CERTIFICATION TEST REPORT

Report Number. : 11934192-E4V3

Applicant	:	APPLE, INC. 1 INFINITE LOOP CUPERTINO, CA 95014, U.S.A.
Model	:	A1862
FCC ID	:	BCGA1862
IC	:	579C-A1862
EUT Description	:	DESKTOP COMPUTER
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E INDUSTRY CANADA RSS - 247 ISSUE 2

Date Of Issue:
December 08, 2017

Prepared by:
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NVLAP TESTING
NVLAP LAB CODE 200065-0

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	11/15/2017	Initial Issue	Francisco Guarnero
V2	11/28/2017	Address TCB Questions	Francisco Guarnero
V3	12/08/2017	Address TCB Questions	Chin Pang

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TABLE OF CONTENTS

REPORT REVISION HISTORY 2

TABLE OF CONTENTS 3

1. ATTESTATION OF TEST RESULTS 5

2. SUMMARY OF TESTING 6

2.1. FACILITIES AND ACCREDITATION 6

2.2. SUMMARY TABLE 6

2.3. TEST METHODOLOGY 6

2.4. CALIBRATION AND UNCERTAINTY 7
2.4.1. MEASURING INSTRUMENT CALIBRATION 7
2.4.2. SAMPLE CALCULATION 7
2.4.3. MEASUREMENT UNCERTAINTY 7

2.5. MEASUREMENT METHOD 8

2.6. TEST AND MEASUREMENT EQUIPMENT 9

3. EQUIPMENT UNDER TEST 10

3.1. DESCRIPTION OF EUT 10

3.2. MAXIMUM OUTPUT POWER 10

3.3. DESCRIPTION OF AVAILABLE ANTENNAS 10

3.4. WORST-CASE CONFIGURATION AND MODE 11

3.5. DESCRIPTION OF TEST SETUP 12

4. ANTENNA PORT TEST RESULTS 16

4.1. DUTY CYCLE 16

4.2. 99% BANDWIDTH 17
4.2.1. 802.11b MODE 17
4.2.2. 802.11n HT20 MODE 20

4.3. 6 dB BANDWIDTH 24
4.3.1. 802.11b MODE 24
4.3.2. 802.11n HT20 MODE 27

4.4. OUTPUT POWER 31
4.4.1. 802.11b MODE 32
4.4.2. 802.11n HT20 MODE 33

4.5. AVERAGE POWER 34
4.5.1. 802.11b MODE 34
4.5.2. 802.11n HT20 MODE 35

4.6. POWER SPECTRAL DENSITY 36
4.6.1. 802.11b MODE 36
4.6.2. 802.11n HT20 MODE 39

4.7. CONDUCTED SPURIOUS EMISSIONS 43
4.7.1. 802.11b MODE 44

4.7.2. 802.11n HT20 MODE 48

5. RADIATED TEST RESULTS 53

5.1. TRANSMITTER ABOVE 1 GHz 54
5.1.1. BANDEDGE, 1TX Antenna WF4, 802.11b Mode 54

5.2. HARMONICS AND SPURIOUS EMISSIONS 72
5.2.1. b Mode, 1Tx....72

5.3. BANDEDGE, 802.11n HT20 MODE....78
5.3.1. BANDEDGE, 1TX Antenna WF4....78

5.4. HARMONICS AND SPURIOUS EMISSIONS 102
5.4.1. HT20 1TX 102

5.5. Worst Case Below 1 GHz 108

5.6. Worst Case 18-26 GHz....110

6. AC POWER LINE CONDUCTED EMISSIONS 112

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: APPLE, INC.
1 INFINITE LOOP
CUPERTINO, CA 95014, U.S.A.

EUT DESCRIPTION: DESKTOP COMPUTER

MODEL: A1862

SERIAL NUMBER: C02TW087HR64 (CONDUCTED) C02VJ009JH7L (RADIATED)

DATE TESTED: AUGUST 31, 2017 – NOVEMBER 15, 2017

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	Pass
INDUSTRY CANADA RSS-247 Issue 2	Pass
INDUSTRY CANADA RSS-GEN Issue 4	Pass

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL Verification Services Inc. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL Verification Services Inc. By:

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TEST ENGINEER
UL Verification Services Inc.

2. SUMMARY OF TESTING

2.1. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 and 47266 Benicia Street, Fremont, California, USA. Line conducted emissions are measured only at the 47173 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

47173 Benicia Street	47266 Benicia Street
☐ Chamber A (IC:2324B-1)	☒ Chamber D (IC:22541-1)
☐ Chamber B (IC:2324B-2)	☒ Chamber E (IC:22541-2)
☐ Chamber C (IC:2324B-3)	☐ Chamber F (IC:22541-3)
	☐ Chamber G (IC:22541-4)
	☐ Chamber H (IC:22541-5)

UL Verification Services Inc. is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://ts.nist.gov/standards/scopes/2000650.htm.

2.2. SUMMARY TABLE

FCC Part Section	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	RSS-247 5.2.1	Occupied Band width (6dB)	>500KHz	Conducted	Pass	MHz
2.1051, 15.247 (d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-20dBc		Pass	dBm
15.247	RSS-247 5.4.4	TX conducted output power	<30dBm		Pass	dBm
15.247	RSS-247 5.2.2	PSD	<8dBm		Pass	dBm
15.207 (a)	RSS-GEN 8.8	AC Power Line conducted emissions	Section 10		Pass	dBuV(AV)
15.205, 15.209	RSS-GEN 8.9/7	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	dBuV/m

2.3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, KDB 558074 D01 v04, KDB 662911, ANSI C63.10-2013, RSS-GEN Issue 4, RSS-247 Issue 2.

2.4. CALIBRATION AND UNCERTAINTY

2.4.1. 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 recognized national standards.

2.4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

2.4.3. MEASUREMENT UNCERTAINTY

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

Parameter	Uncertainty
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.84 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.65 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	3.15 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	5.36 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.32 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.45 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.24 dB
Occupied Channel Bandwidth	±0.39 %

Uncertainty figures are valid to a confidence level of 95%.

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2.5. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 558074 D01 v04, Section 6.

6 dB Emission BW: KDB 558074 D01 v04, Section 8.

Conducted Output Power: KDB 558074 D01 v04, Section 9.1.2 (Method PKPM1), Section 9.2.3.2 (Method AVGPM-G)

Power Spectral Density: KDB 558074 D01 v04, Section 10.2 (Method PKPSD), Section 10.3 (Method AVGPSD-1)

Unwanted emissions in restricted bands: KDB 558074 D01 v04, Section 12.0, 12.2.

Unwanted emissions in non-restricted bands: KDB 558074 D01 v04, Section 11.1 (a) (b), 11.2, and 11.3

AC Power Line Conducted Emissions: ANSI C63.10-2013, Section 6.2.

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2.6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Asset**	**Cal Due**
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T711	1/30/2018
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T740	11/29/17
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T340	12/14/2017
Antenna, Horn 1-18GHz	ETS Lindgren	3117	T346	3/28/2018
Antenna, Broadband Hybrid, 30MHz to 2000MHz	Sunol Sciences	JB3	T900	5/31/2018
Amplifier, 1 to 18GHz	Miteq	AFS42-00101800-25-S-42	T741	11/29/2017
Amplifier, 10KHz to 1GHz, 32dB	Sonoma	310N	T285	6/24/2018
Spectrum Analyzer, PXA 3Hz to 44GHz	Keysight	N9030A	T906	2/14/2018
Power Meter, P-series single channel	Keysight	N1912A	T1245	1/05/2018
Power Sensor	Keysight	N1921A	T1224	1/31/2018
Pre-Amp 18-26GHz	Agilent Technology	8449B	T404	7/23/2018
Antenna Horn, 18 to 26GHz	ARA	MWH-1826	T89	1/04/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T459	6/22/2018
Spectrum Analyzer, PXA, 3Hz to 44GHz	Agilent (Keysight) Technologies	N9030A	T342	2/23/2018
AC Line Conducted				
EMI Test Receiver 9Khz-7GHz	Rohde & Schwarz	ESCI7	T1436	01/06/2018
LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2-01	T1310	06/15/2018
Power Cable, Line Conducted Emissions	UL	PG1	T861	08/31/2018
LISN for Conducted Emissions CISPR-16	Fischer	50/250-25-2-01	T1310	06/15/2018
UL AUTOMATION SOFTWARE				
Radiated Software	UL	UL EMC	Ver 9.5, April 26, 2016	
Conducted Software	UL	UL EMC	Ver 5.4, October 13, 2016	
AC Line Conducted Software	UL	UL EMC	Ver 9.5, May 26, 2015	

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3. EQUIPMENT UNDER TEST

3.1. DESCRIPTION OF EUT

The Apple iMac Pro is a desktop computer, with 27-inch Retina display, storage media, multimedia functions, IEEE 802.11a/b/g/n/ac radio and Bluetooth radio.

3.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

2.4GHz BAND

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
1Tx			
2412 - 2472	802.11b	27.21	526.02
2412 - 2472	802.11g	COVERED BY 802.11n HT20 1TX	
2412 - 2472	802.11n HT20	28.4	691.83

3.3. DESCRIPTION OF AVAILABLE ANTENNAS

Frequency Band (GHz)	WF4 (dBi)
2.4	4.1

3.4. WORST-CASE CONFIGURATION AND MODE

For below 1G, 18-26GHz radiated emission, and power line conducted emissions were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

For b and HT20 modes, radiated harmonics spurious were performed with the EUT set at the highest power setting as worst-case scenario.

EUT was performed with AC Power in the normal use orientation as described by the manufacturer.

802.11g 1TX has the same target power and use the same modulation (OFDM) and is covered by 802.11n HT20 1TX.

Based on client provided and the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20mode: MCS0

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3.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Keyboard	Apple	A1243	CC2420202BHDPQVAV	
Mouse	Apple	A1152	CC23304069XDNYPA0	

I/O CABLES (Conducted Test)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	Antenna	4	SMA	Un-Shielded	0.2	N/A
2	AC	1	120Vac	Un-Shielded	3	N/A

I/O CABLES (Radiated Test)

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
2	AC	1	120Vac	Un-Shielded	3	N/A

TEST SETUP

The EUT was power by AC Source. Test software exercised the EUT.

SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was 9.30.121.47

The test utility software used during testing (r711441 WLTEST) FWID 01-f52a9c20

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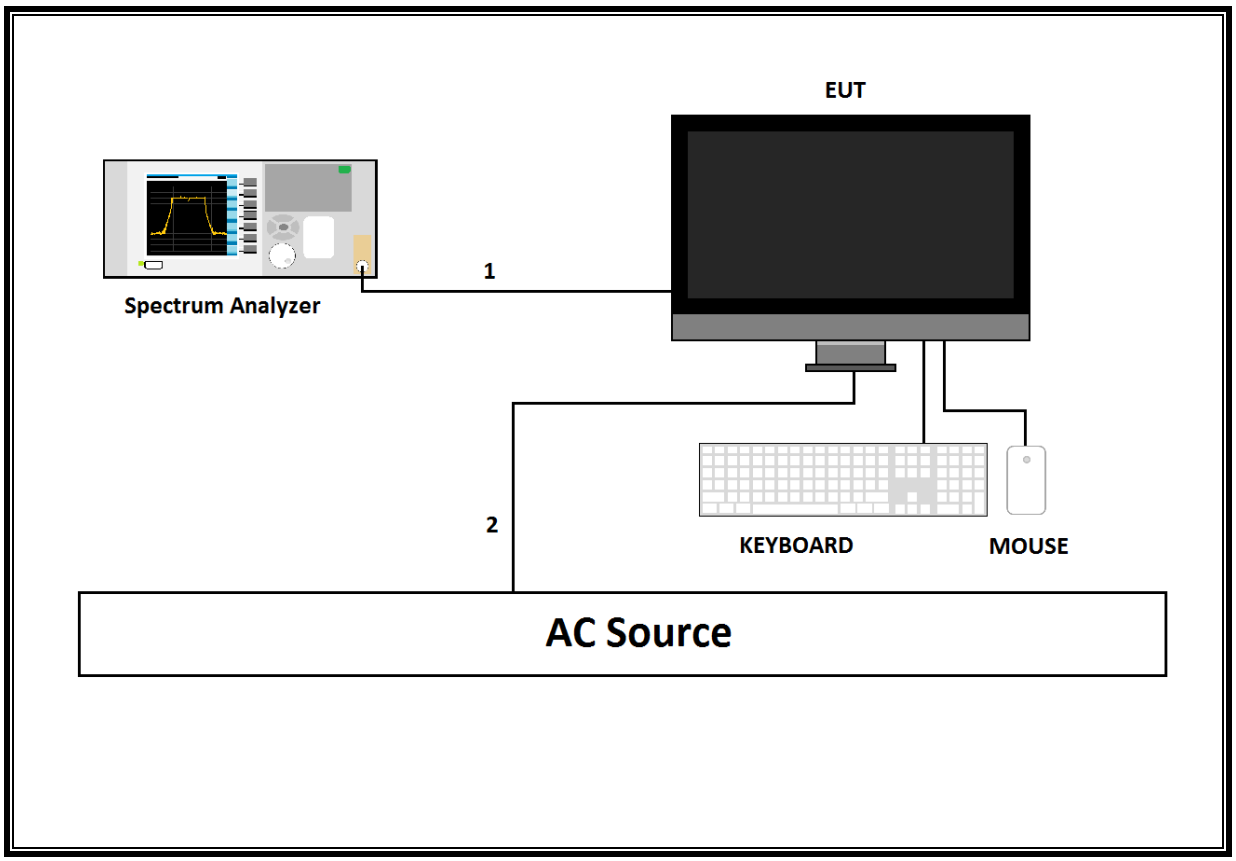
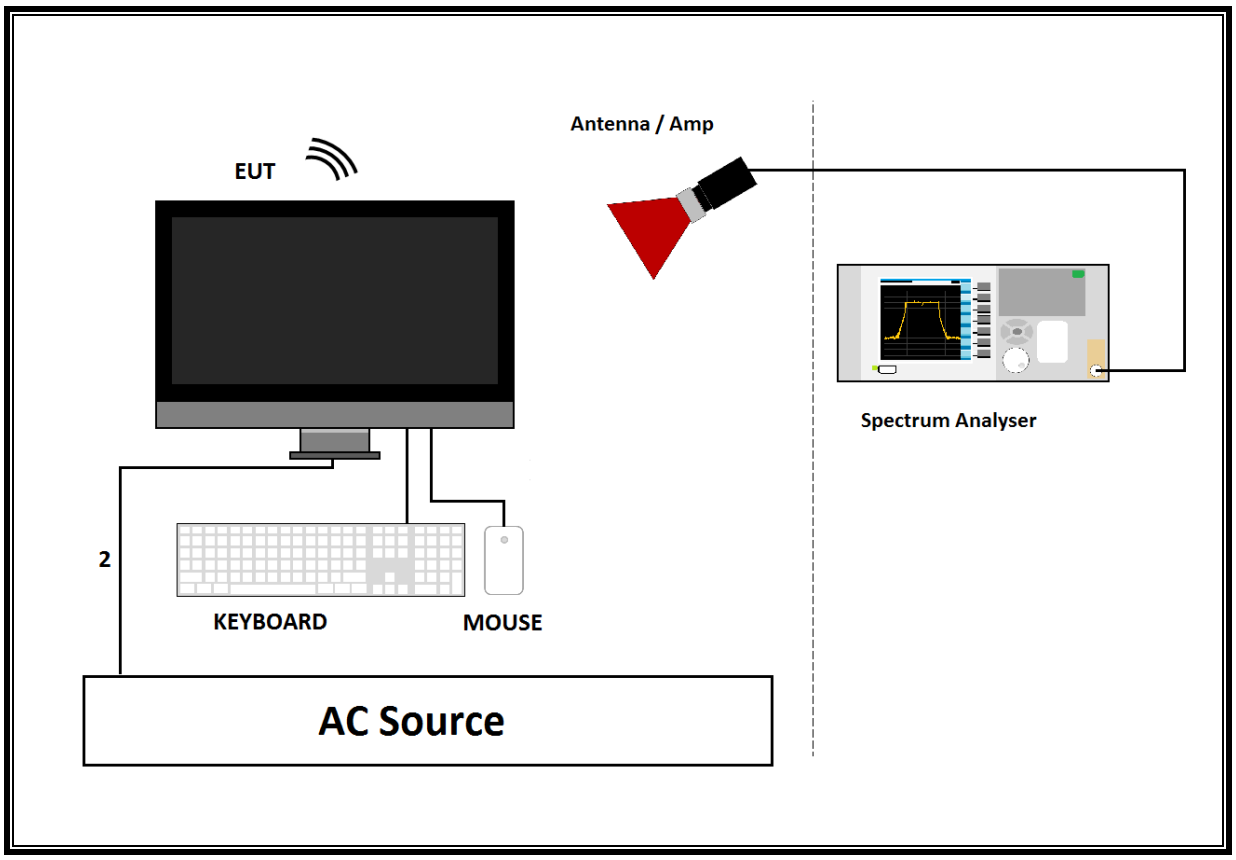
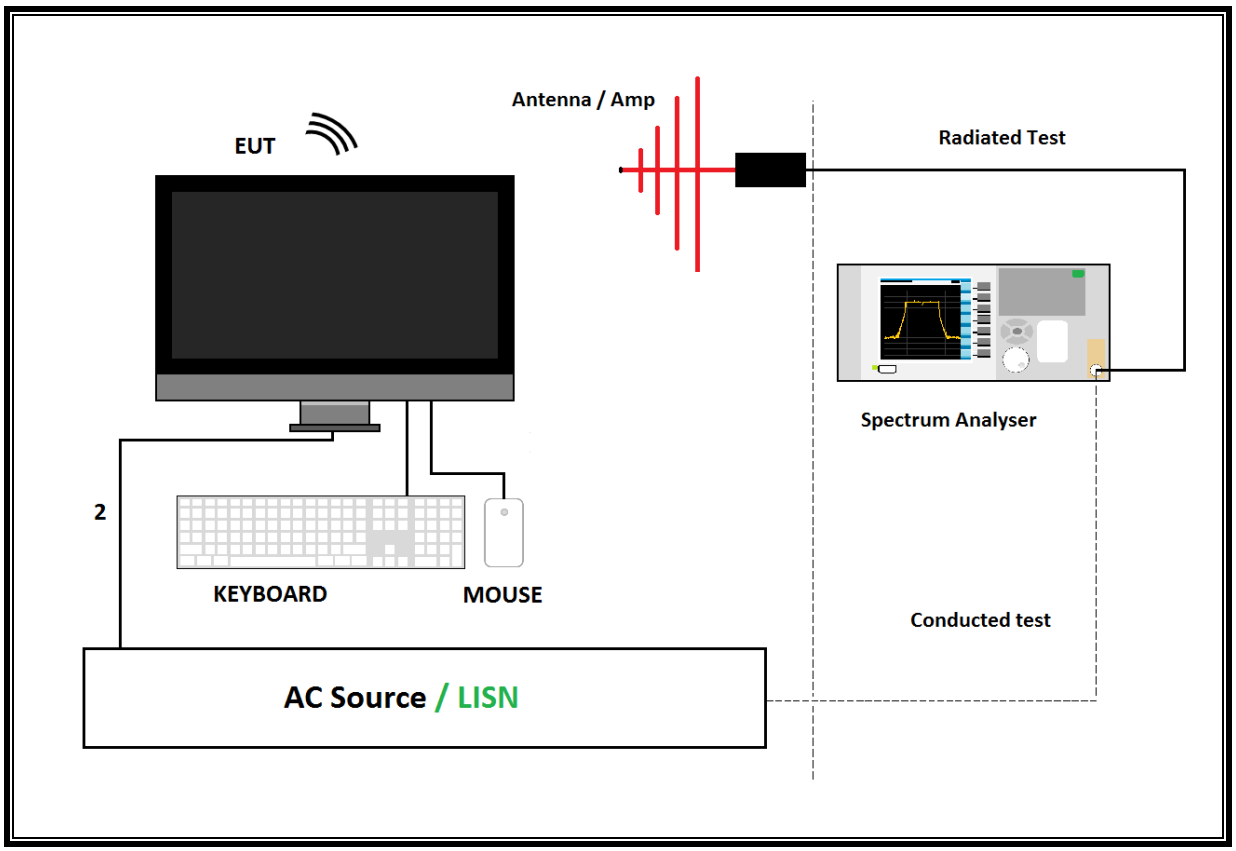
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS



SETUP DIAGRAM FOR BELOW 1GHz AND LINE CONDUCTED TEST



4. ANTENNA PORT TEST RESULTS

4.1. DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
802.11b 1TX	12.000	12.120	0.990	99.01%	0.00	0.010
802.11n HT20 1TX	1.860	1.962	0.948	94.80%	0.23	0.538

DUTY CYCLE 802.11b 1TX MODE

DUTY CYCLE 802.11n 1TX MODE

4.2. 99% BANDWIDTH

LIMITS

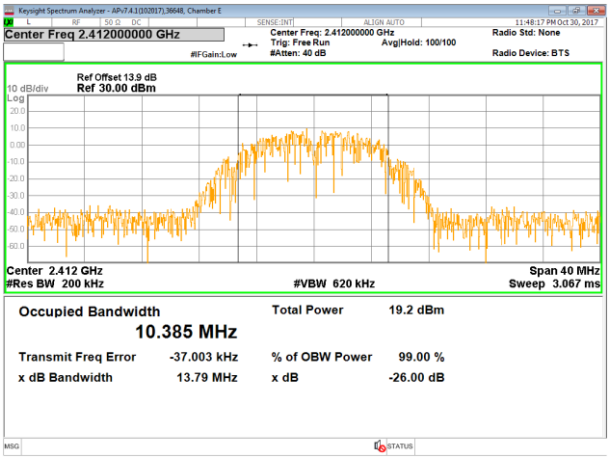
None; for reporting purposes only.

