TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2BQAD-SNR001	
Test Report No..... :	TCT250625E036	
Date of issue..... :	Jul. 14, 2025	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	WuLu Networks Pty Ltd	
Address..... :	135 Coal Point Road, Coal Point, NSW, 2283 Austria	
Manufacturer's name ... :	WuLu Networks Pty Ltd	
Address..... :	135 Coal Point Road, Coal Point, NSW, 2283 Austria	
Standard(s) ..... :	FCC CFR Title 47 Part 15 Subpart C Section 15.247 FCC KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2020	
Product Name..... :	WLNW-AP1 Router	
Trade Mark ..... :	N/A	
Model/Type reference..... :	S-NR001	
Rating(s)..... :	Adapter Information: MODEL: BS12A-1201000US Input: AC 100-240V, 50-60Hz, 0.4A Max Output: DC 12V, 1000mA	
Date of receipt of test item ..... :	Jun. 25, 2025	
Date (s) of performance of test..... :	Jun. 25, 2025 ~ Jul. 14, 2025	
Tested by (+signature) ... :	Rleo LIU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

General disclaimer:

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1. General Product Information

1.1. EUT description

Product Name.....:	WLNW-AP1 Router
Model/Type reference.....:	S-NR001
Sample Number.....:	TCT250625E035-0101
Operation Frequency.....:	903.5MHz~926.5MHz (802.11ah BPSK) 905MHz~925MHz (802.11ah QPSK) 906MHz~926MHz (802.11ah 16QAM) 908MHz~924MHz (802.11ah 64QAM)
Channel Separation.....:	1 MHz for 802.11ah BPSK 2 MHz for 802.11ah QPSK 4 MHz for 802.11ah 16QAM 8 MHz for 802.11ah 64QAM
Number of Channel.....:	24 for 802.11ah BPSK 11 for 802.11ah QPSK 6 for 802.11ah 16QAM 3 for 802.11ah 64QAM
Modulation Technology.....:	802.11ah: BPSK, QPSK, 16QAM, 64QAM
Data speed.....:	802.11ah: 1Mbps, 2Mbps, 4Mbps, 8Mbps
Antenna Type.....:	External Antenna
Antenna Gain.....:	Antenna 0: 2.92dBi Antenna 1: 2.92dBi
Rating(s).....:	Adapter Information: MODEL: BS12A-1201000US Input: AC 100-240V, 50-60Hz, 0.4A Max Output: DC 12V, 1000mA

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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1.3. Operation Frequency

For 802.11ah BPSK

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
3	903.5MHz	15	909.5MHz	27	915.5MHz	39	921.5MHz
5	904.5MHz	17	910.5MHz	29	916.5MHz	41	922.5MHz
7	905.5MHz	19	911.5MHz	31	917.5MHz	43	923.5MHz
9	906.5MHz	21	912.5MHz	33	918.5MHz	45	924.5MHz
11	907.5MHz	23	913.5MHz	35	919.5MHz	47	925.5MHz
13	908.5MHz	25	914.5MHz	37	920.5MHz	49	926.5MHz

For 802.11ah QPSK

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
6	905MHz	18	911MHz	30	917MHz	42	923MHz
10	907MHz	22	913MHz	34	919MHz	46	925MHz
14	909MHz	26	915MHz	38	921MHz	--	--

For 802.11ah 16QAM

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
8	906MHz	24	914MHz	40	922MHz	--	--
16	910MHz	32	918MHz	48	926MHz	--	--

For 802.11ah 64QAM

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
12	908MHz	28	916MHz	44	924MHz	--	--

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

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802.11ah BPSK

Channel	Frequency
The lowest channel	903.5MHz
The middle channel	914.5MHz
The Highest channel	926.5MHz

802.11ah QPSK

Channel	Frequency
The lowest channel	905.0MHz
The middle channel	915.0MHz
The Highest channel	925.0MHz

802.11ah 16QAM

Channel	Frequency
The lowest channel	906.0MHz
The Highest channel	926.0MHz

802.11ah 64QAM

Channel	Frequency
The lowest channel	908.0MHz
The Highest channel	924.0MHz

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2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna requirement	§15.203	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(3)	PASS
6dB Emission Bandwidth	§15.247 (a)(2)	PASS
Power Spectral Density	§15.247 (e)	PASS
Band Edge	§15.247(d)	PASS
Spurious Emission	§15.205/§15.209	PASS

Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

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3. General Information

3.1. Test environment and mode

Operating Environment:		
Condition	Conducted Emission	Radiated Emission
Temperature:	22.8 °C	22.8 °C
Humidity:	49 % RH	51 % RH
Atmospheric Pressure:	1010 mbar	1010 mbar
Test Software:		
Software Information:	C:Windows\system32\cmd.exe	
Power Level:	14	
Test Mode:		
Engineering mode:	Keep the EUT in continuous transmitting by select channel and modulations	
The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages.		

We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Mode	Data rate
802.11ah BPSK	1Mbps
802.11ah QPSK	2Mbps
802.11ah 16QAM	4Mbps
802.11ah 64QAM	8Mbps

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3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power Spectral Density, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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4. Facilities and Accreditations

4.1. Facilities

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

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- A2LA-No.: 4320.01

  SHENZHEN TONGCE TESTING LAB

  The testing lab has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories.

4.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

5. Measurement Uncertainty

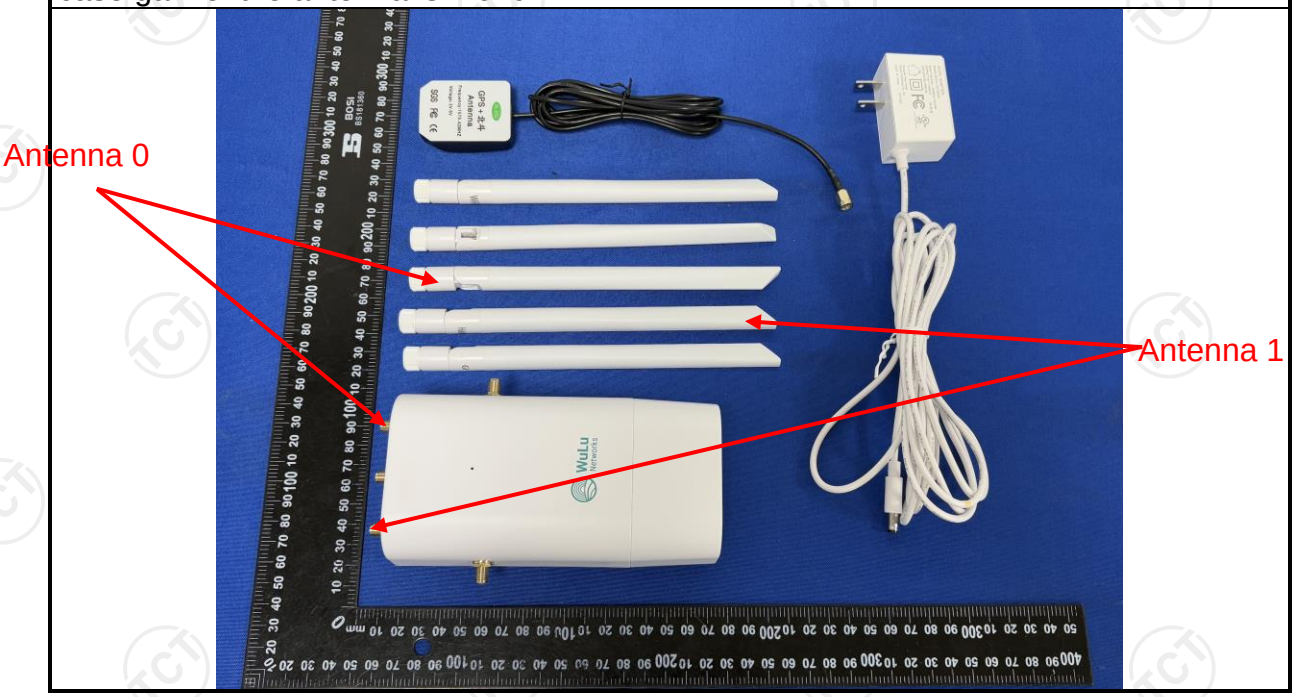
The reported uncertainty of measurement y ± U, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB

6. Test Results and Measurement Data

6.1. Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
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 antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
E.U.T Antenna:	
The Halow antenna is External antennas which permanently attached, and the best case gain of the antenna is 2.92dBi.	



