FCC CFR47 PART 15 SUBPART C

DTS Wireless LAN

CERTIFICATION TEST REPORT

FOR

RMCU-FMS

MODEL NUMBER : FMS-HF1

FCC ID: ZE8-FMS-HF1

REPORT NUMBER: 4788243069-E1V4

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ACCREDITED
Testing Laboratory

TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	01/31/2018	Initial issue	Hyunsik Yun
V2	02/07/2018	Revised data(duty factor and missed typo)	Hyunsik Yun
V3	02/26/2018	Revised data(duty factor and description, Add 12, 13 channel test data)	Hyunsik Yun
V4	02/27/2018	Revised data(duty factor and description)	Hyunsik Yun

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	KYUNGWOO SYSTECH INC.
EUT DESCRIPTION:	RMCU-FMS
MODEL NUMBER:	FMS-HF1
SERIAL NUMBER:	Prototype
DATE TESTED:	JAN 09, 2018 - JAN 24, 2018

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

UL Korea, Ltd. 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 Korea, Ltd. 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 Korea, Ltd. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Korea, Ltd. 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 IAS, any agency of the Federal Government, or any agency of any government.

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2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 DTS Meas Guidance v04.
4. ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 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.

218 Maeyeong-ro
☐ Chamber 1
☒ Chamber 2

UL Korea, Ltd. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at http://www.iasonline.org/PDF/TL/TL-637.pdf.

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 recognized national standards.

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

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.32 dB
Radiated Disturbance, Below 1GHz	3.86 dB
Radiated Disturbance, Above 1 GHz	5.97 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT has GSM/WCDMA, DTS b/g/n and RFID functons.
This test report addresses the DTS (WLAN) operational mode.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum total conducted average output power as follows:

Input Voltage	Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
24 V	2412 - 2472	802.11b	-5.32	0.29
		802.11g	2.75	1.88
		802.11n HT20	2.53	1.79
12 V	2412 - 2472	802.11b	-5.36	0.29
		802.11g	2.72	1.87
		802.11n HT20	2.51	1.78

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an internal antennas, with a antenna's maximum gain of 0.8 dBi.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/high channels.

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that X orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in X orientation.

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

802.11b mode: 1 Mbps
802.11g mode: 6 Mbps
802.11n HT20 mode: MCS0

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
N/A	N/A	N/A	N/A	N/A

I/O CABLES

I/O Cable List						
Cable No	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	Fixed	Non-shielded	0.8m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests.
After inputting the command for DTS mode operation using UART communication, detach the UART communication jig and test it.

All test item has been tested with DC 12V, 24V to determine the worst-case condition. The test results in condition of DC 24 V (Worst-case) is only described in this report.

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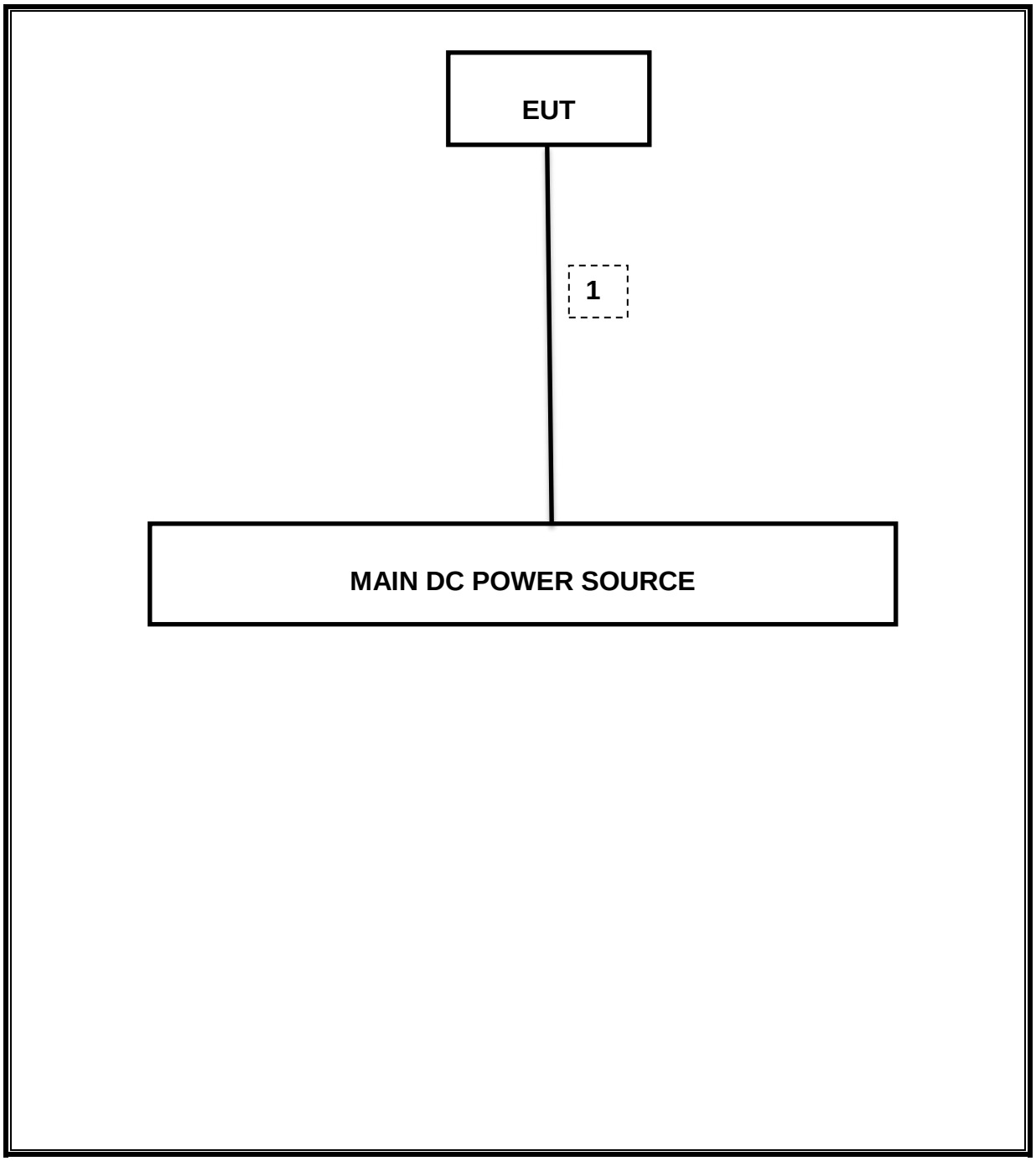
SETUP DIAGRAM FOR TESTS



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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**	**S/N**	**Cal Due**
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-31-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	04-14-19
Antenna, Horn, 18 GHz	ETS	3115	00167211	10-14-18
Antenna, Horn, 18 GHz	ETS	3115	00161451	03-10-19
Antenna, Horn, 18 GHz	ETS	3117	00168724	05-31-19
Antenna, Horn, 18 GHz	ETS	3117	00168717	05-31-19
Antenna, Horn, 40 GHz	ETS	3116C	00166155	12-04-19
Antenna, Horn, 40 GHz	ETS	3116C-PA	00168841	11-13-19
Attenuator / Switch driver	HP	11713A	3748A04272	N/A
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-09-18
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-07-18
Preamplifier	ETS	3115-PA	00167475	08-09-18
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-08-18
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-08-18
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-08-18
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-08-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-08-18
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-08-18
ATTENUATOR	PASTERNACK	PE7087-10	A009	08-08-18
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	009	08-08-18
High Pass Filter 6GHz	Micro-Tronics	HPM17542	016	08-08-18
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	10-26-19
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	

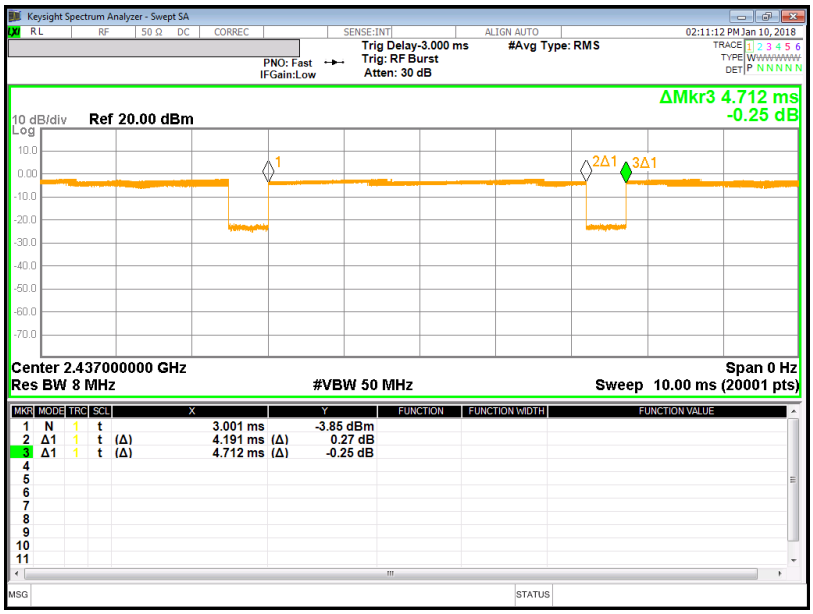
7. REFERENCE MEASUREMENT RESULTS

7.1. ON TIME AND DUTY CYCLE RESULTS

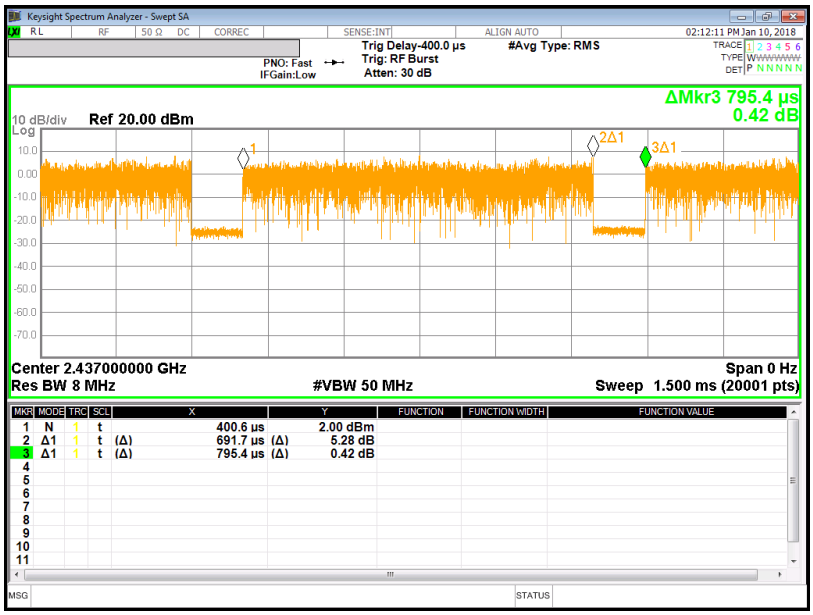
LIMITS

None; for reporting purposes only.

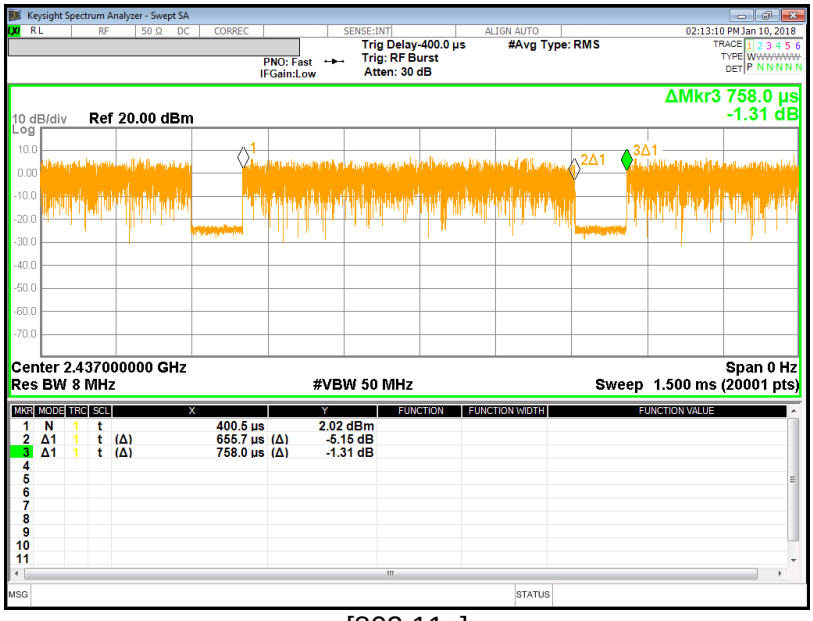
Mode	ON Time B [msec)	Period [msec]	Duty Cycle x [linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
2400MHz Bands						
802.11b	4.191	4.712	0.889	88.9%	0.51	0.239
802.11g	0.692	0.795	0.870	87.0%	0.61	1.446
802.11n HT20	0.656	0.758	0.865	86.5%	0.63	1.525



[802.11b]



[802.11g]



[802.11n]

8. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result	Worst Case
15.247 (a)(2)	Occupied Band width (6dB)	>500KHz	Conducted	Pass	8.052 MHz
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-30dBc		Pass	-48.378 dBm
15.247 (b)(3)	TX conducted output power	<30dBm		Pass	2.75 dBm
15.247 (e)	PSD	<8dBm		Pass	-22.464 dBm
15.207 (a)	AC Power Line conducted emissions	Section 10	Power Line conducted	N/A*	N/A*
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass	50.64 dBuV/m (Av)

* The EUT is only operated with DC power.

9. ANTENNA PORT TEST RESULTS

9.1. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

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

TEST PROCEDURE

Reference to KDB 558074 D01 DTS Meas Guidance v04: The transmitter output is connected to a spectrum analyzer with the RBW set to100 kHz, the VBW >= 3 x RBW, peak detector and max hold.

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RESULTS

9.1.1. 802.11b MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	8.052	0.5
Mid	2437	8.067	0.5
High	2462	8.557	0.5
	2467	8.069	0.5
	2472	8.060	0.5
Worst		8.052	0.5

9.1.2. 802.11g MODE IN THE 2.4 GHz BAND

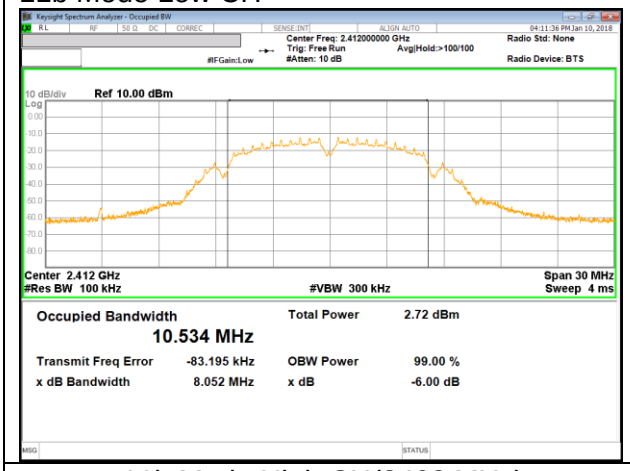
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	16.290	0.5
Mid	2437	16.270	0.5
High	2462	16.280	0.5
	2467	16.040	0.5
	2472	16.260	0.5
Worst		16.040	0.5

9.1.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

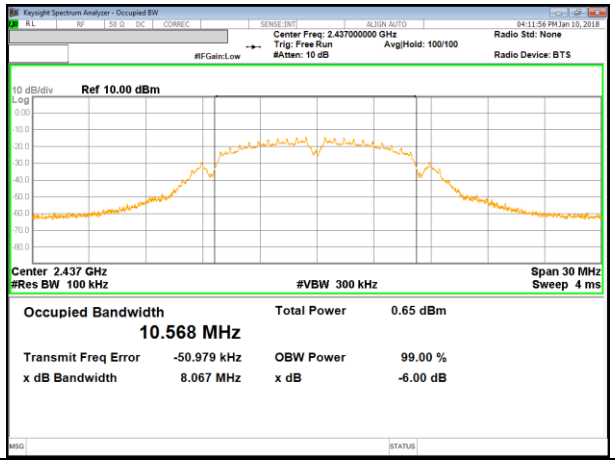
Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
Low	2412	16.260	0.5
Mid	2437	16.050	0.5
High	2462	16.250	0.5
	2467	16.040	0.5
	2472	15.680	0.5
Worst		15.680	0.5

