



**FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 2**

CERTIFICATION TEST REPORT

For

Appliance

MODEL NUMBER: S9N29R

FCC ID: 2ANXA-6733

IC: 23821-6733

REPORT NUMBER: 4788499014-2

ISSUE DATE: 30 Jun. 2018

Prepared for

The Resistor L.L.C.

8215 SW Tualatin-Sherwood Road Suite 200 Tualatin, Oregon, 97062

Prepared by

**UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch
Room 101, Building 10, Innovation Technology Park, Song Shan Lake Hi tech
Development Zone, Dongguan, 523808, China**

Tel: +86 769 33817100

Fax: +86 769 33244054

Website: www.ul.com



Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/30/2018	Initial Issue	--



Summary of Test Results			
Clause	Test Items	FCC/IC Rules	Test Results
1	6 dB Bandwidth and 99% Bandwidth	FCC 15.247 (a) (2) RSS-247 Clause 5.2 (a)	Pass
2	Peak Conducted Output Power	FCC 15.247 (b) (3) RSS-247 Clause 5.4 (e)	Pass
3	Power Spectral Density	FCC 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC 15.247 (d) FCC 15.209 FCC 15.205 RSS-247 Clause 5.5 RSS-Gen Clause 8.9	Pass
6	Conducted Emission Test For AC Power Port	FCC 15.207 RSS-Gen Clause 8.8	Pass
7	Antenna Requirement	FCC 15.203 RSS-Gen Clause 8.3	Pass



TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS	6
2. TEST METHODOLOGY	7
3. FACILITIES AND ACCREDITATION	7
4. CALIBRATION AND UNCERTAINTY	8
4.1. MEASURING INSTRUMENT CALIBRATION	8
4.2. MEASUREMENT UNCERTAINTY.....	8
5. EQUIPMENT UNDER TEST	9
5.1. DESCRIPTION OF EUT	9
5.2. MAXIMUM OUTPUT POWER	9
5.3. CHANNEL LIST.....	9
5.4. TEST CHANNEL CONFIGURATION.....	10
5.5. THE WORSE CASE CONFIGURATIONS	10
5.6. DESCRIPTION OF AVAILABLE ANTENNAS.....	10
5.7. DESCRIPTION OF TEST SETUP	11
6. MEASURING INSTRUMENT AND SOFTWARE USED	12
7. MEASUREMENT METHODS	14
8. ANTENNA PORT TEST RESULTS	15
8.1. ON TIME AND DUTY CYCLE.....	15
8.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH.....	18
8.2.1. 802.11b MODE	19
8.2.2. 802.11g MODE	25
8.2.3. 802.11n HT20 MODE	31
8.2.4. 802.11n HT40 MODE	37
8.3. PEAK CONDUCTED OUTPUT POWER	43
8.3.1. 802.11b MODE	44
8.3.2. 802.11g MODE	44
8.3.3. 802.11n HT20 MODE	44
8.3.4. 802.11 n HT40 MODE	45
8.4. POWER SPECTRAL DENSITY.....	46
8.4.1. 802.11b MODE	47
8.4.2. 802.11g MODE	50
8.4.3. 802.11n HT20 MODE	53
8.4.4. 802.11n HT40 MODE	56
8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS	59
8.5.1. 802.11b MODE	60



8.5.2.	802.11g MODE	64
8.5.3.	802.11n HT20 MODE	68
8.5.4.	802.11n HT40 MODE	72
9.	RADIATED TEST RESULTS.....	76
9.1.	<i>RESTRICTED BANDEDGE.....</i>	<i>82</i>
9.2.	<i>SPURIOUS EMISSIONS (30-1GHz).....</i>	<i>106</i>
9.3.	<i>SPURIOUS EMISSIONS (1GHz-18GHz)</i>	<i>108</i>
9.4.	<i>SPURIOUS EMISSIONS (18GHz-25GHz).....</i>	<i>130</i>
9.5.	<i>SPURIOUS EMISSIONS BELOW 30M</i>	<i>134</i>
10.	AC POWER LINE CONDUCTED EMISSIONS.....	138
11.	ANTENNA REQUIREMENTS.....	141



1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: The Resistor L.L.C.
Address: 8215 SW Tualatin-Sherwood Road Suite 200 Tualatin, Oregon, 97062

Manufacturer Information

Company Name: The Resistor L.L.C.
Address: 8215 SW Tualatin-Sherwood Road Suite 200 Tualatin, Oregon, 97062

EUT Description

EUT Name: Appliance
Model: S9N29R
Brand Name: N/A
Sample Status: Normal
Sample ID: 1102464
Sample Received Date: 06 Mar. 2018
Date of Tested: 06 Mar. 2018 ~ 28 Jun. 2018

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC Part 15 Subpart C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-Gen Issue 5	PASS

Tested By:

Chris chen
Engineer Project Associate
Approved By:

Stephen Guo
Laboratory Manager

Checked By:

Shawn Wen
Laboratory Leader



2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with 558074 D01 DTS Meas Guidance v04, 414788 D01 Radiated Test Site v01, FCC CFR 47 Part 2, FCC CFR 47 Part 15 , ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-Gen Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	A2LA (Certificate No.: 4338.01) Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with A2LA. CNAS (Registration No.: L7649) Shenzhen STS Test Services Co., Ltd. has been assessed and proved to be in compliance with CNAS. FCC (FCC Designation No.: 625569) Shenzhen STS Test Services Co., Ltd. has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules IC(Company No.: 12108A) Shenzhen STS Test Services Co., Ltd. has been registered and fully described in a report filed with Industry Canada. The Company Number is 12108A.
---------------------------	---

Note 1: All tests measurement facilities use to collect the measurement data are located at 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road, Fuyong Street, Bao'an District, Shenzhen, Guangdong, China

Note 2: The test anechoic chamber in Shenzhen STS Test Services Co., Ltd.
had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.



4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Conducted Emission (9KHz-150KHz)	$\pm 2.88\text{dB}$
2	Conducted Emission (150KHz-30MHz)	$\pm 2.67\text{dB}$
3	RF power, conducted	$\pm 0.71\text{dB}$
4	Spurious emissions, conducted	$\pm 0.63\text{dB}$
5	All emissions, radiated (9KHz-30MHz)	$\pm 3.02\text{dB}$
6	All emissions, radiated (30MHz-200MHz)	$\pm 3.80\text{dB}$
7	All emissions, radiated (200MHz-1000MHz)	$\pm 3.97\text{dB}$
8	All emissions, radiated(>1G)	$\pm 3.03\text{dB}$



5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name	Appliance
EUT Description	The EUT is a Connected Appliance.
Model	S9N29R
Radio Technology	IEEE802.11b/g/n HT20/n HT40
Operation frequency	IEEE 802.11b: 2412MHz—2472MHz IEEE 802.11g: 2412MHz—2472MHz IEEE 802.11n HT20: 2412MHz—2472MHz IEEE 802.11n HT40: 2422MHz—2462MHz
Modulation	IEEE 802.11b: DSSS(CCK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Power Supply	Input: 120VAC, 60Hz, 1050W; Output 700W
Hardware Version	EVT3
Software Version	EVT3

5.2. MAXIMUM OUTPUT POWER

Frequency Range (MHz)	Number of Transmit Chains (NTX)	IEE Std. 802.11	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
2400-2483.5	1	IEEE 802.11b	2412-2472	1-13[13]	18.52
2400-2483.5	1	IEEE 802.11g	2412-2472	1-13[13]	17.45
2400-2483.5	1	IEEE 802.11nHT20	2412-2472	1-13[13]	17.26
2400-2483.5	1	IEEE 802.11nHT40	2422-2462	3-11[9]	15.84

5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452	13	2472
2	2417	6	2437	10	2457	N/A	N/A
3	2422	7	2442	11	2462	N/A	N/A
4	2425	8	2447	12	2467	N/A	N/A



5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11, CH12, CH13	2412MHz, 2437MHz, 2462MHz, 2467MHz, 2472MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11, CH12, CH13	2412MHz, 2437MHz, 2462MHz, 2467MHz, 2472MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11, CH12, CH13	2412MHz, 2437MHz, 2462MHz, 2467MHz, 2472MHz
WiFi TX(802.11n HT40)	CH 3, CH 6, CH 9, CH10, CH11	2422MHz, 2437MHz, 2452MHz, 2457MHz, 2462MHz

5.5. THE WORSE CASE CONFIGURATIONS

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band											
Modulation Mode	Transmit Antenna Number	Test Channel									
		NCB: 20MHz					NCB: 40MHz				
		CH 1	CH 6	CH 11	CH 12	CH 13	CH 3	CH 6	CH 09	CH 10	CH 11
802.11b	1	Default	Default	Default	Default	Default	N/A				
802.11g	1	Default	Default	Default	Default	Default					
802.11n HT20	1	Default	Default	Default	Default	Default					
802.11n HT40	1	N/A					Default	Default	Default	Default	Default

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2412-2472	PIFA Antenna	1.47

Test Mode	Transmit and Receive Mode	Description
IEEE 802.11b	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11g	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT20	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.
IEEE 802.11n HT40	☒ 1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.



5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	PC	DELL	VOSTRO.3800	N/A

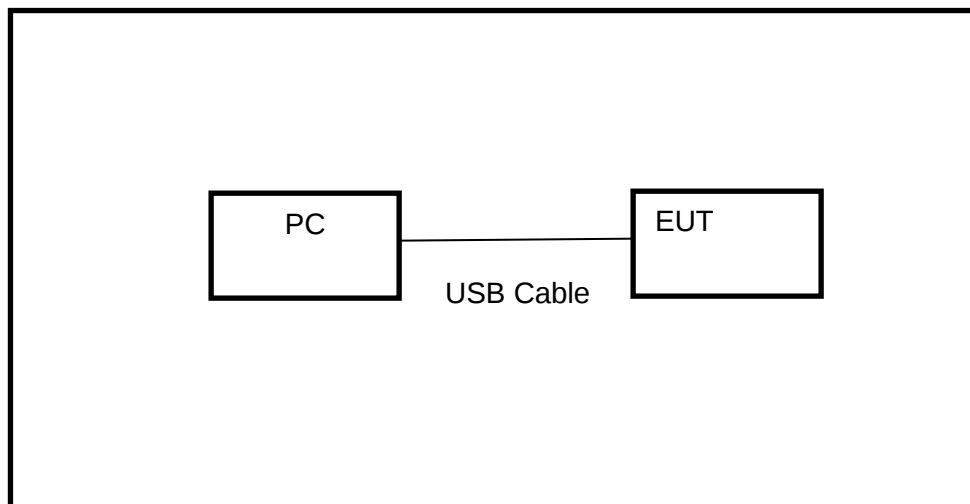
I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(cm)	Remarks
1	USB Cable	NO	N/A	100cm	N/A

TEST SETUP

The EUT can work in engineering mode with firmware QRCT from QUALCOMM through a Laptop.

SETUP DIAGRAM FOR TESTS





6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☒	Test Receiver	R&S	ESCI	101427	2017.10.15	2018.10.14
☒	LISN	R&S	ENV216	101242	2017.10.15	2018.10.14
☒	Conduction Cable	EM	C01	N/A	2017.10.18	2018.10.17
☒	Temperature & Humidity	Mieo	HH660	N/A	2017.10.15	2018.10.14
Radiated Emissions						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☒	EMI Test Receiver	R&S	ESCI	102086	2017.10.15	2018.10.14
☒	Bilog Antenna	TESEQ	CBL6111D	34678	2017.10.30	2018.10.29
☒	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1343	2017.10.27	2018.10.26
☒	SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	N/A	2017.03.11	2019.03.10
☒	Temperature & Humidity	HH660	Mieo	N/A	2017.10.15	2018.10.14
☒	Temperature & Humidity	HH660	Mieo	N/A	2017.10.15	2018.10.14
☒	Pre-Amplifier (0.1M-3GHz)	EM	EM330	60538	2017.10.28	2018.10.27
☒	Pre Amplifier (1G-26.5GHz)	Agilent	8449B	60538	2017.10.15	2018.10.14
☒	Operational Manual Passive Loop (9K--30MHz)	ETS	6512	00165355	2017.10.18	2018.10.17
☒	Low frequency cable	EM	R01	N/A	2017.10.18	2018.10.17
☒	Low frequency cable	EM	R06	N/A	2017.10.18	2018.10.17
☒	High frequency cable	SCHWARZBECK	R04	N/A	2017.10.18	2018.10.17
☒	High frequency cable	SCHWARZBECK	R02	N/A	2017.10.18	2018.10.17
☒	Semi-anechoic chamber	Changling	966	N/A	2017.10.15	2018.10.14
☒	turn table	EM	SC100_1	60531	N/A	N/A
☒	Antenna mast	EM	SC100	N/A	N/A	N/A
☒	Max-full Antenna Corp	MF	MFA-440H	N/A	N/A	N/A



☒	Low Noise PreAMP_18-40GHz	A-INFO	LNPA_1840G- 50	N/A	2017.03.11	2019.03.10
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☒	USB RF power sensor	DARE	RPR3006 W	15I00041SNO03	2017.10.15	2018.10.14
☒	Power Meter	R&S	NRP	100510	2017.10.15	2018.10.14
☒	Spectrum Analyzer	Agilent	E4407B	MY50140340	2018.03.08	2019.03.07
☒	Signal Analyzer	Agilent	N9020A	MY49100060	2018.03.08	2019.03.07



7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6 dB Bandwidth and 99% Bandwidth	KDB 558074 D01 DTS Meas Guidance v04	8.0
2	Peak Output Power	KDB 558074 D01 DTS Meas Guidance v04	9.1.3
3	Power Spectral Density	KDB 558074 D01 DTS Meas Guidance v04	10.2
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 DTS Meas Guidance v04	11.0
5	Out-of-band emissions in restricted bands	KDB 558074 D01 DTS Meas Guidance v04	12.1
6	Band-edge	KDB 558074 D01 DTS Meas Guidance v04	13.3.2
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2



8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

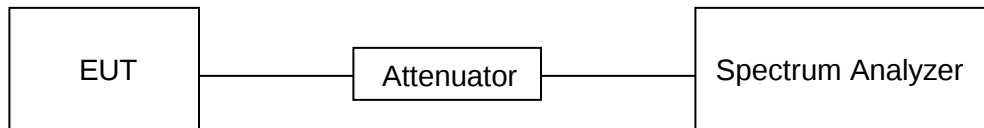
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



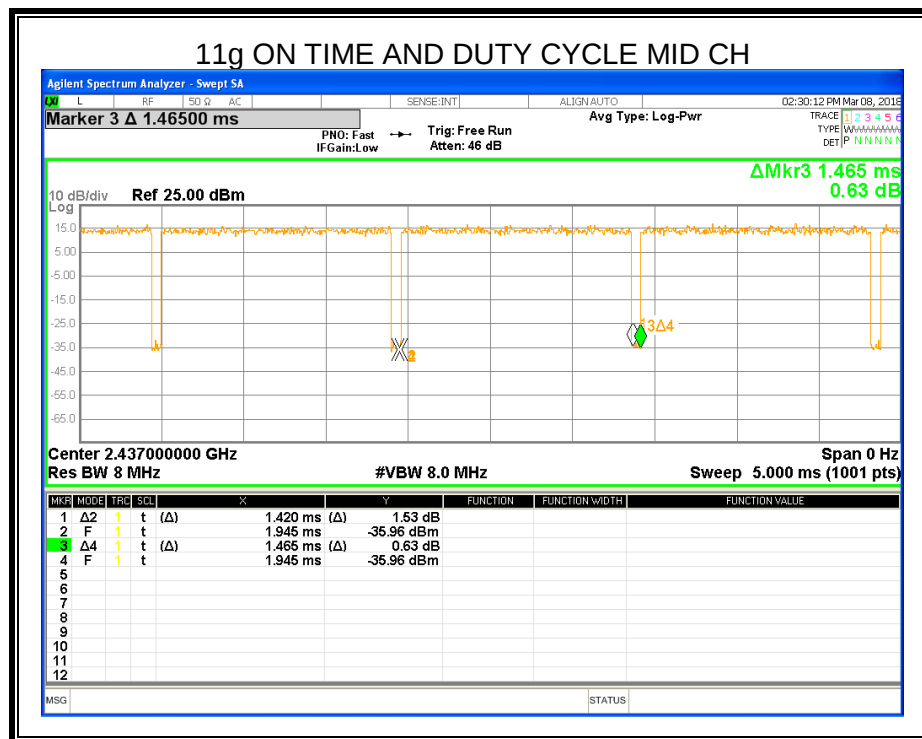
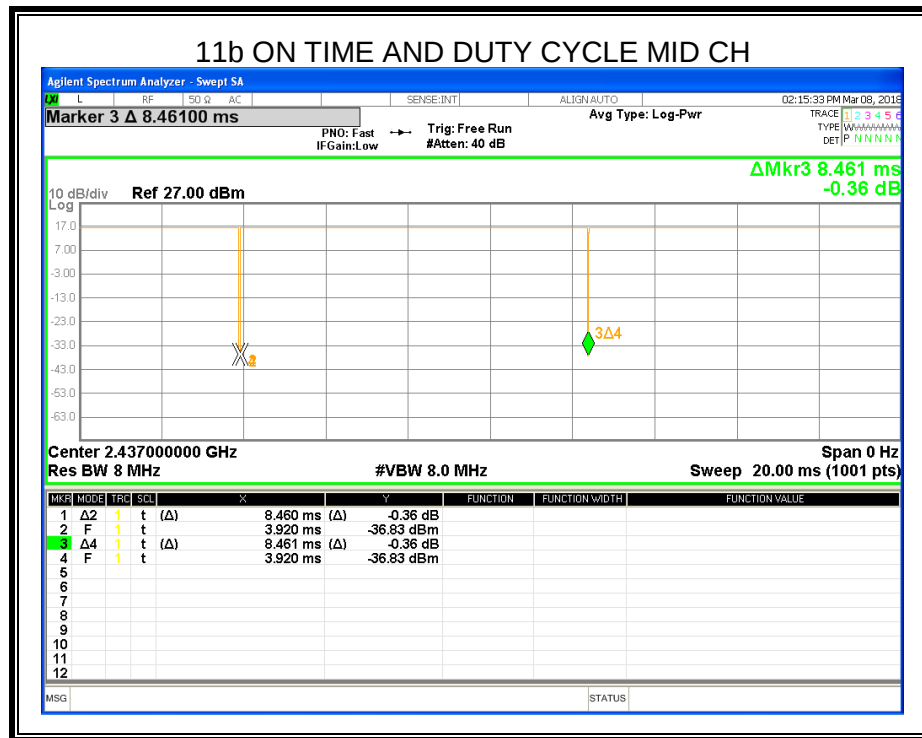
TEST ENVIRONMENT

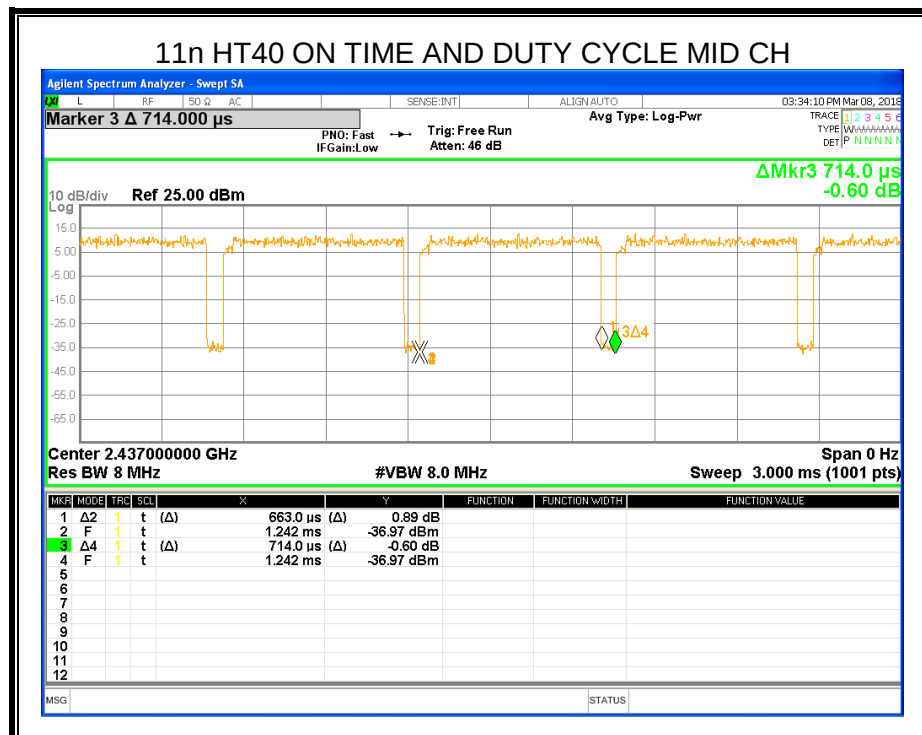
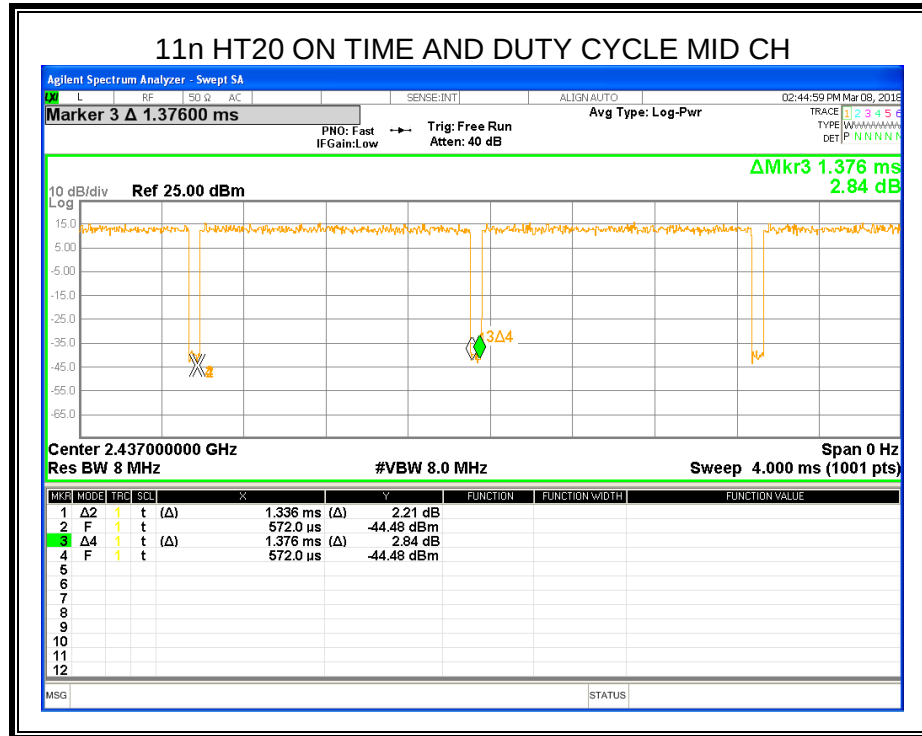
Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/B Minimum VBW (KHz)
11b	8.460	8.461	0.9999	99.99	0.00	8000
11g	1.420	1.465	0.9693	96.93	0.14	8000
11n20	1.336	1.376	0.9709	97.09	0.13	8000
11n40	0.663	0.714	0.9286	92.86	0.32	8000

Note: Duty Cycle Correction Factor=10log(1/x).
Where: x is Duty Cycle(Linear)
Where: B is On Time







8.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2) RSS-247 5.1 (a)	6 dB Bandwidth	$\geq 500\text{KHz}$	2400-2483.5
RSS-Gen Clause 6.6	99% Bandwidth	For reporting purposes only.	2400-2483.5

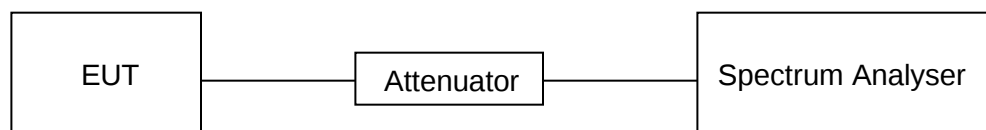
TEST PROCEDURE

Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	For 6dB Bandwidth :100K For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : $\geq 3 \times \text{RBW}$ For 99% Bandwidth : approximately $3 \times \text{RBW}$
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB and 99% relative to the maximum level measured in the fundamental emission.

TEST SETUP





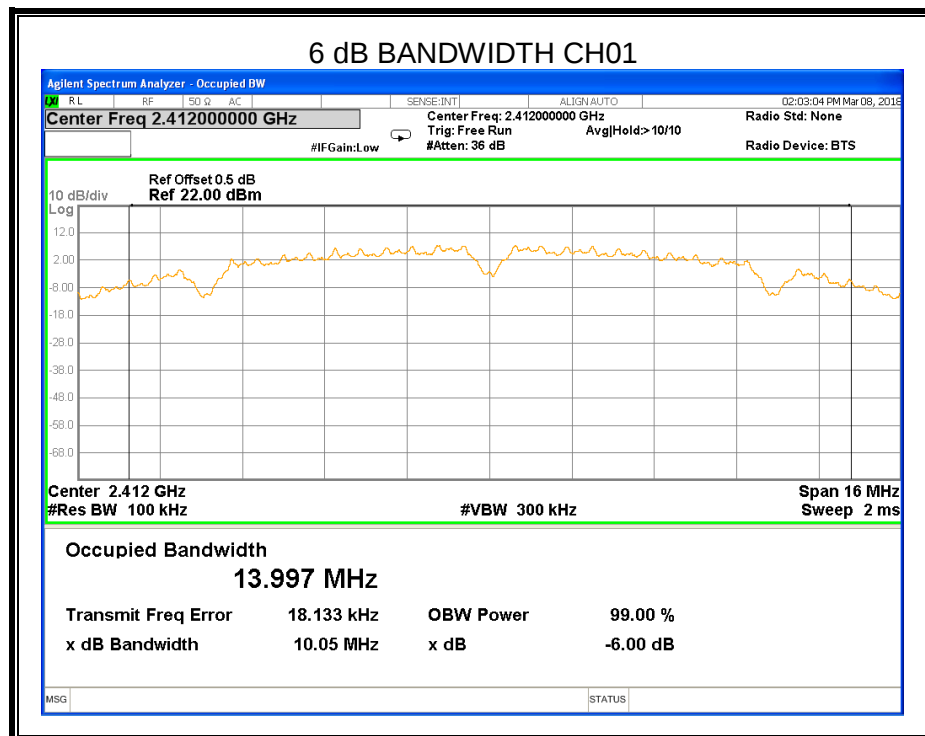
TEST ENVIRONMENT

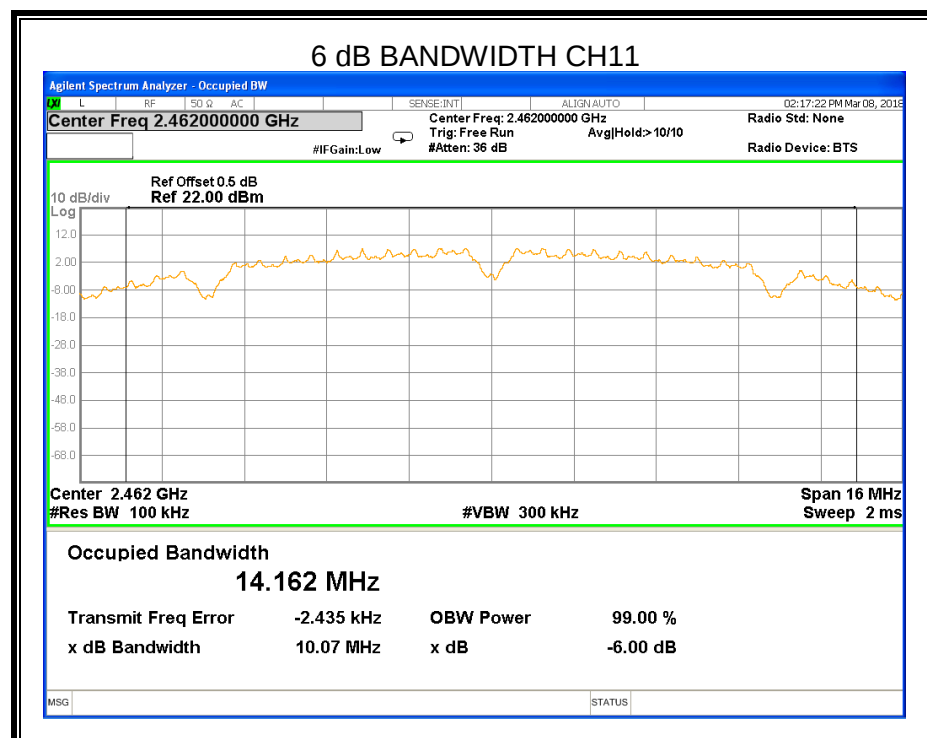
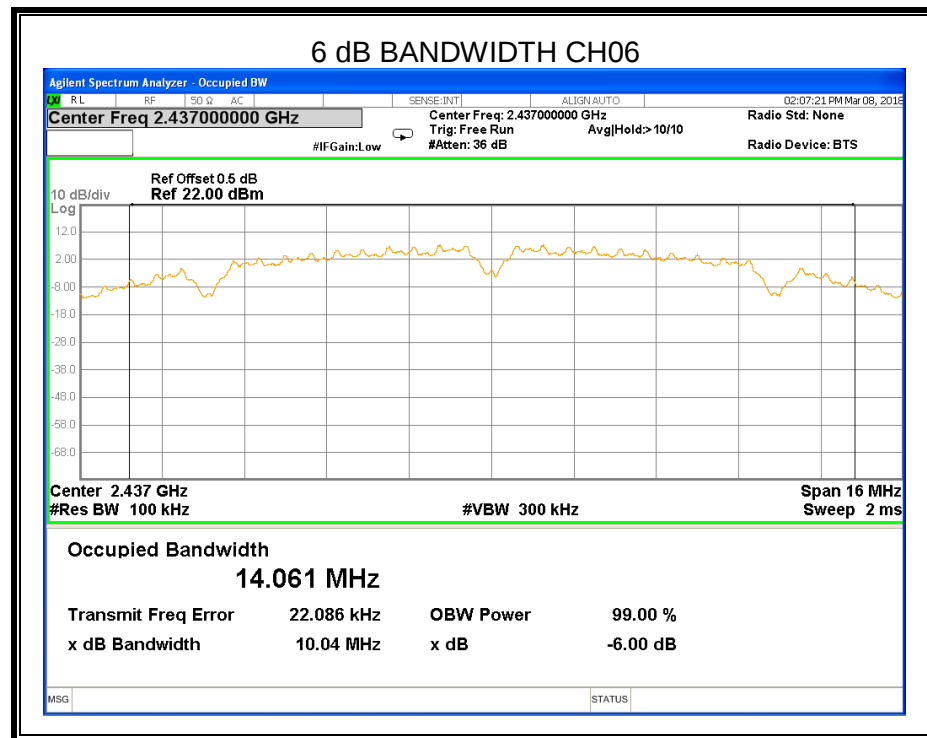
Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

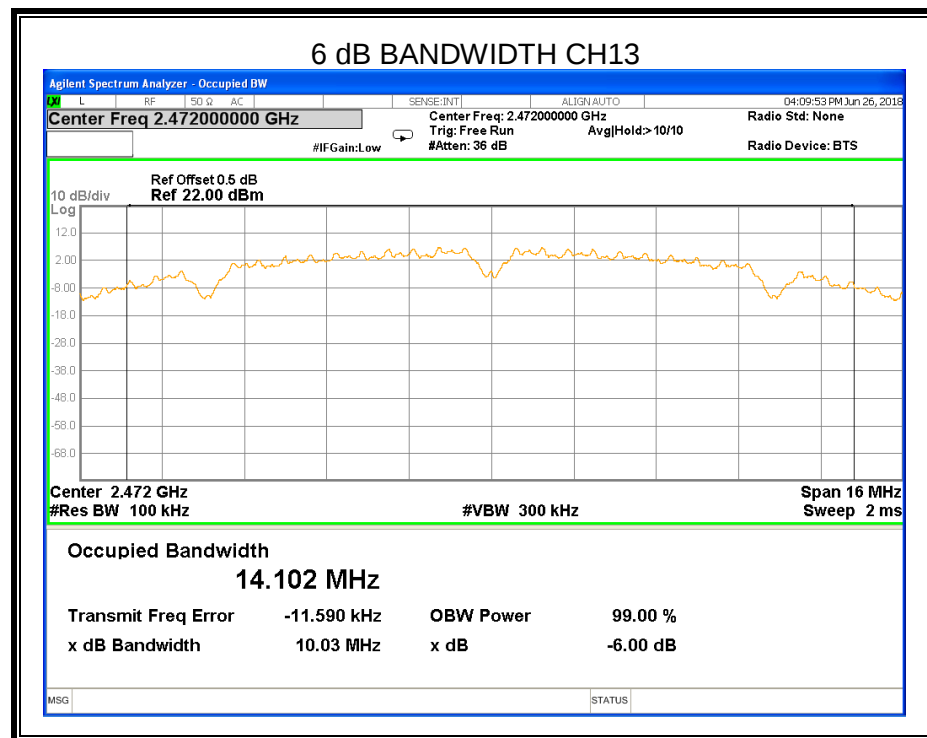
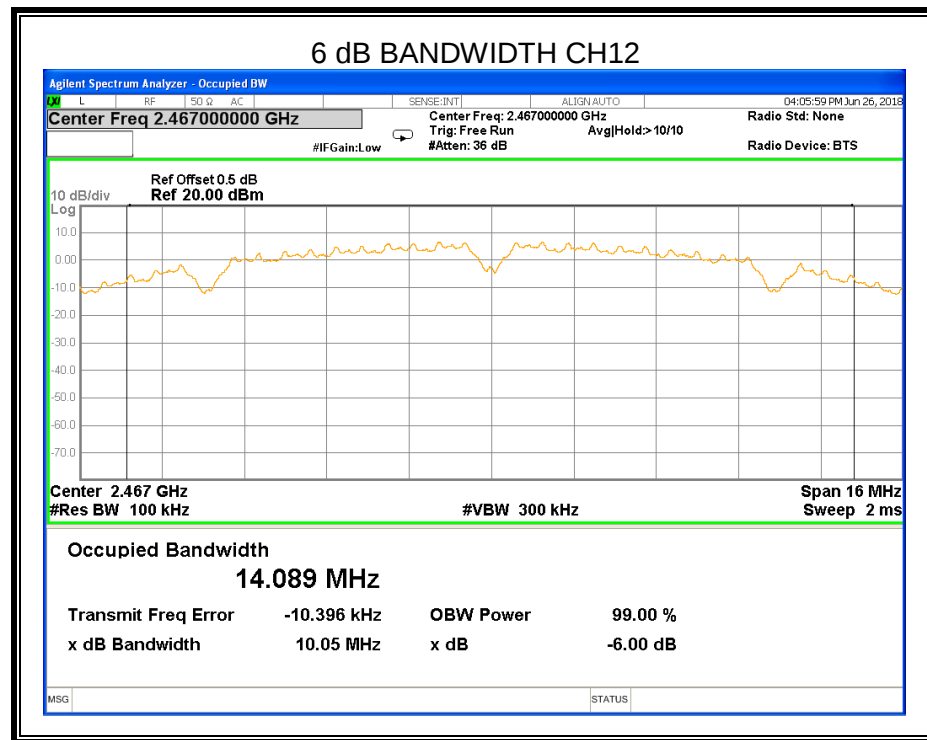
RESULTS

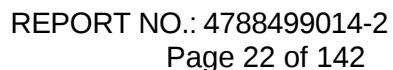
8.2.1. 802.11b MODE

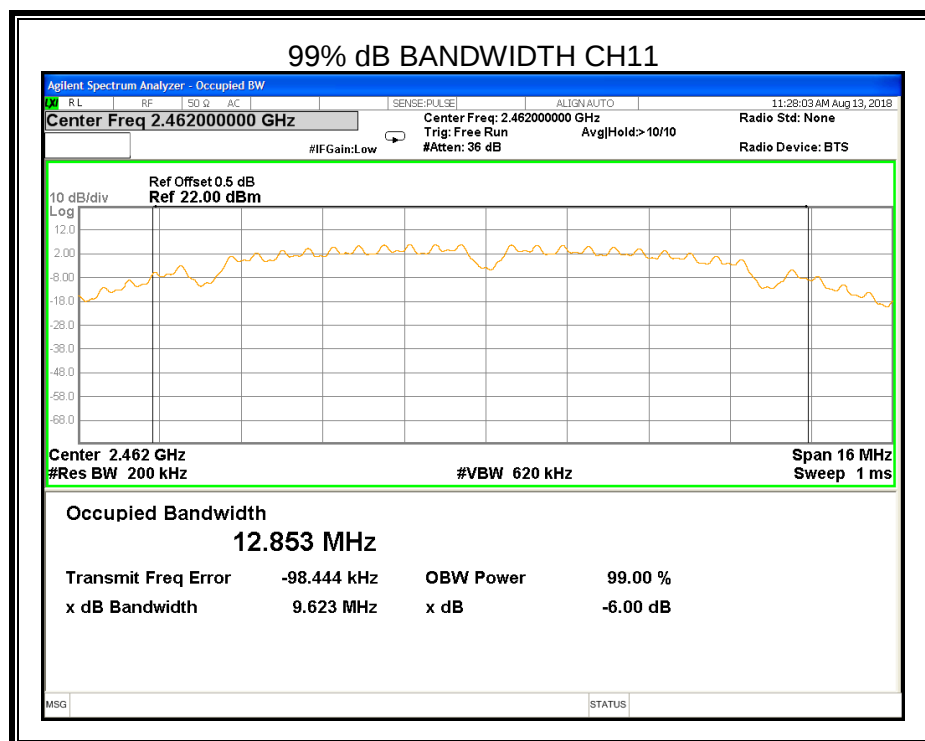
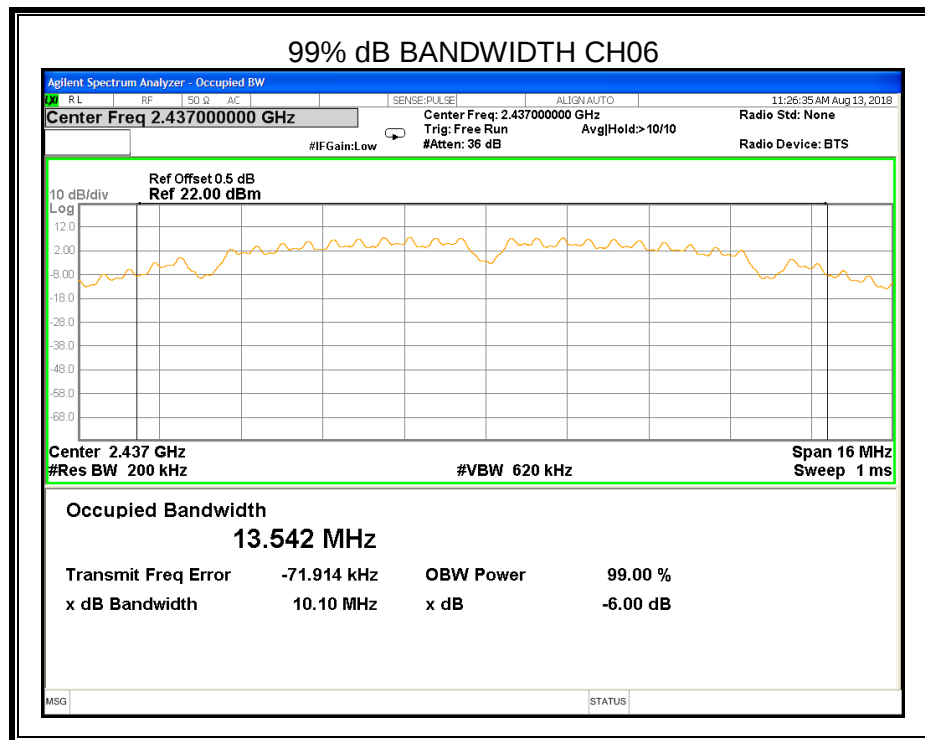
Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
CH01	2412	10.05	500	Pass
CH06	2437	10.04	500	Pass
CH11	2462	10.07	500	Pass
CH12	2467	10.05	500	Pass
CH13	2472	10.03	500	Pass

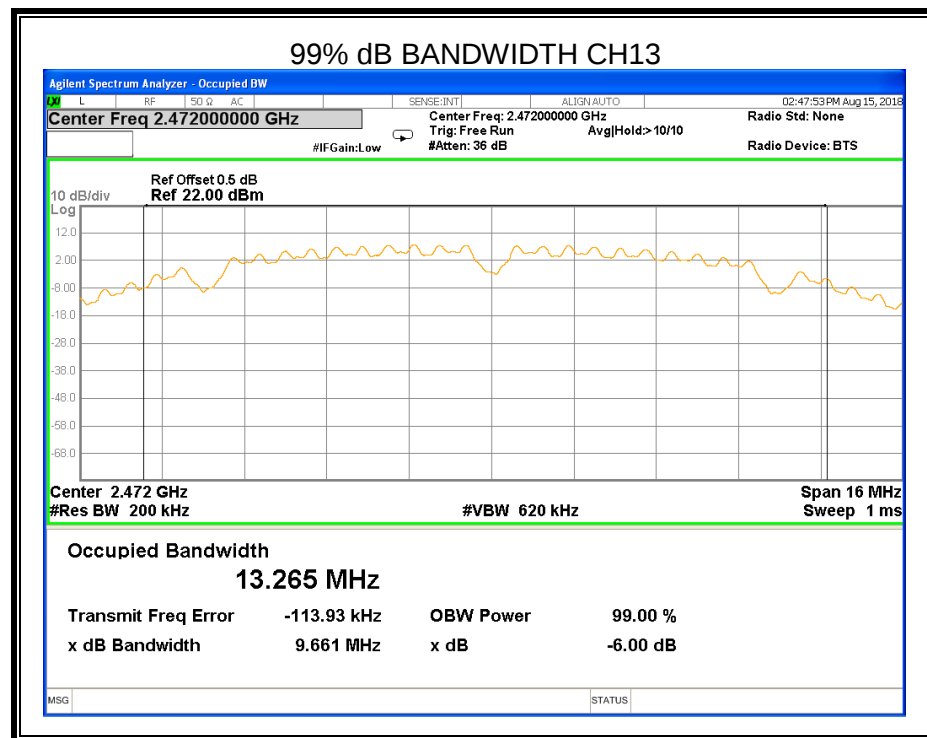
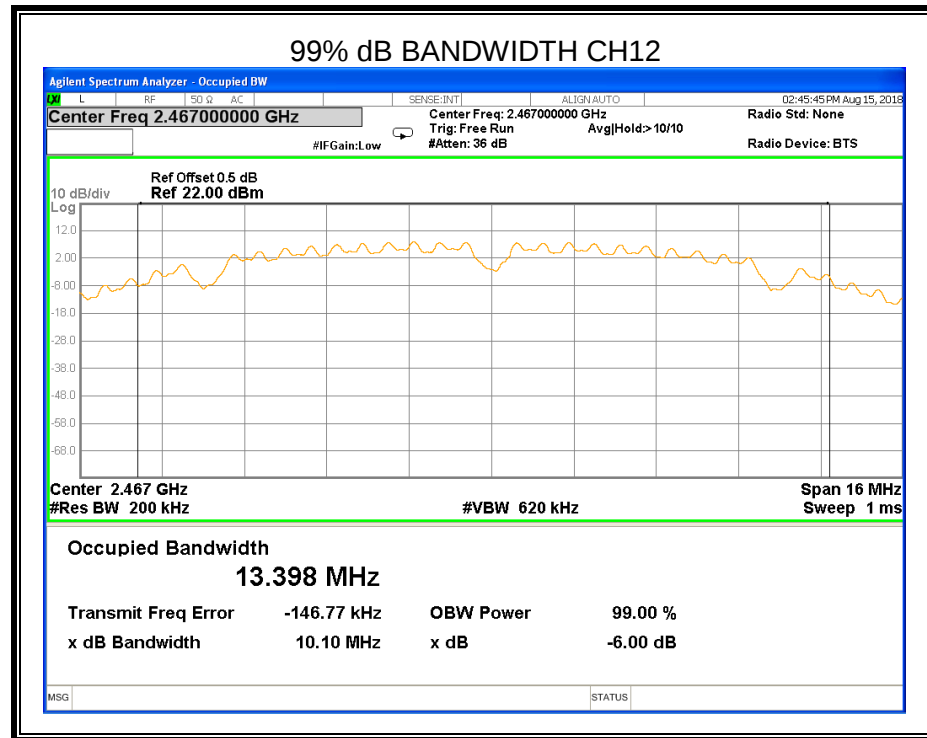








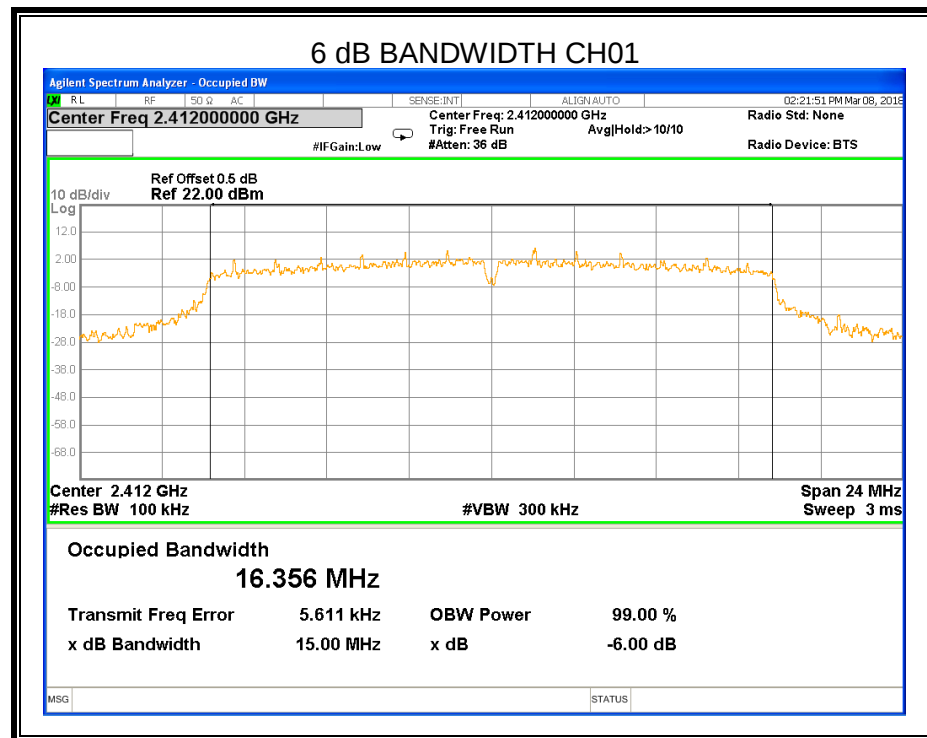


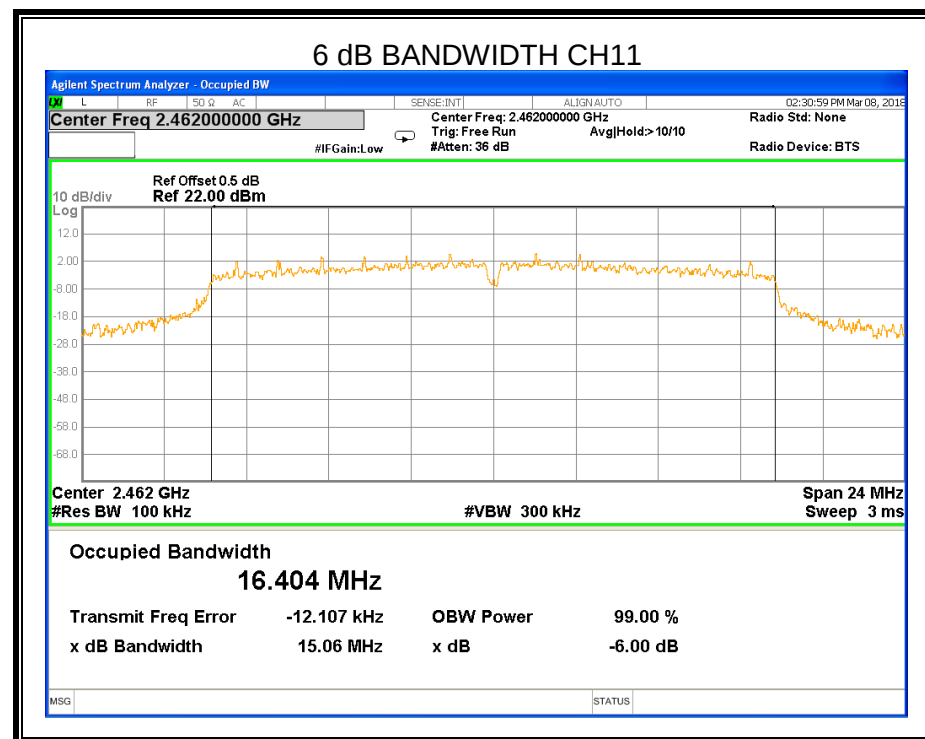
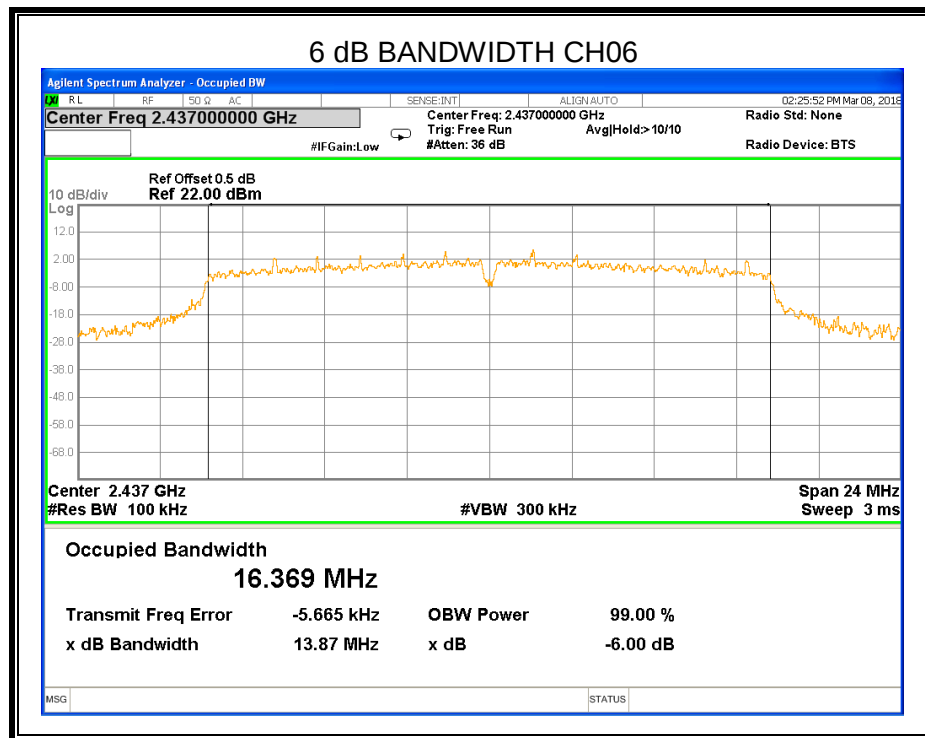


