FCC PART 15 SUBPART C

CERTIFICATION TEST REPORT

For

UAV Remote Controller

MODEL NUMBER: DHI-UAV-R1S-RH

FCC ID: SVNUAV-R1

REPORT NUMBER: 4788322398-4-4

ISSUE DATE: July 19, 2018

Prepared for

Zhejiang Dahua Vision Technology Co., Ltd.
No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

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
--	07/19/2018	Initial Issue	

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

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

Manufacturer Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

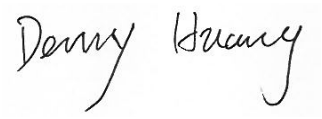
Factory Information

Company Name: Zhejiang Dahua Vision Technology Co., Ltd.
Address: No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

EUT Name: UAV Remote Controller
Brand: alhua
Model: DHI-UAV-R1S-RH
Serial Model: See chapter 5.1
Sample Received Date: November 20, 2017
Date of Tested: April 10, 2018 ~ June 26,2018

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass

Prepared By:



Denny Huang
Engineer Project Associate

Checked By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo
Laboratory Manager

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 and ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **IAS (Lab Code: TL-702)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has demonstrated compliance with ISO/IEC Standard 17025:2005, General requirements for the competence of testing and calibration laboratories **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **IC(Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch 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.

3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.

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

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Uncertainty for Conduction emission test	2.90dB
Uncertainty for Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.52dB
Uncertainty for Radiation Emission test (1GHz to 26GHz)(include Fundamental emission)	5.04dB(1-6GHz)
	5.30dB (6GHz-18Gz)
	5.23dB (18GHz-26Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Equipment	UAV Remote Controller
Product Description	The EUT is a remote controller used for UAV.
Model Name	DHI-UAV-R1S-RH
Series Model	UAV-R1S-RH,DH-UAV-R1S-RH,OEM-UAV-R1S-RH,DHI-UAV-R1123,DHI-UAV-R1133, UAV-R1123, UAV-R1133, DH-UAV-R1123, DH-UAV-R1133, OEM-UAV-R1123, OEM-UAV-R1133, DH-UAV-R1S-11,DHI-UAV-R1S-23,DHI-UAV-R1S-33,OEM-UAV-R1S-11,UAV-R1S-23,UAV-R1S-33,DH-UAV-R1S-11-C,DHI-UAV-R1S-23-C,DHI-UAV-R1S-33-C,OEM-UAV-R1S-11-C,UAV-R1S-23-C,UAV-R1S-33-C,DH-UAV-R1S-11CH,OEM-UAV-R1S-11CH,DH-UAV-R1S-11CH-C,OEM-UAV-R1S-11CH-C,DH-UAV-R1S-S-11CH,OEM-UAV-R1S-S-11CH,DH-UAV-R1S-S-11CH-C,OEM-UAV-R1S-S-11CH-C,DHI-UAV-R1S-33CH,UAV-R1S-33CH,DHI-UAV-R1S-33CH-C,UAV-R1S-33CH-C,DHI-UAV-R1S-S-33CH,UAV-R1S-S-33CH,DHI-UAV-R1S-S-33CH-C,UAV-R1S-S-33CH-C,DHI-UAV-R1S-23CH,UAV-R1S-23CH,UAV-R1S-23CH-C,HI-UAV-R1S-23CH-C,DHI-UAV-R1S-S-23CH,UAV-R1S-S-23CH,DHI-UAV-R1S-S-23CH-C,UAV-R1S-S-23CH-C.
Model Difference	All the same except for the appearance of the different color and graphic pattern.
Operation frequency	IEEE 802.11b: 2412MHz—2462MHz IEEE 802.11g: 2412MHz—2462MHz IEEE 802.11n HT20: 2412MHz—2462MHz IEEE 802.11n HT40: 2422MHz—2452MHz
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)
Rated Power Input	100-240V~,50Hz/60Hz,1.5A max
Battery	7.4V, 7800mAh

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	2412-2462	1-11[11]	24.630
2400-2483.5	1	IEEE 802.11g	2412-2462	1-11[11]	26.659
2400-2483.5	1	IEEE 802.11nHT20	2412-2462	1-11[11]	26.809
2400-2483.5	1	IEEE 802.11nHT40	2422-2452	3-9[7]	25.123

5.3. CHANNEL LIST

Channel List for 802.11b/g/n (20 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	5	2432	9	2452		
2	2417	6	2437	10	2457		
3	2422	7	2442	11	2462		
4	2427	8	2447				

Channel List for 802.11n (40 MHz)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	2422	7	2442				
4	2427	8	2447				
5	2432	9	2452				
6	2437						

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
WiFi TX(802.11b)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11g)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT20)	CH 1, CH 6, CH 11	2412MHz, 2437MHz, 2462MHz
WiFi TX(802.11n HT40)	CH 3, CH 6, CH 9	2422MHz, 2437MHz, 2452MHz

5.5. THE WORSE CASE CONFIGURATIONS

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band							
Test Software		/					
Modulation Mode	Transmit Antenna Number	Test Channel					
		NCB: 20MHz			NCB: 40MHz		
		CH 1	CH 6	CH 11	CH 3	CH 6	CH 9
802.11b	1	Default	Default	Default	N/A		
802.11g	1	Default	Default	Default			
802.11n HT20	1	Default	Default	Default			
802.11n HT40	N/A				Default	Default	Default

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2412-2462	FPCB Antenna	5.23

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. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	55 ~ 65%	
Atmospheric Pressure:	1025Pa	
Temperature	TN	23 ~ 28°C
Voltage :	VL	N/A
	VN	DC 7.4V
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperatur

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Laptop	ThinkPad	T460S	SL10K24796 JS
2	USB to Serial board	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	/	/	/	/	/

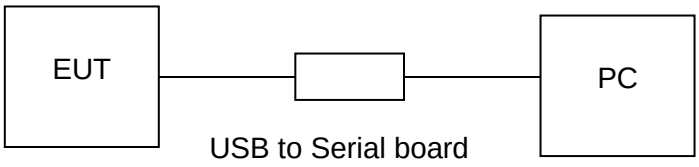
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	LiPo Charger for Drones	alhua	ADS-65HI-12N-1 12048E	AC Input: 100 ~ 240V, 1.5A DC Output: 12V, 4A

TEST SETUP

The EUT can work in engineering mode with the inside software.

SETUP DIAGRAM FOR TESTS



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.12,2017	Dec.11,2018
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.12,2017	Dec.11,2018
☑	Artificial Mains Networks	Schwarzbeck	NSLK 8126	8126465	Dec.12,2017	Dec.11,2018
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Radiated Emissions						
Instrument						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Dec.12,2017	Dec.11,2018
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jan.09, 2016	Jan.09, 2019
☑	Preamplifier	HP	8447D	2944A09099	Dec.12,2017	Dec.11,2018
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.12,2017	Dec.11,2018
☑	Horn Antenna	TDK	HRN-0118	130939	Jan. 09, 2016	Jan. 09, 2019
☑	High Gain Horn Antenna	Schwarzbeck	BBHA-9170	691	Jan.06, 2016	Jan.06, 2019
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.12,2017	Dec.11,2018
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.12,2017	Dec.11,2018
☑	Loop antenna	Schwarzbeck	1519B	00008	Mar. 26, 2016	Mar. 25, 2019
Software						
Used	Description		Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance		Farad	EZ-EMC	Ver. UL-3A1	
Other instruments						
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.12,2017	Dec.11,2018
☑	Power Meter	Keysight	N1911A	MY55416024	Dec.12,2017	Dec.11,2018
☑	Power Sensor	Keysight	N1921A	MY51100041	Dec.12,2017	Dec.11,2018

7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6dB 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

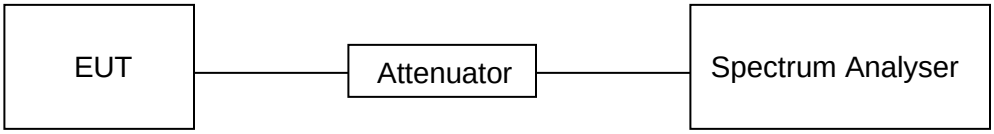
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP

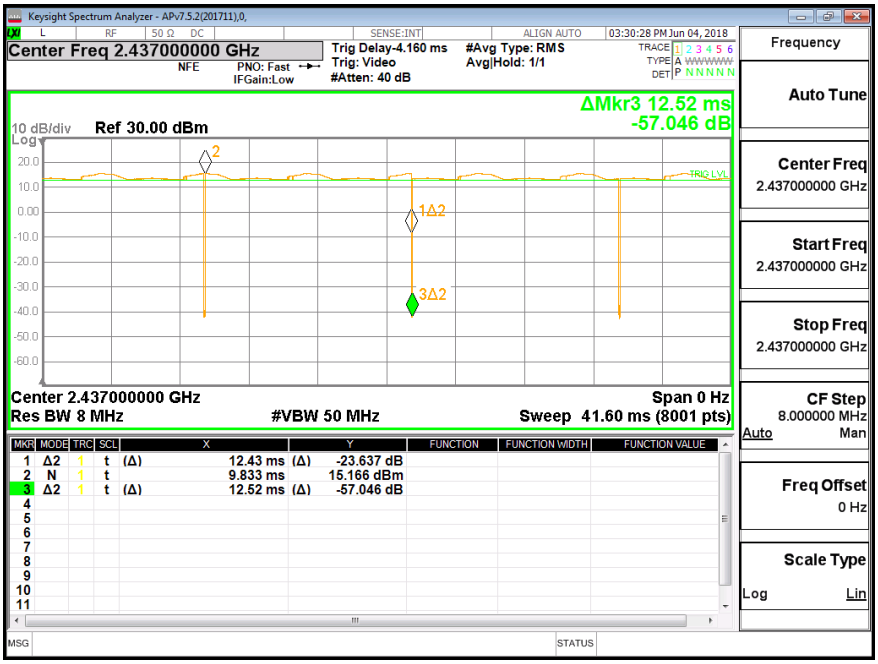


RESULTS

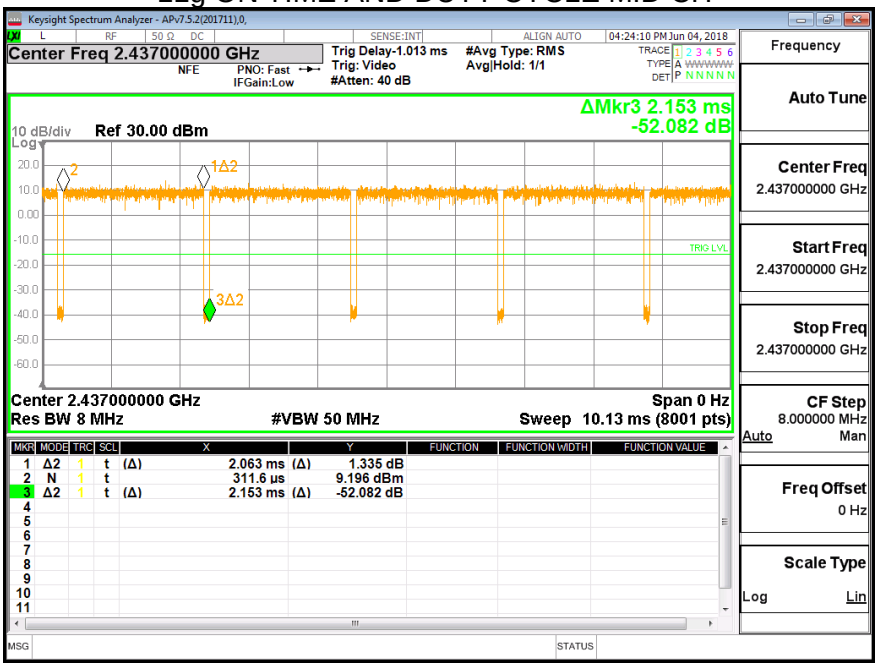
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)
11b	12.43	12.52	0.993	99.3	0.031	0.1
11g	2.063	2.153	0.958	95.8	0.185	0.5
11n20	1.924	2.017	0.954	95.4	0.205	1
11n40	0.949	1.036	0.916	91.6	0.381	2

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

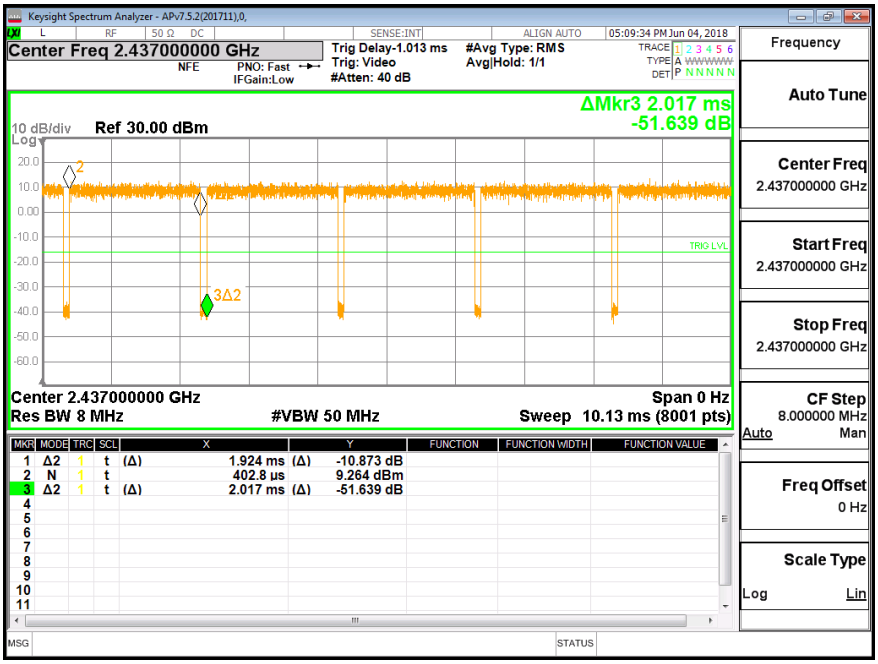
11b ON TIME AND DUTY CYCLE MID CH



11g ON TIME AND DUTY CYCLE MID CH



11n HT20 ON TIME AND DUTY CYCLE MID CH



11n HT40 ON TIME AND DUTY CYCLE MID CH

8.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(a)(2)	6 dB Bandwidth	>= 500KHz	2400-2483.5

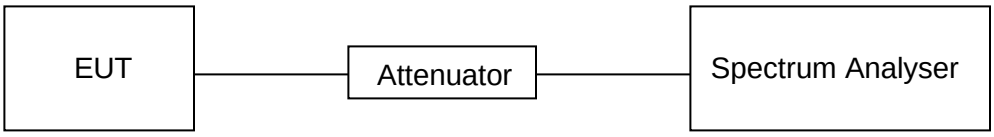
TEST PROCEDURE

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	For 6dB Bandwidth :100K For 99% Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Bandwidth : approximately 3×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



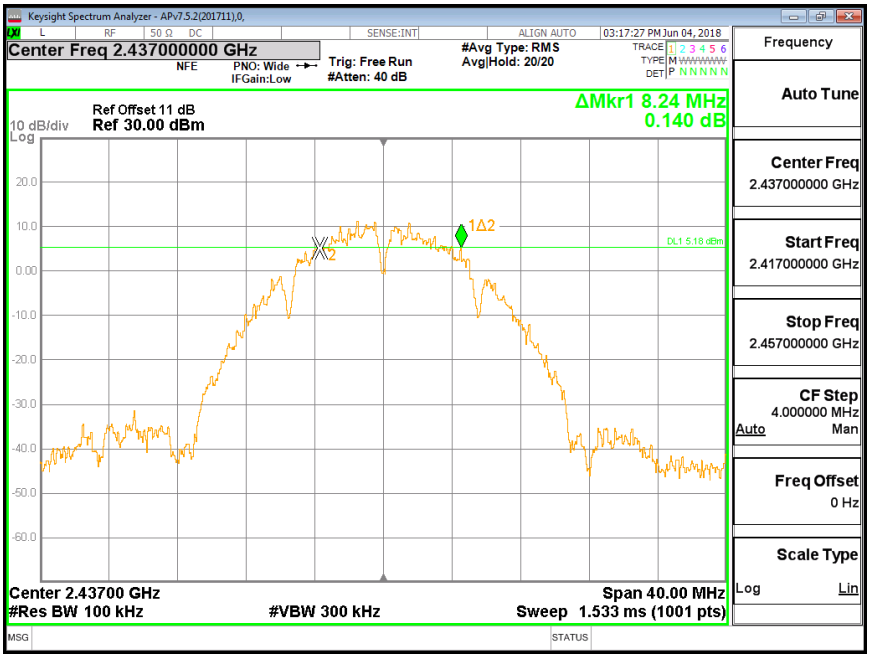
RESULTS

8.2.1. 802.11b MODE

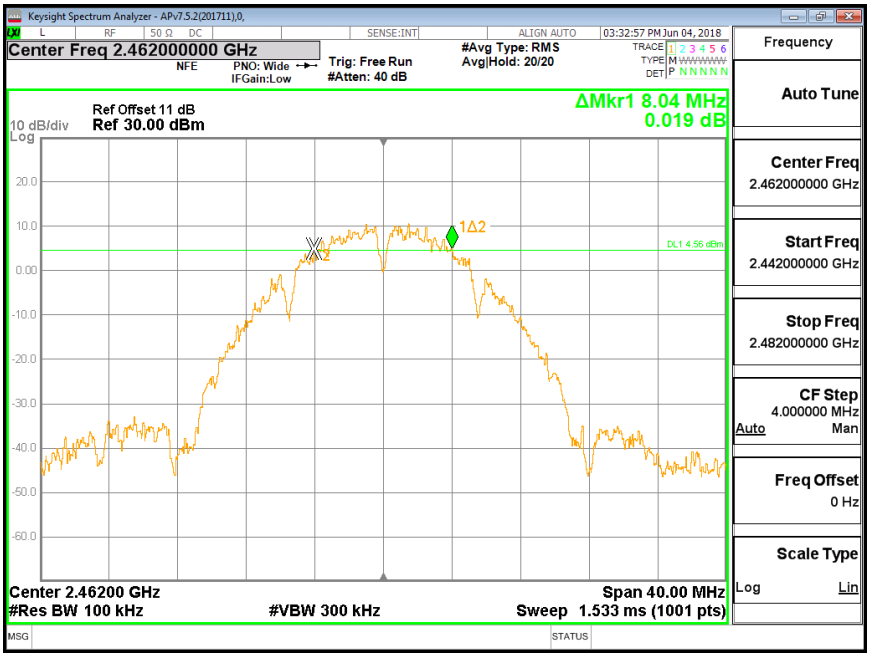
Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2412	7.96	13.269	500	Pass
Middle	2437	8.24	13.248	500	Pass
High	2462	8.04	13.311	500	Pass

6 dB BANDWIDTH LOW CH

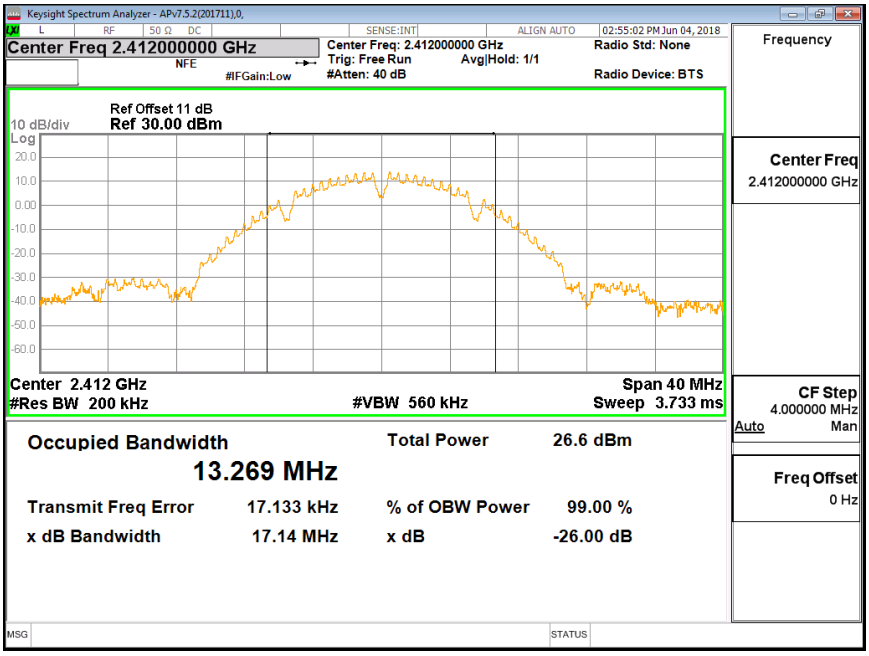
6 dB BANDWIDTH MID CH



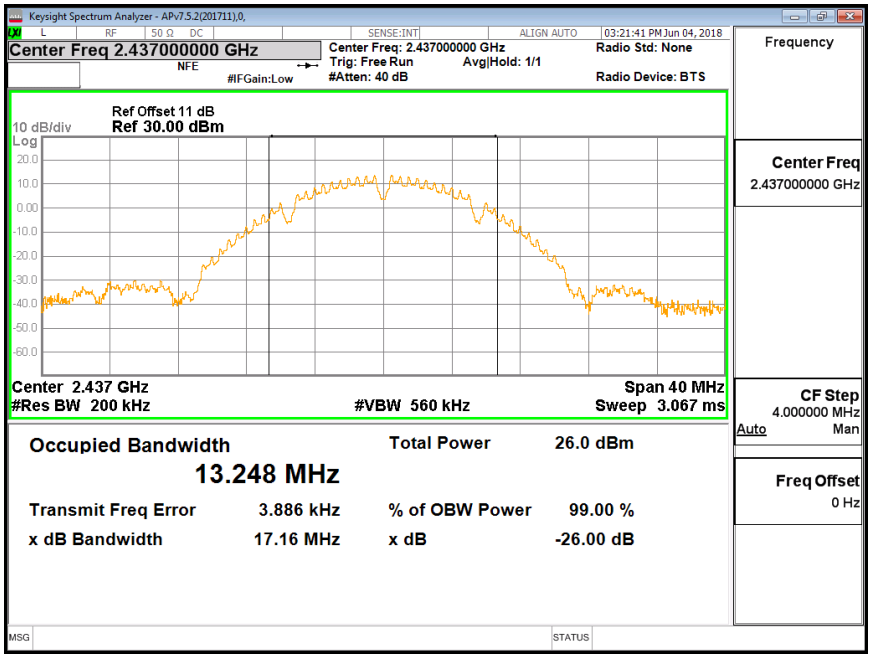
6 dB BANDWIDTH HIGH CH



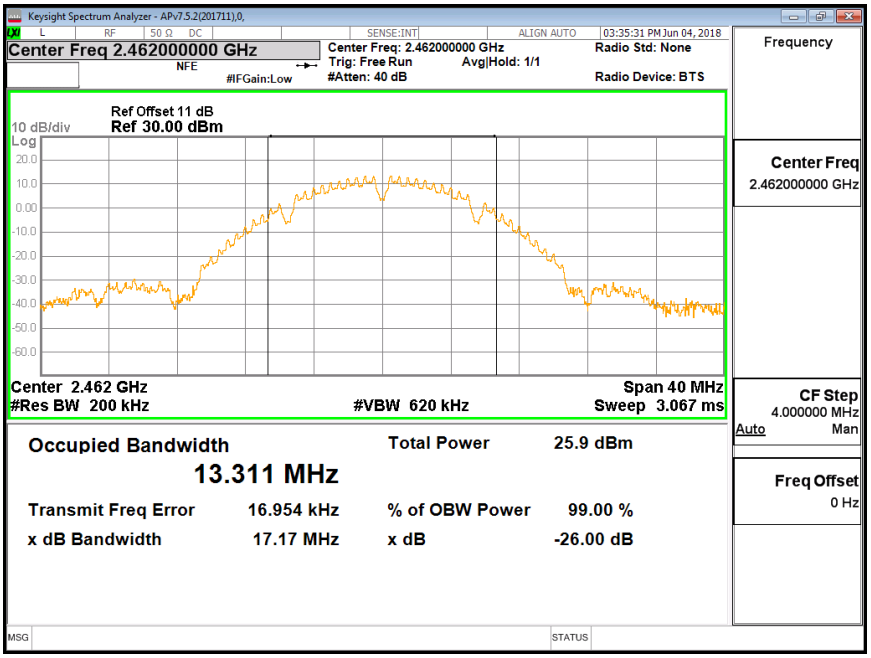
99%BANDWIDTH LOW CH



99% BANDWIDTH MID CH



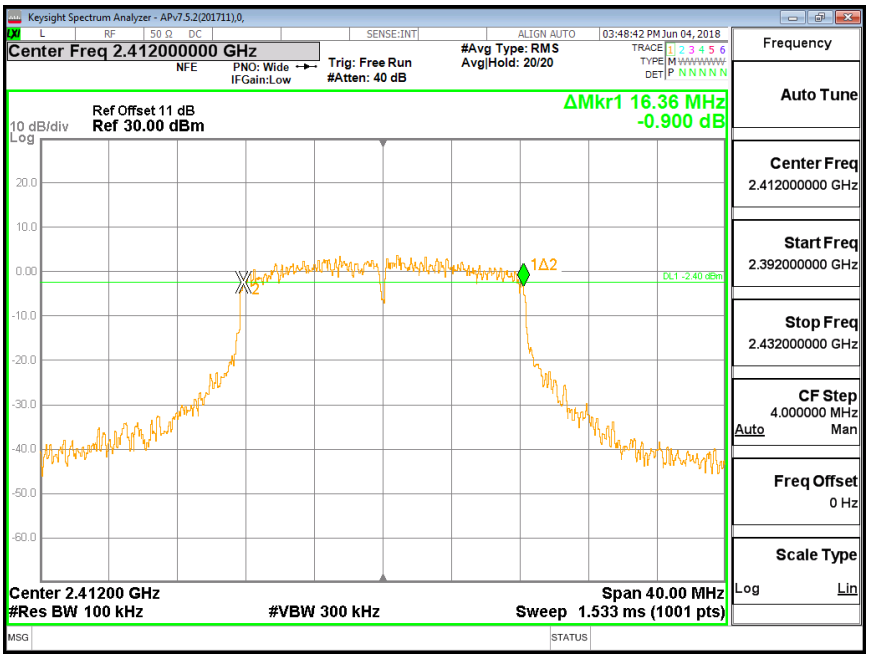
99% BANDWIDTH HIGH CH



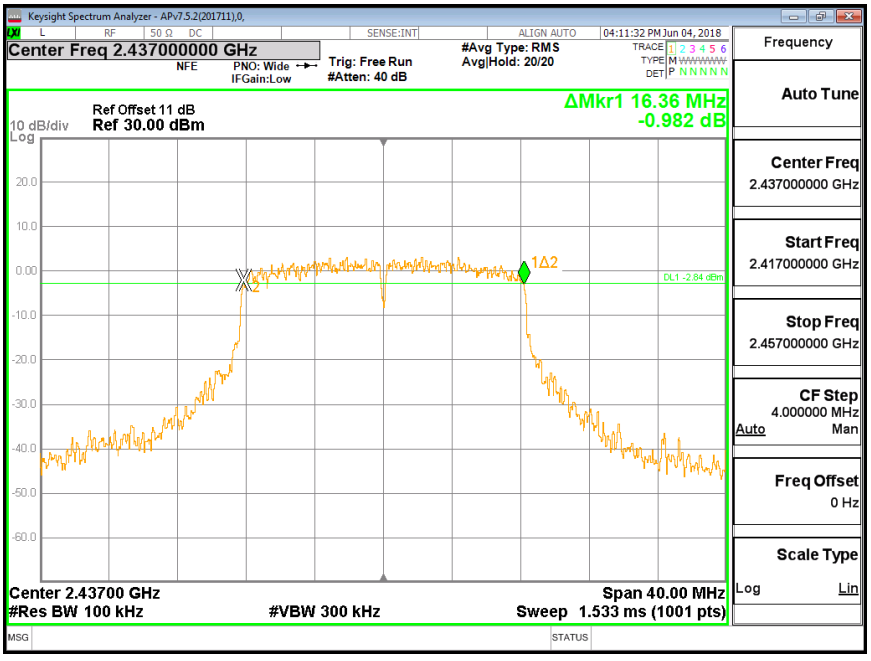
8.2.2. 802.11g MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2412	16.36	16.276	500	Pass
Middle	2437	16.36	16.314	500	Pass
High	2462	16.00	16.282	500	Pass

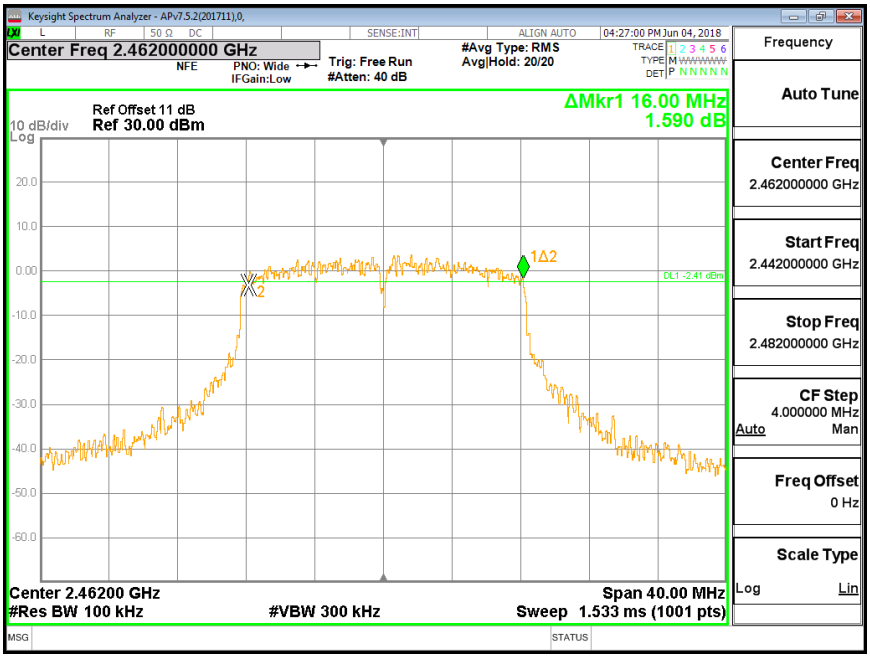
6 dB BANDWIDTH LOW CH



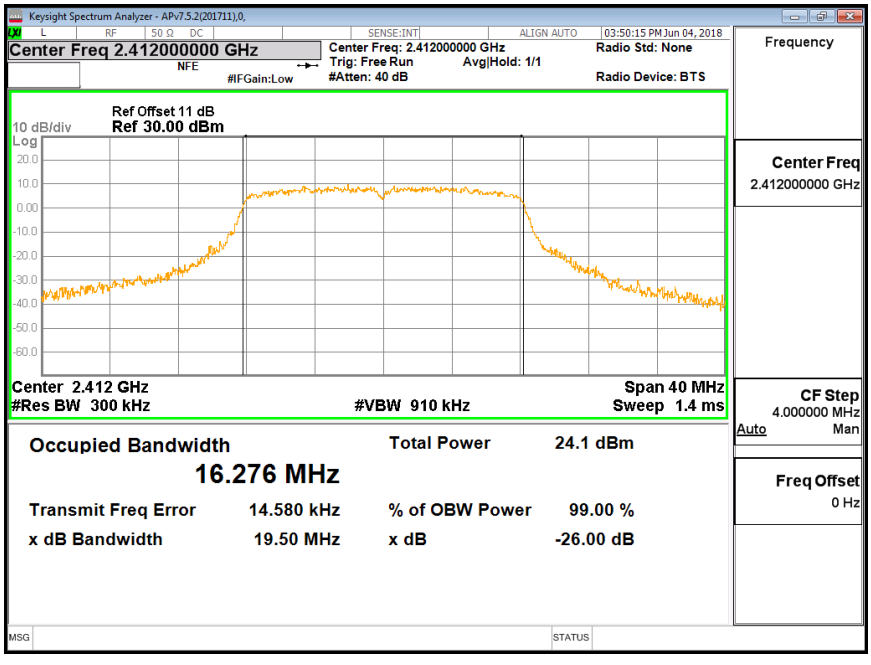
6 dB BANDWIDTH MID CH



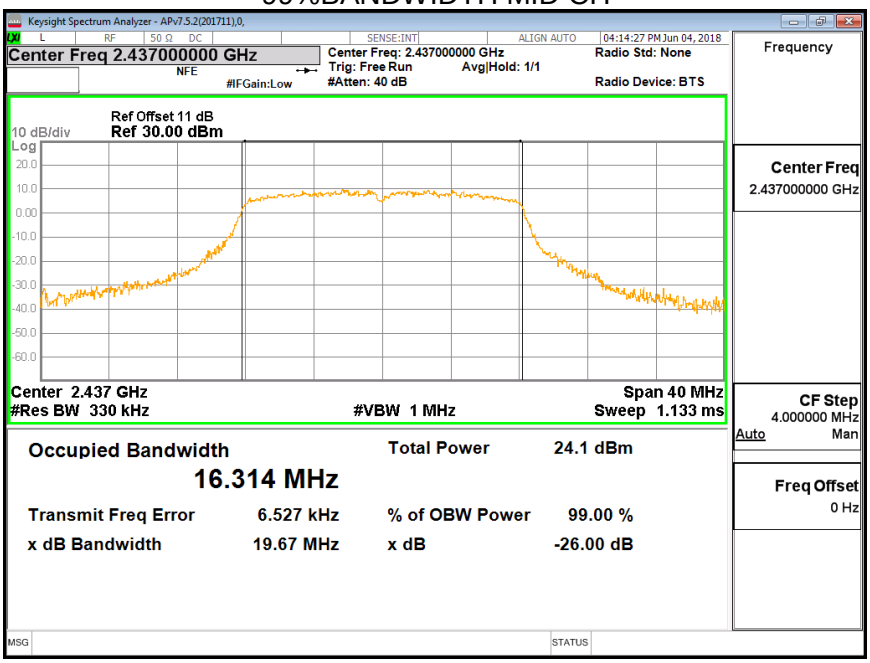
6 dB BANDWIDTH HIGH CH



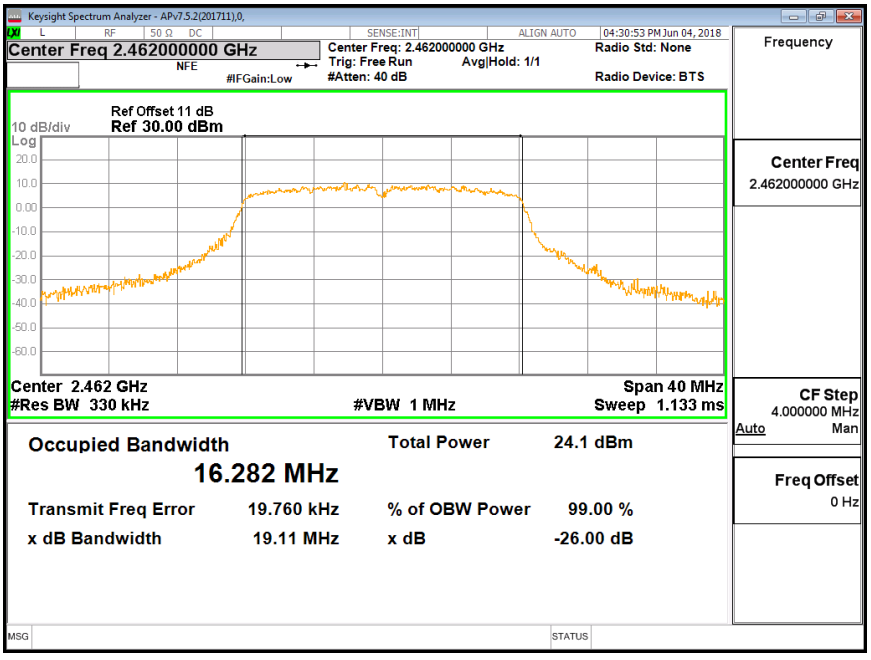
99% BANDWIDTH LOW CH



99%BANDWIDTH MID CH



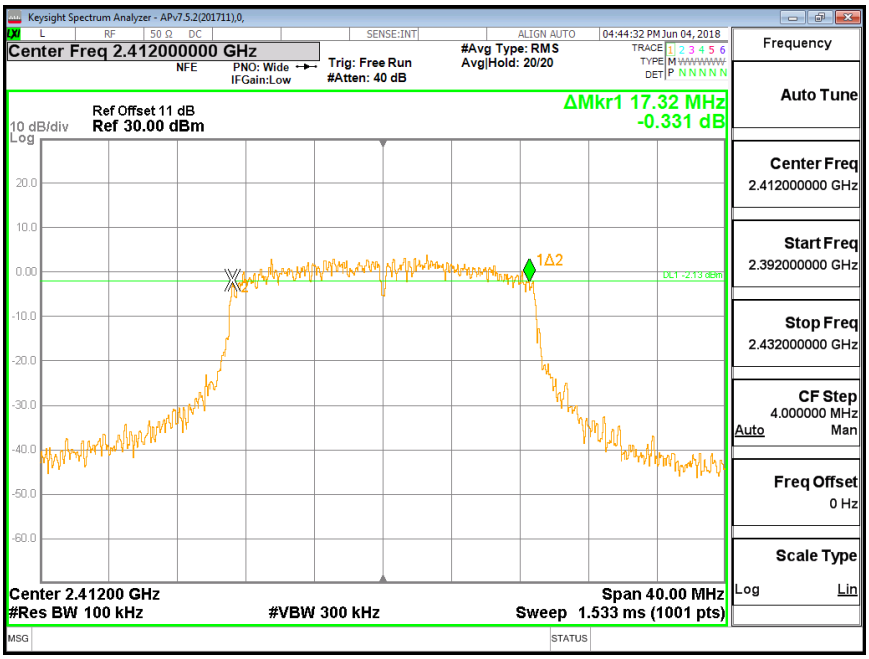
99% BANDWIDTH HIGH CH



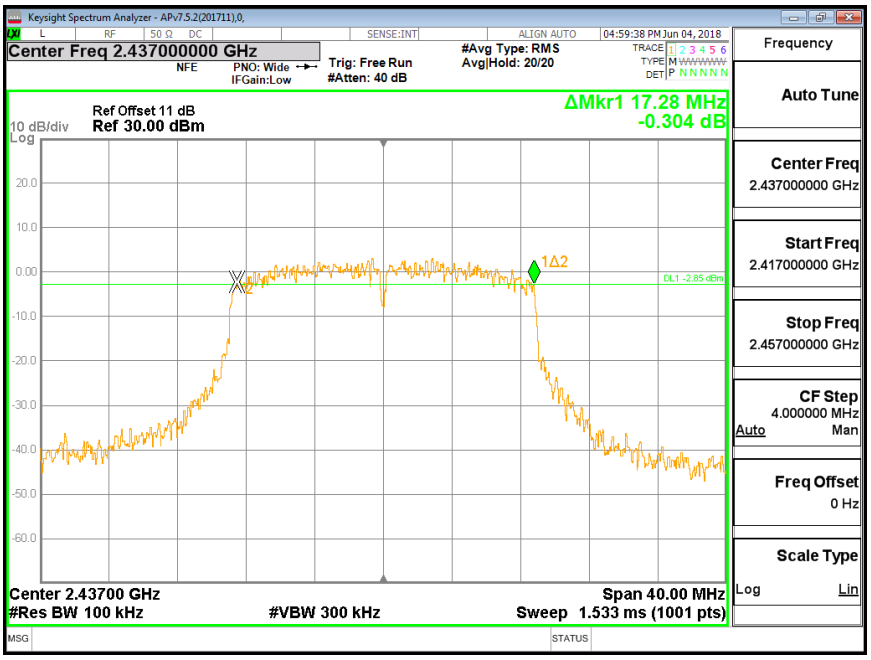
8.2.3. 802.11n HT20 MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2412	17.32	17.424	500	Pass
Middle	2437	17.28	17.420	500	Pass
High	2462	16.72	17.420	500	Pass

