



TEST REPORT

REPORT NUMBER: I22W00019-WiFi RF-5.1GHz-Rev4

ON

Type of Equipment: Wi-Fi Module
Type of Designation: W82
Brand Name: SIMCom
Manufacturer: SIMCom Wireless Solutions Limited
FCC ID 2AJYU-8XN0002

ACCORDING TO
FCC Part15 Subpart E
ANSI C63.10-2013

Chongqing Academy of Information and Communications Technology

Month date, year

May, 23, 2023

Signature

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.



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Revision Version

Report Number	Revision	Date	Memo
I22W00019-WiFi RF-5.1GHz	00	2022-12-29	Initial creation of test report
I22W00019-WiFi RF-5.1GHz-Rev1	01	2023-05-04	First change of test report
I22W00019-WiFi RF-5.1GHz-Rev2	02	2023-05-18	Second change of test report
I22W00019-WiFi RF-5.1GHz-Rev3	03	2023-05-19	Third change of test report
I22W00019-WiFi RF-5.1GHz-Rev4	04	2023-05-23	Fourth change of test report

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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
Designation Number:	CN1239
Address:	Building C, Technology Innovation Center, No.8, Yuma Road, Chayuan New Area, Nan'an District, Chongqing, People's Republic of China
	No.19 East Road, Xiantao Big-data Valley, Yubei District, Chongqing, People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	15-35°C
Relative Humidity:	30-60%

1.3. Project data

Testing Start Date:	2022-03-20
Testing End Date:	2023-05-18

1.4. Signature



2023-05-23

Li Quan
(Prepared this test report)

Date

2023-05-23

Xiao Yu
(Reviewed this test report)

Date

2023-05-23

Xiang Luoyong
Director of the laboratory
(Approved this test report)

Date

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2. Client Information

2.1. Applicant Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	86 21 3157 5100
Fax:	--
Email:	Yongsheng Li@simcom.com
Contact Person:	Yongsheng Li

2.2. Manufacturer Information

Company Name:	SIMCom Wireless Solutions Limited
Address /Post:	SIMCom Headquarters Building, Building 3, No.289 Linhong Road, Changning District, Shanghai, China
City:	Shanghai
Country:	China
Telephone:	86 21 3157 5100
Fax:	--
Email:	Yongsheng Li@simcom.com
Contact Person:	Yongsheng Li

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3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	Wi-Fi Module
Model name	W82
Brand name	SIMCom
WLAN Frequency Band	2.4G/UNII 1/2A/2C/3/5/6/7/8
Product Type	UNII-1/2A/2C/3:Indoor Access Point
	UNII-5/6/7/8:Low-power Indoor Client
Frequency Range	2.4G: 802.11b/g/n20/ax20: 2412-2462MHz; 802.11n40/ax40: 2422-2452MHz
	5.1G : UNII-1:802.11a/n20/ac20/ax20 : 5180-5240MHz ; 802.11n40/ac40/ax40 : 5190-5230MHz; 802.11ac80/ax80: 5210MHz
	UNII-2A: 802.11a/n20/ac20/ax20: 5260-5320MHz; 802.11n40/ac40/ax40: 5270-5310MHz 802.11ac80/ax80: 5290MHz; UNII-1and UNII-2A: 802.11ac160/ax160: 5250MHz
	UNII-2C:802.11a/n20/ac20/ax20: 5500-5700MHz; 802.11n40/ac40/ax40: 5510-5670MHz 802.11ac80/ax80: 5530-5610MHz; 802.11ac160/ax160: 5570MHz
	UNII-3:802.11a/n20/ac20/ax20:5745-5825MHz; 802.11n40/ac40/ax40: 5755-5795MHz 802.11ac80/ax80: 5775MHz
	Band5 : 802.11ax20 : 5955-6415MHz ; 802.11ax40 : 5965-6405MHz ; 802.11ax80 : 5985-6385MHz; 802.11ax160: 6025-6345MHz
	Band6: 802.11ax20: 6435-6515MHz; 802.11ax40: 6445-6525MHz; 802.11ax80: 6465MHz; 802.11ax160: 6505MHz
Band7 : 802.11ax20 : 6535-6855MHz ; 802.11ax40 : 6565-6845MHz ; 802.11ax80 : 6545-6865MHz; 802.11ax160: 6665-6825MHz	
Band8 : 802.11ax20 : 6895-7115MHz ; 802.11ax40 : 6885-7085MHz ; 802.11ax80 : 6945-7025MHz; 802.11ax160: 6985MHz	
802.11 mode	b/g/a/n/ac/ax
Modulation mode	DSSS/CCK/OFDM/OFDMA
Antenna port	Ant0/Ant1
Extreme Temperature	-30/+70°C
Nominal Voltage	3.8V
Extreme High Voltage	4.4V
Extreme Low Voltage	3.3V

Note1: Photographs of EUT are shown in ANNEX A of this test report.

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Note2: High and low voltage values in extreme condition test are given by manufacturer.

Note3: This report is only for U-NII 1, U-NII 2a, U-NII 2C test results.

Test frequency list:

WLAN_2.4G:

BW_20M	Channel	1	6	11
	Fre.(MHz)	2412	2437	2462
BW_40M	Channel	3	6	9
	Fre.(MHz)	2422	2437	2452

UNII-1 and UNII-2A:

BW_20M	Channel	36	40	44	48	52	56	60	64
	Fre.(MHz)	5180	5200	5220	5240	5260	5280	5300	5320
BW_40M	Channel	38		46		54		62	
	Fre.(MHz)	5190		5230		5270		5310	
BW_80M	Channel	42				58			
	Fre.(MHz)	5210				5290			
BW_160M	Channel	50							
	Fre.(MHz)	5250							

UNII-2C:

BW_20M	Channel	100	104	108	112	116	120	124	128	132	136	140
	Fre.(MHz)	5500	5520	5540	5560	5580	5600	5620	5640	5660	5680	5700
BW_40M	Channel	102		110		118		126		134		/
	Fre.(MHz)	5510		5550		5590		5630		5670		/
BW_80M	Channel	106				122				/		
	Fre.(MHz)	5530				5610						
BW_160M	Channel	114								/		
	Fre.(MHz)	5570										

Note: "/" Represents empty

UNII-3:

BW_20M	Channel	149	153	157	161	165
	Fre.(MHz)	5745	5765	5785	5805	5825
BW_40M	Channel	151		159		/
	Fre.(MHz)	5755		5795		
BW_80M	Channel	155				/
	Fre.(MHz)	5775				
BW_160M	Channel	/				/
	Fre.(MHz)	/				

Note: "/" Represents empty

WLAN_6G:

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		UNII-5			UNII-6			UNII-7			UNII-8		
BW_20M	Channel	1	45	93	97	105	113	117	149	181	185	209	233
	Fre.(MHz)	5955	6175	6415	6435	6475	6515	6535	6695	6855	6875	6995	7115
BW_40M	Channel	3	43	91	99	107	115	123	147	179	187	203	227
	Fre.(MHz)	5965	6165	6405	6445	6485	6525	6565	6685	6845	6885	6965	7085
BW_80M	Channel	7	39	87	103	/	/	119	151	183	199	215	/
	Fre.(MHz)	5985	6145	6385	6465	/	/	6545	6705	6865	6945	7025	/
BW_160M	Channel	15	47	79	111	/	/	143	175	/	207	/	/
	Fre.(MHz)	6025	6185	6345	6505	/	/	6665	6825	/	6985	/	/

Note1: CH115/119/183/111/175/187 includes cross frequency
 Note2: "/" Represents empty

3.2. Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version	Date of receipt
S1	SN:MP0622033CCC290	V1.01	V1.0.01	2022-03-04
S2	SN:MP0622033CCC308	V1.01	V1.0.01	2022-03-04

*EUT ID: is used to identify the test sample in the lab internally.

Technology	Band	Frequency range(MHz)	Support mode	Antenna gain ^{note2}	MIMO Tx function ^{note3}	Directional gain ^{note4}
WLAN	2.4G	2400-2483.5	802.11b/g/n(HT20/40)/ax(HE20/40) ^{note1}	2.97dBi	2TX	b/g:2.97dBi n/ax:2.97dBi+10log(2)=5.98dBi
	5G	UNII 1: 5150MHz-5250MHz UNII 2A: 5250MHz-5350MHz UNII 2C: 5470MHz-5725MHz UNII 3: 5725MHz-5850MHz	802.11a/n(HT20/40)/ac(VHT20/40/80/160)/ax(HE20/40/80/160) ^{note1}	UNII 1: 3.50dBi UNII 2A:3.47dBi UNII 2C: 3.94dBi UNII 3: 3.52dBi	2TX	a:UNII 1: 3.50dBi a:UNII 2A:3.47dBi a:UNII 2C: 3.94dBi a:UNII 3: 3.52dBi n/ac/ax:UNII 1: 3.50dBi+10log(2)=6.51dBi n/ac/ax:UNII 2A:3.47dBi+10log(2)=6.48dBi n/ac/ax:UNII 2C:3.94dBi+10log(2)=6.95dBi n/ac/ax:UNII 3: 3.52dBi+10log(2)=6.53dBi
	6G	UNII 5: 5925MHz-6425MHz UNII 6: 6425MHz-6525MHz UNII 7: 6525MHz-6875MHz UNII 8: 6875MHz-7125MHz	802.11ax(HE20/40/80/160) ^{note1}	UNII 5: 3.99dBi UNII 6: 3.29dBi UNII 7: 3.95dBi UNII 8: 3.82dBi	2TX	UNII 5: 3.99dBi+10log(2)=7.00dBi UNII 6: 3.29dBi+10log(2)=6.30dBi UNII 7: 3.95dBi+10log(2)=6.96dBi UNII 8: 3.82dBi+10log(2)=6.83dBi

Note1: This device only supports full RU transmission.

