CERTIFICATION TEST REPORT

Report Number. : 4789467590-E3V4

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-F707B, SCG04
FCC ID	:	A3LSMF707B
EUT Description	:	GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC and WPT
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
June 16, 2020

Prepared by:
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IAS ACCREDITED
Testing Laboratory
TL-637

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	06/05/20	Initial issue	Jihyeon Park
V2	06/11/20	Updated to address TCB's question	Jihyeon Park
V3	06/15/20	Updated to address manufacturer's request	Jihyeon Park
V4	06/16/20	Updated to address manufacturer's request	Jihyeon Park

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC and WPT

MODEL NUMBER: SM-F707B, SCG04

SERIAL NUMBER: 4393b319891f7ece (CONDUCTED)
4393B6255D1F7ECE (RADIATED);

DATE TESTED: MAY 15, 2020 – JUN 04, 2020;

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

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.

Approved & Released For
UL Korea, Ltd. By:

Junwhan Lee
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Jihyeon Park
Suwon Lab Technician
UL Korea, Ltd.

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2. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 DTS Meas Guidance v05r02.
4. KDB 662911 D01 Multiple Transmitter Output v02r01
5. 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
☐ Chamber 3

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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)

28.9 dBuV/m = 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB

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	2.35 dB
Radiated Disturbance, 30 MHz to 1 GHz	3.49 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.82 dB
Radiated Disturbance, 18 GHz to 40 GHz	5.49 dB

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

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 1, Clause 4.4.2 in IEC Guide 115:2007.

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5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC and WPT. This test report addresses the DTS (WLAN) operational mode.

WiFi operating mode

Frequency rage	Mode	ANT 1	ANT 2
2.4GHz (2412 MHz ~ 2472 MHz)	802.11b SISO	-	TX/RX
	802.11b MIMO	TX/RX	TX/RX
	802.11g SISO	-	TX/RX
	802.11g MIMO	TX/RX	TX/RX
	802.11n(HT20) SISO	-	TX/RX
	802.11n(HT20) MIMO	TX/RX	TX/RX

Simultaneous TX Condition

Simultaneous Tx Condition - RSDB

Mode	# of TX	5GHz WLAN		2.4GHz WLAN		Test Case
		ANT1	ANT2	ANT1	ANT2	
2.4GHz + 5GHz RSDB MIMO	4	**O**	**O**	**O**	**O**	**O**

Simultaneous Tx Condition - RSDB + Bluetooth

Mode	# of TX	5GHz WLAN		2.4GHz Bluetooth	2.4GHz WLAN	Test Case
		ANT1	ANT2	ANT1	ANT2	
5GHz MIMO RSDB & Bluetooth	3	O	O	O	-	-
2.4GHz + 5GHz MIMO RSDB & Bluetooth	4	**O**	**O**	**O**	**O**	**O**

Note. Please refer to the test report(4789467590-E7) section 11.5. “Spurious Emissions for Simultaneous Transmission”

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5.2. MAXIMUM OUTPUT POWER

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

Frequency Range [MHz]	Mode	Output Power [dBm]		Output Power [mW]	
		ANT1	ANT2	ANT1	ANT2
2412 - 2472	802.11b SISO	-	18.67	-	73.62
	802.11b MIMO	21.42		138.68	
	802.11g SISO	-	17.36	-	54.45
	802.11g MIMO	20.92		123.59	
	802.11n(HT20) SISO	-	17.88	-	61.38
	802.11n(HT20) MIMO	20.81		120.50	

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5.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can 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 internal antenna was Permanently attached.
Therefore this E.U.T Complies with the requirement of §15.203.

The radio utilizes an internal antennas, with Antenna 1's maximum gain of –1.11 dBi and Antenna 2's maximum gain of –5.37 dBi

"Sub4" and "Sub7" as indicated in antenna specification are written as Antenna 1 and Antenna 2 in this report.

5.4. TESTED CHANNELS LIST

802.11b Mode	Channel	Frequency (MHz)
Low	1	2412
Mid	6	2437
High	11	2462
Reduction High 1	12	2467
Reduction High 2	13	2472

802.11g Mode	Channel	Frequency (MHz)
Low	1	2412
Mid	6	2437
High	11	2462
Reduction High 1	12	2467
Reduction High 2	13	2472

802.11n HT20 Mode	Channel	Frequency (MHz)
Low	1	2412
Mid	6	2437
High	11	2462
Reduction High 1	12	2467
Reduction High 2	13	2472

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5.5. WORST-CASE CONFIGURATION AND MODE

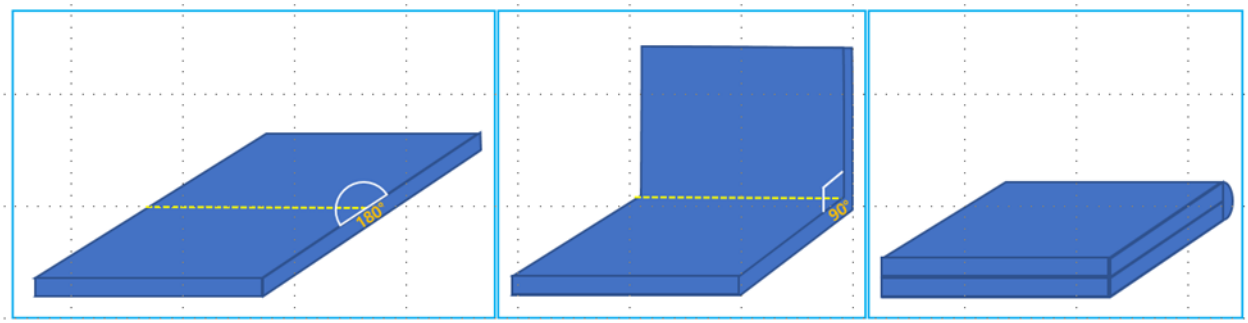
Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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

i. Worst Axis condition

For SISO (Antenna 2), the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Y orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Y orientation.
For MIMO, 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.

ii. Foldable condition



For SISO (Antenna 2), the fundamental of the EUT was investigated in three foldable conditions(Open, Half-folded, Full-folded). It was determined that the “Open” condition was worst-case orientation; therefore, all final radiated testing was performed with the EUT in the “Open” condition.
For MIMO, the fundamental of the EUT was investigated in three foldable conditions(Open, Half-folded, Full-folded). It was determined that the “Half-folded” condition was worst-case orientation; therefore, all final radiated testing was performed with the EUT in the “Half-folded” condition.

Based on the baseline scan, the worst-case data rates were:
802.11b mode: 1 Mbps 2TX
802.11g mode: 6 Mbps 2TX
802.11n HT20 mode: MCS0 2TX

Depending on spot-check results for 802.11b / g / n HT20, MIMO mode is worst case than SISO(Antenna 2). So radiation test for 802.11b/ g / n HT20 were evaluated at MIMO mode.

Note : All radiated and power line conducted tests were performed attached with travel adapter for the worst case condition mode.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA200	R37M7QS0NL1DK3	N/A
Data Cable	SAMSUNG	EP-DF700	N/A	N/A
Earphone	SAMSUNG	GH59-15252A	N/A	N/A

I/O CABLE

I/O Cable List						
Cable No.	Port	# of identical ports	Connector Type	Cable Type	Cable Length(m)	Remarks
1	DC Power	1	C Type	Shielded	1.1m	N/A

TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable DTS mode.

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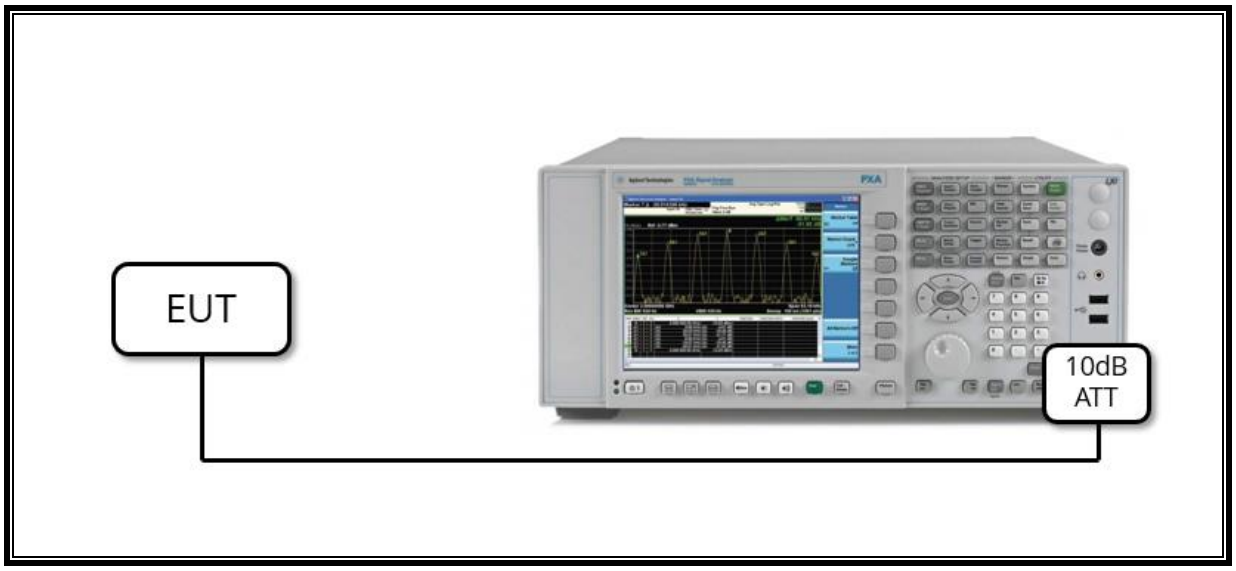
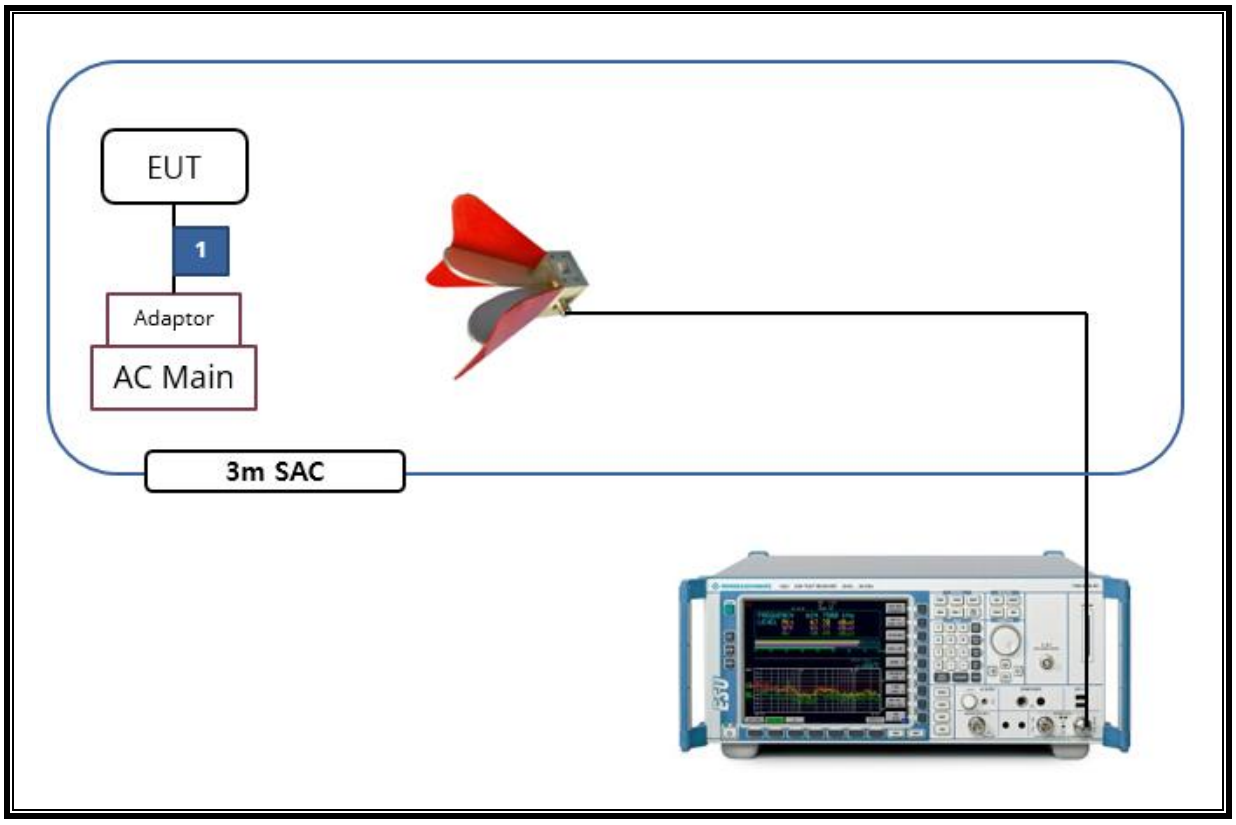
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. MEASUREMENT METHOD

6 dB BW : KDB 558074 D01 v05r02, Section 8.2

OUTPUT POWER : KDB 558074 D01 v05r02, Section 8.3.2.3.