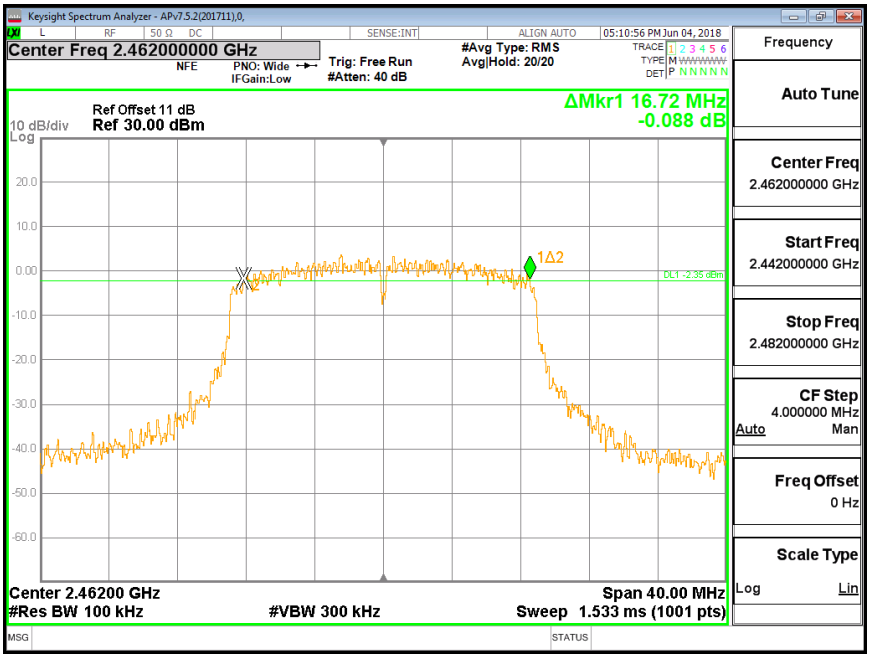
6 dB BANDWIDTH LOW CH



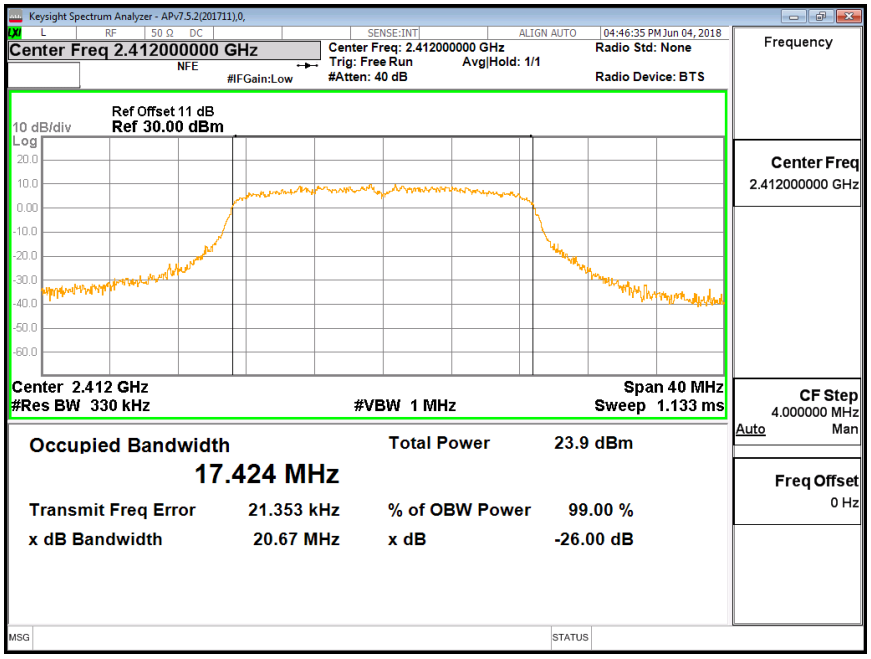
6 dB BANDWIDTH MID CH



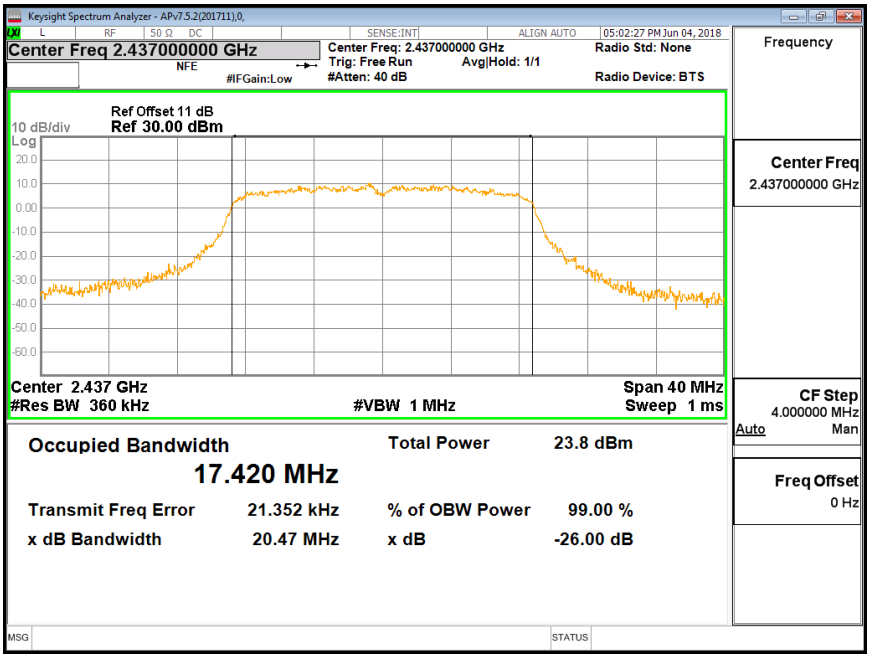
6 dB BANDWIDTH HIGH CH



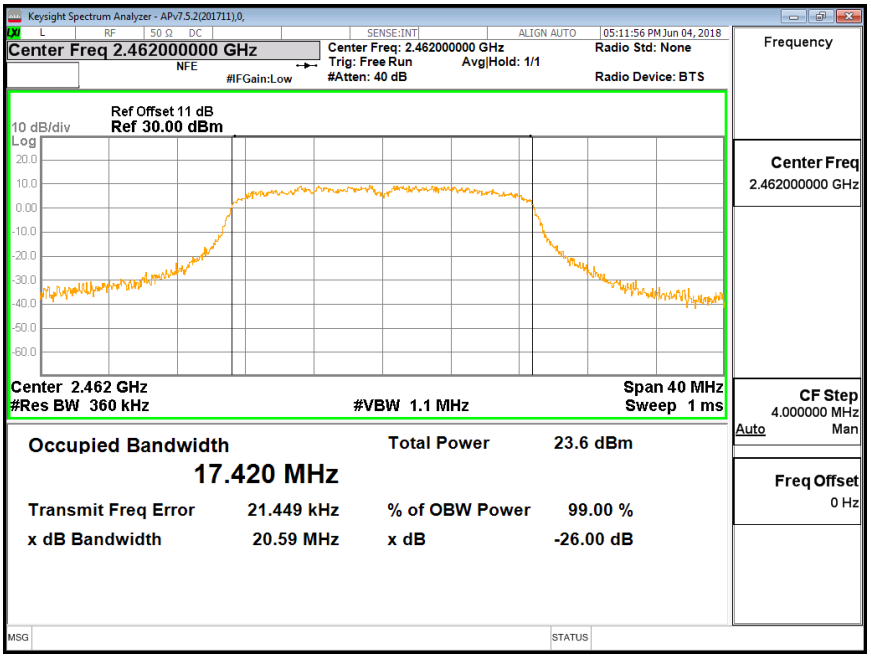
99%BANDWIDTH LOW CH



99% BANDWIDTH MID CH



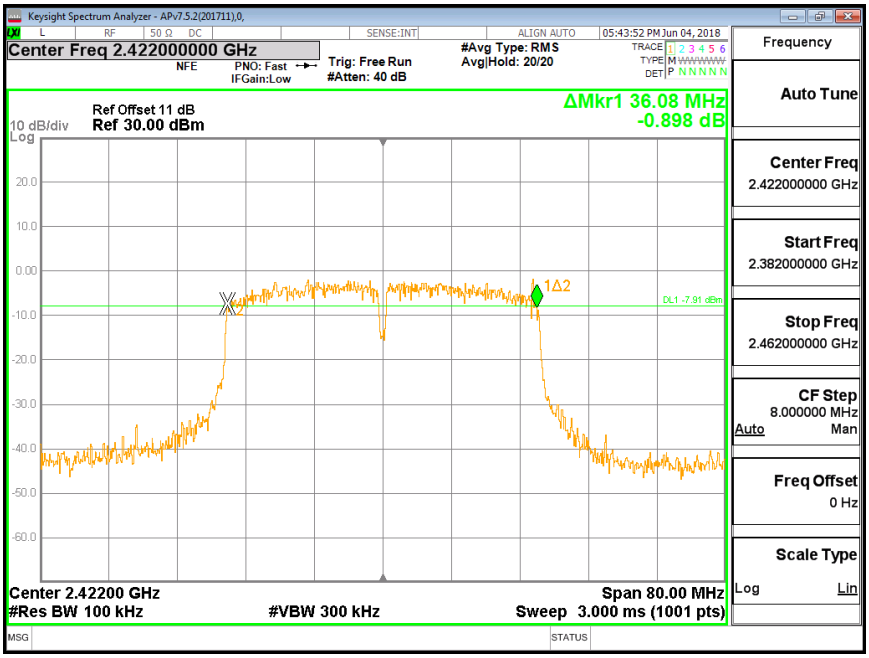
99% BANDWIDTH HIGH CH



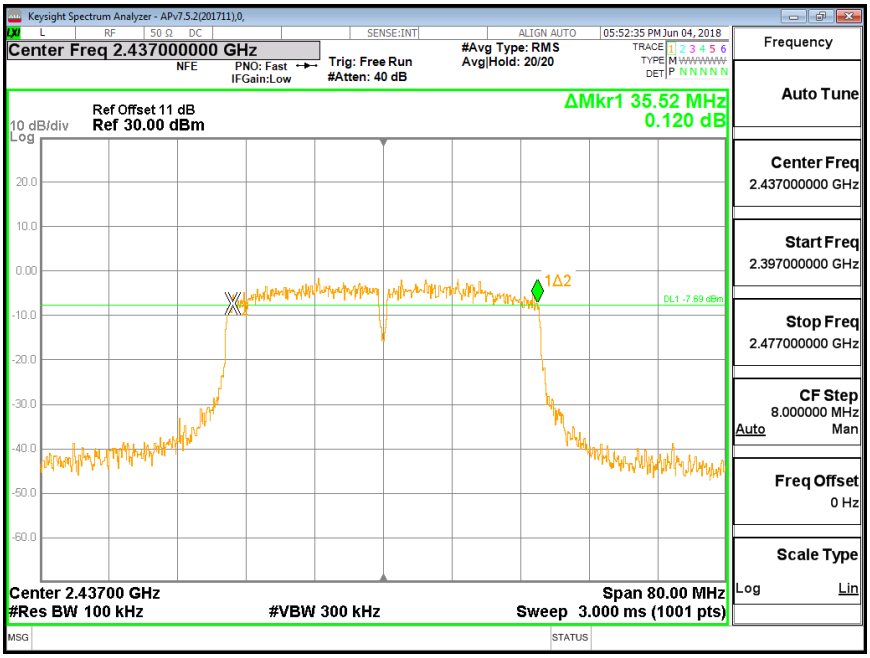
8.2.4. 802.11n HT40 MODE

Channel	Frequency (MHz)	6dB bandwidth (MHz)	99% bandwidth (MHz)	Limit (kHz)	Result
Low	2422	36.08	35.875	500	Pass
Middle	2437	35.52	35.903	500	Pass
High	2452	34.24	35.893	500	Pass

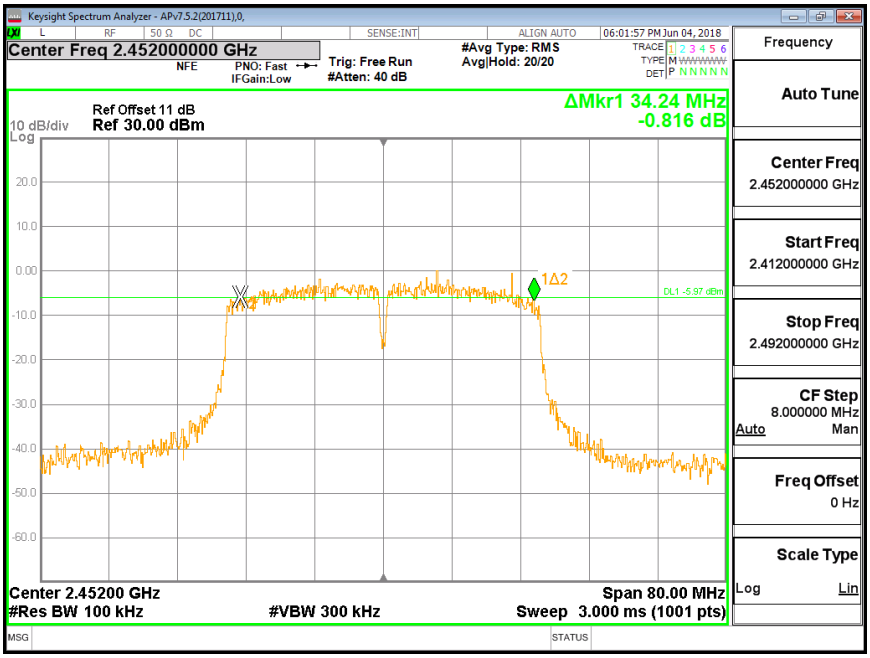
6 dB BANDWIDTH LOW CH



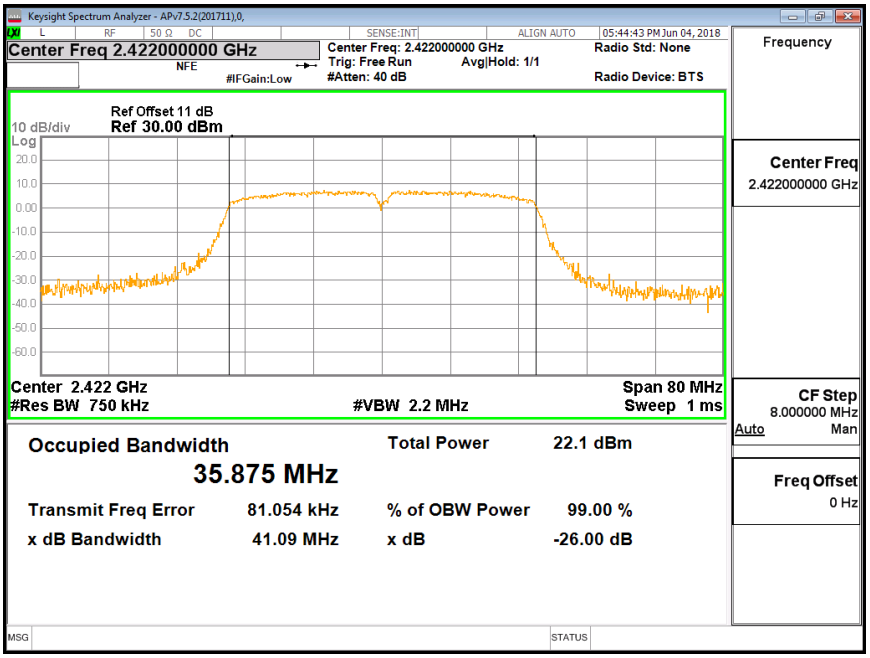
6 dB BANDWIDTH MID CH



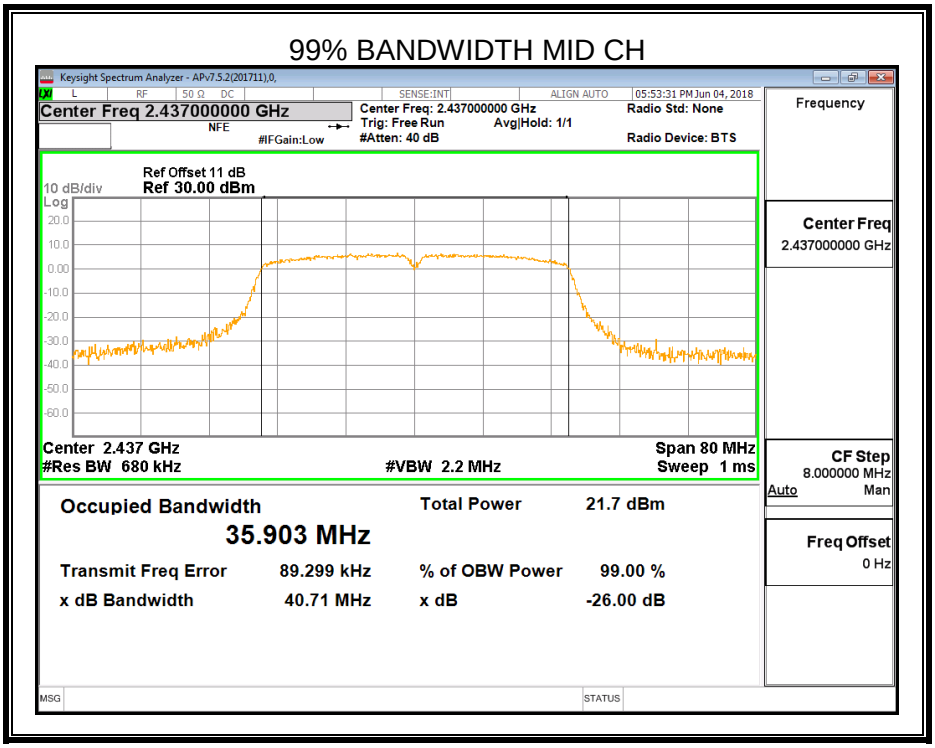
6 dB BANDWIDTH HIGH CH



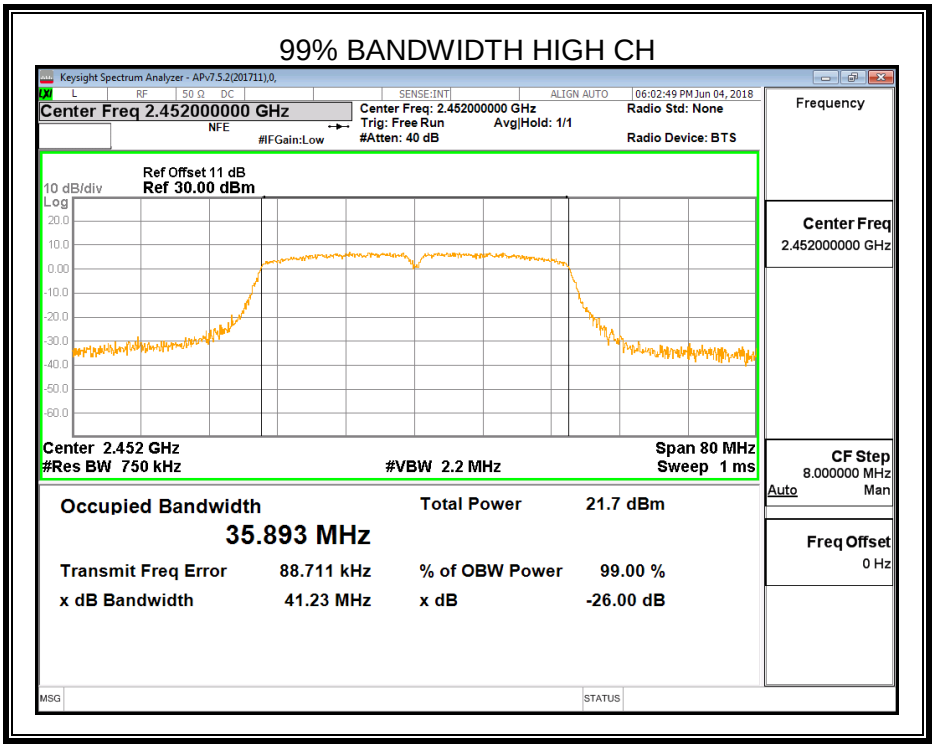
99%BANDWIDTH LOW CH



99% BANDWIDTH MID CH



99% BANDWIDTH HIGH CH



8.3. PEAK CONDUCTED OUTPUT POWER

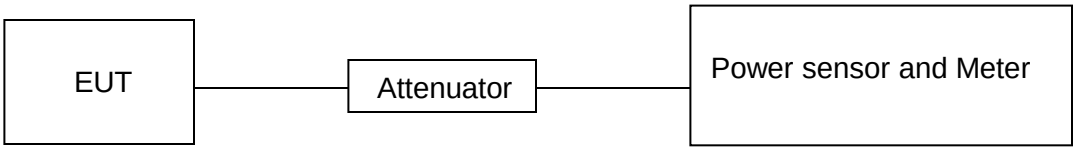
LIMITS

FCC Part15 (15.247) Subpart C			
Section	Test Item	Limit	Frequency Range (MHz)
FCC 15.247(b)(3)	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



RESULTS

8.3.1. 802.11b MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AVG)	LIMIT
	(MHz)	(dBm)		dBm
Low	2412	24.630	21.63	30
Middle	2437	24.360	21.30	30
High	2462	24.222	21.20	30

8.3.2. 802.11g MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AVG)	LIMIT
	(MHz)	(dBm)		dBm
Low	2412	26.631	17.51	30
Middle	2437	26.659	17.24	30
High	2462	26.144	17.20	30

8.3.3. 802.11n HT20 MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AVG)	LIMIT
	(MHz)	(dBm)		dBm
Low	2412	26.809	17.30	30
Middle	2437	26.637	17.01	30
High	2462	26.369	17.96	30

8.3.4. 802.11 n HT40 MODE

Test Channel	Frequency	Maximum Conducted Output Power(PK)	Maximum Conducted Output Power(AVG)	LIMIT
	(MHz)	(dBm)		dBm
Low	2422	25.123	14.99	30
Middle	2437	24.757	14.69	30
High	2452	24.703	14.66	30

8.4. POWER SPECTRAL DENSITY

LIMITS

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

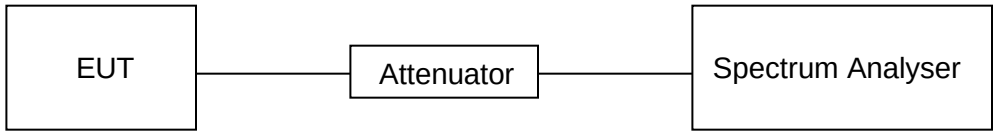
TEST PROCEDURE

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 kHz ≤ RBW 100 ≤ kHz
VBW	≥3 × RBW
Span	1.5 x 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

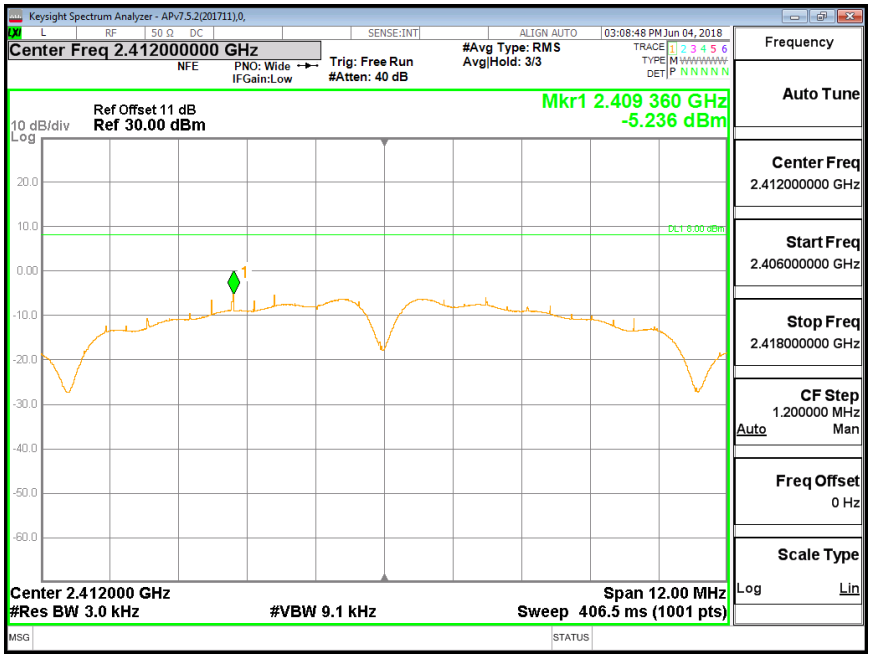


RESULTS

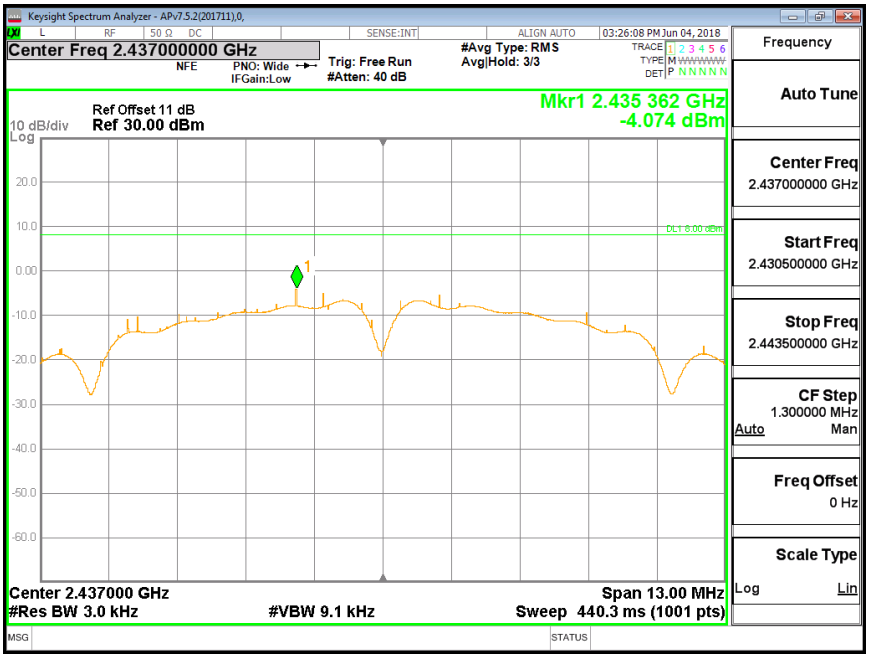
8.4.1. 802.11b MODE

Test Channel	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2412MHz	-5.236	8	PASS
Middle	2437MHz	-4.074	8	PASS
High	2462MHz	-4.608	8	PASS

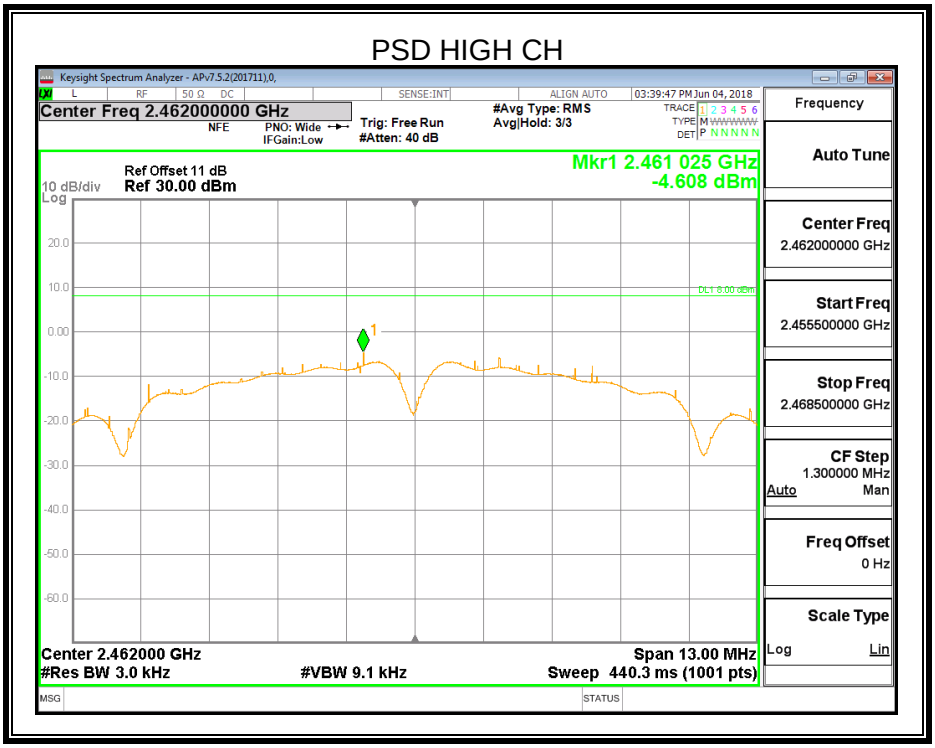
PSD LOW CH



PSD MID CH



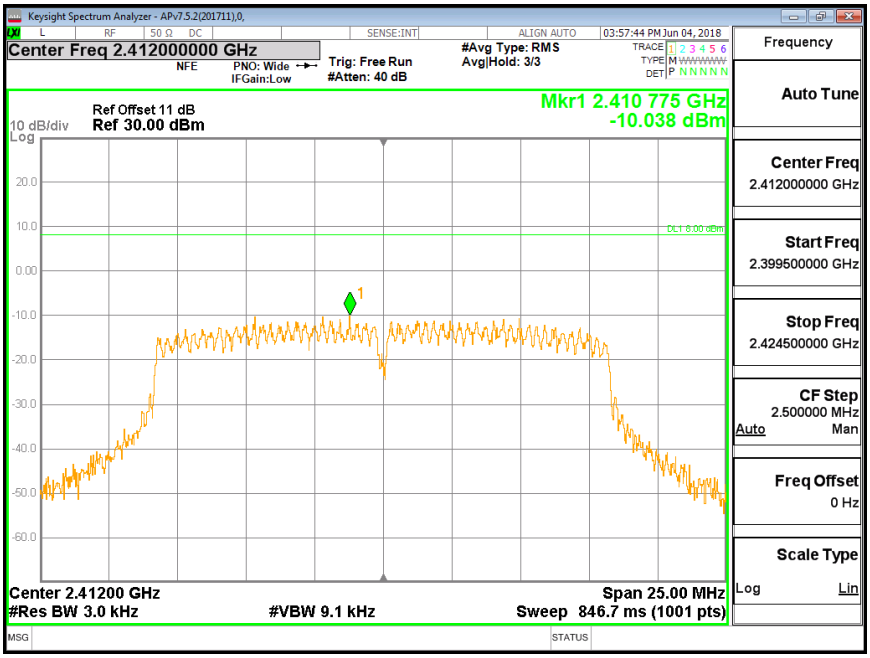
PSD HIGH CH



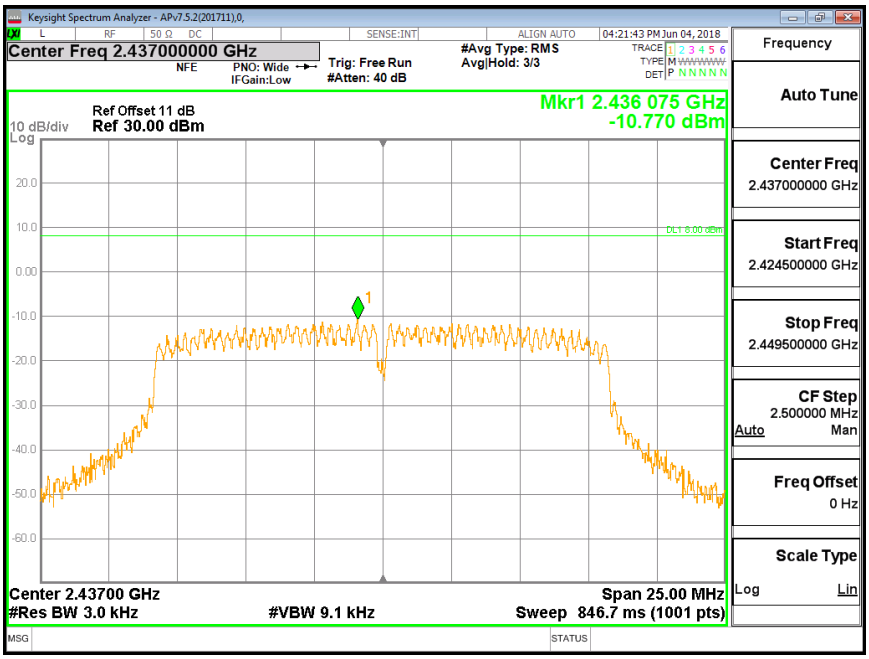
8.4.2. 802.11g MODE

Test Channel	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2412MHz	-10.038	8	PASS
Middle	2437MHz	-10.770	8	PASS
High	2462MHz	-9.764	8	PASS

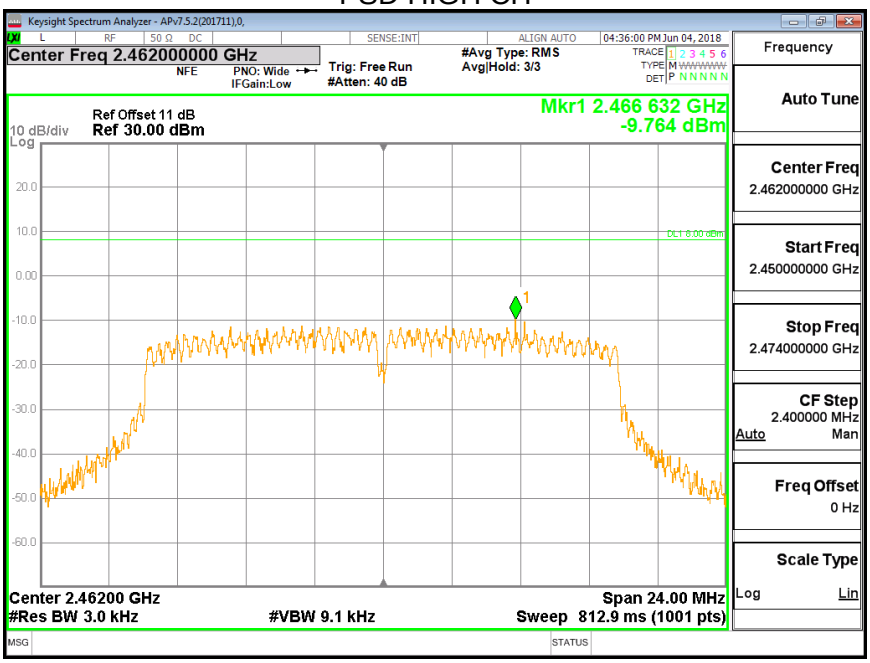
PSD LOW CH



PSD MID CH



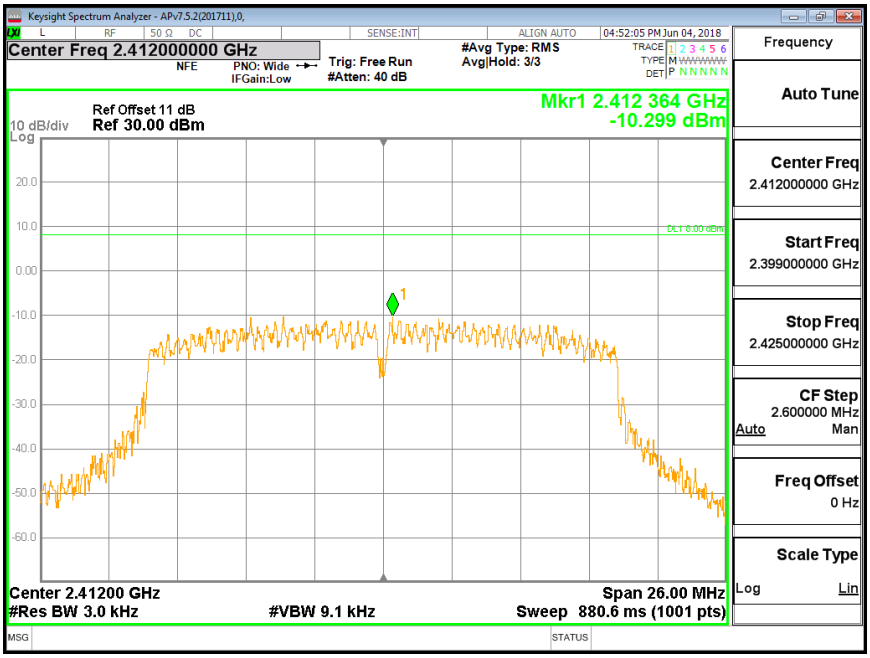
PSD HIGH CH



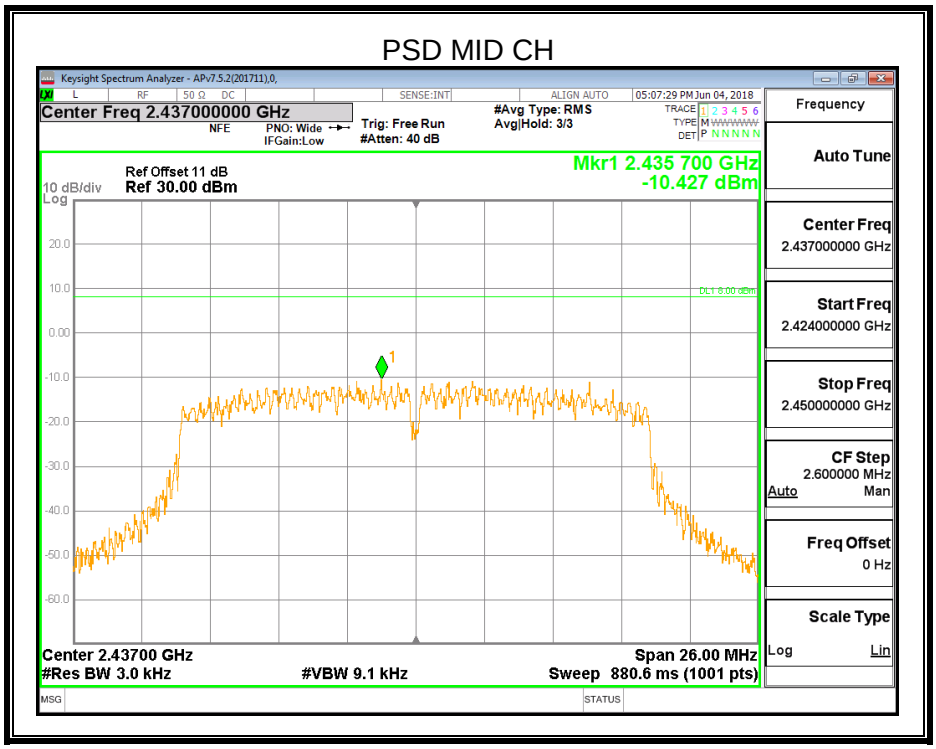
8.4.3. 802.11n HT20 MODE

Test Channel	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2412MHz	-10.299	8	PASS
Middle	2437MHz	-10.427	8	PASS
High	2462MHz	-9.999	8	PASS

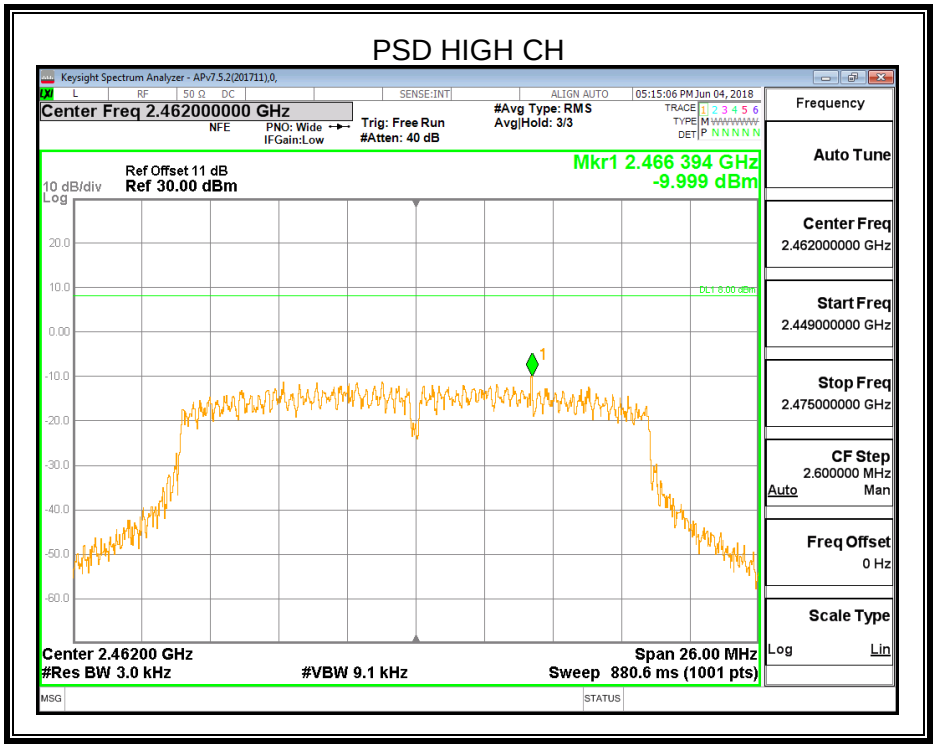
PSD LOW CH



PSD MID CH



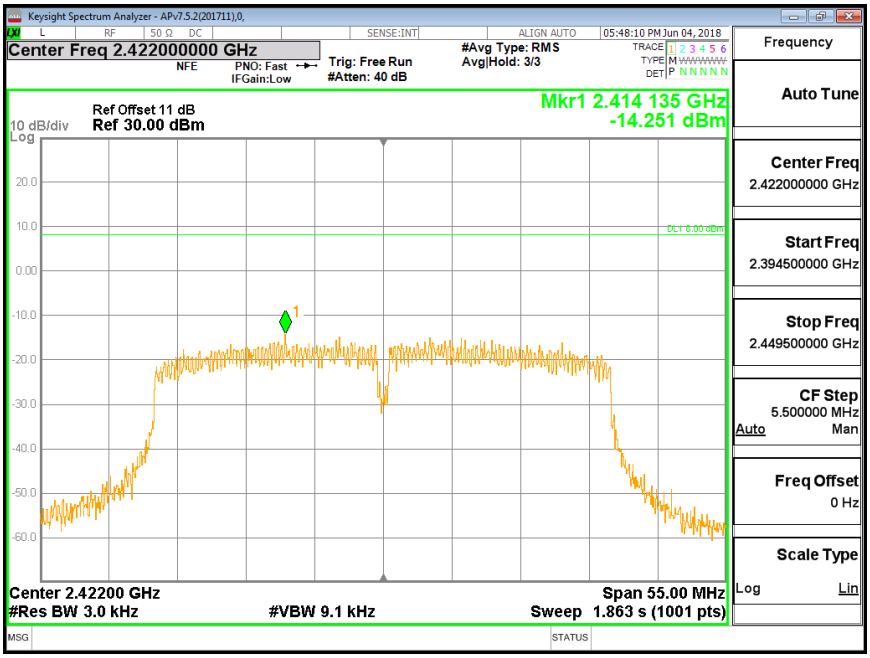
PSD HIGH CH



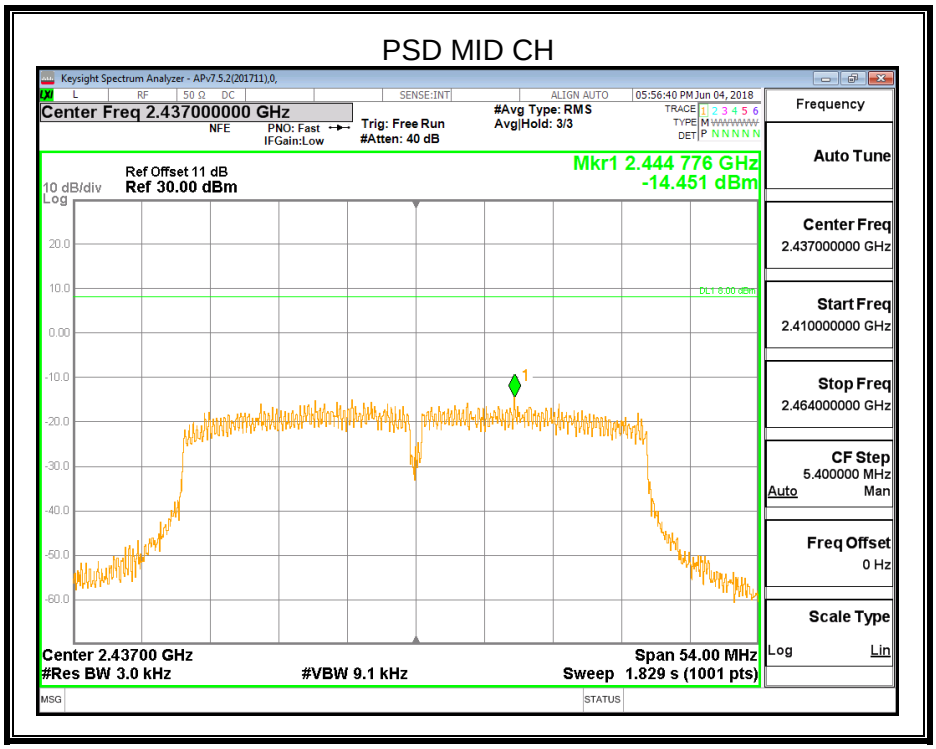
8.4.4. 802.11n HT40 MODE

Test Channel	Frequency	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Low	2422MHz	-14.251	8	PASS
Middle	2437MHz	-14.451	8	PASS
High	2452MHz	-14.125	8	PASS