Note2: Antenna gain data provided by the customer.ANT0 and ANT1 antennas have the same gain.

Note3:Only 802.11n/ac/ax supports MIMO.MIMO function don't support simultaneous CDD technology and Beamforming .

Note4:According to KDB 662911D01 Multiple Transmitter Output V02R01, If any transmit signals are correlated with each other, Directional gain = Gant + 10 log (Nant) dBi

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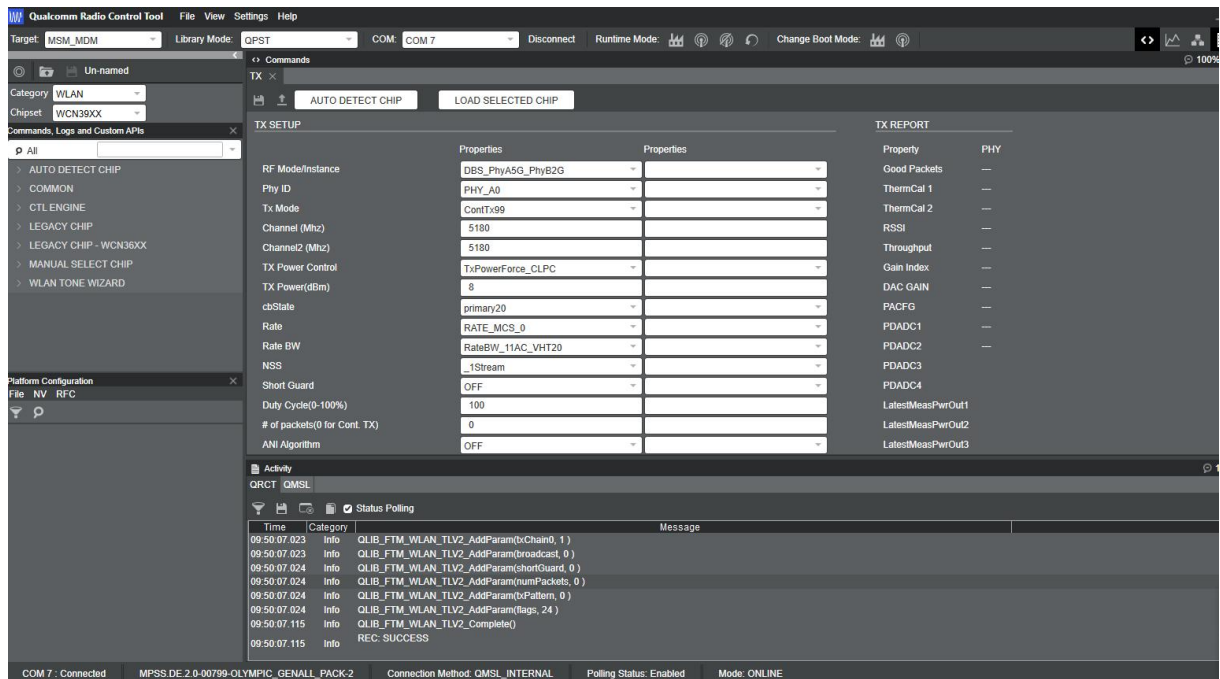
3.3. Internal Identification of AE used during the test

AE ID*	Description	dB*
AE1	RF cable	2.4GHz: 1.2 5GHz: 2.5 6GHz: 2.5

*AE ID: is used to identify the test sample in the lab internally.
dB*: is provided customer.

3.4. EUT Test RF Configuration

EUT uses tool to control emission measurement, Change power level, channel, rate and HT .11a/n/ac/ax transmitter power level set to 8.



3.5. Test software line loss compensation list

Frequency(MHz)	Cable loss(dB)
2400	1.2
5000	1.8
5800	2.0
6000	2.2
7000	2.5

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Note: The test line loss file consists of two parts: the cable line loss provided by the customer, see report 3.3RF cable for details; All cable losses used in system construction are detailed in this table. The test line loss file value was called by the testing software and has been compensated for in the test power test project and PSD test project.

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4. Reference Documents

4.1. Documents supplied by applicant

PICS/PIXIT, referring to Annex B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 15, Subpart E	Title 47 of the Code of Federal Regulations; Chapter I Part 15 - Radio frequency devices	--
ANSI C63.10	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices	2013
KDB 789033 D02 General U-NII Test Procedures New Rules v02r01	GUIDELINES FOR COMPLIANCE TESTING OF UNLICENSED NATIONAL INFORMATION INFRASTRUCTURE (U-NII) DEVICES PART 15, SUBPART E	2017
KDB 662911 D01 Multiple Transmitter Output v02r01	Emissions Testing of Transmitters with Multiple Outputs in the Same Band	2013

Note1: KDB 789033/662911 is not A2AL certified.



5. Test Equipments Utilized

5.1. RF Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	spectrum analyzer	N9030A	MY55410223	--	--	Keysight	2023-06-29
2	spectrum analyzer	N9030B	MY57140708	--	--	Keysight	2023-06-29

5.2. RSE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESU40	100350	01	4.43 SP3	R&S	2023-06-29
2	Ultra-wideband Log Periodic Antenna	VULB 9163	9163-586	--	--	Schwarzbeck	2024-10-28
3	Double Ridged Guide Antenna	9120D	9120D-1103	--	--	Schwarzbeck	2024-05-05
4	Test Receiver	ESW 26	101382	00	1.50 SP1	R&S	2023-06-29
5	18GHz-26.5GHz Horn Antenna	DATE 1152	LM7127	--	--	ETS	2024-09-06
6	26.5GHz-40GHz Horn Antenna	DATE 1012	LM5945	--	--	ETS	2024-09-06
7	Loop Antenna	6502	00143163	--	--	ETS	2024-09-06
8	Preamplifier	SCU-08F1	08320027	--	--	R&S	--
9	Preamplifier	SCU-18F	180093	--	--	R&S	--

5.3. CE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Test Receiver	ESR 3	102477	03	3.48 SP2	R&S	2023-06-29
2	Artificial Main Network	ENV 216	102368	--	--	R&S	2023-04-31

5.4. Climate Chamber

No.	Name	Type	SN	Manufacture	Cal.Due Date
1	Fully anechoic chamber	FAC-5	--	TDK	2024-08-30
2	Semi-anechoic chamber	FAC-10	--	TDK	2024-08-28

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5.5. Vibration table

No.	Name	Type	SN	Manufacture	Cal.Due Date
--	--	--	--	--	--

Anechoic chamber

Fully anechoic chamber by TDK.

5.6. Test software

No.	Name	version	SN	Manufacture
1	EMC32	V 9.26.01	--	R&S
2	EMC32	V10.20.10	--	R&S
3	T-RFS500	V2.0	--	Manufacturer:Beijing Zhiwang Xince Technology Co., Ltd.

6. Test Results

6.1. Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
FCC CFR Part 15.407	OBW and Emission BW	Pass
FCC CFR Part 15.407(a)	Maximum Output Power	Pass
FCC CFR Part 15.407(a)	Peak Power Spectral Density	Pass
FCC 47 CFR Part 15.407(b)	Band Edges Compliance (Radiated)	Pass
FCC 47 CFR Part 15.407(b)	Transmitter Spurious Emission-Radiated	Pass
FCC 47 CFR Part 15.407(b)	AC Powerline Conducted Emission (150kHz- 30MHz)	Pass
FCC 47 CFR Part 15.203	Antenna requirement	Pass ^{note1}

Note1: The EUT have two RF welding disc interfaces for connecting external antennas and contain the two unique antenna connectors. Antenna type is Sector Glue Stick Antenna; Two antenna ports use same antennas. The max antenna gain is : 2.4G: 2.97dBi, UNII 1: 3.50dBi, UNII 2C: 3.94dBi, UNII 3: 3.52dBi, UNII 5: 3.99dBi, UNII 6: 3.29dBi, UNII 7: 3.95dBi, UNII 8: 3.82dBi; So this EUT Complies with the FCC section 15.203 antenna requirements, please refer to the internal photos.

6.2. OBW and Emission BW

SpeciPications:	--
DUT Serial Number:	S1
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Limit (dBm)
--	--

Measurement Uncertainty:

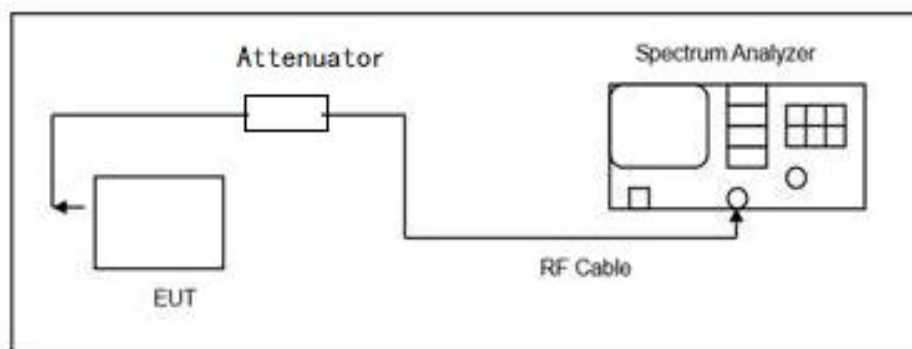
Measurement Uncertainty	$\pm 10.04\text{kHz}$
-------------------------	-----------------------

Test Procedure

The measurement is according to ANSI C63.10 clause 12.4.1

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = peak.
- Trace mode = max hold.
- Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the instrument. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

Test block diagram:



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Measurement Results:

