TEST REPORT

Report Number: 15175342-E5V3

Applicant	:	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	:	A3212 (Parent Model) A3408, A3409, A3410 (Variant Models)
Brand	:	APPLE
FCC ID	:	BCG-E8725A (Parent Model) BCG-E8726A, BCG-E8727A, BCG-E8728A (Variant Models)
EUT Description	:	SMARTPHONE
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
2024/11/22

Prepared by:
UL Verification Services Inc.
47173 Benicia Street
Fremont, CA 94538 U.S.A.
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ACCREDITED
CERT #0751.05

REPORT REVISION HISTORY

Rev.	Issue Date	Revisions	Revised By
V1	2024/11/08	Initial Issue	Tony Li
V2	2024/11/14	Addressed TCB comments on Sections 6.2, 6.5, 9.1, and 9.4	Alice Yu
V3	2024/11/18	Addressed TCB comments on Sections 6.5 and 9.4.2 and add Section 10	Tony Li

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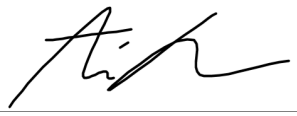
1. ATTESTATION OF TEST RESULTS

Applicant Name and Address	APPLE INC. 1 APPLE PARK WAY CUPERTINO, CA 95014, U.S.A.
Model	A3212 (Parent Model) A3408, A3409, A3410 (Variant Models)
Brand	APPLE
FCC ID	BCG-E8725A (Parent Model) BCG-E8726A, BCG-E8727A, BCG-E8728A (Variant Models)
EUT Description	SMARTPHONE
Serial Number	Parent Model: J970CHYF9P, JRY1Q7C9QQ, H56Q0XWR44 (CONDUCTED) H4XTTG4JW9, M0PK979X27, MW2WNFJK44, J6DKJ441YH (RADIATED) Variant Model Conducted: J970CHYF9P (A3408), LHXH14D1WF (A3409), KYFJV03QL6 (A3410) Variant Model Radiated: LKQVT2W2YG (A3408), QV6H6WR6YR (A3409), R0QQVMMXH7 (A3410)
Sample Receipt Date	2024/07/16, 2024/11/13
Date Tested	2024/08/27 to 2024/11/19
Applicable Standards	CFR 47 Part 15 Subpart E
Test Results	COMPLIES

UL Verification Services Inc. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. All samples tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise.

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 A2LA, NIST, any agency of the Federal Government, or any agency of the U.S. government.

Approved & Released By:	Reviewed By:	Prepared By:
		
Chin Pang Senior Lab Engineer UL Verification Services Inc.	Tony Li Lead Test Engineer UL Verification Services Inc.	Alice Yu Laboratory Engineer UL Verification Services Inc.

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2. TEST RESULT SUMMARY

This report contains data provided by the customer which can impact the validity of results. UL Verification Services Inc. is only responsible for the validity of results after the integration of the data provided by the customer.

Below is a list of the data provided by the customer:

1. Antenna gain and type (see section 6.2)
2. Cable loss (see section 6.2)

FCC Clause	Requirement	Result	Comment
See Comment	Duty Cycle	Reporting purposes only	Per ANSI C63.10, Section 12.2.
See Comment	26dB BW/99% OBW	Reporting purposes only	Per ANSI C63.10 Sections 6.9.2 and 6.9.3
15.407 (e)	6 dB BW	Complies	None.
15.407 (a) (1-4), (h) (1)	Output Power	Complies	None.
15.407 (a) (1-3, 5)	PSD	Complies	None.
15.209, 15.205, 15.407 (b)	Radiated Emissions	Complies	None.
15.207	AC Mains Conducted Emissions	Complies	None.

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3. TEST METHODOLOGY

The tests documented in this report were performed in accordance with:
- FCC CFR 47 Part 2
- FCC CFR 47 Part 15
- FCC KDB 662911 D01 v02r01
- FCC KDB 789033 D02 v02r01
- FCC KDB 484596 D01 V02r03
- ANSI C63.10-2020
- KDB 414788 D01 Radiated Test Site v01r01

4. FACILITIES AND ACCREDITATION

UL Verification Services Inc. is accredited by A2LA, certification #0751.05, for all testing performed within the scope of this report. Testing was performed at the locations noted below.

	Address	ISED CABID	ISED Company Number	FCC Registration
☐	Building 1: 47173 Benicia Street, Fremont, CA 94538, USA	US0104	2324A	550739
☒	Building 2: 47266 Benicia Street, Fremont, CA 94538, USA			
☒	Building 3: 843 Auburn Court, Fremont, CA 94538 USA			
☒	Building 4: 47658 Kato Rd, Fremont, CA 94538 USA			
☒	Building 5: 47670 Kato Rd, Fremont, CA 94538 USA			

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5. DECISION RULES AND MEASUREMENT UNCERTAINTY

5.1. METROLOGICAL TRACEABILITY

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, with a maximum time between calibrations of one year or the manufacturers' recommendation, whichever is less, and where applicable is traceable to recognized national standards.

5.2. DECISION RULES

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4:2012 Clause 8.2. (Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

5.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	U_{LAB}
Conducted Antenna Port Emission Measurement	1.94 dB
Power Spectral Density	2.466 dB
Time Domain Measurements Using SA	3.39 dB
RF Power Measurement Direct Method Using Power Meter	1.3 dB(Peak), 0.45 dB (Ave)
Radio Frequency (Spectrum Analyzer)	141.16 Hz
Occupied Bandwidth	1.22%
Worst Case Conducted Disturbance, 9KHz to 0.15 MHz	3.78 dB
Worst Case Conducted Disturbance, 0.15 to 30 MHz	3.40 dB
Worst Case Radiated Disturbance, 9KHz to 30 MHz	2.87 dB
Worst Case Radiated Disturbance, 30 to 1000 MHz	6.01 dB
Worst Case Radiated Disturbance, 1000 to 18000 MHz	4.73 dB
Worst Case Radiated Disturbance, 18000 to 26000 MHz	4.51 dB
Worst Case Radiated Disturbance, 26000 to 40000 MHz	5.29 dB

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

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5.4. SAMPLE CALCULATION

RADIATED EMISSIONS

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

MAINS CONDUCTED EMISSIONS

Where relevant, the following sample calculation is provided:
Final Voltage (dBuV) = Measured Voltage (dBuV) + Cable Loss (dB) + Limiter Factor (dB) + LISN Insertion Loss.
36.5 dBuV + 0 dB +10.1 dB+ 0 dB = 46.6 dBuV

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6. EQUIPMENT UNDER TEST

6.1. EUT DESCRIPTION

The Apple iPhone is a smartphone with GSM, GPRS, EGPRS, WCDMA, LTE, 5GNR1, IEEE 802.11a/b/g/n/ac/ax, Bluetooth (BT), Global Positioning System (GPS), Near-Field Communication (NFC), and Mobile Satellite Service (MSS) technologies. The rechargeable battery is not user accessible. This device is not user-serviceable and requires special tools to disassemble.

6.2. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna 6 Type is IFA and Antenna 5 Type is Microstrip.

The antennas' gains, as provided by the manufacturer, are as follows:

Antenna 6 (dBi)	Antenna 5 (dBi)	Uncorrelated Chains (dBi)	Correlated Chains (dBi)
-0.5	-6.0	-2.4	0.2
-1.3	-4.2	-2.5	0.4
-2.3	-1.6	-1.9	1.1
-3.2	-1.4	-2.2	0.8

Frequency Range (MHz)	Cable Loss	
	Antenna 6 (dB)	Antenna 5 (dB)
5150 - 5250 UNII - 1	-0.15	-3.20
5250 - 5350 UNII - 2a	-1.00	-2.54
5500 - 5700 UNII - 2c	-2.39	-0.77
5725 - 5825 UNII 3	-3.25	-2.02

The cables were used for RF antenna port tests that had been offset to the test equipment during testing.

6.3. SOFTWARE AND FIRMWARE

The EUT firmware installed during testing was 20_10_1127.

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6.4. MAXIMUM OUTPUT POWER

The transmitter has a maximum conducted output power as follows:

5.2 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.2 GHz band, 1TX			
5180-5240	802.11a	Covered by 802.11n HT20 1TX	
5180-5240	802.11n HT20	19.96	99.08
5190-5230	802.11n HT40	20.95	124.45
5180-5240	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5190-5230	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5210	802.11ac VHT80	17.46	55.72
5180-5240	802.11ax HE20	19.95	98.86
5190-5230	802.11ax HE40	20.95	124.45
5210	802.11ax HE80	16.44	44.06
5.2 GHz band, 2TX			
5180-5240	802.11n HT20 CDD	19.98	99.54
5180-5240	802.11n HT20 SDM/STBC	Covered by 802.11n HT20 2TX CDD	
5190-5230	802.11n HT40 CDD	22.44	175.39
5190-5230	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5180-5240	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5190-5230	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5210	802.11ac VHT80 CDD	19.49	88.92
5210	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5180-5240	802.11ax HE20 OFDMA	19.97	99.31
5180-5240	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5190-5230	802.11ax HE40 OFDMA	22.48	177.01
5190-5230	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5210	802.11ax HE80 OFDMA	18.95	78.52
5210	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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5.3 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.3 GHz band, 1TX			
5260 - 5320	802.11a	Covered by 802.11n HT20 1TX	
5260 - 5320	802.11n HT20	19.96	99.08
5270 - 5310	802.11n HT40	20.96	124.74
5260 - 5320	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5270 - 5310	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5290	802.11ac VHT80	15.95	39.36
5260 - 5320	802.11ax HE20	19.97	99.31
5270 - 5310	802.11ax HE40	20.91	123.31
5290	802.11ax HE80	15.47	35.24
5.3 GHz band, 2TX			
5260 - 5320	802.11n HT20 CDD	19.95	98.86
5260 - 5320	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5270 - 5310	802.11n HT40 CDD	22.45	175.79
5270 - 5310	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5260 - 5320	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5270 - 5310	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5290	802.11ac VHT80 CDD	18.49	70.63
5290	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5260 - 5320	802.11ax HE20 OFDMA	19.97	99.31
5260 - 5320	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5270 - 5310	802.11ax HE40 OFDMA	22.44	175.39
5270 - 5310	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5290	802.11ax HE80 OFDMA	17.45	55.59
5290	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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5.6 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.6 GHz band, 1TX			
5500-5720	802.11a	Covered by 802.11n HT20 1TX	
5500-5720	802.11n HT20	19.96	99.08
5510-5710	802.11n HT40	20.97	125.03
5500-5720	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5510-5710	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5530-5690	802.11ac VHT80	20.95	124.45
5500-5720	802.11ax HE20	19.94	98.63
5510-5710	802.11ax HE40	20.95	124.45
5530-5690	802.11ax HE80	20.98	125.31
5.6 GHz band, 2TX			
5500-5720	802.11n HT20 CDD	19.97	99.31
5500-5720	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5510-5710	802.11n HT40 CDD	22.48	177.01
5510-5710	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5500-5720	802.11ac VHT20 SDM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5510-5710	802.11ac VHT40 SDM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5530-5690	802.11ac VHT80 CDD	22.94	196.79
5530-5690	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5500-5720	802.11ax HE20 OFDMA	19.95	98.86
5500-5720	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5510-5710	802.11ax HE40 OFDMA	22.47	176.60
5510-5710	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5530-5690	802.11ax HE80 OFDMA	22.94	196.79
5530-5690	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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5.8 GHz BAND (FCC)

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
5.8 GHz band, 1TX			
5745-5825	802.11a	Covered by 802.11n HT20 1TX	
5745-5825	802.11n HT20	20.98	125.31
5755-5795	802.11n HT40	20.98	125.31
5745-5825	802.11ac VHT20	Covered by 802.11n HT20 1TX	
5755-5795	802.11ac VHT40	Covered by 802.11n HT40 1TX	
5775	802.11ac VHT80	20.94	124.17
5745-5825	802.11ax HE20	20.97	125.03
5755-5795	802.11ax HE40	20.93	123.88
5775	802.11ax HE80	20.98	125.31
5.8 GHz band, 2TX			
5745-5825	802.11n HT20 CDD	23.97	249.46
5745-5825	802.11n HT20 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5755-5795	802.11n HT40 CDD	23.95	248.31
5755-5795	802.11n HT40 SDM/STBC	Covered by 802.11n HT40 2TX CDD	
5745-5825	802.11ac VHT20 STM/STBC/CDD	Covered by 802.11n HT20 2TX CDD	
5755-5795	802.11ac VHT40 STM/STBC/CDD	Covered by 802.11n HT40 2TX CDD	
5775	802.11ac VHT80 CDD	23.47	222.33
5775	802.11ac VHT80 SDM/STBC	Covered by 802.11ac VHT80 2TX CDD	
5745-5825	802.11ax HE20 OFDMA	23.98	250.03
5745-5825	802.11ax HE20 SDM	Covered by 802.11ax HE20 OFDMA	
5755-5795	802.11ax HE40 OFDMA	23.95	248.31
5755-5795	802.11ax HE40 SDM	Covered by 802.11ax HE40 OFDMA	
5775	802.11ax HE80 OFDMA	23.44	220.80
5775	802.11ax HE80 SDM	Covered by 802.11ax HE80 OFDMA	

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6.5. WORST-CASE CONFIGURATION AND MODE

The fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z on ANT 6, ANT 5 and 2TX. It was determined that Y (Landscape) orientation was the worst-case orientation for ANT 6 and 2TX, and Z (Portrait) for ANT 5.

802.11n 2TX and 802.11ax 2TX modes were used to perform on radiated harmonic spurious final test to cover all SISO modes. Max power was tuned to maximum based on among all the modes. For testing purposes, radiated harmonics spurious below 1GHz, 1-18GHz L/M/H channels, 18-40GHz, and power line conducted emissions were performed with the EUT set at the 2TX CDD mode among the CDD/SDM modes with power setting equal or higher than FCC conducted SISO modes as worst-case scenario. The power at SISO modes are higher than that of CDD/SDM modes.

For Radiated band edge test all test modes have been investigated with power setting equal or higher than FCC conducted SISO modes as worst-case scenario.

Below 1GHz tests were performed with EUT connected to AC power adapter as the worst case; and for above 1GHz, the worst-case configuration reported was tested with EUT only. For AC line conducted emission, test was investigated with AC power adapter and with laptop. There were no emissions found below 30MHz within 20dB of the limit.

Simultaneous transmission with the Bluetooth was investigated, and no noticeable emission was found.

With same power on Full RU and SU higher data rate, investigation was performed on both band edge to determine the worst case, and SU mode was determined to be the worst case.

Low data rate was used to test on antenna port conducted tests and radiated spurious emissions since it has the highest maximum power. For radiated band edge, the following are the worst-case data rates set for test:

802.11n HT20 mode : MCS7
802.11n HT40 mode : MCS7
802.11ac VHT80 mode: MCS9
802.11ax (5.2G, 5.3G, 5.6G, and 5.8G bands): HE20/HE40/HE80 Partial Tones and SU mode: MCS11

Note: ANT1 and ANT2 indicated in the test result sections are representative of ANT6 and ANT5, respectively.

The modulation and bandwidth of 802.11a and 802.11n modes are similar at 20 MHz and the target power of 802.11a mode is equal to or lower than that of 802.11n mode. The data rate of 802.11n mode is higher than 802.11a mode, so 802.11n mode is performed in the test to represent worst-case reporting.

We investigated and found the worst case of power and PSD modes for full testing as table shown below, in addition we were also spot-check for Full RU and the rest of Partial RU modes on radiated bandage and radiated spurious emissions.

The target power of SDM mode is equal to or lower than that of CDD mode. CDD correlated antenna gain is also worst-case, so CDD mode is performed in the test to represent worst-case reporting.

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BW (MHz)	Tone (T)	RU Index	RU Index (Chipset Support only)	Worst Case Tone (UNII-1)		Worst Case Tone (UNII-2a)		Worst Case Tone (UNII-2c)		Worst Case Tone (UNII-3)	
				Highest Power	Highest PSD	Highest Power	Highest PSD	Highest Power	Highest Power	Highest Power	Highest PSD
20	26	0 ~ 8	0 ~ 8								
	52	37 ~ 40	37 ~ 40		X		X		X		X
	106	53 ~ 54	53 ~ 54					X			
	242	61	61								
	SU	--	--	X		X		X		X	
40	26	0 ~ 17	0 ~ 17								
	52	37 ~ 44	37 ~ 44								
	106	53 ~ 56	53 ~ 56		X		X		X		X
	242	61 ~ 61	61 ~ 62					X			
	484	65	65								
	SU	--	--	X		X		X		X	
80	26	0 ~ 36	0 ~ 36								
	52	37 ~ 52	37 ~ 52								
	106	53 ~ 60	53 ~ 60		X		X		X		X
	242	61 ~ 64	61 ~ 64								
	484	65 ~ 66	65 ~ 66								
	996	67	67								
	SU	--	--	X		X		X		X	

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6.6. DESCRIPTION OF TEST SETUP

SUPPORT TEST EQUIPMENT						
Description		**Manufacturer**	**Model**	**Serial Number**		**FCC ID/ DoC**
Laptop		Apple	Macbook Pro	C02VD7SAHV22		BCGA1708
Laptop AC/DC adapter		Liteon Technology	A1424	NSW25679		DoC
EUT AC/DC adapter		Apple	A1720	C3D8417A7R93KVPA8		DoC
Conducted Switch Box		UL	n/a	208281		N/A
I/O CABLES (RF CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	SMA	1	SMA	Shielded	0.75	To spectrum Analyzer
2	Antenna	2	SMA	Un-shielded	0.2	To Conducted Switch Box
3	USB-C	1	USB-C	Shielded	1.0	N/A
4	AC	1	AC	Un-shielded	2	N/A
I/O CABLES (RF RADIATED AND AC LINE CONDUCTED TEST)						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	AC	1	AC	Un-shielded	2	N/A
2	USB	1	USB	Shielded	1	N/A

TEST SETUP

The EUT setup is shown as below. Test software exercised the radio card.

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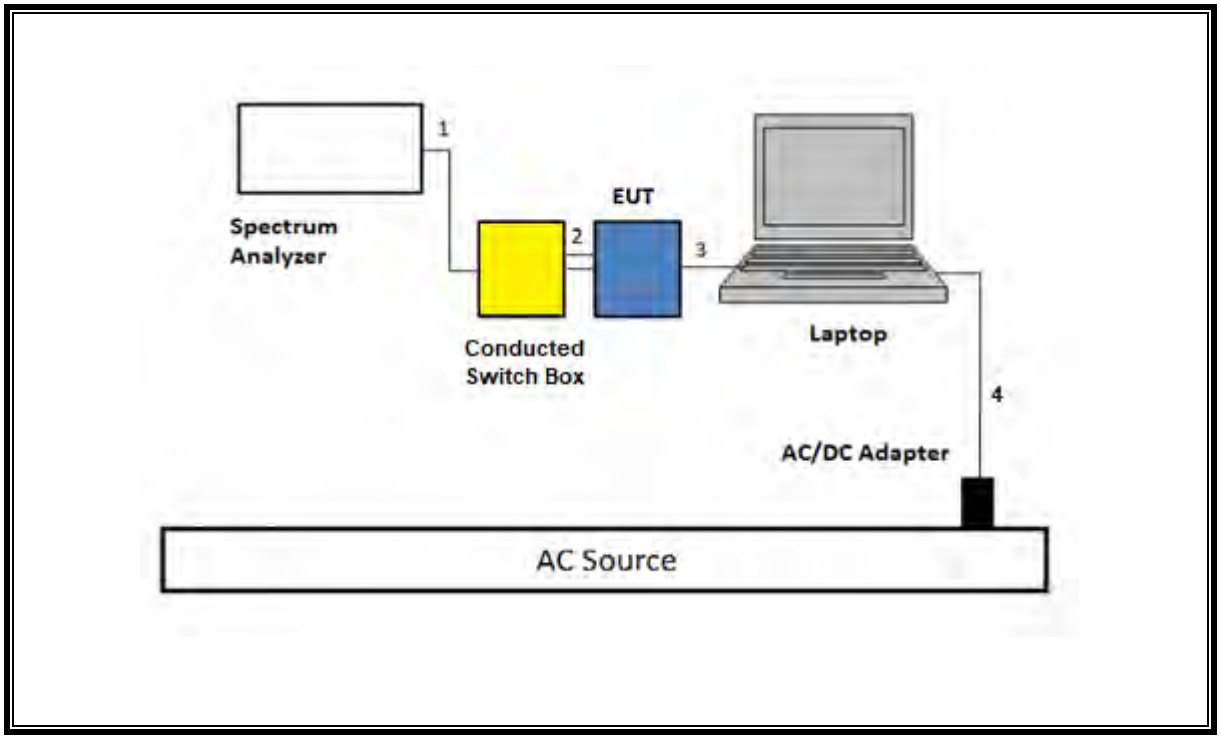
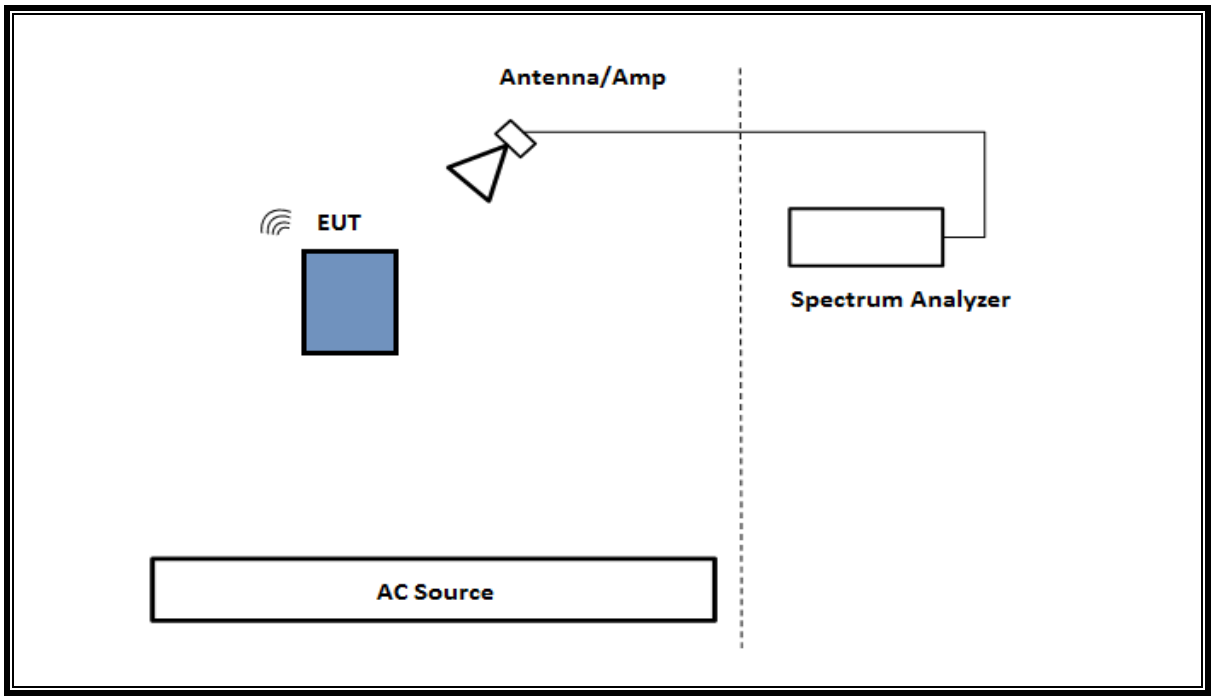
SETUP DIAGRAM FOR CONDUCTED TESTS



SETUP DIAGRAM FOR RADIATED TESTS Above 1 GHz (1-40GHZ)