9.1.4. 6 dB BANDWIDTH PLOTS

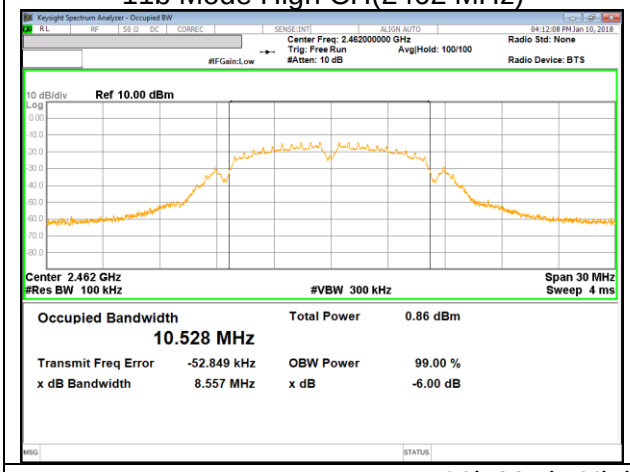
11b Mode Low CH



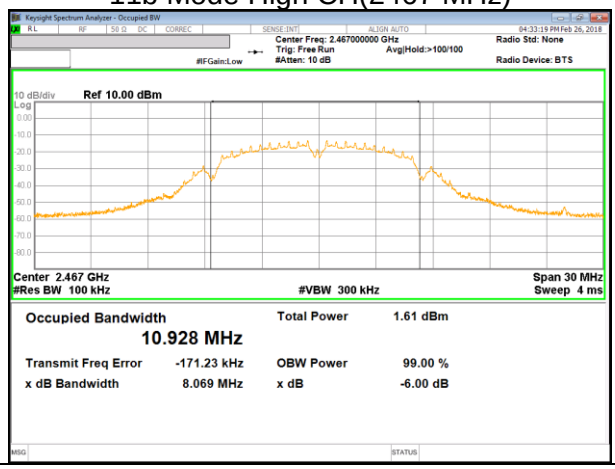
11b Mode Middle CH



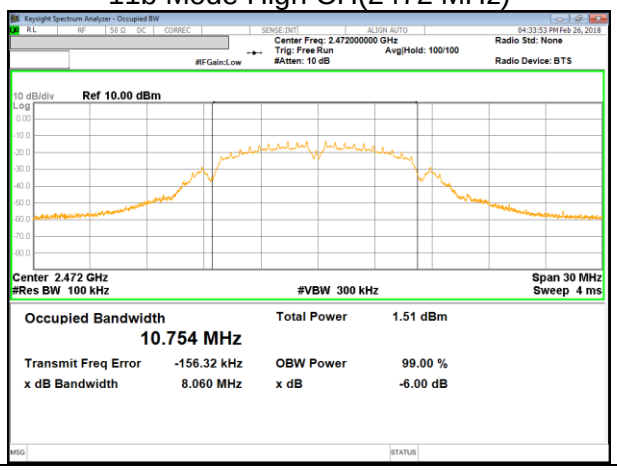
11b Mode High CH(2462 MHz)



11b Mode High CH(2467 MHz)



11b Mode High CH(2472 MHz)



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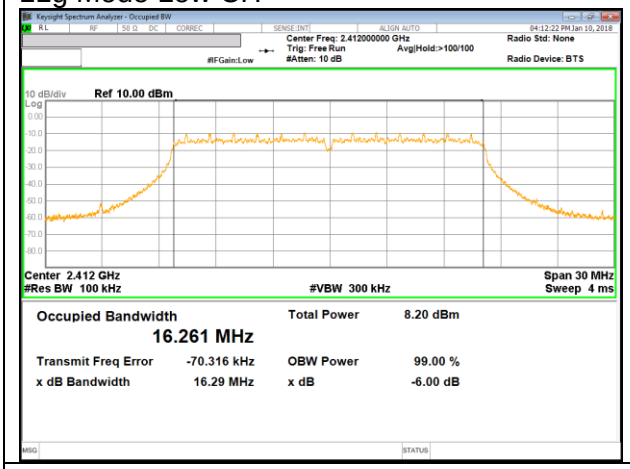
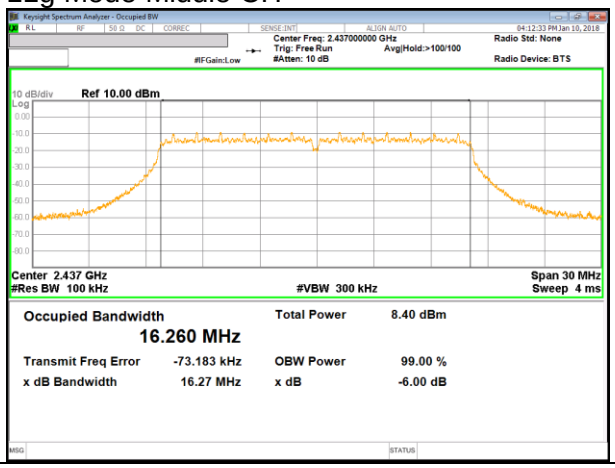
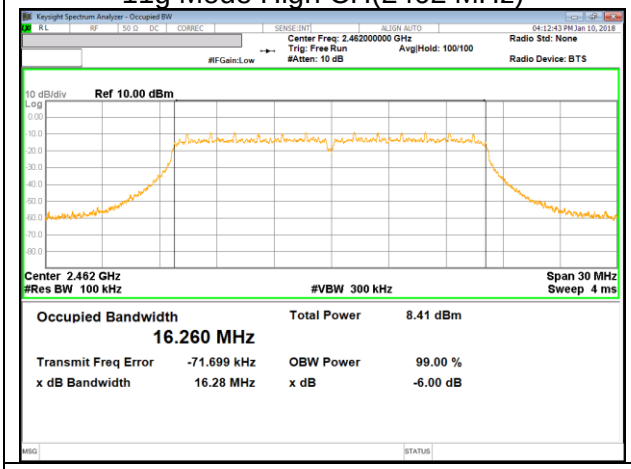
11g Mode Low CH



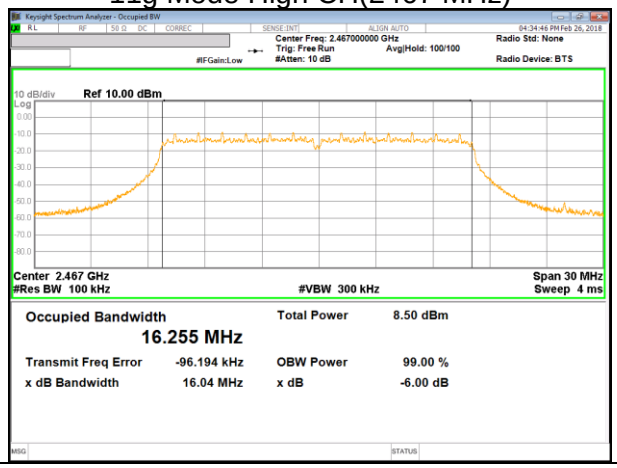
11g Mode Middle CH



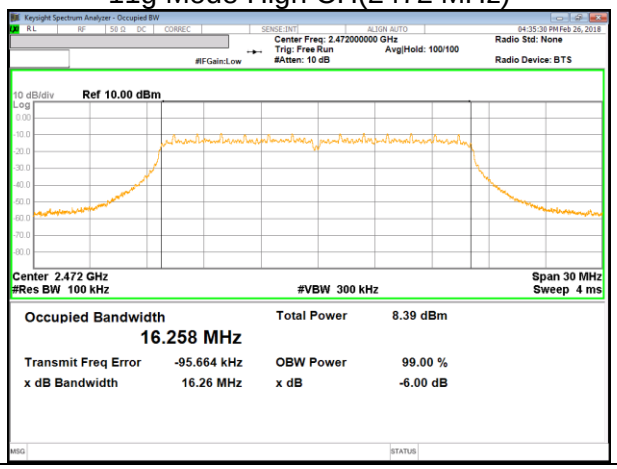
11g Mode High CH(2462 MHz)



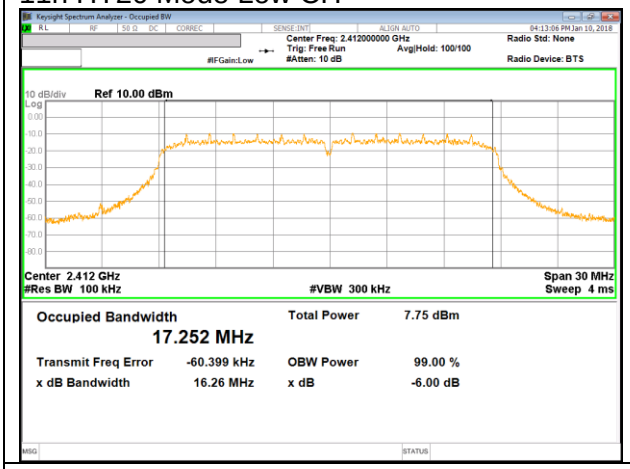
11g Mode High CH(2467 MHz)



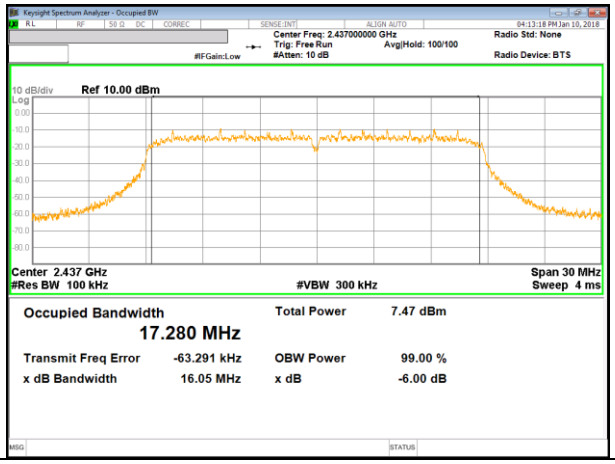
11g Mode High CH(2472 MHz)



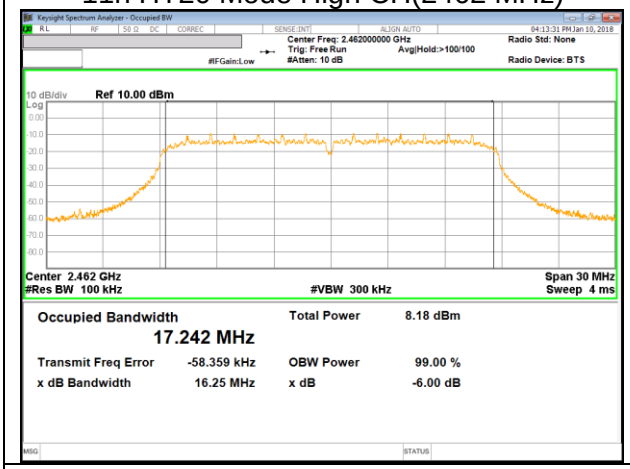
11n HT20 Mode Low CH



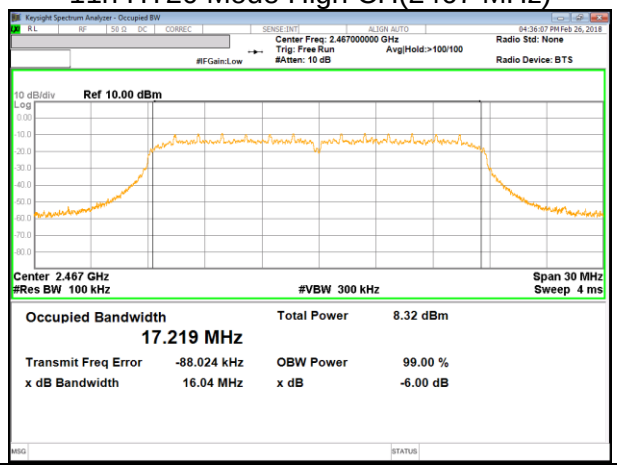
11n HT20 Mode Middle CH



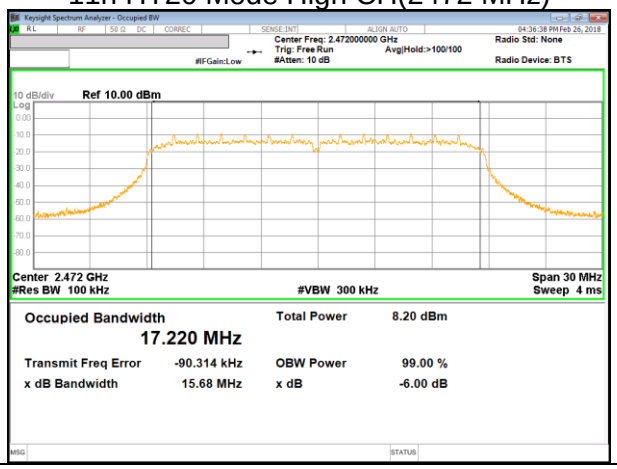
11n HT20 Mode High CH(2462 MHz)



11n HT20 Mode High CH(2467 MHz)



11n HT20 Mode High CH(2472 MHz)



9.2. OUTPUT POWER

LIMITS

FCC §15.247

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

There is only one transmitter output therefore the directional gain is equal to the antenna gain.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss was entered as an offset in the power meter to allow for direct reading of power.

Output power measurement was performed utilizing the “§9.2.3.1 AVGPM” under KDB558074 D01 DTS Meas Guidance v04.

Duty cycle correction factor is already added to the average output power results for duty cycle factor < 98%. (all mode)

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RESULTS

9.2.1. 802.11b MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	0.80	30.00	30.00
Mid	2437	0.80	30.00	30.00
High	2462	0.80	30.00	30.00
	2467	0.80	30.00	30.00
	2472	0.80	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	-5.64	-5.64	30.00	-35.64
Mid	2437	-5.54	-5.54	30.00	-35.54
High	2462	-5.32	-5.32	30.00	-35.32
	2467	-5.40	-5.40	30.00	-35.40
	2472	-5.41	-5.41	30.00	-35.41
Worst			-5.32	30.00	-35.32

9.2.2. 802.11g MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	0.80	30.00	30.00
Mid	2437	0.80	30.00	30.00
High	2462	0.80	30.00	30.00
	2467	0.80	30.00	30.00
	2472	0.80	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	2.23	2.23	30.00	-27.77
Mid	2437	2.69	2.69	30.00	-27.31
High	2462	2.75	2.75	30.00	-27.25
	2467	2.18	2.18	30.00	-27.82
	2472	2.07	2.07	30.00	-27.93
Worst			2.75	30.00	-27.25

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9.2.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Limits

Channel	Frequency [MHz]	Directional Gain Primary [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
Low	2412	0.80	30.00	30.00
Mid	2437	0.80	30.00	30.00
High	2462	0.80	30.00	30.00
	2467	0.80	30.00	30.00
	2472	0.80	30.00	30.00

Results

Channel	Frequency [MHz]	Meas Power [dBm]	Total Power [dBm]	Power Limit [dBm]	Margin [dB]
Low	2412	2.05	2.05	30.00	-27.95
Mid	2437	2.38	2.38	30.00	-27.62
High	2462	2.53	2.53	30.00	-27.47
	2467	1.88	1.88	30.00	-28.12
	2472	1.83	1.83	30.00	-28.17
Worst			2.53	30.00	-27.47

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9.3. PSD

LIMITS

FCC §15.247

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.

TEST PROCEDURE

Power Spectral Density was performed utilizing the “Method §10.5 AVGPSD-2(802.11 b/g/n mode)” under KDB558074 D01 DTS Meas Guidance v04.

