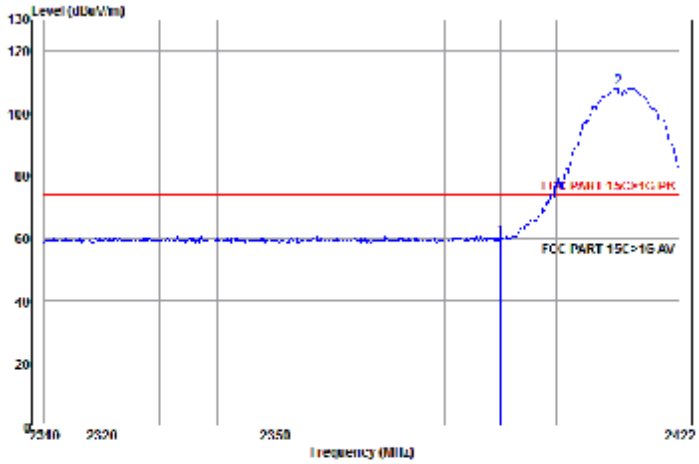
g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter).
h. Test the EUT in the lowest channel , the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

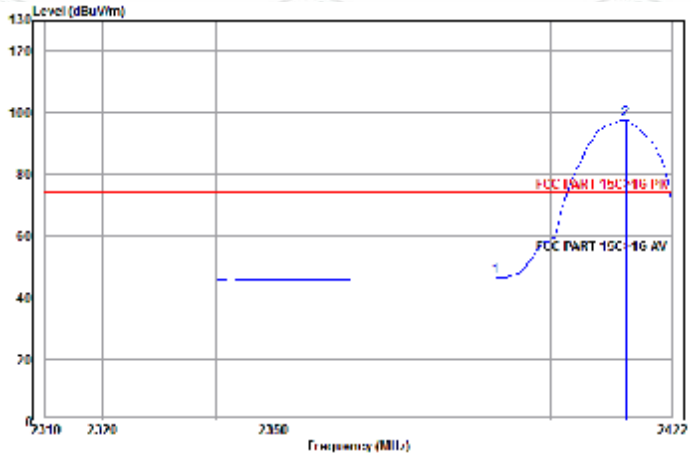
Test plot as follows:
Antenna 1

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



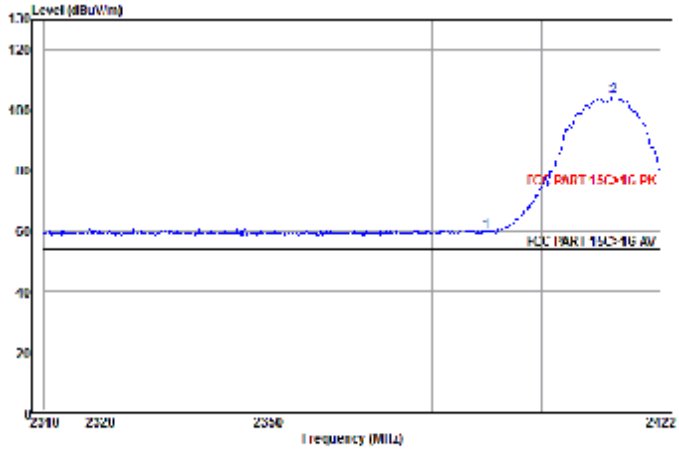
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	24.43	60.03	74.00	-13.97	Horizontal	Peak
2 pp	2411.016	32.58	3.08	72.51	108.17	74.00	34.17	Horizontal	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



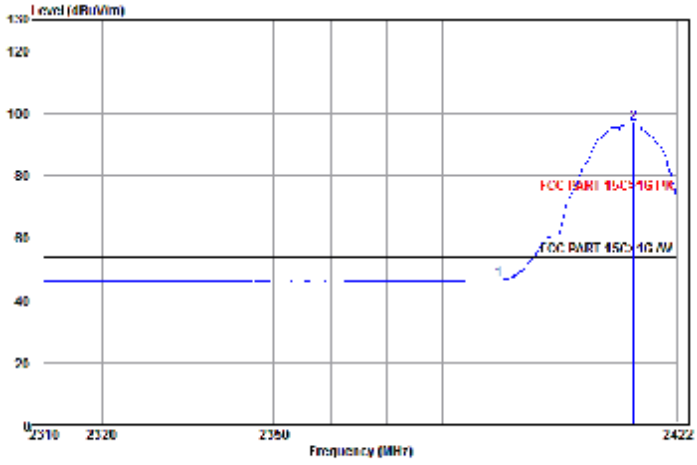
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	10.64	46.24	54.00	-7.76	Horizontal	Average
2 pp	2411.640	32.58	3.08	61.94	97.60	54.00	43.60	Horizontal	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



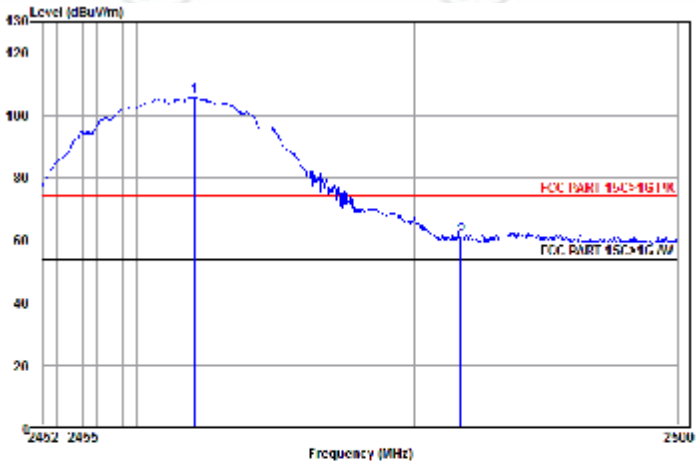
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	24.08	59.68	74.00	14.32	Vertical	Peak
2 pp	2413.520	32.58	3.08	68.99	104.65	74.00	30.65	Vertical	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



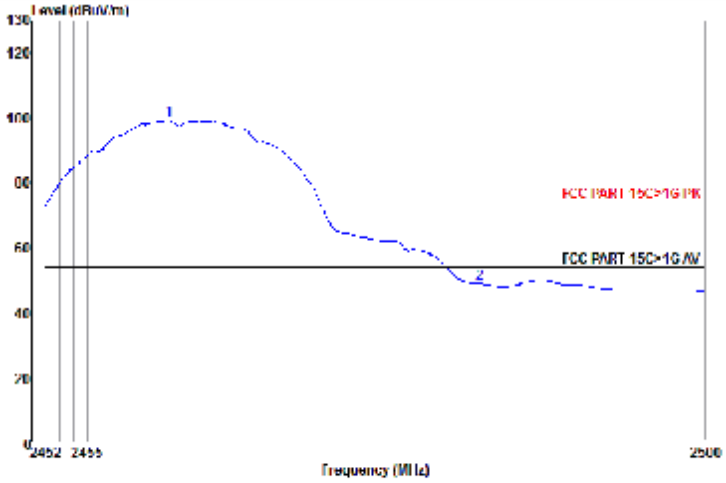
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	10.89	46.49	54.00	-7.51	Vertical	Average
2 pp	2414.215	32.58	3.08	68.90	96.56	54.00	42.56	Vertical	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



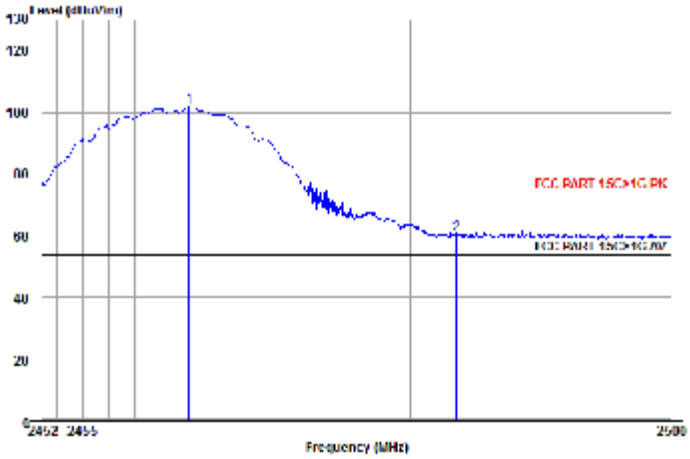
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2461.987	32.68	1.11	68.97	102.76	74.00	31.76	Horizontal	Peak
2	2483.500	32.71	3.12	25.06	60.88	74.00	13.12	Horizontal	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



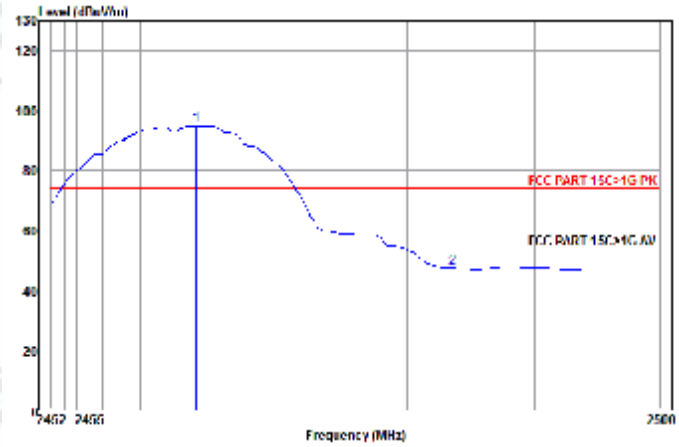
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2468.986	32.67	1.11	63.46	99.24	54.00	45.24	Horizontal	Average
2	2483.500	32.71	3.12	13.01	48.84	54.00	-5.16	Horizontal	Average

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



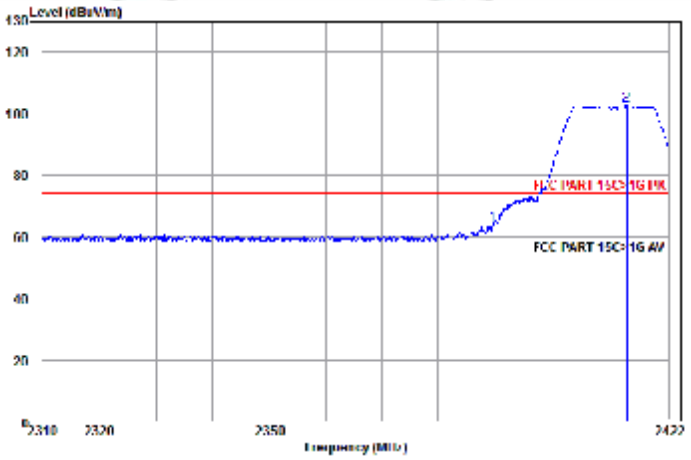
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2463.300	32.68	3.11	65.71	101.50	74.00	27.50	Vertical	Peak
2	2483.500	32.71	3.12	24.78	60.61	74.00	13.39	Vertical	Peak

Worse case mode:	802.11b (11Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Average



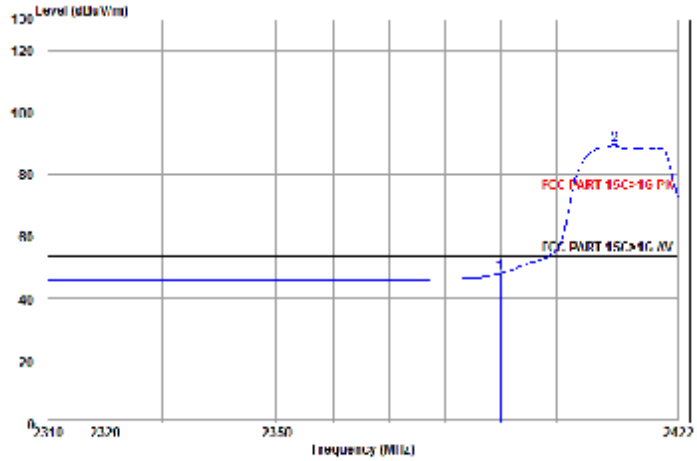
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2463.300	32.68	3.11	59.35	95.14	54.00	41.14	Vertical	Average
2	2483.500	32.71	3.12	11.54	47.37	54.00	-6.63	Vertical	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