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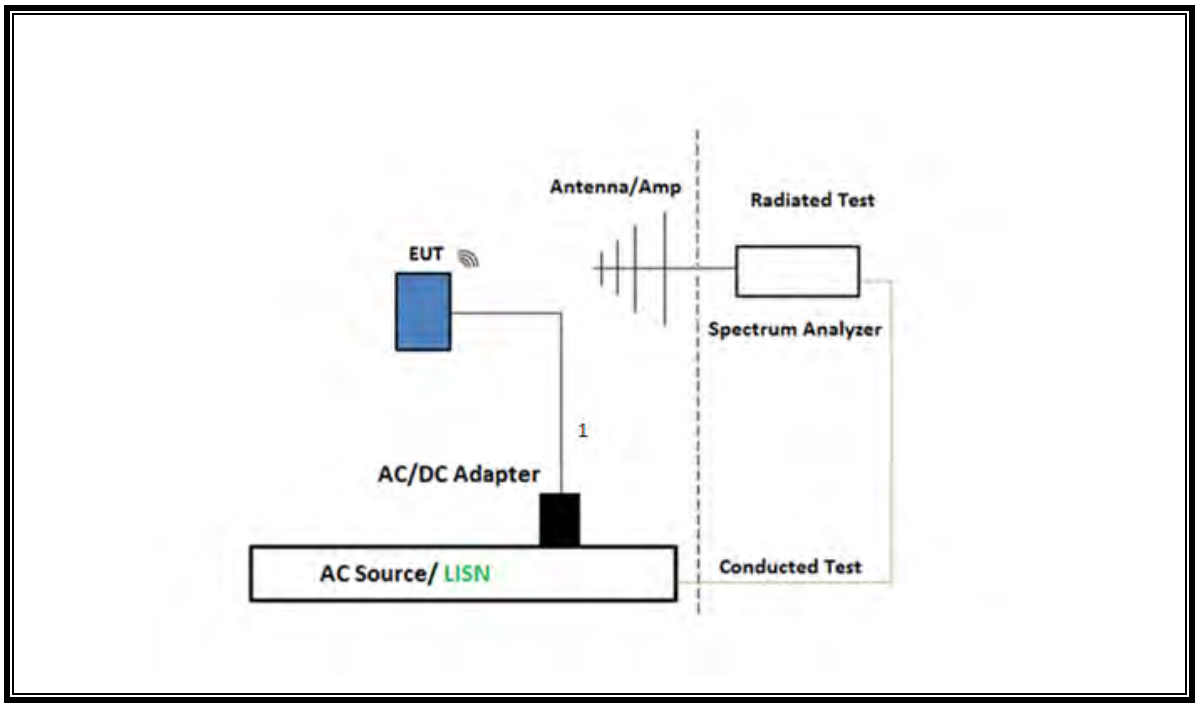
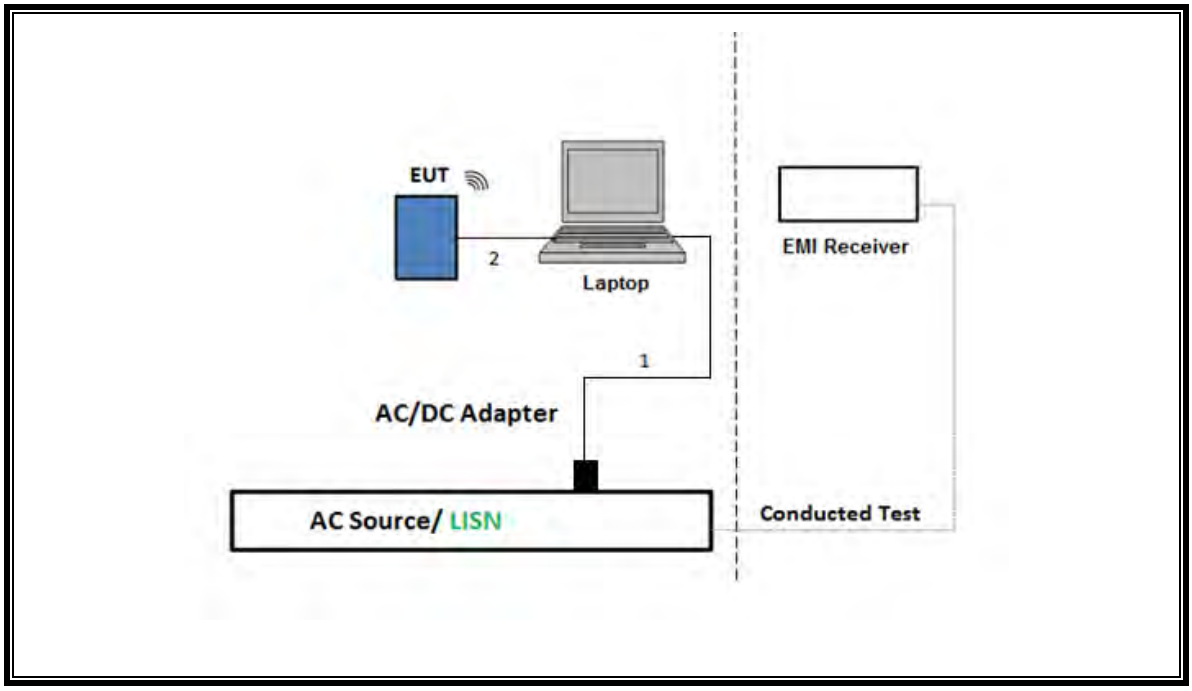
SETUP DIAGRAM FOR 30-1000MHz and AC LINE CONDUCTED TEST



TEST SETUP- AC LINE CONDUCTED: LAPTOP CONFIGURATION



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7. MEASUREMENT METHOD

On Time and Duty Cycle: KDB 789033 D02 v02r01, Section B.

6 dB Emission BW: KDB 789033 D02 v02r01, Section C.2

26 dB Emission BW: KDB 789033 D02 v02r01, Section C.1

99% Occupied BW: KDB 789033 D02 v02r01, Section D.

Conducted Output Power: KDB 789033 D02 v02r01

Power Spectral Density: KDB 789033 D02 v02r01, Section F

Unwanted emissions in restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, G.5, and G.6.

Unwanted emissions in non-restricted bands: KDB 789033 D02 v02r01, Sections G.3, G.4, and G.5.

AC Power Line Conducted Emissions: ANSI C63.10-2020, Section 6.2.

Radiated Spurious Emissions Below 30MHz: ANSI C63.10-2020 Section 6.4

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8. 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**	**ID Num**	**Cal Due**
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	230299	2025/01/31
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	UL-FR1	225575	2025/04/27
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	201498	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	80403	2025/06/30
*RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	236726	2024/10/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223460	2025/02/28
*Antenna, Horn 1-18GHz	ETS-Lindgren	3117	223084	2024/10/31
RF Filter Box, 1-18GHz, 17 Ports	UL-FR1	RATS 2	225079	2025/04/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	235670	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	226672	2025/02/28
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231876	2025/04/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	223459	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	200897	2025/04/30
*RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	217255	2024/10/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	169936	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	226673	2025/02/28
RF Filter Box, 1-18GHz, 12 Port.	UL-FR1	Frankenstein	231874	2025/07/31
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	PRE0179372	2025/02/28
Antenna, Horn 1-18GHz	ETS-Lindgren (Cedar Park, Texas)	3117	80402	2025/07/31
RF Filter Box, 1-18GHz, 12 Port	UL-FR1	Frankenstein	216812	2025/01/30
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	230548	2025/02/28
*Antenna, Broadband Hybrid, 30MHz to 3GHz	Sunol Sciences Corp.	JB3	224378	2024/10/31
Link File, @3m, 9kHz-1000MHz Hybrid Path Loss	UL-FR1	Port 0 Factors	232001	2025/02/28
EMI TEST RECEIVER	Rohde & Schwarz	ESW44	170063	2024/11/30
*Antenna, Horn 18 to 26.5GHz	A.R.A.	MWH-1826/B	172354	2024/10/31
RF Amplifier Assembly, 18-26.5GHz, 60dB Gain	AMPLICAL	AMP18G26.5-60	221832	2025/03/31
*Antenna, Horn 26.5 to 40GHz	A.R.A.	MWH-2640/B	172369	2024/10/31
RF Amplifier Assembly, 26-40GHz, 65dB Gain	AMPLICAL	AMP26G40-65	221834	2025/03/31
Antenna, Passive Loop 30Hz - 1MHz	ELECTRO-METRICS	EM-6871	170013	2025/07/31
Antenna, Passive Loop 100KHz - 30MHz	ELECTRO-METRICS	EM-6872	170015	2025/07/31
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A-544	87738	2025/01/31
Conducted Switch Box	N/A	CSB	245774	2025/05/31
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	90756	2025/01/31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	90419	2025/03/31
Spectrum Analyzer, PXA, 3Hz to 44GHz	Keysight Technologies Inc	N9030A	125179	2025/02/28

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Conducted Switch Box	N/A	CSB	245782	2025/07/31
Power Meter, P-series single channel	Keysight Technologies Inc	N1911A	82174	2025/01/31
Power Sensor, P - series, 50MHz to 18GHz, Wideband	Keysight Technologies Inc	N1921A	81319	2025/01/31

AC Line Conducted				
Description	**Manufacturer**	**Model**	**ID Num**	**Cal Due**
EMI Test Receiver 9kHz-7GHz	Rohde & Schwarz	ESR	93091	2025/02/28
LISN for Conducted Emissions CISPR-16	FISCHER CUSTOM COMMUNICATIONS	FCC-LISN-50/250-25-2-01-480V	175765	2025/01/31
*Transient Limiter	TE	TBFL1	207996	2024/08/31

UL AUTOMATION SOFTWARE			
Radiated Software	UL	UL EMC	Ver 9.5, 2023, May 1
Conducted Software	UL	UL EMC	2020.8.16
AC Line Conducted Software	UL	UL EMC	Ver 9.5, 2023, Mar 3

*Testing was completed before calibration due date and/or after calibration was completed.

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9. ANTENNA PORT TEST RESULTS

9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method.

ON TIME AND DUTY CYCLE RESULTS

Mode	Tone (T)	Data Rate (Mbps)	ON Time B (msec)	Period (msec)	Duty Cycle x (linear)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	1/B Minimum VBW (kHz)
HT20	--	MCS0	1.920	1.943	0.9882	98.82%	0.00	0.010
	--	MCS7	0.228	0.249	0.9157	91.57%	0.38	4.386
HT40	--	MCS0	0.943	0.966	0.9762	97.62%	0.10	1.060
	--	MCS7	0.128	0.149	0.8591	85.91%	0.66	7.813
VHT80	--	MCS0	0.459	0.481	0.9543	95.43%	0.20	2.179
	--	MCS9	0.072	0.094	0.7660	76.60%	1.16	13.889
HE20	SU	MCS0	1.487	1.511	0.9841	98.41%	0.00	0.010
		MCS11	0.146	0.168	0.8690	86.90%	0.61	6.849
	52T	MCS0	3.822	3.854	0.9917	99.17%	0.00	0.010
		MCS11	0.278	0.311	0.8939	89.39%	0.49	3.597
	106T	MCS0	3.5175	3.5517	0.9904	99.04%	0.00	0.010
		MCS11	0.2636	0.2971	0.8872	88.72%	0.52	3.794
HE40	SU	MCS0	1.469	1.493	0.9839	98.39%	0.00	0.010
		MCS11	0.142	0.163	0.8712	87.12%	0.60	7.042
	106T	MCS0	3.518	3.552	0.9904	99.04%	0.00	0.010
		MCS11	0.263	0.296	0.8885	88.85%	0.51	3.802
	242T	MCS0	3.0438	3.0767	0.9893	98.93%	0.00	0.010
		MCS11	0.2351	0.2677	0.8782	87.82%	0.56	4.254
HE80	SU	MCS0	1.401	1.426	0.9825	98.25%	0.00	0.010
		MCS11	0.14	0.165	0.8485	84.85%	0.71	7.143
	106T	MCS0	3.516	3.552	0.9899	98.99%	0.00	0.010
		MCS11	0.264	0.297	0.8889	88.89%	0.51	3.788

Note: There is same duty cycle factor on 1TX and 2TX

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DUTY CYCLE PLOTS

802.11n HT20 MODE MCS0

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9.2. 26 dB AND 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

RESULTS

ID:	27979	Date:	2024/10/23

9.2.1. 802.11n/ac SISO MODE IN THE UNII-1 BAND

UNII-1 (SISO)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Ant 1	Ant 2	Ant 1	Ant 2
HT20 (FCC)	5180	36	23.11	23.19	17.8360	17.9950
	5200	40	21.20	21.20	17.8650	17.8340
	5240	48	20.96	21.15	17.8340	17.8990
HT40 (FCC)	5190	38	42.53	41.43	36.4900	36.3680
	5230	46	41.14	41.20	36.3550	36.3600
VHT80 (FCC)	5210	42	83.44	81.49	75.4860	75.5140

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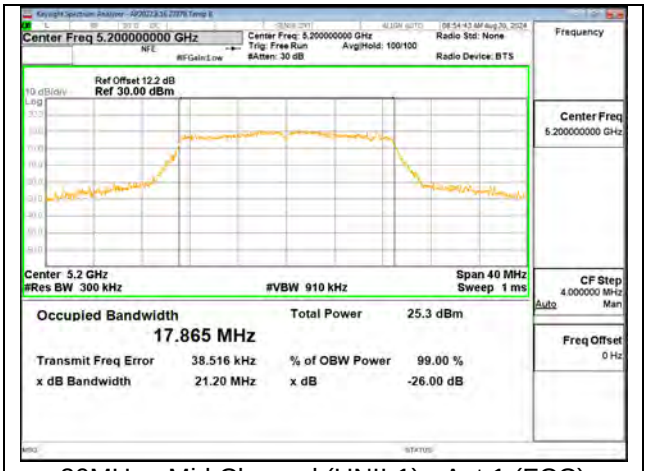

20MHz - Mid Channel (UNII-1) - Ant 1 (FCC)

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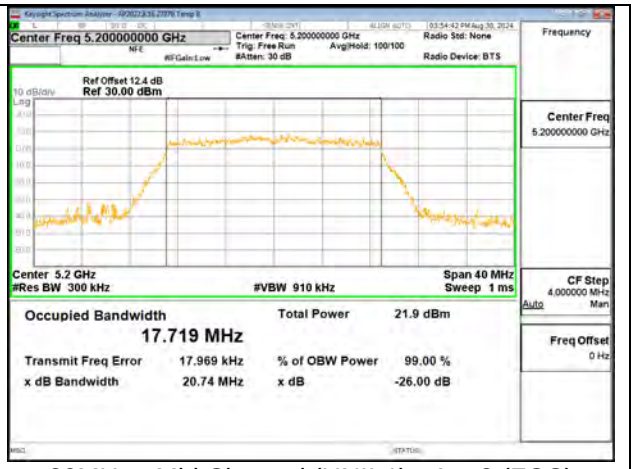
9.2.2. 802.11n/ac MIMO CDD MODE IN THE UNII-1 BAND

UNII-1 (MIMO CDD)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HT20 (FCC)	5180	36	21.60	22.21	--	17.8750	17.8760	--
	5200	40	20.89	20.74	--	17.7580	17.7190	--
	5240	48	20.96	20.74	--	17.7890	17.7470	--
HT40 (FCC)	5190	38	42.46	40.43	--	36.4040	36.2860	--
	5230	46	41.42	41.02	--	36.3230	36.2980	--
VHT80 (FCC)	5210	42	82.74	81.25	--	75.5130	75.4060	--

20MHz - Mid Channel (UNII-1) - Ant 1 (FCC)



20MHz - Mid Channel (UNII-1) - Ant 2 (FCC)

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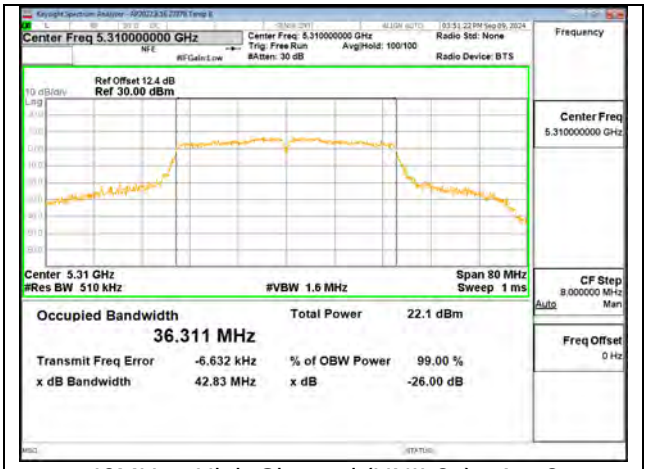
9.2.3. 802.11n/ac SISO MODE IN THE UNII-2A BAND

UNII-2a (SISO)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Ant 1	Ant 2	Ant 1	Ant 2
HT20	5260	52	21.45	21.28	17.8420	17.9300
	5300	60	21.18	21.21	17.8580	17.9270
	5320	64	24.74	24.15	18.0170	18.0870
HT40	5270	54	40.64	40.95	36.2660	36.3390
	5310	62	42.09	42.83	36.4060	36.3110
VHT80	5290	58	84.52	80.95	75.5200	75.5150



40MHz - High Channel (UNII-2a) - Ant 2

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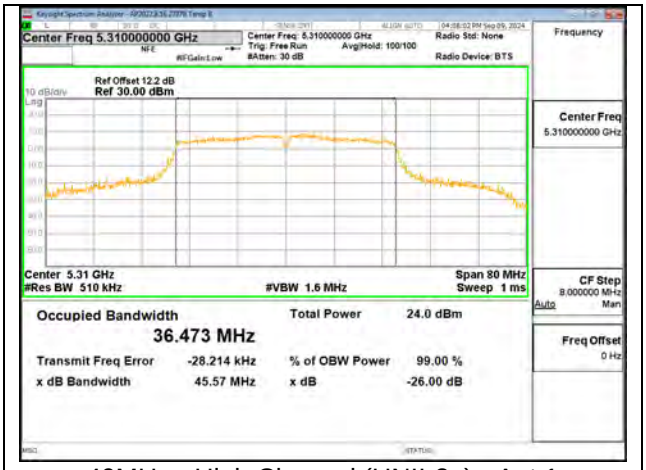
9.2.4. 802.11n/ac MIMO CDD MODE IN THE UNII-2A BAND

UNII-2a (MIMO CDD)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HT20	5260	52	20.84	21.36	20.84	17.7360	17.8780	17.7360
	5300	60	20.87	21.13	20.87	17.7650	17.9040	17.7650
	5320	64	21.92	21.87	21.87	17.9040	17.9680	17.9040
HT40	5270	54	41.19	40.78	40.78	36.3540	36.2080	36.2080
	5310	62	45.57	42.07	42.07	36.4730	35.3310	35.3310
VHT80	5290	58	82.67	82.71	82.67	75.5310	75.4873	75.4873



40MHz - High Channel (UNII-2a) - Ant 1

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9.2.5. 802.11n/ac SISO MODE IN THE UNII-2C BAND

UNII-2c (SISO)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Ant 1	Ant 2	Ant 1	Ant 2
HT20	5500	100	25.17	21.83	18.0590	17.9120
	5580	116	21.41	21.03	17.9140	17.8790
	5700	140	26.18	21.54	18.0150	17.9770
	5720 (Straddle)	144	21.34	21.14	17.9240	17.8600
HT40	5510	102	46.98	42.33	36.3950	36.4230
	5550	110	41.54	40.99	36.3480	36.4120
	5670	134	45.79	47.72	36.4640	36.5580
	5710 (Straddle)	142	41.25	41.06	36.2880	36.3710
VHT80	5530	106	85.66	82.70	75.5270	75.5190
	5610	122	82.98	83.58	75.6410	75.5260
	5690 (Straddle)	138	80.38	80.72	75.5130	75.5530

80MHz - Mid Channel (UNII-2c) - Ant 1

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9.2.6. 802.11n/ac MIMO CDD MODE IN THE UNII-2C BAND

UNII-2c (MIMO CDD)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HT20	5500	100	21.67	21.71	21.67	17.9390	17.8650	17.8650
	5580	116	21.10	20.76	20.76	17.7900	17.7470	17.7470
	5700	140	22.01	21.08	21.08	17.8950	17.8980	17.8950
	5720 (Straddle)	144	20.99	20.79	20.79	17.7970	17.7250	17.7250
HT40	5510	102	42.98	41.26	41.26	36.3190	36.2550	36.2550
	5550	110	40.98	40.49	40.49	36.4230	36.2420	36.2420
	5670	134	42.13	45.56	42.13	36.3670	36.4110	36.3670
	5710 (Straddle)	142	41.32	40.80	40.80	36.2660	36.2080	36.2080
VHT80	5530	106	81.45	81.85	81.45	75.5030	75.5280	75.5030
	5610	122	82.22	81.04	81.04	75.6330	75.4530	75.4530
	5690 (Straddle)	138	81.46	80.47	80.47	75.4140	75.5110	75.4140

80MHz - Mid Channel (UNII-2c) - Ant 2

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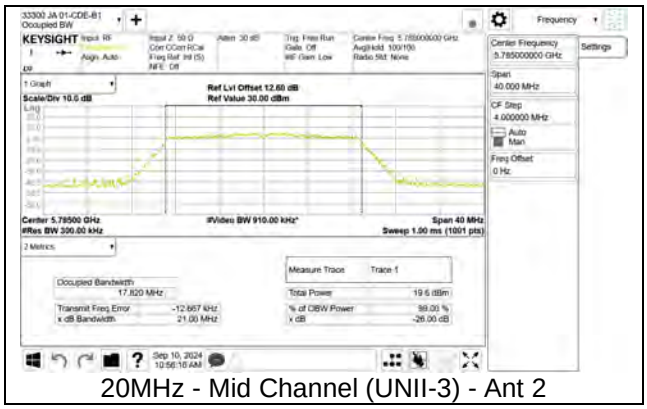
9.2.7. 802.11n/ac SISO MODE IN THE UNII-3 BAND

UNII-3 (SISO)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Ant 1	Ant 2	Ant 1	Ant 2
HT20	5745	149	20.95	20.69	17.7830	17.7770
	5785	157	21.00	21.00	17.7600	17.8200
	5825	165	21.22	20.92	17.7930	17.8110
HT40	5755	151	40.77	40.92	36.2130	36.2990
	5795	159	40.82	41.01	36.3410	36.2690
VHT80	5775	155	80.76	81.22	75.4470	75.5330



20MHz - Mid Channel (UNII-3) - Ant 2

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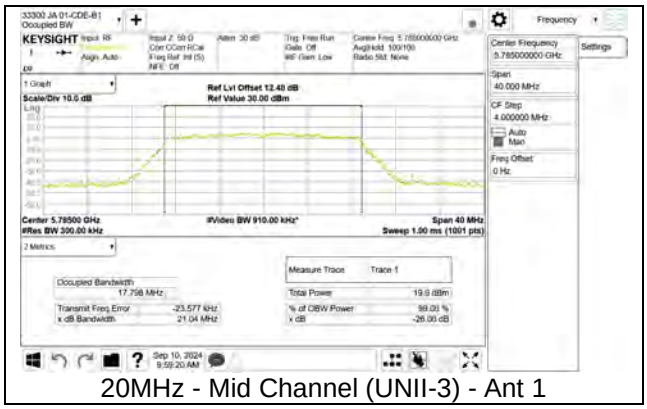
9.2.8. 802.11n/ac MIMO CDD MODE IN THE UNII-3 BAND

UNII-3 (MIMO CDD)	Frequency (MHz)	Channel Number	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
			Ant 1	Ant 2	Ant 1	Ant 2
HT20	5745	149	21.06	20.89	17.7480	17.7590
	5785	157	21.04	20.79	17.7980	17.7350
	5825	165	21.41	20.85	17.7830	17.7430
HT40	5755	151	41.11	40.56	36.2920	36.2770
	5795	159	40.93	40.43	36.2830	36.1940
VHT80	5775	155	81.43	80.29	75.4840	75.4340



20MHz - Mid Channel (UNII-3) - Ant 1

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9.2.9. 802.11ax SISO MODE IN THE UNII-1 BAND

UNII-1 (SISO)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2
HE20 (FCC)	5180	36	SU	--	22.43	23.59	18.9980	19.0110
			52T	37	19.58	20.00	18.1710	18.2680
				38	19.78	19.88	16.8850	17.1050
				40	20.67	20.96	18.3590	18.6130
	5200	40	SU	--	21.20	21.32	18.9650	18.9950
			52T	37	20.05	20.26	18.0950	18.2150
				38	19.66	19.29	16.4470	17.0460
				40	20.65	20.98	18.0010	18.2240
	5240	48	SU	--	21.00	20.97	18.9440	18.9450
			52T	37	20.09	19.70	18.2220	18.1900
				38	19.89	19.86	17.2140	17.1210
				40	20.96	20.77	18.3370	18.2480
HE40 (FCC)	5190	38	SU	--	43.34	41.84	38.0400	38.0490
			106T	53	23.13	23.15	18.2790	18.2130
				54	28.30	27.34	20.0330	19.4420
				56	24.70	25.18	18.1760	18.2750
	5230	46	SU	--	41.41	41.63	38.0210	38.0090
			106T	53	22.90	22.89	18.1140	18.1770
				54	26.53	26.41	19.8900	20.0570
				56	25.45	24.98	18.2310	18.1470
HE80 (FCC)	5210	42	SU	--	83.07	83.20	77.2380	77.1742
			106T	53	21.01	20.81	17.7511	17.8610
				56	25.21	26.15	17.4448	18.1962
				60	23.21	23.84	17.9471	18.0222

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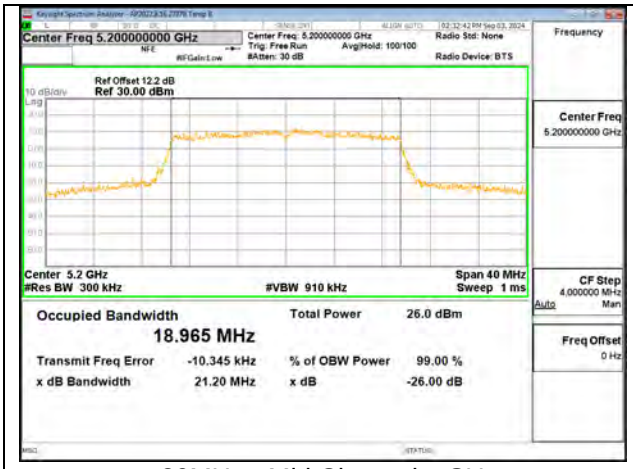
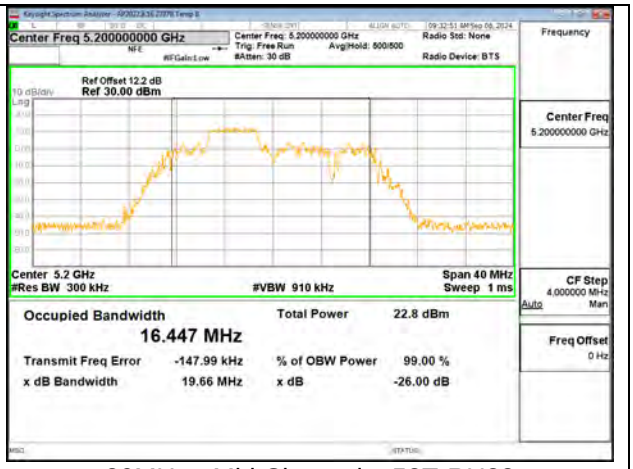


