FCC Test Report

Report No.: AGC11034230801FR02

FCC ID	:	2AYHE-2307A
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Network Video Recorder
BRAND NAME	:	Reolink
MODEL NAME	:	RLN12W
APPLICANT	:	Reolink Innovation Limited
DATE OF ISSUE	:	Aug. 29, 2023
STANDARD(S)	:	FCC Part 15 Subpart E §15.407
REPORT VERSION	:	V1.0

*A*ttestation of *G*lobal *C*ompliance (Shenzhen) Co., Ltd

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Aug. 29, 2023	Valid	Initial Release

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1. VERIFICATION OF CONFORMITY

Applicant	Reolink Innovation Limited
Address	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Manufacturer	Reolink Innovation Limited
Address	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Factory	Shenzhen Reolink Technology Co., Ltd
Address	2-4th Floor, Building 2, Yuanling Industrial Park, ShangWu, Shiyan Street, Bao'an District, Shenzhen, China
Product Designation	Network Video Recorder
Brand Name	Reolink
Test Model	RLN12W
Date of receipt of test item	Aug. 08, 2023
Date of Test	Aug. 10, 2023~ Aug. 28, 2023
Deviation	No any deviation from the test method
Condition of Test Sample	Normal
Test Result	Pass
Report Template	AGCRT-US-BGN/RF

We hereby certify that:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Prepared By	Bibo Zhang	
	Bibo Zhang (Project Engineer)	Aug. 29, 2023
Reviewed By	Calvin Liu	
	Calvin Liu (Reviewer)	Aug. 29, 2023
Approved By	Max Zhang	
	Max Zhang Authorized Officer	Aug. 29, 2023

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

Equipment Type	☐ Outdoor access points ☐ Indoor access points ☐ Fixed P2P access points ☒ Client devices
Operation Frequency	☒ U-NII 1:5150MHz~5250MHz ☒ U-NII 2A: 5250MHz~5350MHz ☒ U-NII 2C:5470MHz~5725MHz ☒ U-NII 3: 5725MHz~5850MHz
DFS Design Type	☐ Master ☐ Slave with radar detection ☒ Slave without radar detection
TPC Function	☐ Yes ☒ No
Hardware Version	V110
Software Version	v3.3.0.256_23082520
Test Frequency Range:	For 802.11a/n(HT)20/ac(VHT)20/ax(HE)20: 5180~5240MHz, 5260~5320MHz, 5500~5700MHz, 5745~5825MHz For 802.11n(HT40/ac(VHT)40/ax(HE)40: 5190~5230MHz, 5270~5310MHz, 5510~5710MHz, 5755~5795MHz For 802.11ac(VHT)80/ax(HE)80: 5210MHz, 5290MHz, 5530~5690MHz, 5775MHz
Output Power	IEEE 802.11a(HT20):12.25dBm; IEEE 802.11n(HT20):11.44dBm; IEEE802.11n(HT40):11.55dBm; IEEE 802.11ac(VHT20):11.86dBm; IEEE802.11ac(VHT40):11.65dBm; IEEE802.11ac(VHT80):10.50dBm; IEEE802.11ax(HE20):10.72dBm; IEEE802.11ax(HE40):11.02dBm; IEEE802.11ax(HE80):10.42dBm
Output Power_MIMO	IEEE 802.11nHT(20):14.17dBm;IEEE802.11n(HT40):14.08dBm IEEE 802.11ac(VHT20):14.50dBm; IEEE802.11ac(VHT40):13.92dBm; IEEE802.11ac(VHT80):13.00dBm;IEEE802.11ax(HE20):13.54dBm; IEEE802.11ax(HE40):13.14dBm;IEEE802.11ax(HE80):12.65dBm
Modulation	802.11a/n:(64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ac :(256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ax :(1024-QAM,256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDMA
Data Rate	802.11a: 6/9/12/18/24/36/48/54Mbps; 802.11n: up to 300Mbps; 802.11ac: up to 866.8Mbps; 802.11ax: up to 1201Mbps
Number of channels	7 channels of U-NII-1 Band; 7 channels of U-NII-2A Band 18 channels of U-NII-2C Band; 8 channels of U-NII-3 Band
Antenna Designation	Refer to Chapter 2.8 of the report. (Comply with requirements of the FCC part 15.203)
Antenna Gain	Refer to Chapter 2.8 of the report.
Power Supply	DC 12V

2.2. TABLE OF CARRIER FREQUENCYS

For 5180~5240MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20), 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
36	5180 MHz	44	5220 MHz
40	5200 MHz	48	5240 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40), 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
38	5190 MHz	46	5230 MHz

1 channel is provided for 802.11ac (VHT80), 802.11ax (VHT80):

Channel	Frequency	Channel	Frequency
42	5210 MHz	--	--

For 5260~5320MHz:

4 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) , 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
52	5260 MHz	60	5300 MHz
56	5280 MHz	64	5320 MHz

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40) , 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
54	5270 MHz	62	5310 MHz

1 channel is provided for 802.11ac (VHT80) , 802.11ax (VHT80):

Channel	Frequency	Channel	Frequency
58	5290 MHz	--	--

For 5500~5720MHz:

12 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) , 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
100	5500 MHz	124	5620 MHz
104	5520 MHz	128	5640 MHz
108	5540 MHz	132	5660 MHz
112	5560 MHz	136	5680 MHz
116	5580 MHz	140	5700 MHz
120	5600 MHz		

6 channels are provided for 802.11n (HT40), 802.11ac (VHT40) , 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
102	5510 MHz	126	5630 MHz
110	5550 MHz	134	5670 MHz
118	5590 MHz		

3 channel is provided for 802.11ac (VHT80) , 802.11ax (VHT80):

Channel	Frequency	Channel	Frequency
106	5530 MHz	122	5610 MHz

For 5745~5825MHz:

5 channels are provided for 802.11a, 802.11n (HT20), 802.11ac (VHT20) , 802.11ax (HE20):

Channel	Frequency	Channel	Frequency
149	5745 MHz	161	5805 MHz
153	5765 MHz	165	5825 MHz
157	5785 MHz	--	--

2 channels are provided for 802.11n (HT40), 802.11ac (VHT40) , 802.11ax (HE40):

Channel	Frequency	Channel	Frequency
151	5755 MHz	159	5795 MHz

1 channel is provided for 802.11ac (VHT80) , 802.11ax (HE80):

Channel	Frequency	Channel	Frequency
155	5775 MHz	--	--

2.3. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2AYHE-2307A** filing to comply with the FCC Part 15 requirements.

2.4. TEST METHODOLOGY

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 15	Radio Frequency Devices
3	ANSI C63.10-2013	American National Standard for Testing Unlicensed Wireless Devices
4	KDB 662911	662911 D01 Multiple Transmitter Output v02r01
5	KDB 789033	789033 D02 General U-NII Test Procedures New Rules v02r01

2.5. SPECIAL ACCESSORIES

Refer to section 5.2.

2.6. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2.7. ANTENNA REQUIREMENT

Standard Requirement
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antennathat uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a brokenantenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.
EUT Antenna:
The non-detachable antenna inside the device cannot be replaced by the user at will. The gain of the antenna refer to Section 2.8 of the report

2.8. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna Type	Frequency Band (MHz)	TX Paths	Bandwidth (MHz)	Max Peak Gain (dBi)		Max Directional Gain (dBi)
				Ant 1	Ant 2	
5G WIFI SMA Antenna List (5GHz 2*2 MIMO)						
SMA Antenna	5150 ~ 5250	2	20,40,80	3.46	3.46	6.47
	5250 ~ 5350	2	20,40,80	3.46	3.46	6.47
	5470 ~ 5725	2	20,40,80	4.27	4.27	7.28
	5725 ~ 5850	2	20,40,80	3.93	3.93	6.94

Note 1: The EUT supports Cyclic Delay Diversity (CDD) technology for 802.11n/ac/ax mode.

Note 2: The EUT supports Cyclic Delay Diversity (CDD) mode, and CDD signals are correlated.

If all antennas have the same gain, G_{ANT}, Directional gain = G_{ANT} + Array Gain, where Array Gain is as follows.