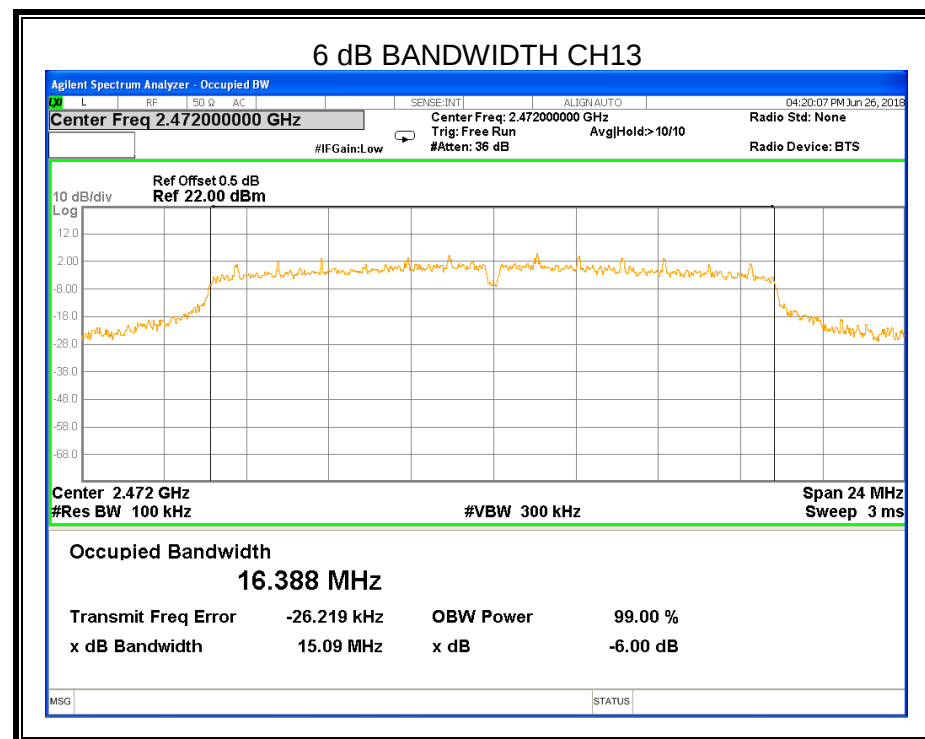
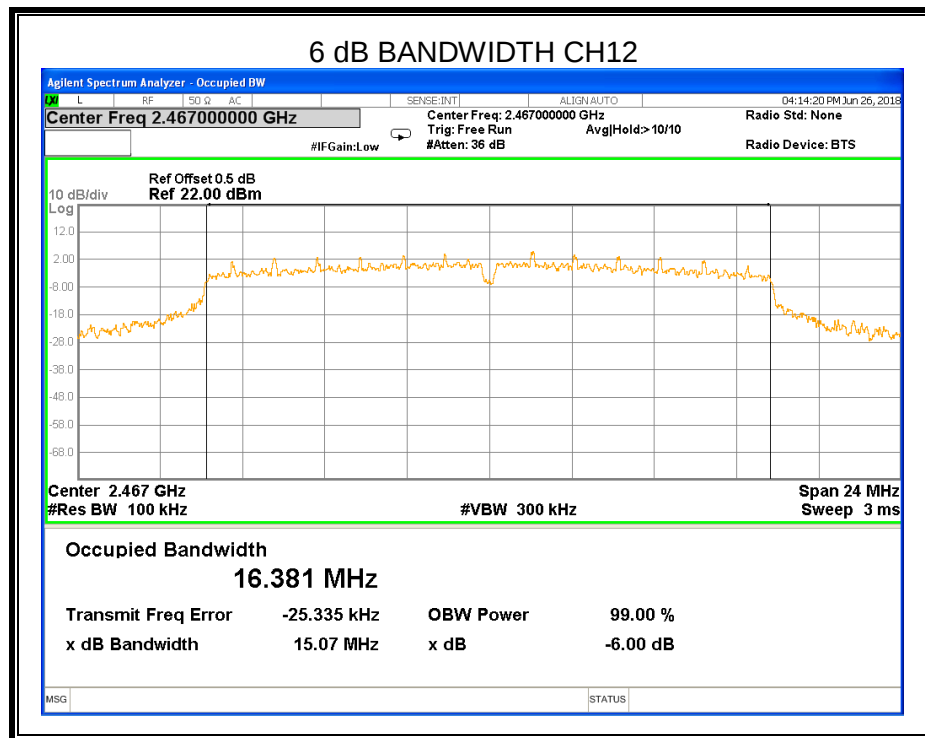


8.2.2. 802.11g MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
CH01	2412	15.00	500	Pass
CH06	2437	13.87	500	Pass
CH11	2462	15.06	500	Pass
CH12	2467	15.07	500	Pass
CH13	2472	15.09	500	Pass

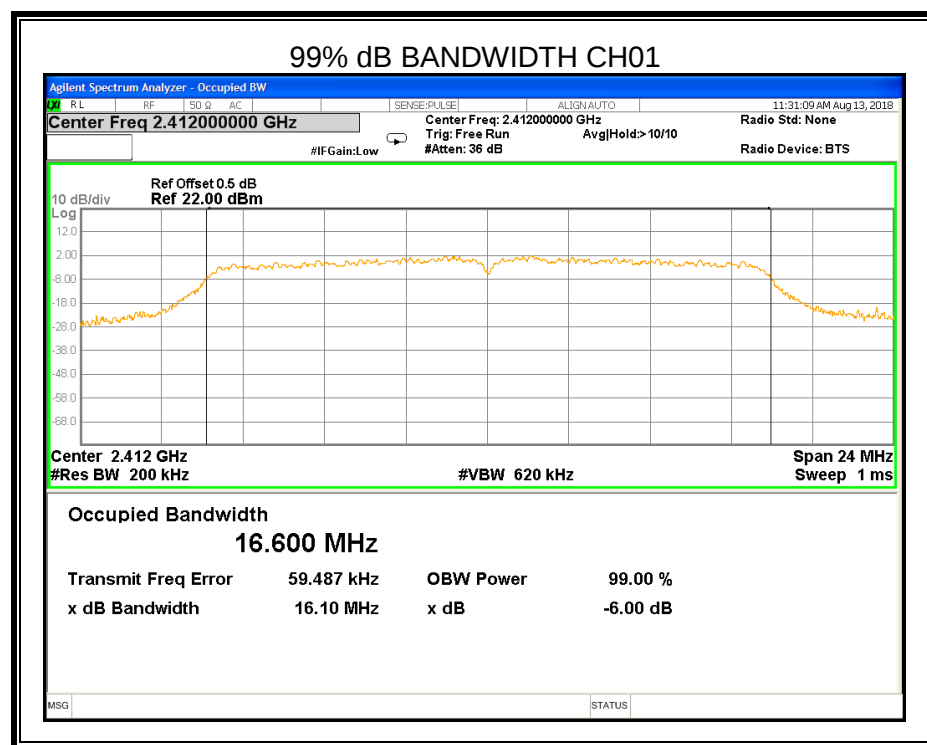


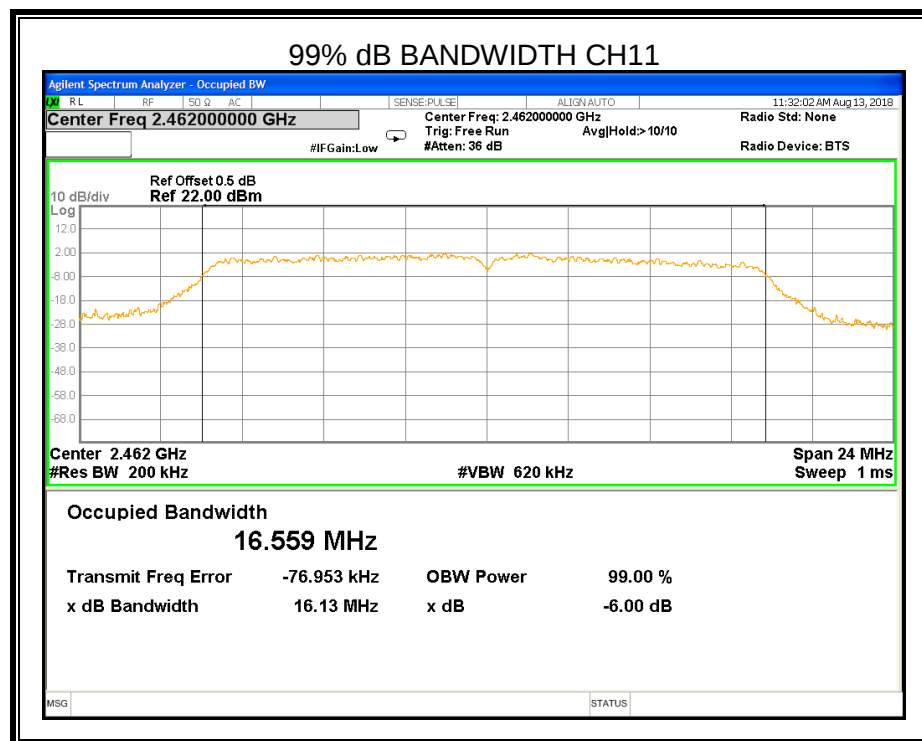
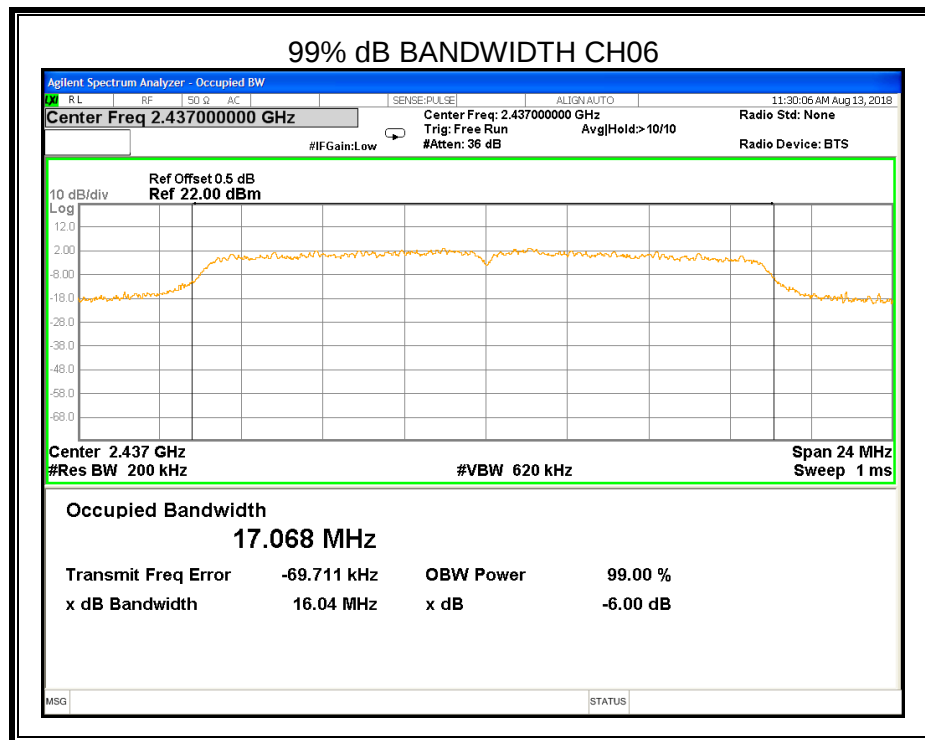


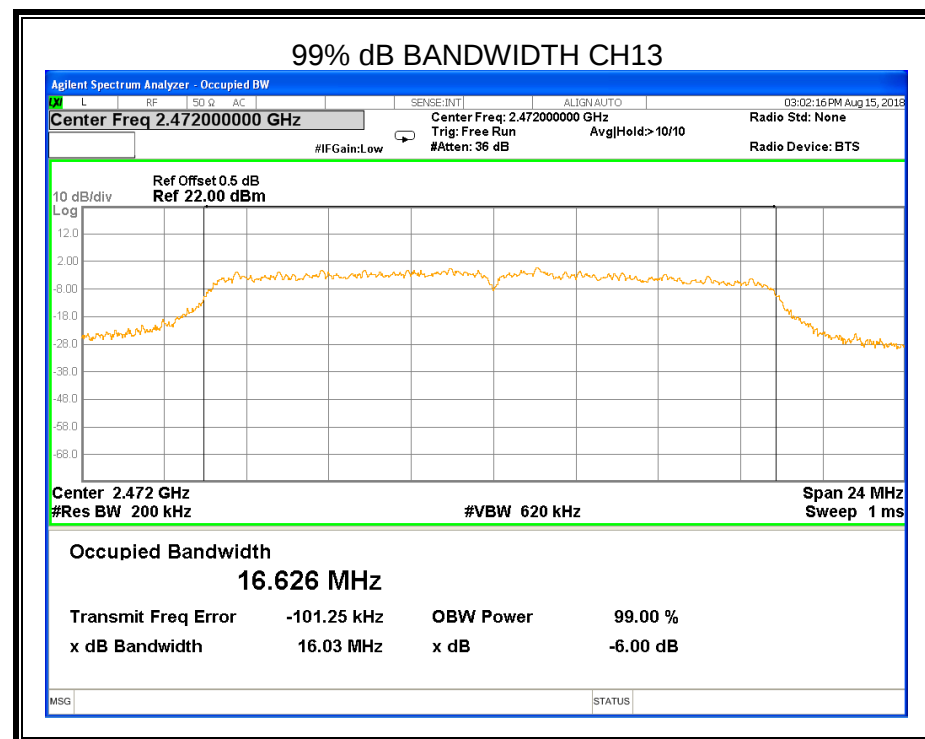
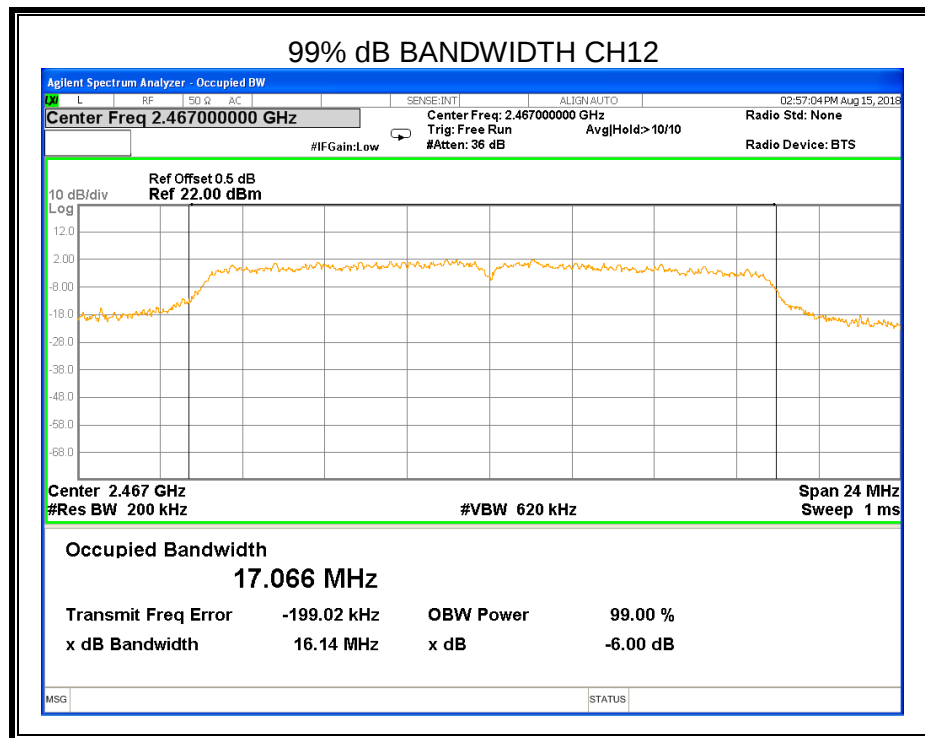




Channel	Frequency (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
CH01	2412	16.600	500	Pass
CH06	2437	17.068	500	Pass
CH11	2462	16.559	500	Pass
CH12	2467	17.066	500	Pass
CH13	2472	16.626	500	Pass



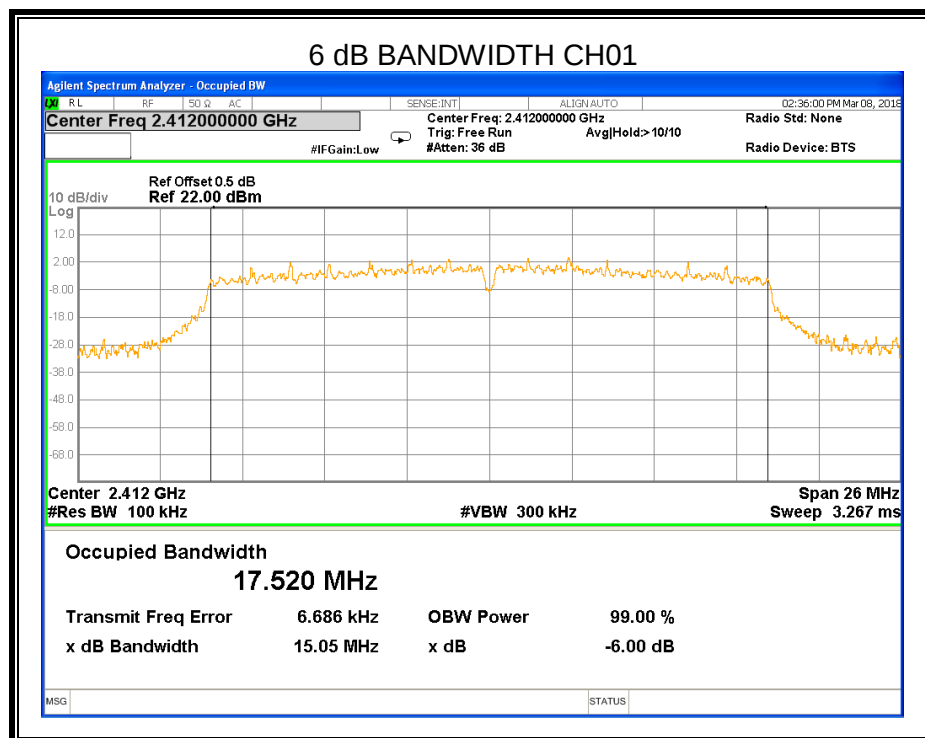


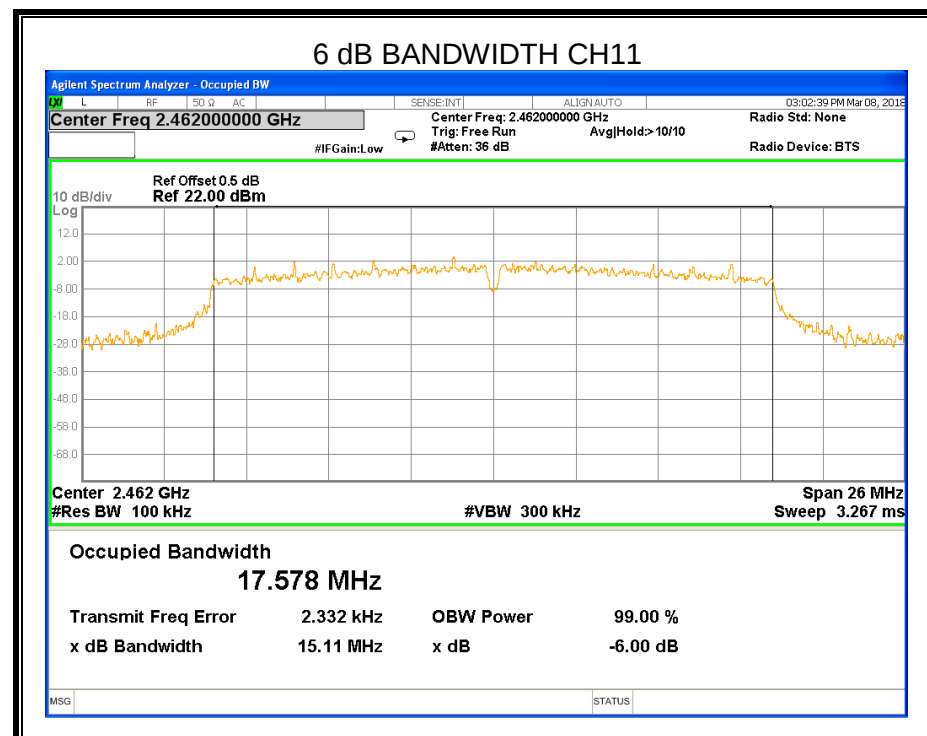
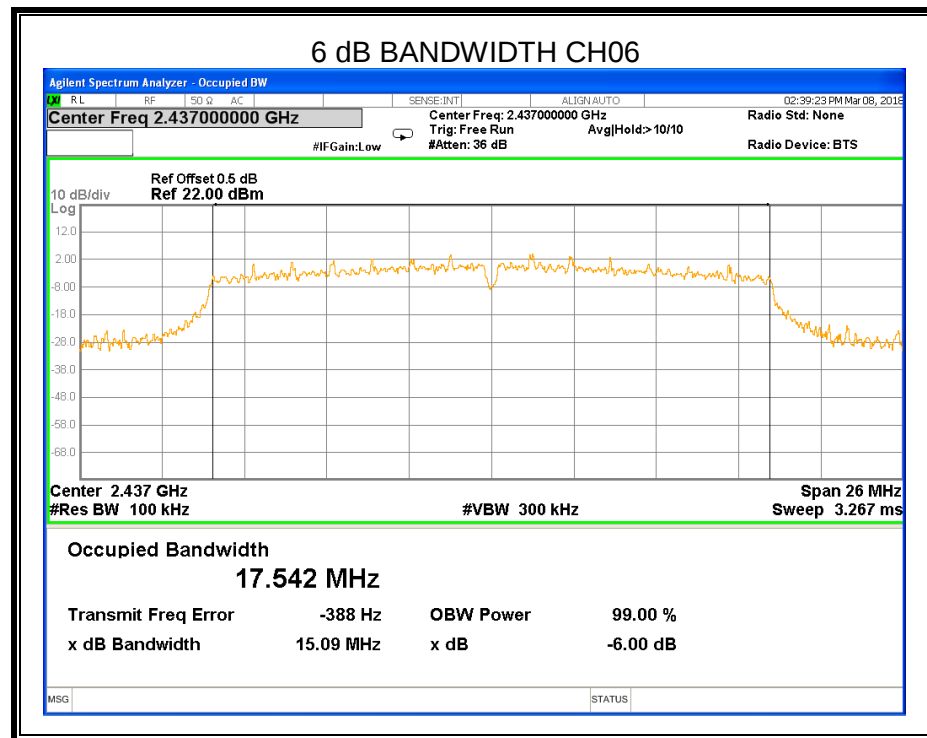


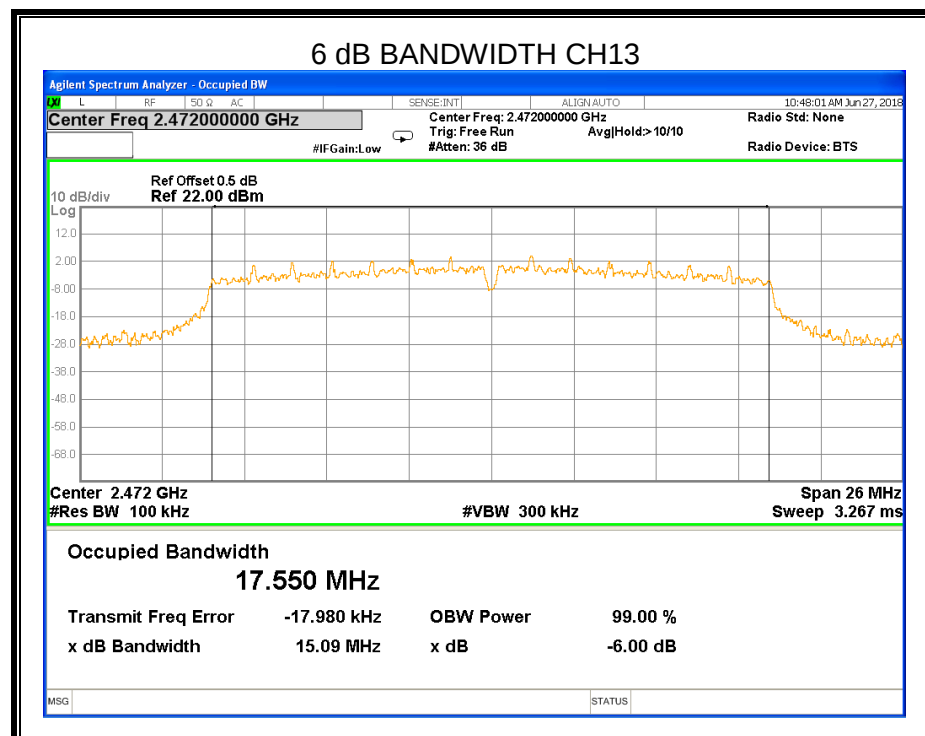
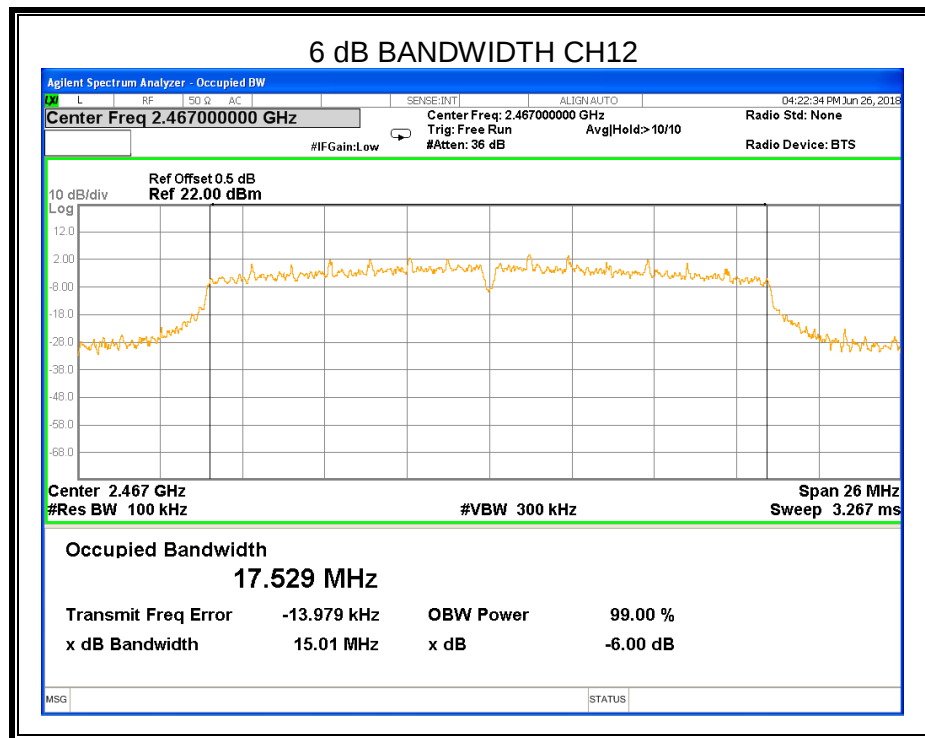


8.2.3. 802.11n HT20 MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
CH01	2412	15.05	500	Pass
CH06	2437	15.09	500	Pass
CH11	2462	15.11	500	Pass
CH12	2467	15.01	500	Pass
CH13	2472	15.09	500	Pass

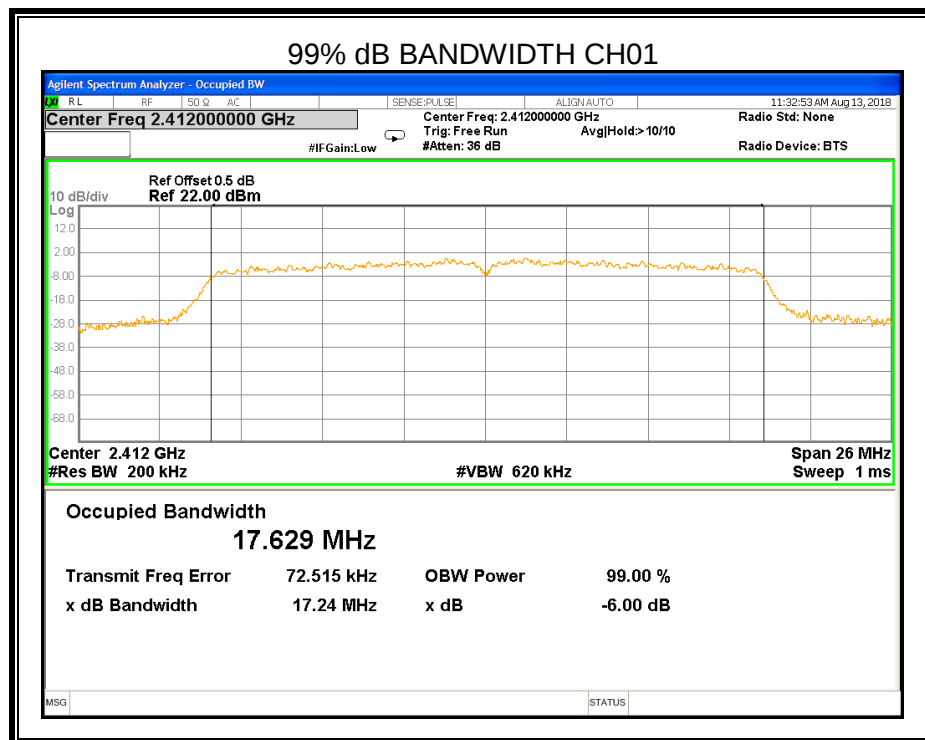


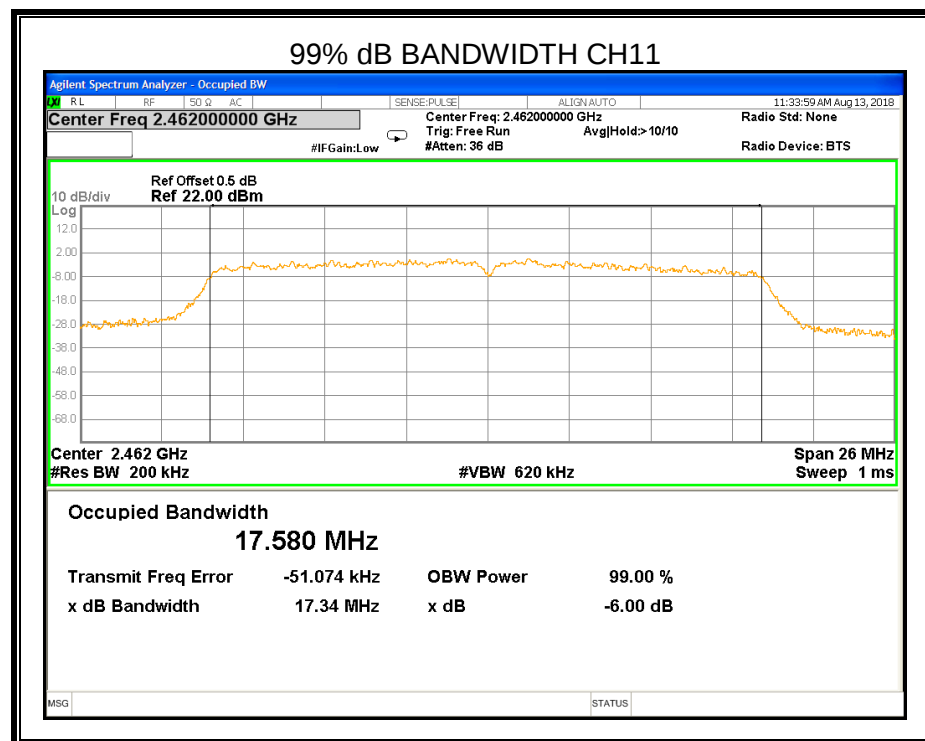
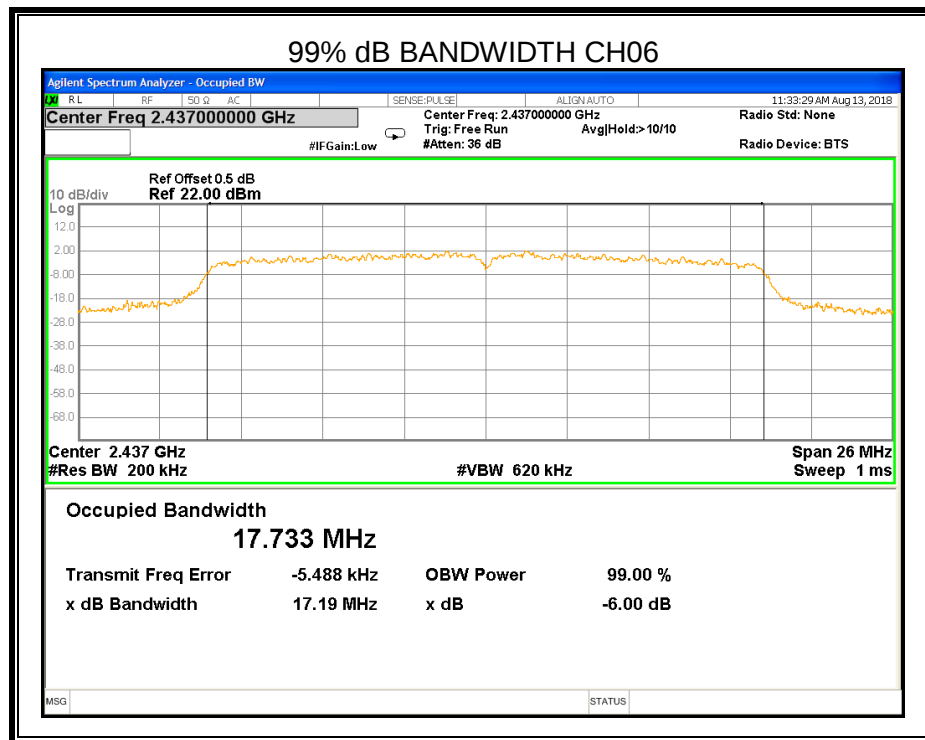


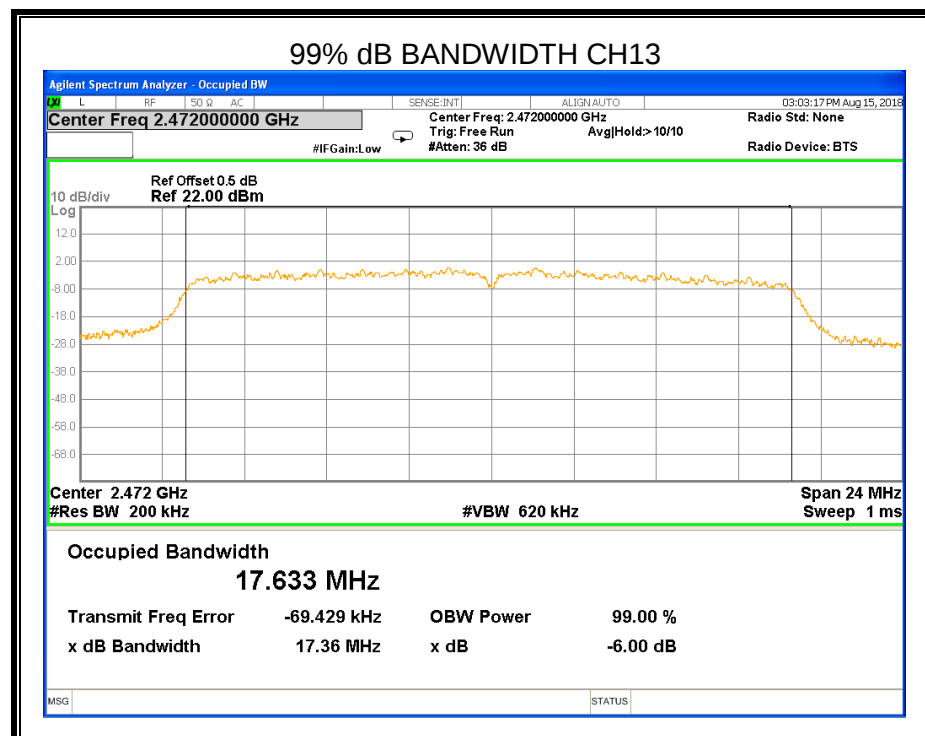
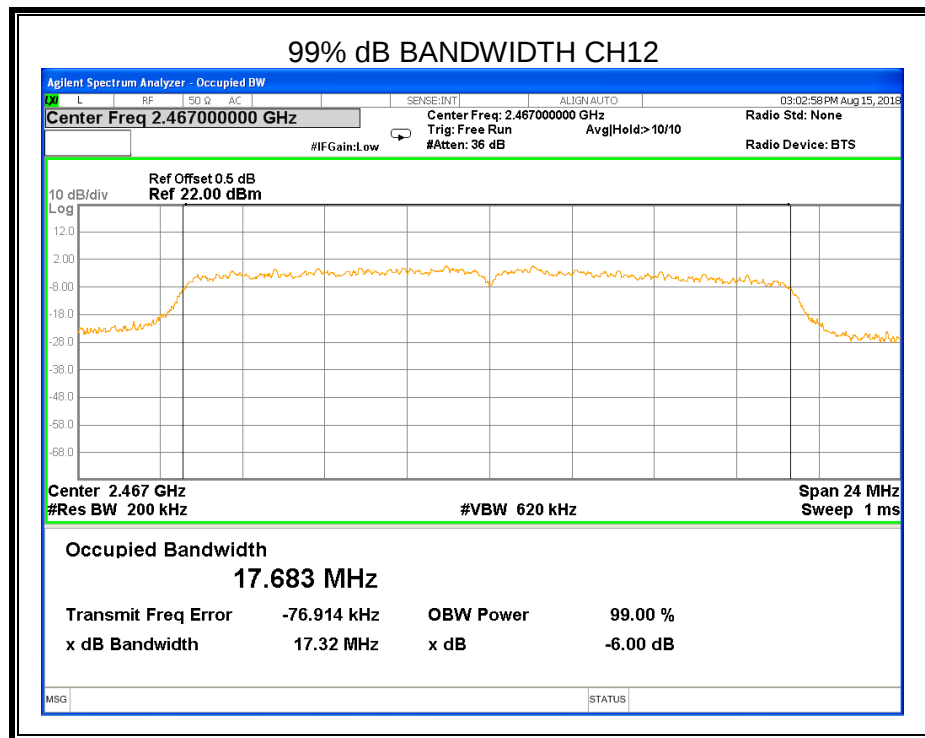




Channel	Frequency (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
CH01	2412	17.629	500	Pass
CH06	2437	17.733	500	Pass
CH11	2462	17.580	500	Pass
CH12	2467	17.683	500	Pass
CH13	2472	17.633	500	Pass



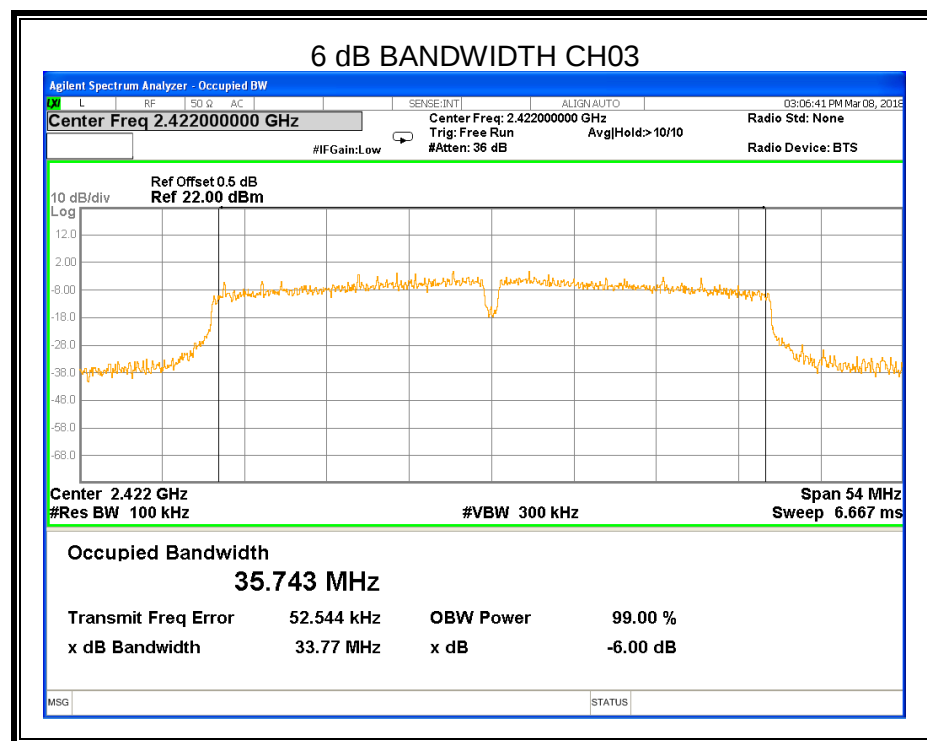


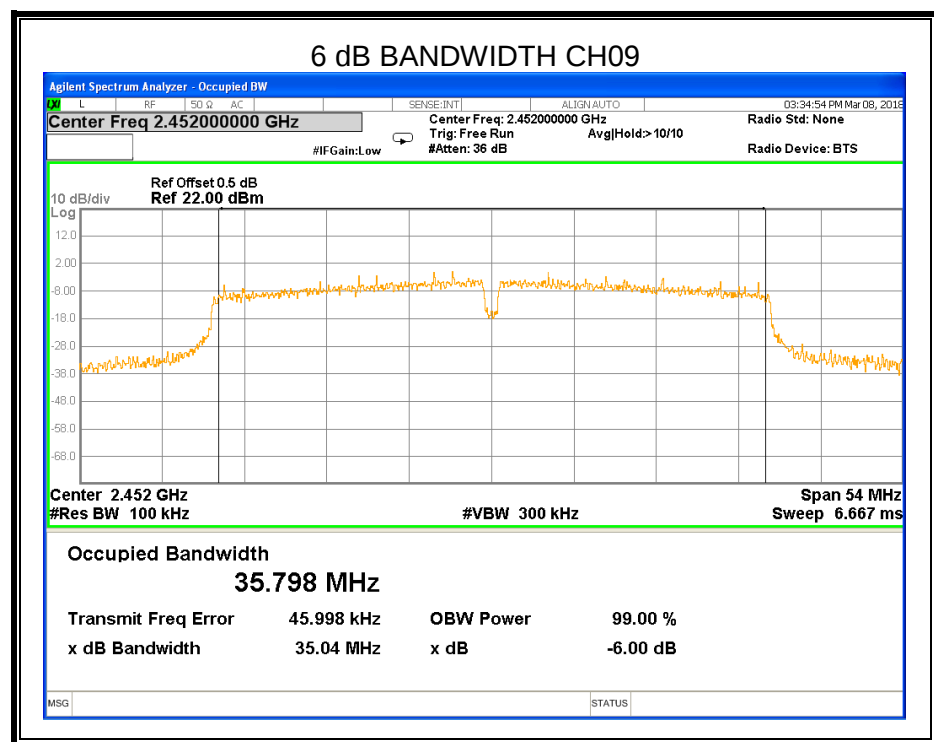
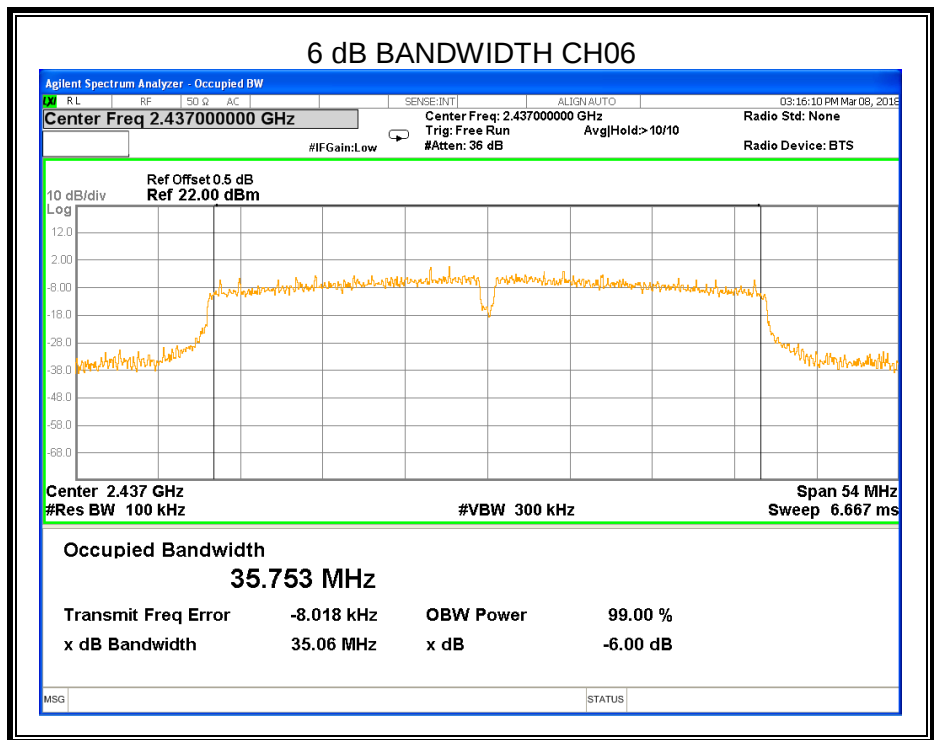


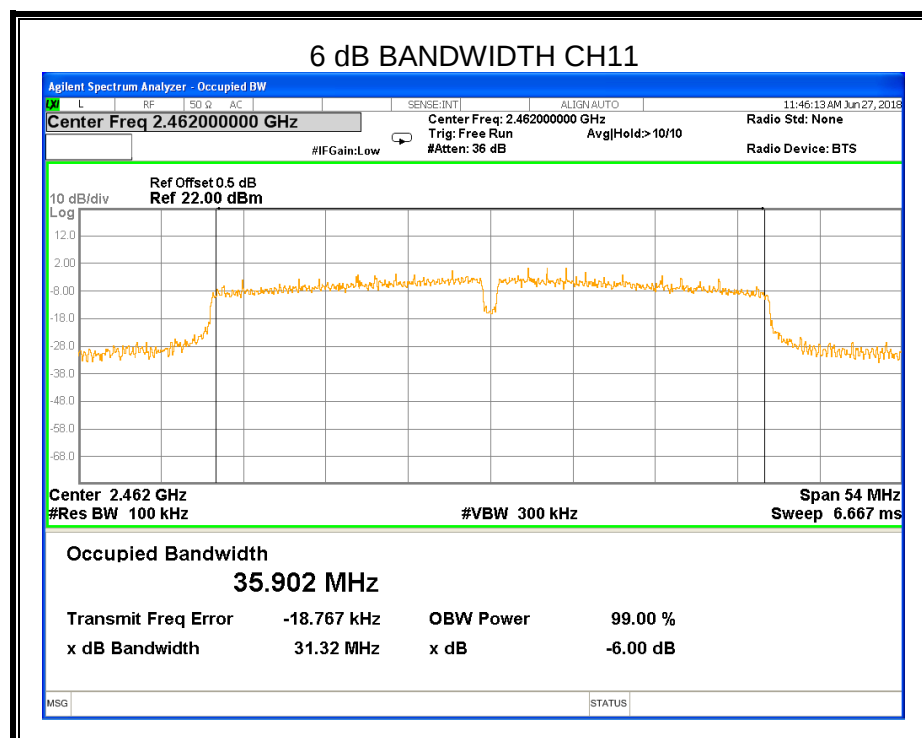
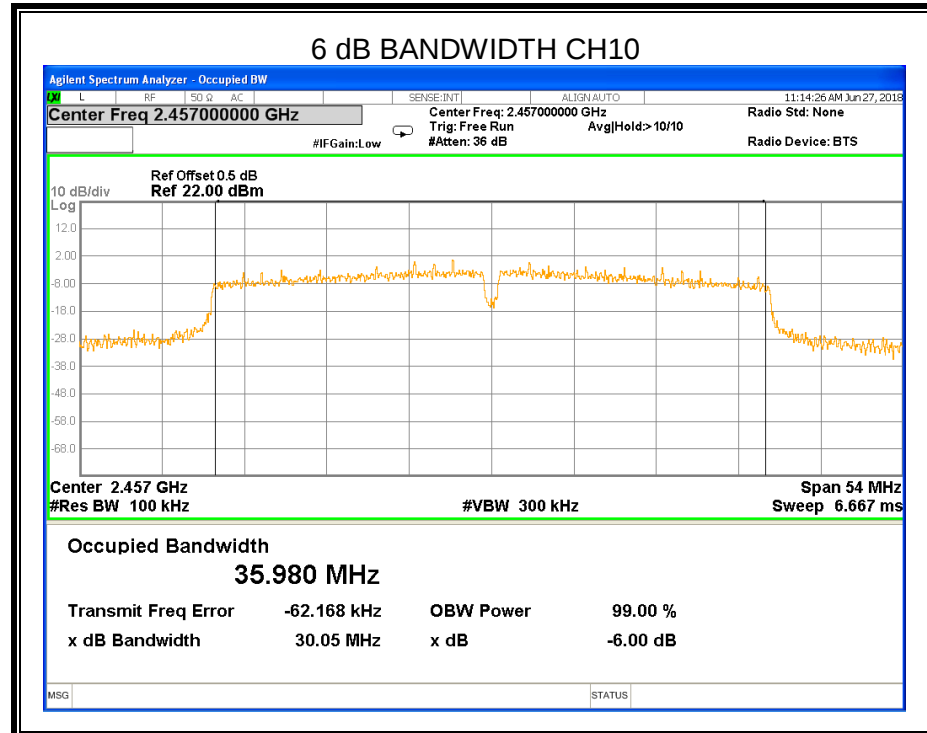


8.2.4. 802.11n HT40 MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	Limit (kHz)	Result
CH03	2422	33.77	500	Pass
CH06	2437	35.06	500	Pass
CH09	2452	35.04	500	Pass
CH10	2457	30.05	500	Pass
CH11	2462	31.32	500	Pass