Chain.0

Mode	RU Con.	Channel		99% OBW(MHz)	26dB BW(MHz)	Conclusion
802.11a-20	NA	36	Pic.1	16.559	19.43	PASS
		40	Pic.2	16.478	19.12	PASS
		48	Pic.3	16.524	20.11	PASS
		52	Pic.4	16.571	19.31	PASS
		56	Pic.5	16.554	19.83	PASS
		64	Pic.6	16.522	20.18	PASS
		100	Pic.7	16.504	20.05	PASS
		116	Pic.8	16.540	20.08	PASS
		140	Pic.9	16.509	21.34	PASS
802.11n-HT20	NA	36	Pic.10	17.719	21.65	PASS
		40	Pic.11	17.781	20.61	PASS
		48	Pic.12	17.666	21.14	PASS
		52	Pic.13	17.716	20.86	PASS
		56	Pic.14	17.756	21.61	PASS
		64	Pic.15	17.779	21.29	PASS
		100	Pic.16	17.766	20.91	PASS
		116	Pic.17	17.783	21.01	PASS
		140	Pic.18	17.775	20.84	PASS
802.11n-HT40	NA	38	Pic.19	36.123	38.98	PASS
		46	Pic.20	36.131	39.08	PASS
		54	Pic.21	36.128	39.11	PASS
		62	Pic.22	36.163	39.16	PASS
		102	Pic.23	36.146	38.69	PASS
		118	Pic.24	36.041	38.86	PASS
		134	Pic.25	36.080	38.12	PASS
802.11ac-VHT20	NA	36	Pic.26	17.765	21.14	PASS
		40	Pic.27	17.712	20.84	PASS
		48	Pic.28	17.807	20.93	PASS
		52	Pic.29	17.769	20.46	PASS
		56	Pic.30	17.752	21.13	PASS
		64	Pic.31	17.717	21.13	PASS
		100	Pic.32	17.755	20.40	PASS
		116	Pic.33	17.712	20.78	PASS
		140	Pic.34	17.742	21.91	PASS

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802.11ac-VHT40	NA	38	Pic.35	36.094	38.89	PASS
		46	Pic.36	36.109	38.66	PASS
		54	Pic.37	36.176	39.22	PASS
		62	Pic.38	36.200	38.83	PASS
		102	Pic.39	36.134	38.98	PASS
		118	Pic.40	36.170	38.48	PASS
		134	Pic.41	36.170	38.91	PASS
802.11ac-VHT80	NA	42	Pic.42	75.454	80.86	PASS
		58	Pic.43	75.502	79.93	PASS
		106	Pic.44	75.546	80.78	PASS
		122	Pic.45	75.560	80.86	PASS
802.11ac-VHT160	NA	50	Pic.46	155.30	170.70	PASS
		114	Pic.47	155.31	171.00	PASS
802.11ax-HE20	Full	36	Pic.48	18.945	20.51	PASS
		40	Pic.49	18.955	20.34	PASS
		48	Pic.50	18.921	20.25	PASS
		52	Pic.51	18.964	20.57	PASS
		56	Pic.52	18.919	20.44	PASS
		64	Pic.53	18.969	20.29	PASS
		100	Pic.54	18.930	20.77	PASS
		116	Pic.55	18.885	20.15	PASS
		140	Pic.56	18.955	20.45	PASS
802.11ax-HE40	Full	38	Pic.57	37.868	40.61	PASS
		46	Pic.58	37.887	41.72	PASS
		54	Pic.59	38.102	41.16	PASS
		62	Pic.60	37.905	41.29	PASS
		102	Pic.61	38.030	42.69	PASS
		118	Pic.62	37.955	42.65	PASS
		134	Pic.63	37.941	42.80	PASS
802.11ax-HE80	Full	42	Pic.64	77.070	80.90	PASS
		58	Pic.65	76.896	80.46	PASS
		106	Pic.66	77.019	80.39	PASS
		122	Pic.67	76.996	80.95	PASS
802.11ax-HE160	Full	50	Pic.68	156.48	168.2	PASS
		114	Pic.69	156.75	174.00	PASS

Test Picture as below:

Note: Test screenshots can be found in Chapter 6.3

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6.3. Maximum Output Power

SpeciPications:	FCC Part 15.407 (a)
DUT Serial Number:	S1
Test conditions:	Ambient Temperature:15°C-35°C Relative Humidity:30%-60% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

Standard	Frequency (MHz)	Limit (dBm)
FCC Part 15.407 (a)	5150MHz~5250MHz	For an indoor access point operating in the band 5.15–5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. 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.
	5250MHz~5350MHz	For the 5.25–5.35 GHz and 5.47–5.725 GHz bands, 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. 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.
	5470MHz~5725MHz	

Note: Directional gain according to section 3.2 of this report

Band	802.11a Directional gain (dBi)	802.11n/ac/ax Directional gain (dBi)
UNII 1	3.50	6.51
UNII 2A	3.47	6.48
UNII 2C	3.94	6.95

UNII 1: 802.11a limit=1w=30dBm

802.11n/ac/ax limit=1W-(DG-6)=29.49dBm

UNII 2A: 802.11a Min EBW=19.31,11+10log19.31=23.86, limit=23.86dBm

802.11n20/ac20/ax20 Min EBW=20.29,11+10log20.29=24.07, limit=23.98dBm(250mW)-(DG-6)=23.5dBm

802.11n40/ac40/ax40/ac80/ax80/ac160/ax160, limit=23.98dBm(250mW)-(DG-6)=23.5dBm

UNII 2C: 802.11a Min EBW=20.05,11+10log20.05=24.02, limit=23.98dBm(250mW)

802.11n20/ac20/ax20 Min EBW=20.15,11+10log20.15=24.04, limit=23.98dBm(250mW)-(DG-6)=23.03dBm

802.11n40/ac40/ax40/ac80/ax80/ac160/ax160, limit=23.98dBm(250mW)-(DG-6)=23.03dBm

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Measurement Uncertainty:

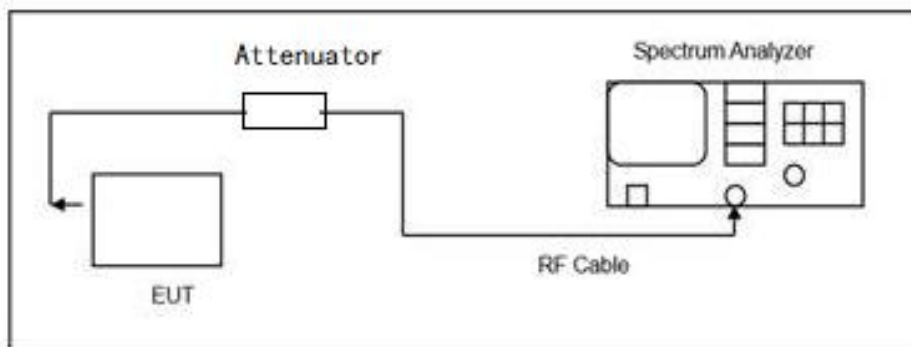
Measurement Uncertainty	±0.52dB
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Test Procedure

The measurement is according to ANSI C63.10 clause 12.3.2.2

- a) Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
- b) Set RBW = 1 MHz.
- c) Set VBW ≥ 3 MHz.
- d) Number of points in sweep ≥ $[2 \cdot \text{span} / \text{RBW}]$. (This gives bin-to-bin spacing ≤ $\text{RBW} / 2$, so that narrowband signals are not lost between frequency bins.)
- e) Sweep time = auto.
- f) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
- g) If transmit duty cycle < 98%, use a video trigger with the trigger level set to enable triggering only on full power pulses. The transmitter shall operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no OFF intervals) or at duty cycle ≥ 98%, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run.”
- h) Trace average at least 100 traces in power averaging (rms) mode.
- i) Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument’s band power measurement function, with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1 MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.

Test block diagram:



Note: The test screenshot only reflects the worst-case rate and is placed in the order of 11a/11n20/11n40/11ac20/11ac40/11ac80/11ac160/11ax20/11ax40/11ax80/11ax160.

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Measurement Results:
Chain.0

Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11a	6 Mbps	7.45	/	/	7.91	/	/	7.82	/	/	PASS
	9 Mbps	6.46	/	/	7.98	/	/	7.74	/	/	PASS
	12 Mbps	7.46	/	/	7.87	/	/	7.70	/	/	PASS
	18 Mbps	7.51	/	/	8.05	/	/	7.77	/	/	PASS
	24 Mbps	8.16	/	/	8.11	/	/	7.92	/	/	PASS
	36 Mbps	8.17	/	/	8.08	/	/	7.94	/	/	PASS
	48 Mbps	8.97	9.32	8.93	8.74	9.00	9.52	8.52	8.01	9.50	PASS
	54 Mbps	8.26	/	/	8.18	/	/	8.03	/	/	PASS

The data rate 48 Mbps is selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11n-HT20	MCS 0	7.88	/	/	8.06	/	/	7.92	/	/	PASS
	MCS 1	7.26	/	/	8.06	/	/	7.91	/	/	PASS
	MCS 2	7.63	/	/	8.08	/	/	7.94	/	/	PASS
	MCS 3	8.04	/	/	7.98	/	/	7.97	/	/	PASS
	MCS 4	8.14	/	/	8.11	/	/	8.11	/	/	PASS
	MCS 5	8.80	10.52	8.35	8.50	8.56	8.10	8.27	8.11	9.53	PASS
	MCS 6	8.12	/	/	8.13	/	/	7.90	/	/	PASS
	MCS 7	8.13	/	/	8.16	/	/	7.87	/	/	PASS

The data rate MCS5 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
		Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11n-HT40	MCS 0	8.07	/	7.82	/	8.09	/	/	PASS
	MCS 1	8.00	/	7.83	/	8.08	/	/	PASS
	MCS 2	8.03	/	7.81	/	8.05	/	/	PASS
	MCS 3	8.74	8.27	8.47	7.97	8.24	8.16	9.21	PASS
	MCS 4	8.37	/	7.56	/	7.82	/	/	PASS
	MCS 5	8.38	/	7.57	/	7.87	/	/	PASS
	MCS 6	8.38	/	7.56	/	7.82	/	/	PASS
	MCS 7	8.35	/	7.58	/	7.87	/	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