POWER SPECTRAL DENSITY : KDB 558074 D01 v05r02, Section 8.4.

Out-of-band EMISSIONS (Conducted) : KDB 558074 D01 v05r02, Section 8.5.

Out-of-band EMISSIONS IN NON-RESTRICTED BANDS: KDB 558074 D01 v05r02, Section 8.5.

Out-of-band EMISSIONS IN RESTRICTED BANDS KDB 558074 D01 v05r02, Section 8.6.

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

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7. 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**	**New Cal Due**
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	08-04-20
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	08-04-20
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	08-04-20
Antenna, Horn, 18 GHz	ETS	3115	00167211	08-04-20
Antenna, Horn, 18 GHz	ETS	3115	00161451	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00168724	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00168717	08-04-20
Antenna, Horn, 18 GHz	ETS	3117	00205959	08-04-20
Antenna, Horn, 40 GHz	ETS	3116C	00166155	08-14-20
Antenna, Horn, 40 GHz	ETS	3116C	00168645	10-02-21
Preamplifier	ETS	3116C-PA	00168841	08-08-20
Preamplifier, 1000 MHz	Sonoma	310N	341282	08-05-20
Preamplifier, 1000 MHz	Sonoma	310N	351741	08-05-20
Preamplifier, 1000 MHz	Sonoma	310N	370599	08-05-20
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	08-06-20
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	08-06-20
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	08-06-20
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	08-06-20
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	08-06-20
Spectrum Analyzer, 43.5 GHz	R&S	FSW43	104089	08-06-20
Average Power Sensor	Agilent / HP	U2000	MY54270007	08-09-20
Attenuator	PASTERNACK	PE7087-10	A001	08-08-20
Attenuator	PASTERNACK	PE7087-10	A008	08-08-20
Attenuator	PASTERNACK	PE7004-10	2	08-06-20
Attenuator	PASTERNACK	PE7087-10	A009	08-08-20
EMI Test Receive, 40 GHz	R&S	ESU40	100439	08-06-20
EMI Test Receive, 40 GHz	R&S	ESU40	100457	08-06-20
EMI Test Receive, 44 GHz	R&S	ESW44	101590	08-05-20
EMI Test Receive, 3 GHz	R&S	ESR3	101832	08-05-20
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	08-06-20
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	08-06-20
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	020	08-06-20
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	08-06-20
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	08-06-20
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	08-06-20
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	08-06-20
High Pass Filter 6GHz	Micro-Tronics	HPS17542	016	08-06-20
High Pass Filter 6GHz	Micro-Tronics	HPS17542	021	08-06-20
LISN	R&S	ENV-216	101837	08-09-20
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	10-02-21

Antenna, Loop, 9kHz-30MHz			
Description	**Manufacturer**	**Model**	**Version**
Radiated software	UL	UL EMC	Ver 9.5
AC Line Conducted software	UL	UL EMC	Ver 9.5

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8. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	Occupied Band width (6dB)	> 500kHz	Conducted	Pass
2.1051, 15.247 (d)	Band Edge / Conducted Spurious Emission	-30dBc		Pass
15.247 (b)(3)	TX conducted output power	< 30dBm		Pass
15.247 (e)	PSD	< 8dBm		Pass
15.207 (a)	AC Power Line conducted emissions	Section 10	Power Line conducted	Pass
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m	Radiated	Pass

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

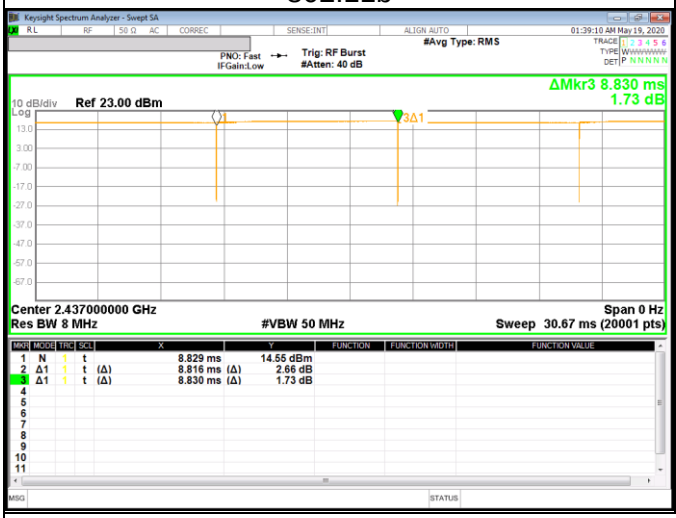
LIMITS

None; for reporting purposes only.

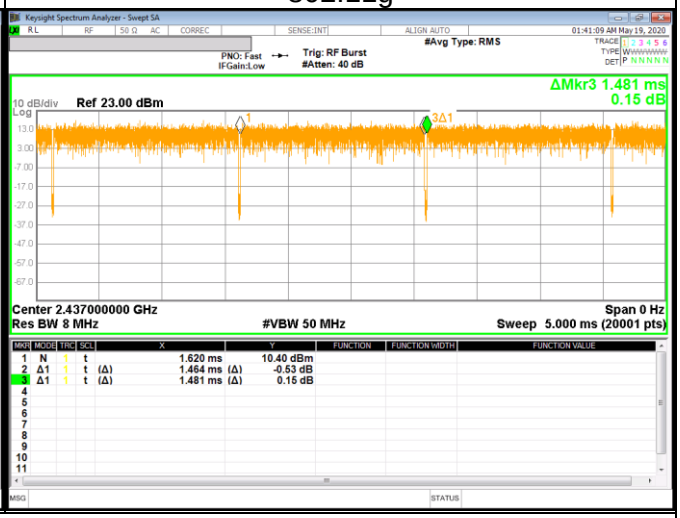
Band	Mode	On Time [ms]	Period [ms]	Duty Cycle X [Linear]	Duty Cycle X [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
2.4 GHz	802.11b	8.816	8.830	0.998	99.84	0.0	0.113
	802.11g	1.464	1.481	0.989	98.85	0.0	0.683
	802.11n(HT20)	5.428	5.446	0.997	99.67	0.0	0.184

Note. Since the duty cycle of all modes is over 98%, compensation is not included(average measurement)

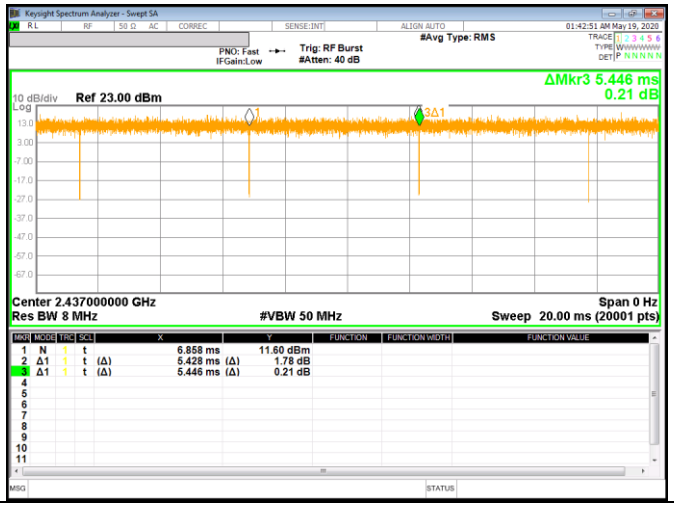
802.11b



802.11g



802.11n HT20



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9.2. 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 15.247 Meas Guidance: 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.

RESULTS

- Please refer to the next page

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9.2.1. 802.11b MODE

2TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	8.1210	0.5
Mid 6	2437	8.0770	0.5
High 11	2462	8.1060	0.5
High 12	2467	8.0310	0.5
High 13	2472	7.5610	0.5

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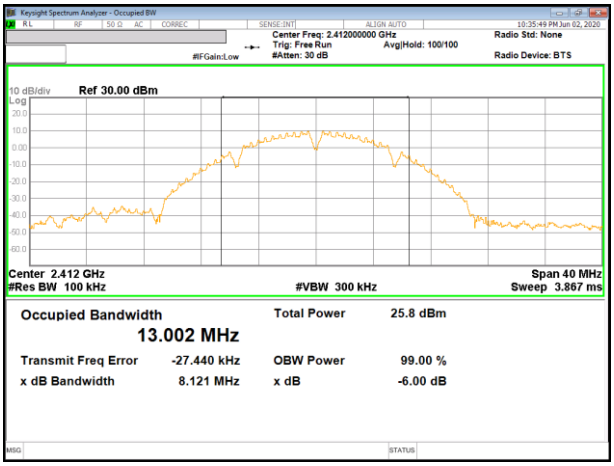

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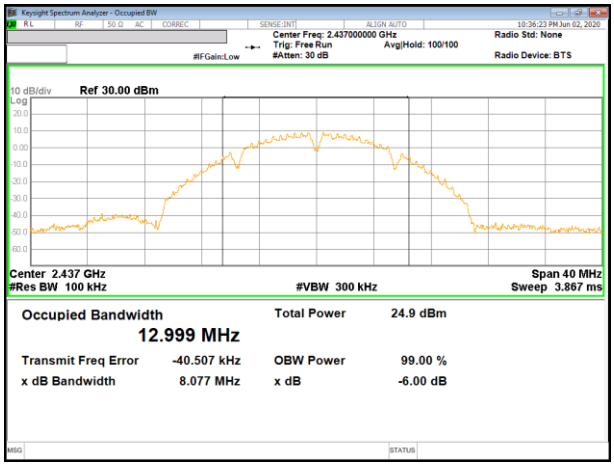

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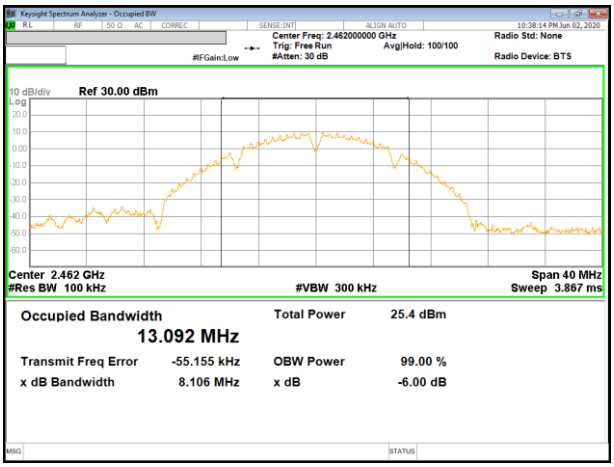