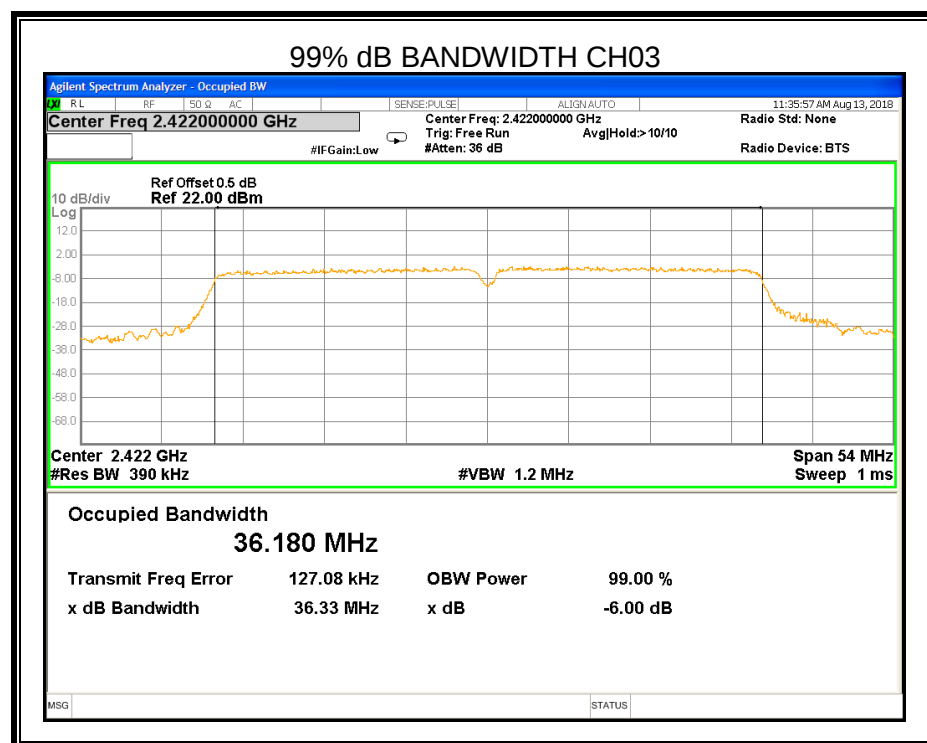


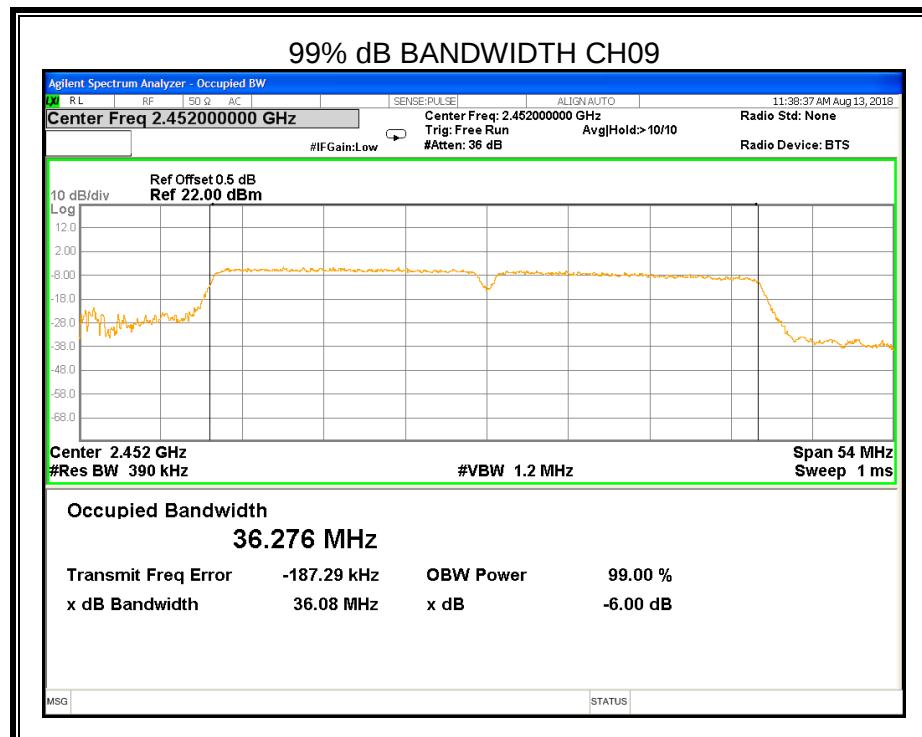
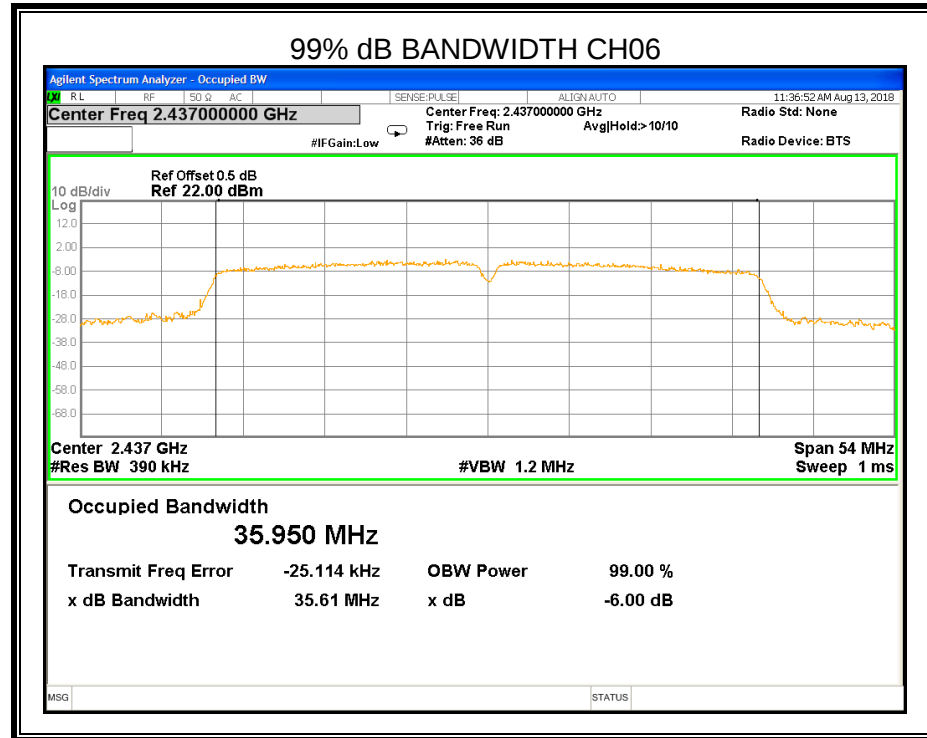


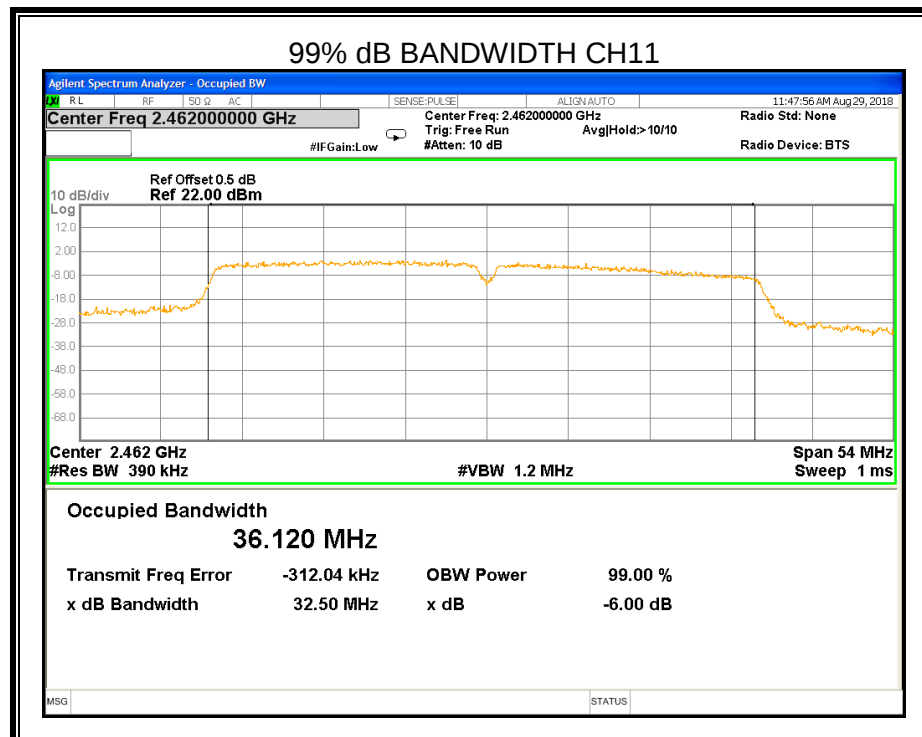
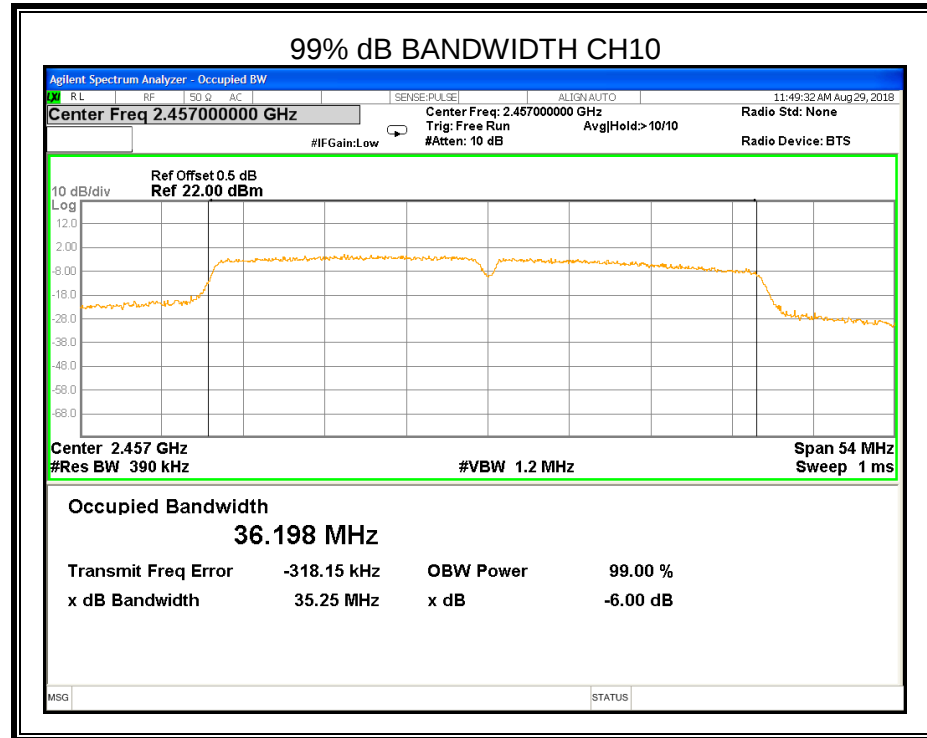




Channel	Frequency (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
CH03	2422	36.180	500	Pass
CH06	2437	35.950	500	Pass
CH09	2452	36.276	500	Pass
CH10	2457	36.198	500	Pass
CH11	2462	36.120	500	Pass









8.3. PEAK CONDUCTED OUTPUT POWER

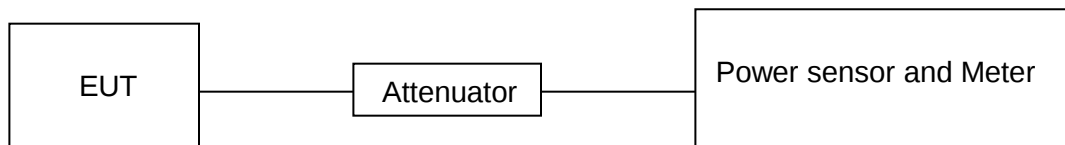
LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3) RSS-247 5.4 (e)	Peak Output Power	1 watt or 30dBm	2400-2483.5

TEST PROCEDURE

Place the EUT on the table and set it in the transmitting mode.
Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the Power sensor.
Measure peak power each channel.

TEST SETUP



TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz



RESULTS

8.3.1. 802.11b MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	18.26	30
CH06	2437	18.43	30
CH11	2462	18.52	30
CH12	2467	17.69	30
CH13	2472	17.84	30

8.3.2. 802.11g MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	17.45	30
CH06	2437	17.43	30
CH11	2462	17.34	30
CH12	2467	16.84	30
CH13	2472	16.79	30

8.3.3. 802.11n HT20 MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH01	2412	17.26	30
CH06	2437	16.79	30
CH11	2462	16.82	30
CH12	2467	16.15	30
CH13	2472	16.27	30



8.3.4. 802.11 n HT40 MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	LIMIT
	(MHz)	(dBm)	dBm
CH03	2422	15.84	30
CH06	2437	15.73	30
CH09	2452	15.59	30
CH10	2457	15.38	30
CH11	2462	15.54	30



8.4. POWER SPECTRAL DENSITY

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
FCC §15.247 (e) RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

TEST PROCEDURE

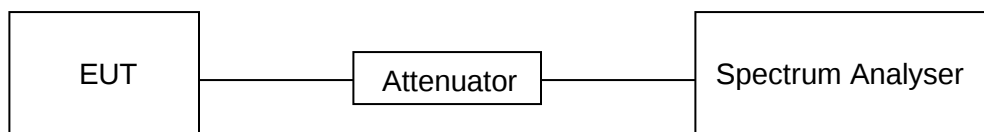
Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	$\geq 3 \times \text{RBW}$
Span	$1.5 \times \text{DTS bandwidth}$
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

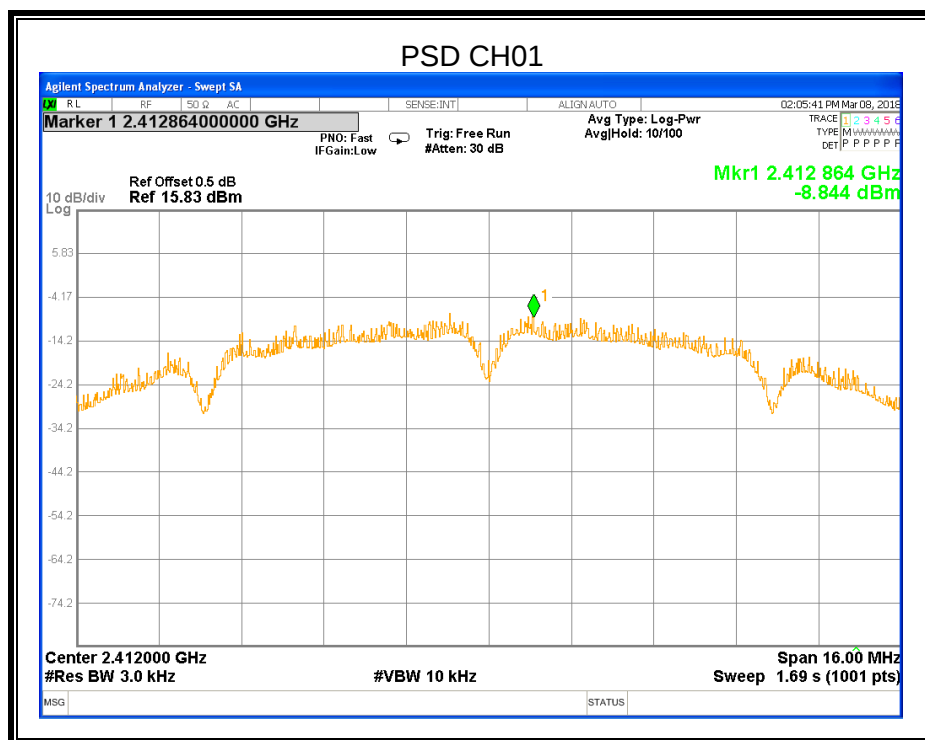
Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

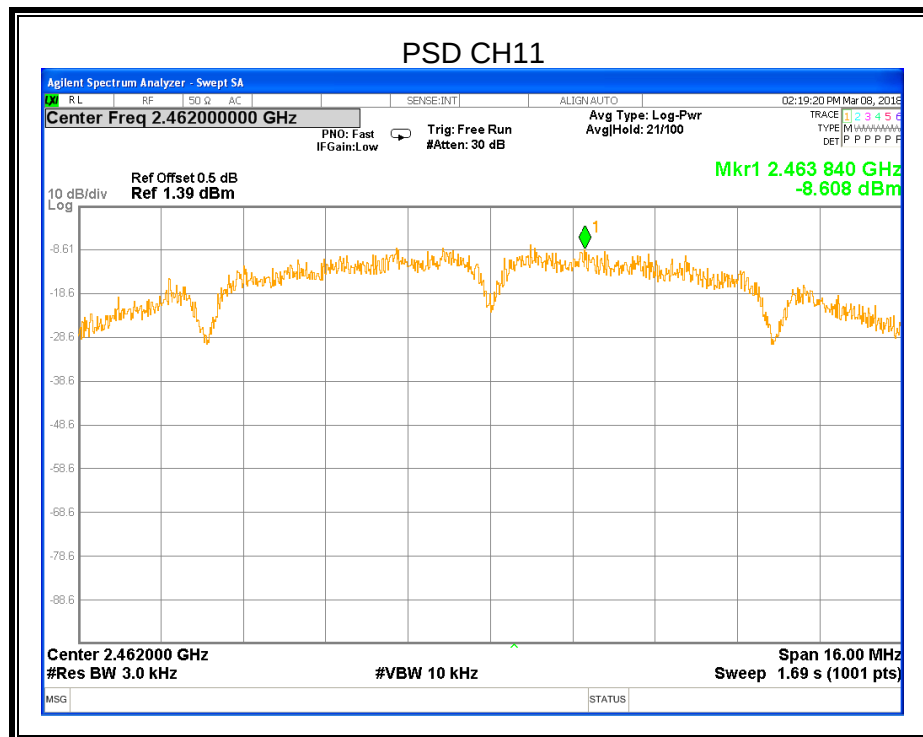
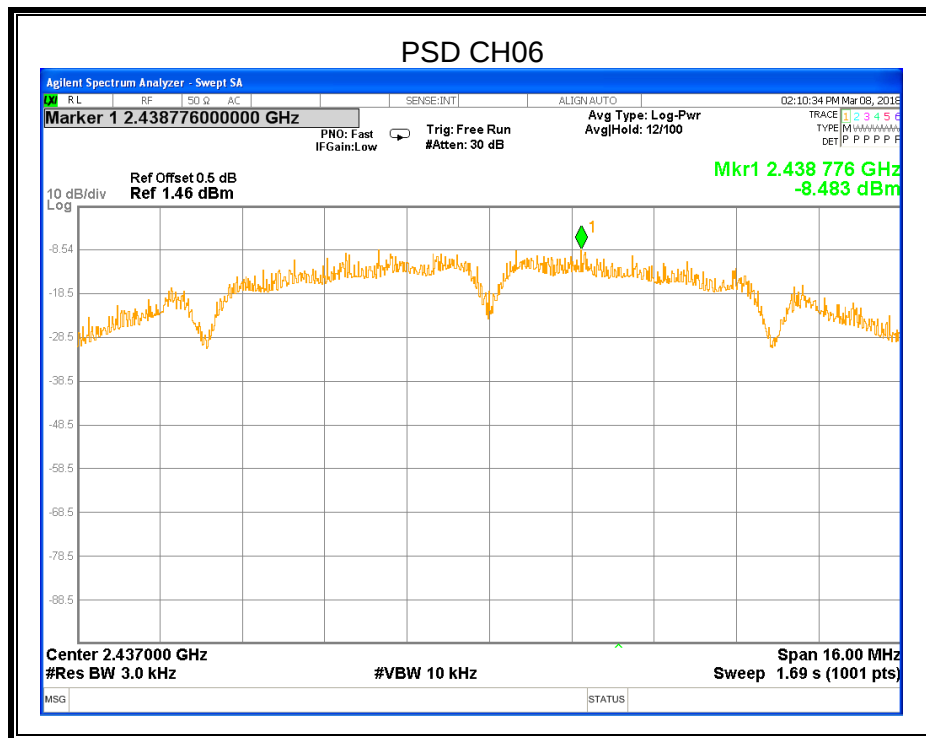


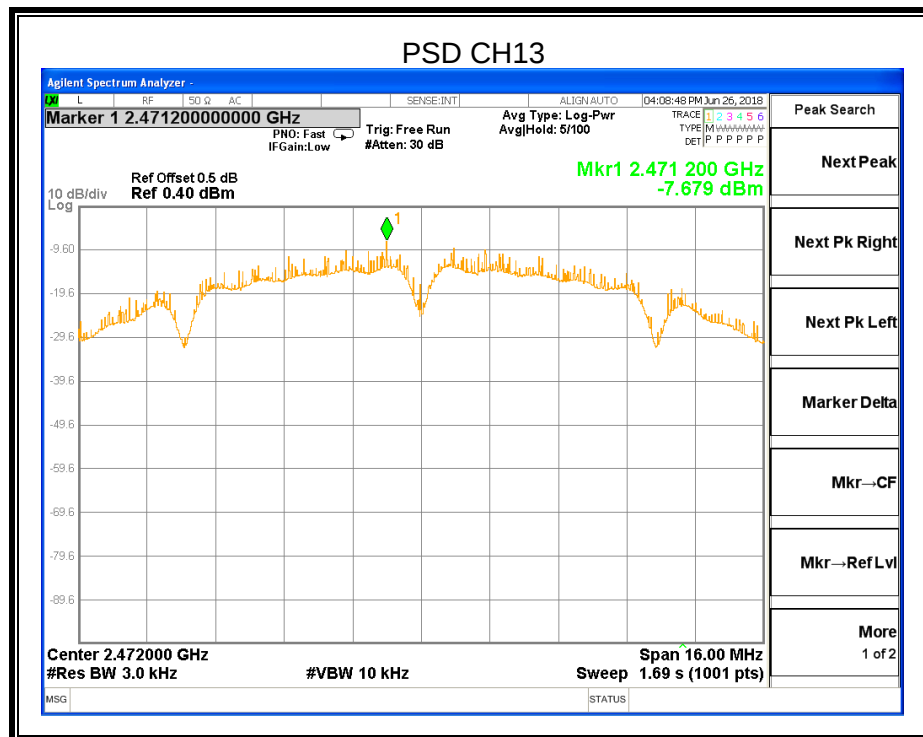
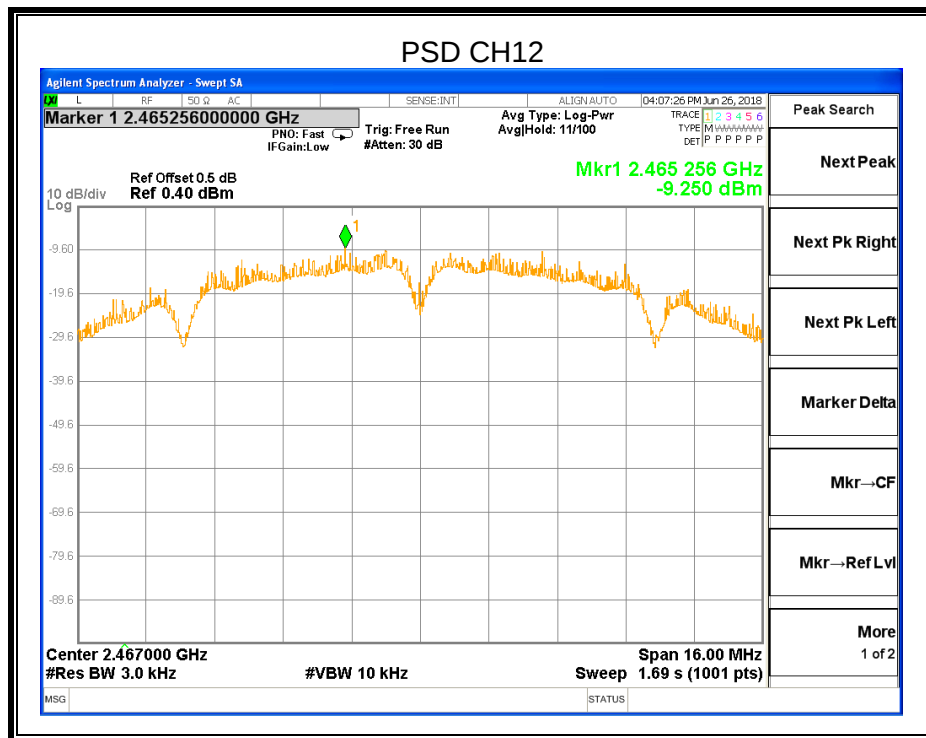
RESULTS

8.4.1. 802.11b MODE

Test Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
CH01	2412	-8.844	8	PASS
CH06	2437	-8.483	8	PASS
CH11	2462	-8.608	8	PASS
CH12	2467	-9.250	8	PASS
CH13	2472	-7.679	8	PASS



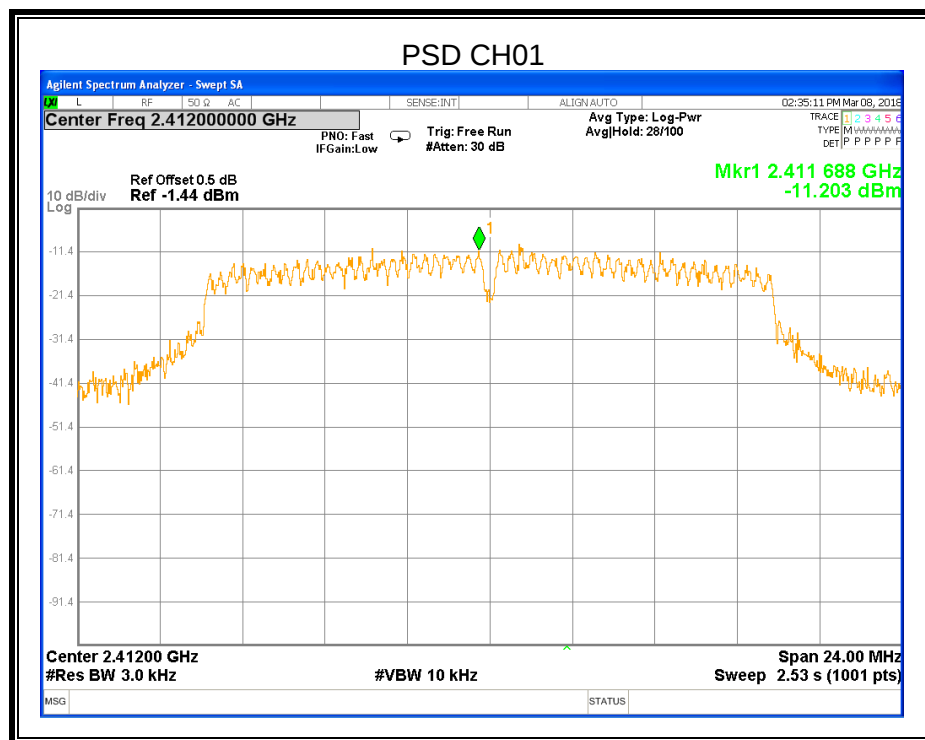


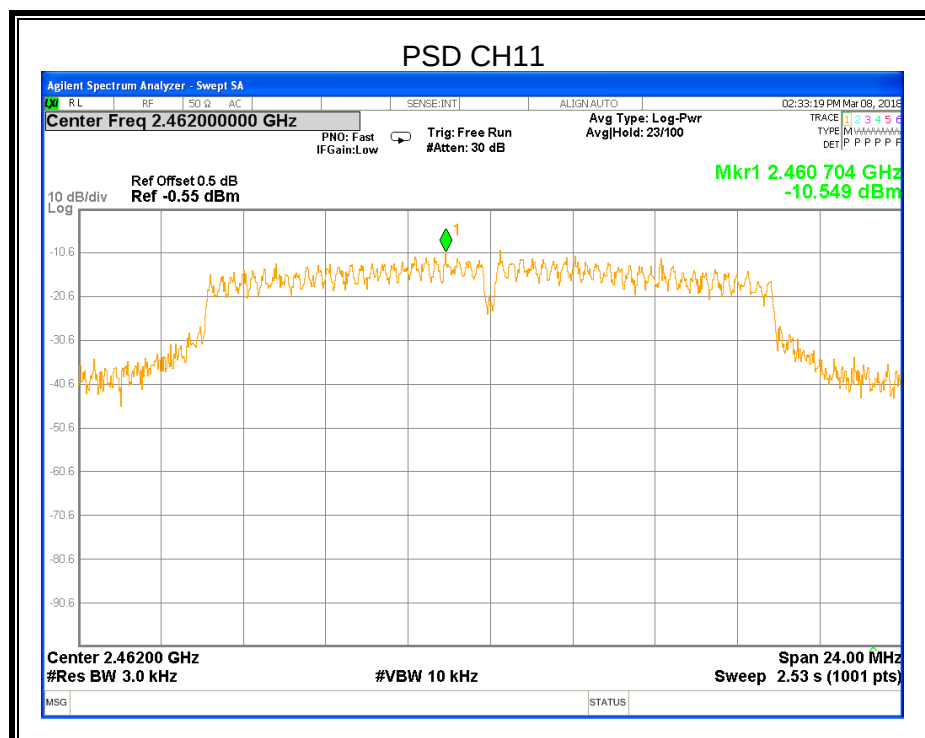
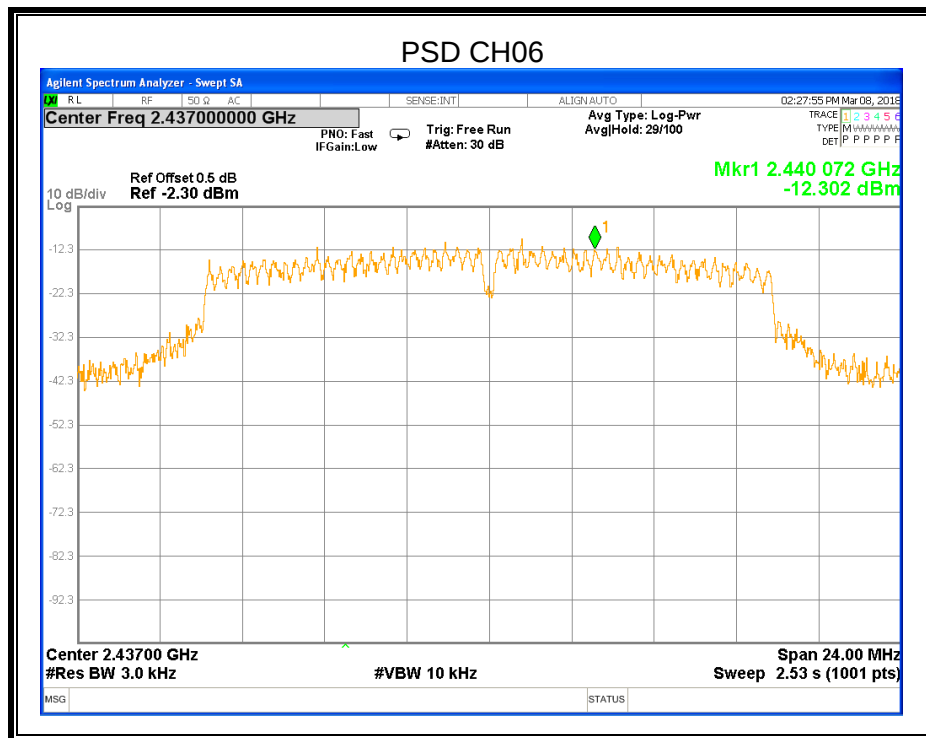


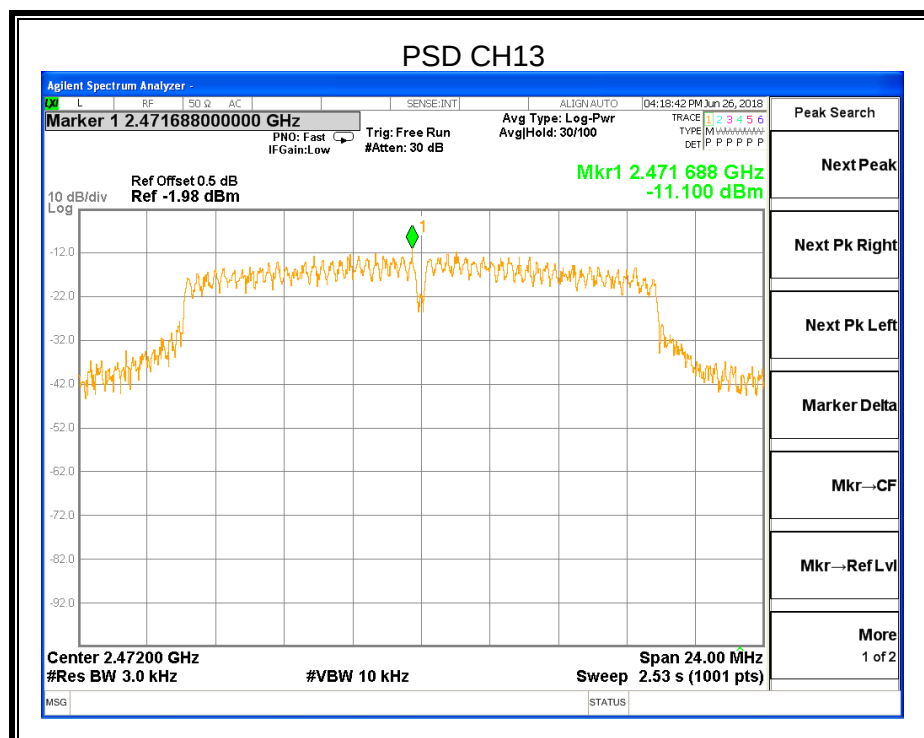
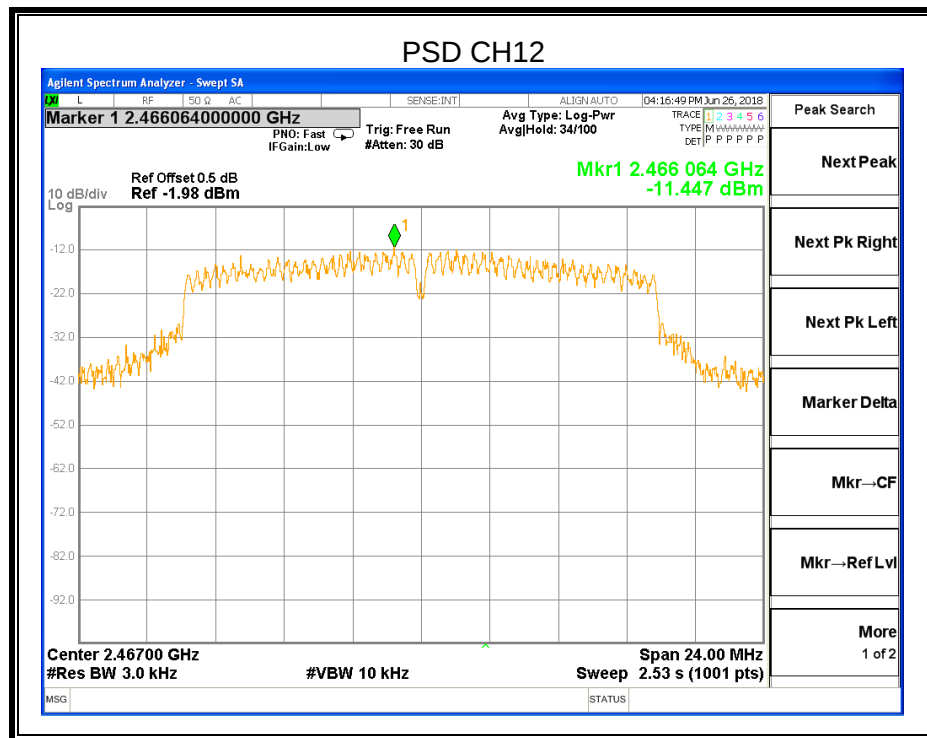


8.4.2. 802.11g MODE

Test Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
CH01	2412	-11.203	8	PASS
CH06	2437	-12.302	8	PASS
CH11	2462	-10.549	8	PASS
CH12	2467	-11.447	8	PASS
CH13	2472	-11.100	8	PASS



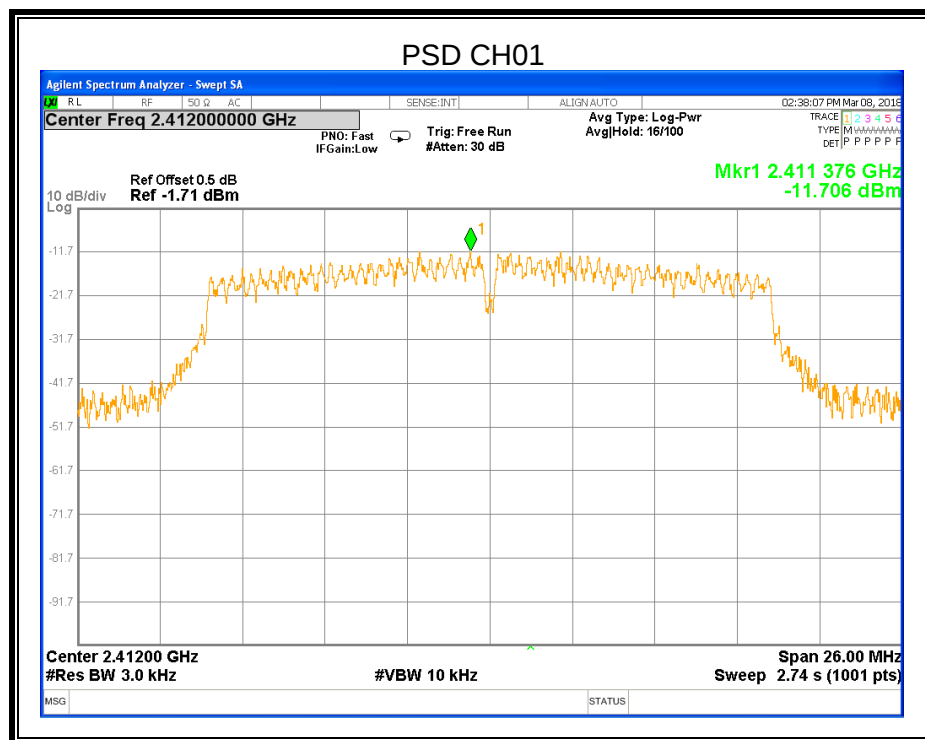


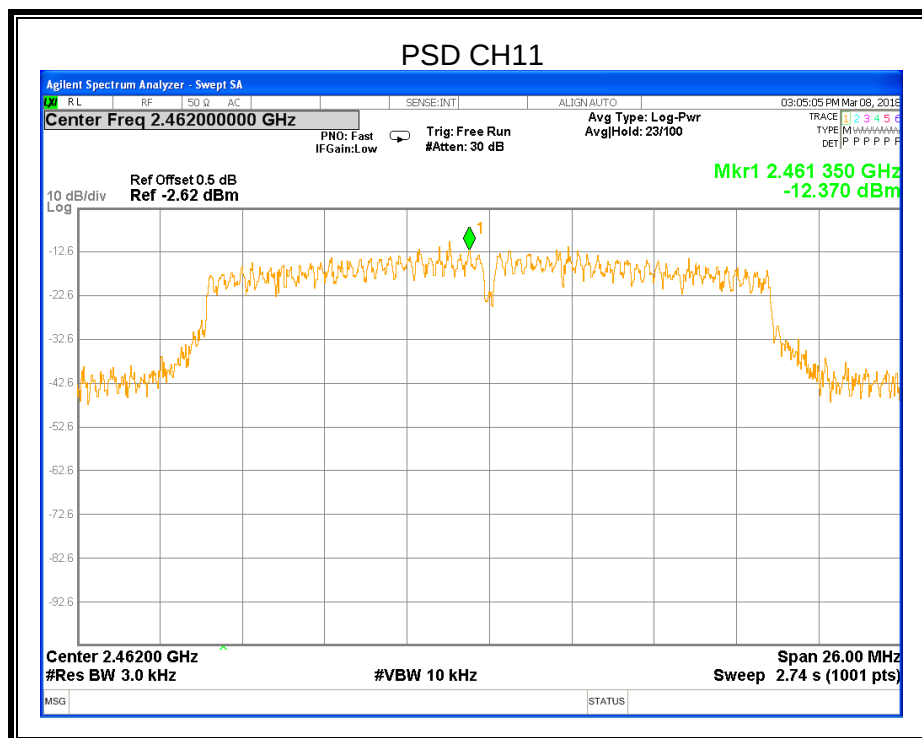
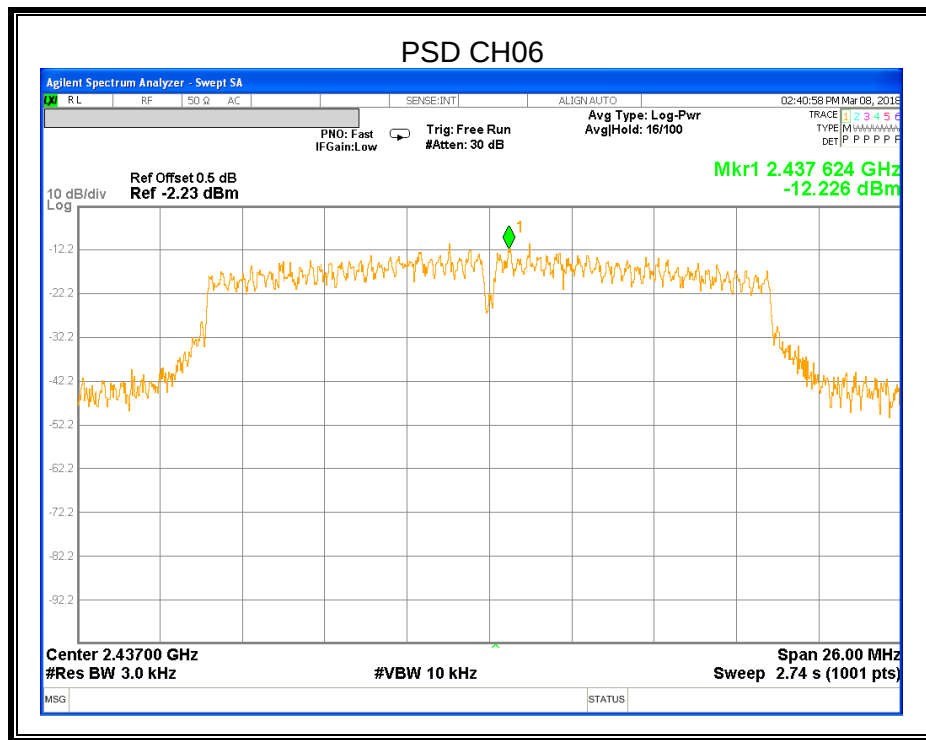


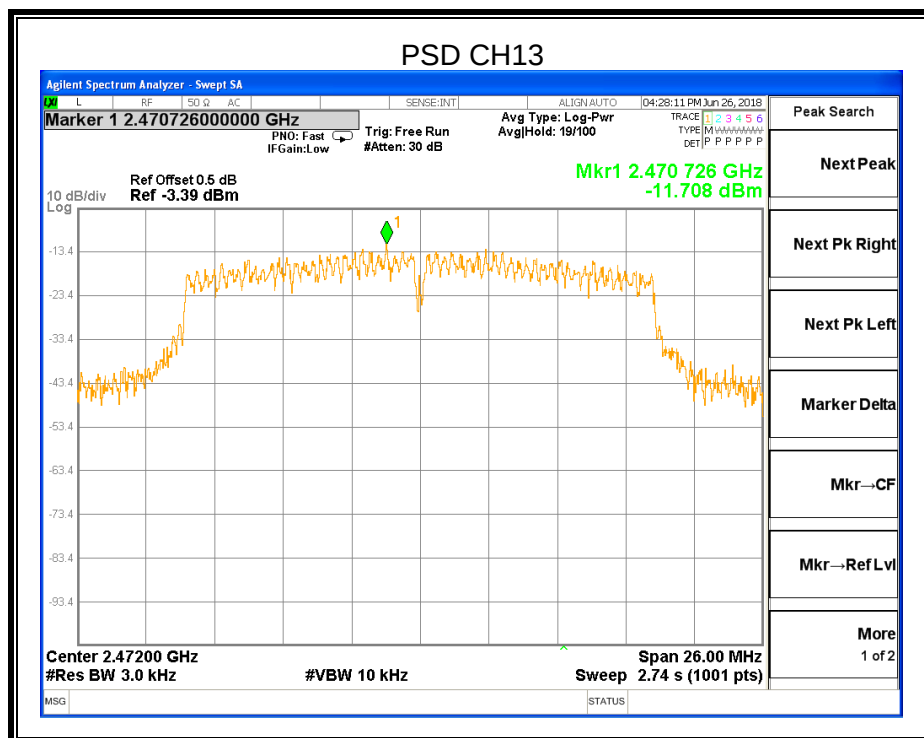
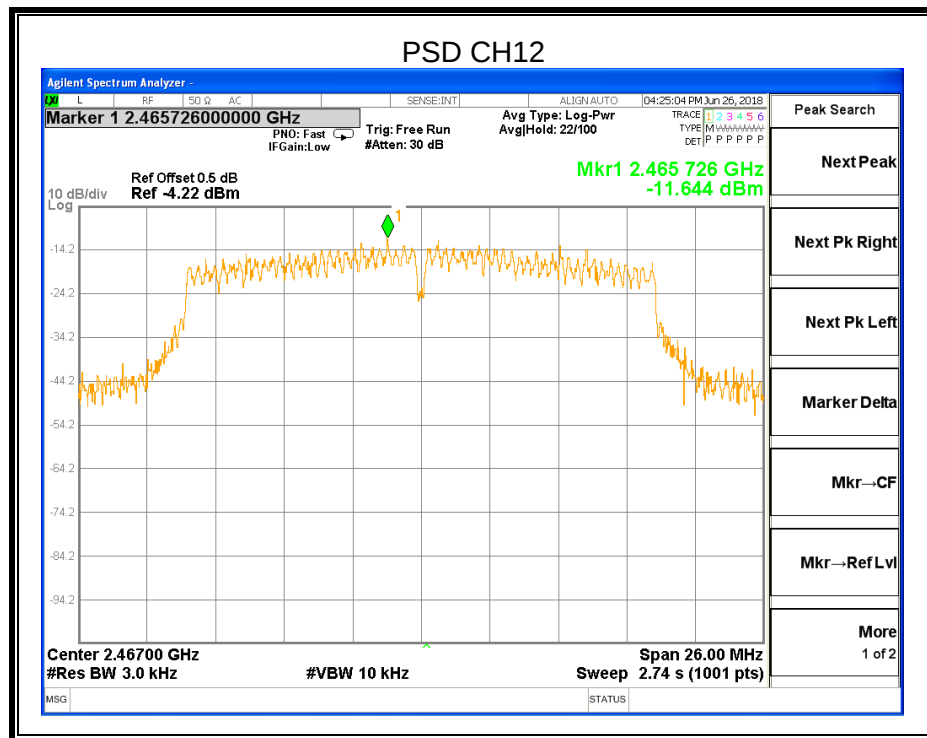


8.4.3. 802.11n HT20 MODE

Test Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
CH01	2412	-11.706	8	PASS
CH06	2437	-12.226	8	PASS
CH11	2462	-12.370	8	PASS
CH12	2467	-11.644	8	PASS
CH13	2472	-11.708	8	PASS



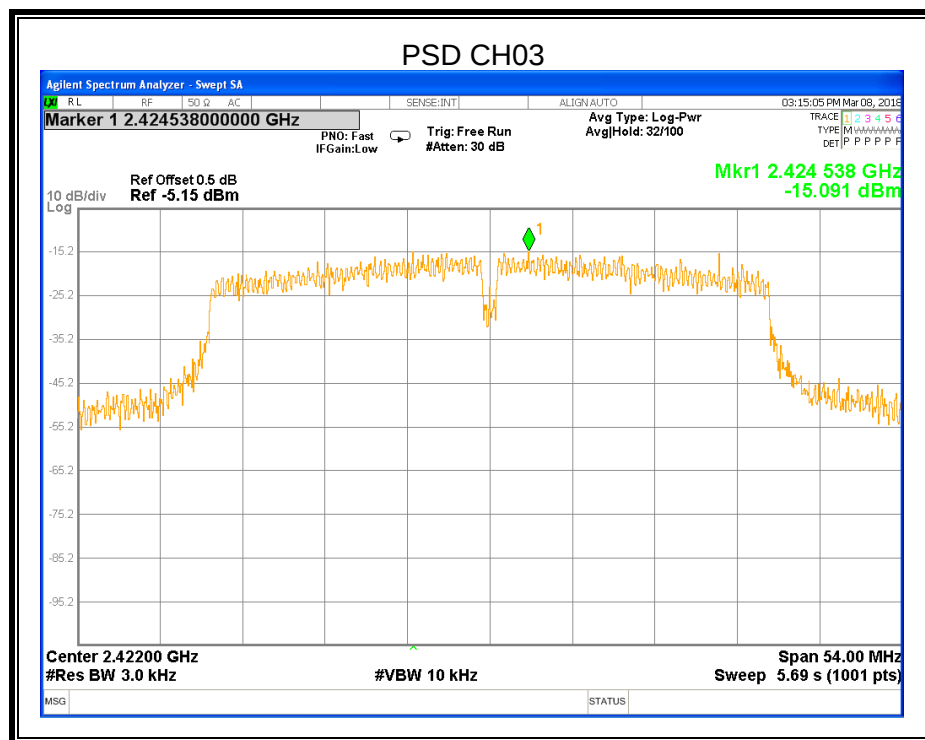


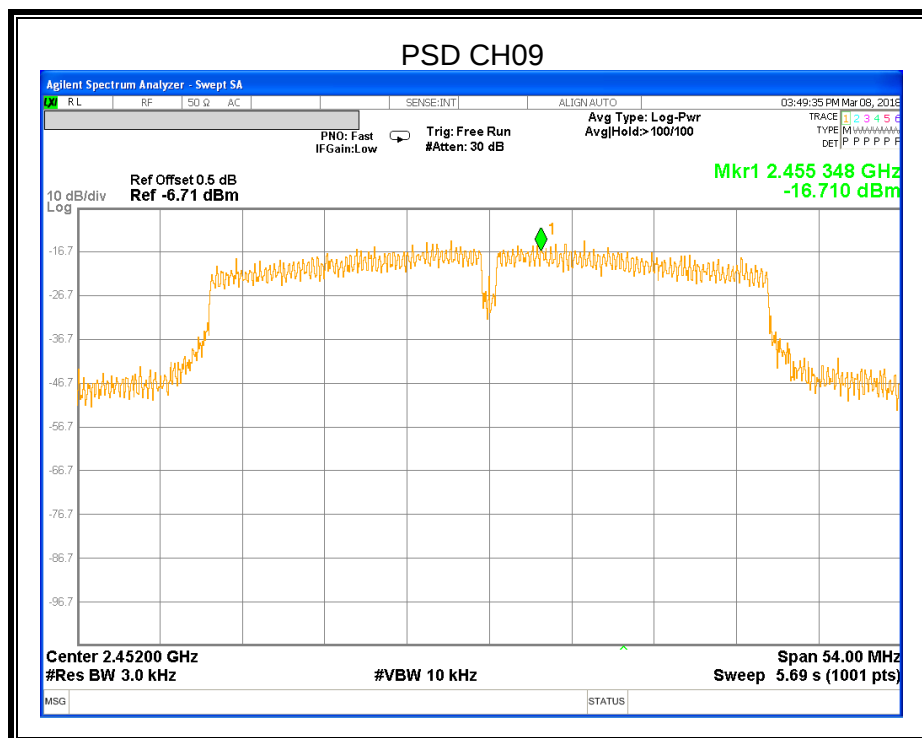
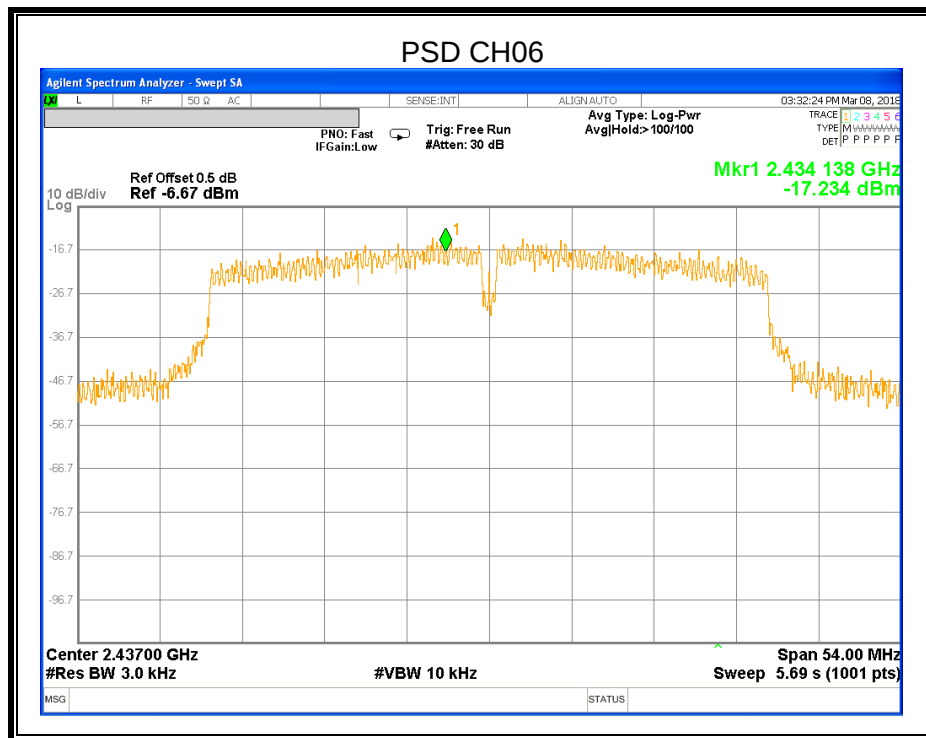


