

TEST REPORT

Product Name : Toucan Surveillance Kit 2.0
Trade mark : Toucan
Model/Type reference : TC200KU
Serial Number : N/A
Report Number : EED32I00271802
FCC ID : 2ABT4TC200KU
Date of Issue : Dec. 27, 2016
Test Standards : 47 CFR Part 15 Subpart C (2015)
Test result : PASS

Prepared for:

Sky Light Imaging Limited
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Prepared by:

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Date:

Dec. 27, 2016

Check No.: 2457551382



2 Version

Version No.	Date	Description
00	Dec. 27, 2016	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/ KDB 558074 D01v03r05	PASS
6dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.247 (a)(2)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
Power Spectral Density	47 CFR Part 15 Subpart C Section 15.247 (e)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v03r05	PASS
RF Conducted Spurious Emissions	47 CFR Part 15 Subpart C Section 15.247(d)	ANSI C63.10-2013/ KDB 558074 D01v03r05	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 and the sample information are provided by the client.

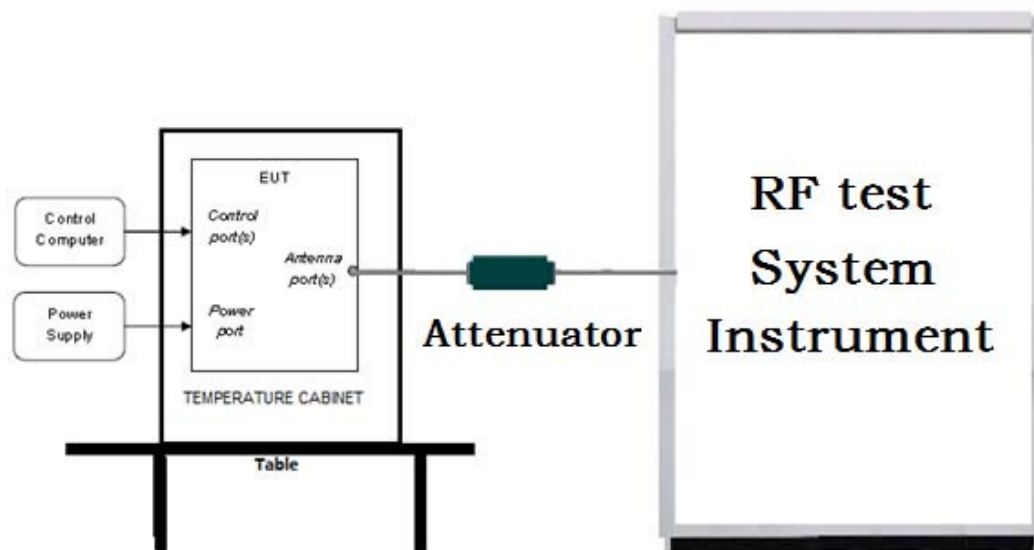
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5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

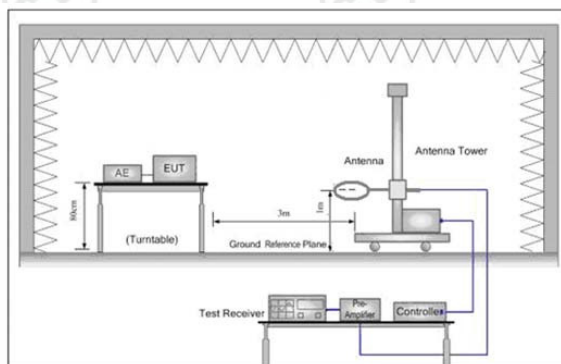


Figure 1. Below 30MHz

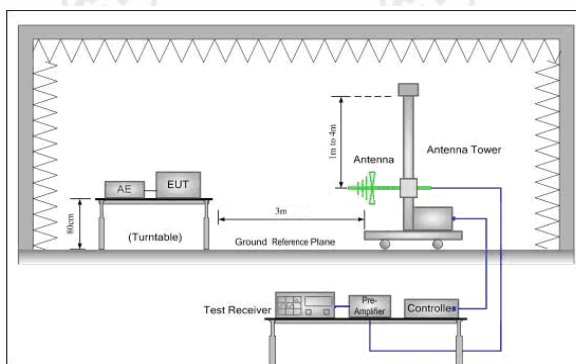


Figure 2. 30MHz to 1GHz

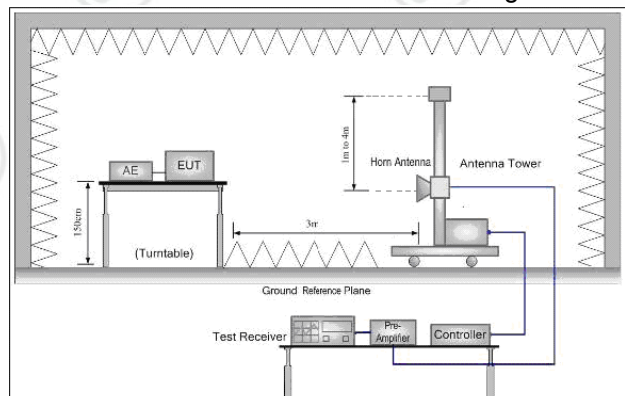
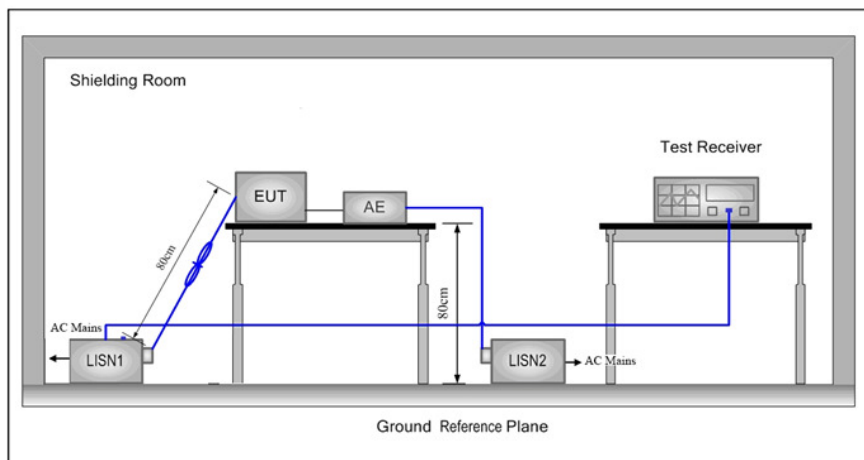


Figure 3. Above 1GHz

5.1.3 For Conducted Emissions test setup

Conducted Emissions setup



5.2 Test Environment

Operating Environment:	
Temperature:	22°C
Humidity:	53% RH
Atmospheric Pressure:	1010 mbar

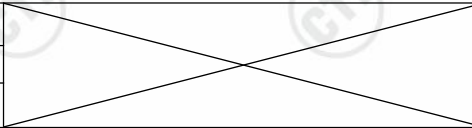
5.3 Test Condition

Test channel:

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

Test mode:

Pre-scan under all rate at lowest channel 1

Scan under all rate at 1000000 channel								
Mode	802.11b							
Data Rate	1Mbps	2Mbps	5.5Mbps	11Mbps				
Power(dBm)	16.55	16.71	16.74	16.80				
Mode	802.11g							
Data Rate	6Mbps	9Mbps	12Mbps	18Mbps	24Mbps	36Mbps	48Mbps	54Mbps
Power(dBm)	15.18	15.14	15.13	15.10	15.09	15.07	15.03	15.00
Mode	802.11n (HT20)							
Data Rate	6.5Mbps	13Mbps	19.5Mbps	26Mbps	39Mbps	52Mbps	58.5Mbps	65Mbps
Power(dBm)	15.82	15.81	15.76	15.72	15.71	15.67	15.61	15.44
Mode	802.11n (HT40)							
Data Rate	13.5Mbps	27Mbps	40.5Mbps	54Mbps	81Mbps	108Mbps	121.5Mbps	135Mbps
Power(dBm)	15.12	15.11	15.09	15.05	15.03	15.02	15.00	14.98

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

6 General Information

6.1 Client Information

Applicant:	Sky Light Imaging Limited
Address of Applicant:	Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong
Manufacturer:	Sky Light Imaging Limited
Address of Manufacturer:	Rm. 1009 Kwong Sang Hong Centre, 151-153 Hoi Bun Road, Kwun Tong, Kowloon, Hong Kong
Factory:	Sky Light Electronic (ShenZhen) Limited
Address of Factory:	No.1,5 and 6 Building, JinBi Industrial Area,HuangTian, BaoAn, Shenzhen, China.

6.2 General Description of EUT

Product Name:	Toucan Surveillance Kit 2.0
Model No.:	TC200KU
Test Model No.:	TC200KU
Trade Mark:	Toucan
EUT Supports Radios application:	Bluetooth V4.0: 2402-2480MHz, Wlan 2.4GHz 802.11b/g/n(HT20): 2412MHz ~2462 MHz 5G: U-NII-1: 5.15-5.25GHz; U-NII-2A: 5.250-5.350GHz; U-NII-2C: 5.470-5.725GHz; U-NII-3: 5.725-5.850GHz; 802.11a; 802.11n(20MHz/40MHz); 802.11ac(20MHz/40MHz/80MHz)
Power Supply:	DC 5V, 1A
Sample Received Date:	Oct. 23, 2016
Sample tested Date:	Oct. 23, 2016 to Dec. 27, 2016

6.3 Product Specification subjective to this standard

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Channel Numbers:	IEEE 802.11b/g, IEEE 802.11n HT20: 11 Channels IEEE 802.11n HT40: 7 Channels
Channel Separation:	5MHz
Type of Modulation:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g :OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK,BPSK)
Test Power Grade:	N/A (manufacturer declare)
Test Software of EUT:	Secure GRT (manufacturer declare)
Antenna Type and Gain:	PIFA Antenna
Antenna Gain:	3dBi
Test Voltage:	AC 120V/60Hz

Operation Frequency each of channel(802.11b/g/n HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

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

6.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Certification	Supplied by
Toucan smart socket	Sky Light Imaging	TS100WU	FCC ID	Client

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.

6.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 886427

Centre Testing International Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 886427.

IC-Registration No.: 7408A-2

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A-2 .

IC-Registration No.: 7408B-1

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B-1.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 & 10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard Conditions

None.

6.9 Other Information Requested by the Customer

None.

6.10 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	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Communication test set test set	Agilent	N4010A	MY51400230	04-01-2016	03-31-2017
Spectrum Analyzer	Keysight	N9010A	MY54510339	04-01-2016	03-31-2017
Signal Generator	Keysight	N5182B	MY53051549	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
DC Power	Keysight	E3642A	MY54436035	04-01-2016	03-31-2017
PC-1	Lenovo	R4960d	---	04-01-2016	03-31-2017
BT&Wi-Fi Automatic control	R&S	OSPB157	101374	04-01-2015	03-31-2016
RF control unit	JS Tonscend	JS0806-2	2015860006	04-01-2015	03-31-2016
BT&Wi-Fi Automatic test software	JS Tonscend	JSTS1120-2	---	04-01-2015	03-31-2016

Conducted disturbance Test					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Receiver	R&S	ESCI	100009	06-16-2016	06-15-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
LISN	R&S	ENV216	100098	06-16-2016	06-15-2017
LISN	schwarzbeck	NNLK8121	8121-529	06-16-2016	06-15-2017
Voltage Probe	R&S	ESH2-Z3	--	07-09-2014	07-07-2017
Current Probe	R&S	EZ17	100106	06-16-2016	06-15-2017
ISN	TESEQ GmbH	ISN T800	30297	01-29-2015	01-27-2017

3M Semi/full-anechoic Chamber					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-05-2016	06-05-2019
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-484	05-23-2016	05-22-2017
Microwave Preamplifier	Agilent	8449B	3008A02425	02-04-2016	02-03-2017
Horn Antenna	ETS-LINDGREN	3117	00057410	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Microwave Preamplifier	A.H.SYSTEMS	PAP-1840-60	6041.6042	06-30-2015	06-28-2018
Horn Antenna	A.H.SYSTEMS	SAS-574	374	06-30-2015	06-28-2018
Spectrum Analyzer	R&S	FSP40	100416	06-16-2016	06-15-2017
Receiver	R&S	ESCI	100435	06-16-2016	06-15-2017
Multi device Controller	maturo	NCD/070/1071 1112	---	01-12-2016	01-11-2017
LISN	schwarzbeck	NNBM8125	81251547	06-16-2016	06-15-2017
LISN	schwarzbeck	NNBM8125	81251548	06-16-2016	06-15-2017
Signal Generator	Agilent	E4438C	MY45095744	04-01-2016	03-31-2017
Signal Generator	Keysight	E8257D	MY53401106	04-01-2016	03-31-2017
Temperature/ Humidity Indicator	TAYLOR	1451	1905	04-27-2016	04-26-2017
Communication test set	Agilent	E5515C	GB47050534	04-01-2016	03-31-2017
Cable line	Fulai(7M)	SF106	5219/6A	01-12-2016	01-11-2017
Cable line	Fulai(6M)	SF106	5220/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5216/6A	01-12-2016	01-11-2017
Cable line	Fulai(3M)	SF106	5217/6A	01-12-2016	01-11-2017
Communication test set	R&S	CMW500	152394	04-01-2016	03-31-2017
High-pass filter	Sinoscite	FL3CX03WG1 8NM12-0398-002	---	01-12-2016	01-11-2017
High-pass filter	MICRO-TRONICS	SPA-F-63029-4	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA09 CL12-0395-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX01CA08 CL12-0393-001	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA04 CL12-0396-002	---	01-12-2016	01-11-2017
band rejection filter	Sinoscite	FL5CX02CA03 CL12-0394-001	---	01-12-2016	01-11-2017

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 Unlicensed Wireless Devices
3	KDB 558074 D01 v03r05	DTS Meas Guidance

Test Results List:

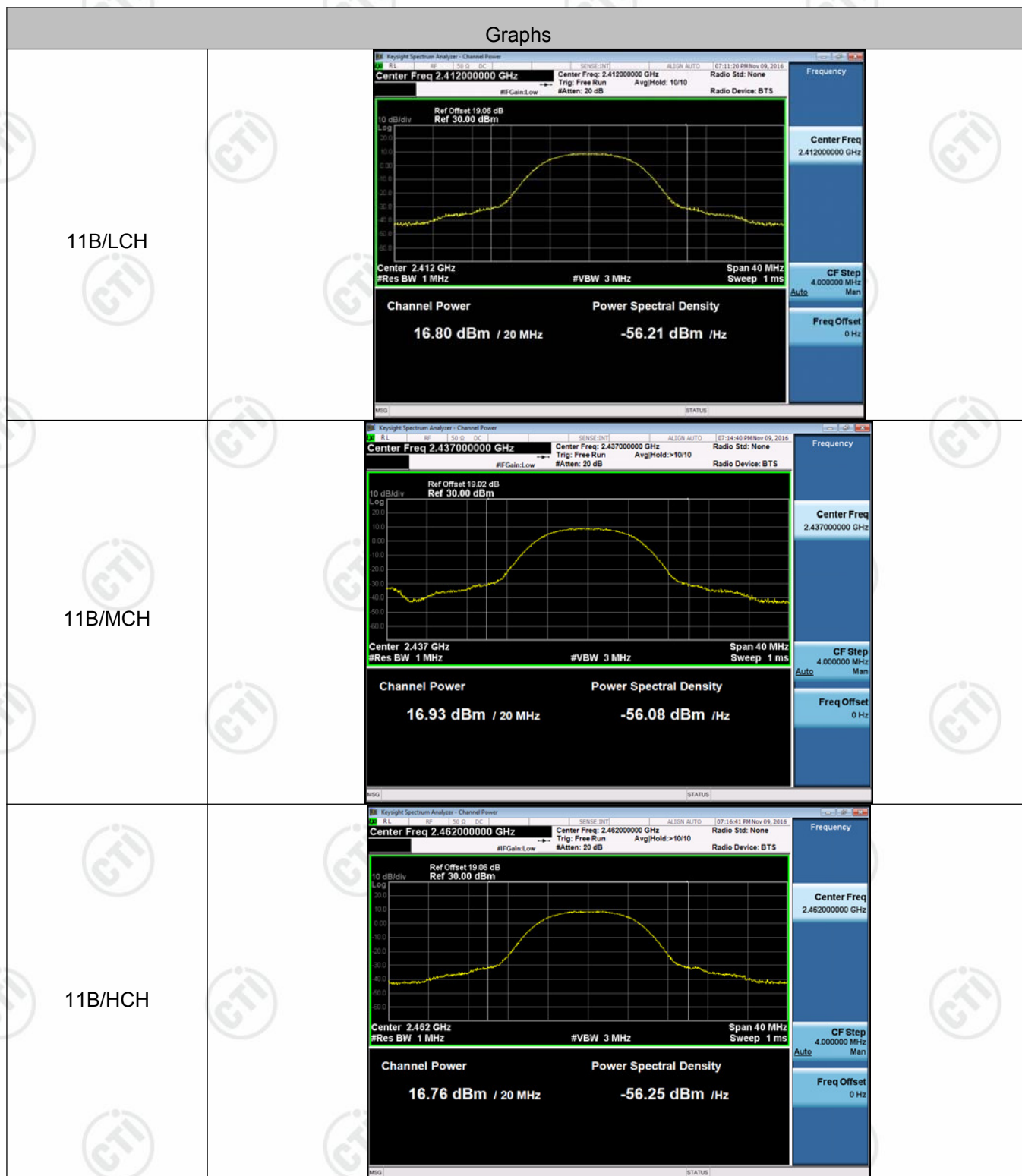
Test Requirement	Test method	Test item	Verdict	Note
Part15C Section 15.247 (b)(3)	ANSI C63.10/ KDB 558074	Conducted Peak Output Power	PASS	Appendix A)
Part15C Section 15.247 (a)(2)	ANSI C63.10/ KDB 558074	6dB Occupied Bandwidth	PASS	Appendix B)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	Band-edge for RF Conducted Emissions	PASS	Appendix C)
Part15C Section 15.247(d)	ANSI C63.10/ KDB 558074	RF Conducted Spurious Emissions	PASS	Appendix D)
Part15C Section 15.247 (e)	ANSI C63.10/ KDB 558074	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)

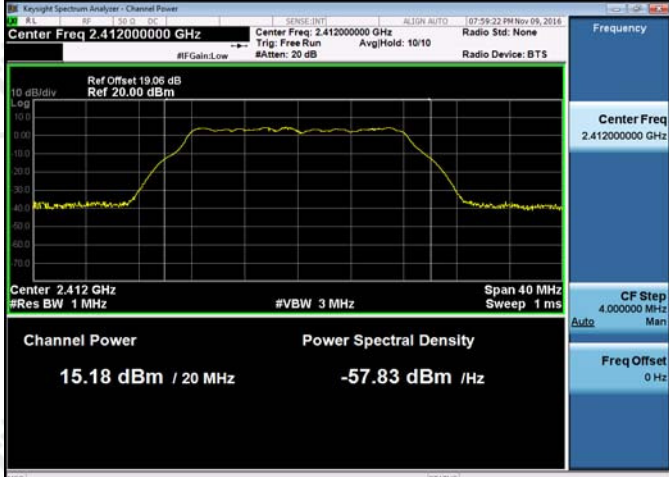
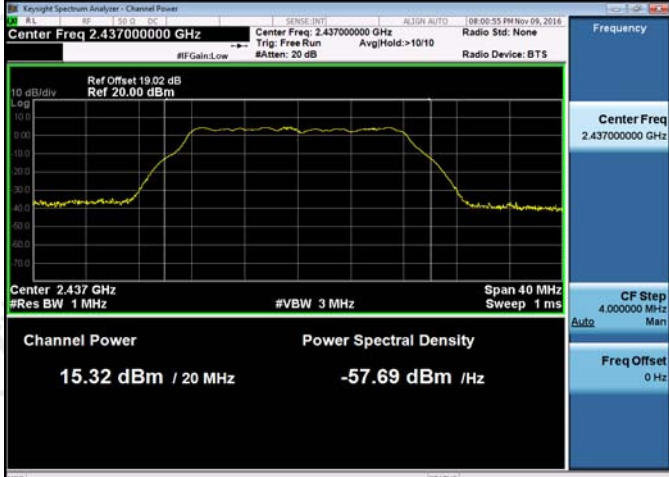
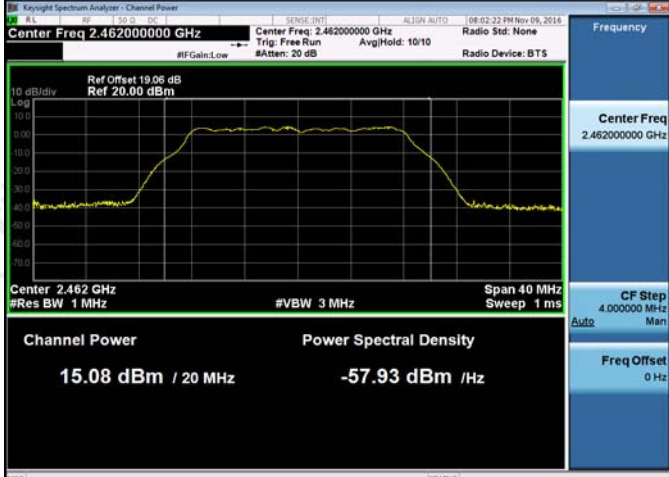
Appendix A): Conducted Peak Output Power