20MHz - Mid Channel – SU
(UNII-1) – Ant 1 (FCC)



20MHz - Mid Channel – 52T-RU38
(UNII-1) – Ant 1 (FCC)

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9.2.10. 802.11ax MIMO OFDMA MODE IN THE UNII-1 BAND

UNII-1 (MIMO OFDMA)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
					Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HE20 (FCC)	5180	36	SU	--	21.61	21.10	--	18.9980	19.0020	--
			52T	37	20.06	19.85	--	18.2710	18.0780	--
				38	19.89	18.43	--	16.9900	16.8710	--
				40	20.78	19.19	--	18.4950	17.8220	--
	5200	40	SU	--	20.81	21.01	--	18.9830	18.9670	--
			52T	37	20.38	19.06	--	18.1400	17.5330	--
				38	19.74	18.41	--	16.9610	16.6580	--
				40	20.72	19.71	--	18.2380	18.2730	--
	5240	48	SU	--	21.30	21.07	--	18.9360	18.9670	--
			52T	37	19.86	19.66	--	18.2100	18.1900	--
				38	19.71	18.43	--	17.2080	16.8520	--
				40	20.54	19.65	--	18.3720	18.1800	--
HE40 (FCC)	5190	38	SU	--	41.82	41.61	--	38.0360	38.0570	--
			106T	53	23.08	20.23	--	17.9090	17.9840	--
				54	27.22	25.24	--	19.9030	19.4100	--
				56	24.83	19.98	--	18.2410	18.0300	--
	5230	46	SU	--	41.16	40.94	--	37.9540	38.0080	--
			106T	53	24.06	21.08	--	18.1980	17.4550	--
				54	25.81	24.80	--	19.7380	19.6310	--
				56	25.62	20.09	--	18.1830	18.0980	--
HE80 (FCC)	5210	42	SU	--	84.70	82.07	--	77.3471	77.2677	--
			106T	53	21.54	20.07	--	17.8412	17.7881	--
				56	22.80	21.14	--	18.2405	17.7751	--
				60	23.30	19.86	--	18.2097	17.7017	--

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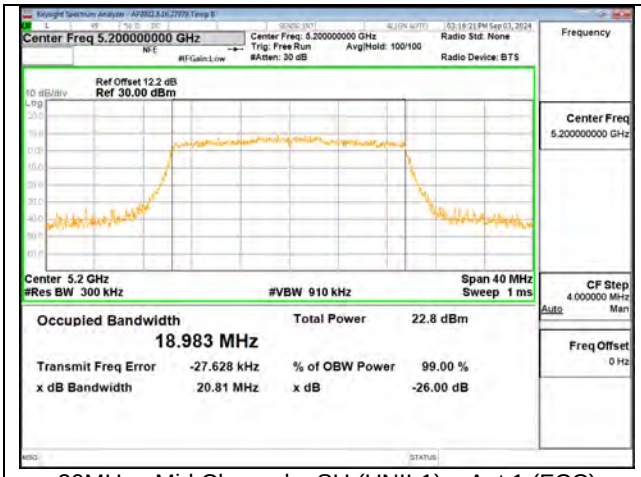
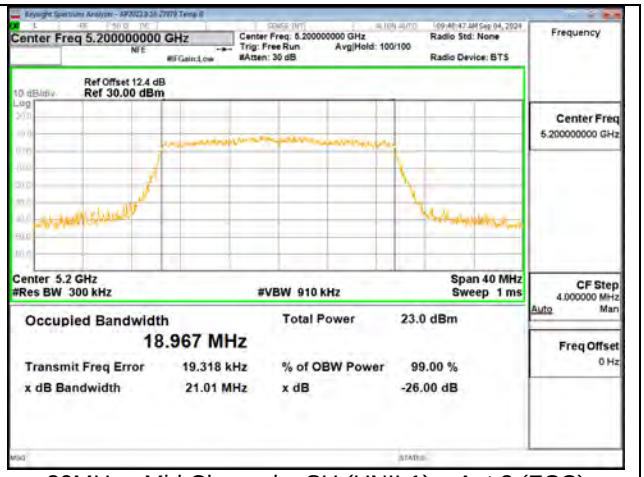
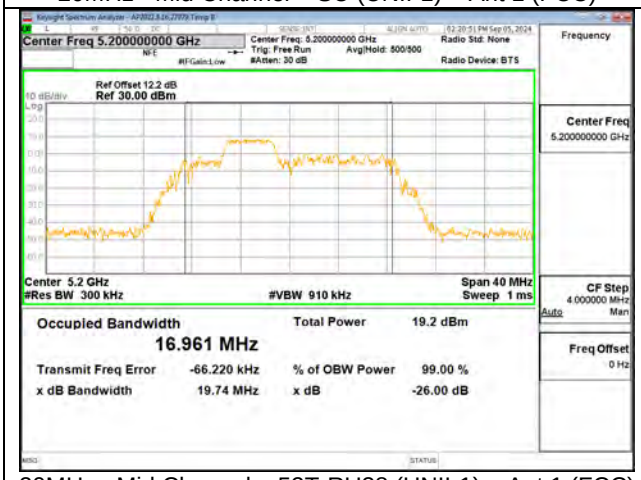


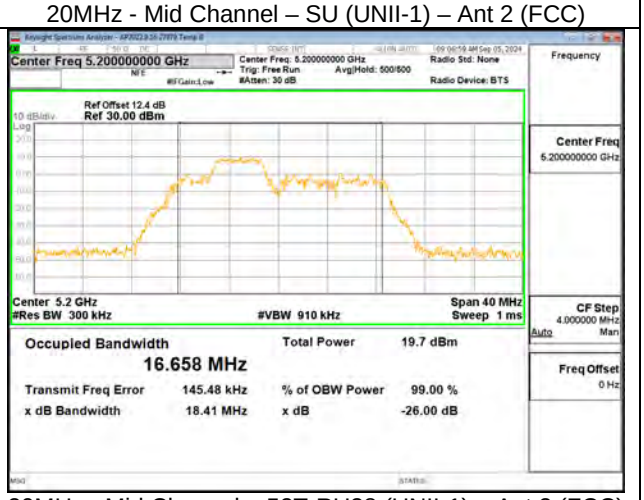
20MHz - Mid Channel – SU (UNII-1) – Ant 1 (FCC)



20MHz - Mid Channel – SU (UNII-1) – Ant 2 (FCC)



20MHz - Mid Channel – 52T-RU38 (UNII-1) – Ant 1 (FCC)



20MHz - Mid Channel – 52T-RU38 (UNII-1) – Ant 2 (FCC)

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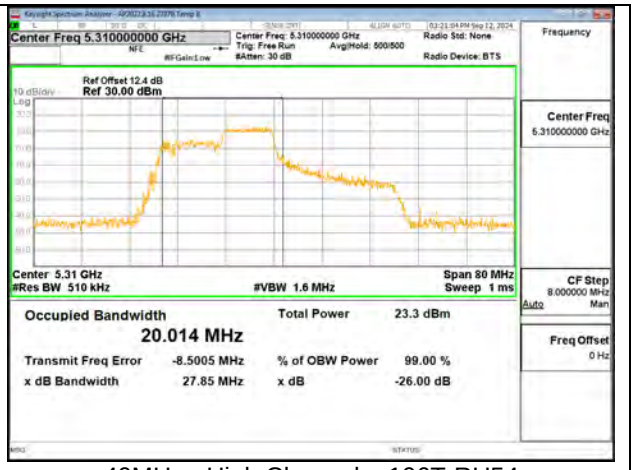
9.2.11. 802.11ax SISO MODE IN THE UNII-2A BAND

UNII-2a (SISO)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2
HE20	5260	52	SU	--	21.21	21.32	19.0010	18.9760
			52T	37	20.27	20.37	18.1950	17.9590
				38	19.89	19.66	17.1940	17.1340
				40	20.98	20.93	18.4150	18.4450
	5300	60	SU	--	21.02	20.96	19.0130	19.0160
			52T	37	19.19	20.51	17.7030	18.2720
				38	19.84	19.53	17.2810	17.0450
				40	20.49	20.93	18.3630	18.5270
	5320	64	SU	--	26.34	21.08	19.0360	18.9880
			52T	37	20.02	20.52	18.2460	18.2890
				38	19.60	19.65	17.2460	17.1880
				40	20.71	20.96	18.4370	18.4500
HE40	5270	54	SU	--	41.07	41.07	37.9860	37.9700
			106T	53	23.66	26.36	18.1620	18.5390
				54	25.51	25.00	19.6770	19.8880
				56	25.26	24.51	18.6220	18.5770
	5310	62	SU	--	42.24	41.53	38.0030	38.0210
			106T	53	22.90	25.95	18.3310	17.7670
				54	25.70	27.85	19.9470	20.0140
				56	25.34	25.60	18.5070	18.2370
HE80	5290	58	SU	--	81.71	82.00	77.3910	77.3510
			106T	53	21.25	21.07	17.8240	17.7970
				56	24.84	25.02	18.0330	18.5750
				60	23.45	21.92	18.0210	17.9210

40MHz - High Channel – SU (UNII-2a) – Ant 2



40MHz - High Channel – 106T-RU54 (UNII-2a) – Ant 2

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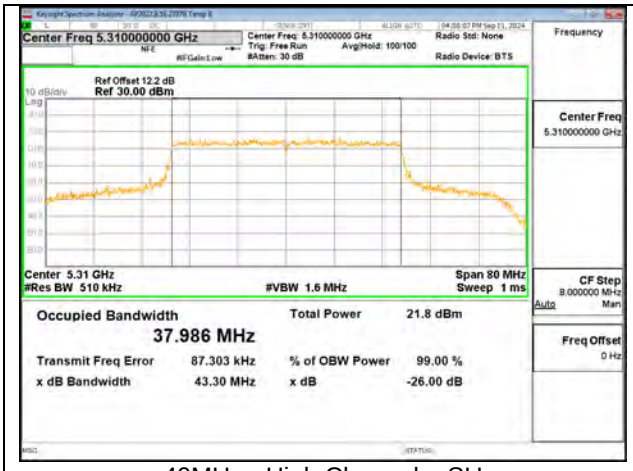
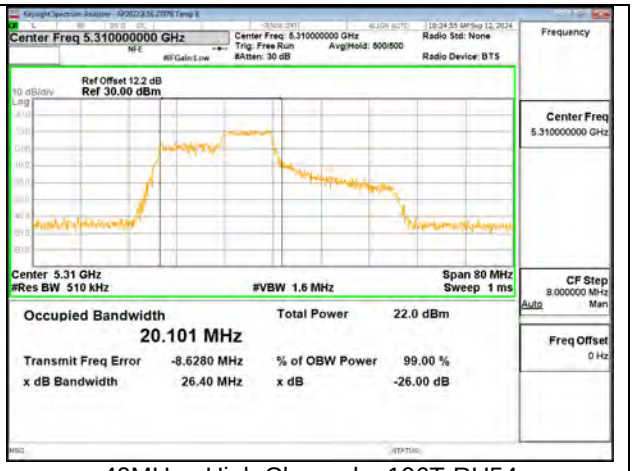
9.2.12. 802.11ax MIMO OFDMA MODE IN THE UNII-2A BAND

UNII-2a (MIMO OFDMA)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
					Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HE20	5260	52	SU	--	20.65	20.65	20.65	18.8970	18.9500	18.8970
			52T	37	20.35	19.76	19.76	18.2640	18.1740	18.1740
				38	20.01	18.48	18.48	17.2150	16.9870	16.9870
				40	20.89	20.03	20.03	18.4270	18.2500	18.2500
	5300	60	SU	--	20.62	21.08	20.62	18.9990	18.9660	18.9660
			52T	37	19.98	19.60	19.60	18.2990	18.1490	18.1490
				38	19.67	18.39	18.39	17.1860	16.9530	16.9530
				40	20.98	19.82	19.82	18.5090	18.1930	18.1930
	5320	64	SU	--	22.18	21.26	21.26	18.9750	18.9580	18.9580
			52T	37	20.21	19.82	19.82	18.2460	18.1730	18.1730
				38	19.82	18.34	18.34	17.0640	16.9610	16.9610
				40	20.87	20.00	20.00	18.4580	18.2240	18.2240
HE40	5270	54	SU	--	41.07	41.23	41.07	37.9850	37.9450	37.9450
			106T	53	24.39	21.17	21.17	18.2770	17.9120	17.9120
				54	25.00	23.86	23.86	19.8380	19.3190	19.3190
				56	25.45	20.23	20.23	18.4850	17.9870	17.9870
	5310	62	SU	--	43.30	41.12	41.12	37.9860	37.9490	37.9490
			106T	53	23.04	20.12	20.12	18.3310	17.9680	17.9680
				54	26.40	24.91	24.91	20.1010	19.4810	19.4810
				56	25.09	20.24	20.24	18.5580	17.9060	17.9060
HE80	5290	58	SU	--	81.95	83.31	81.95	77.3950	77.3670	77.3670
			106T	53	20.34	19.30	19.30	17.8280	17.7990	17.7990
				56	25.12	21.15	21.15	18.3070	17.6550	17.6550
				60	23.44	19.96	19.96	18.1450	17.7510	17.7510



40MHz - High Channel – SU (UNII-2a) – Ant 1



40MHz - High Channel – 106T-RU54 (UNII-2a) – Ant 1

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9.2.13. 802.11ax SISO MODE IN THE UNII-2C BAND

UNII-2c (SISO)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2
HE20	5500	100	SU	--	22.26	21.75	18.9930	18.9630
			106T	53	20.95	20.83	18.1330	18.2150
				54	21.14	21.19	18.3230	18.3000
			52T	37	20.39	20.27	18.2770	18.2050
				38	19.72	19.56	16.8940	17.2010
				40	20.83	20.82	18.2370	18.3960
	5580	116	SU	--	20.90	20.97	18.9600	18.9970
			106T	53	21.03	20.82	18.1690	18.2050
				54	21.01	21.08	18.3740	18.2470
			52T	37	20.54	20.18	18.0160	17.9030
				38	19.20	19.48	16.9550	17.0030
				40	20.80	20.73	18.3120	18.4200
	5700	140	SU	--	21.54	21.87	19.0120	19.0040
			106T	53	20.62	20.87	18.0340	18.2430
				54	21.00	21.09	18.1960	18.3890
			52T	37	20.54	20.49	18.2430	18.2190
				38	19.22	19.82	17.1410	16.9940
				40	20.71	20.61	18.4800	18.3490
	5720 (Straddle)	144	SU	--	20.73	20.87	18.9540	19.0320
			106T	53	20.56	20.97	18.1860	18.2430
				54	21.29	21.07	18.0560	18.3350
			52T	37	20.38	20.40	18.2620	18.2750
				38	19.80	19.62	17.1670	17.1030
				40	20.95	20.85	18.3740	18.3200
HE40	5510	102	SU	--	41.70	46.24	37.9820	38.0043
			242T	61	37.33	29.53	19.3270	19.6460
				62	34.46	36.01	19.4070	19.3670
			106T	53	23.17	24.18	18.3500	18.3390
				54	30.91	27.27	20.1880	19.9070
				56	24.30	25.83	18.2870	18.0360
	5550	110	SU	--	41.64	41.49	38.0340	37.9700
			242T	61	36.26	39.80	19.6060	19.9090
				62	37.32	39.82	19.6860	20.1100
			106T	53	22.25	25.44	18.1240	18.0550
				54	25.88	28.66	19.6880	19.8810
				56	25.47	25.76	18.3410	18.3400
	5670	134	SU	--	47.35	51.42	38.0570	38.1510
			242T	61	33.66	36.43	19.7390	20.3130
				62	35.29	38.29	20.2100	20.1330
			106T	53	25.63	25.82	18.0930	18.0126
				54	26.54	26.94	19.6430	20.2260
				56	25.29	24.85	18.3300	18.2680
	5710 (Straddle)	142	SU	--	41.77	41.03	38.0140	38.0070
			242T	61	27.74	29.16	19.3990	19.2640
				62	32.37	30.21	19.3440	19.3670
			106T	53	25.63	26.94	17.9840	18.2970
				54	26.28	26.33	19.7660	19.2340
				56	25.38	25.60	17.8460	18.2000
HE80	5530	106	SU	--	82.31	81.86	77.4230	77.2290
			106T	53	21.31	21.19	17.8320	17.8630
				56	23.64	24.77	18.1160	18.1410
				60	23.73	25.44	17.8500	17.9480
	5610	122	SU	--	87.46	99.33	77.5330	77.4240
			106T	53	20.52	20.21	17.7280	17.7220
				56	24.27	24.09	18.1230	18.2670
				60	22.15	23.56	17.9103	17.9360
	5690 (Straddle)	138	SU	--	80.80	81.62	77.4490	77.4650
			106T	53	19.42	20.54	17.5930	17.7330
				56	24.45	24.29	17.5680	18.0420
				60	25.22	23.71	18.0090	17.6750

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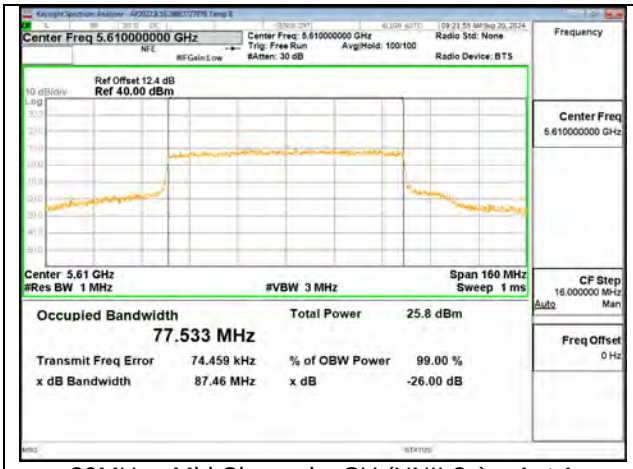
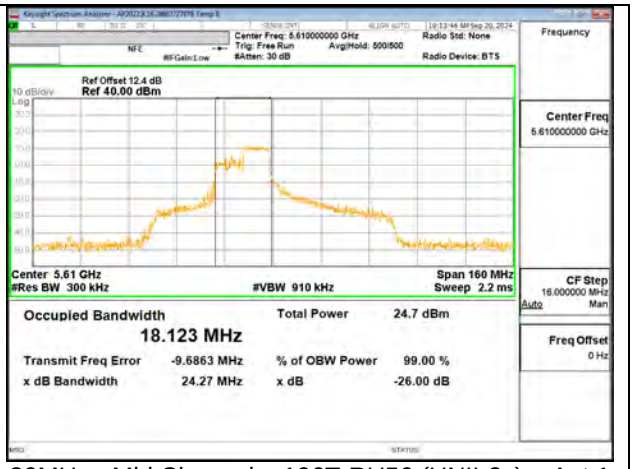


80MHz - Mid Channel – SU (UNII-2c) – Ant 1



80MHz - Mid Channel – 106T-RU56 (UNII-2c) – Ant 1

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9.2.14. 802.11ax MIMO OFDMA MODE IN THE UNII-2C BAND

UNII-2c (MIMO OFDMA)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)			99% Bandwidth (MHz)		
					Ant 1	Ant 2	Min BW	Ant 1	Ant 2	Min BW
HE20	5500	100	SU	--	20.95	21.04	20.95	18.9670	18.9930	18.9670
			106T	53	20.72	19.94	19.94	18.2270	18.1600	18.1600
				54	21.09	19.89	19.89	18.2990	18.2170	18.2170
			52T	37	20.39	19.85	19.85	18.2640	18.1440	18.1440
				38	19.78	18.38	18.38	16.7510	16.8500	16.7510
				40	20.82	19.65	19.65	18.5000	17.7960	17.7960
	5580	116	SU	--	21.11	20.71	20.71	18.9550	18.9460	18.9460
			106T	53	20.60	18.21	18.21	17.7960	16.8160	16.8160
				54	20.99	19.94	19.94	18.3400	18.1370	18.1370
			52T	37	20.17	19.85	19.85	18.1990	18.1700	18.1700
				38	18.86	18.43	18.43	17.2220	16.8410	16.8410
				40	19.96	19.96	19.96	18.2310	18.2000	18.2000
	5700	140	SU	--	20.97	21.41	20.97	18.9760	18.9970	18.9760
			106T	53	20.66	19.81	19.81	18.1790	18.1760	18.1760
				54	20.98	19.95	19.95	18.4770	18.1280	18.1280
			52T	37	20.33	19.85	19.85	18.2370	18.1340	18.1340
				38	19.59	18.25	18.25	17.2480	16.8850	16.8850
				40	20.59	19.92	19.92	18.4680	18.2040	18.2040
	5720 (Straddle)	144	SU	--	20.97	20.96	20.96	18.9050	18.9700	18.9050
			106T	53	20.67	19.87	19.87	18.1910	18.1110	18.1110
				54	20.78	20.08	20.08	18.3390	17.7110	17.7110
			52T	37	19.94	19.57	19.57	18.2130	18.0830	18.0830
				38	19.84	18.38	18.38	17.2180	16.8570	16.8570
				40	20.53	19.99	19.99	18.4400	18.2200	18.2200
HE40	5510	102	SU	--	43.19	42.37	42.37	38.0080	37.9040	37.9040
			242T	61	30.66	30.39	30.39	19.6150	19.4490	19.4490
				62	31.20	28.67	28.67	19.4780	19.4500	19.4500
			106T	53	25.80	22.72	22.72	18.2160	18.1190	18.1190
				54	25.76	27.55	25.76	20.6270	20.0570	20.0570
				56	25.86	20.14	20.14	18.2290	18.0180	18.0180
	5550	110	SU	--	41.56	41.18	41.18	38.0120	38.0430	38.0120
			242T	61	28.23	24.94	24.94	19.3630	19.2810	19.2810
				62	30.43	29.87	29.87	19.3700	19.3700	19.3700
			106T	53	23.73	21.13	21.13	17.9800	17.9790	17.9790
				54	26.39	24.83	24.83	19.8300	19.4370	19.4370
				56	25.33	20.42	20.42	18.3080	17.9530	17.9530
	5670	134	SU	--	44.05	47.27	44.05	38.0370	38.1300	38.0370
			242T	61	34.80	31.10	31.10	19.8930	19.3950	19.3950
				62	29.84	28.62	28.62	19.3500	19.4440	19.3500
			106T	53	25.18	19.66	19.66	18.1860	17.7170	17.7170
				54	26.83	26.62	26.62	20.1860	19.6840	19.6840
				56	25.12	20.33	20.33	18.3870	18.1050	18.1050
	5710 (Straddle)	142	SU	--	41.16	41.24	41.16	37.9830	38.0690	37.9830
			242T	61	30.26	28.02	28.02	19.2950	19.2790	19.2790
				62	29.78	25.20	25.20	19.5460	19.1680	19.1680
			106T	53	23.45	20.66	20.66	18.0430	17.8070	17.8070
				54	28.05	24.90	24.90	19.8210	19.4710	19.4710
				56	24.98	20.35	20.35	18.3470	18.0290	18.0290
HE80	5530	106	SU	--	82.34	82.85	82.34	77.5090	77.4640	77.4640
			106T	53	20.25	19.53	19.53	17.7910	17.8080	17.7910
				56	24.88	22.84	22.84	17.4900	17.6270	17.4900
				60	23.75	19.92	19.92	17.9330	17.6810	17.6810
	5610	122	SU	--	90.63	81.69	81.69	77.4630	77.4730	77.4630
			106T	53	21.60	19.57	19.57	17.7380	17.7630	17.7380
				56	26.95	21.50	21.50	18.0030	17.6290	17.6290
				60	24.04	18.76	18.76	17.9090	17.0350	17.0350
	5690 (Straddle)	138	SU	--	82.20	81.49	81.49	77.3260	77.4250	77.3260
			106T	53	21.21	19.47	19.47	17.7950	17.7660	17.7660
				56	27.38	21.94	21.94	18.0840	17.5260	17.5260
				60	23.55	19.83	19.83	18.1020	17.7860	17.7860

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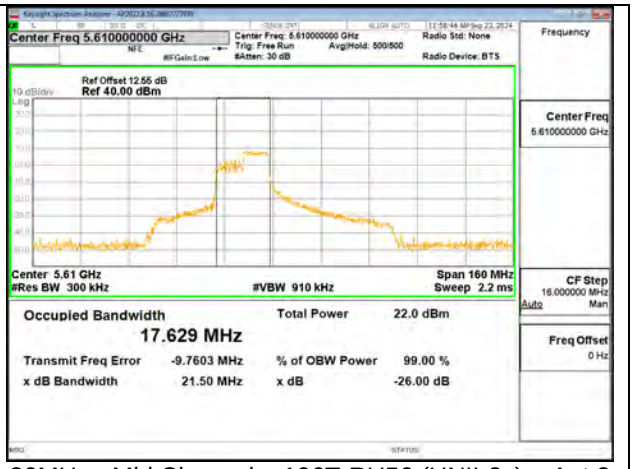
80MHz - Mid Channel – SU (UNII-2c) – Ant 2