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RESULTS

9.3.1. 802.11b MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-28.803	0.51	-28.293	8.00	-36.803
Mid	2437	-28.887	0.51	-28.377	8.00	-36.887
High	2462	-28.700	0.51	-28.190	8.00	-36.700
	2467	-22.974	0.51	-22.464	8.00	-30.974
	2472	-23.482	0.51	-22.972	8.00	-31.482

9.3.2. 802.11g MODE IN THE 2.4 GHz BAND

PSD Results

Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-28.400	0.61	-27.790	8.00	-36.400
Mid	2437	-27.662	0.61	-27.052	8.00	-35.662
High	2462	-27.438	0.61	-26.828	8.00	-35.438
	2467	-23.493	0.61	-22.883	8.00	-31.493
	2472	-23.291	0.61	-22.681	8.00	-31.291

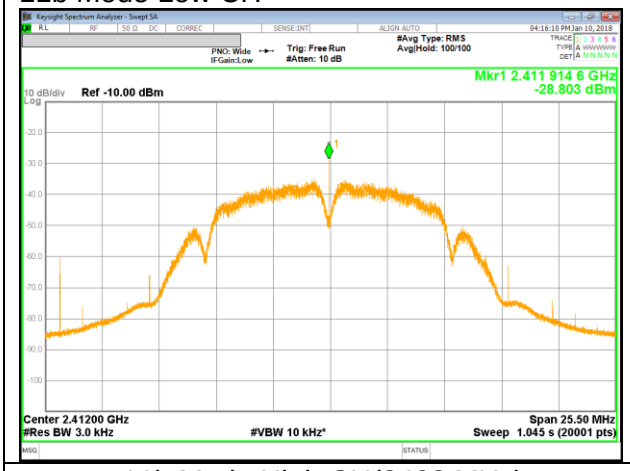
9.3.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

PSD Results

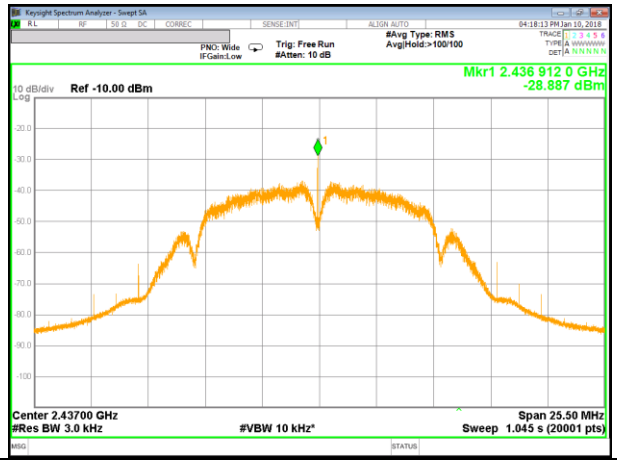
Channel	Frequency [MHz]	PSD Meas [dBm]	Duty Factor [dB]	Final PSD [dBm]	Limit [dBm]	Margin [dB]
Low	2412	-28.740	0.63	-28.110	8.00	-36.740
Mid	2437	-28.374	0.63	-27.744	8.00	-36.374
High	2462	-28.120	0.63	-27.490	8.00	-36.120
High	2467	-23.698	0.63	-23.068	8.00	-31.698
High	2472	-23.620	0.63	-22.990	8.00	-31.620

9.3.4. PSD PLOTS

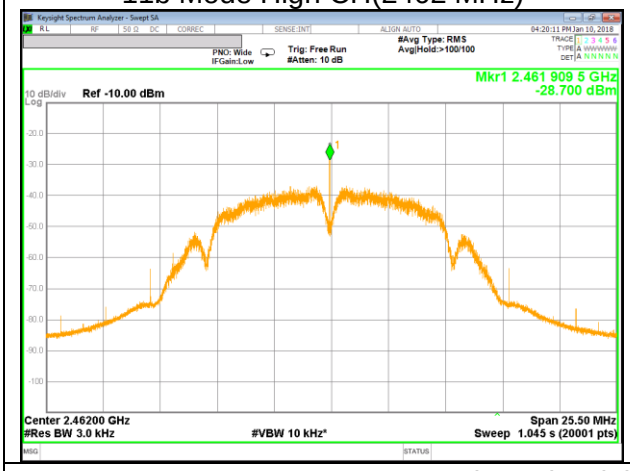
11b Mode Low CH



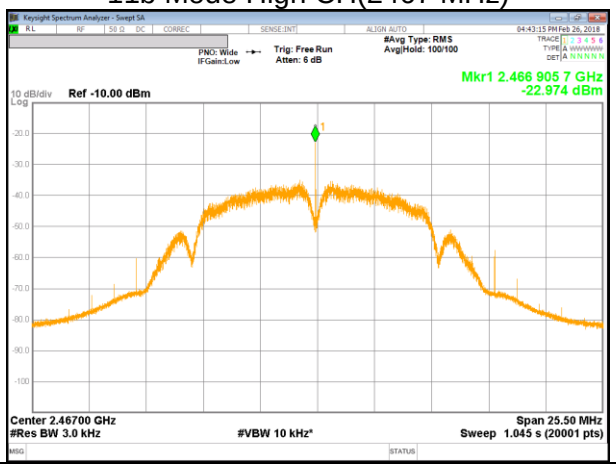
11b Mode Middle CH



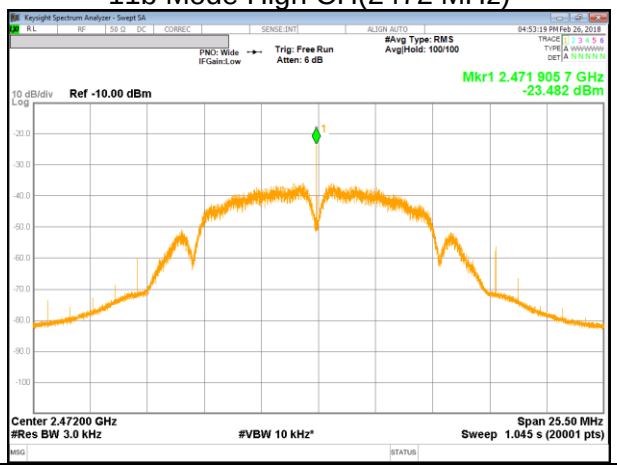
11b Mode High CH(2462 MHz)



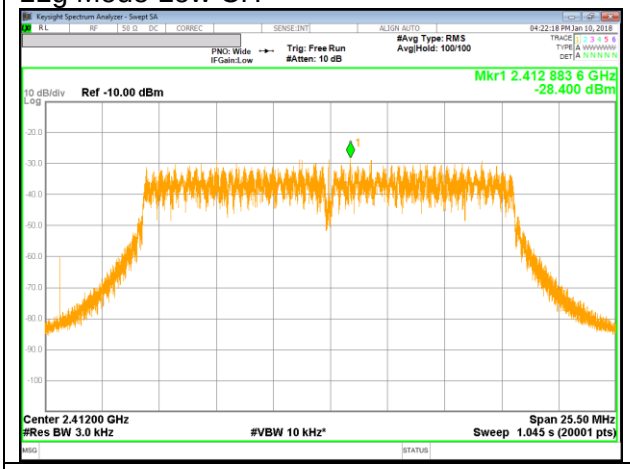
11b Mode High CH(2467 MHz)



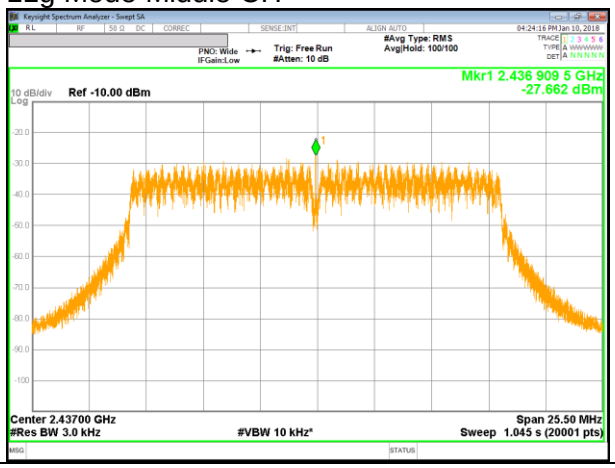
11b Mode High CH(2472 MHz)



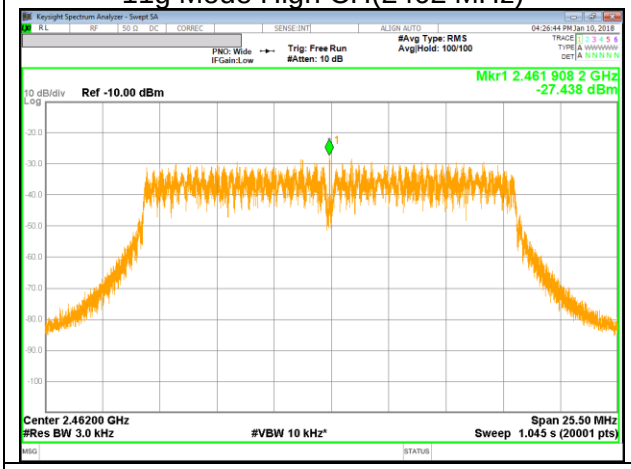
11g Mode Low CH



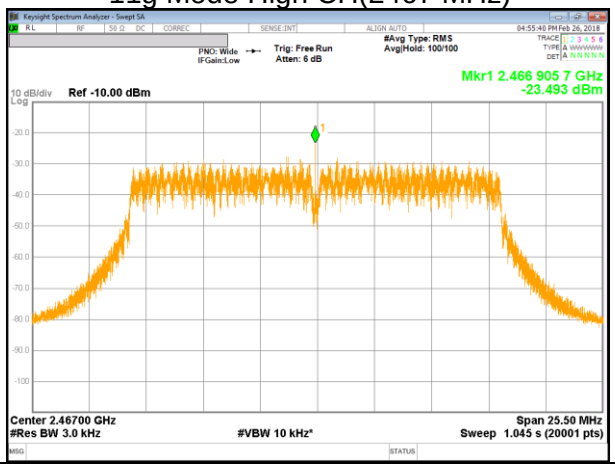
11g Mode Middle CH



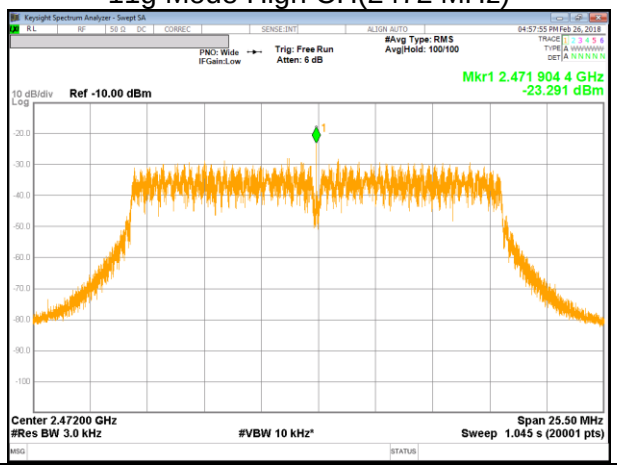
11g Mode High CH(2462 MHz)



11g Mode High CH(2467 MHz)



11g Mode High CH(2472 MHz)



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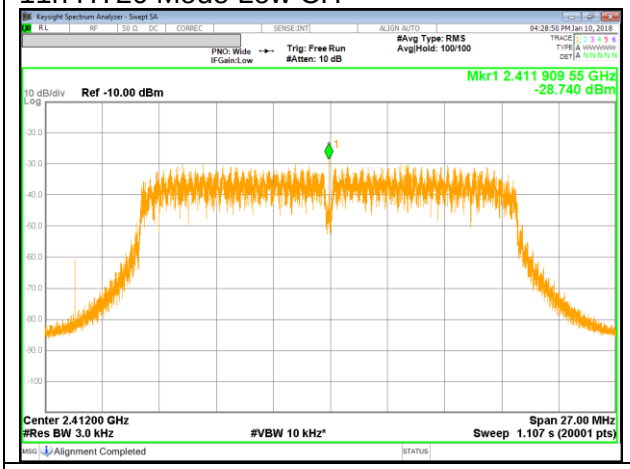
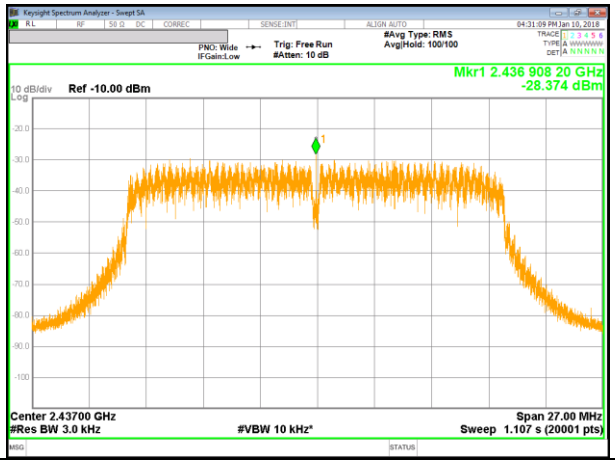
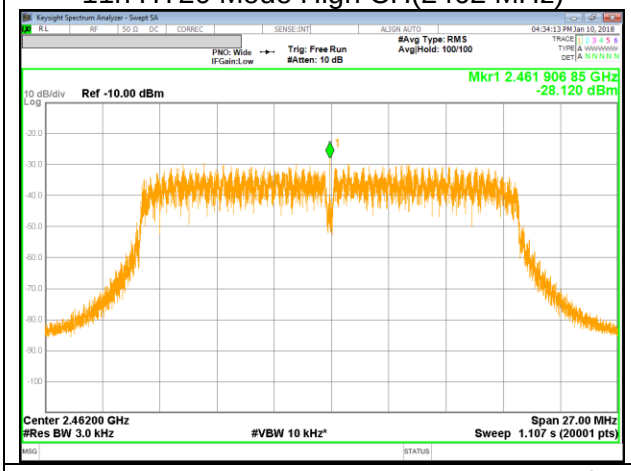
11n HT20 Mode Low CH



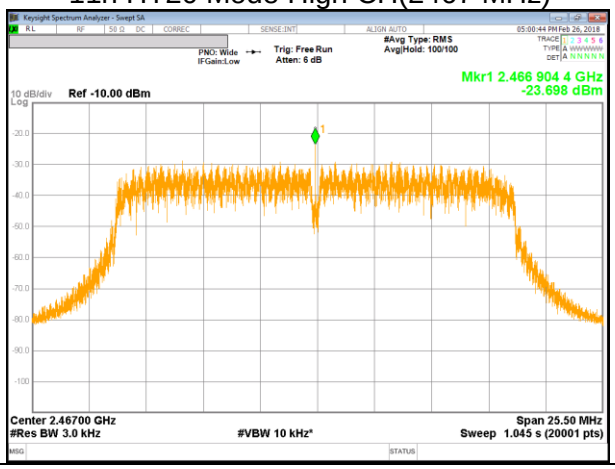
11n HT20 Mode Middle CH



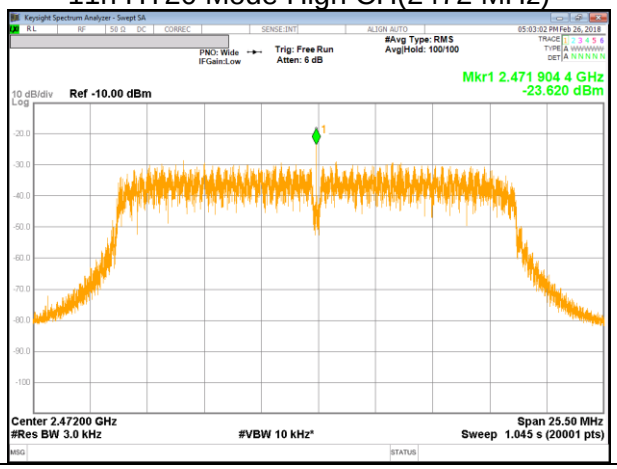
11n HT20 Mode High CH(2462 MHz)



11n HT20 Mode High CH(2467 MHz)



11n HT20 Mode High CH(2472 MHz)



9.4. OUT-OF-BAND EMISSIONS

LIMITS

FCC §15.247 (d)

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.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer with RBW = 100 kHz, VBW = 300 kHz, peak detector, and max hold. Measurements utilizing these settings are made of the in-band reference level, bandedge (where measurements to the general radiated limits will not be made) and out-of-band emissions.