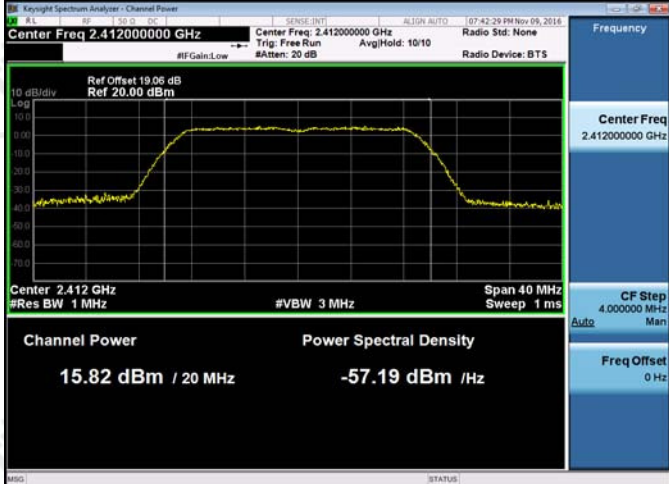
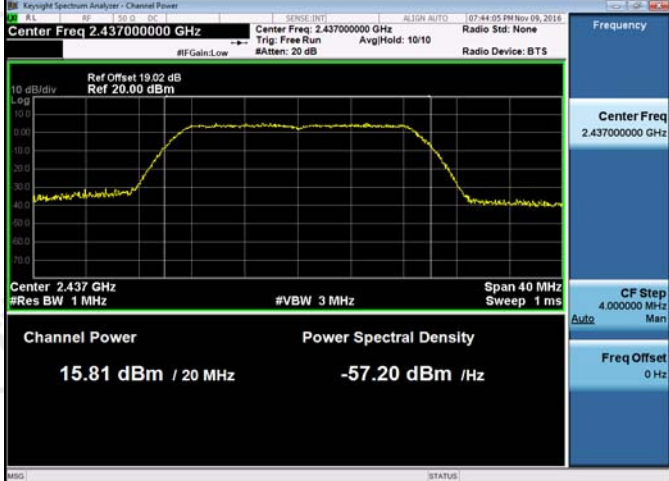
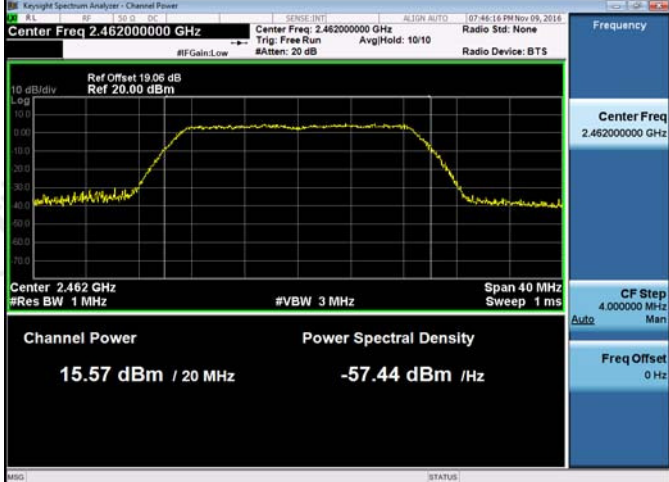
Result Table

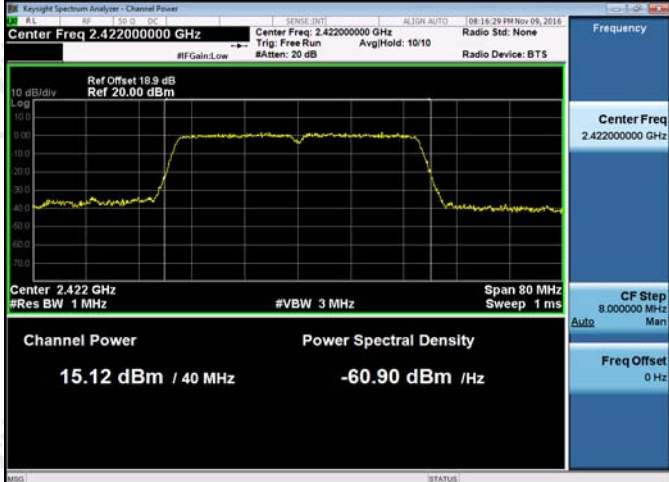
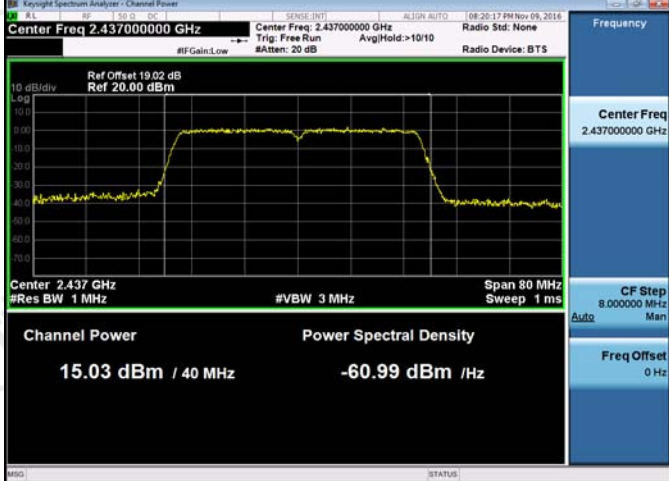
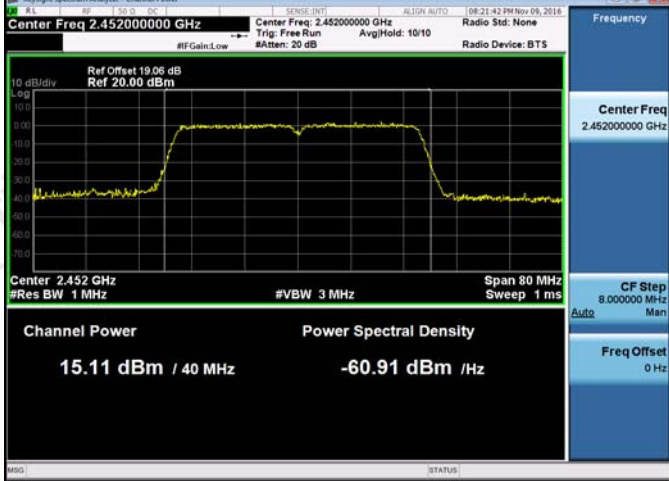
Mode	Channel	Conducted Peak Output Power [dBm]	Verdict	Remark
11B	LCH	16.80	PASS	RMS detector
11B	MCH	16.93	PASS	
11B	HCH	16.76	PASS	
11G	LCH	15.18	PASS	
11G	MCH	15.32	PASS	
11G	HCH	15.08	PASS	
11N20SISO	LCH	15.82	PASS	
11N20SISO	MCH	15.81	PASS	
11N20SISO	HCH	15.57	PASS	
11N40SISO	LCH	15.12	PASS	
11N40SISO	MCH	15.03	PASS	
11N40SISO	HCH	15.11	PASS	

Test Graph



11G/LCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Device: BTS Ref Offset 19.06 dB Ref 20.00 dBm Center 2.412 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 1 ms Channel Power 15.18 dBm / 20 MHz Power Spectral Density -57.83 dBm / Hz Frequency Center Freq 2.412000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11G/MCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Device: BTS Ref Offset 19.02 dB Ref 20.00 dBm Center 2.437 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 1 ms Channel Power 15.32 dBm / 20 MHz Power Spectral Density -57.69 dBm / Hz Frequency Center Freq 2.437000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11G/HCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Device: BTS Ref Offset 19.06 dB Ref 20.00 dBm Center 2.462 GHz #Res BW 1 MHz #VBW 3 MHz Span 40 MHz Sweep 1 ms Channel Power 15.08 dBm / 20 MHz Power Spectral Density -57.93 dBm / Hz Frequency Center Freq 2.462000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

11N20SISO/LCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Radio Std: None Trig: Free Run Avg/Hold: 10/10 #IFGain: Low #Atten: 20 dB Radio Device: BTS Ref Offset 19.06 dB Ref 20.00 dBm 10 dB/div Log Center 2.412 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 1 ms Channel Power Power Spectral Density 15.82 dBm / 20 MHz -57.19 dBm / Hz Frequency Center Freq 2.412000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/MCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Radio Std: None Trig: Free Run Avg/Hold: 10/10 #IFGain: Low #Atten: 20 dB Radio Device: BTS Ref Offset 19.02 dB Ref 20.00 dBm 10 dB/div Log Center 2.437 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 1 ms Channel Power Power Spectral Density 15.81 dBm / 20 MHz -57.20 dBm / Hz Frequency Center Freq 2.437000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	 Keyight Spectrum Analyzer - Channel Power Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Radio Std: None Trig: Free Run Avg/Hold: 10/10 #IFGain: Low #Atten: 20 dB Radio Device: BTS Ref Offset 19.06 dB Ref 20.00 dBm 10 dB/div Log Center 2.462 GHz Span 40 MHz #Res BW 1 MHz #VBW 3 MHz Sweep 1 ms Channel Power Power Spectral Density 15.57 dBm / 20 MHz -57.44 dBm / Hz Frequency Center Freq 2.462000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

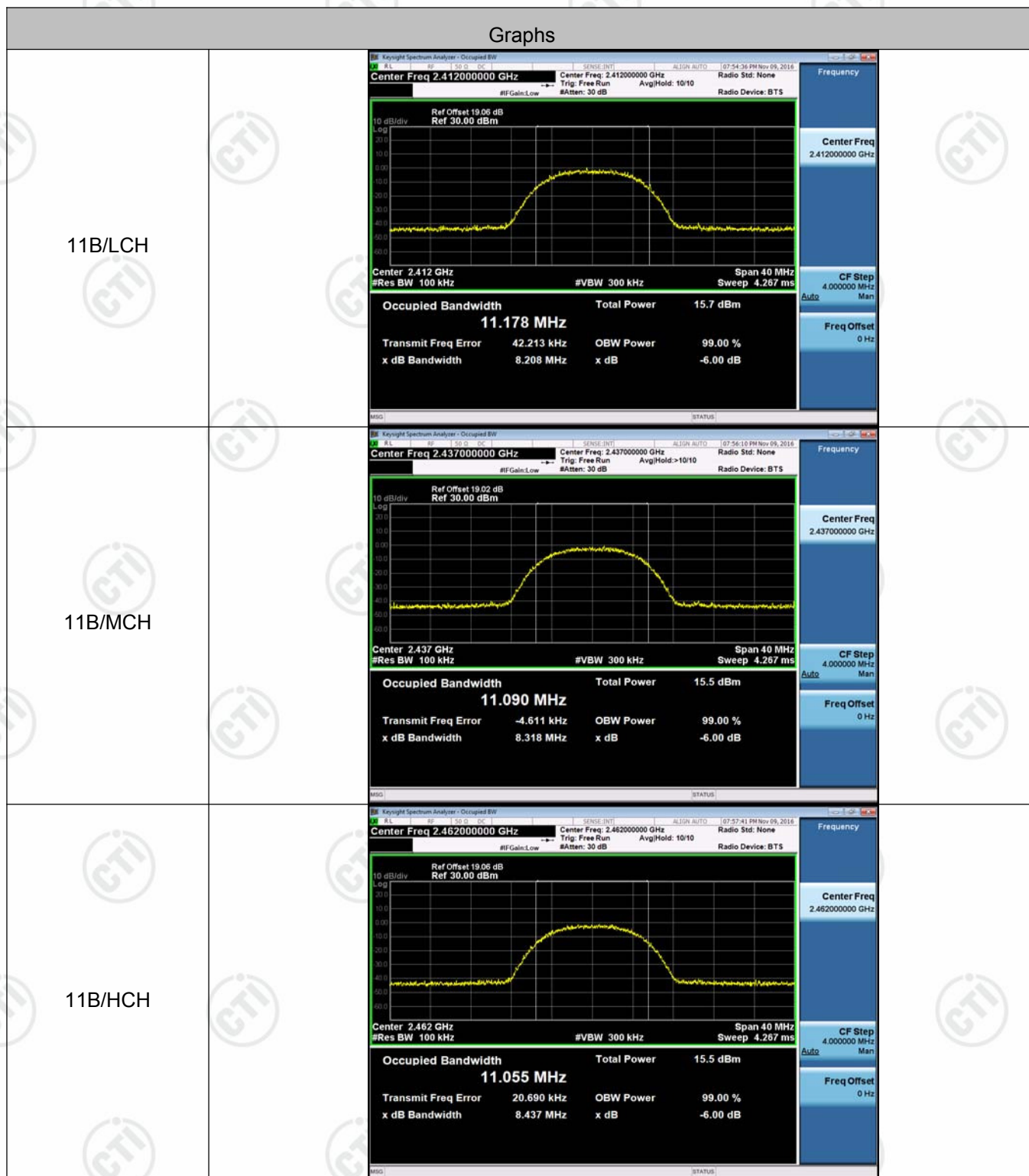
11N40SISO/LCH	 Keysight Spectrum Analyzer - Channel Power Center Freq 2.422000000 GHz Ref Offset 19.9 dB Ref 20.00 dBm Channel Power: 15.12 dBm / 40 MHz Power Spectral Density: -60.90 dBm / Hz
11N40SISO/MCH	 Keysight Spectrum Analyzer - Channel Power Center Freq 2.437000000 GHz Ref Offset 19.02 dB Ref 20.00 dBm Channel Power: 15.03 dBm / 40 MHz Power Spectral Density: -60.99 dBm / Hz
11N40SISO/HCH	 Keysight Spectrum Analyzer - Channel Power Center Freq 2.452000000 GHz Ref Offset 19.06 dB Ref 20.00 dBm Channel Power: 15.11 dBm / 40 MHz Power Spectral Density: -60.91 dBm / Hz

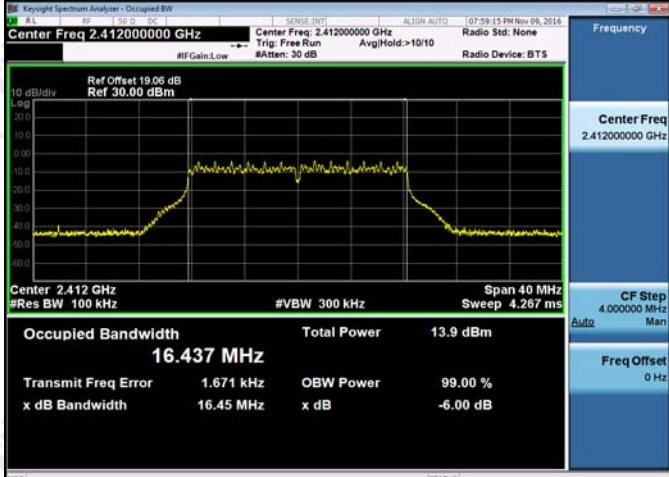
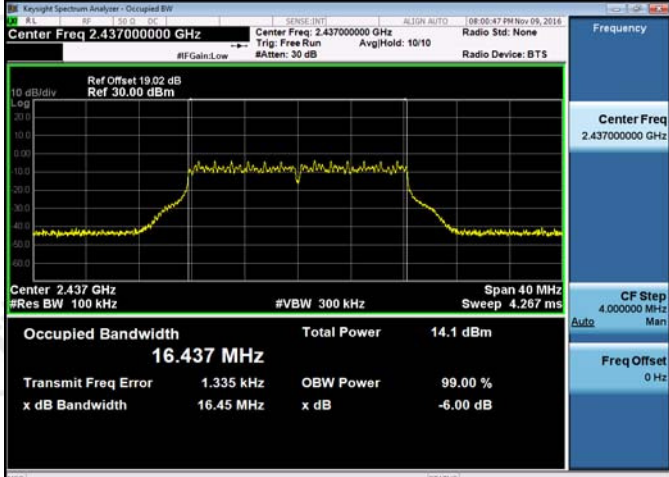
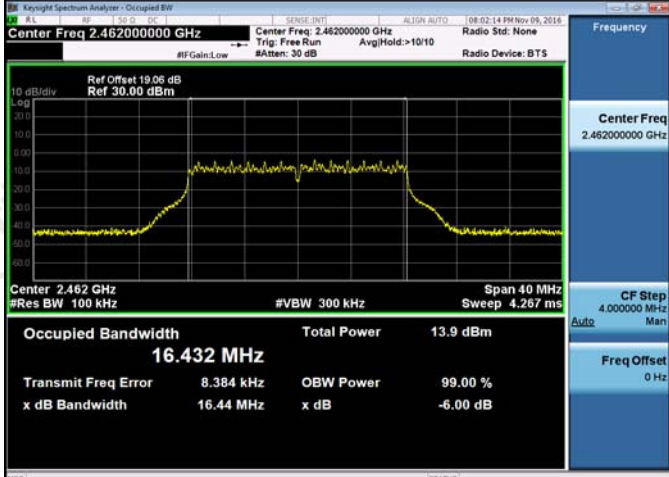
Appendix B): 6dB Occupied Bandwidth

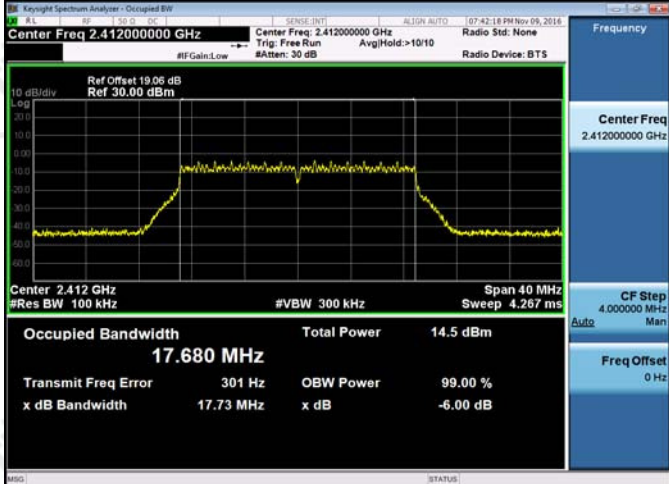
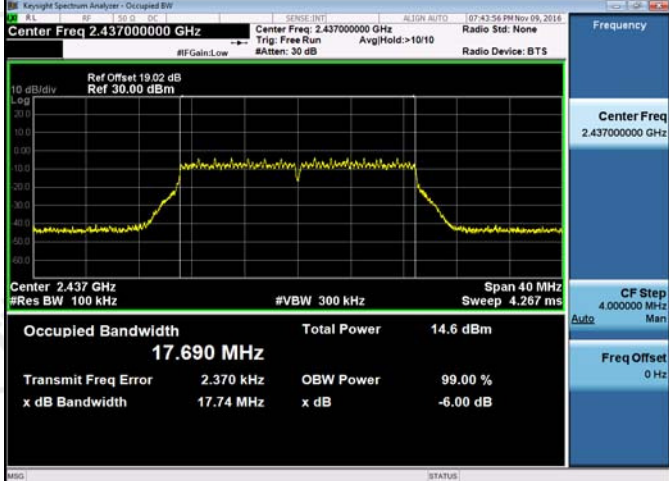
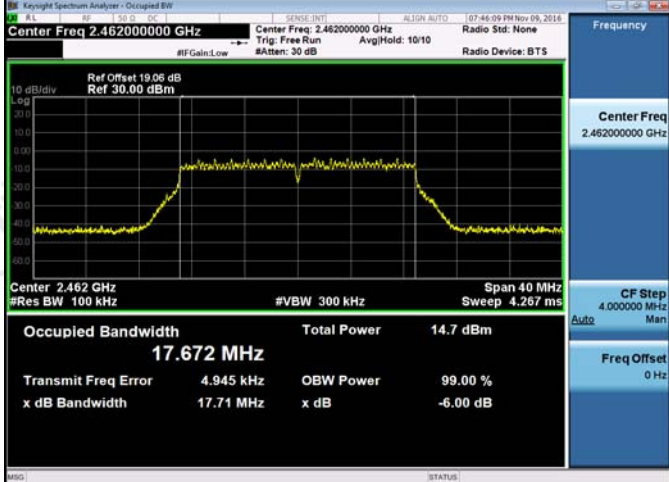
Result Table

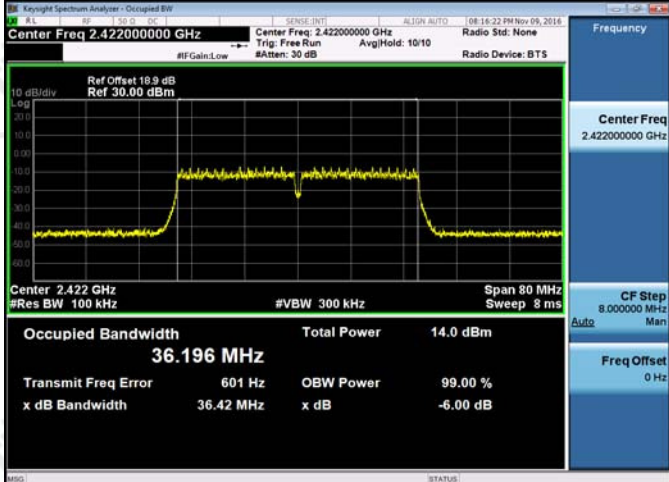
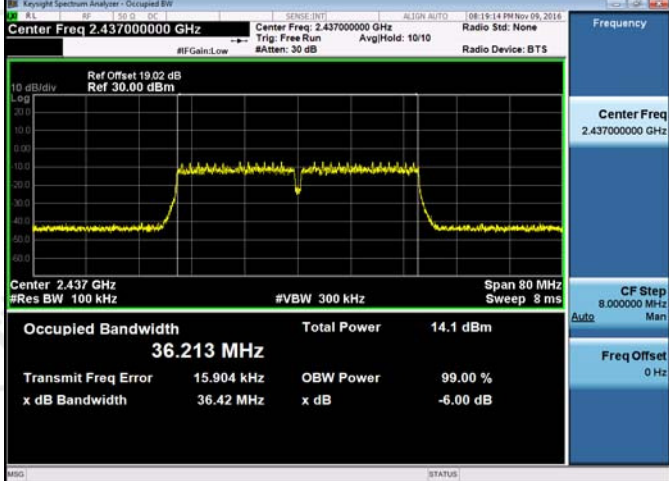
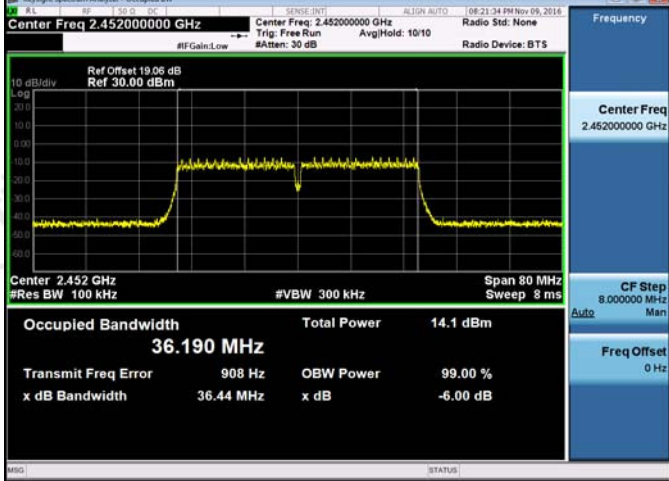
Mode	Channel	6dB Bandwidth [MHz]	99% OBW [MHz]	Verdict	Remark
11B	LCH	8.208	11.178	PASS	Peak detector
11B	MCH	8.318	11.090	PASS	
11B	HCH	8.437	11.055	PASS	
11G	LCH	16.45	16.437	PASS	
11G	MCH	16.45	16.437	PASS	
11G	HCH	16.44	16.432	PASS	
11N20SISO	LCH	17.73	17.680	PASS	
11N20SISO	MCH	17.74	17.690	PASS	
11N20SISO	HCH	17.71	17.672	PASS	
11N40SISO	LCH	36.42	36.196	PASS	
11N40SISO	MCH	36.42	36.213	PASS	
11N40SISO	HCH	36.44	36.190	PASS	