80MHz - Mid Channel – 106T-RU56 (UNII-2c) – Ant 2

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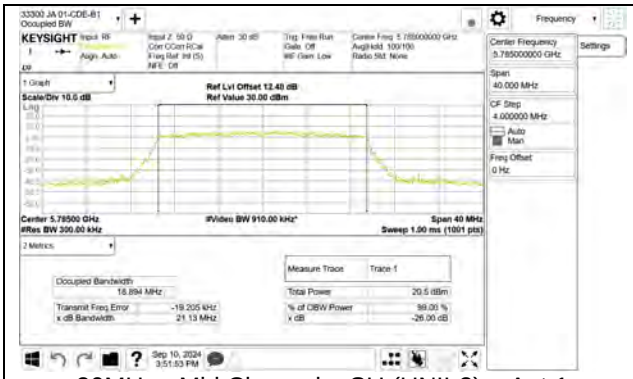
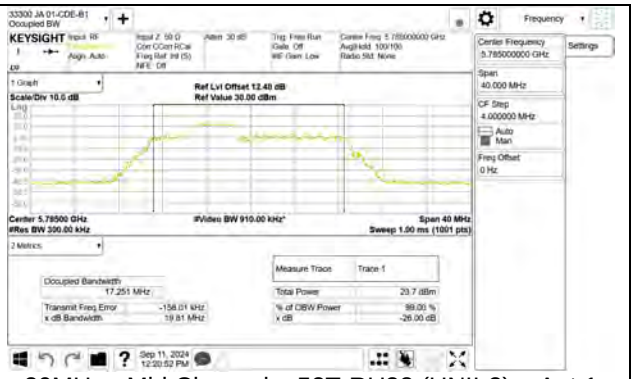
9.2.15. 802.11ax SISO MODE IN THE UNII-3 BAND

UNII-3 (SISO)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2
HE20	5745	149	SU	--	20.97	20.95	18.9450	18.9710
			52T	37	20.20	19.96	18.2240	18.2680
				38	19.86	19.63	17.2020	17.2030
				40	20.81	20.70	18.4720	18.3360
	5785	157	SU	--	21.13	21.00	18.8940	18.9690
			52T	37	20.46	20.54	18.2880	18.2360
				38	19.81	19.96	17.2510	17.1890
				40	20.79	20.81	18.0930	18.3910
	5825	165	SU	--	20.73	20.92	18.9240	18.9640
			52T	37	20.43	20.42	18.2430	18.2640
				38	19.56	19.72	17.1320	17.2790
				40	20.78	20.89	18.5360	18.4540
HE40	5755	151	SU	--	41.07	41.34	37.9040	37.9530
			106T	53	23.95	23.67	18.0160	18.2740
				54	27.93	27.22	20.6500	20.0400
				56	24.40	24.96	18.4290	18.5340
	5795	159	SU	--	40.89	41.33	38.0400	37.9420
			106T	53	24.22	23.99	18.3630	18.4110
				54	25.22	27.54	20.1820	20.3710
				56	24.19	23.94	18.2380	18.3610
HE80	5775	155	SU	--	81.22	81.22	77.2850	77.4460
			106T	53	21.29	20.85	17.8400	17.9060
				56	24.96	23.97	18.2580	18.0840
				60	22.90	23.05	17.9540	18.2450



20MHz - Mid Channel – SU (UNII-3) – Ant 1



20MHz - Mid Channel – 52T-RU38 (UNII-3) – Ant 1

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9.2.16. 802.11ax MIMO OFDMA MODE IN THE UNII-3 BAND

UNII-3 (MIMO OFDMA)	Frequency (MHz)	Channel Number	Tone	RU Index	26 dB Bandwidth (MHz)		99% Bandwidth (MHz)	
					Ant 1	Ant 2	Ant 1	Ant 2
HE20	5745	149	SU	--	21.18	20.50	18.9450	18.9730
			52T	37	20.61	19.77	18.2800	18.1470
				38	19.82	18.59	17.1440	17.0050
				40	20.75	19.96	18.3330	18.2180
	5785	157	SU	--	20.86	21.06	18.9280	18.9510
			52T	37	20.24	19.88	18.2510	18.1770
				38	19.54	18.51	17.0650	16.9780
				40	20.80	19.93	18.5030	18.1620
	5825	165	SU	--	21.09	21.13	18.9150	18.9210
			52T	37	20.46	19.79	18.1140	18.1100
				38	19.79	18.38	17.1830	16.9400
				40	20.99	19.90	18.4220	18.2190
HE40	5755	151	SU	--	41.28	41.07	38.0180	37.9160
			106T	53	23.88	21.33	18.1760	18.0730
				54	26.90	25.58	19.8770	19.5750
				56	18.68	20.21	18.6780	18.0220
	5795	159	SU	--	41.10	40.85	37.9810	37.9030
			106T	53	24.51	21.32	18.2610	18.0520
				54	27.76	24.98	19.8730	19.5050
				56	25.64	20.07	18.5460	18.0820
HE80	5775	155	SU	--	81.26	81.67	77.3070	77.3140
			106T	53	20.86	19.64	17.7840	17.7790
				56	25.15	20.99	18.3040	17.8340
				60	23.71	19.68	18.2080	17.7900

20MHz - Mid Channel – SU (UNII-3) – Ant 1

20MHz - Mid Channel – 52T-RU38 (UNII-3) – Ant 1

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9.3. 6 dB BANDWIDTH

LIMITS

FCC §15.407 (e)

RSS-247 6.2.4.1

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

RESULTS

For 6dB bandwidth measurements, the 802.11ax HE20 was tested at 26T as a worst-case scenario. For straddle channels, 52T was tested as worst-case as 26T is not supported.

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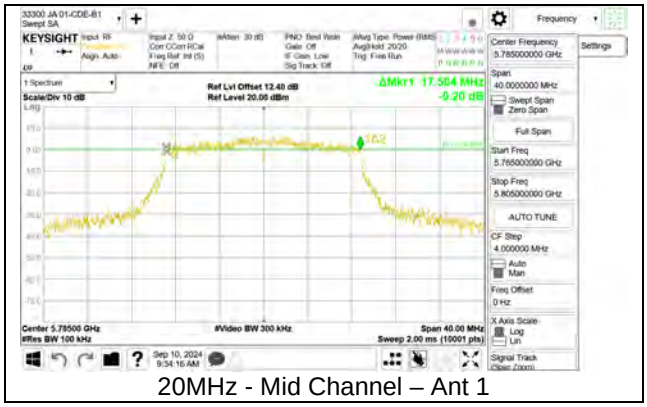
9.3.1. 802.11n/ac SISO MODE IN THE 5.8 GHz BAND

UNII-3 (SISO)	Frequency (MHz)	Channel Number	6 dB BW (MHz)	
			Ant 1	Ant 2
HT20	5720 (Straddle)	144	3.488	3.928
	5745	149	17.536	17.588
	5785	157	17.584	17.596
	5825	165	17.580	17.588
HT40	5710 (Straddle)	142	3.280	3.304
	5755	151	36.024	36.160
	5795	159	36.280	36.296
VHT80	5690 (Straddle)	138	2.856	3.176
	5775	155	75.088	75.200



20MHz - Mid Channel – Ant 1

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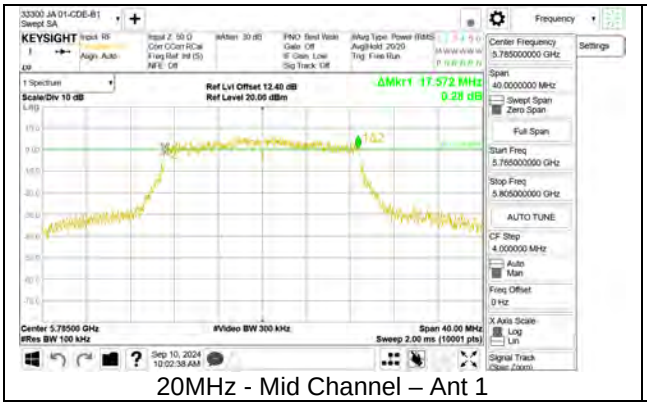
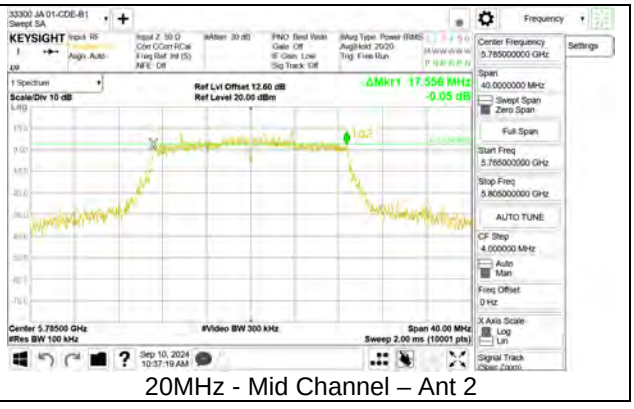
9.3.2. 802.11n/ac MIMO CDD MODE IN THE 5.8 GHz BAND

UNII-3 (MIMO CDD)	Frequency (MHz)	Channel Number	6 dB BW (MHz)	
			Ant 1	Ant 2
HT20	5720 (Straddle)	144	3.816	3.808
	5745	149	17.544	17.604
	5785	157	17.572	17.556
	5825	165	17.584	17.580
HT40	5710 (Straddle)	142	3.168	3.176
	5755	151	36.232	36.288
	5795	159	36.240	36.312
VHT80	5690 (Straddle)	138	3.176	3.160
	5775	155	75.088	75.152



20MHz - Mid Channel – Ant 1



20MHz - Mid Channel – Ant 2

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9.3.3. 802.11ax SISO MODE IN THE 5.8 GHz BAND

UNII-3 (SISO)	Frequency (MHz)	Channel Number	Tone	RU Index	6 dB BW (MHz)	
					Ant 1	Ant 2
HE20	5720 (Straddle)	144	SU	--	--	--
			52T	40	4.452	4.464
	5745	149	SU	--	--	--
			26T	0	2.056	2.012
				4	2.560	2.564
				8	2.080	2.064
	5785	157	SU	--	--	--
			26T	0	2.040	1.984
				4	2.496	2.588
				8	2.036	2.016
	5825	165	SU	--	--	--
			26T	0	2.012	2.000
				4	2.596	2.552
				8	2.008	2.064
HE40	5710 (Straddle)	142	SU	--	--	--
			52T	44	4.016	3.992
	5755	151	SU	--	--	--
			26T	0	2.032	1.992
				9	2.104	2.024
				17	2.032	2.128
	5795	159	SU	--	--	--
			26T	0	2.096	2.040
				9	2.064	1.880
				17	2.000	1.984
HE80	5690 (Straddle)	138	SU	--	--	--
			52T	52	3.944	3.960
	5775	155	SU	--	--	--
			26T	0	1.984	2.032
				18	2.608	2.736
				36	2.128	2.048

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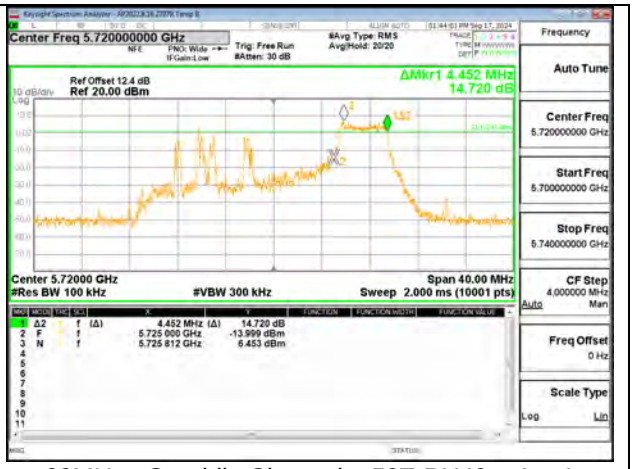
20MHz - Mid Channel – 26T-RU0 – Ant 1



20MHz - Straddle Channel – 52T-RU40 – Ant 1

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9.3.4. 802.11ax MIMO OFDMA MODE IN THE 5.8 GHz BAND

UNII-3 (MIMO OFDMA)	Frequency (MHz)	Channel Number	Tone	RU Index	6 dB BW (MHz)	
					Ant 1	Ant 2
HE20	5720 (Straddle)	144	SU	--	--	--
			52T	40	3.928	3.996
	5745	149	SU	--	--	--
			26T	0	2.004	1.980
				4	2.632	2.588
				8	1.996	1.972
	5785	157	SU	--	--	--
			26T	0	2.012	2.052
				4	2.584	2.556
				8	2.036	2.092
	5825	165	SU	--	--	--
			26T	0	2.004	4.500
				4	2.540	2.520
				8	2.028	2.004
HE40	5710 (Straddle)	142	SU	--	--	--
			52T	44	4.080	4.032
	5755	151	SU	--	--	--
			26T	0	4.096	2.064
				9	2.080	2.088
				17	1.992	2.048
	5795	159	SU	--	--	--
			26T	0	1.992	2.056
				9	1.984	2.024
				17	2.024	2.096
HE80	5690 (Straddle)	138	SU	--	--	--
			52T	52	3.880	3.944
	5775	155	SU	--	--	--
			26T	0	2.064	2.080
				18	2.576	2.624
				36	2.032	2.080

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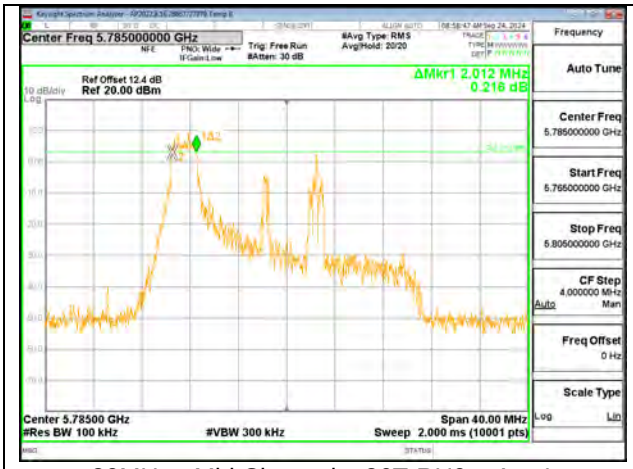
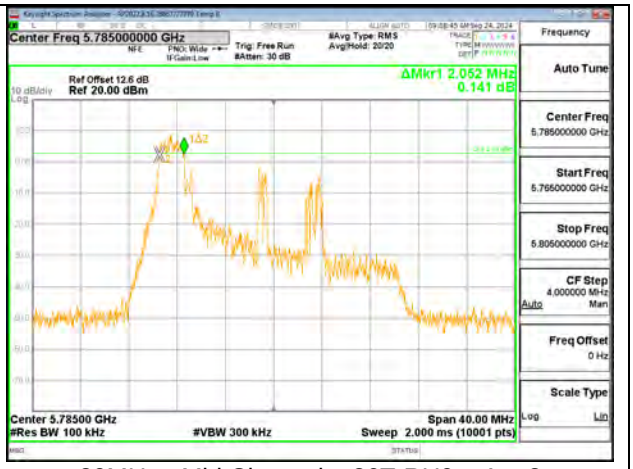
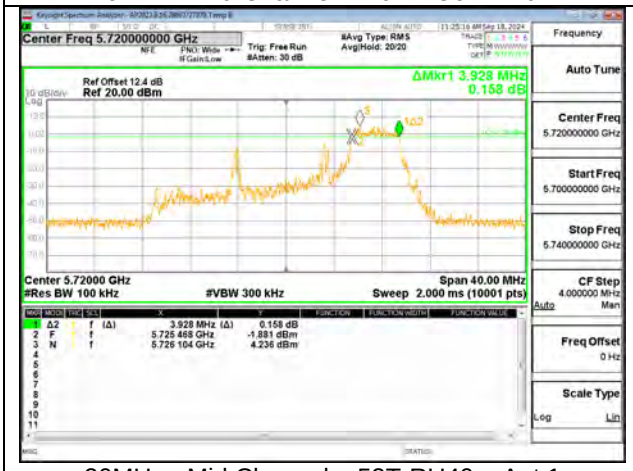


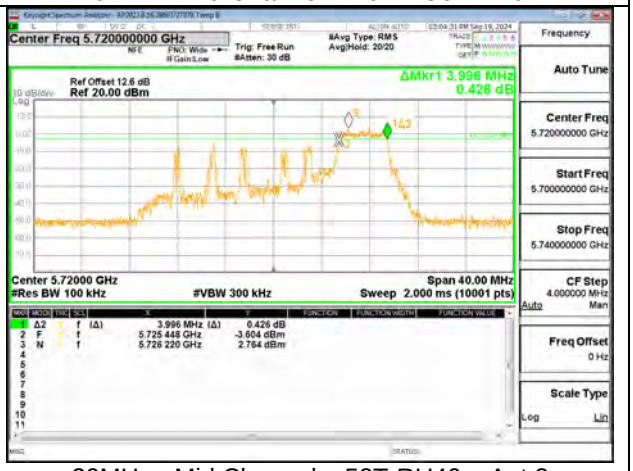
20MHz - Mid Channel – 26T-RU0 – Ant 1



20MHz - Mid Channel – 26T-RU0 – Ant 2



20MHz - Mid Channel – 52T-RU40 – Ant 1



20MHz - Mid Channel – 52T-RU40 – Ant 2

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9.4. OUTPUT POWER AND PSD

LIMITS

FCC §15.407

Band 5.15–5.25 GHz

(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Bands 5.25-5.35 GHz and 5.47-5.725 GHz
The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information.

TEST PROCEDURE

The measurement method used for output power is KDB 789033 D02 v02r01, Section E.3.b (Method PM-G).

The measurement method used for power spectral density is KDB 789033 D02 v02r01, Section F.
For all straddle channels, full bandwidth power and PSD/MHz are reported in the 5.6GHz section because the combined 5.6GHz and 5.8GHz power and PSD/MHz already passed the worst-case 5.6GHz power and 5.8 GHz PSD/500kHz limits.

11n HT20 and 11ax HE20 straddle channel 26dB bandwidth= (26dB BW/2)+5
11n HT20 and 11ax HE20 straddle channel 99% bandwidth= (99% BW/2)+5

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DIRECTIONAL ANTENNA GAIN

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

For 2 TX:

Tx chains are uncorrelated for power and correlated for PSD due to the device supporting CDD in all MIMO modes. The directional gains are as follows:

Band (GHz)	ANT6 Gain (dBi)	ANT5 Gain (dBi)	Uncorrelated Chains Directional Gain (dBi)	Correlated Chains Directional Gain (dBi)
5.2 (UNII-1)	-0.5	-6.0	-2.4	0.2
5.3 (UNII-2a)	-1.3	-4.2	-2.5	0.4
5.6 (UNII-2c)	-2.3	-1.6	-1.9	1.1
5.8 (UNII-3)	-3.2	-1.4	-2.2	0.8

DIRECTIONAL GAIN CALCULATION:

ANSI C63.10-2020 section 14.6.3

Uncorrelated directional gain=10*LOG((10^(Ant6/10)+10^(Ant5/10))/2)
Correlated directional Gain=10*LOG(((10^(Ant6/20)+10^(Ant5/20))^2)/2)

Sample Calculation at 5.2GHz Band:

Ant6=-0.5, Ant5=-6.0

Uncorrelated Antenna gain=10log[(10^(-0.5/10)+10^(-6.0/10))/2]=-2.43dBi

Correlated Antenna gain=10log[(10^(-0.5/20)+10^(-6.0/20))^2)/2]=0.19dBi

Note: Ant 6=Ant 1, Ant5=Ant 2

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9.4.1. 802.11n/ac SISO MODE IN THE UNII-1 BAND

UNII-1 (SISO)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Ant 1 (dBi)	-0.5		
Ant 2 (dBi)	-6.0		

UNII-2a (SISO)	
Straddle Channel	
Ant 1 (dBi)	-1.3
Ant 2 (dBi)	-4.2

UNII-1 (SISO)	Freq (MHz)	Ch. #	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
			Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HT20 (FCC)	5180	36	--		24	24	18.99	18.92	18.99	18.92	11	11	8.740	8.730	8.740	8.730
	5200	40					19.90	19.95	**19.90**	19.95			9.715	9.655	9.715	9.655
	5240	48					19.89	19.96	19.89	**19.96**			9.444	9.446	9.444	9.446
HT40 (FCC)	5190	38	--		24	24	17.47	17.46	17.47	17.46	11	11	4.727	4.778	4.827	4.878
	5230	46					20.91	20.95	**20.91**	**20.95**			7.865	7.739	7.965	7.839
VHT80 (FCC)	5210	42	--		24	24	17.46	17.42	**17.46**	17.42	11	11	1.417	1.333	1.617	1.533

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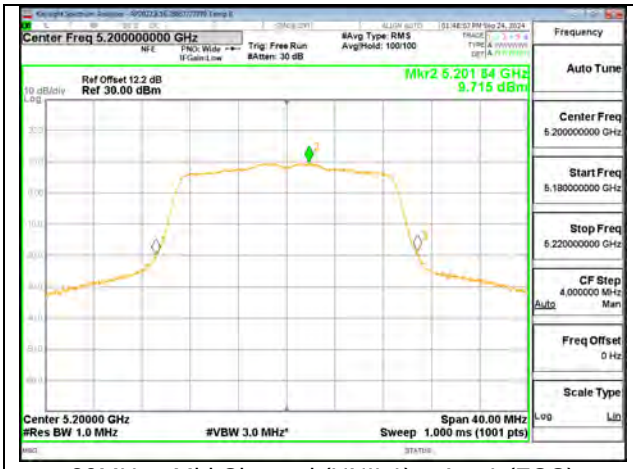

20MHz - Mid Channel (UNII-1) – Ant 1 (FCC)

40MHz - High Channel (UNII-1) – Ant 1 (FCC)

80MHz - Mid Channel (UNII-1) – Ant 1 (FCC)

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9.4.2. 802.11n/ac MIMO CDD MODE IN THE UNII-1 BAND

UNII-1 (MIMO CDD)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Un-Correlated Gain (dBi)	-2.4		
Correlated Gain (dBi)	0.2		

UNII-2a (MIMO CDD)	
Straddle Channel	
Un-Correlated Gain (dBi)	-2.5
Correlated Gain (dBi)	0.4

UNII-1 (MIMO CDD)	Freq (MHz)	Ch. #	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
					Ant 1	Ant 2			Ant 1	Ant 2	
HT20 (FCC)	5180	36	--	24	16.98	16.96	**19.98**	11	6.842	6.851	9.857
	5200	40			16.94	16.96	19.96		7.061	6.811	9.948
	5240	48			16.96	16.93	19.96		7.016	6.988	10.012
HT40 (FCC)	5190	38	--	24	15.95	15.97	18.97	11	3.308	3.150	6.340
	5230	46			19.44	19.42	**22.44**		6.197	6.140	9.279
VHT80 (FCC)	5210	42	--	24	16.47	16.48	**19.49**	11	0.469	0.336	3.613

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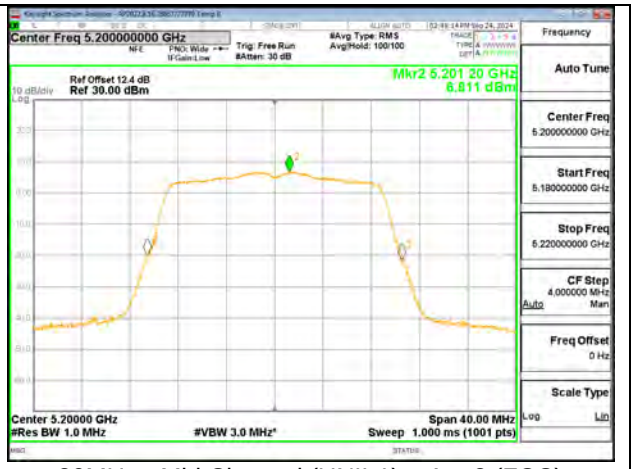
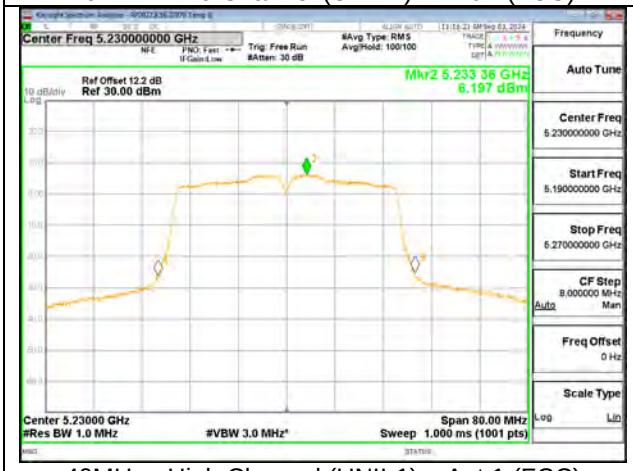
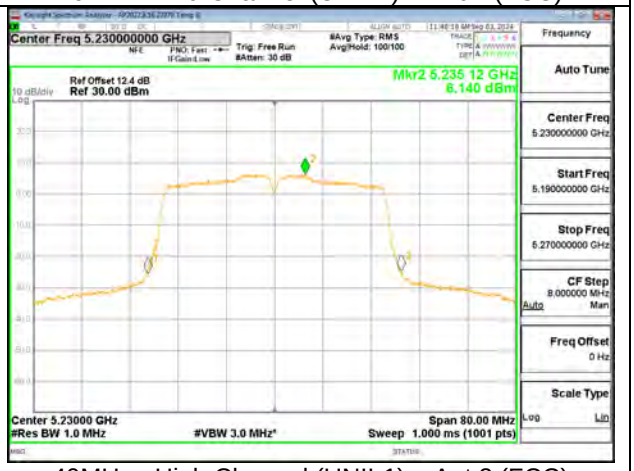
20MHz - Mid Channel (UNII-1) – Ant 1 (FCC)