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Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11ac-VHT20	MCS 0	7.73	/	/	8.05	/	/	8.02	/	/	PASS
	MCS 1	7.79	/	/	7.98	/	/	7.97	/	/	PASS
	MCS 2	7.75	/	/	7.93	/	/	8.01	/	/	PASS
	MCS 3	8.32	/	/	7.87	/	/	7.93	/	/	PASS
	MCS 4	8.10	/	/	7.93	/	/	8.04	/	/	PASS
	MCS 5	8.09	/	/	7.97	/	/	8.06	/	/	PASS
	MCS 6	8.16	/	/	8.01	/	/	8.05	/	/	PASS
	MCS 7	8.15	/	/	7.99	/	/	8.03	/	/	PASS
	MCS 8	8.24	/	/	7.99	/	/	8.06	/	/	PASS
	MCS 9	9.13	8.85	8.24	8.27	8.45	8.12	8.20	8.05	9.45	PASS

The data rate MCS9 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
		Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11ac-VHT40	MCS 0	8.27	/	7.91	/	8.34			PASS
	MCS 1	8.28	/	7.91	/	8.32	/	/	PASS
	MCS 2	8.28	/	7.89	/	8.30	/	/	PASS
	MCS 3	8.84	8.28	8.49	7.92	8.34	8.04	9.11	PASS
	MCS 4	8.56	/	7.70	/	8.11	/	/	PASS
	MCS 5	8.54	/	7.69	/	8.15	/	/	PASS
	MCS 6	8.51	/	7.68	/	8.15	/	/	PASS
	MCS 7	8.50	/	7.68	/	8.12	/	/	PASS
	MCS 8	8.51	/	7.69	/	8.13	/	/	PASS
	MCS 9	8.55	/	7.71	/	8.17	/	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)				Conclusion
		Ch42	Ch58	Ch106	Ch122	
802.11ac-VHT80	MCS 0	7.52	7.56	8.02	/	PASS
	MCS 1	8.39	8.59	8.28	8.28	PASS
	MCS 2	7.47	7.57	8.21	/	PASS
	MCS 3	7.46	7.53	8.26	/	PASS
	MCS 4	7.97	7.23	8.03	/	PASS
	MCS 5	7.80	7.19	7.99	/	PASS
	MCS 6	8.01	7.24	8.00	/	PASS
	MCS 7	8.31	7.20	8.02	/	PASS
	MCS 8	8.23	7.23	8.01	/	PASS

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	MCS 9	8.35	7.20	7.98	/	PASS
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The data rate MCS1 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)		Conclusion
		Ch50	Ch114	
802.11ac-VHT160	MCS 0	7.40	9.02	PASS
	MCS 1	7.61	9.20	PASS
	MCS 2	7.57	9.21	PASS
	MCS 3	7.51	9.16	PASS
	MCS 4	7.42	9.14	PASS
	MCS 5	7.45	9.17	PASS
	MCS 6	7.50	9.03	PASS
	MCS 7	7.51	9.12	PASS
	MCS 8	8.18	9.24	PASS
	MCS 9	7.53	9.17	PASS

The data rate MCS8 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
			Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11ax-HE20	Full	MCS 0	7.79	/	/	7.79	/	/	8.08	/	/	PASS
	Full	MCS 1	7.69	/	/	7.79	/	/	8.07	/	/	PASS
	Full	MCS 2	7.68	/	/	7.82	/	/	8.06	/	/	PASS
	Full	MCS 3	9.03	9.40	8.71	8.80	9.05	8.49	8.44	8.57	10.10	PASS
	Full	MCS 4	8.13	/	/	8.00	/	/	7.89	/	/	PASS
	Full	MCS 5	8.09	/	/	8.00	/	/	7.88	/	/	PASS
	Full	MCS 6	8.10	/	/	8.03	/	/	7.90	/	/	PASS
	Full	MCS 7	8.12	/	/	8.04	/	/	7.90	/	/	PASS
	Full	MCS 8	8.11	/	/	8.03	/	/	7.91	/	/	PASS
	Full	MCS 9	8.10	/	/	8.05	/	/	7.90	/	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
			Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11ax-HE40	Full	MCS 0	8.10	/	8.09	/	8.35	/	/	PASS
	Full	MCS 1	8.08	/	8.04	/	8.35	/	/	PASS
	Full	MCS 2	8.07	/	8.05	/	8.32	/	/	PASS
	Full	MCS 3	8.53	/	7.99	/	8.25	/	/	PASS
	Full	MCS 4	8.54	/	8.05	/	8.28	/	/	PASS
	Full	MCS 5	8.52	/	8.02	/	8.28	/	/	PASS

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	Full	MCS 6	8.55	/	8.04	/	8.29	/	/	PASS
	Full	MCS 7	8.57	/	8.06	/	8.28	/	/	PASS
	Full	MCS 8	9.79	9.34	9.41	8.44	9.12	8.97	10.17	PASS
	Full	MCS 9	8.55	/	8.03	/	8.26	/	/	PASS

The data rate MCS8 is selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)				Conclusion
			Ch42	Ch58	Ch106	Ch122	
802.11ax-HE80	Full	MCS 0	9.07	8.11	8.95	/	PASS
	Full	MCS 1	9.10	9.65	9.41	8.86	PASS
	Full	MCS 2	9.03	8.09	8.75	/	PASS
	Full	MCS 3	9.03	8.09	8.87	/	PASS
	Full	MCS 4	9.05	7.94	8.75	/	PASS
	Full	MCS 5	9.10	7.96	8.70	/	PASS
	Full	MCS 6	9.07	7.93	8.70	/	PASS
	Full	MCS 7	9.09	7.92	8.70	/	PASS
	Full	MCS 8	9.09	7.98	8.71	/	PASS
	Full	MCS 9	9.06	7.96	8.72	/	PASS

The data rate MCS1 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)		Conclusion
			Ch50	Ch114	
802.11ax-HE160	Full	MCS 0	7.70	8.46	PASS
	Full	MCS 1	7.65	8.48	PASS
	Full	MCS 2	7.67	8.47	PASS
	Full	MCS 3	7.59	8.63	PASS
	Full	MCS 4	7.74	8.65	PASS
	Full	MCS 5	7.81	8.59	PASS
	Full	MCS 6	7.81	8.58	PASS
	Full	MCS 7	7.83	8.64	PASS
	Full	MCS 8	8.62	8.76	PASS
	Full	MCS 9	7.88	8.62	PASS

The data rate MCS8 are selected as worse condition, and the following cases are performed with this condition.

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Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11a	6 Mbps	8.45	/	/	7.85	/	/	8.46	/	/	PASS
	9 Mbps	8.53	/	/	7.86	/	/	8.52	/	/	PASS
	12 Mbps	8.46	/	/	7.86	/	/	8.43	/	/	PASS
	18 Mbps	8.59	/	/	7.93	/	/	8.54	/	/	PASS
	24 Mbps	8.85	/	/	8.35	/	/	8.82	/	/	PASS
	36 Mbps	8.81	/	/	8.35	/	/	8.80	/	/	PASS
	48 Mbps	9.36	8.80	9.17	9.26	8.79	8.70	8.92	8.74	10.50	PASS
	54 Mbps	8.82	/	/	8.36	/	/	8.80	/	/	PASS

The data rate 48 Mbps is selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11n-HT20	MCS 0	8.79	/	/	8.06	/	/	8.75	/	/	PASS
	MCS 1	8.71	/	/	7.99	/	/	8.73	/	/	PASS
	MCS 2	8.74	/	/	8.07	/	/	8.74	/	/	PASS
	MCS 3	8.84	/	/	8.25	/	/	8.69	/	/	PASS
	MCS 4	8.92	/	/	8.38	/	/	8.82			PASS
	MCS 5	9.40	8.69	9.10	9.30	8.72	8.70	8.94	8.82	10.60	PASS
	MCS 6	8.94	/	/	8.38	/	/	8.94	/	/	PASS
	MCS 7	8.91	/	/	8.36			8.90	/	/	PASS

The data rate MCS5 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
		Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11n-HT40	MCS 0	8.95	/	7.44	/	8.98			PASS
	MCS 1	9.02	/	7.46	/	8.97	/	/	PASS
	MCS 2	8.99	/	7.48	/	8.91	/	/	PASS
	MCS 3	9.34	9.27	9.35	8.68	8.98	8.97	9.76	PASS
	MCS 4	8.85	/	7.56	/	8.87	/	/	PASS
	MCS 5	8.85	/	7.57	/	8.85	/	/	PASS
	MCS 6	8.88	/	7.62	/	8.85	/	/	PASS
	MCS 7	8.85	/	7.62	/	8.87	/	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

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Mode	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
		Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11ac-VHT20	MCS 0	8.60	/	/	7.57	/	/	8.50	/	/	PASS
	MCS 1	8.49	/	/	7.53	/	/	8.41	/	/	PASS
	MCS 2	8.51	/	/	7.55	/	/	8.45	/	/	PASS
	MCS 3	8.56	/	/	7.78	/	/	8.38	/	/	PASS
	MCS 4	8.69	/	/	7.91	/	/	8.53	/	/	PASS
	MCS 5	8.67	/	/	7.95	/	/	8.53	/	/	PASS
	MCS 6	8.66	/	/	7.92	/	/	8.49	/	/	PASS
	MCS 7	8.66	/	/	7.95	/	/	8.50	/	/	PASS
	MCS 8	8.65	/	/	7.96			8.50	/	/	PASS
	MCS 9	9.47	8.93	9.15	9.29	8.72	8.63	8.93	8.73	10.51	PASS

The data rate MCS9 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
		Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11ac-VHT40	MCS 0	8.77	/	7.44	/	8.37			PASS
	MCS 1	8.77	/	7.44	/	8.36	/	/	PASS
	MCS 2	8.82	/	7.44	/	8.35	/	/	PASS
	MCS 3	8.94	9.23	8.79	8.60	8.43	8.78	9.76	PASS
	MCS 4	8.77	/	7.61	/	8.38	/	/	PASS
	MCS 5	8.76	/	7.62	/	8.37	/	/	PASS
	MCS 6	8.72	/	7.60	/	8.37	/	/	PASS
	MCS 7	8.71	/	7.64	/	8.38	/	/	PASS
	MCS 8	8.71	/	7.60	/	8.37	/	/	PASS
	MCS 9	8.73	/	7.63	/	8.37	/	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)				Conclusion
		Ch42	Ch58	Ch106	Ch122	
802.11ac-VHT80	MCS 0	9.22	7.71	9.25	/	PASS
	MCS 1	9.40	9.12	9.29	9.22	PASS
	MCS 2	9.33	7.67	9.25	/	PASS
	MCS 3	9.38	7.94	9.26	/	PASS
	MCS 4	9.20	7.64	9.17	/	PASS
	MCS 5	9.22	7.60	9.16	/	PASS
	MCS 6	9.25	7.66	9.14	/	PASS
	MCS 7	9.26	7.64	9.17	/	PASS
MCS 8	9.24	7.68	9.18	/	PASS	

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	MCS 9	9.25	7.65	9.12	/	PASS
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The data rate MCS1 are selected as worse condition, and the following cases are performed with this condition.