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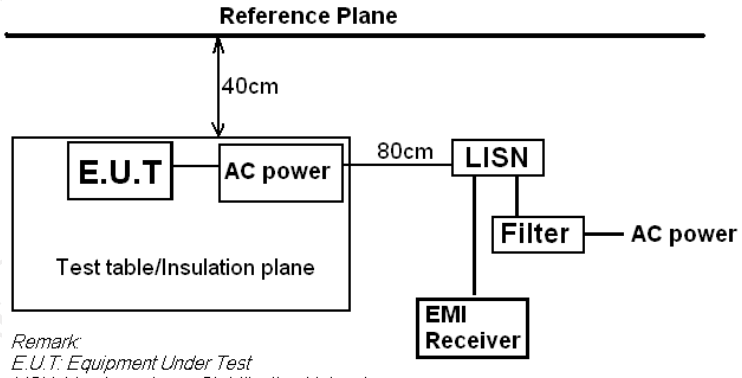
6.2. Conducted Emission

6.2.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.10:2020
Frequency Range:	150 kHz to 30 MHz
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=auto
Limits:	Frequency range (MHz) / Limit (dBuV): Quasi-peak / Average 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50
Test Setup:	 *Remark:* *E.U.T: Equipment Under Test* *LISN: Line Impedence Stabilization Network* *Test table height=0.8m*
Test Mode:	Transmitting Mode
Test Procedure:	1. The E.U.T is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2020 on conducted measurement.
Test Result:	PASS

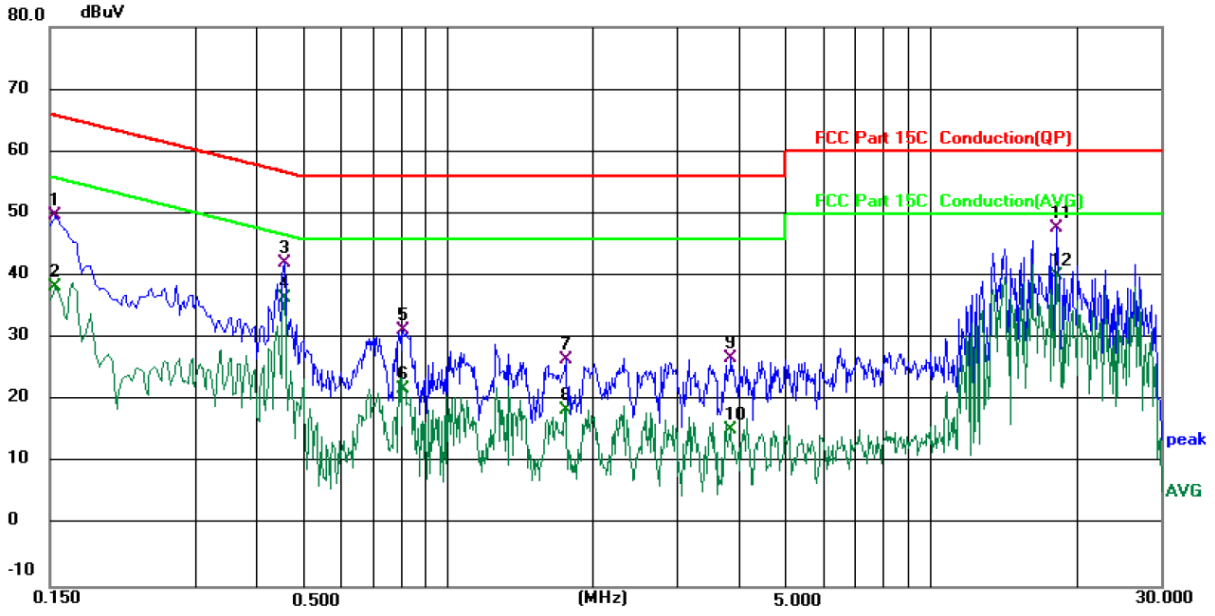
6.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)					
Equipment	**Manufacturer**	**Model**	**Serial Number**	**Date of Cal.**	**Due Date**
EMI Test Receiver	R&S	ESCI3	100898	Jun. 26, 2025	Jun. 25, 2026
LISN	Schwarzbeck	NSLK 8126	8126453	Jan. 21, 2025	Jan. 20, 2026
Attenuator	N/A	10dB	164080	Jun. 26, 2025	Jun. 25, 2026
Line-5	TCT	CE-05	/	Jun. 26, 2025	Jun. 25, 2026
EMI Test Software	EZ_EMC	EMEC-3A1	1.1.4.2	/	/

6.2.3. Test data

Please refer to following diagram for individual

Conducted Emission on Line Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: *L1* | Temperature: 22.8 (℃) | Humidity: 49 %

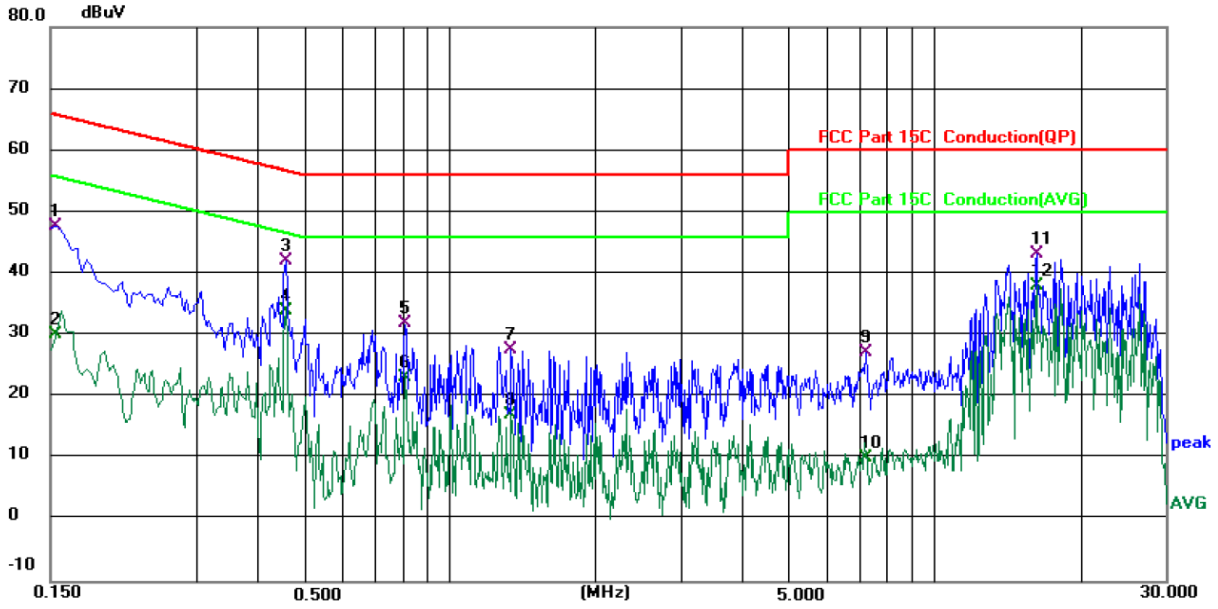
Limit: FCC Part 15C Conduction(QP) | Power: AC 120 V/60 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	39.81	9.96	49.77	65.79	-16.02	QP	
2		0.1539	28.35	9.96	38.31	55.79	-17.48	AVG	
3		0.4580	32.23	9.91	42.14	56.73	-14.59	QP	
4		0.4580	26.53	9.91	36.44	46.73	-10.29	AVG	
5		0.8100	21.36	9.92	31.28	56.00	-24.72	QP	
6		0.8100	11.91	9.92	21.83	46.00	-24.17	AVG	
7		1.7540	16.57	10.00	26.57	56.00	-29.43	QP	
8		1.7540	8.43	10.00	18.43	46.00	-27.57	AVG	
9		3.8740	16.69	10.11	26.80	56.00	-29.20	QP	
10		3.8740	5.15	10.11	15.26	46.00	-30.74	AVG	
11		18.2420	37.04	10.57	47.61	60.00	-12.39	QP	
12	*	18.2420	29.59	10.57	40.16	50.00	-9.84	AVG	

Note:

Freq. = Emission frequency in MHz
Reading level (dBμV) = Receiver reading
Corr. Factor (dB) = LISN factor + Cable loss
Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)
Limit (dBμV) = Limit stated in standard
Margin (dB) = Measurement (dBμV) – Limits (dBμV)
Q.P. =Quasi-Peak
AVG =average
** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)



Site 844 Shielding Room | Phase: *N* | Temperature: 22.8 (℃) | Humidity: 49 %

Limit: FCC Part 15C Conduction(QP) | Power: AC 120 V/60 Hz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1539	37.88	9.94	47.82	65.79	-17.97	QP	
2		0.1539	20.19	9.94	30.13	55.79	-25.66	AVG	
3		0.4580	32.25	9.93	42.18	56.73	-14.55	QP	
4		0.4580	24.10	9.93	34.03	46.73	-12.70	AVG	
5		0.8100	21.89	9.96	31.85	56.00	-24.15	QP	
6		0.8100	13.16	9.96	23.12	46.00	-22.88	AVG	
7		1.3420	16.47	11.33	27.80	56.00	-28.20	QP	
8		1.3420	5.86	11.33	17.19	46.00	-28.81	AVG	
9		7.2179	16.98	10.23	27.21	60.00	-32.79	QP	
10		7.2179	-0.11	10.23	10.12	50.00	-39.88	AVG	
11		16.2259	32.60	10.52	43.12	60.00	-16.88	QP	
12	*	16.2259	27.54	10.52	38.06	50.00	-11.94	AVG	

Note:

Freq. = Emission frequency in MHz

Reading level (dBμV) = Receiver reading

Corr. Factor (dB) = LISN factor + Cable loss

Measurement (dBμV) = Reading level (dBμV) + Corr. Factor (dB)

Limit (dBμV) = Limit stated in standard

Margin (dB) = Measurement (dBμV) – Limits (dBμV)

Q.P. =Quasi-Peak

AVG =average

** is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.*

2. Measurements were conducted in all three channels (high, middle, low) and all modulation(1 MHz, 2 MHz, 4 MHz, 8 MHz), and the worst case Mode (Highest channel and 4 MHz) transmit with antenna 0 was submitted only.