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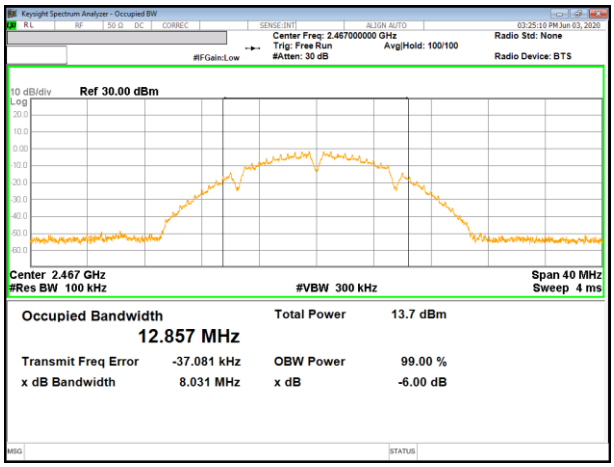

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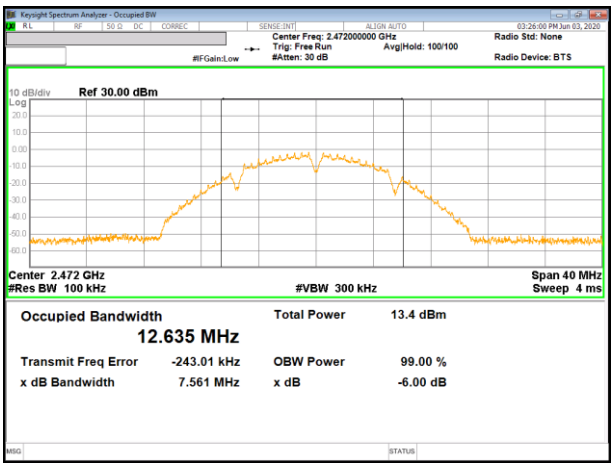

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2TX Antenna 2 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	8.0890	0.5
Mid 6	2437	8.1080	0.5
High 11	2462	8.0860	0.5
High 12	2467	8.0650	0.5
High 13	2472	8.0600	0.5

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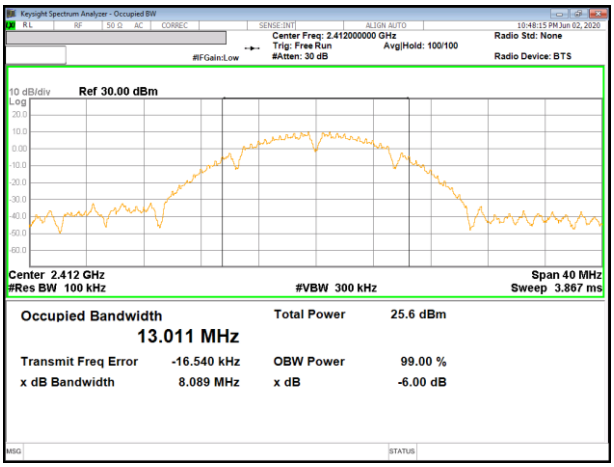

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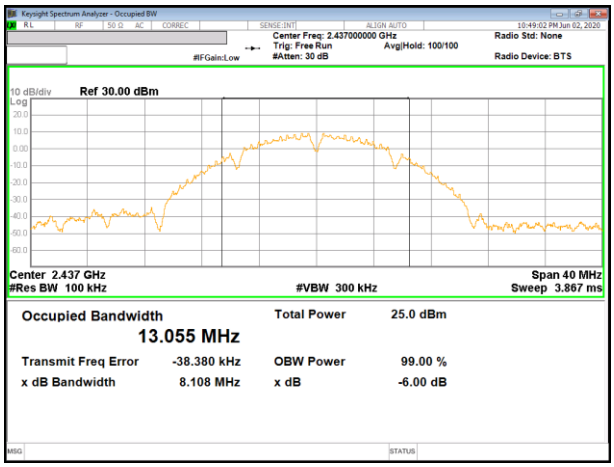

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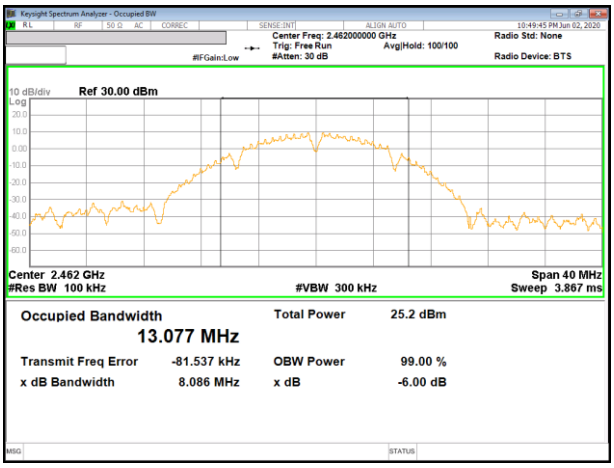

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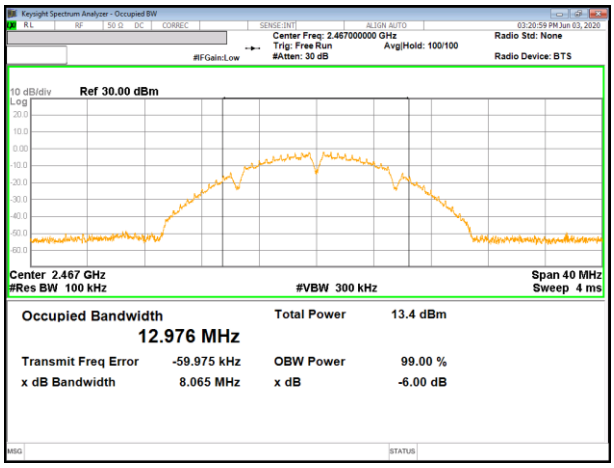

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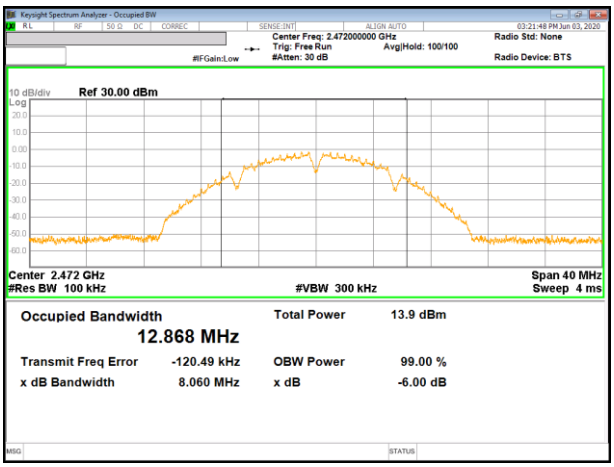

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9.2.2. 802.11g MODE

2TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.1300	0.5
Mid 6	2437	15.9600	0.5
High 11	2462	16.3600	0.5
High 12	2467	16.0100	0.5
High 13	2472	15.7500	0.5

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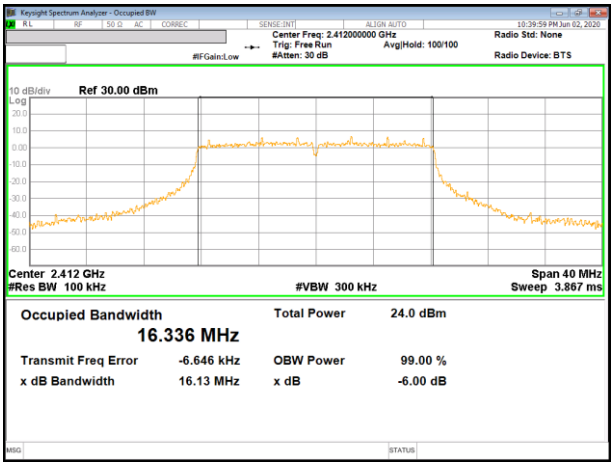

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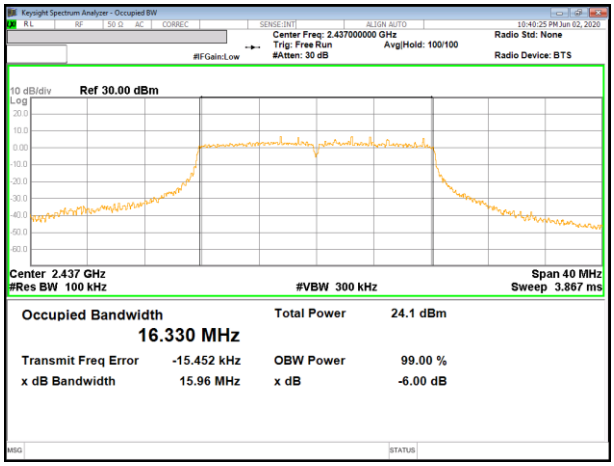

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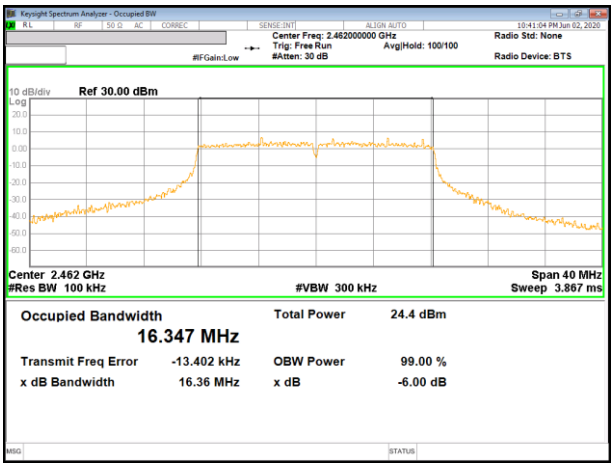

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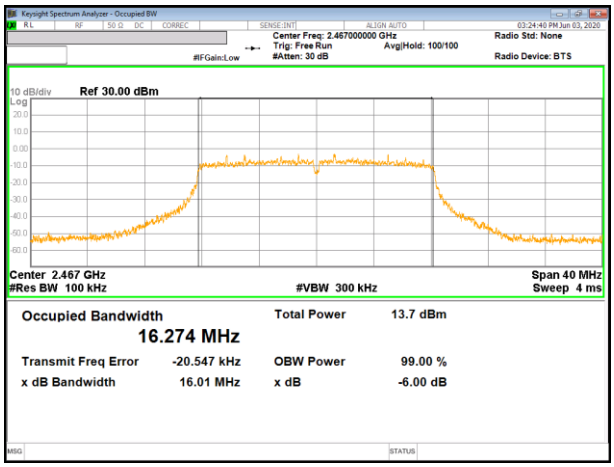

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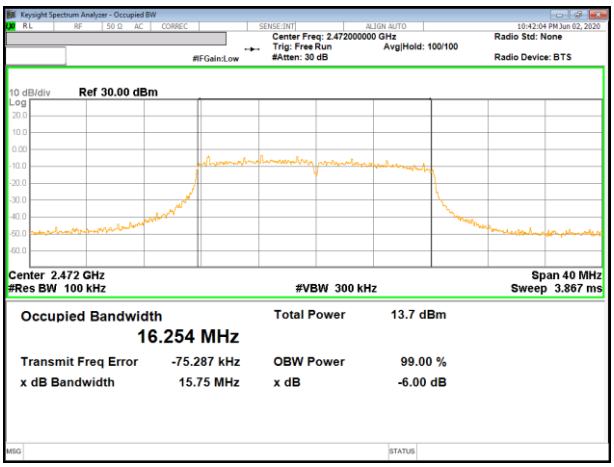

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2TX Antenna 2 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.3500	0.5
Mid 6	2437	16.3300	0.5
High 11	2462	16.0500	0.5
High 12	2467	15.9200	0.5
High 13	2472	15.7300	0.5

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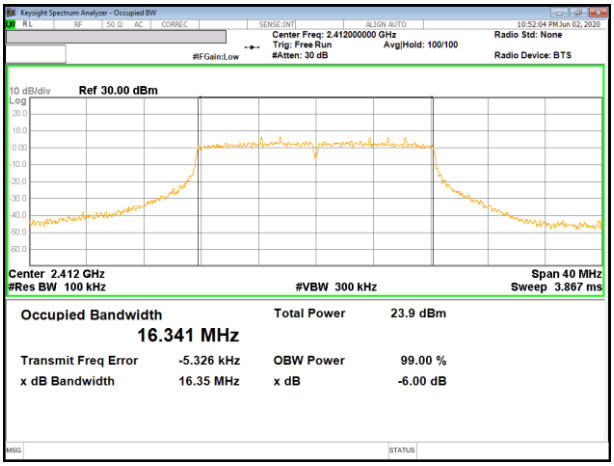