Mode	Data Rate(Mbps)	Teat Result(dBm)		Conclusion
		Ch50	Ch114	
802.11ac-VHT160	MCS 0	8.04	9.37	PASS
	MCS 1	7.92	9.36	PASS
	MCS 2	8.01	9.34	PASS
	MCS 3	9.47	9.40	PASS
	MCS 4	8.03	9.33	PASS
	MCS 5	8.02	9.32	PASS
	MCS 6	7.99	9.35	PASS
	MCS 7	8.02	9.38	PASS
	MCS 8	8.03	9.39	PASS
MCS 9	8.00	9.32	PASS	

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)									Conclusion
			Ch36	Ch40	Ch48	Ch52	Ch56	Ch64	Ch100	Ch116	Ch140	
802.11ax-HE20	Full	MCS 0	8.74	/	/	8.15	/	/	8.82	/	/	PASS
	Full	MCS 1	8.76	/	/	8.12	/	/	8.80	/	/	PASS
	Full	MCS 2	8.79	/	/	8.20	/	/	8.78	/	/	PASS
	Full	MCS 3	9.90	9.36	9.65	9.27	9.38	9.30	8.89	9.31	11.16	PASS
	Full	MCS 4	8.84	/	/	8.34	/	/	8.71	/	/	PASS
	Full	MCS 5	8.81	/	/	8.27	/	/	8.65	/	/	PASS
	Full	MCS 6	8.82	/	/	8.29	/	/	8.70	/	/	PASS
	Full	MCS 7	8.84	/	/	8.28	/	/	8.67	/	/	PASS
	Full	MCS 8	8.83	/	/	8.26	/	/	8.65	/	/	PASS
Full	MCS 9	8.81	/	/	8.25	/	/	8.65	/	/	PASS	

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)							Conclusion
			Ch38	Ch46	Ch54	Ch62	Ch102	Ch118	Ch134	
802.11ax-HE40	Full	MCS 0	9.03	/	7.87	/	8.84	/	/	PASS
	Full	MCS 1	9.11	/	7.82	/	8.82	/	/	PASS
	Full	MCS 2	9.08	/	7.81	/	8.83	/	/	PASS
	Full	MCS 3	9.10	/	7.93	/	8.81	/	/	PASS
	Full	MCS 4	9.17	/	7.97	/	8.83	/	/	PASS
	Full	MCS 5	9.12	/	8.01	/	8.81	/	/	PASS

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	Full	MCS 6	9.15	/	8.01	/	8.95	/	/	PASS
	Full	MCS 7	9.15	/	8.05	/	8.96	/	/	PASS
	Full	MCS 8	9.77	10.06	9.69	9.51	9.31	9.24	10.70	PASS
	Full	MCS 9	9.12	/	8.01	/	8.97	/	/	PASS

The data rate MCS8 is selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)				Conclusion
			Ch42	Ch58	Ch106	Ch122	
802.11ax-HE80	Full	MCS 0	9.38	7.85	9.02	/	PASS
	Full	MCS 1	9.97	9.39	9.13	9.56	PASS
	Full	MCS 2	9.39	7.79	9.04	/	PASS
	Full	MCS 3	9.44	7.98	9.03	/	PASS
	Full	MCS 4	9.27	7.91	8.99	/	PASS
	Full	MCS 5	9.20	7.89	9.01	/	PASS
	Full	MCS 6	9.18	7.91	9.08	/	PASS
	Full	MCS 7	9.16	7.88	9.01	/	PASS
	Full	MCS 8	9.17	7.91	9.03	/	PASS
	Full	MCS 9	9.16	7.95	9.05	/	PASS

The data rate MCS3 are selected as worse condition, and the following cases are performed with this condition.

Mode	RU Con.	Data Rate(Mbps)	Teat Result(dBm)		Conclusion
			Ch50	Ch114	
802.11ax-HE160	Full	MCS 0	7.99	9.12	PASS
	Full	MCS 1	7.91	9.18	PASS
	Full	MCS 2	7.96	9.06	PASS
	Full	MCS 3	7.99	9.07	PASS
	Full	MCS 4	8.26	9.16	PASS
	Full	MCS 5	8.30	9.09	PASS
	Full	MCS 6	8.25	9.13	PASS
	Full	MCS 7	8.25	9.18	PASS
	Full	MCS 8	9.31	9.26	PASS
	Full	MCS 9	8.24	9.14	PASS

The data rate MCS8 are selected as worse condition, and the following cases are performed with this condition.

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MIMO

UNII-1

Mode	Chain0 Test Result(dBm)			Chain1 Test Result(dBm)			Totle Result(dBm)			Conclusion
	Ch36	Ch40	Ch48	Ch36	Ch40	Ch48	Ch36	Ch40	Ch48	
802.11n-HT20	8.80	10.52	8.35	9.40	8.69	9.10	12.12	12.71	11.75	PASS
802.11ac-VHT20	9.13	8.85	8.24	9.47	8.93	9.15	12.31	11.90	11.73	PASS
802.11ax-HE20	9.03	9.40	8.71	9.90	9.36	9.65	12.50	12.39	12.22	PASS

Mode	Chain0 Test Result(dBm)		Chain1 Test Result(dBm)		Totle Result(dBm)		Conclusion
	Ch38	Ch46	Ch38	Ch46	Ch38	Ch46	
802.11n-HT40	8.74	8.27	9.34	9.27	12.06	11.81	PASS
802.11ac-VHT40	8.84	8.28	8.94	9.23	11.90	11.79	PASS
802.11ax-HE40	9.79	9.34	9.77	10.06	12.79	12.73	PASS

Mode	Chain0 Test Result(dBm)	Chain1 Test Result(dBm)	Teat Result(dBm)	Conclusion
	Ch42	Ch42	Ch42	
802.11ac-VHT80	8.39	9.40	11.93	PASS
802.11ax-HE80	9.10	9.97	12.57	PASS

UNII-2A

Mode	Chain0 Test Result(dBm)			Chain1 Test Result(dBm)			Totle Result(dBm)			Conclusion
	Ch52	Ch56	Ch64	Ch52	Ch56	Ch64	Ch52	Ch56	Ch64	
802.11n-HT20	8.50	8.56	8.10	9.30	8.72	8.70	11.93	11.65	11.42	PASS
802.11ac-VHT20	8.27	8.45	8.12	9.29	8.72	8.63	11.82	11.60	11.39	PASS
802.11ax-HE20	8.80	9.05	8.49	9.27	9.38	9.30	12.05	12.23	11.92	PASS

Mode	Chain0 Test Result(dBm)		Chain1 Test Result(dBm)		Totle Result(dBm)		Conclusion
	Ch54	Ch62	Ch54	Ch62	Ch54	Ch62	
802.11n-HT40	8.47	7.97	9.35	8.68	11.94	11.35	PASS
802.11ac-VHT40	8.49	7.92	8.79	8.60	11.65	11.28	PASS
802.11ax-HE40	9.41	8.44	9.69	9.51	12.56	12.02	PASS

Mode	Chain0 Test Result(dBm)	Chain1 Test Result(dBm)	Teat Result(dBm)	Conclusion
	Ch58	Ch58	Ch58	
802.11ac-VHT80	8.59	9.12	11.87	PASS
802.11ax-HE80	9.65	9.39	12.53	PASS

Mode	Chain0 Test Result(dBm)	Chain1 Test Result(dBm)	Teat Result(dBm)	Conclusion
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	Ch50	Ch50	Ch50	
802.11ac-VHT160	8.18	9.47	11.88	PASS
802.11ax-HE160	8.62	9.31	11.99	PASS

UNII-2C

Mode	Chain0 Test Result(dBm)			Chain1 Test Result(dBm)			Totle Result(dBm)			Conclusion
	Ch100	Ch116	Ch140	Ch100	Ch116	Ch140	Ch100	Ch116	Ch140	
802.11n-HT20	8.27	8.11	9.53	8.94	8.82	10.60	11.63	11.49	13.11	PASS
802.11ac-VHT20	8.20	8.05	9.45	8.93	8.73	10.51	11.59	11.41	13.02	PASS
802.11ax-HE20	8.44	8.57	10.10	8.89	9.31	11.16	11.68	11.97	13.67	PASS

Mode	Chain0 Test Result(dBm)			Chain1 Test Result(dBm)			Totle Result(dBm)			Conclusion
	Ch102	Ch118	Ch134	Ch102	Ch118	Ch134	Ch102	Ch118	Ch134	
802.11n-HT40	8.24	8.16	9.21	8.98	8.97	9.76	11.64	11.59	12.50	PASS
802.11ac-VHT40	8.34	8.04	9.11	8.43	8.78	9.76	11.40	11.44	12.46	PASS
802.11ax-HE40	9.12	8.97	10.17	9.31	9.24	10.70	12.23	12.12	13.45	PASS