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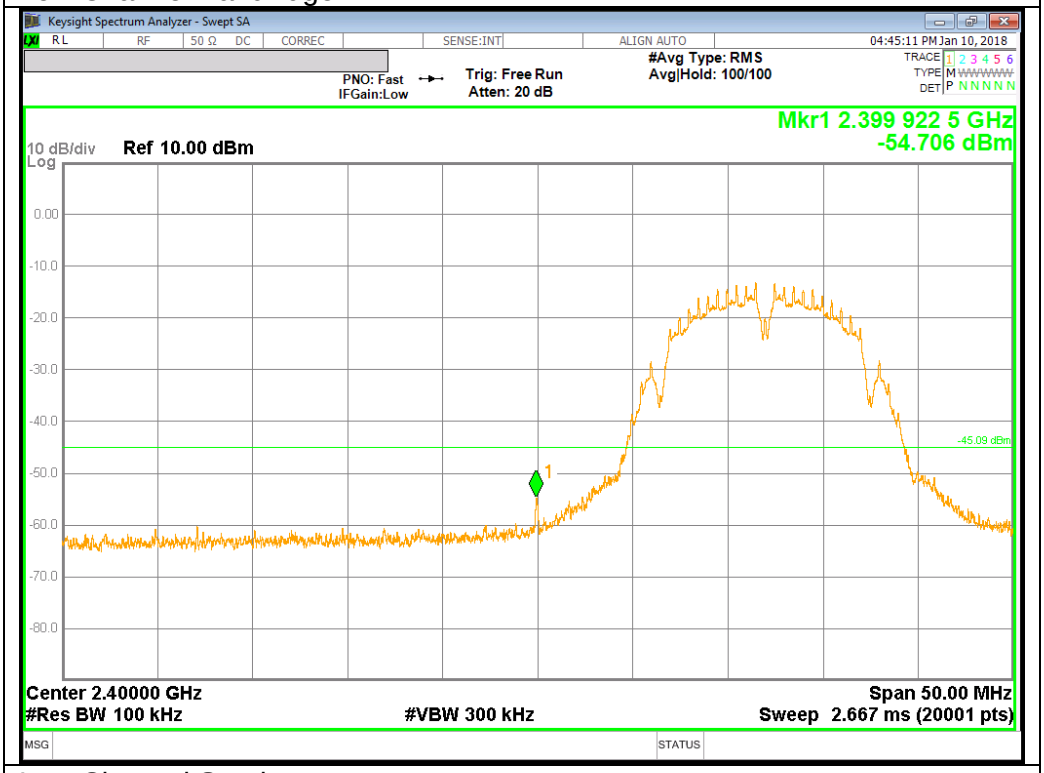
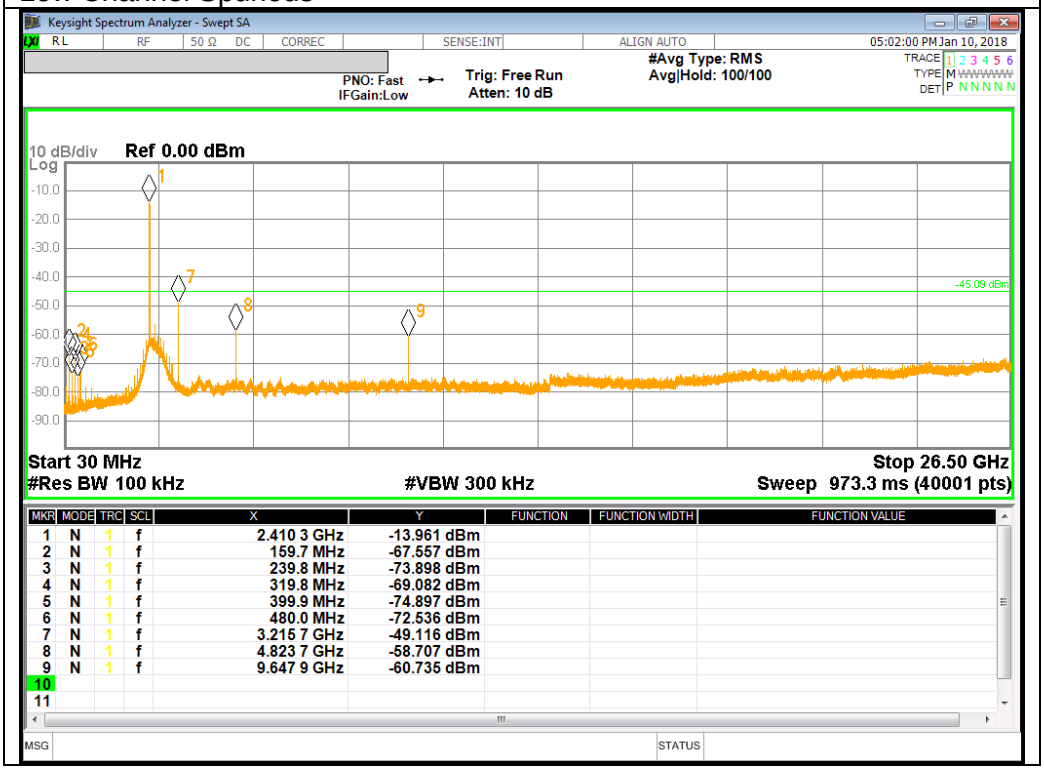
RESULTS

9.4.1. 802.11b MODE IN THE 2.4 GHz BAND

Low Channel BandEdge

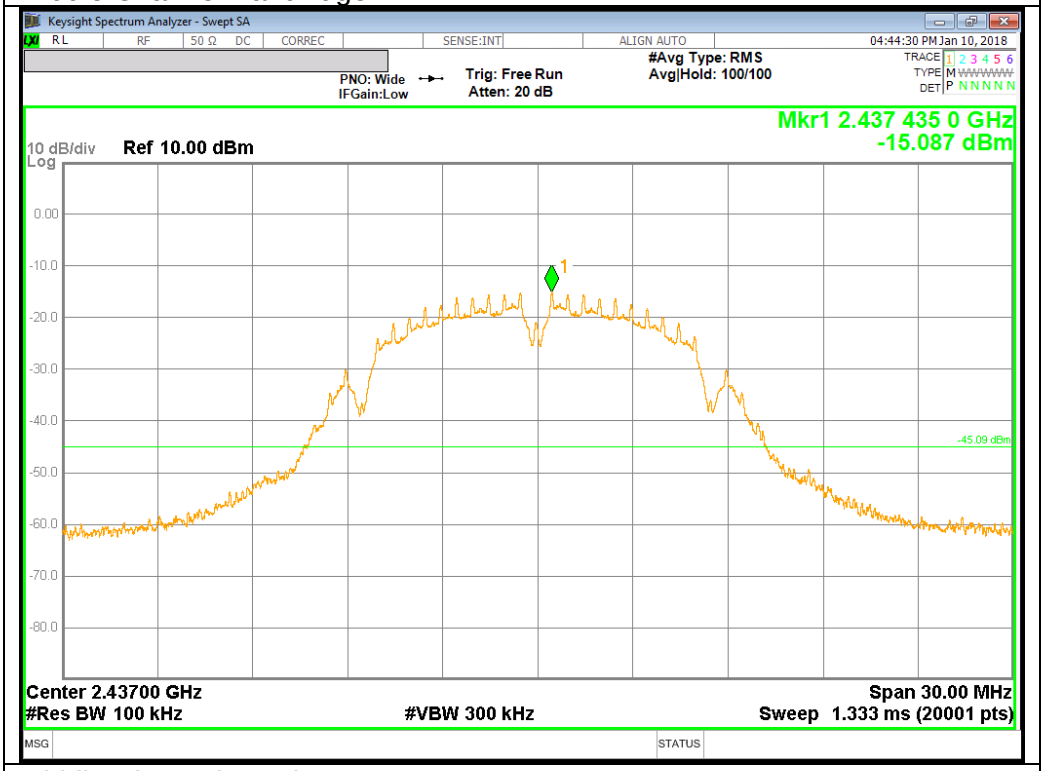


Low Channel Spurious

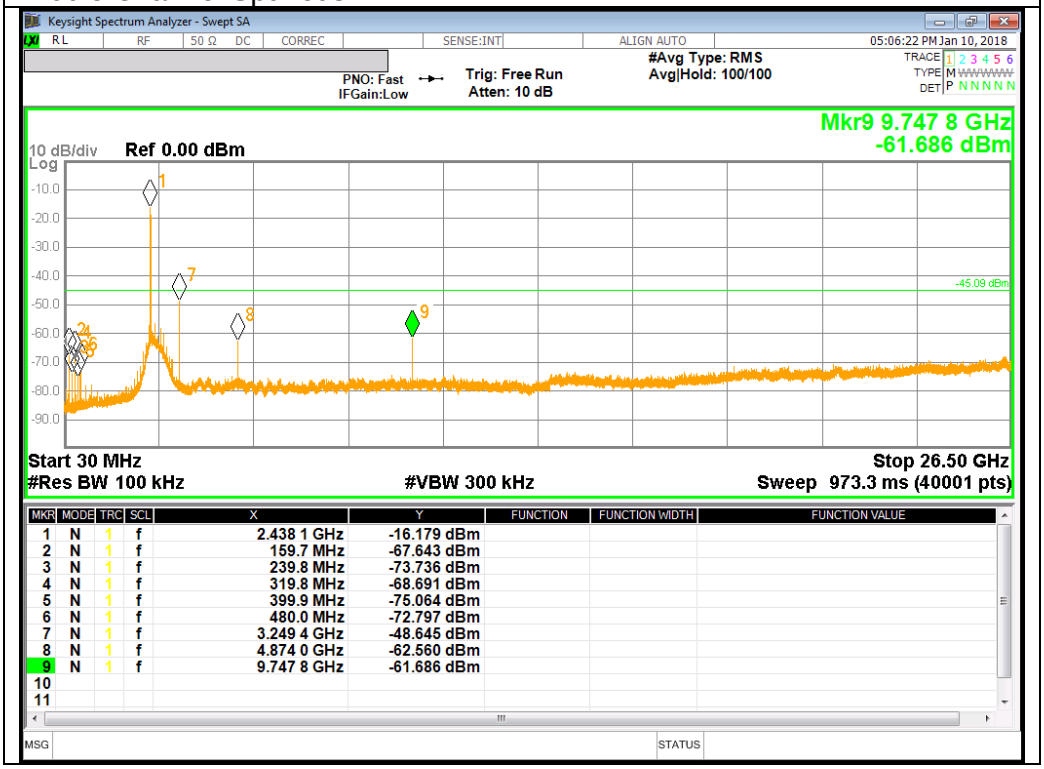


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.410 3 GHz	-13.961 dBm			
2	N	1	f	159.7 MHz	-67.557 dBm			
3	N	1	f	239.8 MHz	-73.898 dBm			
4	N	1	f	319.8 MHz	-69.082 dBm			
5	N	1	f	399.9 MHz	-74.897 dBm			
6	N	1	f	480.0 MHz	-72.536 dBm			
7	N	1	f	3.215 7 GHz	-49.116 dBm			
8	N	1	f	4.823 7 GHz	-58.707 dBm			
9	N	1	f	9.647 9 GHz	-60.735 dBm			
10								
11								

Middle Channel BandEdge



Middle Channel Spurious



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.438 1 GHz	-16.179 dBm			
2	N	1	f	159.7 MHz	-67.643 dBm			
3	N	1	f	239.8 MHz	-73.736 dBm			
4	N	1	f	319.8 MHz	-68.691 dBm			
5	N	1	f	399.9 MHz	-75.064 dBm			
6	N	1	f	480.0 MHz	-72.797 dBm			
7	N	1	f	3.249 4 GHz	-48.645 dBm			
8	N	1	f	4.874 0 GHz	-62.560 dBm			
9	N	1	f	9.747 8 GHz	-61.686 dBm			
10								
11								

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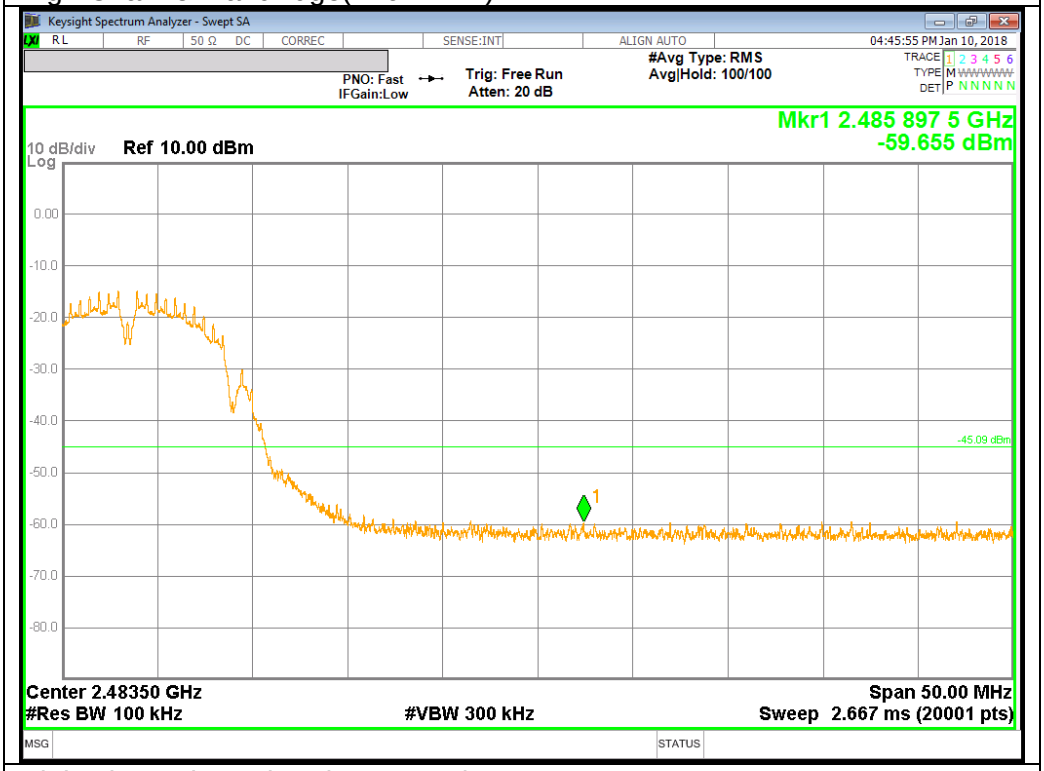
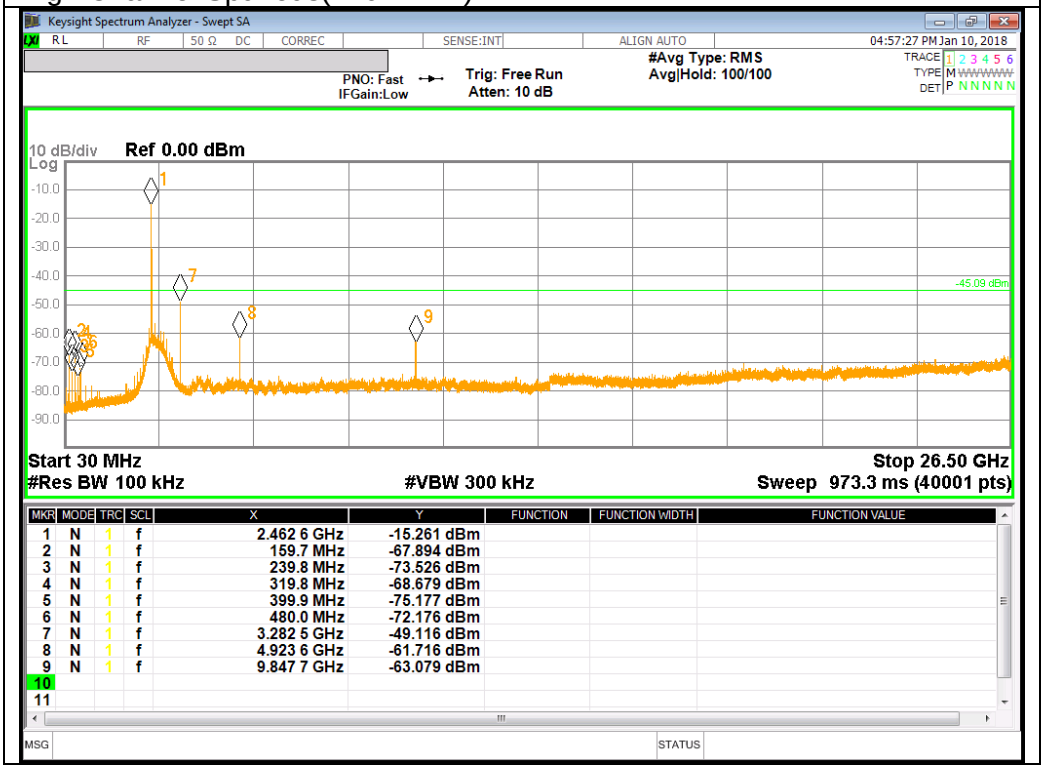
High Channel BandEdge(2462 MHz)

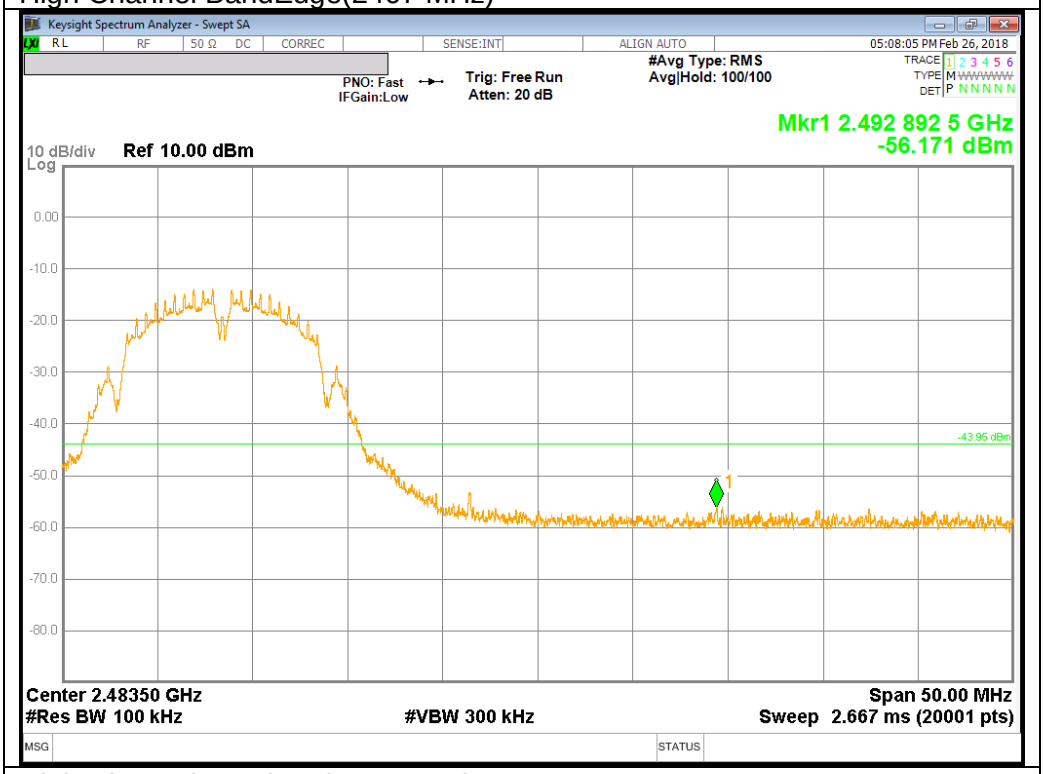


High Channel Spurious(2462 MHz)