Test Graph



11G/LCH	 Keygraph Spectrum Analyzer - Occupied BW Center Freq 2.41200000 GHz Center Freq: 2.41200000 GHz Trig: Free Run Avg/Hold: >10/10 Radio Device: BTS Ref Offset 19.06 dB Ref 30.00 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 16.437 MHz Total Power 13.9 dBm Transmit Freq Error 1.671 kHz OBW Power 99.00 % x dB Bandwidth 16.45 MHz x dB -6.00 dB
11G/MCH	 Keygraph Spectrum Analyzer - Occupied BW Center Freq 2.43700000 GHz Center Freq: 2.43700000 GHz Trig: Free Run Avg/Hold: >10/10 Radio Device: BTS Ref Offset 19.02 dB Ref 30.00 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 16.437 MHz Total Power 14.1 dBm Transmit Freq Error 1.335 kHz OBW Power 99.00 % x dB Bandwidth 16.45 MHz x dB -6.00 dB
11G/HCH	 Keygraph Spectrum Analyzer - Occupied BW Center Freq 2.46200000 GHz Center Freq: 2.46200000 GHz Trig: Free Run Avg/Hold: >10/10 Radio Device: BTS Ref Offset 19.06 dB Ref 30.00 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 16.432 MHz Total Power 13.9 dBm Transmit Freq Error 8.384 kHz OBW Power 99.00 % x dB Bandwidth 16.44 MHz x dB -6.00 dB

11N20SISO/LCH	 Key: Knight Spectrum Analyzer - Occupied BW Center Freq 2.412000000 GHz Center Freq: 2.412000000 GHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 19.06 dB Ref 30.00 dBm Center 2.412 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 17.680 MHz Total Power 14.5 dBm Transmit Freq Error 301 Hz OBW Power 99.00 % x dB Bandwidth 17.73 MHz x dB -6.00 dB Frequency Center Freq 2.412000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/MCH	 Key: Knight Spectrum Analyzer - Occupied BW Center Freq 2.437000000 GHz Center Freq: 2.437000000 GHz Trig: Free Run Avg/Hold: >10/10 Radio Std: None Radio Device: BTS Ref Offset 19.02 dB Ref 30.00 dBm Center 2.437 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 17.690 MHz Total Power 14.6 dBm Transmit Freq Error 2.370 kHz OBW Power 99.00 % x dB Bandwidth 17.74 MHz x dB -6.00 dB Frequency Center Freq 2.437000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	 Key: Knight Spectrum Analyzer - Occupied BW Center Freq 2.462000000 GHz Center Freq: 2.462000000 GHz Trig: Free Run Avg/Hold: 10/10 Radio Std: None Radio Device: BTS Ref Offset 19.06 dB Ref 30.00 dBm Center 2.462 GHz #Res BW 100 kHz #VBW 300 kHz Span 40 MHz Sweep 4.267 ms Occupied Bandwidth 17.672 MHz Total Power 14.7 dBm Transmit Freq Error 4.945 kHz OBW Power 99.00 % x dB Bandwidth 17.71 MHz x dB -6.00 dB Frequency Center Freq 2.462000000 GHz CF Step 4.000000 MHz Auto Man Freq Offset 0 Hz

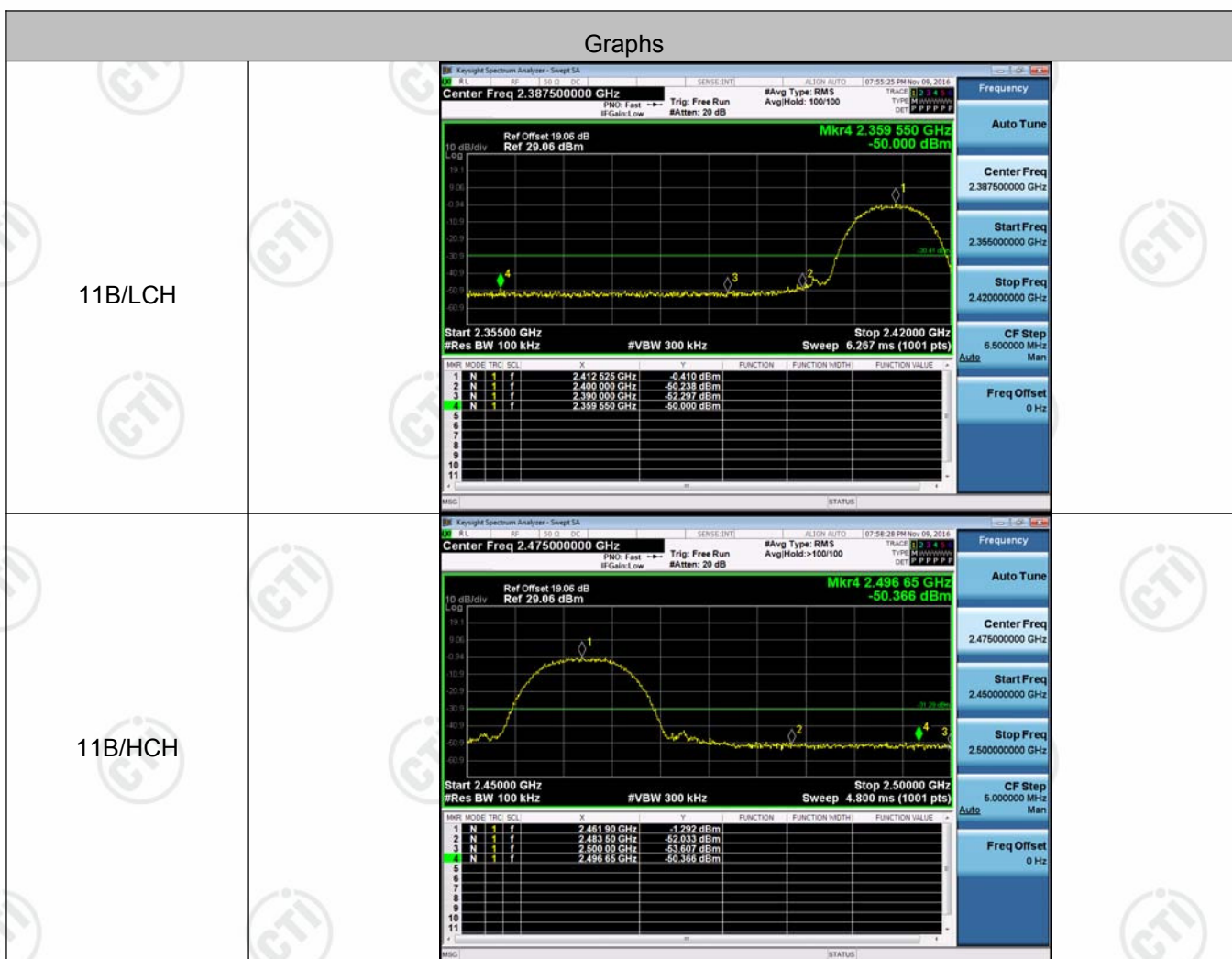
11N40SISO/LCH	 Center Freq 2.42200000 GHz Center Freq 2.42200000 GHz CF Step 8.000000 MHz Freq Offset 0 Hz Occupied Bandwidth 36.196 MHz Total Power 14.0 dBm Transmit Freq Error 601 Hz OBW Power 99.00 % x dB Bandwidth 36.42 MHz x dB -6.00 dB
11N40SISO/MCH	 Center Freq 2.43700000 GHz Center Freq 2.43700000 GHz CF Step 8.000000 MHz Freq Offset 0 Hz Occupied Bandwidth 36.213 MHz Total Power 14.1 dBm Transmit Freq Error 15.904 kHz OBW Power 99.00 % x dB Bandwidth 36.42 MHz x dB -6.00 dB
11N40SISO/HCH	 Center Freq 2.45200000 GHz Center Freq 2.45200000 GHz CF Step 8.000000 MHz Freq Offset 0 Hz Occupied Bandwidth 36.190 MHz Total Power 14.1 dBm Transmit Freq Error 908 Hz OBW Power 99.00 % x dB Bandwidth 36.44 MHz x dB -6.00 dB

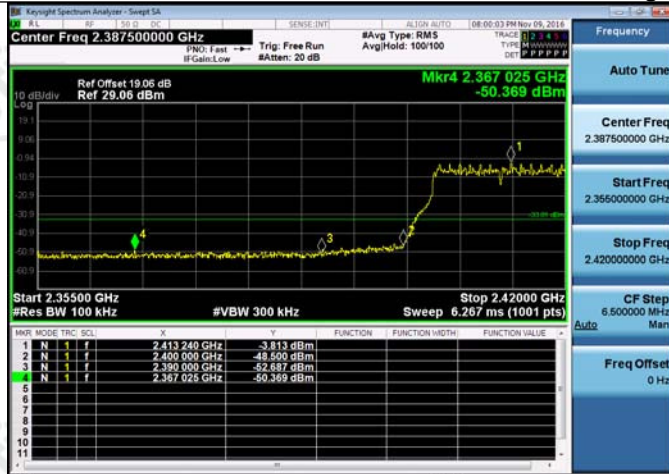
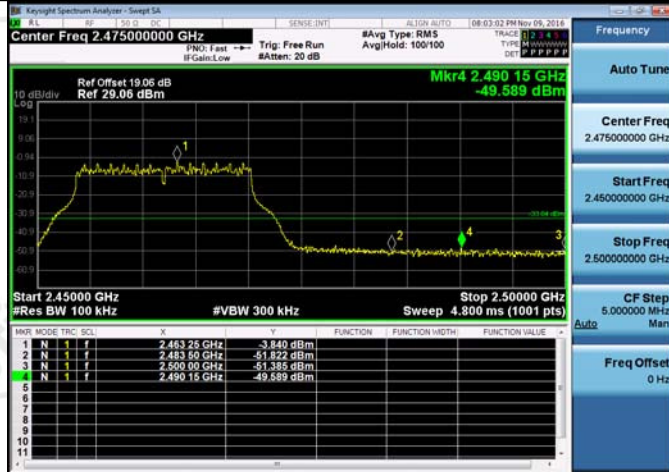
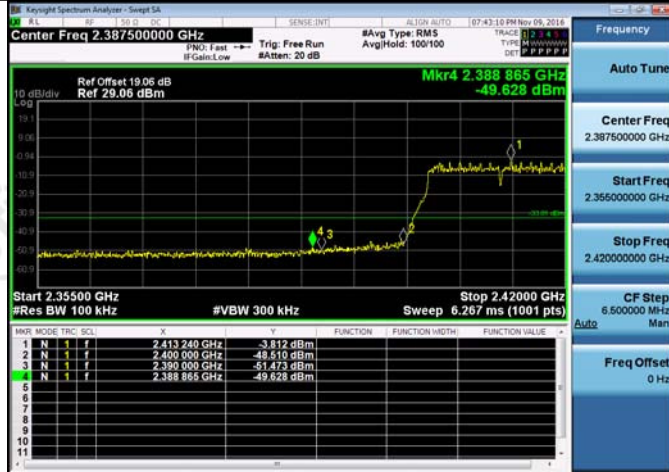
Appendix C): Band-edge for RF Conducted Emissions

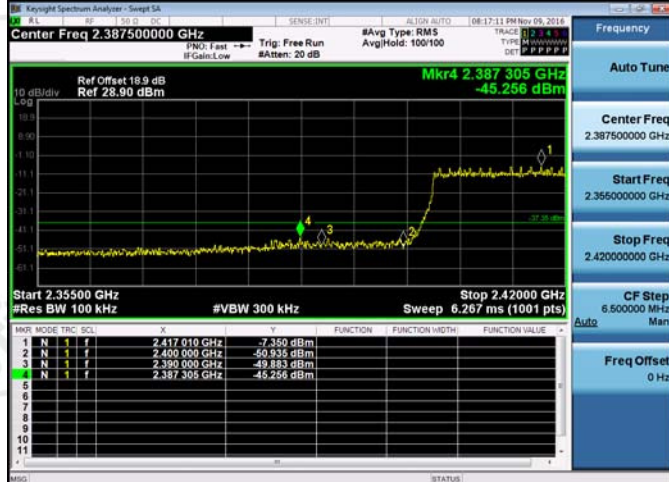
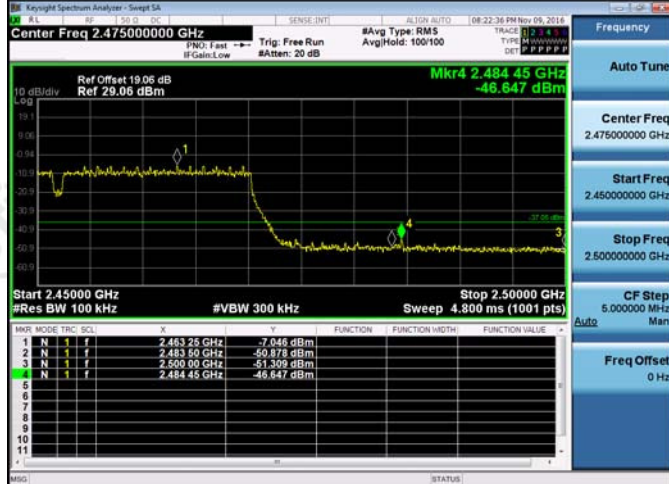
Result Table

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	-0.410	-50.000	-30.41	PASS
11B	HCH	-1.292	-50.366	-31.29	PASS
11G	LCH	-3.813	-50.369	-33.81	PASS
11G	HCH	-3.840	-49.589	-33.84	PASS
11N20SISO	LCH	-3.812	-49.628	-33.81	PASS
11N20SISO	HCH	-3.796	-49.398	-33.8	PASS
11N40SISO	LCH	-7.350	-45.256	-37.35	PASS
11N40SISO	HCH	-7.046	-46.647	-37.05	PASS

Test Graph



11G/LCH	 Center Freq 2.387500000 GHz Ref Offset 19.06 dB Ref 29.06 dBm Mkr4 2.387 025 GHz -50.369 dBm Start 2.35500 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 6.267 ms (1001 pts) <table><tr><th>MARKER</th><th>MODE</th><th>TRIG</th><th>SCAL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION METHOD</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.413 240 GHz</td><td>-3.813 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.400 000 GHz</td><td>-48.500 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.390 000 GHz</td><td>-52.487 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.387 025 GHz</td><td>-50.369 dBm</td><td></td><td></td><td></td></tr></table>	MARKER	MODE	TRIG	SCAL	X	Y	FUNCTION	FUNCTION METHOD	FUNCTION VALUE	1	N	1	f	2.413 240 GHz	-3.813 dBm				2	N	1	f	2.400 000 GHz	-48.500 dBm				3	N	1	f	2.390 000 GHz	-52.487 dBm				4	N	1	f	2.387 025 GHz	-50.369 dBm			
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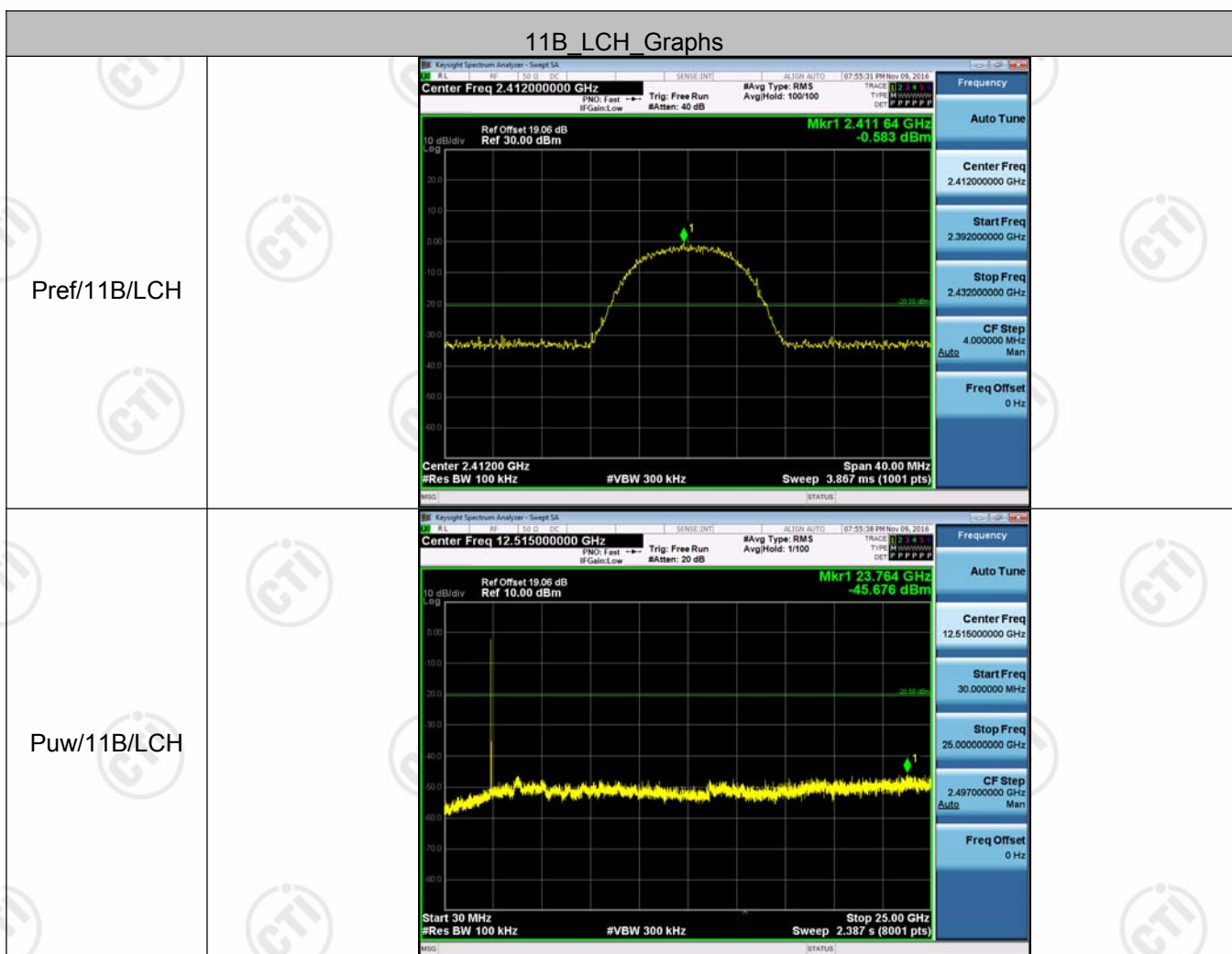
11N20SISO/HCH	 Center Freq 2.475000000 GHz Ref Offset 19.06 dB Ref 29.06 dBm Mkr4 2.488 50 GHz -49.398 dBm Start 2.45000 GHz #Res BW 100 kHz #VBW 300 kHz Stop 2.50000 GHz Sweep 4.800 ms (1001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCL</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>2.46325 GHz</td><td>-7.796 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>2.48350 GHz</td><td>-52.052 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td>N</td><td>1</td><td>f</td><td>2.50000 GHz</td><td>-53.812 dBm</td><td></td><td></td><td></td></tr><tr><td>4</td><td>N</td><td>1</td><td>f</td><td>2.48850 GHz</td><td>-49.398 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	2.46325 GHz	-7.796 dBm				2	N	1	f	2.48350 GHz	-52.052 dBm				3	N	1	f	2.50000 GHz	-53.812 dBm				4	N	1	f	2.48850 GHz	-49.398 dBm			
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Appendix D): RF Conducted Spurious Emissions