Mode	Chain0 Test Result(dBm)		Chain1 Test Result(dBm)		Totle Result(dBm)		Conclusion
	Ch106	Ch122	Ch106	Ch122	Ch106	Ch122	
802.11ac-VHT80	8.28	8.28	9.29	9.22	11.82	11.79	PASS
802.11ax-HE80	9.41	8.86	9.13	9.56	12.28	12.23	PASS

Mode	Chain0 Test Result(dBm)	Chain1 Test Result(dBm)	Teat Result(dBm)	Conclusion
	Ch114	Ch114	Ch114	
802.11ac-VHT160	9.24	9.40	12.33	PASS
802.11ax-HE160	8.76	9.26	12.03	PASS

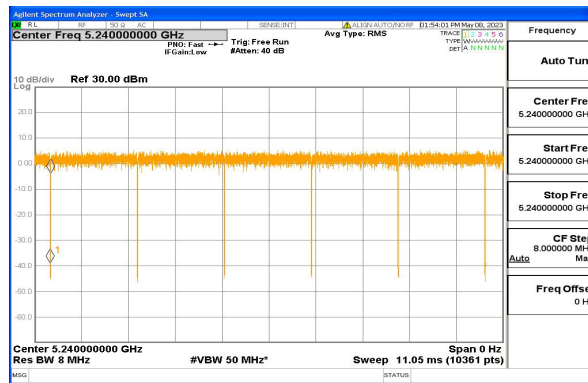
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Test Picture as below:

Duty cycle:

Mode	UNII 1	UNII 2A	UNII 2C
11a	>98%	>98%	>98%
11n HT20	>98%	>98%	>98%
11n HT40	>98%	>98%	>98%
11ac-VHT20	>98%	>98%	>98%
11ac-VHT40	>98%	>98%	>98%
11ac-VHT80	>98%	>98%	>98%
11ac-VHT160	/	>98%	>98%
11ax-HE20	>98%	>98%	>98%
11ax-HE40	>98%	>98%	>98%
11ax-HE80	>98%	>98%	>98%
11ax-HE160	/	>98%	>98%



UNII-1-11a-Duty cycle

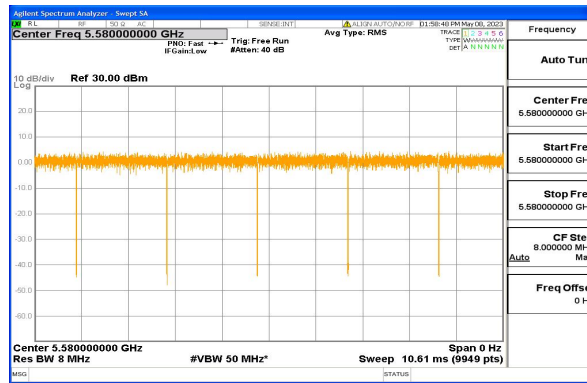


UNII-2A-11a-Duty cycle

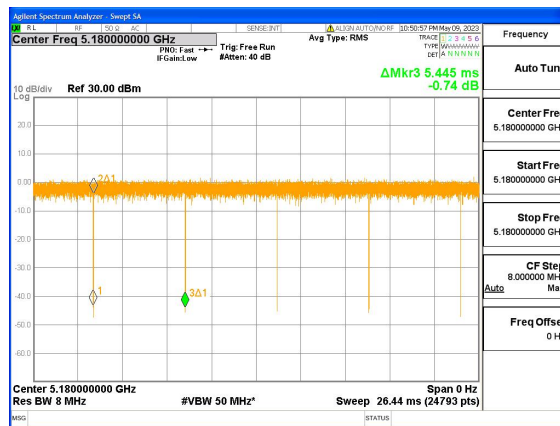
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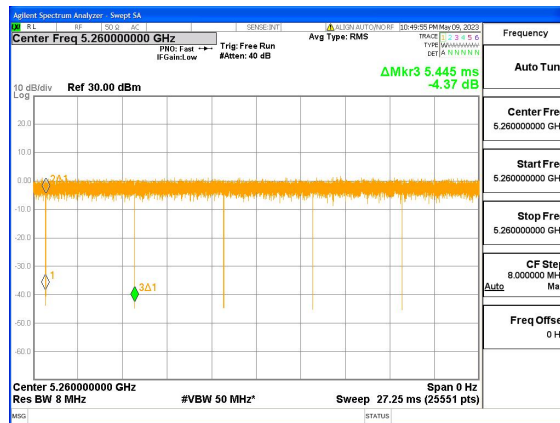
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UNII-2C-11a-Duty cycle

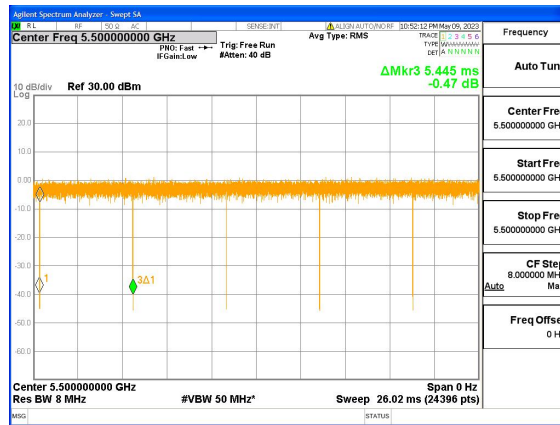


UNII-1-11n-HT20-Duty cycle

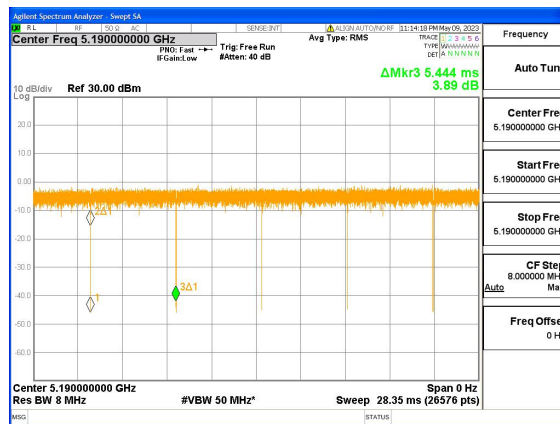


UNII-2A-11n-HT20-Duty cycle

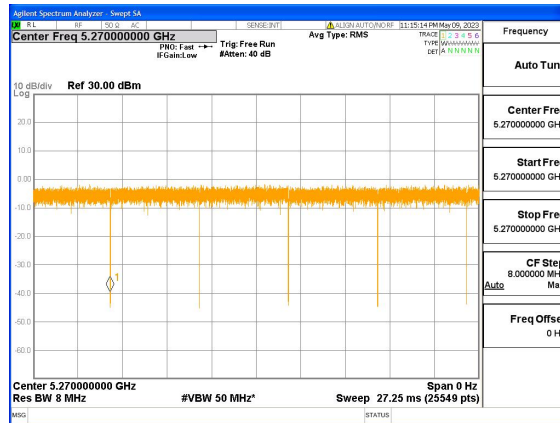
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UNII-2C-11n-HT20-Duty cycle