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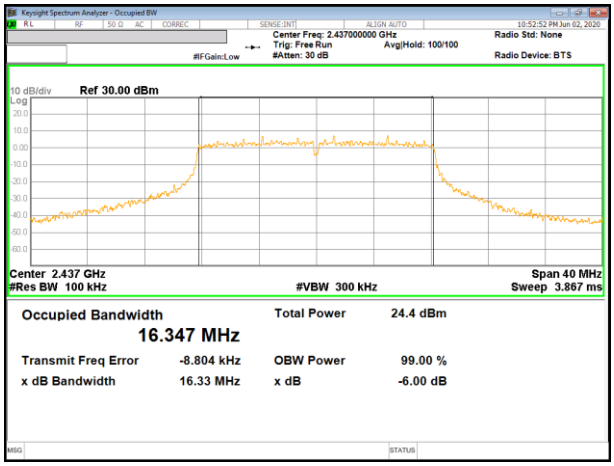

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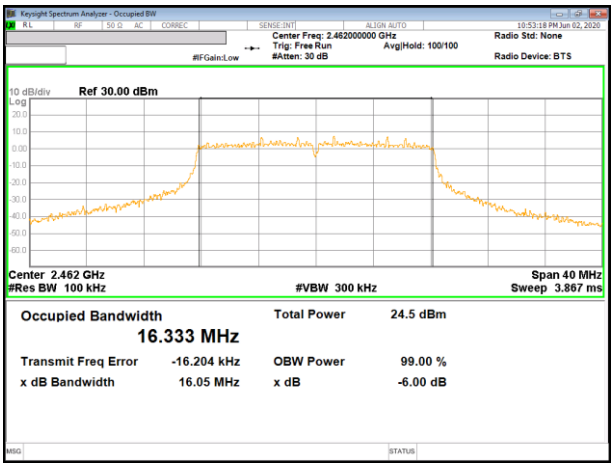

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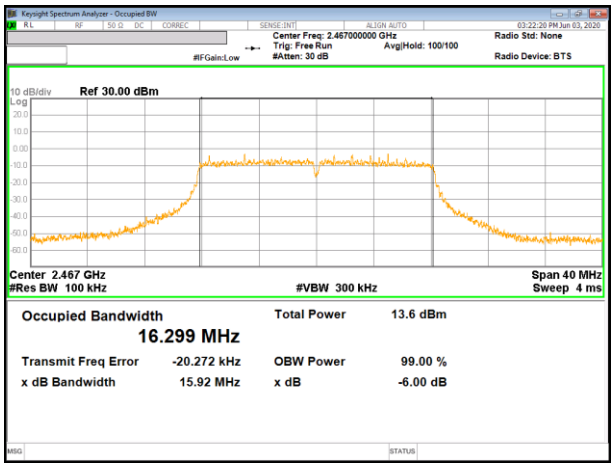

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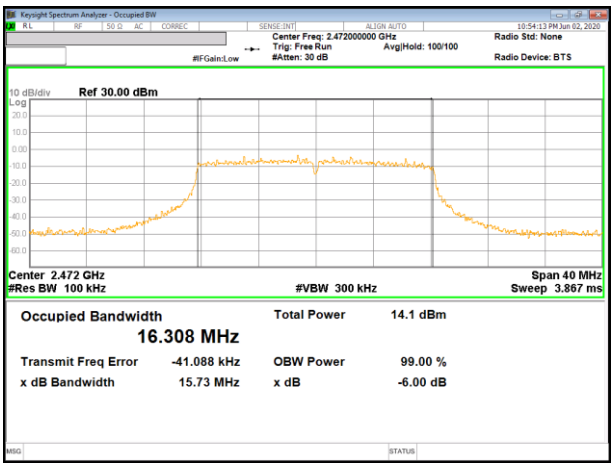

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9.2.3. 802.11n HT20 MODE

2TX Antenna 1 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	17.6900	0.5
Mid 6	2437	17.0300	0.5
High 11	2462	16.3100	0.5
High 12	2467	17.1500	0.5
High 13	2472	15.1500	0.5

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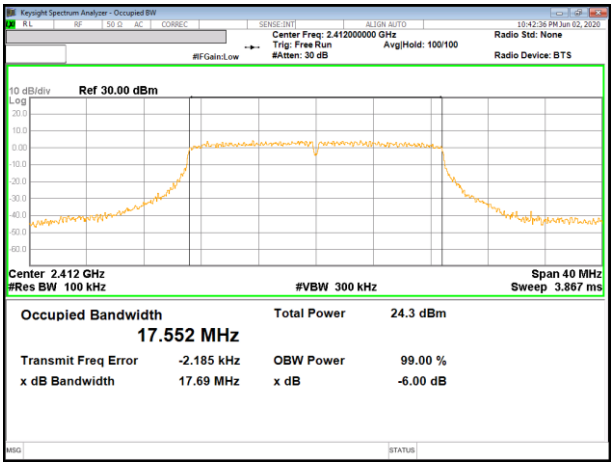

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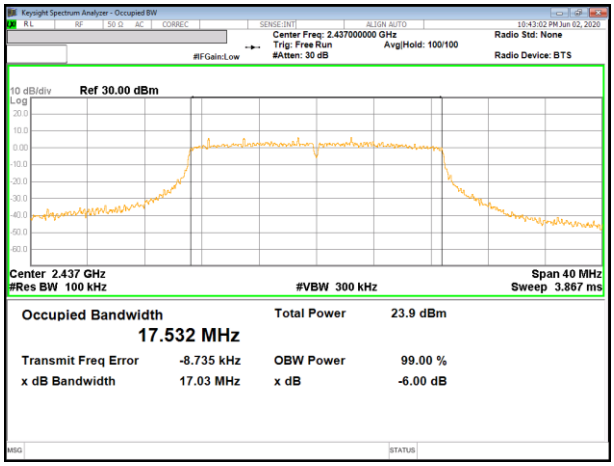

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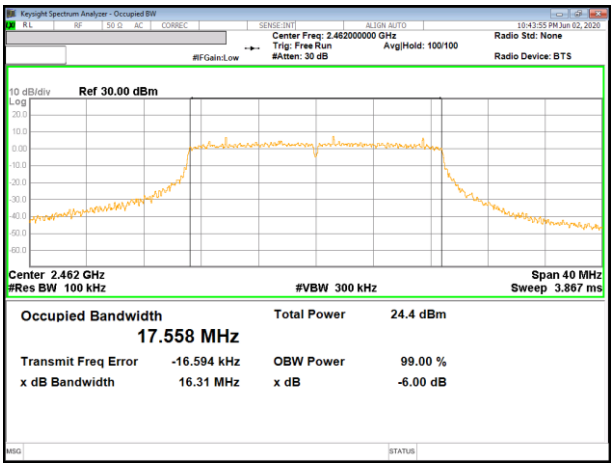

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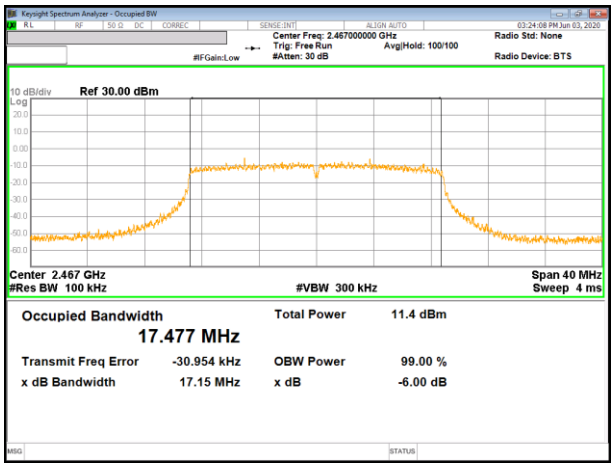

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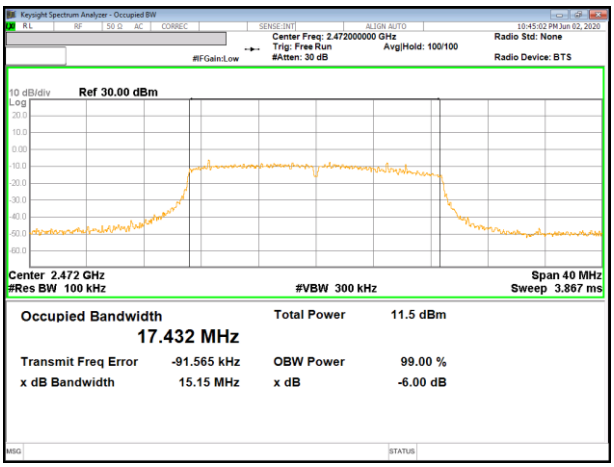

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2TX Antenna 2 MODE

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Minimum Limit (MHz)
Low 1	2412	16.5500	0.5
Mid 6	2437	17.6900	0.5
High 11	2462	17.2900	0.5
High 12	2467	17.5500	0.5
High 13	2472	16.3200	0.5

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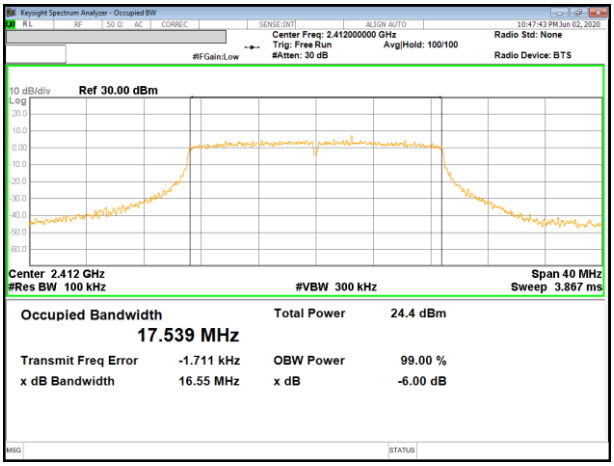

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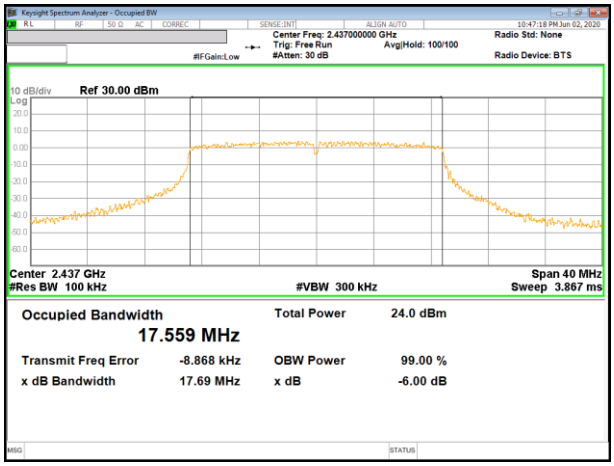

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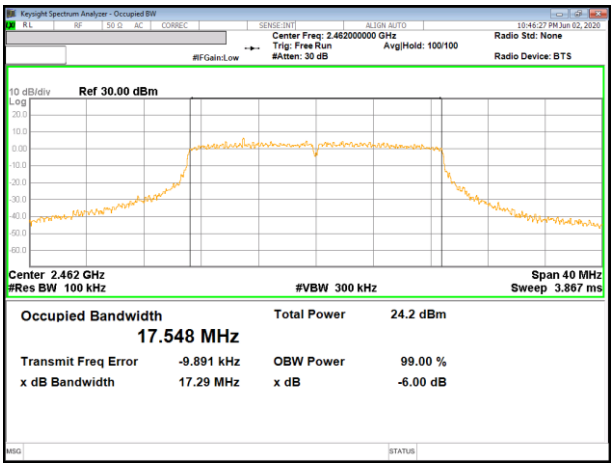