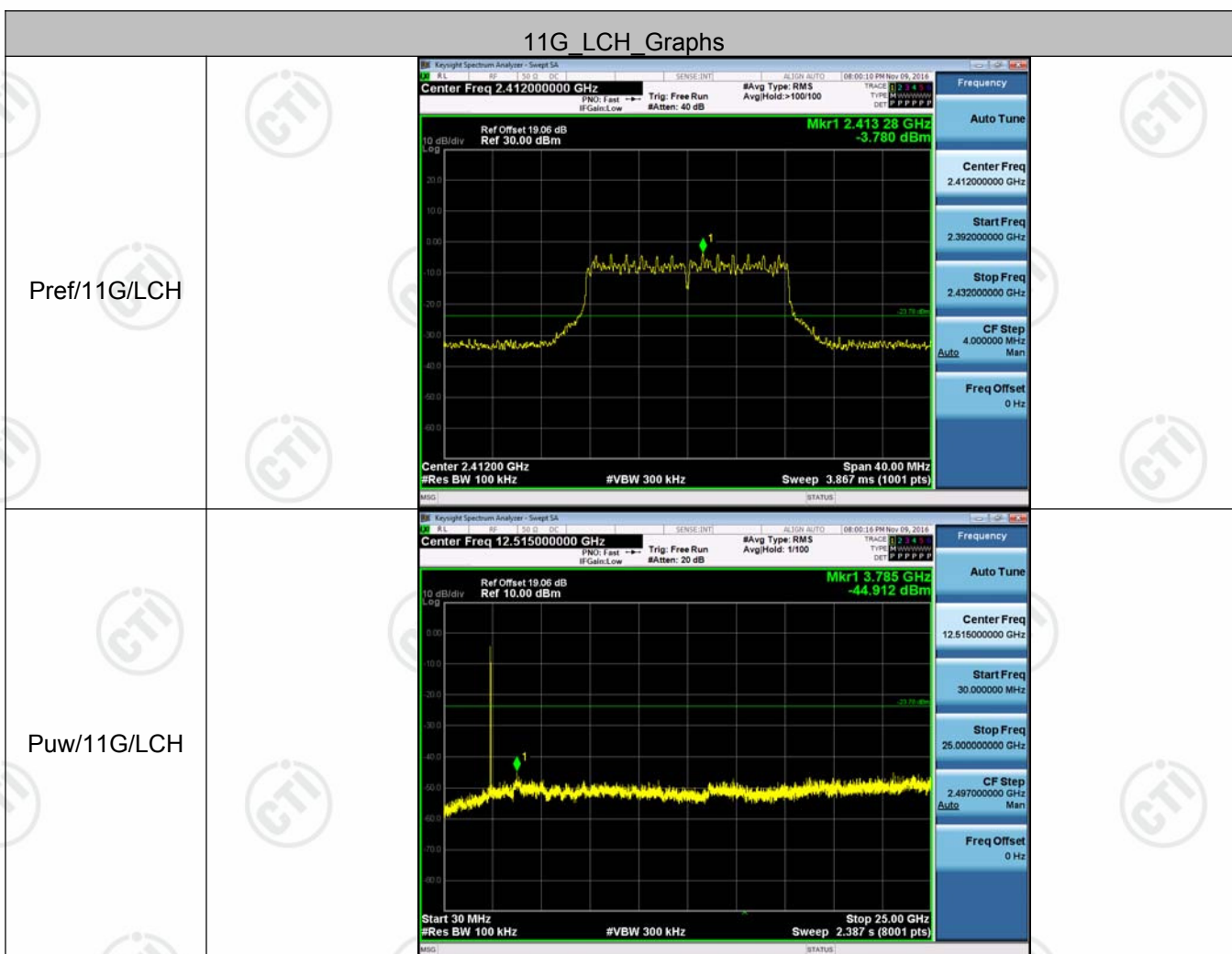
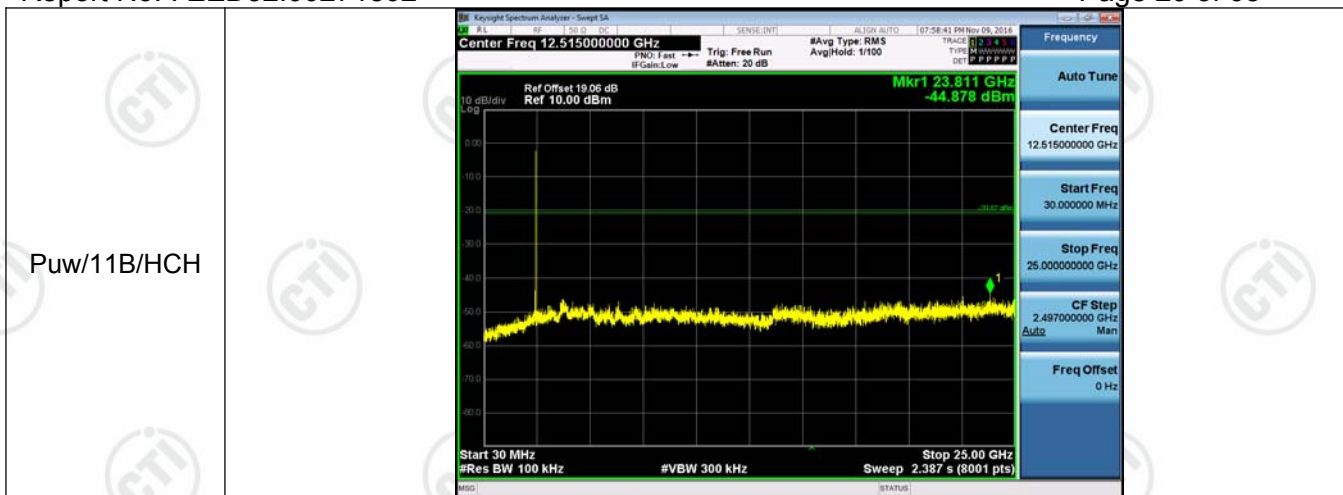
Result Table

Mode	Channel	Pref [dBm]	Puw[dBm]	Verdict
11B	LCH	-0.583	<Limit	PASS
11B	MCH	-0.748	<Limit	PASS
11B	HCH	-0.87	<Limit	PASS
11G	LCH	-3.78	<Limit	PASS
11G	MCH	-3.608	<Limit	PASS
11G	HCH	-3.734	<Limit	PASS
11N20SISO	LCH	-3.681	<Limit	PASS
11N20SISO	MCH	-3.7	<Limit	PASS
11N20SISO	HCH	-3.712	<Limit	PASS
11N40SISO	LCH	-7.156	<Limit	PASS
11N40SISO	MCH	-7.074	<Limit	PASS
11N40SISO	HCH	-6.951	<Limit	PASS

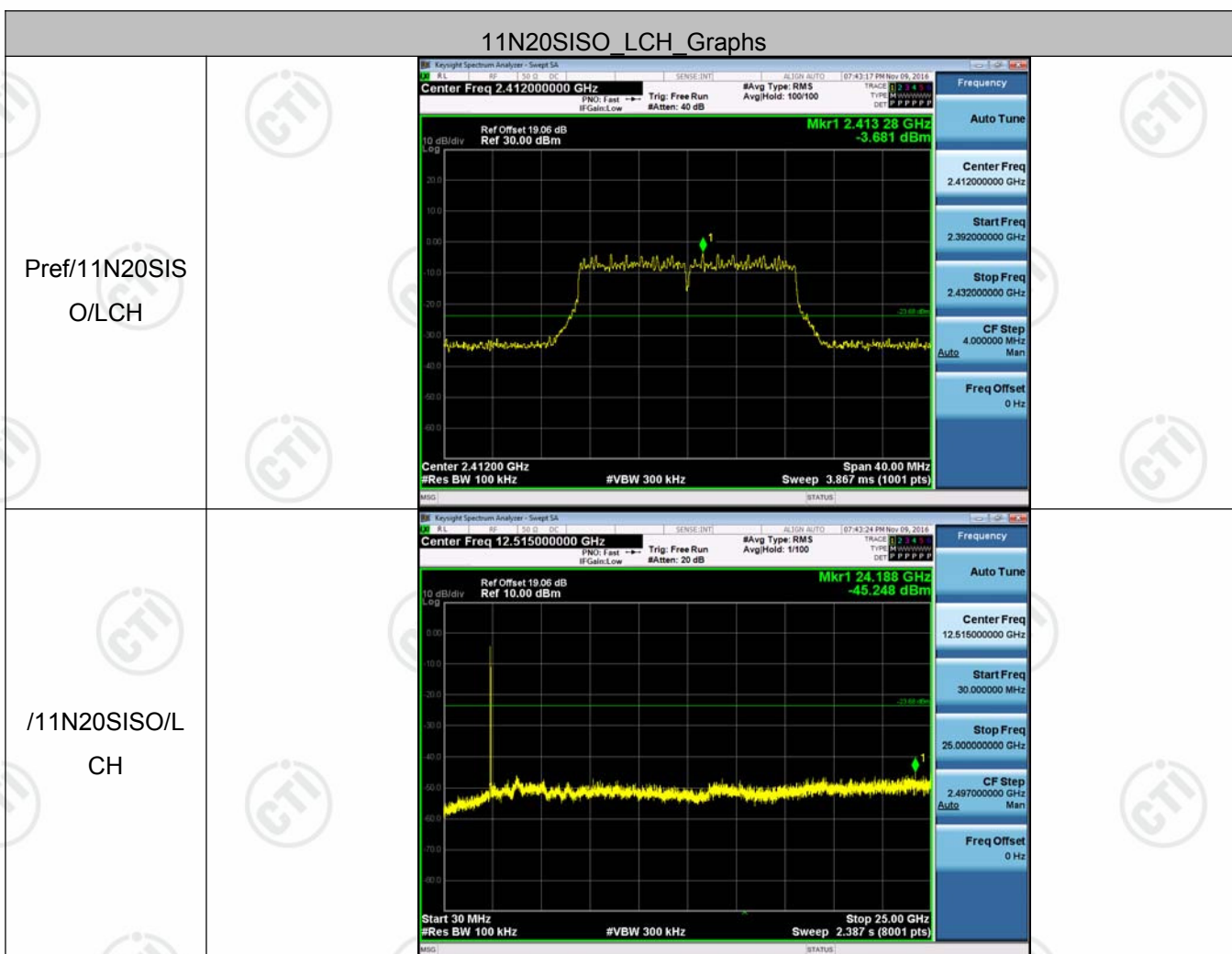
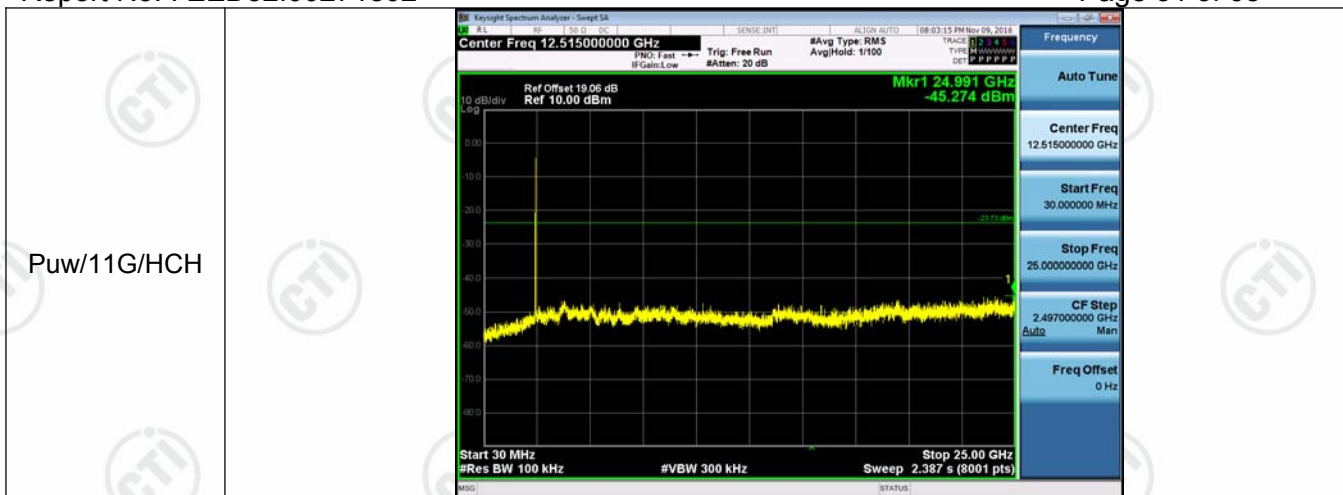
Test Graph



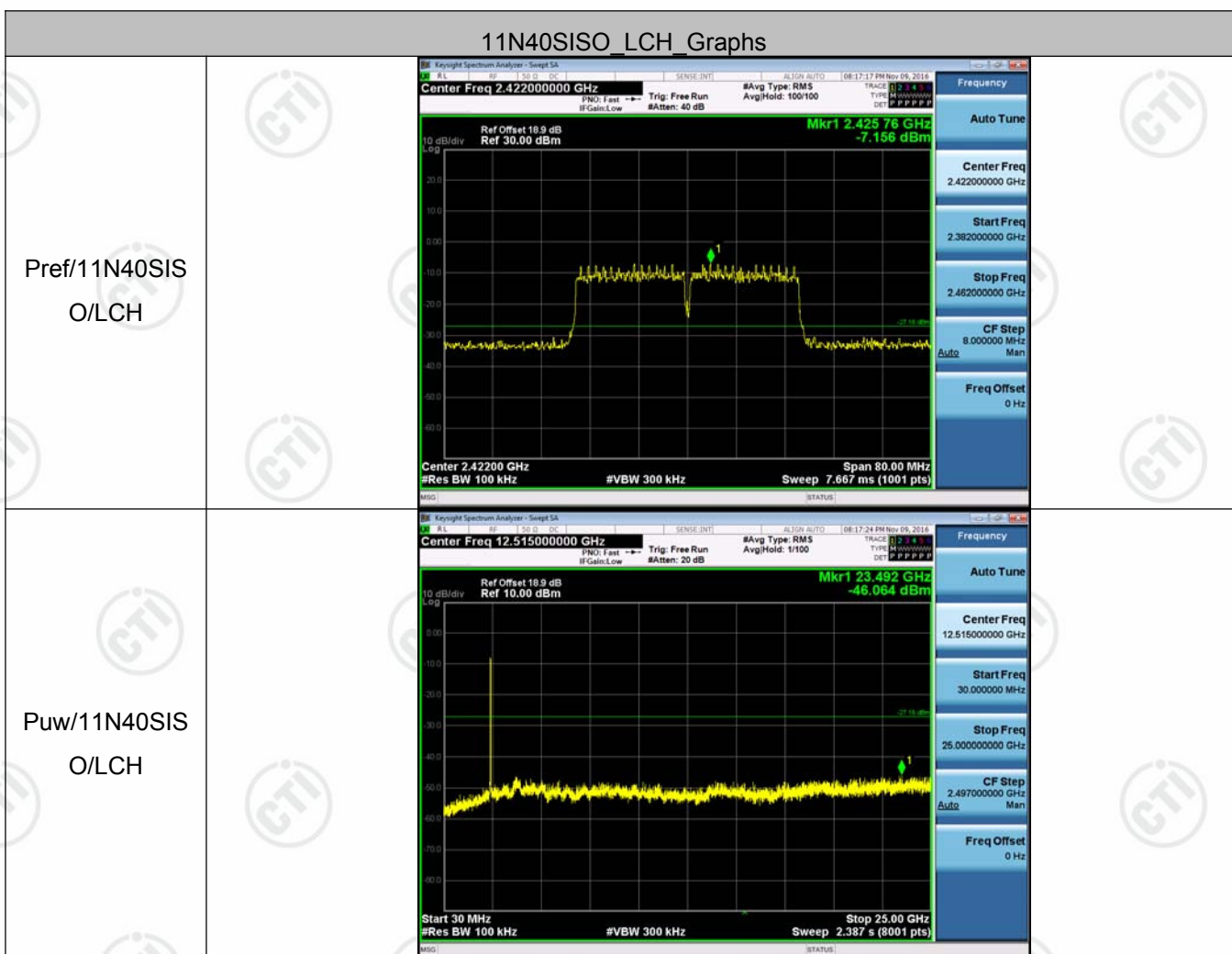
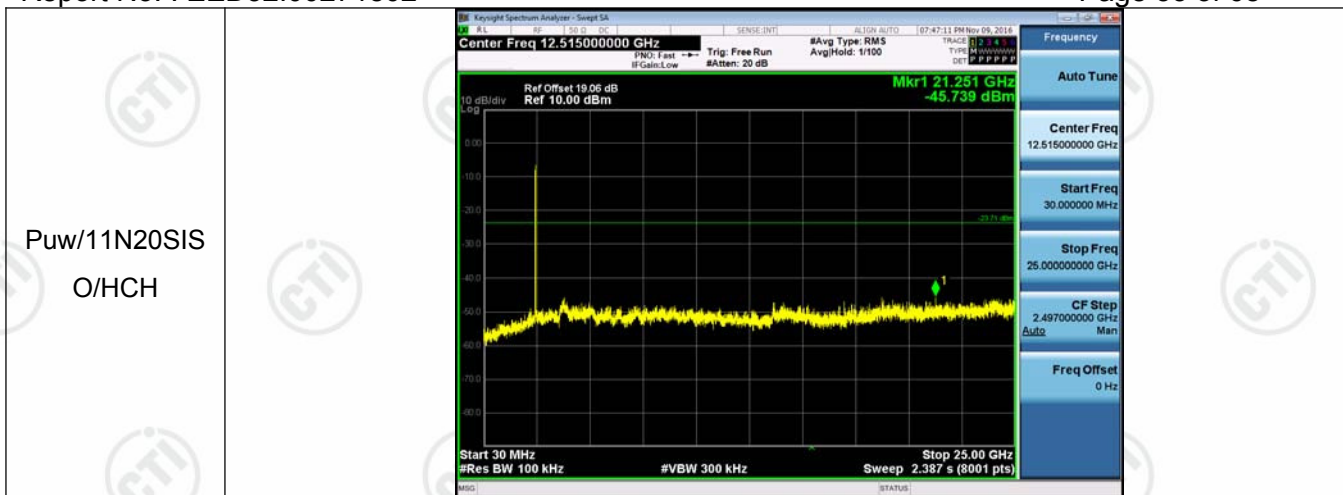