RESULTS

4.2.1. 802.11b MODE

1TX Antenna WF4

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	10.385
Low 2	2417	10.505
Low 3	2422	10.844
Low 4	2427	11.883
Mid 6	2437	11.831
High 9	2452	11.063
High 10	2457	10.451
High 11	2462	9.506
High 12	2467	11.364
High 13	2472	10.565



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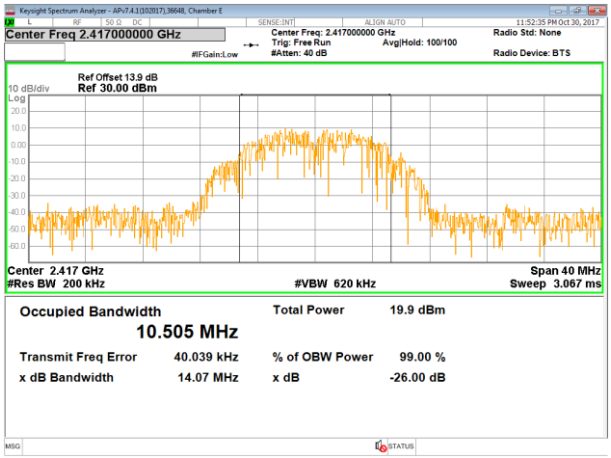

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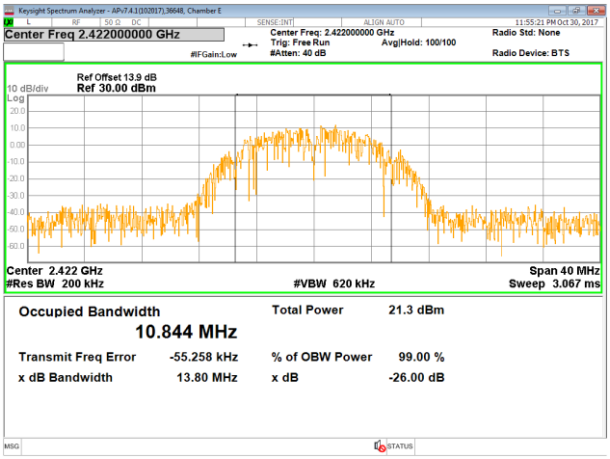

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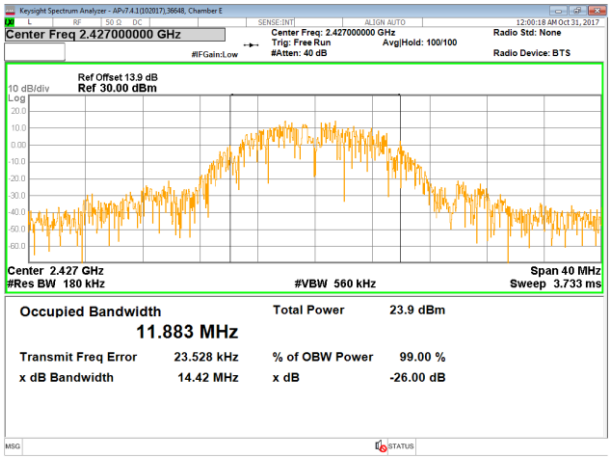
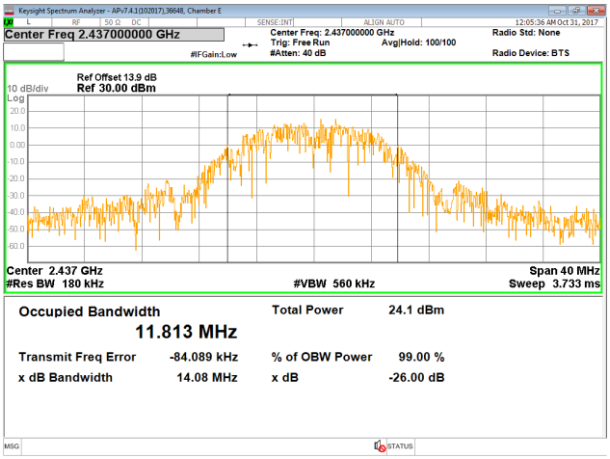
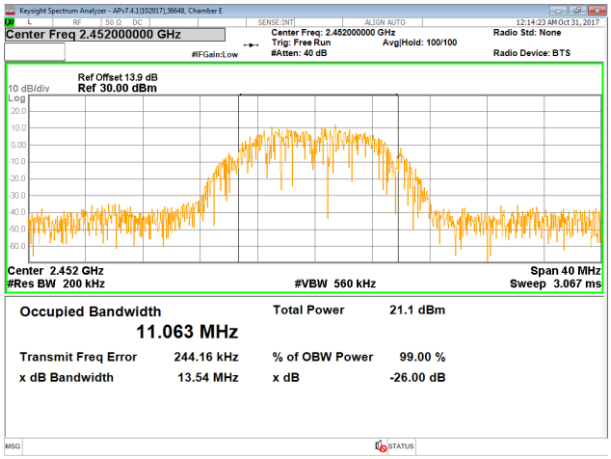


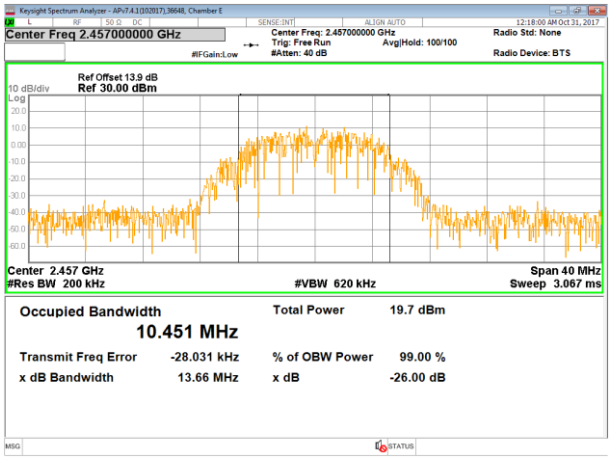
LOW CHANNEL 4



MID CHANNEL 6



HIGH CHANNEL 9



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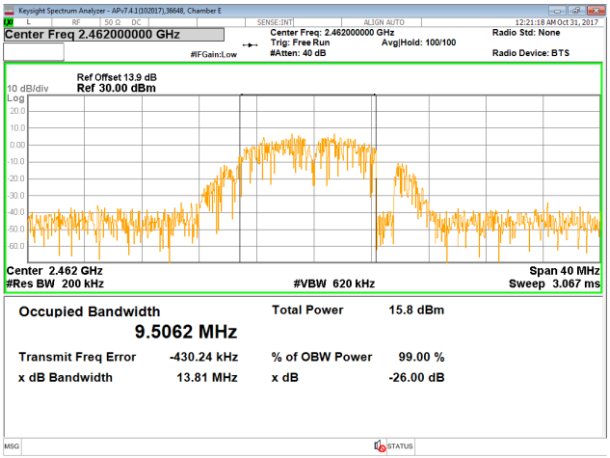

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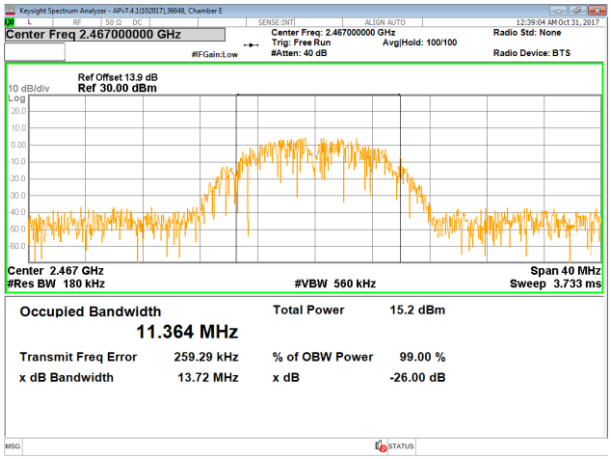

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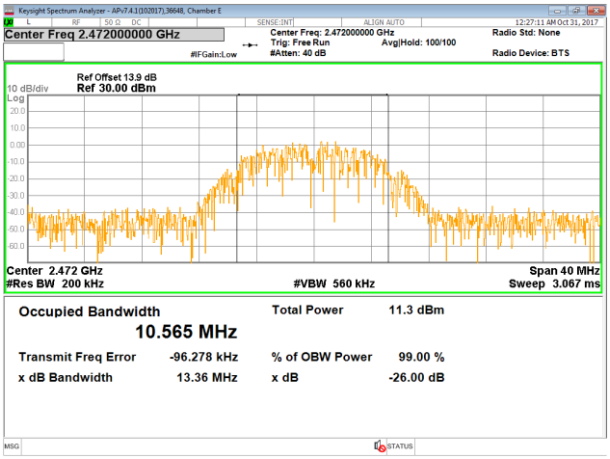
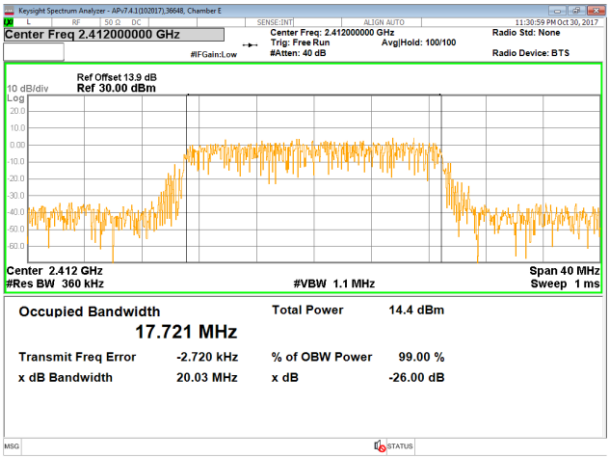


HIGH CHANNEL 13

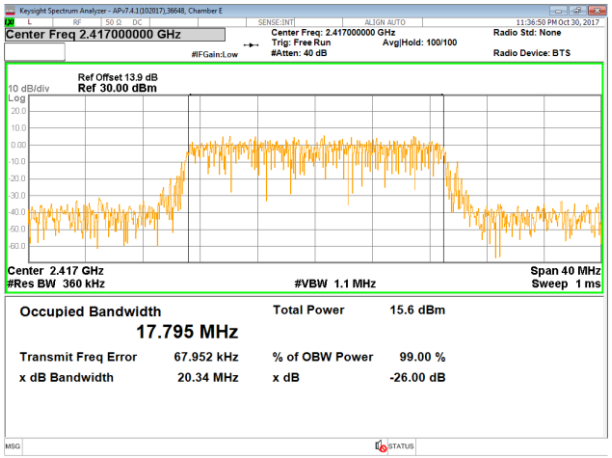
4.2.2. 802.11n HT20 MODE

1TX Antenna WF4

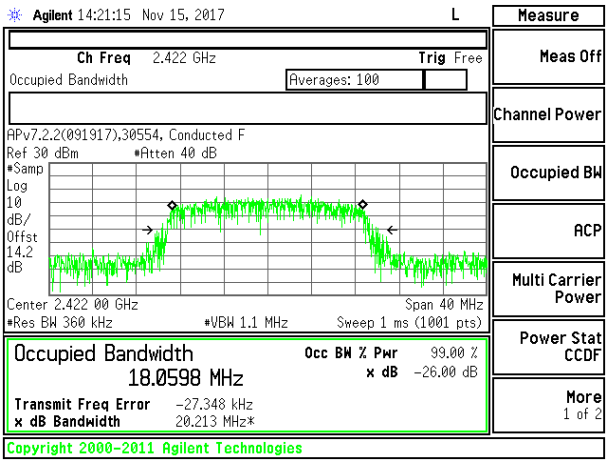
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low 1	2412	17.721
Low 2	2417	17.795
Low 3	2422	18.060
Low 4	2427	17.851
Low 5	2432	18.103
Mid 6	2437	17.865
High 7	2442	17.837
High 8	2447	17.871
High 9	2452	17.766
High 10	2457	17.810
High 11	2462	17.742
High 12	2467	17.716
High 13	2472	18.139