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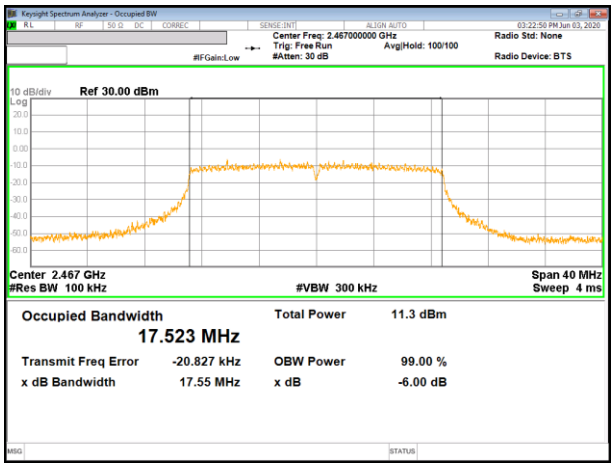

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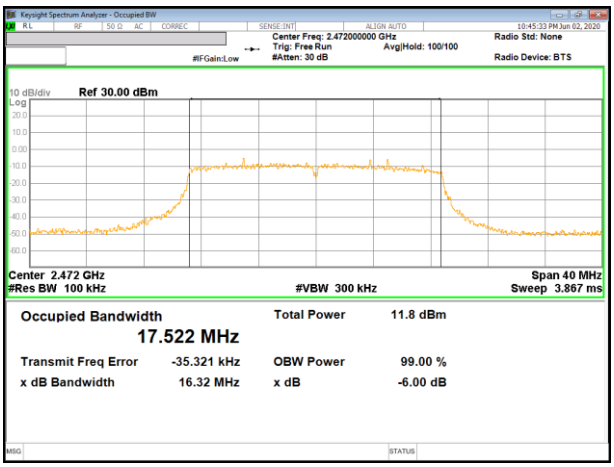

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9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

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.

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 8.3.2.3 under KDB558074 D01 15.247 Meas Guidance.

Duty cycle correction factor is not added to the average output power results for duty cycle factor > 98%.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is unequal among the chains.
The directional gain is:

Bands [MHz]	ANT 1 [dBi]	ANT 2 [dBi]	Correlated Directional Gain [dBi]
2 412- 2472	-1.11	-5.37	0.029

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RESULTS

9.3.1. 1TX_TEST RESULTS

Frequency Range [MHz]	ANT Gain		FCC Power Limit [dBm]	Max Power [dBm]
	ANT1	ANT2		
2 412 – 2 472	-1.11	-5.37	30.00	30.00

Included in Calculations of Corr'd Power			
Duty Cycle CF	802.11b	0.00	dB
	802.11g	0.00	dB
	802.11n HT20	0.00	dB

Calculation of Output Power result
→ Corr'd Power = Meas Power + Duty Cycle CF

Mode	Channel	Frequency [MHz]	Meas Power [dBm]		Corr'd Power [dBm]		Power Limit [dBm]
			ANT1	ANT2	ANT1	ANT2	
802.11b	1	2412		18.67		18.67	30.00
	6	2437		18.47		18.47	
	11	2462		18.47		18.47	
	12	2467		7.95		7.95	
	13	2472		7.81		7.81	
Worst Case					-	**18.67**	
802.11g		2412		17.36		17.36	30.00
		2437		17.19		17.19	
	11	2462		17.17		17.17	
	12	2467		7.63		7.63	
	13	2472		7.48		7.48	
Worst Case					-	**17.36**	
802.11n HT20	1	2412		17.88		17.88	30.00
	6	2437		17.68		17.68	
	11	2462		17.75		17.75	
	12	2467		5.49		5.49	
	13	2472		5.20		5.20	
Worst Case					-	**17.88**	

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9.3.2. 2TX_TEST RESULTS

Frequency Range [MHz]	ANT Gain Correlated Chain Directional Gain [dBi]	FCC Power Limit [dBm]	Max Power [dBm]
2 412 – 2 472	0.029	30.00	30.00

Included in Calculations of Corr'd Power			
Duty Cycle CF	802.11b	0.00	dB
	802.11g	0.00	dB
	802.11n HT20	0.00	dB

Calculation of Output Power result
→ Total Corr'd Power = ANT1 Power + ANT2 Power + Duty Cycle CF

Mode	Channel	Frequency [MHz]	Meas Power [dBm]		Total Corr'd Power [dBm]	Power Limit [dBm]
			ANT1	ANT2		
802.11b	1	2412	18.36	**18.45**	**21.42**	30.00
	6	2437	17.88	18.11	21.01	
	11	2462	**18.42**	18.18	21.31	
	12	2467	7.53	7.01	10.29	
	13	2472	7.41	7.35	10.39	
Worst Case					**21.42**	
802.11g	1	2412	17.40	17.35	20.39	30.00
	6	2437	17.44	17.85	20.66	
	11	2462	**17.92**	**17.90**	**20.92**	
	12	2467	7.98	7.66	10.83	
	13	2472	7.10	7.48	10.30	
Worst Case					**20.92**	
802.11n HT20	1	2412	17.68	**17.92**	**20.81**	30.00
	6	2437	17.27	17.69	20.50	
	11	2462	**17.76**	17.73	20.76	
	12	2467	5.63	5.53	8.59	
	13	2472	4.92	5.32	8.13	
Worst Case					**20.81**	

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9.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

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 section8.4 under KDB558074 D01 15.247 Meas Guidance.

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RESULTS

9.4.1. 802.11b MODE

2TX Antenna 1 MODE

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-12.95	-12.95	8.0	-21.0
Mid 6	2437	-12.85	-12.85	8.0	-20.8
High 11	2462	-12.31	-12.31	8.0	-20.3
High 12	2467	-23.30	-23.30	8.0	-31.3
High 13	2472	-23.63	-23.63	8.0	-31.6

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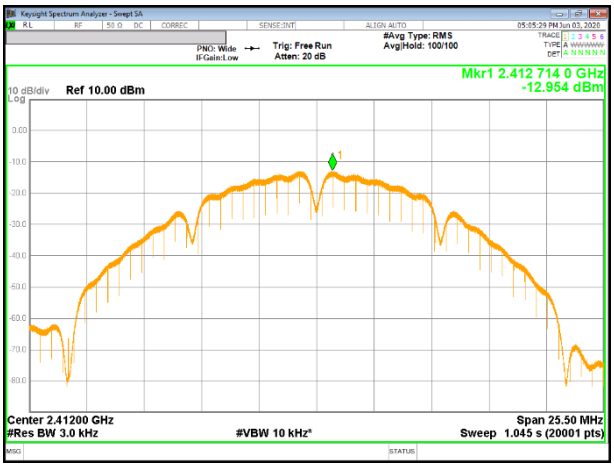

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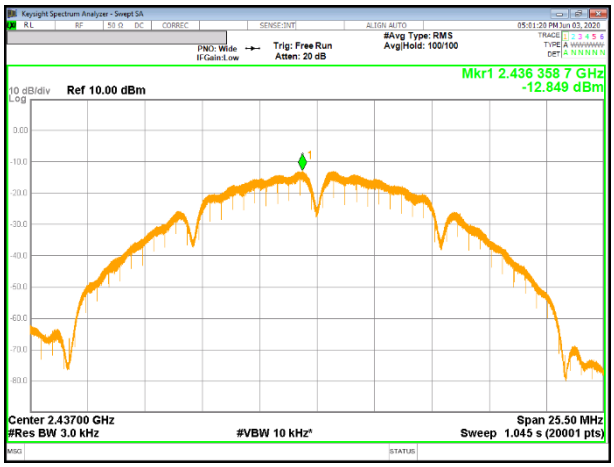

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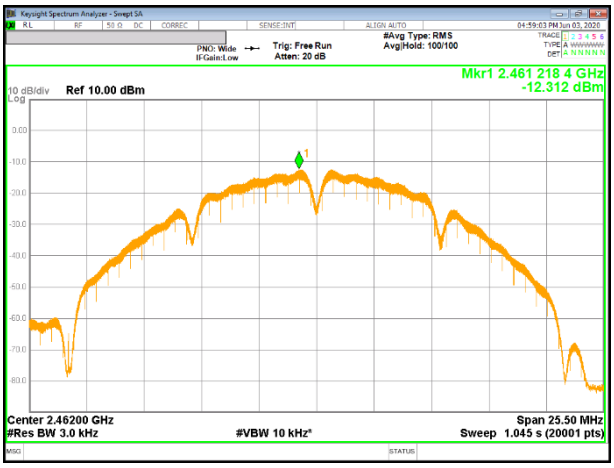

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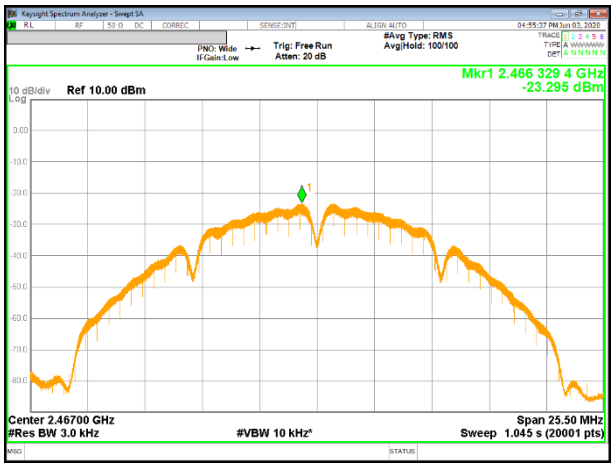

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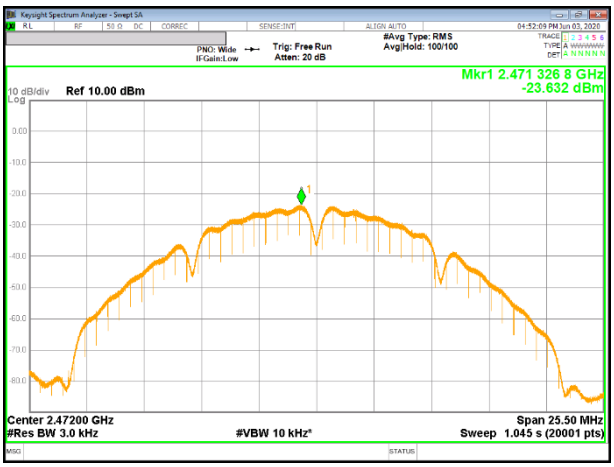

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2TX Antenna 2 MODE

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-12.21	-12.21	8.0	-20.2
Mid 6	2437	-12.63	-12.63	8.0	-20.6
High 11	2462	-12.92	-12.92	8.0	-20.9
High 12	2467	-23.73	-23.73	8.0	-31.7
High 13	2472	-23.27	-23.27	8.0	-31.3