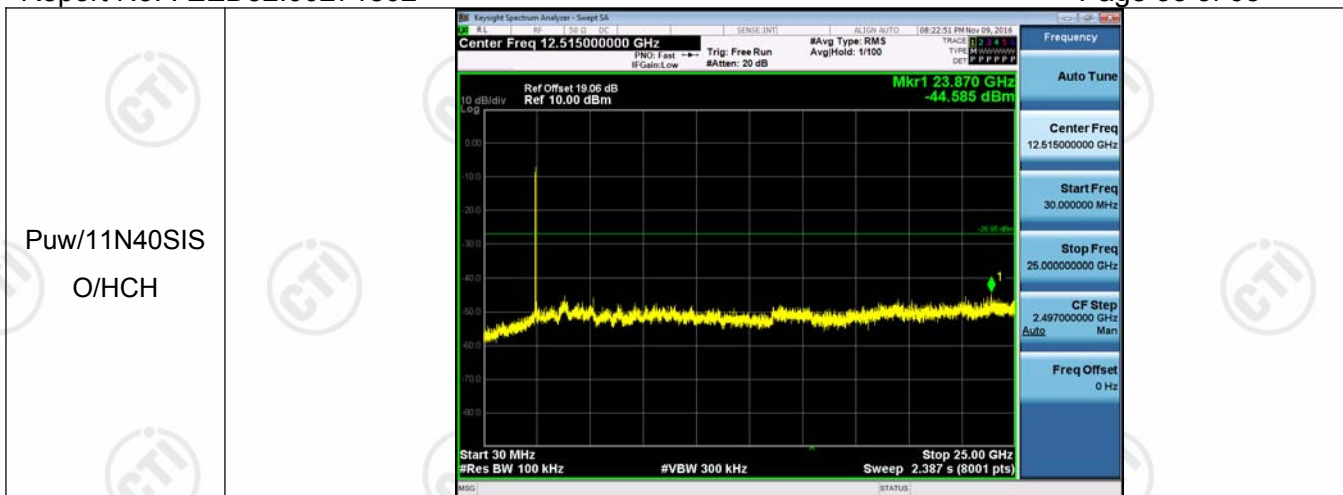










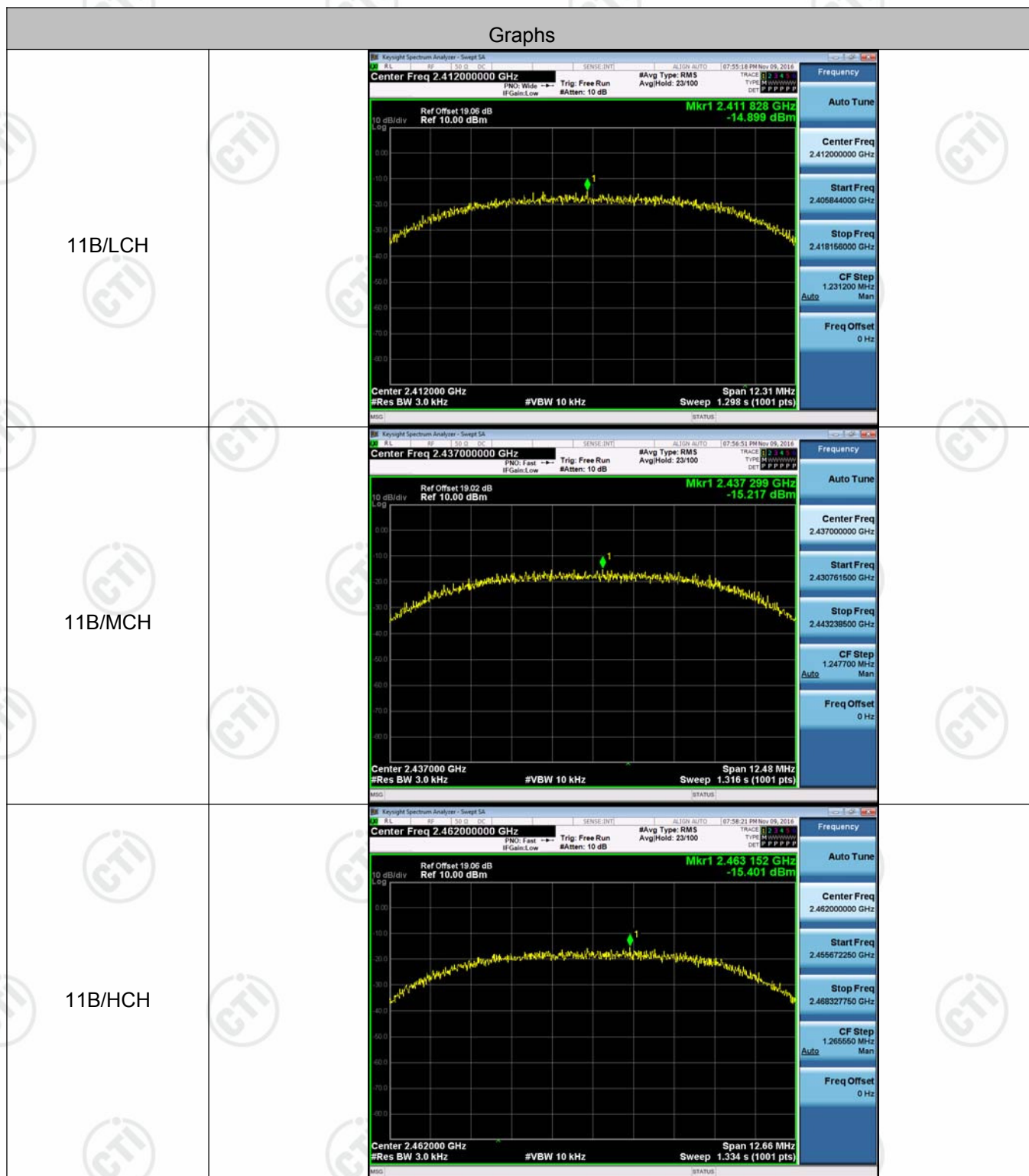


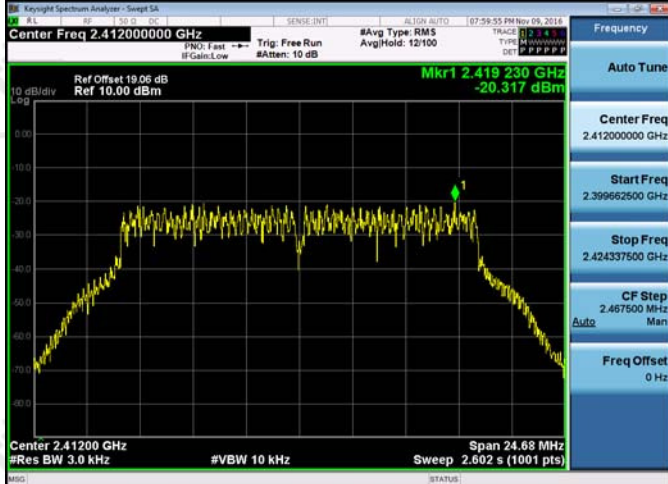
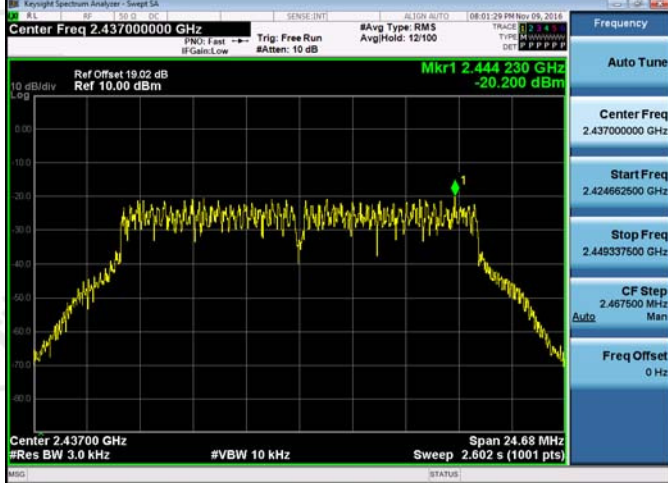
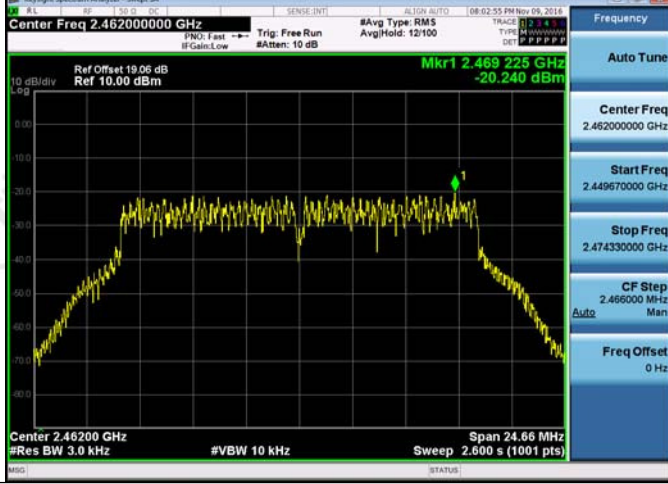
Appendix E): Power Spectral Density

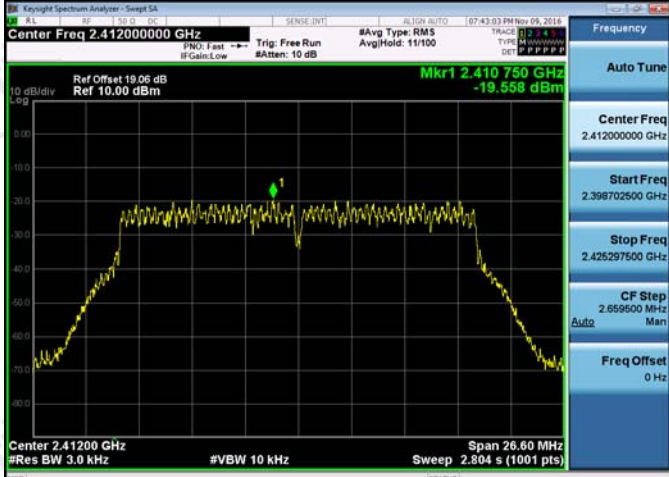
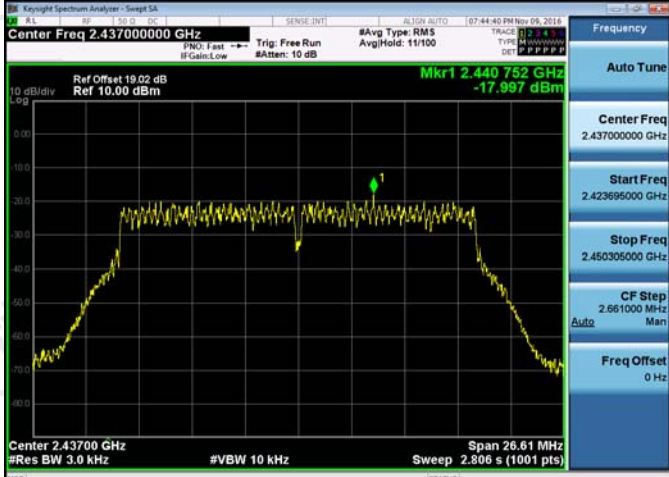
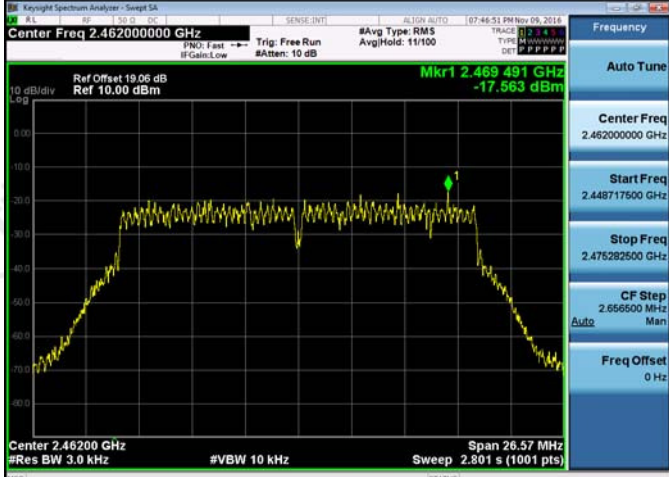
Result Table

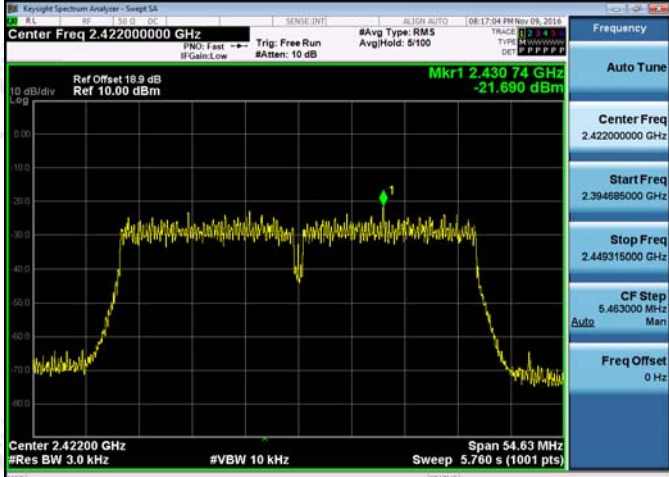
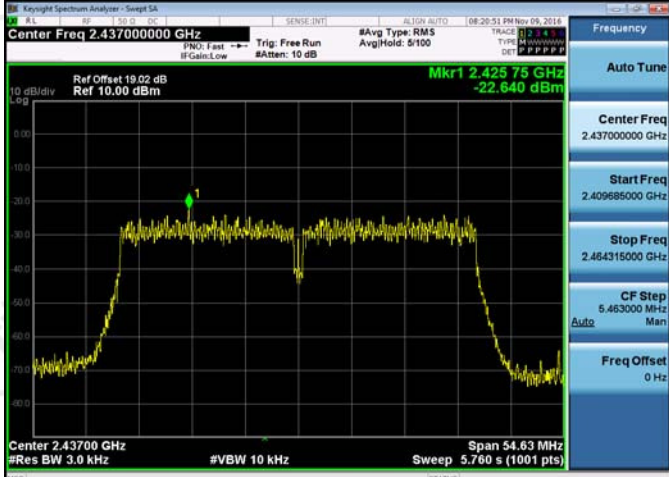
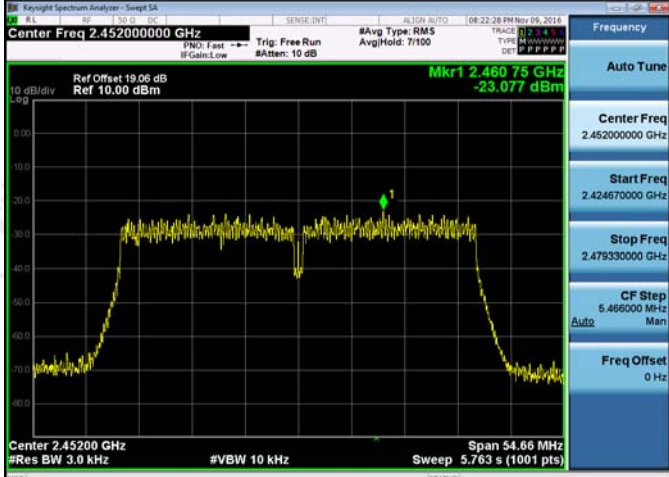
Mode	Channel	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Verdict
11B	LCH	-14.899	8	PASS
11B	MCH	-15.217	8	PASS
11B	HCH	-15.401	8	PASS
11G	LCH	-20.317	8	PASS
11G	MCH	-20.200	8	PASS
11G	HCH	-20.240	8	PASS
11N20SISO	LCH	-19.558	8	PASS
11N20SISO	MCH	-17.997	8	PASS
11N20SISO	HCH	-17.563	8	PASS
11N40SISO	LCH	-21.690	8	PASS
11N40SISO	MCH	-22.640	8	PASS
11N40SISO	HCH	-23.077	8	PASS

Test Graph



11G/LCH	 Keynote Spectrum Analyzer - Sweep SA Center Freq 2.41200000 GHz Ref Offset 19.06 dB Ref 10.00 dBm Mkr1 2.419 230 GHz -20.317 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 2.602 s (1001 pts) Span 24.68 MHz Frequency Auto Tune Center Freq 2.41200000 GHz Start Freq 2.399662500 GHz Stop Freq 2.424337500 GHz CF Step 2.467500 MHz Auto Man Freq Offset 0 Hz
11G/MCH	 Keynote Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 19.02 dB Ref 10.00 dBm Mkr1 2.444 230 GHz -20.200 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 2.602 s (1001 pts) Span 24.68 MHz Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq 2.424662500 GHz Stop Freq 2.449337500 GHz CF Step 2.467500 MHz Auto Man Freq Offset 0 Hz
11G/HCH	 Keynote Spectrum Analyzer - Sweep SA Center Freq 2.46200000 GHz Ref Offset 19.06 dB Ref 10.00 dBm Mkr1 2.469 225 GHz -20.240 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Sweep 2.600 s (1001 pts) Span 24.66 MHz Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq 2.449670000 GHz Stop Freq 2.474330000 GHz CF Step 2.466000 MHz Auto Man Freq Offset 0 Hz

11N20SISO/LCH	 Keygraph Spectrum Analyzer - Sweep SA Center Freq 2.41200000 GHz Ref Offset 19.06 dB Ref 10.00 dBm Mkr1 2.410 750 GHz -19.558 dBm Center 2.41200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 26.60 MHz Sweep 2.804 s (1001 pts) Frequency Auto Tune Center Freq 2.41200000 GHz Start Freq 2.398702500 GHz Stop Freq 2.425297500 GHz CF Step 2.659600 MHz Auto Man Freq Offset 0 Hz
11N20SISO/MCH	 Keygraph Spectrum Analyzer - Sweep SA Center Freq 2.43700000 GHz Ref Offset 19.02 dB Ref 10.00 dBm Mkr1 2.440 752 GHz -17.997 dBm Center 2.43700 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 26.61 MHz Sweep 2.806 s (1001 pts) Frequency Auto Tune Center Freq 2.43700000 GHz Start Freq 2.423695000 GHz Stop Freq 2.450305000 GHz CF Step 2.661000 MHz Auto Man Freq Offset 0 Hz
11N20SISO/HCH	 Keygraph Spectrum Analyzer - Sweep SA Center Freq 2.46200000 GHz Ref Offset 19.06 dB Ref 10.00 dBm Mkr1 2.469 491 GHz -17.563 dBm Center 2.46200 GHz #Res BW 3.0 kHz #VBW 10 kHz Span 26.57 MHz Sweep 2.801 s (1001 pts) Frequency Auto Tune Center Freq 2.46200000 GHz Start Freq 2.448717500 GHz Stop Freq 2.475292500 GHz CF Step 2.656600 MHz Auto Man Freq Offset 0 Hz

11N40SISO/LCH	 Key parameters for 11N40SISO/LCH: - Center Freq: 2.422000000 GHz - Start Freq: 2.394685000 GHz - Stop Freq: 2.449315000 GHz - CF Step: 5.463000 MHz - Freq Offset: 0 Hz - Mkr1: 2.43074 GHz, -21.690 dBm - Ref Offset: 18.9 dB, Ref: 10.00 dBm - Center: 2.42200 GHz, #Res BW: 3.0 kHz, #VBW: 10 kHz, Sweep: 5.760 s (1001 pts)
11N40SISO/MCH	 Key parameters for 11N40SISO/MCH: - Center Freq: 2.437000000 GHz - Start Freq: 2.409685000 GHz - Stop Freq: 2.464315000 GHz - CF Step: 5.463000 MHz - Freq Offset: 0 Hz - Mkr1: 2.42575 GHz, -22.640 dBm - Ref Offset: 19.02 dB, Ref: 10.00 dBm - Center: 2.43700 GHz, #Res BW: 3.0 kHz, #VBW: 10 kHz, Sweep: 5.760 s (1001 pts)
11N40SISO/HCH	 Key parameters for 11N40SISO/HCH: - Center Freq: 2.452000000 GHz - Start Freq: 2.424670000 GHz - Stop Freq: 2.479330000 GHz - CF Step: 5.466000 MHz - Freq Offset: 0 Hz - Mkr1: 2.46075 GHz, -23.077 dBm - Ref Offset: 19.06 dB, Ref: 10.00 dBm - Center: 2.45200 GHz, #Res BW: 3.0 kHz, #VBW: 10 kHz, Sweep: 5.763 s (1001 pts)

Appendix F): Antenna Requirement

15.203 requirement:

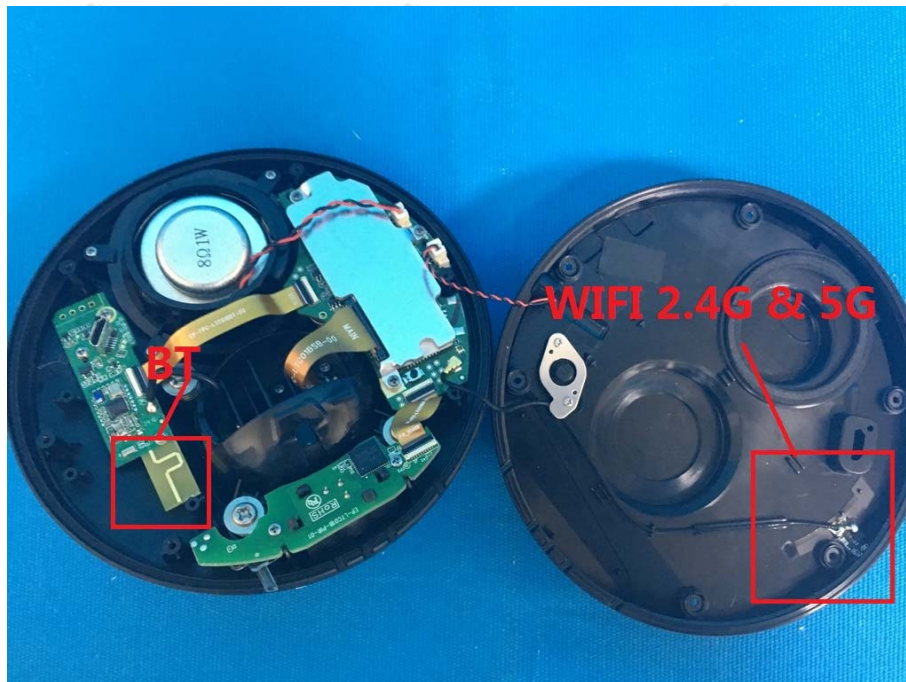
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

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

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the WIFI antenna is 3Bi.



Appendix G): AC Power Line Conducted Emission

Test Procedure:	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 $50\Omega/50\mu\text{H} + 5\Omega$ 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.															
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBμV)</th></tr> <tr> <th>Quasi-peak</th><th>Average</th></tr> </thead> <tbody> <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> </tbody> </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		Frequency range (MHz)	Limit (dB μ V)		Quasi-peak	Average	0.15-0.5	66 to 56*	56 to 46*	0.5-5	56	46	5-30	60	50
Frequency range (MHz)	Limit (dB μ V)															
	Quasi-peak	Average														
0.15-0.5	66 to 56*	56 to 46*														
0.5-5	56	46														
5-30	60	50														

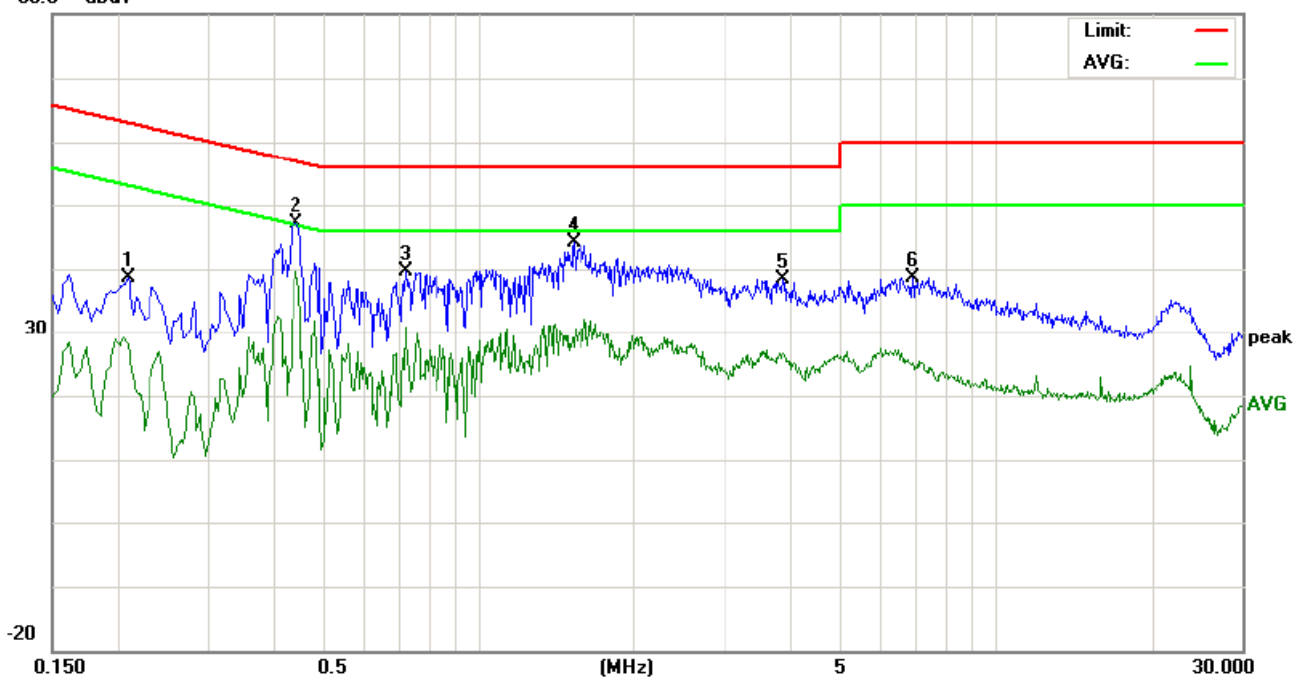
Measurement Data

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:

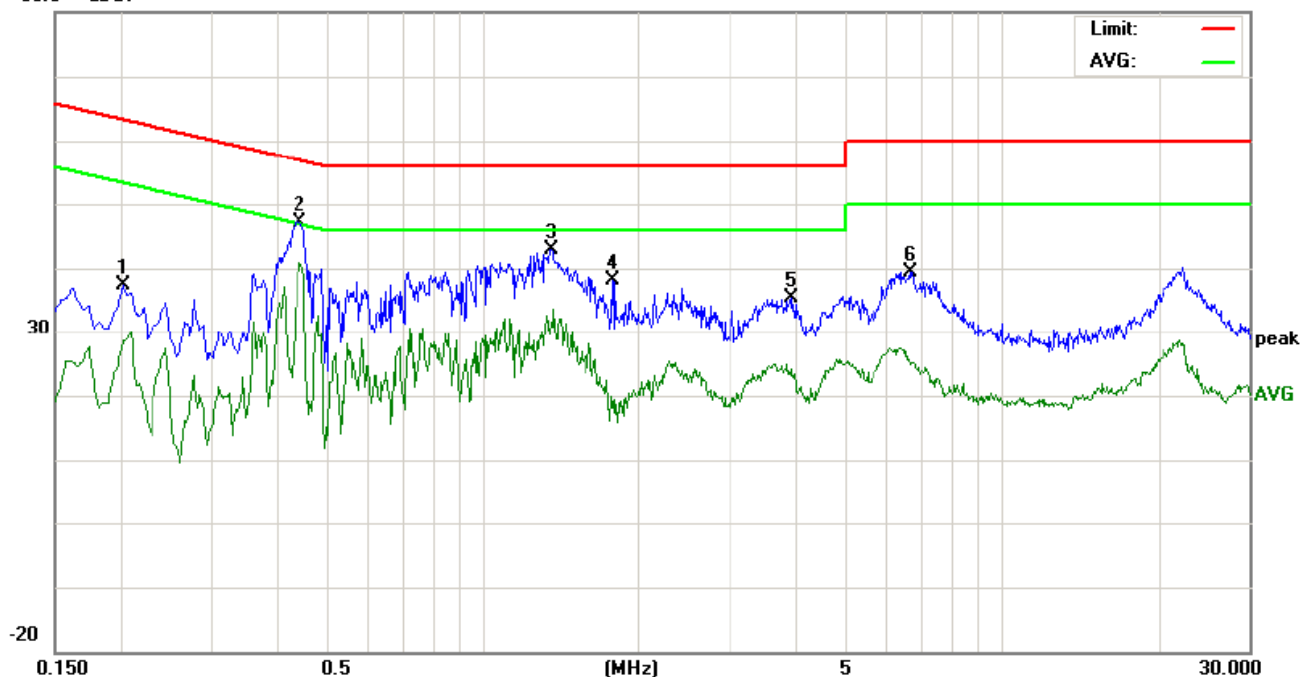
80.0 dBuV



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2100	28.82		18.22	9.80	38.62		28.02	63.20	53.20	-24.58	-25.18	P	
2	0.4460	37.17		29.72	9.90	47.07		39.62	56.95	46.95	-9.88	-7.33	P	
3	0.7220	29.85		20.89	9.90	39.75		30.79	56.00	46.00	-16.25	-15.21	P	
4	1.5339	34.38		17.77	9.86	44.24		27.63	56.00	46.00	-11.76	-18.37	P	
5	3.8980	28.48		16.70	10.00	38.48		26.70	56.00	46.00	-17.52	-19.30	P	
6	6.9220	28.69		15.15	10.00	38.69		25.15	60.00	50.00	-21.31	-24.85	P	

Neutral line:

80.0 dBuV



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	0.2020	27.55		18.64	9.80	37.35		28.44	63.52	53.52	-26.17	-25.08	P	
2	0.4460	37.13		31.00	9.90	47.03		40.90	56.95	46.95	-9.92	-6.05	P	
3	1.3580	33.15		21.83	9.81	42.96		31.64	56.00	46.00	-13.04	-14.36	P	
4	1.7900	28.22		8.68	9.94	38.16		18.62	56.00	46.00	-17.84	-27.38	P	
5	3.9260	25.40		14.08	10.00	35.40		24.08	56.00	46.00	-20.60	-21.92	P	
6	6.6820	29.50		15.13	10.00	39.50		25.13	60.00	50.00	-20.50	-24.87	P	

Notes:

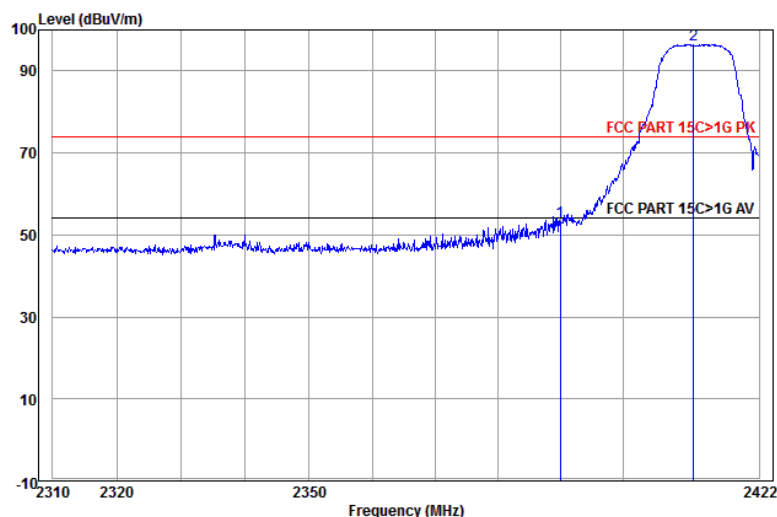
1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.

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: - The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. - The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. - 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. - 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. - The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. - 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: - 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). - Test the EUT in the lowest channel , the Highest channel - 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. - 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		

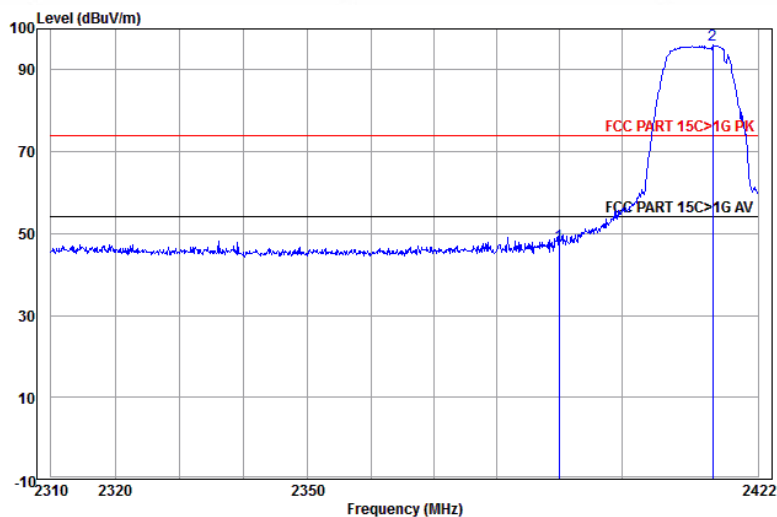
Test plot as follows:

Worse case mode:	802.11b (11Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



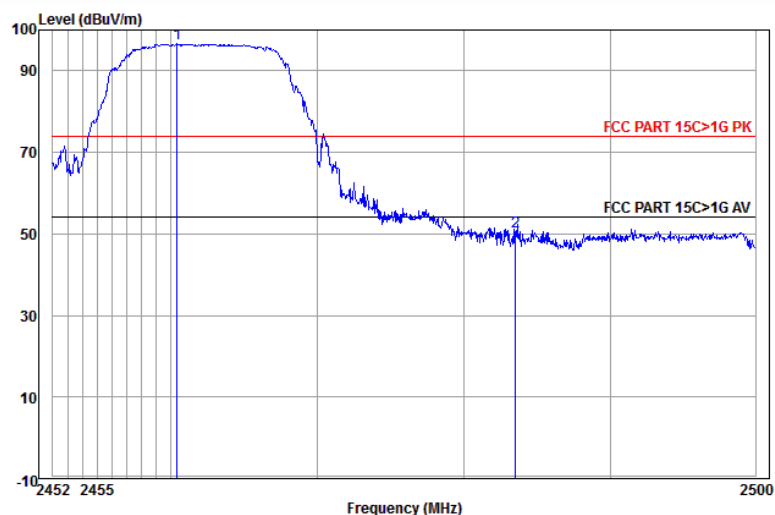
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	50.85	53.27	74.00	-20.73	Horizontal
2 pp	2411.359	32.58	4.33	34.39	93.90	96.42	74.00	22.42	Horizontal

Worse case mode:	802.11b (11Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



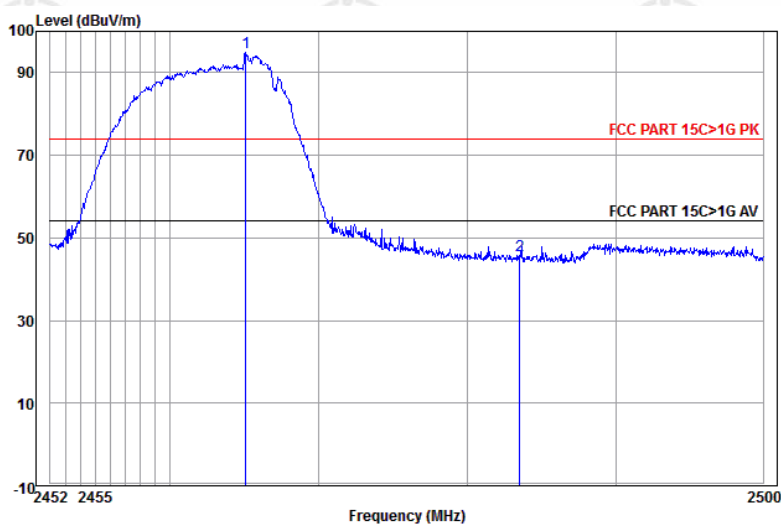
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	44.80	47.22	74.00	-26.78	Vertical
2 pp	2414.672	32.58	4.34	34.39	93.46	95.99	74.00	21.99	Vertical

Worse case mode:	802.11b (11Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



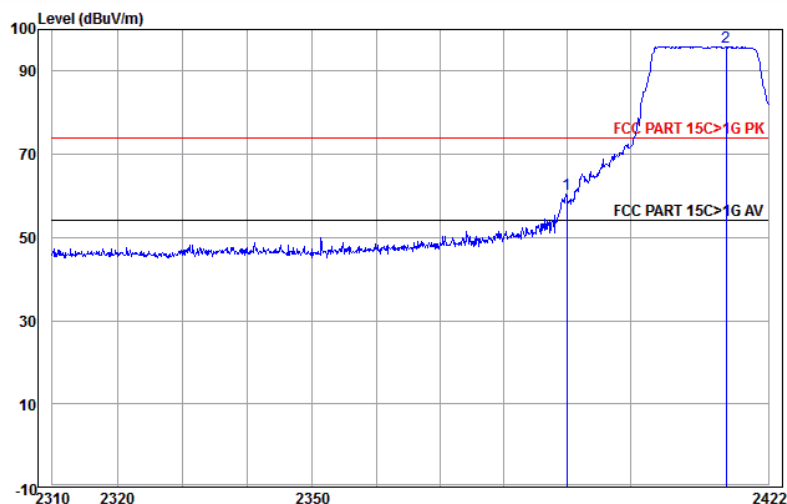
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2460.428	32.67	4.45	34.40	93.84	96.56	74.00	22.56	Horizontal
2	2483.500	32.71	4.51	34.41	47.70	50.51	74.00	-23.49	Horizontal

Worse case mode:	802.11b (11Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



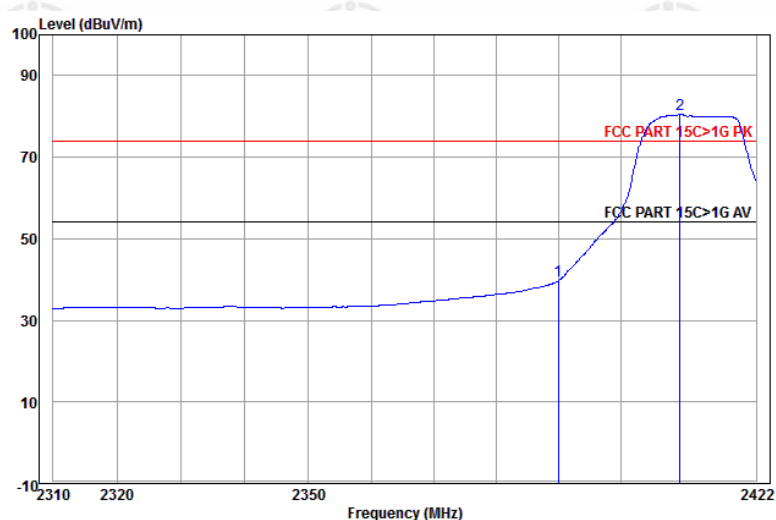
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2465.060	32.68	4.46	34.40	92.06	94.80	74.00	20.80	Vertical
2	2483.500	32.71	4.51	34.41	42.94	45.75	74.00	-28.25	Vertical

Worse case mode:	802.11g (6Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



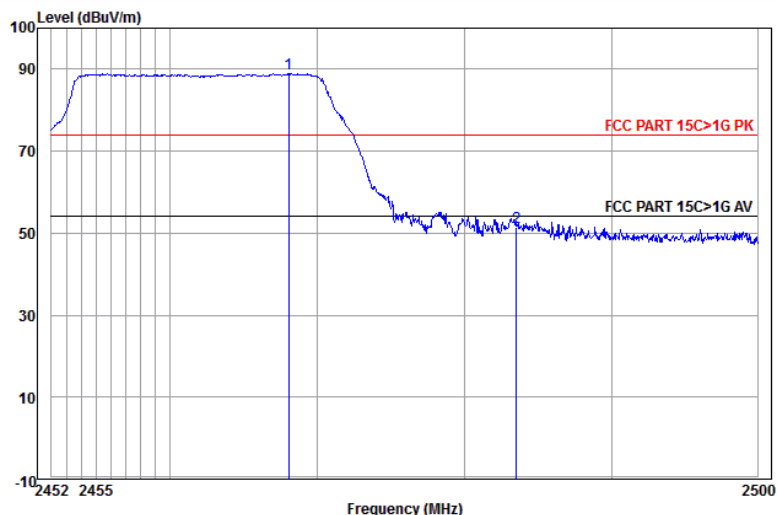
	Frequency (MHz)	Ant Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit	Over	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	dB		
1	2390.000	32.53	4.28	34.39	57.89	60.31	74.00	-13.69	Horizontal		
2 pp	2415.244	32.58	4.34	34.39	93.40	95.93	74.00	21.93	Horizontal		

Worse case mode:	802.11g (6Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



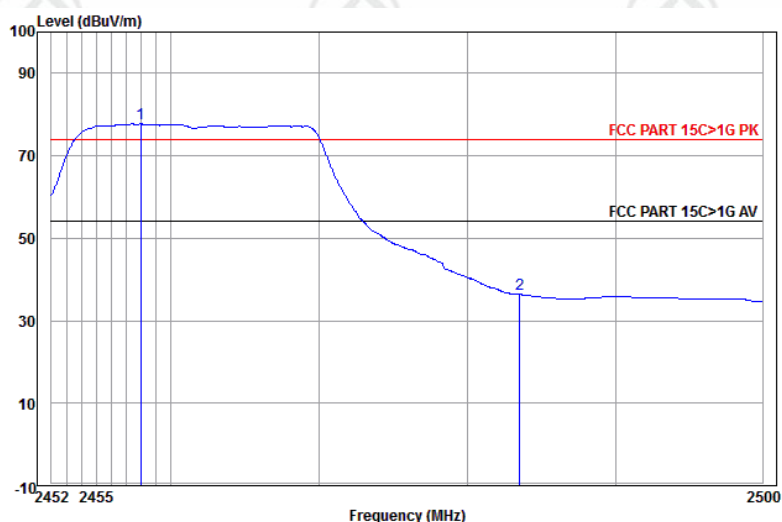
	Frequency (MHz)	Ant Freq	Ant Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit	Over	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	dB		
1	2390.000	32.53	4.28	34.39	37.46	39.88	54.00	-14.12	Horizontal	Average	
2 pp	2409.647	32.57	4.33	34.39	77.99	80.50	54.00	26.50	Horizontal	Average	

Worse case mode:	802.11g (6Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



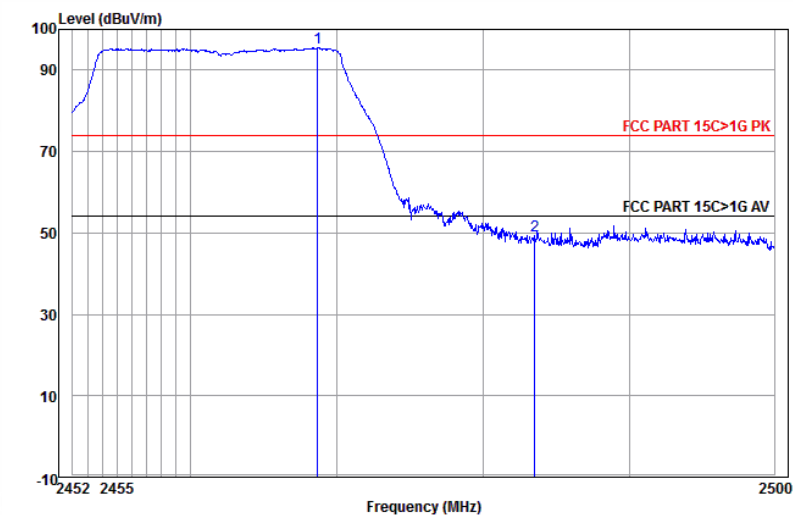
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2468.024	32.69	4.47	34.40	86.13	88.89	74.00	14.89	Horizontal
2	2483.500	32.71	4.51	34.41	48.73	51.54	74.00	-22.46	Horizontal

Worse case mode:	802.11g (6Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



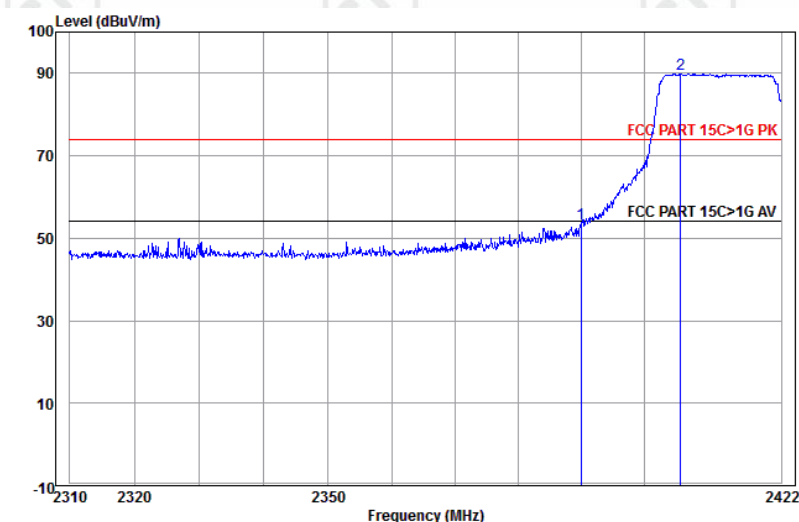
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2457.997	32.67	4.45	34.40	74.98	77.70	54.00	23.70	Horizontal Average
2	2483.500	32.71	4.51	34.41	33.54	36.35	54.00	-17.65	Horizontal Average

Worse case mode:	802.11g (6Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



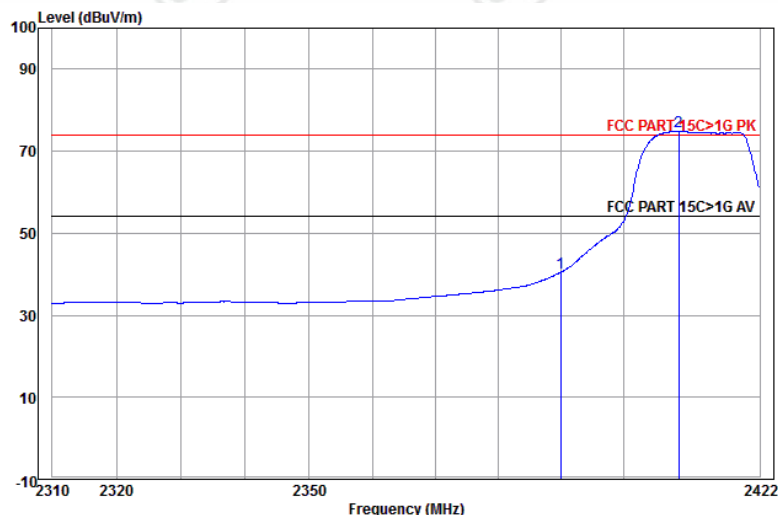
	Ant Freq	Cable Factor	Preamp Loss	Preamp Factor	Read Level	Level	Limit	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2468.646	32.69	4.47	34.40	92.85	95.61	74.00	21.61	Vertical	
2	2483.500	32.71	4.51	34.41	46.44	49.25	74.00	-24.75	Vertical	

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



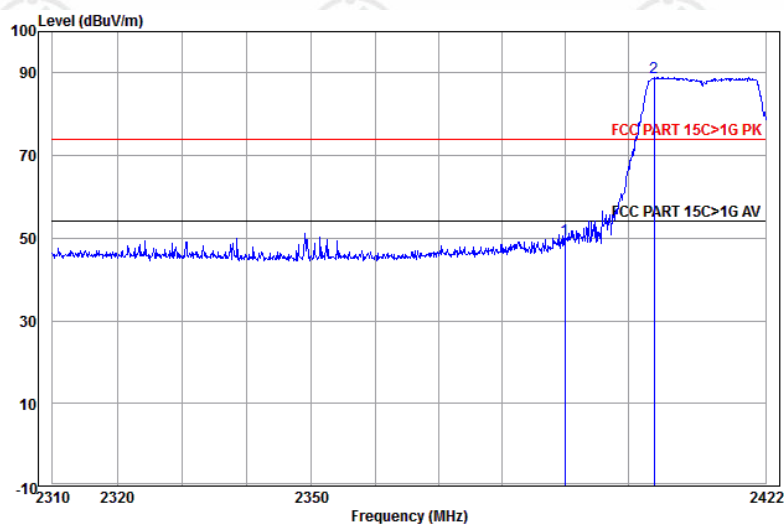
	Ant Freq	Cable Factor	Preamp Loss	Preamp Factor	Read Level	Level	Limit	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	51.19	53.61	74.00	-20.39	Horizontal	
2 pp	2405.885	32.57	4.32	34.39	87.40	89.90	74.00	15.90	Horizontal	

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



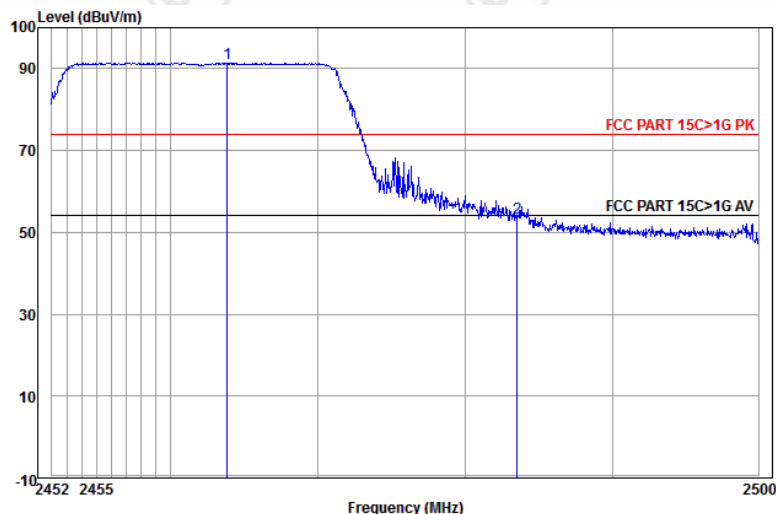
	Ant Freq	Cable Factor	Preamp Loss	Preamp Factor	Read Level	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	38.07	40.49	54.00	-13.51	Horizontal	Average
2 pp	2408.963	32.57	4.33	34.39	72.41	74.92	54.00	20.92	Horizontal	Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