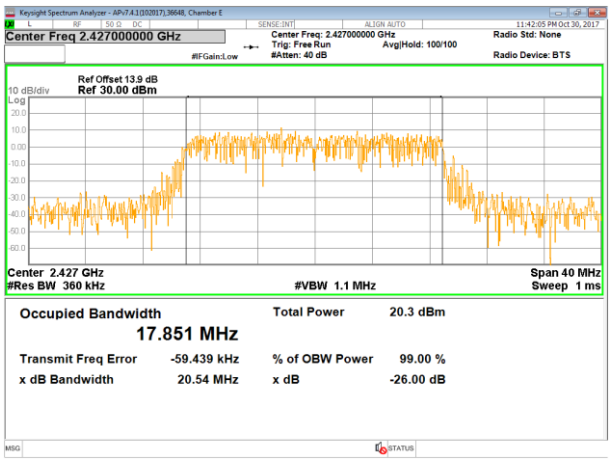
LOW CHANNEL 1



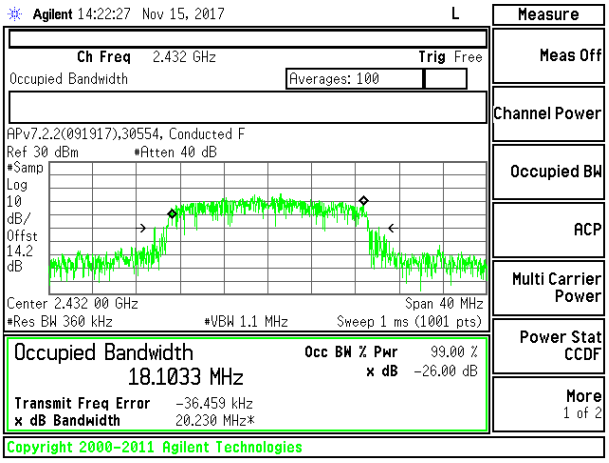
LOW CHANNEL 2



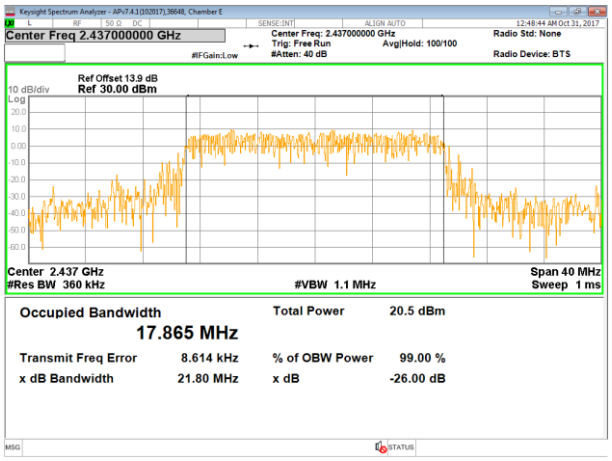
LOW CHANNEL 3



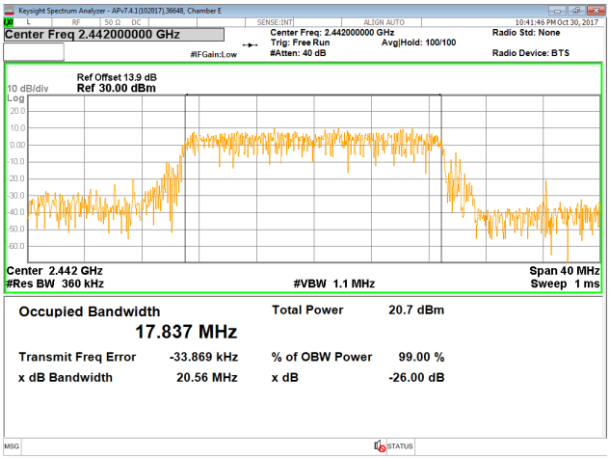
LOW CHANNEL 4



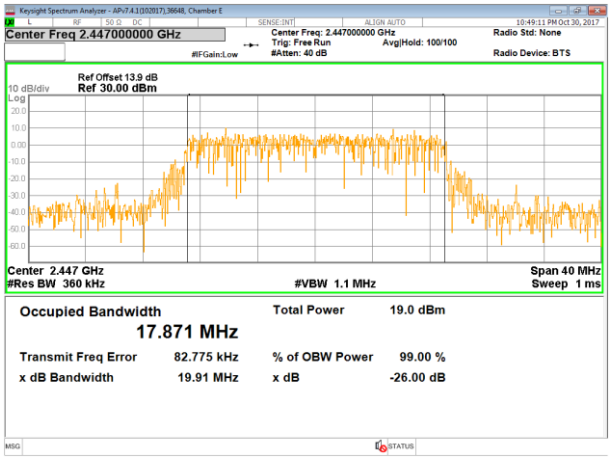
LOW CHANNEL 5



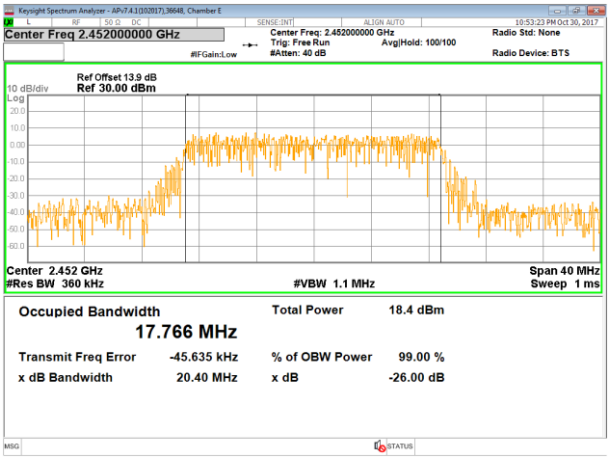
MID CHANNEL 6



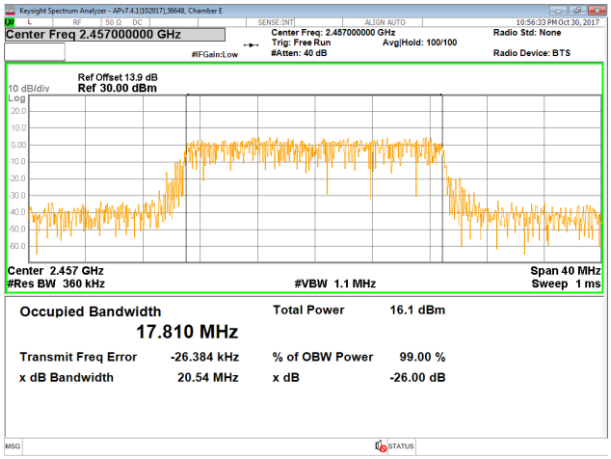
HIGH CHANNEL 7



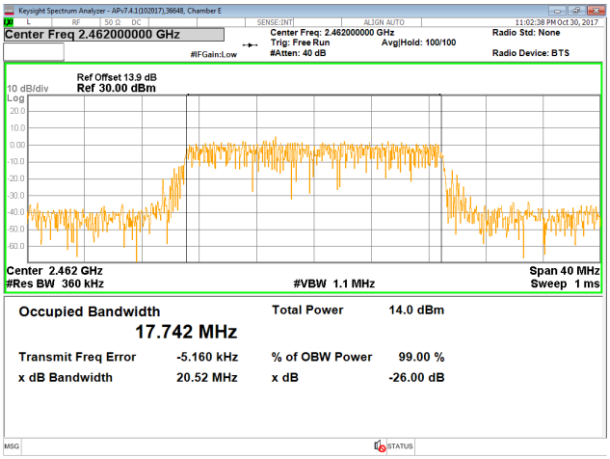
HIGH CHANNEL 8



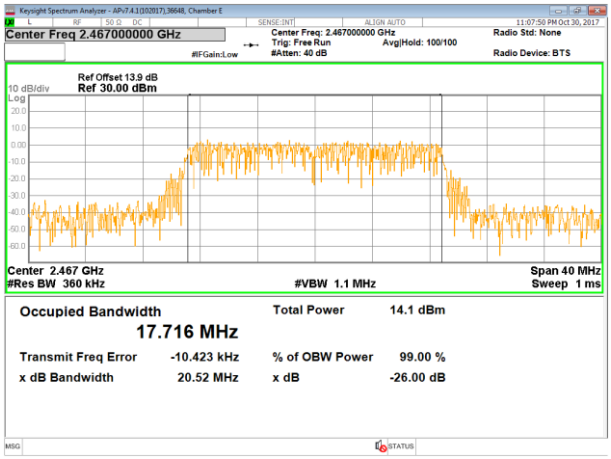
HIGH CHANNEL 9



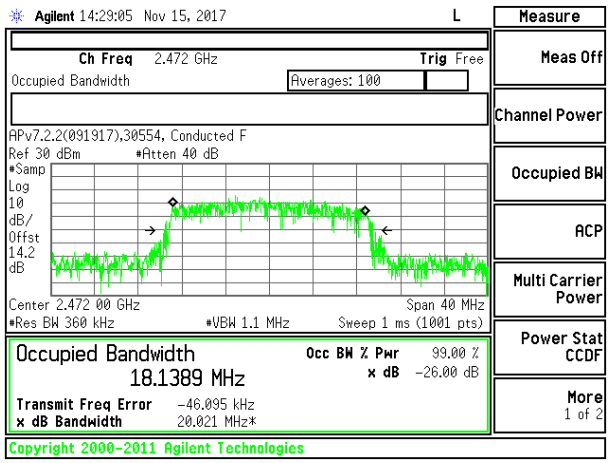
HIGH CHANNEL 10



HIGH CHANNEL 11



HIGH CHANNEL 12



HIGH CHANNEL 13

4.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407
IC RSS-247 6.2.4

The minimum 6 dB bandwidth shall be at least 500 kHz.