6.3. Maximum Conducted (Peak) Output Power

6.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074 D01 v05r02
Limit:	30dBm
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The RF output of EUT was connected to the power meter by RF cable. The path loss was compensated to the results for each measurement. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Measure the Peak output power and record the results in the test report.
Test Result:	PASS

6.3.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial Number	Date of Cal.	Due Date
Power Sensor	Agilent	8184A	MY41096530	Jun. 26, 2024	Jun. 25, 2026
Power Meter	Agilent	E4418B	MY45100357	Jun. 26, 2024	Jun. 25, 2026

6.3.3. Test Data

802.11ah BPSK / Antenna 0+Antenna 1					
Test channel	Maximum Conducted (Peak) Output Power (dBm)			Limit (dBm)	Result
	Antenna 0	Antenna 1	Total		
Lowest	16.86	16.55	19.72	30	PASS
Middle	16.42	16.38	19.41	30	PASS
Highest	15.88	15.59	18.75	30	PASS

802.11ah QPSK / Antenna 0+Antenna 1					
Test channel	Maximum Conducted (Peak) Output Power (dBm)			Limit (dBm)	Result
	Antenna 0	Antenna 1	Total		
Lowest	16.31	16.35	19.46	30	PASS
Middle	17.34	16.92	19.67	30	PASS
Highest	16.86	16.36	19.00	30	PASS

802.11ah 16QAM / Antenna 0+Antenna 1					
Test channel	Maximum Conducted (Peak) Output Power (dBm)			Limit (dBm)	Result
	Antenna 0	Antenna 1	Total		
Lowest	16.44	16.43	19.45	30	PASS
Highest	16.97	16.96	19.98	30	PASS

802.11ah 64QAM / Antenna 0+Antenna 1					
Test channel	Maximum Conducted (Peak) Output Power (dBm)			Limit (dBm)	Result
	Antenna 0	Antenna 1	Total		
Lowest	16.30	16.16	19.24	30	PASS
Highest	16.74	16.31	19.54	30	PASS

***Note*:**

Refer to KDB 662911 D01 Multiple Transmitter Output v02r01:
For power measurements on IEEE 802.11 devices,
Array Gain = 0 dB (i.e., no array gain) 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 $N_{ANT} \geq 5$.
Because N_{ANT}=2, so Array Gain = 0, Directional gain = G_{ANT} + Array Gain= 2.92dBi.

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6.4. Emission Bandwidth

6.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074 D01 v05r02
Limit:	>500kHz
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. Set to the maximum power setting and enable the EUT transmit continuously. 2. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. Set the Video bandwidth (VBW) = 300 kHz. In order to make an accurate measurement. The 6dB bandwidth must be greater than 500 kHz. 3. Measure and record the results in the test report.
Test Result:	PASS

6.4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial Number	Date of Cal.	Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025	Jun. 25, 2026
Power detector box	MWRFtest	MW100-RFCB	MW210531TCT	Jan. 21, 2025	Jan. 20, 2026

Antenna 0:

Test channel	6dB Emission Bandwidth (MHz)			
	802.11ah BPSK	802.11ah QPSK	802.11ah 16QAM	802.11ah 64QAM
Lowest	0.82	1.71	3.52	6.83
Middle	0.82	1.72	--	--
Highest	0.81	1.74	3.65	6.73
Limit:	>500k			
Test Result:	PASS			

Antenna 1:

Test channel	6dB Emission Bandwidth (MHz)			
	802.11ah BPSK	802.11ah QPSK	802.11ah 16QAM	802.11ah 64QAM
Lowest	0.81	1.72	3.55	6.49
Middle	0.81	1.73	--	--
Highest	0.83	1.73	3.61	6.50
Limit:	>500k			
Test Result:	PASS			

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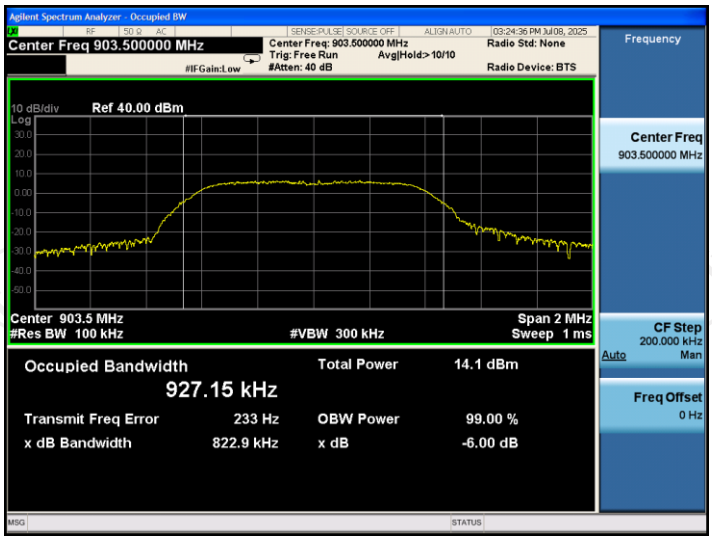
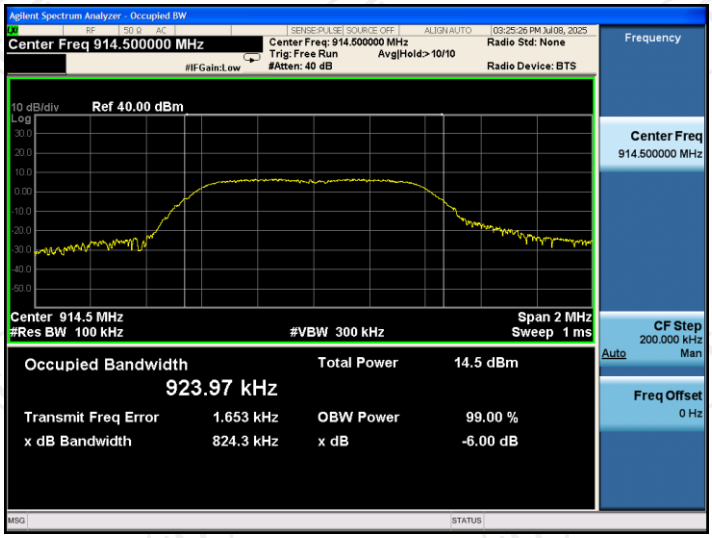
Test plots as follows:
Antenna 0:
802.11ah BPSK Modulation