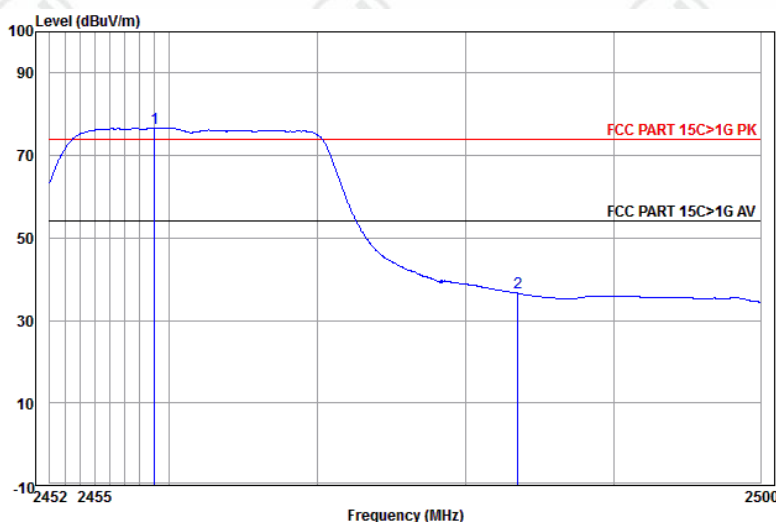
	Ant Freq	Cable Factor	Preamp Loss	Preamp Factor	Read Level	Read Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	47.37	49.79	74.00	-24.21	Vertical	
2 pp	2404.177	32.56	4.31	34.39	86.46	88.94	74.00	14.94	Vertical	

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



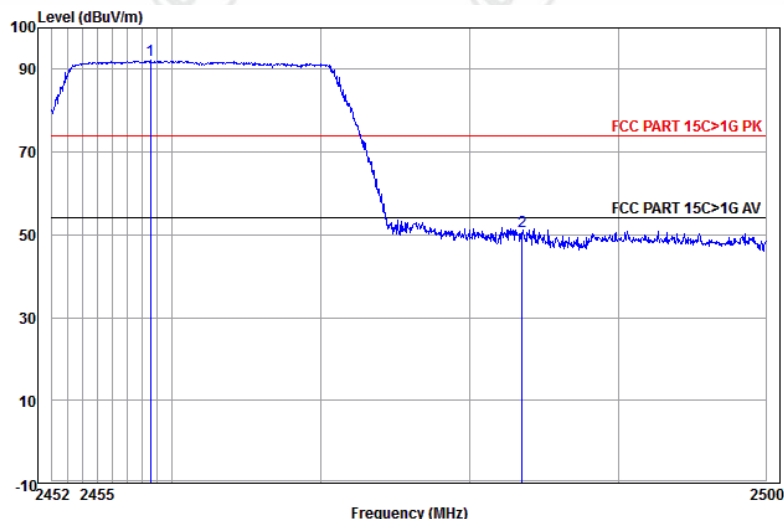
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2463.817	32.68	4.46	34.40	88.70	91.44	74.00	17.44	Horizontal
2	2483.500	32.71	4.51	34.41	50.70	53.51	74.00	-20.49	Horizontal

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Average



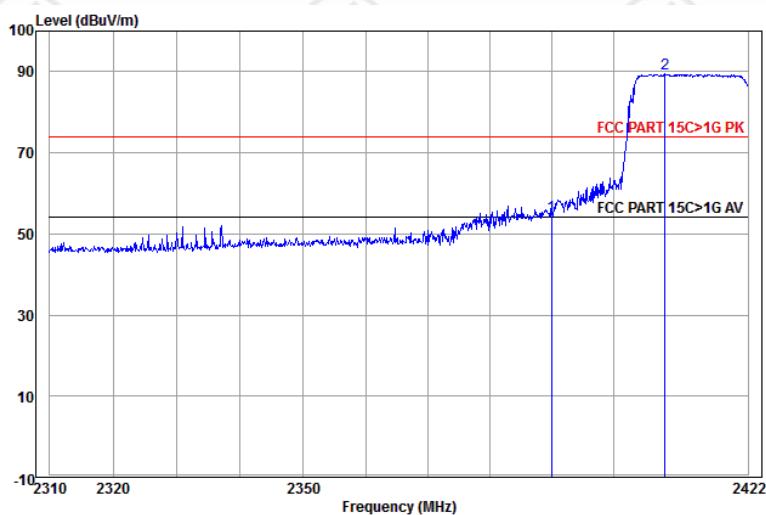
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp	2458.998	32.67	4.45	34.40	73.94	76.66	54.00	22.66	Horizontal Average
2	2483.500	32.71	4.51	34.41	33.81	36.62	54.00	-17.38	Horizontal Average

Worse case mode:	802.11n(HT20) (6.5Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Vertical	Remark: Peak



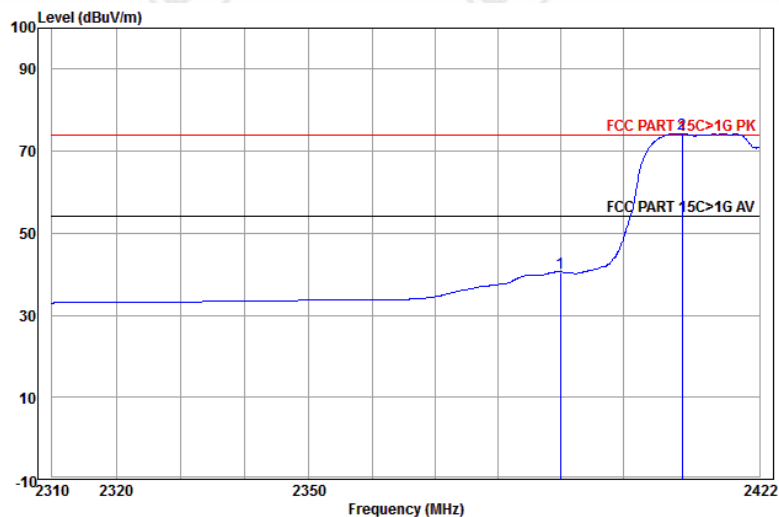
	Frequency (MHz)	Ant Freq	Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	dB		
1 pp	2458.569	32.67	4.45	34.40	89.38	92.10	74.00	18.10	Vertical		
2	2483.500	32.71	4.51	34.41	48.06	50.87	74.00	-23.13	Vertical		

Worse case mode:	802.11n(HT40) (13..5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Peak



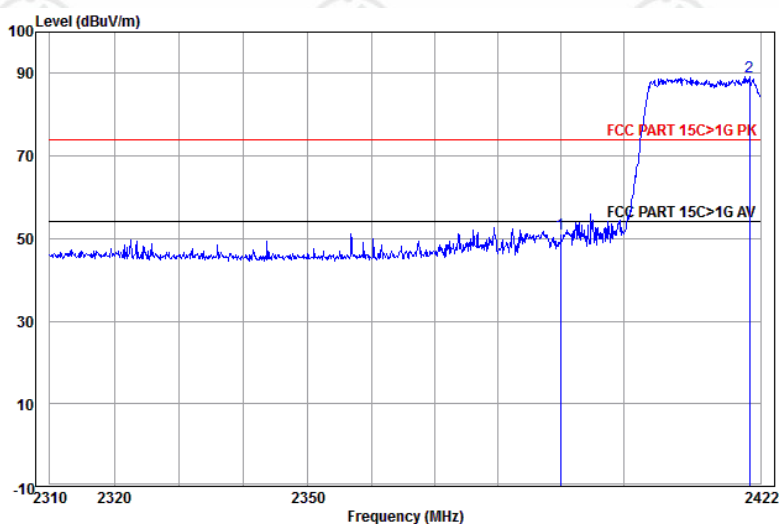
	Frequency (MHz)	Ant Freq	Factor	Cable Loss	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	dB		
1	2390.000	32.53	4.28	34.39	52.08	54.50	74.00	-19.50	Horizontal		
2 pp	2408.392	32.57	4.33	34.39	86.90	89.41	74.00	15.41	Horizontal		

Worse case mode:	802.11n(HT40) (13.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Horizontal	Remark: Average



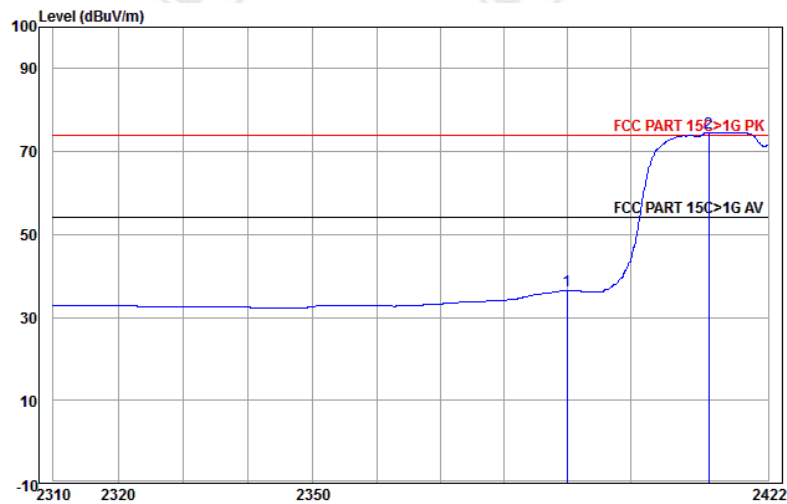
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit	Over	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	32.53	4.28	34.39	37.99	40.41	54.00	-13.59	Horizontal Average
2 pp	2409.533	32.57	4.33	34.39	71.86	74.37	54.00	20.37	Horizontal Average

Worse case mode:	802.11n(HT40) (13.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Peak



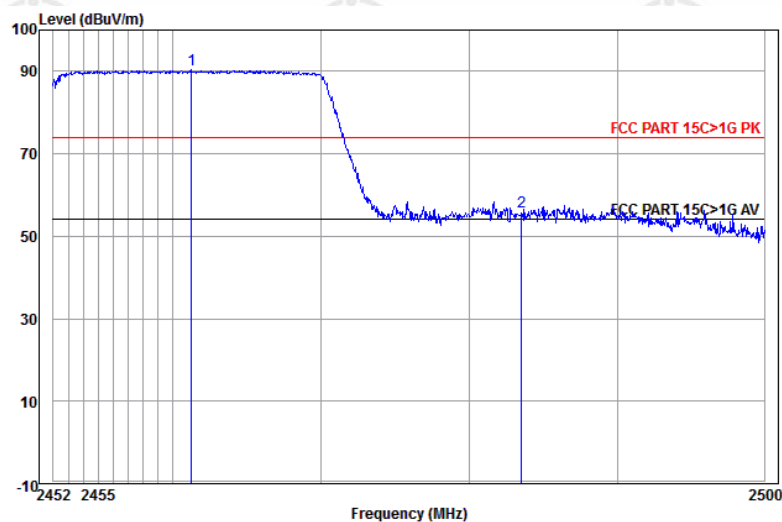
	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit	Over	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2390.000	32.53	4.28	34.39	48.75	51.17	74.00	-22.83	Vertical
2 pp	2420.281	32.59	4.35	34.39	86.65	89.20	74.00	15.20	Vertical

Worse case mode:	802.11n(HT40) (13.5Mbps)		
Frequency: 2390.0MHz	Test channel: Lowest	Polarization: Vertical	Remark: Average



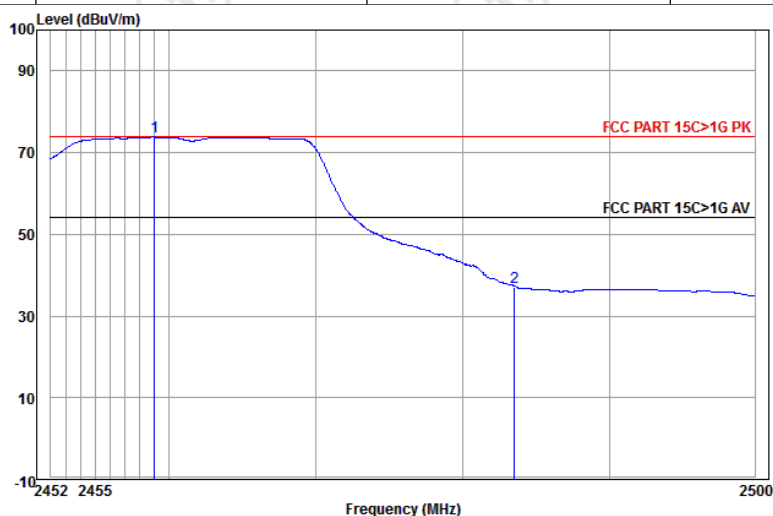
	Frequency (MHz)	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1	2390.000	32.53	4.28	34.39	34.05	36.47	54.00	-17.53	Vertical	Average
2 pp	2412.501	32.58	4.34	34.39	72.14	74.67	54.00	20.67	Vertical	Average

Worse case mode:	802.11n(HT40) (13..5Mbps)		
Frequency: 2483.5MHz	Test channel: Highest	Polarization: Horizontal	Remark: Peak



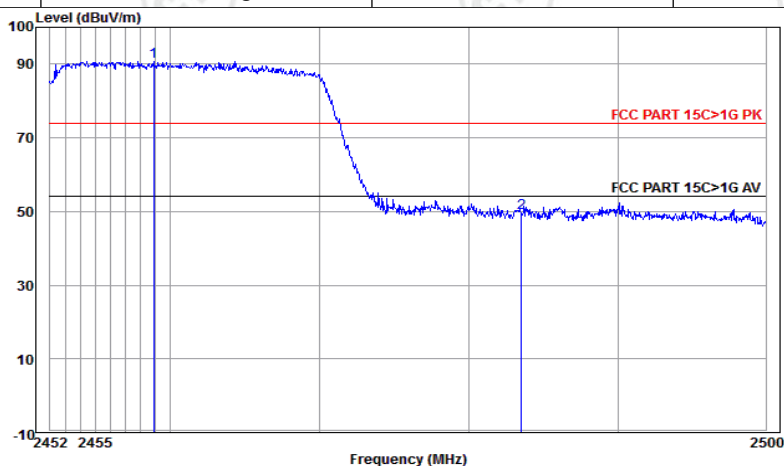
	Frequency (MHz)	Ant Freq	Cable Factor	Preamp Loss	Read Level	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB		
1 pp	2461.240	32.67	4.45	34.40	87.56	90.28	74.00	16.28	Horizontal	
2	2483.500	32.71	4.51	34.41	53.00	55.81	74.00	-18.19	Horizontal	

Worse case mode:	802.11n(HT40) (13.5Mbps)		
Frequency: 2483.5MHz	Test channel:Highest	Polarization: Horizontal	Remark: Average



	Ant	Cable	Preamp	Read	Limit	Over		
Freq	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 2458.998	32.67	4.45	34.40	71.11	73.83	54.00	19.83	Horizontal Average
2 2483.500	32.71	4.51	34.41	34.20	37.01	54.00	-16.99	Horizontal Average

Worse case mode:	802.11n(HT40) (13.5Mbps)		
Frequency: 2483.5MHz	Test channel:Highest	Polarization: Vertical	Remark: Peak



	Ant	Cable	Preamp	Read	Limit	Over		
Freq	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 2458.902	32.67	4.45	34.40	87.92	90.64	74.00	16.64	Vertical
2 2483.500	32.71	4.51	34.41	46.90	49.71	74.00	-24.29	Vertical

Note:

1) Through Pre-scan transmitting mode with all kind of modulation and data rate, and the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40), 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

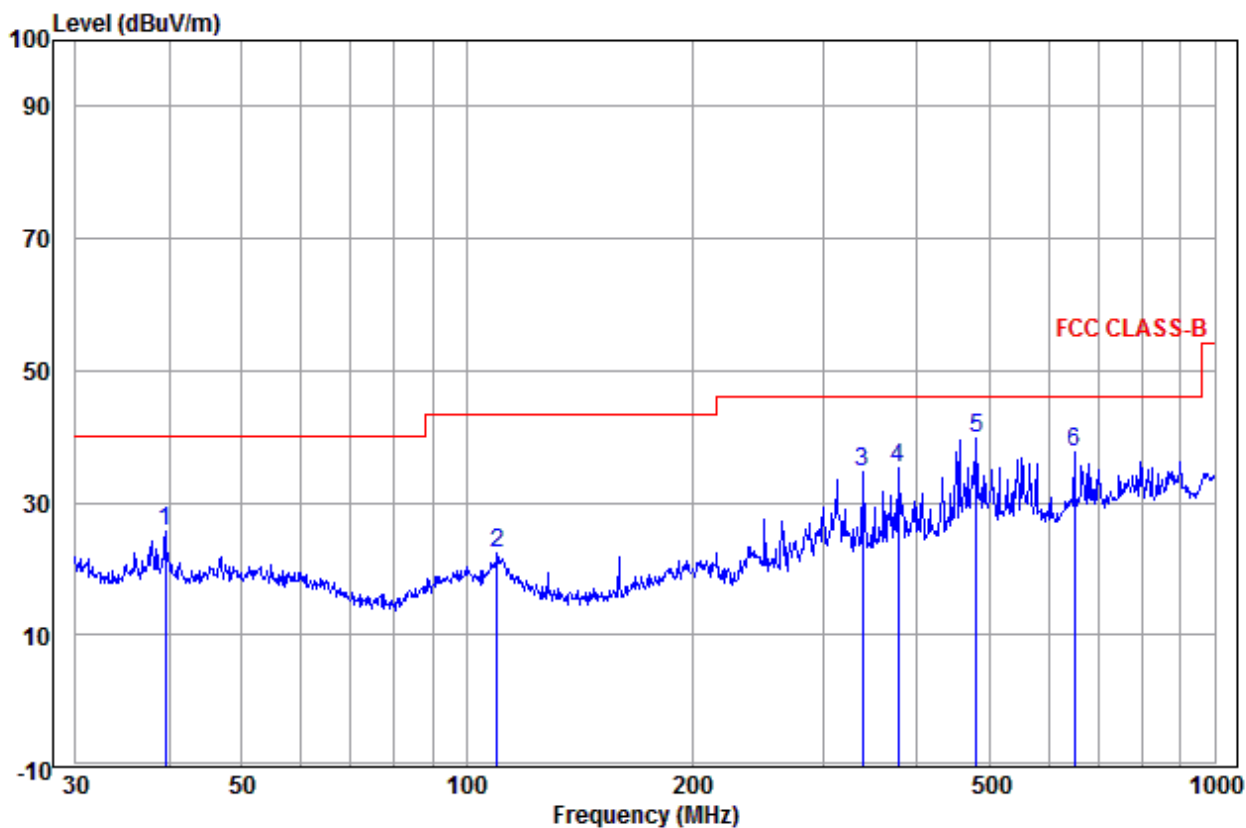
Appendix I): Radiated Spurious Emissions

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 chamber. 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

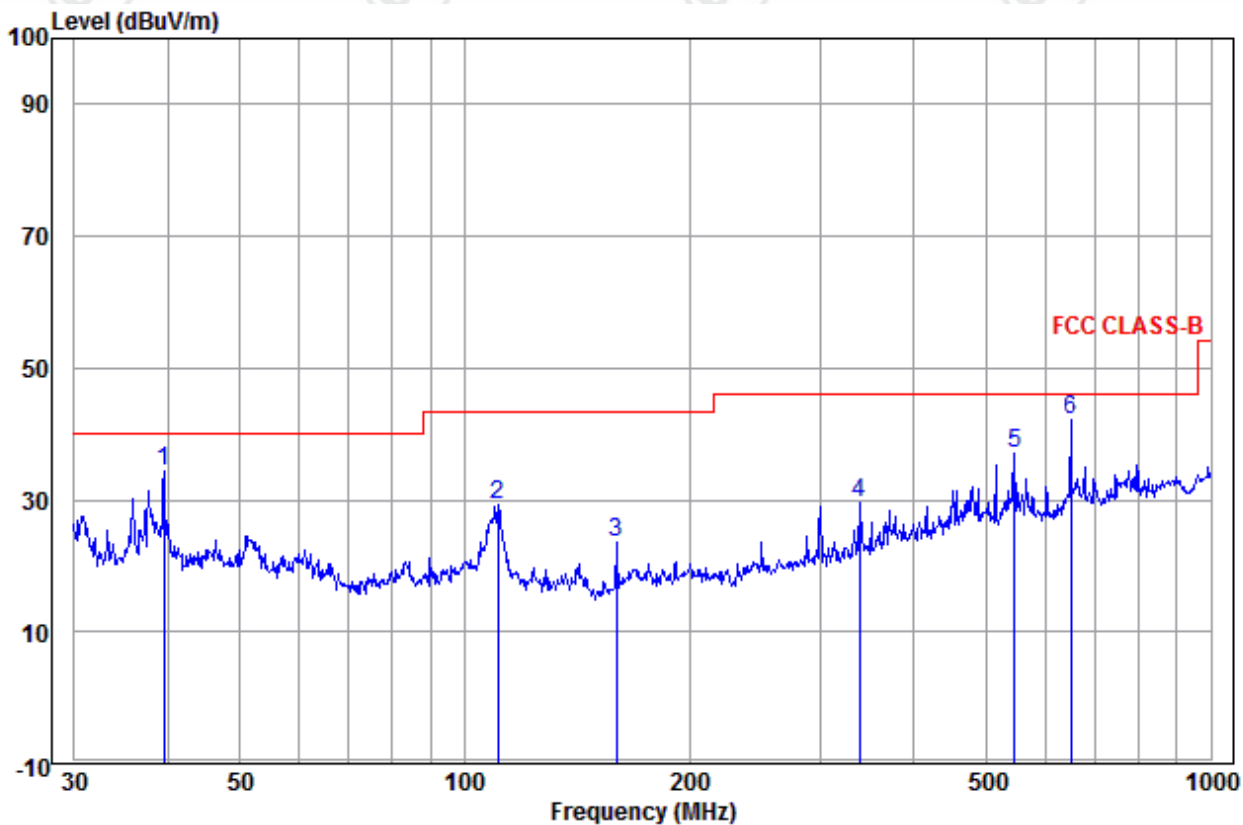
30MHz~1GHz (QP)

Test mode:	Transmitting	Horizontal
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	Freq	Ant Factor	Cable Loss	Read Level	Limit Level	Over Limit	Pol/Phase	Remark
	MHz	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	39.576	14.14	0.55	10.88	25.57	40.00	-14.43	Horizontal
2	109.796	12.39	1.57	8.47	22.43	43.50	-21.07	Horizontal
3	338.400	14.52	2.64	17.47	34.63	46.00	-11.37	Horizontal
4	377.259	15.64	2.76	16.78	35.18	46.00	-10.82	Horizontal
5 pp	480.528	17.91	3.08	18.85	39.84	46.00	-6.16	Horizontal
6	649.660	19.59	3.57	14.42	37.58	46.00	-8.42	Horizontal

Test mode:	Transmitting	Vertical
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	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	39.576	14.14	0.55	19.53	34.22	40.00	-5.78	Vertical	
2	110.957	12.30	1.57	15.35	29.22	43.50	-14.28	Vertical	
3	159.784	10.12	1.72	11.81	23.65	43.50	-19.85	Vertical	
4	338.400	14.52	2.64	12.28	29.44	46.00	-16.56	Vertical	
5	545.183	18.58	3.20	15.13	36.91	46.00	-9.09	Vertical	
6 pp	649.660	19.59	3.57	19.13	42.29	46.00	-3.71	Vertical	

Remark: for 30MHz~1GHz test, low middle highest channel are tested, only show worst data in the report.