RESULTS

4.3.1. 802.11b MODE

1TX Antenna WF4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	7.56	0.5
Low 2	2417	6.68	0.5
Low 3	2422	7.56	0.5
Low 4	2427	8.00	0.5
Mid 6	2437	7.88	0.5
High 9	2452	7.68	0.5
High 10	2457	8.12	0.5
High 11	2462	8.36	0.5
High 12	2467	6.60	0.5
High 13	2472	7.12	0.5

LOW CHANNEL 1

LOW CHANNEL 2

LOW CHANNEL 3

LOW CHANNEL 4

MID CHANNEL 6

HIGH CHANNEL 9

HIGH CHANNEL 10

HIGH CHANNEL 11

HIGH CHANNEL 12

HIGH CHANNEL 13

4.3.2. 802.11n HT20 MODE

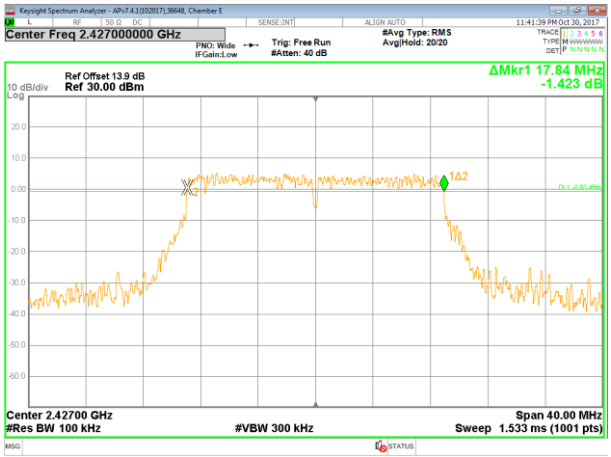
1TX Antenna WF4

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.60	0.5
Low 2	2417	17.68	0.5
Low 3	2422	17.72	0.5
Low 4	2427	17.84	0.5
Low 5	2432	17.52	0.5
Mid 6	2437	17.76	0.5
High 7	2442	17.56	0.5
High 8	2447	17.76	0.5
High 9	2452	17.80	0.5
High 10	2457	17.72	0.5
High 11	2462	17.80	0.5
High 12	2467	17.76	0.5
High 13	2472	17.80	0.5

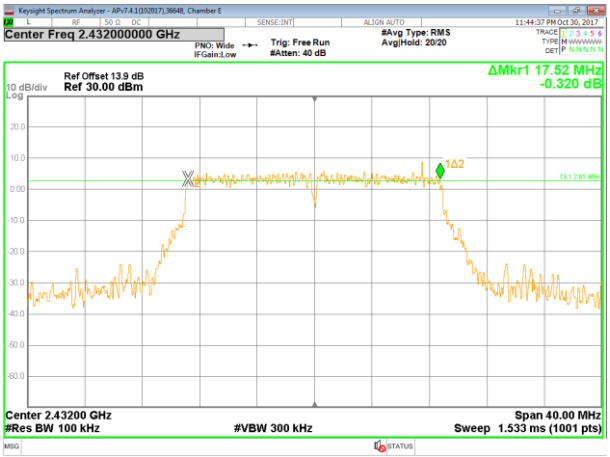
LOW CHANNEL 1

LOW CHANNEL 2

LOW CHANNEL 3



LOW CHANNEL 4



LOW CHANNEL 5

MID CHANNEL 6

HIGH CHANNEL 7

HIGH CHANNEL 8

HIGH CHANNEL 9

HIGH CHANNEL 10

HIGH CHANNEL 11

HIGH CHANNEL 12

HIGH CHANNEL 13

4.4. OUTPUT POWER

ID:	30554	Date:	11/03/2017

LIMITS

FCC §15.247 (b)

IC RSS-247 5.4.4

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

DIRECTIONAL ANTENNA GAIN

For 1 TX:
There is only one transmitter output therefore the directional gain is equal to the antenna gain.

RESULTS

4.4.1. 802.11b MODE

1TX Antenna WF4

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	4.10	30.00	30	36	30.00
Low 2	2417	4.10	30.00	30	36	30.00
Low 3	2422	4.10	30.00	30	36	30.00
Low 4	2427	4.10	30.00	30	36	30.00
Mid 6	2437	4.10	30.00	30	36	30.00
High 9	2452	4.10	30.00	30	36	30.00
High 10	2457	4.10	30.00	30	36	30.00
High 11	2462	4.10	30.00	30	36	30.00
High 12	2467	4.10	30.00	30	36	30.00
High 13	2472	4.10	30.00	30	36	30.00

Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	WF4 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	22.95	22.95	30.00	-7.05
Low 2	2417	24.68	24.68	30.00	-5.32
Low 3	2422	24.90	24.90	30.00	-5.10
Low 4	2427	27.21	27.21	30.00	-2.79
Mid 6	2437	27.16	27.16	30.00	-2.84
High 9	2452	24.95	24.95	30.00	-5.05
High 10	2457	23.66	23.66	30.00	-6.34
High 11	2462	18.51	18.51	30.00	-11.49
High 12	2467	19.09	19.09	30.00	-10.91
High 13	2472	14.48	14.48	30.00	-15.52

4.4.2. 802.11n HT20 MODE

1TX Antenna WF4

Limits

Channel	Frequency (MHz)	Directional Gain (dBi)	FCC Power Limit (dBm)	IC Power Limit (dBm)	IC EIRP Limit (dBm)	Max Power (dBm)
Low 1	2412	4.10	30.00	30	36	30.00
Low 2	2417	4.10	30.00	30	36	30.00
Low 3	2422	4.10	30.00	30	36	30.00
Low 4	2427	4.10	30.00	30	36	30.00
Low 5	2432	4.10	30.00	30	36	30.00
Mid 6	2437	4.10	30.00	30	36	30.00
High 7	2442	4.10	30.00	30	36	30.00
High 8	2447	4.10	30.00	30	36	30.00
High 9	2452	4.10	30.00	30	36	30.00
High 10	2457	4.10	30.00	30	36	30.00
High 11	2462	4.10	30.00	30	36	30.00
High 12	2467	4.10	30.00	30	36	30.00
High 13	2472	4.10	30.00	30	36	30.00

Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd Power

Results

Channel	Frequency (MHz)	WF4 Meas Power (dBm)	Total Corr'd Power (dBm)	Power Limit (dBm)	Margin (dB)
Low 1	2412	24.88	25.11	30.00	-4.89
Low 2	2417	26.22	26.45	30.00	-3.55
Low 3	2422	27.30	27.53	30.00	-2.47
Low 4	2427	27.91	28.14	30.00	-1.86
Low 5	2432	28.17	28.40	30.00	-1.60
Mid 6	2437	27.97	28.20	30.00	-1.80
High 7	2442	28.05	28.28	30.00	-1.72
High 8	2447	27.50	27.73	30.00	-2.27
High 9	2452	27.36	27.59	30.00	-2.41
High 10	2457	27.36	27.59	30.00	-2.41
High 11	2462	24.39	24.62	30.00	-5.38
High 12	2467	24.04	24.27	30.00	-5.73
High 13	2472	12.58	12.81	30.00	-17.19

4.5. AVERAGE POWER

ID:	30554	Date:	11/03/2017

LIMITS

None; for reporting purposes only

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS

4.5.1. 802.11b MODE

1TX Antenna WF4

Channel	Frequency (MHz)	WF4 Power (dBm)
Low 1	2412	18.83
Low 2	2417	20.90
Low 3	2422	20.95
Low 4	2427	23.89
Mid 6	2437	23.93
High 9	2452	20.93
High 10	2457	19.88
High 11	2462	15.82
High 12	2467	15.39
High 13	2472	10.82

4.5.2. 802.11n HT20 MODE

1TX Antenna WF4

Channel	Frequency (MHz)	WF4 Power (dBm)
Low 1	2412	13.98
Low 2	2417	15.43
Low 3	2422	17.99
Low 4	2427	19.89
Low 5	2432	20.48
Mid 6	2437	20.45
High 7	2442	20.42
High 8	2447	18.93
High 9	2452	18.30
High 10	2457	15.89
High 11	2462	13.96
High 12	2467	12.90
High 13	2472	1.72

4.6. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

IC RSS-247 (6.2.4)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

RESULTS

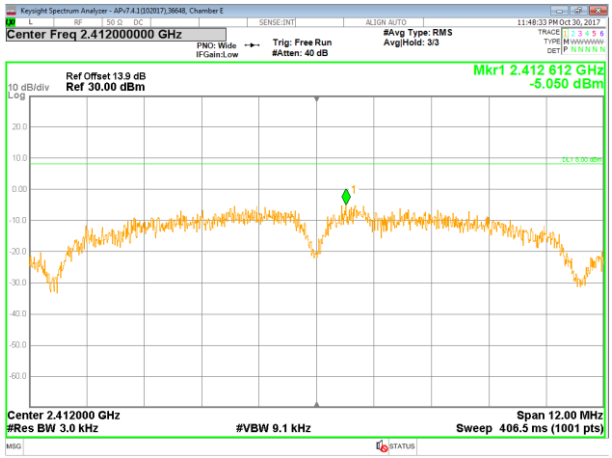
4.6.1. 802.11b MODE

1TX Antenna WF4

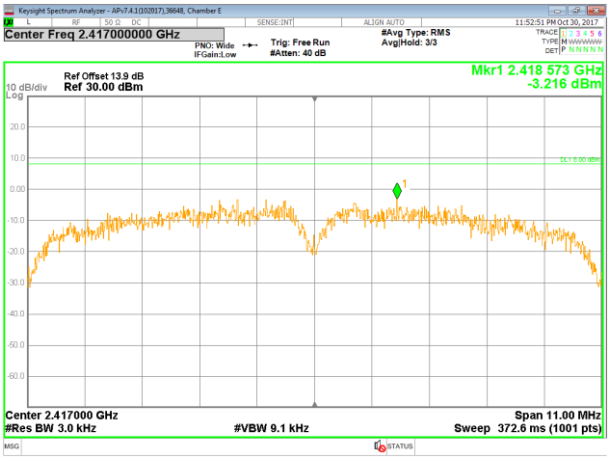
Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

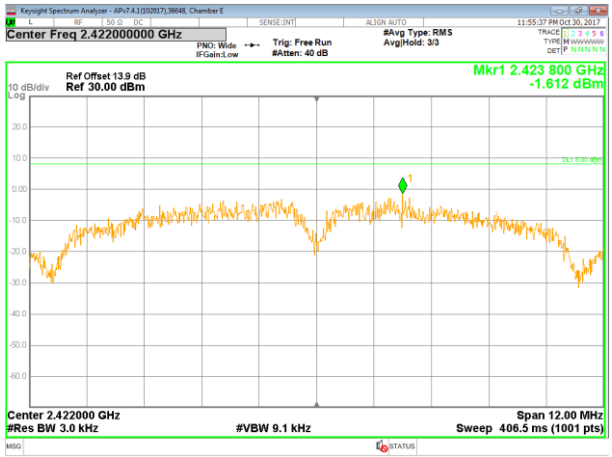
Channel	Frequency (MHz)	WF4 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low 1	2412	-5.05	-5.05	8.0	-13.1
Low 2	2417	-3.22	-3.22	8.0	-11.2
Low 3	2422	-1.61	-1.61	8.0	-9.6
Low 4	2427	0.54	0.54	8.0	-7.5
Mid 6	2437	1.16	1.16	8.0	-6.8
High 9	2452	-1.19	-1.19	8.0	-9.2
High 10	2457	-3.17	-3.17	8.0	-11.2
High 11	2462	-7.73	-7.73	8.0	-15.7
High 12	2467	-5.12	-5.12	8.0	-13.1
High 13	2472	-11.71	-11.71	8.0	-19.7