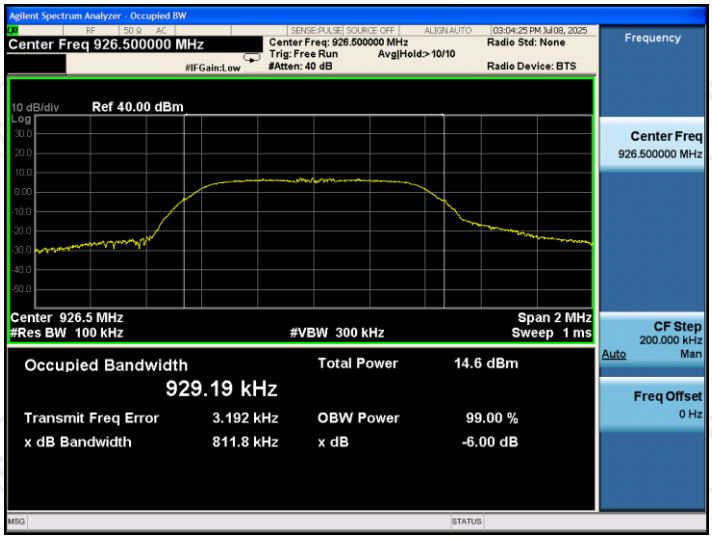
Lowest channel



Middle channel

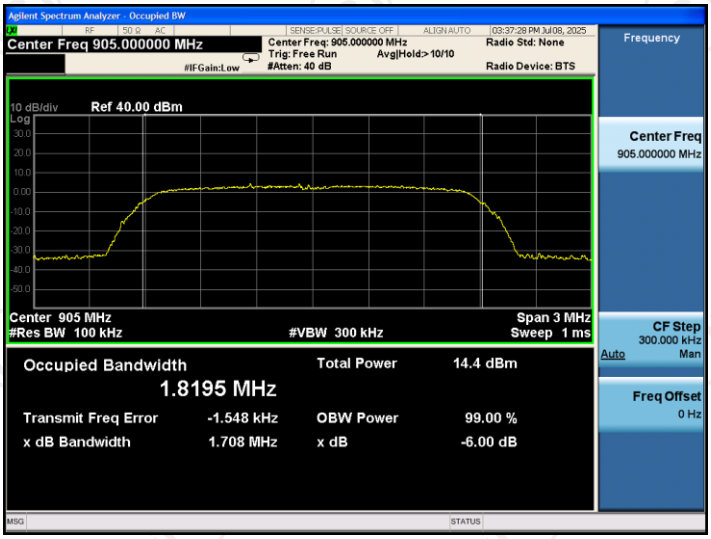


Highest channel

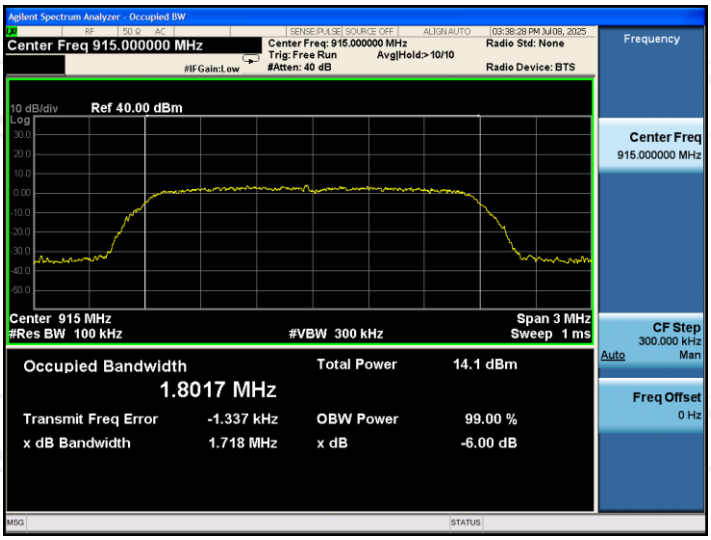


802.11ah QPSK Modulation

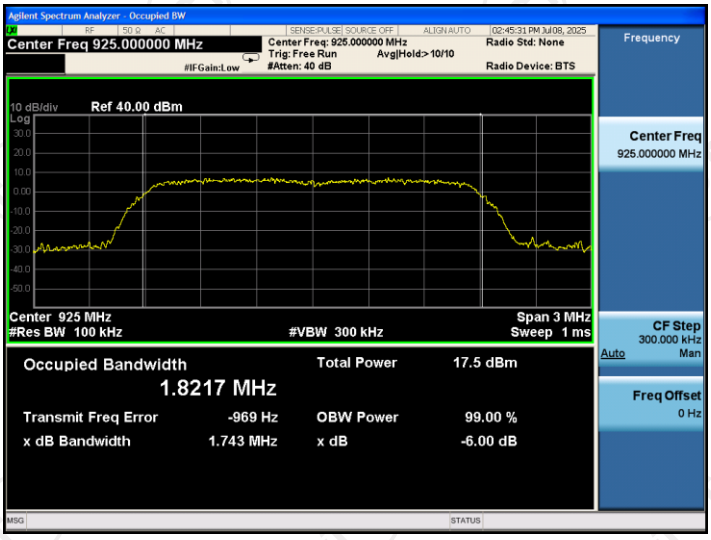
Lowest channel



Middle channel

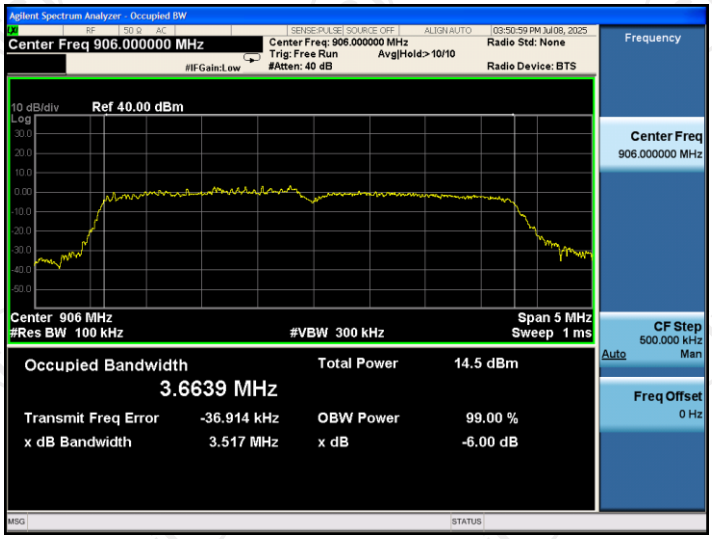


Highest channel

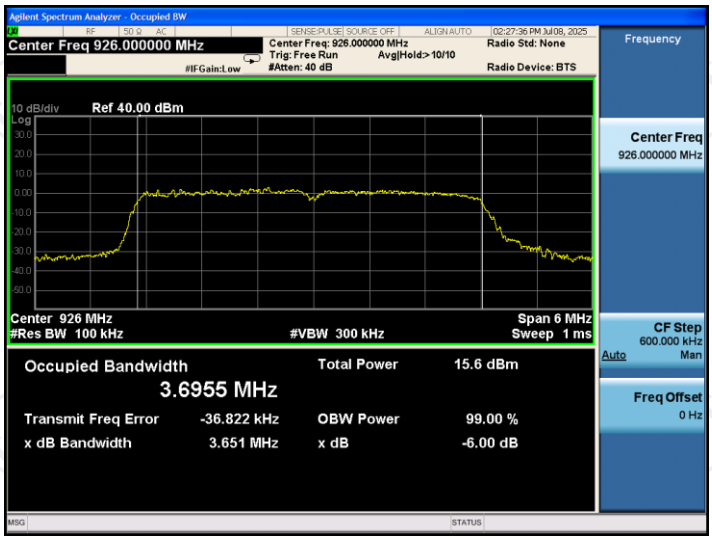


802.11ah 16QAM Modulation

Lowest channel

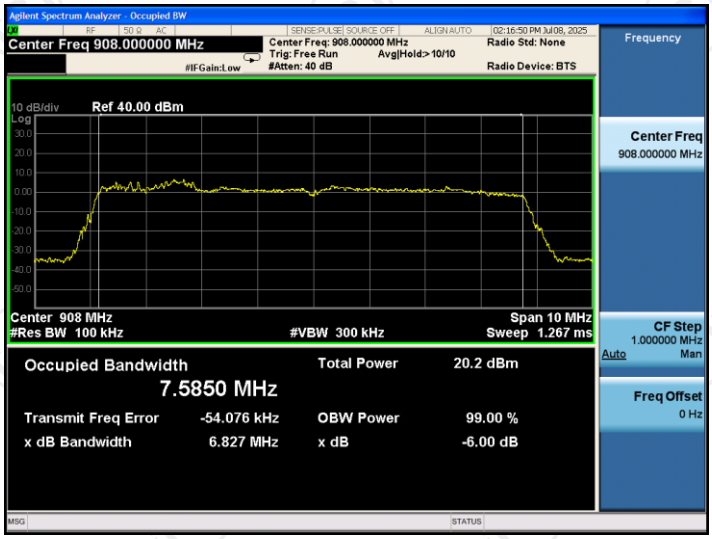


Highest channel

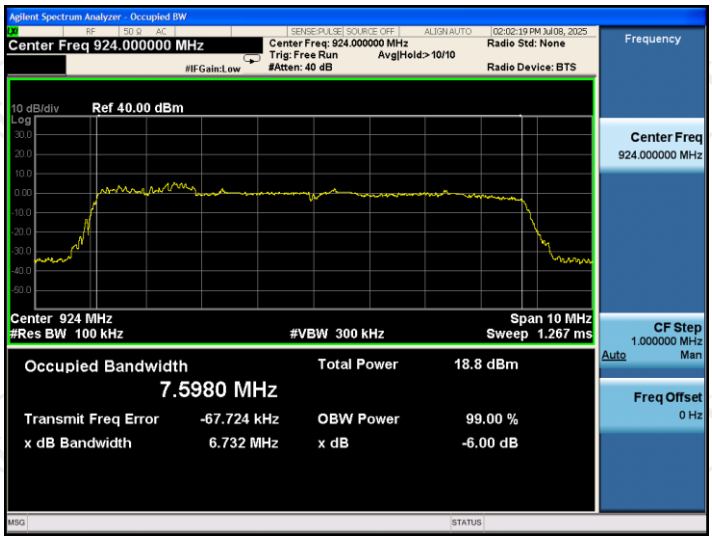


802.11ah 64QAM Modulation

Lowest channel

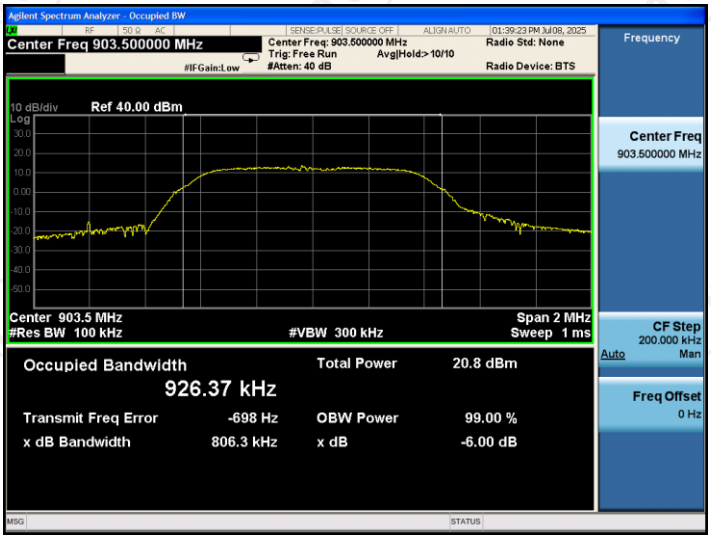


Highest channel

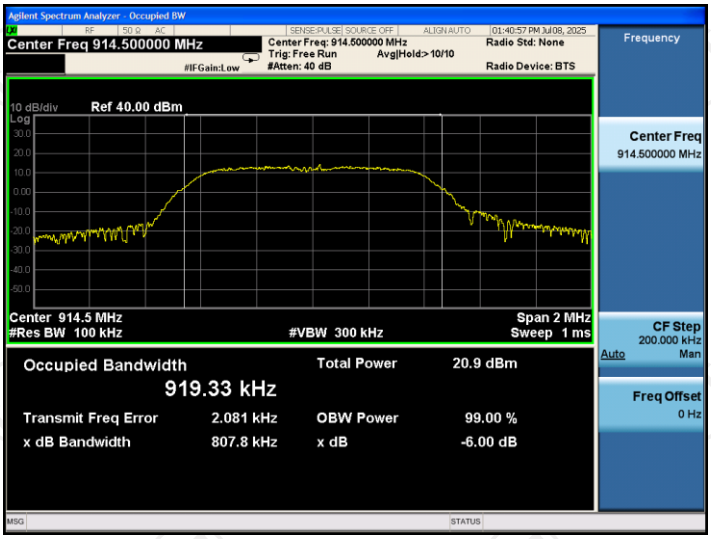


Antenna 1:
802.11ah BPSK Modulation

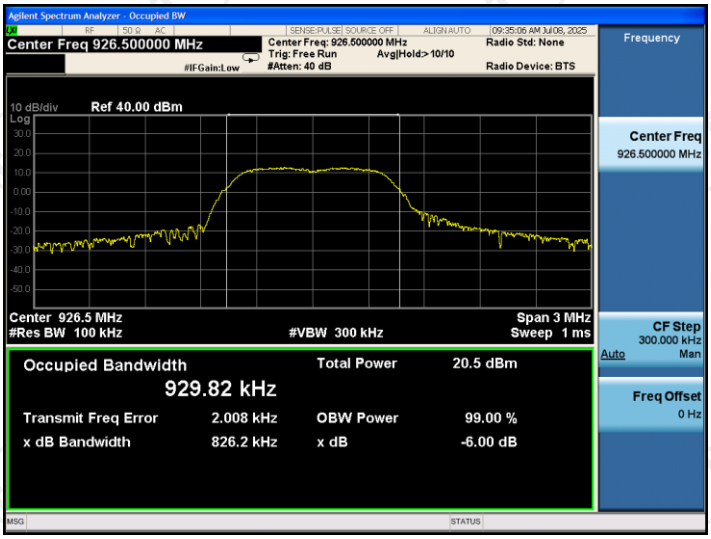
Lowest channel



Middle channel

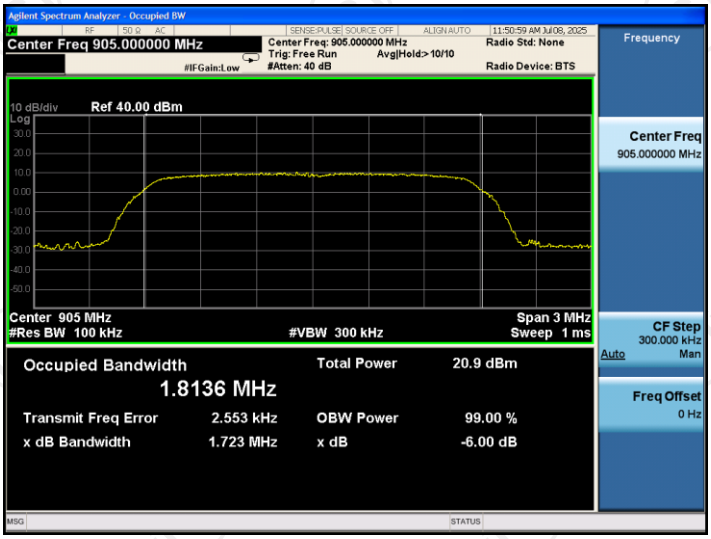


Highest channel

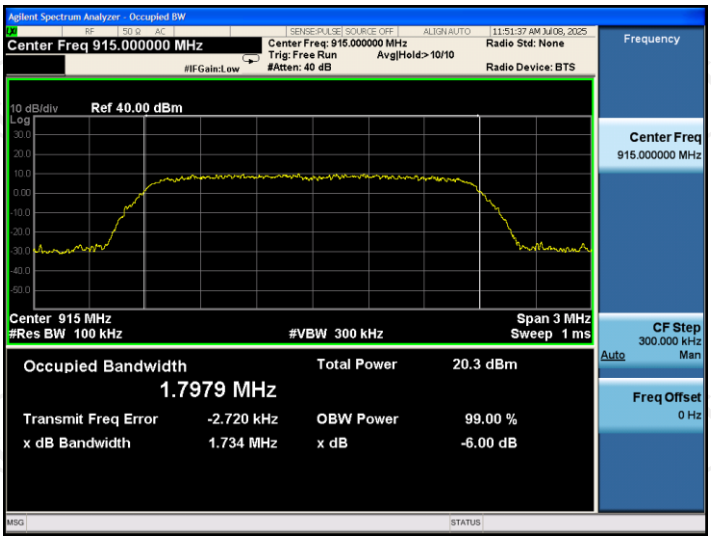


802.11ah QPSK Modulation

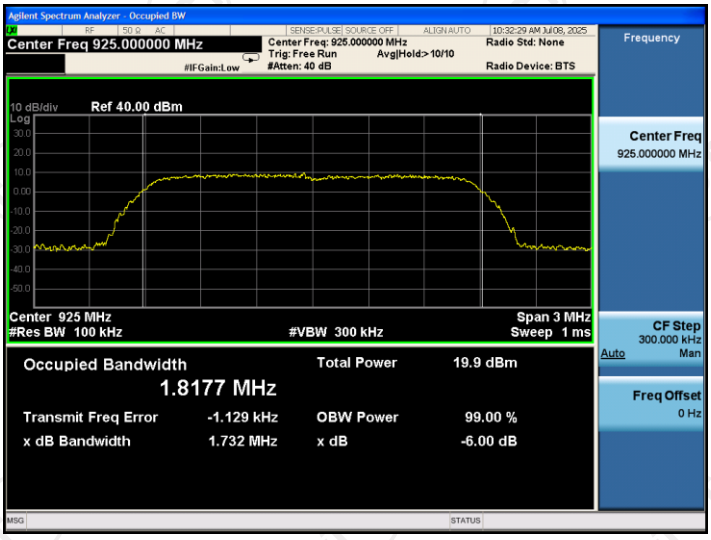
Lowest channel



Middle channel

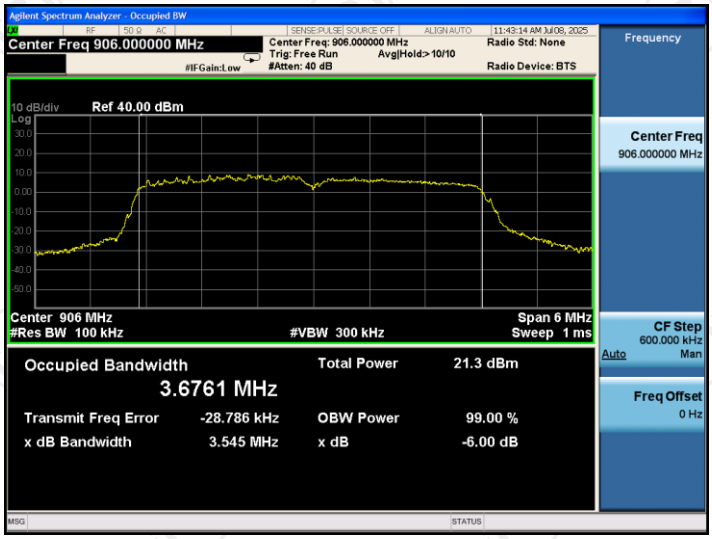


Highest channel

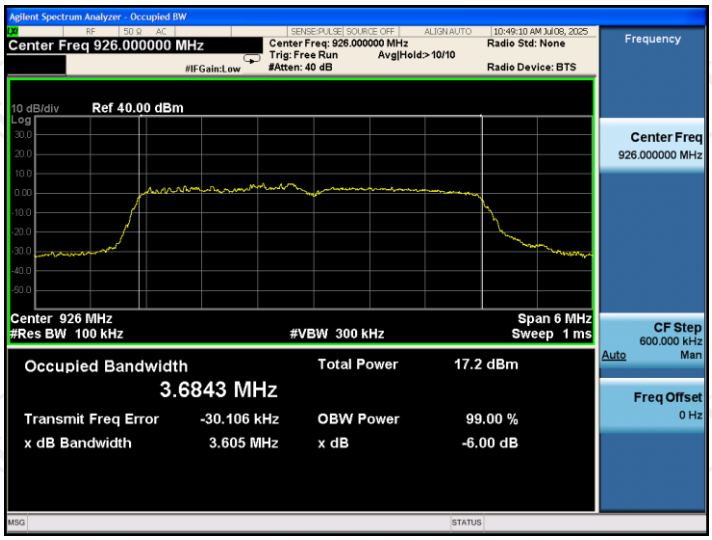