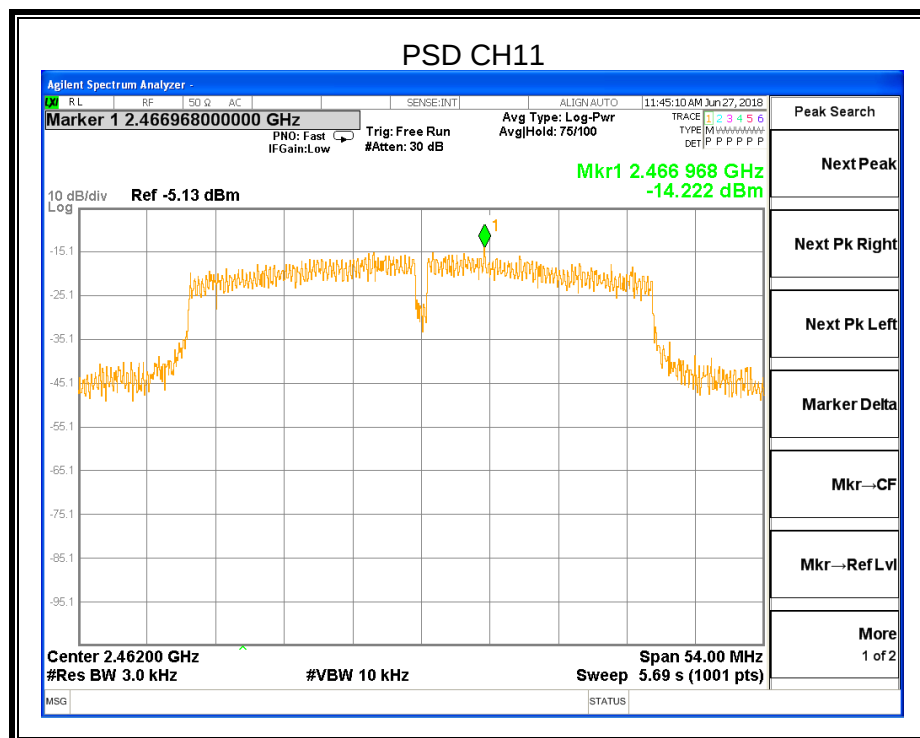
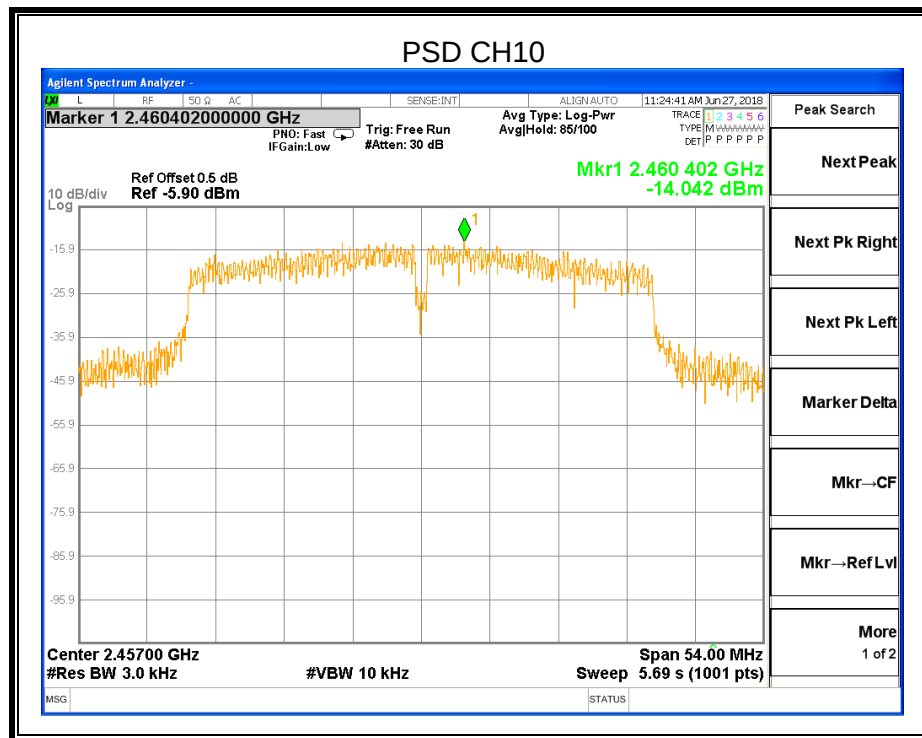


8.4.4. 802.11n HT40 MODE

Test Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
CH03	2422	-15.091	8	PASS
CH06	2437	-17.234	8	PASS
CH09	2452	-16.710	8	PASS
CH10	2457	-14.042	8	PASS
CH11	2462	-14.222	8	PASS









8.5. CONDUCTED BANDEGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247) Subpart C RSS-247 ISSUE 2		
Section	Test Item	Limit
FCC §15.247 (d) RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

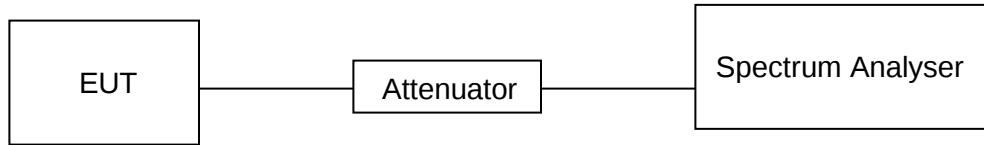
Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100K
VBW	$\geq 3 \times \text{RBW}$
measurement points	$\geq \text{span}/\text{RBW}$
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.



TEST SETUP

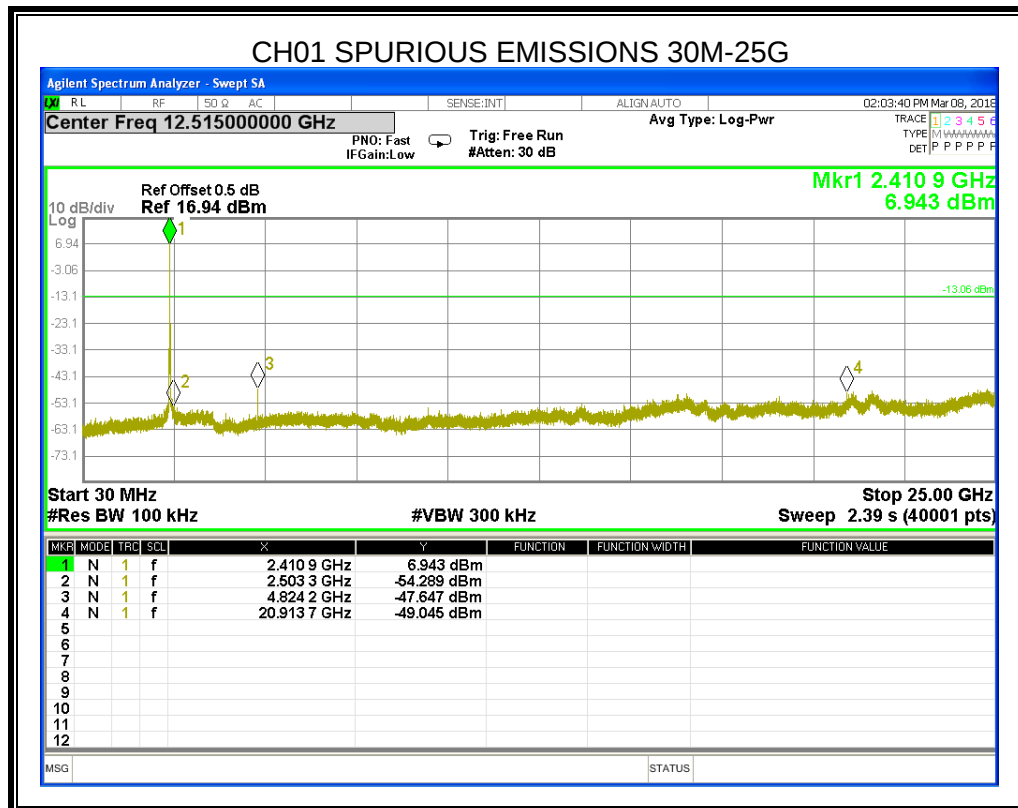


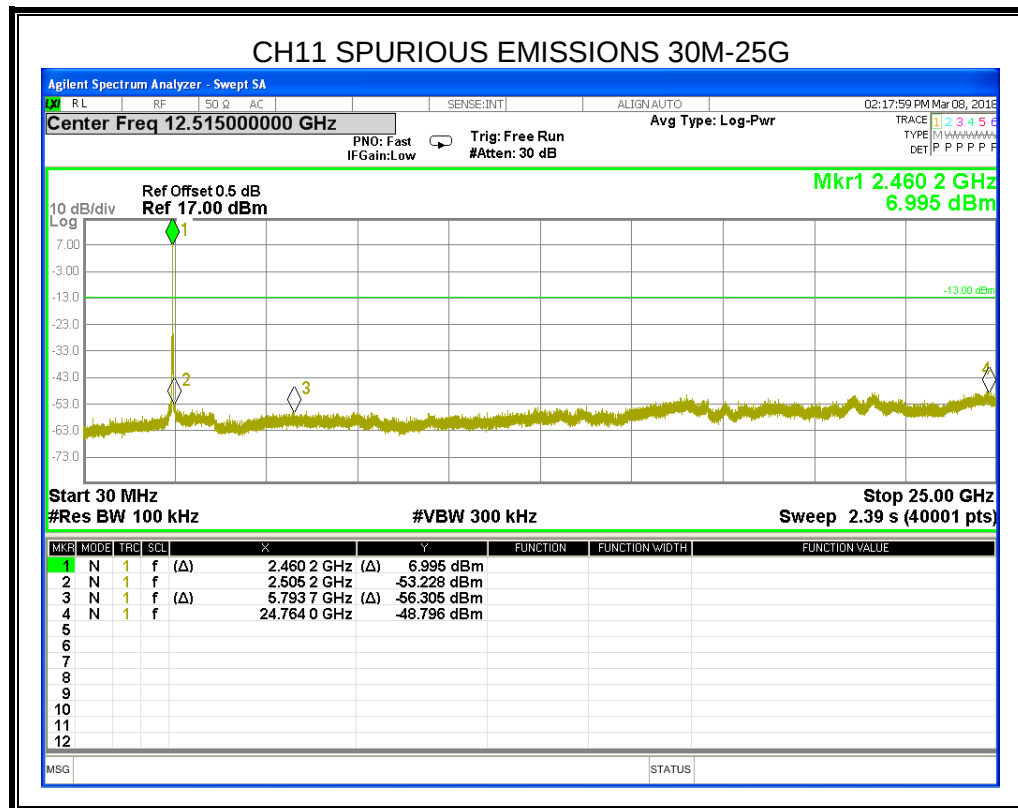
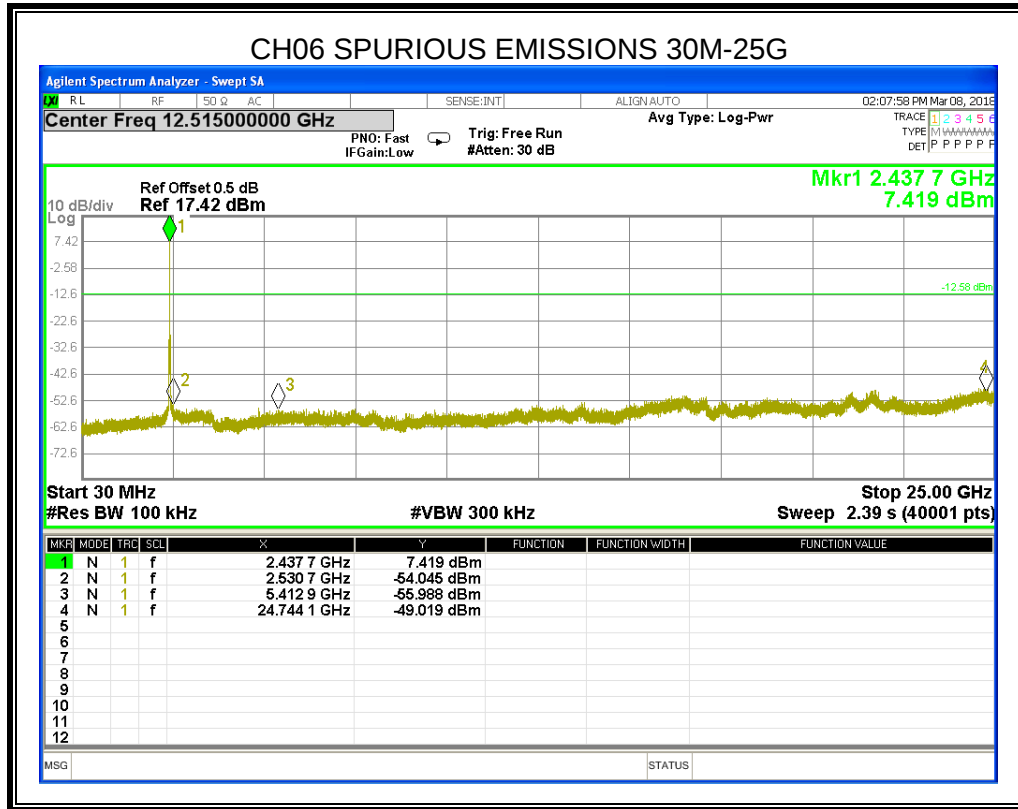
TEST ENVIRONMENT

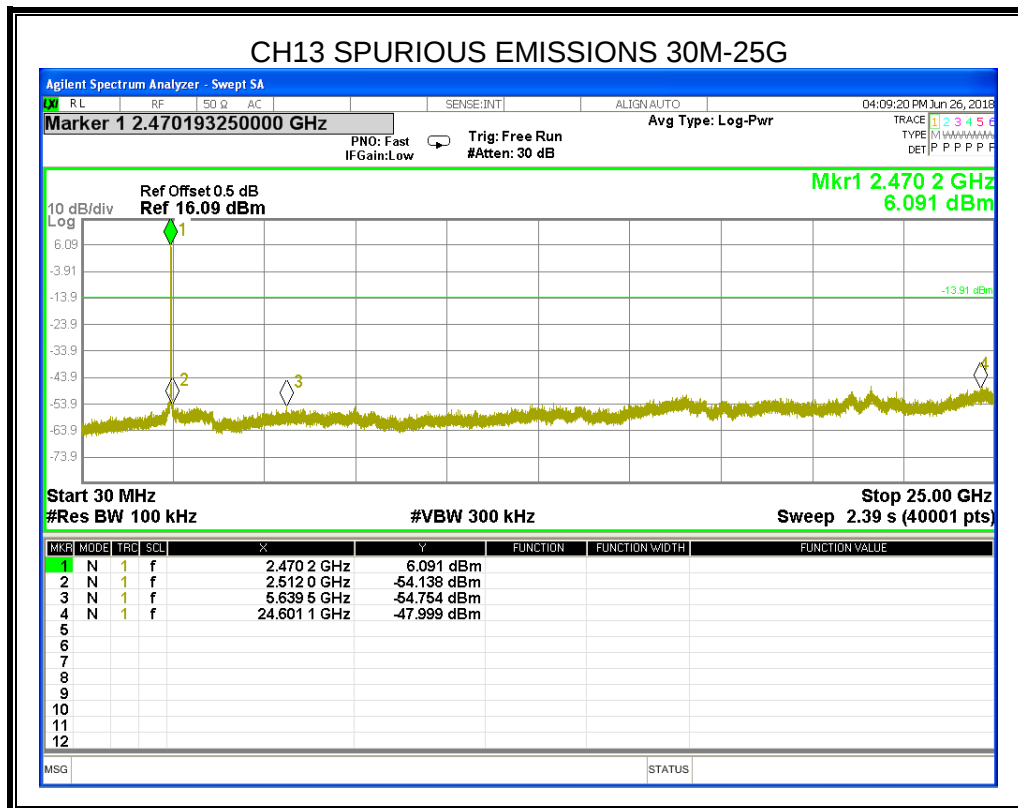
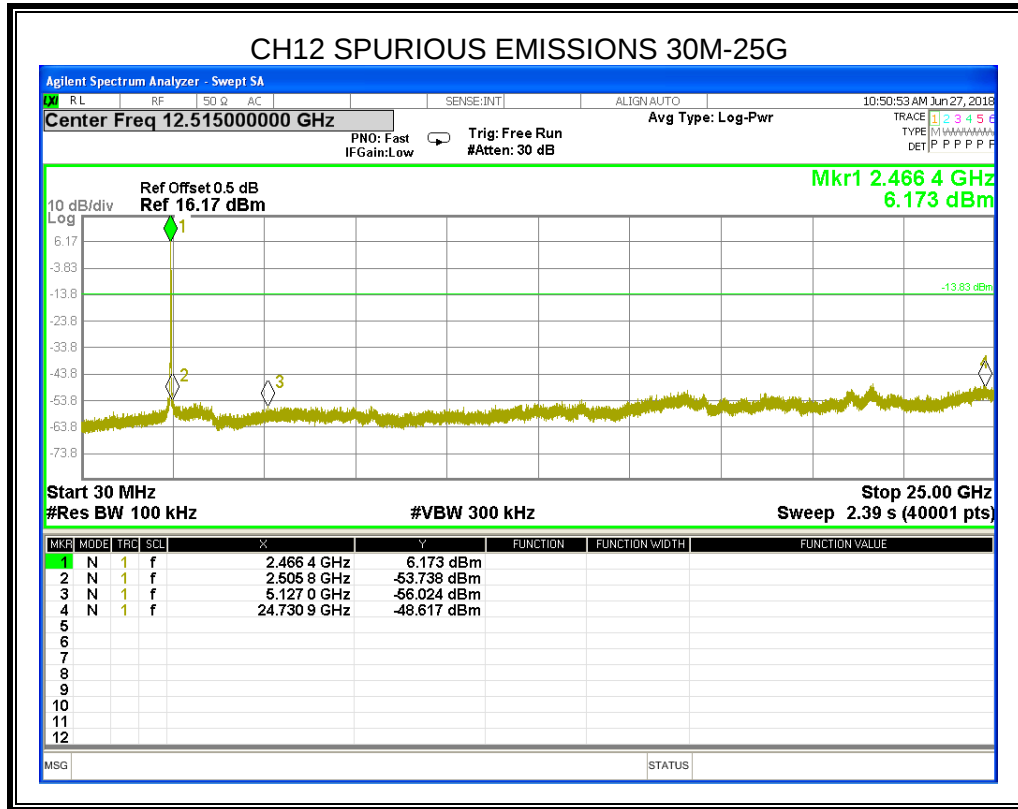
Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz

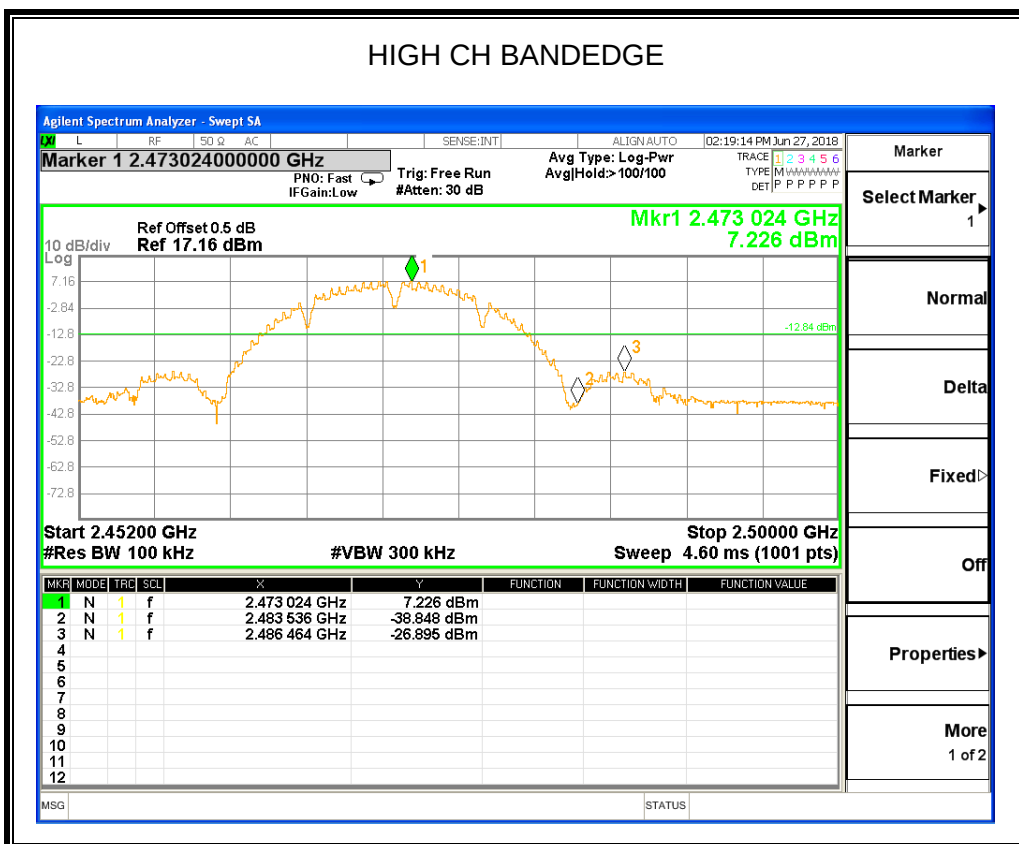
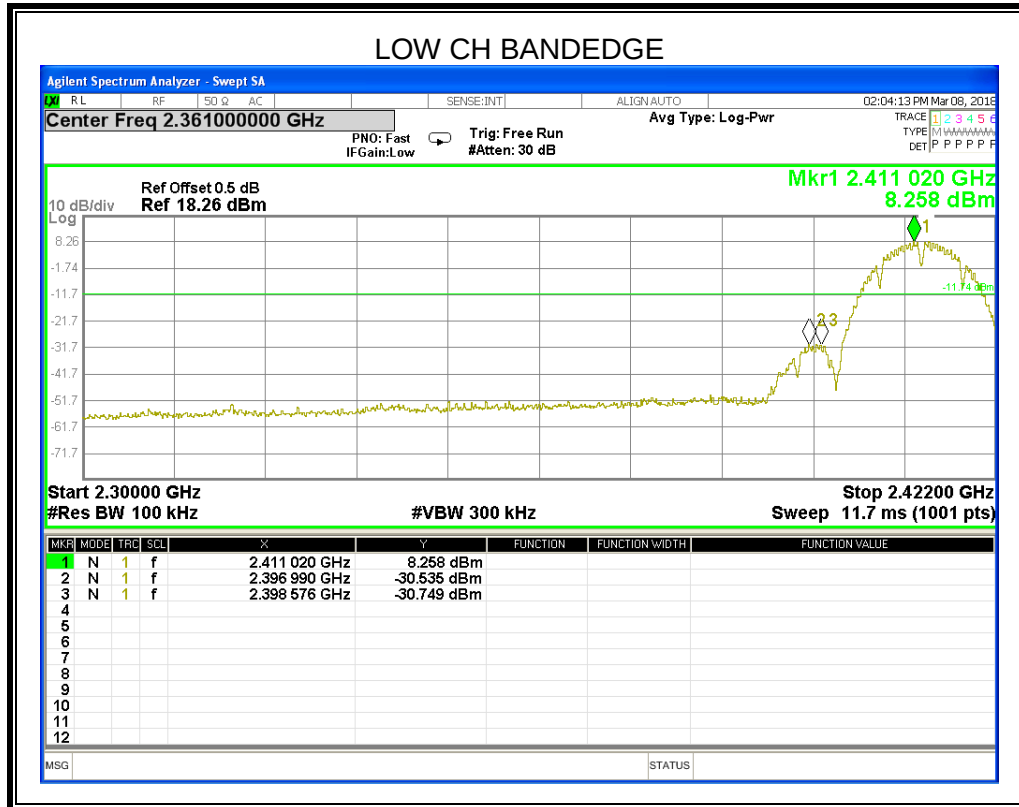
RESULTS

8.5.1. 802.11b MODE



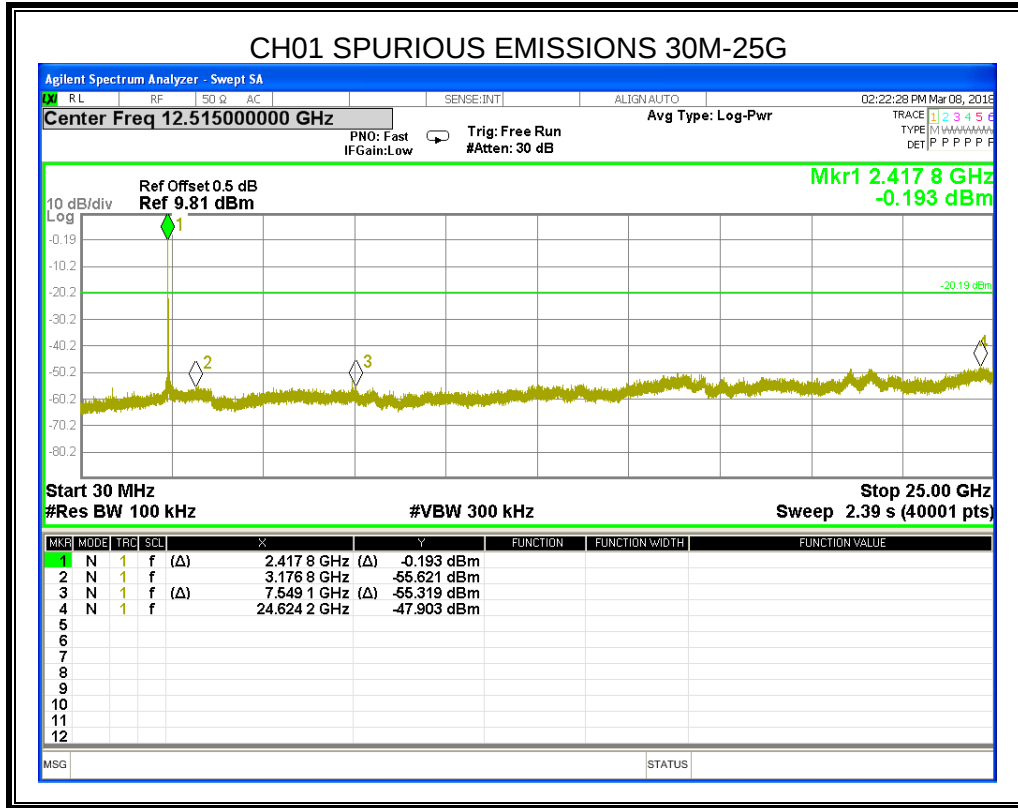


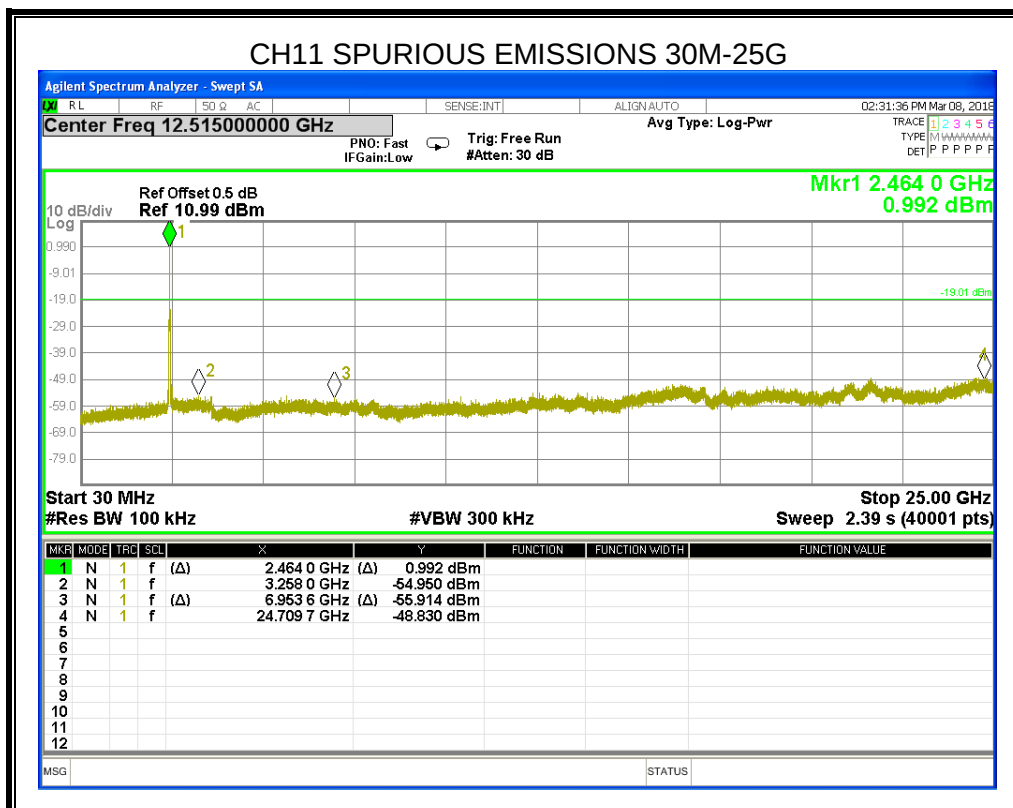
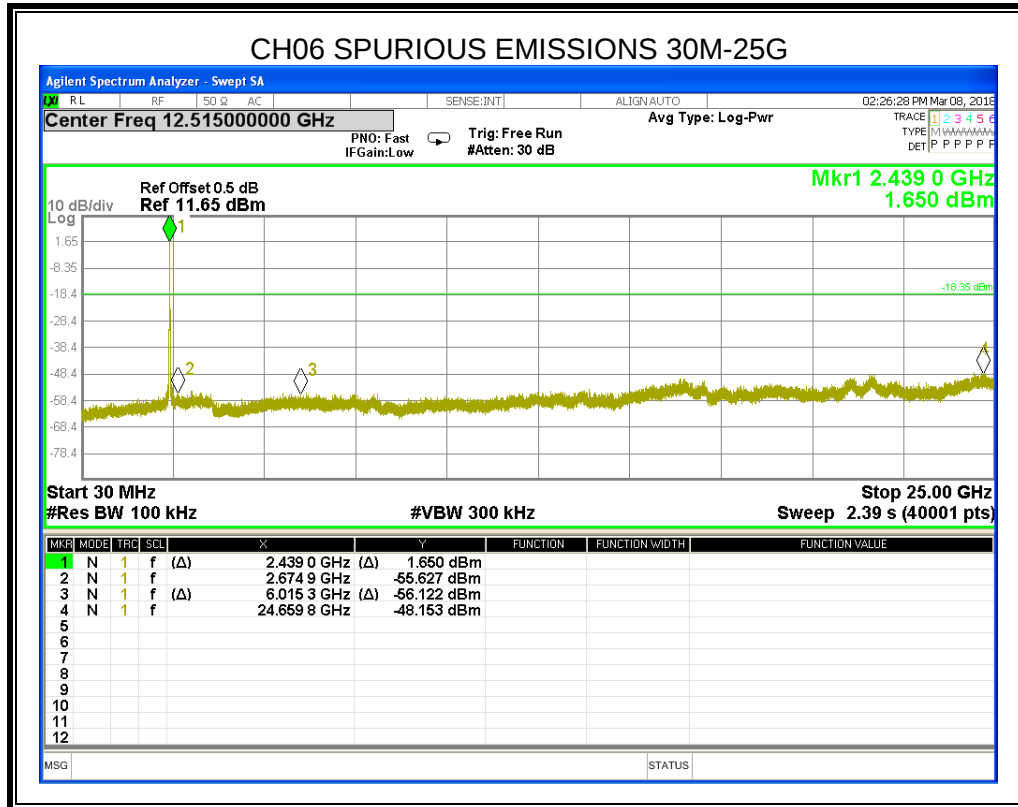


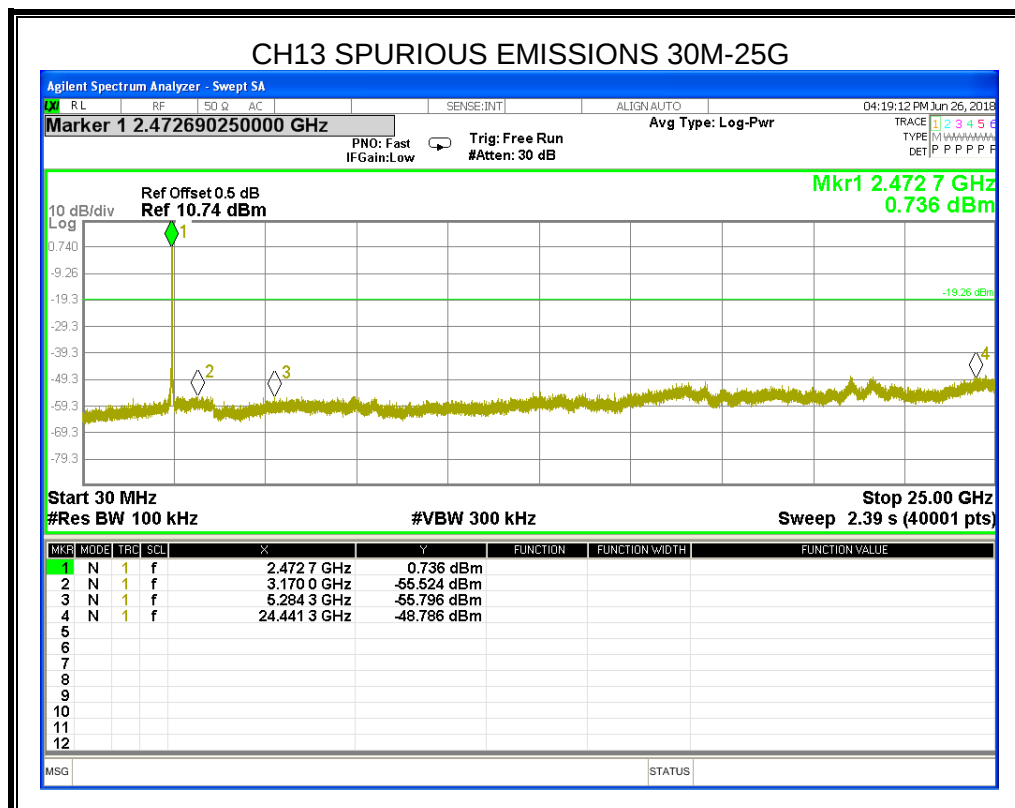
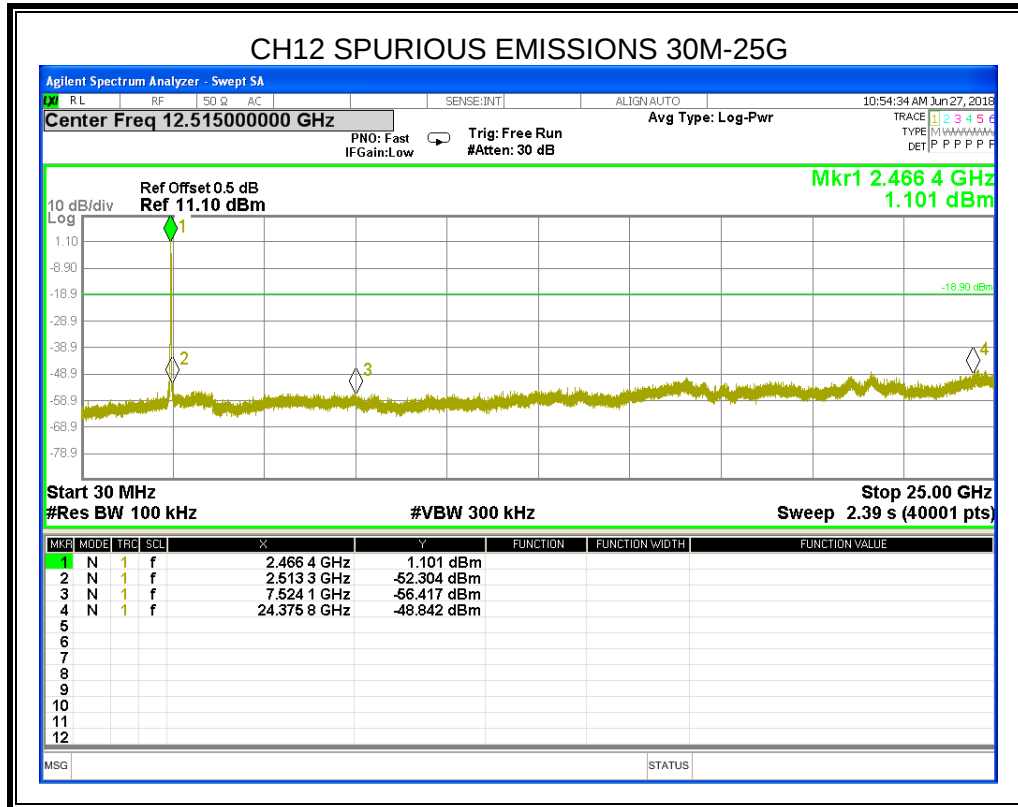


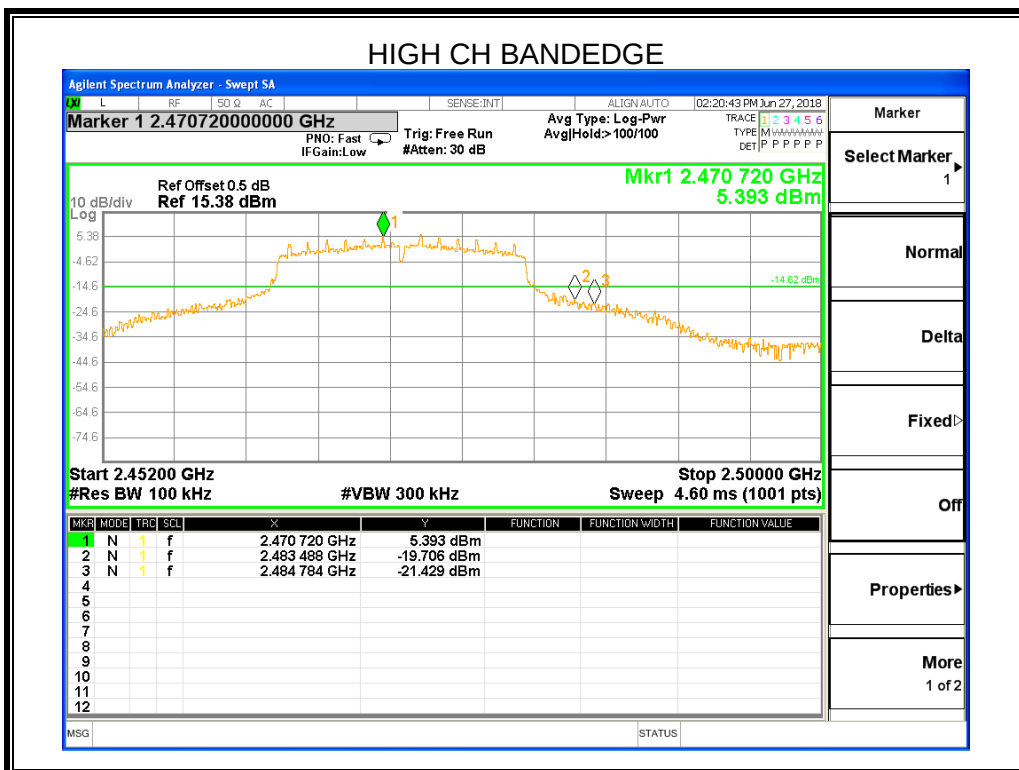
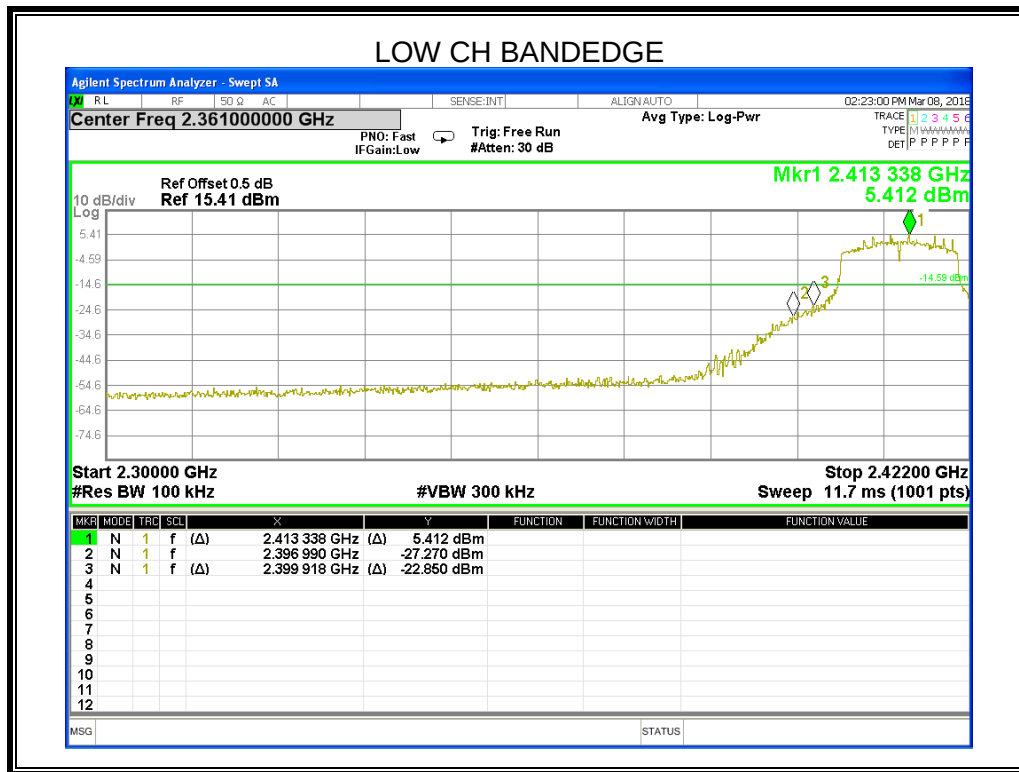


8.5.2. 802.11g MODE



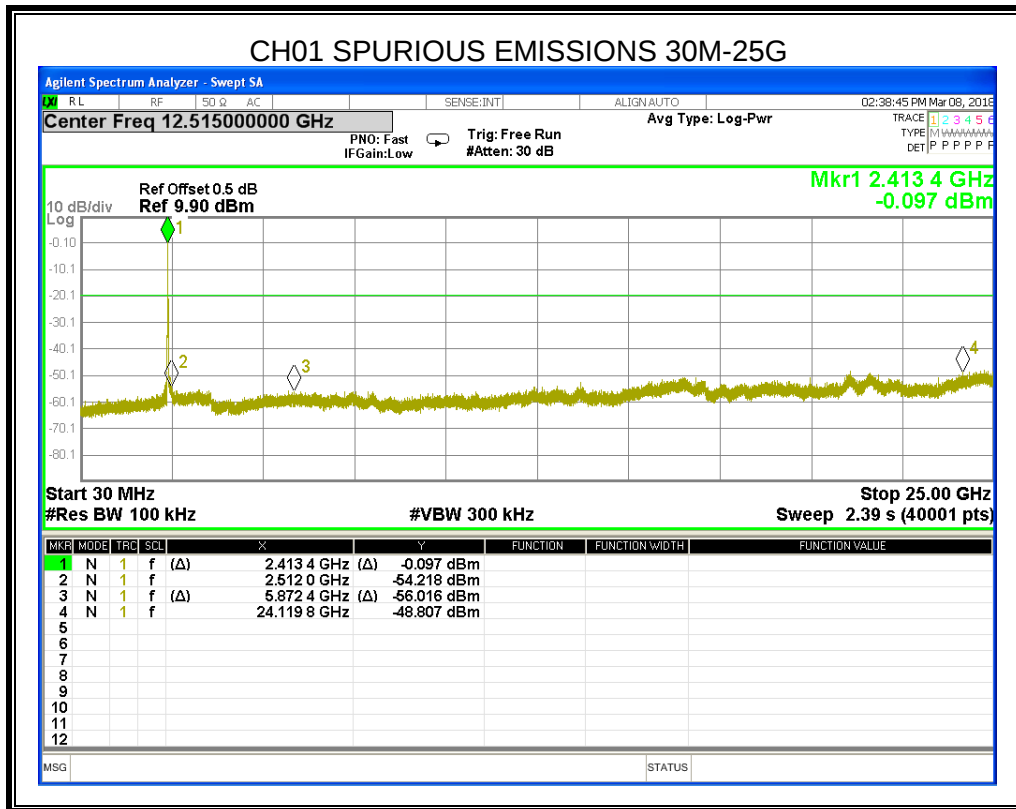


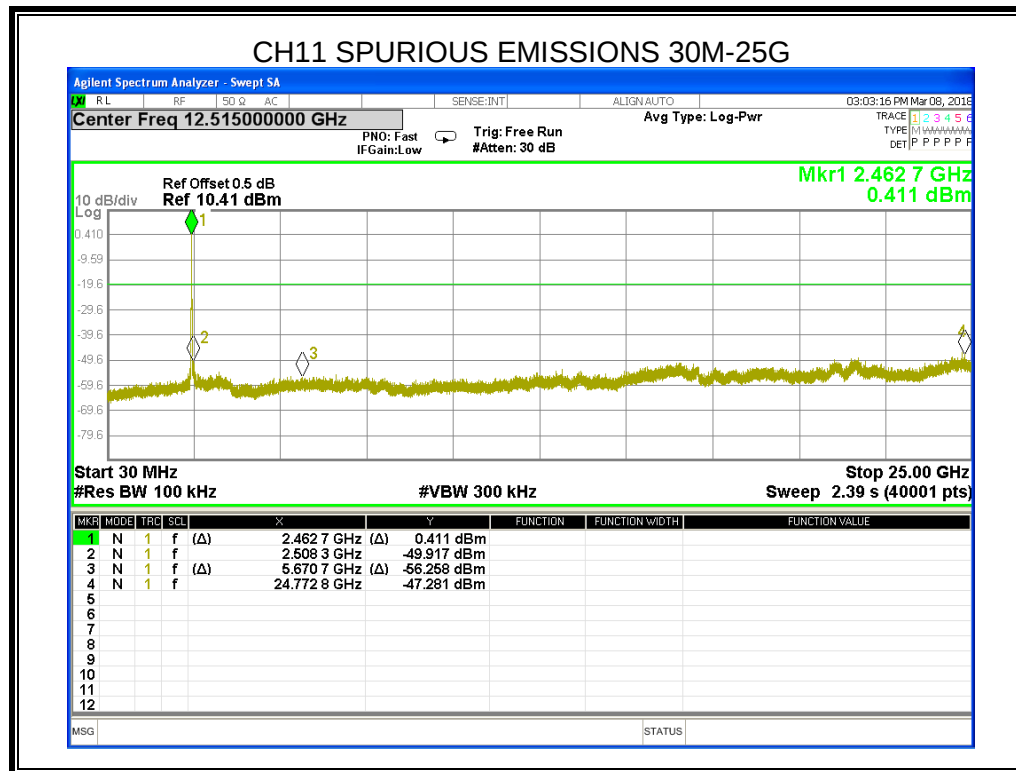
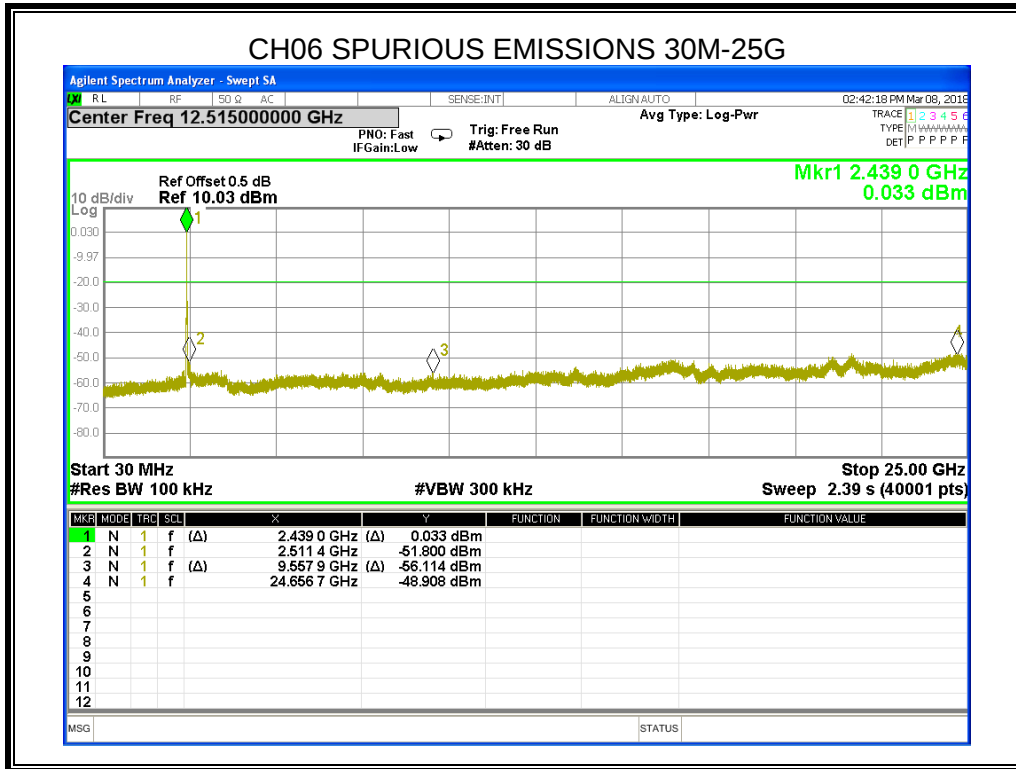