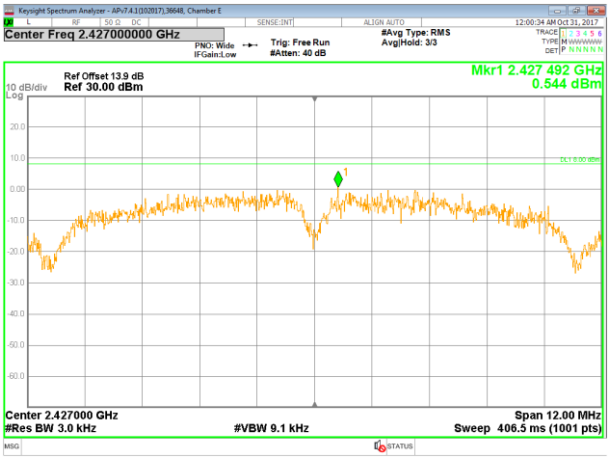
LOW CHANNEL 1



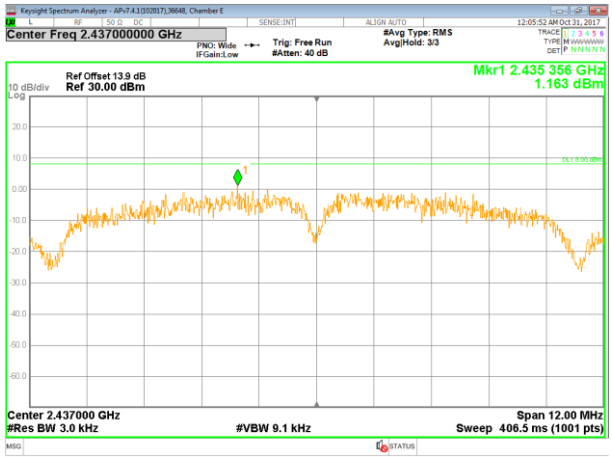
LOW CHANNEL 2



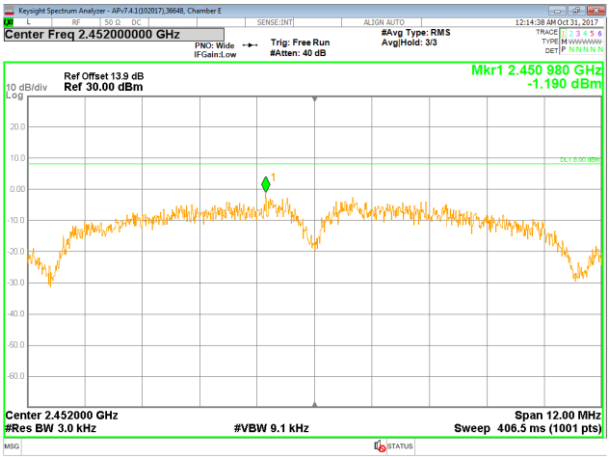
LOW CHANNEL 3



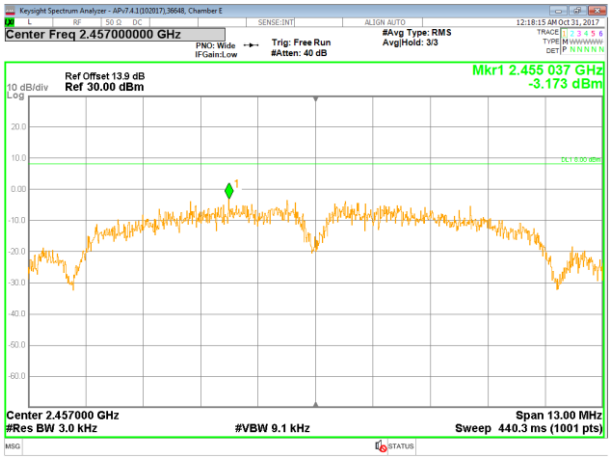
LOW CHANNEL 4



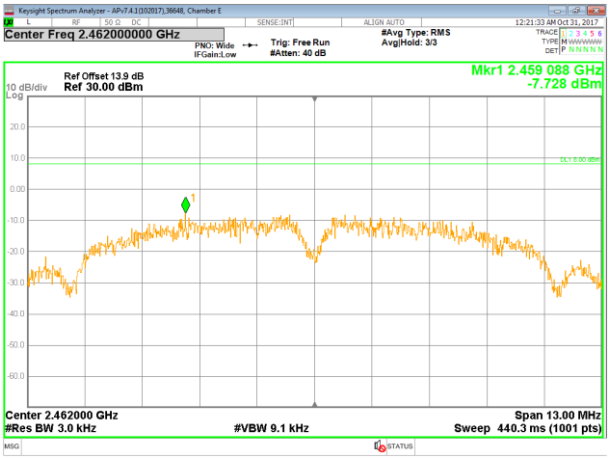
MID CHANNEL 6



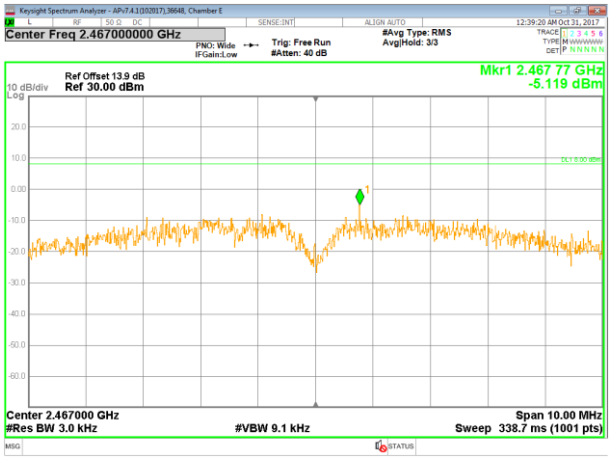
HIGH CHANNEL 9



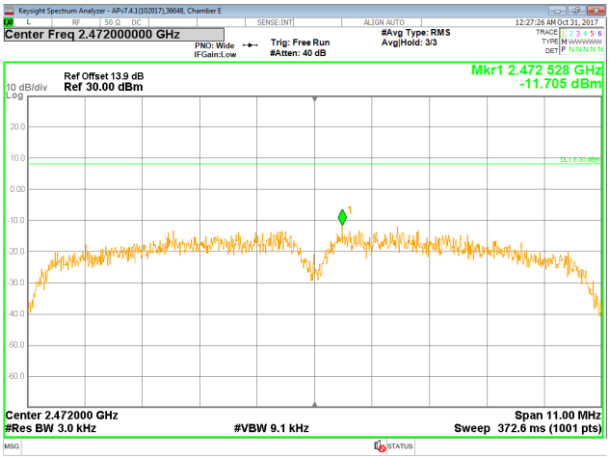
HIGH CHANNEL 10



HIGH CHANNEL 11



HIGH CHANNEL 12



HIGH CHANNEL 13

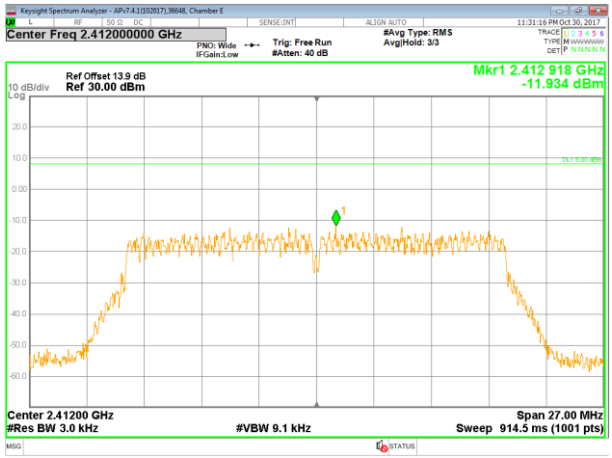
4.6.2. 802.11n HT20 MODE

1TX Antenna WF4

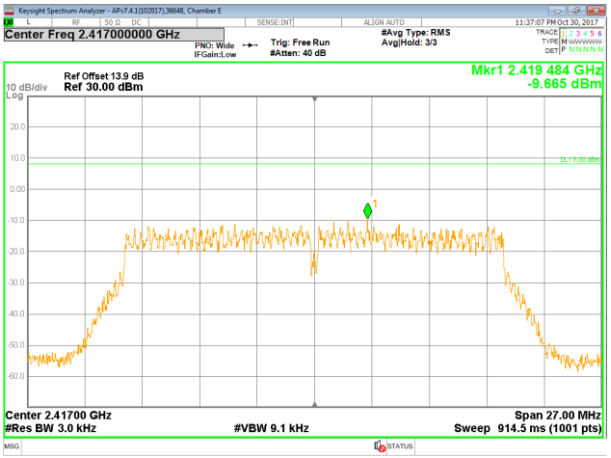
Duty Cycle CF (dB)	0.23	Included in Calculations of Corr'd PSD

PSD Results

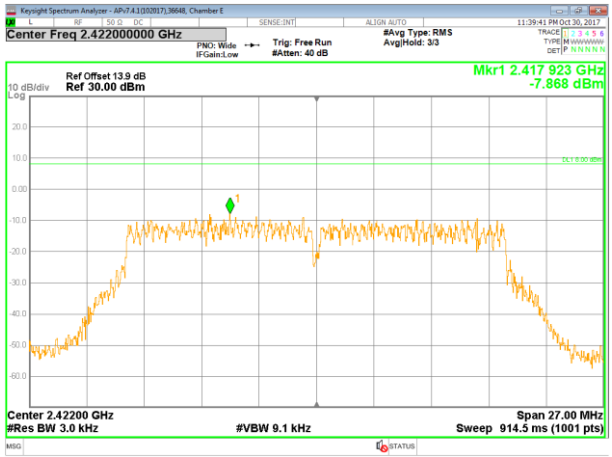
Channel	Frequency (MHz)	WF4 Meas (dBm)	Total Corr'd PSD (dBm)	Limit (dBm)	Margin (dB)
Low 1	2412	-11.93	-11.70	8.0	-19.7
Low 2	2417	-9.66	-9.43	8.0	-17.4
Low 3	2422	-7.87	-7.64	8.0	-15.6
Low 4	2427	-5.73	-5.50	8.0	-13.5
Low 5	2432	-4.66	-4.43	8.0	-12.4
Mid 6	2437	-4.63	-4.40	8.0	-12.4
High 7	2442	-5.36	-5.13	8.0	-13.1
High 8	2447	-7.05	-6.82	8.0	-14.8
High 9	2452	-7.96	-7.73	8.0	-15.7
High 10	2457	-8.07	-7.84	8.0	-15.8
High 11	2462	-10.34	-10.11	8.0	-18.1
High 12	2467	-12.31	-12.08	8.0	-20.1
High 13	2472	-21.89	-21.66	8.0	-29.7