802.11ah 16QAM Modulation

Lowest channel

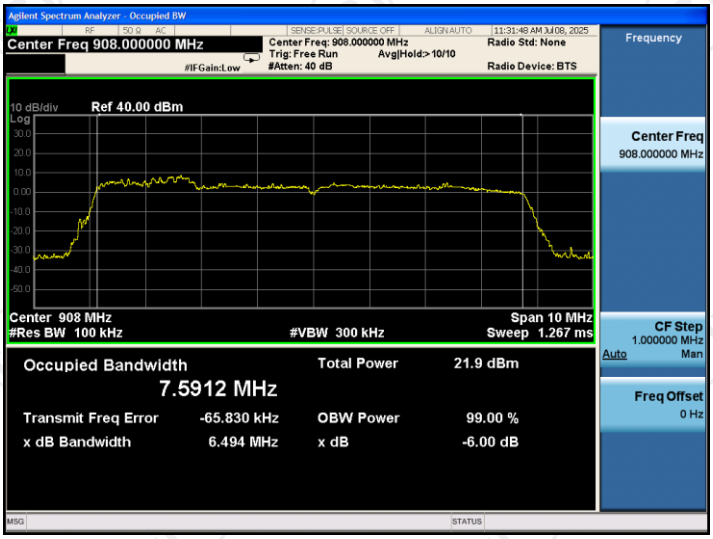


Highest channel

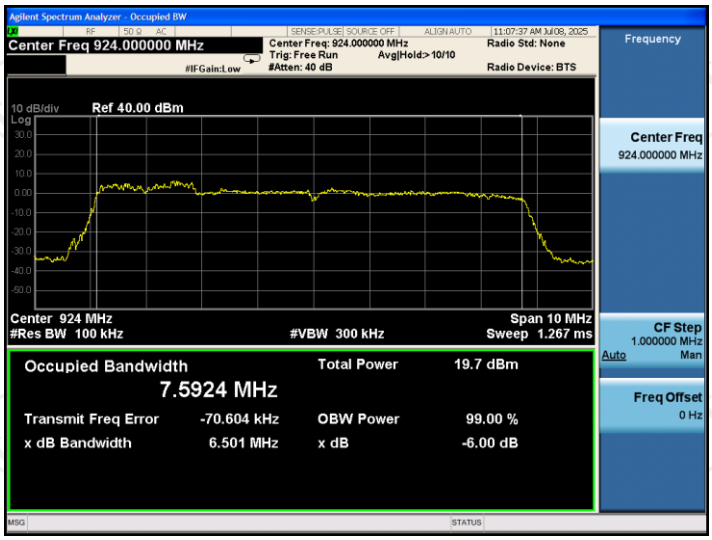


802.11ah 64QAM Modulation

Lowest channel



Highest channel



6.5. Power Spectral Density

6.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074 D01 v05r02
Limit:	The peak power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): 3 kHz ≤ RBW ≤ 100 kHz. Video bandwidth VBW ≥ 3 x RBW. Set the span to at least 1.5 times the OBW. 4. Detector = Peak, Sweep time = auto couple. 5. Trace mode =max hold. Use the peak marker function to determine the maximum power level. 6. Measure and record the results in the test report.
Test Result:	PASS

6.5.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial Number	Date of Cal.	Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025	Jun. 25, 2026
Power detector box	MWRFtest	MW100-RFCB	MW210531TCT	Jan. 21, 2025	Jan. 20, 2026

6.5.3. Test data

802.11ah BPSK / Antenna 0, Antenna 1					
Test channel	Peak Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	Antenna 0	Antenna 1	Total		