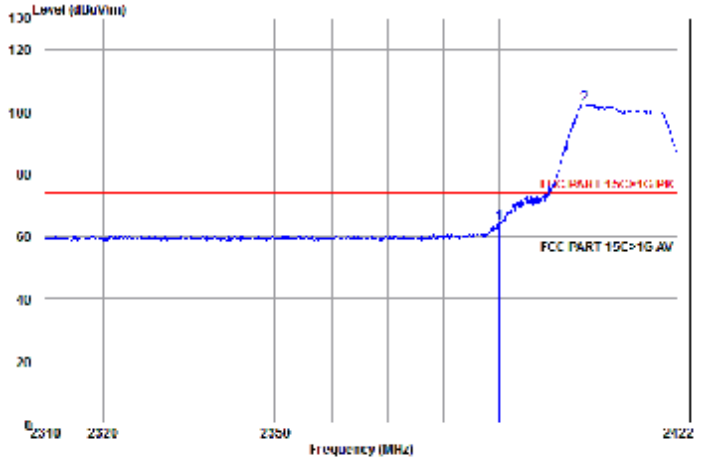
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	28.23	63.83	74.00	-10.17	Horizontal	Peak
2	2414.939	32.58	3.08	67.65	103.31	74.00	29.31	Horizontal	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



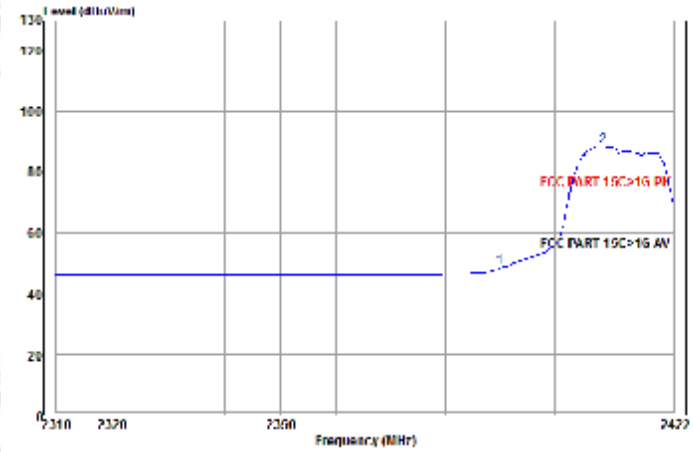
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.68	48.28	54.00	5.72	Horizontal	Average
2	2410.674	32.53	3.08	53.94	89.68	54.00	35.68	Horizontal	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



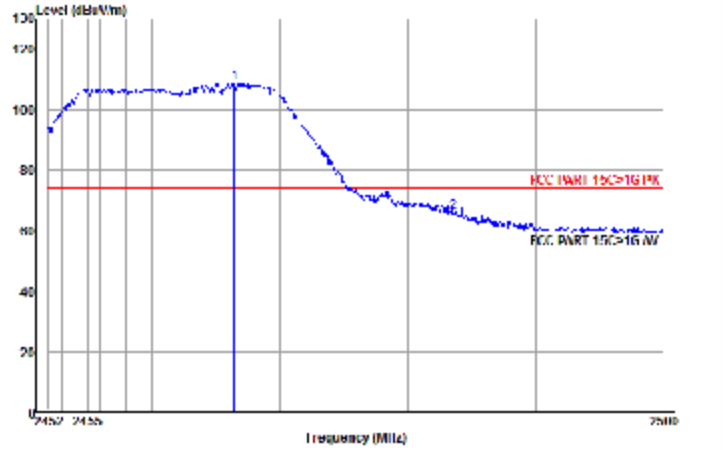
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.51	1.87	28.57	64.17	74.00	9.83	Vertical	Peak
2 pp	2485.316	32.56	1.88	66.78	102.42	74.00	28.42	Vertical	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



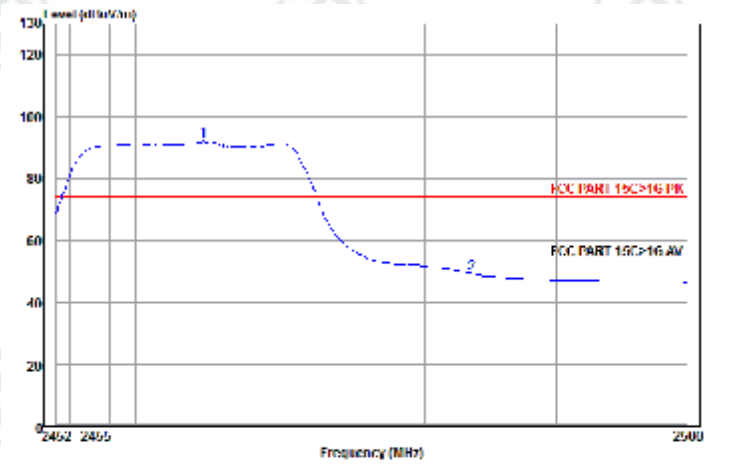
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.51	1.87	32.86	68.46	54.00	-14.54	Vertical	Average
2 pp	2480.963	32.57	1.88	52.93	88.58	54.00	34.58	Vertical	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



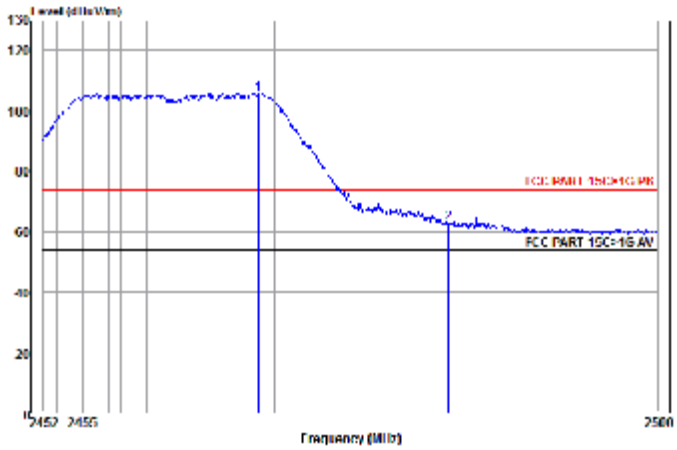
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	op 2466.398	32.68	3.11	72.87	108.66	74.00	34.66	Horizontal	Peak
2	2483.500	32.71	3.12	30.00	65.83	74.00	-8.17	Horizontal	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



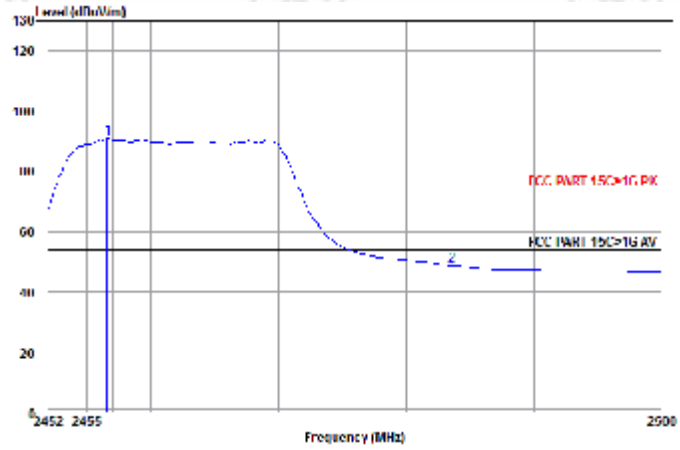
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	op 2463.101	32.68	3.11	56.21	92.00	54.00	38.00	Horizontal	Average
2	2483.500	32.71	3.12	13.52	49.35	54.00	-4.65	Horizontal	Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



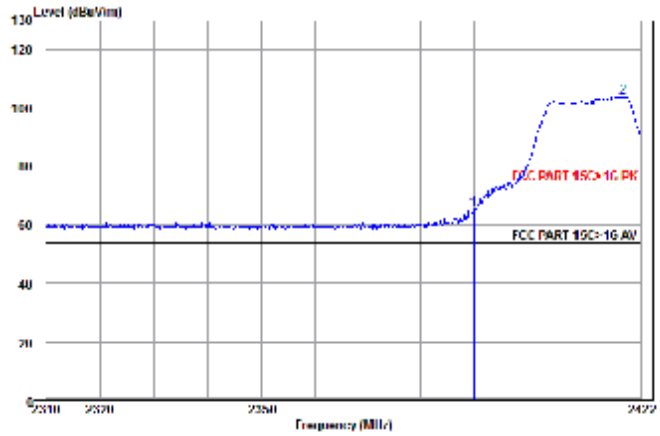
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2468.694	32.69	3.11	69.88	105.68	74.00	31.68	Vertical	Peak
2	2483.500	32.71	3.12	27.80	63.63	74.00	-11.37	Vertical	Peak

Worse case mode:	802.11g (6Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Average



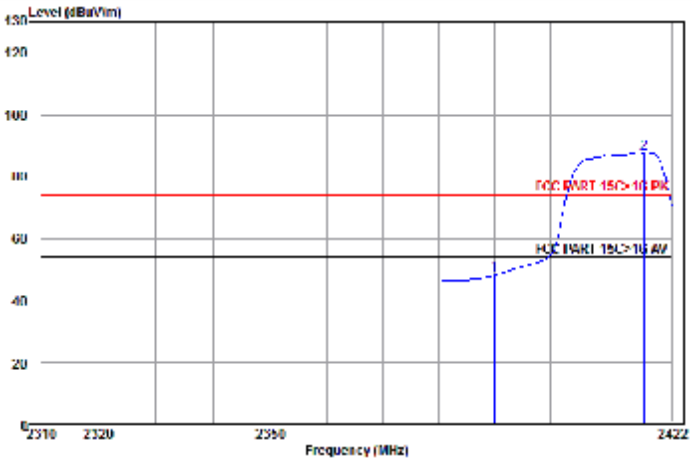
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2466.615	32.66	3.10	55.34	91.10	54.00	37.10	Vertical	Average
2	2483.500	32.71	3.12	12.80	48.63	54.00	-5.37	Vertical	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



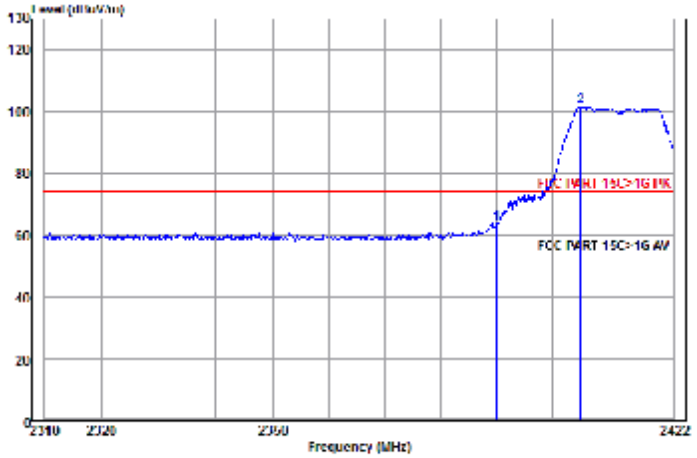
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	29.50	65.10	74.00	8.90	Horizontal	Peak
2	pp 2416.960	32.59	3.08	68.27	103.94	74.00	29.94	Horizontal	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



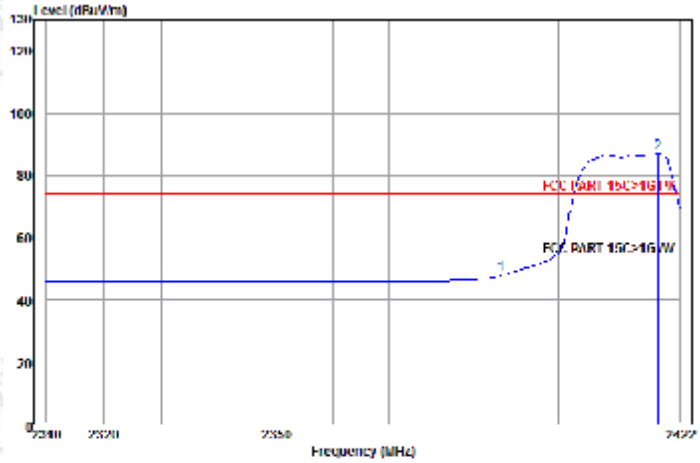
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.46	48.06	54.00	5.94	Horizontal	Average
2	pp 2416.960	32.59	3.08	51.78	87.45	54.00	33.45	Horizontal	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