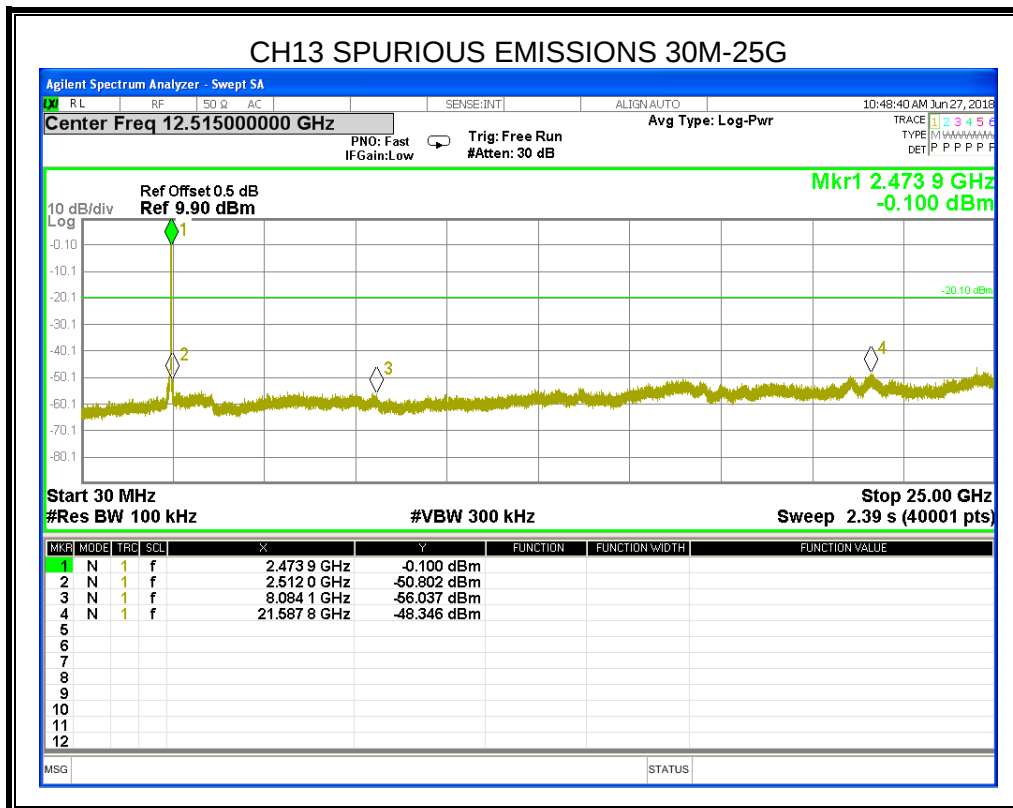
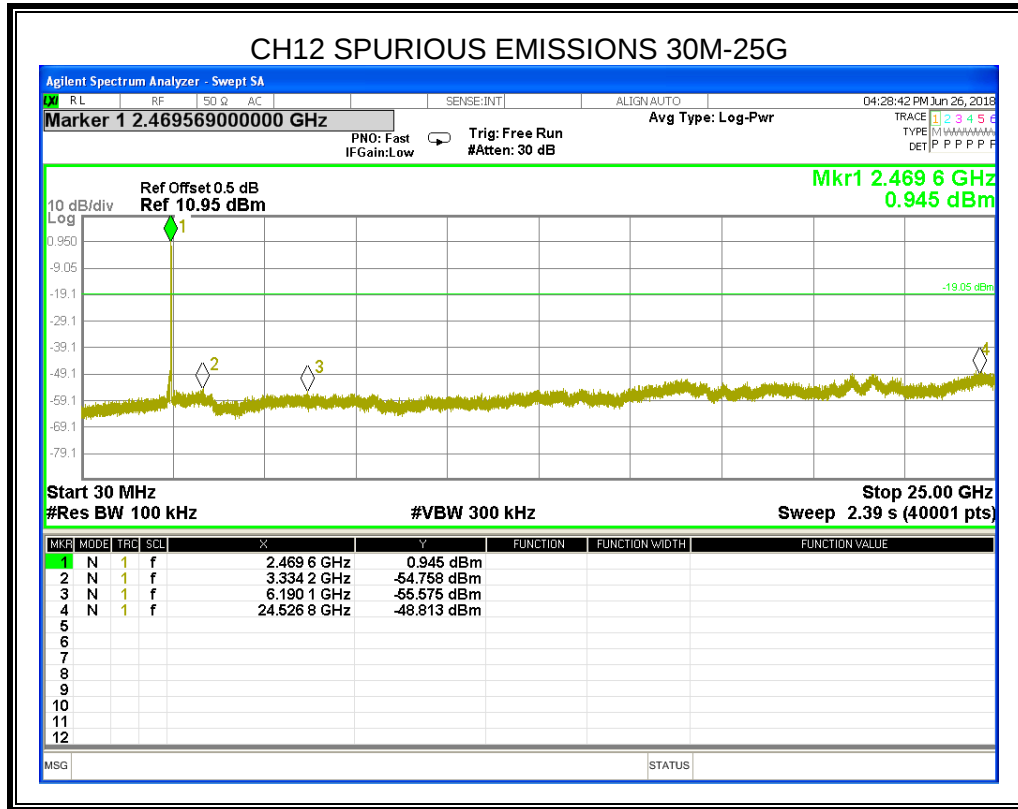


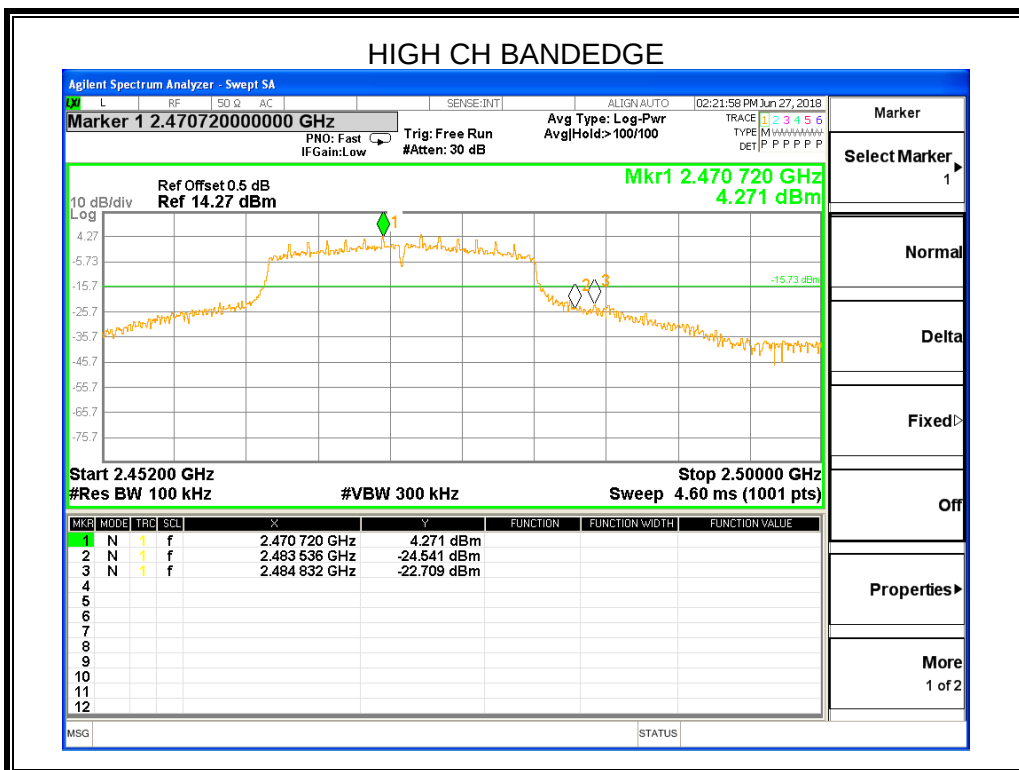
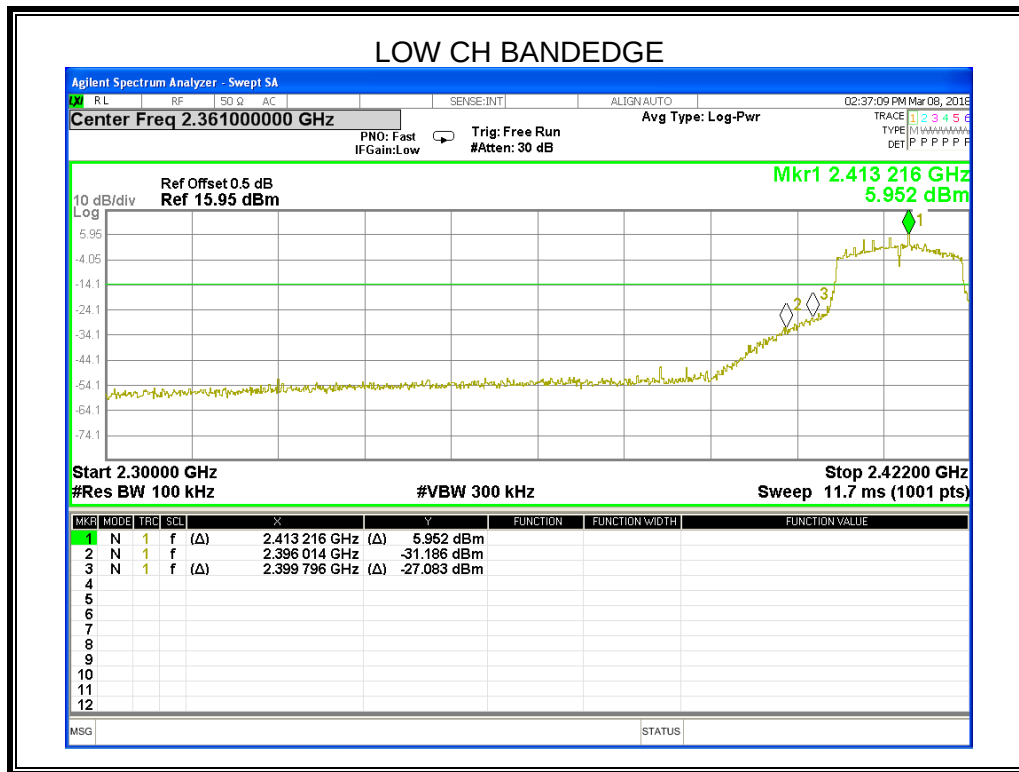


8.5.3. 802.11n HT20 MODE



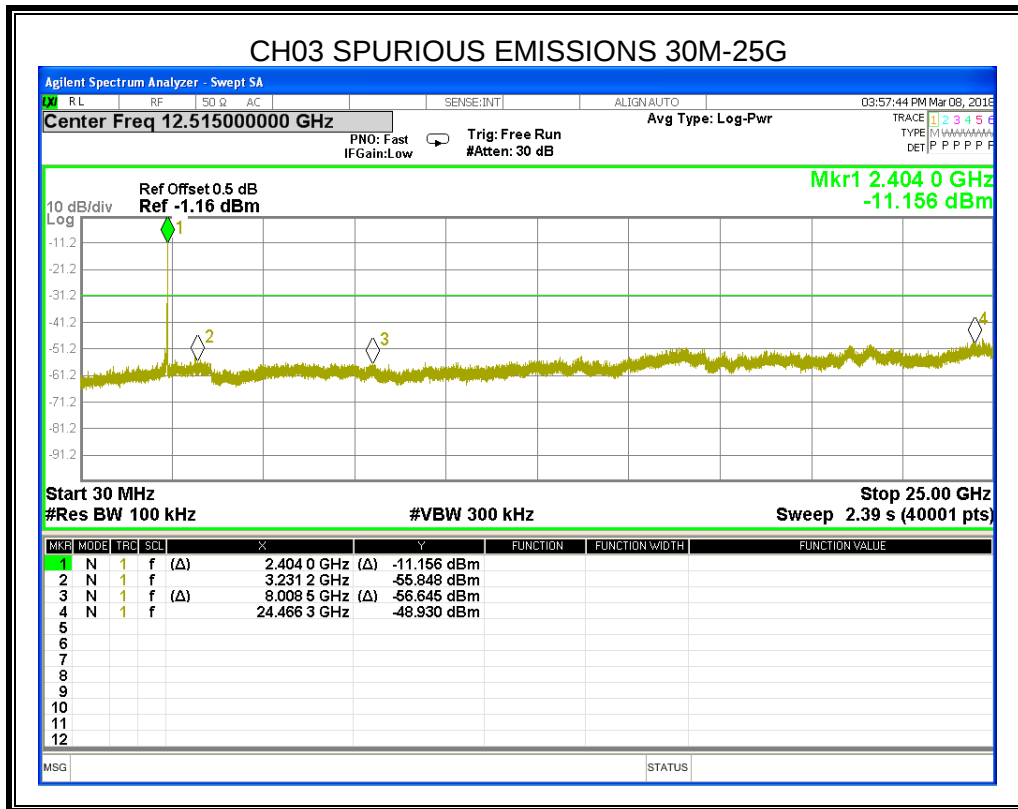


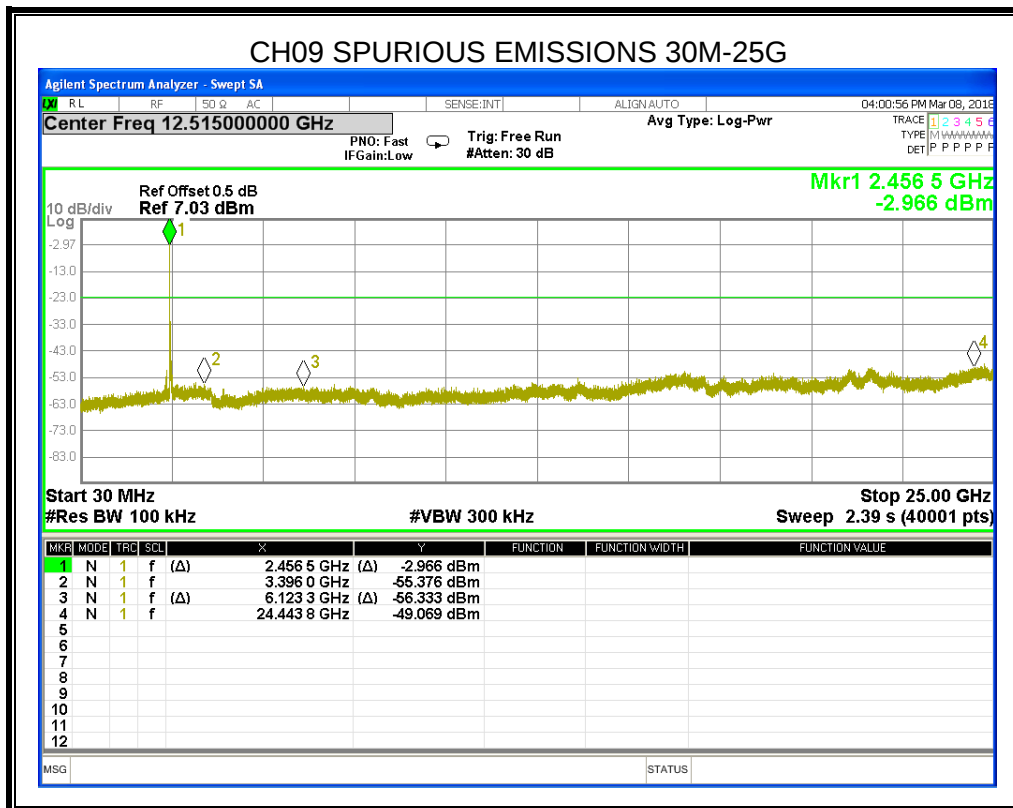
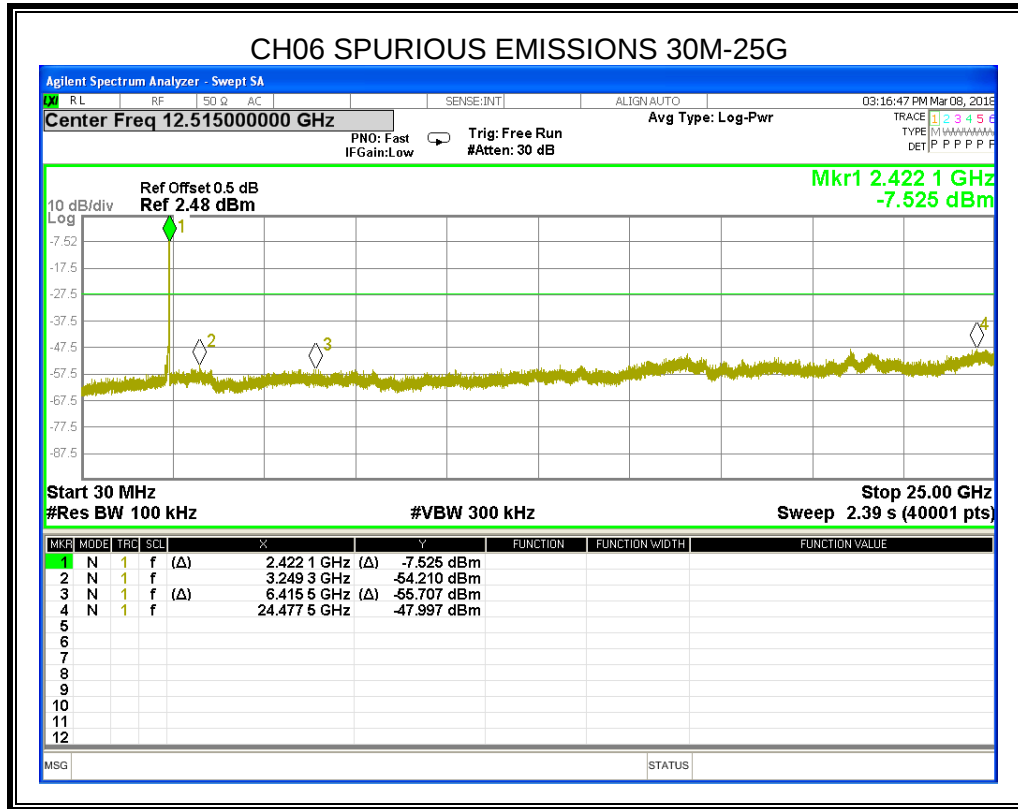


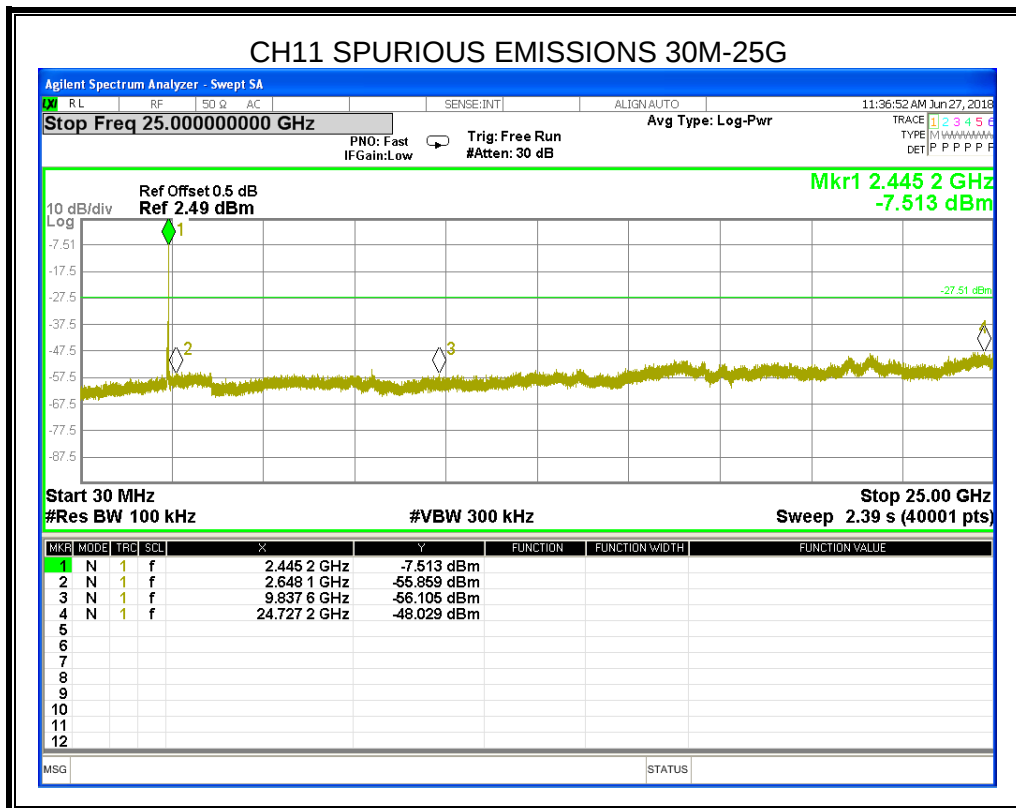
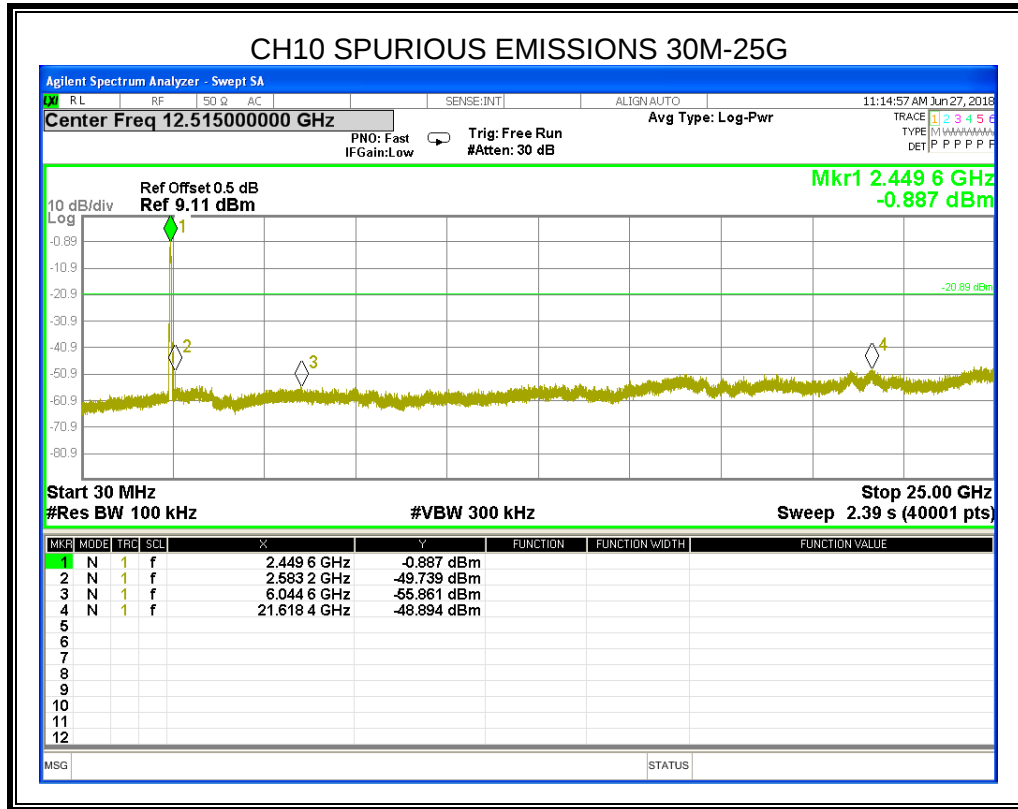


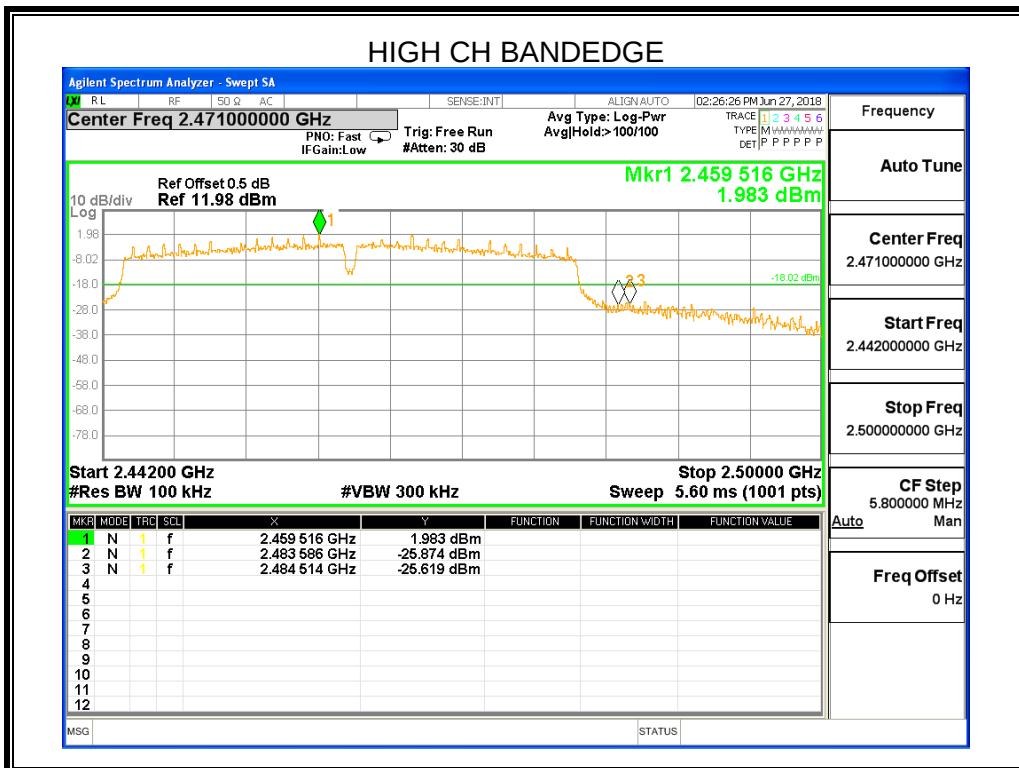
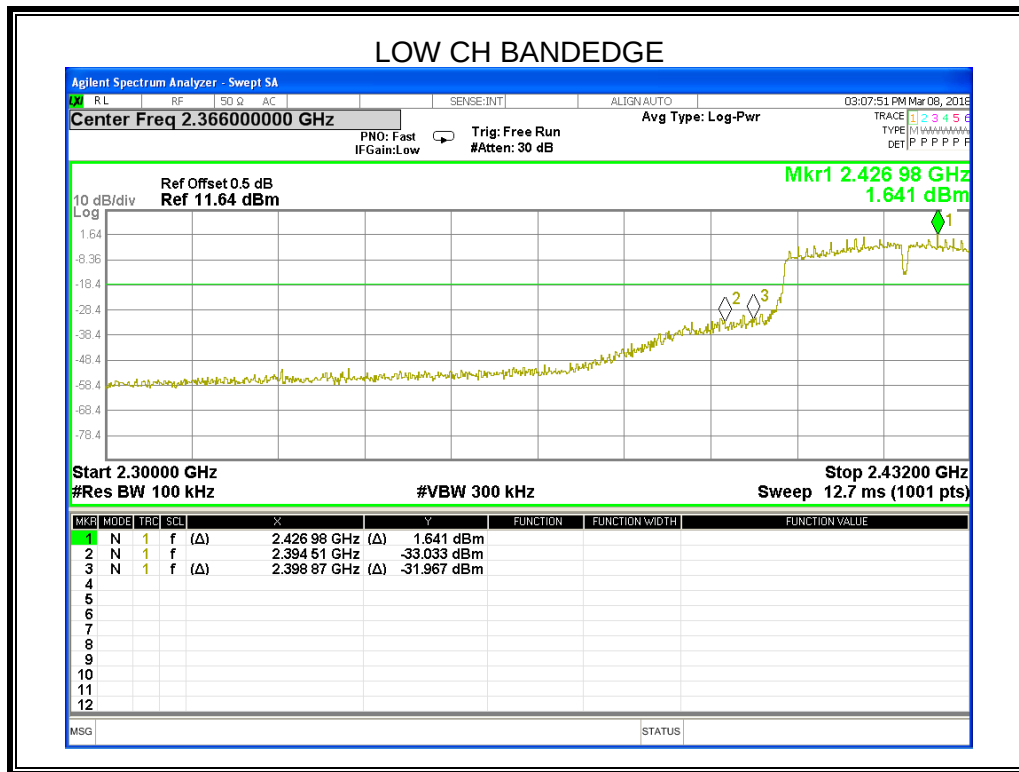


8.5.4. 802.11n HT40 MODE











9. RADIATED TEST RESULTS

LIMITS

Please refer to FCC §15.205 and §15.209

Please refer to RSS-Gen Clause 8.9 (Transmitter)

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.



Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

Restricted bands of operation

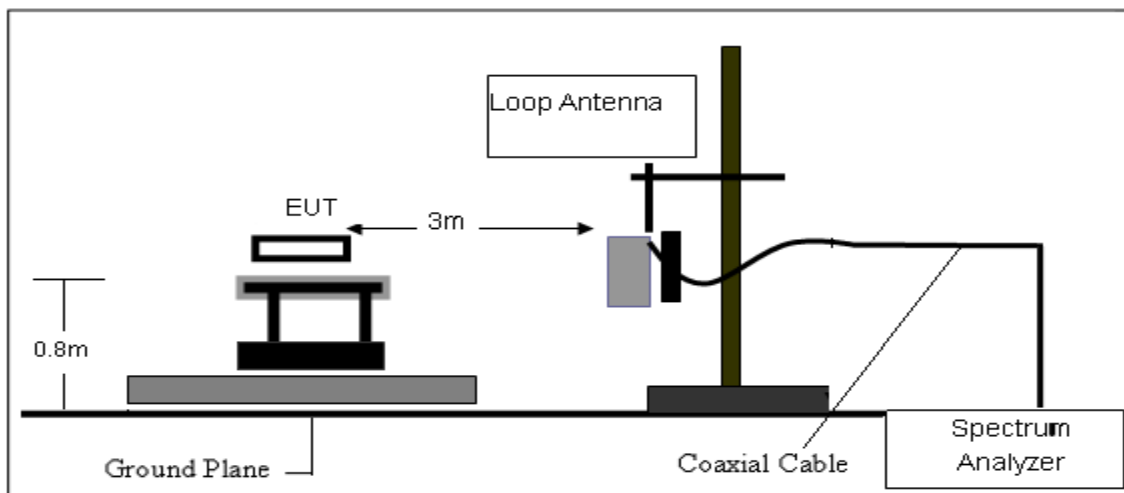
MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(²)
13.36-13.41			

Note: ¹Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

²Above 38.6c

TEST SETUP AND PROCEDURE

Below 30MHz



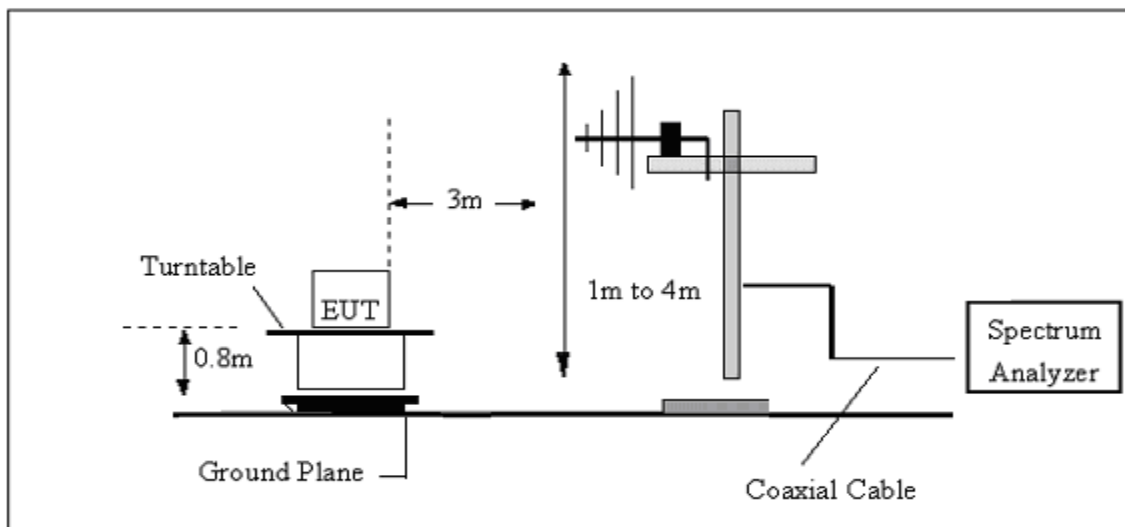
The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Detector	Peak/QP/ Average
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013
2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
6. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

Note: Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G

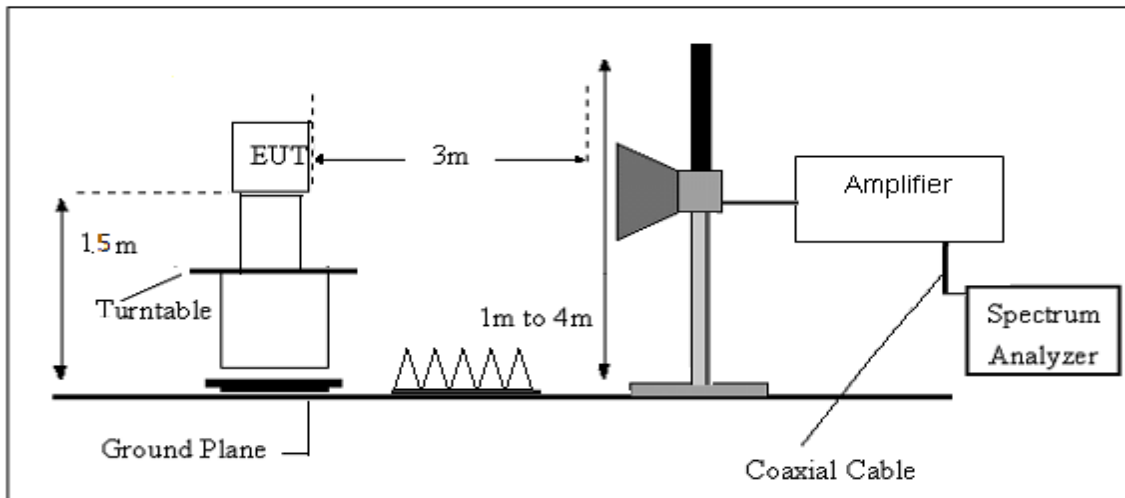


The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 0.8 meter above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
6. For the actual test configuration, please refer to the related Item in this test report (Photographs of the Test Configuration)

ABOVE 1G

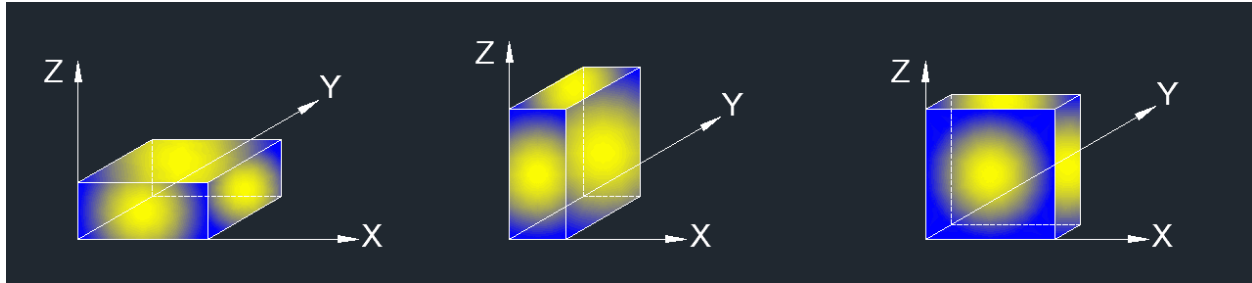


The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
3. The EUT was placed on a turntable with 1.5m above ground.
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements.
7. For the actual test configuration, please refer to the related item in this test report (Photographs of the Test Configuration)

X axis, Y axis, Z axis positions:



8.The EUT as shown in setup Photo is the worst mode, the report only shown the worst mode data.

TEST ENVIRONMENT

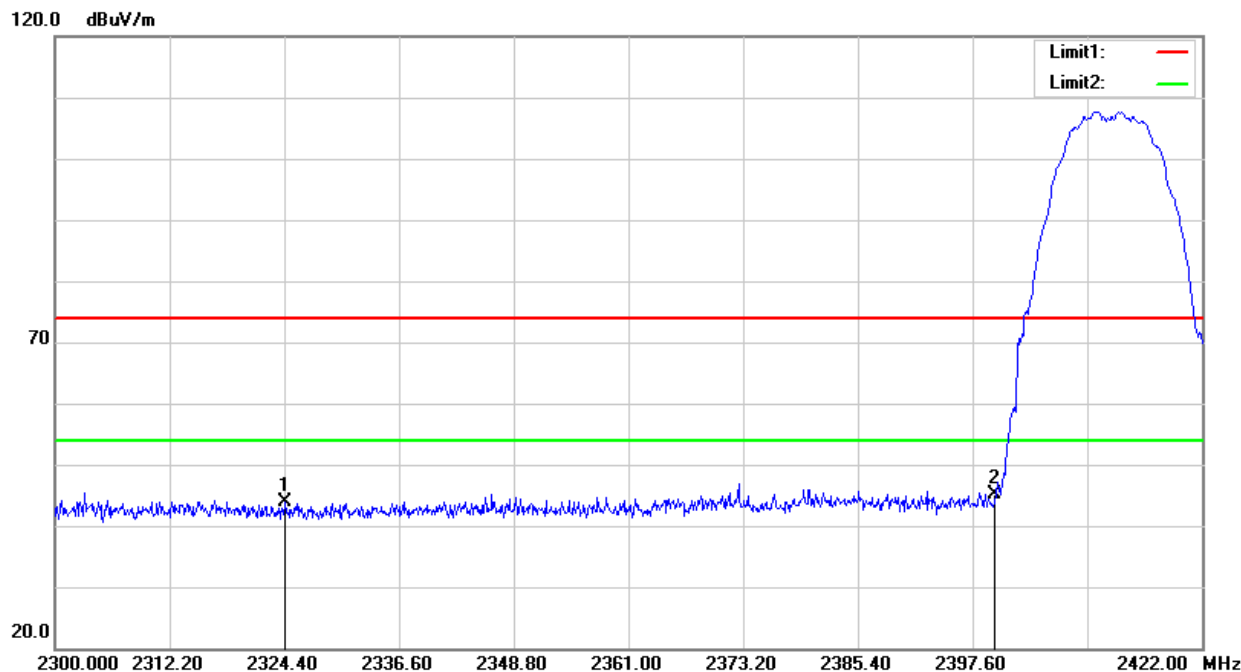
Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz



9.1. RESTRICTED BANDEDGE

802.11 b mode

RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



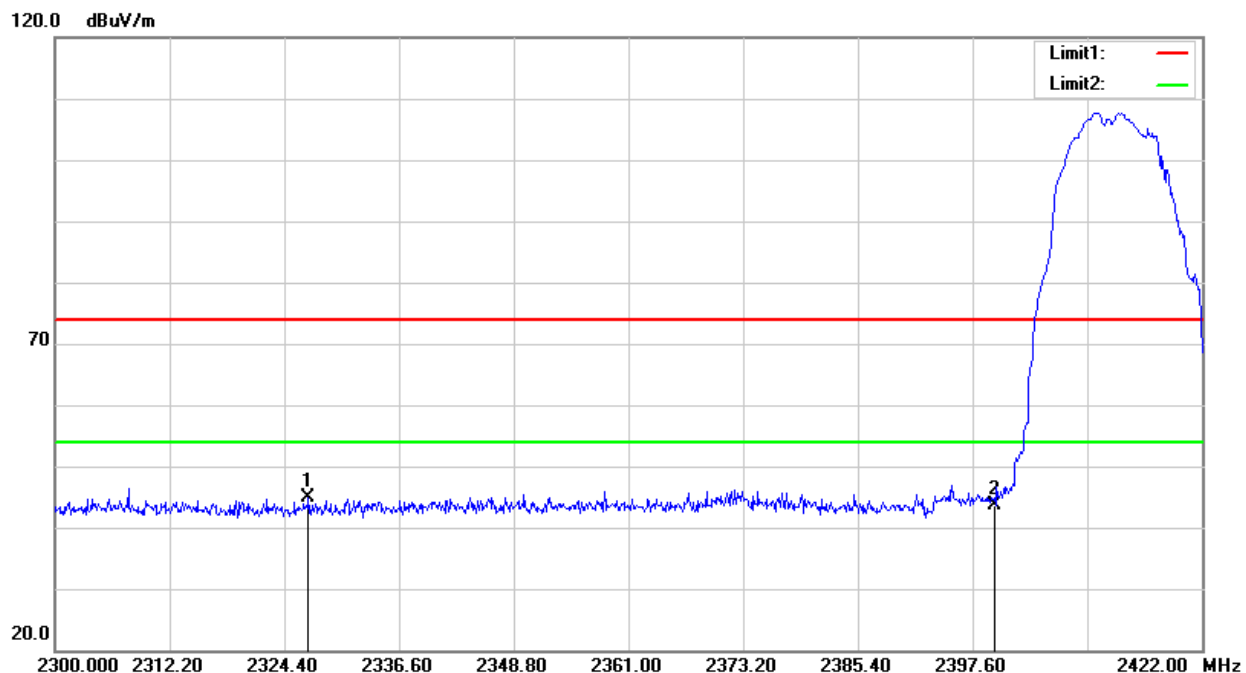
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2324.522	45.98	-2.13	43.85	74.00	-30.15	peak
2	2400.000	46.93	-1.69	45.24	74.00	-28.76	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



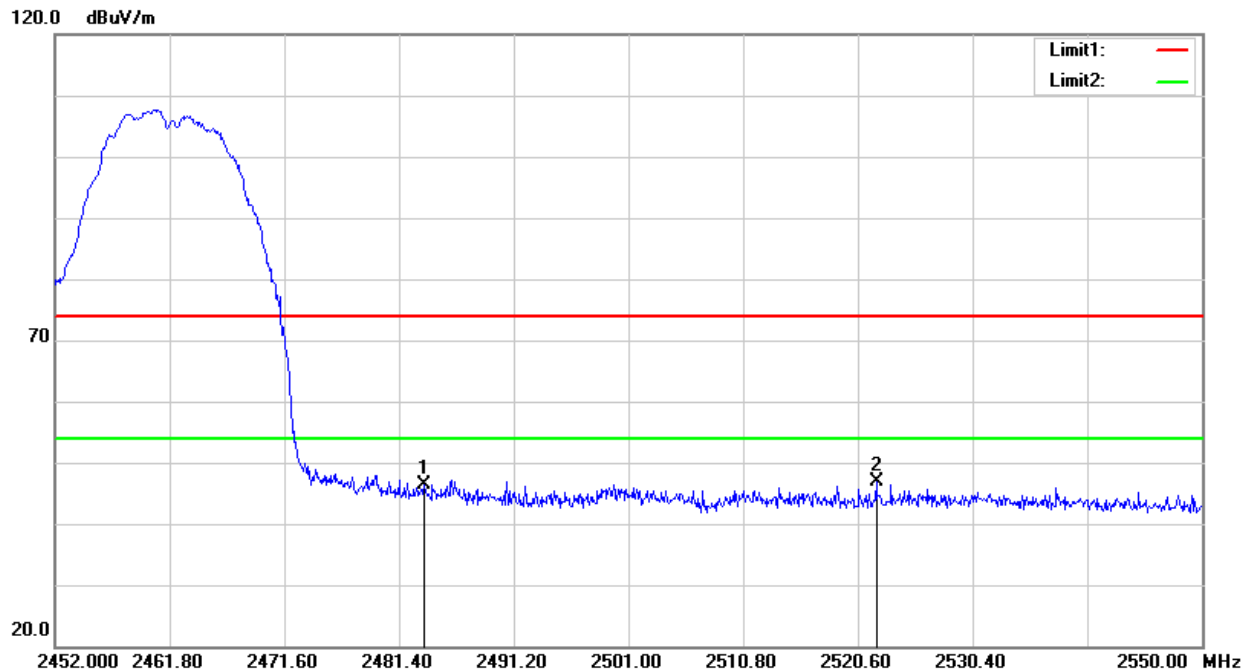
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2326.962	47.01	-2.11	44.90	74.00	-29.10	peak
2	2400.000	45.34	-1.69	43.65	74.00	-30.35	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



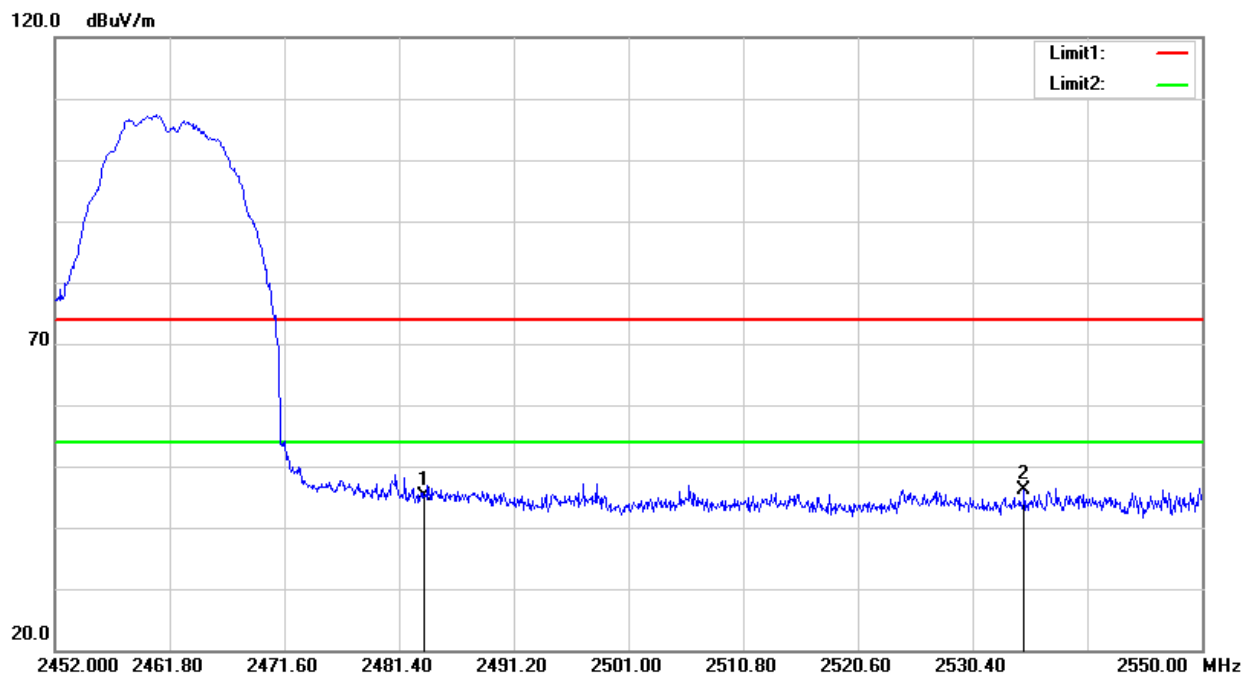
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	47.67	-1.20	46.47	74.00	-27.53	peak
2	2522.168	47.89	-1.03	46.86	74.00	-27.14	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)



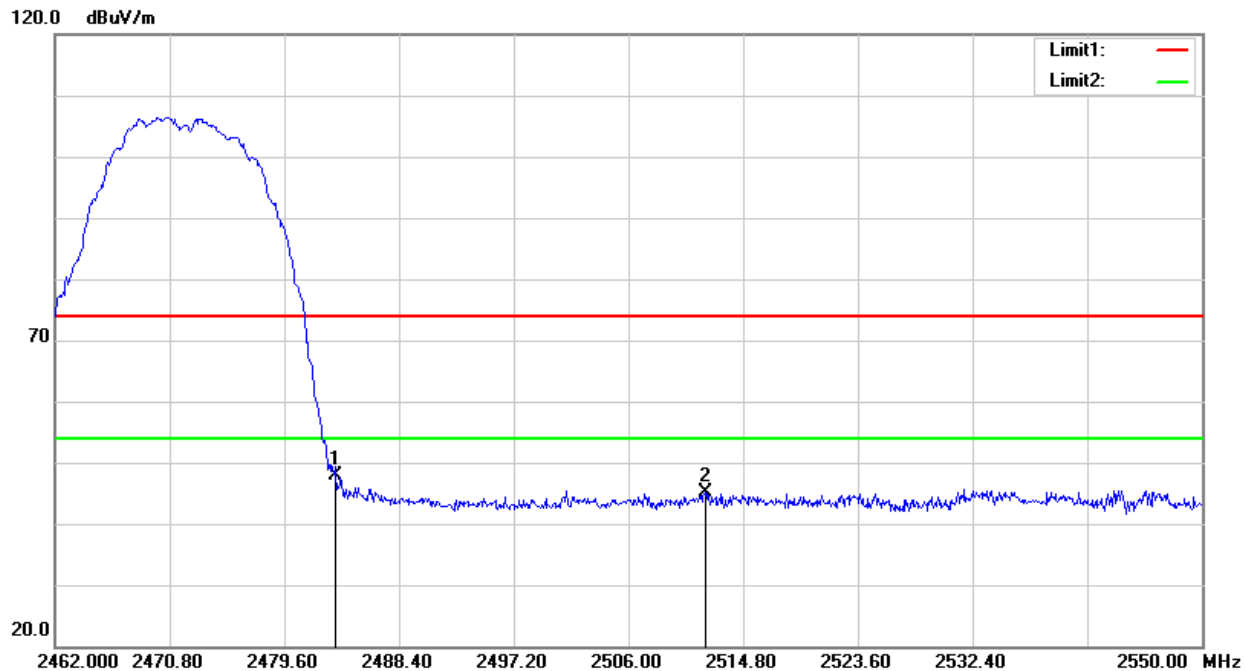
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	46.45	-1.20	45.25	74.00	-28.75	peak
2	2534.810	47.13	-0.97	46.16	74.00	-27.84	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, HORIZONTAL)