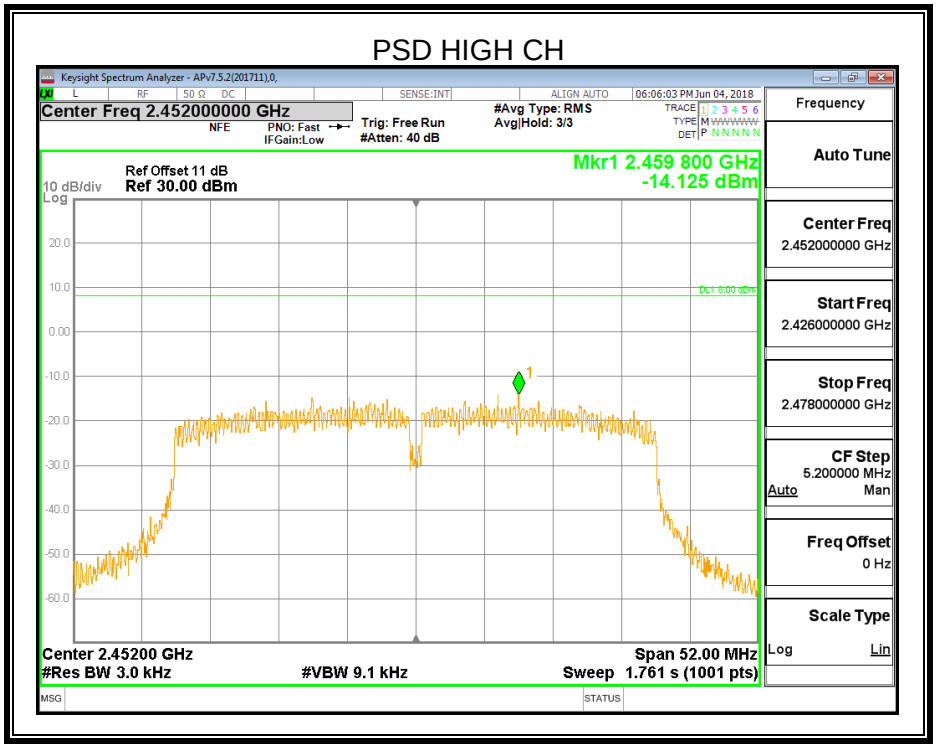
PSD LOW CH



PSD MID CH



PSD HIGH CH



8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

FCC Part15 (15.247) Subpart C		
Section	Test Item	Limit
FCC §15.247 (d)	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:

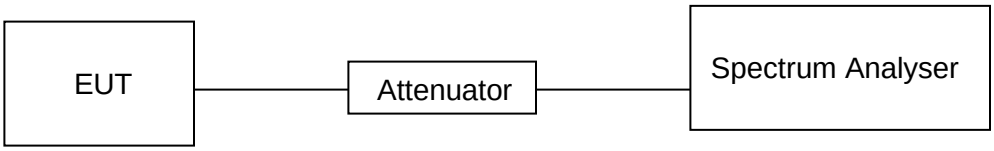
Center Frequency	The centre frequency of the channel under test
Detector	Peak
RBW	100K
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

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	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

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

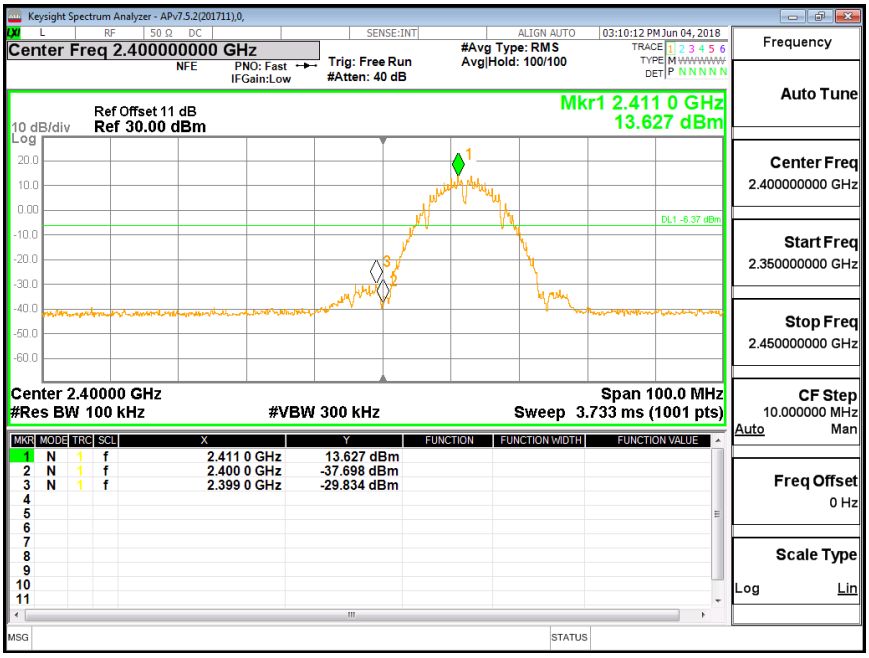
TEST SETUP



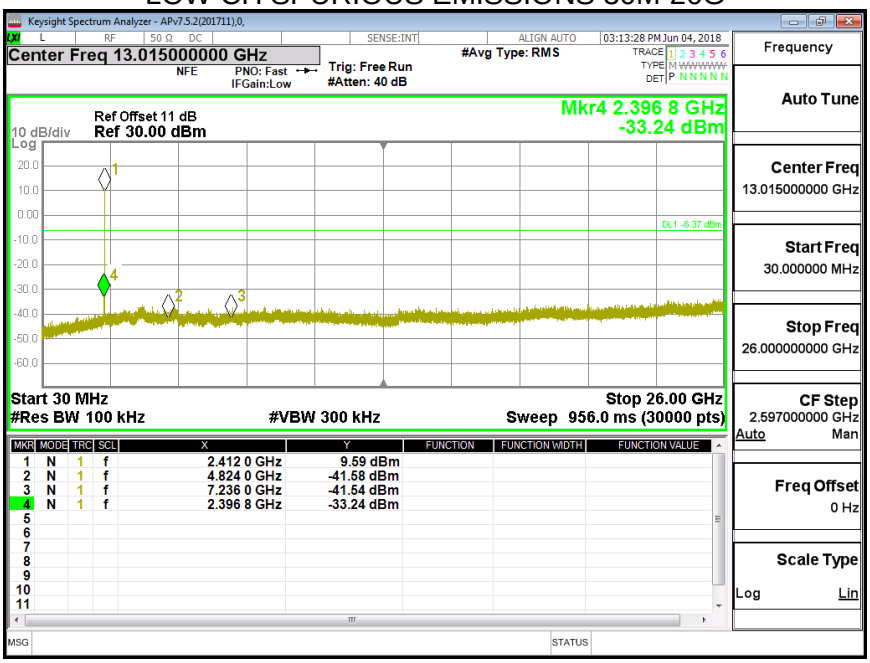
RESULTS

8.5.1. 802.11b MODE

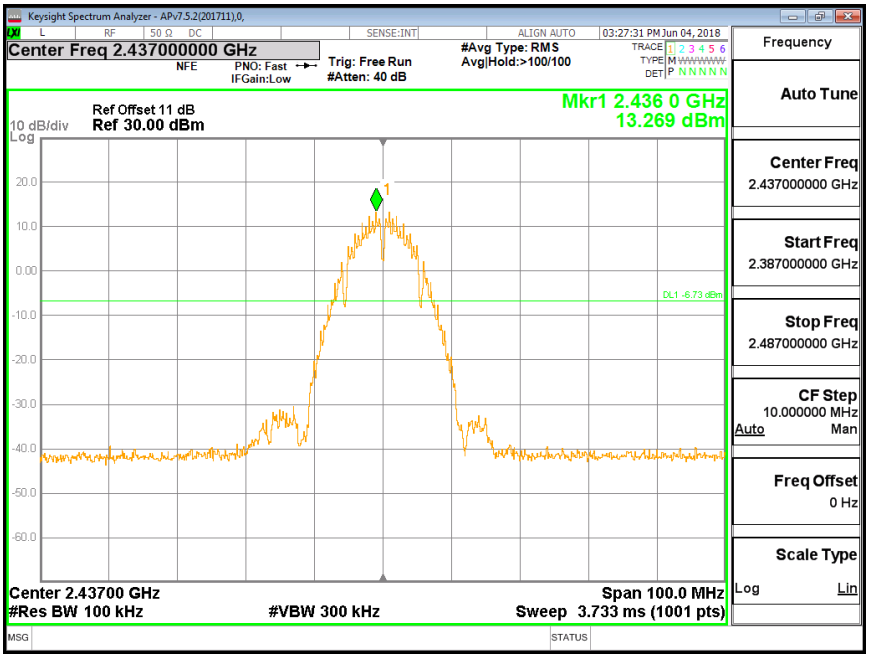
LOW CH BANDEDAGE



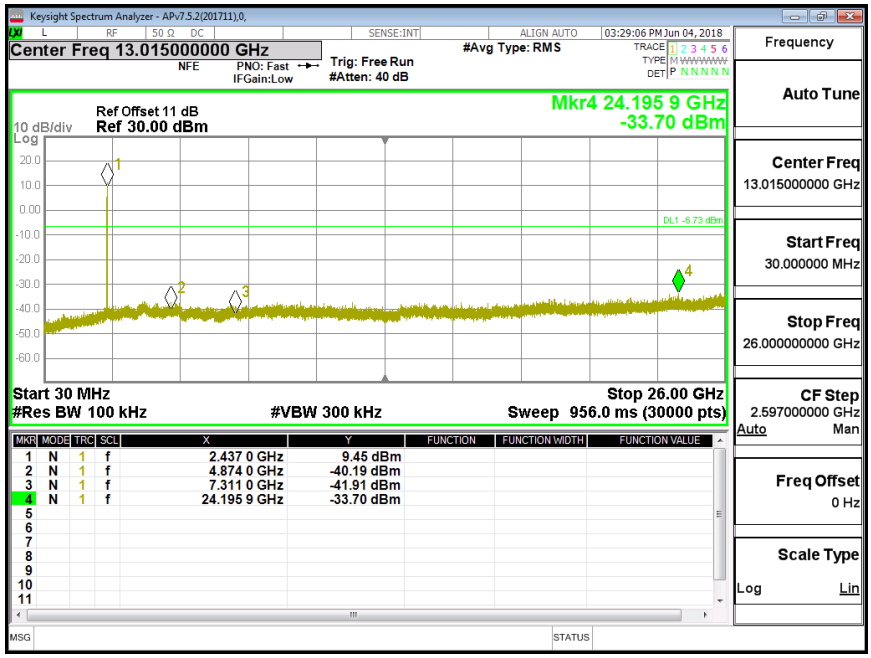
LOW CH SPURIOUS EMISSIONS 30M-26G



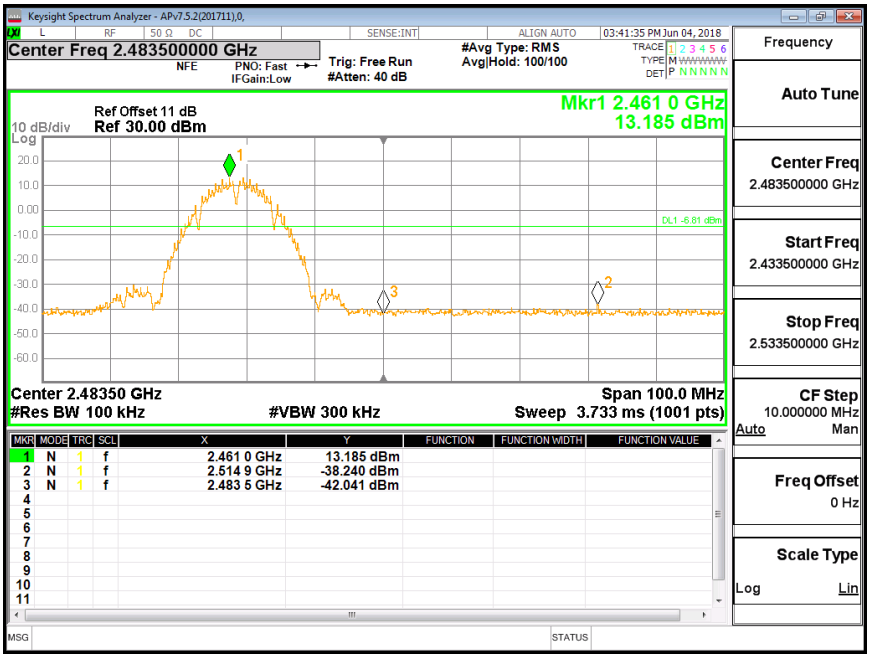
MID CH REFERENCE



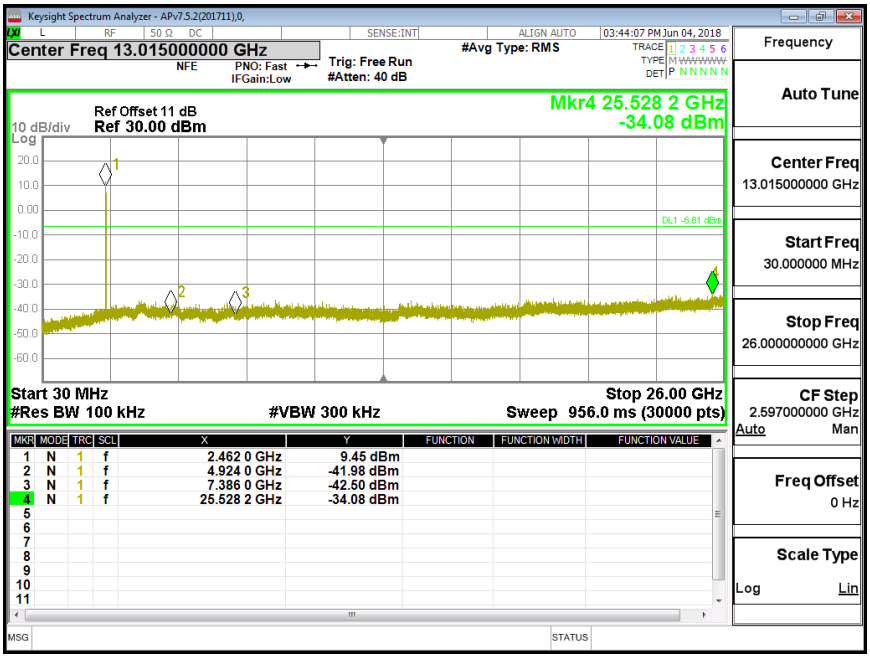
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE

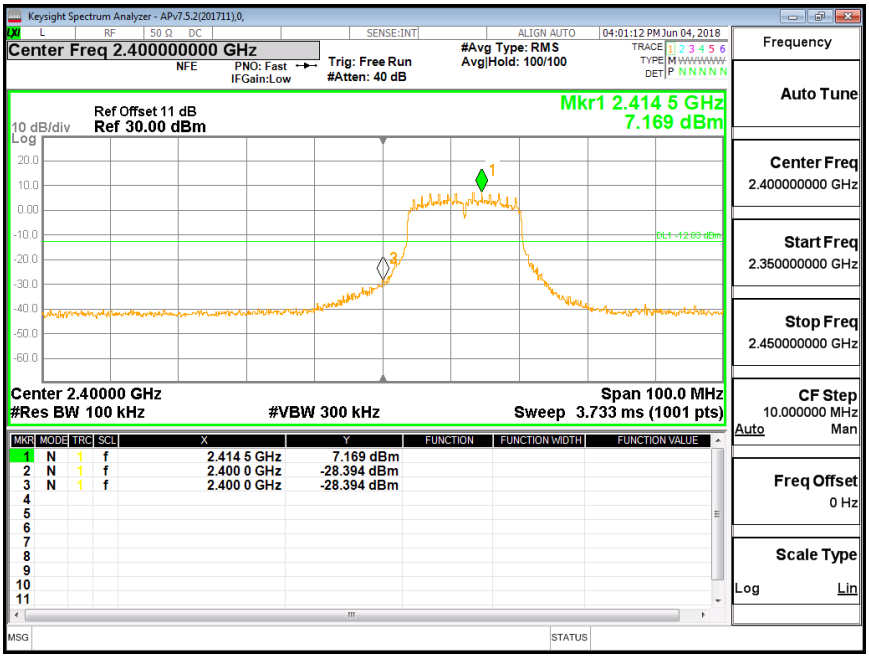


HIGH CH SPURIOUS EMISSIONS 30M-26G

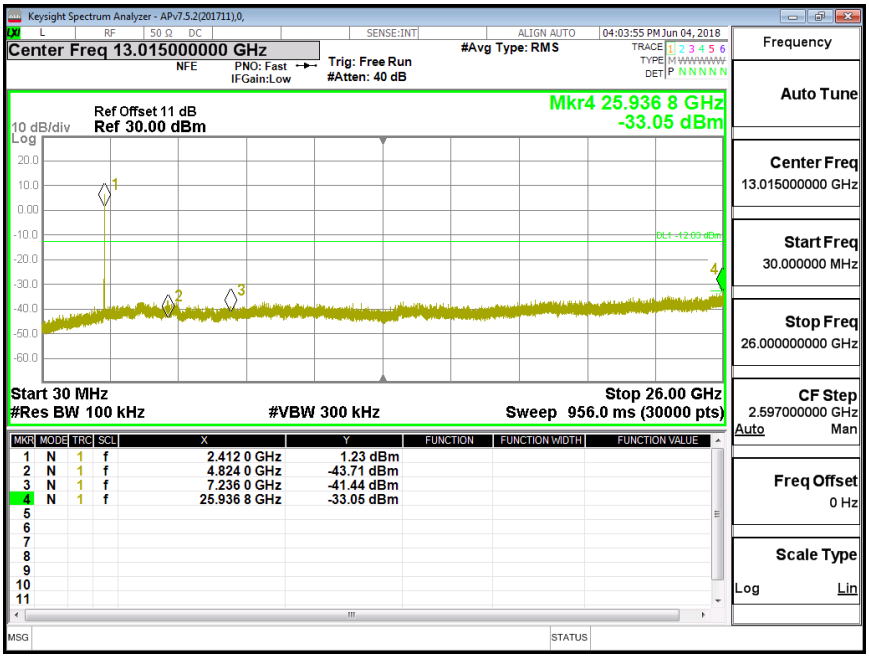


8.5.1. 802.11g MODE

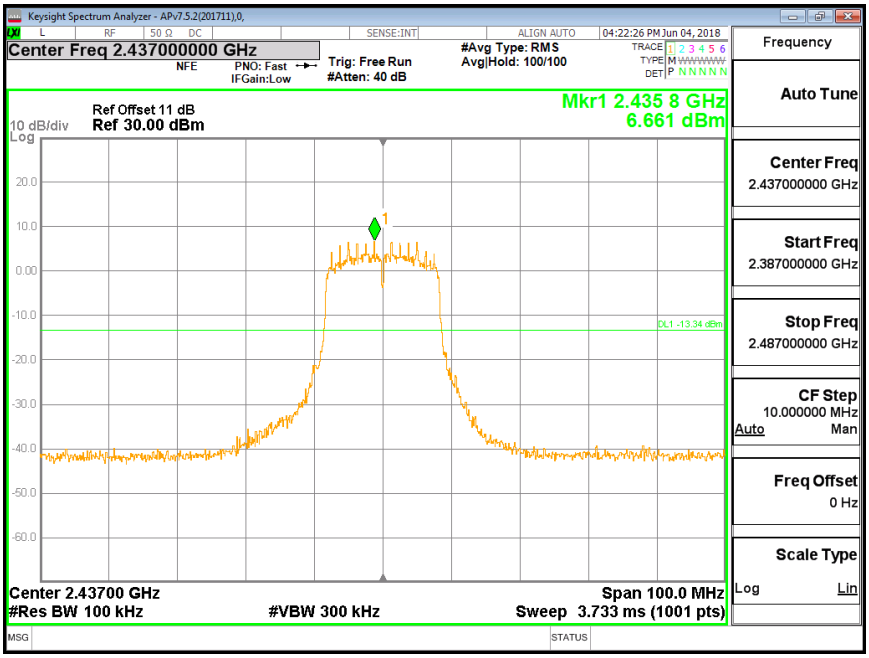
LOW CH BANDEDAGE



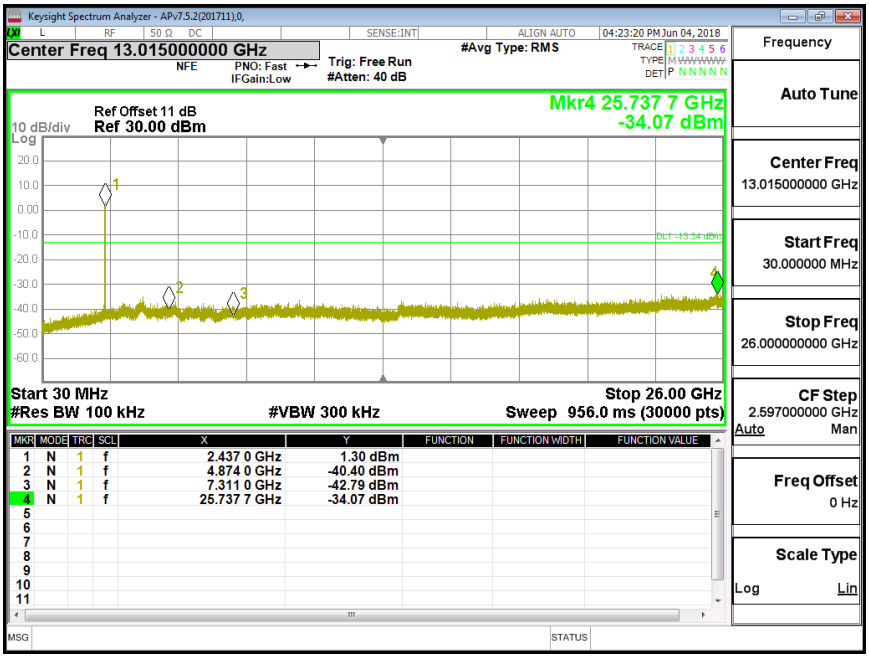
LOW CH SPURIOUS EMISSIONS 30M-26G



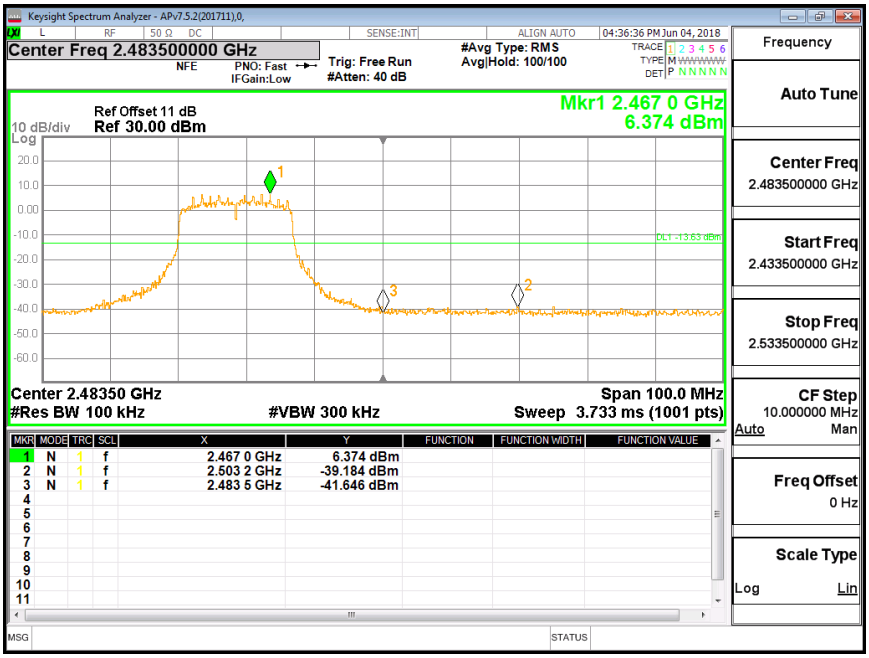
MID CH REFERENCE



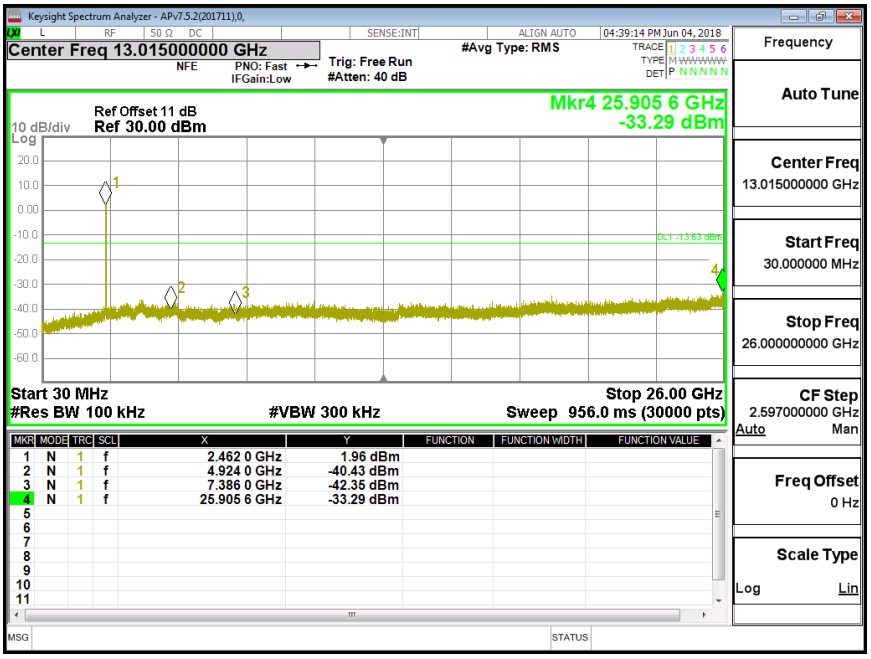
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE

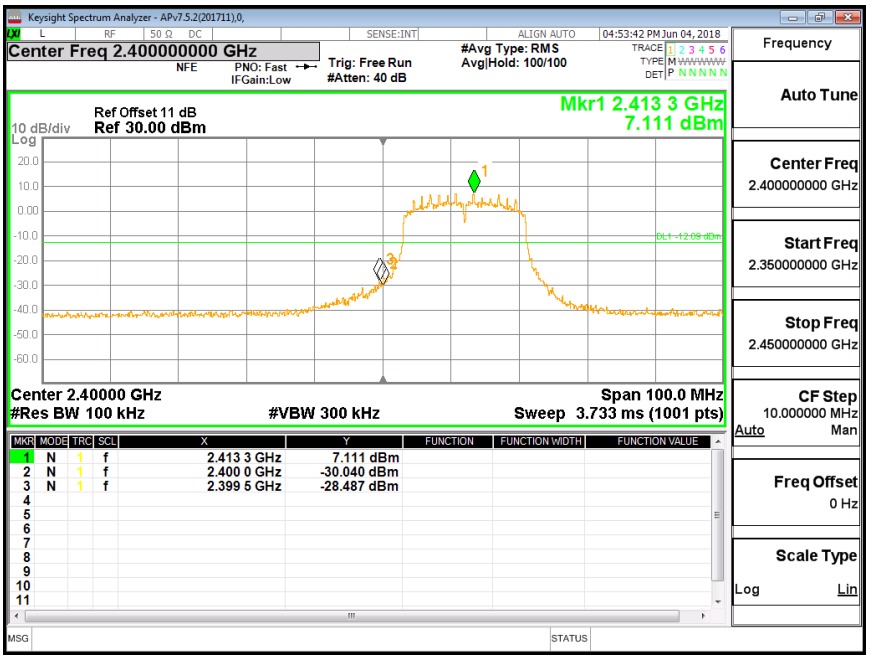


HIGH CH SPURIOUS EMISSIONS 30M-26G

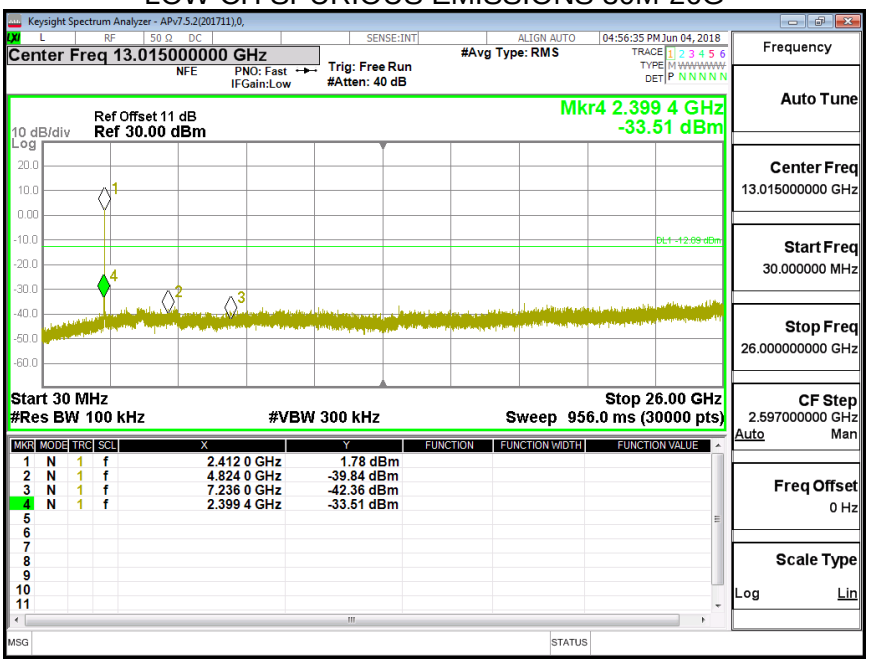


8.5.2. 802.11n HT20 MODE

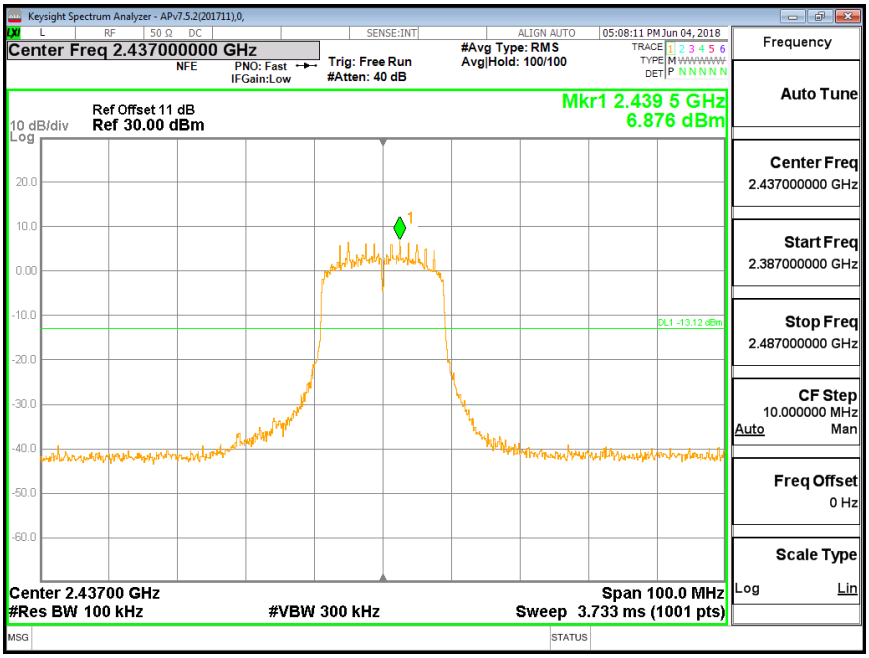
LOW CH BANDEDAGE



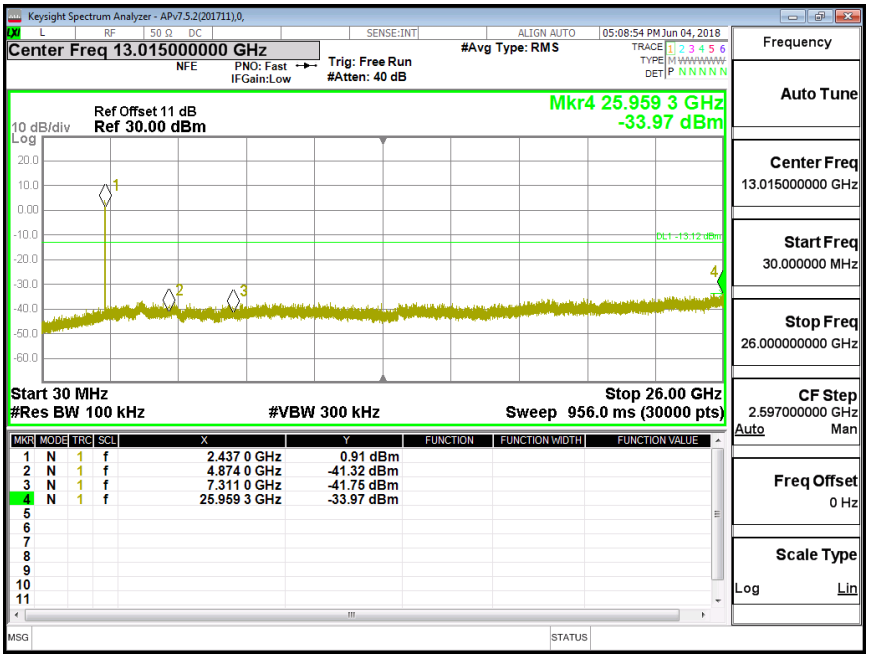
LOW CH SPURIOUS EMISSIONS 30M-26G



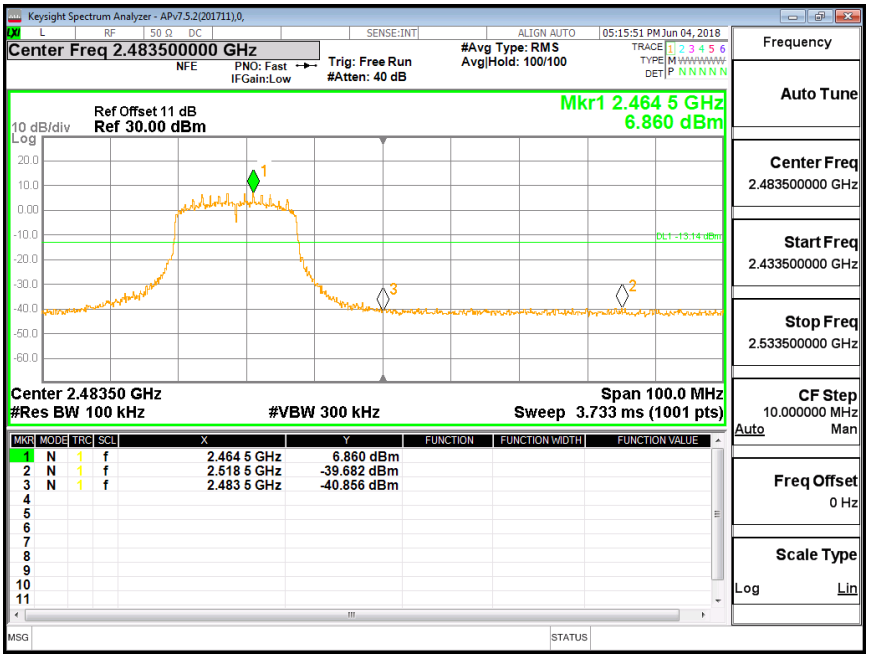
MID CH REFERENCE



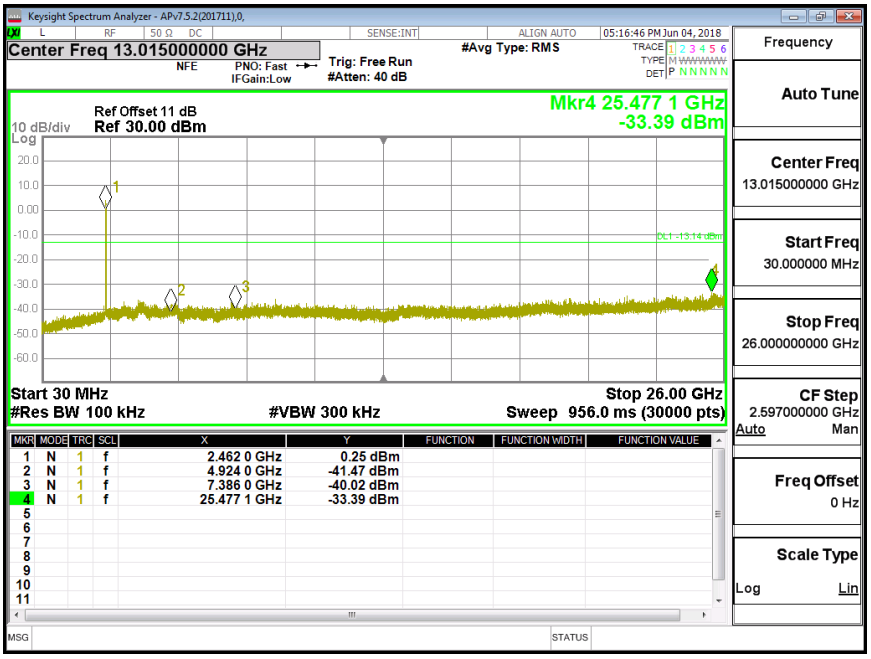
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE