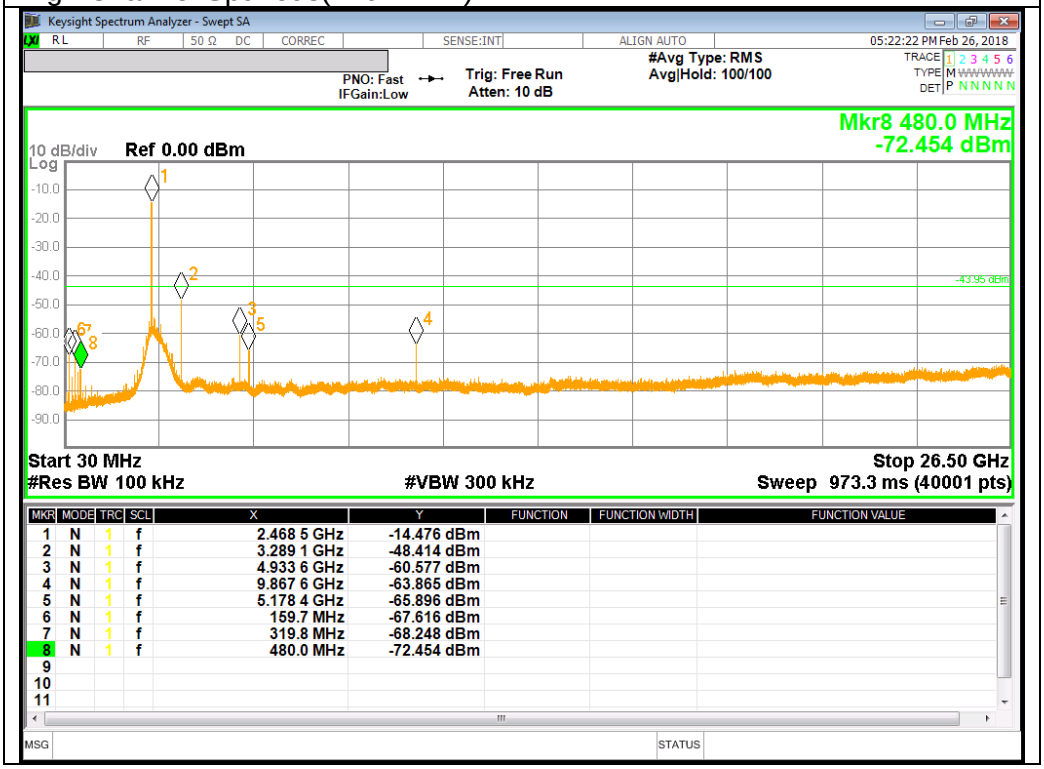


MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.462 6 GHz	-15.261 dBm			
2	N	1	f	159.7 MHz	-67.894 dBm			
3	N	1	f	239.8 MHz	-73.526 dBm			
4	N	1	f	319.8 MHz	-68.679 dBm			
5	N	1	f	399.9 MHz	-75.177 dBm			
6	N	1	f	480.0 MHz	-72.176 dBm			
7	N	1	f	3.282 5 GHz	-49.116 dBm			
8	N	1	f	4.923 6 GHz	-61.716 dBm			
9	N	1	f	9.847 7 GHz	-63.079 dBm			
10								
11								

High Channel BandEdge(2467 MHz)



High Channel Spurious(2467 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.468 5 GHz	-14.476 dBm			
2	N	1	f	3.289 1 GHz	-48.414 dBm			
3	N	1	f	4.933 6 GHz	-60.577 dBm			
4	N	1	f	9.867 6 GHz	-63.865 dBm			
5	N	1	f	5.178 4 GHz	-65.896 dBm			
6	N	1	f	159.7 MHz	-67.616 dBm			
7	N	1	f	319.8 MHz	-68.248 dBm			
8	N	1	f	480.0 MHz	-72.454 dBm			
9								
10								
11								

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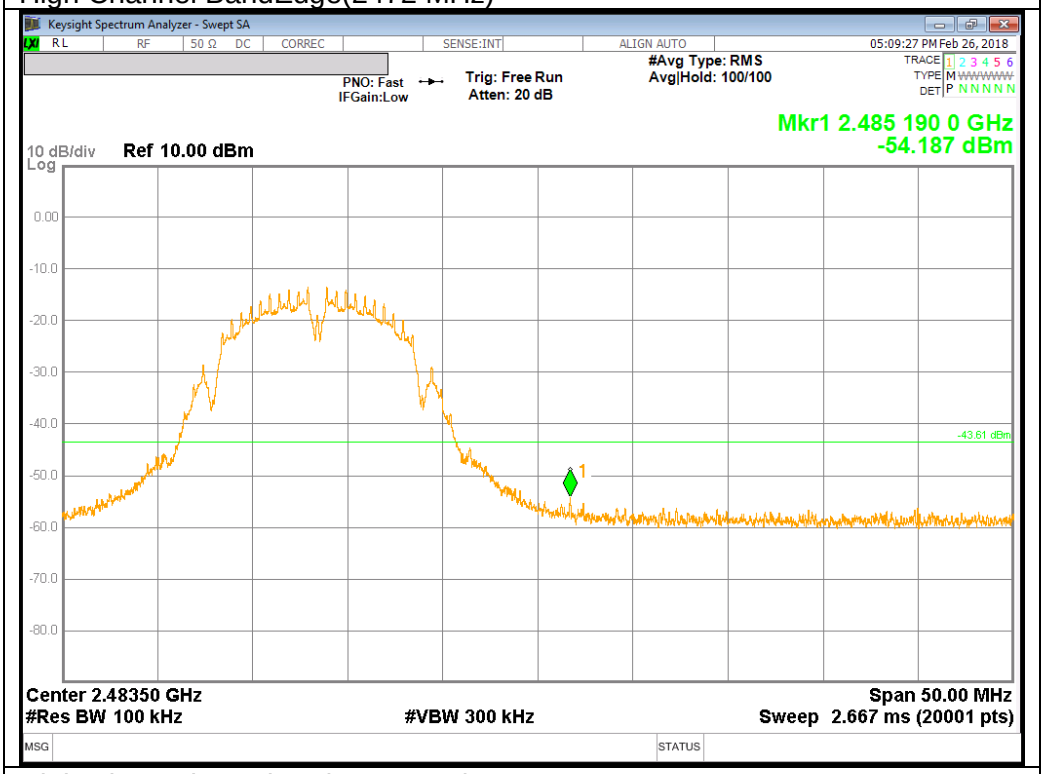
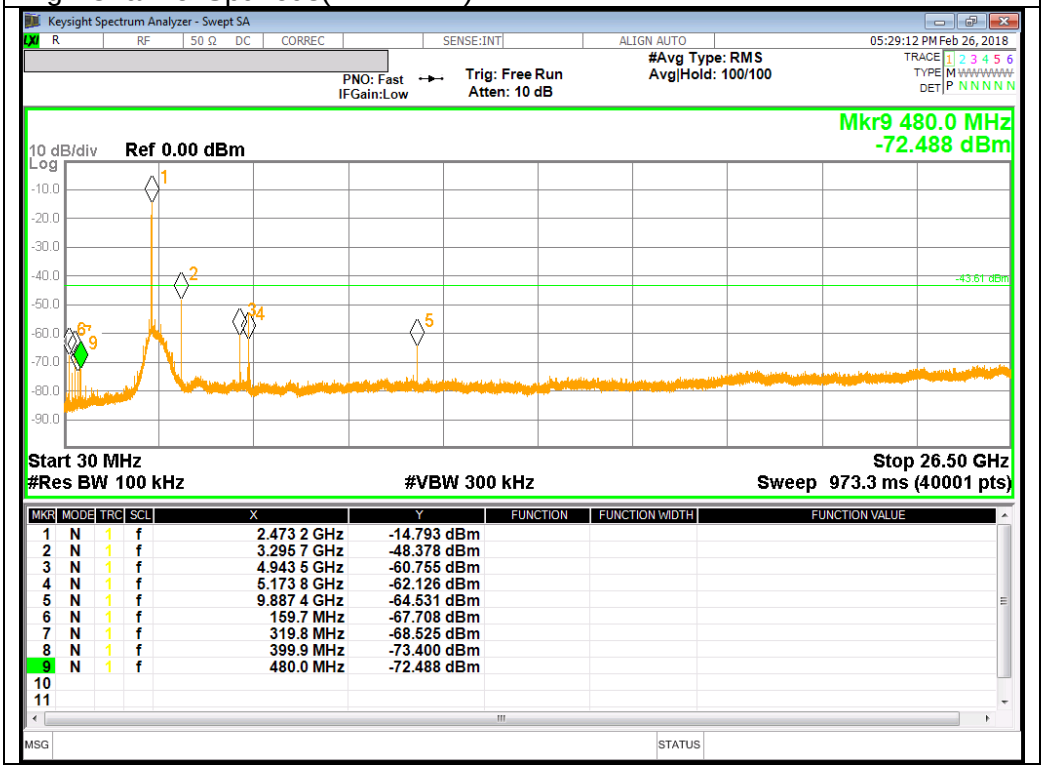
High Channel BandEdge(2472 MHz)



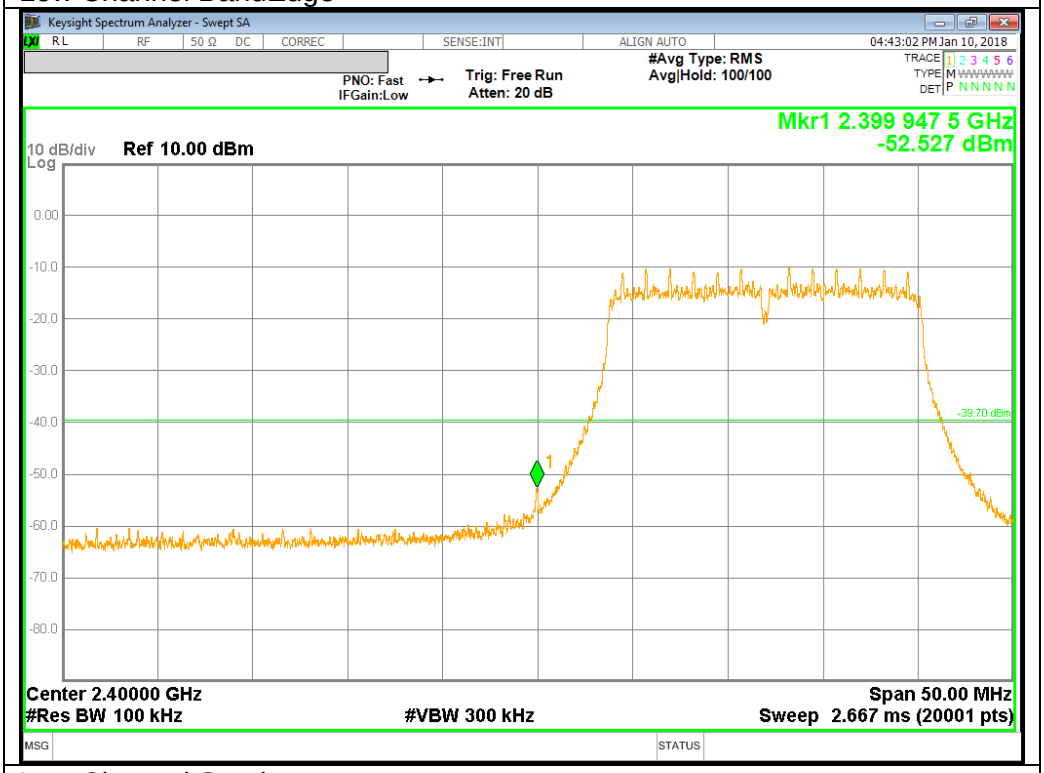
High Channel Spurious(2472 MHz)



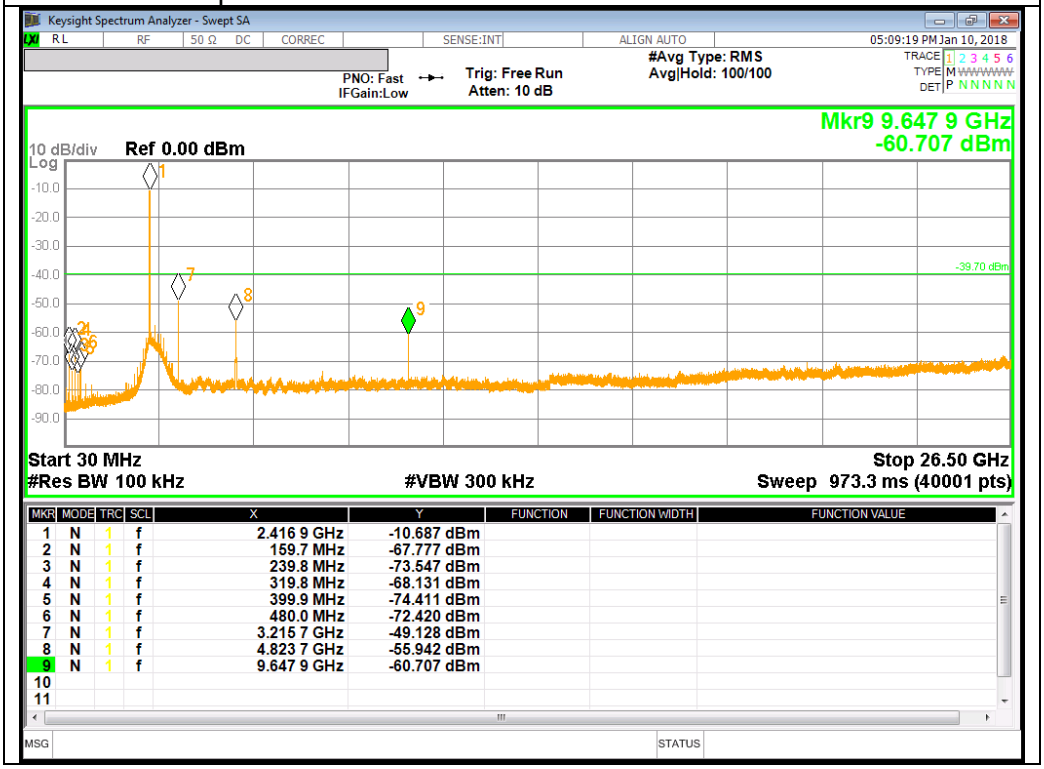
MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.473 2 GHz	-14.793 dBm			
2	N	1	f	3.295 7 GHz	-48.378 dBm			
3	N	1	f	4.943 5 GHz	-60.755 dBm			
4	N	1	f	5.173 8 GHz	-62.126 dBm			
5	N	1	f	9.887 4 GHz	-64.531 dBm			
6	N	1	f	159.7 MHz	-67.708 dBm			
7	N	1	f	319.8 MHz	-68.525 dBm			
8	N	1	f	399.9 MHz	-73.400 dBm			
9	N	1	f	480.0 MHz	-72.488 dBm			
10								
11								

9.4.2. 802.11g MODE IN THE 2.4 GHz BAND

Low Channel BandEdge



Low Channel Spurious



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.416 9 GHz	-10.687 dBm			
2	N	1	f	159.7 MHz	-67.777 dBm			
3	N	1	f	239.8 MHz	-73.547 dBm			
4	N	1	f	319.8 MHz	-68.131 dBm			
5	N	1	f	399.9 MHz	-74.411 dBm			
6	N	1	f	480.0 MHz	-72.420 dBm			
7	N	1	f	3.215 7 GHz	-49.128 dBm			
8	N	1	f	4.823 7 GHz	-55.942 dBm			
9	N	1	f	9.647 9 GHz	-60.707 dBm			
10								
11								