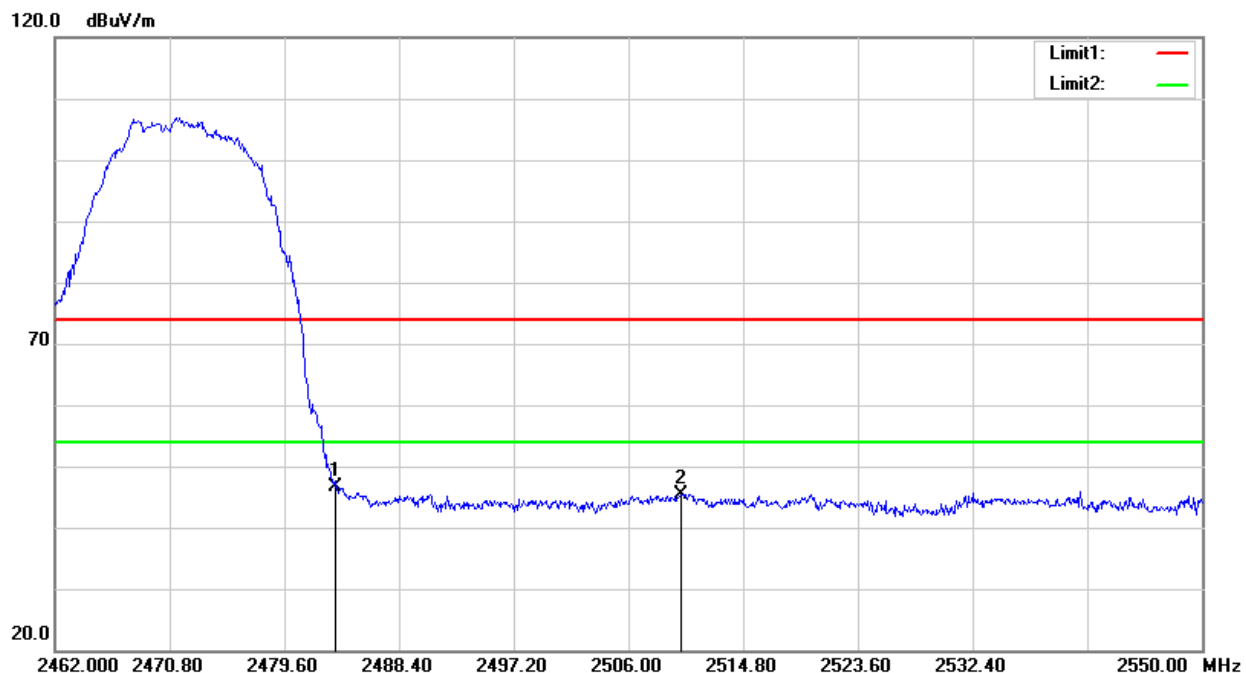
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	49.12	-1.20	47.92	74.00	-26.08	peak
2	2511.896	46.30	-1.06	45.24	74.00	-28.76	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, VERTICAL)



No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	47.85	-1.20	46.65	74.00	-27.35	peak
2	2510.048	46.53	-1.07	45.46	74.00	-28.54	peak

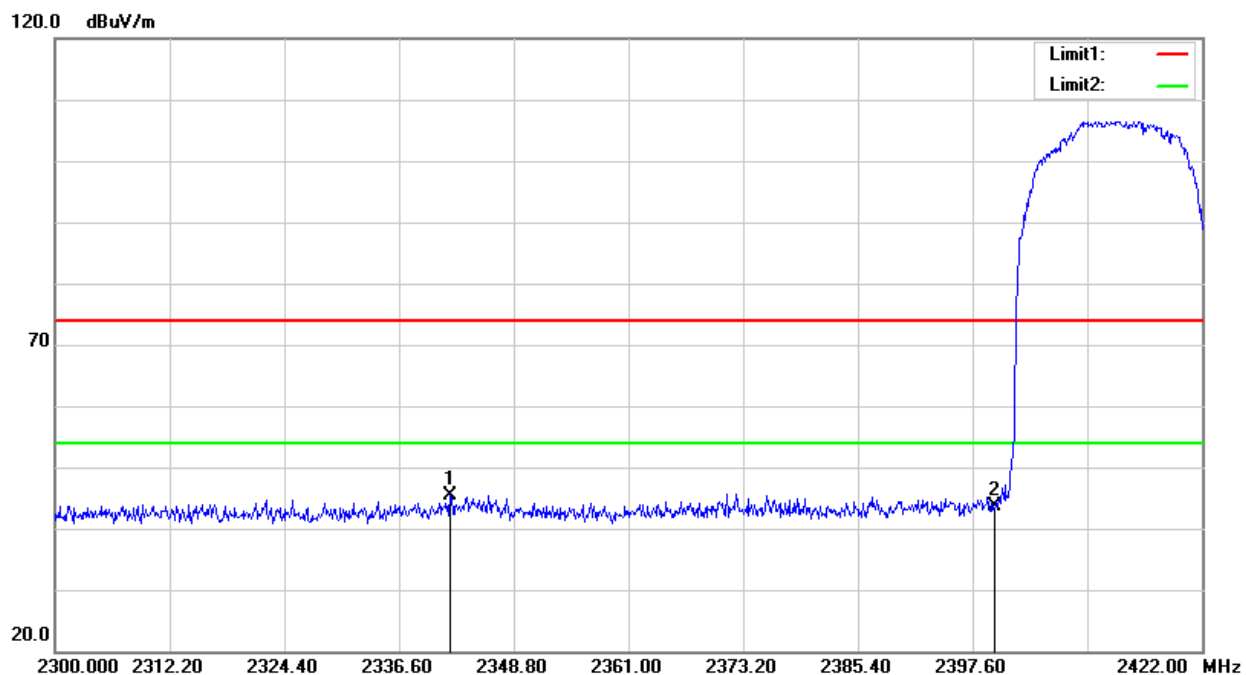
Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



802.11 g mode

RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



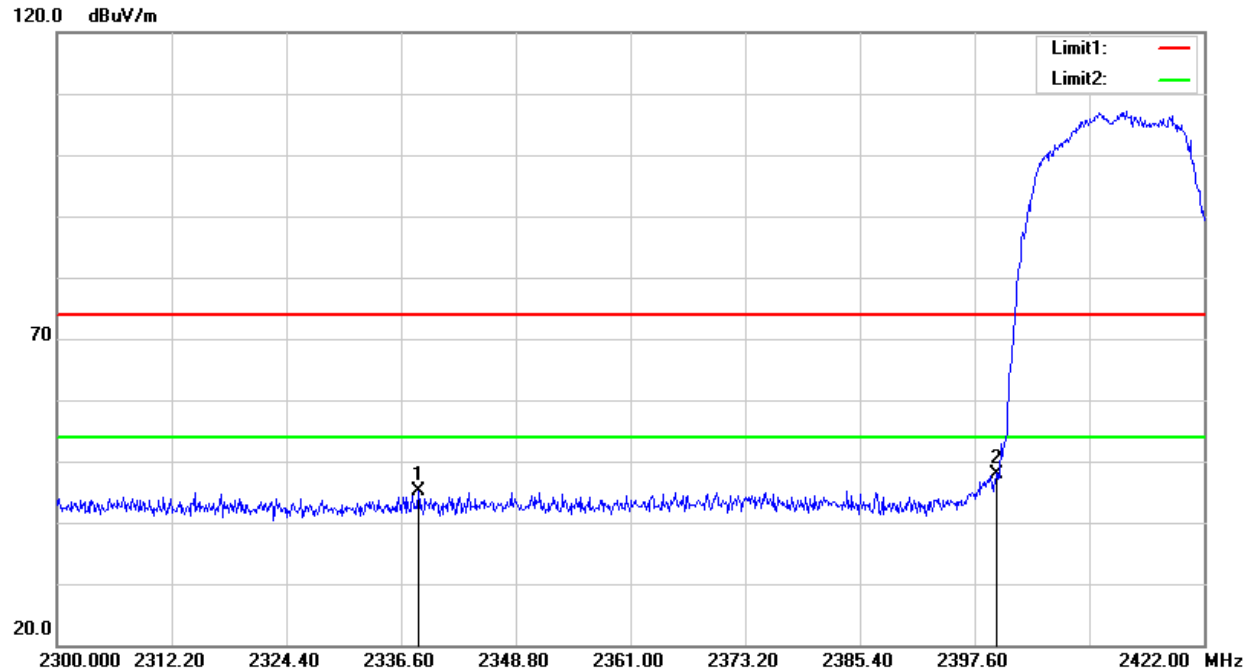
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2341.968	47.53	-2.03	45.50	74.00	-28.50	peak
2	2400.000	45.32	-1.69	43.63	74.00	-30.37	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



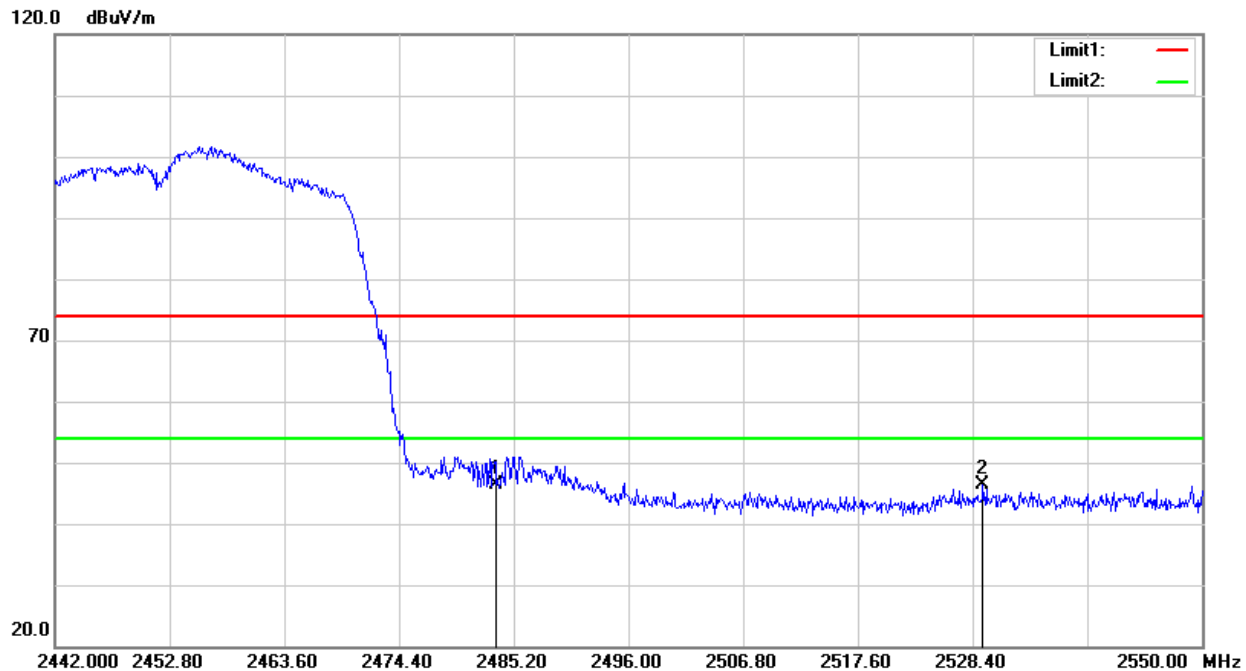
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2338.430	47.09	-2.05	45.04	74.00	-28.96	peak
2	2400.000	49.49	-1.69	47.80	74.00	-26.20	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



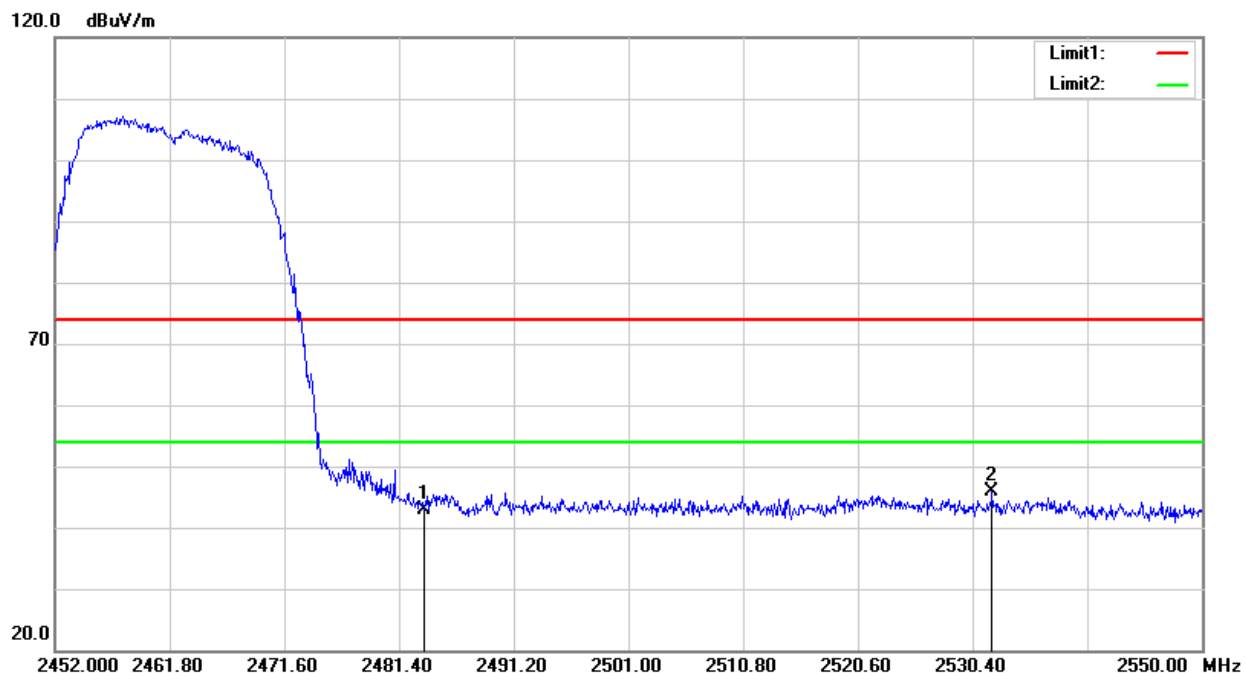
No.	Frequency	Reading level	Correction	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	44.92	-1.20	43.72	74.00	-30.28	peak
2	2524.422	48.06	-1.01	47.05	74.00	-26.95	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)



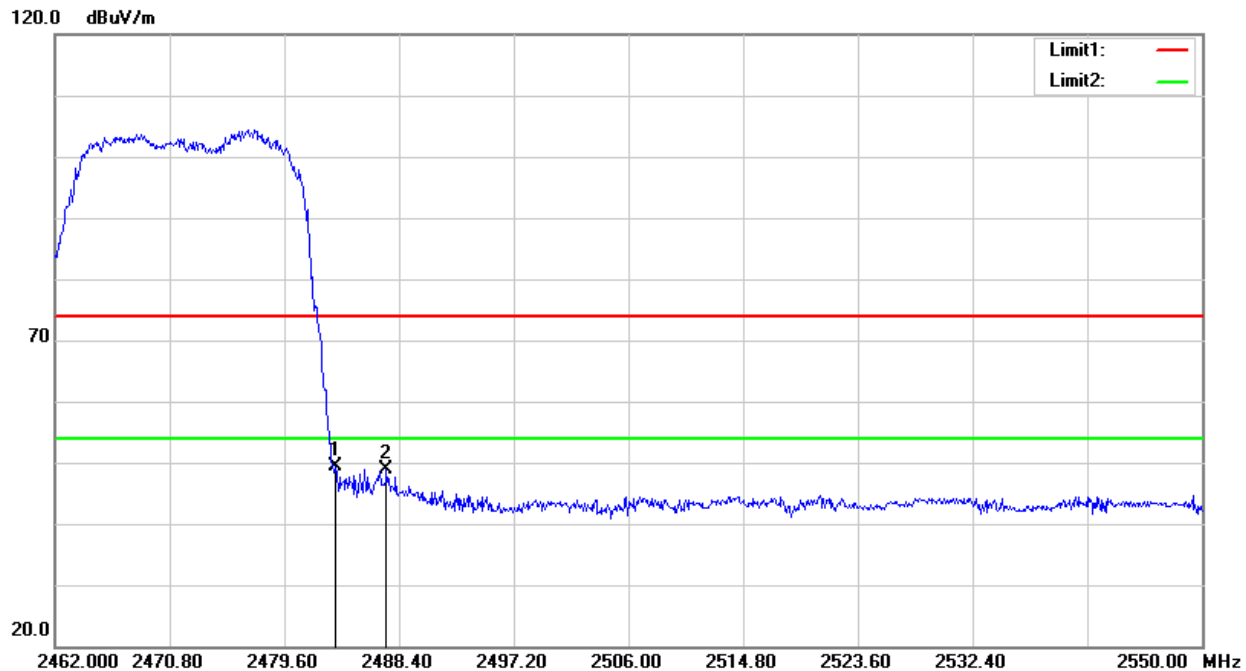
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	44.14	-1.20	42.94	74.00	-31.06	peak
2	2532.066	46.92	-0.98	45.94	74.00	-28.06	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, HORIZONTAL)



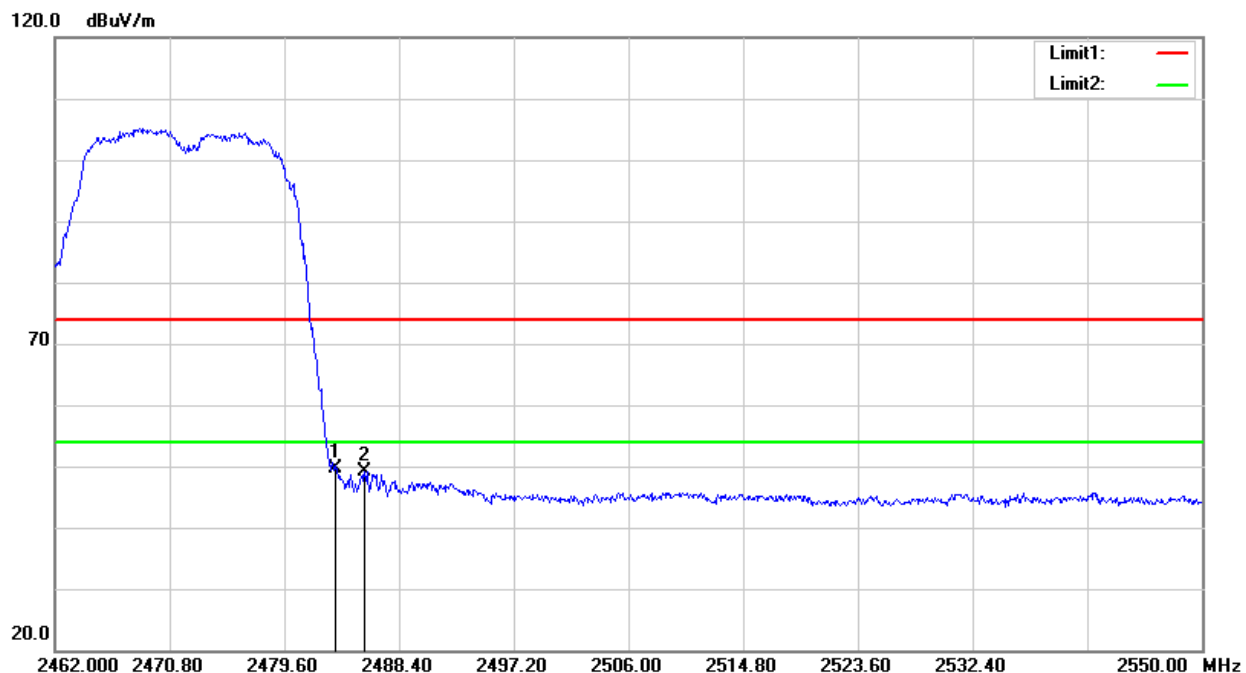
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	50.54	-1.20	49.34	74.00	-24.66	peak
2	2487.432	49.98	-1.19	48.79	74.00	-25.21	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, VERTICAL)



No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	50.73	-1.20	49.53	74.00	-24.47	peak
2	2485.760	50.39	-1.19	49.20	74.00	-24.80	peak

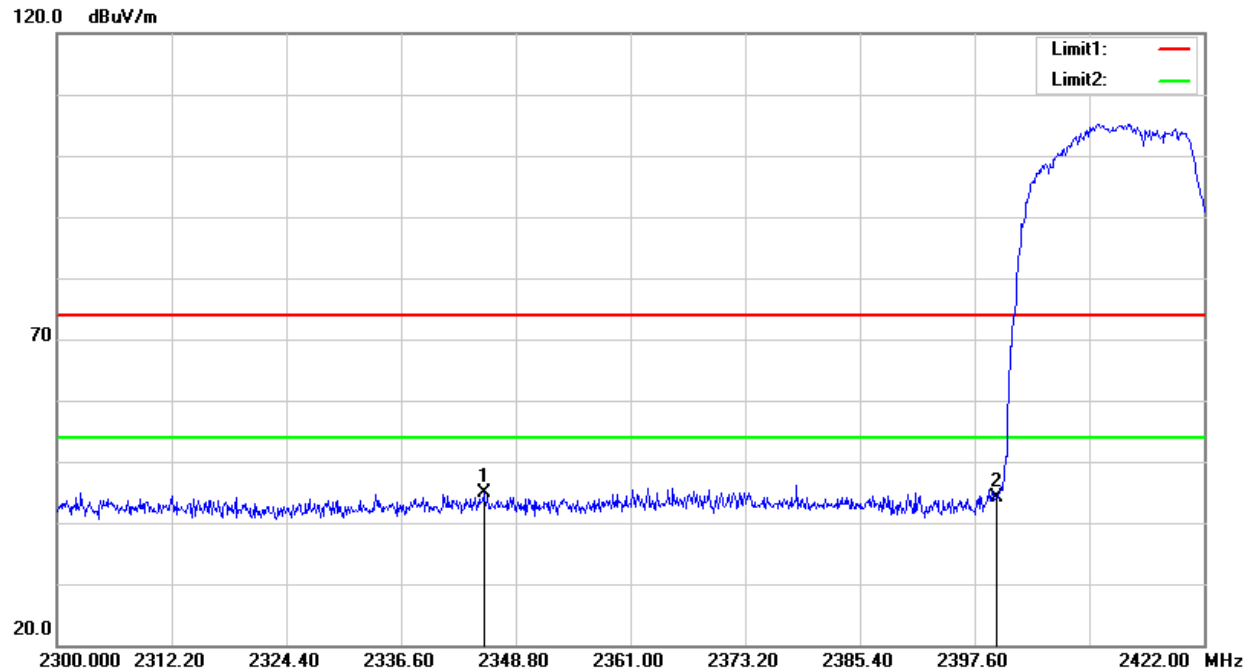
Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



802.11 n20 mode

RESTRICTED BANDEDGE (01 CHANNEL, HORIZONTAL)



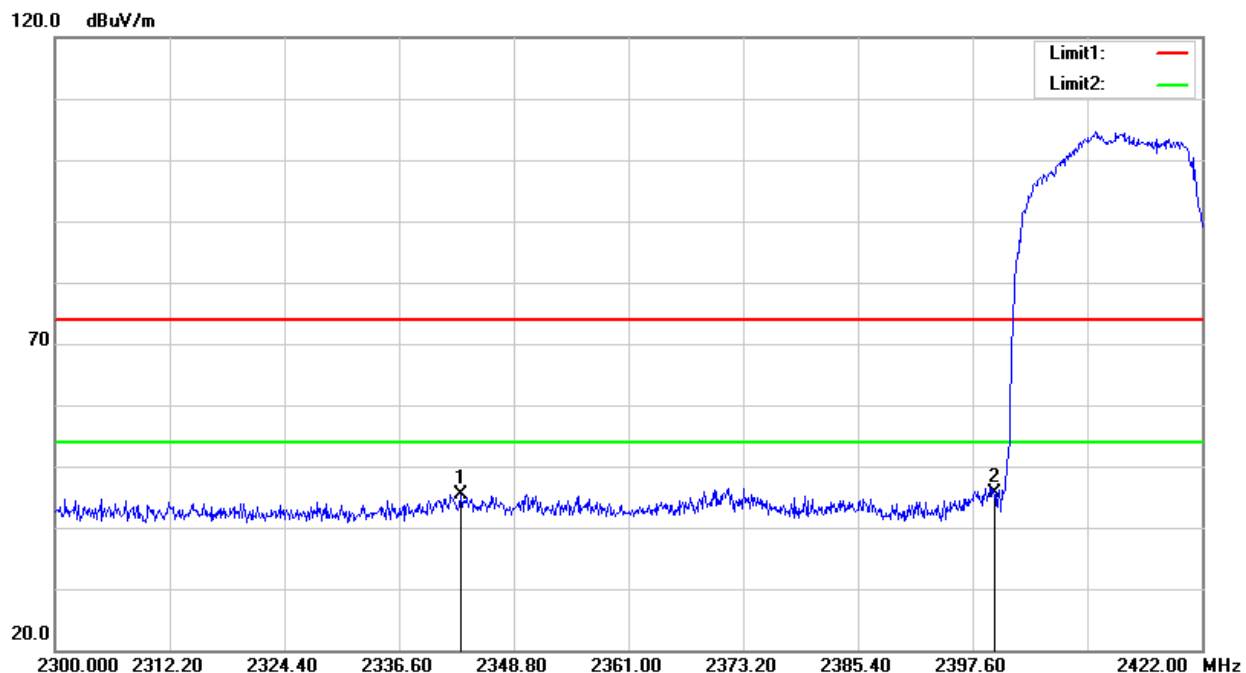
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2345.384	46.95	-2.01	44.94	74.00	-29.06	peak
2	2400.000	45.93	-1.69	44.24	74.00	-29.76	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (01 CHANNEL, VERTICAL)



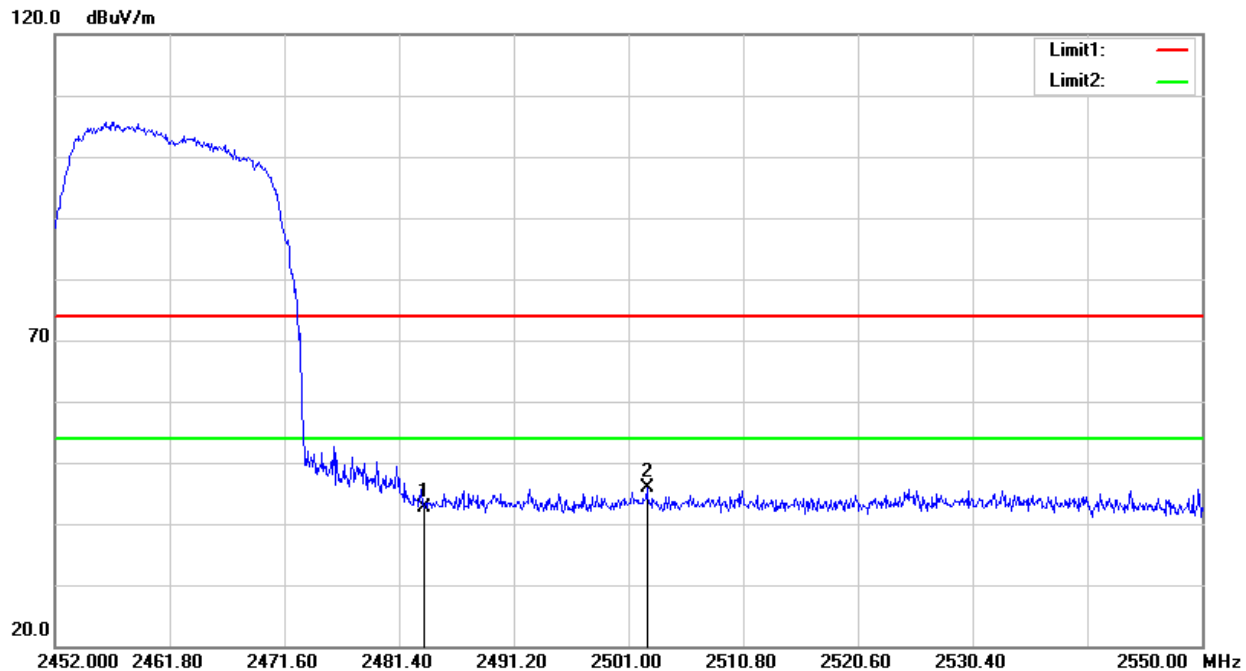
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2343.188	47.36	-2.02	45.34	74.00	-28.66	peak
2	2400.000	47.25	-1.69	45.56	74.00	-28.44	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



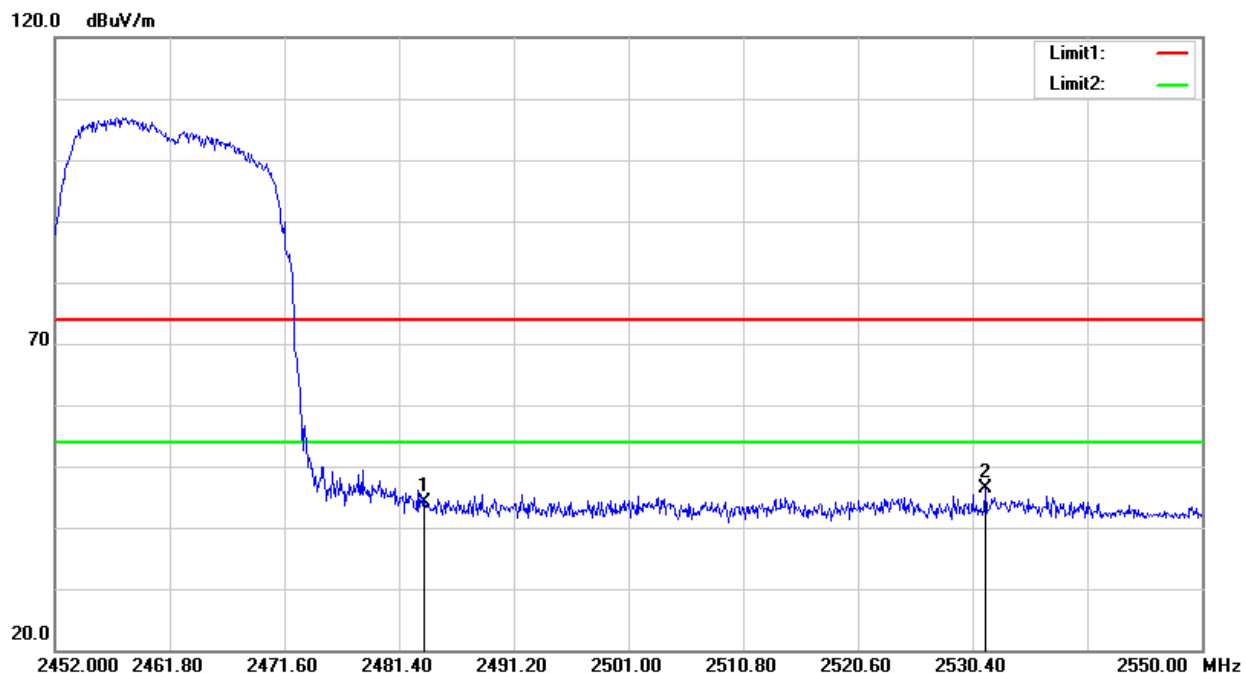
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	43.87	-1.20	42.67	74.00	-31.33	peak
2	2502.568	46.98	-1.11	45.87	74.00	-28.13	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)



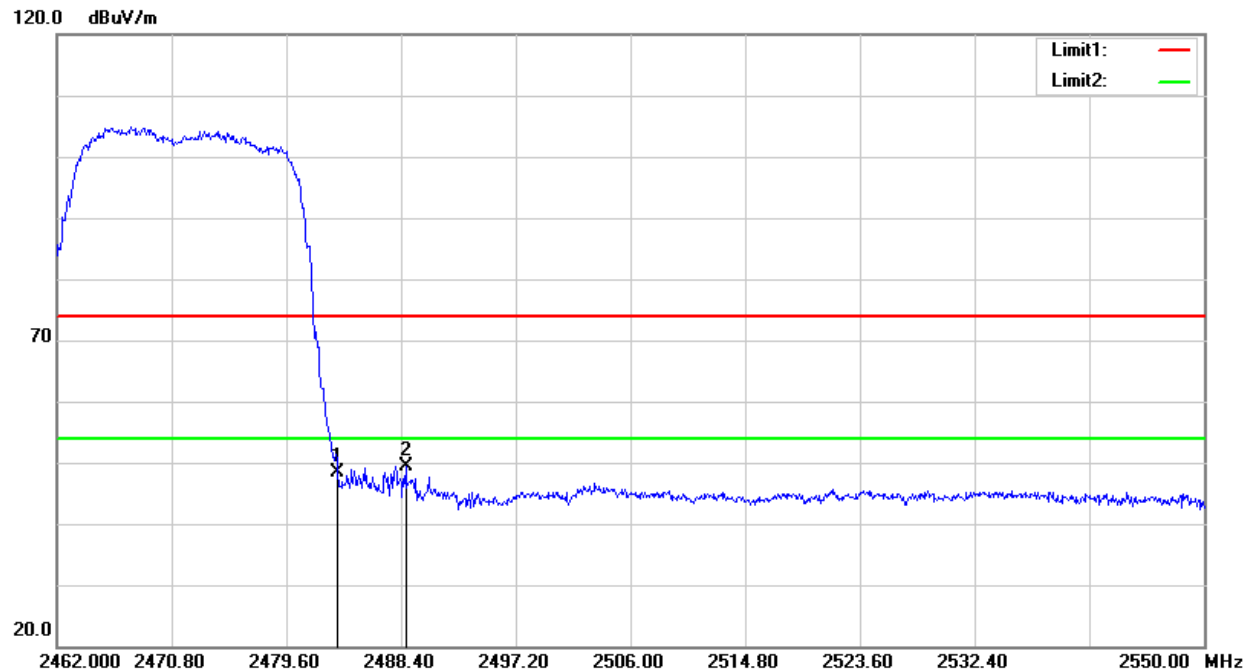
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	45.42	-1.20	44.22	74.00	-29.78	peak
2	2531.478	47.26	-0.99	46.27	74.00	-27.73	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, HORIZONTAL)



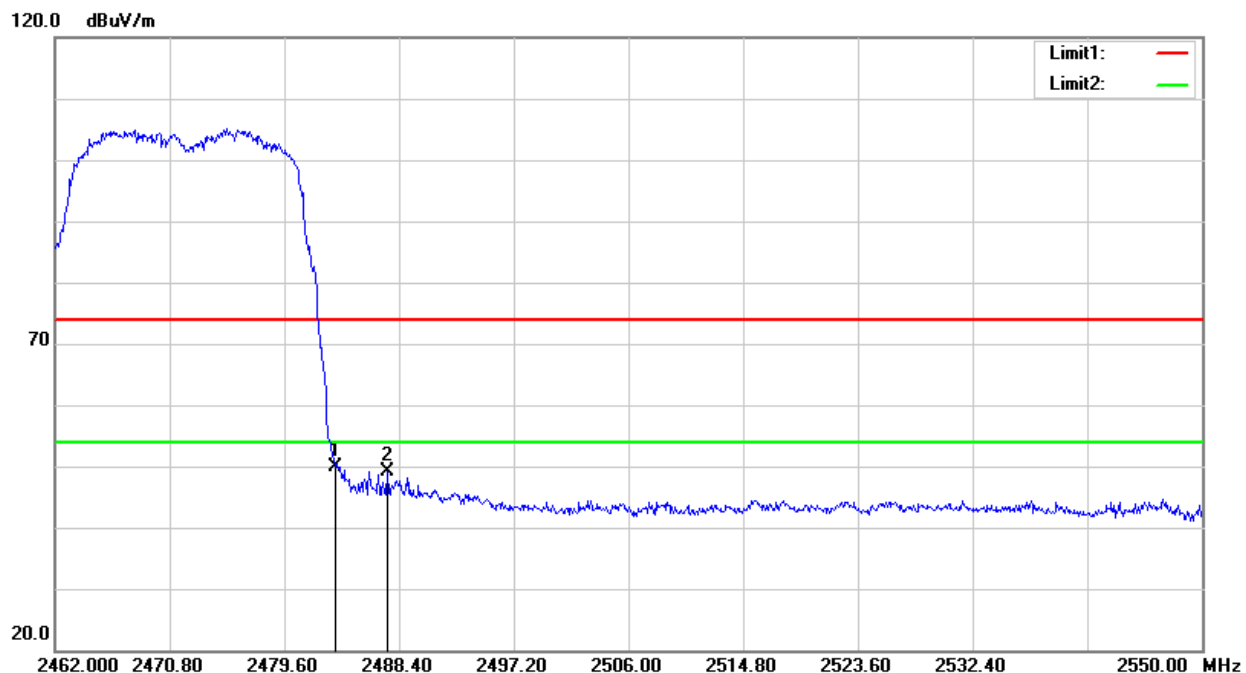
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	49.62	-1.20	48.42	74.00	-25.58	peak
2	2488.752	50.50	-1.18	49.32	74.00	-24.68	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (13 CHANNEL, VERTICAL)



No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	51.05	-1.20	49.85	74.00	-24.15	peak
2	2487.520	50.23	-1.18	49.05	74.00	-24.95	peak

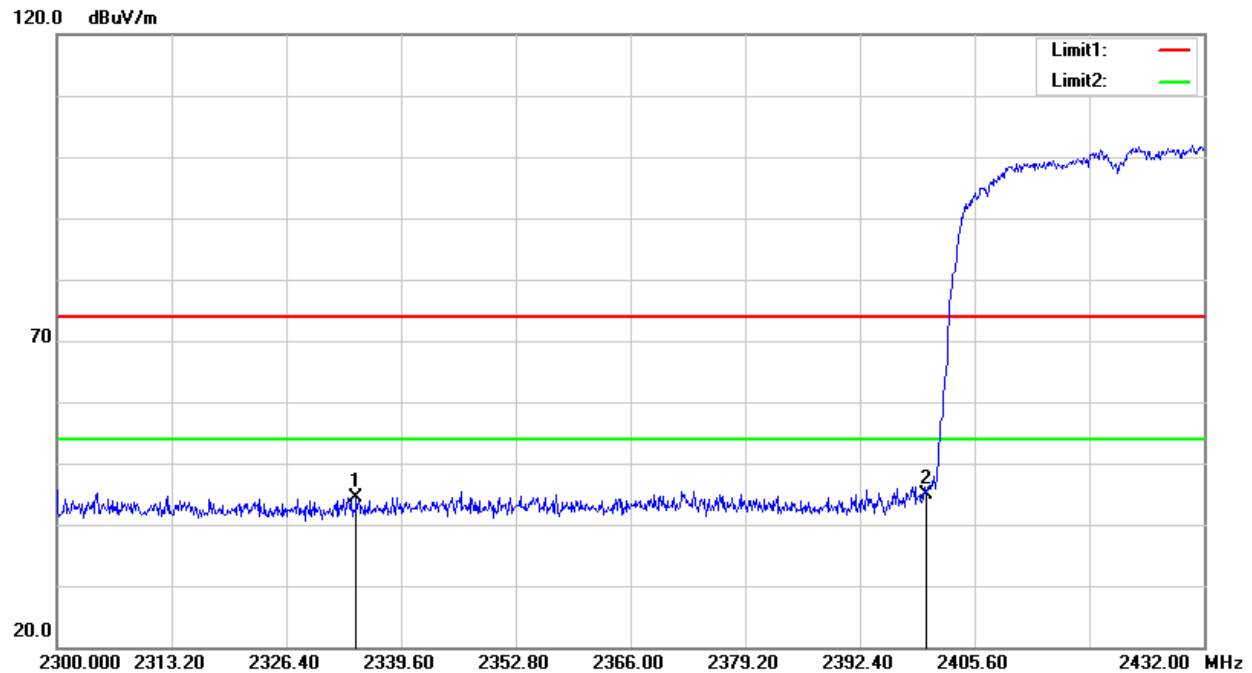
Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



802.11 n40 mode

RESTRICTED BANDEDGE (03 CHANNEL, HORIZONTAL)



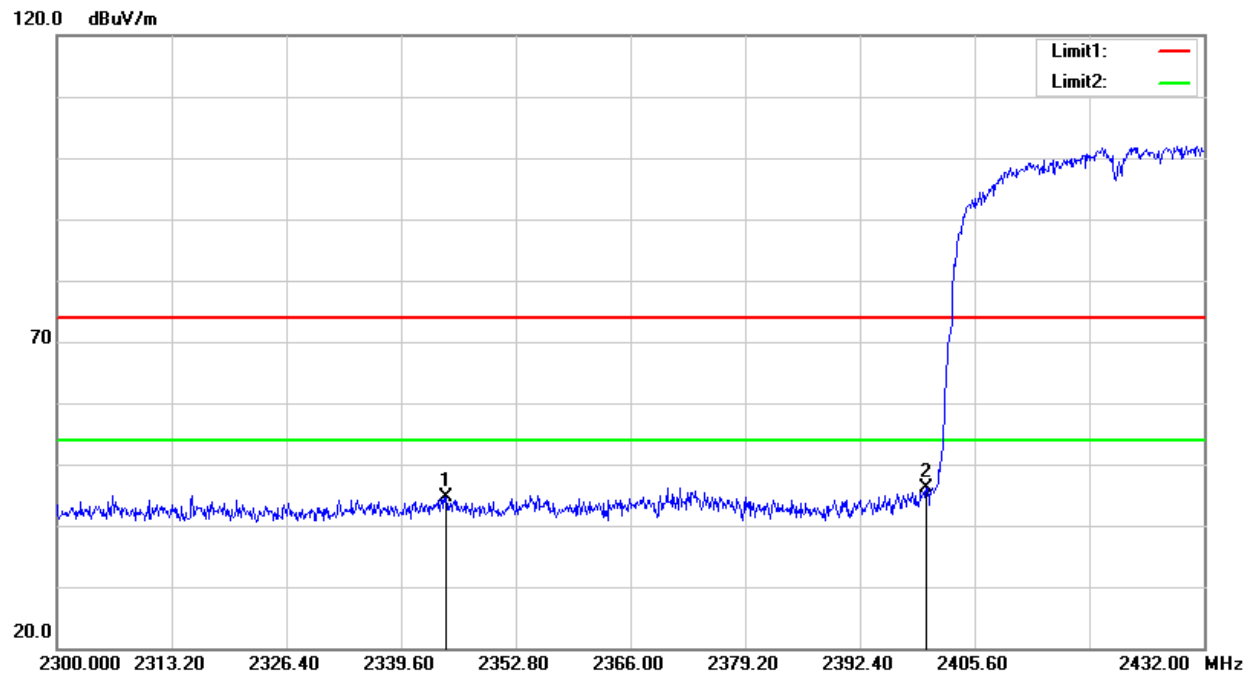
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2334.452	46.51	-2.08	44.43	74.00	-29.57	peak
2	2400.000	46.50	-1.69	44.81	74.00	-29.19	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (03 CHANNEL, VERTICAL)



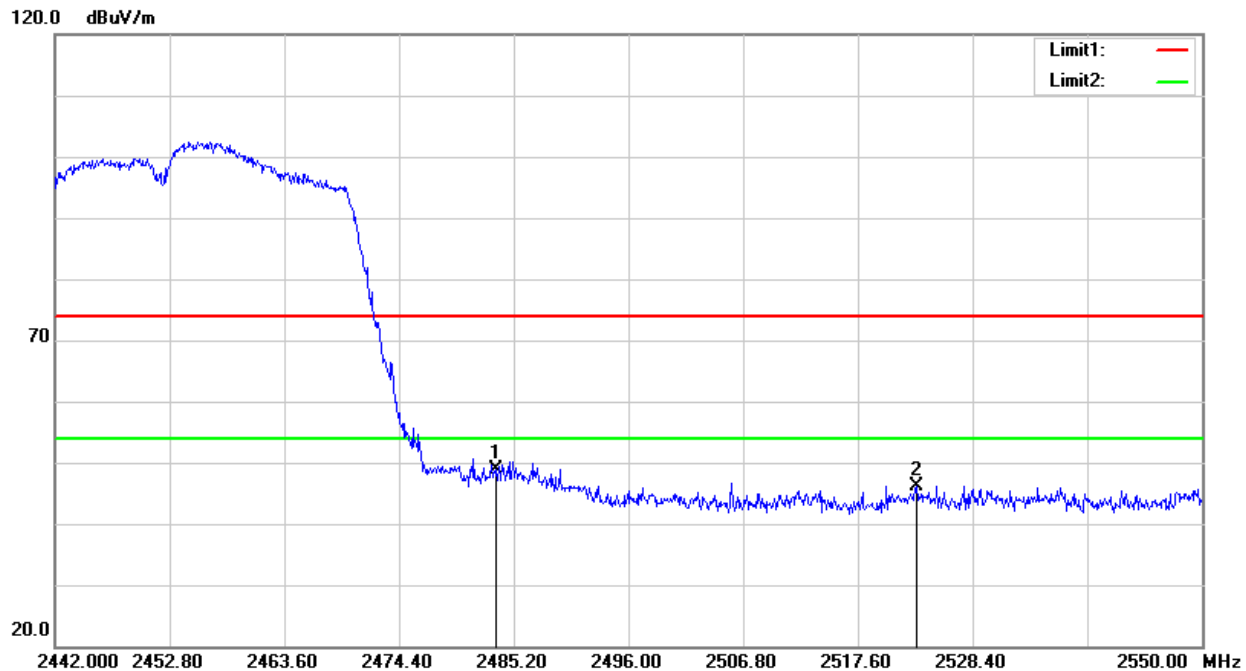
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2344.748	46.65	-2.01	44.64	74.00	-29.36	peak
2	2400.000	47.83	-1.69	46.14	74.00	-27.86	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (09 CHANNEL, HORIZONTAL)



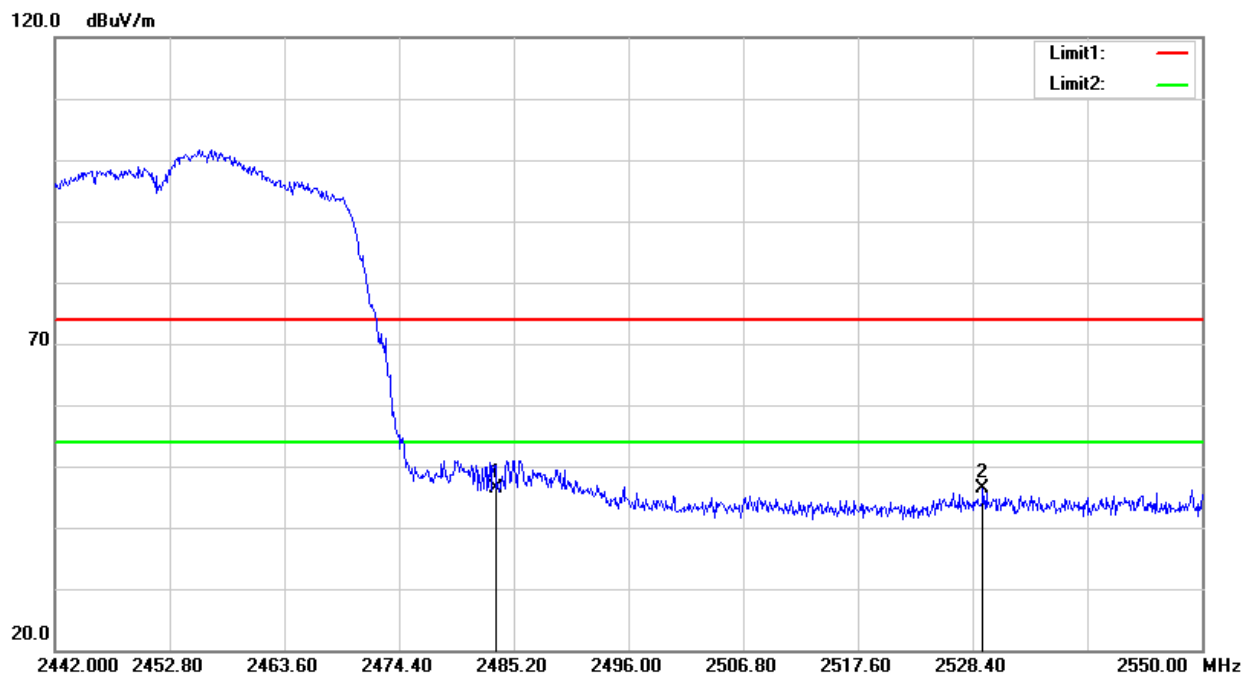
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	50.12	-1.20	48.92	74.00	-25.08	peak
2	2523.108	47.18	-1.02	46.16	74.00	-27.84	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (09 CHANNEL, VERTICAL)



