

FCC Test Report

**Test Report
On Behalf of
Fujian Centerm Information Co.,Ltd.
For
Chromebook**

**Model No.: Centerm Chromebook M311A, Centerm Enterprise
Chromebook M311A, Chromebook M311A, M311A Plus,
M****, M31****, M***** (“*” may be alphanumeric characters,
blank or other characters)**

FCC ID: 2AN9R-M311A

Prepared For: **Fujian Centerm Information Co.,Ltd.
#21-#22 Buildings,No.618,Jinshan Road,Jinshan Industrial Park,Cangshan
District,Fuzhou City, Fujian Province,China**

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Date of Test: **Apr. 10, 2026 ~ Apr. 29, 2026**

Date of Report: **Apr. 29, 2026**

Report Number: **HK2604100402-3E**

Test Result Certification

Applicant's Name.....: Fujian Centerm Information Co.,Ltd.
Address: #21-#22 Buildings,No.618,Jinshan Road,Jinshan Industrial Park,Cangshan District,Fuzhou City, Fujian Province,China
Manufacturer's Name: Fujian Centerm Information Co.,Ltd.
Address: #21-#22 Buildings,No.618,Jinshan Road,Jinshan Industrial Park,Cangshan District,Fuzhou City, Fujian Province,China

Product Description

Trade Mark.....: Centerm
Product Name.....: Chromebook
Model and/or Type Reference : Centerm Chromebook M311A, Centerm Enterprise Chromebook M311A, Chromebook M311A, M311A Plus, M****, M31****, M***** ("*" may be alphanumeric characters, blank or other characters)
Standards: FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2020

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Date of Test.....:
Date (s) of Performance of Tests: **Apr. 10, 2026 ~ Apr. 29, 2026**
Date of Issue.....: **Apr. 29, 2026**
Test Result.....: **Pass**

Testing Engineer

Len Liao

Len Liao

Technical Manager

Sliver Wan

Sliver Wan

Authorized Signatory

Jason Zhou

Jason Zhou



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**** Issued History ****

Revision	Description	Issued Date	Remark
Revision 1.0	Initial Test Report Release	Apr. 29, 2026	Jason Zhou



1. Summary

1.1 Test Procedures and Results

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203/§15.247(b)(4)	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.

1.2 Information of the Test Laboratory

Shenzhen HUAKE Testing Technology Co., Ltd.

Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

1.3 Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, 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 0.15~30MHz	$\pm 2.71\text{dB}$
2	All Emissions, Radiated(<1G)	$\pm 3.90\text{dB}$
3	All Emissions, Radiated(>1G)	$\pm 4.28\text{dB}$
4	Transmitter Power Conducted	$\pm 0.37\text{dB}$
5	Conducted Spurious Emission	$\pm 2.20\text{dB}$
6	Occupied Bandwidth	$\pm 1.5\%$
7	Temperature	$\pm 0.1^{\circ}\text{C}$
8	Humidity	$\pm 1.0\%$



2. EUT Description

2.1 General Description of EUT

Equipment:	Chromebook
Model Name:	Centerm Chromebook M311A
Series Model(s):	Centerm Enterprise Chromebook M311A, Chromebook M311A, M311A, M311A Plus, M****, M31****, M***** ("*" may be alphanumeric characters, blank or other characters)
Model Difference:	All model's the function, software and electric circuit are the same, only with product model named different. Test sample model: Centerm Chromebook M311A.
Antenna Type:	FPC Antenna
Antenna Gain:	Antenna 1: 1.13dBi Antenna 2: 1.57dBi MIMO: 4.37dBi
Operation Frequency:	802.11b/g/n/ax(HE20): 2412~2462MHz 802.11n/ax(HE40): 2422~2452MHz
Number of Channels:	802.11b/g/n/ax(HE20): 11CH 802.11n/ax(HE40): 7CH
Modulation Type:	DSSS, OFDM, OFDMA
Power Source:	DC15V From Adapter with AC100-240V, 50/60Hz or DC11.1V From Battery
Power Rating:	DC15V From Adapter with AC100-240V, 50/60Hz or DC11.1V From Battery
Hardware Version	V1.0
Software Version:	V1.0
Note: 1. The EUT incorporates a MIMO function. Physically, it provides two completed transmitters and receivers(2T2R), two transmit signals are completely correlated, then, Direction gain=GANT + Array Gain(Array Gain=10 log(2) dB for power spectral density; Array Gain=0 for power measurement) 2. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 3. Antenna gain Refer to the antenna specifications. 4. The cable loss data is obtained from the supplier. 5. The test results in the report only apply to the tested sample.	