- For power spectral density (PSD) measurements on devices:

  Array Gain = 10 log (N_{ANT}/ N_{SS}) dB = 3.01;

- For power measurements on IEEE 802.1devices:

  Array Gain = 0 dB for $N_{ANT} \leq 4$;

  Array Gain = 0 dB (i.e., no array gain) for channel widths ≥40 MHz for any N_{ANT};

  Array Gain = 5 log(N_{ANT}/N_{SS}) dB or 3 dB, whichever is less, for 20 MHz channel widths with $N_{ANT} \geq 5$.

If antenna gains are not equal, Directional gain may be calculated by using the formulas applicable to equal gain antennas with G_{ANT} set equal to the gain of the antenna having the highest gain.

3. TEST ENVIRONMENT

3.1 ADDRESS OF THE TEST LABORATORY

Laboratory: Attestation of Global Compliance (Shenzhen) Co., Ltd.

Address: 1-2/F, Building 19, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

3.2 TEST FACILITY

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L5488

Attestation of Global Compliance (Shenzhen) Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2017 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No.: 5054.02

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 975832

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files with Registration 975832.

IC-Registration No.: 24842 (CAB identifier: CN0063)

Attestation of Global Compliance (Shenzhen) Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the Certification and Engineering Bureau of Industry Canada. The acceptance letter from the IC is maintained in our files with Registration 24842.

3.3 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS
Temperature range (℃)	15 - 35	-20 - 50
Relative humidty range	20 % - 75 %	20 % - 75 %
Pressure range (kPa)	86 - 106	86 - 106
Power supply	DC 19.0V	--
Note: The Extreme Temperature and Extreme Voltages declared by the manufacturer.		

3.4 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ±U, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Item	Measurement Uncertainty
Uncertainty of Conducted Emission for AC Port	U_c = ±3.1 dB
Uncertainty of Radiated Emission below 1GHz	U_c = ±4.0 dB
Uncertainty of Radiated Emission above 1GHz	U_c = ±4.8 dB
Uncertainty of total RF power, conducted	U_c = ±0.8 dB
Uncertainty of RF power density, conducted	U_c = ±2.6 dB
Uncertainty of spurious emissions, conducted	U_c = ±2 %
Uncertainty of Occupied Channel Bandwidth	U_c = ±2.7 %

3.5 LIST OF EQUIPMENTS USED

TEST EQUIPMENT OF CONDUCTED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESPI	101206	Jun. 03, 2023	Jun. 02, 2024
LISN	R&S	ESH2-Z5	100086	Jun. 03, 2023	Jun. 02, 2024
Attenuator	Dongfang Xupu	LM-XX-6-5W	N/A	Jun. 09, 2023	Jun. 08, 2024
Test software	R&S	Ver.V1.71	N/A	N/A	N/A

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
TEST RECEIVER	R&S	ESCI	10096	Feb. 18, 2023	Feb. 17, 2024
EXA Signal Analyzer	Aglient	N9010A	MY53470504	Jun. 01, 2023	May 31, 2024
Power sensor	Aglient	U2021XA	MY54110007	Mar. 18, 2022	Mar. 19, 2024
5GHz Fliter	EM Electronics	5150-5880MHz	N/A	Mar. 18, 2022	Mar. 19, 2024
Horn antenna	SCHWARZBECK	BBHA 9170	#768	Oct. 31, 2021	Oct. 30, 2023
Active loop antenna (9K-30MHz)	ZHINAN	ZN30900C	18051	Mar. 12, 2022	Mar. 11, 2024
Double-Ridged Waveguide Horn	ETS LINDGREN	3117	00034609	Apr. 23, 2023	Apr. 22, 2024
Broadband Preamplifier	ETS LINDGREN	3117PA	00225134	Sep. 01, 2022	Sep. 02, 2024
ANTENNA	SCHWARZBECK	VULB9168	VULB9168-494	Jan. 05, 2023	Jan. 04, 2025
Test software	FARA	Ver.RA-03A	N/A	N/A	N/A

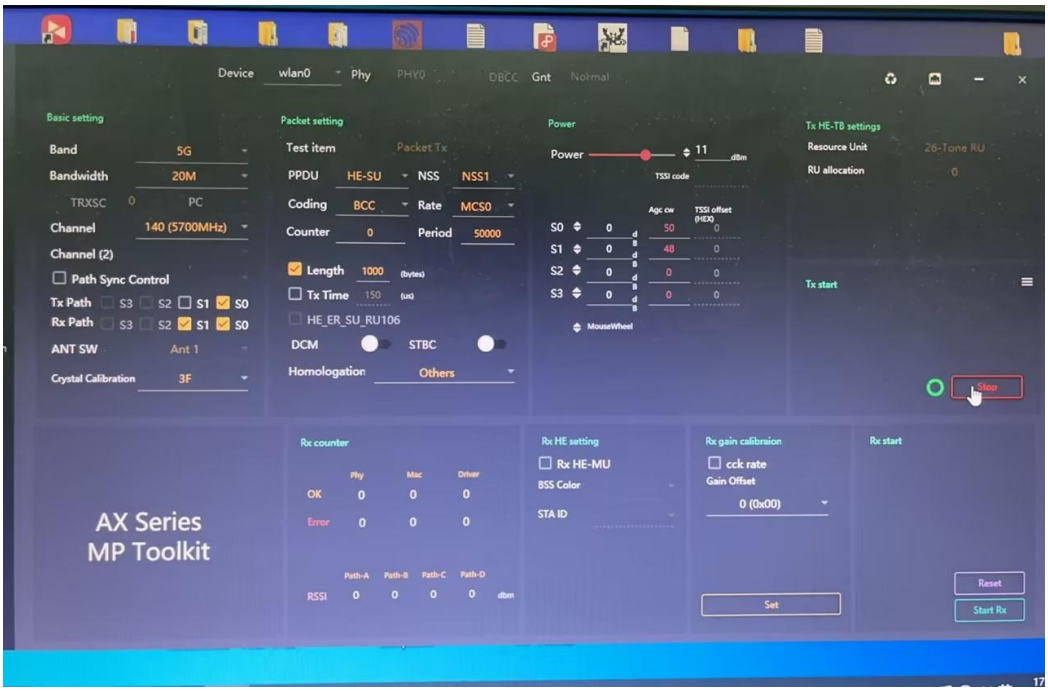
4. DESCRIPTION OF TEST MODES

Mode	Available channel	Tested channel	Modulation	Date rate (Mbps)
802.11a/n/ac/ax20	36,40,44,48,52, 56, 60, 64,100, 104, 108, 112, 116, 120, 124, 128, 132, 136, 140, 144, 149, 153, 157, 161, 165	36,40,48,52, 64, 100, 120, 140, 149, 157, 165	OFDM/OFDMA	6Mbps/MCS0
802.11n/ac/ax40	38,46, 54, 62, 102, 110, 118, 126, 134, 142, 151,159	38,46, 54, 62, 102, 118, 126, 151,159	OFDM/OFDMA	MCS0
802.11ac/ax80	42, 58, 106, 138, 122, 155	42, 58, 106, 122, 155	OFDM/OFDMA	MCS0

Note:

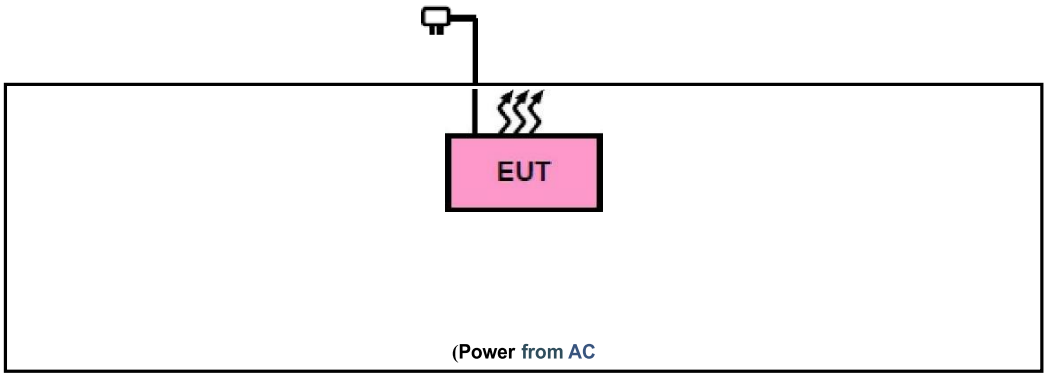
1. The EUT has been set to operate continuously on tested channel individually, and the EUT is operating at its maximum duty cycle.
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
3. All radiated spurious emission and conducted interference modes have been pre scanned, and the report only records that antenna 1+antenna 2 work in the worst mode.