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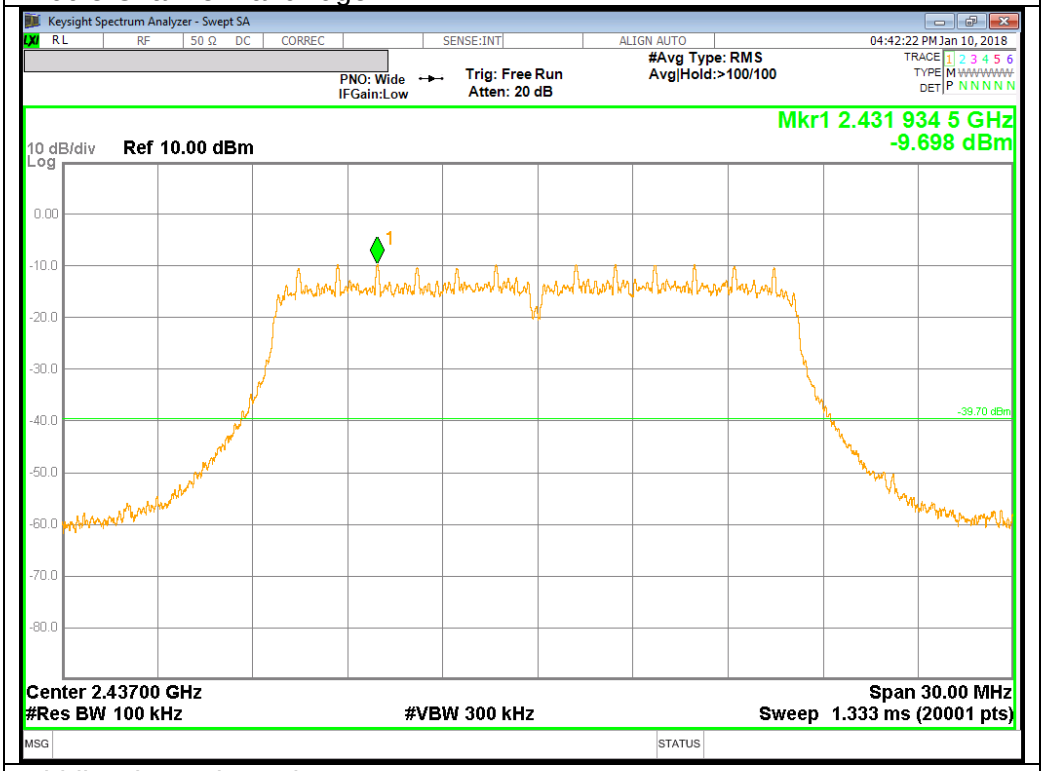
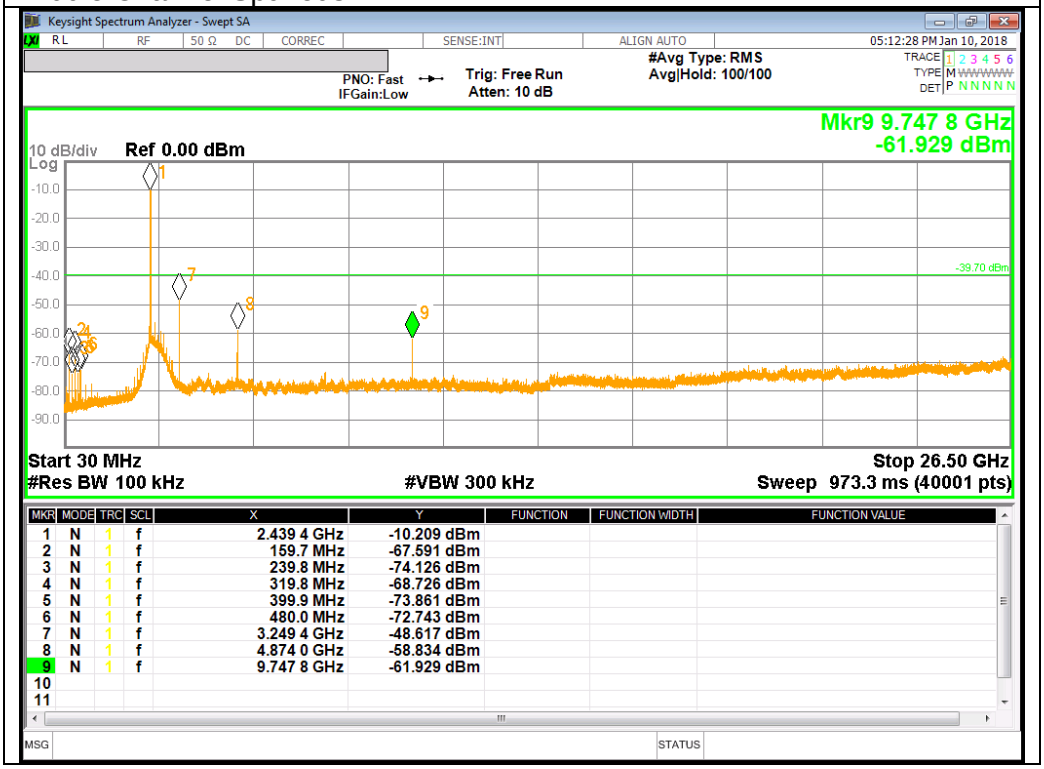
Middle Channel BandEdge



Middle Channel Spurious



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.439 4 GHz	-10.209 dBm			
2	N	1	f	159.7 MHz	-67.591 dBm			
3	N	1	f	239.8 MHz	-74.126 dBm			
4	N	1	f	319.8 MHz	-68.726 dBm			
5	N	1	f	399.9 MHz	-73.861 dBm			
6	N	1	f	480.0 MHz	-72.743 dBm			
7	N	1	f	3.249 4 GHz	-48.617 dBm			
8	N	1	f	4.874 0 GHz	-58.834 dBm			
9	N	1	f	9.747 8 GHz	-61.929 dBm			
10								
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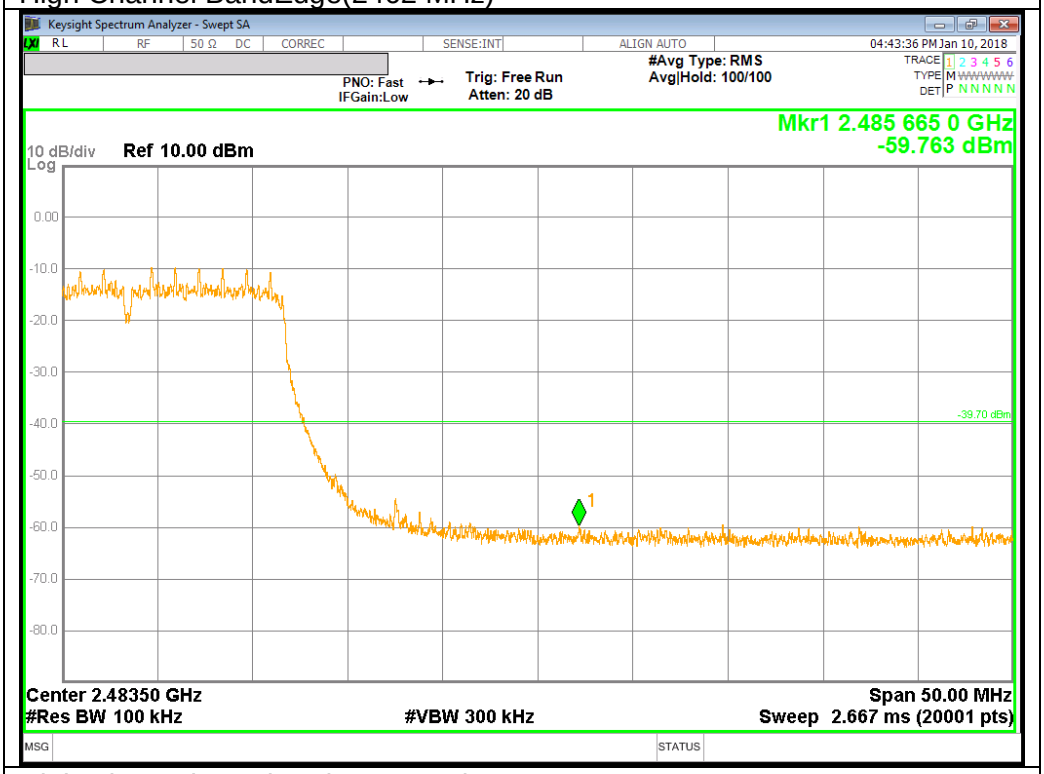
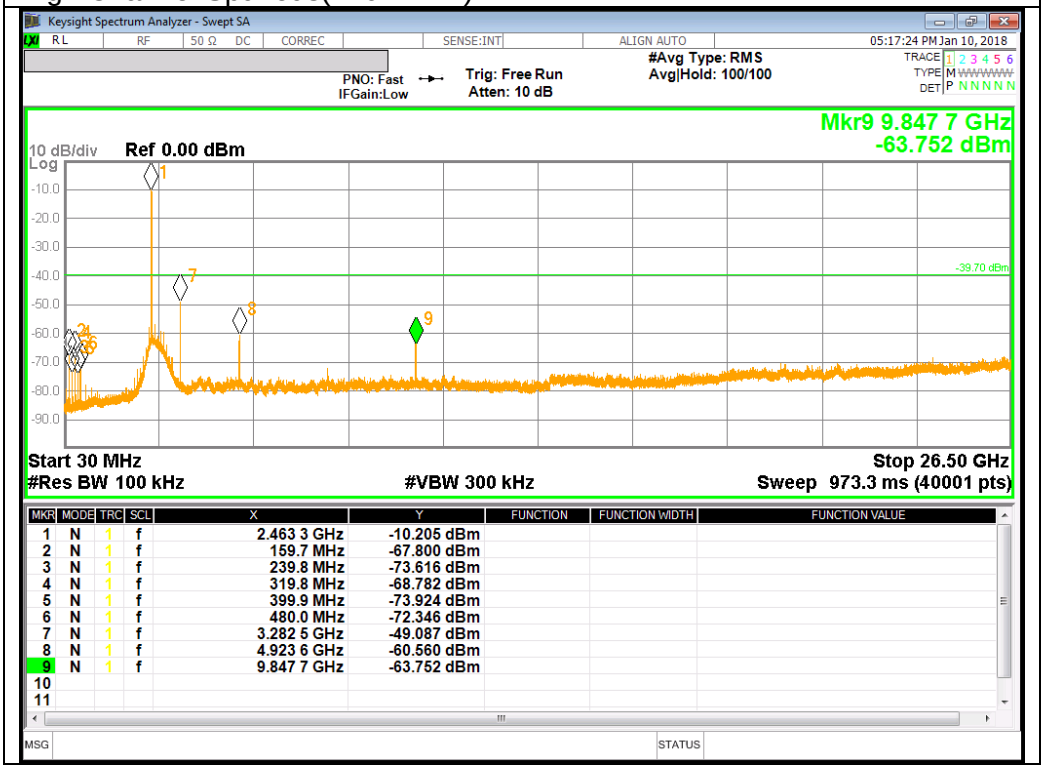
High Channel BandEdge(2462 MHz)



High Channel Spurious(2462 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.463 3 GHz	-10.205 dBm			
2	N	1	f	159.7 MHz	-67.800 dBm			
3	N	1	f	239.8 MHz	-73.616 dBm			
4	N	1	f	319.8 MHz	-68.782 dBm			
5	N	1	f	399.9 MHz	-73.924 dBm			
6	N	1	f	480.0 MHz	-72.346 dBm			
7	N	1	f	3.282 5 GHz	-49.087 dBm			
8	N	1	f	4.923 6 GHz	-60.560 dBm			
9	N	1	f	9.847 7 GHz	-63.752 dBm			
10								
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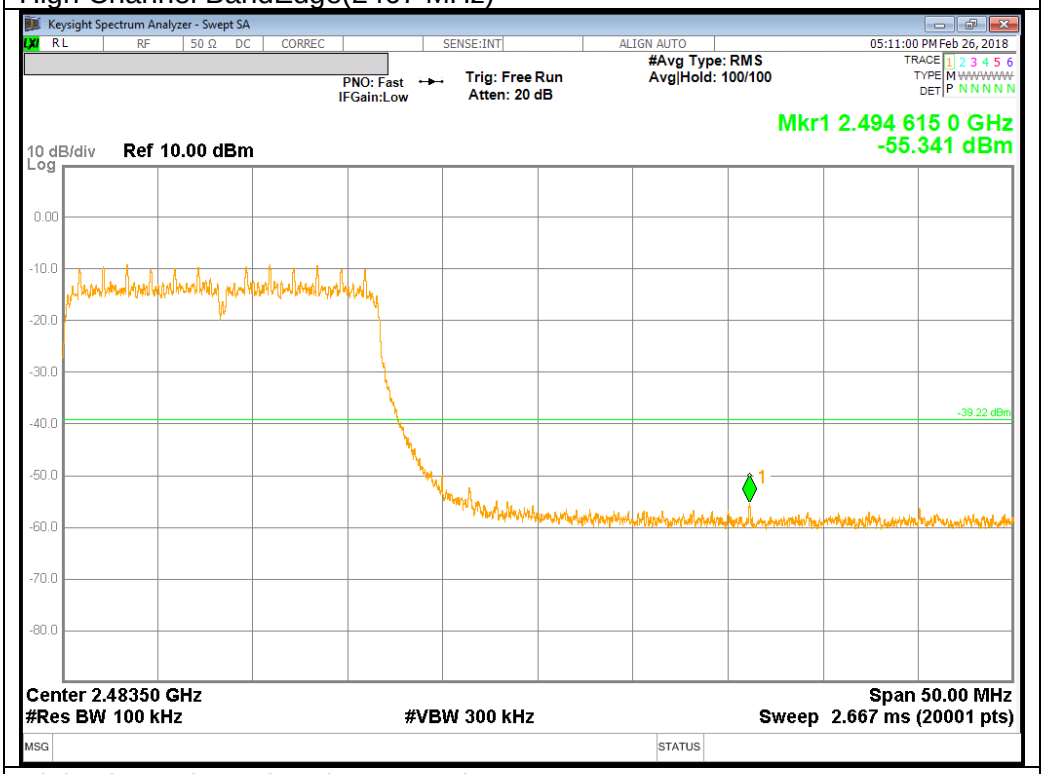
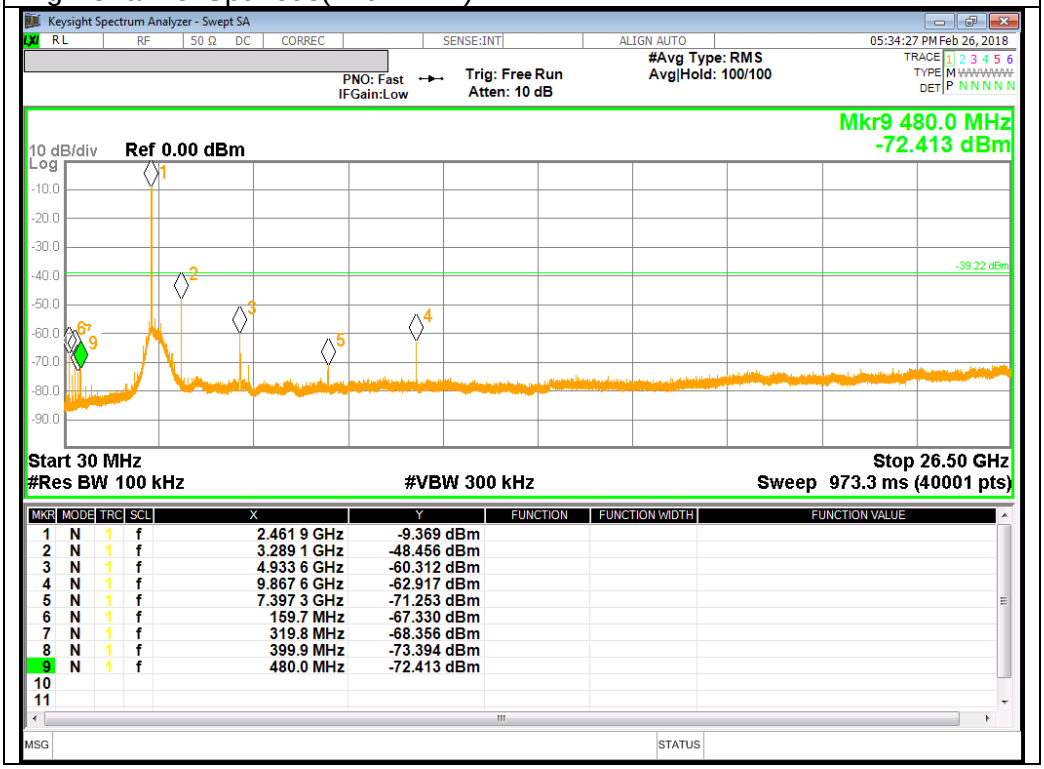
High Channel BandEdge(2467 MHz)