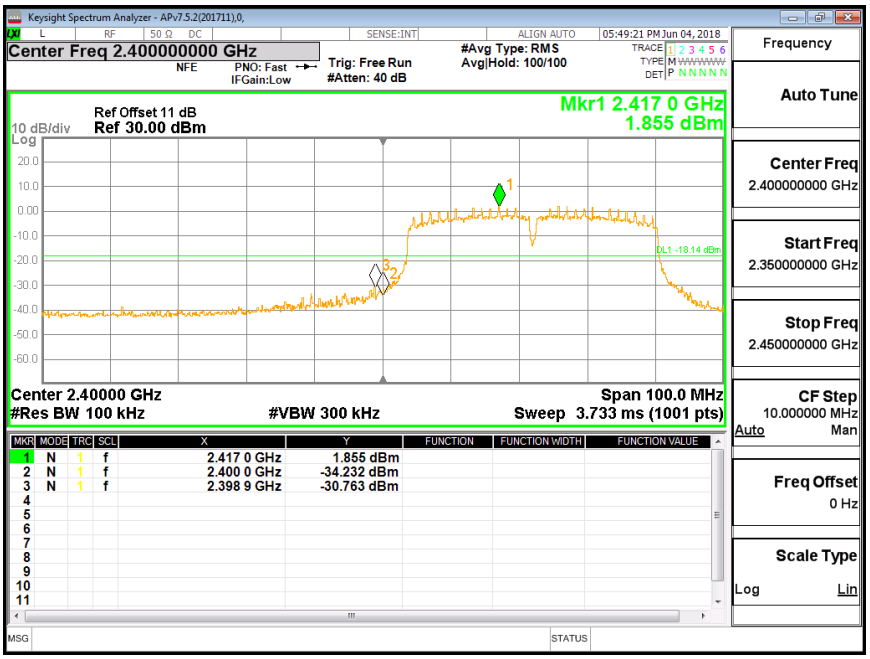


HIGH CH SPURIOUS EMISSIONS 30M-26G

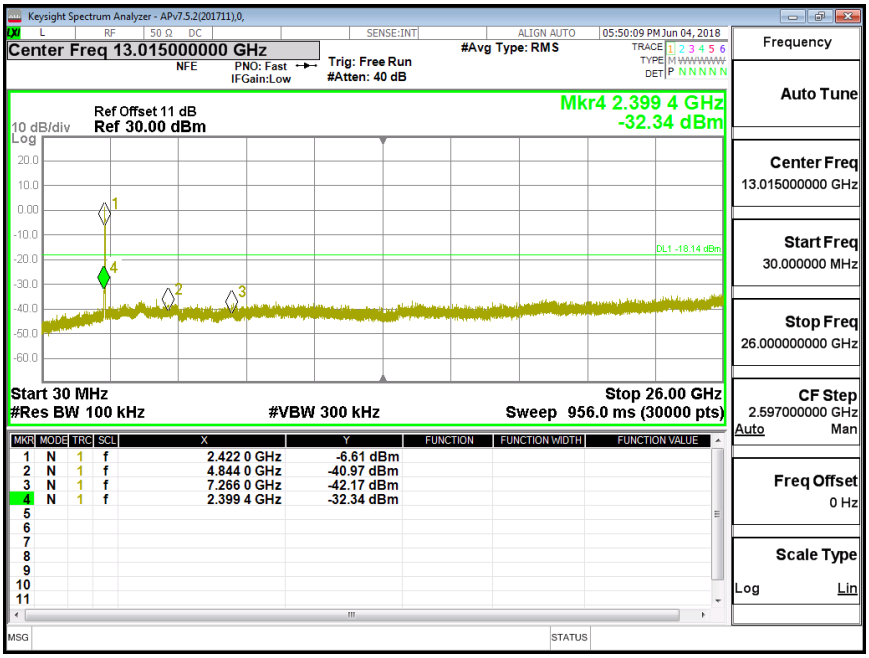


8.5.3. 802.11n HT40 MODE

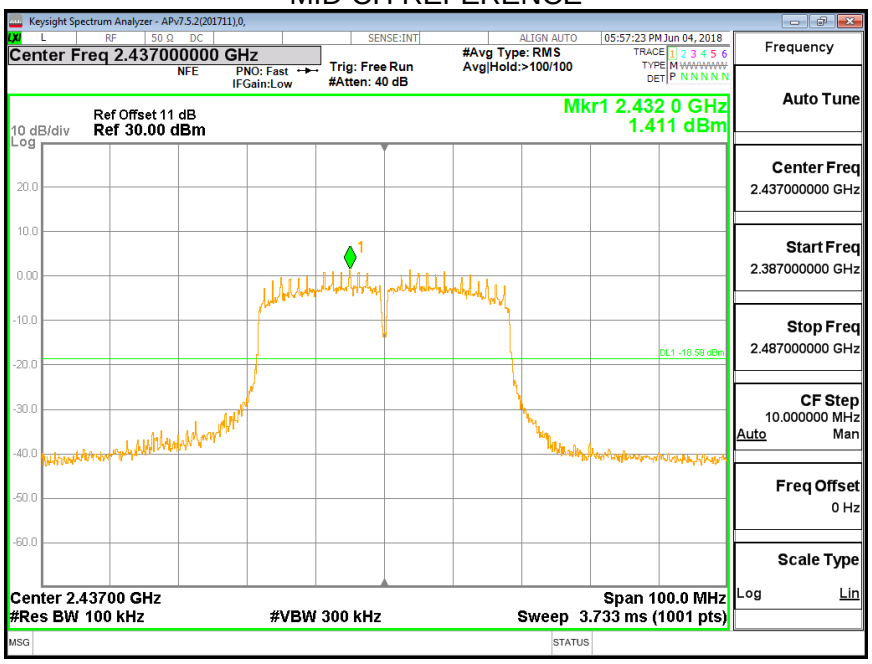
LOW CH BANDEDAGE



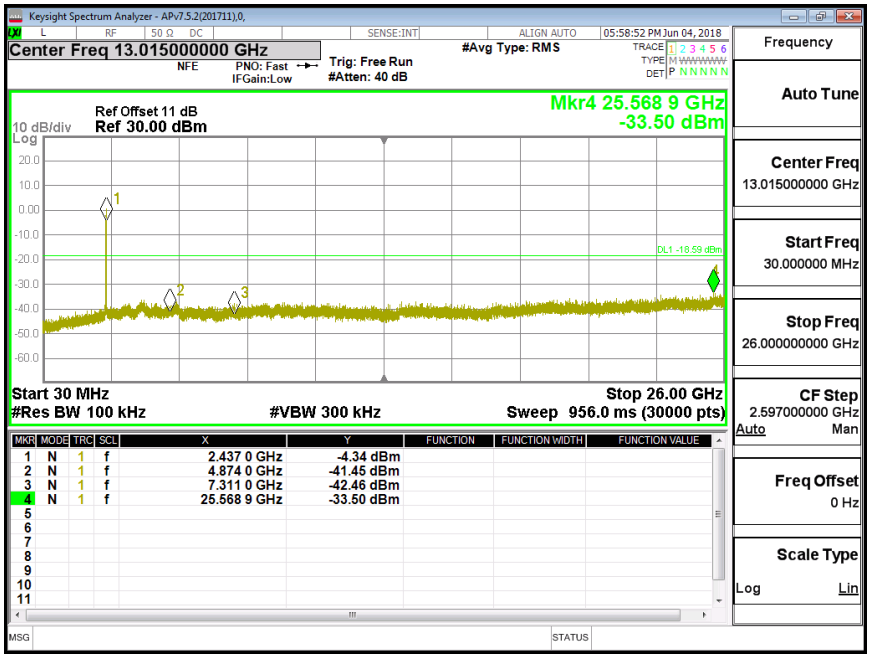
LOW CH SPURIOUS EMISSIONS 30M-26G



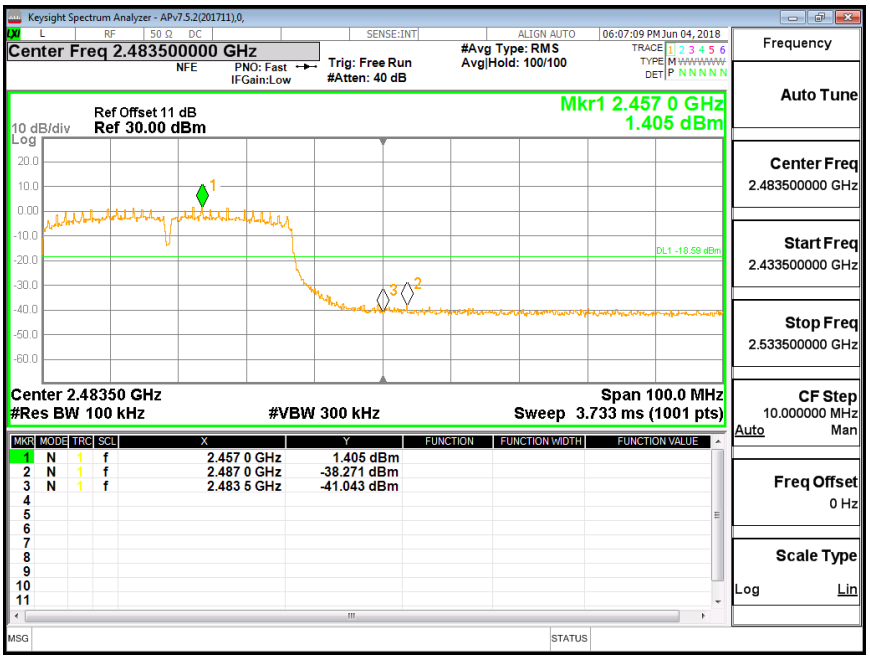
MID CH REFERENCE



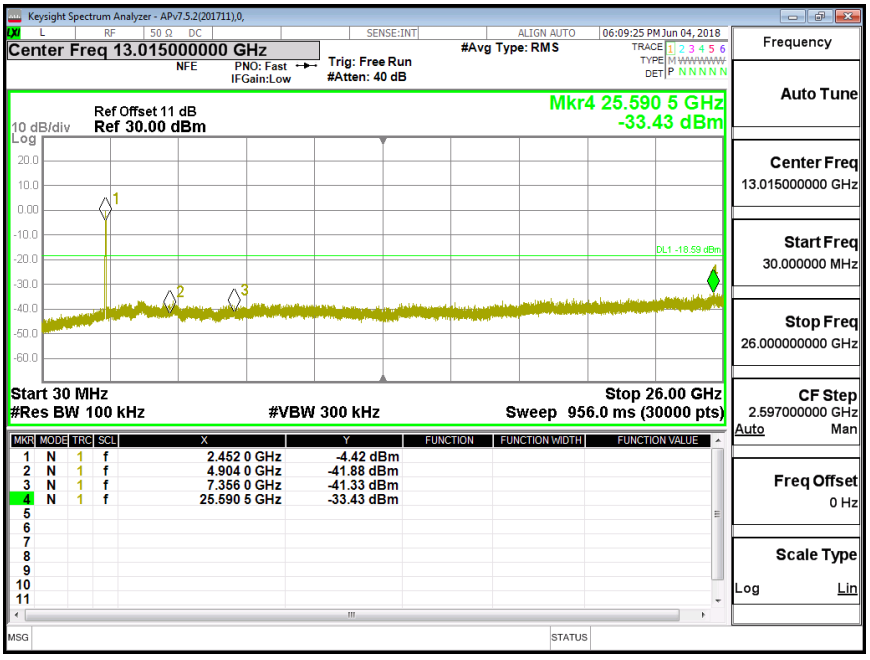
MID CH SPURIOUS EMISSIONS 30M-26G



HIGH CH BANDEDAGE



HIGH CH SPURIOUS EMISSIONS 30M-26G



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

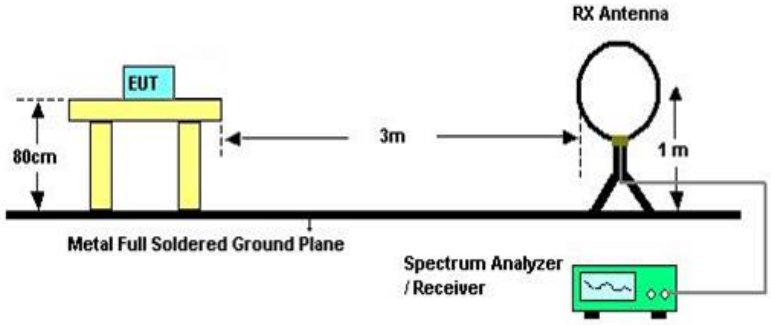
Restricted bands of operation

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: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 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 and 414788 D01 Radiated Test Site v01.

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 80cm meter above ground.

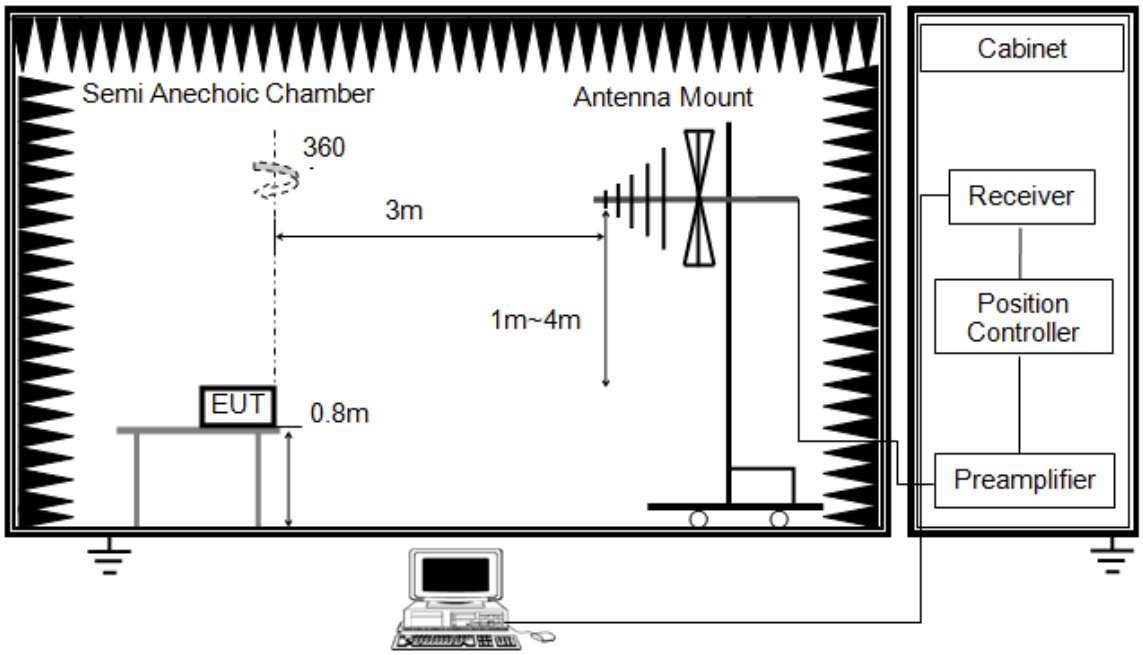
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. 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.

7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are 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.

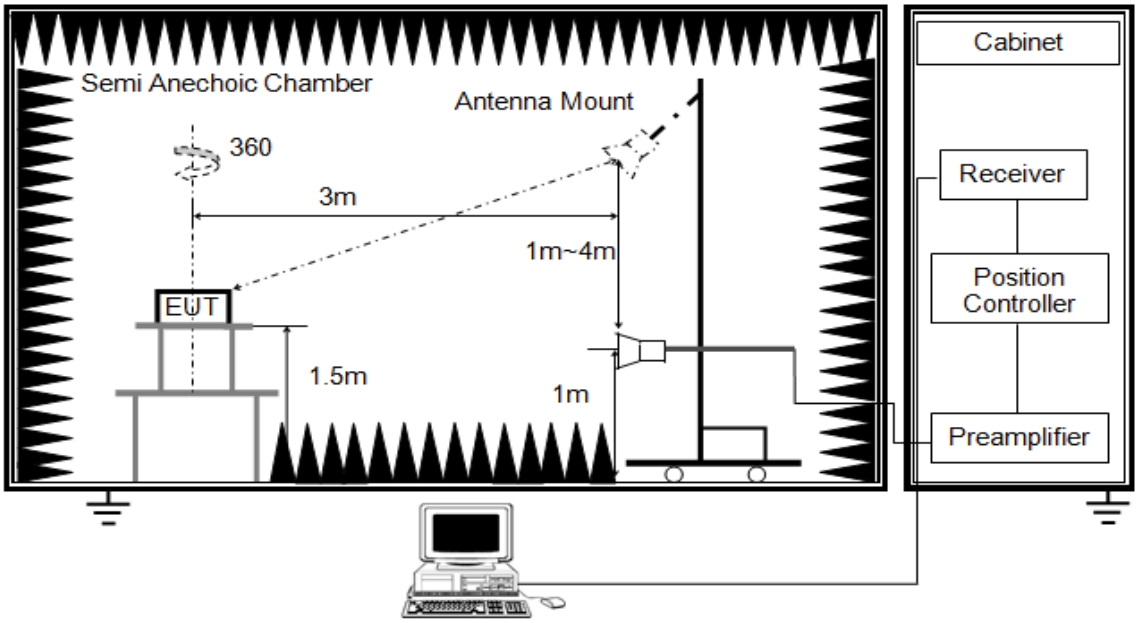
3. The EUT was placed on a turntable with 0.8 meter above ground.

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.

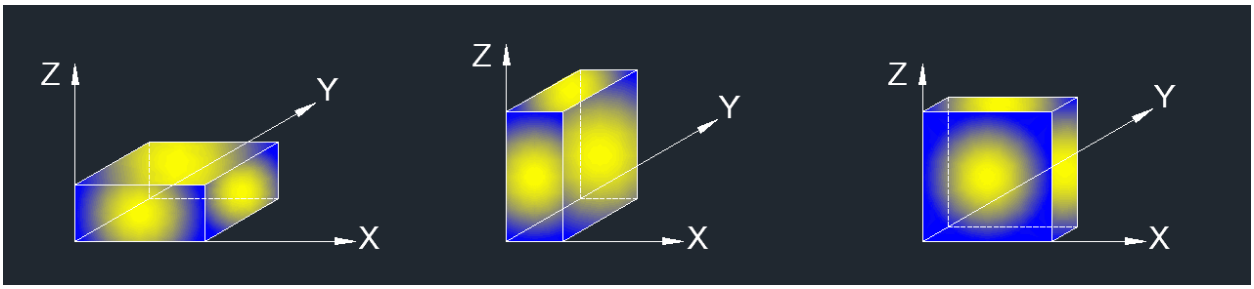
3. The EUT was placed on a turntable with 1.5m above ground.

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 the Duty Cycle please refer to clause 8.1.ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: All the EUT's emissions had been evaluated for simultaneous transmission with the other 2.4GHz (SRD), 5GHz and 915MHz transmitter and there were no any additional or worse emissions found.

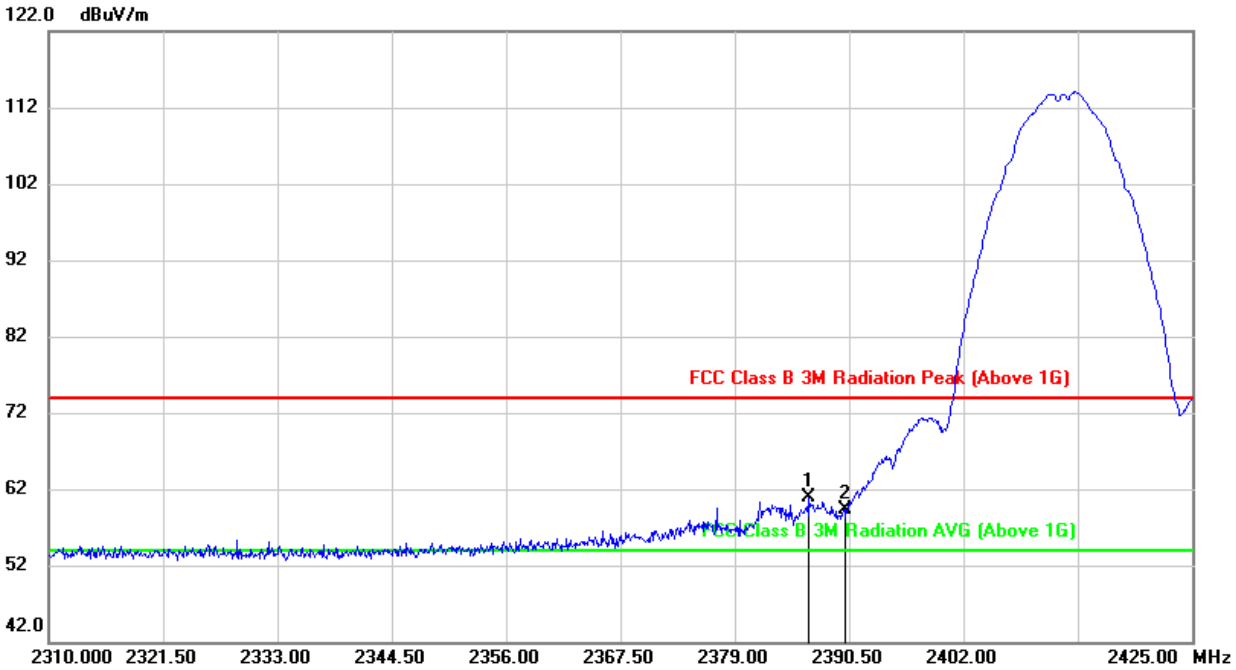
Note 3: For all radiated measurements, EUT was worked in stand-alone mode but it can simulated the communication between PC and the accessories through software.

9.1. RESTRICTED BANDEDGE

9.1.1. 802.11b MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

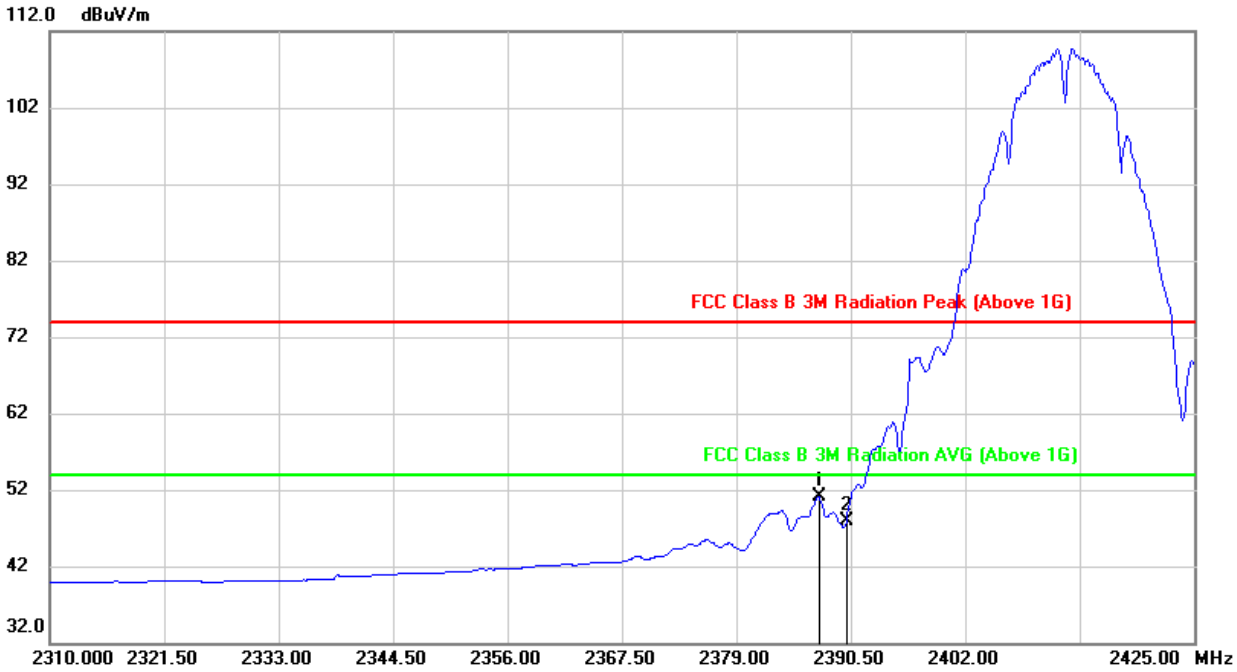


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.475	27.71	33.17	60.88	74.00	-13.12	peak
2	2390.000	26.25	33.14	59.39	74.00	-14.61	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

AVG

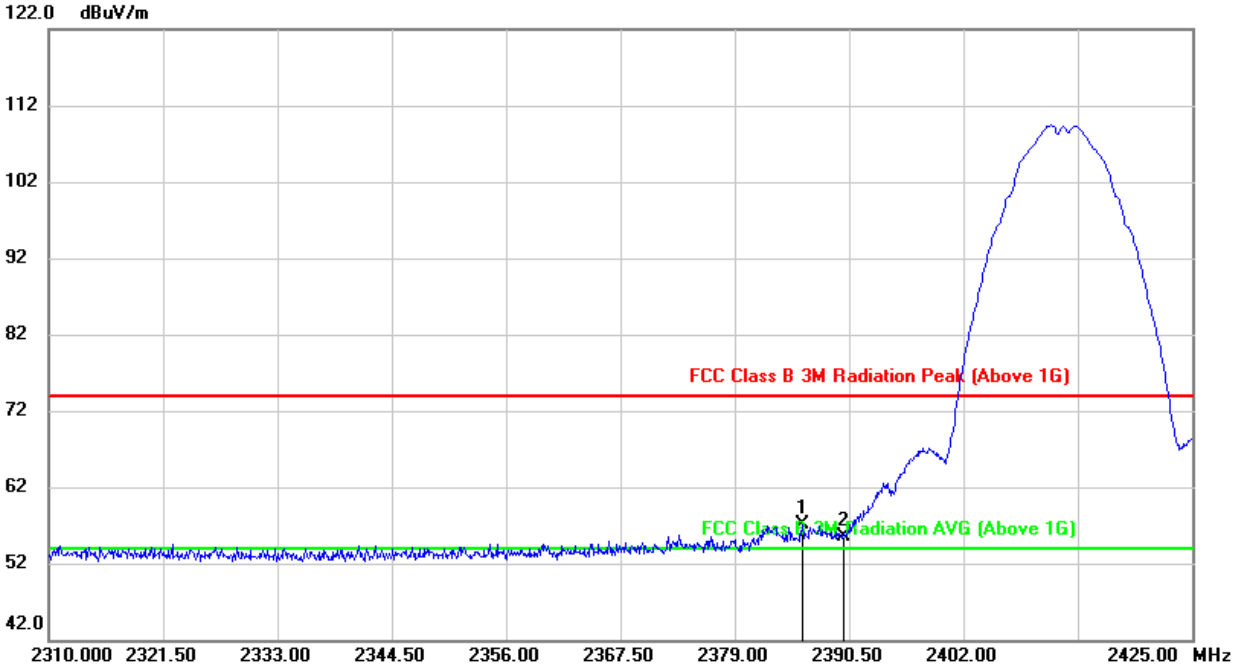


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.280	17.86	33.16	51.02	54.00	-2.98	AVG
2	2390.000	14.78	33.14	47.92	54.00	-6.08	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

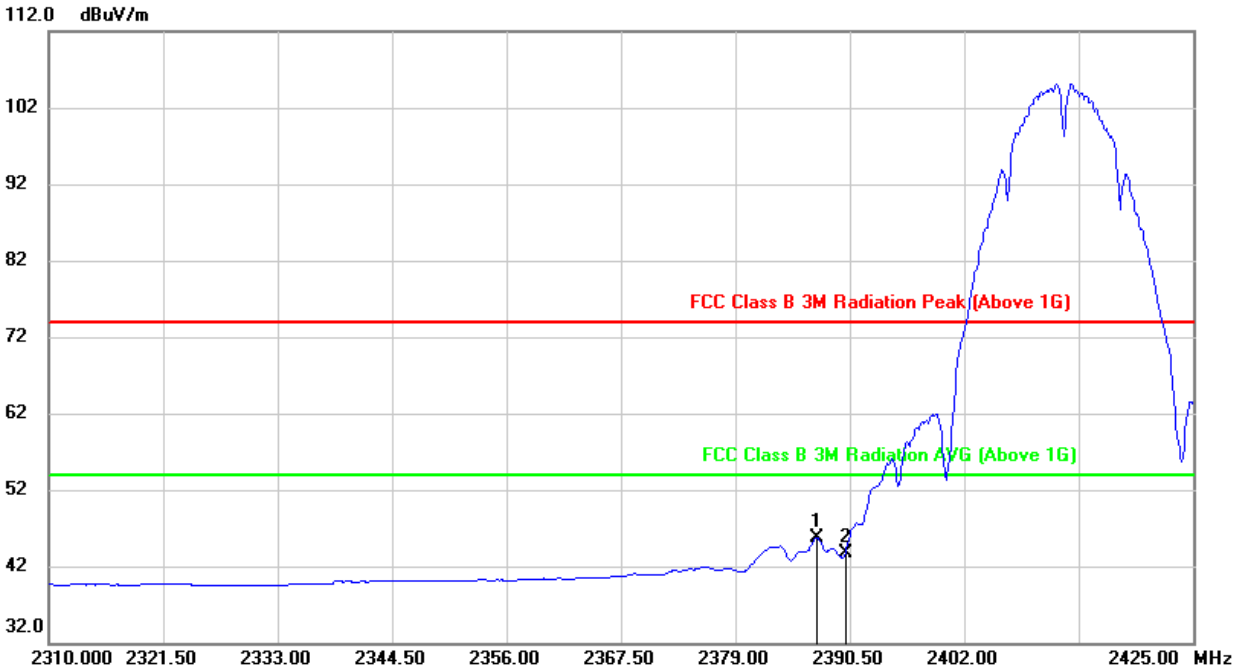


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2385.785	23.87	33.27	57.14	74.00	-16.86	peak
2	2390.000	22.32	33.24	55.56	74.00	-18.44	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

AVG

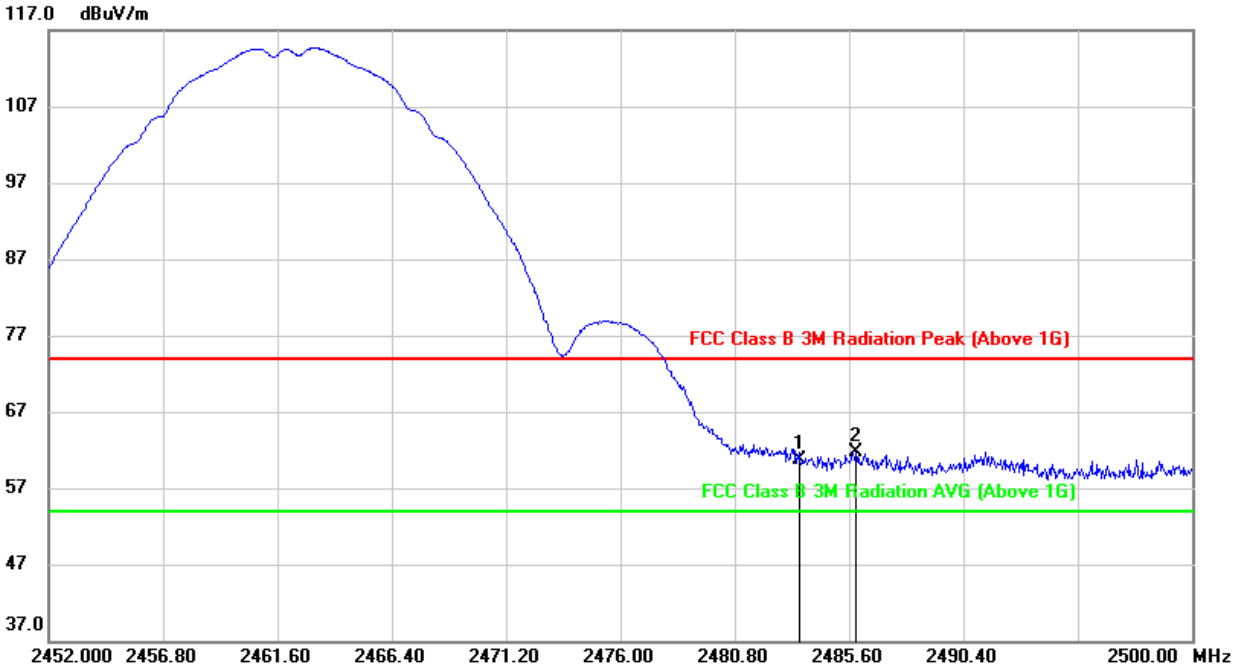


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.165	12.54	33.26	45.80	54.00	-8.20	AVG
2	2390.000	10.49	33.24	43.73	54.00	-10.27	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK

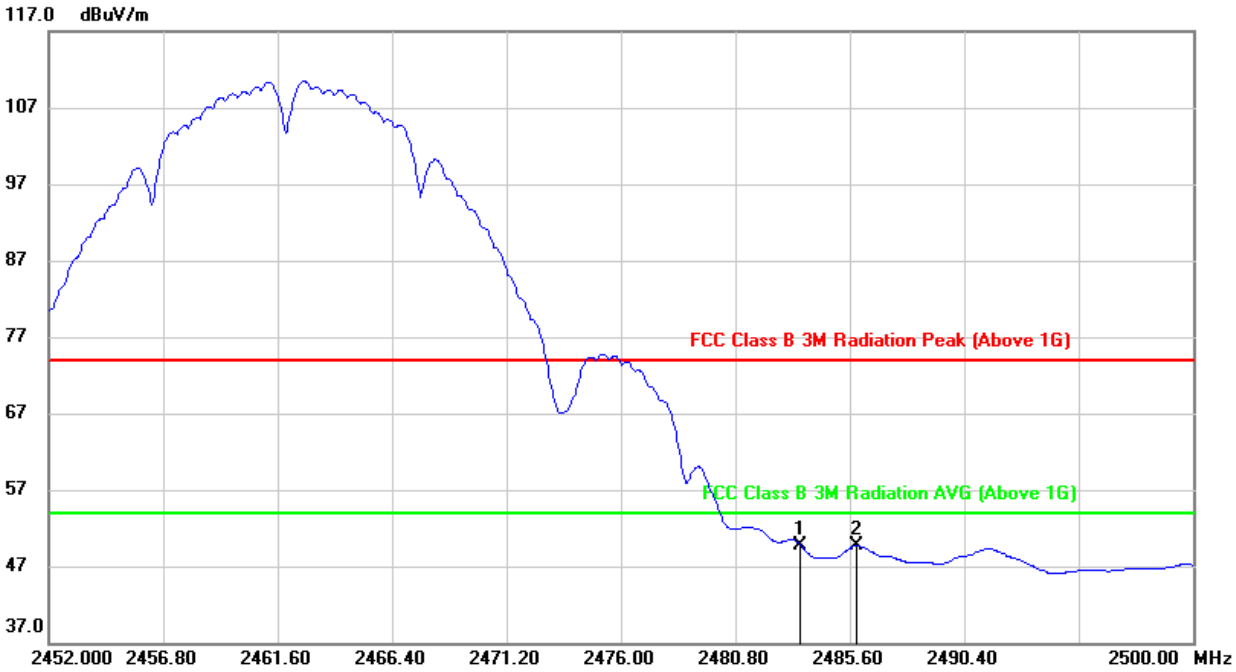


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	27.94	32.78	60.72	74.00	-13.28	peak
2	2485.888	28.84	32.79	61.63	74.00	-12.37	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

AVG

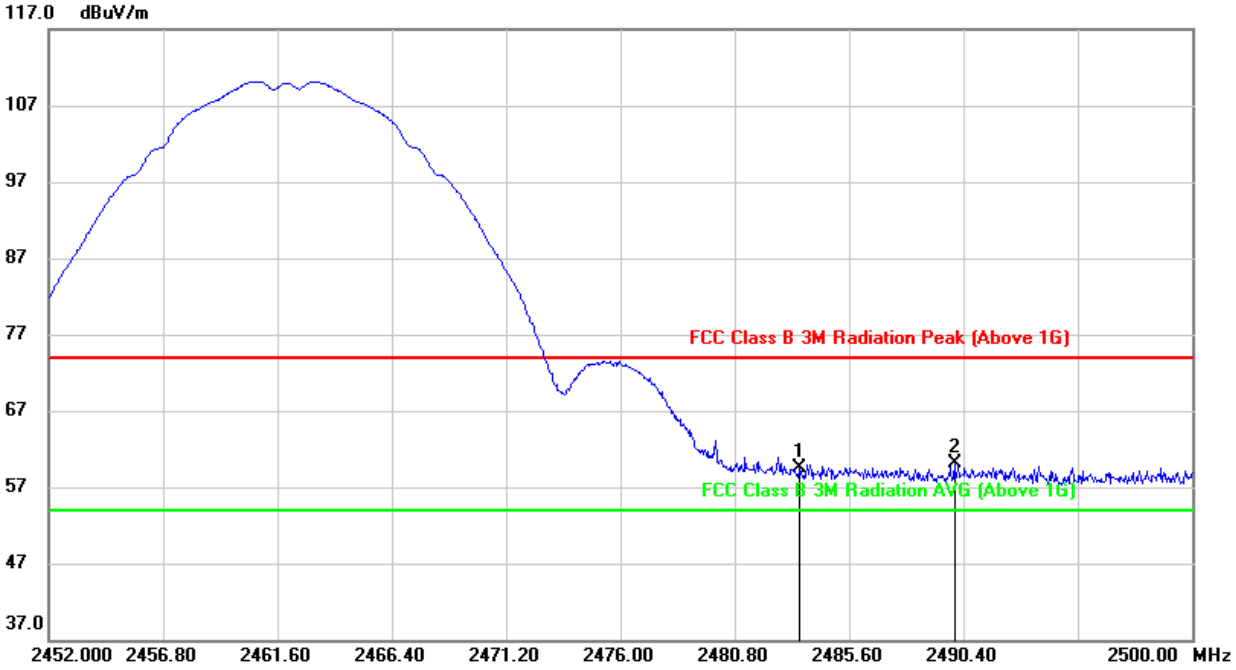


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	16.99	32.78	49.77	54.00	-4.23	AVG
2	2485.888	16.90	32.79	49.69	54.00	-4.31	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK

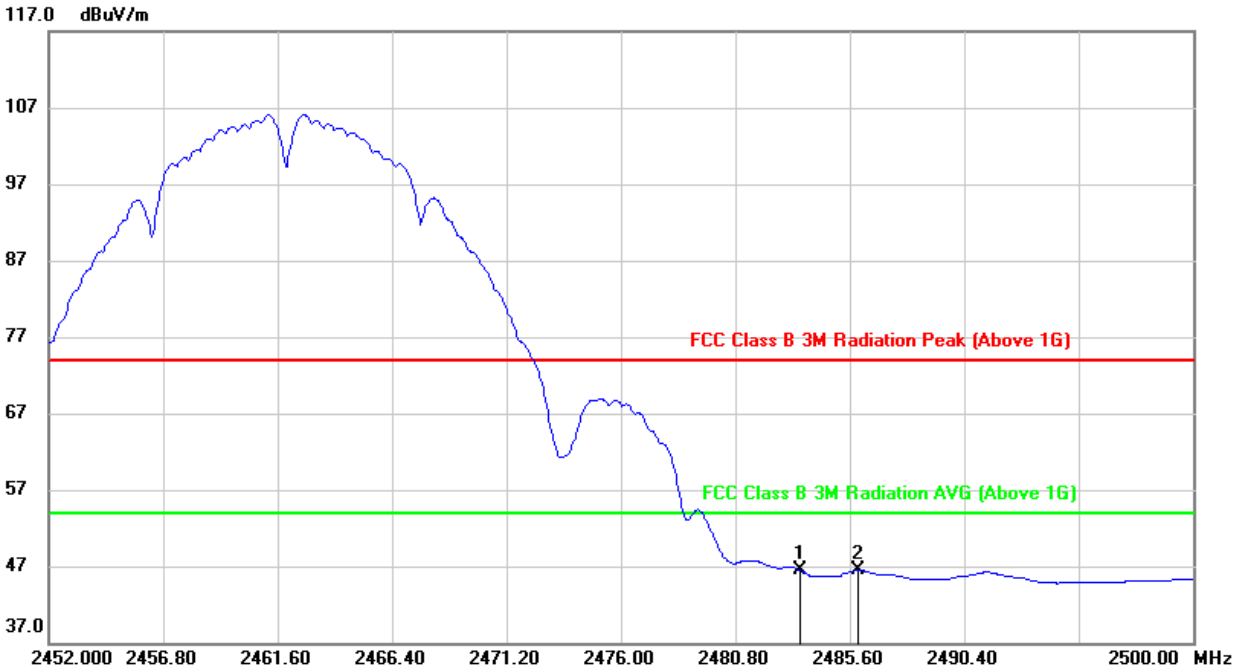


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	26.54	32.88	59.42	74.00	-14.58	peak
2	2490.016	27.14	32.88	60.02	74.00	-13.98	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

AVG



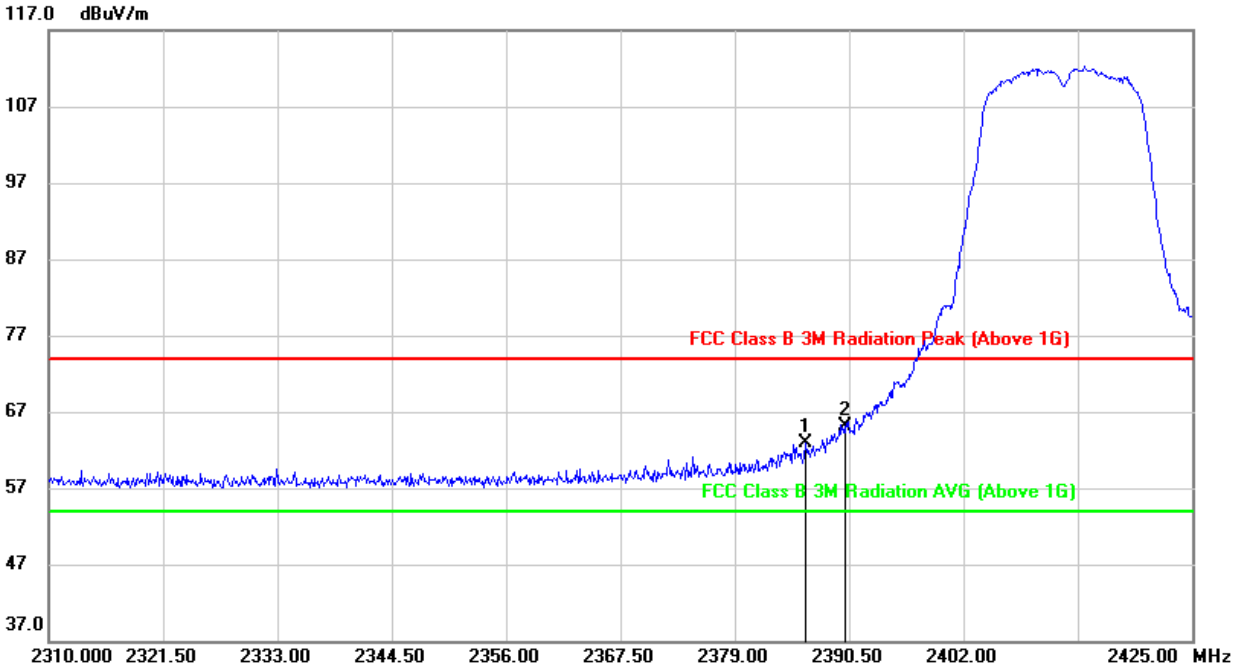
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	13.55	32.88	46.43	54.00	-7.57	AVG
2	2485.936	13.59	32.89	46.48	54.00	-7.52	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

9.1.2. 802.11g MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

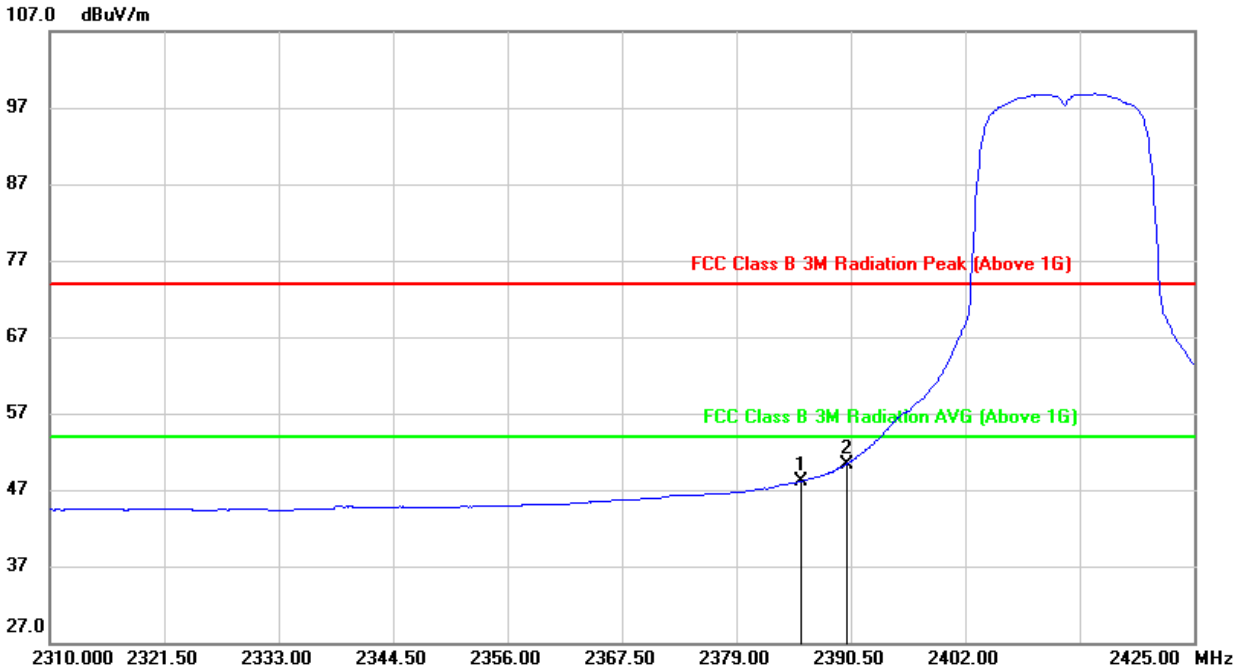


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.130	29.65	33.17	62.82	74.00	-11.18	peak
2	2390.000	31.94	33.14	65.08	74.00	-8.92	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