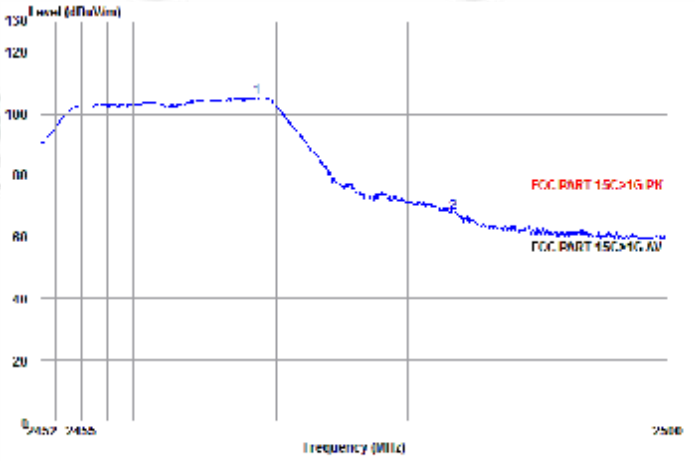
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	27.92	63.52	74.00	10.48	Vertical	Peak
2 pp	2405.088	32.56	3.08	66.02	101.66	74.00	27.66	Vertical	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2412MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



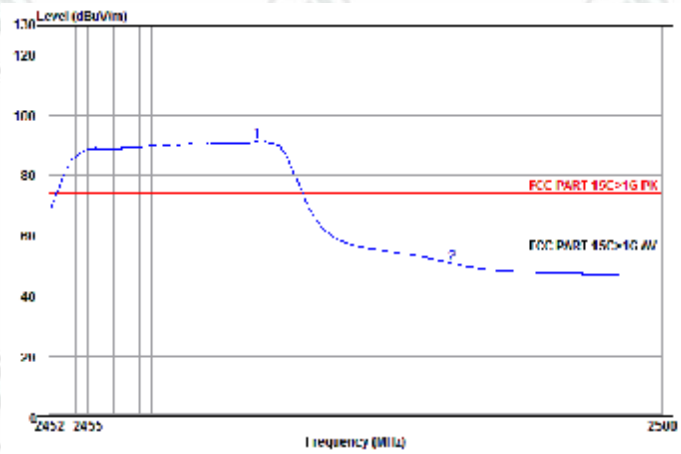
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	3.07	12.43	48.03	54.00	5.97	Vertical	Average
2 pp	2413.104	32.59	3.08	51.40	87.07	54.00	33.07	Vertical	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



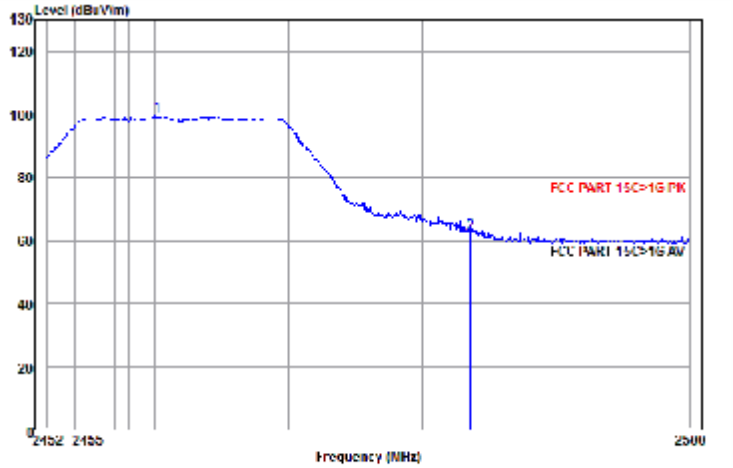
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.455	32.69	3.11	69.44	105.24	74.00	31.24	Horizontal	Peak
2	2483.500	32.71	3.12	31.72	67.55	74.00	-6.45	Horizontal	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Horizontal	Remark:Average



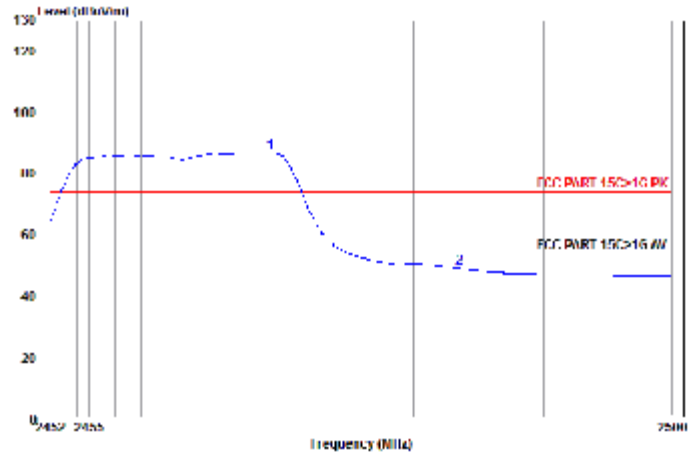
	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2463.160	32.69	3.11	51.54	91.34	54.00	37.34	Horizontal	Average
2	2483.500	32.71	3.12	14.97	50.80	54.00	3.20	Horizontal	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2460.142	32.67	3.11	63.63	99.41	74.00	25.41	Vertical	Peak
2	2483.500	32.71	3.12	26.52	62.35	74.00	-11.65	Vertical	Peak

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2462MHz	Test channel: Highest	Polarization: Vertical	Remark: Average



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2460.086	32.69	3.11	51.15	86.95	54.00	32.95	Vertical	Average
2	2483.500	32.71	3.12	12.96	48.79	54.00	5.21	Vertical	Average

Note:

1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20),and then Only the worst case is recorded in the report.

2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level =Receiver Reading - Correct Factor

Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

3) All modes and antenna are tested, and found the antenna 1 which is worst case, so only the worst case mode is recorded in the report.

Appendix I): Radiated Spurious Emissions

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Test Procedure:

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. 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.
d. 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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. 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.

Above 1GHz test procedure as below:

g. Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 meter to 1.5 meter(Above 18GHz the distance is 1 meter and table is 1.5 meter)..
h. Test the EUT in the lowest channel ,the middle channel ,the Highest channel
i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.
j. Repeat above procedures until all frequencies measured was complete.

Limit:

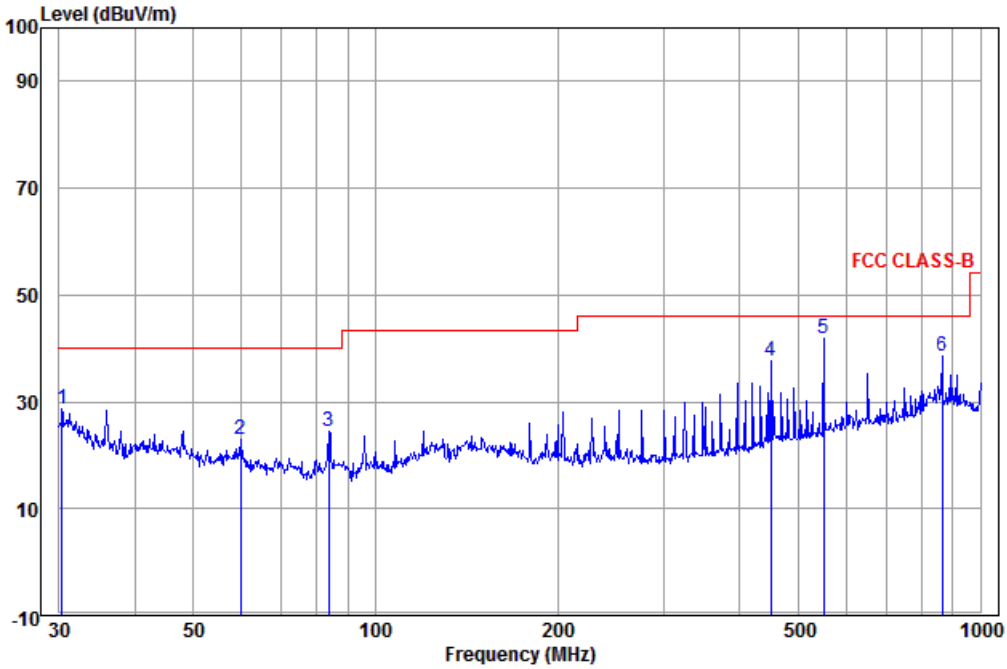
Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Radiated Spurious Emissions test Data:

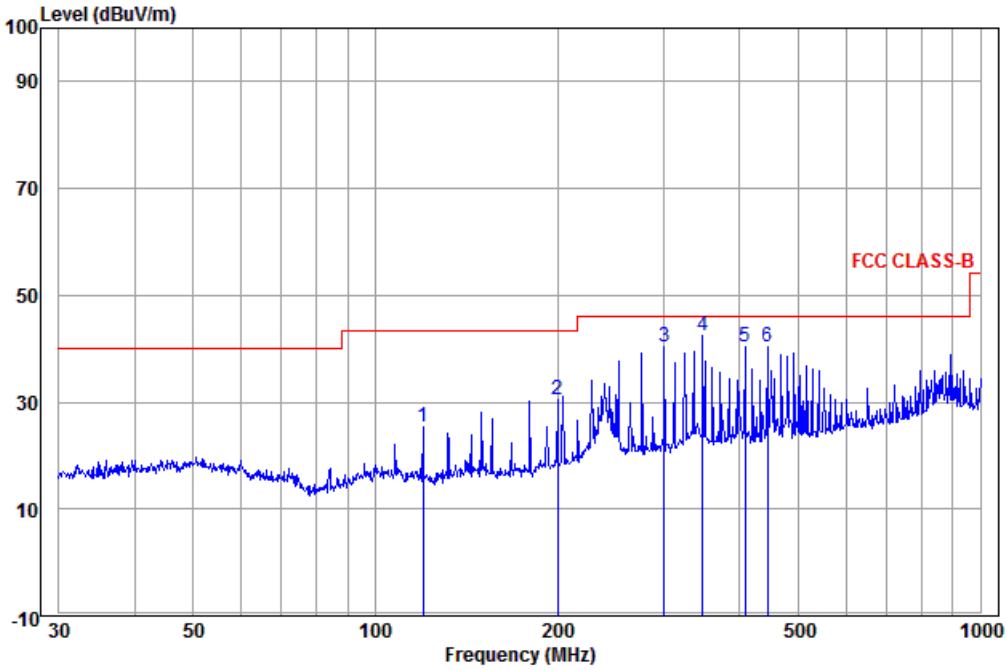
Radiated Emission below 1GHz

30MHz~1GHz (QP)		
Test mode:	Transmitting	Vertical



	Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1	30.317	11.97	0.09	16.55	28.61	40.00	-11.39	Vertical	QP
2	59.859	13.12	0.21	9.67	23.00	40.00	-17.00	Vertical	QP
3	83.816	9.51	0.41	14.69	24.61	40.00	-15.39	Vertical	QP
4	451.135	16.22	1.47	20.06	37.75	46.00	-8.25	Vertical	QP
5 pp	550.948	17.82	1.55	22.41	41.78	46.00	-4.22	Vertical	QP
6	866.088	21.56	2.46	14.66	38.68	46.00	-7.32	Vertical	QP

Test mode:	Transmitting	Horizontal



		Freq	Ant Factor	Cable Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
		MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB		
1		119.856	10.85	0.60	13.87	25.32	43.50	-18.18	Horizontal	QP
2		199.986	11.50	1.10	17.96	30.56	43.50	-12.94	Horizontal	QP
3		300.367	13.41	1.07	25.74	40.22	46.00	-5.78	Horizontal	QP
4	pp	348.027	14.36	1.31	26.73	42.40	46.00	-3.60	Horizontal	QP
5		408.946	15.39	1.35	23.67	40.41	46.00	-5.59	Horizontal	QP
6		444.851	16.10	1.46	22.71	40.27	46.00	-5.73	Horizontal	QP