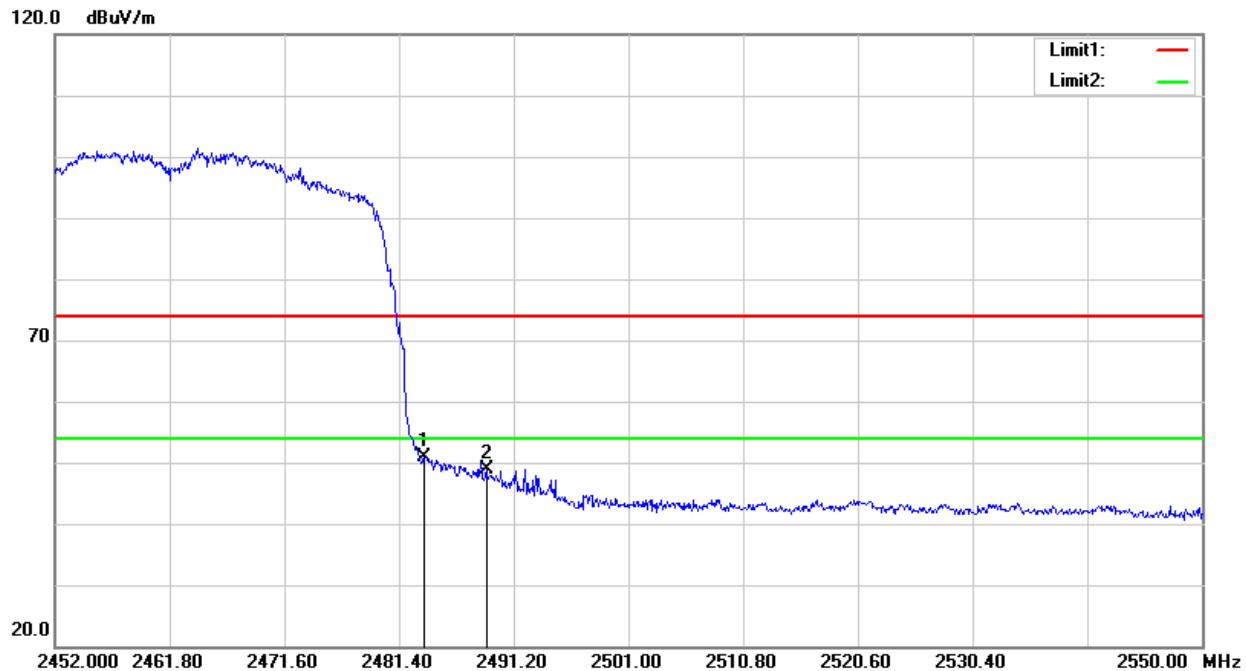
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	47.48	-1.20	46.28	74.00	-27.72	peak
2	2529.372	47.32	-1.00	46.32	74.00	-27.68	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, HORIZONTAL)



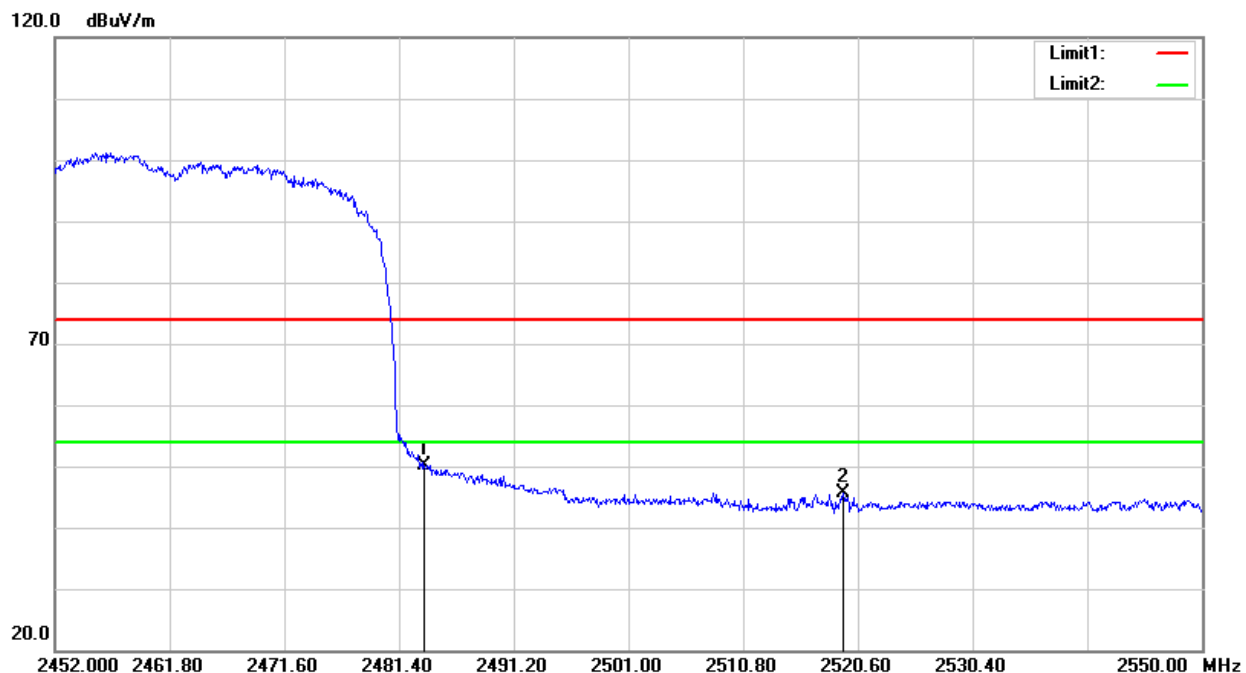
No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	52.00	-1.20	50.80	74.00	-23.20	peak
2	2488.848	50.13	-1.18	48.95	74.00	-25.05	peak

Note:

- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



RESTRICTED BANDEDGE (11 CHANNEL, VERTICAL)



No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	51.25	-1.20	50.05	74.00	-23.95	peak
2	2519.326	46.68	-1.03	45.65	74.00	-28.35	peak

Note:

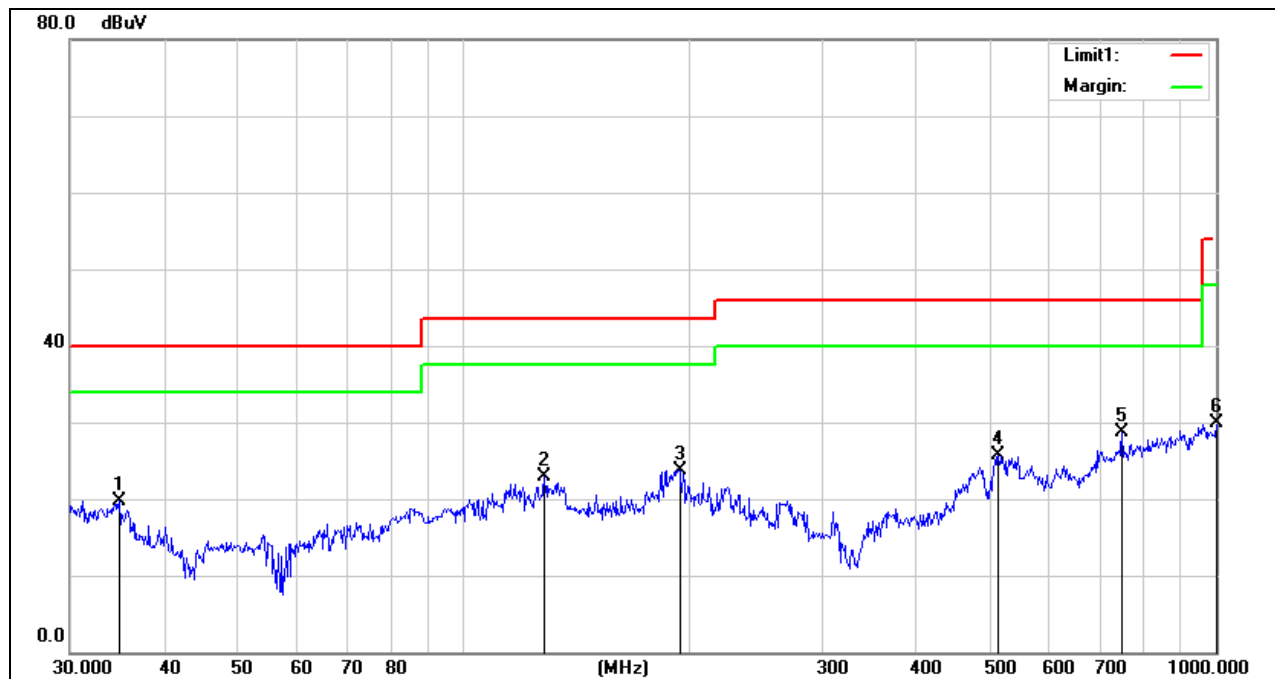
- Measurement = Reading Level + Correction Factor.
- Peak level is less than the average limit, according to ANSI C63.10-2013 clause 4.1.4.1, the average level does meet the limit requirement.



9.2. SPURIOUS EMISSIONS (30-1GHz)

Note: All the channels had been tested, but only the worst data(802.11b channel 01) recorded in the report.

HARMONICS AND SPURIOUS EMISSIONS (HORIZONTAL)

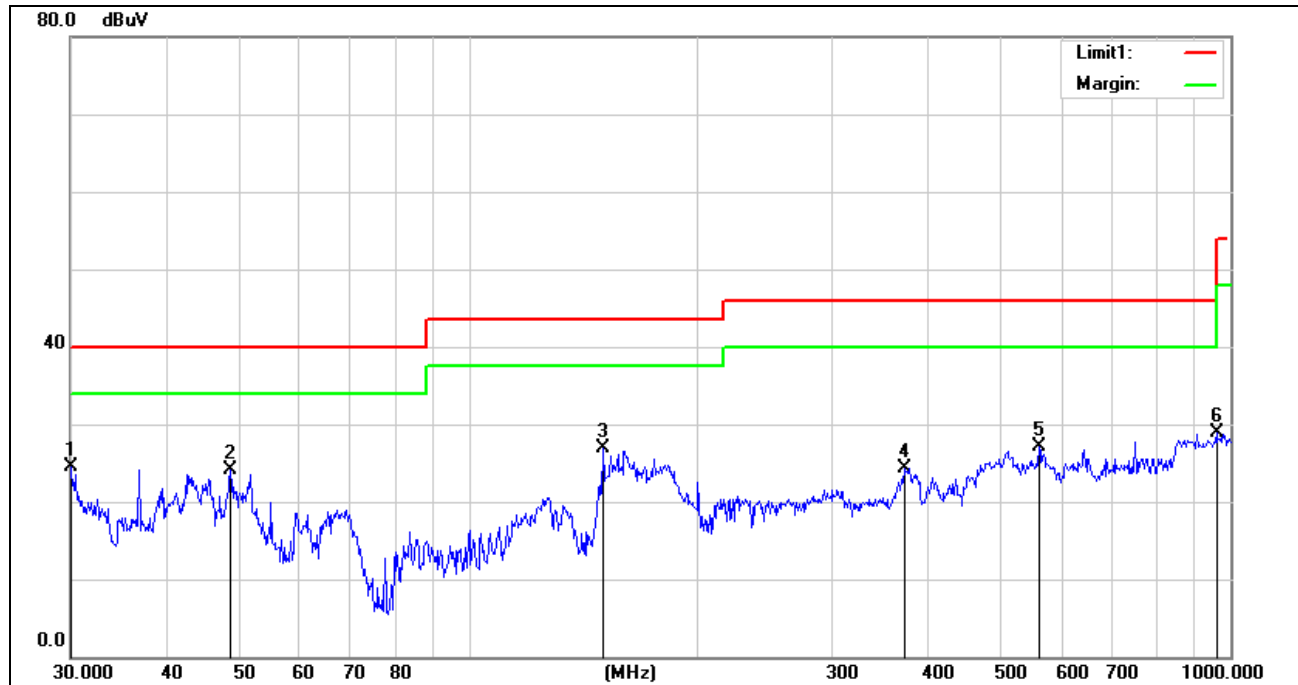


No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	34.8823	33.47	-13.70	19.77	40.00	-20.23	QP
2	128.1130	40.39	-17.58	22.81	43.50	-20.69	QP
3	193.7726	43.96	-20.22	23.74	43.50	-19.76	QP
4	513.6331	34.48	-8.86	25.62	46.00	-20.38	QP
5	750.1082	32.31	-3.56	28.75	46.00	-17.25	QP
6	1000.0000	29.89	-0.07	29.82	54.00	-24.18	QP

Note: Measurement = Reading Level + Correction Factor.



HARMONICS AND SPURIOUS EMISSIONS (VERTICAL)



No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	30.0000	35.72	-11.19	24.53	40.00	-15.47	QP
2	48.6720	44.93	-20.80	24.13	40.00	-15.87	QP
3	150.0107	44.84	-17.97	26.87	43.50	-16.63	QP
4	373.3110	37.10	-12.79	24.31	46.00	-21.69	QP
5	560.6928	33.65	-6.57	27.08	46.00	-18.92	QP
6	958.7943	29.06	-0.16	28.90	46.00	-17.10	QP

Note: Measurement = Reading Level + Correction Factor.



9.3. SPURIOUS EMISSIONS (1GHz-18GHz)

802.11b Channel 01

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 01 (2412 MHz)										
3264.65	49.21	44.70	6.70	28.20	-9.80	39.41	74.00	-34.59	PK	Vertical
3264.65	39.93	44.70	6.70	28.20	-9.80	30.13	54.00	-23.87	AV	Vertical
3264.71	47.98	44.70	6.70	28.20	-9.80	38.18	74.00	-35.82	PK	Horizontal
3264.71	39.73	44.70	6.70	28.20	-9.80	29.93	54.00	-24.07	AV	Horizontal
4824.44	59.85	44.20	9.04	31.60	-3.56	56.29	74.00	-17.71	PK	Vertical
4824.44	39.71	44.20	9.04	31.60	-3.56	36.15	54.00	-17.85	AV	Vertical
4824.42	59.62	44.20	9.04	31.60	-3.56	56.06	74.00	-17.94	PK	Horizontal
4824.42	39.84	44.20	9.04	31.60	-3.56	36.28	54.00	-17.72	AV	Horizontal
5359.83	45.45	44.20	9.86	32.00	-2.34	43.11	74.00	-30.89	PK	Vertical
5359.83	38.28	44.20	9.86	32.00	-2.34	35.94	54.00	-18.06	AV	Vertical
5359.86	46.55	44.20	9.86	32.00	-2.34	44.21	74.00	-29.79	PK	Horizontal
5359.86	37.73	44.20	9.86	32.00	-2.34	35.39	54.00	-18.61	AV	Horizontal
7235.96	51.03	43.50	11.40	35.50	3.40	54.43	74.00	-19.57	PK	Vertical
7235.96	33.84	43.50	11.40	35.50	3.40	37.24	54.00	-16.76	AV	Vertical
7235.81	50.99	43.50	11.40	35.50	3.40	54.39	74.00	-19.61	PK	Horizontal
7235.92	31.75	43.50	11.40	35.50	3.40	35.15	54.00	-18.85	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11b Channel 06

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 06 (2437 MHz)										
3264.87	49.56	44.70	6.70	28.20	-9.80	39.76	74.00	-34.24	PK	Vertical
3264.87	38.76	44.70	6.70	28.20	-9.80	28.96	54.00	-25.04	AV	Vertical
3264.72	48.41	44.70	6.70	28.20	-9.80	38.61	74.00	-35.39	PK	Horizontal
3264.72	38.70	44.70	6.70	28.20	-9.80	28.90	54.00	-25.10	AV	Horizontal
4874.40	58.98	44.20	9.04	31.60	-3.56	55.42	74.00	-18.58	PK	Vertical
4874.40	39.95	44.20	9.04	31.60	-3.56	36.39	54.00	-17.61	AV	Vertical
4874.45	59.97	44.20	9.04	31.60	-3.56	56.41	74.00	-17.59	PK	Horizontal
4874.45	38.86	44.20	9.04	31.60	-3.56	35.30	54.00	-18.70	AV	Horizontal
5359.60	46.73	44.20	9.86	32.00	-2.34	44.39	74.00	-29.61	PK	Vertical
5359.60	38.52	44.20	9.86	32.00	-2.34	36.18	54.00	-17.82	AV	Vertical
5359.67	45.98	44.20	9.86	32.00	-2.34	43.64	74.00	-30.36	PK	Horizontal
5359.67	38.36	44.20	9.86	32.00	-2.34	36.02	54.00	-17.98	AV	Horizontal
7310.82	51.98	43.50	11.40	35.50	3.40	55.38	74.00	-18.62	PK	Vertical
7310.82	33.37	43.50	11.40	35.50	3.40	36.77	54.00	-17.23	AV	Vertical
7310.90	51.65	43.50	11.40	35.50	3.40	55.05	74.00	-18.95	PK	Horizontal
7310.90	34.25	43.50	11.40	35.50	3.40	37.65	54.00	-16.35	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11b Channel 11

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 11(2462 MHz)										
3264.73	48.58	44.70	6.70	28.20	-9.80	38.78	74.00	-35.22	PK	Vertical
3264.73	39.41	44.70	6.70	28.20	-9.80	29.61	54.00	-24.39	AV	Vertical
3264.60	48.52	44.70	6.70	28.20	-9.80	38.72	74.00	-35.28	PK	Horizontal
3264.60	39.33	44.70	6.70	28.20	-9.80	29.53	54.00	-24.47	AV	Horizontal
4924.52	58.97	44.20	9.04	31.60	-3.56	55.41	74.00	-18.59	PK	Vertical
4924.52	39.12	44.20	9.04	31.60	-3.56	35.56	54.00	-18.44	AV	Vertical
4924.37	59.35	44.20	9.04	31.60	-3.56	55.79	74.00	-18.21	PK	Horizontal
4924.37	39.42	44.20	9.04	31.60	-3.56	35.86	54.00	-18.14	AV	Horizontal
5359.71	46.47	44.20	9.86	32.00	-2.34	44.13	74.00	-29.87	PK	Vertical
5359.71	37.98	44.20	9.86	32.00	-2.34	35.64	54.00	-18.36	AV	Vertical
5359.79	45.95	44.20	9.86	32.00	-2.34	43.61	74.00	-30.39	PK	Horizontal
5359.79	37.51	44.20	9.86	32.00	-2.34	35.17	54.00	-18.83	AV	Horizontal
7385.78	51.99	43.50	11.40	35.50	3.40	55.39	74.00	-18.61	PK	Vertical
7385.78	33.85	43.50	11.40	35.50	3.40	37.25	54.00	-16.75	AV	Vertical
7385.76	51.89	43.50	11.40	35.50	3.40	55.29	74.00	-18.71	PK	Horizontal
7385.76	33.46	43.50	11.40	35.50	3.40	36.86	54.00	-17.14	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11b Channel 12

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 12(2467 MHz)										
3264.74	47.99	44.70	6.70	28.20	-9.80	38.19	74.00	-35.81	PK	Vertical
3264.74	38.52	44.70	6.70	28.20	-9.80	28.72	54.00	-25.28	AV	Vertical
3264.67	47.99	44.70	6.70	28.20	-9.80	38.19	74.00	-35.81	PK	Horizontal
3264.67	38.52	44.70	6.70	28.20	-9.80	28.72	54.00	-25.28	AV	Horizontal
4934.40	59.45	44.20	9.04	31.60	-3.56	55.89	74.00	-18.11	PK	Vertical
4934.40	39.45	44.20	9.04	31.60	-3.56	35.89	54.00	-18.11	AV	Vertical
4934.60	59.37	44.20	9.04	31.60	-3.56	55.81	74.00	-18.19	PK	Horizontal
4934.60	38.65	44.20	9.04	31.60	-3.56	35.09	54.00	-18.91	AV	Horizontal
5359.78	46.01	44.20	9.86	32.00	-2.34	43.67	74.00	-30.33	PK	Vertical
5359.78	38.30	44.20	9.86	32.00	-2.34	35.96	54.00	-18.04	AV	Vertical
5359.76	45.42	44.20	9.86	32.00	-2.34	43.08	74.00	-30.92	PK	Horizontal
5359.76	37.39	44.20	9.86	32.00	-2.34	35.05	54.00	-18.95	AV	Horizontal
7400.73	52.01	43.50	11.40	35.50	3.40	55.41	74.00	-18.59	PK	Vertical
7400.73	33.06	43.50	11.40	35.50	3.40	36.46	54.00	-17.54	AV	Vertical
7400.90	51.80	43.50	11.40	35.50	3.40	55.20	74.00	-18.80	PK	Horizontal
7400.90	32.64	43.50	11.40	35.50	3.40	36.04	54.00	-17.96	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11b Channel 13

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 13(2472 MHz)										
3264.61	48.18	44.70	6.70	28.20	-9.80	38.38	74.00	-35.62	PK	Vertical
3264.61	39.45	44.70	6.70	28.20	-9.80	29.65	54.00	-24.35	AV	Vertical
3264.66	48.40	44.70	6.70	28.20	-9.80	38.60	74.00	-35.40	PK	Horizontal
3264.66	38.17	44.70	6.70	28.20	-9.80	28.37	54.00	-25.63	AV	Horizontal
4944.51	58.86	44.20	9.04	31.60	-3.56	55.30	74.00	-18.70	PK	Vertical
4944.51	38.43	44.20	9.04	31.60	-3.56	34.87	54.00	-19.13	AV	Vertical
4944.35	59.22	44.20	9.04	31.60	-3.56	55.66	74.00	-18.34	PK	Horizontal
4944.35	39.48	44.20	9.04	31.60	-3.56	35.92	54.00	-18.08	AV	Horizontal
5359.73	45.37	44.20	9.86	32.00	-2.34	43.03	74.00	-30.97	PK	Vertical
5359.73	38.27	44.20	9.86	32.00	-2.34	35.93	54.00	-18.07	AV	Vertical
5359.79	46.05	44.20	9.86	32.00	-2.34	43.71	74.00	-30.29	PK	Horizontal
5359.79	37.97	44.20	9.86	32.00	-2.34	35.63	54.00	-18.37	AV	Horizontal
7415.88	51.67	43.50	11.40	35.50	3.40	55.07	74.00	-18.93	PK	Vertical
7415.88	33.56	43.50	11.40	35.50	3.40	36.96	54.00	-17.04	AV	Vertical
7415.80	51.75	43.50	11.40	35.50	3.40	55.15	74.00	-18.85	PK	Horizontal
7415.80	33.29	43.50	11.40	35.50	3.40	36.69	54.00	-17.31	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11g Channel 01

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 01 (2412 MHz)										
3264.61	48.78	44.70	6.70	28.20	-9.80	38.98	74.00	-35.02	PK	Vertical
3264.61	38.56	44.70	6.70	28.20	-9.80	28.76	54.00	-25.24	AV	Vertical
3264.74	48.73	44.70	6.70	28.20	-9.80	38.93	74.00	-35.07	PK	Horizontal
3264.74	37.90	44.70	6.70	28.20	-9.80	28.10	54.00	-25.90	AV	Horizontal
4824.49	58.16	44.20	9.04	31.60	-3.56	54.60	74.00	-19.40	PK	Vertical
4824.49	39.41	44.20	9.04	31.60	-3.56	35.85	54.00	-18.15	AV	Vertical
4824.52	59.29	44.20	9.04	31.60	-3.56	55.73	74.00	-18.27	PK	Horizontal
4824.52	38.64	44.20	9.04	31.60	-3.56	35.08	54.00	-18.92	AV	Horizontal
5359.59	46.19	44.20	9.86	32.00	-2.34	43.85	74.00	-30.15	PK	Vertical
5359.59	37.29	44.20	9.86	32.00	-2.34	34.95	54.00	-19.05	AV	Vertical
5359.60	45.82	44.20	9.86	32.00	-2.34	43.48	74.00	-30.52	PK	Horizontal
5359.60	38.51	44.20	9.86	32.00	-2.34	36.17	54.00	-17.83	AV	Horizontal
7235.71	51.09	43.50	11.40	35.50	3.40	54.49	74.00	-19.51	PK	Vertical
7235.71	33.72	43.50	11.40	35.50	3.40	37.12	54.00	-16.88	AV	Vertical
7235.82	50.67	43.50	11.40	35.50	3.40	54.07	74.00	-19.93	PK	Horizontal
7235.74	30.99	43.50	11.40	35.50	3.40	34.39	54.00	-19.61	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11g Channel 06

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 06 (2437 MHz)										
3264.68	48.48	44.70	6.70	28.20	-9.80	38.68	74.00	-35.32	PK	Vertical
3264.68	38.81	44.70	6.70	28.20	-9.80	29.01	54.00	-24.99	AV	Vertical
3264.59	47.95	44.70	6.70	28.20	-9.80	38.15	74.00	-35.85	PK	Horizontal
3264.59	38.86	44.70	6.70	28.20	-9.80	29.06	54.00	-24.94	AV	Horizontal
4874.55	59.07	44.20	9.04	31.60	-3.56	55.51	74.00	-18.49	PK	Vertical
4874.55	38.58	44.20	9.04	31.60	-3.56	35.02	54.00	-18.98	AV	Vertical
4874.57	58.38	44.20	9.04	31.60	-3.56	54.82	74.00	-19.18	PK	Horizontal
4874.57	39.44	44.20	9.04	31.60	-3.56	35.88	54.00	-18.12	AV	Horizontal
5359.69	46.22	44.20	9.86	32.00	-2.34	43.88	74.00	-30.12	PK	Vertical
5359.69	37.89	44.20	9.86	32.00	-2.34	35.55	54.00	-18.45	AV	Vertical
5359.74	46.52	44.20	9.86	32.00	-2.34	44.18	74.00	-29.82	PK	Horizontal
5359.74	37.98	44.20	9.86	32.00	-2.34	35.64	54.00	-18.36	AV	Horizontal
7310.95	50.61	43.50	11.40	35.50	3.40	54.01	74.00	-19.99	PK	Vertical
7310.95	33.07	43.50	11.40	35.50	3.40	36.47	54.00	-17.53	AV	Vertical
7310.82	51.60	43.50	11.40	35.50	3.40	55.00	74.00	-19.00	PK	Horizontal
7310.82	33.87	43.50	11.40	35.50	3.40	37.27	54.00	-16.73	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11g Channel 11

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 11(2462 MHz)										
3264.72	48.31	44.70	6.70	28.20	-9.80	38.51	74.00	-35.49	PK	Vertical
3264.72	38.98	44.70	6.70	28.20	-9.80	29.18	54.00	-24.82	AV	Vertical
3264.77	48.38	44.70	6.70	28.20	-9.80	38.58	74.00	-35.42	PK	Horizontal
3264.77	38.22	44.70	6.70	28.20	-9.80	28.42	54.00	-25.58	AV	Horizontal
4924.54	58.24	44.20	9.04	31.60	-3.56	54.68	74.00	-19.32	PK	Vertical
4924.54	38.90	44.20	9.04	31.60	-3.56	35.34	54.00	-18.66	AV	Vertical
4924.45	59.45	44.20	9.04	31.60	-3.56	55.89	74.00	-18.11	PK	Horizontal
4924.45	39.57	44.20	9.04	31.60	-3.56	36.01	54.00	-17.99	AV	Horizontal
5359.80	45.74	44.20	9.86	32.00	-2.34	43.40	74.00	-30.60	PK	Vertical
5359.80	38.31	44.20	9.86	32.00	-2.34	35.97	54.00	-18.03	AV	Vertical
5359.82	46.34	44.20	9.86	32.00	-2.34	44.00	74.00	-30.00	PK	Horizontal
5359.82	37.72	44.20	9.86	32.00	-2.34	35.38	54.00	-18.62	AV	Horizontal
7385.85	50.90	43.50	11.40	35.50	3.40	54.30	74.00	-19.70	PK	Vertical
7385.85	32.87	43.50	11.40	35.50	3.40	36.27	54.00	-17.73	AV	Vertical
7385.74	50.54	43.50	11.40	35.50	3.40	53.94	74.00	-20.06	PK	Horizontal
7385.74	32.76	43.50	11.40	35.50	3.40	36.16	54.00	-17.84	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11g Channel 12

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 12(2467 MHz)										
3264.82	49.11	44.70	6.70	28.20	-9.80	39.31	74.00	-34.69	PK	Vertical
3264.82	39.34	44.70	6.70	28.20	-9.80	29.54	54.00	-24.46	AV	Vertical
3264.80	48.92	44.70	6.70	28.20	-9.80	39.12	74.00	-34.88	PK	Horizontal
3264.80	38.97	44.70	6.70	28.20	-9.80	29.17	54.00	-24.83	AV	Horizontal
4934.38	59.26	44.20	9.04	31.60	-3.56	55.70	74.00	-18.30	PK	Vertical
4934.38	39.16	44.20	9.04	31.60	-3.56	35.60	54.00	-18.40	AV	Vertical
4934.48	59.38	44.20	9.04	31.60	-3.56	55.82	74.00	-18.18	PK	Horizontal
4934.48	38.47	44.20	9.04	31.60	-3.56	34.91	54.00	-19.09	AV	Horizontal
5359.66	45.82	44.20	9.86	32.00	-2.34	43.48	74.00	-30.52	PK	Vertical
5359.66	37.43	44.20	9.86	32.00	-2.34	35.09	54.00	-18.91	AV	Vertical
5359.72	45.12	44.20	9.86	32.00	-2.34	42.78	74.00	-31.22	PK	Horizontal
5359.72	37.15	44.20	9.86	32.00	-2.34	34.81	54.00	-19.19	AV	Horizontal
7400.96	51.66	43.50	11.40	35.50	3.40	55.06	74.00	-18.94	PK	Vertical
7400.96	32.75	43.50	11.40	35.50	3.40	36.15	54.00	-17.85	AV	Vertical
7400.91	51.74	43.50	11.40	35.50	3.40	55.14	74.00	-18.86	PK	Horizontal
7400.91	32.78	43.50	11.40	35.50	3.40	36.18	54.00	-17.82	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11g Channel 13

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 13(2472 MHz)										
3264.84	48.21	44.70	6.70	28.20	-9.80	38.41	74.00	-35.59	PK	Vertical
3264.84	38.41	44.70	6.70	28.20	-9.80	28.61	54.00	-25.39	AV	Vertical
3264.61	49.04	44.70	6.70	28.20	-9.80	39.24	74.00	-34.76	PK	Horizontal
3264.61	37.98	44.70	6.70	28.20	-9.80	28.18	54.00	-25.82	AV	Horizontal
4944.51	58.78	44.20	9.04	31.60	-3.56	55.22	74.00	-18.78	PK	Vertical
4944.51	38.76	44.20	9.04	31.60	-3.56	35.20	54.00	-18.80	AV	Vertical
4944.35	59.00	44.20	9.04	31.60	-3.56	55.44	74.00	-18.56	PK	Horizontal
4944.35	39.35	44.20	9.04	31.60	-3.56	35.79	54.00	-18.21	AV	Horizontal
5359.69	45.15	44.20	9.86	32.00	-2.34	42.81	74.00	-31.19	PK	Vertical
5359.69	38.19	44.20	9.86	32.00	-2.34	35.85	54.00	-18.15	AV	Vertical
5359.71	45.71	44.20	9.86	32.00	-2.34	43.37	74.00	-30.63	PK	Horizontal
5359.71	38.37	44.20	9.86	32.00	-2.34	36.03	54.00	-17.97	AV	Horizontal
7415.78	50.70	43.50	11.40	35.50	3.40	54.10	74.00	-19.90	PK	Vertical
7415.78	32.80	43.50	11.40	35.50	3.40	36.20	54.00	-17.80	AV	Vertical
7415.80	51.30	43.50	11.40	35.50	3.40	54.70	74.00	-19.30	PK	Horizontal
7415.80	33.98	43.50	11.40	35.50	3.40	37.38	54.00	-16.62	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n20 Channel 01

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 01 (2412 MHz)										
3264.87	48.64	44.70	6.70	28.20	-9.80	38.84	74.00	-35.16	PK	Vertical
3264.87	39.27	44.70	6.70	28.20	-9.80	29.47	54.00	-24.53	AV	Vertical
3264.64	48.58	44.70	6.70	28.20	-9.80	38.78	74.00	-35.22	PK	Horizontal
3264.64	38.24	44.70	6.70	28.20	-9.80	28.44	54.00	-25.56	AV	Horizontal
4824.40	58.39	44.20	9.04	31.60	-3.56	54.83	74.00	-19.17	PK	Vertical
4824.40	38.46	44.20	9.04	31.60	-3.56	34.90	54.00	-19.10	AV	Vertical
4824.45	58.87	44.20	9.04	31.60	-3.56	55.31	74.00	-18.69	PK	Horizontal
4824.45	38.15	44.20	9.04	31.60	-3.56	34.59	54.00	-19.41	AV	Horizontal
5359.76	45.18	44.20	9.86	32.00	-2.34	42.84	74.00	-31.16	PK	Vertical
5359.76	37.97	44.20	9.86	32.00	-2.34	35.63	54.00	-18.37	AV	Vertical
5359.72	45.92	44.20	9.86	32.00	-2.34	43.58	74.00	-30.42	PK	Horizontal
5359.72	37.32	44.20	9.86	32.00	-2.34	34.98	54.00	-19.02	AV	Horizontal
7235.90	50.87	43.50	11.40	35.50	3.40	54.27	74.00	-19.73	PK	Vertical
7235.90	32.84	43.50	11.40	35.50	3.40	36.24	54.00	-17.76	AV	Vertical
7235.68	51.50	43.50	11.40	35.50	3.40	54.90	74.00	-19.10	PK	Horizontal
7235.92	31.22	43.50	11.40	35.50	3.40	34.62	54.00	-19.38	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n20 Channel 06

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 06 (2437 MHz)										
3264.65	48.20	44.70	6.70	28.20	-9.80	38.40	74.00	-35.60	PK	Vertical
3264.65	37.87	44.70	6.70	28.20	-9.80	28.07	54.00	-25.93	AV	Vertical
3264.74	48.40	44.70	6.70	28.20	-9.80	38.60	74.00	-35.40	PK	Horizontal
3264.74	38.94	44.70	6.70	28.20	-9.80	29.14	54.00	-24.86	AV	Horizontal
4874.54	59.52	44.20	9.04	31.60	-3.56	55.96	74.00	-18.04	PK	Vertical
4874.54	38.86	44.20	9.04	31.60	-3.56	35.30	54.00	-18.70	AV	Vertical
4874.53	58.84	44.20	9.04	31.60	-3.56	55.28	74.00	-18.72	PK	Horizontal
4874.53	38.94	44.20	9.04	31.60	-3.56	35.38	54.00	-18.62	AV	Horizontal
5359.77	45.41	44.20	9.86	32.00	-2.34	43.07	74.00	-30.93	PK	Vertical
5359.77	37.12	44.20	9.86	32.00	-2.34	34.78	54.00	-19.22	AV	Vertical
5359.78	45.26	44.20	9.86	32.00	-2.34	42.92	74.00	-31.08	PK	Horizontal
5359.78	37.50	44.20	9.86	32.00	-2.34	35.16	54.00	-18.84	AV	Horizontal
7310.84	51.79	43.50	11.40	35.50	3.40	55.19	74.00	-18.81	PK	Vertical
7310.84	33.08	43.50	11.40	35.50	3.40	36.48	54.00	-17.52	AV	Vertical
7310.89	50.60	43.50	11.40	35.50	3.40	54.00	74.00	-20.00	PK	Horizontal
7310.89	33.58	43.50	11.40	35.50	3.40	36.98	54.00	-17.02	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n20 Channel 11

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 11(2462 MHz)										
3264.61	49.09	44.70	6.70	28.20	-9.80	39.29	74.00	-34.71	PK	Vertical
3264.61	39.51	44.70	6.70	28.20	-9.80	29.71	54.00	-24.29	AV	Vertical
3264.68	48.33	44.70	6.70	28.20	-9.80	38.53	74.00	-35.47	PK	Horizontal
3264.68	38.96	44.70	6.70	28.20	-9.80	29.16	54.00	-24.84	AV	Horizontal
4924.37	58.22	44.20	9.04	31.60	-3.56	54.66	74.00	-19.34	PK	Vertical
4924.37	38.95	44.20	9.04	31.60	-3.56	35.39	54.00	-18.61	AV	Vertical
4924.41	59.49	44.20	9.04	31.60	-3.56	55.93	74.00	-18.07	PK	Horizontal
4924.41	38.55	44.20	9.04	31.60	-3.56	34.99	54.00	-19.01	AV	Horizontal
5359.89	46.25	44.20	9.86	32.00	-2.34	43.91	74.00	-30.09	PK	Vertical
5359.89	37.20	44.20	9.86	32.00	-2.34	34.86	54.00	-19.14	AV	Vertical
5359.69	46.14	44.20	9.86	32.00	-2.34	43.80	74.00	-30.20	PK	Horizontal
5359.69	38.23	44.20	9.86	32.00	-2.34	35.89	54.00	-18.11	AV	Horizontal
7385.97	50.70	43.50	11.40	35.50	3.40	54.10	74.00	-19.90	PK	Vertical
7385.97	33.93	43.50	11.40	35.50	3.40	37.33	54.00	-16.67	AV	Vertical
7385.92	51.05	43.50	11.40	35.50	3.40	54.45	74.00	-19.55	PK	Horizontal
7385.92	33.95	43.50	11.40	35.50	3.40	37.35	54.00	-16.65	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n20 Channel 12

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 12(2467 MHz)										
3264.78	48.67	44.70	6.70	28.20	-9.80	38.87	74.00	-35.13	PK	Vertical
3264.78	38.71	44.70	6.70	28.20	-9.80	28.91	54.00	-25.09	AV	Vertical
3264.72	48.02	44.70	6.70	28.20	-9.80	38.22	74.00	-35.78	PK	Horizontal
3264.72	38.88	44.70	6.70	28.20	-9.80	29.08	54.00	-24.92	AV	Horizontal
4934.52	58.97	44.20	9.04	31.60	-3.56	55.41	74.00	-18.59	PK	Vertical
4934.52	39.28	44.20	9.04	31.60	-3.56	35.72	54.00	-18.28	AV	Vertical
4934.44	58.75	44.20	9.04	31.60	-3.56	55.19	74.00	-18.81	PK	Horizontal
4934.44	39.18	44.20	9.04	31.60	-3.56	35.62	54.00	-18.38	AV	Horizontal
5359.67	45.76	44.20	9.86	32.00	-2.34	43.42	74.00	-30.58	PK	Vertical
5359.67	37.16	44.20	9.86	32.00	-2.34	34.82	54.00	-19.18	AV	Vertical
5359.68	46.33	44.20	9.86	32.00	-2.34	43.99	74.00	-30.01	PK	Horizontal
5359.68	38.05	44.20	9.86	32.00	-2.34	35.71	54.00	-18.29	AV	Horizontal
7400.94	51.60	43.50	11.40	35.50	3.40	55.00	74.00	-19.00	PK	Vertical
7400.94	32.89	43.50	11.40	35.50	3.40	36.29	54.00	-17.71	AV	Vertical
7400.97	51.70	43.50	11.40	35.50	3.40	55.10	74.00	-18.90	PK	Horizontal
7400.97	33.33	43.50	11.40	35.50	3.40	36.73	54.00	-17.27	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n20 Channel 13

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 13(2472 MHz)										
3264.68	49.27	44.70	6.70	28.20	-9.80	39.47	74.00	-34.53	PK	Vertical
3264.68	39.80	44.70	6.70	28.20	-9.80	30.00	54.00	-24.00	AV	Vertical
3264.86	48.97	44.70	6.70	28.20	-9.80	39.17	74.00	-34.83	PK	Horizontal
3264.86	38.85	44.70	6.70	28.20	-9.80	29.05	54.00	-24.95	AV	Horizontal
4944.42	59.58	44.20	9.04	31.60	-3.56	56.02	74.00	-17.98	PK	Vertical
4944.42	39.58	44.20	9.04	31.60	-3.56	36.02	54.00	-17.98	AV	Vertical
4944.50	58.50	44.20	9.04	31.60	-3.56	54.94	74.00	-19.06	PK	Horizontal
4944.50	38.35	44.20	9.04	31.60	-3.56	34.79	54.00	-19.21	AV	Horizontal
5359.73	46.02	44.20	9.86	32.00	-2.34	43.68	74.00	-30.32	PK	Vertical
5359.73	37.16	44.20	9.86	32.00	-2.34	34.82	54.00	-19.18	AV	Vertical
5359.58	45.91	44.20	9.86	32.00	-2.34	43.57	74.00	-30.43	PK	Horizontal
5359.58	37.93	44.20	9.86	32.00	-2.34	35.59	54.00	-18.41	AV	Horizontal
7416.06	51.62	43.50	11.40	35.50	3.40	55.02	74.00	-18.98	PK	Vertical
7416.06	33.34	43.50	11.40	35.50	3.40	36.74	54.00	-17.26	AV	Vertical
7416.07	51.88	43.50	11.40	35.50	3.40	55.28	74.00	-18.72	PK	Horizontal
7416.07	32.65	43.50	11.40	35.50	3.40	36.05	54.00	-17.95	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n40 Channel 03

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 01 (2422 MHz)										
3264.89	48.95	44.70	6.70	28.20	-9.80	39.15	74.00	-34.85	PK	Vertical
3264.89	39.54	44.70	6.70	28.20	-9.80	29.74	54.00	-24.26	AV	Vertical
3264.79	49.14	44.70	6.70	28.20	-9.80	39.34	74.00	-34.66	PK	Horizontal
3264.79	38.13	44.70	6.70	28.20	-9.80	28.33	54.00	-25.67	AV	Horizontal
4844.39	58.21	44.20	9.04	31.60	-3.56	54.65	74.00	-19.35	PK	Vertical
4844.39	38.48	44.20	9.04	31.60	-3.56	34.92	54.00	-19.08	AV	Vertical
4844.34	59.06	44.20	9.04	31.60	-3.56	55.50	74.00	-18.50	PK	Horizontal
4844.34	38.85	44.20	9.04	31.60	-3.56	35.29	54.00	-18.71	AV	Horizontal
5359.69	46.10	44.20	9.86	32.00	-2.34	43.76	74.00	-30.24	PK	Vertical
5359.69	37.27	44.20	9.86	32.00	-2.34	34.93	54.00	-19.07	AV	Vertical
5359.67	46.02	44.20	9.86	32.00	-2.34	43.68	74.00	-30.32	PK	Horizontal
5359.67	37.87	44.20	9.86	32.00	-2.34	35.53	54.00	-18.47	AV	Horizontal
7265.83	51.34	43.50	11.40	35.50	3.40	54.74	74.00	-19.26	PK	Vertical
7265.83	32.51	43.50	11.40	35.50	3.40	35.91	54.00	-18.09	AV	Vertical
7265.74	50.88	43.50	11.40	35.50	3.40	54.28	74.00	-19.72	PK	Horizontal
7235.90	31.61	43.50	11.40	35.50	3.40	35.01	54.00	-18.99	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n40 Channel 06

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 06 (2437 MHz)										
3264.70	48.07	44.70	6.70	28.20	-9.80	38.27	74.00	-35.73	PK	Vertical
3264.70	39.71	44.70	6.70	28.20	-9.80	29.91	54.00	-24.09	AV	Vertical
3264.84	48.49	44.70	6.70	28.20	-9.80	38.69	74.00	-35.31	PK	Horizontal
3264.84	38.33	44.70	6.70	28.20	-9.80	28.53	54.00	-25.47	AV	Horizontal
4874.41	58.27	44.20	9.04	31.60	-3.56	54.71	74.00	-19.29	PK	Vertical
4874.41	38.36	44.20	9.04	31.60	-3.56	34.80	54.00	-19.20	AV	Vertical
4874.56	59.06	44.20	9.04	31.60	-3.56	55.50	74.00	-18.50	PK	Horizontal
4874.56	39.19	44.20	9.04	31.60	-3.56	35.63	54.00	-18.37	AV	Horizontal
5359.74	45.07	44.20	9.86	32.00	-2.34	42.73	74.00	-31.27	PK	Vertical
5359.74	37.20	44.20	9.86	32.00	-2.34	34.86	54.00	-19.14	AV	Vertical
5359.65	45.72	44.20	9.86	32.00	-2.34	43.38	74.00	-30.62	PK	Horizontal
5359.65	38.18	44.20	9.86	32.00	-2.34	35.84	54.00	-18.16	AV	Horizontal
7310.77	51.71	43.50	11.40	35.50	3.40	55.11	74.00	-18.89	PK	Vertical
7310.77	33.76	43.50	11.40	35.50	3.40	37.16	54.00	-16.84	AV	Vertical
7310.71	51.31	43.50	11.40	35.50	3.40	54.71	74.00	-19.29	PK	Horizontal
7310.71	33.25	43.50	11.40	35.50	3.40	36.65	54.00	-17.35	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n40 Channel 09

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 11(2452 MHz)										
3264.80	48.05	44.70	6.70	28.20	-9.80	38.25	74.00	-35.75	PK	Vertical
3264.80	38.03	44.70	6.70	28.20	-9.80	28.23	54.00	-25.77	AV	Vertical
3264.77	47.97	44.70	6.70	28.20	-9.80	38.17	74.00	-35.83	PK	Horizontal
3264.77	38.28	44.70	6.70	28.20	-9.80	28.48	54.00	-25.52	AV	Horizontal
4904.43	58.92	44.20	9.04	31.60	-3.56	55.36	74.00	-18.64	PK	Vertical
4904.43	38.71	44.20	9.04	31.60	-3.56	35.15	54.00	-18.85	AV	Vertical
4904.42	59.31	44.20	9.04	31.60	-3.56	55.75	74.00	-18.25	PK	Horizontal
4904.42	38.16	44.20	9.04	31.60	-3.56	34.60	54.00	-19.40	AV	Horizontal
5359.78	46.00	44.20	9.86	32.00	-2.34	43.66	74.00	-30.34	PK	Vertical
5359.78	37.63	44.20	9.86	32.00	-2.34	35.29	54.00	-18.71	AV	Vertical
5359.63	45.29	44.20	9.86	32.00	-2.34	42.95	74.00	-31.05	PK	Horizontal
5359.63	38.49	44.20	9.86	32.00	-2.34	36.15	54.00	-17.85	AV	Horizontal
7355.75	51.64	43.50	11.40	35.50	3.40	55.04	74.00	-18.96	PK	Vertical
7355.75	33.42	43.50	11.40	35.50	3.40	36.82	54.00	-17.18	AV	Vertical
7355.81	51.77	43.50	11.40	35.50	3.40	55.17	74.00	-18.83	PK	Horizontal
7355.81	33.50	43.50	11.40	35.50	3.40	36.90	54.00	-17.10	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n40 Channel 10

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 12(2457 MHz)										
3264.61	48.42	44.70	6.70	28.20	-9.80	38.62	74.00	-35.38	PK	Vertical
3264.61	38.22	44.70	6.70	28.20	-9.80	28.42	54.00	-25.58	AV	Vertical
3264.80	48.27	44.70	6.70	28.20	-9.80	38.47	74.00	-35.53	PK	Horizontal
3264.80	37.85	44.70	6.70	28.20	-9.80	28.05	54.00	-25.95	AV	Horizontal
4914.46	59.31	44.20	9.04	31.60	-3.56	55.75	74.00	-18.25	PK	Vertical
4914.46	39.31	44.20	9.04	31.60	-3.56	35.75	54.00	-18.25	AV	Vertical
4914.38	58.81	44.20	9.04	31.60	-3.56	55.25	74.00	-18.75	PK	Horizontal
4914.38	38.19	44.20	9.04	31.60	-3.56	34.63	54.00	-19.37	AV	Horizontal
5359.62	46.03	44.20	9.86	32.00	-2.34	43.69	74.00	-30.31	PK	Vertical
5359.62	38.02	44.20	9.86	32.00	-2.34	35.68	54.00	-18.32	AV	Vertical
5359.63	45.48	44.20	9.86	32.00	-2.34	43.14	74.00	-30.86	PK	Horizontal
5359.63	38.24	44.20	9.86	32.00	-2.34	35.90	54.00	-18.10	AV	Horizontal
7370.93	51.03	43.50	11.40	35.50	3.40	54.43	74.00	-19.57	PK	Vertical
7370.93	33.03	43.50	11.40	35.50	3.40	36.43	54.00	-17.57	AV	Vertical
7370.83	51.36	43.50	11.40	35.50	3.40	54.76	74.00	-19.24	PK	Horizontal
7370.83	33.42	43.50	11.40	35.50	3.40	36.82	54.00	-17.18	AV	Horizontal

Remark:

- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / T_{on} where T_{on} is the transmit duration.



802.11n40 Channel 11

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 13(2462 MHz)										
3264.83	48.33	44.70	6.70	28.20	-9.80	38.53	74.00	-35.47	PK	Vertical
3264.83	38.53	44.70	6.70	28.20	-9.80	28.73	54.00	-25.27	AV	Vertical
3264.76	48.31	44.70	6.70	28.20	-9.80	38.51	74.00	-35.49	PK	Horizontal
3264.76	39.05	44.70	6.70	28.20	-9.80	29.25	54.00	-24.75	AV	Horizontal
4924.36	59.05	44.20	9.04	31.60	-3.56	55.49	74.00	-18.51	PK	Vertical
4924.36	39.38	44.20	9.04	31.60	-3.56	35.82	54.00	-18.18	AV	Vertical
4924.41	58.77	44.20	9.04	31.60	-3.56	55.21	74.00	-18.79	PK	Horizontal
4924.41	38.97	44.20	9.04	31.60	-3.56	35.41	54.00	-18.59	AV	Horizontal
5359.80	45.97	44.20	9.86	32.00	-2.34	43.63	74.00	-30.37	PK	Vertical
5359.80	37.25	44.20	9.86	32.00	-2.34	34.91	54.00	-19.09	AV	Vertical
5359.61	45.47	44.20	9.86	32.00	-2.34	43.13	74.00	-30.87	PK	Horizontal
5359.61	38.28	44.20	9.86	32.00	-2.34	35.94	54.00	-18.06	AV	Horizontal
7385.90	51.87	43.50	11.40	35.50	3.40	55.27	74.00	-18.73	PK	Vertical
7385.90	33.48	43.50	11.40	35.50	3.40	36.88	54.00	-17.12	AV	Vertical
7385.95	51.80	43.50	11.40	35.50	3.40	55.20	74.00	-18.80	PK	Horizontal
7385.95	33.18	43.50	11.40	35.50	3.40	36.58	54.00	-17.42	AV	Horizontal

Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.