20MHz - Mid Channel (UNII-1) – Ant 2 (FCC)

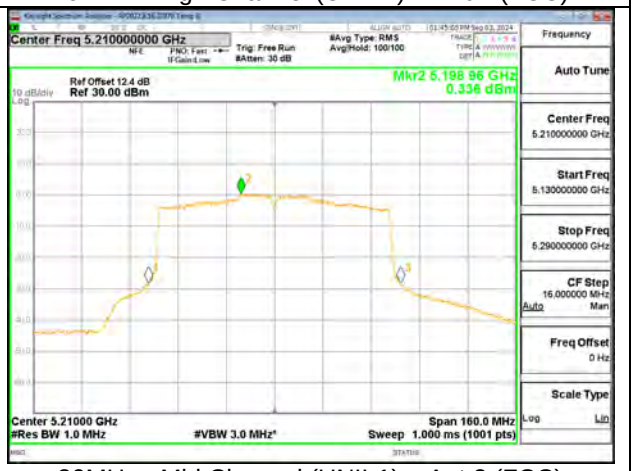


40MHz - High Channel (UNII-1) – Ant 1 (FCC)



40MHz - High Channel (UNII-1) – Ant 2 (FCC)

80MHz - Mid Channel (UNII-1) – Ant 1 (FCC)



80MHz - Mid Channel (UNII-1) – Ant 2 (FCC)

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9.4.3. 802.11n/ac SISO MODE IN THE UNII-2A BAND

UNII-2a (SISO)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Ant 1 (dBi)	-1.3		
Ant 2 (dBi)	-4.2		

UNII-1 (SISO)	
Straddle Channel	
Ant 1 (dBi)	-0.5
Ant 2 (dBi)	-6.0

UNII-2a (SISO)	Freq (MHz)	Ch. #	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
			Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HT20 (FCC)	5260	52	21.45	21.28	24.00	24.00	19.96	19.89	**19.96**	19.89	11.00	11.00	9.672	9.916	9.672	9.916
	5300	60	21.18	21.21	24.00	24.00	19.92	19.92	19.92	19.92			9.609	9.796	9.609	9.796
	5320	64	24.74	24.15	24.00	24.00	18.94	18.98	18.94	18.98			8.628	8.819	8.628	8.819
HT40 (FCC)	5270	54	40.64	40.95	24.00	24.00	20.89	20.96	20.89	**20.96**	11.00	11.00	7.680	7.927	7.780	8.027
	5310	62	42.09	42.83	24.00	24.00	17.45	17.40	17.45	17.40			3.877	3.865	3.977	3.965
VHT80 (FCC)	5290	58	84.52	80.95	24.00	24.00	15.95	15.94	**15.95**	15.94	11.00	11.00	0.168	0.378	0.368	0.578

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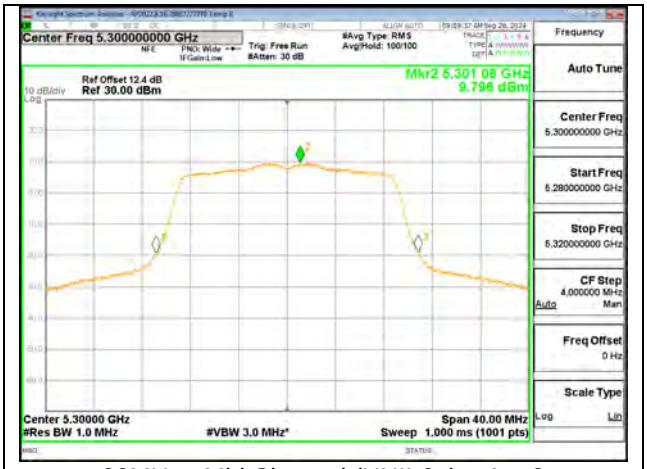

20MHz - Mid Channel (UNII-2a) – Ant 2

40MHz - Mid Channel (UNII-2a) – Ant 2

80MHz - Mid Channel (UNII-2a) – Ant 2

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9.4.4. 802.11n/ac MIMO CDD MODE IN THE UNII-2A BAND

UNII-2a (MIMO CDD)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Un-Correlated Gain (dBi)	-2.5		
Correlated Gain (dBi)	0.4		

UNII-1 (MIMO CDD)	
Straddle Channel	
Un-Correlated Gain (dBi)	-2.4
Correlated Gain (dBi)	0.2

UNII-2a (MIMO CDD)	Freq (MHz)	Ch. #	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
					Ant 1	Ant 2			Ant 1	Ant 2	
HT20 (FCC)	5260	52	20.84	24.00	16.92	16.86	19.90	11.00	6.913	6.601	9.770
	5300	60	20.87	24.00	16.91	16.96	19.95		6.898	6.768	9.844
	5320	64	21.87	24.00	16.91	16.92	19.93		6.719	6.824	9.782
HT40 (FCC)	5270	54	40.78	24.00	19.41	19.47	22.45	11.00	6.052	5.991	9.132
	5310	62	42.07	24.00	15.92	15.88	18.91		2.314	2.384	5.459
VHT80 (FCC)	5290	58	82.67	24.00	15.48	15.47	18.49	11.00	-0.445	-0.386	2.795

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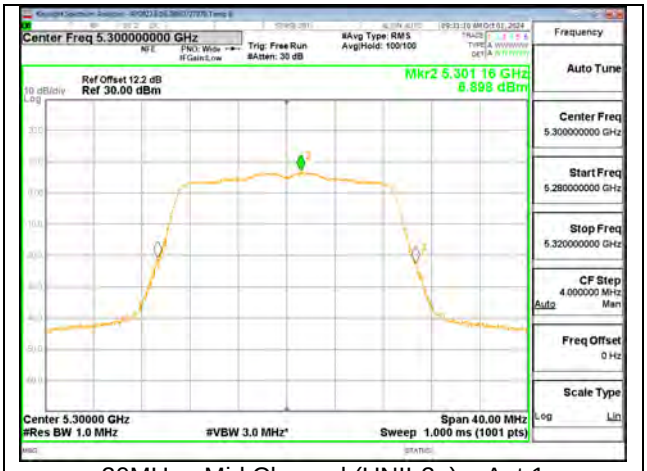
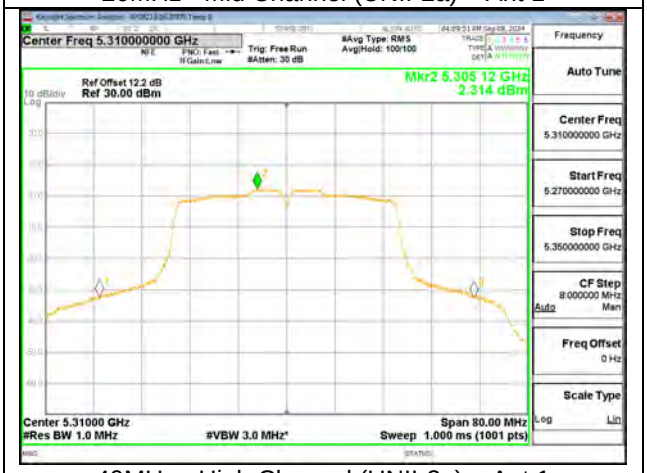
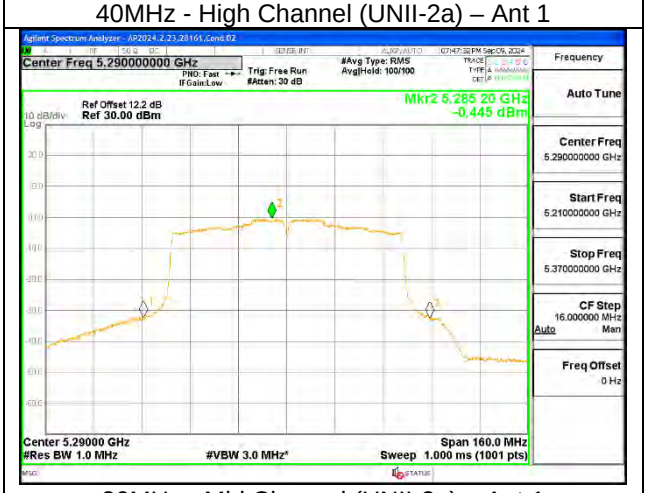


20MHz - Mid Channel (UNII-2a) – Ant 1



40MHz - High Channel (UNII-2a) – Ant 1



80MHz - Mid Channel (UNII-2a) – Ant 1

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9.4.5. 802.11n/ac SISO MODE IN THE UNII-2C BAND

UNII-2c (SISO)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Ant 1 (dBi)	-2.3		
Ant 2 (dBi)	-1.6		

UNII-3 (SISO)	
Straddle Channel	
Ant 1 (dBi)	-3.2
Ant 2 (dBi)	-1.4

UNII-2c (SISO)	Freq (MHz)	Ch. #	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
			Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HT20 (FCC)	5500	100	25.17	21.83	24.00	24.00	18.69	18.72	18.69	18.72	11.00	11.00	8.928	8.790	8.928	8.790
	5580	116	21.41	21.03	24.00	24.00	19.96	19.95	**19.96**	19.95			9.973	10.331	9.973	10.331
	5700	140	26.18	21.54	24.00	24.00	18.46	18.44	18.46	18.44			8.710	8.695	8.710	8.695
	5720 (Straddle)	144	15.67	15.57	22.95	22.92	19.91	19.93	19.91	19.93			10.298	10.293	10.298	10.293
HT40 (FCC)	5510	102	46.98	42.33	24.00	24.00	16.49	16.49	16.49	16.49	11.00	11.00	3.082	2.972	3.182	3.072
	5550	110	41.54	40.99	24.00	24.00	20.92	20.93	20.92	20.93			8.132	8.150	8.232	8.250
	5670	134	45.79	47.72	24.00	24.00	20.46	20.44	20.46	20.44			8.127	7.977	8.227	8.077
	5710 (Straddle)	142	41.25	41.06	24.00	24.00	20.84	20.97	20.84	**20.97**			8.254	8.166	8.354	8.266
VHT80 (FCC)	5530	106	85.66	82.70	24.00	24.00	15.95	15.98	15.95	15.98	11.00	11.00	-0.054	-0.075	0.146	0.125
	5610	122	82.98	83.58	24.00	24.00	20.95	20.95	**20.95**	**20.95**			5.060	5.308	5.260	5.508
	5690 (Straddle)	138	80.38	80.72	24.00	24.00	20.93	20.93	20.93	20.93			5.211	5.378	5.411	5.578

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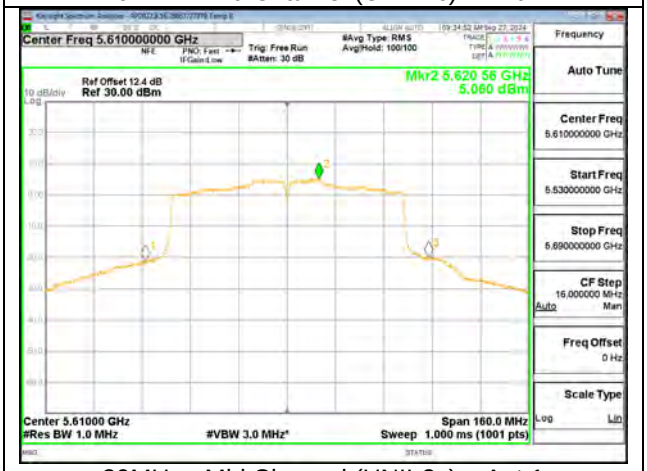
20MHz - Mid Channel (UNII-2c) – Ant 1

40MHz - Mid Channel (UNII-2c) – Ant 1



80MHz - Mid Channel (UNII-2c) – Ant 1

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9.4.6. 802.11n/ac MIMO CDD MODE IN THE UNII-2C BAND

UNII-2c (MIMO CDD)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Un-Correlated Gain (dBi)	-1.9		
Correlated Gain (dBi)	1.1		

UNII-3 (MIMO CDD)	
Straddle Channel	
Un-Correlated Gain (dBi)	-2.2
Correlated Gain (dBi)	0.8

UNII-2c (MIMO CDD)	Freq (MHz)	Ch. #	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
					Ant 1	Ant 2			Ant 1	Ant 2	
HT20 (FCC)	5500	100	21.67	24.00	16.94	16.98	19.97	11.00	6.860	6.817	9.849
	5580	116	20.76	24.00	16.97	16.89	19.94		6.865	6.975	9.931
	5700	140	21.08	24.00	16.91	16.98	19.96		6.992	6.993	10.003
	5720 (Straddle)	144	15.40	22.87	16.94	16.92	19.94		7.067	6.992	10.040
HT40 (FCC)	5510	102	41.26	24.00	15.48	15.42	18.46	11.00	1.939	1.802	4.981
	5550	110	40.49	24.00	19.45	19.45	22.46		6.769	6.634	9.812
	5670	134	45.56	24.00	19.47	19.46	22.48		6.825	6.759	9.902
	5710 (Straddle)	142	40.80	24.00	19.41	19.47	22.45		6.822	6.818	9.930
VHT80 (FCC)	5530	106	81.45	24.00	15.23	15.23	18.24	11.00	-1.003	-0.711	2.356
	5610	122	81.04	24.00	19.92	19.94	22.94		4.289	4.439	7.575
	5690 (Straddle)	138	80.47	24.00	19.93	19.92	22.94		4.484	4.364	7.635

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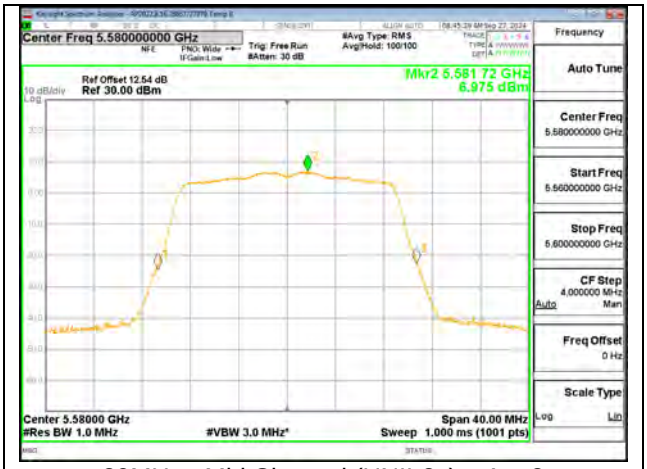
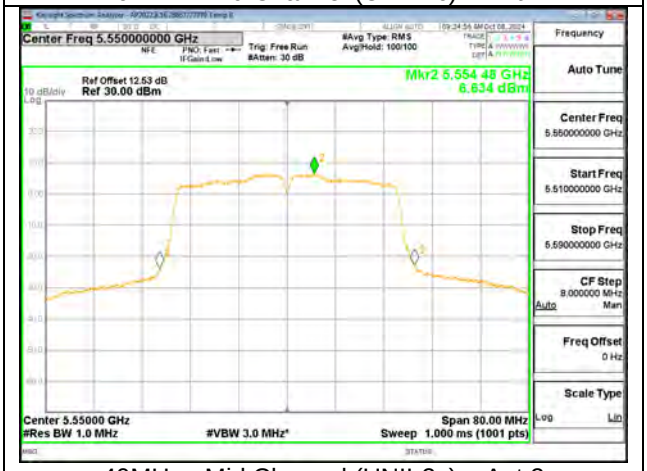
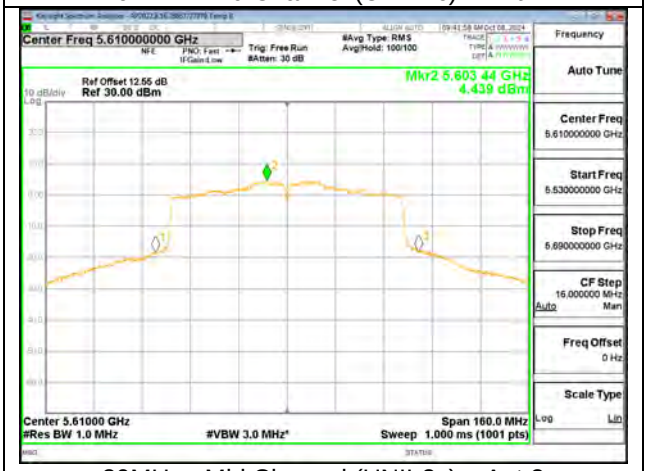


20MHz - Mid Channel (UNII-2c) – Ant 2



40MHz - Mid Channel (UNII-2c) – Ant 2



80MHz - Mid Channel (UNII-2c) – Ant 2

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9.4.7. 802.11n/ac SISO MODE IN THE UNII-3 BAND

UNII-3 (SISO)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Ant 1 (dBi)	-3.2		
Ant 2 (dBi)	-1.4		

UNII-3 (SISO)	Freq (MHz)	Ch. #	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/500kHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/500kHz)	
			Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HT20	5745	149	--		30	30	20.97	20.92	20.97	20.92	30	30	8.466	8.386	8.466	8.386
	5785	157					20.98	20.97	**20.98**	20.97			8.292	8.151	8.292	8.151
	5825	165					20.94	20.95	20.94	20.95			8.288	8.176	8.288	8.176
HT40	5755	151	--		30	30	20.92	20.98	20.92	**20.98**	30	30	5.623	5.571	5.723	5.671
	5795	159					20.92	20.94	20.92	20.94			5.568	5.324	5.668	5.424
VHT80	5775	155	--		30	30	20.94	20.87	**20.94**	20.87	30	30	2.290	2.188	2.490	2.388

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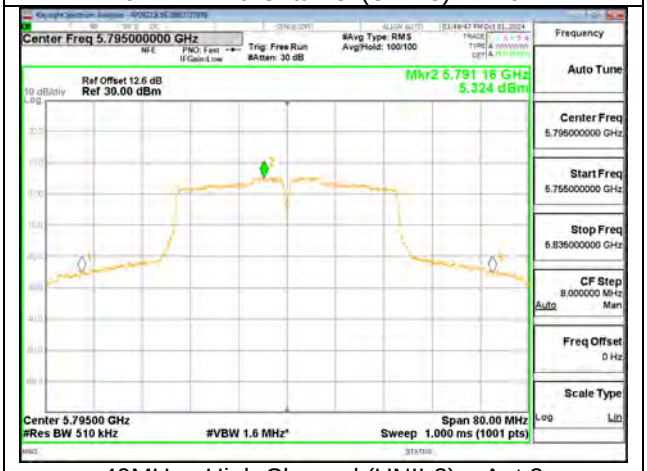
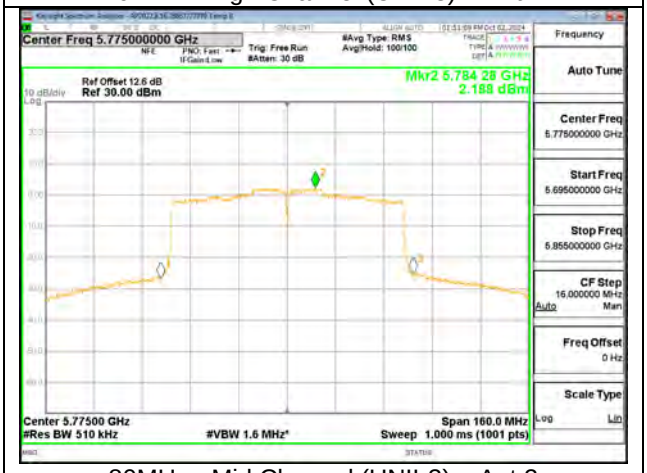
20MHz - Mid Channel (UNII-3) – Ant 2



40MHz - High Channel (UNII-3) – Ant 2



80MHz - Mid Channel (UNII-3) – Ant 2

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9.4.8. 802.11n/ac MIMO CDD MODE IN THE UNII-3 BAND

UNII-3 (MIMO CDD)	20MHz	40MHz	80MHz
DCCF (MCS0) (dB)	0.00	0.10	0.20
Un-Correlated Gain (dBi)	-2.2		
Correlated Gain (dBi)	0.8		

UNII-3 (MIMO CDD)	Freq (MHz)	Ch. #	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/500kHz)	PSD (dBm/500kHz)		Total MIMO Corrected PSD (dBm/500kHz)
					Ant 1	Ant 2			Ant 1	Ant 2	
HT20	5745	149	--	30	20.96	20.96	23.97	30	8.313	8.051	11.194
	5785	157			20.95	20.93	23.95		8.142	8.016	11.090
	5825	165			20.98	20.92	23.96		8.081	8.180	11.141
HT40	5755	151	--	30	20.92	20.96	23.95	30	5.473	5.589	8.642
	5795	159			20.90	20.93	23.93		5.267	5.277	8.382
VHT80	5775	155	--	30	20.45	20.46	23.47	30	2.532	2.463	5.708

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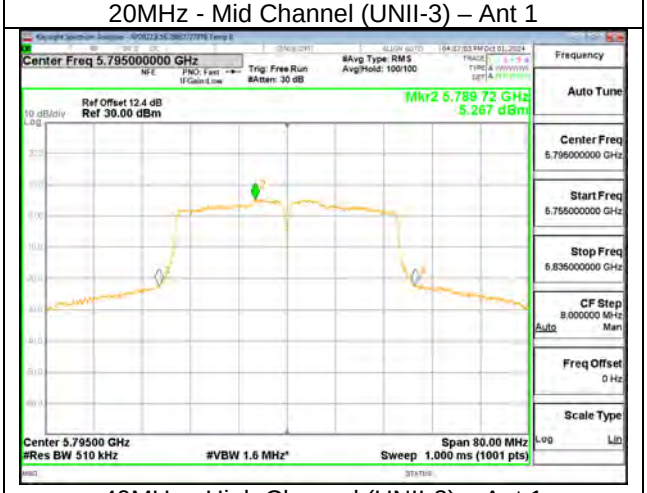
20MHz - Mid Channel (UNII-3) – Ant 1



40MHz - High Channel (UNII-3) – Ant 1

80MHz - Mid Channel (UNII-3) – Ant 1

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9.4.9. 802.11ax SISO MODE IN THE UNII-1 BAND

UNII-1 (SISO)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Ant 1 (dBi)	-0.5					
Ant 2 (dBi)	-6.0					

UNII-2a (SISO)	
Straddle Channel	
Ant 1 (dBi)	-1.3
Ant 2 (dBi)	-4.2

UNII-1 (SISO)	Freq (MHz)	Ch. #	Tone	RU Index	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
					Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HE20 (FCC)	5180	36	SU	--	--		24.00	24.00	18.47	18.46	18.47	18.46	11.00	11.00	7.968	8.157	7.968	8.157
			52T	37					14.23	14.18	14.23	14.18			9.210	8.932	9.210	8.932
				38					14.15	14.22	14.15	14.22			9.128	9.061	9.128	9.061
				40					14.20	14.23	14.20	14.23			9.126	8.957	9.126	8.957
	5200	40	SU	--					19.95	19.83	**19.95**	19.83			9.445	9.564	9.445	9.564
			52T	37					14.22	14.21	14.22	14.21			8.999	8.993	8.999	8.993
				38					14.18	14.23	14.18	14.23			9.115	8.914	9.115	8.914
				40					14.22	14.24	14.22	14.24			9.020	8.941	9.020	8.941
	5240	48	SU	--					19.93	19.83	19.93	19.83			9.247	9.231	9.247	9.231
			52T	37					14.23	14.16	14.23	14.16			9.193	8.935	9.193	8.935
				38					14.22	14.23	14.22	14.23			9.002	9.238	9.002	9.238
				40					14.16	14.23	14.16	14.23			9.019	9.006	9.019	9.006
HE40 (FCC)	5190	38	SU	--	--		24.00	24.00	16.46	16.44	16.46	16.44	11.00	11.00	2.315	2.081	2.315	2.081
			106T	53					14.21	14.24	14.21	14.24			6.380	6.327	6.380	6.327
				54					14.22	14.16	14.22	14.16			6.087	6.060	6.087	6.060
				56					14.23	14.16	14.23	14.16			6.020	6.195	6.020	6.195
	5230	46	SU	--					20.95	20.93	**20.95**	20.93			6.660	6.683	6.660	6.683
			106T	53					14.24	14.20	14.24	14.20			6.132	6.231	6.132	6.231
				54					14.22	14.23	14.22	14.23			5.909	6.054	5.909	6.054
				56					14.21	14.23	14.21	14.23			5.985	5.930	5.985	5.930
HE80 (FCC)	5210	42	SU	--	--		24.00	24.00	16.44	16.42	**16.44**	16.42	11.00	11.00	-0.266	-0.467	-0.266	-0.467
			106T	53					11.18	11.17	11.18	11.17			3.190	3.297	3.190	3.297
				56					11.22	11.19	11.22	11.19			3.023	3.099	3.023	3.099
				60					11.23	11.20	11.23	11.20			3.136	3.586	3.136	3.586