Software Setting



5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Model No.	ID or Specification	Remark
1	Network Video Recorder	RLN12W	2AYHE-2307A	EUT
2	Adapter	JF012WR-0900150UH	Input: AC100-240V,50-60Hz Output: DC12V2A	AE

5.3. SUMMARY OF TEST RESULTS

Item	FCC Rules	Description Of Test	Result
1	§15.203	Antenna Equipment	Pass
2	§15.407(a/1/2/3)	RF Output Power	Pass
3	§15.407(e)	6dB Bandwidth Measurement	Pass
4	§2.1049	26dB bandwidth Measurement	Pass
5	§15.407(a/1/2/3)	Power Spectral Density	Pass
6	§15.407(b)(1/2/3/4)	Conducted Spurious Emission	Pass
7	§15.209,§15.407(b)(1/2/3/4)	Radiated Emission& Band Edge	Pass
8	§15.207	AC Power Line Conducted Emission	Pass

6. DUTY CYCLE MEASUREMENT

5GHz WLAN (NII) operation is possible in 20MHz, 40MHz and 80MHz channel bandwidths. The maximum achievable duty cycles for all modes were determined based on measurements performed on a spectrum analyzer in zero-span mode with RBW = 8MHz, VBW = 50MHz, and detector = Peak. The RBW and VBW were both greater than 50/T, where T is the minimum transmission duration, and the number of sweep points across T was greater than 100. The duty cycles are as follows:

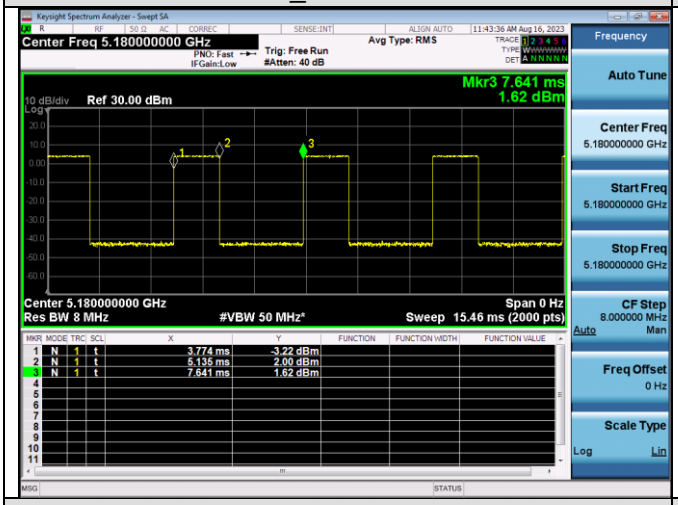
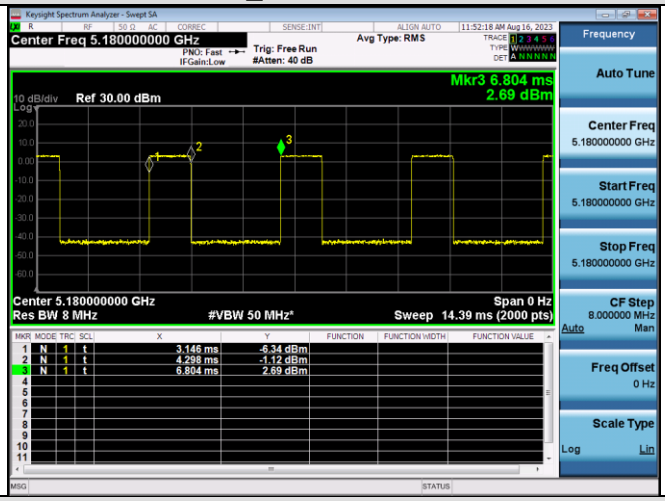
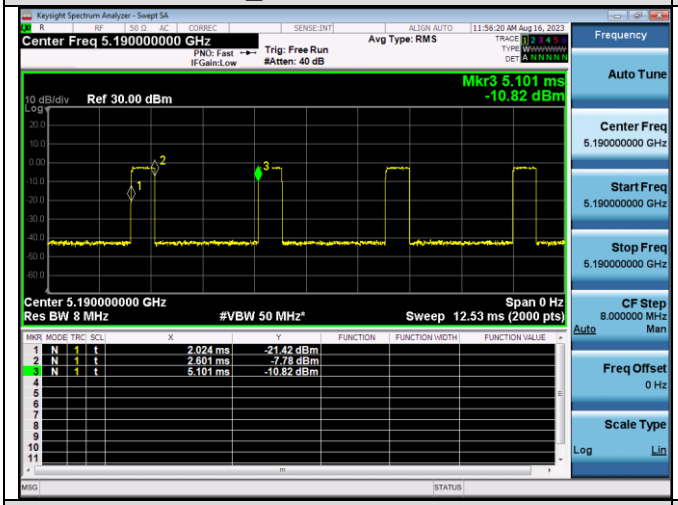
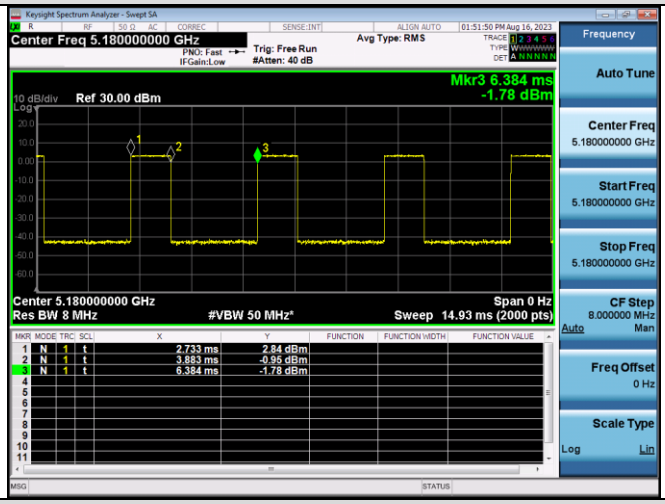
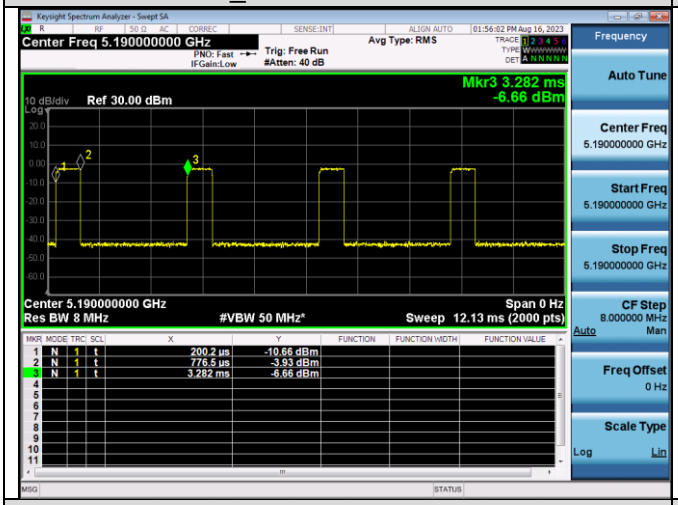
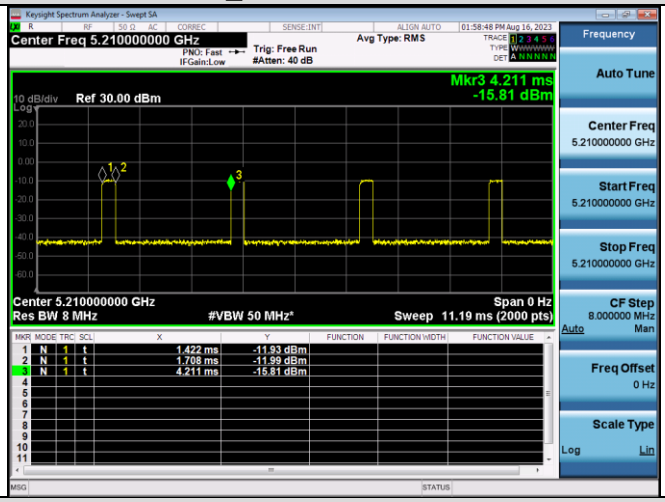
Operating mode	Data rates (Mbps)	Duty Cycle (%)	Duty Cycle Factor (dB)	1/ T Minimum VBW (kHz)	Average Factor (dB)
For band 5.150-5.250 GHz:					
IEEE 802.11a	6	35.23	4.53	0.73	-9.06
IEEE 802.11n-HT20	MCS0	31.49	5.02	0.87	-10.04
IEEE 802.11n-HT40	MCS0	18.75	7.27	1.73	-14.54
IEEE 802.11ac-VHT20	MCS0	3.15	5.02	0.87	-10.03
IEEE 802.11ac-VHT40	MCS9	1.87	7.28	1.74	-14.56
IEEE 802.11ac-VHT80	MCS9	10.25	9.89	3.5	-19.79
IEEE 802.11ax-HE20	MCS0	28.26	5.49	1.01	-10.98
IEEE 802.11ax-HE40	MCS9	17.53	7.56	1.88	-15.12
IEEE 802.11ax-HE80	MCS9	9.87	10.06	3.65	-20.11
For band 5.25-5.35 GHz:					
IEEE 802.11a	6	35.27	4.53	0.73	-9.05
IEEE 802.11n-HT20	MCS0	31.37	5.03	0.87	-10.07
IEEE 802.11n-HT40	MCS0	18.56	7.31	1.75	-14.63
IEEE 802.11ac-VHT20	MCS0	31.57	5.01	0.87	-10.01
IEEE 802.11ac-VHT40	MCS9	18.73	7.27	1.74	-14.55
IEEE 802.11ac-VHT80	MCS9	10.42	9.82	3.43	-19.64
IEEE 802.11ax-HE20	MCS0	28.24	5.49	1.01	-10.98
IEEE 802.11ax-HE40	MCS9	17.27	7.63	1.91	-15.25
IEEE 802.11ax-HE80	MCS9	12.63	8.99	3.57	-17.97
For band 5.47-5.725 GHz:					