AVG

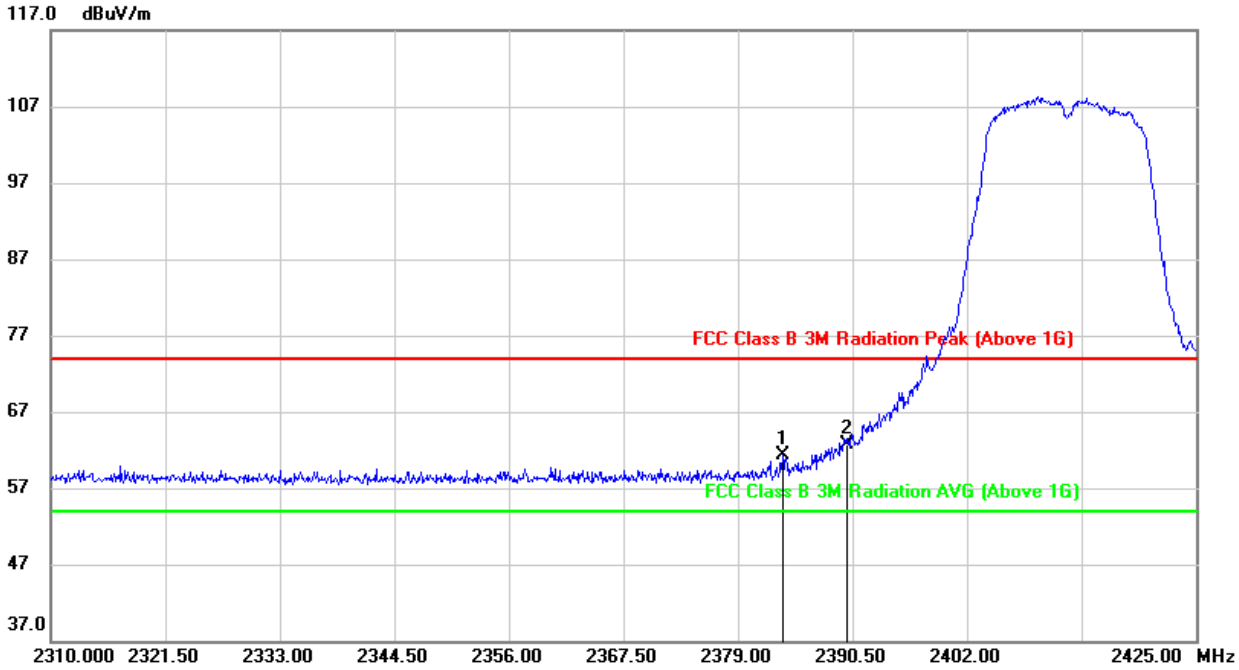


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2385.325	14.88	33.18	48.06	54.00	-5.94	AVG
2	2390.000	17.22	33.14	50.36	54.00	-3.64	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.5K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

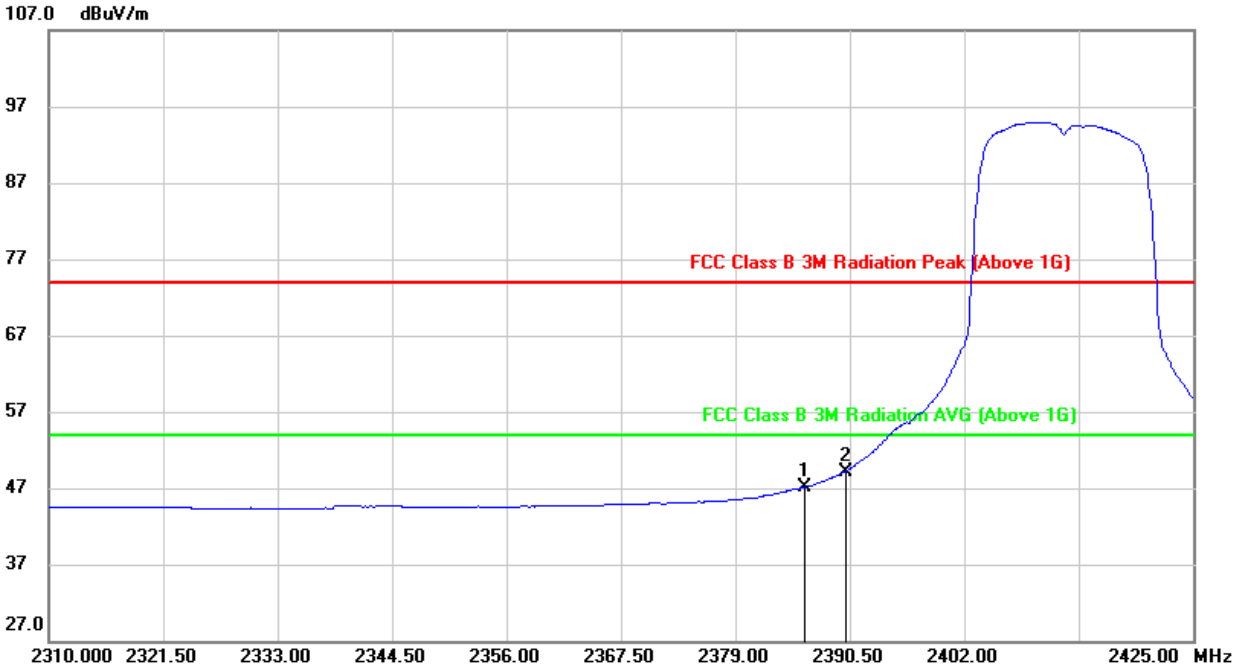


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2383.485	28.10	33.29	61.39	74.00	-12.61	peak
2	2390.000	29.41	33.24	62.65	74.00	-11.35	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

AVG

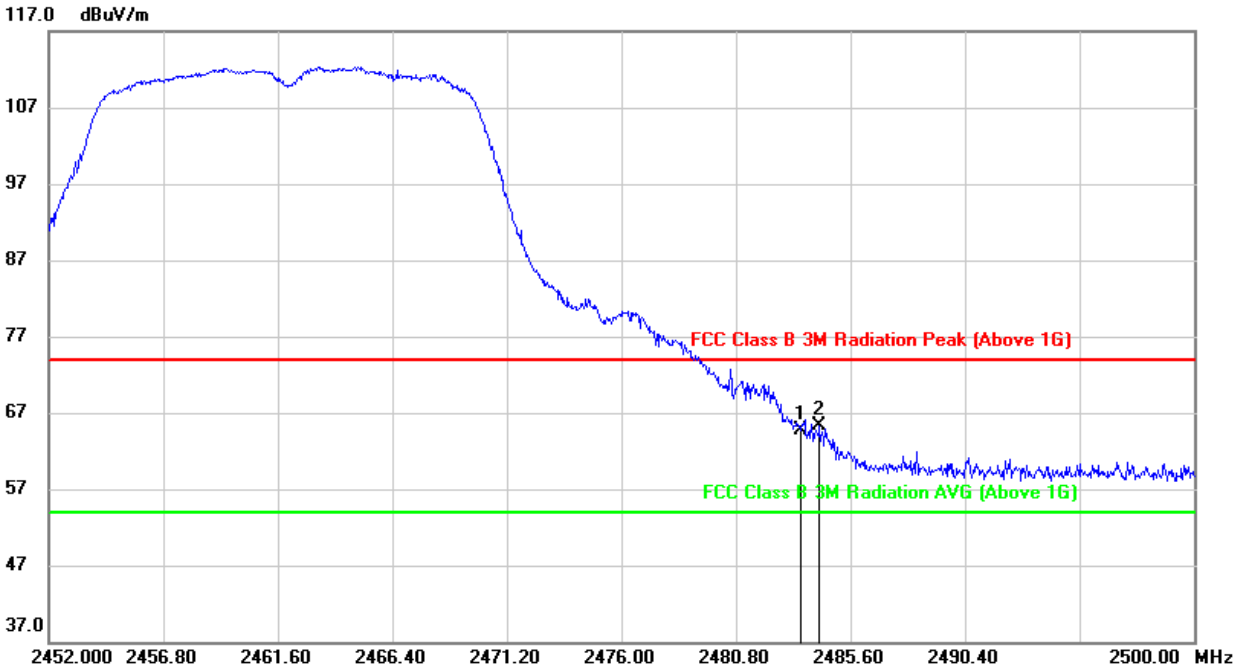


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.015	13.89	33.27	47.16	54.00	-6.84	AVG
2	2390.000	15.95	33.24	49.19	54.00	-4.81	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.5K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK

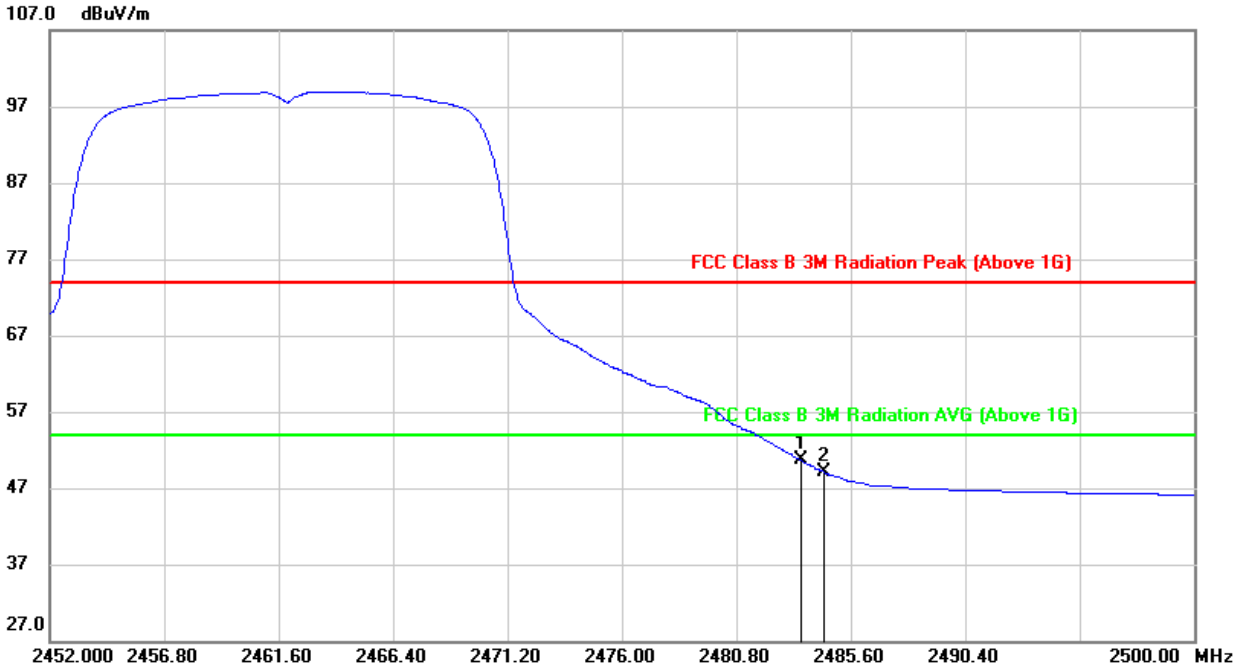


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	31.93	32.78	64.71	74.00	-9.29	peak
2	2484.304	32.44	32.78	65.22	74.00	-8.78	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

AVG

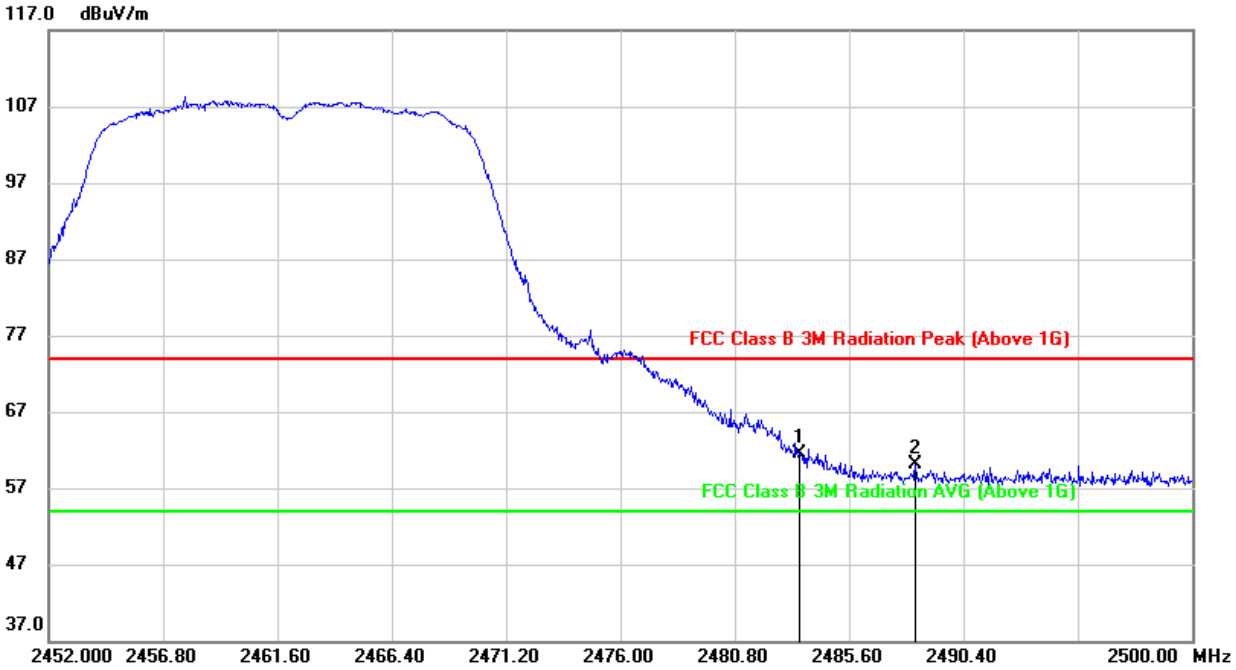


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	17.85	32.78	50.63	54.00	-3.37	AVG
2	2484.496	16.26	32.78	49.04	54.00	-4.96	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.5K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK

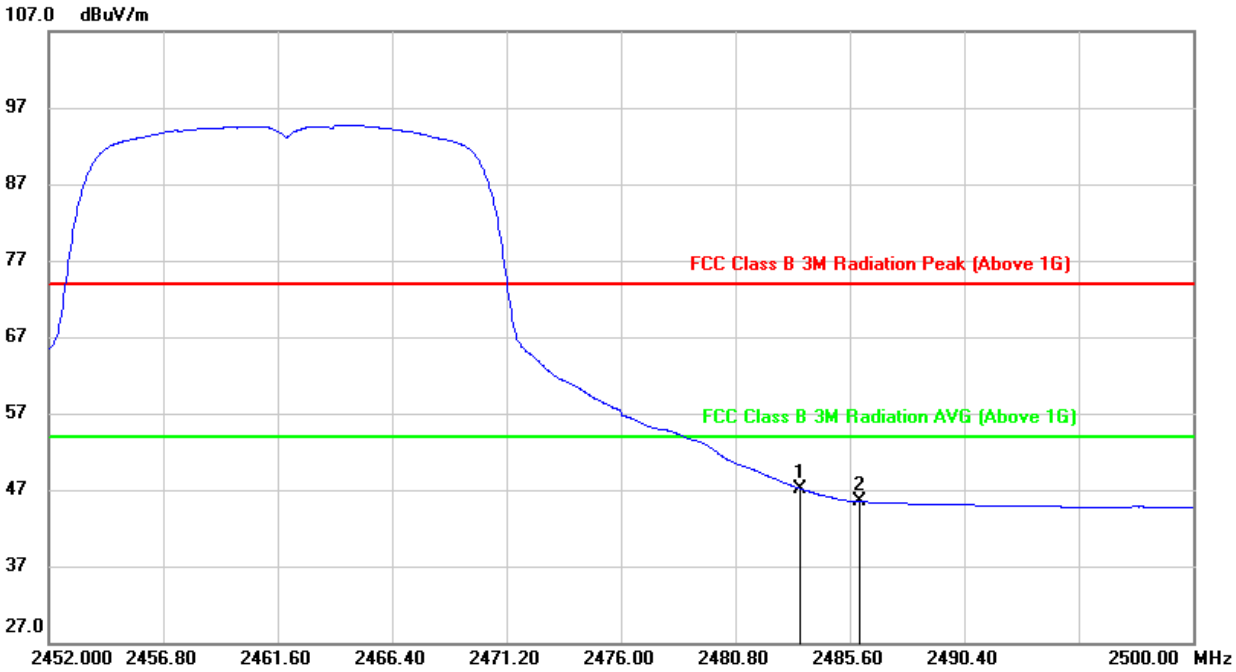


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	28.56	32.88	61.44	74.00	-12.56	peak
2	2488.384	27.28	32.88	60.16	74.00	-13.84	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

AVG



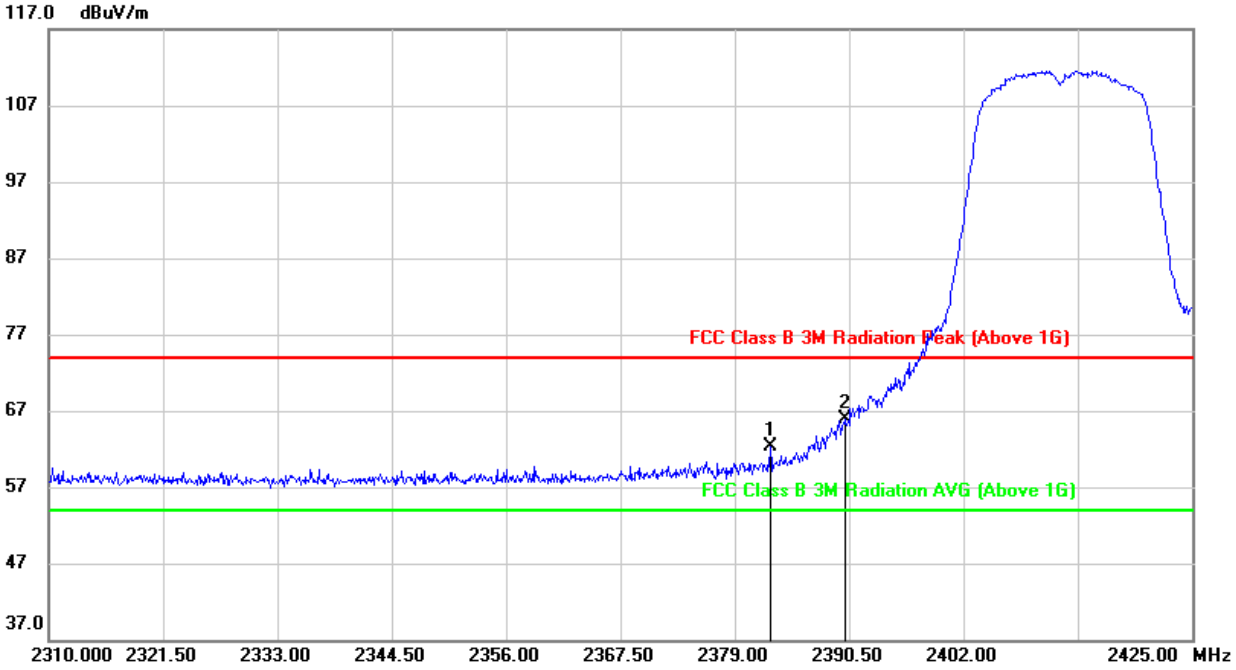
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.26	32.88	47.14	54.00	-6.86	AVG
2	2485.984	12.62	32.89	45.51	54.00	-8.49	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.5K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

9.1.3. 802.11n HT20 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

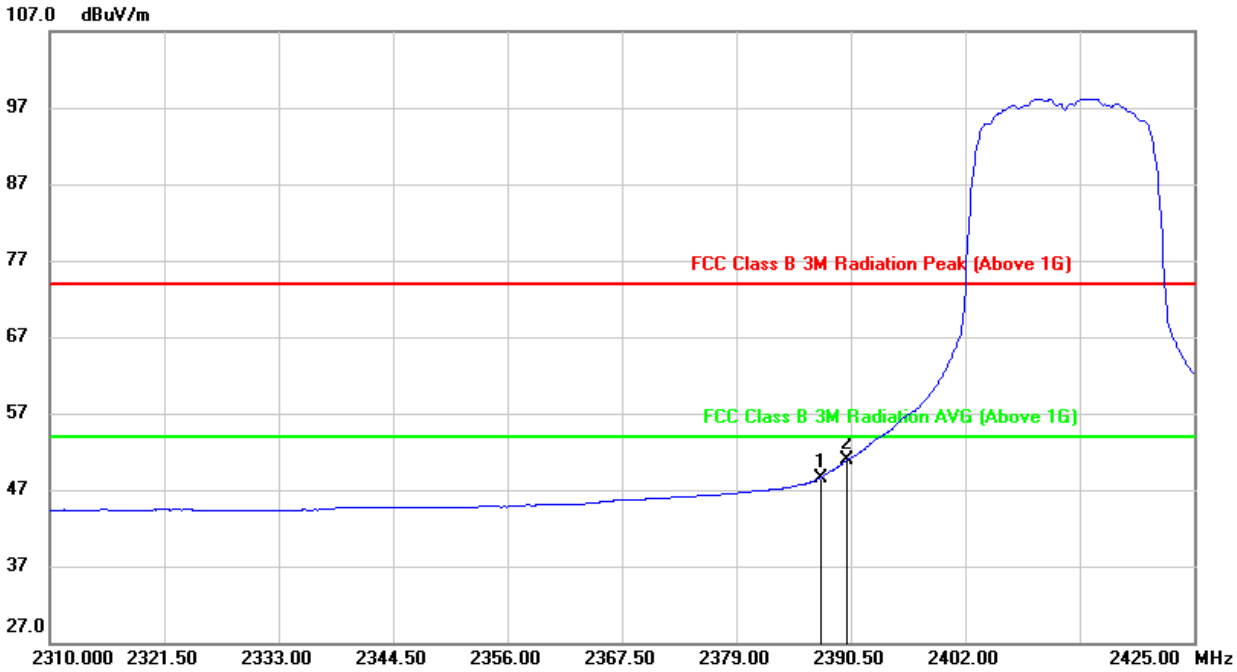


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2382.565	29.17	33.20	62.37	74.00	-11.63	peak
2	2390.000	32.68	33.14	65.82	74.00	-8.18	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

AVG

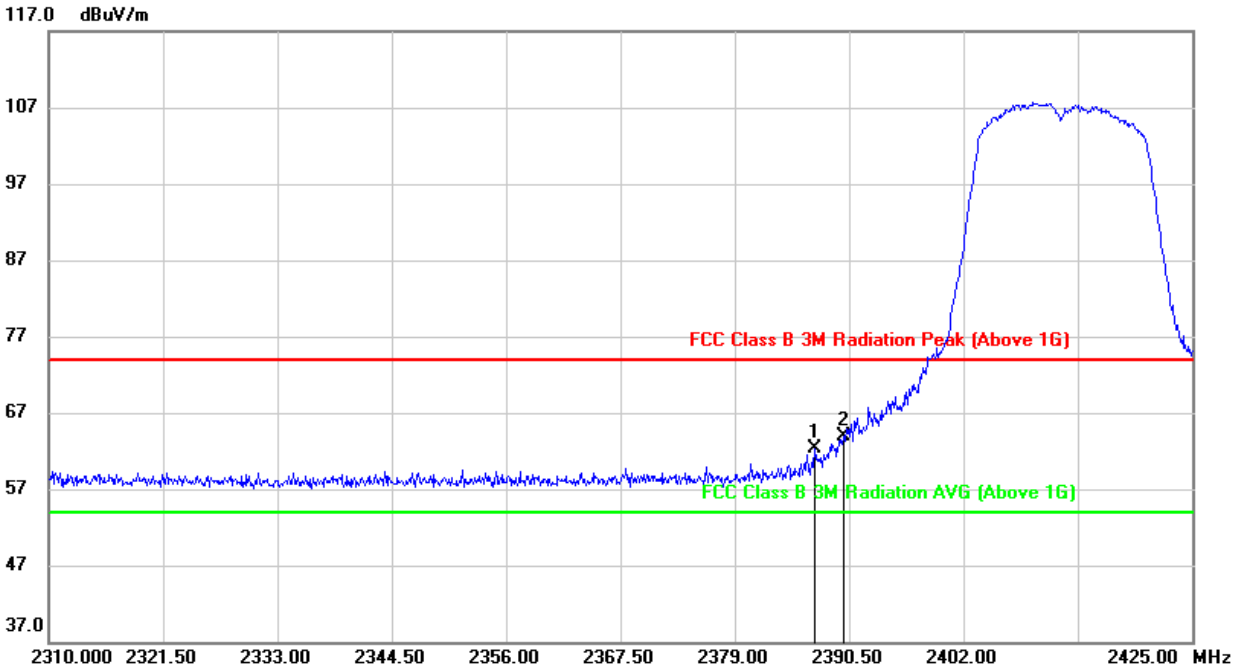


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.395	15.40	33.16	48.56	54.00	-5.44	AVG
2	2390.000	17.76	33.14	50.90	54.00	-3.10	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

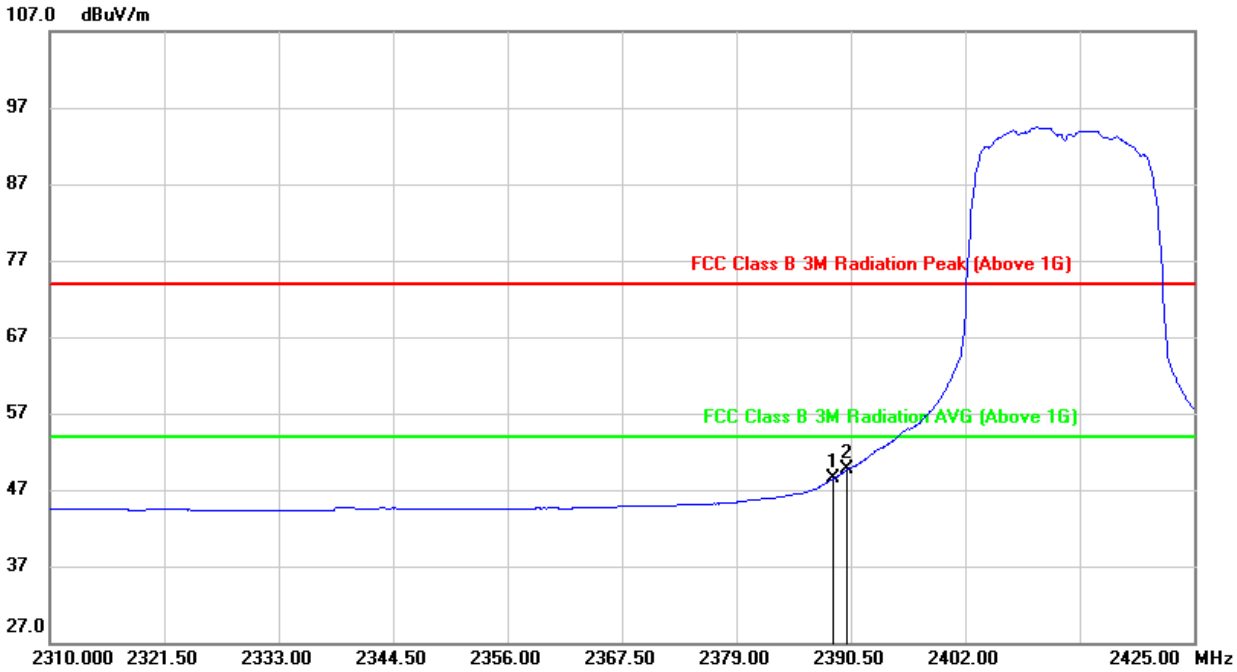


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2387.050	29.06	33.26	62.32	74.00	-11.68	peak
2	2390.000	30.64	33.24	63.88	74.00	-10.12	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

AVG

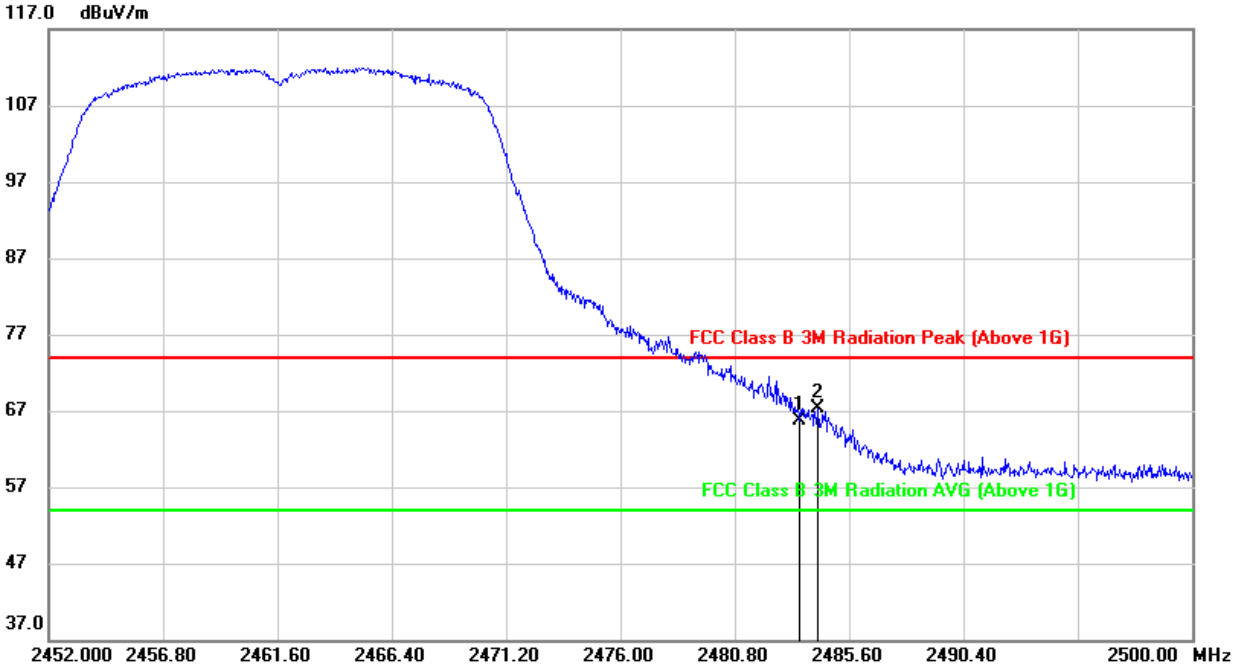


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.775	15.20	33.25	48.45	54.00	-5.55	AVG
2	2390.000	16.38	33.24	49.62	54.00	-4.38	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK

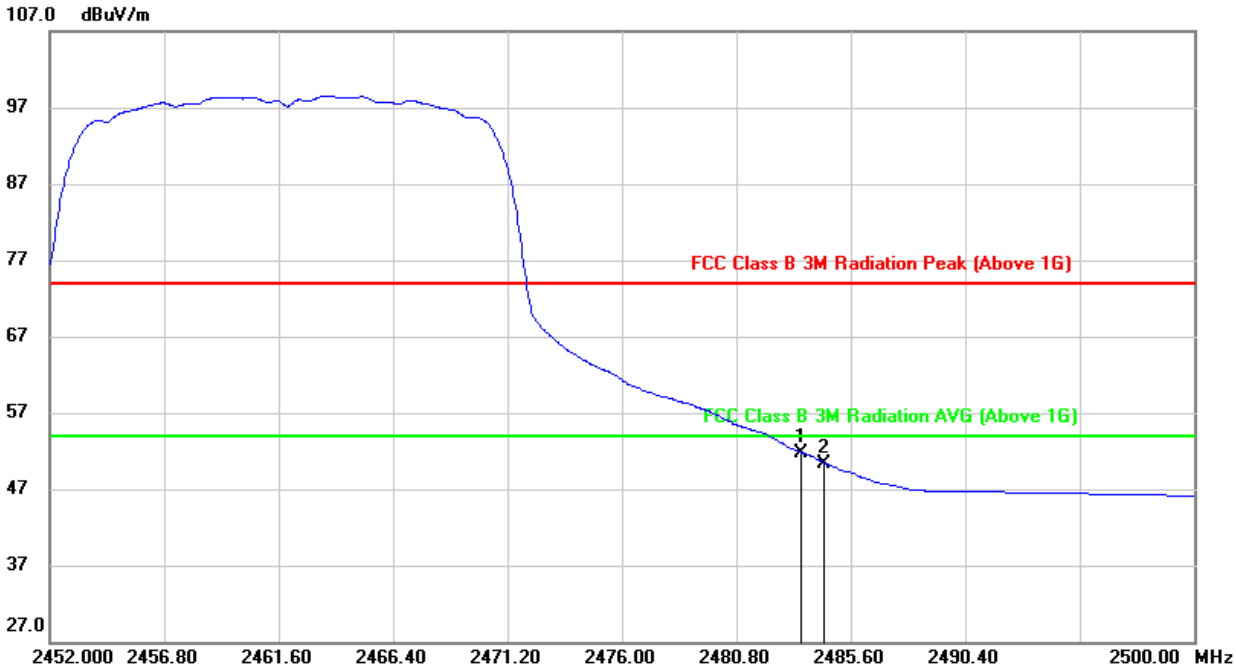


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	32.99	32.78	65.77	74.00	-8.23	peak
2	2484.304	34.56	32.78	67.34	74.00	-6.66	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

AVG

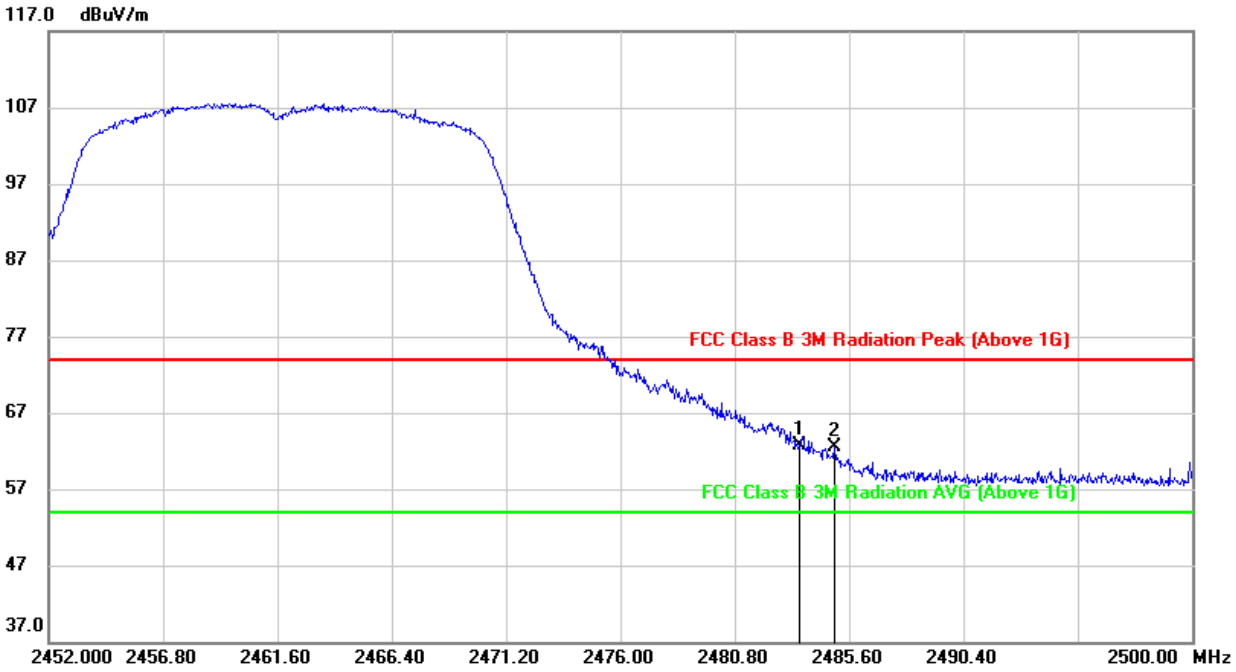


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.500	18.99	32.78	51.77	54.00	-2.23	AVG
2	2484.496	17.61	32.78	50.39	54.00	-3.61	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK

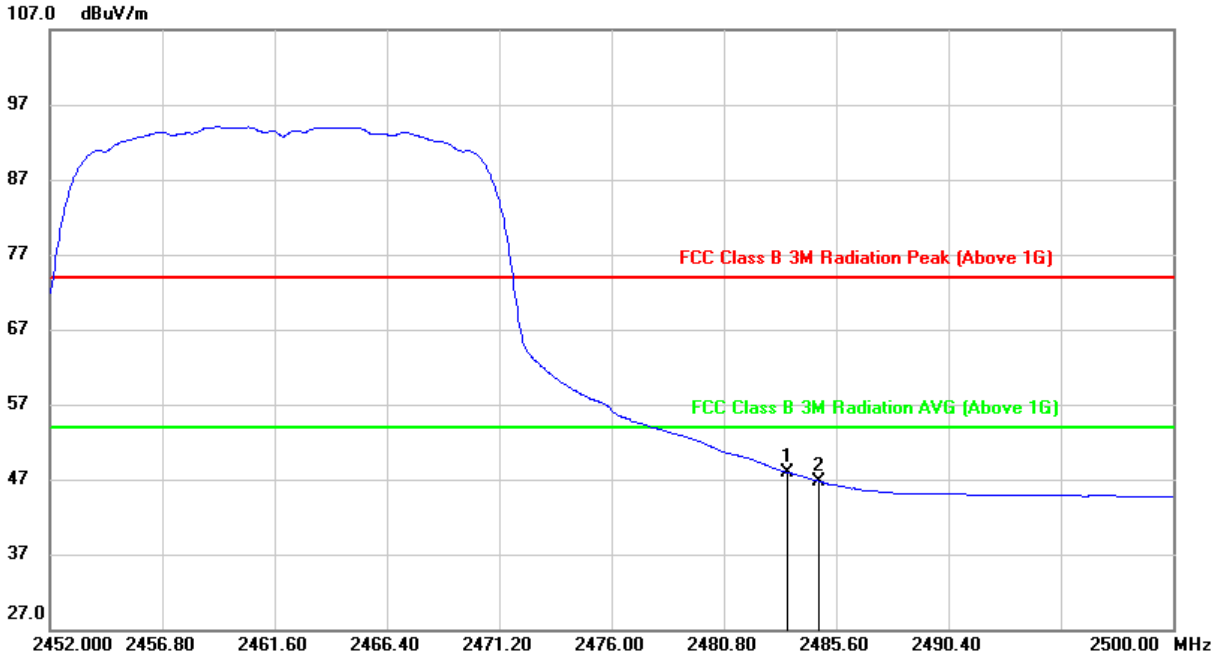


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	29.73	32.88	62.61	74.00	-11.39	peak
2	2484.976	29.68	32.88	62.56	74.00	-11.44	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

AVG



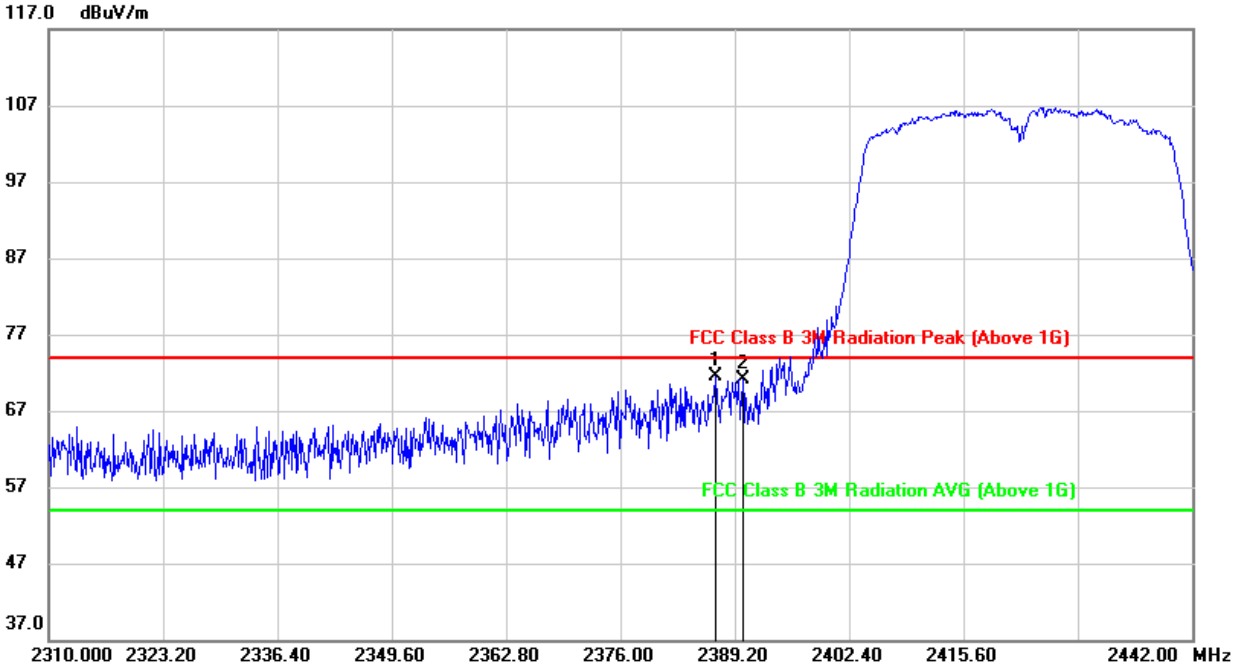
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	15.06	32.88	47.94	54.00	-6.06	AVG
2	2484.880	13.81	32.88	46.69	54.00	-7.31	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

9.1.4. 802.11n HT40 MODE

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

PEAK

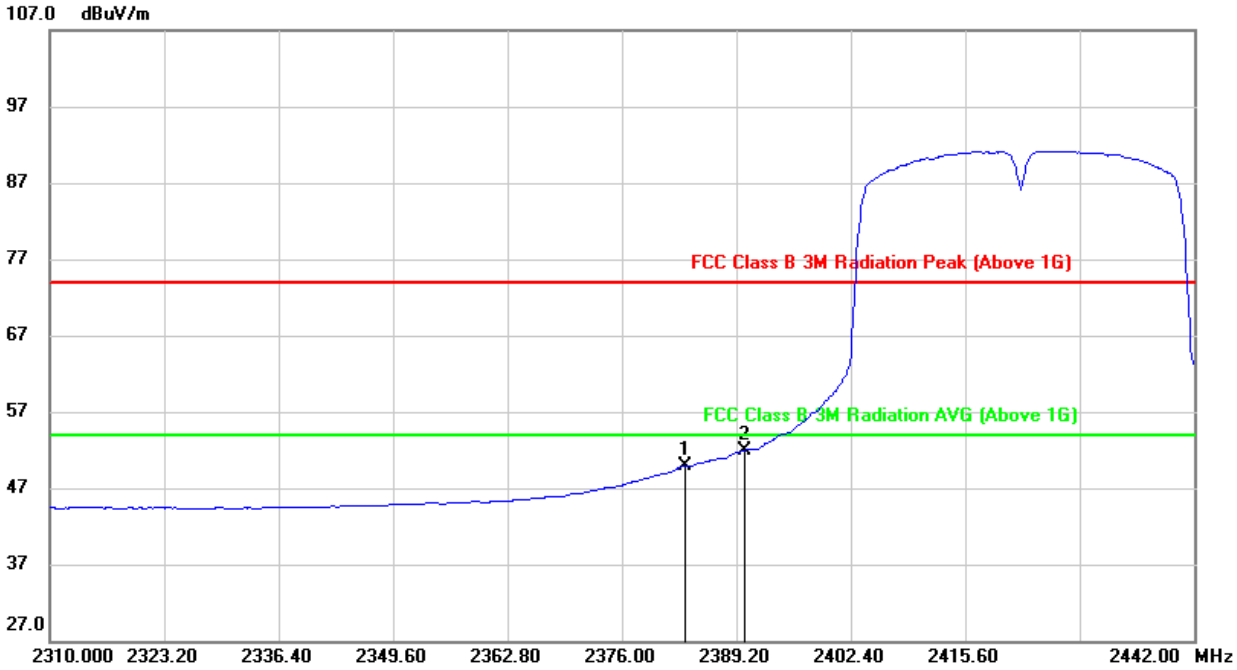


No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2386.956	38.44	33.16	71.60	74.00	-2.40	peak
2	2390.000	38.05	33.14	71.19	74.00	-2.81	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)