Lowest	-3.66	2.57	3.50	8	PASS
Middle	-3.72	3.22	4.02	8	PASS
Highest	-3.96	2.38	3.29	8	PASS

802.11ah QPSK / Antenna 0, Antenna 1					
Test channel	Peak Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	Antenna 0	Antenna 1	Total		
Lowest	-9.63	-3.13	-2.25	8	PASS
Middle	-9.84	-2.01	-1.35	8	PASS
Highest	-6.14	-3.44	-1.57	8	PASS

802.11ah 16QAM / Antenna 0, Antenna 1					
Test channel	Peak Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	Antenna 0	Antenna 1	Total		
Lowest	-11.25	-4.83	-3.94	8	PASS
Highest	-8.52	-9.52	-5.98	8	PASS

802.11ah 64QAM / Antenna 0, Antenna 1					
Test channel	Peak Power Spectral Density (dBm/3kHz)			Limit (dBm/3kHz)	Result
	Antenna 0	Antenna 1	Total		
Lowest	-6.13	-5.95	-3.03	8	PASS
Highest	-6.75	-7.04	-3.88	8	PASS

Note:

G_{ANT} = 2.92dBi, Array Gain= 10log(N_{ANT})= 3.01dBi

Directional Gain=G_{ANT} + Array Gain= 5.93dBi

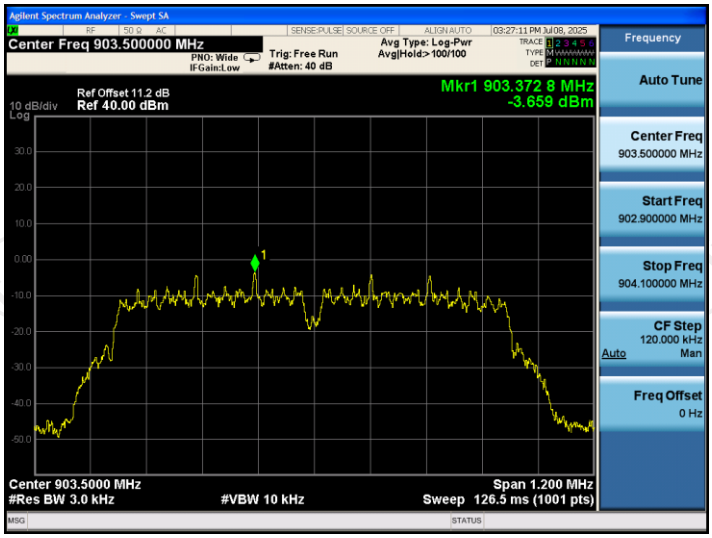
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

Test plots as follows:

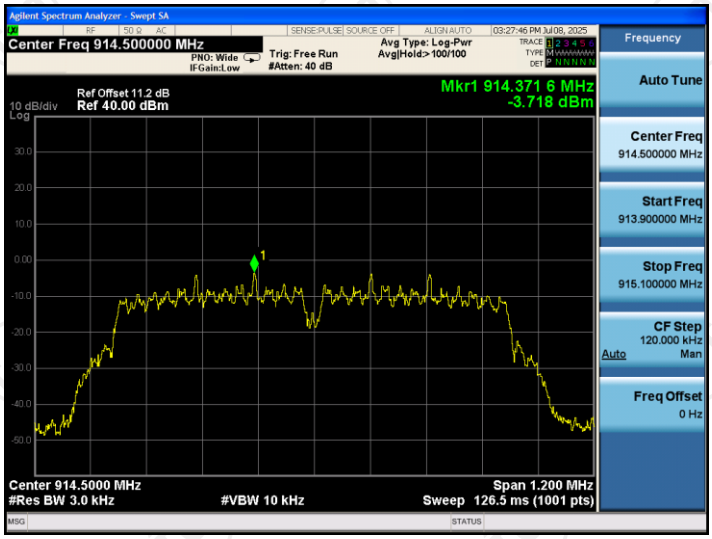
Antenna 0:

802.11ah BPSK Modulation

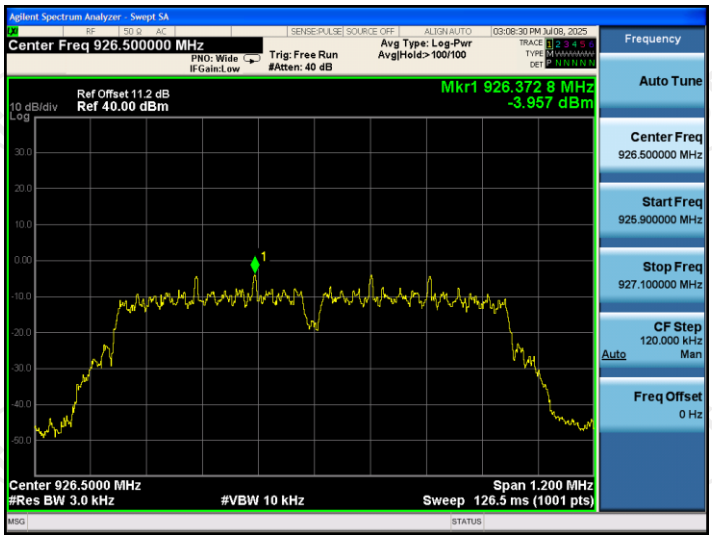
Lowest channel



Middle channel

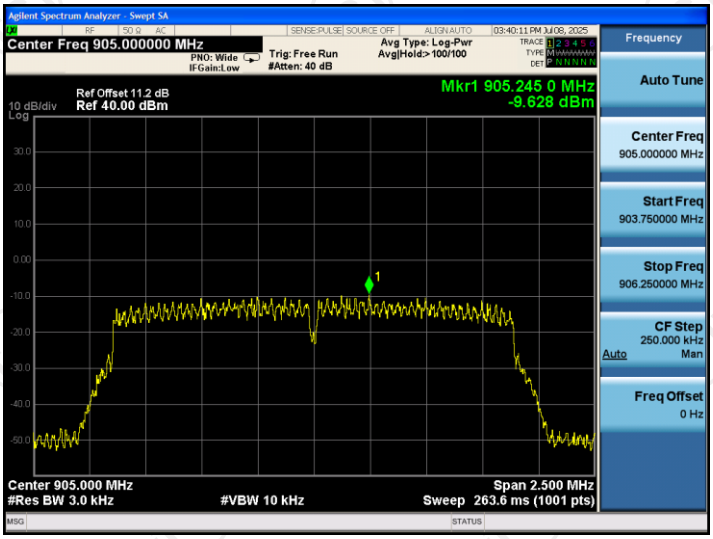


Highest channel

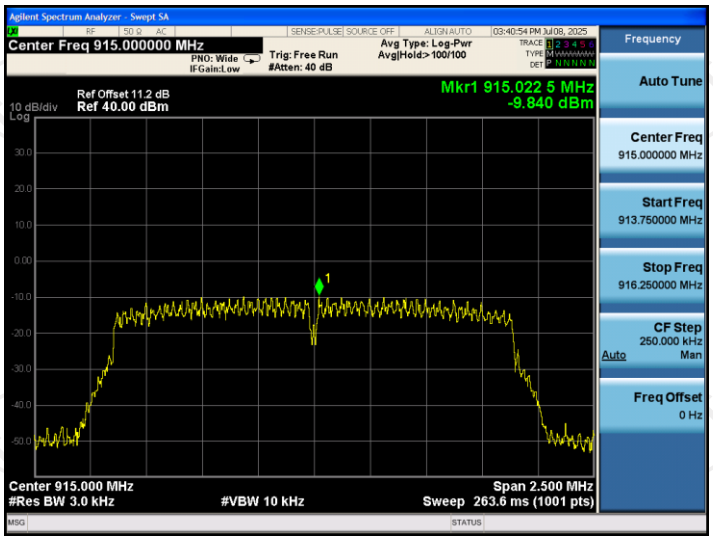


802.11ah QPSK Modulation

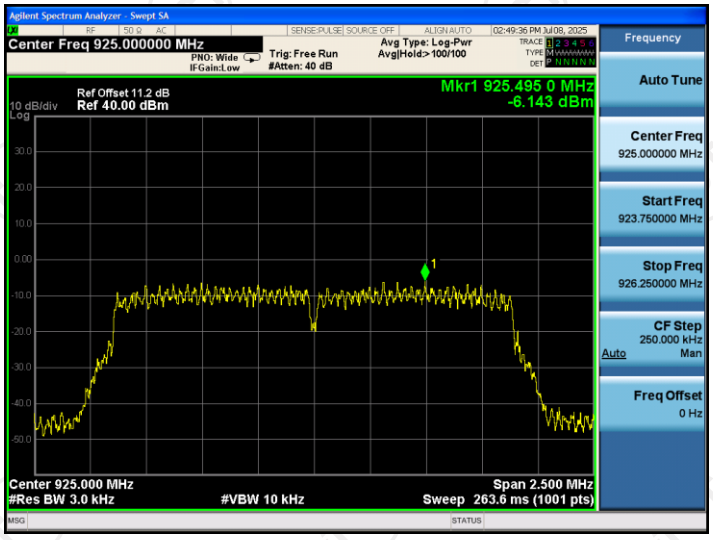
Lowest channel



Middle channel

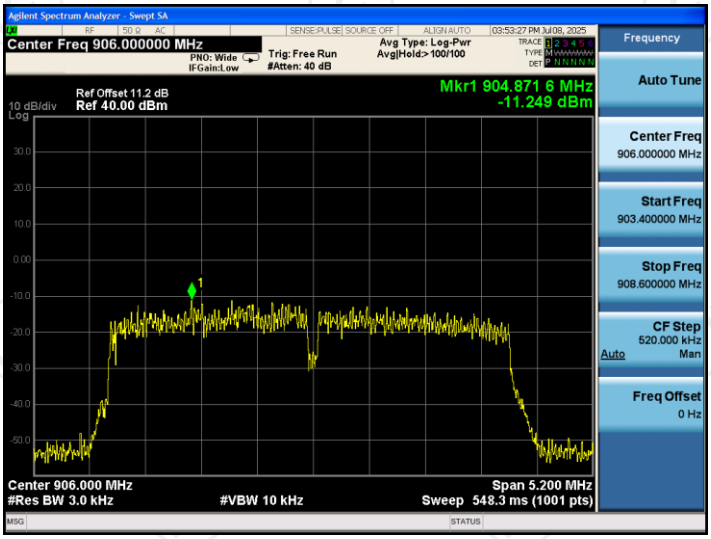


Highest channel

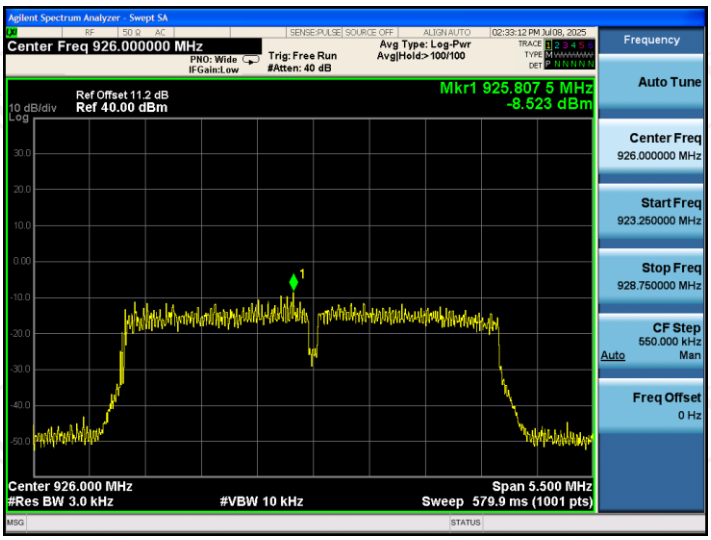


802.11ah 16QAM Modulation

Lowest channel



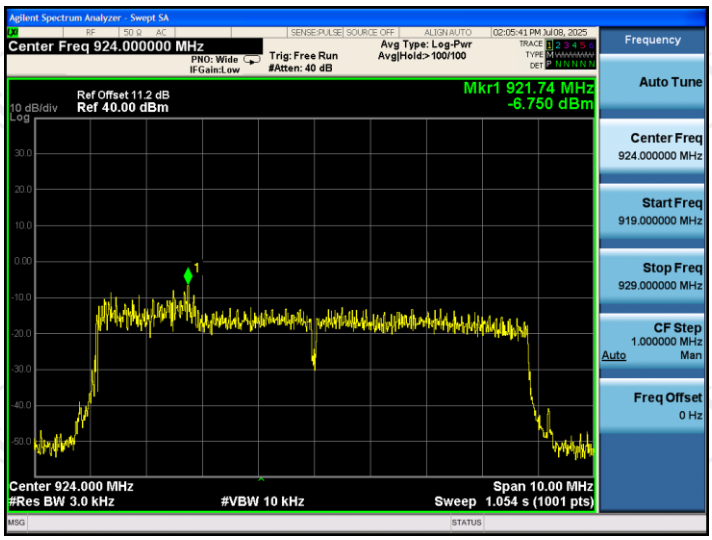
Highest channel



802.11ah 64QAM Modulation

Lowest channel

Highest channel



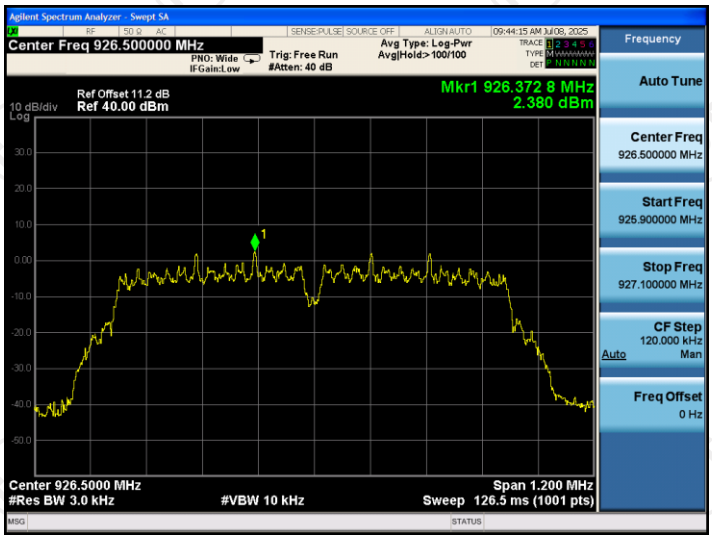
Antenna 1:

802.11ah BPSK Modulation

Lowest channel

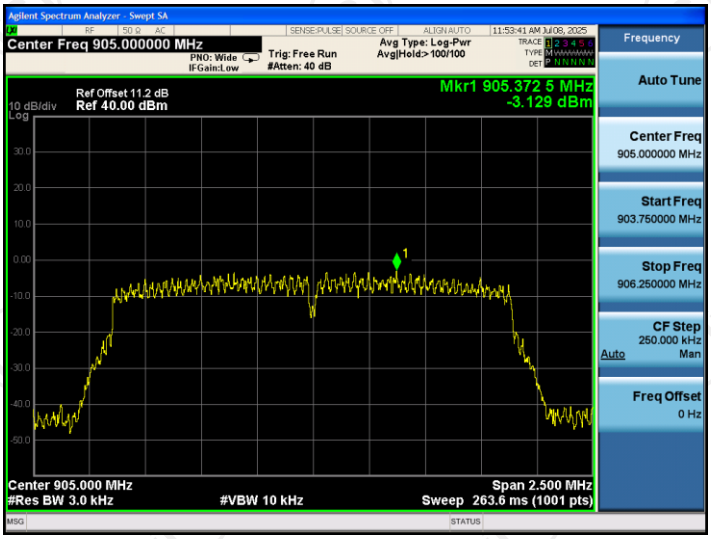
Middle channel

Highest channel

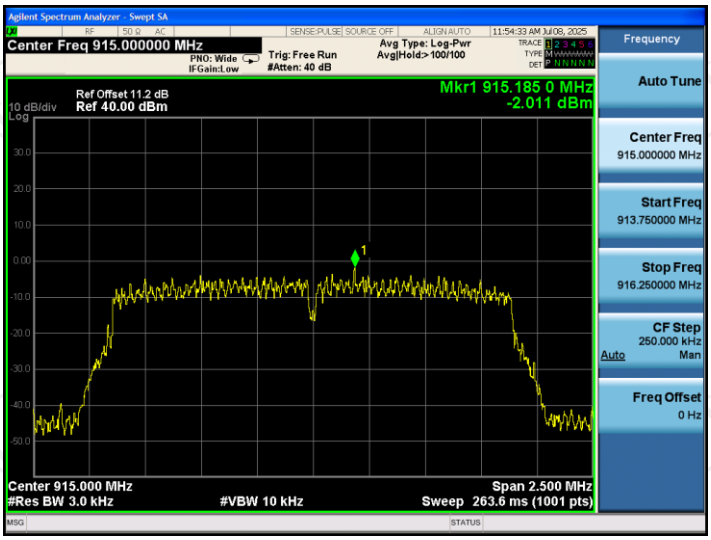


802.11ah QPSK Modulation

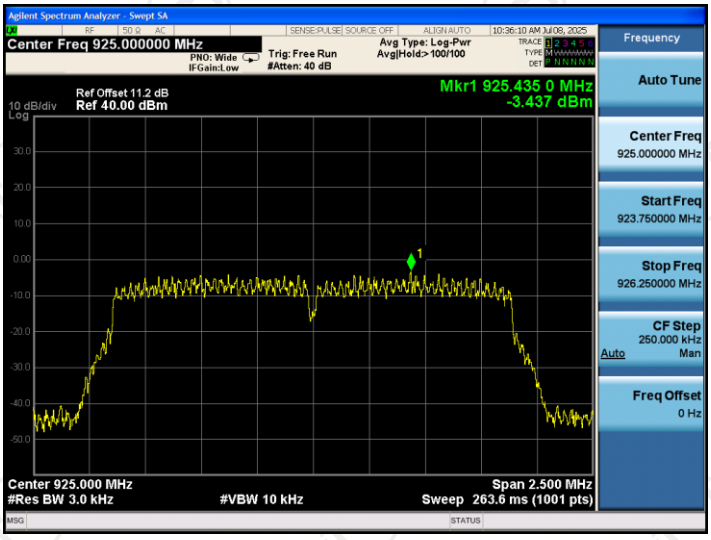
Lowest channel



Middle channel

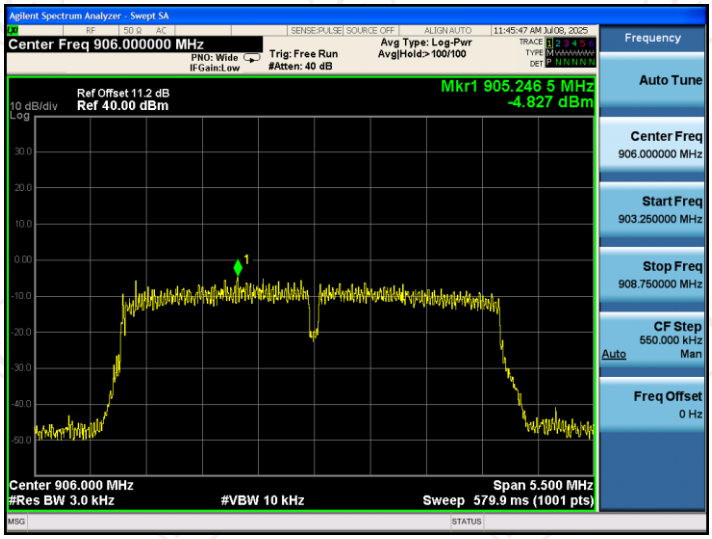


Highest channel

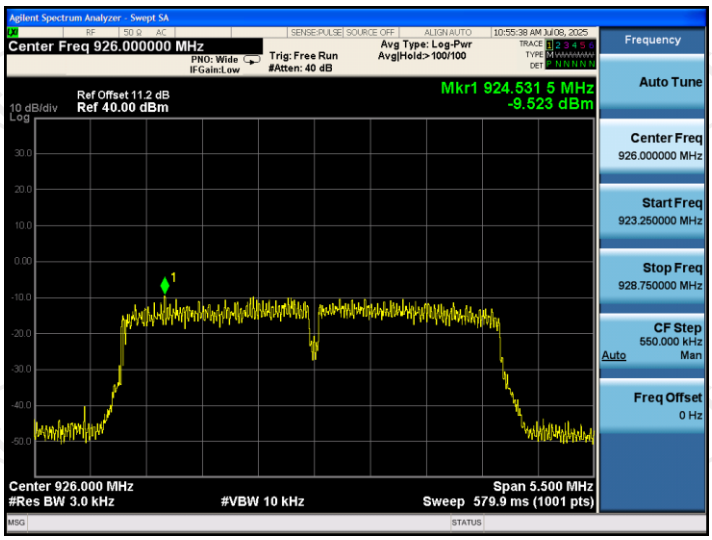


802.11ah 16QAM Modulation

Lowest channel



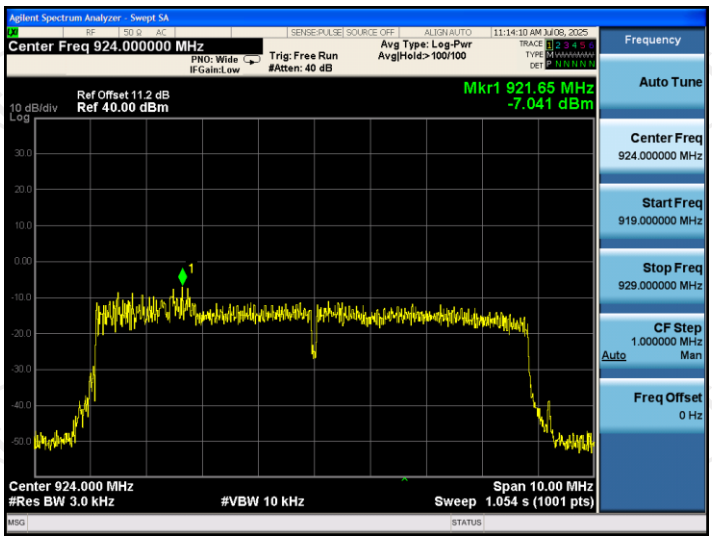
Highest channel



802.11ah 64QAM Modulation

Lowest channel

Highest channel



6.6. Conducted Band Edge and Spurious Emission Measurement

6.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB 558074 D01 v05r02
Limit:	In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).
Test Setup:	
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The RF output of EUT was connected to the spectrum analyzer by RF cable. The path loss was compensated to the results for each measurement. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Set RBW = 100 kHz, VBW=300 kHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when maximum peak conducted output power procedure is used. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB per 15.247(d). 4. Measure and record the results in the test report. 5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS

6.6.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial Number	Date of Cal.	Due Date
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 26, 2025	Jun. 25, 2026
Power detector box	MWRFtest	MW100-RFCB	MW210531TCT	Jan. 21, 2025	Jan. 20, 2026