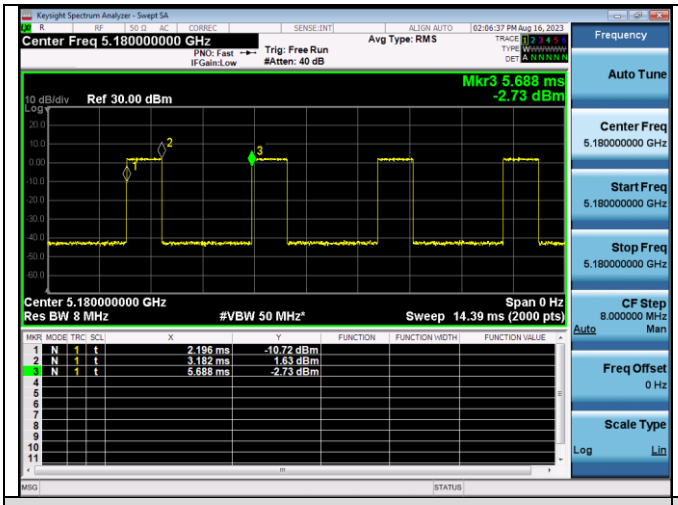
IEEE 802.11a	6	35.20	4.53	0.73	-9.07
IEEE 802.11n-HT20	MCS0	31.37	5.03	0.87	-10.07
IEEE 802.11n-HT40	MCS0	18.52	7.32	1.76	-14.65
IEEE 802.11ac-VHT20	MCS0	31.49	5.02	0.87	-10.04
IEEE 802.11ac-VHT40	MCS9	18.76	7.27	1.73	-14.54
IEEE 802.11ac-VHT80	MCS9	10.42	9.82	3.44	-19.64
IEEE 802.11ax-HE20	MCS0	28.26	5.49	1.01	-10.98
IEEE 802.11ax-HE40	MCS9	17.05	7.68	1.94	-15.37
IEEE 802.11ax-HE80	MCS9	8.69	10.61	4.14	-21.22
For band 5.725-5.850 GHz:					
IEEE 802.11a	6	35.20	4.53	0.73	-9.07
IEEE 802.11n-HT20	MCS0	31.48	5.02	0.87	-10.04
IEEE 802.11n-HT40	MCS0	18.56	7.31	1.75	-14.63
IEEE 802.11ac-VHT20	MCS0	31.65	5.00	0.86	-9.99
IEEE 802.11ac-VHT40	MCS9	18.70	7.28	1.74	-14.56
IEEE 802.11ac-VHT80	MCS9	10.24	9.90	3.50	-19.79
IEEE 802.11ax-HE20	MCS0	28.36	5.47	1.01	-10.95
IEEE 802.11ax-HE40	MCS9	17.23	7.64	1.92	-15.27
IEEE 802.11ax-HE80	MCS9	10.06	9.97	3.57	-19.95

Remark:

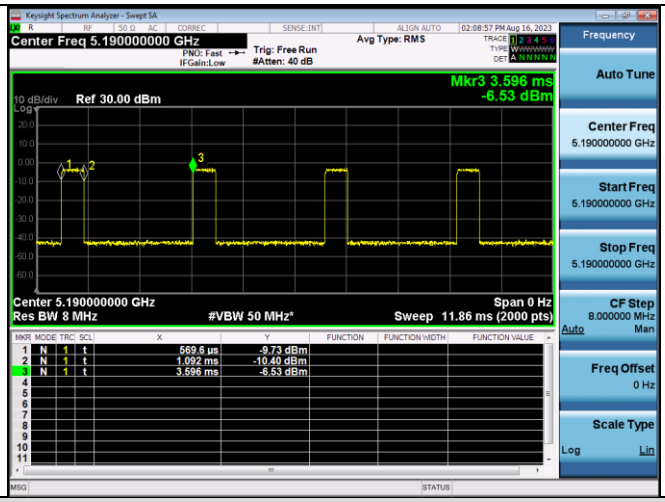
1. Duty Cycle factor = 10 * log (1/ Duty cycle) 2. Average factor = 20 log10 Duty Cycle
2. The duty cycle of each frequency band mode reflects the determination requirements of the low channel measurement value.
3. The measurement results involving the above compensation parameters have been compensated by soft ware to reflect the final results.

The test plots as follows:

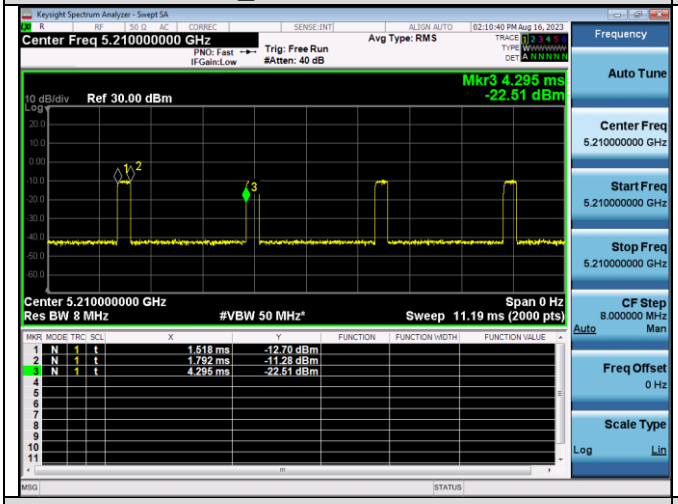
U-NII 1_IEEE 802.11a	U-NII 1_IEEE 802.11n-HT20
	