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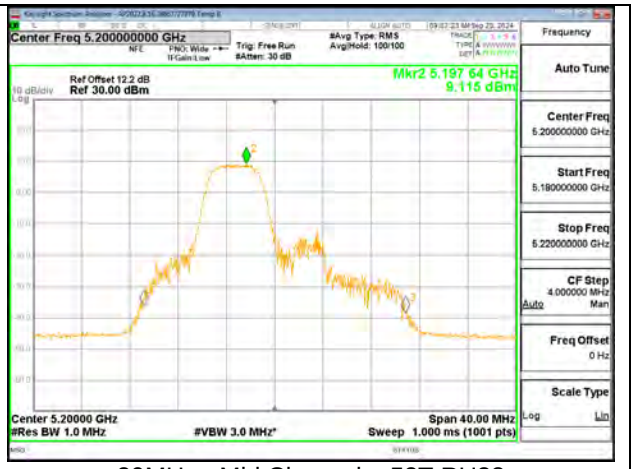
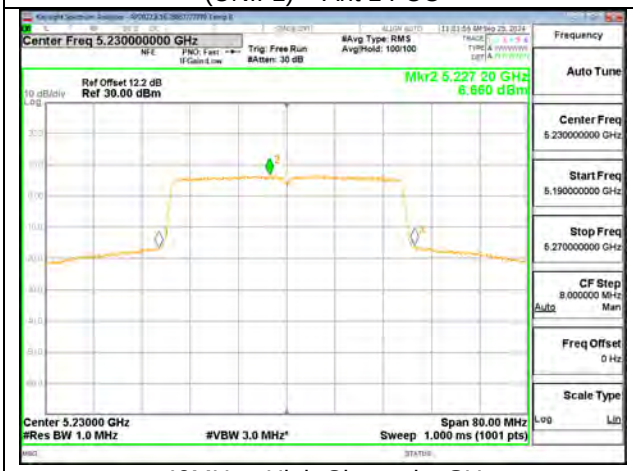
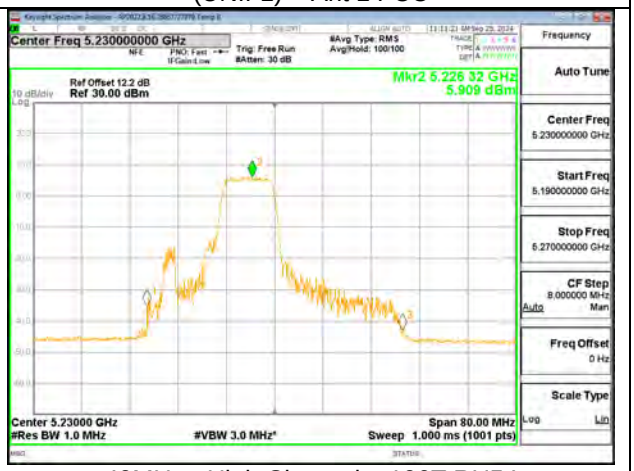
20MHz - Mid Channel – SU
(UNII-1) – Ant 1 FCC



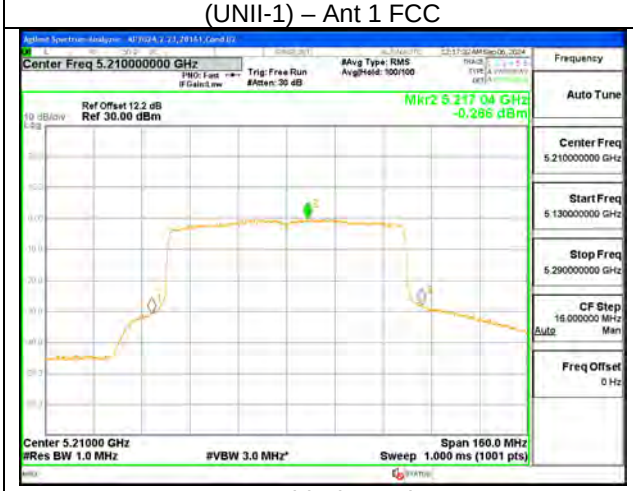
20MHz - Mid Channel – 52T RU38
(UNII-1) – Ant 1 FCC



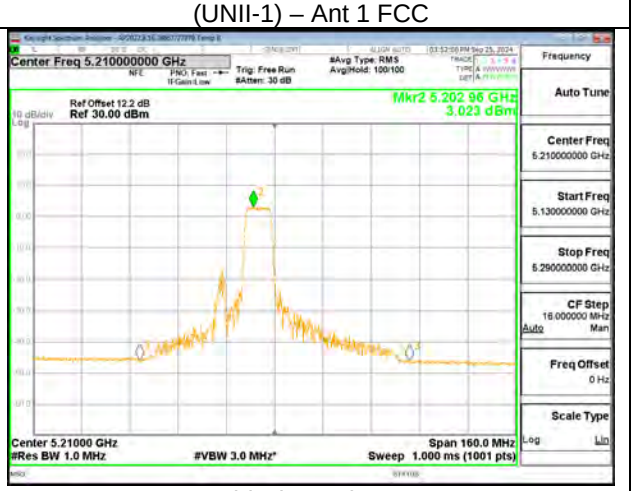
40MHz - High Channel – SU
(UNII-1) – Ant 1 FCC



40MHz - High Channel – 106T RU54
(UNII-1) – Ant 1 FCC



80MHz - Mid Channel – SU
(UNII-1) – Ant 1 FCC



80MHz - Mid Channel – 106T RU56
(UNII-1) – Ant 1 FCC

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9.4.10. 802.11ax MIMO OFDMA MODE IN THE UNII-1 BAND

UNII-1 (MIMO OFDMA)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Un-Correlated Gain (dBi)	-2.4					
Correlated Gain (dBi)	0.2					

UNII-2a (MIMO OFDMA)	
Straddle Channel	
Un-Corr. Gain (dBi)	-2.5
Corr. Gain (dBi)	0.4

UNII-2a (MIMO OFDMA)	Freq (MHz)	Ch. #	Tone	RU Index	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
							Ant 1	Ant 2			Ant 1	Ant 2	
HE20 (FCC)	5180	36	SU	--	--	24	16.97	16.94	**19.97**	11	6.410	6.389	9.410
			52T	37			11.48	11.48	14.49		6.289	6.318	9.314
				38			11.48	11.43	14.47		6.161	6.113	9.147
				40			11.46	11.43	14.46		6.272	6.205	9.249
	5200	40	SU	--			16.97	16.92	19.96		6.310	6.541	9.437
			52T	37			11.45	11.48	14.48		6.220	6.287	9.264
				38			11.43	11.42	14.44		6.228	6.299	9.274
				40			11.47	11.47	14.48		6.147	6.170	9.169
	5240	48	SU	--			16.88	16.94	19.92		6.361	6.430	9.406
			52T	37			11.46	11.44	14.46		6.135	6.216	9.186
				38			11.45	11.46	14.47		6.019	6.191	9.116
				40			11.46	11.41	14.45		6.334	6.114	9.236
HE40 (FCC)	5190	38	SU	--	--	24	15.91	15.92	18.93	11	2.139	2.018	5.089
			106T	53			14.21	14.19	17.21		6.228	6.318	9.284
				54			14.22	14.16	17.20		6.093	6.290	9.203
				56			14.18	14.18	17.19		6.162	6.118	9.150
	5230	46	SU	--			19.48	19.45	**22.48**		4.869	4.725	7.808
			106T	53			14.23	14.23	17.24		6.129	6.142	9.146
				54			14.20	14.21	17.22		6.119	6.119	9.129
				56			14.22	14.23	17.24		6.060	6.073	9.077
HE80 (FCC)	5210	42	SU	--	--	24	15.91	15.97	**18.95**	11	-0.763	-0.891	2.184
			106T	53			11.21	11.16	14.20		3.237	3.079	6.169
				56			11.22	11.23	14.24		3.287	3.191	6.250
				60			11.21	11.24	14.24		3.244	3.170	6.217

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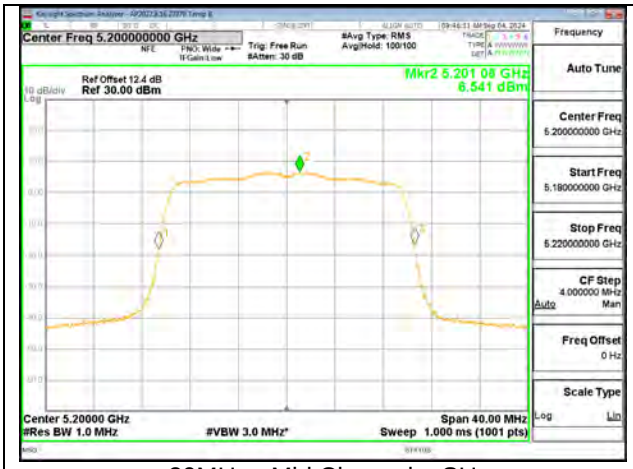
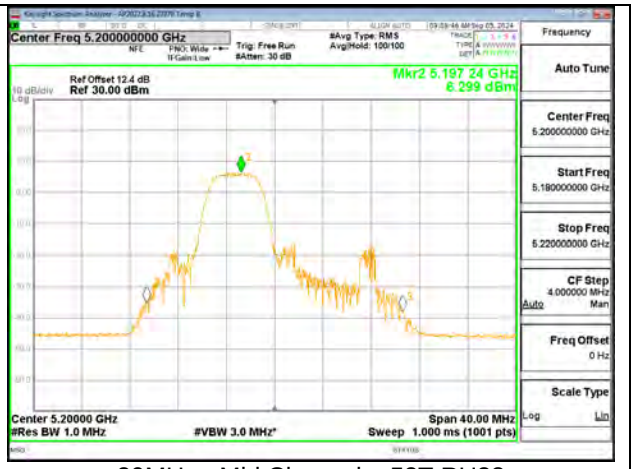
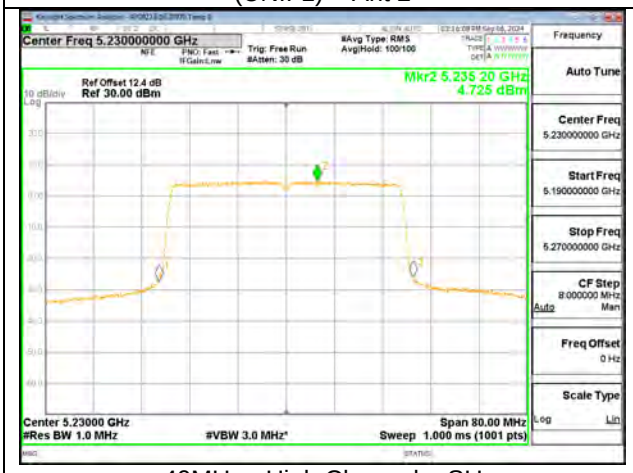


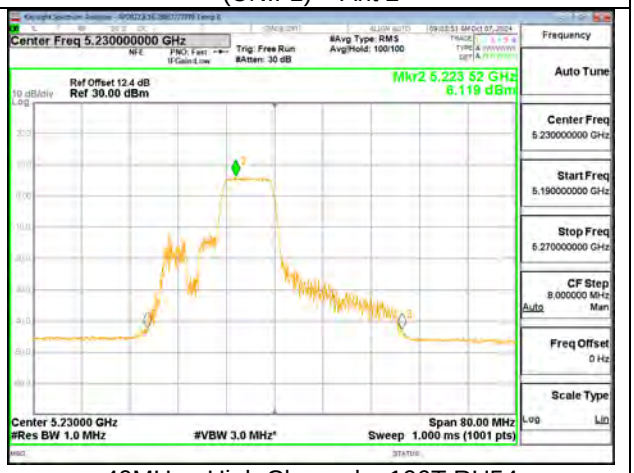
20MHz - Mid Channel – SU
(UNII-1) – Ant 2



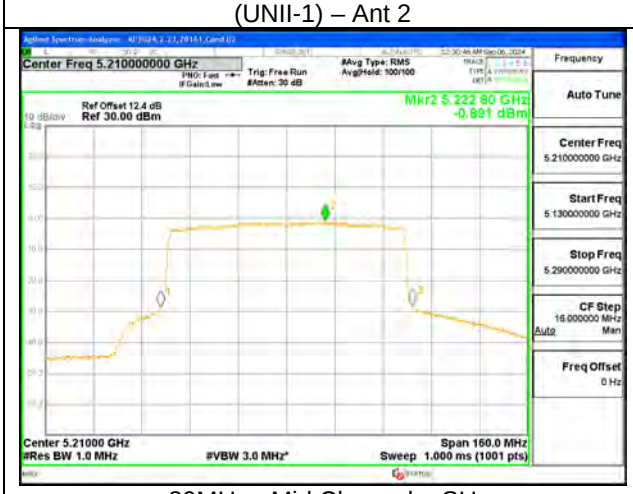
20MHz - Mid Channel – 52T RU38
(UNII-1) – Ant 2



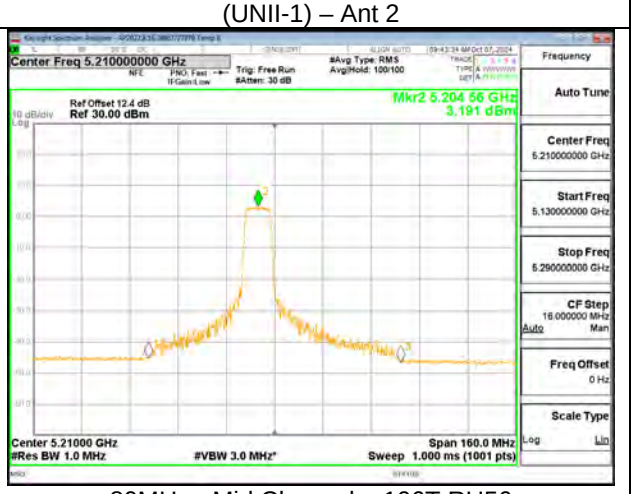
40MHz - High Channel – SU
(UNII-1) – Ant 2



40MHz - High Channel – 106T RU54
(UNII-1) – Ant 2



80MHz - Mid Channel – SU
(UNII-1) – Ant 2



80MHz - Mid Channel – 106T RU56
(UNII-1) – Ant 2

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9.4.11. 802.11ax SISO MODE IN THE UNII-2A BAND

UNII-2a (SISO)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Ant 1 (dBi)	-1.3					
Ant 2 (dBi)	-4.2					

UNII-1 (SISO)	
Straddle Channel	
Ant 1 (dBi)	-0.5
Ant 2 (dBi)	-6.0

UNII-2a (SISO)	Freq (MHz)	Ch. #	Tone	RU Index	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
					Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HE20 (FCC)	5260	52	SU	--	21.21	21.32	24.00	24.00	19.92	19.95	19.92	19.95	11.00	11.00	9.810	10.061	9.810	10.061
			52T	37	20.27	20.37	24.00	24.00	14.20	14.16	14.20	14.16			8.588	8.506	8.588	8.506
				38	19.89	19.66	23.99	23.94	14.16	14.22	14.16	14.22			8.672	8.627	8.672	8.627
				40	20.98	20.93	24.00	24.00	14.18	14.27	14.18	14.27			8.600	8.439	8.600	8.439
	5300	60	SU	--	21.02	20.96	24.00	24.00	19.97	19.97	**19.97**	**19.97**			9.875	9.703	9.875	9.703
			52T	37	19.19	20.51	23.83	24.00	14.21	14.16	14.21	14.16			8.728	8.558	8.728	8.558
				38	19.84	19.53	23.98	23.91	14.22	14.25	14.22	14.25			8.559	8.524	8.559	8.524
				40	20.49	20.93	24.00	24.00	14.20	14.17	14.20	14.17			8.519	8.648	8.519	8.648
	5320	64	SU	--	26.34	21.08	24.00	24.00	18.48	18.45	18.48	18.45			8.453	8.326	8.453	8.326
			52T	37	20.02	20.52	24.00	24.00	14.16	14.18	14.16	14.18			8.712	8.605	8.712	8.605
				38	19.60	19.65	23.92	23.93	14.23	14.20	14.23	14.20			8.699	8.686	8.699	8.686
				40	20.71	20.96	24.00	24.00	14.22	14.23	14.22	14.23			8.681	8.660	8.681	8.660
HE40 (FCC)	5270	54	SU	--	41.07	41.07	24.00	24.00	20.91	20.87	**20.91**	20.87	11.00	11.00	6.067	6.161	6.067	6.161
			106T	53	23.66	26.36	24.00	24.00	14.18	14.23	14.18	14.23			6.026	6.045	6.026	6.045
				54	25.51	25.00	24.00	24.00	14.22	14.19	14.22	14.19			5.910	5.924	5.910	5.924
				56	25.26	24.51	24.00	24.00	14.21	14.16	14.21	14.16			6.005	5.903	6.005	5.903
	5310	62	SU	--	42.24	41.53	24.00	24.00	16.46	16.48	16.46	16.48			2.481	2.150	2.481	2.150
			106T	53	22.90	25.95	24.00	24.00	14.23	14.21	14.23	14.21			5.987	5.818	5.987	5.818
				54	25.70	27.85	24.00	24.00	14.20	14.23	14.20	14.23			5.954	5.969	5.954	5.969
				56	25.34	25.60	24.00	24.00	14.23	14.21	14.23	14.21			5.904	5.944	5.904	5.944
HE80 (FCC)	5290	58	SU	--	81.71	82.00	24.00	24.00	15.47	15.45	**15.47**	15.45	11.00	11.00	-2.495	-2.497	-2.495	-2.497
			106T	53	21.25	21.07	24.00	24.00	11.21	11.23	11.21	11.23			2.676	2.815	2.676	2.815
				56	24.84	25.02	24.00	24.00	11.24	11.17	11.24	11.17			2.679	2.625	2.679	2.625
				60	23.45	21.92	24.00	24.00	11.24	11.22	11.24	11.22			2.548	2.596	2.548	2.596

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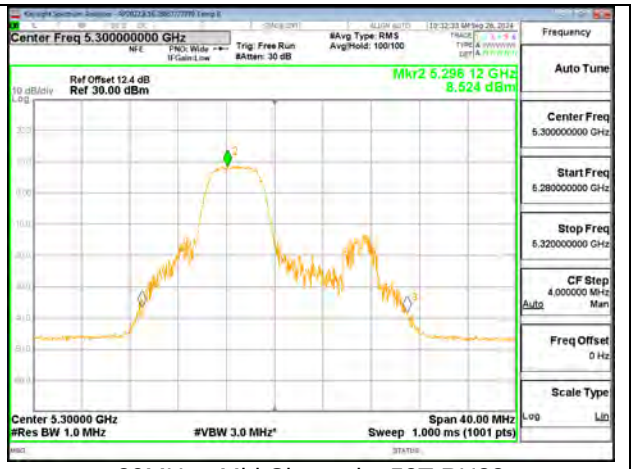
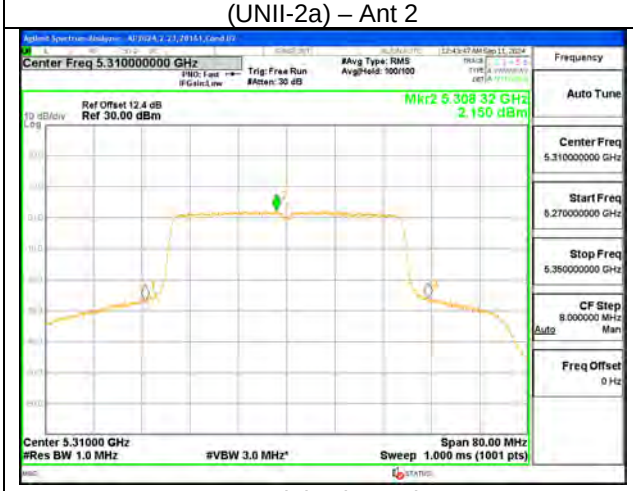
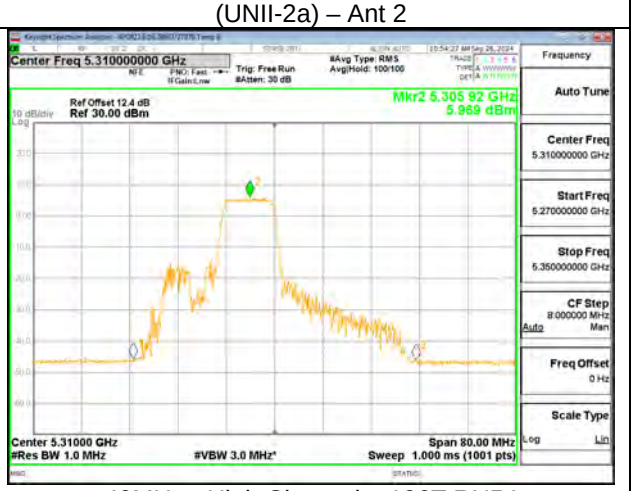
20MHz - Mid Channel – SU
(UNII-2a) – Ant 2



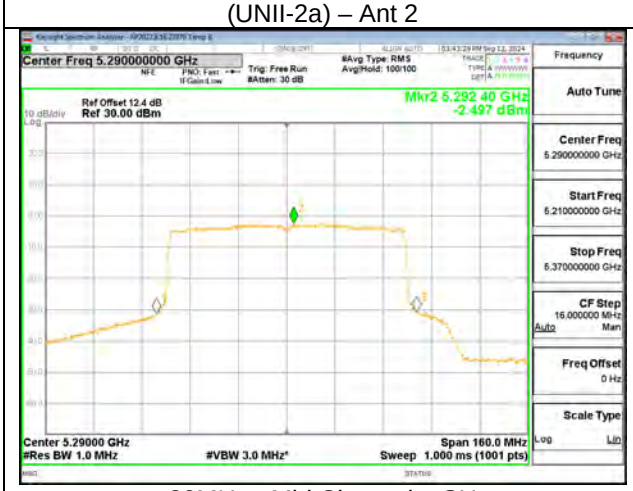
20MHz - Mid Channel – 52T RU38
(UNII-2a) – Ant 2



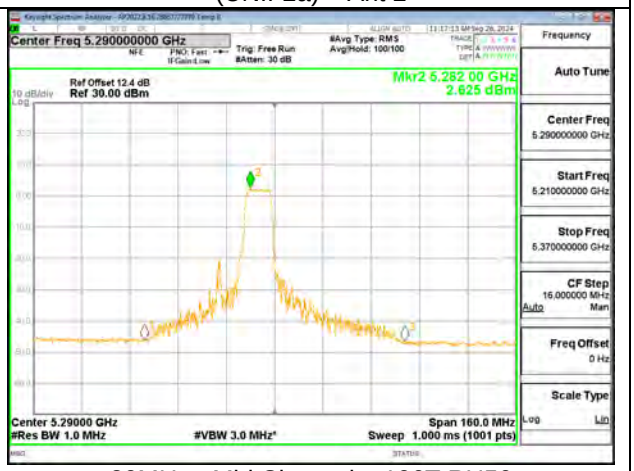
40MHz - High Channel – SU
(UNII-2a) – Ant 2



40MHz - High Channel – 106T RU54
(UNII-2a) – Ant 2



80MHz - Mid Channel – SU
(UNII-2a) – Ant 2



80MHz - Mid Channel – 106T RU56
(UNII-2a) – Ant 2

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9.4.12. 802.11ax MIMO OFDMA MODE IN THE UNII-2A BAND

UNII-2a (MIMO OFDMA)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Un-Correlated Gain (dBi)	-2.5					
Correlated Gain (dBi)	0.4					

UNII-1 (MIMO OFDMA)	
Straddle Channel	
Un-Corr. Gain (dBi)	-2.4
Corr. Gain (dBi)	0.2

UNII-2a (MIMO OFDMA)	Freq (MHz)	Ch. #	Tone	RU Index	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
							Ant 1	Ant 2			Ant 1	Ant 2	
HE20 (FCC)	5260	52	SU	--	20.65	24.00	16.91	16.97	19.95	11.00	6.243	6.444	9.355
			52T	37	19.76	23.96	11.45	11.47	14.47		6.243	6.045	9.155
				38	18.48	23.67	11.48	11.41	14.46		6.093	6.026	9.070
				40	20.03	24.00	11.48	11.43	14.47		6.068	5.929	9.009
	5300	60	SU	--	20.62	24.00	16.97	16.93	19.96		6.246	6.357	9.312
			52T	37	19.60	23.92	11.46	11.41	14.45		6.067	5.975	9.032
				38	18.39	23.65	11.46	11.42	14.45		6.280	5.999	9.152
				40	19.82	23.97	11.48	11.46	14.48		6.094	5.994	9.055
	5320	64	SU	--	21.26	24.00	16.93	16.98	**19.97**		6.331	6.290	9.321
			52T	37	19.82	23.97	11.48	11.45	14.48		6.082	6.051	9.077
				38	18.34	23.63	11.43	11.46	14.46		6.095	5.941	9.029
				40	20.00	24.00	11.42	11.42	14.43		5.989	5.957	8.983
HE40 (FCC)	5270	54	SU	--	41.07	24.00	19.45	19.41	**22.44**	11.00	4.698	4.710	7.714
			106T	53	21.17	24.00	14.12	14.23	17.19		5.885	5.923	8.914
				54	23.86	24.00	14.24	14.22	17.24		6.174	5.974	9.085
				56	20.23	24.00	14.23	14.24	17.25		5.868	5.984	8.937
	5310	62	SU	--	41.12	24.00	15.95	15.92	18.95		1.411	1.160	4.298
			106T	53	20.12	24.00	14.20	14.21	17.22		5.761	5.729	8.755
				54	24.91	24.00	14.16	14.20	17.19		5.716	5.862	8.800
				56	20.24	24.00	14.23	14.23	17.24		6.098	6.024	9.071
HE80 (FCC)	5290	58	SU	--	81.95	24.00	14.41	14.47	**17.45**	11.00	-3.013	-3.140	-0.066
			106T	53	19.30	23.86	11.23	11.17	14.21		2.872	2.649	5.772
				56	21.15	24.00	11.20	11.19	14.21		2.769	2.856	5.823
				60	19.96	24.00	11.21	11.15	14.19		2.832	2.811	5.832