2. Emission Level = Reading Level + Factor

Margin = Limit - Emission Level

3. The emission of peak points that did not show above the forms is mainly from the environment noise.

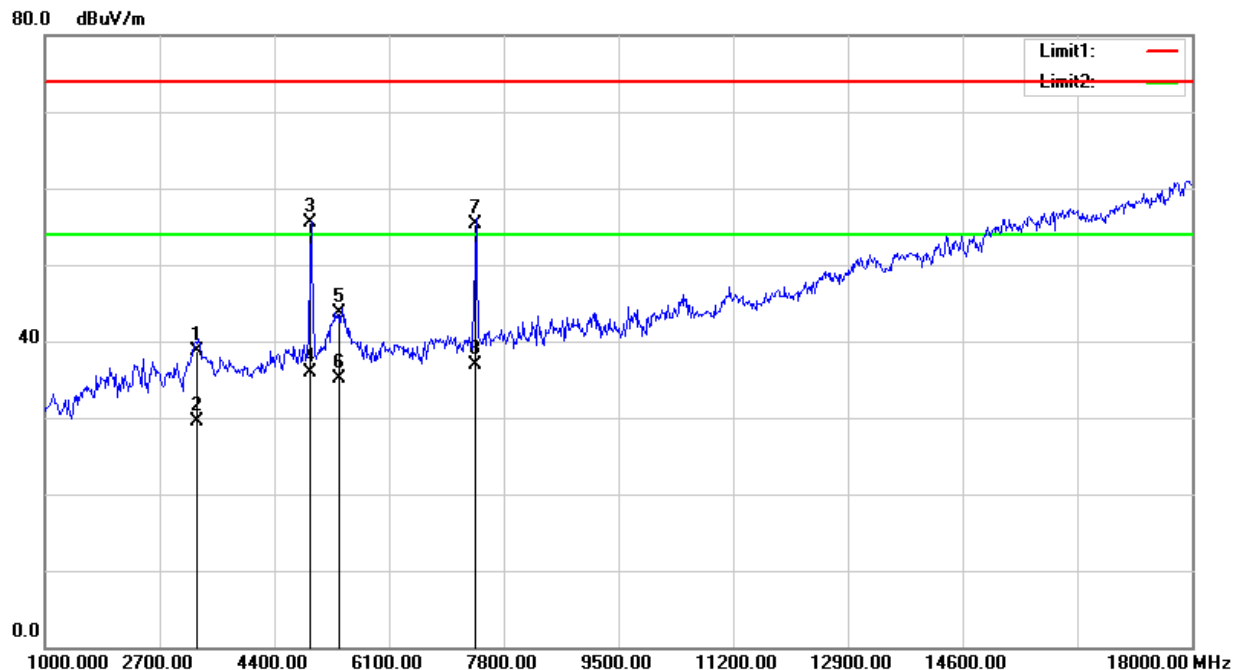
4. $AVG\ VBW = 1 / T_{on}$ where T_{on} is the transmit duration.



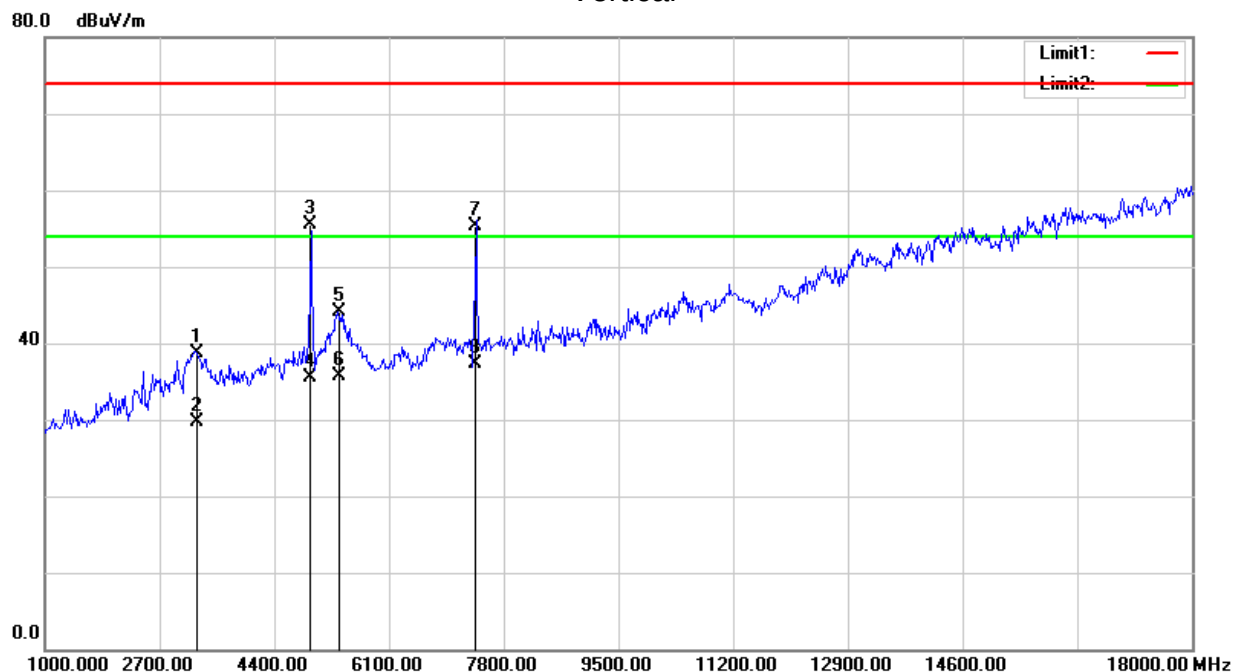
The worst test plots

802.11b Channel 06

HORIZONTAL



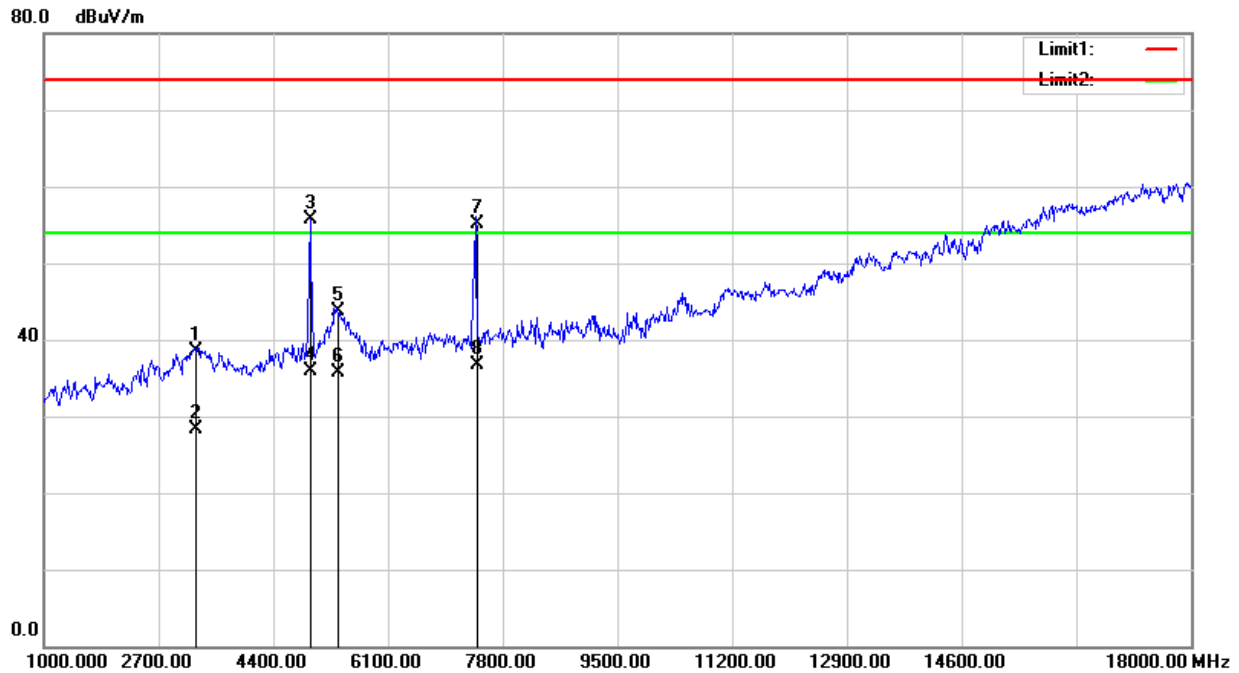
Vertical



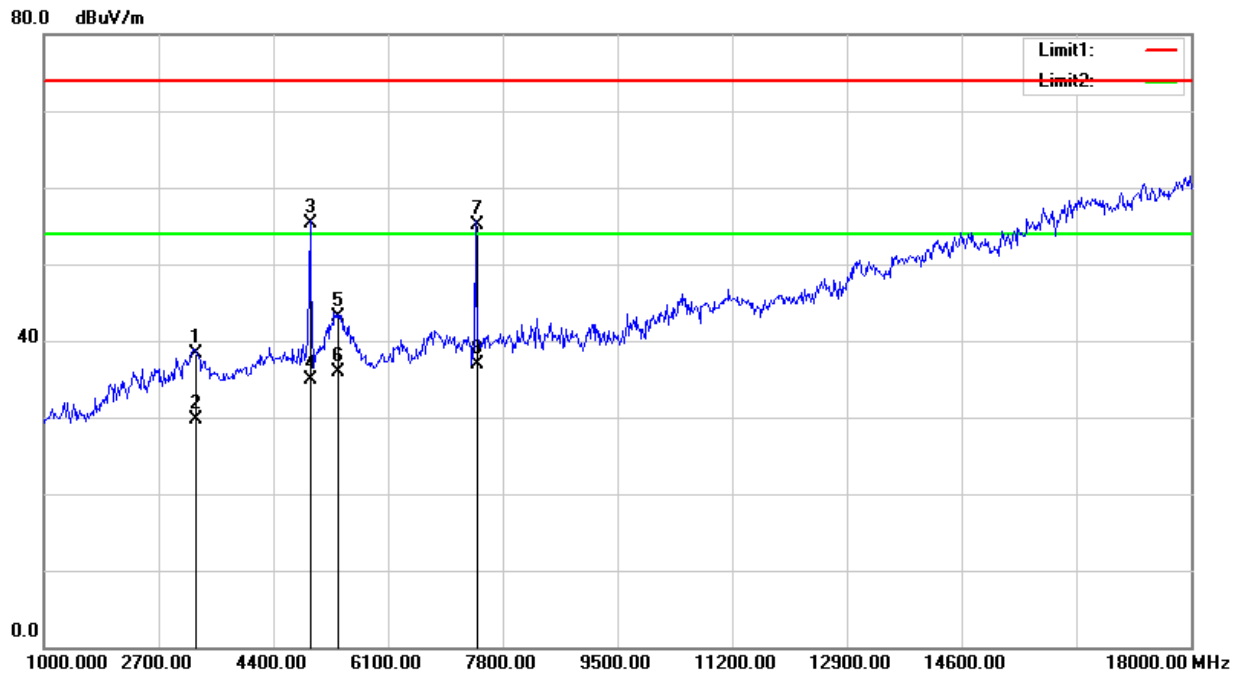


802.11b Channel 13

HORIZONTAL



Vertical





9.4. SPURIOUS EMISSIONS (18GHz-25GHz)

Note: All the channels had been tested, but only the worst data recorded in the report.

802.11b

Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 01 (2412 MHz)										
19523.79	38.65	32.16	12.57	43.60	24.01	62.66	74.00	-11.34	PK	Vertical
19523.79	22.76	32.16	12.57	43.60	24.01	46.77	54.00	-7.23	AV	Vertical
19523.79	38.22	32.16	12.57	43.60	24.01	62.23	74.00	-11.77	PK	Horizontal
19523.79	22.52	32.16	12.57	43.60	24.01	46.53	54.00	-7.47	AV	Horizontal
23890.67	38.84	30.57	13.92	43.20	26.55	65.39	74.00	-8.61	PK	Vertical
23890.67	21.87	30.57	13.92	43.20	26.55	48.42	54.00	-5.58	AV	Vertical
23890.76	39.02	30.57	13.92	43.20	26.55	65.57	74.00	-8.43	PK	Horizontal
23890.76	21.69	30.57	13.92	43.20	26.55	48.24	54.00	-5.76	AV	Horizontal
Channel 06 (2437 MHz)										
19523.55	38.07	32.16	12.57	43.60	24.01	62.08	74.00	-11.92	PK	Vertical
19523.55	22.18	32.16	12.57	43.60	24.01	46.19	54.00	-7.81	AV	Vertical
19523.62	39.23	32.16	12.57	43.60	24.01	63.24	74.00	-10.76	PK	Horizontal
19523.62	20.90	32.16	12.57	43.60	24.01	44.91	54.00	-9.09	AV	Horizontal
23890.51	37.86	30.57	13.92	43.20	26.55	64.41	74.00	-9.59	PK	Vertical
23890.51	22.61	30.57	13.92	43.20	26.55	49.16	54.00	-4.84	AV	Vertical
23890.65	39.22	30.57	13.92	43.20	26.55	65.77	74.00	-8.23	PK	Horizontal
23890.65	21.34	30.57	13.92	43.20	26.55	47.89	54.00	-6.11	AV	Horizontal
Channel 11(2462 MHz)										
19523.65	38.01	32.16	12.57	43.60	24.01	62.02	74.00	-11.98	PK	Vertical
19523.65	21.96	32.16	12.57	43.60	24.01	45.97	54.00	-8.03	AV	Vertical
19523.70	38.93	32.16	12.57	43.60	24.01	62.94	74.00	-11.06	PK	Horizontal
19523.70	21.90	32.16	12.57	43.60	24.01	45.91	54.00	-8.09	AV	Horizontal
23890.59	38.72	30.57	13.92	43.20	26.55	65.27	74.00	-8.73	PK	Vertical
23890.59	21.60	30.57	13.92	43.20	26.55	48.15	54.00	-5.85	AV	Vertical
23890.63	39.11	30.57	13.92	43.20	26.55	65.66	74.00	-8.34	PK	Horizontal
23890.63	21.42	30.57	13.92	43.20	26.55	47.97	54.00	-6.03	AV	Horizontal



Frequency (MHz)	Reading level (dBμV)	Amplifier (dB)	Loss (dB)	Antenna Factor (dB/m)	Correction Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type	Comment
Channel 12(2467 MHz)										
19523.73	38.09	32.16	12.57	43.60	24.01	62.10	74.00	-11.90	PK	Vertical
19523.73	20.98	32.16	12.57	43.60	24.01	44.99	54.00	-9.01	AV	Vertical
19523.75	39.12	32.16	12.57	43.60	24.01	63.13	74.00	-10.87	PK	Horizontal
19523.75	22.38	32.16	12.57	43.60	24.01	46.39	54.00	-7.61	AV	Horizontal
23890.77	38.40	30.57	13.92	43.20	26.55	64.95	74.00	-9.05	PK	Vertical
23890.77	20.87	30.57	13.92	43.20	26.55	47.42	54.00	-6.58	AV	Vertical
23890.57	38.04	30.57	13.92	43.20	26.55	64.59	74.00	-9.41	PK	Horizontal
23890.57	22.09	30.57	13.92	43.20	26.55	48.64	54.00	-5.36	AV	Horizontal
Channel 13(2472 MHz)										
19523.78	38.04	32.16	12.57	43.60	24.01	62.05	74.00	-11.95	PK	Vertical
19523.78	21.71	32.16	12.57	43.60	24.01	45.72	54.00	-8.28	AV	Vertical
19523.76	38.29	32.16	12.57	43.60	24.01	62.30	74.00	-11.70	PK	Horizontal
19523.76	21.06	32.16	12.57	43.60	24.01	45.07	54.00	-8.93	AV	Horizontal
23890.72	37.97	30.57	13.92	43.20	26.55	64.52	74.00	-9.48	PK	Vertical
23890.72	21.12	30.57	13.92	43.20	26.55	47.67	54.00	-6.33	AV	Vertical
23890.71	38.65	30.57	13.92	43.20	26.55	65.20	74.00	-8.80	PK	Horizontal
23890.71	22.22	30.57	13.92	43.20	26.55	48.77	54.00	-5.23	AV	Horizontal

Remark:

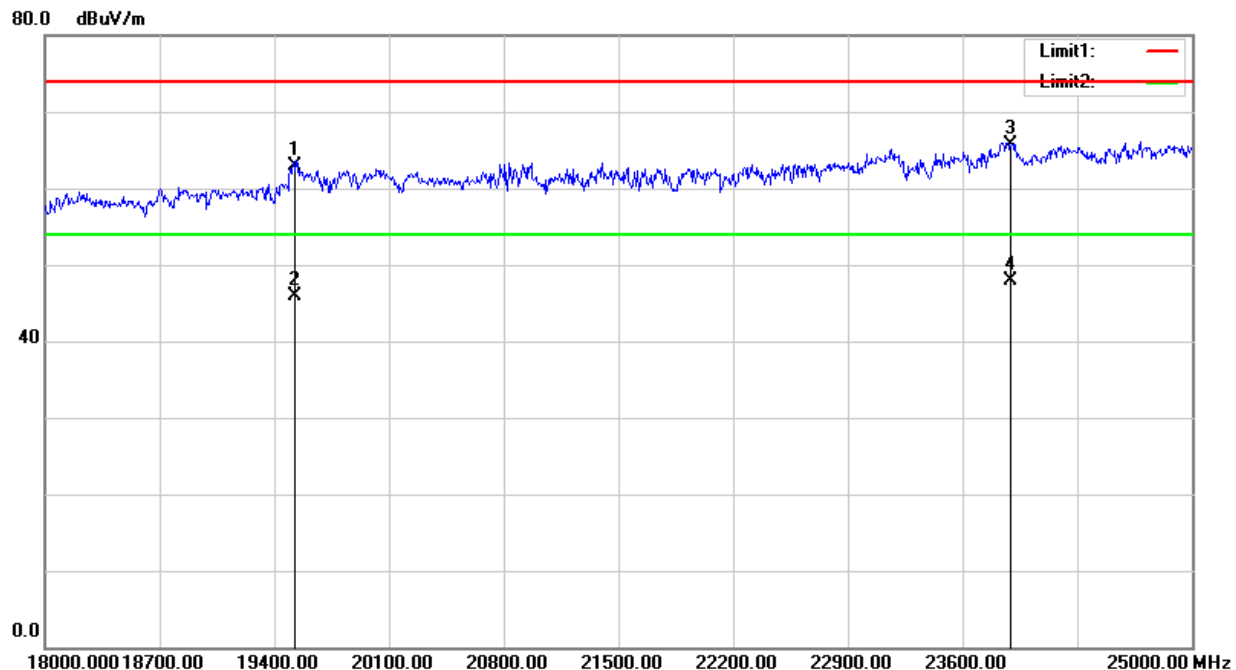
- Factor = Antenna Factor + Cable Loss – Pre-amplifier.
- Emission Level = Reading Level + Factor
Margin = Limit - Emission Level
- The emission of peak points that did not show above the forms is mainly from the environment noise.
- AVG RBW=1MHz, VBW=1 / Ton where Ton is the transmit duration.



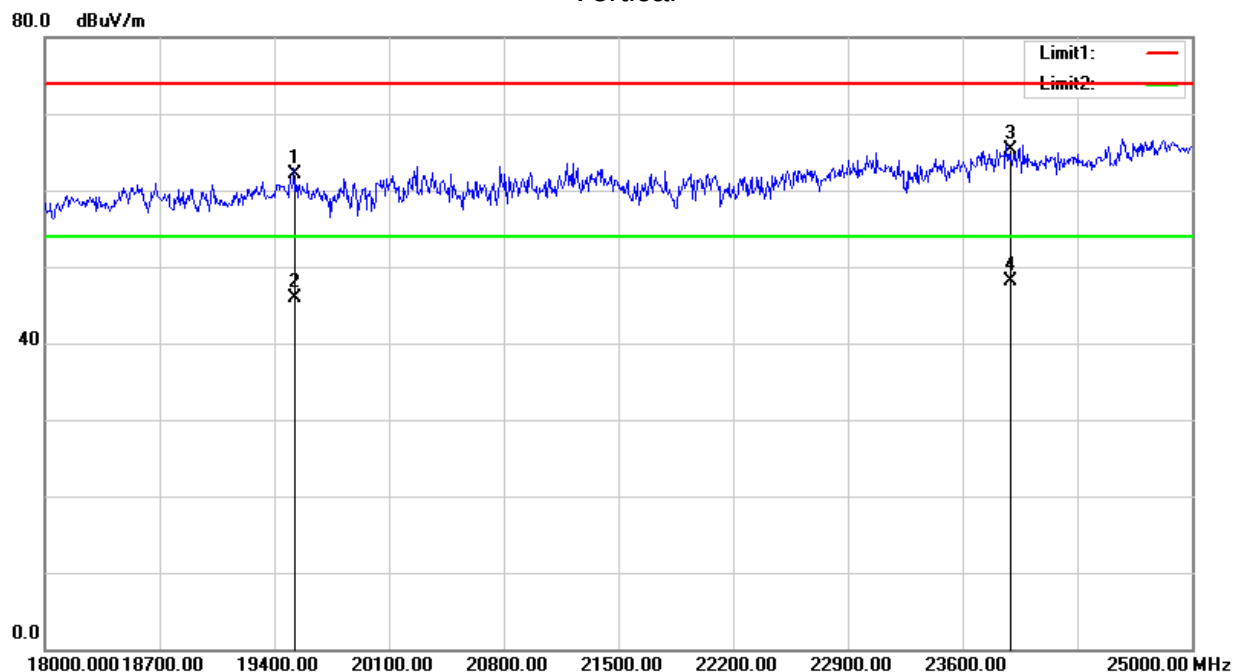
The worst test plots

802.11b Channel 06

HORIZONTAL



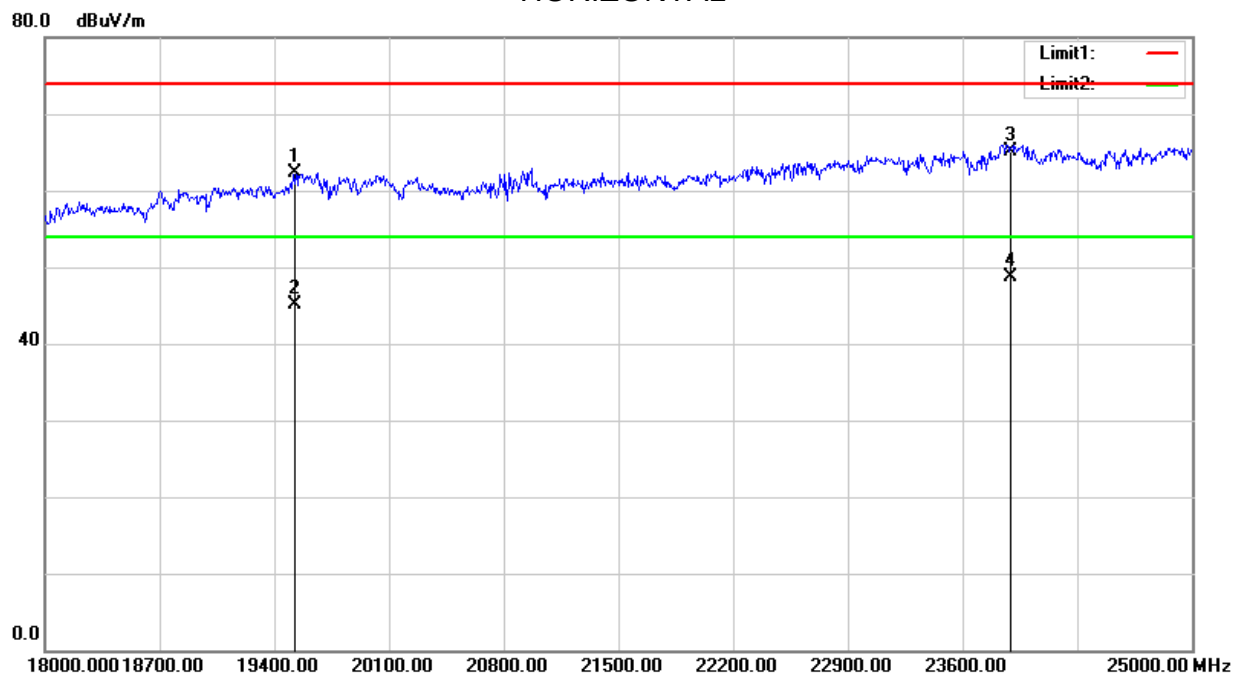
Vertical



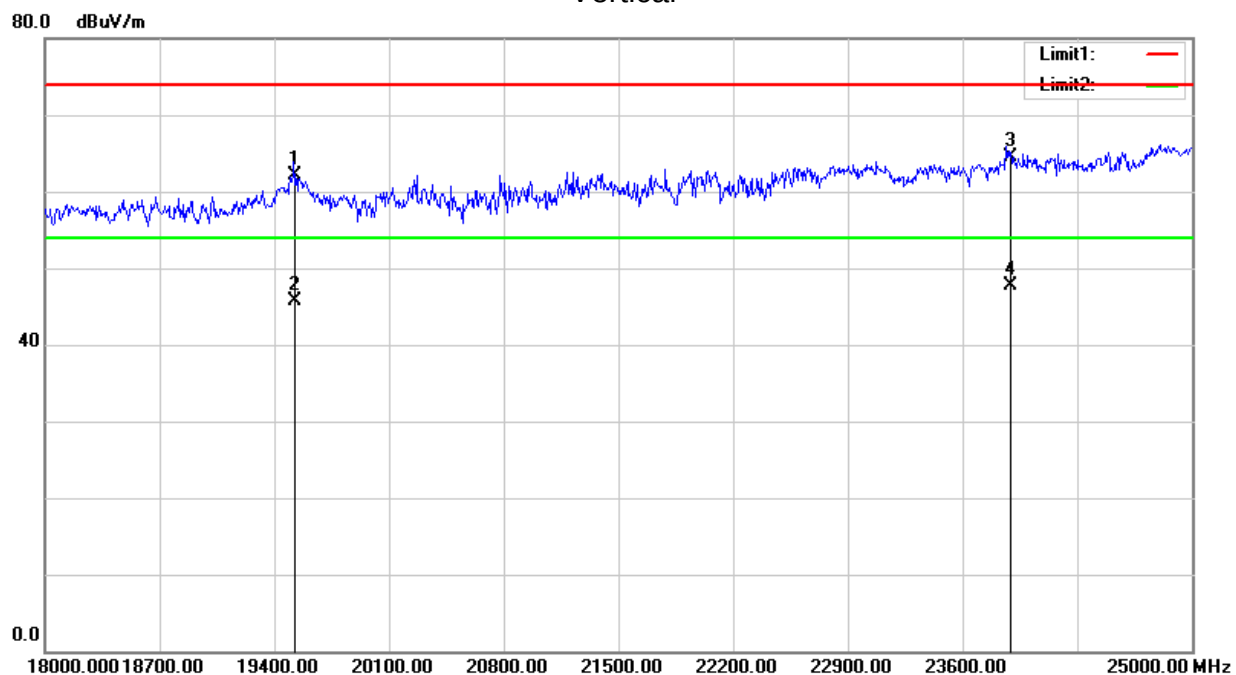


802.11b Channel 13

HORIZONTAL



Vertical



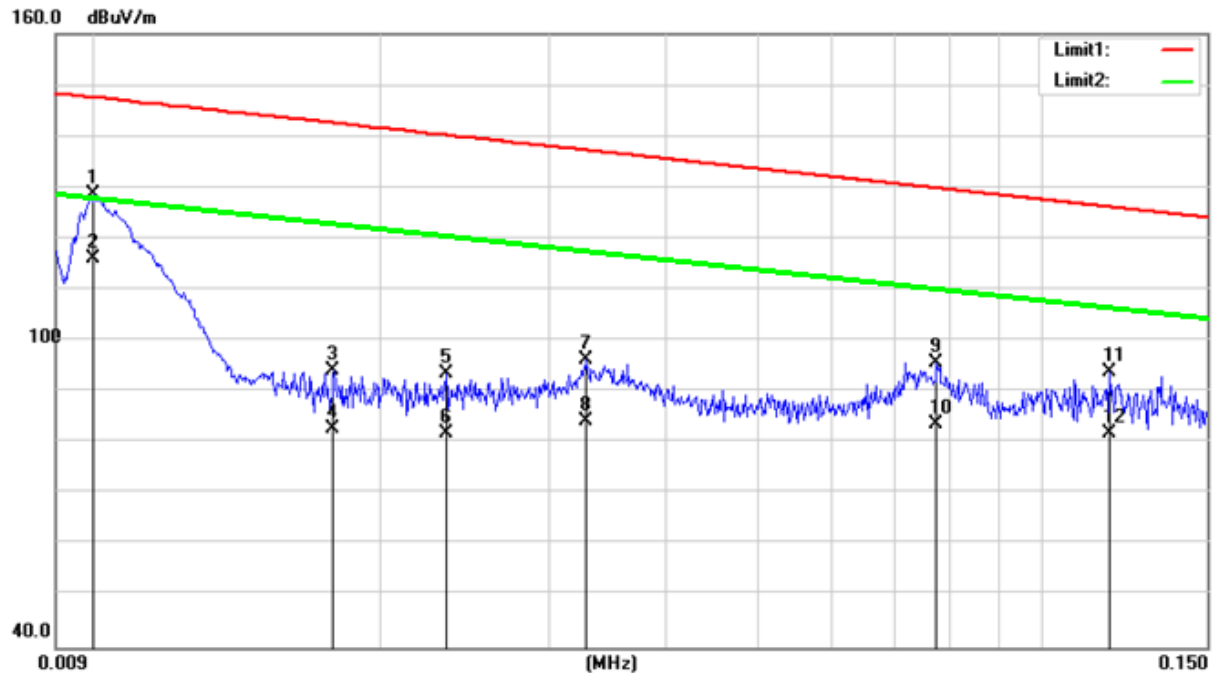


9.5. SPURIOUS EMISSIONS BELOW 30M

Note: All the channels had been tested, but only the worst data(802.11b channel 01) recorded in the report.

SPURIOUS EMISSIONS (WORST-CASE CONFIGURATION, VERTICAL)

9KHz~ 150KHz

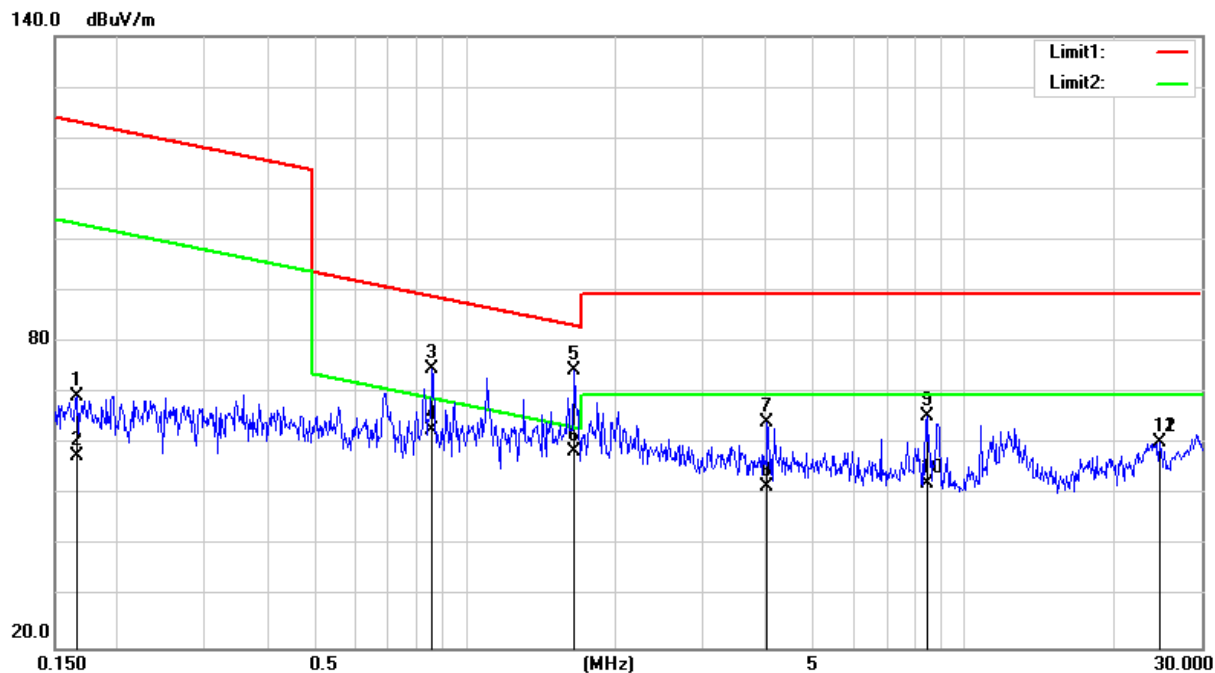


No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	53.37	75.31	128.68	147.60	-18.92	QP
2	0.0100	40.87	75.31	116.18	127.60	-11.42	AVG
3	0.0177	21.60	72.46	94.06	142.64	-48.58	QP
4	0.0177	10.21	72.46	82.67	122.64	-39.97	AVG
5	0.0234	22.42	71.03	93.45	140.22	-46.77	QP
6	0.0234	10.92	71.03	81.95	120.22	-38.27	AVG
7	0.0328	26.87	69.43	96.30	137.29	-40.99	QP
8	0.0328	14.73	69.43	84.16	117.29	-33.13	AVG
9	0.0772	34.77	60.90	95.67	129.85	-34.18	QP
10	0.0772	22.71	60.90	83.61	109.85	-26.24	AVG
11	0.1180	37.58	56.39	93.97	126.16	-32.19	QP
12	0.1180	25.34	56.39	81.73	106.16	-24.43	AVG

Note: Measurement = Reading Level + Correction Factor.



150KHz ~ 30MHz



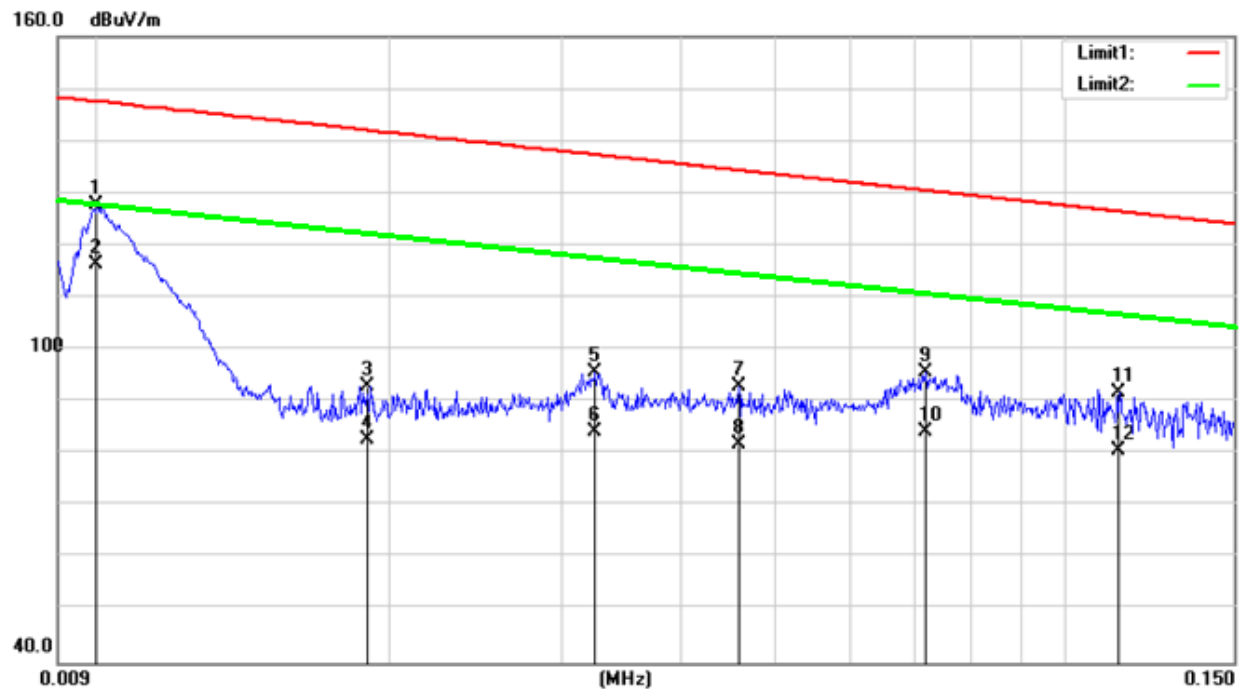
No.	Frequency	Reading level	Correction	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.1658	47.23	22.12	69.35	123.21	-53.86	QP
2	0.1658	35.51	22.12	57.63	103.21	-45.58	AVG
3	0.8572	52.79	21.86	74.65	88.94	-14.29	QP
4	0.8572	40.87	21.86	62.73	68.94	-6.21	AVG
5	1.6536	52.94	21.50	74.44	83.24	-8.80	QP
6	1.6536	37.11	21.50	58.61	63.24	-4.63	AVG
7	4.0274	43.81	20.55	64.36	89.54	-25.18	QP
8	4.0274	31.18	20.55	51.73	69.54	-17.81	AVG
9	8.4561	48.30	17.17	65.47	89.54	-24.07	QP
10	8.4561	35.20	17.17	52.37	69.54	-17.17	AVG
11	24.6594	42.66	17.72	60.38	89.54	-29.16	QP
12	24.6594	42.66	17.72	60.38	69.54	-9.16	AVG

Note: Measurement = Reading Level + Correction Factor.



SPSURIUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

9KHz~ 150KHz

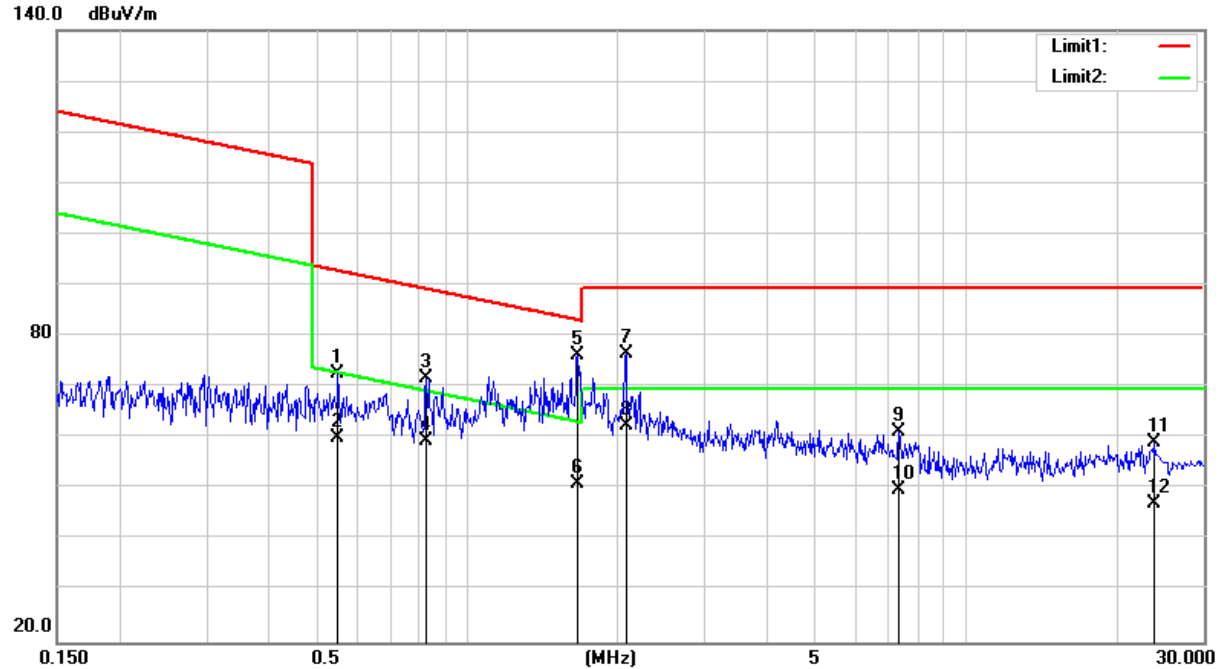


No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0100	52.36	75.31	127.67	147.60	-19.93	QP
2	0.0100	41.12	75.31	116.43	127.60	-11.17	AVG
3	0.0190	21.03	71.98	93.01	142.03	-49.02	QP
4	0.0190	10.66	71.98	82.64	122.03	-39.39	AVG
5	0.0325	26.04	69.48	95.52	137.37	-41.85	QP
6	0.0325	14.81	69.48	84.29	117.37	-33.08	AVG
7	0.0460	25.63	67.20	92.83	134.35	-41.52	QP
8	0.0460	14.63	67.20	81.83	114.35	-32.52	AVG
9	0.0718	33.57	62.01	95.58	130.48	-34.90	QP
10	0.0718	22.38	62.01	84.39	110.48	-26.09	AVG
11	0.1140	35.24	56.39	91.63	126.46	-34.83	QP
12	0.1140	24.14	56.39	80.53	106.46	-25.93	AVG

Note: Measurement = Reading Level + Correction Factor.



150KHz ~ 30MHz



No.	Frequency (MHz)	Reading level (dBuV)	Correction Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.5493	50.84	21.82	72.66	92.81	-20.15	QP
2	0.5493	38.36	21.82	60.18	72.81	-12.63	AVG
3	0.8260	49.89	21.80	71.69	89.26	-17.57	QP
4	0.8260	37.77	21.80	59.57	69.26	-9.69	AVG
5	1.6625	54.88	21.49	76.37	83.19	-6.82	QP
6	1.6625	29.69	21.49	51.18	63.19	-12.01	AVG
7	2.0767	55.30	21.14	76.44	89.54	-13.10	QP
8	2.0767	41.22	21.14	62.36	69.54	-7.18	AVG
9	7.3290	43.52	17.85	61.37	89.54	-28.17	QP
10	7.3290	31.96	17.85	49.81	69.54	-19.73	AVG
11	23.8876	41.42	17.84	59.26	89.54	-30.28	QP
12	23.8876	29.43	17.84	47.27	69.54	-22.27	AVG

Note: Measurement = Reading Level + Correction Factor.

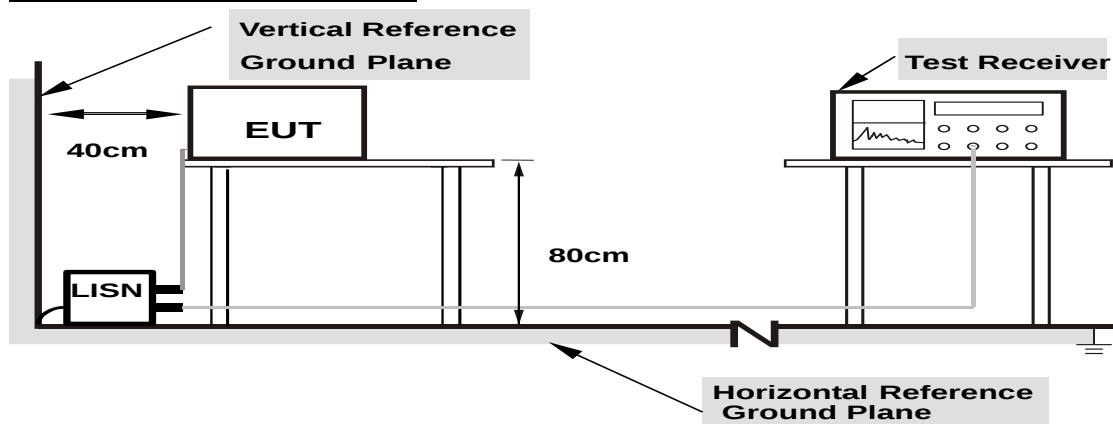
10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to FCC §15.207 (a) and RSS-Gen Clause 8.8

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

TEST SETUP AND PROCEDURE



- Note:**
- 1.Support units were connected to second LISN.
 - 2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 7 and 13 of ANSI C63.10-2013. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.

The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

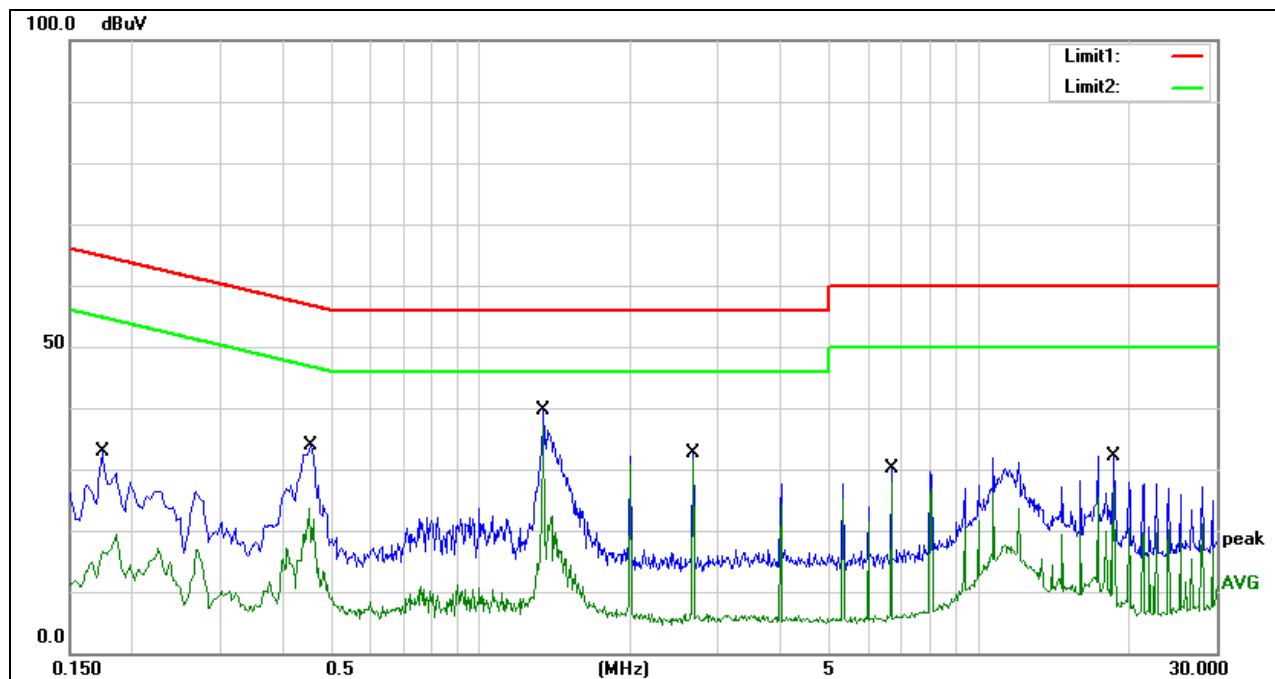
TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	60%
Atmosphere Pressure	101kPa	Test Voltage	AC 120V/60Hz
Test mode	802.11b channel 0 (worst mode)		



TEST RESULTS

LINE N RESULTS

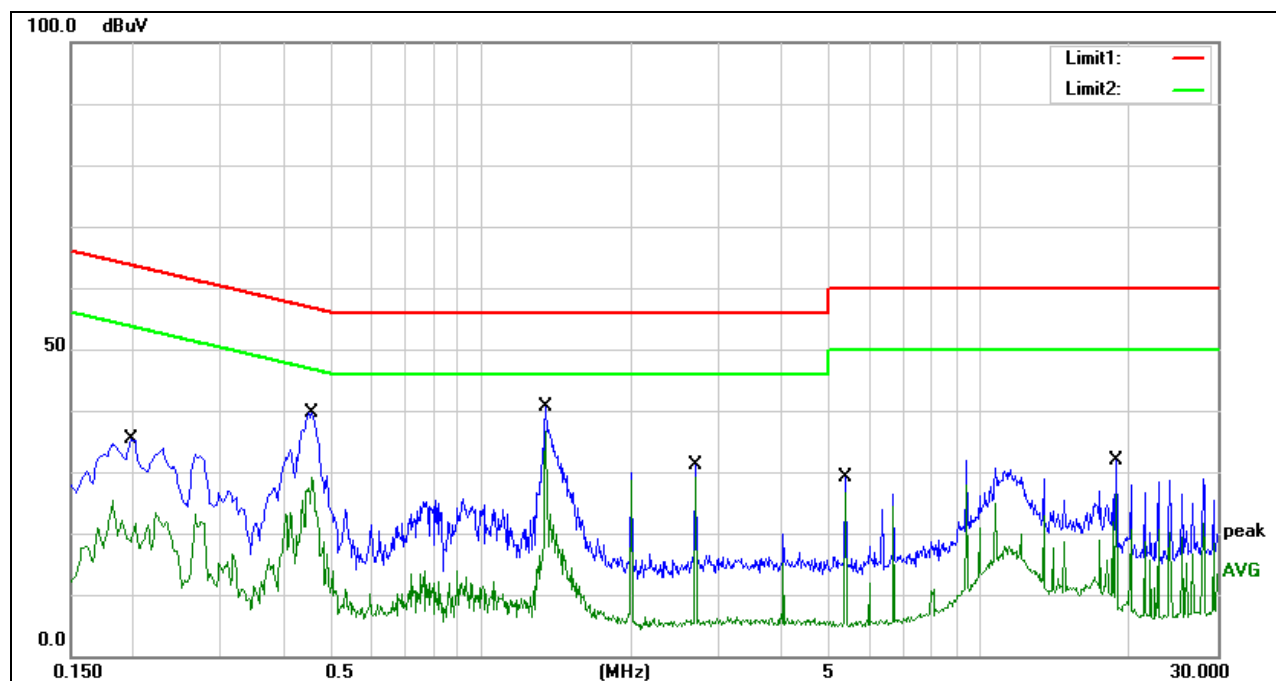


No.	Frequency	Reading level	Correcti on	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	dB	(dBuV)	(dBuV)	(dB)	
1	0.1740	23.06	9.81	32.87	64.77	-31.90	QP
2	0.1740	6.45	9.81	16.26	54.77	-38.51	AVG
3	0.4580	23.86	10.01	33.87	56.73	-22.86	QP
4	0.4580	8.85	10.01	18.86	46.73	-27.87	AVG
5	1.3380	29.82	9.82	39.64	56.00	-16.36	QP
6	1.3380	27.42	9.82	37.24	46.00	-8.76	AVG
7	2.6740	22.83	9.90	32.73	56.00	-23.27	QP
8	2.6740	21.62	9.90	31.52	46.00	-14.48	AVG
9	6.6860	20.13	9.89	30.02	60.00	-29.98	QP
10	6.6860	18.05	9.89	27.94	50.00	-22.06	AVG
11	18.7020	21.82	10.37	32.19	60.00	-27.81	QP
12	18.7020	16.42	10.37	26.79	50.00	-23.21	AVG

- Note: 1. Result = Reading Level + Correction Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.



LINE L RESULTS



No.	Frequency (MHz)	Reading level (dBuV)	Correcti on dB	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1980	25.48	9.78	35.26	63.69	-28.43	QP
2	0.1980	10.85	9.78	20.63	53.69	-33.06	AVG
3	0.4580	29.67	10.03	39.70	56.73	-17.03	QP
4	0.4580	19.04	10.03	29.07	46.73	-17.66	AVG
5	1.3460	30.71	9.79	40.50	56.00	-15.50	QP
6	1.3460	26.95	9.79	36.74	46.00	-9.26	AVG
7	2.6900	21.22	9.80	31.02	56.00	-24.98	QP
8	2.6900	19.40	9.80	29.20	46.00	-16.80	AVG
9	5.3820	19.24	9.85	29.09	60.00	-30.91	QP
10	5.3820	16.78	9.85	26.63	50.00	-23.37	AVG
11	18.7740	21.45	10.40	31.85	60.00	-28.15	QP
12	18.7740	15.97	10.40	26.37	50.00	-23.63	AVG

Note: 1. Result = Reading Level +Correction Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.



11. ANTENNA REQUIREMENTS

APPLICABLE REQUIREMENTS

Please refer to FCC §15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

Please refer to FCC §15.247(b)(4)

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.

ANTENNA CONNECTOR

EUT has a PIFA Antenna without antenna connector.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.



Test photos

Conducted Test Setup

Radiated Test Setup

Refer to appendix report: 4788499014-2-A1

END OF REPORT