U-NII 1_ IEEE 802.11n-HT40	IEEE 802.11ac-VHT20
	
U-NII 1_ IEEE 802.11ac-VHT40	U-NII 1_ IEEE 802.11ac-VHT80
	
U-NII 1_ IEEE 802.11ax-HE20	U-NII 1_ IEEE 802.11ax-HE40



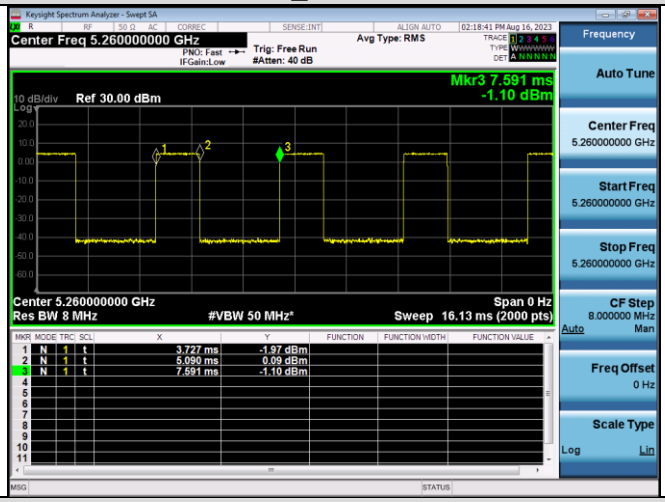
U-NII 1_ IEEE 802.11ax-HE80



U-NII 2A_ IEEE 802.11a



U-NII 2A_ IEEE 802.11n-HT20



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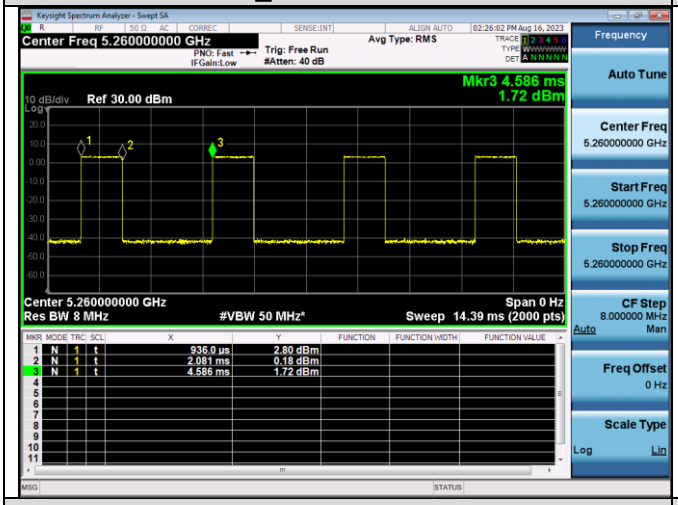

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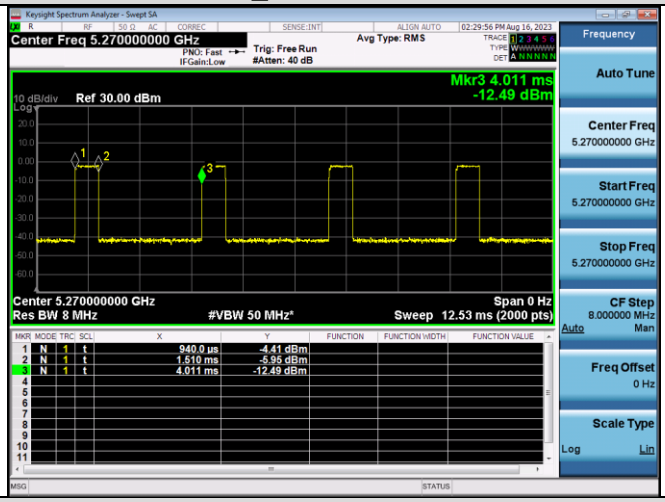

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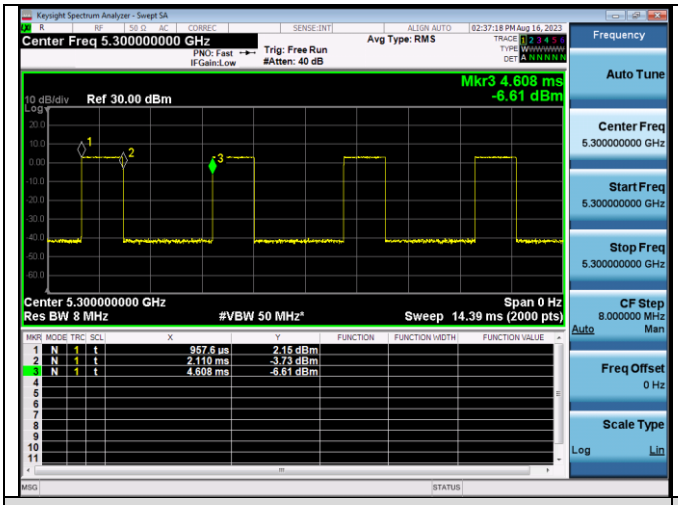

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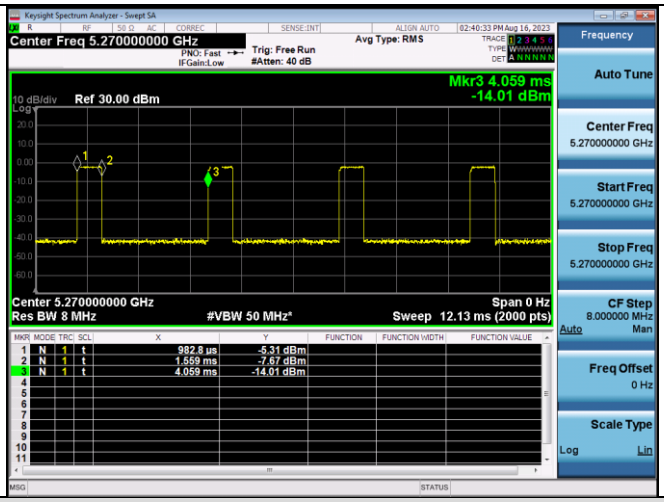
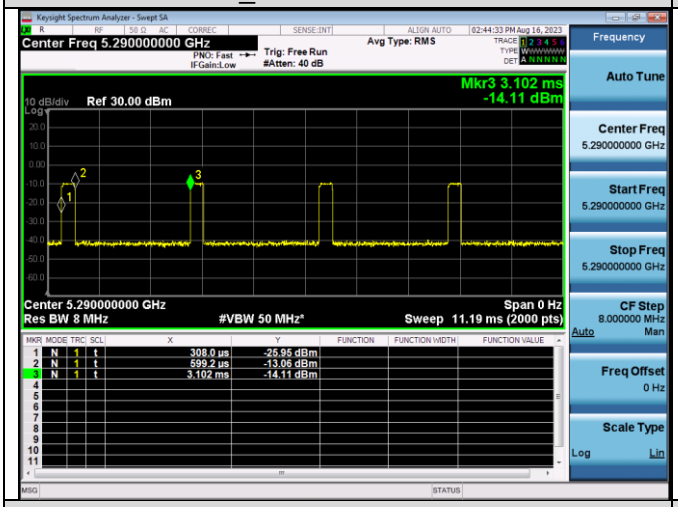


U-NII 2A_ IEEE 802.11ax-HE20



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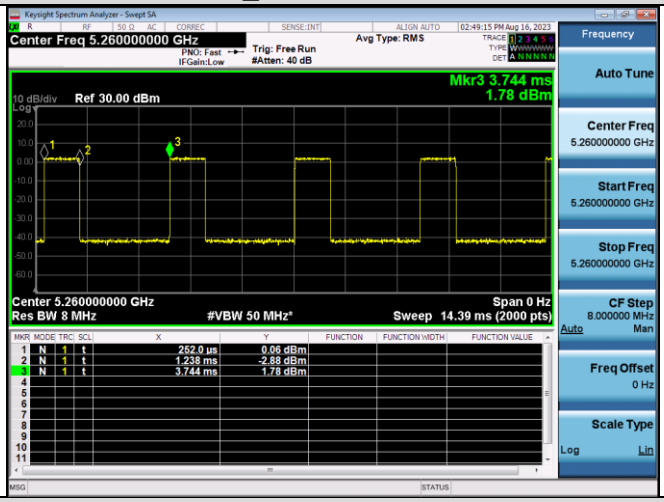