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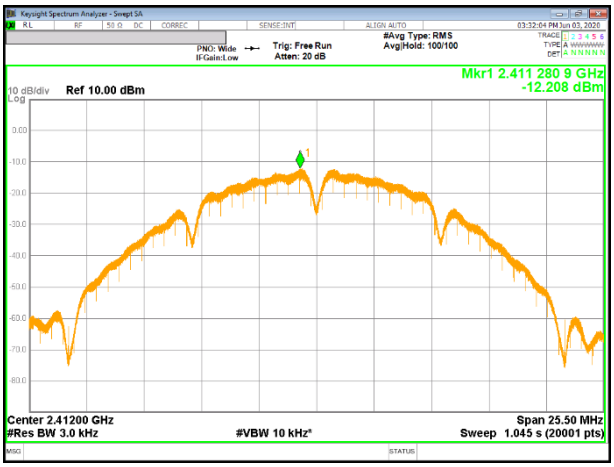
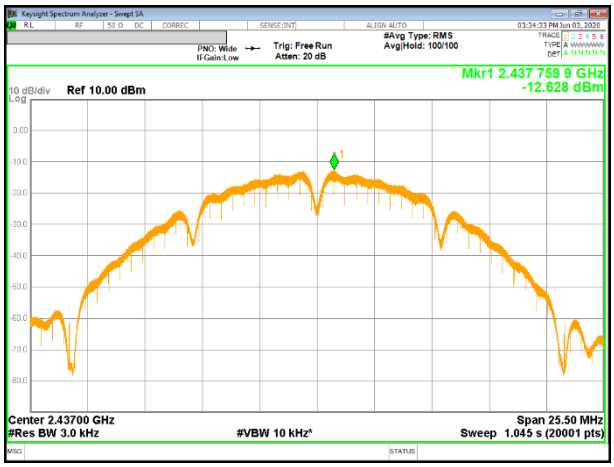
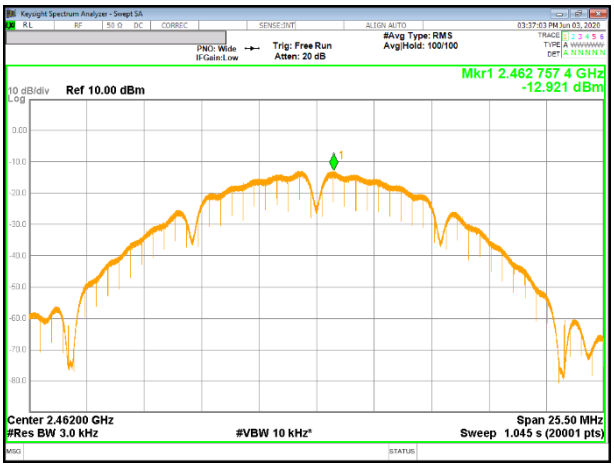


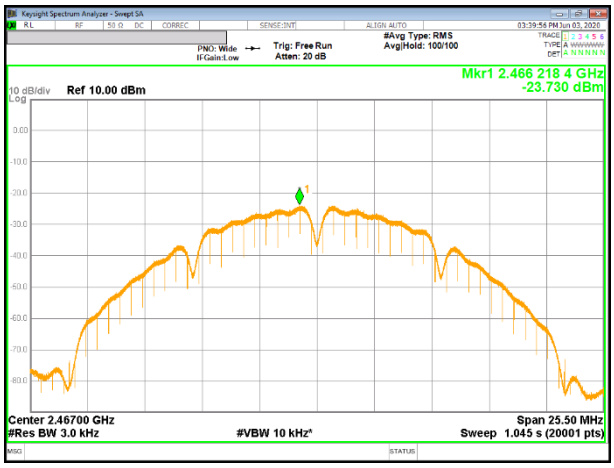
LOW CHANNEL 1



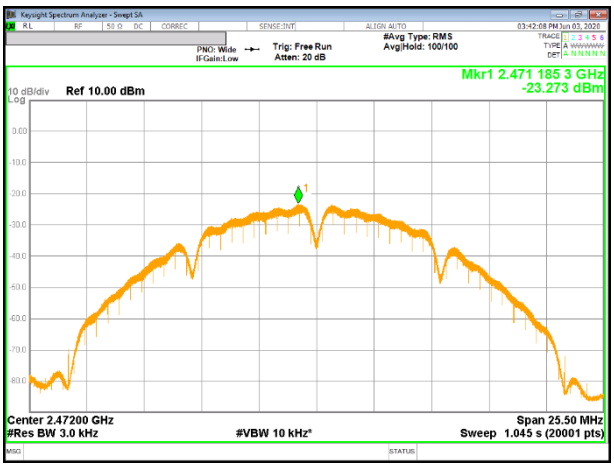
MID CHANNEL 6



HIGH CHANNEL 11



HIGH CHANNEL 12



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9.4.2. 802.11g MODE

2TX Antenna 1 MODE

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-14.50	-14.50	8.0	-22.5
Mid 6	2437	-14.44	-14.44	8.0	-22.4
High 11	2462	-14.33	-14.33	8.0	-22.3
High 12	2467	-23.56	-23.56	8.0	-31.6
High 13	2472	-24.42	-24.42	8.0	-32.4

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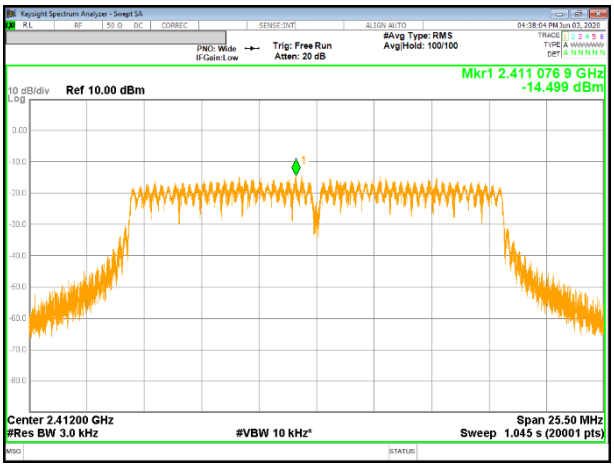
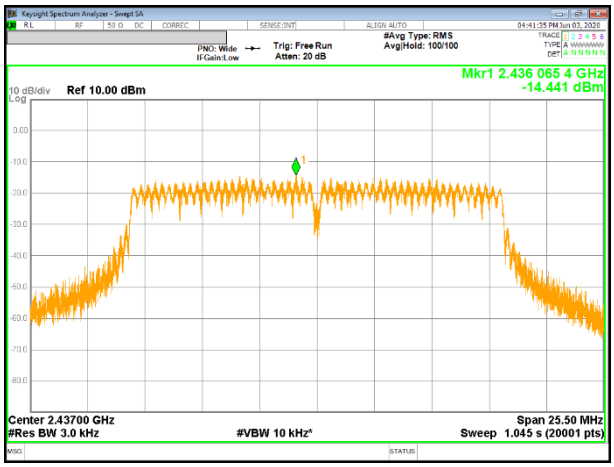


LOW CHANNEL 1



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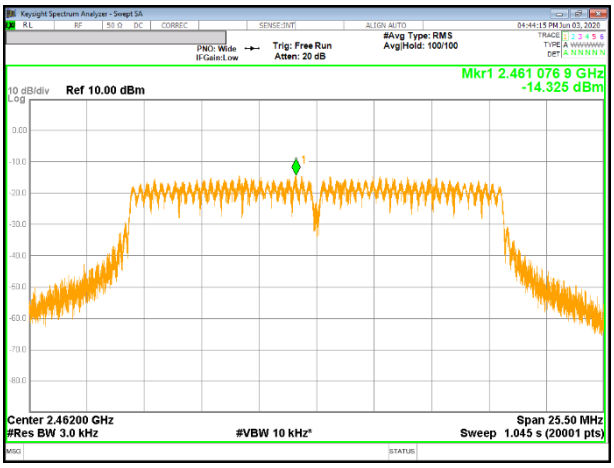
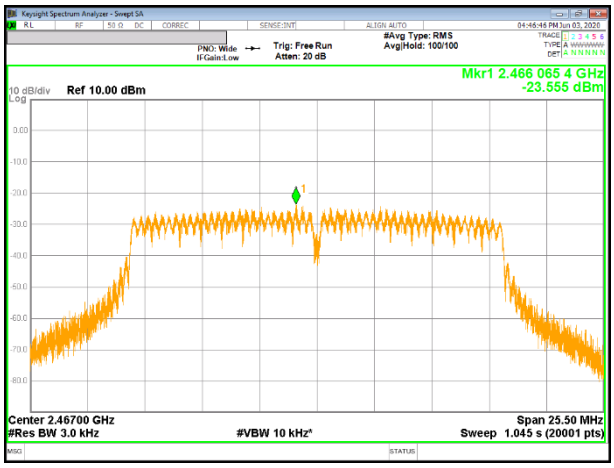
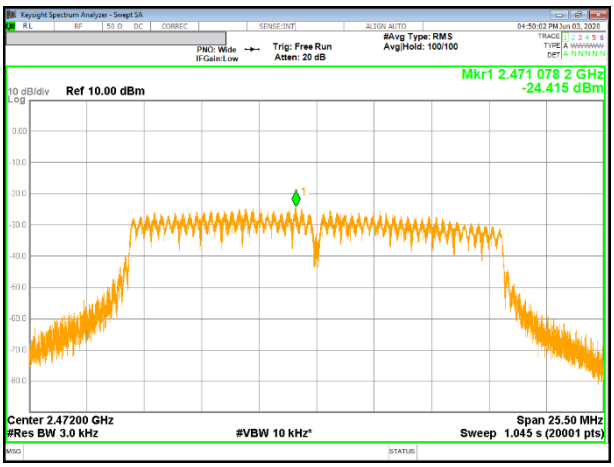


HIGH CHANNEL 11



HIGH CHANNEL 12



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2TX Antenna 2 MODE

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-15.06	-15.06	8.0	-23.1
Mid 6	2437	-14.76	-14.76	8.0	-22.8
High 11	2462	-14.50	-14.50	8.0	-22.5
High 12	2467	-24.80	-24.80	8.0	-32.8
High 13	2472	-24.63	-24.63	8.0	-32.6

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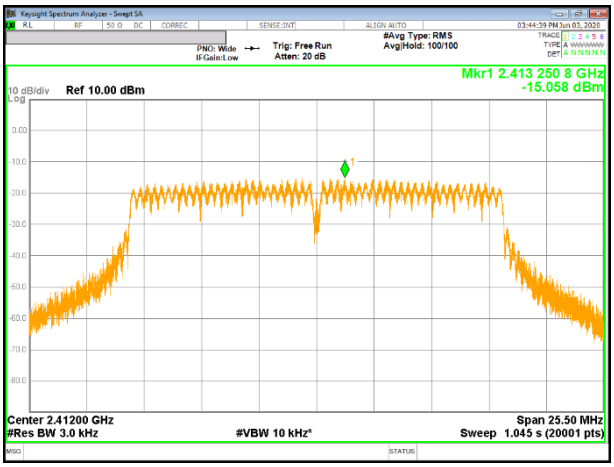
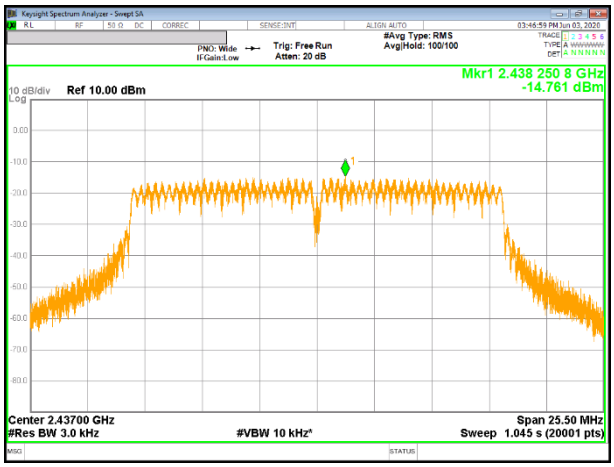
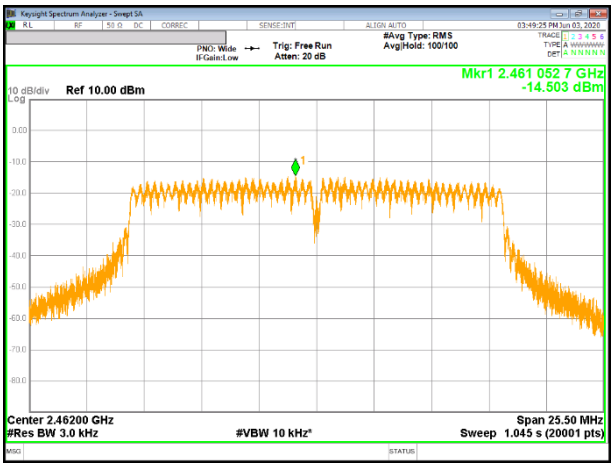