AVG

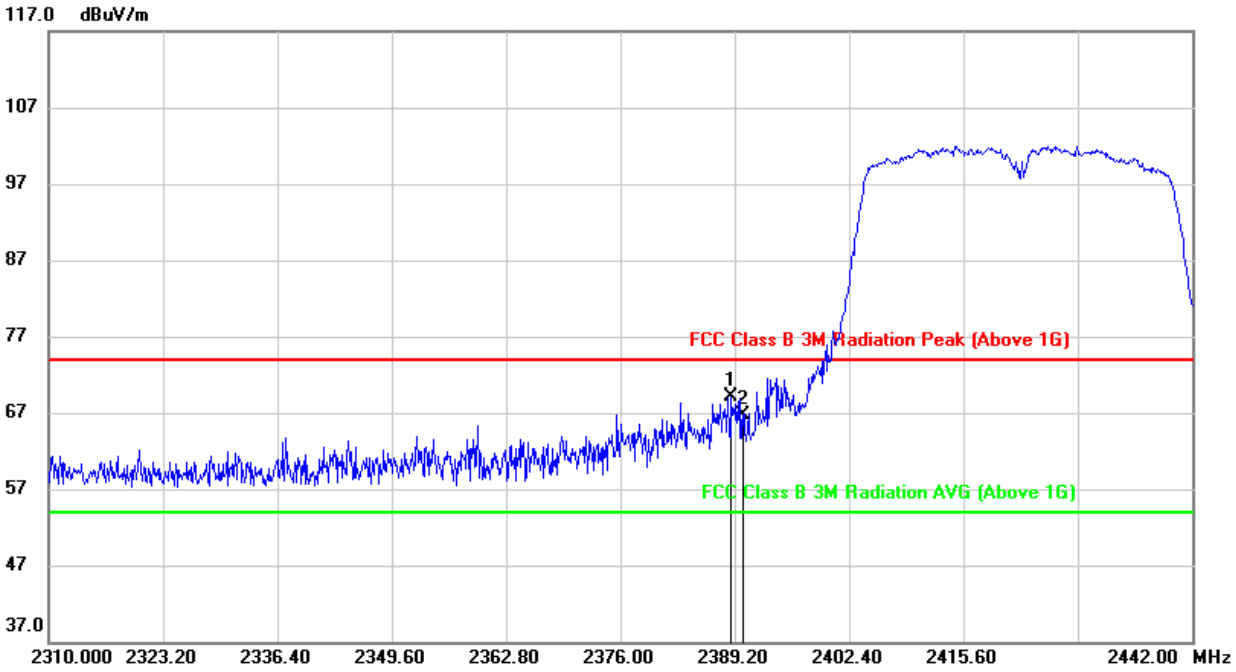


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2383.260	16.72	33.19	49.91	54.00	-4.09	AVG
2	2390.000	18.83	33.14	51.97	54.00	-2.03	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=2K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

PEAK

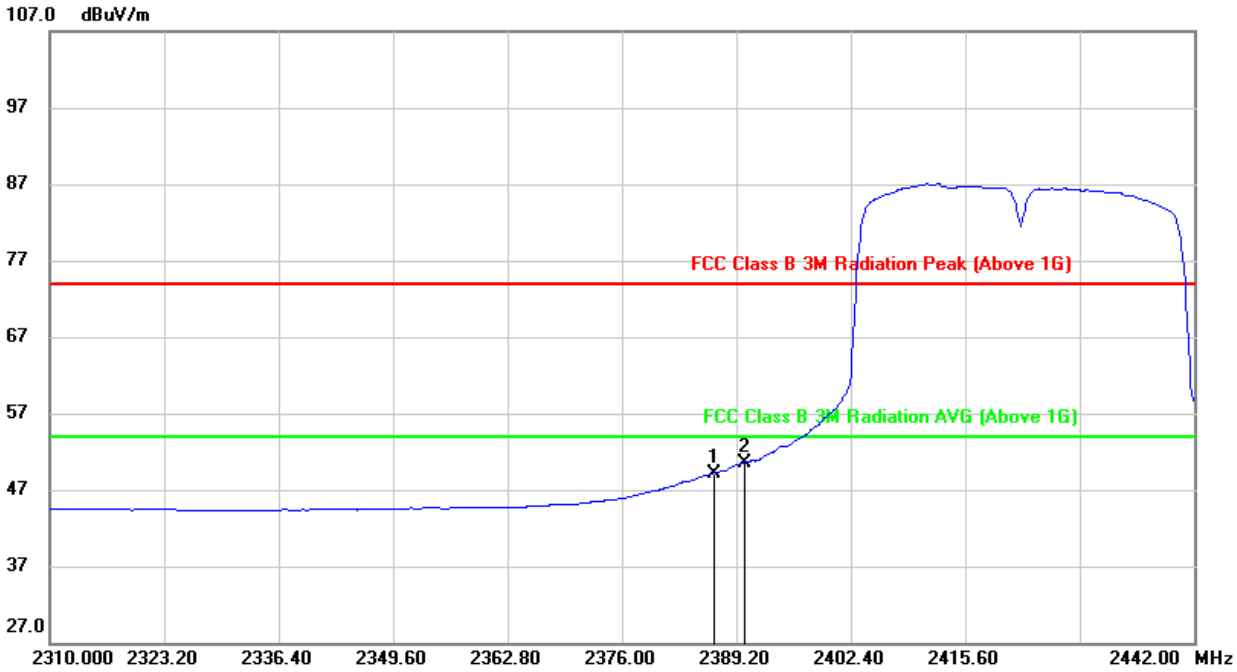


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2388.804	35.77	33.25	69.02	74.00	-4.98	peak
2	2390.000	33.46	33.24	66.70	74.00	-7.30	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

AVG

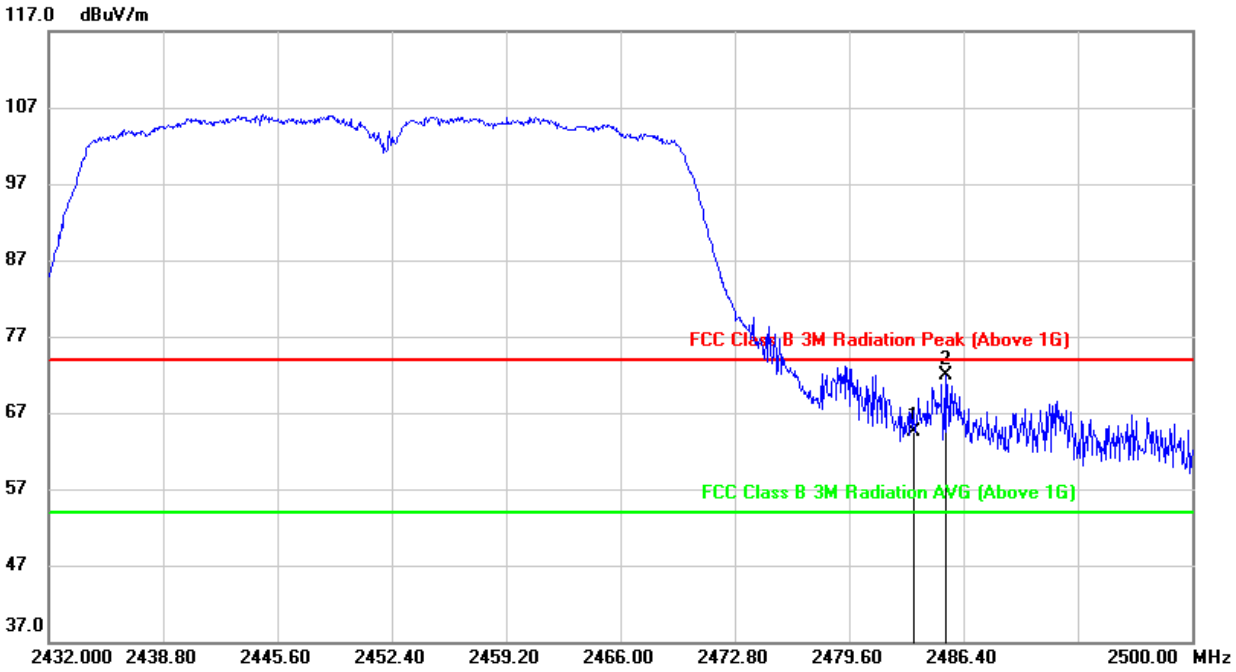


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2386.428	15.91	33.27	49.18	54.00	-4.82	AVG
2	2390.000	17.35	33.24	50.59	54.00	-3.41	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=2K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

PEAK

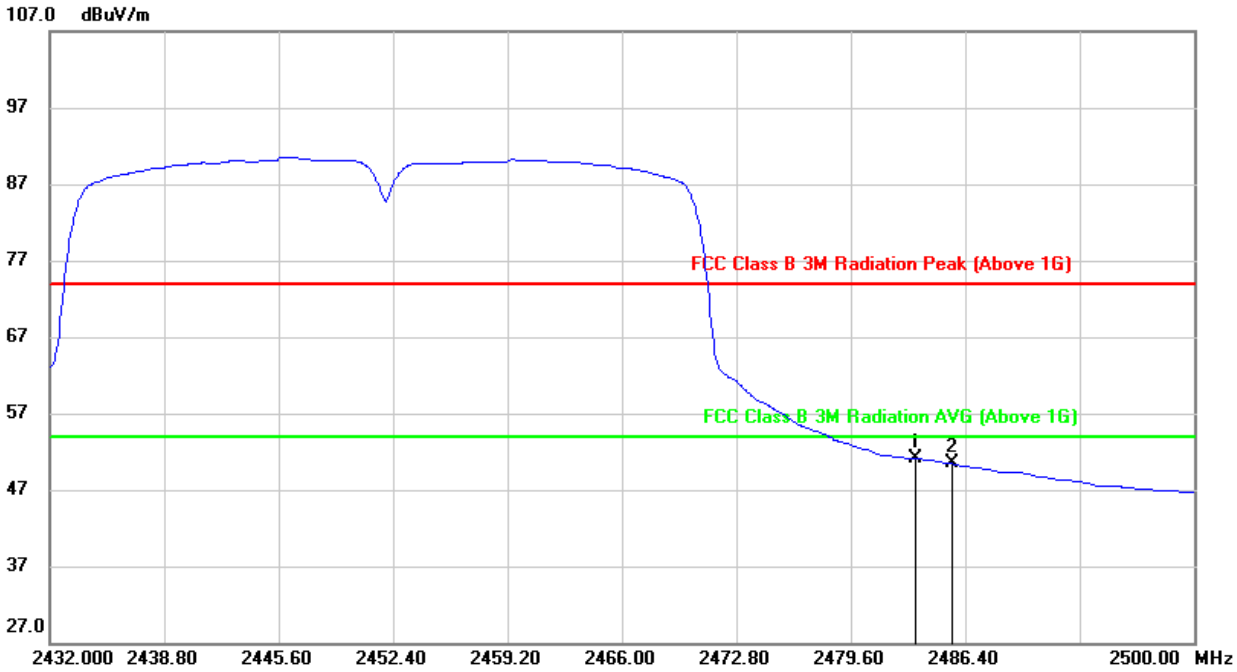


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.81	32.78	64.59	74.00	-9.41	peak
2	2485.312	39.02	32.79	71.81	74.00	-2.19	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

AVG

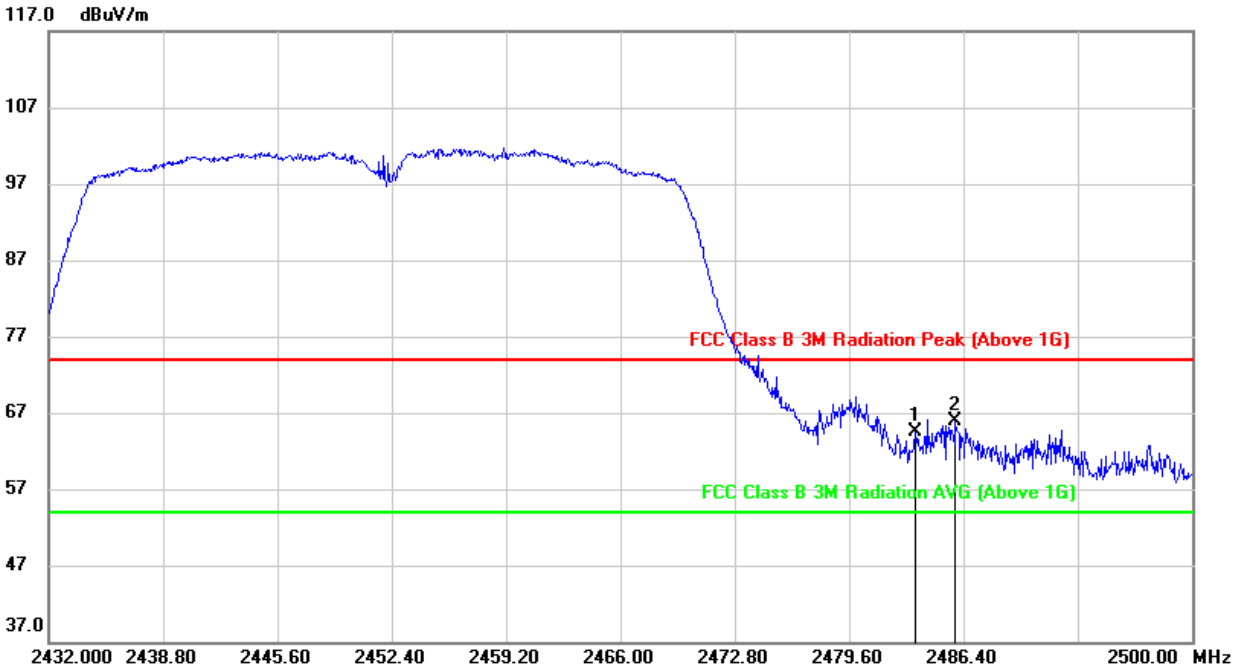


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	18.30	32.78	51.08	54.00	-2.92	AVG
2	2485.652	17.62	32.79	50.41	54.00	-3.59	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=2K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

PEAK

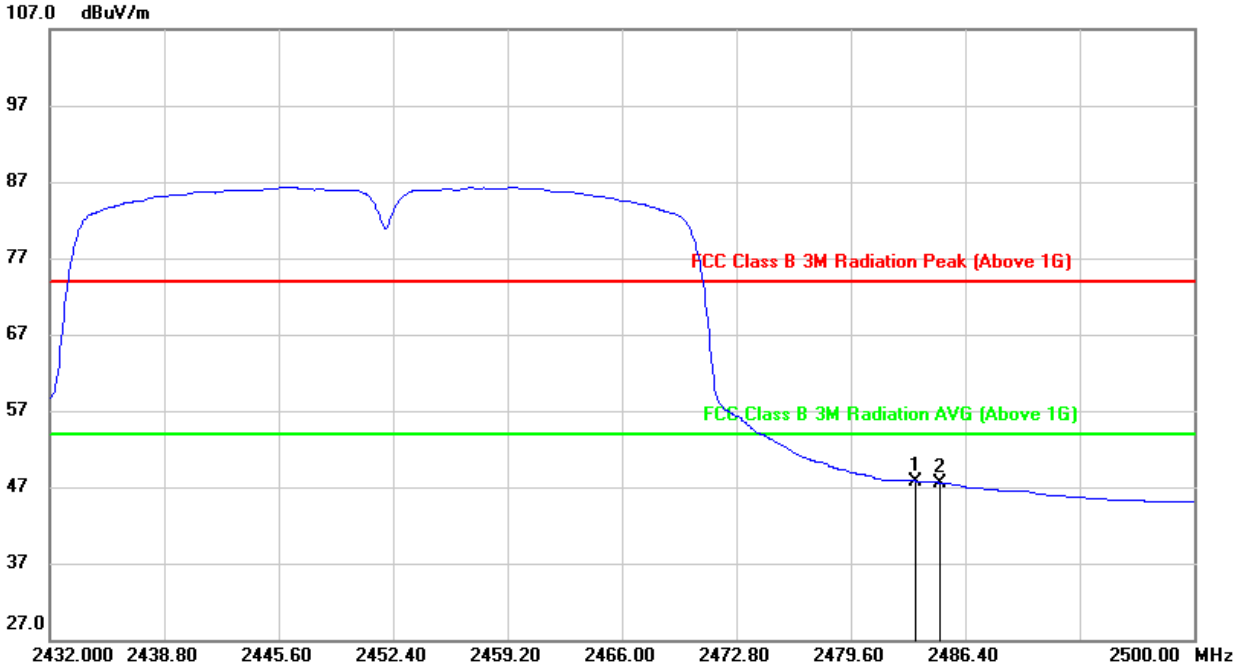


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	31.62	32.88	64.50	74.00	-9.50	peak
2	2485.924	33.04	32.89	65.93	74.00	-8.07	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. Only the worst case emission recorded in the report, if Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

AVG



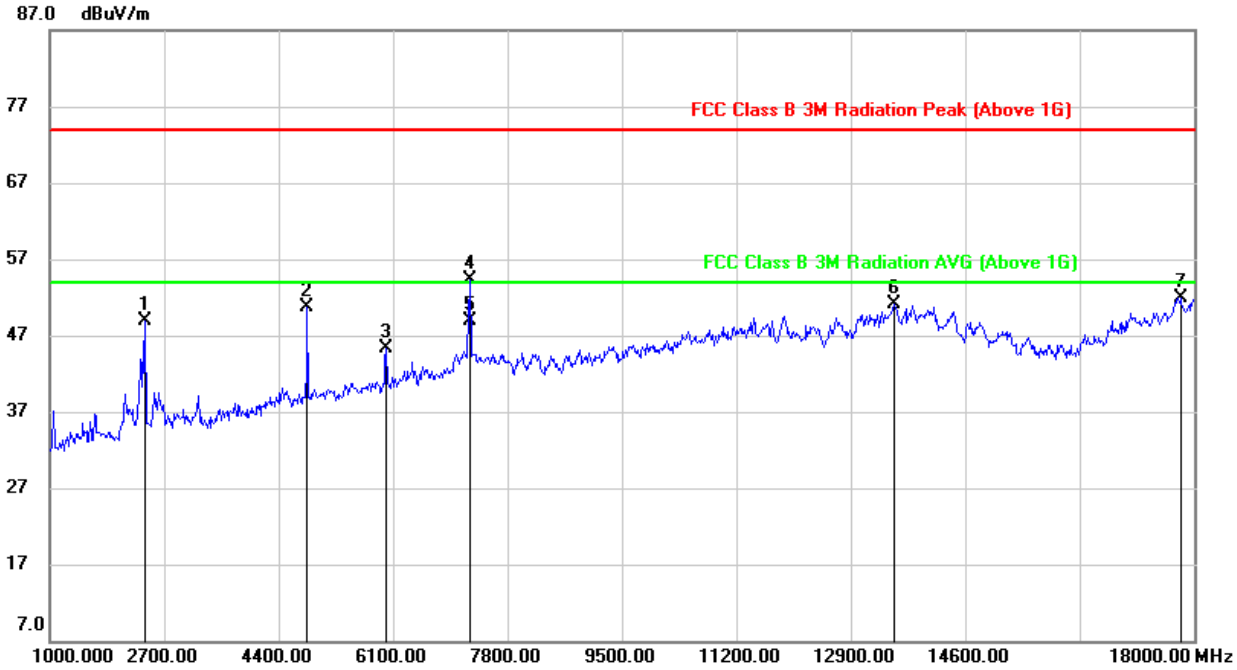
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	14.89	32.88	47.77	54.00	-6.23	AVG
2	2484.904	14.66	32.88	47.54	54.00	-6.46	AVG

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=2K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

9.2. SPURIOUS EMISSIONS (1~18GHz)

9.2.1. 802.11b MODE

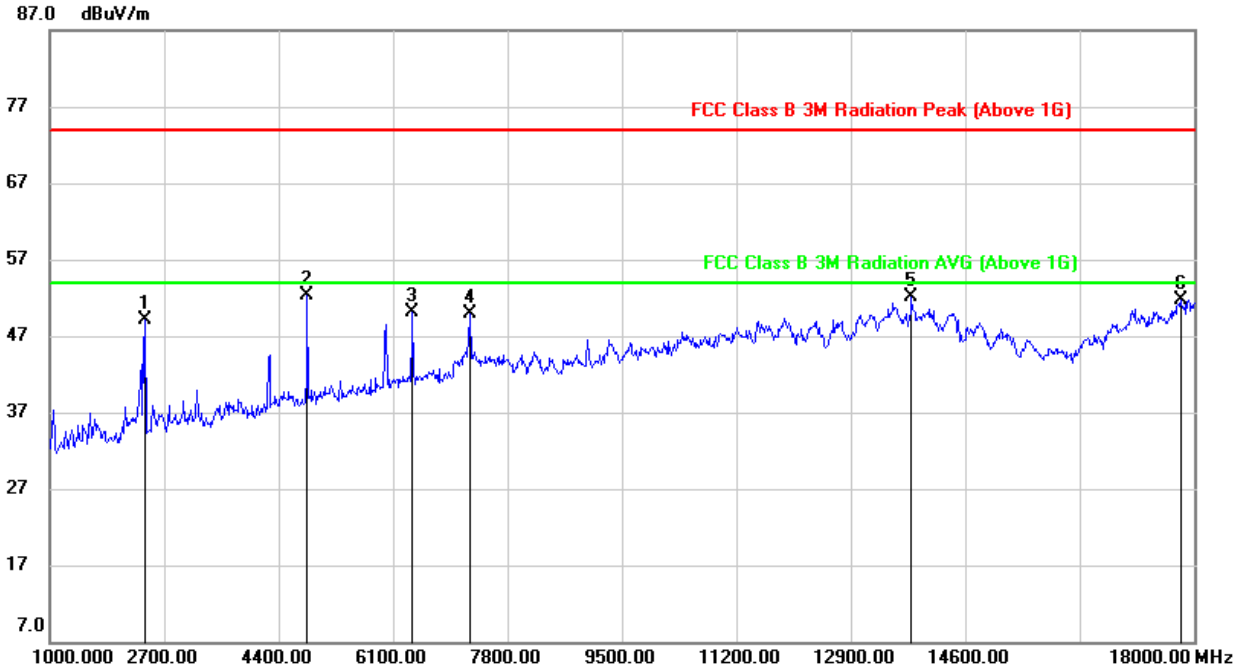
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2411.000	58.01	-9.08	48.93	74.00	-25.07	peak
2	4825.000	52.24	-1.56	50.68	74.00	-23.32	peak
3	5998.000	43.32	1.97	45.29	74.00	-28.71	peak
4	7236.662	47.87	6.42	54.29	74.00	-19.71	peak
5	7236.662	42.56	6.42	48.98	54.00	-5.02	AVG
6	13546.000	32.76	18.27	51.03	74.00	-22.97	peak
7	17796.000	27.75	24.19	51.94	74.00	-22.06	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

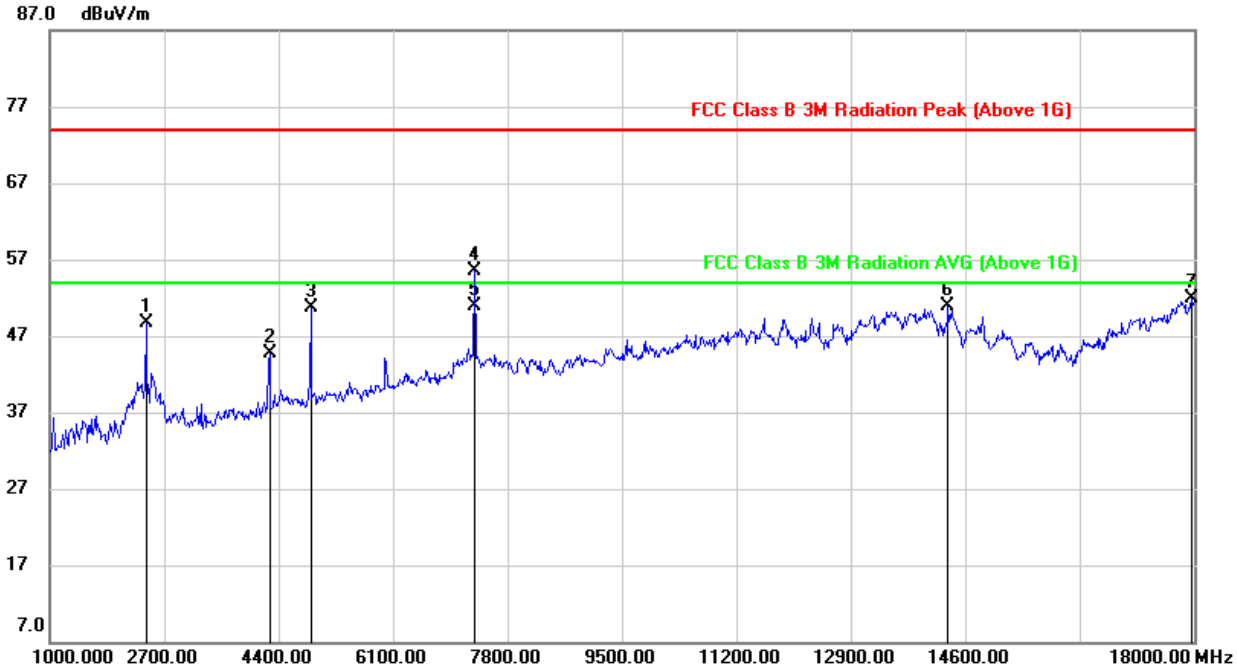
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2411.000	58.09	-8.98	49.11	74.00	-24.89	peak
2	4825.000	53.82	-1.51	52.31	74.00	-21.69	peak
3	6389.000	46.74	3.34	50.08	74.00	-23.92	peak
4	7239.000	43.58	6.36	49.94	74.00	-24.06	peak
5	13801.000	33.01	19.04	52.05	74.00	-21.95	peak
6	17796.000	27.09	24.59	51.68	74.00	-22.32	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

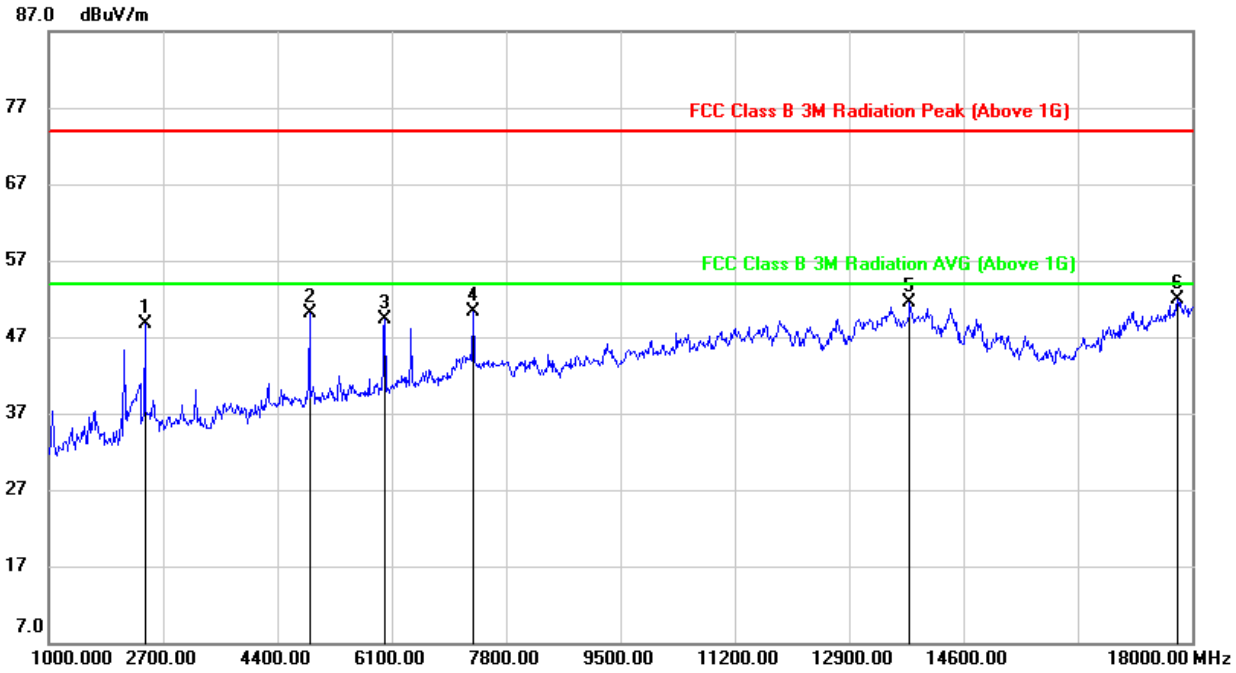
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2428.000	57.93	-9.16	48.77	74.00	-25.23	peak
2	4264.000	48.03	-3.35	44.68	74.00	-29.32	peak
3	4876.000	51.57	-0.95	50.62	74.00	-23.38	peak
4	7311.655	49.13	6.33	55.46	74.00	-18.54	peak
5	7311.655	44.55	6.33	50.88	54.00	-3.12	AVG
6	14345.000	33.07	17.82	50.89	74.00	-23.11	peak
7	17966.000	27.11	24.80	51.91	74.00	-22.09	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

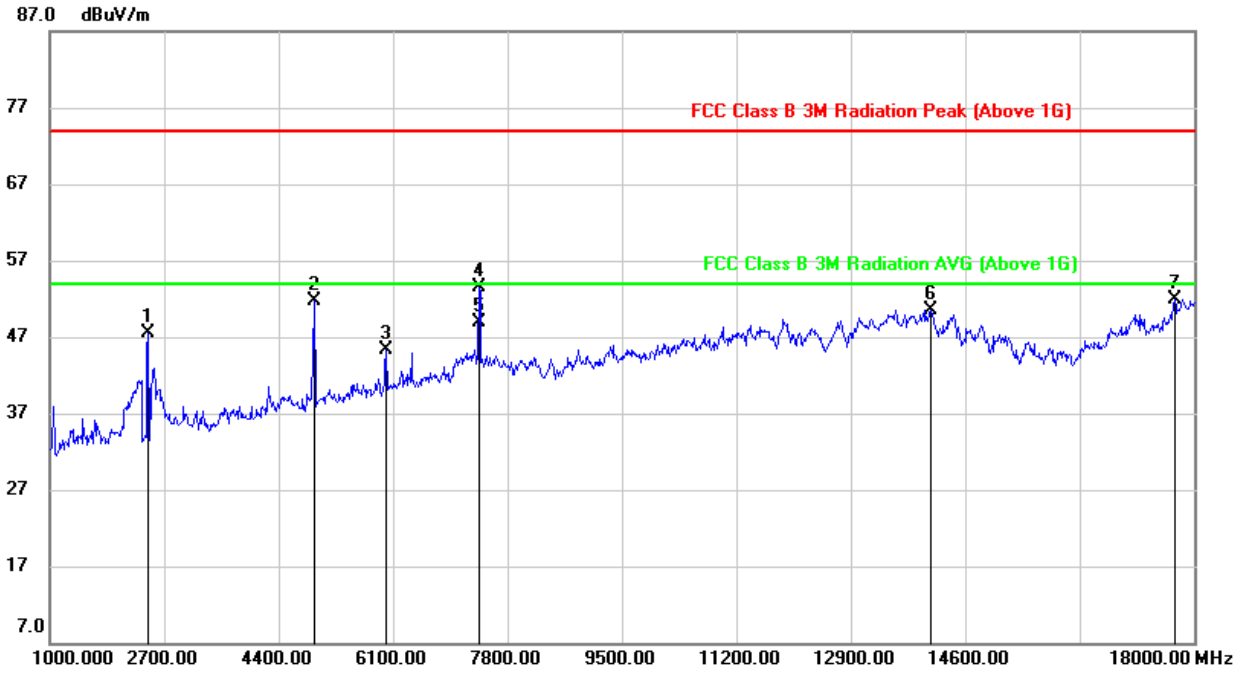
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2428.000	57.72	-9.06	48.66	74.00	-25.34	peak
2	4876.000	51.18	-1.00	50.18	74.00	-23.82	peak
3	5998.000	47.30	2.07	49.37	74.00	-24.63	peak
4	7307.000	43.84	6.40	50.24	74.00	-23.76	peak
5	13801.000	32.40	19.04	51.44	74.00	-22.56	peak
6	17779.000	27.58	24.36	51.94	74.00	-22.06	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

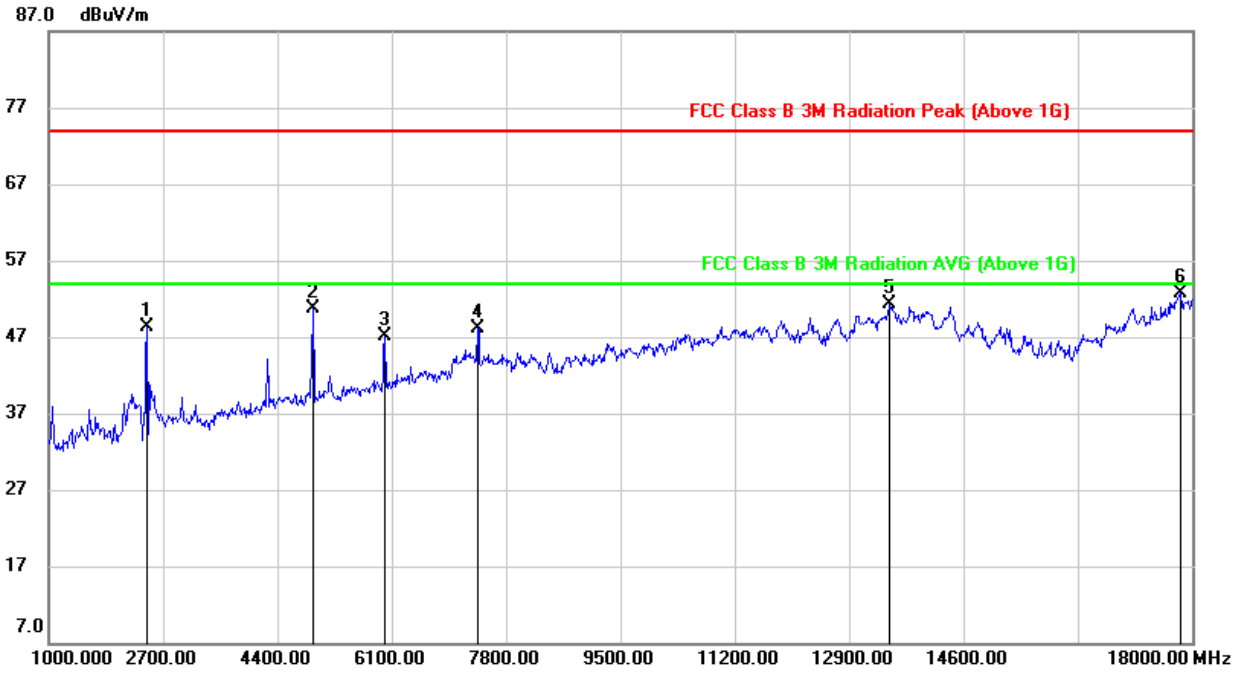
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.000	56.68	-9.26	47.42	74.00	-26.58	peak
2	4927.000	52.51	-0.72	51.79	74.00	-22.21	peak
3	5998.000	43.33	1.97	45.30	74.00	-28.70	peak
4	7385.170	47.86	5.72	53.58	74.00	-20.42	peak
5	7385.170	43.14	5.72	48.86	54.00	-5.14	AVG
6	14090.000	32.07	18.48	50.55	74.00	-23.45	peak
7	17711.000	28.38	23.46	51.84	74.00	-22.16	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton=0.1K, where: Ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

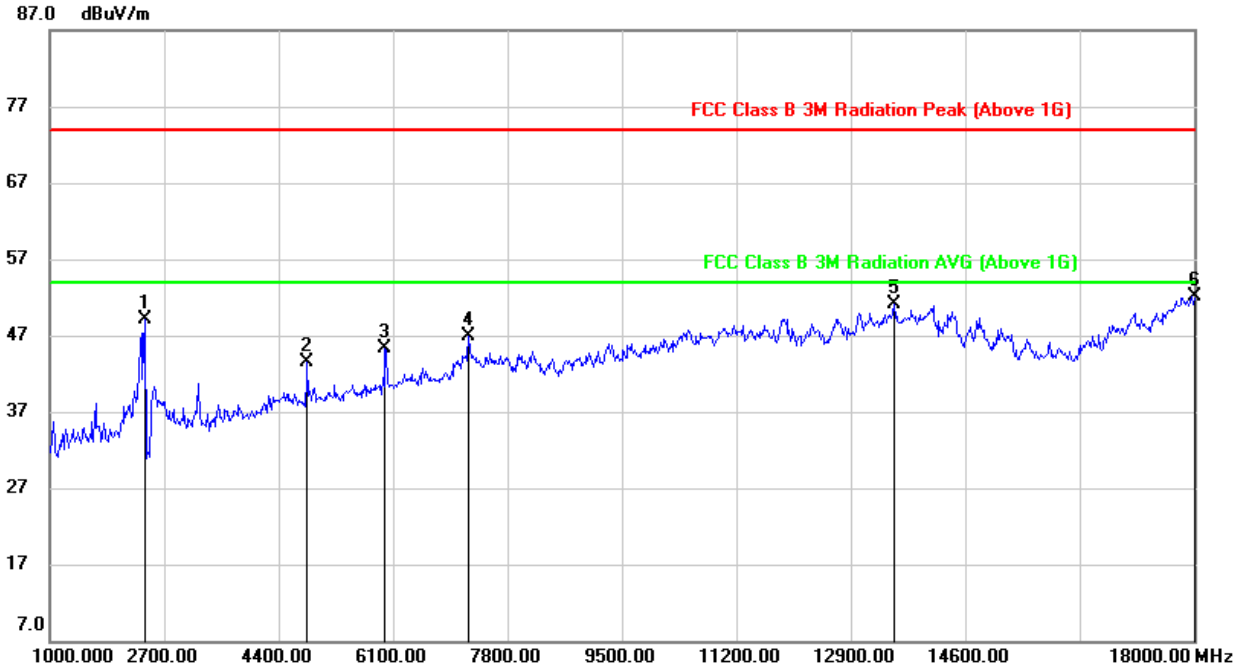


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.000	57.48	-9.16	48.32	74.00	-25.68	peak
2	4927.000	51.51	-0.77	50.74	74.00	-23.26	peak
3	5998.000	45.01	2.07	47.08	74.00	-26.92	peak
4	7375.000	42.22	5.83	48.05	74.00	-25.95	peak
5	13495.000	32.85	18.51	51.36	74.00	-22.64	peak
6	17830.000	28.50	24.17	52.67	74.00	-21.33	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

9.2.2. 802.11g MODE

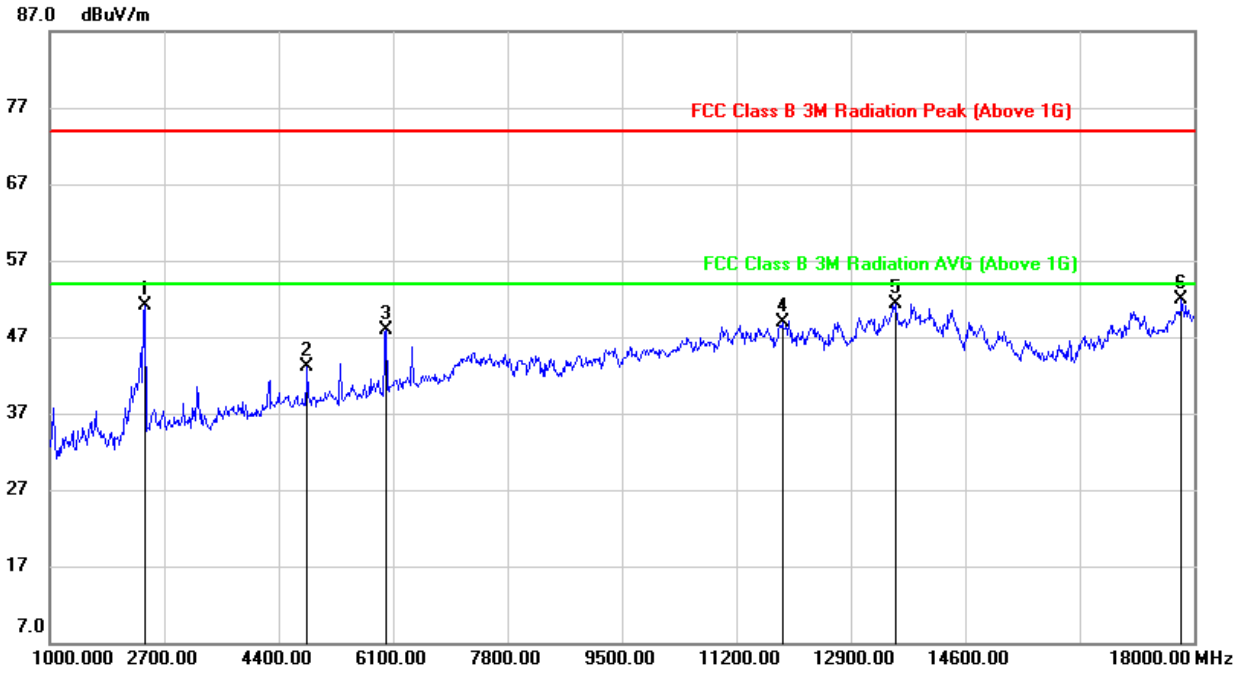
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2411.000	58.09	-9.08	49.01	74.00	-24.99	peak
2	4825.000	45.03	-1.56	43.47	74.00	-30.53	peak
3	5981.000	43.35	1.87	45.22	74.00	-28.78	peak
4	7222.000	40.42	6.39	46.81	74.00	-27.19	peak
5	13546.000	32.88	18.27	51.15	74.00	-22.85	peak
6	18000.000	27.35	24.81	52.16	74.00	-21.84	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