2.2 Carrier Frequency of Channels

Channel List for 802.11b/ 802.11g/ 802.11n (HT20)/ 802.11ax (HE20)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	04	2427	07	2442	10	2457
02	2417	05	2432	08	2447	11	2462
03	2422	06	2437	09	2452		

Channel List for 802.11n (HT40)/ 802.11ax(HE40)							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
--	--	04	2427	07	2442	--	--
--	--	05	2432	08	2447	--	--
03	2422	06	2437	09	2452		

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:

2.3 Operation of EUT during Testing

Operating Mode

The mode is used: Transmitting mode for 802.11b/802.11g/802.11n (HT20)/802.11ax (HE20)

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

The mode is used: Transmitting mode for 802.11n (HT40)/802.11ax (HE40)

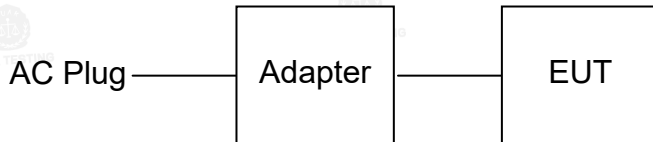
Low Channel: 2422MHz

Middle Channel: 2437MHz

High Channel: 2452MHz

2.4 Description of Test Setup

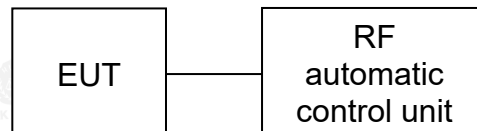
Operation of EUT during AC Conducted testing and below 1GHz Radiation testing:



Operation of EUT during above 1GHz Radiation testing:



Operation of EUT during RF conducted testing:



The sample was placed (0.8m below 1GHz, 1.5m 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 report only reflects the worst emission test results. The worst case is X position.



2.5 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.

Item	Equipment	Trade Mark	Model/Type No.	Specification	Remark
1	Chromebook	Centerm	Centerm Chromebook M311A	N/A	EUT
2	Adapter	N/A	TEKA-PC1A45WUS	Input: AC100-240V, 50/60Hz, 1.2A MAX Output: DC5V/3A 15W, DC9V/3A 27W, DC12V/3A 36W, DC15V/3A 45W, DC20V/2.25A 45W	

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.



3. General Information

3.1 Test Environment and Mode

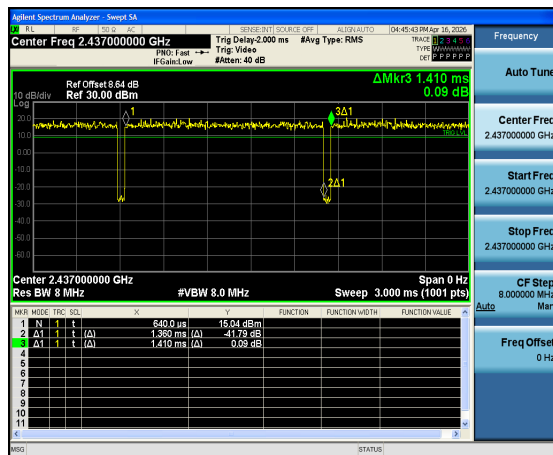
Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1010 mbar
Test Mode:	
Engineering Mode:	Keep the EUT in continuous transmitting by select channel and modulations
We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate in lowest channel, and found the follow list which it was worst case.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)/ax (HE20)	6.5Mbps
802.11n(HT40)/ax (HE40)	13.5Mbps
Final Test Mode:	
Operation Mode:	Keep the EUT in continuous transmitting with modulation
1. For WIFI function, the engineering test program was provided and enabled to make EUT continuous transmit/receive.	
2. According to ANSI C63.10 standards, the test results are both the “worst case” and “worst setup” 1Mbps for 802.11b, 6Mbps for 802.11g, 6.5Mbps for 802.11n(HT20)/ax(HE20), 13.5Mbps for 802.11n(HT40)/ax(HE40).	