LOW CHANNEL 1



MID CHANNEL 6



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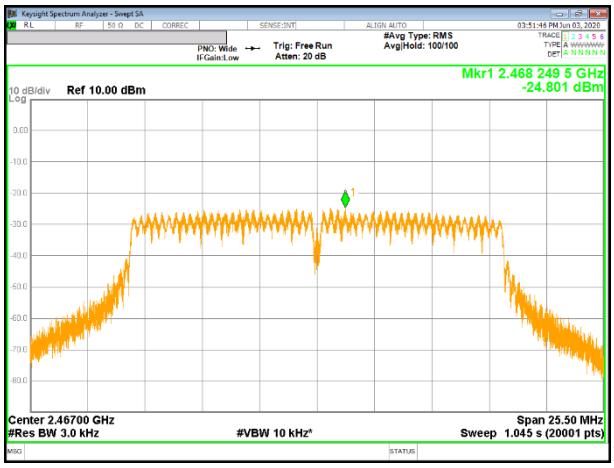

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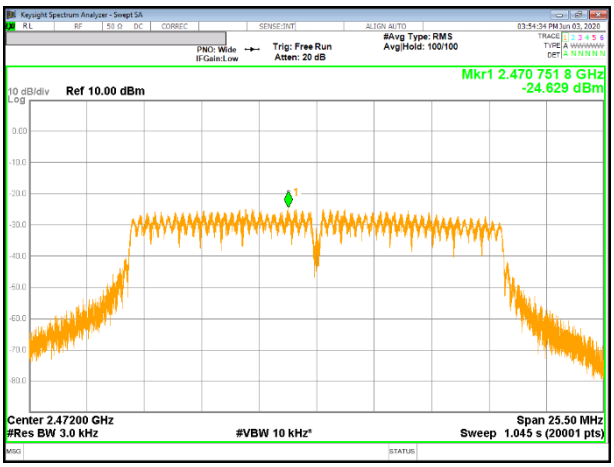

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9.4.3. 802.11n HT20 MODE

1TX Antenna 1 MODE

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

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-16.09	-16.09	8.0	-24.1
Mid 6	2437	-16.43	-16.43	8.0	-24.4
High 11	2462	-15.86	-15.86	8.0	-23.9
High 12	2467	-27.83	-27.83	8.0	-35.8
High 13	2472	-28.28	-28.28	8.0	-36.3

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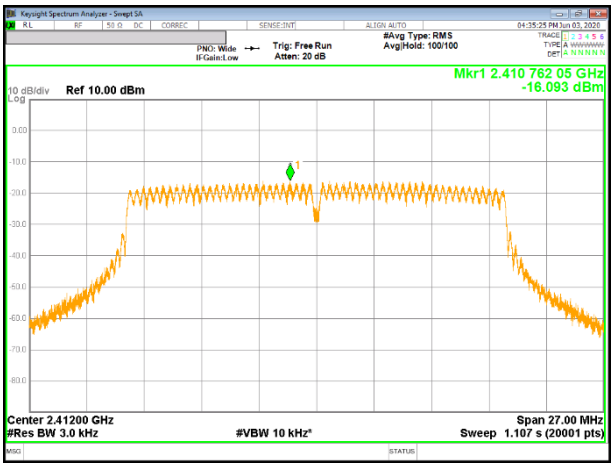
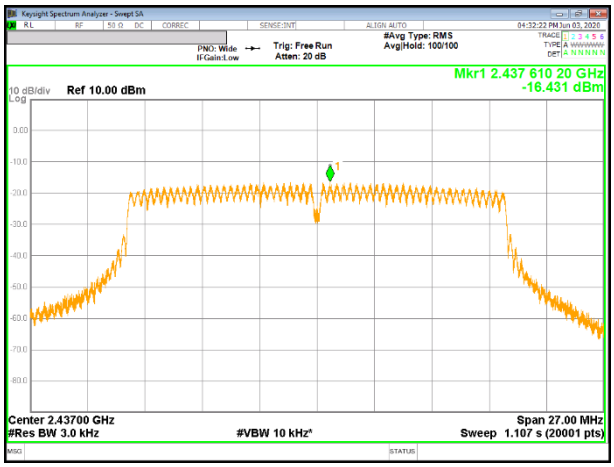


LOW CHANNEL 1



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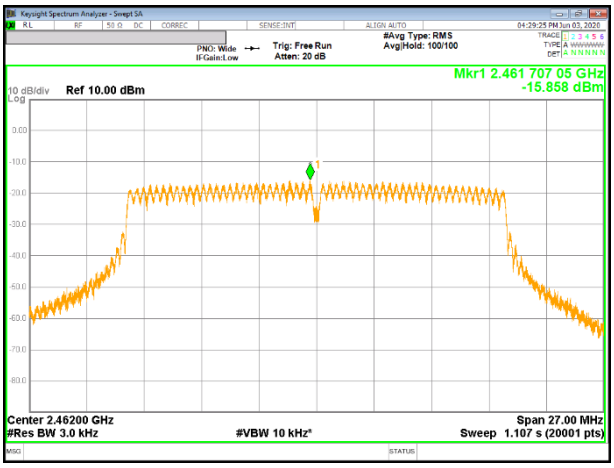

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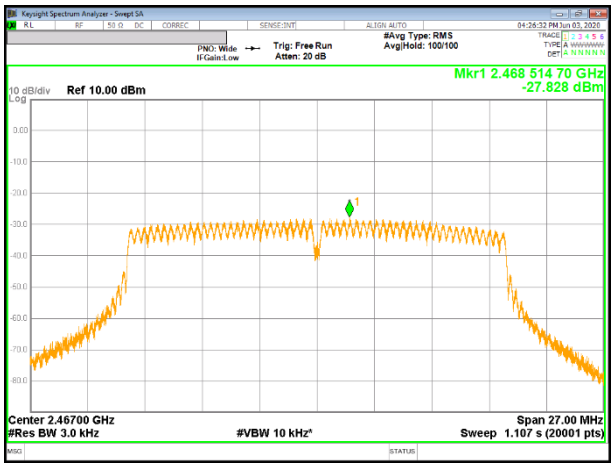

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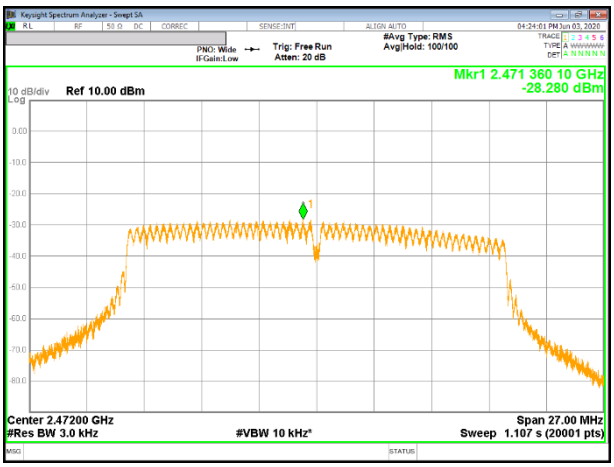

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Duty Cycle CF (dB)	0.00	Included in Calculations of Corr'd PSD

PSD Results

Channel	Frequency (MHz)	Chain 0 Meas (dBm/ 3kHz)	Total Corr'd PSD (dBm/ 3kHz)	Limit (dBm/ 3kHz)	Margin (dB)
Low 1	2412	-15.18	-15.18	8.0	-23.2
Mid 6	2437	-16.21	-16.21	8.0	-24.2
High 11	2462	-15.75	-15.75	8.0	-23.7
High 12	2467	-27.84	-27.84	8.0	-35.8
High 13	2472	-28.17	-28.17	8.0	-36.2

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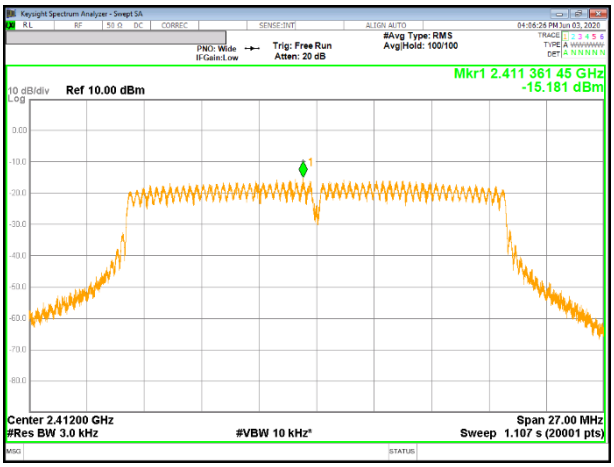
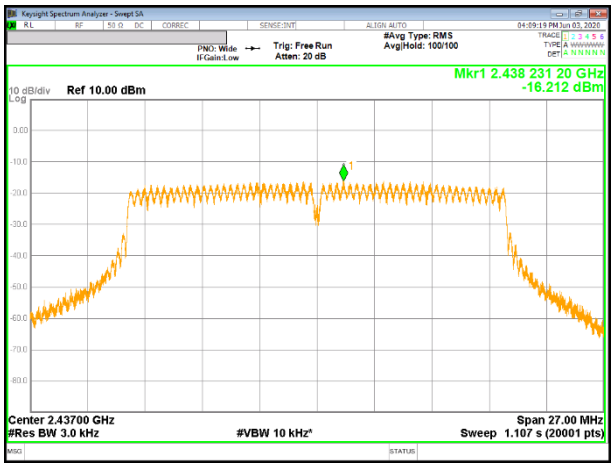


LOW CHANNEL 1



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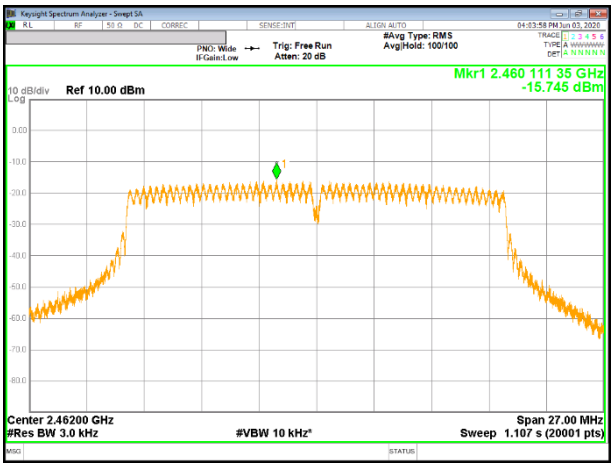

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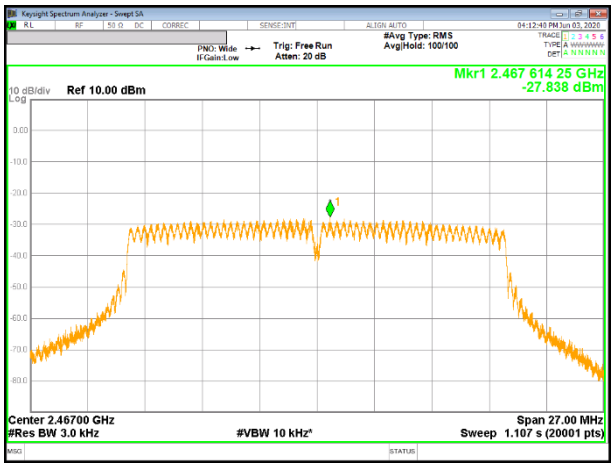

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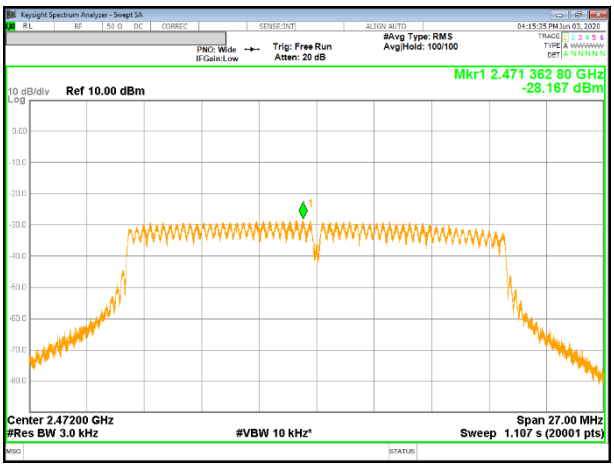

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9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

Output power was measured based on the use of average measurement, therefore the required attenuation is 30 dB.