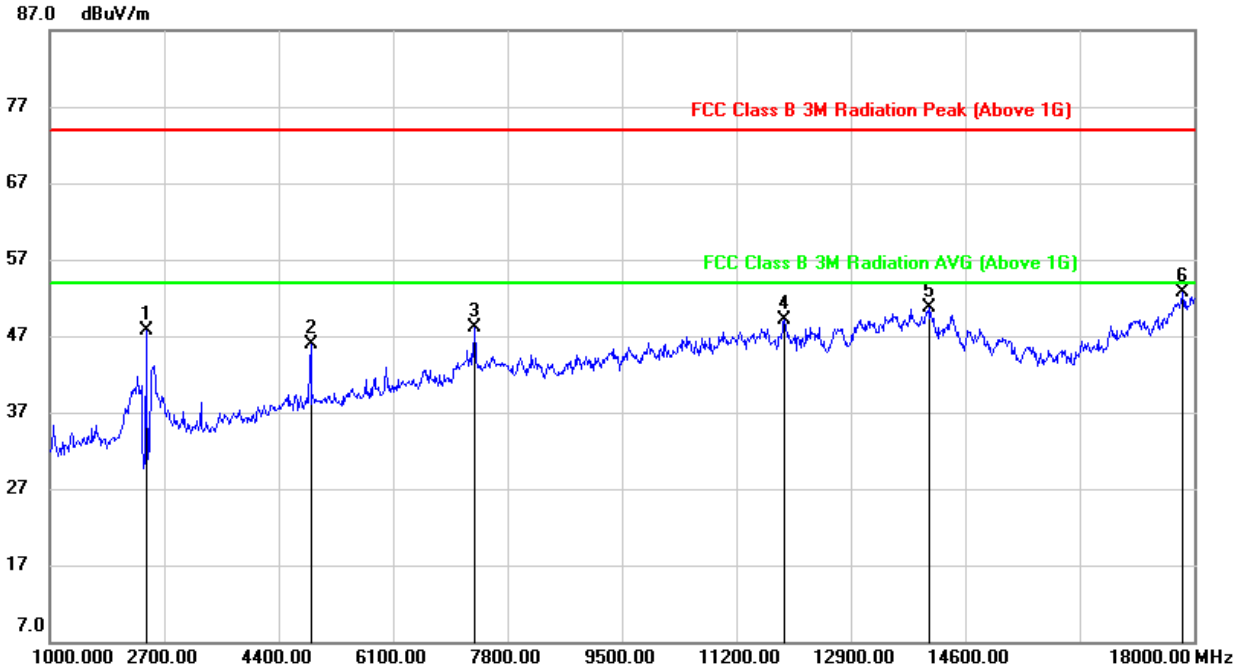
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2411.000	60.07	-8.98	51.09	74.00	-22.91	peak
2	4825.000	44.53	-1.51	43.02	74.00	-30.98	peak
3	5998.000	45.84	2.07	47.91	74.00	-26.09	peak
4	11880.000	34.08	14.74	48.82	74.00	-25.18	peak
5	13563.000	32.52	18.75	51.27	74.00	-22.73	peak
6	17813.000	27.53	24.44	51.97	74.00	-22.03	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

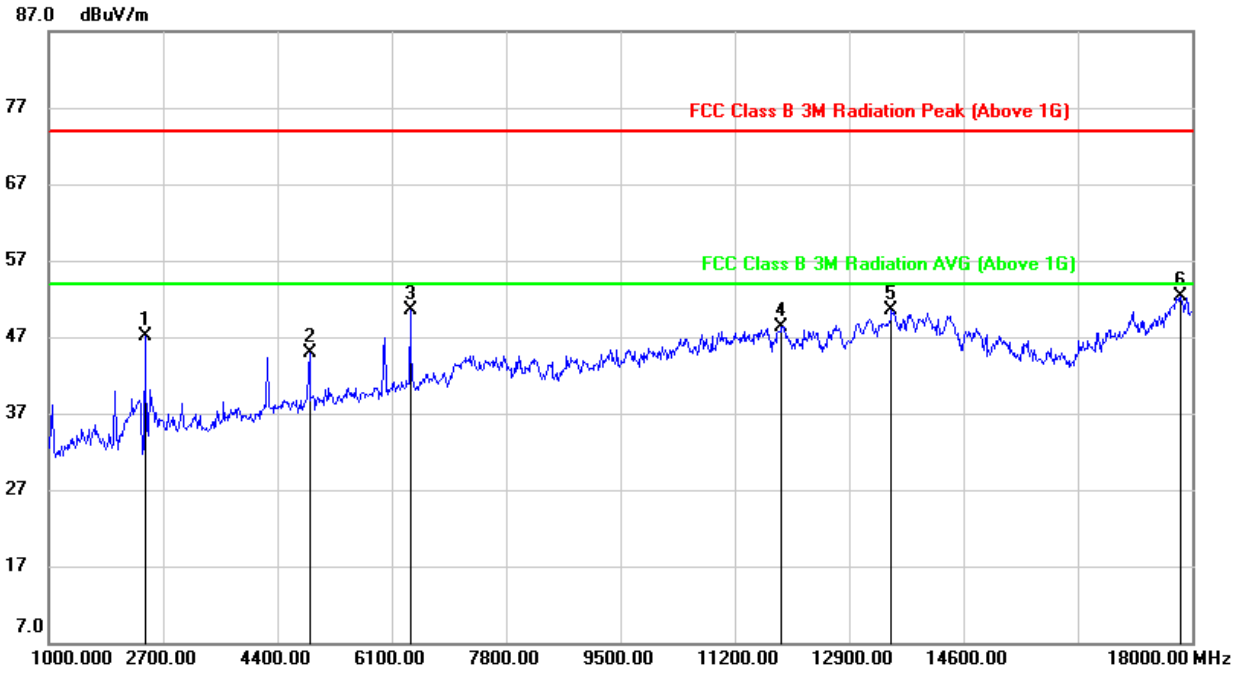
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2428.000	56.88	-9.16	47.72	74.00	-26.28	peak
2	4876.000	46.78	-0.95	45.83	74.00	-28.17	peak
3	7307.000	41.77	6.38	48.15	74.00	-25.85	peak
4	11914.000	34.18	15.02	49.20	74.00	-24.80	peak
5	14056.000	32.29	18.48	50.77	74.00	-23.23	peak
6	17830.000	28.38	24.25	52.63	74.00	-21.37	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

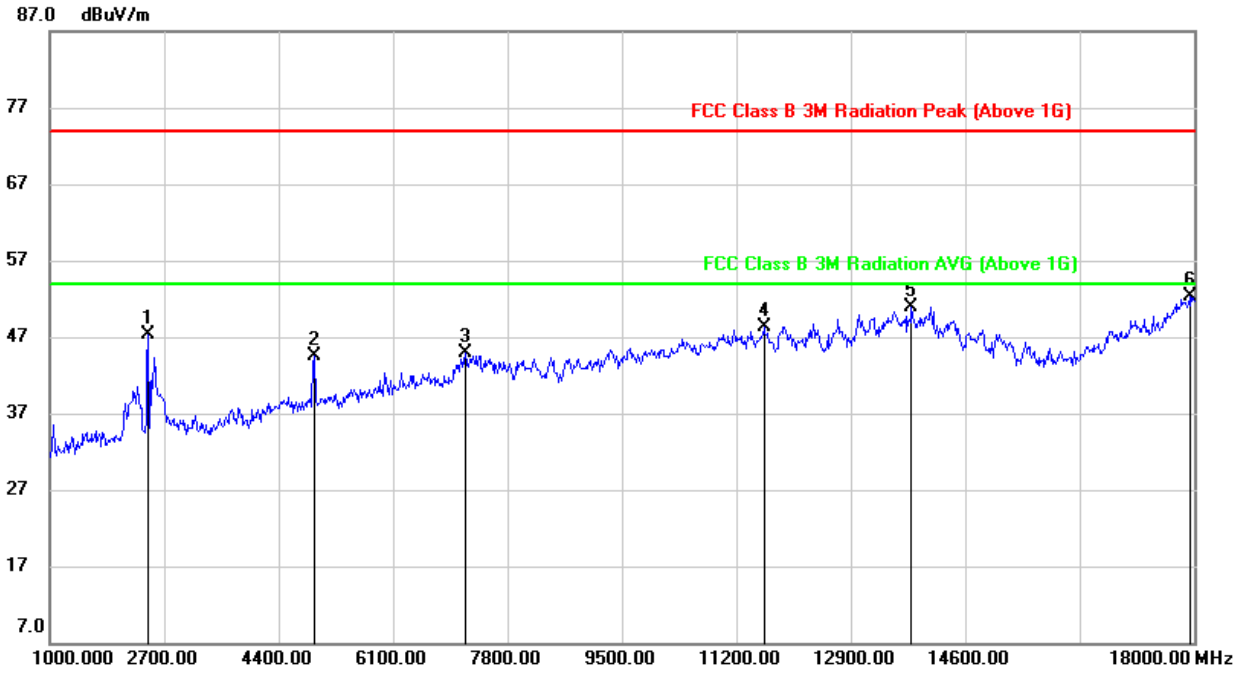
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2428.000	56.11	-9.06	47.05	74.00	-26.95	peak
2	4876.000	45.95	-1.00	44.95	74.00	-29.05	peak
3	6372.000	47.20	3.29	50.49	74.00	-23.51	peak
4	11897.000	33.49	14.75	48.24	74.00	-25.76	peak
5	13529.000	31.72	18.75	50.47	74.00	-23.53	peak
6	17830.000	28.20	24.17	52.37	74.00	-21.63	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

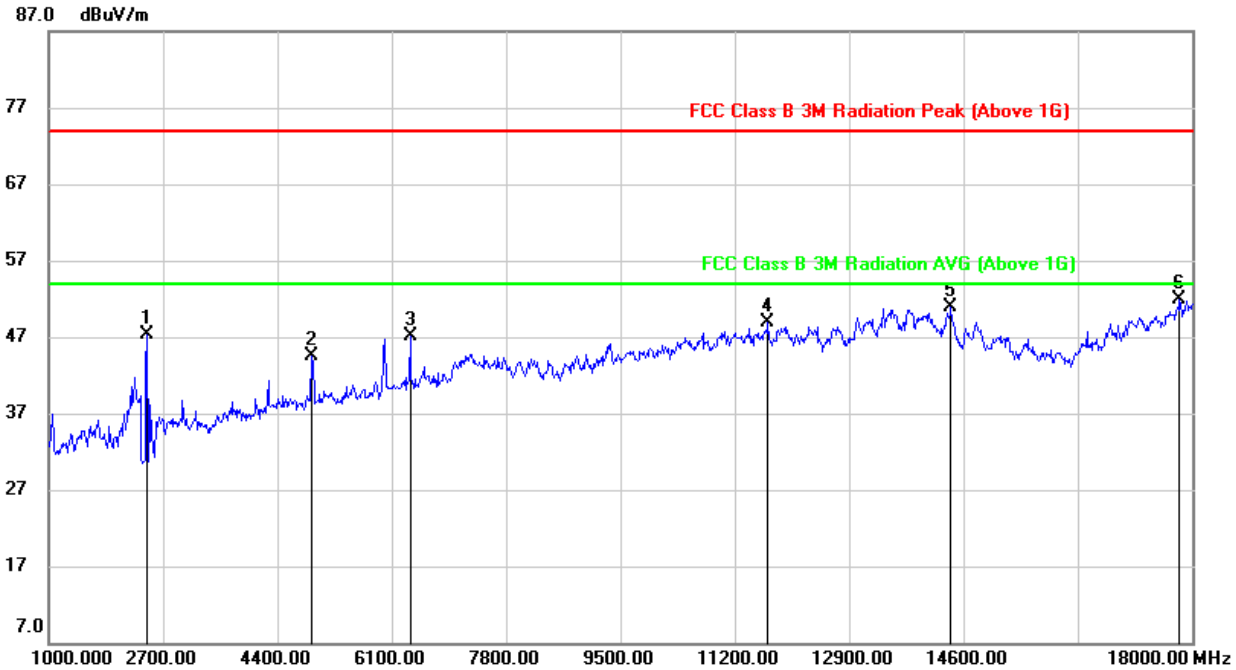
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.000	56.52	-9.26	47.26	74.00	-26.74	peak
2	4927.000	45.28	-0.72	44.56	74.00	-29.44	peak
3	7171.000	38.59	6.36	44.95	74.00	-29.05	peak
4	11608.000	33.94	14.39	48.33	74.00	-25.67	peak
5	13801.000	32.38	18.54	50.92	74.00	-23.08	peak
6	17932.000	27.87	24.50	52.37	74.00	-21.63	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

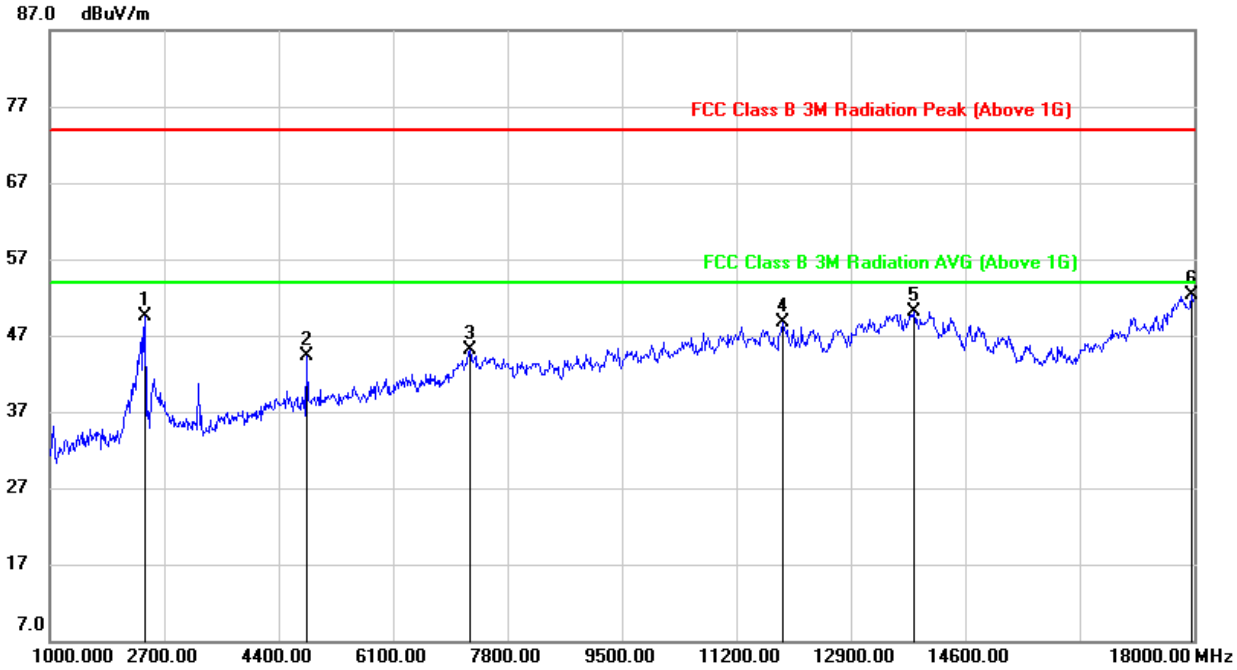


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.000	56.44	-9.16	47.28	74.00	-26.72	peak
2	4910.000	45.34	-0.77	44.57	74.00	-29.43	peak
3	6372.000	43.74	3.29	47.03	74.00	-26.97	peak
4	11693.000	34.09	14.76	48.85	74.00	-25.15	peak
5	14413.000	32.71	18.15	50.86	74.00	-23.14	peak
6	17813.000	27.40	24.44	51.84	74.00	-22.16	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

9.2.3. 802.11n HT20 MODE

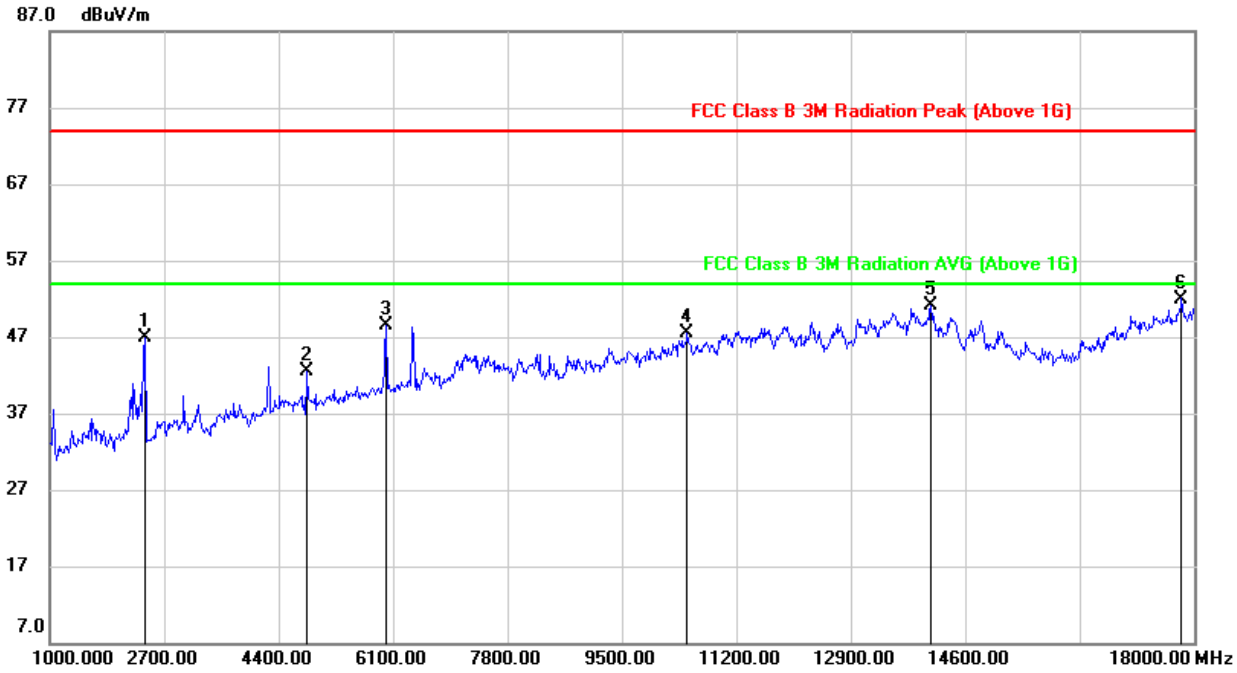
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2411.000	58.61	-9.08	49.53	74.00	-24.47	peak
2	4808.000	46.13	-1.76	44.37	74.00	-29.63	peak
3	7239.000	38.74	6.42	45.16	74.00	-28.84	peak
4	11880.000	33.78	14.84	48.62	74.00	-25.38	peak
5	13835.000	31.59	18.57	50.16	74.00	-23.84	peak
6	17966.000	27.49	24.80	52.29	74.00	-21.71	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

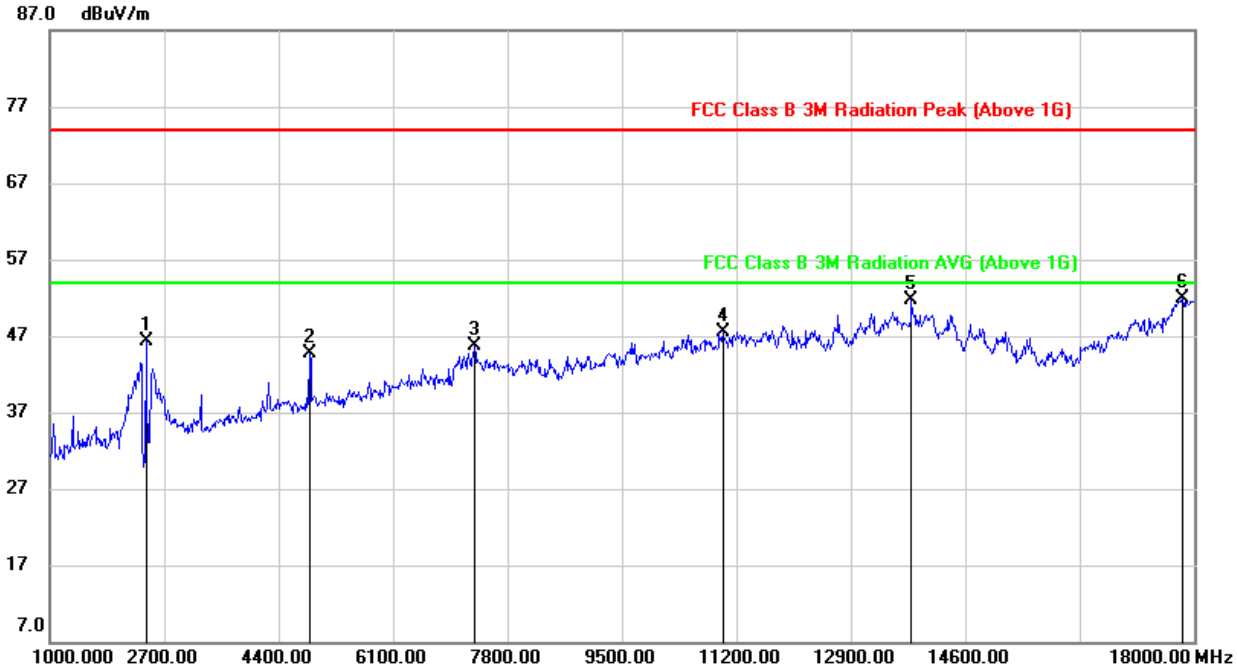
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2411.000	55.93	-8.98	46.95	74.00	-27.05	peak
2	4825.000	44.00	-1.51	42.49	74.00	-31.51	peak
3	5998.000	46.38	2.07	48.45	74.00	-25.55	peak
4	10469.000	35.65	11.87	47.52	74.00	-26.48	peak
5	14090.000	32.57	18.46	51.03	74.00	-22.97	peak
6	17813.000	27.56	24.44	52.00	74.00	-22.00	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

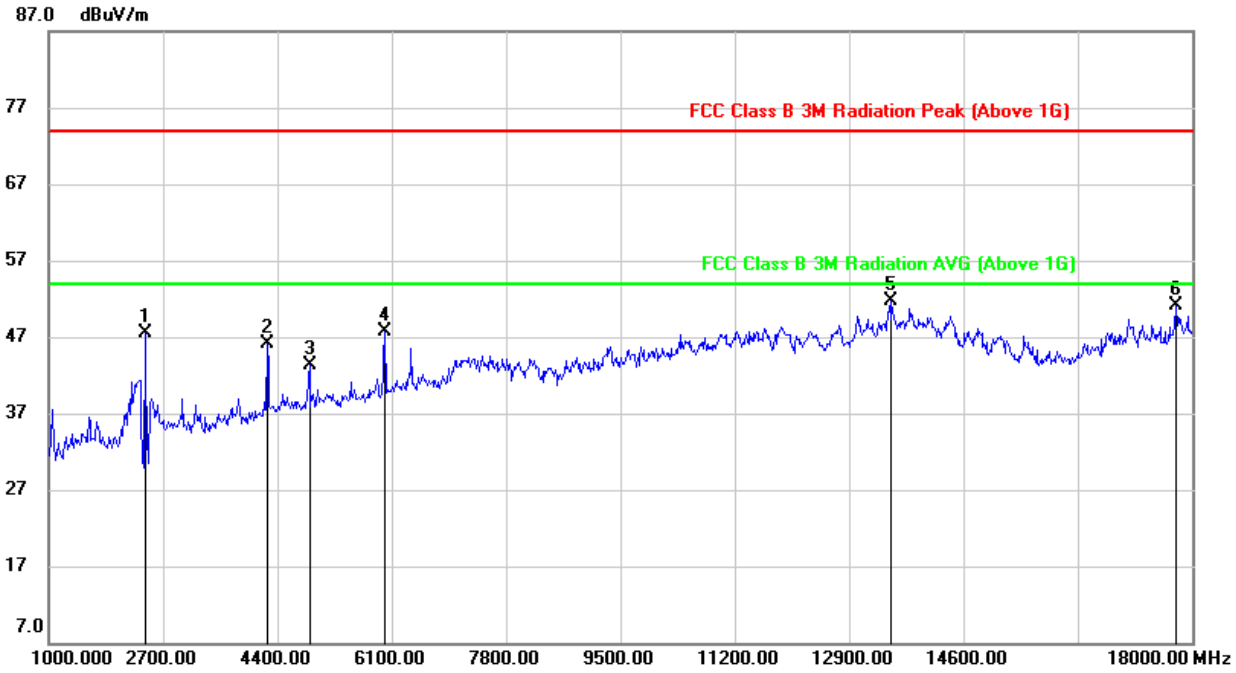
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	2428.000	55.52	-9.16	46.36	74.00	-27.64	peak
2	4859.000	45.94	-1.15	44.79	74.00	-29.21	peak
3	7307.000	39.30	6.38	45.68	74.00	-28.32	peak
4	10996.000	34.62	12.89	47.51	74.00	-26.49	peak
5	13801.000	33.10	18.54	51.64	74.00	-22.36	peak
6	17830.000	27.71	24.25	51.96	74.00	-22.04	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

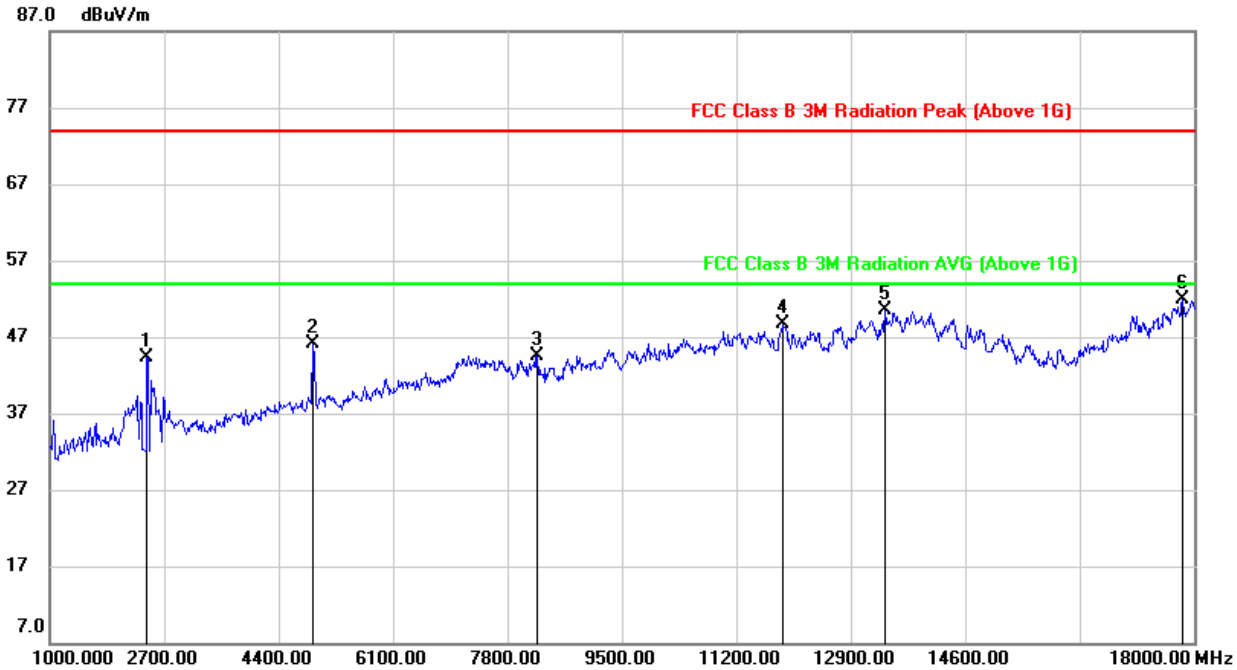
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2428.000	56.47	-9.06	47.41	74.00	-26.59	peak
2	4247.000	49.37	-3.35	46.02	74.00	-27.98	peak
3	4876.000	44.34	-1.00	43.34	74.00	-30.66	peak
4	5998.000	45.71	2.07	47.78	74.00	-26.22	peak
5	13529.000	32.88	18.75	51.63	74.00	-22.37	peak
6	17762.000	27.03	24.14	51.17	74.00	-22.83	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

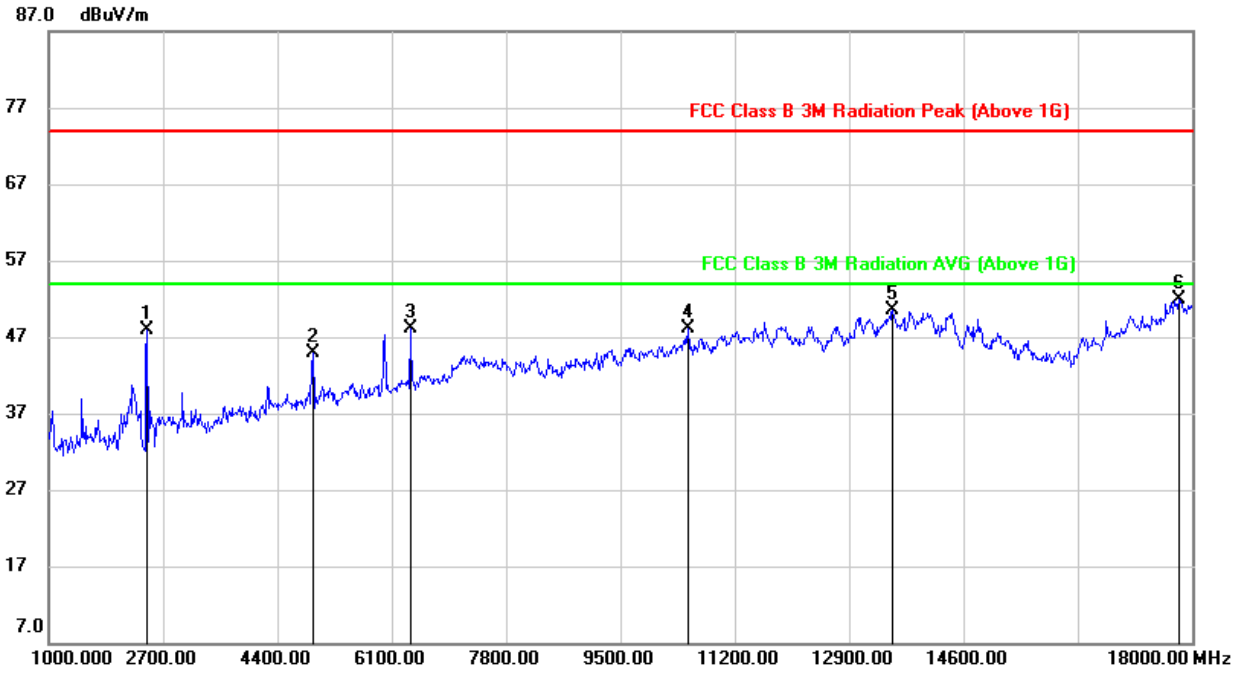
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2445.000	53.62	-9.24	44.38	74.00	-29.62	peak
2	4910.000	46.81	-0.69	46.12	74.00	-27.88	peak
3	8242.000	37.52	6.99	44.51	74.00	-29.49	peak
4	11880.000	33.79	14.84	48.63	74.00	-25.37	peak
5	13410.000	32.98	17.52	50.50	74.00	-23.50	peak
6	17830.000	27.59	24.25	51.84	74.00	-22.16	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.
4. AVG: VBW=1/Ton where: ton is transmit duration.
5. For transmit duration, please refer to clause 8.1.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

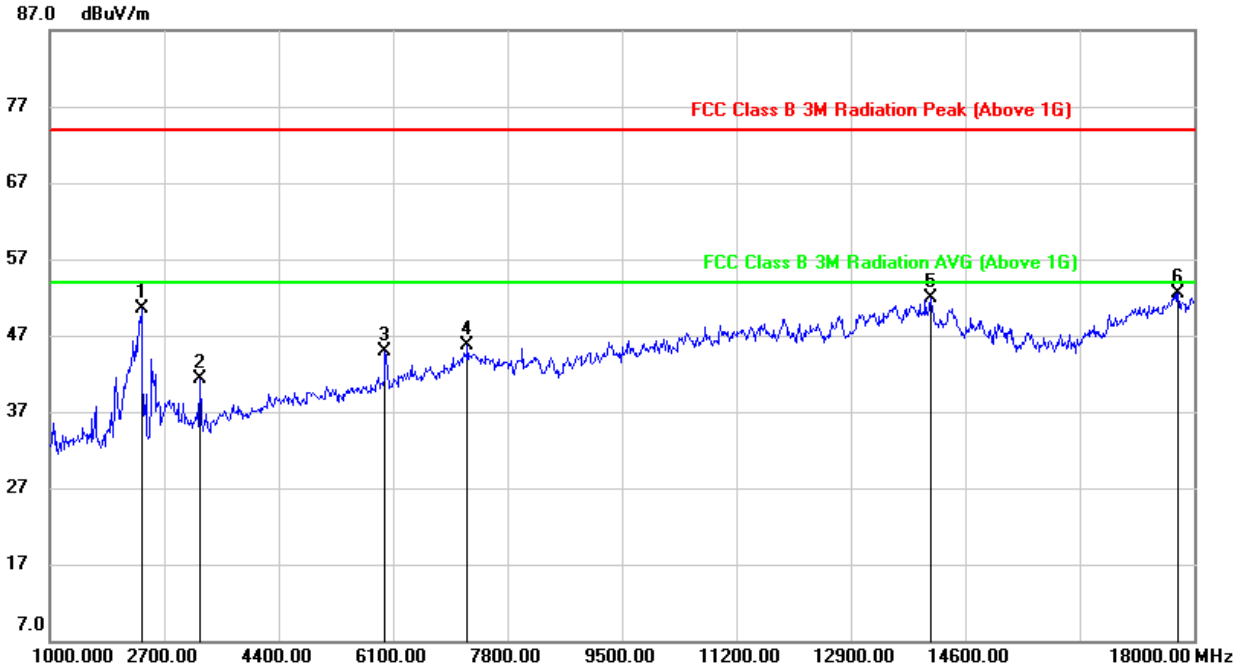


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2462.000	57.01	-9.16	47.85	74.00	-26.15	peak
2	4927.000	45.72	-0.77	44.95	74.00	-29.05	peak
3	6372.000	44.82	3.29	48.11	74.00	-25.89	peak
4	10503.000	36.16	12.01	48.17	74.00	-25.83	peak
5	13546.000	31.66	18.87	50.53	74.00	-23.47	peak
6	17813.000	27.48	24.44	51.92	74.00	-22.08	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

9.2.4. 802.11n HT40 MODE

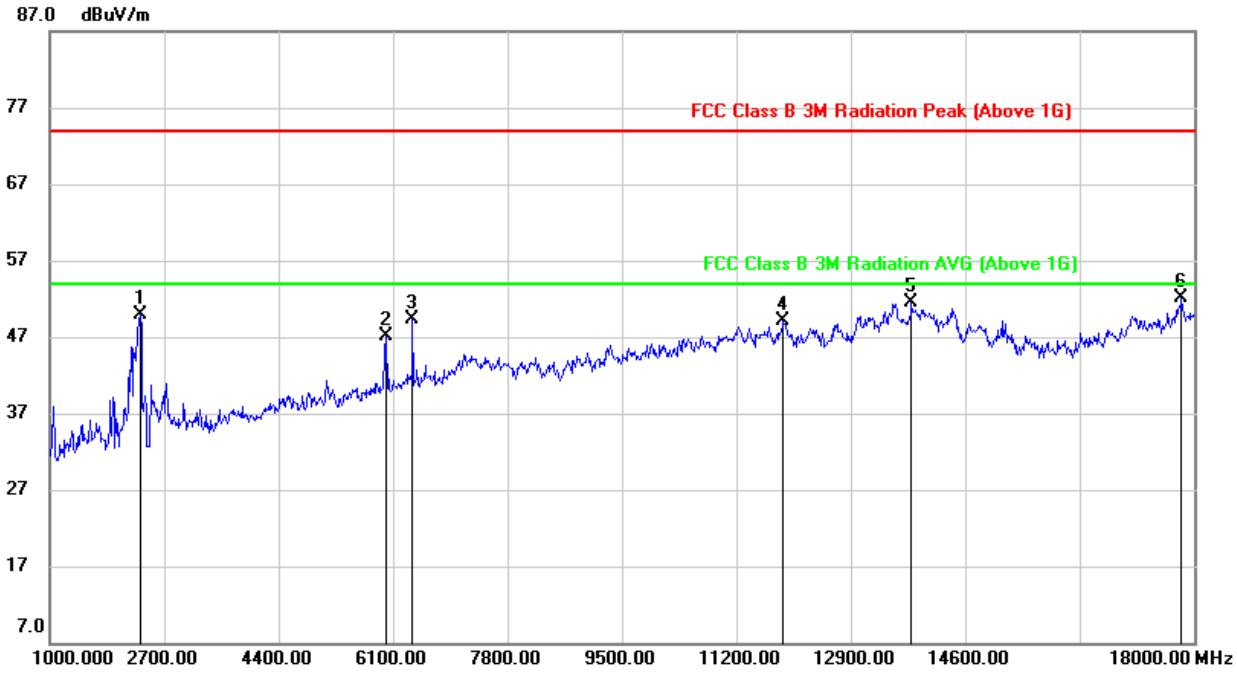
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2360.000	59.32	-8.76	50.56	74.00	-23.44	peak
2	3227.000	47.72	-6.51	41.21	74.00	-32.79	peak
3	5981.000	43.01	1.87	44.88	74.00	-29.12	peak
4	7205.000	39.36	6.35	45.71	74.00	-28.29	peak
5	14090.000	33.34	18.48	51.82	74.00	-22.18	peak
6	17762.000	28.85	23.74	52.59	74.00	-21.41	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

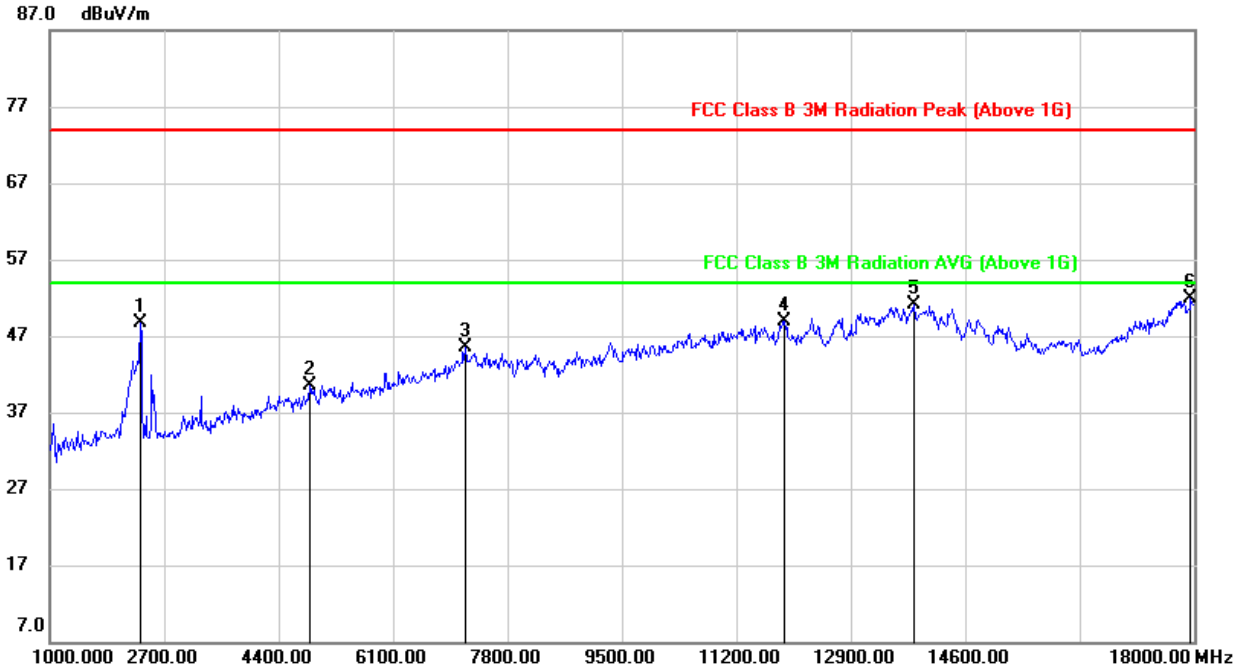
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2343.000	58.43	-8.54	49.89	74.00	-24.11	peak
2	5998.000	44.98	2.07	47.05	74.00	-26.95	peak
3	6389.000	46.06	3.34	49.40	74.00	-24.60	peak
4	11897.000	34.29	14.75	49.04	74.00	-24.96	peak
5	13801.000	32.44	19.04	51.48	74.00	-22.52	peak
6	17813.000	27.66	24.44	52.10	74.00	-21.90	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

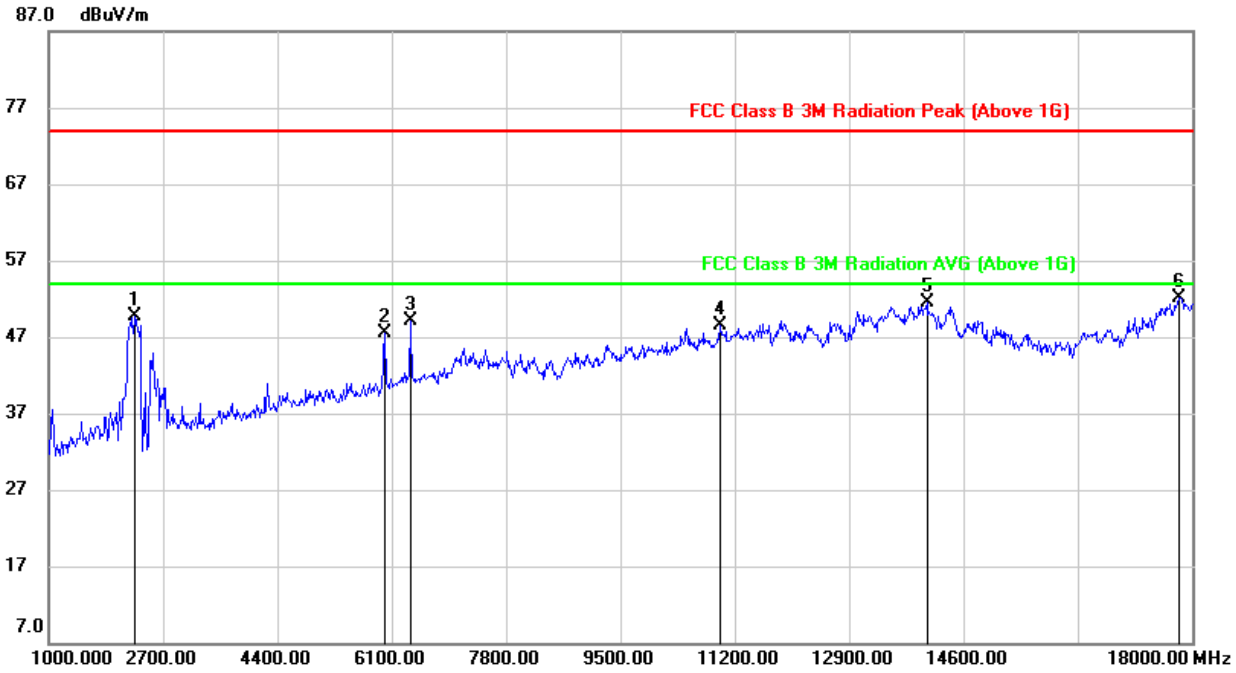
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2343.000	57.37	-8.65	48.72	74.00	-25.28	peak
2	4859.000	41.62	-1.15	40.47	74.00	-33.53	peak
3	7171.000	39.17	6.36	45.53	74.00	-28.47	peak
4	11914.000	33.94	15.02	48.96	74.00	-25.04	peak
5	13835.000	32.49	18.57	51.06	74.00	-22.94	peak
6	17949.000	27.20	24.78	51.98	74.00	-22.02	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