Transmitter Emission above 1GHz

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
1087.632	29.94	2.38	35.09	44.43	41.66	74.00	-32.34	Pass	Horizontal
1439.090	30.75	2.77	34.73	43.74	42.53	74.00	-31.47	Pass	Horizontal
1768.619	31.35	3.06	34.46	43.06	43.01	74.00	-30.99	Pass	Horizontal
4824.000	34.73	5.11	34.35	45.11	56.60	74.00	-23.40	Pass	Horizontal
7236.000	36.42	6.68	34.90	41.31	49.51	74.00	-24.49	Pass	Horizontal
9648.000	37.91	7.71	35.07	39.97	54.52	74.00	-23.48	Pass	Horizontal
1165.013	30.14	2.47	35.00	44.53	42.14	74.00	-31.86	Pass	Vertical
1495.101	30.86	2.82	34.68	43.35	42.35	74.00	-31.65	Pass	Vertical
1958.189	31.64	3.20	34.33	43.68	44.19	74.00	-29.81	Pass	Vertical
4824.000	34.73	5.11	34.35	40.76	46.25	74.00	-27.75	Pass	Vertical
7236.000	36.42	6.68	34.90	40.89	49.09	74.00	-24.91	Pass	Vertical
9648.000	37.91	7.71	35.07	40.16	51.71	74.00	-23.29	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
1204.210	30.24	2.52	34.96	45.15	42.95	74.00	-31.05	Pass	Horizontal
1439.090	30.75	2.77	34.73	44.02	42.81	74.00	-31.19	Pass	Horizontal
1786.719	31.37	3.07	34.45	42.64	42.63	74.00	-31.37	Pass	Horizontal
4874.000	34.86	5.08	34.33	44.64	51.25	74.00	-23.75	Pass	Horizontal
7311.000	36.43	6.77	34.90	41.20	49.50	74.00	-24.50	Pass	Horizontal
9748.000	38.02	7.62	35.05	40.15	50.74	74.00	-23.26	Pass	Horizontal
1244.726	30.33	2.57	34.92	44.54	42.52	74.00	-31.48	Pass	Vertical
1453.818	30.78	2.78	34.71	44.43	43.28	74.00	-30.72	Pass	Vertical
1880.038	31.52	3.14	34.38	43.05	43.33	74.00	-30.67	Pass	Vertical
4874.000	34.83	5.09	34.34	42.54	48.12	74.00	-25.88	Pass	Vertical
7311.000	36.43	6.77	34.90	41.34	49.64	74.00	-24.36	Pass	Vertical
9748.000	38.05	7.60	35.05	39.51	51.11	74.00	-23.89	Pass	Vertical

Test mode: 802.11b(11Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1195.049	30.21	2.51	34.97	43.82	41.57	74.00	-32.43	Pass	Horizontal
1521.981	30.91	2.85	34.65	44.42	43.53	74.00	-30.47	Pass	Horizontal
1908.972	31.57	3.16	34.36	42.52	42.89	74.00	-31.11	Pass	Horizontal
4924.000	34.94	5.07	34.32	44.65	50.34	74.00	-23.66	Pass	Horizontal
7386.000	36.44	6.82	34.90	40.75	49.11	74.00	-24.89	Pass	Horizontal
9848.000	38.15	7.52	35.03	40.17	51.81	74.00	-23.19	Pass	Horizontal
1147.354	30.10	2.45	35.02	44.52	42.05	74.00	-31.95	Pass	Vertical
1402.920	30.68	2.73	34.76	44.14	42.79	74.00	-31.21	Pass	Vertical
1884.829	31.53	3.15	34.38	42.46	42.76	74.00	-31.24	Pass	Vertical
4924.000	34.96	5.06	34.32	40.39	46.09	74.00	-27.91	Pass	Vertical
7386.000	36.44	6.84	34.90	40.24	48.62	74.00	-25.38	Pass	Vertical
9848.000	38.13	7.54	35.03	40.36	51.00	74.00	-23.00	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2412MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1216.534	30.27	2.53	34.95	44.07	41.92	74.00	-32.08	Pass	Horizontal
1577.198	31.01	2.90	34.61	44.20	43.50	74.00	-30.50	Pass	Horizontal
1958.189	31.64	3.20	34.33	43.06	43.57	74.00	-30.43	Pass	Horizontal
4824.000	34.73	5.11	34.35	44.46	49.95	74.00	-24.05	Pass	Horizontal
7236.000	36.42	6.68	34.90	39.76	47.96	74.00	-26.04	Pass	Horizontal
9648.000	37.91	7.71	35.07	39.66	51.21	74.00	-23.79	Pass	Horizontal
1185.958	30.19	2.50	34.98	44.74	42.45	74.00	-31.55	Pass	Vertical
1439.090	30.75	2.77	34.73	44.28	43.07	74.00	-30.93	Pass	Vertical
1764.123	31.34	3.05	34.46	42.81	42.74	74.00	-31.26	Pass	Vertical
4824.000	34.73	5.11	34.35	40.14	45.63	74.00	-28.37	Pass	Vertical
7236.000	36.42	6.68	34.90	39.45	47.65	74.00	-26.35	Pass	Vertical
9648.000	37.91	7.71	35.07	40.09	50.64	74.00	-23.36	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2437MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1144.437	30.09	2.45	35.02	45.32	42.84	74.00	-31.16	Pass	Horizontal
1428.142	30.73	2.76	34.74	43.50	42.25	74.00	-31.75	Pass	Horizontal
1913.838	31.57	3.17	34.36	44.40	44.78	74.00	-29.22	Pass	Horizontal
4874.000	34.83	5.09	34.34	45.33	52.91	74.00	-23.09	Pass	Horizontal
7311.000	36.43	6.77	34.90	41.11	49.41	74.00	-24.59	Pass	Horizontal
9748.000	38.05	7.60	35.05	39.38	49.98	74.00	-24.02	Pass	Horizontal
1198.095	30.22	2.51	34.97	44.55	42.31	74.00	-31.69	Pass	Vertical
1495.101	30.86	2.82	34.68	44.46	43.46	74.00	-30.54	Pass	Vertical
1786.719	31.37	3.07	34.45	43.81	43.80	74.00	-30.20	Pass	Vertical
4874.000	34.83	5.09	34.34	42.25	47.83	74.00	-26.17	Pass	Vertical
7311.000	36.43	6.77	34.90	41.07	49.37	74.00	-24.63	Pass	Vertical
9748.000	38.05	7.60	35.05	39.45	50.05	74.00	-23.95	Pass	Vertical

Test mode: 802.11g(6Mbps)			Test Frequency: 2462MHz			Remark: Peak			
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1144.437	30.09	2.45	35.02	44.49	42.01	74.00	-31.99	Pass	Horizontal
1364.182	30.60	2.69	34.80	45.29	43.78	74.00	-30.22	Pass	Horizontal
1724.166	31.27	3.02	34.49	43.81	43.61	74.00	-30.39	Pass	Horizontal
4924.000	34.96	5.06	34.32	41.91	47.61	74.00	-26.39	Pass	Horizontal
7386.000	36.44	6.82	34.90	39.74	48.10	74.00	-25.90	Pass	Horizontal
9848.000	38.13	7.54	35.03	39.55	51.19	74.00	-23.81	Pass	Horizontal
1165.013	30.14	2.47	35.00	44.65	42.26	74.00	-31.74	Pass	Vertical
1461.238	30.79	2.79	34.71	43.78	42.65	74.00	-31.35	Pass	Vertical
1860.992	31.49	3.13	34.39	42.72	42.95	74.00	-31.05	Pass	Vertical
4924.000	34.94	5.07	34.32	41.18	46.87	74.00	-27.13	Pass	Vertical
7386.000	36.44	6.82	34.90	40.56	48.92	74.00	-25.08	Pass	Vertical
9848.000	38.13	7.54	35.03	40.36	51.00	74.00	-23.00	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)				Test Frequency: 2412MHz			Remark: Peak		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1153.210	30.11	2.46	35.01	44.99	42.55	74.00	-31.45	Pass	Horizontal
1353.804	30.57	2.68	34.81	44.95	43.39	74.00	-30.61	Pass	Horizontal
1828.125	31.44	3.10	34.42	43.41	43.53	74.00	-30.47	Pass	Horizontal
4824.000	34.75	5.10	34.35	43.24	48.74	74.00	-25.26	Pass	Horizontal
7236.000	36.42	6.68	34.90	40.04	48.24	74.00	-25.76	Pass	Horizontal
9648.000	37.91	7.71	35.07	40.23	51.78	74.00	-23.22	Pass	Horizontal
1201.149	30.23	2.52	34.96	45.16	42.95	74.00	-31.05	Pass	Vertical
1533.648	30.93	2.86	34.64	43.61	42.76	74.00	-31.24	Pass	Vertical
1856.261	31.48	3.13	34.40	43.35	43.56	74.00	-30.44	Pass	Vertical
4824.000	34.75	5.10	34.35	41.15	46.65	74.00	-27.35	Pass	Vertical
7236.000	36.42	6.67	34.90	38.67	46.86	74.00	-27.14	Pass	Vertical
9648.000	37.91	7.71	35.07	39.54	50.09	74.00	-23.91	Pass	Vertical

Test mode: 802.11n(HT20)(6.5Mbps)				Test Frequency: 2437MHz			Remark: Peak		
Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Gain (dB)	Read Level (dBμV)	Final test level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Result	Antenna Polaxis
1222.743	30.28	2.54	34.94	44.93	42.81	74.00	-31.19	Pass	Horizontal
1435.431	30.74	2.77	34.73	44.46	43.24	74.00	-30.76	Pass	Horizontal
1759.638	31.33	3.05	34.47	43.76	43.67	74.00	-30.33	Pass	Horizontal
4874.000	34.83	5.09	34.34	46.61	50.19	74.00	-23.81	Pass	Horizontal
7311.000	36.43	6.77	34.90	41.06	49.36	74.00	-24.64	Pass	Horizontal
9748.000	38.02	7.62	35.05	38.09	48.68	74.00	-25.32	Pass	Horizontal
1247.899	30.34	2.57	34.91	42.76	40.76	74.00	-33.24	Pass	Vertical
1561.221	30.99	2.88	34.62	44.35	43.60	74.00	-30.40	Pass	Vertical
1894.450	31.54	3.15	34.37	43.03	43.35	74.00	-30.65	Pass	Vertical
4874.000	34.80	5.09	34.34	40.51	46.06	74.00	-27.94	Pass	Vertical
7311.000	36.43	6.77	34.90	39.77	48.07	74.00	-25.93	Pass	Vertical
9748.000	38.02	7.62	35.05	38.76	49.35	74.00	-24.65	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
1132.844	30.06	2.43	35.04	45.08	42.53	74.00	-31.47	Pass	Horizontal
1336.682	30.54	2.67	34.82	42.63	41.02	74.00	-32.98	Pass	Horizontal
1737.384	31.29	3.03	34.48	43.23	43.07	74.00	-30.93	Pass	Horizontal
4924.000	34.94	5.07	34.32	42.92	48.61	74.00	-25.39	Pass	Horizontal
7386.000	36.44	6.82	34.90	40.21	48.57	74.00	-25.43	Pass	Horizontal
9848.000	38.13	7.54	35.03	40.29	50.93	74.00	-23.07	Pass	Horizontal
1195.049	30.21	2.51	34.97	44.75	42.50	74.00	-31.50	Pass	Vertical
1442.758	30.76	2.77	34.72	43.01	41.82	74.00	-32.18	Pass	Vertical
1894.450	31.54	3.15	34.37	42.34	42.66	74.00	-31.34	Pass	Vertical
4924.000	34.96	5.06	34.32	41.13	46.83	74.00	-27.17	Pass	Vertical
7386.000	36.44	6.84	34.90	40.45	48.83	74.00	-25.17	Pass	Vertical
9848.000	38.13	7.54	35.03	39.81	50.45	74.00	-23.55	Pass	Vertical

Test mode: 802.11n(HT40)(13.5Mbps)				Test Frequency: 2422MHz			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	2.48	34.99	44.93	42.58	74.00	-31.42	Pass	Horizontal
1395.796	30.66	2.73	34.77	45.20	43.82	74.00	-30.18	Pass	Horizontal
1809.605	31.41	3.09	34.43	42.98	43.05	74.00	-30.95	Pass	Horizontal
4844.000	34.78	5.10	34.34	42.34	47.88	74.00	-26.12	Pass	Horizontal
7266.000	36.43	6.72	34.90	41.43	49.68	74.00	-24.32	Pass	Horizontal
9688.000	37.97	7.66	35.06	39.39	49.96	74.00	-24.04	Pass	Horizontal
1176.935	30.17	2.49	34.99	43.37	41.04	74.00	-32.96	Pass	Vertical
1367.659	30.60	2.70	34.79	44.25	42.76	74.00	-31.24	Pass	Vertical
1786.719	31.37	3.07	34.45	42.76	42.75	74.00	-31.25	Pass	Vertical
4844.000	34.80	5.09	34.34	42.23	47.78	74.00	-26.22	Pass	Vertical
7266.000	36.43	6.72	34.90	40.16	48.41	74.00	-25.59	Pass	Vertical
9688.000	37.97	7.66	35.06	38.67	49.24	74.00	-24.76	Pass	Vertical

Test mode: 802.11n(HT40)(13.5Mbps)				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
1167.982	30.15	2.48	35.00	45.42	43.05	74.00	-30.95	Pass	Horizontal
1381.656	30.63	2.71	34.78	45.07	43.63	74.00	-30.37	Pass	Horizontal
1719.783	31.26	3.02	34.50	43.85	43.63	74.00	-30.37	Pass	Horizontal
4874.000	34.83	5.09	34.34	44.10	49.68	74.00	-24.32	Pass	Horizontal
7311.000	36.43	6.77	34.90	41.05	49.35	74.00	-24.65	Pass	Horizontal
9748.000	38.02	7.62	35.05	39.30	49.89	74.00	-24.11	Pass	Horizontal
1118.517	30.02	2.42	35.05	45.07	42.46	74.00	-31.54	Pass	Vertical
1263.883	30.38	2.59	34.90	43.54	41.61	74.00	-32.39	Pass	Vertical
1646.948	31.14	2.96	34.55	42.92	42.47	74.00	-31.53	Pass	Vertical
4874.000	34.83	5.09	34.34	40.18	45.76	74.00	-28.24	Pass	Vertical
7311.000	36.43	6.77	34.90	41.05	49.35	74.00	-24.65	Pass	Vertical
9748.000	38.02	7.62	35.05	38.88	49.47	74.00	-24.53	Pass	Vertical

Test mode: 802.11n(HT40)(13.5Mbps)				Test Frequency: 2452MHz			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
1159.096	30.13	2.47	35.01	44.84	42.43	74.00	-31.57	Pass	Horizontal
1385.177	30.64	2.72	34.78	44.18	42.76	74.00	-31.24	Pass	Horizontal
1719.783	31.26	3.02	34.50	42.83	42.61	74.00	-31.39	Pass	Horizontal
4904.000	34.91	5.07	34.32	41.68	47.34	74.00	-26.66	Pass	Horizontal
7356.000	36.44	6.80	34.90	39.91	48.25	74.00	-25.75	Pass	Horizontal
9808.000	38.10	7.56	35.04	40.06	51.68	74.00	-23.32	Pass	Horizontal
1127.091	30.05	2.43	35.04	44.91	42.35	74.00	-31.65	Pass	Vertical
1428.142	30.73	2.76	34.74	43.05	41.80	74.00	-32.20	Pass	Vertical
1908.972	31.57	3.16	34.36	42.63	43.00	74.00	-31.00	Pass	Vertical
4904.000	34.91	5.07	34.32	40.08	45.74	74.00	-28.26	Pass	Vertical
7356.000	36.44	6.80	34.90	40.46	48.80	74.00	-25.20	Pass	Vertical
9808.000	38.10	7.56	35.04	40.51	50.13	74.00	-23.87	Pass	Vertical

Note:

1) Through Pre-scan transmitter mode with all kind of modulation and data rate, find the 11Mbps of rate is the worst case of 802.11b; 6Mbps of rate is the worst case of 802.11g; 6.5Mbps of rate is the worst case of 802.11n(HT20) ; 13.5Mbps of rate is the worst case of 802.11n(HT40), 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

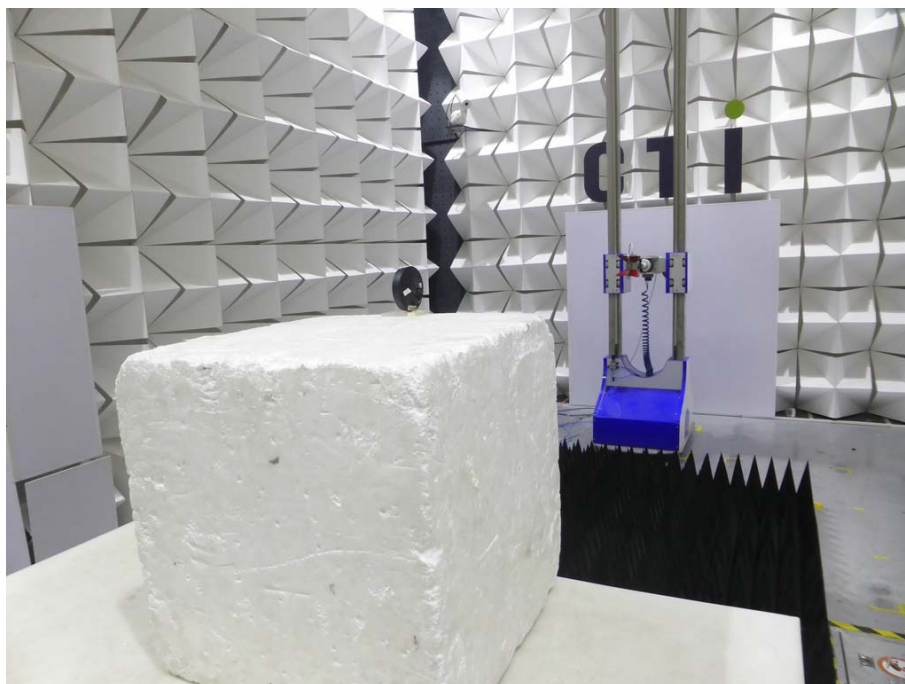
Test Model No.: TC200KU



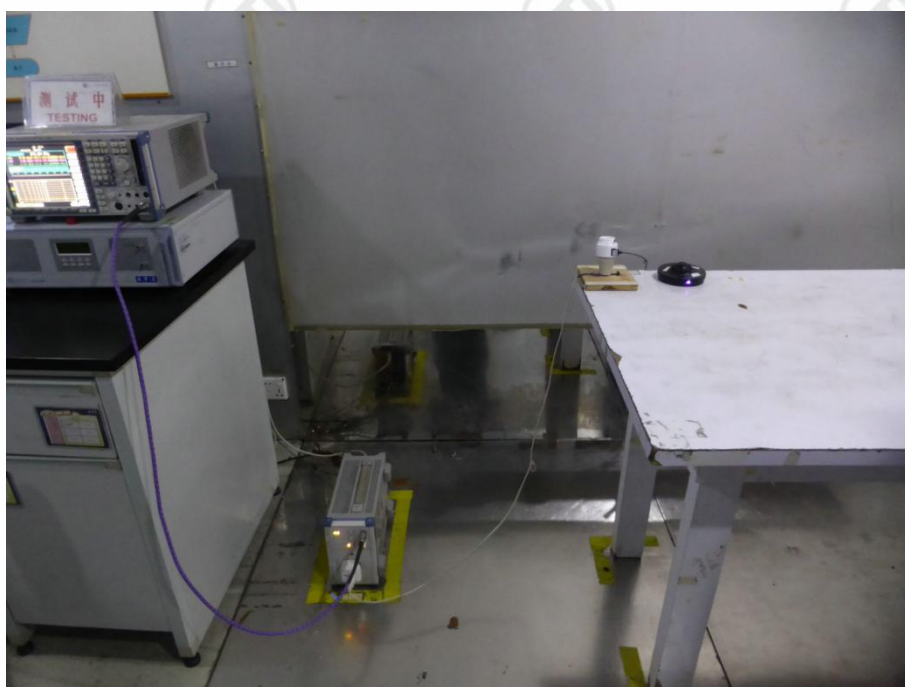
Radiated spurious emission Test Setup-1(Below 30MHz)



Radiated spurious emission Test Setup-2(30MHz-1GHz)



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



Conducted Emissions Test Setup

PHOTOGRAPHS OF EUT Constructional Details

Refer to Report No. EED32I00271801 for EUT external and internal photos.

*** End of Report ***

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