High Channel Spurious(2467 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.461 9 GHz	-9.369 dBm			
2	N	1	f	3.289 1 GHz	-48.456 dBm			
3	N	1	f	4.933 6 GHz	-60.312 dBm			
4	N	1	f	9.867 6 GHz	-62.917 dBm			
5	N	1	f	7.397 3 GHz	-71.253 dBm			
6	N	1	f	159.7 MHz	-67.330 dBm			
7	N	1	f	319.8 MHz	-68.356 dBm			
8	N	1	f	399.9 MHz	-73.394 dBm			
9	N	1	f	480.0 MHz	-72.413 dBm			
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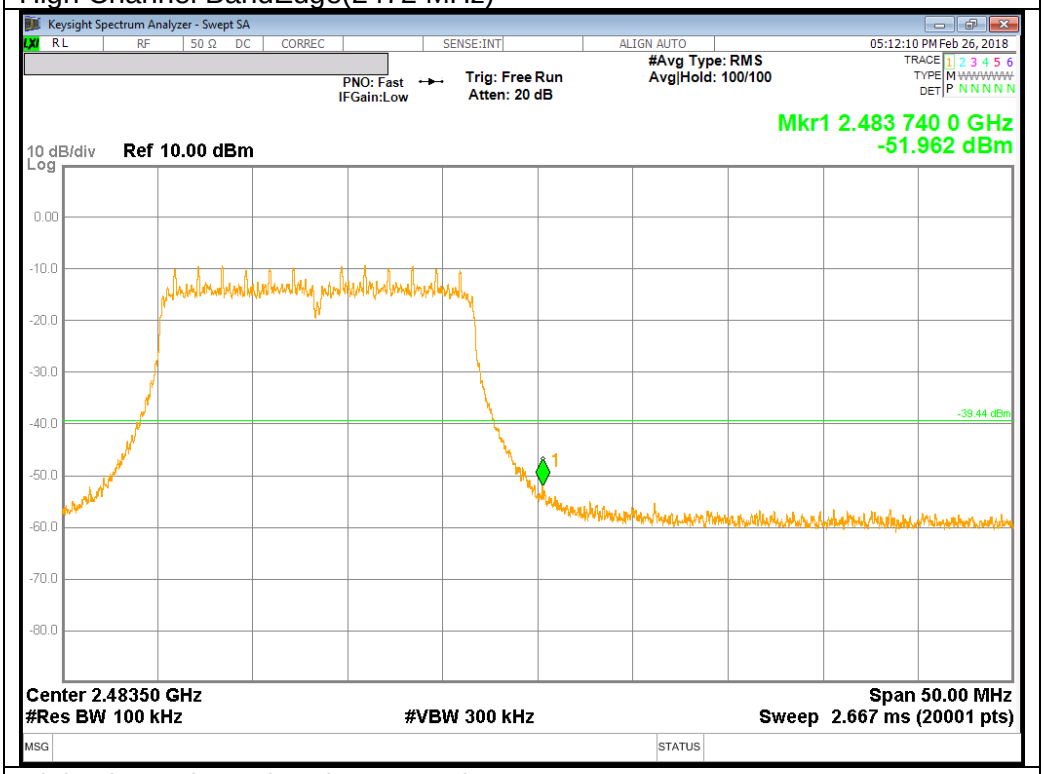
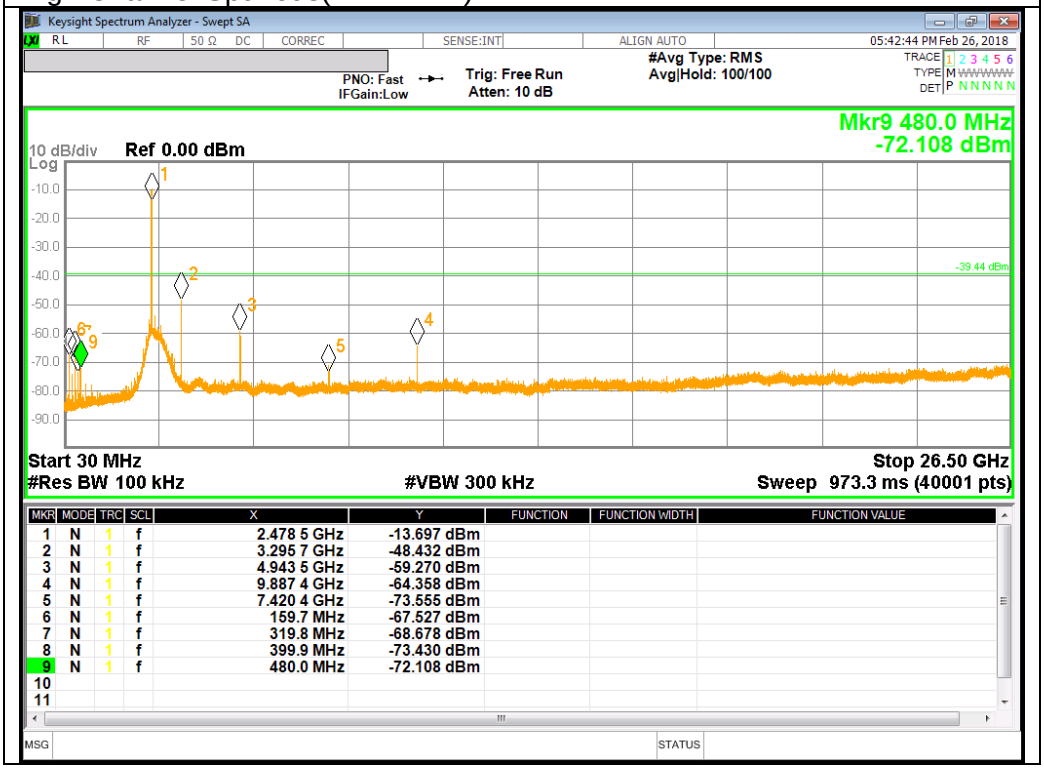
High Channel BandEdge(2472 MHz)



High Channel Spurious(2472 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.478 5 GHz	-13.697 dBm			
2	N	1	f	3.295 7 GHz	-48.432 dBm			
3	N	1	f	4.943 5 GHz	-59.270 dBm			
4	N	1	f	9.887 4 GHz	-64.358 dBm			
5	N	1	f	7.420 4 GHz	-73.555 dBm			
6	N	1	f	159.7 MHz	-67.527 dBm			
7	N	1	f	319.8 MHz	-68.678 dBm			
8	N	1	f	399.9 MHz	-73.430 dBm			
9	N	1	f	480.0 MHz	-72.108 dBm			
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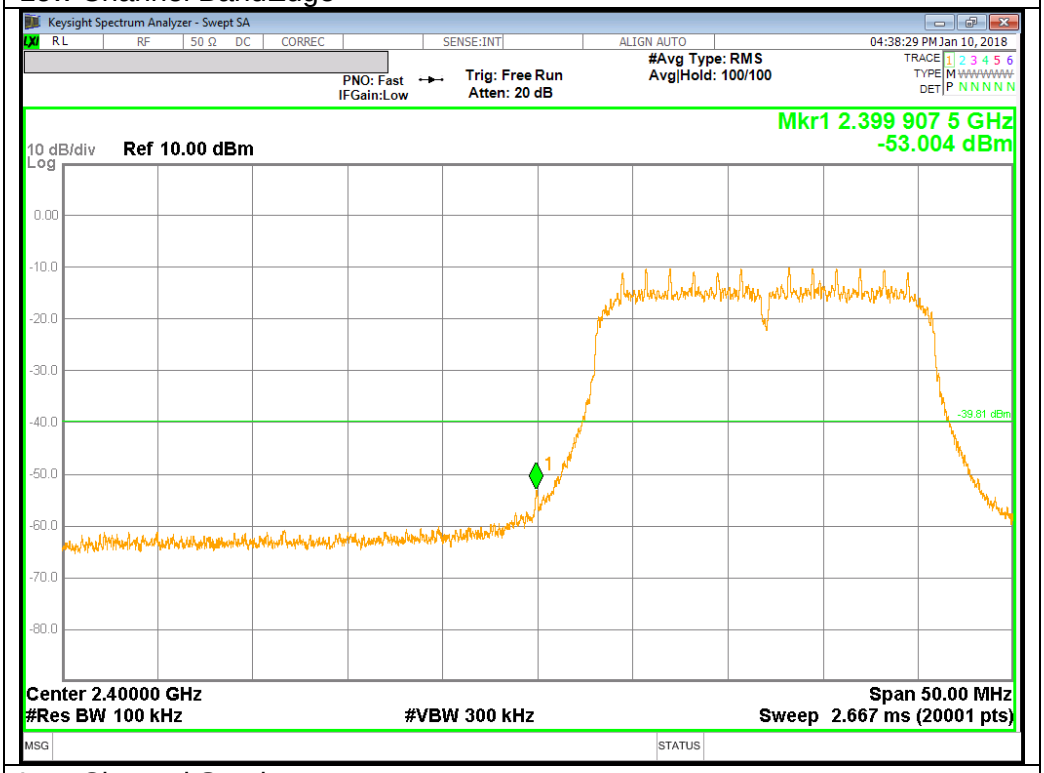
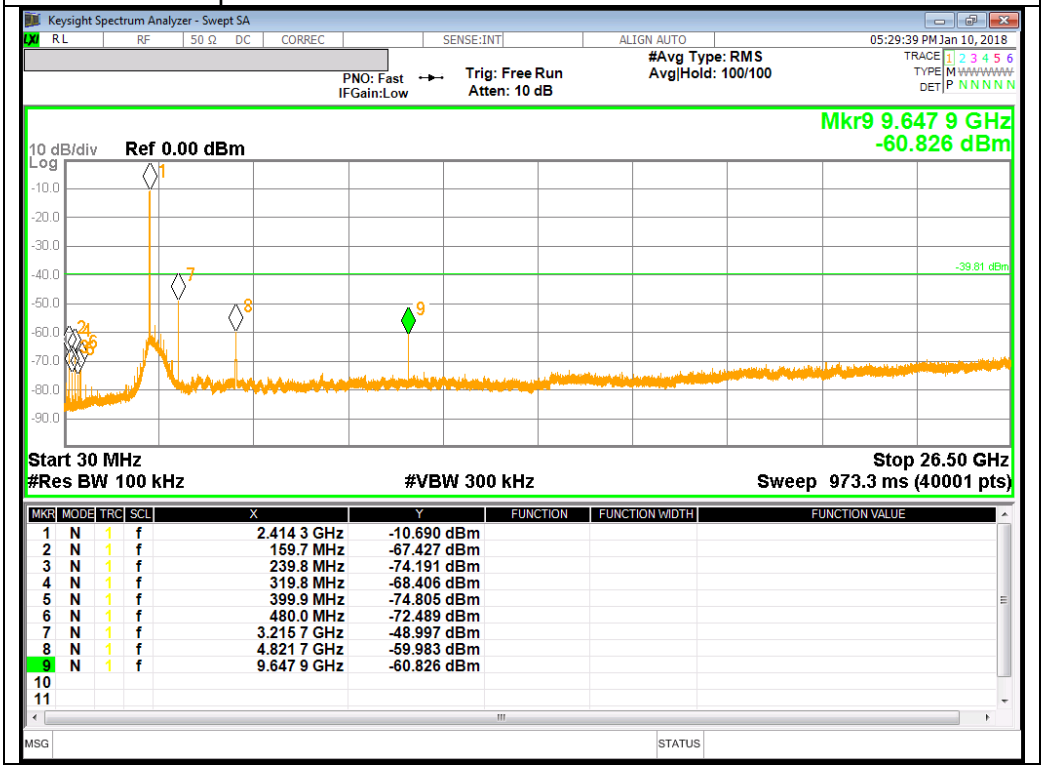
9.4.3. 802.11n HT20 MODE IN THE 2.4 GHz BAND

Low Channel BandEdge



Low Channel Spurious



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.414 3 GHz	-10.690 dBm			
2	N	1	f	159.7 MHz	-67.427 dBm			
3	N	1	f	239.8 MHz	-74.191 dBm			
4	N	1	f	319.8 MHz	-68.406 dBm			
5	N	1	f	399.9 MHz	-74.805 dBm			
6	N	1	f	480.0 MHz	-72.489 dBm			
7	N	1	f	3.215 7 GHz	-48.997 dBm			
8	N	1	f	4.821 7 GHz	-59.983 dBm			
9	N	1	f	9.647 9 GHz	-60.826 dBm			
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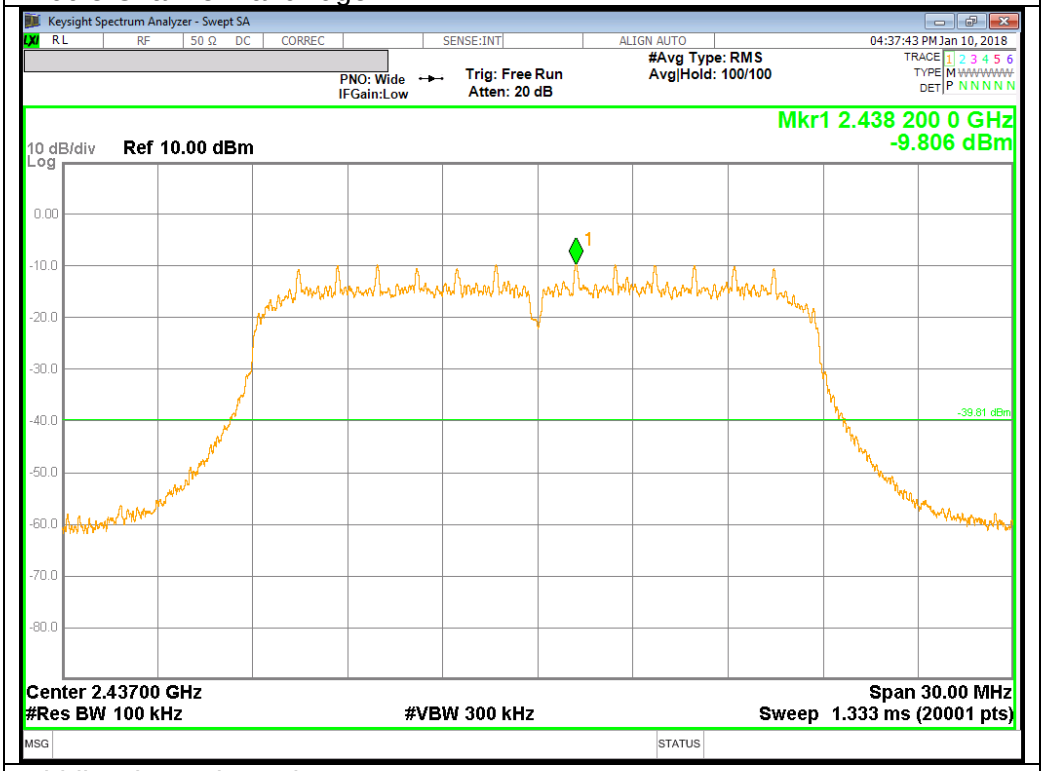
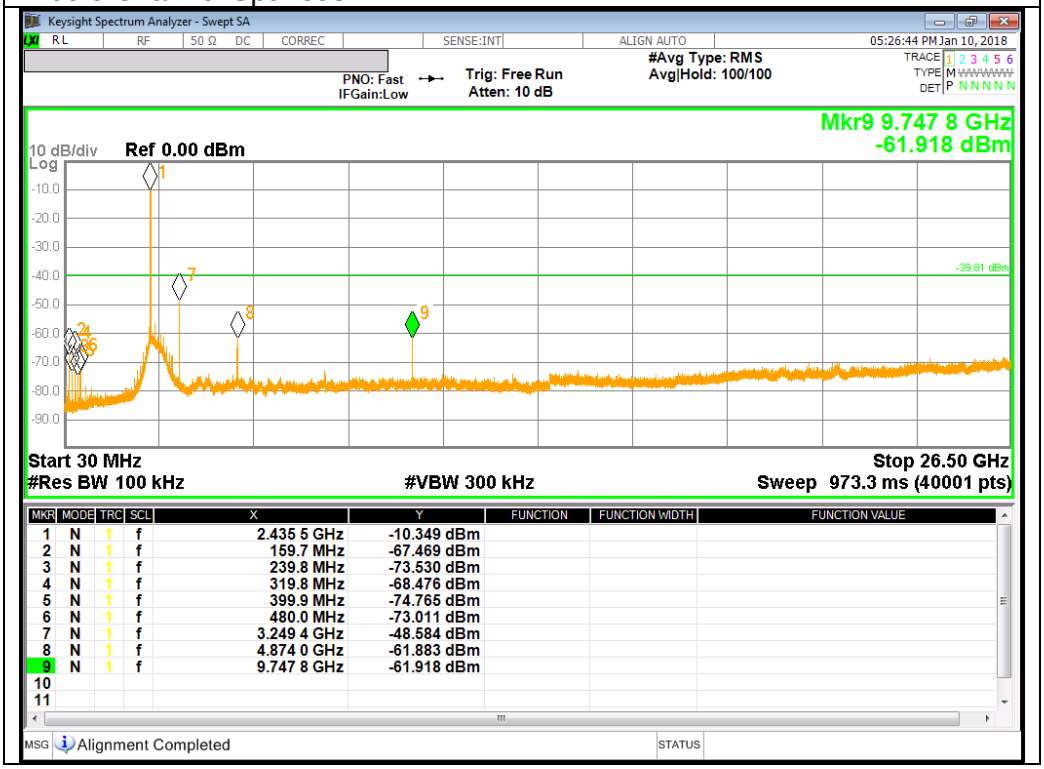
Middle Channel BandEdge