Transmitter Emission above 1GHz
Antenna 1

Test mode: 802.11b(11Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1267.104	30.38	1.96	44.29	49.36	37.41	74	-36.59	Pass	Horizontal
1573.189	31.01	2.38	43.92	48.66	38.13	74	-35.87	Pass	Horizontal
4824	34.73	6.02	44.6	49.07	45.22	74	-28.78	Pass	Horizontal
6412.427	36.12	7.33	44.54	49.21	48.12	74	-25.88	Pass	Horizontal
7236	36.42	6.94	44.8	47.37	45.93	74	-28.07	Pass	Horizontal
9648	37.93	7.01	45.57	46.66	46.03	74	-27.97	Pass	Horizontal
1270.334	30.39	1.97	44.29	48.81	36.88	74	-37.12	Pass	Vertical
1495.101	30.86	2.28	44	49.07	38.21	74	-35.79	Pass	Vertical
4824	34.73	6.02	44.6	49.2	45.35	74	-28.65	Pass	Vertical
5850.919	35.79	7.29	44.51	49.34	47.91	74	-26.09	Pass	Vertical
7236	36.42	6.94	44.8	47.22	45.78	74	-28.22	Pass	Vertical
9648	37.93	7.01	45.57	46.88	46.25	74	-27.75	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1132.844	30.06	1.75	44.48	49.41	36.74	74	-37.26	Pass	Horizontal
1605.554	31.07	2.42	43.88	48.62	38.23	74	-35.77	Pass	Horizontal
4874	34.84	6.12	44.6	52.24	48.6	74	-25.4	Pass	Horizontal
6017.064	35.91	7.44	44.5	48.78	47.63	74	-26.37	Pass	Horizontal
7311	36.43	6.86	44.86	47.45	45.88	74	-28.12	Pass	Horizontal
9748	38.03	7.1	45.55	47.23	46.81	74	-27.19	Pass	Horizontal
1283.335	30.42	1.99	44.27	48.45	36.59	74	-37.41	Pass	Vertical
1791.273	31.38	2.63	43.69	47.92	38.24	74	-35.76	Pass	Vertical
4874	34.84	6.12	44.6	53.58	49.94	74	-24.06	Pass	Vertical
5646.079	35.63	7.08	44.53	49.46	47.64	74	-26.36	Pass	Vertical
7311	36.43	6.86	44.86	48.04	46.47	74	-27.53	Pass	Vertical
9748	38.03	7.1	45.55	48.74	48.32	74	-25.68	Pass	Vertical

Test mode: 802.11b(11Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1260.67	30.37	1.95	44.3	48.66	36.68	74	-37.32	Pass	Horizontal
1541.476	30.95	2.34	43.95	48.37	37.71	74	-36.29	Pass	Horizontal
4924	34.94	6.22	44.6	52.38	48.94	74	-25.06	Pass	Horizontal
6428.771	36.12	7.33	44.54	49.01	47.92	74	-26.08	Pass	Horizontal
7386	36.44	6.78	44.92	48.55	46.85	74	-27.15	Pass	Horizontal
9848	38.14	7.19	45.53	46.72	46.52	74	-27.48	Pass	Horizontal
1267.104	30.38	1.96	44.29	48.63	36.68	74	-37.32	Pass	Vertical
1613.749	31.08	2.43	43.87	48.22	37.86	74	-36.14	Pass	Vertical
4924	34.94	6.22	44.6	49.22	45.78	74	-28.22	Pass	Vertical
6001.768	35.9	7.44	44.5	49.47	48.31	74	-25.69	Pass	Vertical
7386	36.44	6.78	44.92	48.33	46.63	74	-27.37	Pass	Vertical
9848	38.14	7.19	45.53	47.72	47.52	74	-26.48	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2412MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1207.279	30.24	1.87	44.37	48.61	36.35	74	-37.65	Pass	Horizontal
1399.353	30.67	2.15	44.12	48.67	37.37	74	-36.63	Pass	Horizontal
4824	34.73	6.02	44.6	48.88	45.03	74	-28.97	Pass	Horizontal
6032.401	35.92	7.43	44.5	49.71	48.56	74	-25.44	Pass	Horizontal
7236	36.42	6.94	44.8	47.01	45.57	74	-28.43	Pass	Horizontal
9648	37.93	7.01	45.57	47.22	46.59	74	-27.41	Pass	Horizontal
1165.013	30.14	1.8	44.44	49.44	36.94	74	-37.06	Pass	Vertical
1395.796	30.66	2.15	44.12	48.24	36.93	74	-37.07	Pass	Vertical
4824	34.73	6.02	44.6	52.32	48.47	74	-25.53	Pass	Vertical
6017.064	35.91	7.44	44.5	50.06	48.91	74	-25.09	Pass	Vertical
7236	36.42	6.94	44.8	46.73	45.29	74	-28.71	Pass	Vertical
9648	37.93	7.01	45.57	46.37	45.74	74	-28.26	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2437MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1280.072	30.41	1.98	44.27	48.2	36.32	74	-37.68	Pass	Horizontal
1483.727	30.84	2.27	44.02	47.75	36.84	74	-37.16	Pass	Horizontal
4874	34.84	6.12	44.6	49.37	45.73	74	-28.27	Pass	Horizontal
5631.725	35.62	7.07	44.53	49.22	47.38	74	-26.62	Pass	Horizontal
7311	36.43	6.86	44.86	47.09	45.52	74	-28.48	Pass	Horizontal
9748	38.03	7.1	45.55	48.06	47.64	74	-26.36	Pass	Horizontal
1204.21	30.24	1.87	44.38	49.28	37.01	74	-36.99	Pass	Vertical
1417.277	30.71	2.18	44.1	49.2	37.99	74	-36.01	Pass	Vertical
4874	34.84	6.12	44.6	52.45	48.81	74	-25.19	Pass	Vertical
6063.19	35.93	7.42	44.51	49.27	48.11	74	-25.89	Pass	Vertical
7311	36.43	6.86	44.86	47.44	45.87	74	-28.13	Pass	Vertical
9748	38.03	7.1	45.55	47.67	47.25	74	-26.75	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1254.268	30.35	1.94	44.31	48.36	36.34	74	-37.66	Pass	Horizontal
1549.344	30.96	2.35	43.94	48.71	38.08	74	-35.92	Pass	Horizontal
4924	34.94	6.22	44.6	47.33	43.89	74	-30.11	Pass	Horizontal
5617.407	35.61	7.05	44.54	50.59	48.71	74	-25.29	Pass	Horizontal
7386	36.44	6.78	44.92	48.35	46.65	74	-27.35	Pass	Horizontal
9848	38.14	7.19	45.53	47.39	47.19	74	-26.81	Pass	Horizontal
1286.606	30.43	1.99	44.26	48.51	36.67	74	-37.33	Pass	Vertical
1764.123	31.34	2.6	43.72	47.96	38.18	74	-35.82	Pass	Vertical
4924	34.94	6.22	44.6	51.97	48.53	74	-25.47	Pass	Vertical
5986.509	35.89	7.43	44.5	49.62	48.44	74	-25.56	Pass	Vertical
7386	36.44	6.78	44.92	47.99	46.29	74	-27.71	Pass	Vertical
9848	38.14	7.19	45.53	48.35	48.15	74	-25.85	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1286.606	30.43	1.99	44.26	48.11	36.27	74	-37.73	Pass	Horizontal
1537.557	30.94	2.34	43.96	48.43	37.75	74	-36.25	Pass	Horizontal
4824	34.73	6.02	44.6	49.94	46.09	74	-27.91	Pass	Horizontal
6032.401	35.92	7.43	44.5	49.47	48.32	74	-25.68	Pass	Horizontal
7236	36.42	6.94	44.8	48.49	47.05	74	-26.95	Pass	Horizontal
9648	37.93	7.01	45.57	46.75	46.12	74	-27.88	Pass	Horizontal
1141.528	30.08	1.76	44.47	47.86	35.23	74	-38.77	Pass	Vertical
1392.247	30.65	2.14	44.13	48.93	37.59	74	-36.41	Pass	Vertical
1800.416	31.4	2.64	43.68	48.69	39.05	74	-34.95	Pass	Vertical
4824	34.73	6.02	44.6	51.84	47.99	74	-26.01	Pass	Vertical
7236	36.42	6.94	44.8	46.51	45.07	74	-28.93	Pass	Vertical
9648	37.93	7.01	45.57	46.51	45.88	74	-28.12	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1124.226	30.04	1.73	44.5	49.21	36.48	74	-37.52	Pass	Horizontal
1410.08	30.69	2.17	44.11	48.59	37.34	74	-36.66	Pass	Horizontal
4874	34.84	6.12	44.6	50.39	46.75	74	-27.25	Pass	Horizontal
6001.768	35.9	7.44	44.5	49.83	48.67	74	-25.33	Pass	Horizontal
7311	36.43	6.86	44.86	47.16	45.59	74	-28.41	Pass	Horizontal
9748	38.03	7.1	45.55	46.91	46.49	74	-27.51	Pass	Horizontal
1118.517	30.02	1.72	44.51	49.49	36.72	74	-37.28	Pass	Vertical
1402.92	30.68	2.16	44.11	48.07	36.8	74	-37.2	Pass	Vertical
1828.125	31.44	2.67	43.66	48.77	39.22	74	-34.78	Pass	Vertical
4874	34.84	6.12	44.6	51.69	48.05	74	-25.95	Pass	Vertical
7311	36.43	6.86	44.86	47.1	45.53	74	-28.47	Pass	Vertical
9748	38.03	7.1	45.55	46.3	45.88	74	-28.12	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1299.773	30.46	2.01	44.25	48.37	36.59	74	-37.41	Pass	Horizontal
1605.554	31.07	2.42	43.88	48.43	38.04	74	-35.96	Pass	Horizontal
4924	34.94	6.22	44.6	51.17	47.73	74	-26.27	Pass	Horizontal
6017.064	35.91	7.44	44.5	49.61	48.46	74	-25.54	Pass	Horizontal
7386	36.44	6.78	44.92	47.46	45.76	74	-28.24	Pass	Horizontal
9848	38.14	7.19	45.53	48.34	48.14	74	-25.86	Pass	Horizontal
1046.885	29.83	1.6	44.62	48.95	35.76	74	-38.24	Pass	Vertical
1402.92	30.68	2.16	44.11	47.83	36.56	74	-37.44	Pass	Vertical
4924	34.94	6.22	44.6	52.67	49.23	74	-24.77	Pass	Vertical
5836.044	35.78	7.28	44.52	49.4	47.94	74	-26.06	Pass	Vertical
7386	36.44	6.78	44.92	48.11	46.41	74	-27.59	Pass	Vertical
9848	38.14	7.19	45.53	47.12	46.92	74	-27.08	Pass	Vertical