RESULTS

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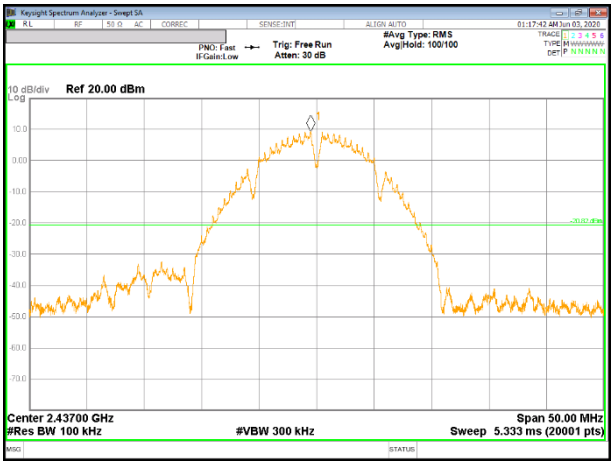
9.5.1. 802.11b MODE

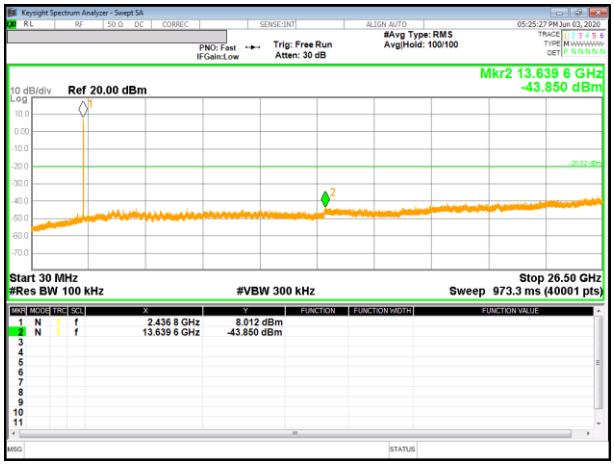
2TX Antenna 1 MODE

LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL



OUT-OF-BAND MID CHANNEL

HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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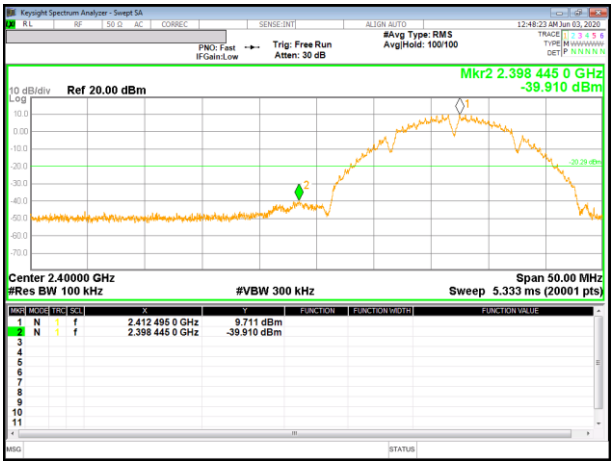
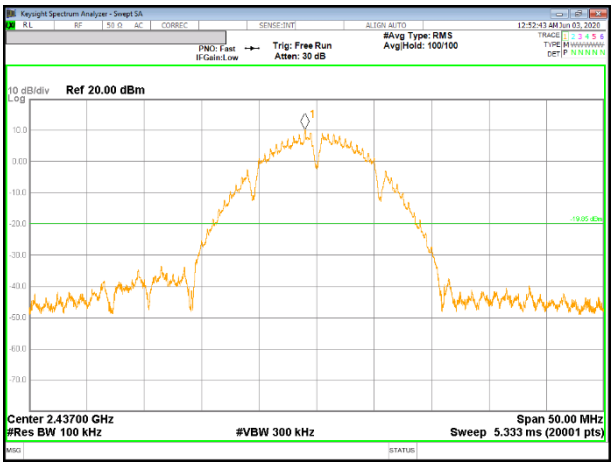
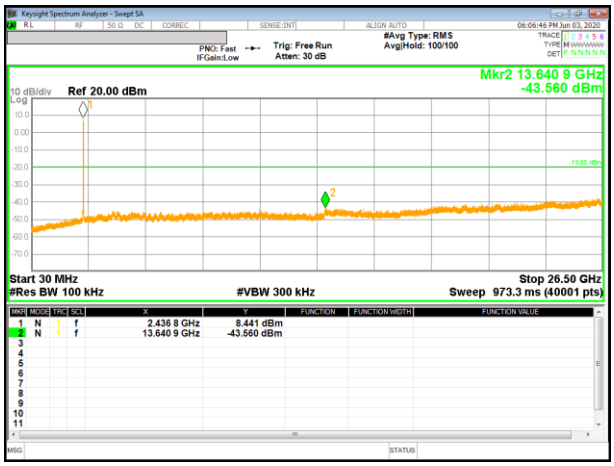


LOW CHANNEL 1 BANDEDGE

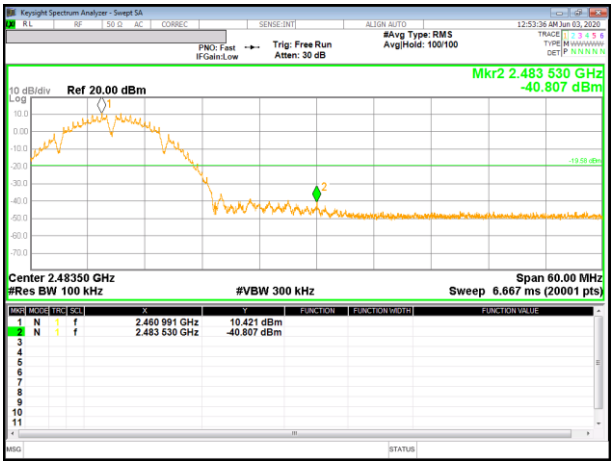
OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL



OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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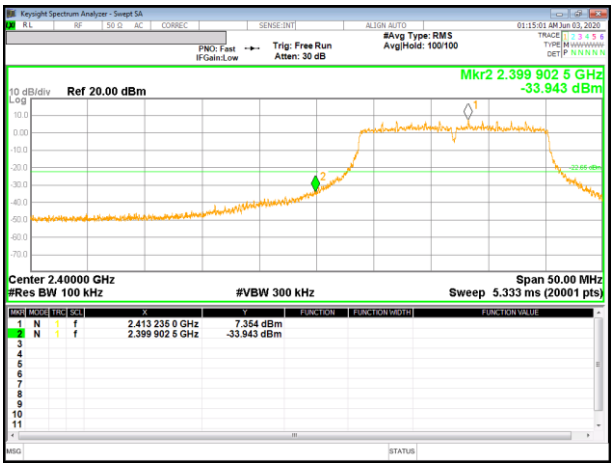
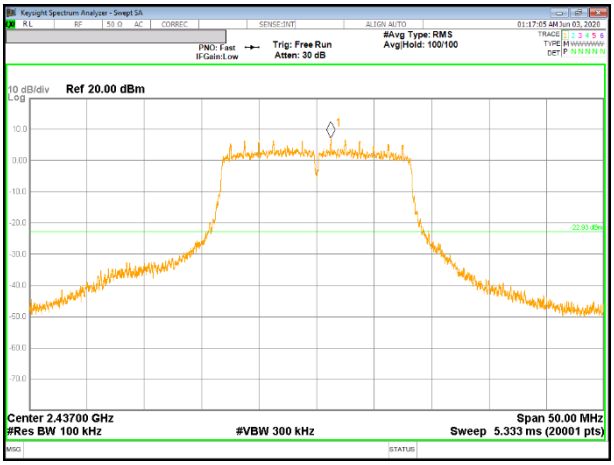
9.5.2. 802.11g MODE

2TX Antenna 1 MODE



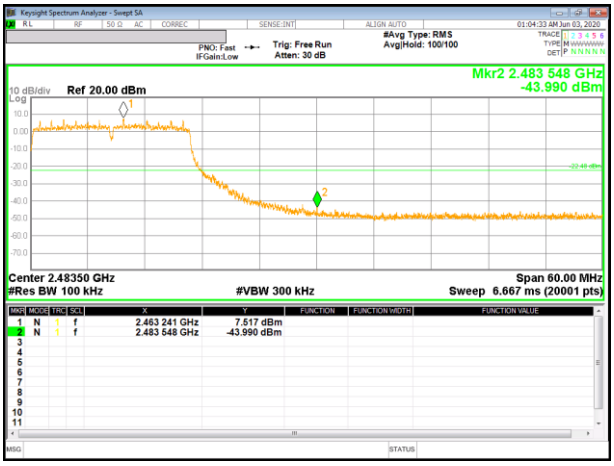
LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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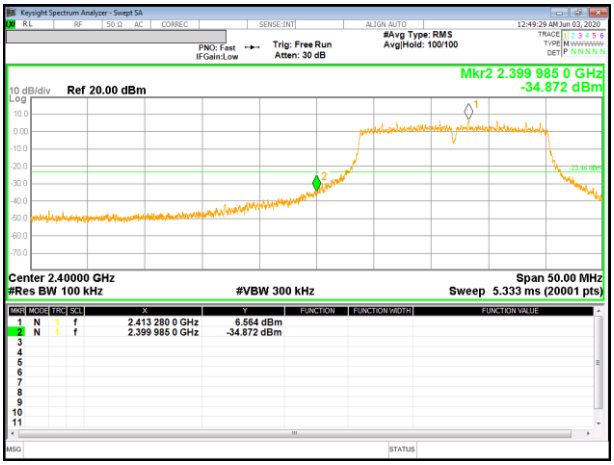
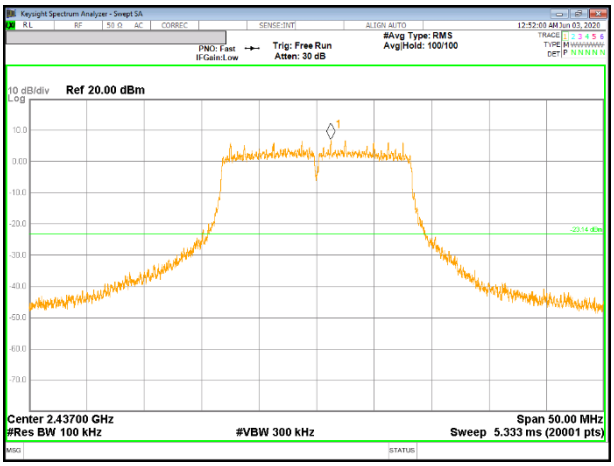
2TX Antenna 2 MODE



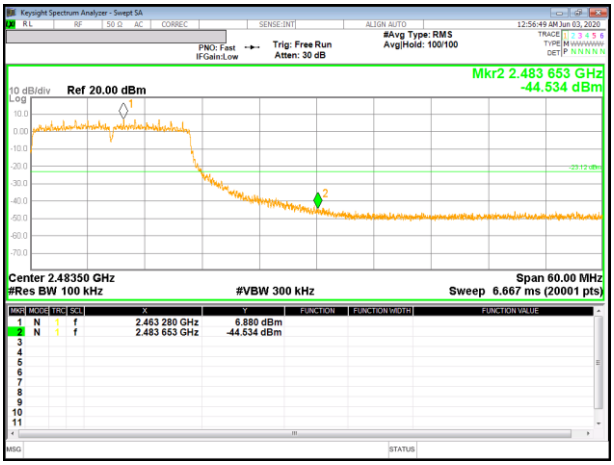
LOW CHANNEL 1 BANDEDGE

OUT-OF-BAND LOW CHANNEL 1



IN-BAND REFERNCE LEVEL

OUT-OF-BAND MID CHANNEL



HIGH CHANNEL 11 BANDEDGE

OUT-OF-BAND HIGH CHANNEL 11

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