Middle Channel Spurious



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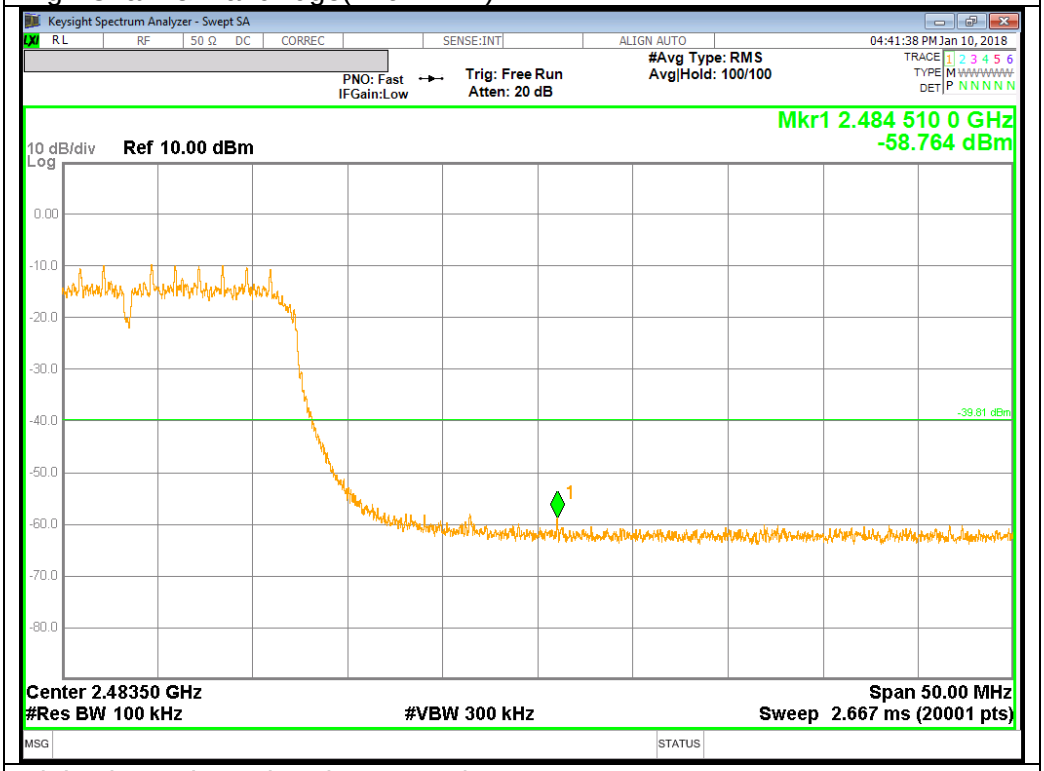
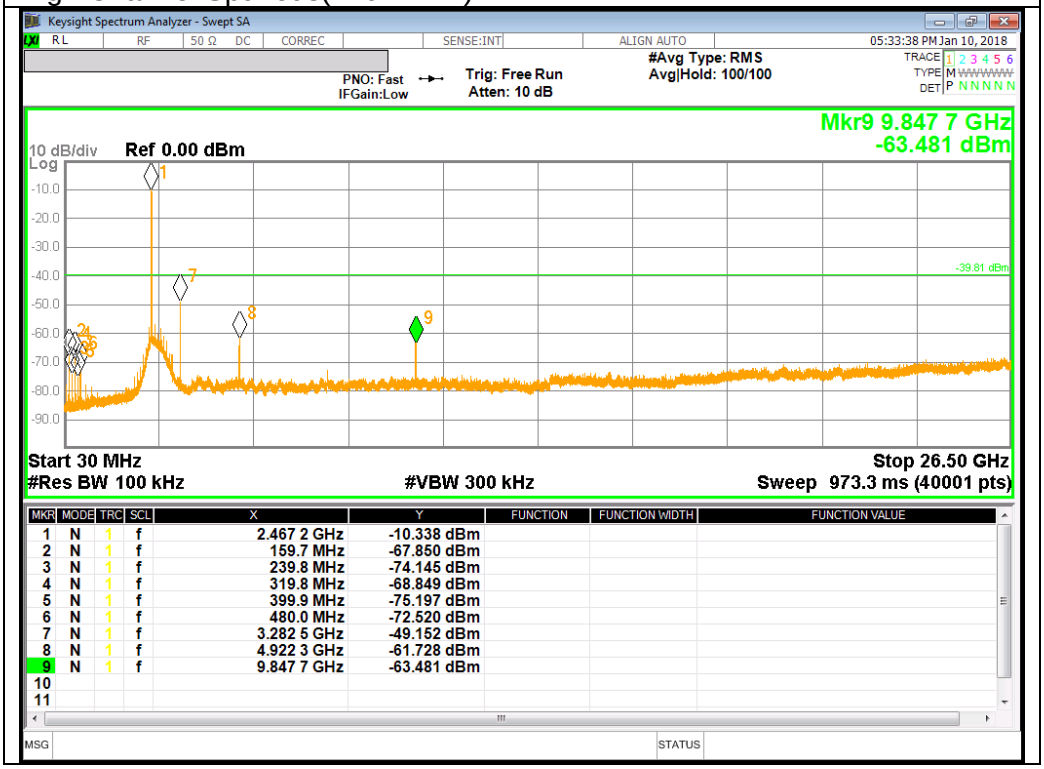
High Channel BandEdge(2462 MHz)



High Channel Spurious(2462 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.467 2 GHz	-10.338 dBm			
2	N	1	f	159.7 MHz	-67.850 dBm			
3	N	1	f	239.8 MHz	-74.145 dBm			
4	N	1	f	319.8 MHz	-68.849 dBm			
5	N	1	f	399.9 MHz	-75.197 dBm			
6	N	1	f	480.0 MHz	-72.520 dBm			
7	N	1	f	3.282 5 GHz	-49.152 dBm			
8	N	1	f	4.922 3 GHz	-61.728 dBm			
9	N	1	f	9.847 7 GHz	-63.481 dBm			
10								
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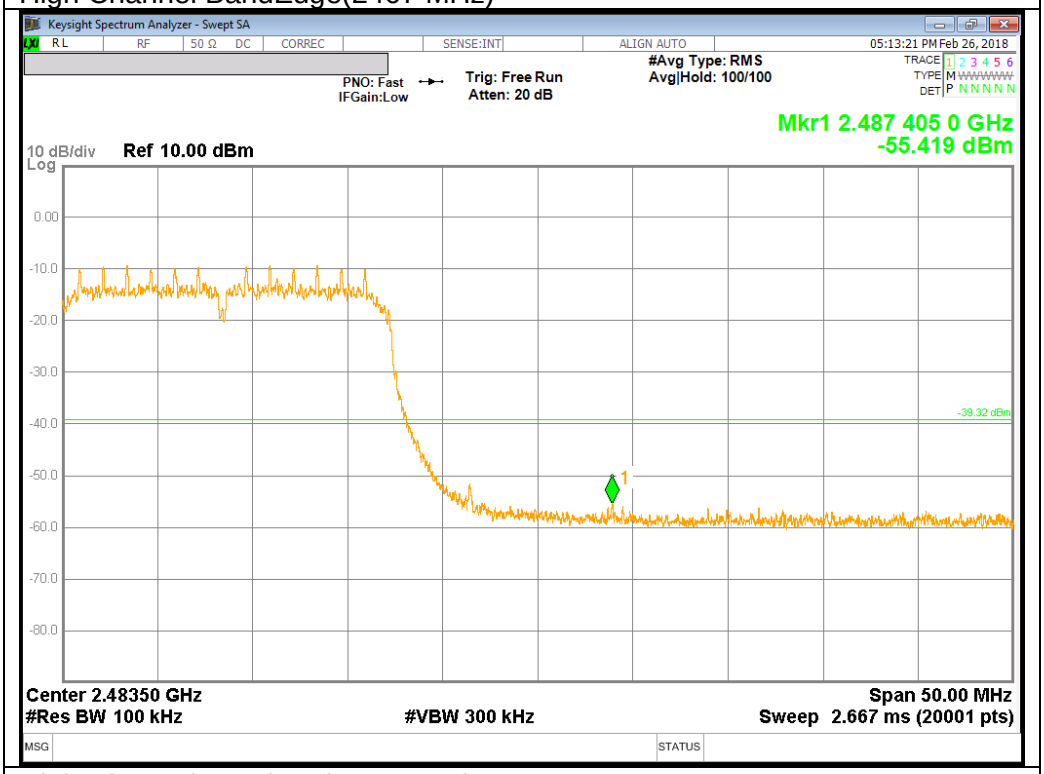
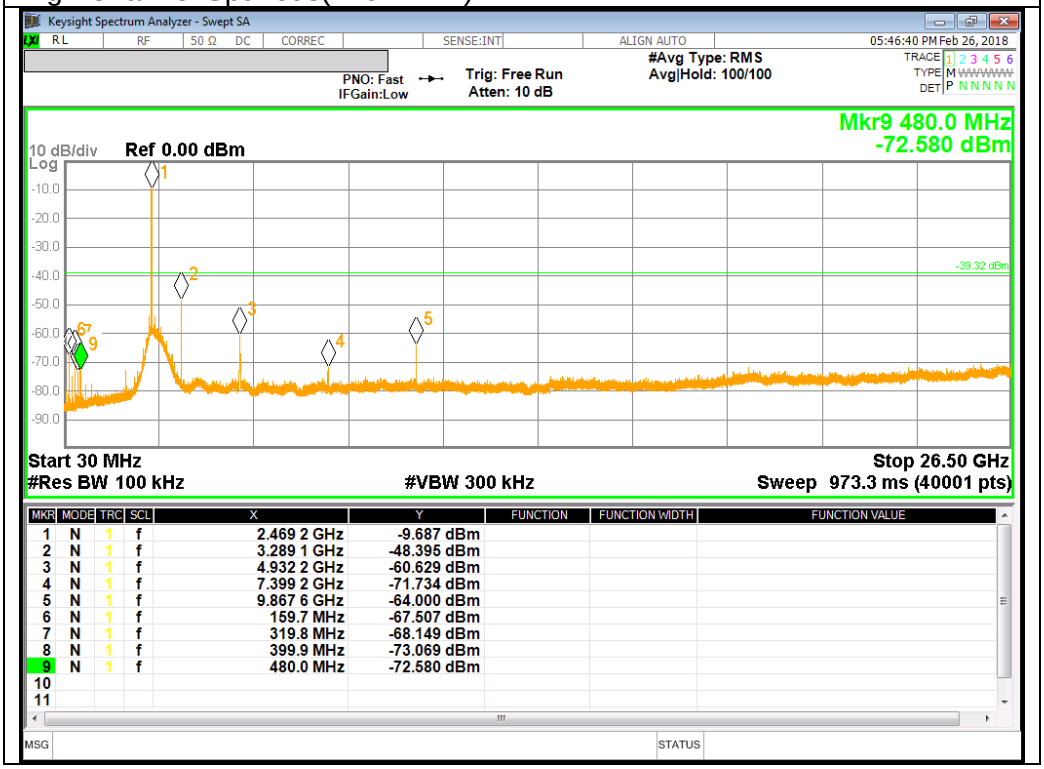
High Channel BandEdge(2467 MHz)



High Channel Spurious(2467 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.469 2 GHz	-9.687 dBm			
2	N	1	f	3.289 1 GHz	-48.395 dBm			
3	N	1	f	4.932 2 GHz	-60.629 dBm			
4	N	1	f	7.399 2 GHz	-71.734 dBm			
5	N	1	f	9.867 6 GHz	-64.000 dBm			
6	N	1	f	159.7 MHz	-67.507 dBm			
7	N	1	f	319.8 MHz	-68.149 dBm			
8	N	1	f	399.9 MHz	-73.069 dBm			
9	N	1	f	480.0 MHz	-72.580 dBm			
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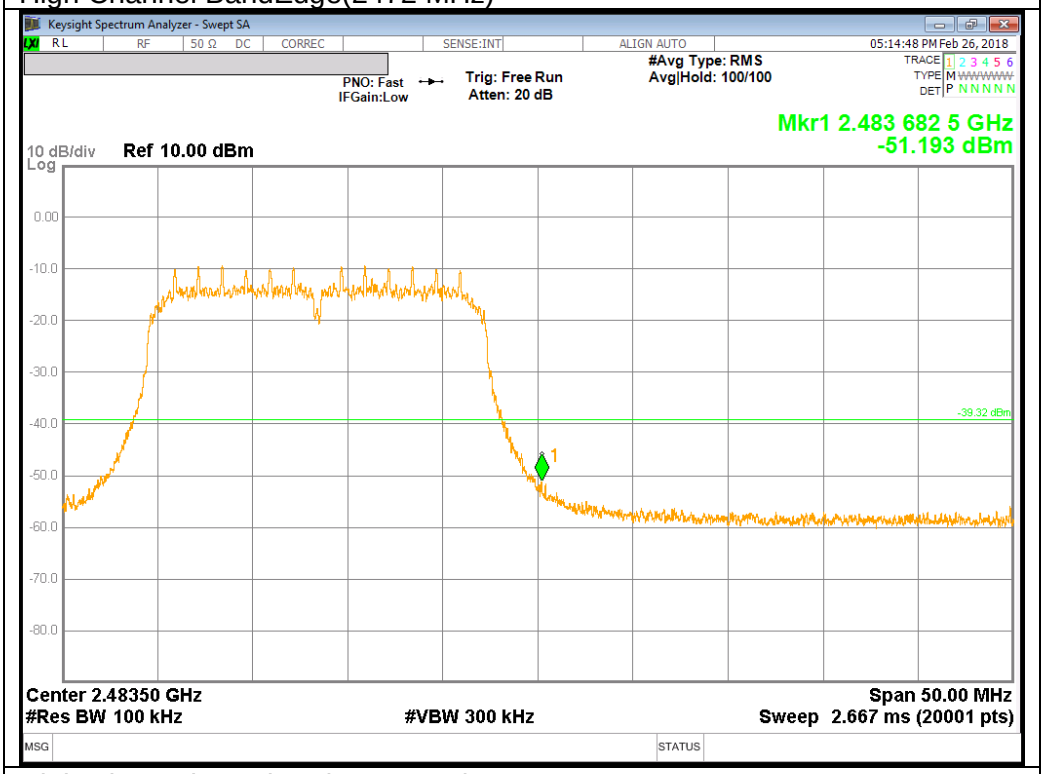
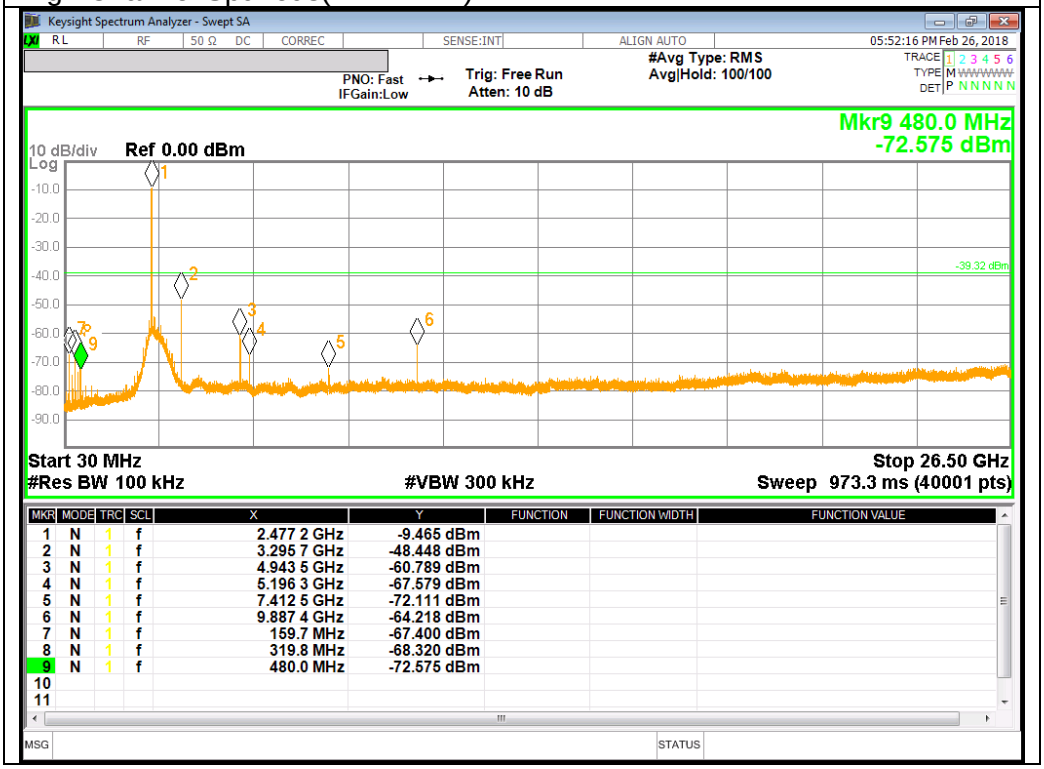
High Channel BandEdge(2472 MHz)



High Channel Spurious(2472 MHz)



MKR	MODE	TRC	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE
1	N	1	f	2.477 2 GHz	-9.465 dBm			
2	N	1	f	3.295 7 GHz	-48.448 dBm			
3	N	1	f	4.943 5 GHz	-60.789 dBm			
4	N	1	f	5.196 3 GHz	-67.579 dBm			
5	N	1	f	7.412 5 GHz	-72.111 dBm			
6	N	1	f	9.887 4 GHz	-64.218 dBm			
7	N	1	f	159.7 MHz	-67.400 dBm			
8	N	1	f	319.8 MHz	-68.320 dBm			
9	N	1	f	480.0 MHz	-72.575 dBm			
10								
11								