Antenna 2

Test mode: 802.11b(11Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1343.505	30.55	2.08	44.19	48.63	37.07	74	-36.93	Pass	Horizontal
1545.405	30.96	2.35	43.95	48.44	37.8	74	-36.2	Pass	Horizontal
4824	34.73	6.02	44.6	49	45.15	74	-28.85	Pass	Horizontal
5660.469	35.64	7.1	44.53	48.61	46.82	74	-27.18	Pass	Horizontal
7236	36.42	6.94	44.8	48.38	46.94	74	-27.06	Pass	Horizontal
9648	37.93	7.01	45.57	47.05	46.42	74	-27.58	Pass	Horizontal
1167.982	30.15	1.81	44.43	48.41	35.94	74	-38.06	Pass	Vertical
1483.727	30.84	2.27	44.02	48.7	37.79	74	-36.21	Pass	Vertical
4824	34.73	6.02	44.6	49.91	46.06	74	-27.94	Pass	Vertical
6017.064	35.91	7.44	44.5	49.2	48.05	74	-25.95	Pass	Vertical
7236	36.42	6.94	44.8	47.59	46.15	74	-27.85	Pass	Vertical
9648	37.93	7.01	45.57	46.21	45.58	74	-28.42	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1289.885	30.43	2	44.26	48.29	36.46	74	-37.54	Pass	Horizontal
1561.221	30.99	2.36	43.93	48.34	37.76	74	-36.24	Pass	Horizontal
4874	34.84	6.12	44.6	48.58	44.94	74	-29.06	Pass	Horizontal
6001.768	35.9	7.44	44.5	49.37	48.21	74	-25.79	Pass	Horizontal
7311	36.43	6.86	44.86	47.37	45.8	74	-28.2	Pass	Horizontal
9748	38.03	7.1	45.55	48.28	47.86	74	-26.14	Pass	Horizontal
1273.572	30.4	1.97	44.28	48.55	36.64	74	-37.36	Pass	Vertical
1525.86	30.92	2.32	43.97	48.61	37.88	74	-36.12	Pass	Vertical
4874	34.84	6.12	44.6	47.58	43.94	74	-30.06	Pass	Vertical
6017.064	35.91	7.44	44.5	48.92	47.77	74	-26.23	Pass	Vertical
7311	36.43	6.86	44.86	46.71	45.14	74	-28.86	Pass	Vertical
9748	38.03	7.1	45.55	47.33	46.91	74	-27.09	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1115.673	30.02	1.72	44.51	49.1	36.33	74	-37.67	Pass	Horizontal
1388.708	30.65	2.14	44.13	48.6	37.26	74	-36.74	Pass	Horizontal
4924	34.94	6.22	44.6	47.04	43.6	74	-30.4	Pass	Horizontal
5986.509	35.89	7.43	44.5	48.87	47.69	74	-26.31	Pass	Horizontal
7386	36.44	6.78	44.92	48	46.3	74	-27.7	Pass	Horizontal
9848	38.14	7.19	45.53	47.39	47.19	74	-26.81	Pass	Horizontal
1176.935	30.17	1.82	44.42	48.44	36.01	74	-37.99	Pass	Vertical
1491.3	30.85	2.28	44.01	49.09	38.21	74	-35.79	Pass	Vertical
4924	34.94	6.22	44.6	46.96	43.52	74	-30.48	Pass	Vertical
6032.401	35.92	7.43	44.5	49.3	48.15	74	-25.85	Pass	Vertical
7386	36.44	6.78	44.92	48.79	47.09	74	-26.91	Pass	Vertical
9848	38.14	7.19	45.53	47.32	47.12	74	-26.88	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2412MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1135.731	30.07	1.75	44.48	48.92	36.26	74	-37.74	Pass	Horizontal
1479.955	30.83	2.26	44.02	48.77	37.84	74	-36.16	Pass	Horizontal
4824	34.73	6.02	44.6	48.25	44.4	74	-29.6	Pass	Horizontal
6032.401	35.92	7.43	44.5	48.93	47.78	74	-26.22	Pass	Horizontal
7236	36.42	6.94	44.8	47.49	46.05	74	-27.95	Pass	Horizontal
9648	37.93	7.01	45.57	46.8	46.17	74	-27.83	Pass	Horizontal
1195.049	30.21	1.85	44.39	48.31	35.98	74	-38.02	Pass	Vertical
1529.749	30.93	2.33	43.96	48.43	37.73	74	-36.27	Pass	Vertical
4824	34.73	6.02	44.6	49.88	46.03	74	-27.97	Pass	Vertical
5806.408	35.76	7.25	44.52	49.42	47.91	74	-26.09	Pass	Vertical
7236	36.42	6.94	44.8	46.99	45.55	74	-28.45	Pass	Vertical
9648	37.93	7.01	45.57	47.78	47.15	74	-26.85	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2437MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1270.334	30.39	1.97	44.29	48.83	36.9	74	-37.1	Pass	Horizontal
1521.981	30.91	2.32	43.97	49.02	38.28	74	-35.72	Pass	Horizontal
4874	34.84	6.12	44.6	48.54	44.9	74	-29.1	Pass	Horizontal
6594.518	36.21	7.29	44.56	48.69	47.63	74	-26.37	Pass	Horizontal
7311	36.43	6.86	44.86	47.24	45.67	74	-28.33	Pass	Horizontal
9748	38.03	7.1	45.55	46.58	46.16	74	-27.84	Pass	Horizontal
1273.572	30.4	1.97	44.28	49.83	37.92	74	-36.08	Pass	Vertical
1589.289	31.04	2.4	43.9	48.37	37.91	74	-36.09	Pass	Vertical
4874	34.84	6.12	44.6	47.88	44.24	74	-29.76	Pass	Vertical
5986.509	35.89	7.43	44.5	49.39	48.21	74	-25.79	Pass	Vertical
7311	36.43	6.86	44.86	47.36	45.79	74	-28.21	Pass	Vertical
9748	38.03	7.1	45.55	47.74	47.32	74	-26.68	Pass	Vertical

Test mode: 802.11g(6Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1273.572	30.4	1.97	44.28	48.99	37.08	74	-36.92	Pass	Horizontal
1537.557	30.94	2.34	43.96	48.47	37.79	74	-36.21	Pass	Horizontal
4924	34.94	6.22	44.6	47.27	43.83	74	-30.17	Pass	Horizontal
6032.401	35.92	7.43	44.5	49.04	47.89	74	-26.11	Pass	Horizontal
7386	36.44	6.78	44.92	48.18	46.48	74	-27.52	Pass	Horizontal
9848	38.14	7.19	45.53	47.2	47	74	-27	Pass	Horizontal
1260.67	30.37	1.95	44.3	48.74	36.76	74	-37.24	Pass	Vertical
1759.638	31.33	2.59	43.72	47.92	38.12	74	-35.88	Pass	Vertical
4924	34.94	6.22	44.6	47.57	44.13	74	-29.87	Pass	Vertical
6235.364	36.02	7.38	44.52	48.95	47.83	74	-26.17	Pass	Vertical
7386	36.44	6.78	44.92	47.72	46.02	74	-27.98	Pass	Vertical
9848	38.14	7.19	45.53	47.21	47.01	74	-26.99	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1306.407	30.47	2.02	44.24	48.44	36.69	74	-37.31	Pass	Horizontal
1818.842	31.43	2.66	43.66	48.59	39.02	74	-34.98	Pass	Horizontal
4824	34.73	6.02	44.6	48.64	44.79	74	-29.21	Pass	Horizontal
6063.19	35.93	7.42	44.51	49.15	47.99	74	-26.01	Pass	Horizontal
7236	36.42	6.94	44.8	46.56	45.12	74	-28.88	Pass	Horizontal
9648	37.93	7.01	45.57	46.97	46.34	74	-27.66	Pass	Horizontal
1270.334	30.39	1.97	44.29	48.67	36.74	74	-37.26	Pass	Vertical
1518.111	30.9	2.31	43.98	48.18	37.41	74	-36.59	Pass	Vertical
4824	34.73	6.02	44.6	49	45.15	74	-28.85	Pass	Vertical
6001.768	35.9	7.44	44.5	49.69	48.53	74	-25.47	Pass	Vertical
7236	36.42	6.94	44.8	47.2	45.76	74	-28.24	Pass	Vertical
9648	37.93	7.01	45.57	47.03	46.4	74	-27.6	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1360.714	30.59	2.1	44.17	49.52	38.04	74	-35.96	Pass	Horizontal
1814.218	31.42	2.65	43.67	48.34	38.74	74	-35.26	Pass	Horizontal
4874	34.84	6.12	44.6	48.14	44.5	74	-29.5	Pass	Horizontal
6032.401	35.92	7.43	44.5	48.9	47.75	74	-26.25	Pass	Horizontal
7311	36.43	6.86	44.86	47.16	45.59	74	-28.41	Pass	Horizontal
9748	38.03	7.1	45.55	48.31	47.89	74	-26.11	Pass	Horizontal
1254.268	30.35	1.94	44.31	48.97	36.95	74	-37.05	Pass	Vertical
1541.476	30.95	2.34	43.95	48.91	38.25	74	-35.75	Pass	Vertical
4874	34.84	6.12	44.6	48.54	44.9	74	-29.1	Pass	Vertical
6001.768	35.9	7.44	44.5	48.61	47.45	74	-26.55	Pass	Vertical
7311	36.43	6.86	44.86	47.5	45.93	74	-28.07	Pass	Vertical
9748	38.03	7.1	45.55	47.09	46.67	74	-27.33	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1260.67	30.37	1.95	44.3	48.61	36.63	74	-37.37	Pass	Horizontal
1777.646	31.36	2.61	43.7	49.04	39.31	74	-34.69	Pass	Horizontal
4924	34.94	6.22	44.6	47.9	44.46	74	-29.54	Pass	Horizontal
6017.064	35.91	7.44	44.5	50.61	49.46	74	-24.54	Pass	Horizontal
7386	36.44	6.78	44.92	47.8	46.1	74	-27.9	Pass	Horizontal
9848	38.14	7.19	45.53	47.16	46.96	74	-27.04	Pass	Horizontal
1141.528	30.08	1.76	44.47	49.68	37.05	74	-36.95	Pass	Vertical
1402.92	30.68	2.16	44.11	48.79	37.52	74	-36.48	Pass	Vertical
4924	34.94	6.22	44.6	47.23	43.79	74	-30.21	Pass	Vertical
5806.408	35.76	7.25	44.52	49.55	48.04	74	-25.96	Pass	Vertical
7386	36.44	6.78	44.92	49.35	47.65	74	-26.35	Pass	Vertical
9848	38.14	7.19	45.53	47.57	47.37	74	-26.63	Pass	Vertical

Antenna 3

Test mode: 802.11b(11Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1395.796	30.66	2.15	44.12	48.14	36.83	74	-37.17	Pass	Horizontal
1768.619	31.35	2.6	43.71	48.71	38.95	74	-35.05	Pass	Horizontal
4824	34.73	6.02	44.6	47.98	44.13	74	-29.87	Pass	Horizontal
6017.064	35.91	7.44	44.5	48.85	47.7	74	-26.3	Pass	Horizontal
7236	36.42	6.94	44.8	46.78	45.34	74	-28.66	Pass	Horizontal
9648	37.93	7.01	45.57	46.85	46.22	74	-27.78	Pass	Horizontal
1273.572	30.4	1.97	44.28	49.57	37.66	74	-36.34	Pass	Vertical
1541.476	30.95	2.34	43.95	48.72	38.06	74	-35.94	Pass	Vertical
4824	34.73	6.02	44.6	48.76	44.91	74	-29.09	Pass	Vertical
6047.776	35.93	7.43	44.51	49.19	48.04	74	-25.96	Pass	Vertical
7236	36.42	6.94	44.8	46.8	45.36	74	-28.64	Pass	Vertical
9648	37.93	7.01	45.57	46.5	45.87	74	-28.13	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1410.08	30.69	2.17	44.11	49.57	38.32	74	-35.68	Pass	Horizontal
1805.005	31.4	2.64	43.68	48.72	39.08	74	-34.92	Pass	Horizontal
4874	34.84	6.12	44.6	49.09	45.45	74	-28.55	Pass	Horizontal
6594.518	36.21	7.29	44.56	49.25	48.19	74	-25.81	Pass	Horizontal
7311	36.43	6.86	44.86	46.53	44.96	74	-29.04	Pass	Horizontal
9748	38.03	7.1	45.55	47.04	46.62	74	-27.38	Pass	Horizontal
1065.707	29.88	1.63	44.59	49.83	36.75	74	-37.25	Pass	Vertical
1823.477	31.43	2.66	43.66	48.89	39.32	74	-34.68	Pass	Vertical
4874	34.84	6.12	44.6	47.25	43.61	74	-30.39	Pass	Vertical
5836.044	35.78	7.28	44.52	49.46	48	74	-26	Pass	Vertical
7311	36.43	6.86	44.86	47.95	46.38	74	-27.62	Pass	Vertical
9748	38.03	7.1	45.55	46.39	45.97	74	-28.03	Pass	Vertical