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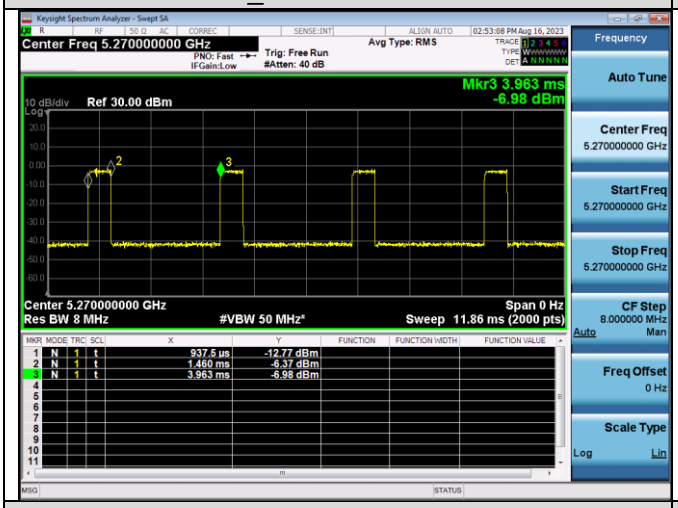
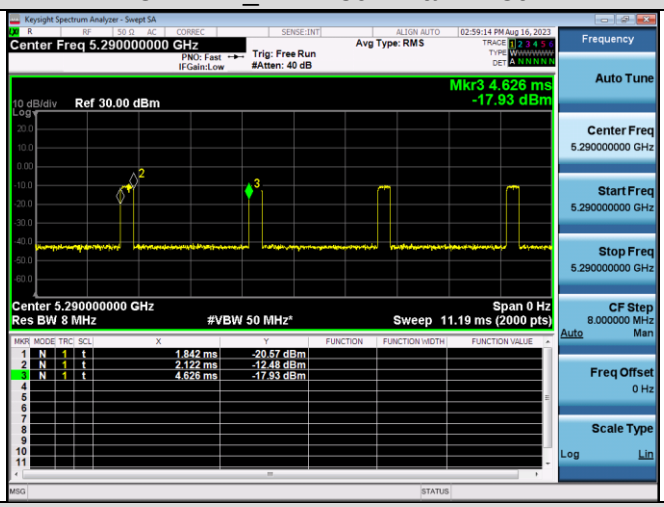
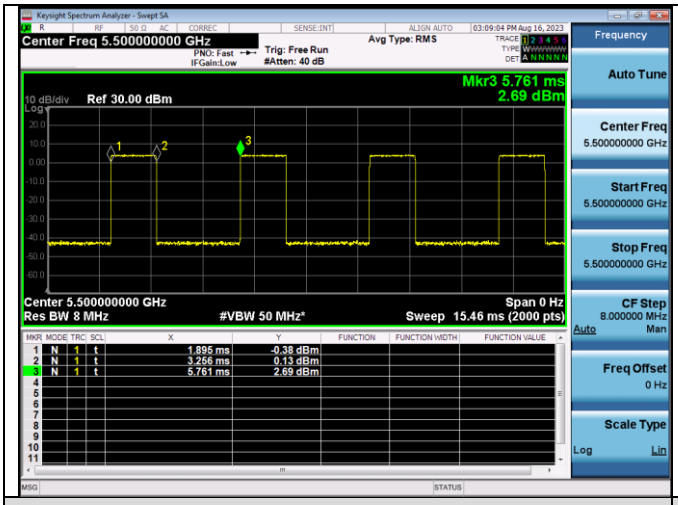


U-NII 2C_ IEEE 802.11a



U-NII 2C_ IEEE 802.11n-HT20



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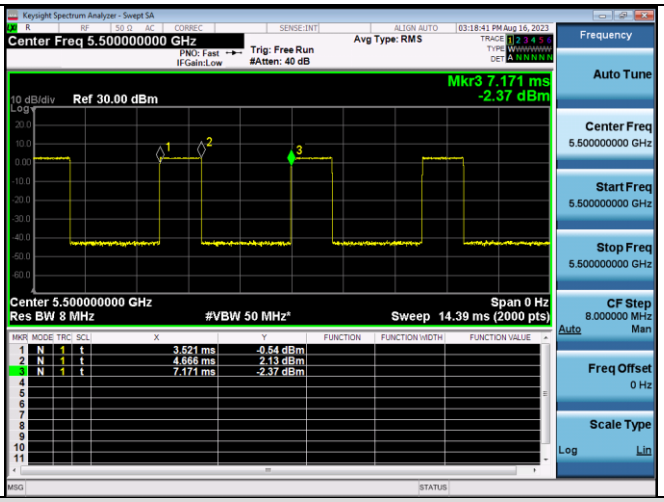

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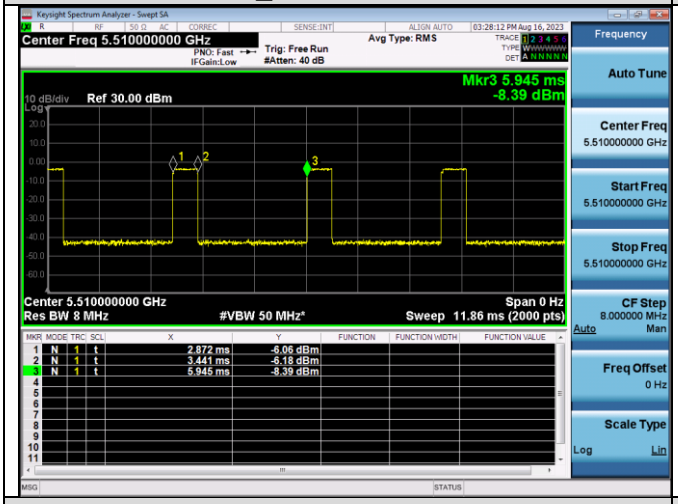

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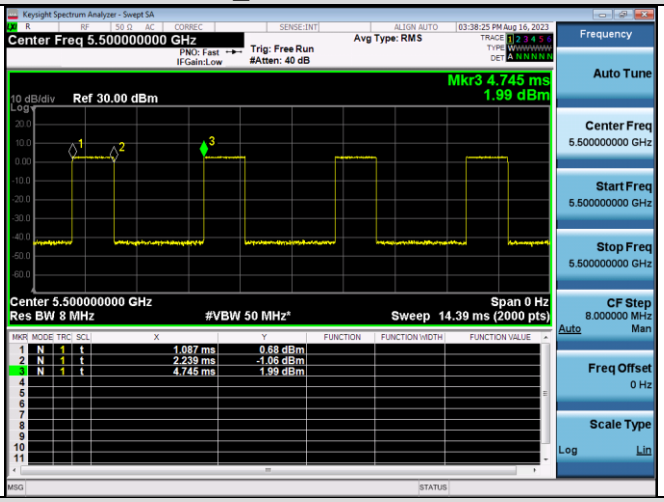

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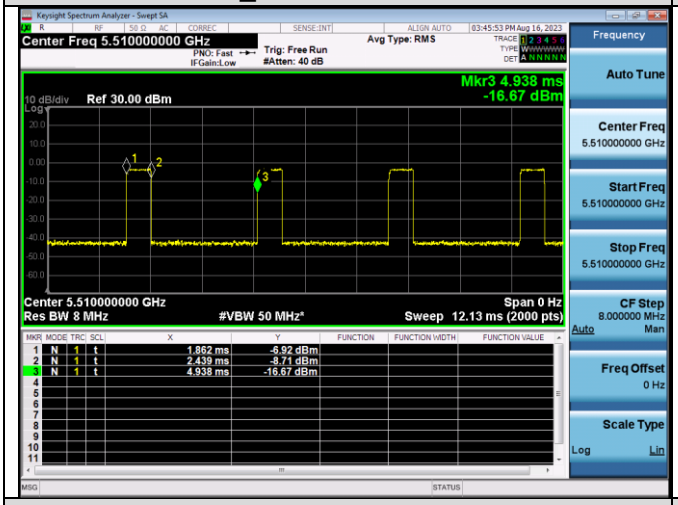
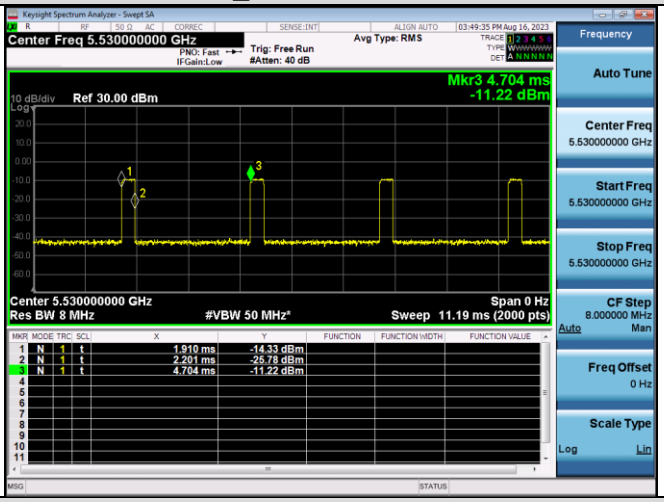