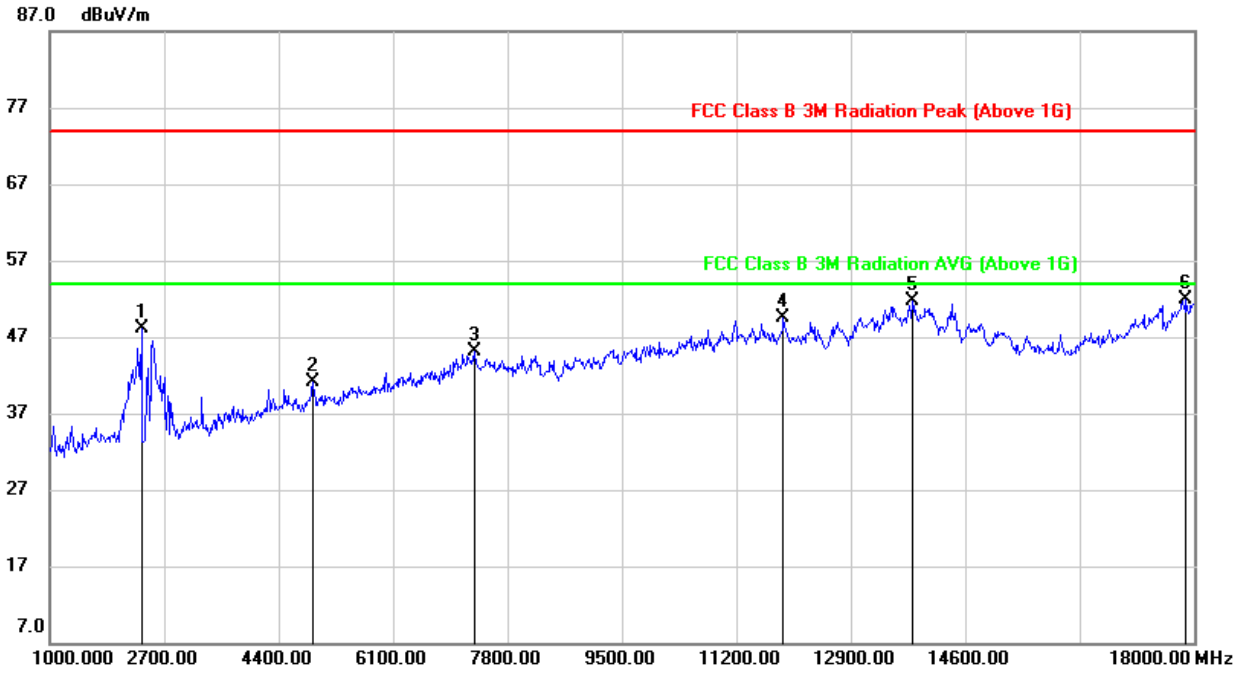
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2275.000	58.05	-8.26	49.79	74.00	-24.21	peak
2	5998.000	45.39	2.07	47.46	74.00	-26.54	peak
3	6372.000	45.89	3.29	49.18	74.00	-24.82	peak
4	10979.000	35.74	12.70	48.44	74.00	-25.56	peak
5	14056.000	33.06	18.39	51.45	74.00	-22.55	peak
6	17796.000	27.56	24.59	52.15	74.00	-21.85	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

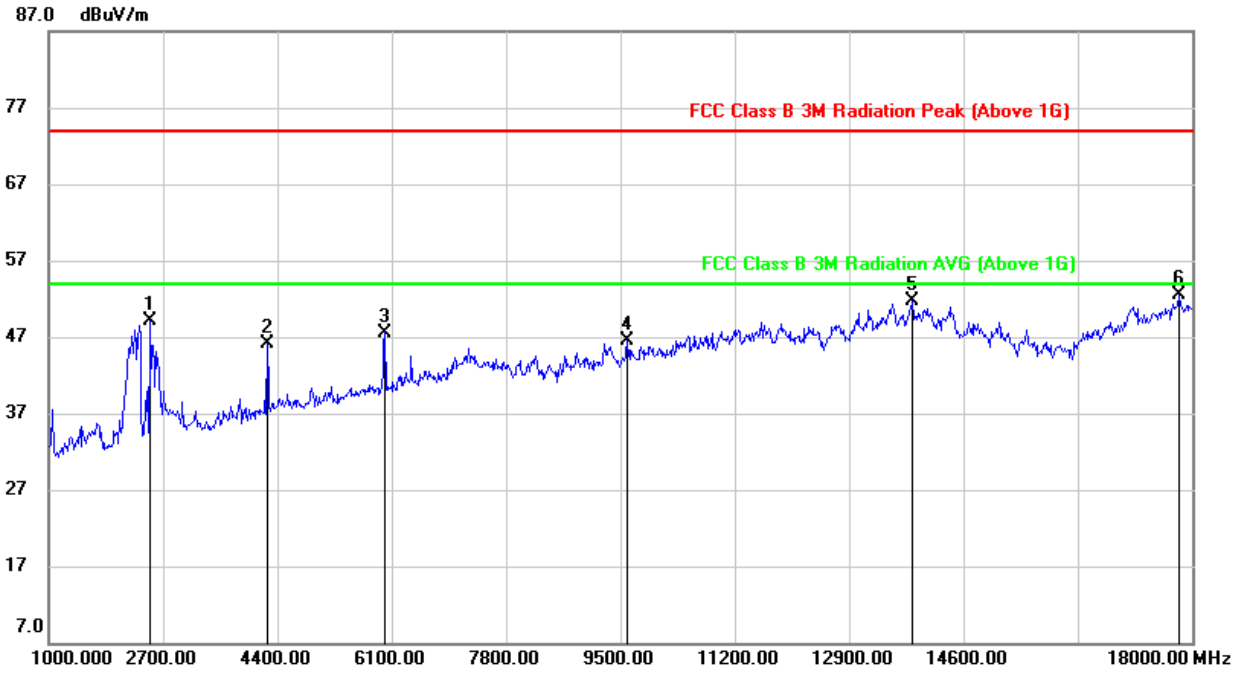
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2360.000	56.95	-8.76	48.19	74.00	-25.81	peak
2	4910.000	41.73	-0.69	41.04	74.00	-32.96	peak
3	7307.000	38.76	6.38	45.14	74.00	-28.86	peak
4	11897.000	34.22	15.19	49.41	74.00	-24.59	peak
5	13818.000	33.07	18.57	51.64	74.00	-22.36	peak
6	17881.000	27.76	24.09	51.85	74.00	-22.15	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)



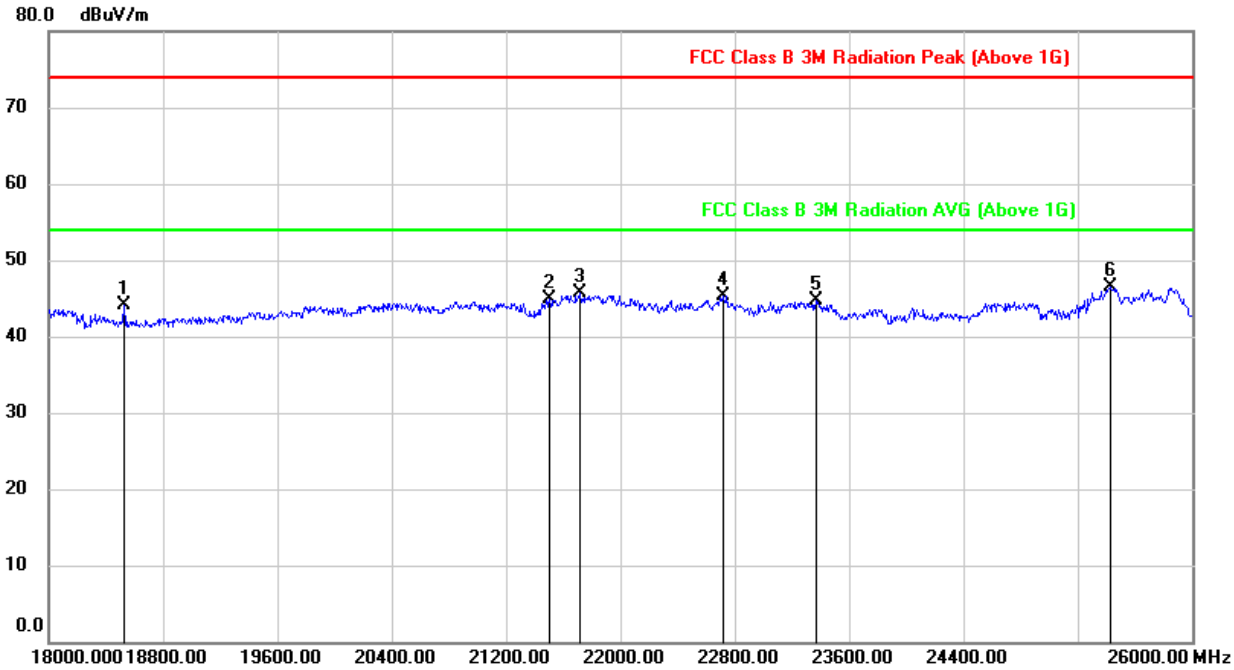
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2513.000	58.24	-9.15	49.09	74.00	-24.91	peak
2	4247.000	49.43	-3.35	46.08	74.00	-27.92	peak
3	5998.000	45.53	2.07	47.60	74.00	-26.40	peak
4	9602.000	36.62	9.79	46.41	74.00	-27.59	peak
5	13835.000	32.86	18.86	51.72	74.00	-22.28	peak
6	17796.000	27.90	24.59	52.49	74.00	-21.51	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

9.3. SPURIOUS EMISSIONS (18~25GHz)

9.3.1. 802.11n HT20 MODE

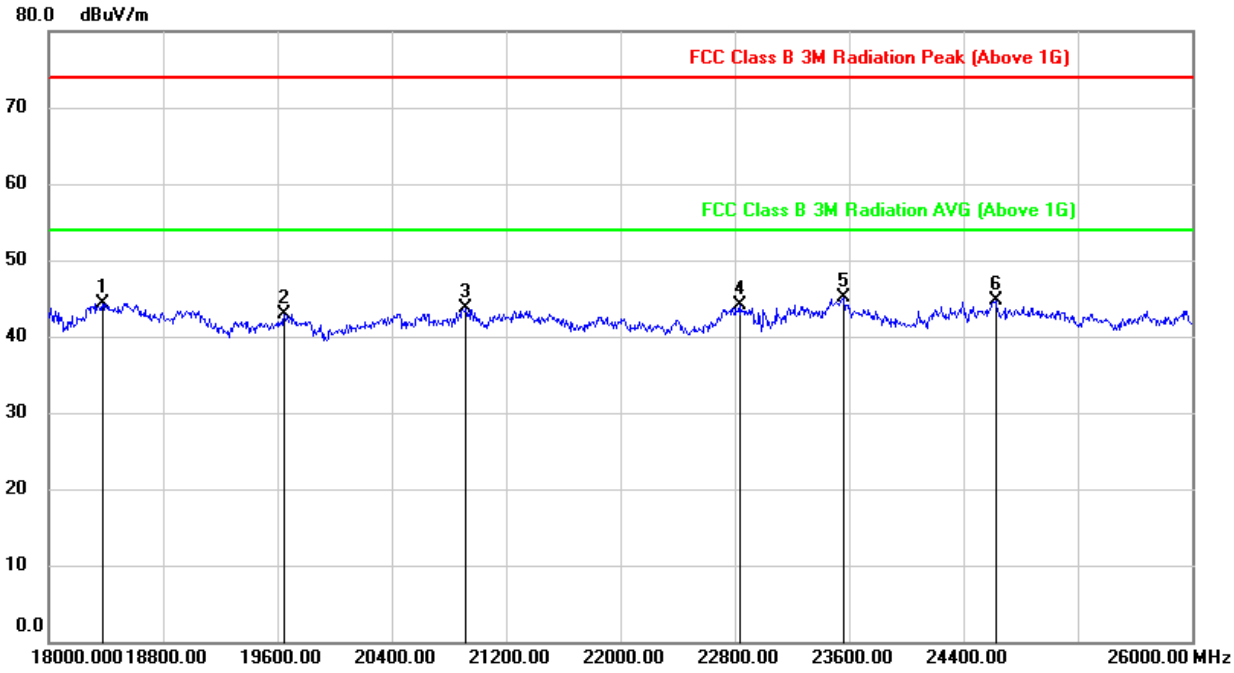
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18528.000	49.41	-5.26	44.15	74.00	-29.85	peak
2	21504.000	49.50	-4.69	44.81	74.00	-29.19	peak
3	21720.000	50.11	-4.37	45.74	74.00	-28.26	peak
4	22720.000	49.09	-3.71	45.38	74.00	-28.62	peak
5	23368.000	47.95	-3.26	44.69	74.00	-29.31	peak
6	25432.000	48.21	-1.75	46.46	74.00	-27.54	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



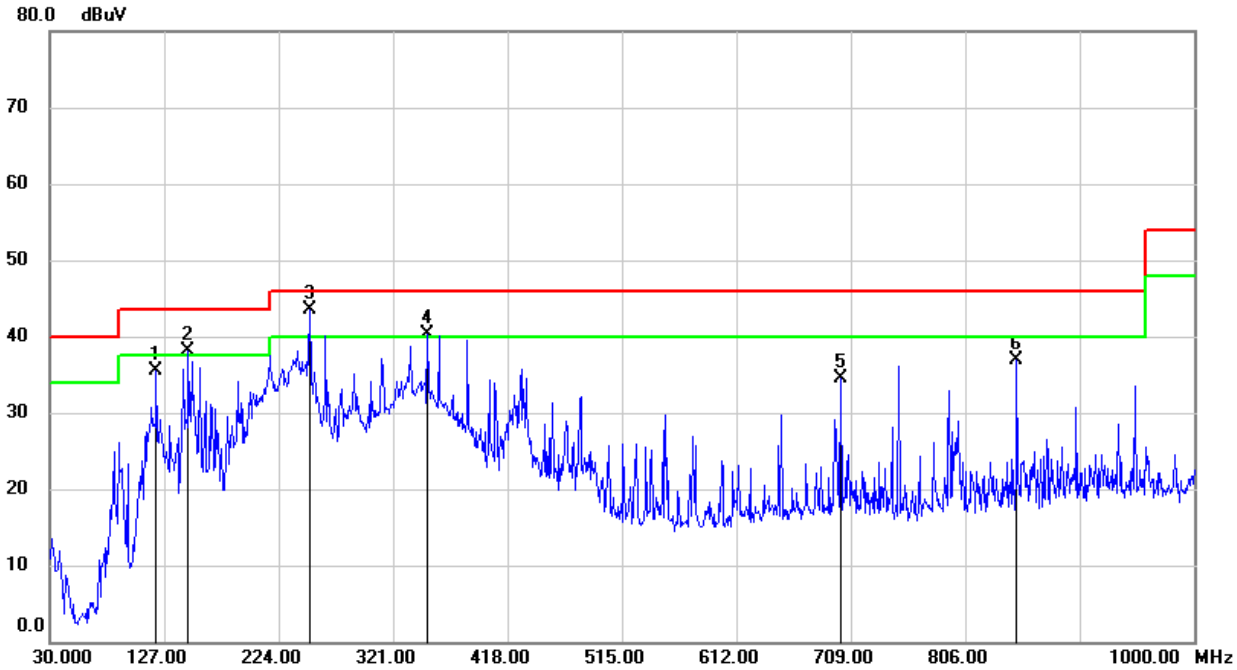
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18376.000	49.77	-5.40	44.37	74.00	-29.63	peak
2	19648.000	48.23	-5.37	42.86	74.00	-31.14	peak
3	20920.000	48.72	-4.95	43.77	74.00	-30.23	peak
4	22832.000	47.72	-3.60	44.12	74.00	-29.88	peak
5	23560.000	48.21	-3.15	45.06	74.00	-28.94	peak
6	24624.000	46.99	-2.33	44.66	74.00	-29.34	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Peak: Peak detector.

9.4. SPURIOUS EMISSIONS (30M ~ 1 GHz)

9.4.1. 802.11n HT20 MODE

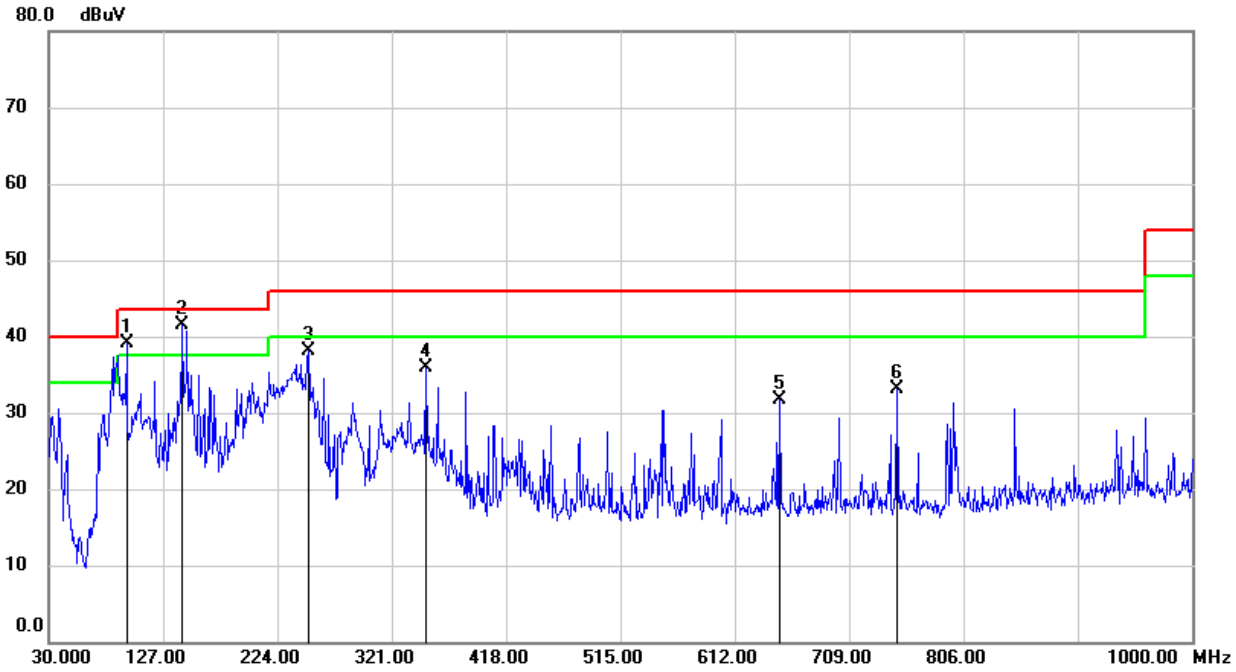
SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Reading (dBuV/m)	Correct dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	120.2100	54.54	-18.99	35.55	43.50	-7.95	QP
2	147.3700	55.68	-17.61	38.07	43.50	-5.43	QP
3	250.1900	61.26	-17.70	43.56	46.00	-2.44	QP
4	350.1000	54.18	-13.83	40.35	46.00	-5.65	QP
5	700.2700	42.41	-7.82	34.59	46.00	-11.41	QP
6	849.6500	43.15	-6.22	36.93	46.00	-9.07	QP

Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	95.9600	60.95	-21.93	39.02	43.50	-4.48	QP
2	143.4900	59.49	-17.97	41.52	43.50	-1.98	QP
3	250.1900	55.79	-17.70	38.09	46.00	-7.91	QP
4	350.1000	49.68	-13.83	35.85	46.00	-10.15	QP
5	649.8300	40.21	-8.60	31.61	46.00	-14.39	QP
6	749.7400	40.72	-7.52	33.20	46.00	-12.80	QP

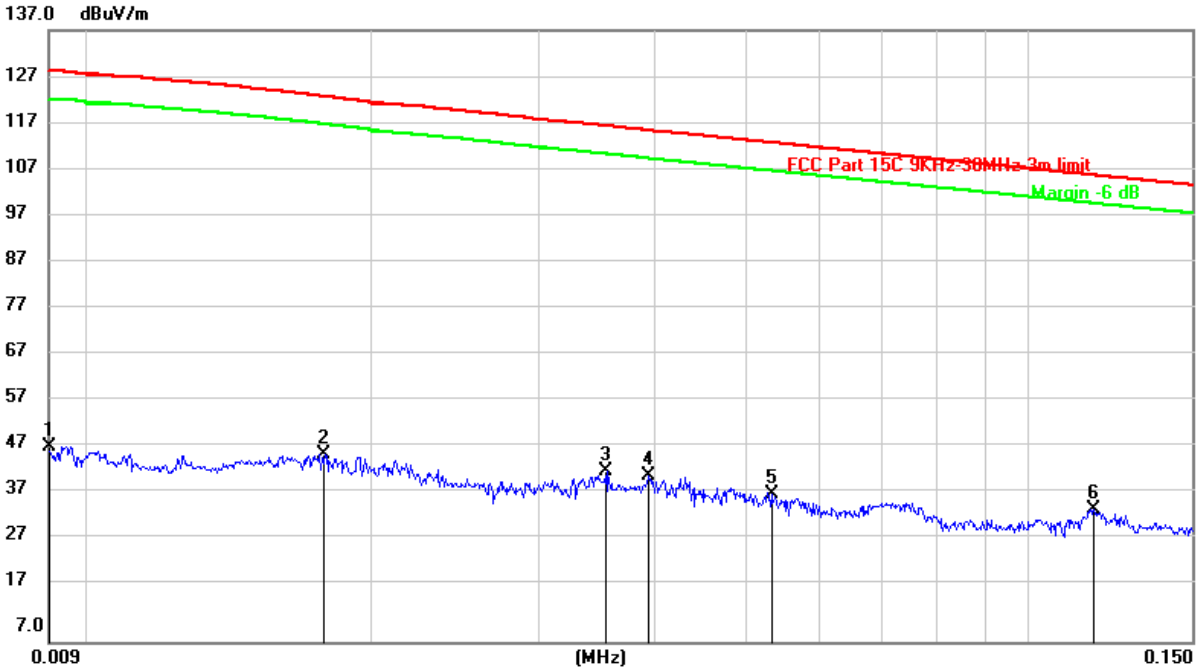
Note: 1. Result Level = Read Level + Correct Factor.
2. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
3. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto

9.5. SPURIOUS EMISSIONS BELOW 30M

9.5.1. 802.11n HT20 MODE

SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)

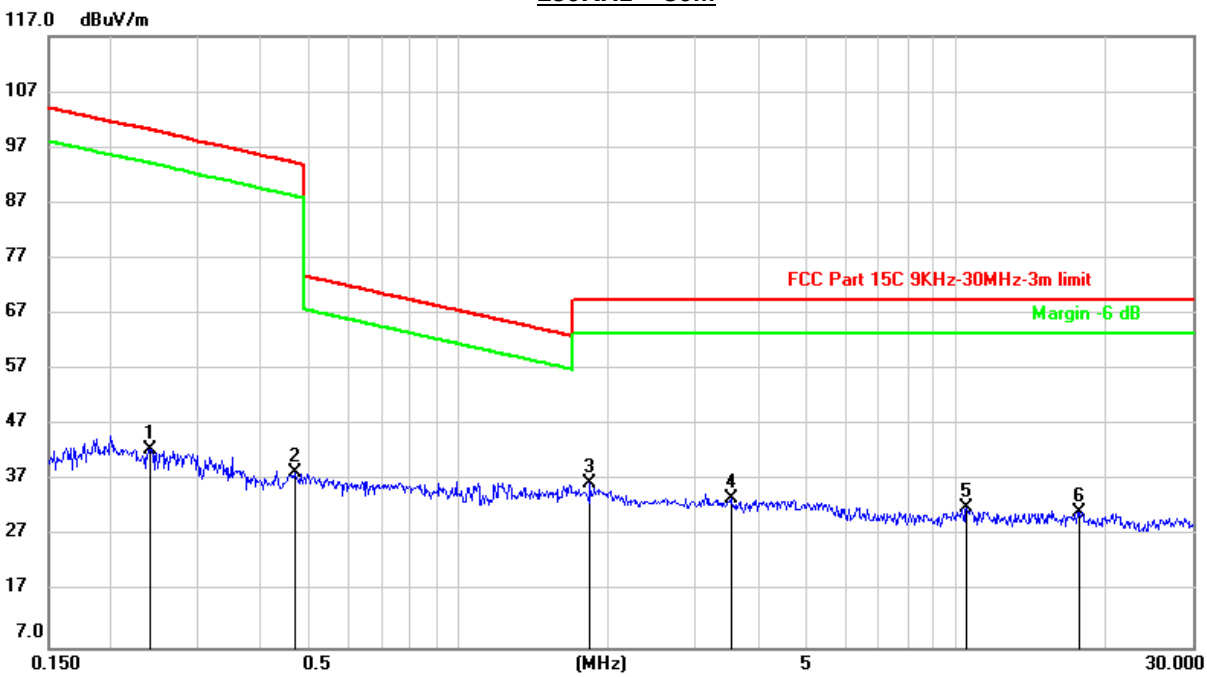
0.09KHz~ 150KHz



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0090	28.28	20.29	48.57	128.37	-79.80	peak
2	0.0177	26.46	20.29	46.75	122.96	-76.21	peak
3	0.0354	22.97	20.31	43.28	116.71	-73.43	peak
4	0.0393	22.01	20.31	42.32	115.73	-73.41	peak
5	0.0533	18.14	20.31	38.45	113.10	-74.65	peak
6	0.1178	14.96	20.29	35.25	106.19	-70.94	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

150KHz ~ 30M

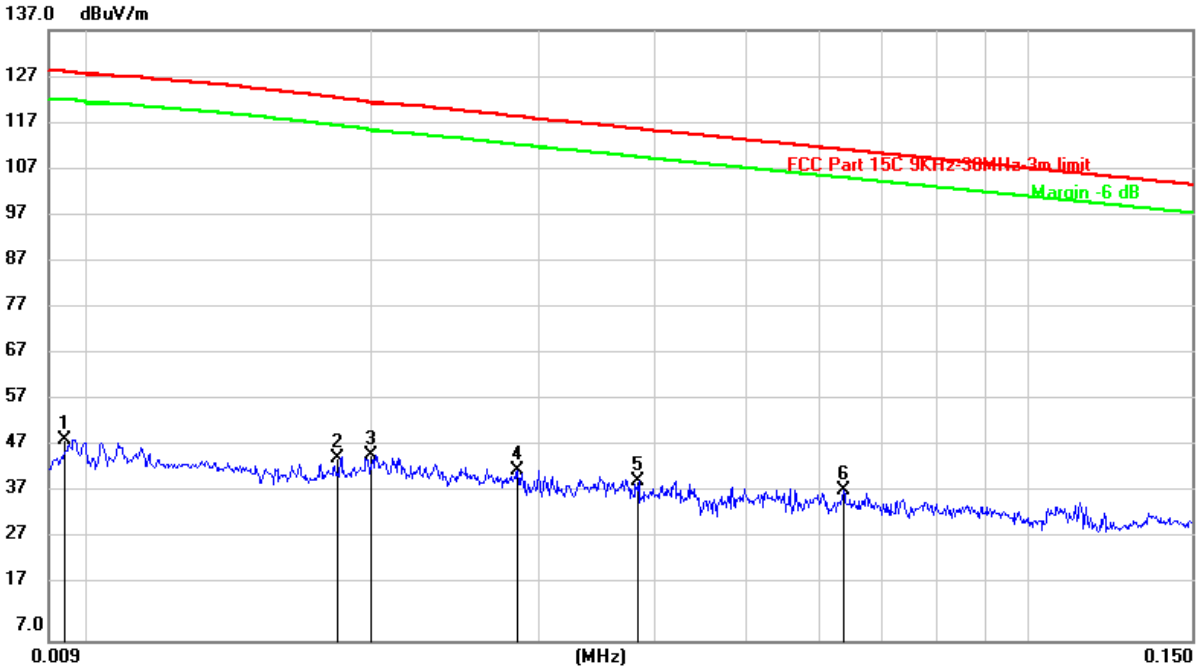


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.2391	22.36	20.33	42.69	100.20	-57.51	peak
2	0.4686	18.22	20.25	38.47	94.22	-55.75	peak
3	1.8386	15.78	20.67	36.45	69.54	-33.09	peak
4	3.5278	12.97	20.98	33.95	69.54	-35.59	peak
5	10.5076	11.19	21.05	32.24	69.54	-37.30	peak
6	17.6611	10.27	20.99	31.26	69.54	-38.28	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

SPURIOUS EMISSIONS (LOW CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)

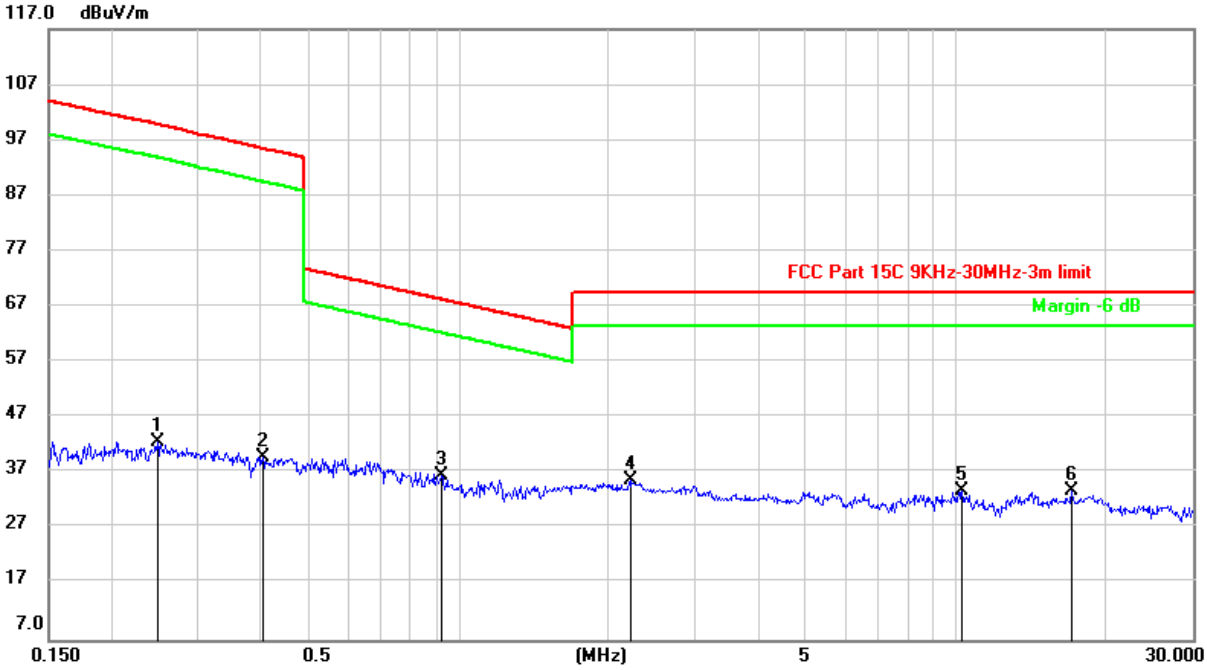
0.09KHz~ 150KHz



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	0.0094	29.51	20.26	49.77	128.06	-78.29	peak
2	0.0183	25.57	20.29	45.86	122.60	-76.74	peak
3	0.0200	26.30	20.31	46.61	121.58	-74.97	peak
4	0.0285	23.06	20.31	43.37	118.59	-75.22	peak
5	0.0383	20.75	20.31	41.06	115.98	-74.92	peak
6	0.0636	18.64	20.31	38.95	111.56	-72.61	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

150KHz ~ 30M



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)	
1	0.2479	22.41	20.32	42.73	99.89	-57.16	peak
2	0.4040	19.73	20.27	40.00	95.48	-55.48	peak
3	0.9233	16.32	20.37	36.69	68.31	-31.62	peak
4	2.2132	14.98	20.77	35.75	69.54	-33.79	peak
5	10.2873	12.65	21.05	33.70	69.54	-35.84	peak
6	17.1082	12.83	20.98	33.81	69.54	-35.73	peak

Note: 1. Measurement = Reading Level + Correct Factor.
2. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.

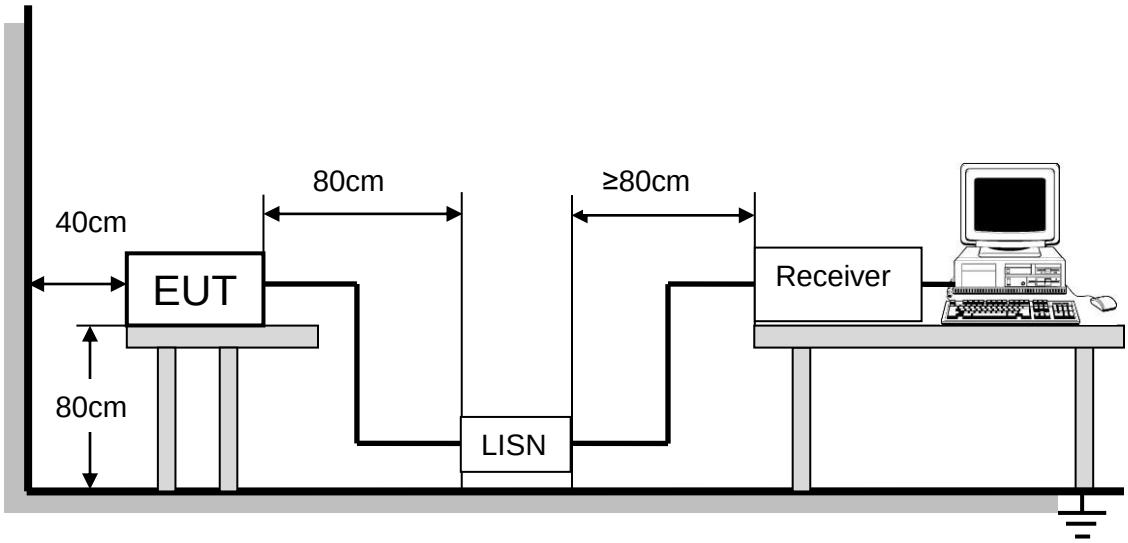
10. AC POWER LINE CONDUCTED EMISSIONS

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

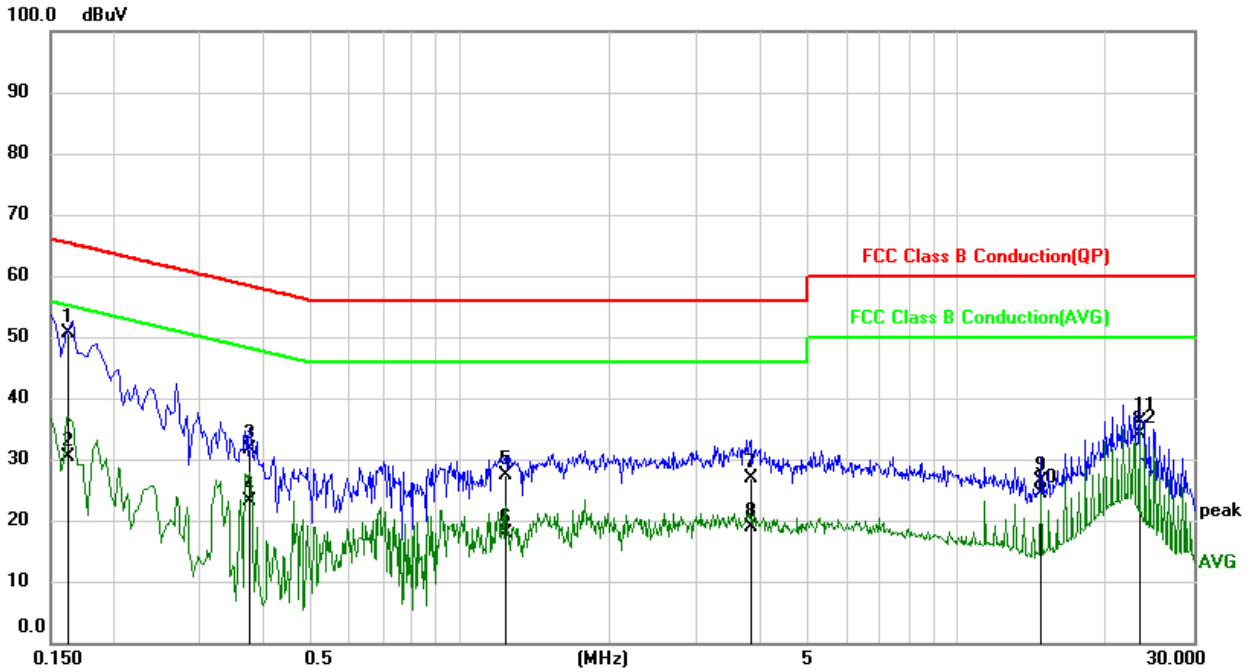


The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) 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 RESULTS

10.1.1. 11n HT20 MODE

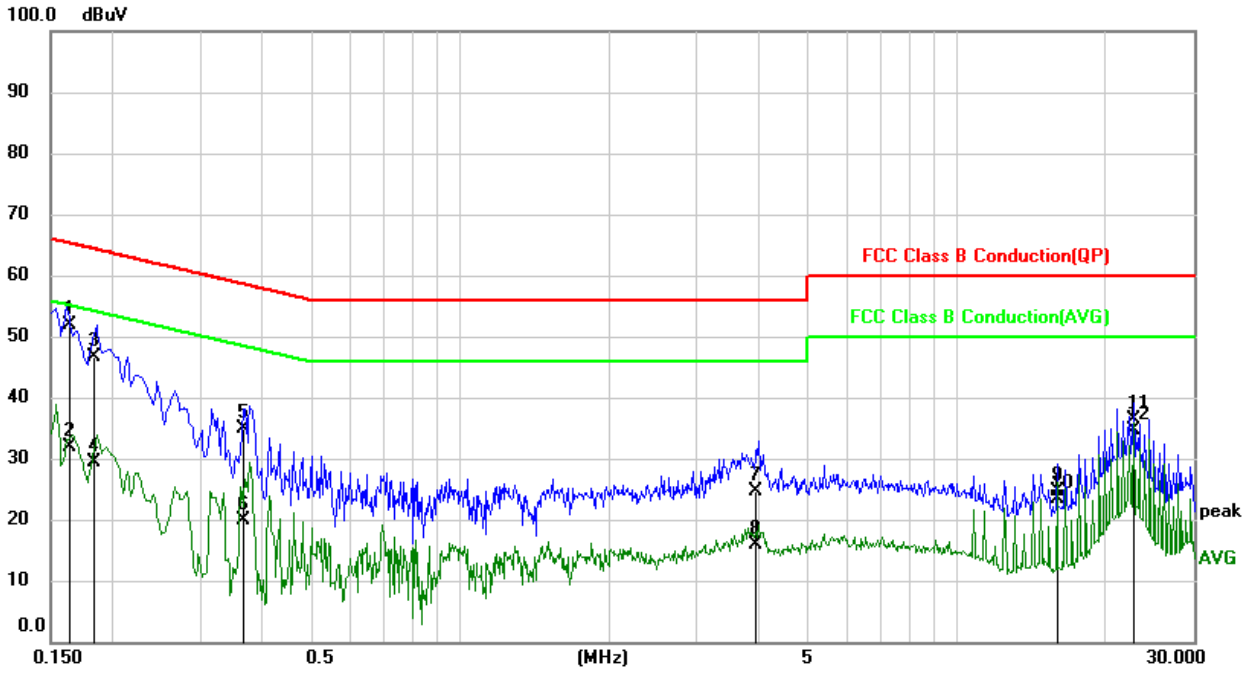
LINE N RESULTS (LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1621	41.11	9.45	50.56	65.36	-14.80	QP
2	0.1621	21.03	9.45	30.48	55.36	-24.88	AVG
3	0.3783	22.16	9.42	31.58	58.32	-26.74	QP
4	0.3783	13.74	9.42	23.16	48.32	-25.16	AVG
5	1.2419	17.95	9.43	27.38	56.00	-28.62	QP
6	1.2419	8.46	9.43	17.89	46.00	-28.11	AVG
7	3.8353	17.30	9.47	26.77	56.00	-29.23	QP
8	3.8353	9.33	9.47	18.80	46.00	-27.20	AVG
9	14.8081	16.77	9.67	26.44	60.00	-33.56	QP
10	14.8081	14.63	9.67	24.30	50.00	-25.70	AVG
11	23.3513	26.52	9.62	36.14	60.00	-23.86	QP
12	23.3513	24.47	9.62	34.09	50.00	-15.91	AVG

Note: 1. Result = Reading +Correct 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 (LOW CHANNEL, WORST-CASE CONFIGURATION)



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1644	42.32	9.63	51.95	65.24	-13.29	QP
2	0.1644	22.36	9.63	31.99	55.24	-23.25	AVG
3	0.1829	37.02	9.63	46.65	64.35	-17.70	QP
4	0.1829	19.63	9.63	29.26	54.35	-25.09	AVG
5	0.3638	25.15	9.62	34.77	58.64	-23.87	QP
6	0.3638	10.37	9.62	19.99	48.64	-28.65	AVG
7	3.9252	15.08	9.66	24.74	56.00	-31.26	QP
8	3.9252	6.23	9.66	15.89	46.00	-30.11	AVG
9	15.9352	14.96	9.78	24.74	60.00	-35.26	QP
10	15.9352	13.59	9.78	23.37	50.00	-26.63	AVG
11	22.7638	26.79	9.68	36.47	60.00	-23.53	QP
12	22.7638	24.86	9.68	34.54	50.00	-15.46	AVG

Note: 1. Result = Reading +Correct 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 an FPCB antenna with antenna connector.

ANTENNA GAIN

The antenna gain of EUT is less than 6 dBi.

END OF REPORT