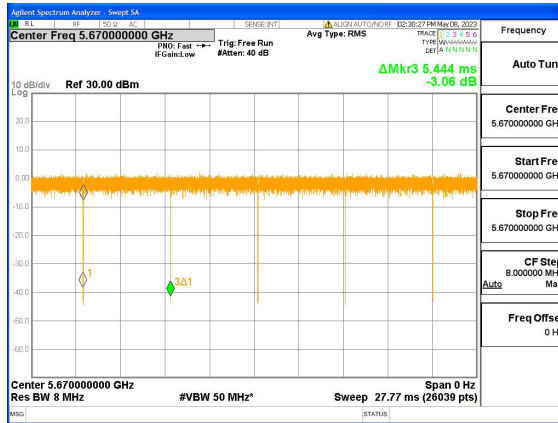


UNII-1-11n-HT40-Duty cycle

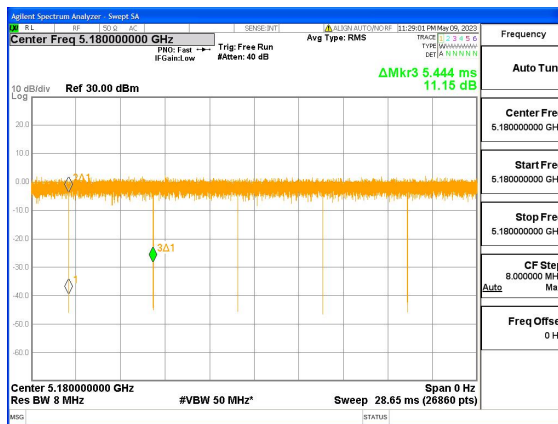


UNII-2A-11n-HT40-Duty cycle

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UNII-2C-11n-HT40-Duty cycle

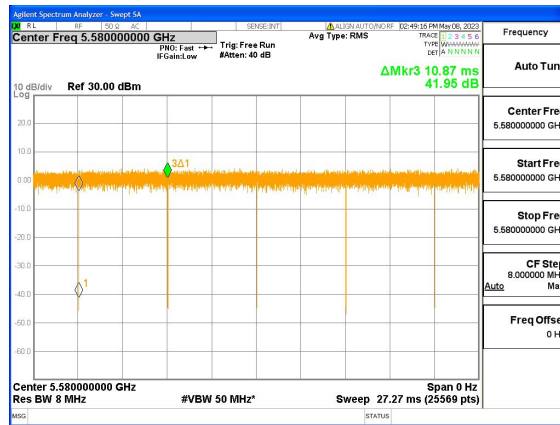


UNII-1-11ac-VHT20-Duty cycle

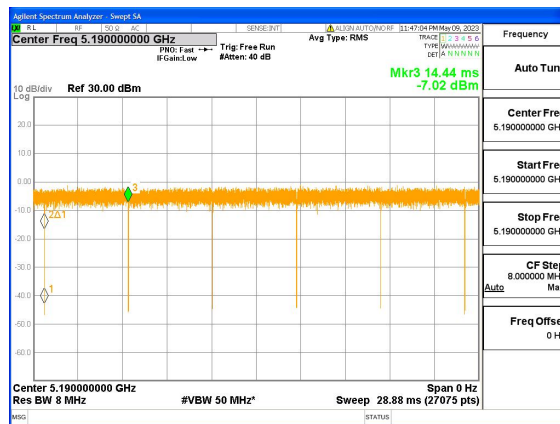


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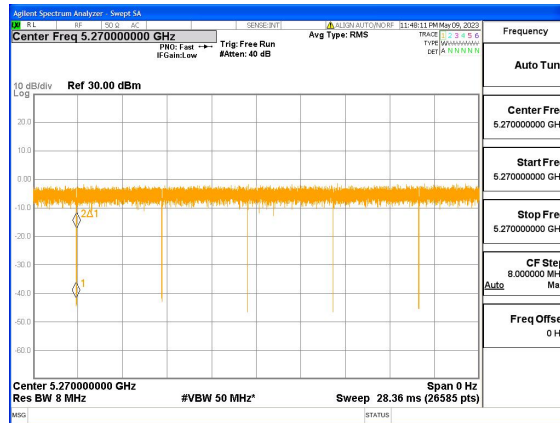
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UNII-2C-11ac-VHT20-Duty cycle



UNII-1-11ac-VHT40-Duty cycle

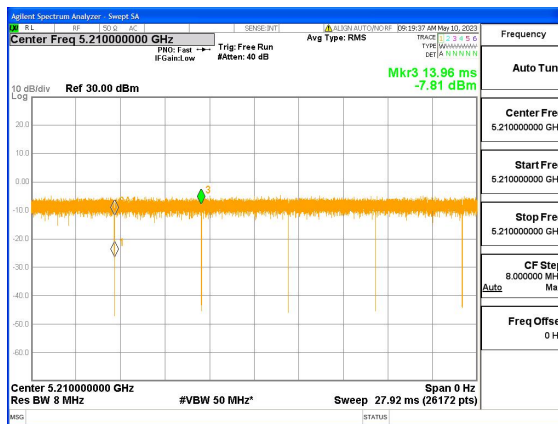


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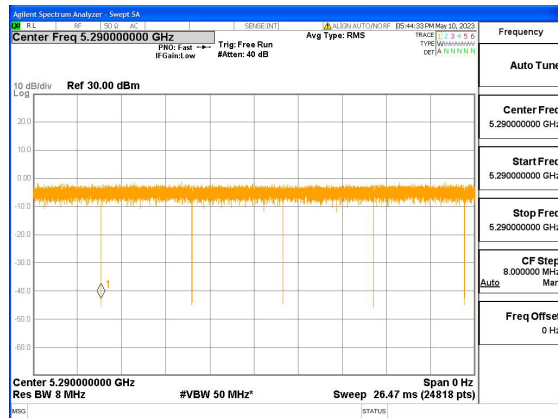
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UNII-2C-11ac-VHT40-Duty cycle



UNII-1-11ac-VHT80-Duty cycle



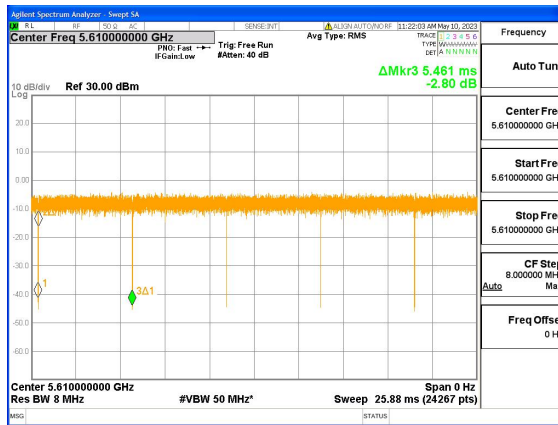
UNII-2A-11ac-VHT80-Duty cycle

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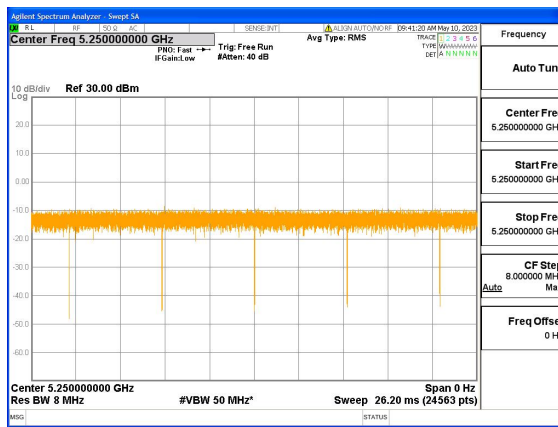
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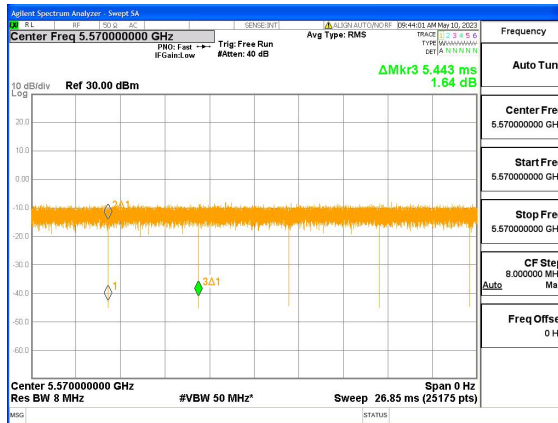
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UNII-2C-11ac-VHT80-Duty cycle

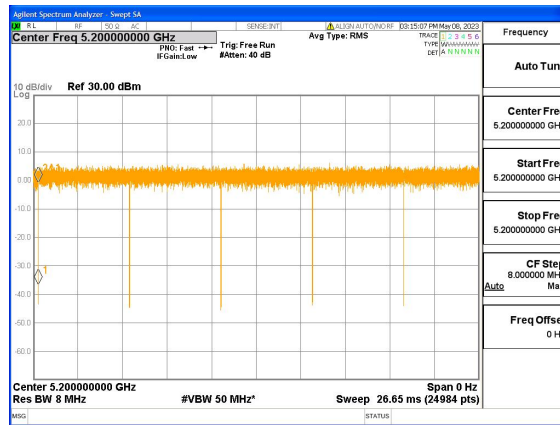


UNII-1-11ac-VHT160-Duty cycle and UNII-2A-11ac-VHT160-Duty cycle

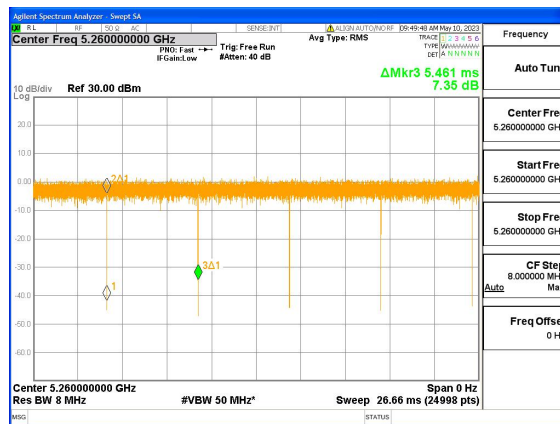


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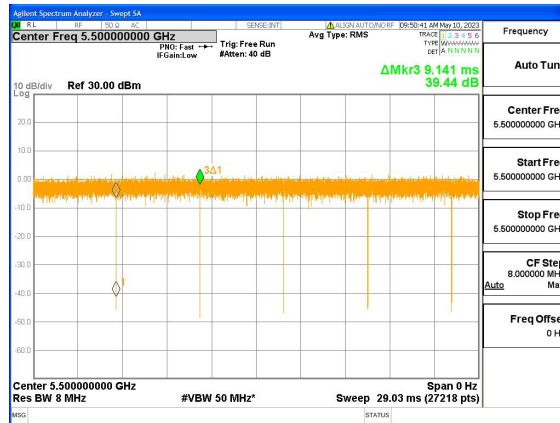
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UNII-1-11ax-VHT20-Duty cycle



UNII-2A-11ax-VHT20-Duty cycle



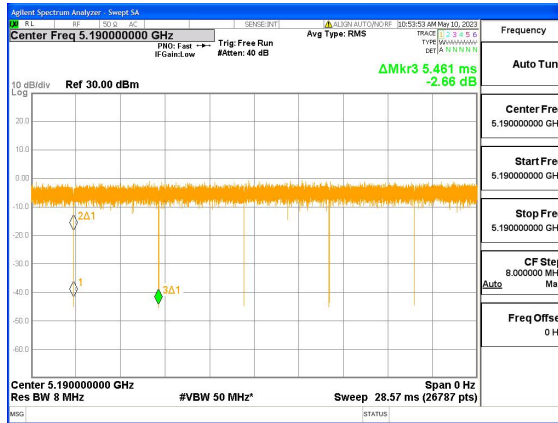
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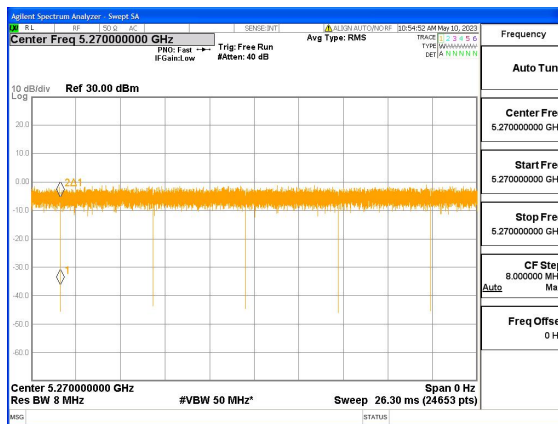
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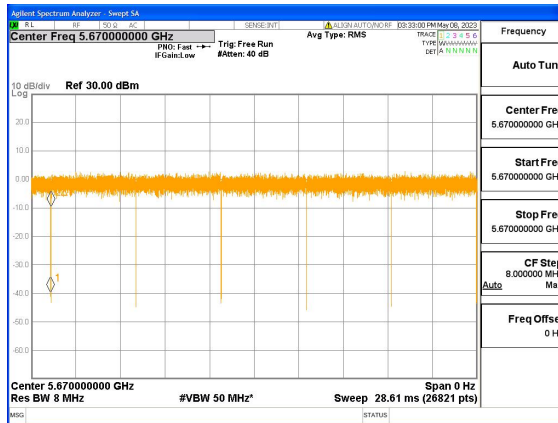
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UNII-1-11ax-VHT40-Duty cycle