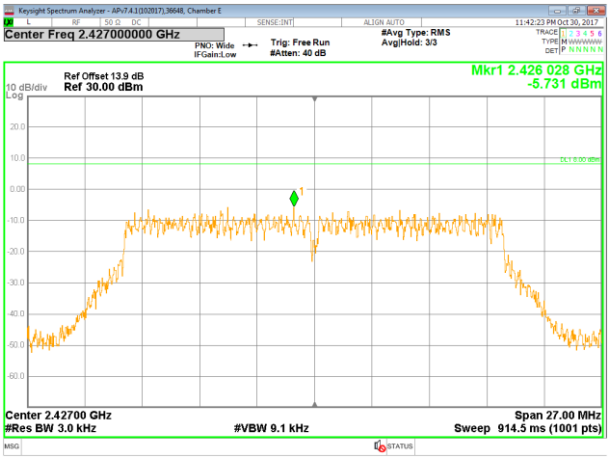
LOW CHANNEL 1



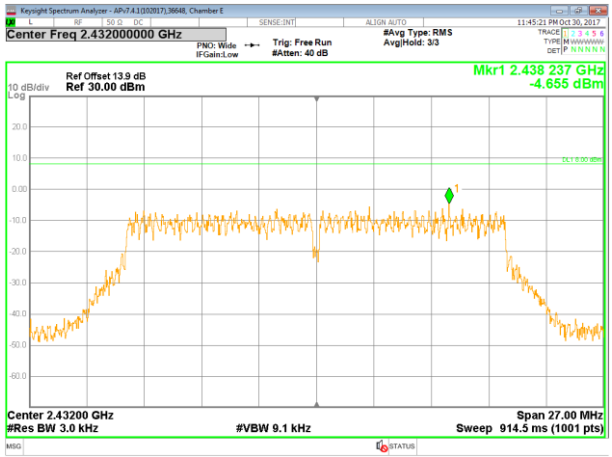
LOW CHANNEL 2



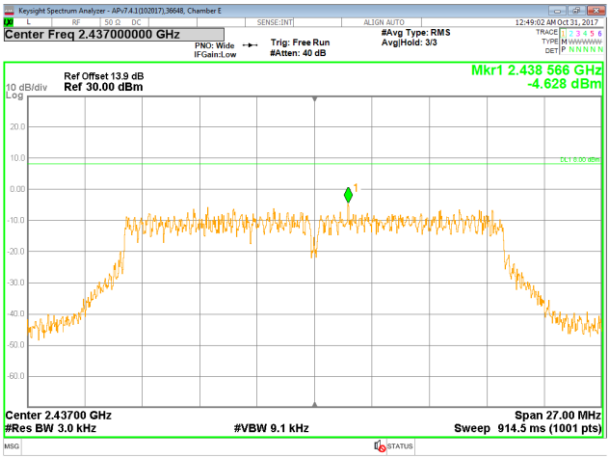
LOW CHANNEL 3



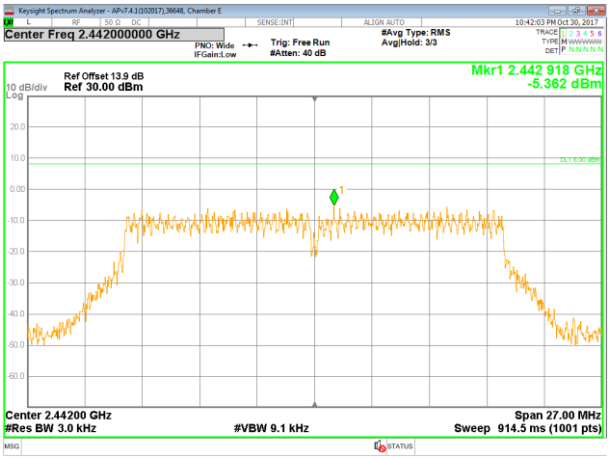
LOW CHANNEL 4



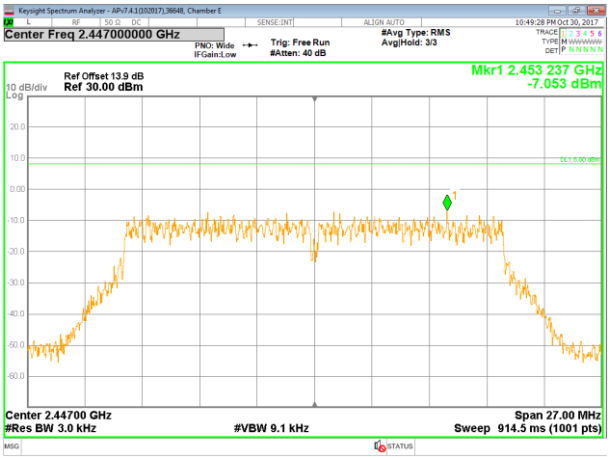
LOW CHANNEL 5



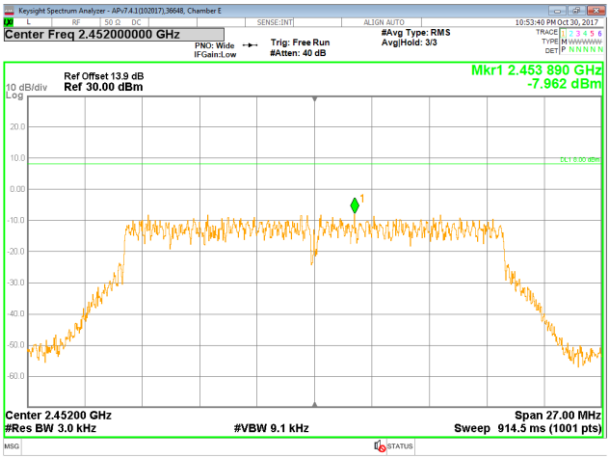
MID CHANNEL 6



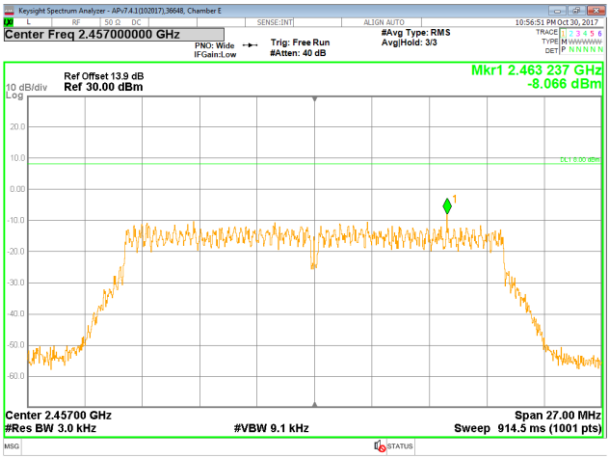
HIGH CHANNEL 7



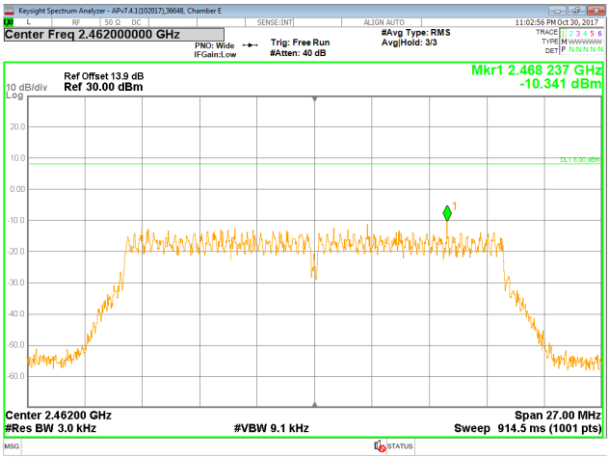
HIGH CHANNEL 8



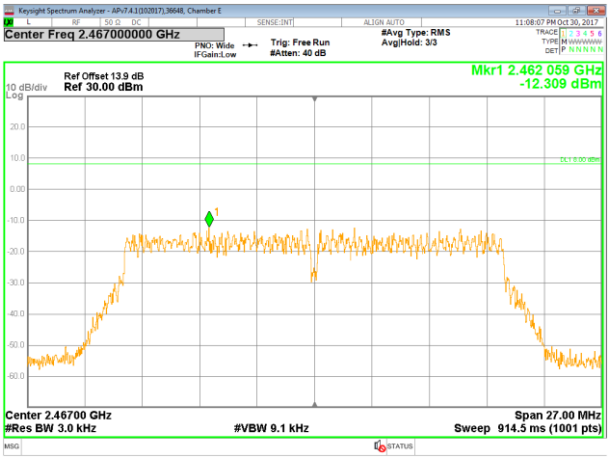
HIGH CHANNEL 9



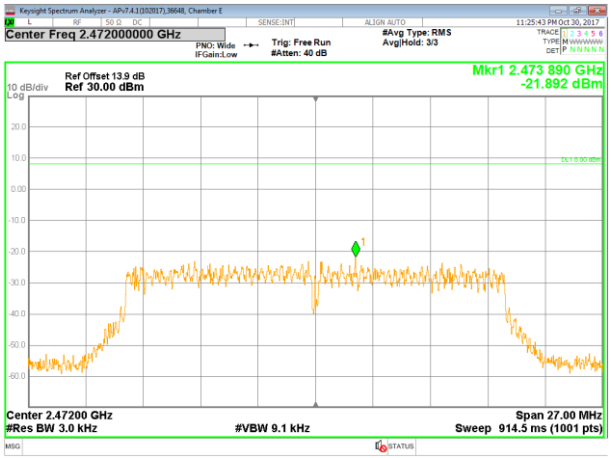
HIGH CHANNEL 10



HIGH CHANNEL 11



HIGH CHANNEL 12



HIGH CHANNEL 13

4.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

IC RSS-247 5.5

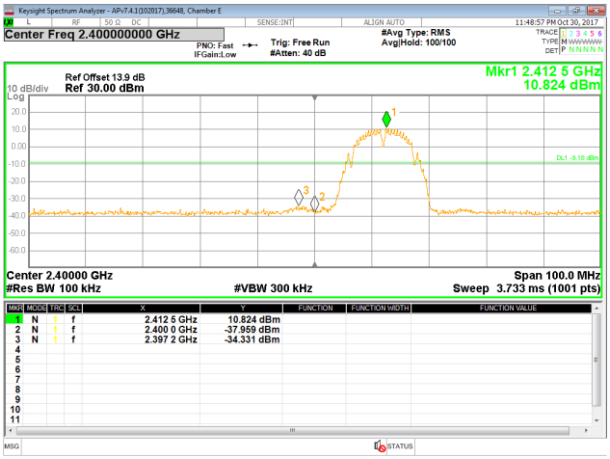
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required.