Test mode: 802.11b(11Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1367.659	30.6	2.11	44.16	48.22	36.77	74	-37.23	Pass	Horizontal
1514.252	30.9	2.31	43.98	48.76	37.99	74	-36.01	Pass	Horizontal
4924	34.94	6.22	44.6	46.35	42.91	74	-31.09	Pass	Horizontal
6219.512	36.02	7.38	44.52	49.12	48	74	-26	Pass	Horizontal
7386	36.44	6.78	44.92	48.11	46.41	74	-27.59	Pass	Horizontal
9848	38.14	7.19	45.53	46.76	46.56	74	-27.44	Pass	Horizontal
1273.572	30.4	1.97	44.28	48.17	36.26	74	-37.74	Pass	Vertical
1585.248	31.03	2.39	43.9	48.88	38.4	74	-35.6	Pass	Vertical
4924	34.94	6.22	44.6	46.93	43.49	74	-30.51	Pass	Vertical
5821.207	35.77	7.26	44.52	49.31	47.82	74	-26.18	Pass	Vertical
7386	36.44	6.78	44.92	48.04	46.34	74	-27.66	Pass	Vertical
9848	38.14	7.19	45.53	47.14	46.94	74	-27.06	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2412MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1273.572	30.4	1.97	44.28	48.66	36.75	74	-37.25	Pass	Horizontal
1533.648	30.93	2.33	43.96	48.35	37.65	74	-36.35	Pass	Horizontal
4824	34.73	6.02	44.6	49.31	45.46	74	-28.54	Pass	Horizontal
6001.768	35.9	7.44	44.5	49.09	47.93	74	-26.07	Pass	Horizontal
7236	36.42	6.94	44.8	46.89	45.45	74	-28.55	Pass	Horizontal
9648	37.93	7.01	45.57	46.87	46.24	74	-27.76	Pass	Horizontal
1173.943	30.16	1.82	44.42	48.12	35.68	74	-38.32	Pass	Vertical
1553.293	30.97	2.35	43.94	48.4	37.78	74	-36.22	Pass	Vertical
4824	34.73	6.02	44.6	48.81	44.96	74	-29.04	Pass	Vertical
5821.207	35.77	7.26	44.52	49.26	47.77	74	-26.23	Pass	Vertical
7236	36.42	6.94	44.8	47.35	45.91	74	-28.09	Pass	Vertical
9648	37.93	7.01	45.57	46.38	45.75	74	-28.25	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2437MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1491.3	30.85	2.28	44.01	48.08	37.2	74	-36.8	Pass	Horizontal
1773.127	31.35	2.61	43.71	47.97	38.22	74	-35.78	Pass	Horizontal
4874	34.84	6.12	44.6	48.28	44.64	74	-29.36	Pass	Horizontal
6203.7	36.01	7.39	44.52	48.65	47.53	74	-26.47	Pass	Horizontal
7311	36.43	6.86	44.86	46.51	44.94	74	-29.06	Pass	Horizontal
9748	38.03	7.1	45.55	48.21	47.79	74	-26.21	Pass	Horizontal
1280.072	30.41	1.98	44.27	48.94	37.06	74	-36.94	Pass	Vertical
1597.401	31.05	2.41	43.89	48.18	37.75	74	-36.25	Pass	Vertical
4874	34.84	6.12	44.6	46.8	43.16	74	-30.84	Pass	Vertical
6032.401	35.92	7.43	44.5	49.1	47.95	74	-26.05	Pass	Vertical
7311	36.43	6.86	44.86	47.37	45.8	74	-28.2	Pass	Vertical
9748	38.03	7.1	45.55	47.45	47.03	74	-26.97	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1176.935	30.17	1.82	44.42	48.25	35.82	74	-38.18	Pass	Horizontal
1453.818	30.78	2.23	44.05	48.26	37.22	74	-36.78	Pass	Horizontal
4924	34.94	6.22	44.6	47.69	44.25	74	-29.75	Pass	Horizontal
5448.41	35.48	6.87	44.55	50.28	48.08	74	-25.92	Pass	Horizontal
7386	36.44	6.78	44.92	47.66	45.96	74	-28.04	Pass	Horizontal
9848	38.14	7.19	45.53	48.22	48.02	74	-25.98	Pass	Horizontal
1263.883	30.38	1.96	44.29	49.38	37.43	74	-36.57	Pass	Vertical
1557.252	30.98	2.36	43.93	47.99	37.4	74	-36.6	Pass	Vertical
4924	34.94	6.22	44.6	47.69	44.25	74	-29.75	Pass	Vertical
6017.064	35.91	7.44	44.5	49.08	47.93	74	-26.07	Pass	Vertical
7386	36.44	6.78	44.92	47.86	46.16	74	-27.84	Pass	Vertical
9848	38.14	7.19	45.53	46.89	46.69	74	-27.31	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1263.883	30.38	1.96	44.29	48.6	36.65	74	-37.35	Pass	Horizontal
1842.139	31.46	2.68	43.64	48.67	39.17	74	-34.83	Pass	Horizontal
4824	34.73	6.02	44.6	48.96	45.11	74	-28.89	Pass	Horizontal
6445.156	36.13	7.32	44.55	48.64	47.54	74	-26.46	Pass	Horizontal
7236	36.42	6.94	44.8	46.81	45.37	74	-28.63	Pass	Horizontal
9648	37.93	7.01	45.57	48.04	47.41	74	-26.59	Pass	Horizontal
1210.356	30.25	1.88	44.37	48.97	36.73	74	-37.27	Pass	Vertical
1541.476	30.95	2.34	43.95	48.34	37.68	74	-36.32	Pass	Vertical
4824	34.73	6.02	44.6	48.82	44.97	74	-29.03	Pass	Vertical
5850.919	35.79	7.29	44.51	48.59	47.16	74	-26.84	Pass	Vertical
7236	36.42	6.94	44.8	47.16	45.72	74	-28.28	Pass	Vertical
9648	37.93	7.01	45.57	46.78	46.15	74	-27.85	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1350.362	30.57	2.09	44.18	49.83	38.31	74	-35.69	Pass	Horizontal
1545.405	30.96	2.35	43.95	48.68	38.04	74	-35.96	Pass	Horizontal
4874	34.84	6.12	44.6	48.11	44.47	74	-29.53	Pass	Horizontal
5617.407	35.61	7.05	44.54	49.7	47.82	74	-26.18	Pass	Horizontal
7311	36.43	6.86	44.86	47.36	45.79	74	-28.21	Pass	Horizontal
9748	38.03	7.1	45.55	46.91	46.49	74	-27.51	Pass	Horizontal
1216.534	30.27	1.89	44.36	48.32	36.12	74	-37.88	Pass	Vertical
1498.912	30.87	2.29	44	48.48	37.64	74	-36.36	Pass	Vertical
4874	34.84	6.12	44.6	47.12	43.48	74	-30.52	Pass	Vertical
6032.401	35.92	7.43	44.5	48.57	47.42	74	-26.58	Pass	Vertical
7311	36.43	6.86	44.86	48.16	46.59	74	-27.41	Pass	Vertical
9748	38.03	7.1	45.55	47.13	46.71	74	-27.29	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1392.247	30.65	2.14	44.13	49.09	37.75	74	-36.25	Pass	Horizontal
1750.702	31.32	2.58	43.73	47.64	37.81	74	-36.19	Pass	Horizontal
4924	34.94	6.22	44.6	46.99	43.55	74	-30.45	Pass	Horizontal
6017.064	35.91	7.44	44.5	49.07	47.92	74	-26.08	Pass	Horizontal
7386	36.44	6.78	44.92	48.18	46.48	74	-27.52	Pass	Horizontal
9848	38.14	7.19	45.53	47.38	47.18	74	-26.82	Pass	Horizontal
1280.072	30.41	1.98	44.27	48.06	36.18	74	-37.82	Pass	Vertical
1545.405	30.96	2.35	43.95	48.2	37.56	74	-36.44	Pass	Vertical
4924	34.94	6.22	44.6	47.81	44.37	74	-29.63	Pass	Vertical
6017.064	35.91	7.44	44.5	48.97	47.82	74	-26.18	Pass	Vertical
7386	36.44	6.78	44.92	48.64	46.94	74	-27.06	Pass	Vertical
9848	38.14	7.19	45.53	48.12	47.92	74	-26.08	Pass	Vertical

Antenna 1+2+3

Test mode: 802.11b(11Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1267.104	30.38	1.96	44.29	48.07	36.12	74.00	-37.88	Pass	Horizontal
1545.405	30.96	2.35	43.95	49.11	38.47	74.00	-35.53	Pass	Horizontal
4824.000	34.73	6.02	44.60	47.70	43.85	74.00	-30.15	Pass	Horizontal
6412.427	36.12	7.33	44.54	48.61	47.52	74.00	-26.48	Pass	Horizontal
7236.000	36.42	6.94	44.80	46.67	45.23	74.00	-28.77	Pass	Horizontal
9648.000	37.93	7.01	45.57	46.97	46.34	74.00	-27.66	Pass	Horizontal
1267.104	30.38	1.96	44.29	48.78	36.83	74.00	-37.17	Pass	Vertical
1545.405	30.96	2.35	43.95	48.20	37.56	74.00	-36.44	Pass	Vertical
4824.000	34.73	6.02	44.60	52.64	48.79	74.00	-25.21	Pass	Vertical
6017.064	35.91	7.44	44.50	49.22	48.07	74.00	-25.93	Pass	Vertical
7236.000	36.42	6.94	44.80	46.71	45.27	74.00	-28.73	Pass	Vertical
9648.000	37.93	7.01	45.57	46.12	45.49	74.00	-28.51	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1270.334	30.39	1.97	44.29	49.61	37.68	74.00	-36.32	Pass	Horizontal
1402.920	30.68	2.16	44.11	49.73	38.46	74.00	-35.54	Pass	Horizontal
4874.000	34.84	6.12	44.60	49.50	45.86	74.00	-28.14	Pass	Horizontal
6017.064	35.91	7.44	44.50	49.16	48.01	74.00	-25.99	Pass	Horizontal
7311.000	36.43	6.86	44.86	47.36	45.79	74.00	-28.21	Pass	Horizontal
9748.000	38.03	7.10	45.55	46.78	46.36	74.00	-27.64	Pass	Horizontal
1216.534	30.27	1.89	44.36	48.90	36.70	74.00	-37.30	Pass	Vertical
1525.860	30.92	2.32	43.97	48.42	37.69	74.00	-36.31	Pass	Vertical
4874.000	34.84	6.12	44.60	52.43	48.79	74.00	-25.21	Pass	Vertical
5776.922	35.73	7.22	44.52	49.19	47.62	74.00	-26.38	Pass	Vertical
7311.000	36.43	6.86	44.86	47.60	46.03	74.00	-27.97	Pass	Vertical
9748.000	38.03	7.10	45.55	47.71	47.29	74.00	-26.71	Pass	Vertical

Test mode: 802.11b(11Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1044.224	29.82	1.59	44.63	49.23	36.01	74.00	-37.99	Pass	Horizontal
1428.142	30.73	2.19	44.08	48.29	37.13	74.00	-36.87	Pass	Horizontal
4924.000	34.94	6.22	44.60	50.09	46.65	74.00	-27.35	Pass	Horizontal
6203.700	36.01	7.39	44.52	49.20	48.08	74.00	-25.92	Pass	Horizontal
7386.000	36.44	6.78	44.92	48.41	46.71	74.00	-27.29	Pass	Horizontal
9848.000	38.14	7.19	45.53	47.56	47.36	74.00	-26.64	Pass	Horizontal
1267.104	30.38	1.96	44.29	48.21	36.26	74.00	-37.74	Pass	Vertical
1577.198	31.01	2.38	43.91	48.29	37.77	74.00	-36.23	Pass	Vertical
4924.000	34.94	6.22	44.60	53.52	50.08	74.00	-23.92	Pass	Vertical
6187.929	36.00	7.39	44.52	48.90	47.77	74.00	-26.23	Pass	Vertical
7386.000	36.44	6.78	44.92	47.86	46.16	74.00	-27.84	Pass	Vertical
9848.000	38.14	7.19	45.53	47.49	47.29	74.00	-26.71	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2412MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1124.226	30.04	1.73	44.50	49.38	36.65	74.00	-37.35	Pass	Horizontal
1402.920	30.68	2.16	44.11	48.10	36.83	74.00	-37.17	Pass	Horizontal
4824.000	34.73	6.02	44.60	48.60	44.75	74.00	-29.25	Pass	Horizontal
6032.401	35.92	7.43	44.50	49.50	48.35	74.00	-25.65	Pass	Horizontal
7236.000	36.42	6.94	44.80	46.84	45.40	74.00	-28.60	Pass	Horizontal
9648.000	37.93	7.01	45.57	46.03	45.40	74.00	-28.60	Pass	Horizontal
1296.469	30.45	2.01	44.25	48.17	36.38	74.00	-37.62	Pass	Vertical
1491.300	30.85	2.28	44.01	48.83	37.95	74.00	-36.05	Pass	Vertical
4824.000	34.73	6.02	44.60	51.96	48.11	74.00	-25.89	Pass	Vertical
6001.768	35.90	7.44	44.50	48.89	47.73	74.00	-26.27	Pass	Vertical
7236.000	36.42	6.94	44.80	47.34	45.90	74.00	-28.10	Pass	Vertical
9648.000	37.93	7.01	45.57	46.88	46.25	74.00	-27.75	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2437MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1410.080	30.69	2.17	44.11	48.50	37.25	74.00	-36.75	Pass	Horizontal
1837.456	31.46	2.68	43.65	48.66	39.15	74.00	-34.85	Pass	Horizontal
4874.000	34.84	6.12	44.60	48.36	44.72	74.00	-29.28	Pass	Horizontal
6001.768	35.90	7.44	44.50	48.87	47.71	74.00	-26.29	Pass	Horizontal
7311.000	36.43	6.86	44.86	46.48	44.91	74.00	-29.09	Pass	Horizontal
9748.000	38.03	7.10	45.55	47.63	47.21	74.00	-26.79	Pass	Horizontal
1313.075	30.49	2.03	44.23	48.21	36.50	74.00	-37.50	Pass	Vertical
1545.405	30.96	2.35	43.95	48.35	37.71	74.00	-36.29	Pass	Vertical
4874.000	34.84	6.12	44.60	51.31	47.67	74.00	-26.33	Pass	Vertical
5836.044	35.78	7.28	44.52	49.49	48.03	74.00	-25.97	Pass	Vertical
7311.000	36.43	6.86	44.86	46.79	45.22	74.00	-28.78	Pass	Vertical
9748.000	38.03	7.10	45.55	47.98	47.56	74.00	-26.44	Pass	Vertical