U-NII 2C_ IEEE 802.11ax-HE20



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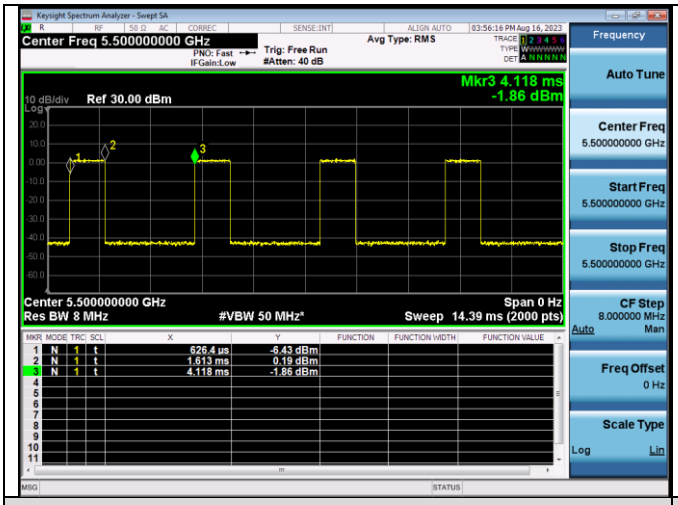

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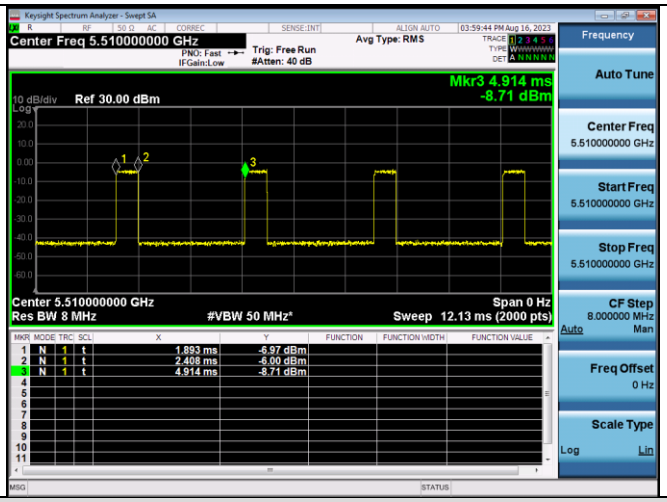
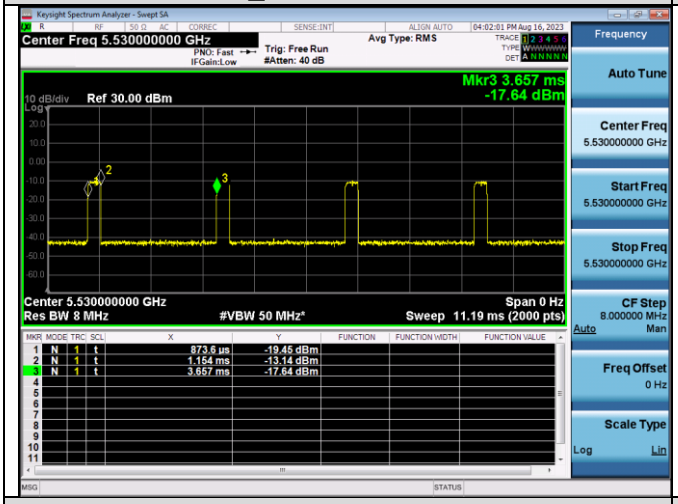


U-NII 3_ IEEE 802.11a



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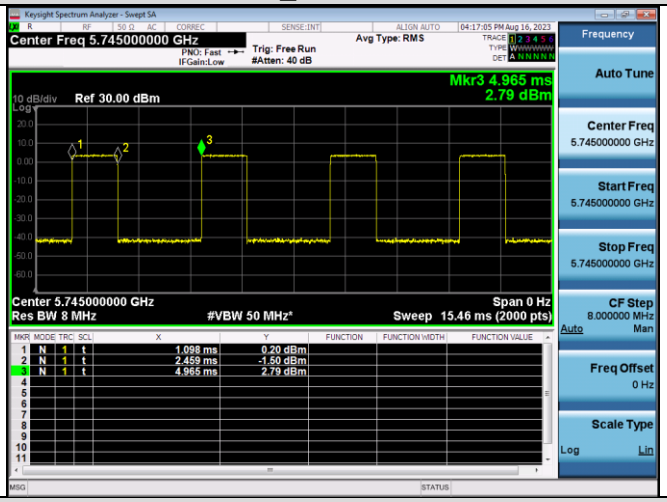

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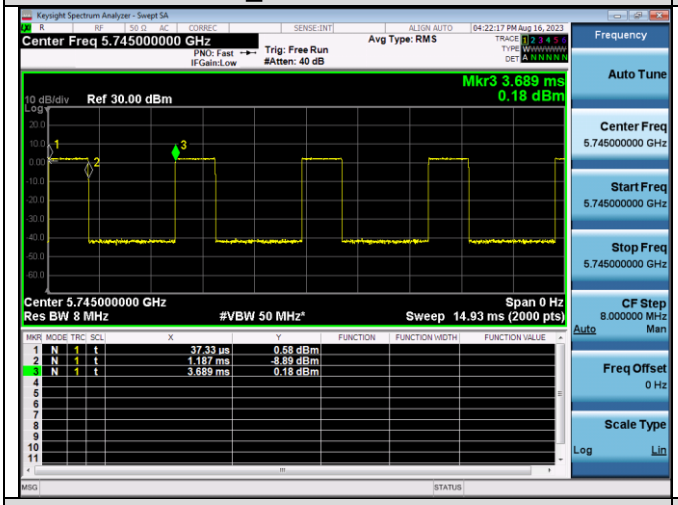

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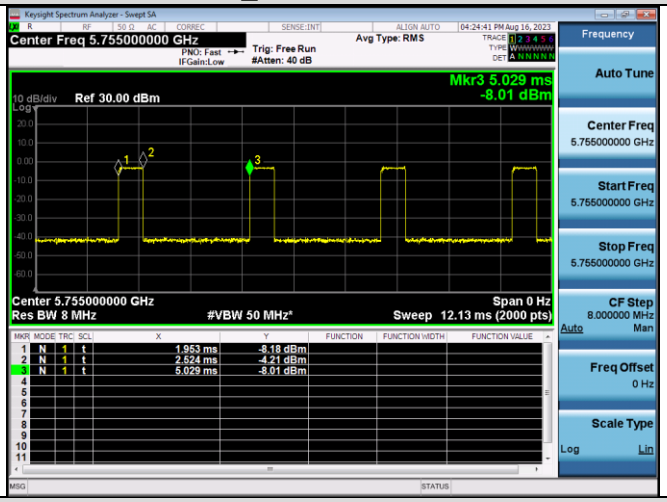

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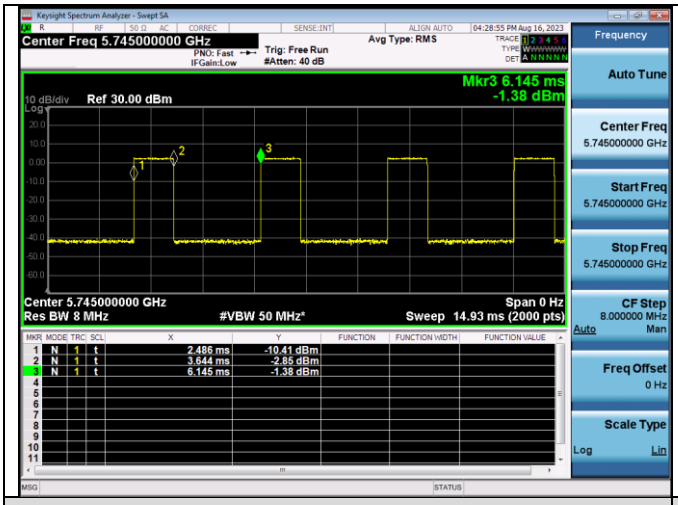

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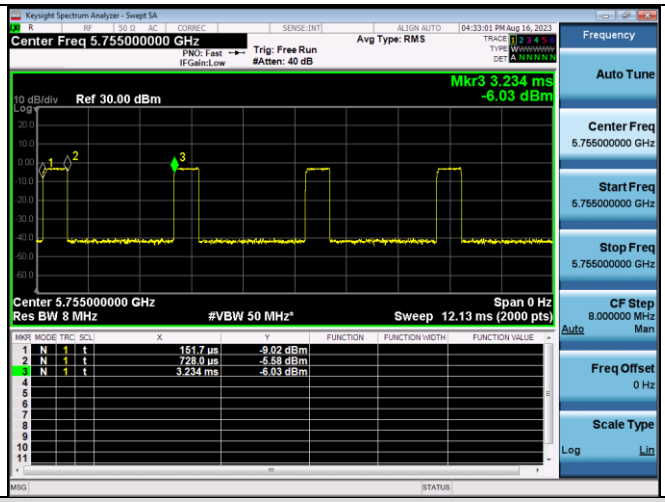