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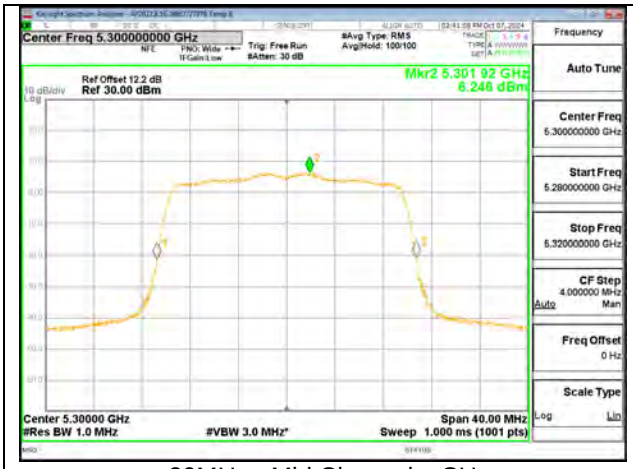
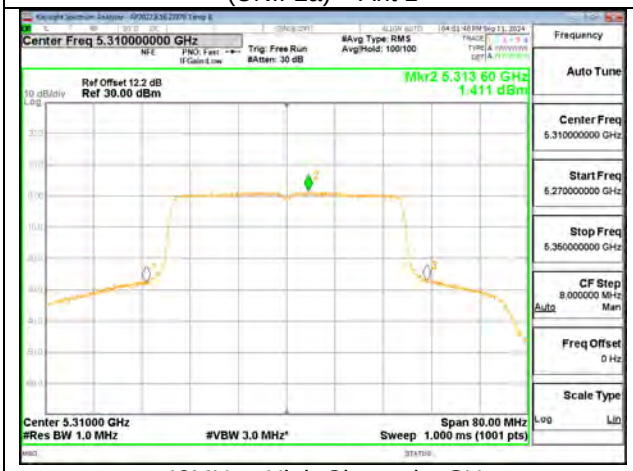
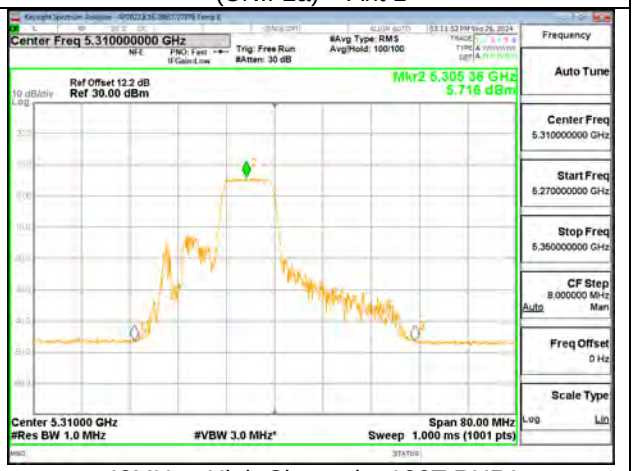


20MHz - Mid Channel – SU
(UNII-2a) – Ant 1

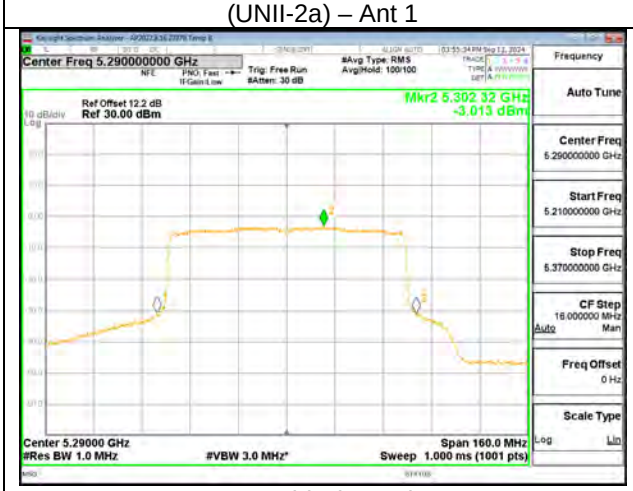
20MHz - Mid Channel – 52T RU38
(UNII-2a) – Ant 1



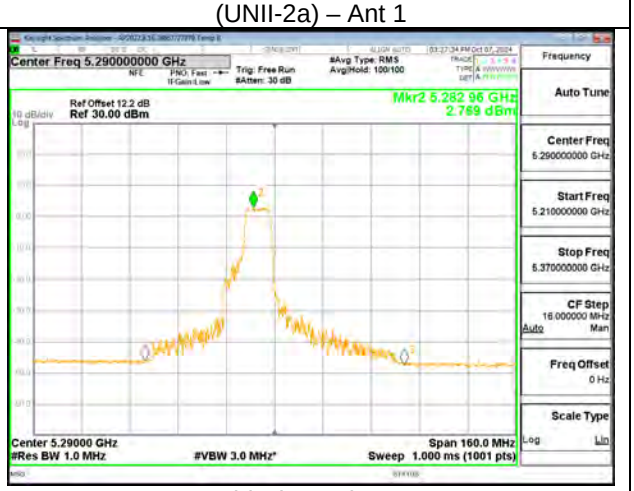
40MHz - High Channel – SU
(UNII-2a) – Ant 1



40MHz - High Channel – 106T RU54
(UNII-2a) – Ant 1



80MHz - Mid Channel – SU
(UNII-2a) – Ant 1



80MHz - Mid Channel – 106T RU56
(UNII-2a) – Ant 1

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9.4.13. 802.11ax SISO MODE IN THE UNII-2C BAND

FCC

UNII-2c (SISO)	20MHz		40MHz		80MHz	
	SU	106T 52T	SU	242T 106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Ant 1 (dBi)	-2.3					
Ant 2 (dBi)	-1.6					

UNII-3 (SISO)	
Straddle Channel	
Ant 1 (dBi)	-3.2
Ant 2 (dBi)	-1.4

UNII-2c (SISO)	Freq (MHz)	Ch. #	Tone	RU Index	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/MHz)		PSD (dBm/MHz)		Total Corrected PSD (dBm/MHz)	
					Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HE20 (FCC)	5500	100	SU	--	22.26	21.75	24.00	24.00	18.43	18.42	18.43	18.42	11.00	11.00	7.849	7.794	7.849	7.794
			106T	53	20.95	20.83	24.00	24.00	17.21	17.19	17.21	17.19			9.027	9.093	9.027	9.093
				54	21.14	21.19	24.00	24.00	17.18	17.20	17.18	17.20			9.027	9.055	9.027	9.055
			52T	37	20.39	20.27	24.00	24.00	14.23	14.23	14.23	14.23			8.937	8.951	8.937	8.951
				38	19.72	19.56	23.95	23.91	14.17	14.23	14.17	14.23			8.794	8.957	8.794	8.957
				40	20.83	20.82	24.00	24.00	14.24	14.19	14.24	14.19			8.887	8.813	8.887	8.813
	5580	116	SU	--	20.90	20.97	24.00	24.00	19.94	19.93	**19.94**	19.93			9.802	9.710	9.802	9.710
			106T	53	21.03	20.82	24.00	24.00	17.19	17.23	17.19	17.23			9.185	9.245	9.185	9.245
				54	21.01	21.08	24.00	24.00	17.18	17.23	17.18	17.23			9.163	9.074	9.163	9.074
			52T	37	20.54	20.18	24.00	24.00	14.24	14.23	14.24	14.23			9.174	9.011	9.174	9.011
				38	19.20	19.48	23.83	23.90	14.16	14.18	14.16	14.18			8.835	8.904	8.835	8.904
				40	20.80	20.73	24.00	24.00	14.22	14.23	14.22	14.23			8.838	9.027	8.838	9.027
	5700	140	SU	--	21.54	21.87	24.00	24.00	16.47	16.43	16.47	16.43			6.311	6.398	6.311	6.398
			106T	53	20.62	20.87	24.00	24.00	17.18	17.23	17.18	17.23			9.125	9.234	9.125	9.234
				54	21.00	21.09	24.00	24.00	17.22	17.18	17.22	17.18			9.303	9.157	9.303	9.157
			52T	37	20.54	20.49	24.00	24.00	14.16	14.23	14.16	14.23			9.001	8.983	9.001	8.983
				38	19.22	19.82	23.84	23.97	14.23	14.16	14.23	14.16			9.106	9.142	9.106	9.142
				40	20.71	20.61	24.00	24.00	14.21	14.22	14.21	14.22			9.186	9.068	9.186	9.068
	5720 (Straddle)	144	SU	--	15.37	15.44	22.87	22.89	19.94	19.92	**19.94**	19.92			9.773	9.982	9.773	9.982
			106T	53	15.28	15.49	22.84	22.90	17.22	17.17	17.22	17.17			9.386	9.170	9.386	9.170
				54	15.65	15.54	22.94	22.91	17.23	17.18	17.23	17.18			9.326	9.196	9.326	9.196
			52T	37	15.19	15.20	22.82	22.82	14.18	14.23	14.18	14.23			9.076	9.080	9.076	9.080
				38	14.90	14.81	22.73	22.71	14.22	14.19	14.22	14.19			8.921	9.118	8.921	9.118
				40	15.48	15.43	22.90	22.88	14.23	14.19	14.23	14.19			9.033	9.018	9.033	9.018
HE40 (FCC)	5510	102	SU	--	41.70	46.24	24.00	24.00	15.98	15.95	15.98	15.95	11.00	11.00	1.653	1.743	1.653	1.743
			242T	61	37.33	29.53	24.00	24.00	17.94	17.98	17.94	17.98			6.764	6.456	6.764	6.456
				62	34.46	36.01	24.00	24.00	17.92	17.90	17.92	17.90			6.648	6.517	6.648	6.517
			106T	53	23.17	24.18	24.00	24.00	14.23	14.23	14.23	14.23			6.151	6.224	6.151	6.224
				54	30.91	27.27	24.00	24.00	14.20	14.24	14.20	14.24			6.004	6.085	6.004	6.085
				56	24.30	25.83	24.00	24.00	14.22	14.24	14.22	14.24			6.185	6.134	6.185	6.134
	5550	110	SU	--	41.64	41.49	24.00	24.00	20.88	20.95	20.88	**20.95**			6.590	6.480	6.590	6.480
			242T	61	36.26	39.80	24.00	24.00	19.91	19.92	19.91	19.92			8.775	8.842	8.775	8.842
				62	37.32	39.82	24.00	24.00	19.93	19.90	19.93	19.90			8.752	8.644	8.752	8.644
			106T	53	22.25	25.44	24.00	24.00	14.23	14.17	14.23	14.17			6.076	6.064	6.076	6.064
				54	25.88	28.66	24.00	24.00	14.21	14.23	14.21	14.23			6.145	6.044	6.145	6.044
				56	25.47	25.76	24.00	24.00	14.21	14.16	14.21	14.16			6.010	6.136	6.010	6.136
	5670	134	SU	--	47.35	51.42	24.00	24.00	18.95	18.89	18.95	18.89			4.824	4.808	4.824	4.808
			242T	61	33.66	36.43	24.00	24.00	19.91	19.92	19.91	19.92			8.669	8.553	8.669	8.553
				62	35.29	38.29	24.00	24.00	19.98	19.95	19.98	19.95			8.754	8.536	8.754	8.536
			106T	53	25.63	25.82	24.00	24.00	14.22	14.21	14.22	14.21			6.254	6.289	6.254	6.289
				54	26.54	26.94	24.00	24.00	14.23	14.17	14.23	14.17			6.259	6.152	6.259	6.152
				56	25.29	24.85	24.00	24.00	14.24	14.23	14.24	14.23			6.191	6.291	6.191	6.291
	5710 (Straddle)	142	SU	--	41.77	41.03	24.00	24.00	20.94	20.95	20.94	**20.95**			6.767	6.704	6.767	6.704
			242T	61	27.74	29.16	24.00	24.00	15.93	15.94	15.93	15.94			4.607	4.798	4.607	4.798
				62	32.37	30.21	24.00	24.00	15.92	15.97	15.92	15.97			4.972	4.925	4.972	4.925
			106T	53	25.63	26.94	24.00	24.00	14.18	14.21	14.18	14.21			6.291	6.325	6.291	6.325
				54	26.28	26.33	24.00	24.00	14.23	14.18	14.23	14.18			6.067	6.355	6.067	6.355
				56	25.38	25.60	24.00	24.00	14.23	14.22	14.23	14.22			6.059	6.382	6.059	6.382
HE80 (FCC)	5530	106	SU	--	82.31	81.86	24.00	24.00	15.95	15.94	15.95	15.94	11.00	11.00	-1.322	-1.486	-1.322	-1.486
			106T	53	21.31	21.19	24.00	24.00	11.23	11.20	11.23	11.20			2.779	2.768	2.779	2.768
				56	23.64	24.77	24.00	24.00	11.24	11.23	11.24	11.23			3.014	2.743	3.014	2.743
				60	23.73	25.44	24.00	24.00	11.18	11.23	11.18	11.23			2.932	2.890	2.932	2.890
	5610	122	SU	--	87.46	99.33	24.00	24.00	20.98	20.92	**20.98**	20.92			3.996	3.858	3.996	3.858
			106T	53	20.52	20.21	24.00	24.00	11.21	11.21	11.21	11.21			2.961	2.924	2.961	2.924
				56	24.27	24.09	24.00	24.00	11.21	11.18	11.21	11.18			3.042	2.889	3.042	2.889
				60	22.15	23.56	24.00	24.00	11.23	11.23	11.23	11.23			3.028	3.108	3.028	3.108
	5690 (Straddle)	138	SU	--	80.80	81.62	24.00	24.00	20.92	20.96	20.92	20.96			3.976	3.846	3.976	3.846
			106T	53	19.42	20.54	23.88	24.00	11.21	11.18	11.21	11.18			3.028	2.989	3.028	2.989
				56	24.45	24.29	24.00	24.00	11.21	11.20	11.21	11.20			3.069	2.963	3.069	2.963
				60	25.22	23.71	24.00	24.00	11.22	11.19	11.22	11.19			3.100	3.092	3.100	3.092

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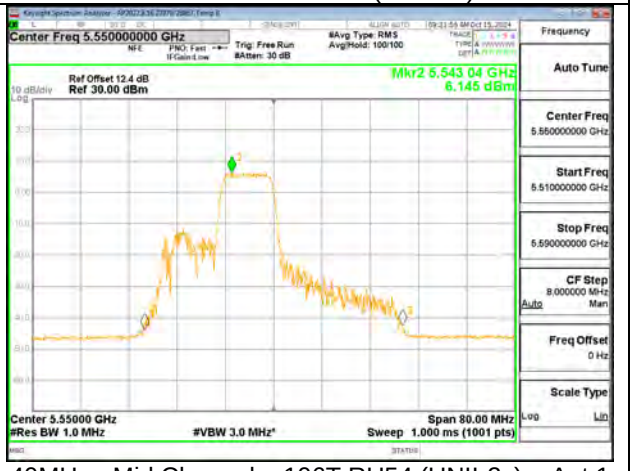
20MHz - Mid Channel – SU (UNII-2c) – Ant 1

20MHz - Mid Channel – 106T RU54 (UNII-2c) – Ant 1

20MHz - Mid Channel – 52T RU38 (UNII-2c) – Ant 1

40MHz - Mid Channel – SU (UNII-2c) – Ant 1

40MHz - Mid Channel – 242T RU62 (UNII-2c) – Ant 1



40MHz - Mid Channel – 106T RU54 (UNII-2c) – Ant 1

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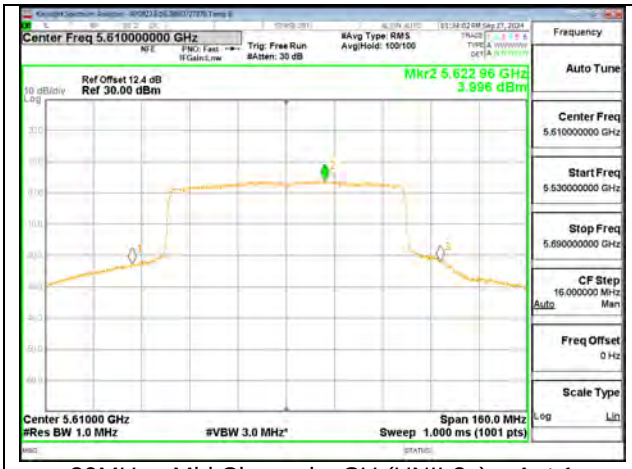
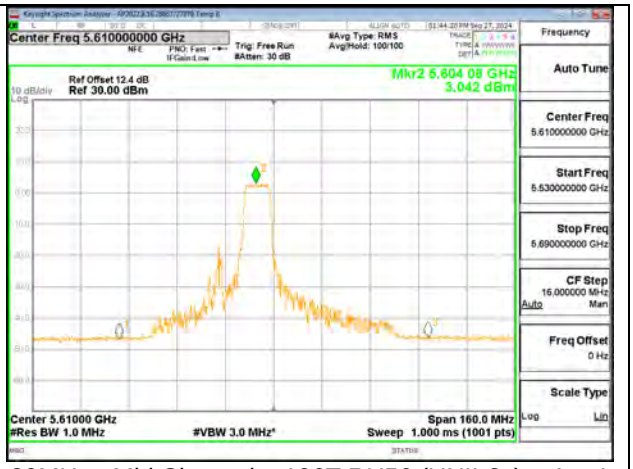


80MHz - Mid Channel – SU (UNII-2c) – Ant 1



80MHz - Mid Channel – 106T RU56 (UNII-2c) – Ant 1

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9.4.14. 802.11ax MIMO OFDMA MODE IN THE UNII-2C BAND

FCC

UNII-2c (MIMO OFDMA)	20MHz		40MHz		80MHz	
	SU	106T 52T	SU	242T 106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Un-Correlated Gain (dBi)	-1.9					
Correlated Gain (dBi)	1.1					

UNII-3 (MIMO OFDMA)	
Straddle Channel	
Un-Corr. Gain (dBi)	-2.2
Corr. Gain (dBi)	0.8

UNII-2c (MIMO OFDMA)	Freq (MHz)	Ch. #	Tone	RU Index	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/MHz)	PSD (dBm/MHz)		Total MIMO Corrected PSD (dBm/MHz)
							Ant 1	Ant 2			Ant 1	Ant 2	
HE20 (FCC)	5500	100	SU	--	20.95	24.00	16.96	16.90	19.94	11.00	6.756	6.760	9.768
			106T	53	19.94	24.00	14.45	14.47	17.47		6.360	6.262	9.322
				54	19.89	23.99	14.45	14.44	17.46		6.483	6.289	9.397
			52T	37	19.85	23.98	11.42	11.41	14.43		6.164	6.184	9.184
				38	18.38	23.64	11.46	11.44	14.46		6.143	6.265	9.215
				40	19.65	23.93	11.48	11.49	14.50		6.186	6.198	9.202
	5580	116	SU	--	20.71	24.00	16.97	16.89	19.94		6.825	6.584	9.716
			106T	53	18.21	23.60	14.46	14.46	17.47		6.479	6.494	9.497
				54	19.94	24.00	14.47	14.45	17.47		6.350	6.422	9.396
			52T	37	19.85	23.98	11.42	11.46	14.45		6.399	6.118	9.271
				38	18.43	23.66	11.48	11.39	14.45		6.155	6.182	9.179
				40	19.96	24.00	11.47	11.45	14.47		6.251	6.288	9.280
	5700	140	SU	--	20.97	24.00	16.46	16.48	19.48		6.298	6.183	9.251
			106T	53	19.81	23.97	14.49	14.45	17.48		6.517	6.495	9.516
				54	19.95	24.00	14.49	14.44	17.48		6.552	6.564	9.568
			52T	37	19.85	23.98	11.45	11.43	14.45		6.418	6.385	9.412
				38	18.25	23.61	11.48	11.41	14.46		6.397	6.358	9.388
				40	19.92	23.99	11.48	11.47	14.49		6.455	6.279	9.378
	5720 (Straddle)	144	SU	--	15.48	22.90	16.91	16.97	**19.95**		6.870	6.675	9.784
			106T	53	14.94	22.74	14.45	14.48	17.48		6.319	6.591	9.467
				54	15.04	22.77	14.45	14.49	17.48		6.498	6.524	9.521
			52T	37	14.79	22.70	11.44	11.45	14.46		6.432	6.232	9.343
				38	14.19	22.52	11.46	11.45	14.47		6.222	6.160	9.201
				40	15.00	22.76	11.42	11.45	14.45		6.291	6.368	9.340
HE40 (FCC)	5510	102	SU	--	42.37	24.00	15.47	15.46	18.48	11.00	1.179	1.056	4.128
			242T	61	30.39	24.00	16.89	16.95	19.93		5.535	5.302	8.430
				62	28.67	24.00	16.93	16.94	19.95		5.447	5.408	8.438
			106T	53	22.72	24.00	14.17	14.18	17.19		5.945	5.938	8.952
				54	25.76	24.00	14.22	14.19	17.22		5.888	5.977	8.943
				56	20.14	24.00	14.20	14.23	17.23		5.914	6.129	9.033
	5550	110	SU	--	41.18	24.00	19.42	19.47	22.46		4.811	4.916	7.874
			242T	61	24.94	24.00	16.95	16.93	19.95		5.429	5.320	8.385
				62	29.87	24.00	16.97	16.93	19.96		5.328	5.489	8.420
			106T	53	21.13	24.00	14.21	14.23	17.23		5.862	6.002	8.943
				54	24.83	24.00	14.23	14.24	17.25		6.160	6.086	9.133
				56	20.42	24.00	14.24	14.21	17.24		6.127	6.014	9.081
	5670	134	SU	--	44.05	24.00	18.47	18.45	21.47		4.365	4.523	7.455
			242T	61	31.10	24.00	16.96	16.91	19.95		5.662	5.564	8.624
				62	28.62	24.00	16.92	16.97	19.96		5.482	5.693	8.599
			106T	53	19.66	23.94	14.22	14.23	17.24		6.089	6.157	9.133
				54	26.62	24.00	14.15	14.17	17.17		6.084	6.059	9.082
				56	20.33	24.00	14.23	14.22	17.24		6.184	6.081	9.143
	5710 (Straddle)	142	SU	--	41.16	24.00	19.47	19.45	**22.47**		5.102	5.013	8.068
			242T	61	28.02	24.00	15.46	15.45	18.47		4.415	4.445	7.440
				62	25.20	24.00	15.45	15.45	18.46		4.473	4.429	7.461
			106T	53	20.66	24.00	14.24	14.23	17.25		6.086	6.094	9.100
				54	24.90	24.00	14.20	14.16	17.19		6.175	6.052	9.124
				56	20.35	24.00	14.22	14.19	17.22		6.194	6.058	9.137
HE80 (FCC)	5530	106	SU	--	82.34	24.00	14.94	14.95	17.96	11.00	-2.315	-2.555	0.577
			106T	53	19.53	23.91	11.23	11.18	14.22		2.878	2.958	5.928
				56	22.84	24.00	11.21	11.27	14.25		3.020	2.976	6.008
				60	19.92	23.99	11.23	11.21	14.23		3.157	2.986	6.083
	5610	122	SU	--	81.69	24.00	19.94	19.91	22.94		3.205	2.965	6.097
			106T	53	19.57	23.92	11.23	11.21	14.23		3.015	2.868	5.952
				56	21.50	24.00	11.17	11.22	14.21		3.029	3.179	6.115
				60	18.76	23.73	11.23	11.17	14.21		3.000	3.142	6.082
	5690 (Straddle)	138	SU	--	81.49	24.00	19.92	19.94	**22.94**		3.026	2.947	5.997
			106T	53	19.47	23.89	11.20	11.22	14.22		3.030	3.000	6.025
				56	21.94	24.00	11.23	11.17	14.21		2.998	3.161	6.091
				60	19.83	23.97	11.24	11.23	14.25		3.175	3.188	6.192