Test mode: 802.11g(6Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1254.268	30.35	1.94	44.31	48.76	36.74	74.00	-37.26	Pass	Horizontal
1541.476	30.95	2.34	43.95	48.16	37.50	74.00	-36.50	Pass	Horizontal
4924.000	34.94	6.22	44.60	50.68	47.24	74.00	-26.76	Pass	Horizontal
5806.408	35.76	7.25	44.52	49.30	47.79	74.00	-26.21	Pass	Horizontal
7386.000	36.44	6.78	44.92	48.40	46.70	74.00	-27.30	Pass	Horizontal
9848.000	38.14	7.19	45.53	46.87	46.67	74.00	-27.33	Pass	Horizontal
1156.150	30.12	1.79	44.45	48.49	35.95	74.00	-38.05	Pass	Vertical
1541.476	30.95	2.34	43.95	48.62	37.96	74.00	-36.04	Pass	Vertical
4924.000	34.94	6.22	44.60	53.42	49.98	74.00	-24.02	Pass	Vertical
6594.518	36.21	7.29	44.56	49.05	47.99	74.00	-26.01	Pass	Vertical
7386.000	36.44	6.78	44.92	47.69	45.99	74.00	-28.01	Pass	Vertical
9848.000	38.14	7.19	45.53	45.49	45.29	74.00	-28.71	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2412MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1173.943	30.16	1.82	44.42	49.41	36.97	74.00	-37.03	Pass	Horizontal
1764.123	31.34	2.60	43.72	47.67	37.89	74.00	-36.11	Pass	Horizontal
4824.000	34.73	6.02	44.60	49.57	45.72	74.00	-28.28	Pass	Horizontal
6017.064	35.91	7.44	44.50	49.28	48.13	74.00	-25.87	Pass	Horizontal
7236.000	36.42	6.94	44.80	47.94	46.50	74.00	-27.50	Pass	Horizontal
9648.000	37.93	7.01	45.57	47.36	46.73	74.00	-27.27	Pass	Horizontal
1336.682	30.54	2.07	44.20	48.52	36.93	74.00	-37.07	Pass	Vertical
1759.638	31.33	2.59	43.72	47.40	37.60	74.00	-36.40	Pass	Vertical
4824.000	34.73	6.02	44.60	52.43	48.58	74.00	-25.42	Pass	Vertical
5806.408	35.76	7.25	44.52	48.67	47.16	74.00	-26.84	Pass	Vertical
7236.000	36.42	6.94	44.80	47.12	45.68	74.00	-28.32	Pass	Vertical
9648.000	37.93	7.01	45.57	46.36	45.73	74.00	-28.27	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2437MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1173.943	30.16	1.82	44.42	48.33	35.89	74.00	-38.11	Pass	Horizontal
1541.476	30.95	2.34	43.95	49.03	38.37	74.00	-35.63	Pass	Horizontal
4874.000	34.84	6.12	44.60	49.57	45.93	74.00	-28.07	Pass	Horizontal
6017.064	35.91	7.44	44.50	49.34	48.19	74.00	-25.81	Pass	Horizontal
7311.000	36.43	6.86	44.86	47.18	45.61	74.00	-28.39	Pass	Horizontal
9748.000	38.03	7.10	45.55	46.89	46.47	74.00	-27.53	Pass	Horizontal
1167.982	30.15	1.81	44.43	49.14	36.67	74.00	-37.33	Pass	Vertical
1814.218	31.42	2.65	43.67	48.66	39.06	74.00	-34.94	Pass	Vertical
4874.000	34.84	6.12	44.60	51.96	48.32	74.00	-25.68	Pass	Vertical
5821.207	35.77	7.26	44.52	49.20	47.71	74.00	-26.29	Pass	Vertical
7311.000	36.43	6.86	44.86	47.14	45.57	74.00	-28.43	Pass	Vertical
9748.000	38.03	7.10	45.55	47.03	46.61	74.00	-27.39	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)	Test Frequency: 2462MHz	Remark: Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1446.435	30.77	2.22	44.06	48.97	37.90	74.00	-36.10	Pass	Horizontal
1856.261	31.48	2.70	43.63	47.90	38.45	74.00	-35.55	Pass	Horizontal
4924.000	34.94	6.22	44.60	48.27	44.83	74.00	-29.17	Pass	Horizontal
5986.509	35.89	7.43	44.50	49.34	48.16	74.00	-25.84	Pass	Horizontal
7386.000	36.44	6.78	44.92	48.12	46.42	74.00	-27.58	Pass	Horizontal
9848.000	38.14	7.19	45.53	48.01	47.81	74.00	-26.19	Pass	Horizontal
1270.334	30.39	1.97	44.29	48.59	36.66	74.00	-37.34	Pass	Vertical
1828.125	31.44	2.67	43.66	48.99	39.44	74.00	-34.56	Pass	Vertical
4924.000	34.94	6.22	44.60	52.37	48.93	74.00	-25.07	Pass	Vertical
6032.401	35.92	7.43	44.50	49.45	48.30	74.00	-25.70	Pass	Vertical
7386.000	36.44	6.78	44.92	48.03	46.33	74.00	-27.67	Pass	Vertical
9848.000	38.14	7.19	45.53	47.20	47.00	74.00	-27.00	Pass	Vertical

Note:
1) Through Pre-scan transmitting mode and charge+transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbpsof rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20), and then Only the worst case is recorded in the report.
2) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading - Correct Factor
Correct Factor = Preamplifier Factor– Antenna Factor–Cable Factor

3) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test Model No.: RWOLSPv1

Radiated spurious emission Test Setup-1(Below 1GHz)

Radiated spurious emission Test Setup-2(Below 30M)

Radiated spurious emission Test Setup-3(Above 1GHz)