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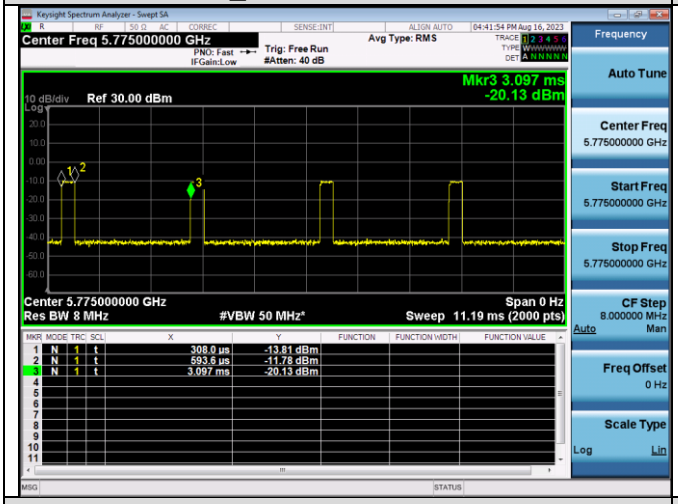

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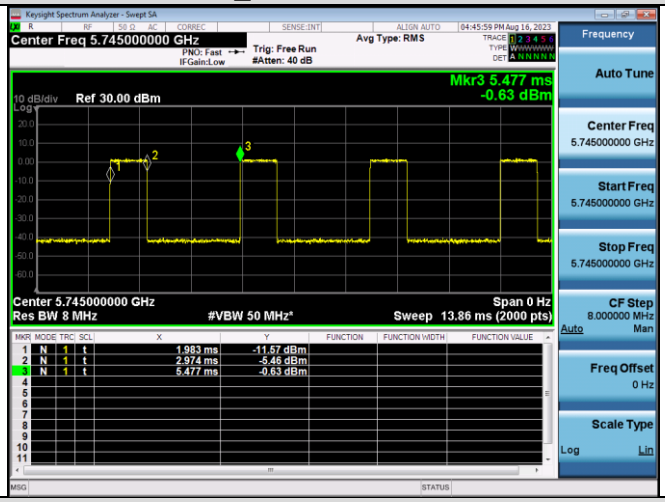

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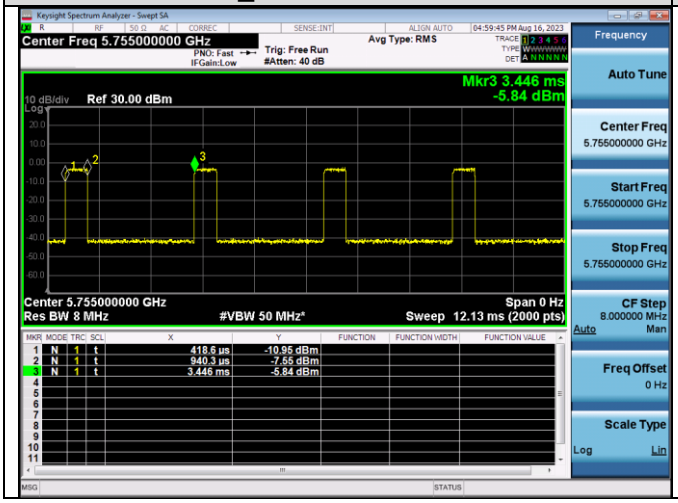

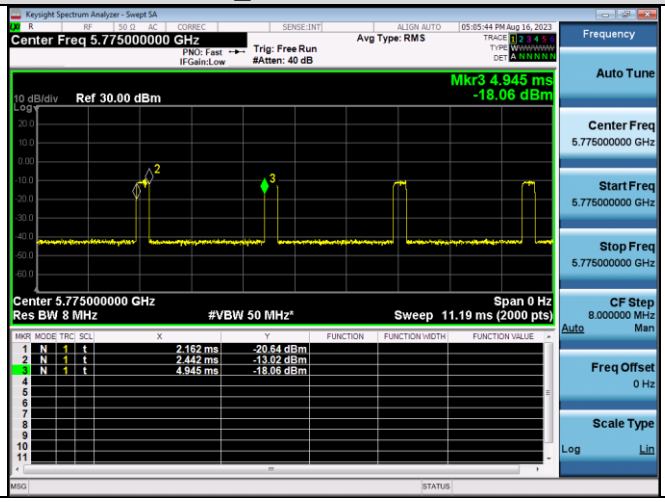

7. RF OUTPUT POWER MEASUREMENT

7.1 MEASUREMENT LIMITS

Operation Band	EUT Category		LIMIT
U-NII-1	☐	Outdoor Access Point	1 Watt (30 dBm) (Max. e.i.r.p < 125mW(21 dBm) at any elevation angle above 30 degrees as measured from the horizon)
	☐	Fixed point-to-point Access Point	1 Watt (30 dBm)
	☐	Indoor Access Point	1 Watt (30 dBm)
	☒	Client devices	250mW (23.98 dBm)
U-NII-2A	/		250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-2C	/		250mW (23.98 dBm) or 11 dBm+10 log B*
U-NII-3	/		1 Watt (30 dBm)

Note: Where B is the 26dB emission bandwidth in MHz.

7.2 MEASUREMENT PROCEDURE

☒Method PM is Measurement using an RF average power meter. The procedure for this method is as follows:

1. The testing follows the ANSI C63.10 Section 12.3.3.1
2. Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the following conditions are satisfied:
3. The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
4. At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
5. The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
6. Determine according to the duty cycle of the equipment: when it is less than 98%, follow the steps below.
7. Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
8. Adjust the measurement in dBm by adding [10 log (1 / D)], where D is the duty cycle {e.g., [10 log (1 / 0.25)], if the duty cycle is 25%}.
9. Record the test results in the report.

7.3 MEASUREMENT SETUP (BLOCK DIAGRAM OF CONFIGURATION)

7.4 MEASUREMENT RESULT

Test Data of Conducted Output Power for band 5.15-5.25 GHz-ANT 1				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	11.83	23.98	Pass
	5200	10.68	23.98	Pass
	5240	11.13	23.98	Pass
802.11n20	5180	11.16	23.98	Pass
	5200	10.48	23.98	Pass
	5240	10.41	23.98	Pass
802.11n40	5190	10.81	23.98	Pass
	5230	11.11	23.98	Pass
802.11ac20	5180	11.30	23.98	Pass
	5200	10.72	23.98	Pass
	5240	10.62	23.98	Pass
802.11ac40	5190	11.44	23.98	Pass
	5230	10.91	23.98	Pass
802.11ac80	5210	10.50	23.98	Pass
802.11ax20	5180	10.64	23.98	Pass
	5200	10.38	23.98	Pass
	5240	9.90	23.98	Pass
802.11ax40	5190	10.06	23.98	Pass
	5230	10.23	23.98	Pass
802.11ax80	5210	10.42	23.98	Pass

Test Data of Conducted Output Power for band 5.15-5.25 GHz-ANT 2				
Test Mode	Test Channel (MHz)	Average Power (dBm)	Limits (dBm)	Pass or Fail
802.11a	5180	11.17	23.98	Pass
	5200	9.44	23.98	Pass
	5240	9.77	23.98	Pass
802.11n20	5180	10.11	23.98	Pass
	5200	9.70	23.98	Pass
	5240	9.25	23.98	Pass
802.11n40	5190	9.94	23.98	Pass
	5230	9.76	23.98	Pass
802.11ac20	5180	9.98	23.98	Pass
	5200	9.29	23.98	Pass
	5240	9.12	23.98	Pass
802.11ac40	5190	9.68	23.98	Pass
	5230	10.05	23.98	Pass
802.11ac80	5210	8.69	23.98	Pass
802.11ax20	5180	9.37	23.98	Pass
	5200	9.20	23.98	Pass
	5240	9.11	23.98	Pass
802.11ax40	5190	9.19	23.98	Pass
	5230	9.31	23.98	Pass
802.11ax80	5210	8.68	23.98	Pass