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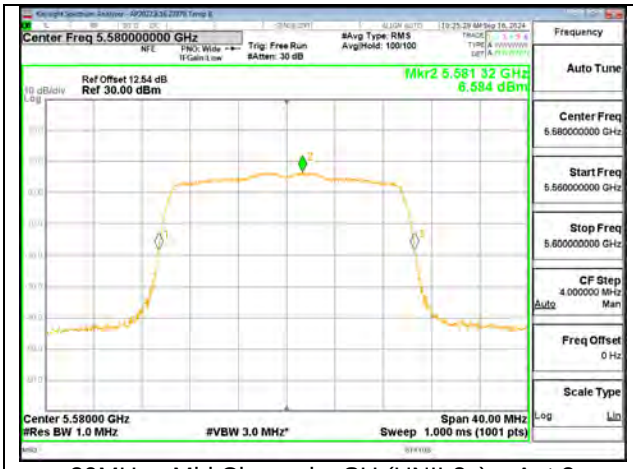
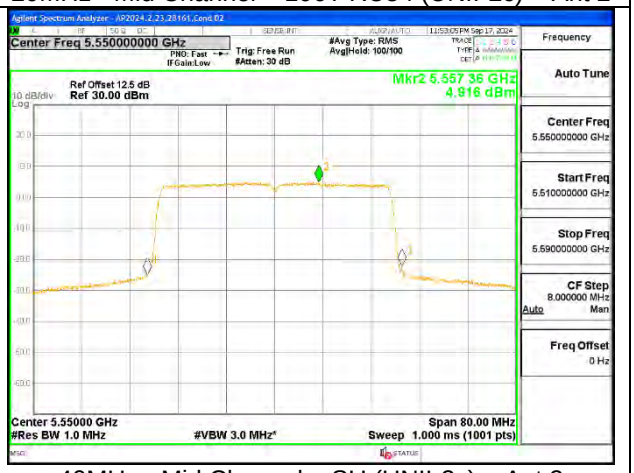


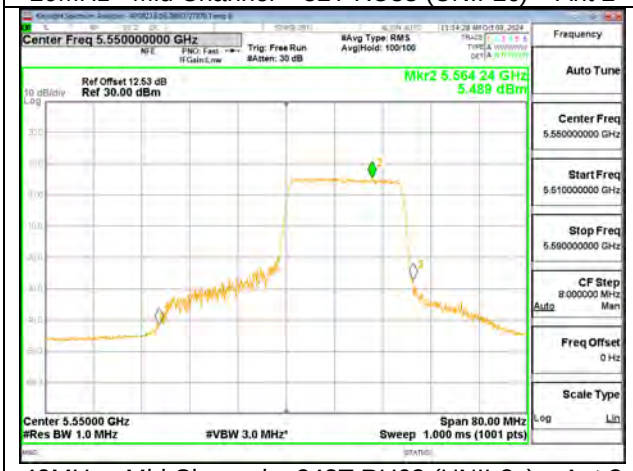
20MHz - Mid Channel – SU (UNII-2c) – Ant 2

20MHz - Mid Channel – 106T RU54 (UNII-2c) – Ant 2

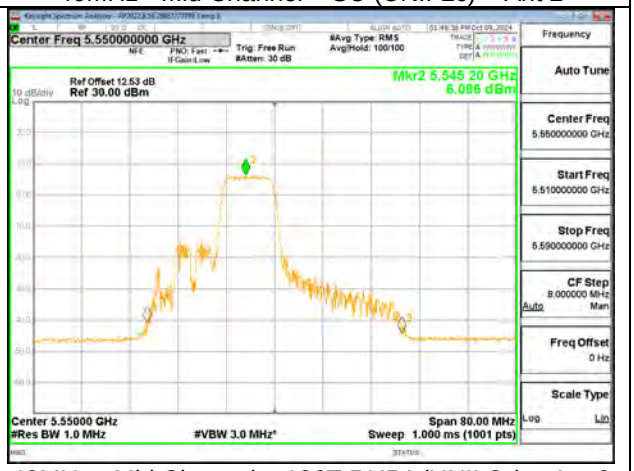
20MHz - Mid Channel – 52T RU38 (UNII-2c) – Ant 2



40MHz - Mid Channel – SU (UNII-2c) – Ant 2



40MHz - Mid Channel – 242T RU62 (UNII-2c) – Ant 2



40MHz - Mid Channel – 106T RU54 (UNII-2c) – Ant 2

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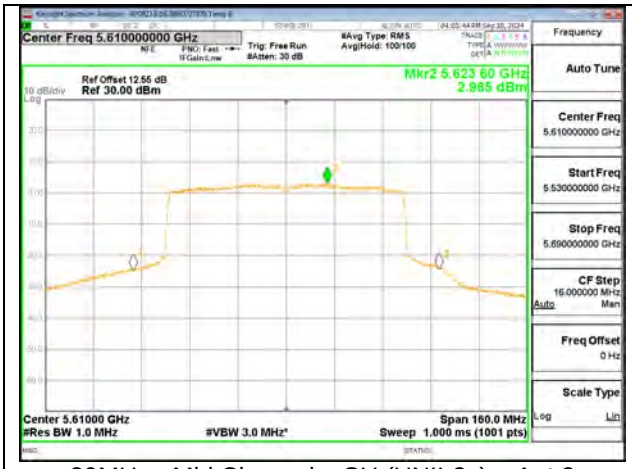
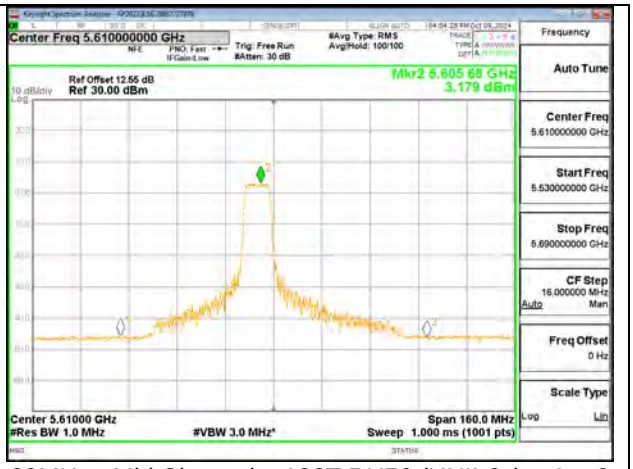


80MHz - Mid Channel – SU (UNII-2c) – Ant 2



80MHz - Mid Channel – 106T RU56 (UNII-2c) – Ant 2

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9.4.15. 802.11ax SISO MODE IN THE UNII-3 BAND

UNII-3 (SISO)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Ant 1 (dBi)	-3.2					
Ant 2 (dBi)	-1.4					

UNII-3 (SISO)	Freq (MHz)	Ch. #	Tone	RU Index	Minimum Bandwidth (MHz)		Power Limit (dBm)		Output Power (Gated) (dBm)		Total Corrected Power (dBm)		PSD Limit (dBm/500kHz)		PSD (dBm/500kHz)		Total Corrected PSD (dBm/500kHz)	
					Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2	Ant 1	Ant2	Ant 1	Ant 2	Ant 1	Ant 2
HE20	5745	149	SU	--	--		30	30	20.91	20.89	20.91	20.89	30	30	8.327	8.396	8.327	8.396
			52T	37					14.21	14.19	14.21	14.19			6.596	6.751	6.596	6.751
				38					14.21	14.22	14.21	14.22			6.539	6.602	6.539	6.602
				40					14.18	14.23	14.18	14.23			6.443	6.711	6.443	6.711
	5785	157	SU	--					20.97	20.91	**20.97**	20.91			8.573	8.424	8.573	8.424
			52T	37					14.24	14.17	14.24	14.17			6.603	6.589	6.603	6.589
				38					14.23	14.22	14.23	14.22			6.458	6.541	6.458	6.541
				40					14.22	14.24	14.22	14.24			6.693	6.643	6.693	6.643
	5825	165	SU	--					20.96	20.95	20.96	20.95			8.287	8.268	8.287	8.268
			52T	37					14.21	14.22	14.21	14.22			6.548	6.544	6.548	6.544
				38					14.23	14.21	14.23	14.21			6.607	6.663	6.607	6.663
				40					14.23	14.18	14.23	14.18			6.500	6.683	6.500	6.683
HE40	5755	151	SU	--	--		30	30	20.91	20.91	20.91	20.91	30	30	4.119	4.221	4.119	4.221
			106T	53					14.23	14.22	14.23	14.22			4.052	3.874	4.052	3.874
				54					14.21	14.18	14.21	14.18			4.064	3.831	4.064	3.831
				56					14.18	14.17	14.18	14.17			3.891	3.702	3.891	3.702
	5795	159	SU	--					20.86	20.93	20.86	**20.93**			3.931	4.021	3.931	4.021
			106T	53					14.23	14.22	14.23	14.22			4.031	3.830	4.031	3.830
				54					14.18	14.18	14.18	14.18			3.716	3.780	3.716	3.780
				56					14.19	14.23	14.19	14.23			3.776	3.727	3.776	3.727
HE80	5775	155	SU	--	--		30	30	20.94	20.98	20.94	**20.98**	30	30	1.077	1.364	1.077	1.364
			106T	53					11.20	11.23	11.20	11.23			1.063	1.036	1.063	1.036
				56					11.17	11.23	11.17	11.23			0.766	0.961	0.766	0.961
				60					11.21	11.24	11.21	11.24			0.701	0.812	0.701	0.812

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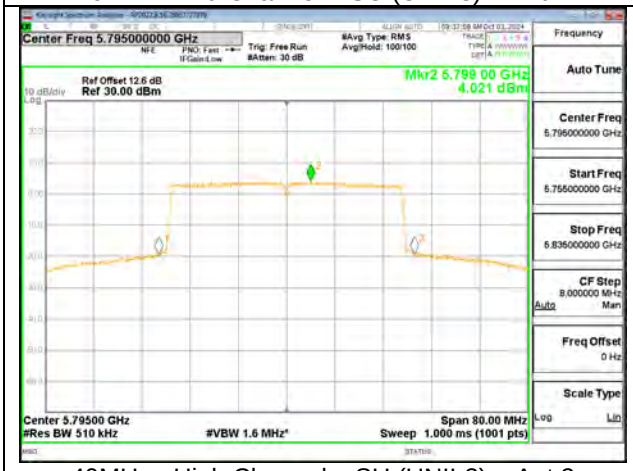
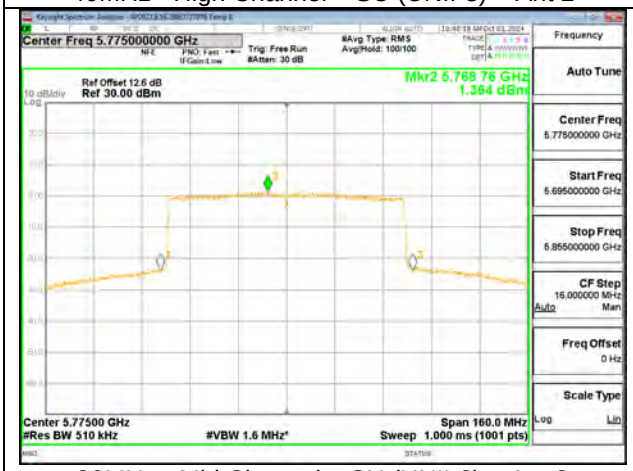
20MHz - Mid Channel – SU (UNII-3) – Ant 2

20MHz - Mid Channel – 52T RU38 (UNII-3) – Ant 2



40MHz - High Channel – SU (UNII-3) – Ant 2

40MHz - High Channel – 106T RU54 (UNII-3) – Ant 2



80MHz - Mid Channel – SU (UNII-3) – Ant 2

80MHz - Mid Channel – 106T RU56 (UNII-3) – Ant 2

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9.4.16. 802.11ax MIMO OFDMA MODE IN THE UNII-3 BAND

UNII-3 (MIMO CDD)	20MHz		40MHz		80MHz	
	SU	52T	SU	106T	SU	106T
DCCF (MCS0) (dB)	0.00	0.00	0.00	0.00	0.00	0.00
Un-Correlated Gain (dBi)	-2.2					
Correlated Gain (dBi)	0.8					

UNII-3 (MIMO CDD)	Freq (MHz)	Ch. #	Tone	RU Index	Min BW (MHz)	Power Limit (dBm)	Output Power (Gated) (dBm)		Total MIMO Corrected Power (dBm)	PSD Limit (dBm/500kHz)	PSD (dBm/500kHz)		Total MIMO Corrected PSD (dBm/500kHz)
							Ant 1	Ant 2			Ant 1	Ant 2	
HE20	5745	149	SU	--	--	30	20.93	20.91	23.93	30	8.009	7.935	10.982
			52T	37			14.21	14.19	17.21		6.392	6.351	9.382
				38			14.23	14.22	17.24		6.431	6.461	9.456
				40			14.19	14.20	17.21		6.353	6.387	9.380
	5785	157	SU	--			20.95	20.94	23.96		7.873	8.098	10.997
			52T	37			14.23	14.19	17.22		6.450	6.439	9.455
				38			14.22	14.23	17.24		6.314	6.342	9.338
				40			14.21	14.20	17.22		6.297	6.232	9.275
	5825	165	SU	--			20.96	20.98	**23.98**		7.846	7.904	10.885
			52T	37			14.18	14.24	17.22		6.391	6.403	9.407
				38			14.22	14.22	17.23		6.244	6.257	9.261
				40			14.17	14.23	17.21		6.242	6.258	9.260
HE40	5755	151	SU	--	--	30	20.92	20.96	23.95	30	4.127	4.320	7.235
			106T	53			14.23	14.23	17.24		3.656	3.904	6.792
				54			14.21	14.17	17.20		3.675	3.805	6.751
				56			14.23	14.23	17.24		3.578	3.958	6.782
	5795	159	SU	--			20.90	20.98	**23.95**		4.064	4.260	7.173
			106T	53			14.23	14.16	17.21		3.852	3.969	6.921
				54			14.21	14.18	17.21		3.842	3.670	6.767
				56			14.23	14.24	17.25		3.623	3.721	6.683
HE80	5775	155	SU	--	--	30	20.41	20.44	**23.44**	30	0.803	0.602	3.714
			106T	53			11.20	11.23	14.23		0.925	0.926	3.936
				56			11.23	11.18	14.22		0.753	0.730	3.752
				60			11.19	11.18	14.20		0.761	0.777	3.779

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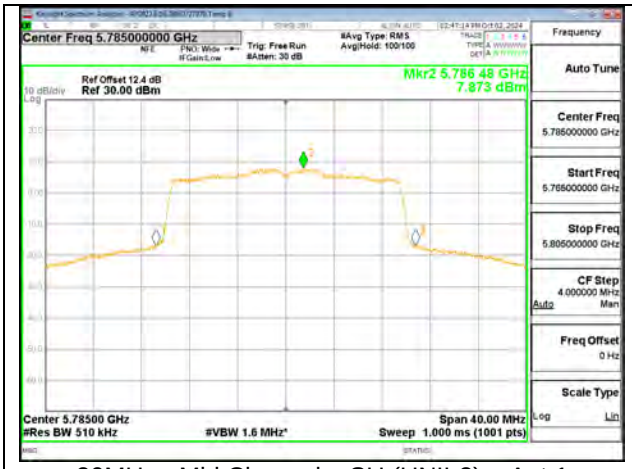
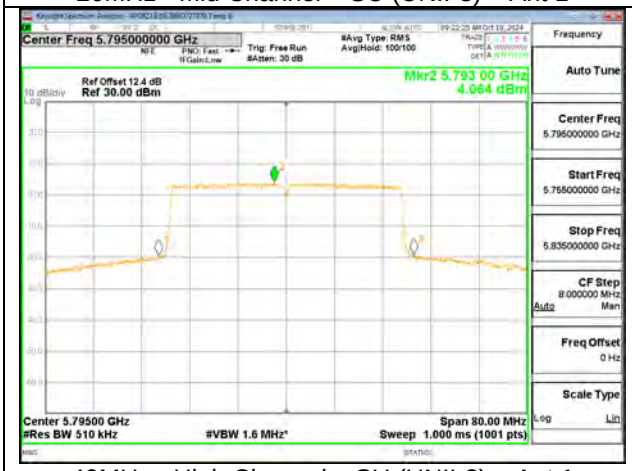


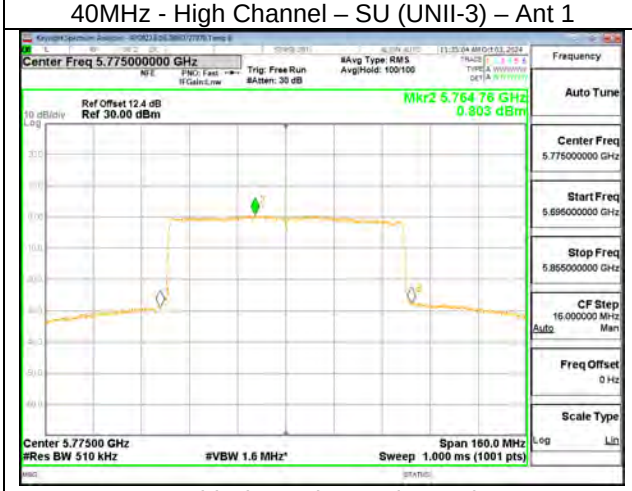
20MHz - Mid Channel – SU (UNII-3) – Ant 1

20MHz - Mid Channel – 52T RU38 (UNII-3) – Ant 1

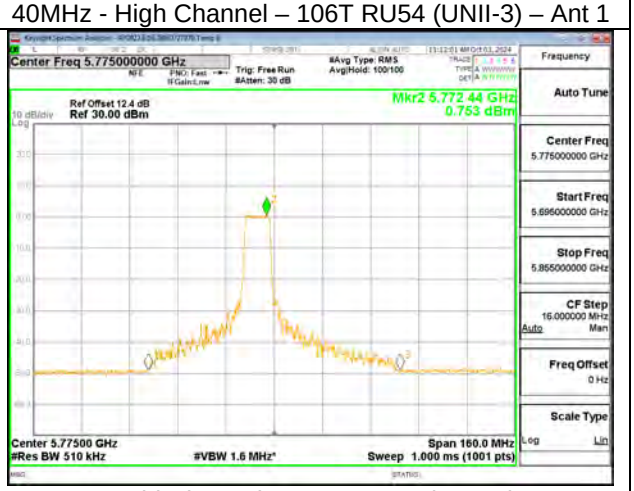


40MHz - High Channel – SU (UNII-3) – Ant 1

40MHz - High Channel – 106T RU54 (UNII-3) – Ant 1



80MHz - Mid Channel – SU (UNII-3) – Ant 1



80MHz - Mid Channel – 106T RU56 (UNII-3) – Ant 1

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10. SPOT CHECK EVALUATION

10.1. MODEL DIFFERENCES

The manufacturer hereby declares the following for models A3212, A3408, A3409 and A3410.
A3212, A3408, A3409 and A3410 are highly similar, with the only difference being the supported cellular bands.

Model	FCC ID	B14/29/71	MCC B53/n53	Sim Support	Reference Model
A3212	BCG-E8725A	Yes	Yes	eSIM	-
A3408	BCG-E8726A	Yes	Yes	eSIM+pSIM	A3212
A3409	BCG-E8727A	No	Yes	eSIM+pSIM	
A3410	BCG-E8728A	No	No	pSIM+pSIM	

Note:

_ All models have the same PCB layout, circuit design, common components, antennas and antenna locations across their respective reference model table above. The cellular modem, Wi-Fi, BT, NFC and MSS transmitters are identical.

_Remove of LTE/NR (B14/29/53/71) and MSS bands is done by de-population of directly related components.

The spot check plan, approved by the FCC inquiry, allows for data reuse from the reference model where the variant model data meets the limits and has not changed by more than the criteria from KDB 484596 D01 v02r03 equation (2).

$$d_{dB} = |V_{dB} - R_{dB}| \le (3 + M_{dB}/20)\ dB \quad , \text{for } 0 \le M_{dB} \le 60\ dB$$
$$d_{dB} = |V_{dB} - R_{dB}| = 6\ dB \quad , \text{for } M_{dB} > 60\ dB \qquad (2)$$

Where: d_{dB} deviation from Reference data, V_{dB} variant spot check level, and R_{dB} measurement level

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10.2. SPOT CHECK VERIFICATION RESULTS SUMMARY FOR A3408

A3408 SPOT CHECK RESULTS											
Equipment Class	Frequency (GHz)	MIMO CDD Mode	Data Rate / Tone / RU	Test Item	Channel	Measured Frequency (GHz)	Original Model: A3212 FCC ID : BCG-E8725A	Sub Model: A3408 FCC ID : BCG-E8726A	Delta (dB)	Margin	Remarks
NII	5.2G	HT20	MCS0	Avg Power (dBm)	Mid	Fundamental	19.98	19.96	-0.02	-4.02	Note 1
			MCS7	Radiated Bandedge (dBuV/m)	36	Vertical Low Bandedge	51.38	51.48	0.10	-2.62	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	38.17	37.40	-0.77	-15.83	Note 1
NII	5.3G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	18.49	18.41	-0.08	-5.51	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	58	Vertical High Bandedge	51.23	52.46	1.23	-2.77	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.16	39.62	0.46	-14.84	Note 1
NII	5.6G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	22.94	22.93	-0.01	-1.06	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	122	Horizontal High Bandedge	63.57	63.68	0.11	-4.63	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.76	39.13	-0.63	-14.24	Note 1
NII	5.8G	HE80	MCS0	Avg Power (dBm)	Mid	Fundamental	23.44	23.39	-0.05	-6.56	Note 1
			MCS11	Radiated Bandedge (dBuV/m)	155L	Vertical Low Bandedge	-33.28	-32.49	0.79	-6.28	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.99	41.62	1.63	-14.01	Note 1

Note 1: Deviation from reference to variant within the value allowed by equation (2) in KDB 484596. Additional tests not required.
Note 2: Deviation from reference to variant exceeds the value allowed by equation (2) in KDB 484596. Additional tests performed on second channel.

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10.3. SPOT CHECK VERIFICATION RESULTS SUMMARY FOR A3409

A3409 SPOT CHECK RESULTS											
Equipment Class	Frequency (GHz)	MIMO CDD Mode	Data Rate / Tone / RU	Test Item	Channel	Measured Frequency (GHz)	Original Model: A3212 FCC ID : BCG-E8725A	Sub Model: A3409 FCC ID : BCG-E8727A	Delta (dB)	Margin	Remarks
NII	5.2G	HT20	MCS0	Avg Power (dBm)	Mid	Fundamental	19.98	19.74	-0.24	-4.02	Note 1
			MCS7	Radiated Bandedge (dBuV/m)	36	Horizontal Low Bandedge	51.38	51.37	-0.01	-2.62	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	38.17	37.97	-0.20	-15.83	Note 1
NII	5.3G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	18.49	18.35	-0.14	-5.51	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	58	Vertical High Bandedge	51.23	51.40	0.17	-2.77	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.16	35.90	-3.26	-14.84	Note 1
NII	5.6G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	22.94	22.80	-0.14	-1.06	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	122	Horizontal High Bandedge	63.57	64.50	0.93	-4.63	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.76	38.00	-1.76	-14.24	Note 1
NII	5.8G	HE80	MCS0	Avg Power (dBm)	Mid	Fundamental	23.44	23.40	-0.04	-6.56	Note 1
			MCS11	Radiated Bandedge (dBuV/m)	155L	Vertical Low Bandedge	-33.28	-31.49	1.79	-6.28	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.99	41.33	1.34	-14.01	Note 1

Note 1: Deviation from reference to variant within the value allowed by equation (2) in KDB 484596. Additional tests not required.
Note 2: Deviation from reference to variant exceeds the value allowed by equation (2) in KDB 484596. Additional tests performed on second channel.

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10.4. SPOT CHECK VERIFICATION RESULTS SUMMARY FOR A3410

A3410 SPOT CHECK RESULTS											
Equipment Class	Frequency (GHz)	MIMO CDD Mode	Data Rate / Tone / RU	Test Item	Channel	Measured Frequency (GHz)	Original Model: A3212 FCC ID : BCG-E8725A	Sub Model: A3410 FCC ID : BCG-E8728A	Delta (dB)	Margin	Remarks
NII	5.2G	HT20	MCS0	Avg Power (dBm)	Mid	Fundamental	19.98	19.87	-0.11	-4.02	Note 1
			MCS11	Radiated Bandedge (dBuV/m)	36	Vertical Low Bandedge	51.38	52.10	0.72	-2.62	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	38.17	35.44	-2.73	-15.83	Note 1
NII	5.3G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	18.49	18.46	-0.03	-5.51	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	58	Vertical High Bandedge	51.23	52.30	1.07	-2.77	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.16	38.84	-0.32	-14.84	Note 1
NII	5.6G	VHT80	MCS0	Avg Power (dBm)	Mid	Fundamental	22.94	22.93	-0.01	-1.06	Note 1
			MCS9	Radiated Bandedge (dBuV/m)	122	Horizontal High Bandedge	63.57	63.92	0.35	-4.63	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.76	40.04	0.28	-14.24	Note 1
NII	5.8G	HE80	MCS0	Avg Power (dBm)	Mid	Fundamental	23.44	23.43	-0.01	-6.56	Note 1
			MCS11	Radiated Bandedge (dBuV/m)	155L	Vertical Low Bandedge	-33.28	-32.30	0.98	-6.28	Note 1
			MCS0	RSE (dBuV/m)	Mid	1 to 18	39.99	40.06	0.07	-14.01	Note 1

Note 1: Deviation from reference to variant within the value allowed by equation (2) in KDB 484596. Additional tests not required.
Note 2: Deviation from reference to variant exceeds the value allowed by equation (2) in KDB 484596. Additional tests performed on second channel.

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