RESULTS

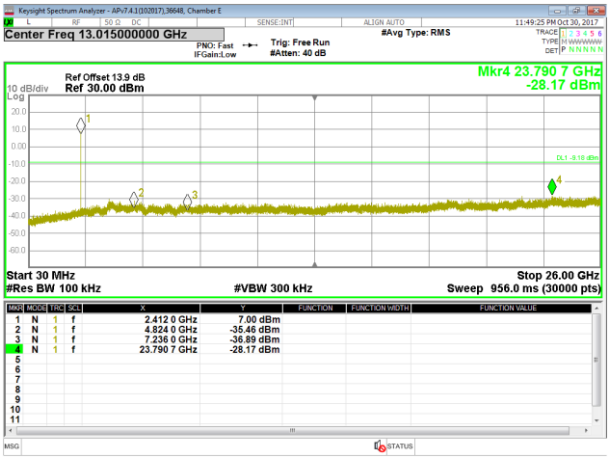
UL VERIFICATION SERVICES INC.
47173 BENICIA STREET, FREMONT, CA 94538, USA TEL: (510) 771-1000 FAX: (510) 661-0888

4.7.1. 802.11b MODE

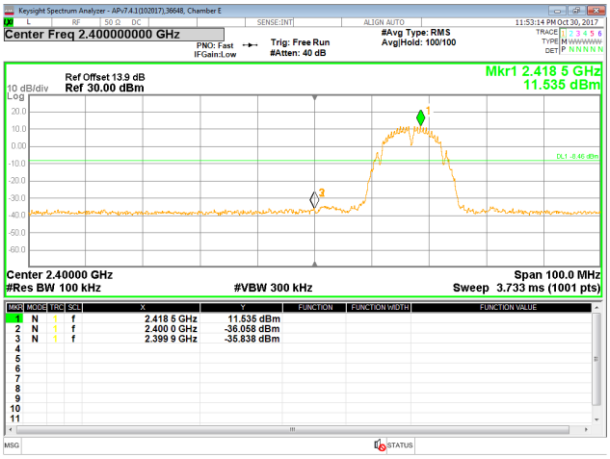
1TX Antenna WF4



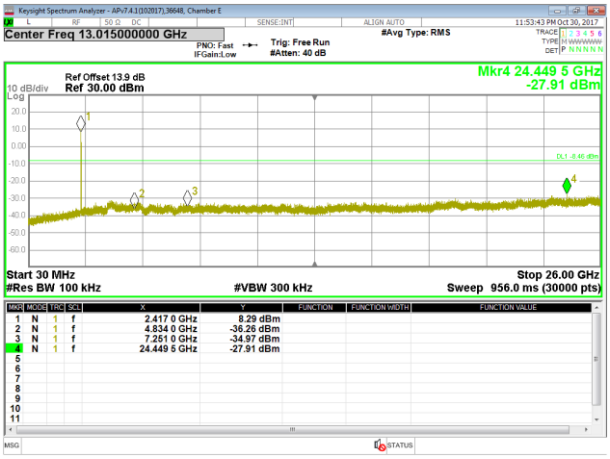
LOW CHANNEL 1 BANDEDGE



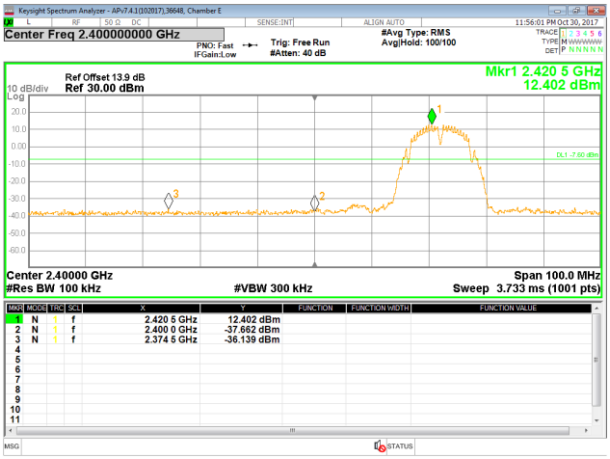
OUT-OF-BAND LOW CHANNEL 1



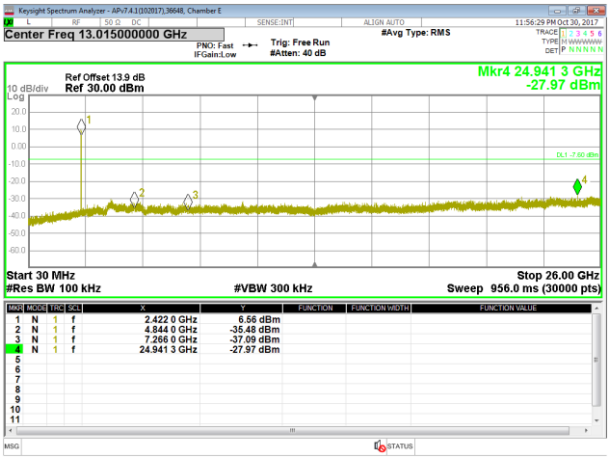
LOW CHANNEL 2 BANDEDGE



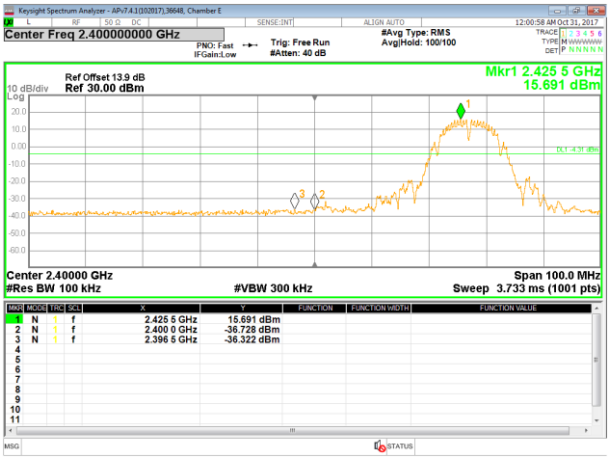
OUT-OF-BAND LOW CHANNEL 2



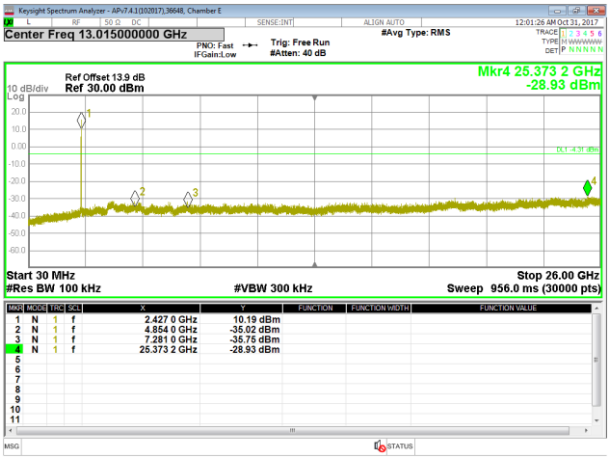
LOW CHANNEL 3 BANDEDGE



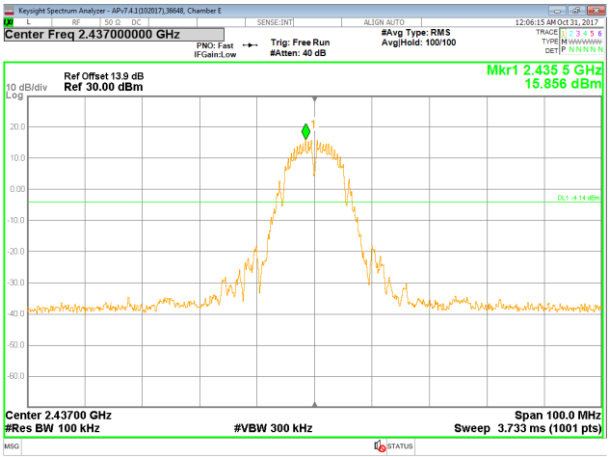
OUT-OF-BAND LOW CHANNEL 3



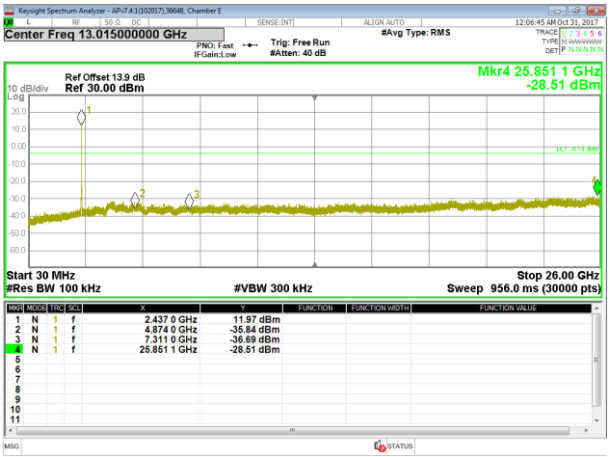
LOW CHANNEL 4 BANDEDGE



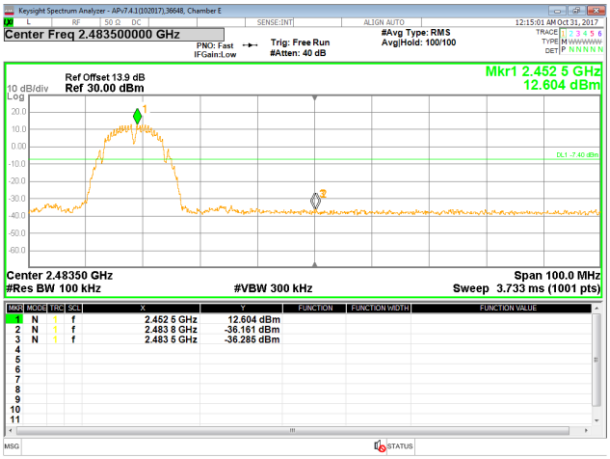
OUT-OF-BAND LOW CHANNEL 4



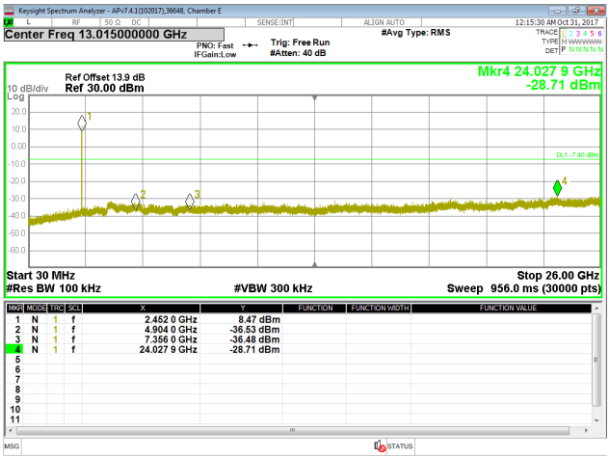
IN-BAND REFERNCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 9 BANDEDGE



OUT-OF-BAND HIGH CHANNEL 9

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