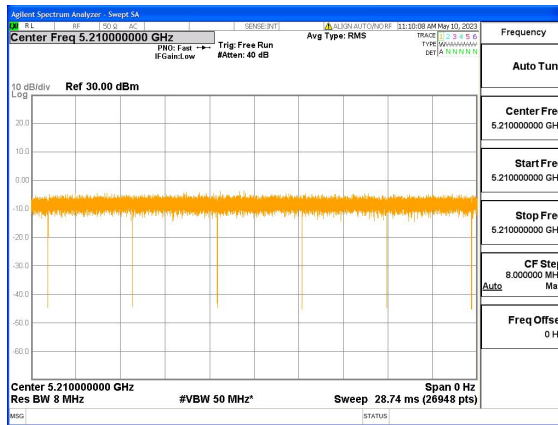
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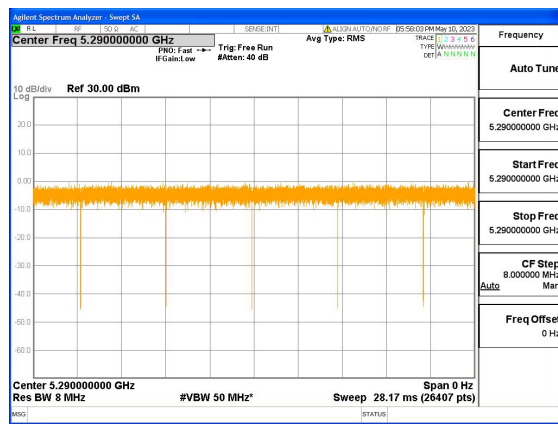
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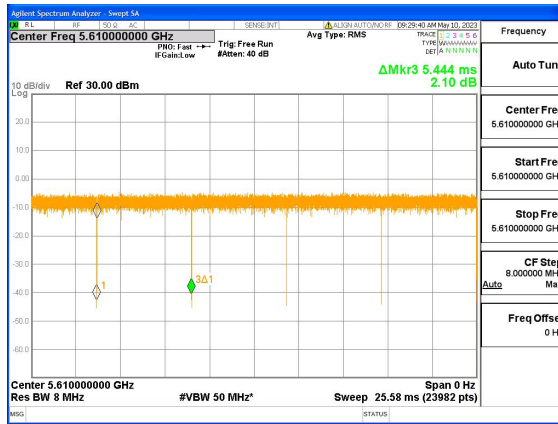
Report No.: I22W00019-WiFi RF-5.1GHz-Rev4



UNII-1-11ax-VHT80-Duty cycle



UNII-2A-11ax-VHT80-Duty cycle



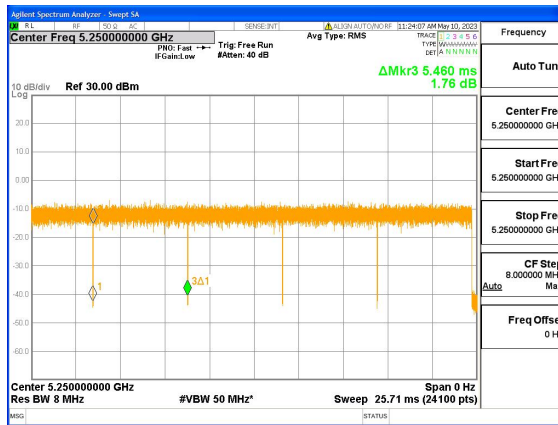
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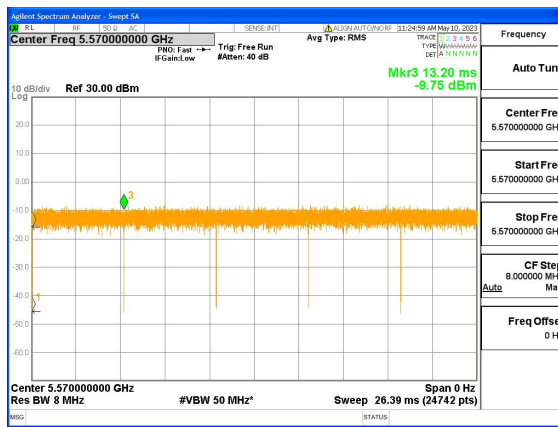
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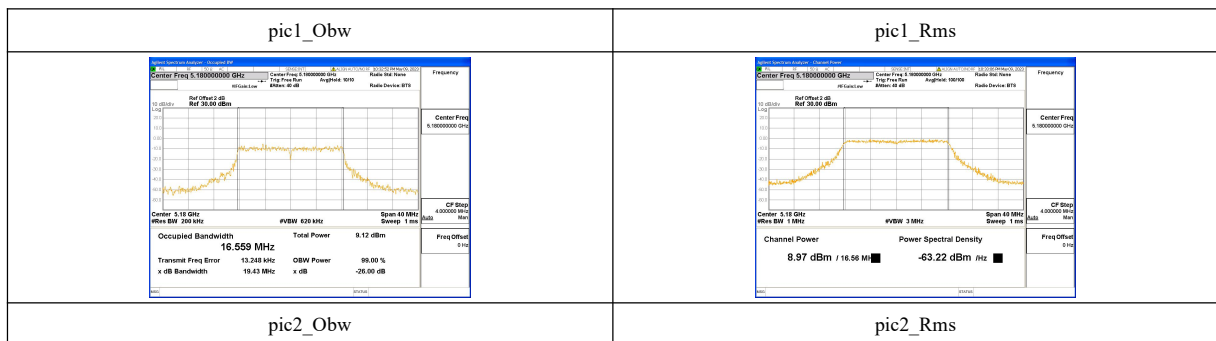


UNII-1-11ax-VHT160-Duty cycle and UNII-2A-11ax-VHT160-Duty cycle



UNII-2C-11ax-VHT160-Duty cycle

Chain.0
11a:



<p>Center Freq: 5.20000000 GHz Center: 5.2 GHz Span: 60 MHz Occupied Bandwidth: 16.478 MHz Total Power: 9.38 dBm Channel Power: 9.32 dBm / 16.48 MHz Power Spectral Density: -62.85 dBm / Hz</p>	<p>Center Freq: 5.20000000 GHz Center: 5.2 GHz Span: 60 MHz Channel Power: 9.32 dBm / 16.48 MHz Power Spectral Density: -62.85 dBm / Hz</p>
<p>pic3_Obw</p>	<p>pic3_Rms</p>
<p>Center Freq: 5.24000000 GHz Center: 5.24 GHz Span: 60 MHz Occupied Bandwidth: 16.524 MHz Total Power: 8.38 dBm Channel Power: 8.93 dBm / 16.52 MHz Power Spectral Density: -63.25 dBm / Hz</p>	<p>Center Freq: 5.24000000 GHz Center: 5.24 GHz Span: 60 MHz Channel Power: 8.93 dBm / 16.52 MHz Power Spectral Density: -63.25 dBm / Hz</p>
<p>pic4_Obw</p>	<p>pic4_Rms</p>
<p>Center Freq: 5.26000000 GHz Center: 5.26 GHz Span: 60 MHz Occupied Bandwidth: 16.571 MHz Total Power: 8.38 dBm Channel Power: 8.74 dBm / 16.57 MHz Power Spectral Density: -63.45 dBm / Hz</p>	<p>Center Freq: 5.26000000 GHz Center: 5.26 GHz Span: 60 MHz Channel Power: 8.74 dBm / 16.57 MHz Power Spectral Density: -63.45 dBm / Hz</p>
<p>pic5_Obw</p>	<p>pic5_Rms</p>
<p>Center Freq: 5.28000000 GHz Center: 5.28 GHz Span: 60 MHz Occupied Bandwidth: 16.554 MHz Total Power: 9.02 dBm Channel Power: 9.00 dBm / 16.55 MHz Power Spectral Density: -63.19 dBm / Hz</p>	<p>Center Freq: 5.28000000 GHz Center: 5.28 GHz Span: 60 MHz Channel Power: 9.00 dBm / 16.55 MHz Power Spectral Density: -63.19 dBm / Hz</p>
<p>pic6_Obw</p>	<p>pic6_Rms</p>
<p>Center Freq: 5.32000000 GHz Center: 5.32 GHz Span: 60 MHz Occupied Bandwidth: 16.522 MHz Total Power: 9.62 dBm Channel Power: 9.52 dBm / 16.52 MHz Power Spectral Density: -62.66 dBm / Hz</p>	<p>Center Freq: 5.32000000 GHz Center: 5.32 GHz Span: 60 MHz Channel Power: 9.52 dBm / 16.52 MHz Power Spectral Density: -62.66 dBm / Hz</p>
<p>pic7_Obw</p>	<p>pic7_Rms</p>