Conducted Emissions Test Setup

PHOTOGRAPHS OF EUT Constructional Details

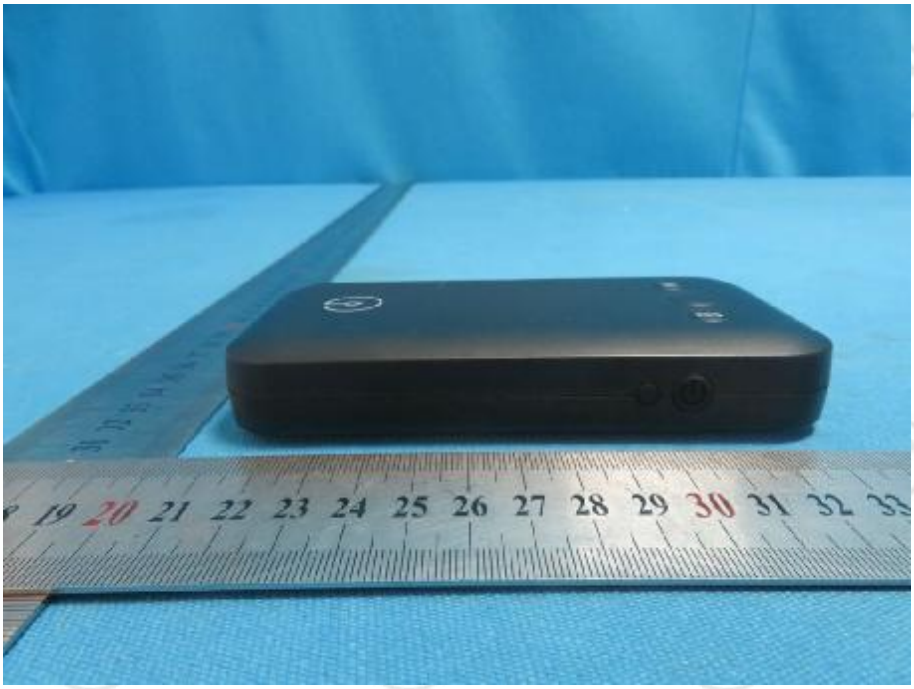
Test model No.: RWOLSPv1

View of Product-1

View of Product-2

View of Product-3

View of Product-4



View of Product-5

View of Product-6

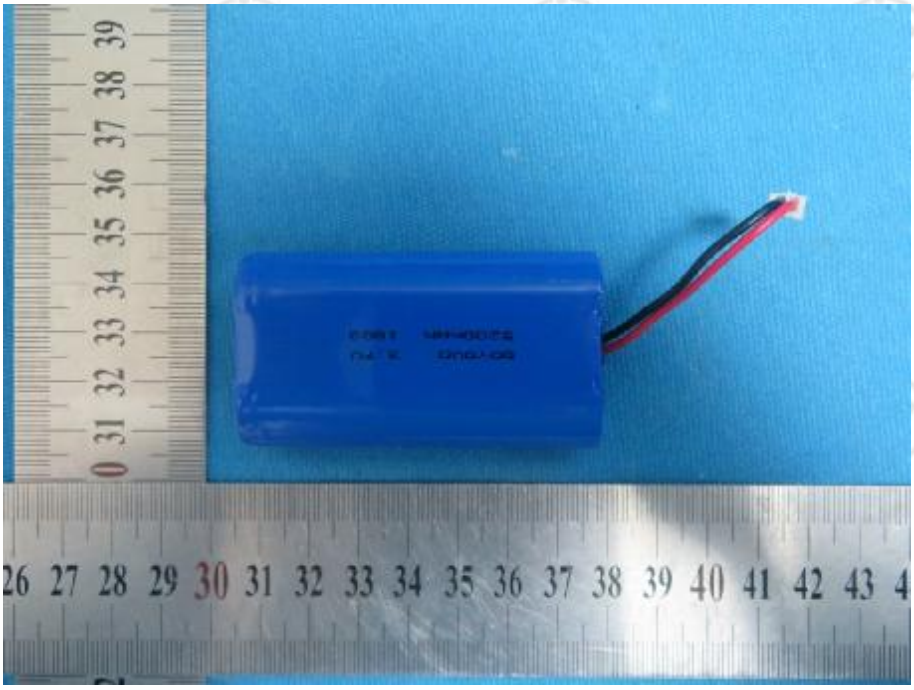
View of Product-7

View of Product-8

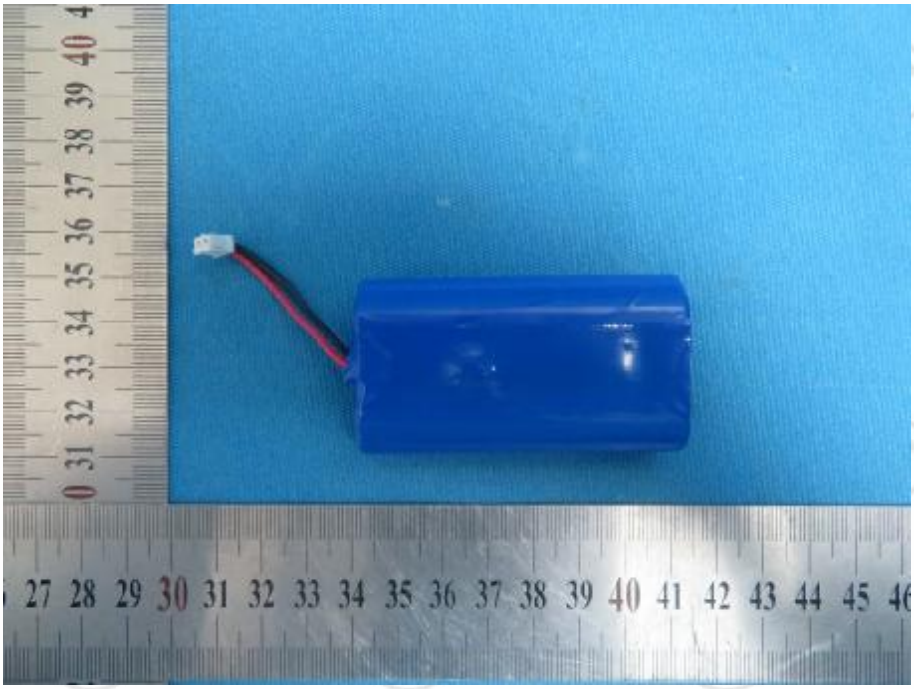
View of Product-9

View of Product-10

View of Product-11

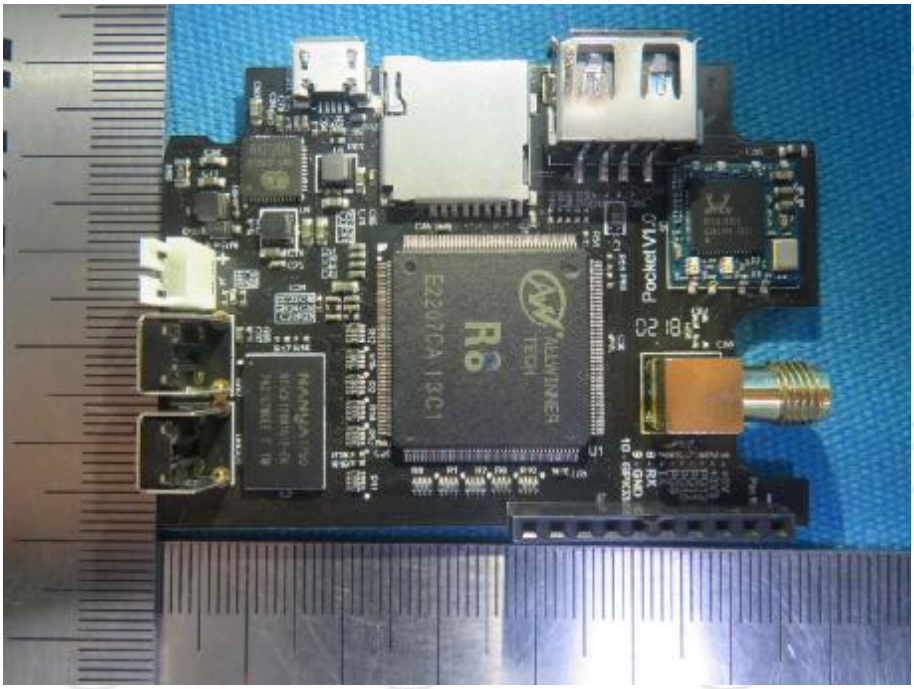


View of Product-12



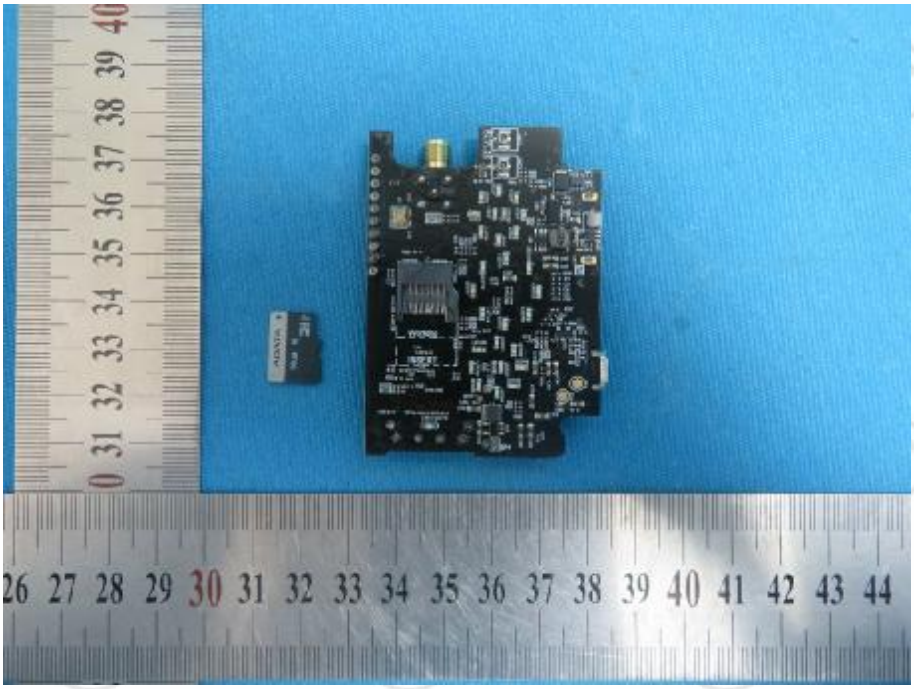
View of Product-13

View of Product-14

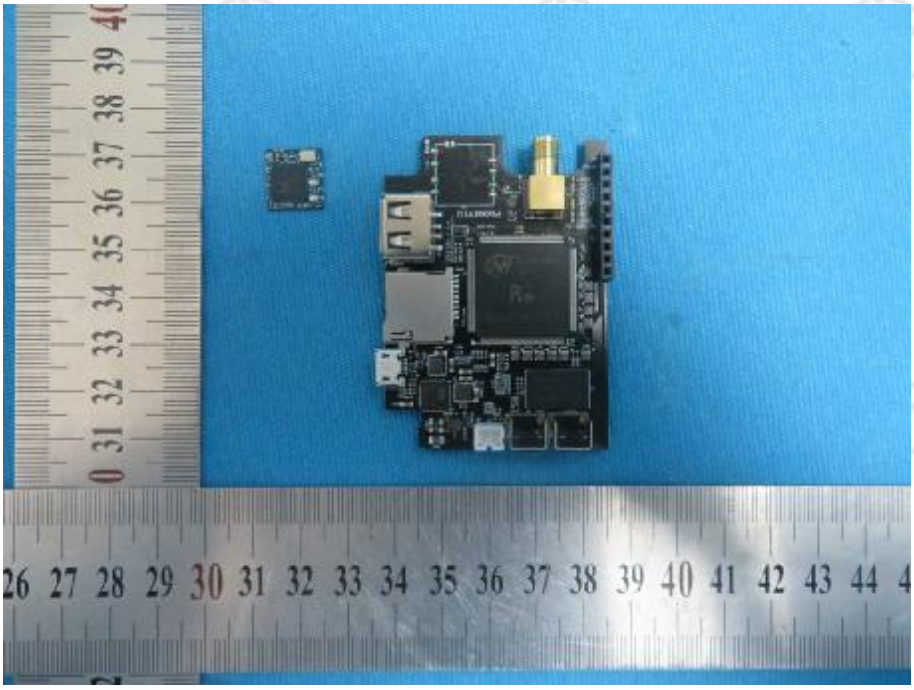


View of Product-15

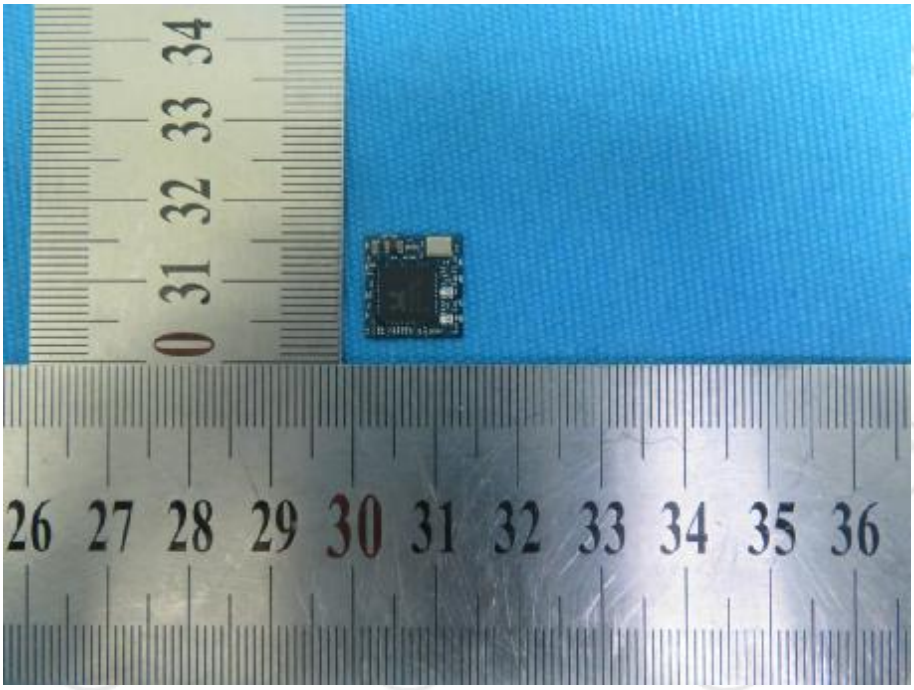
View of Product-16



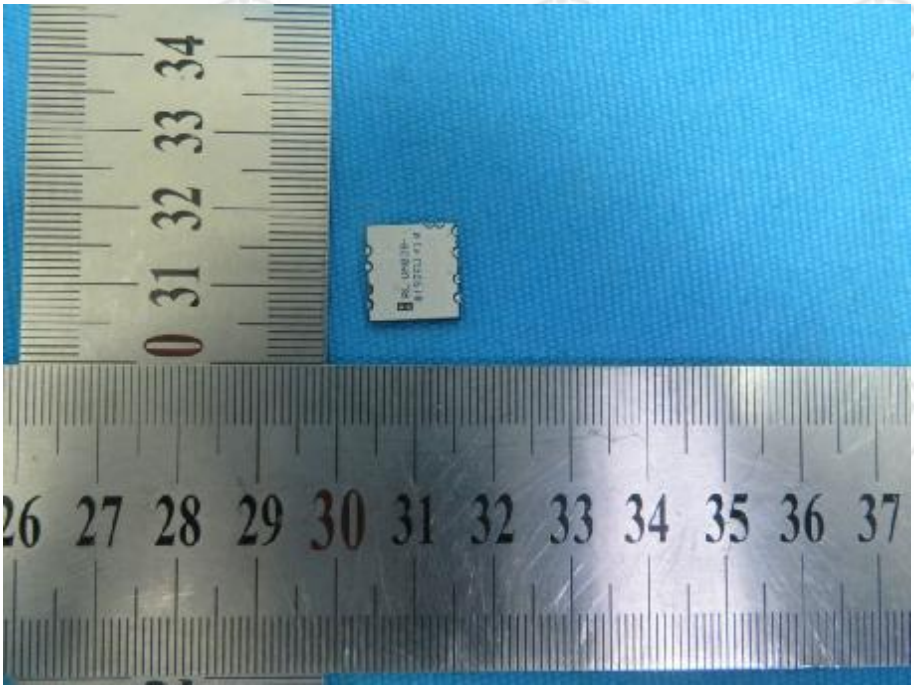
View of Product-17



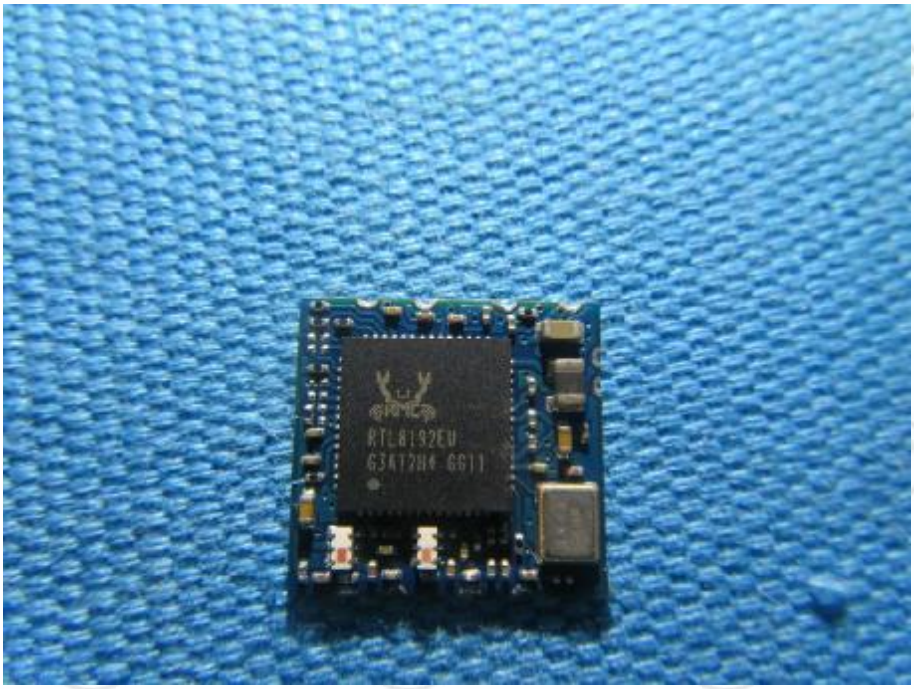
View of Product-18



View of Product-19



View of Product-20



View of Product-21

*** End of Report ***

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CTI, this report can't be reproduced except in full.