3. Mode Test Duty Cycle

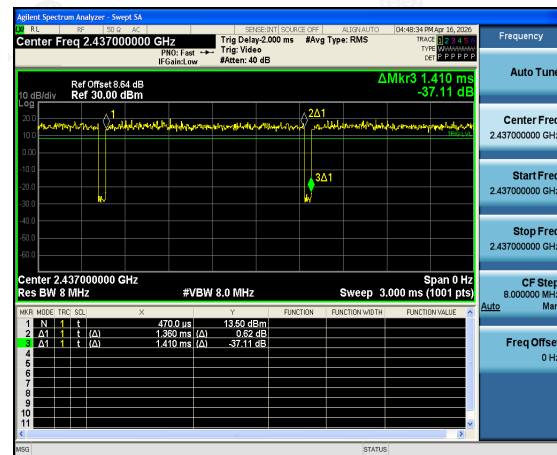
ANT.1:

Mode	Duty Cycle
802.11b	0.9645
802.11g	0.9645
802.11n(HT20)	0.9549
802.11n(HT40)	0.9265
802.11ax(HE20)	0.9549
802.11ax(HE40)	0.9265

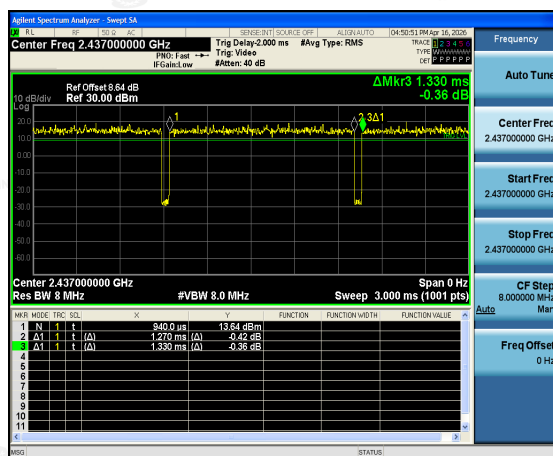
802.11b



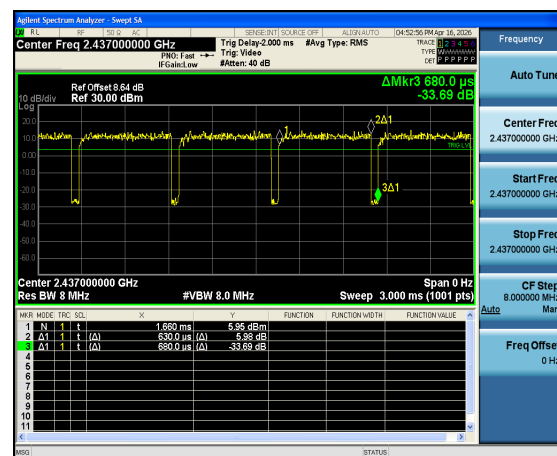
802.11g



802.11n(HT20)



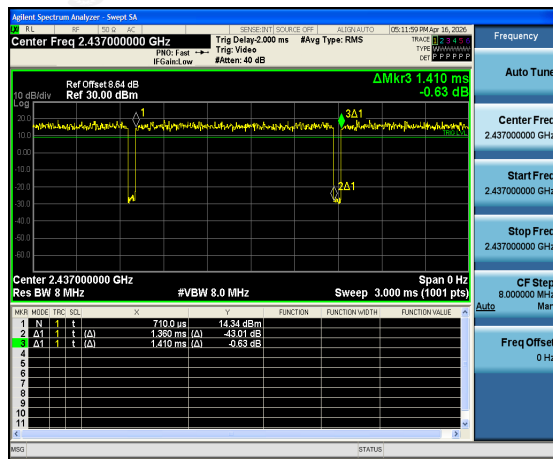
802.11n(HT40)



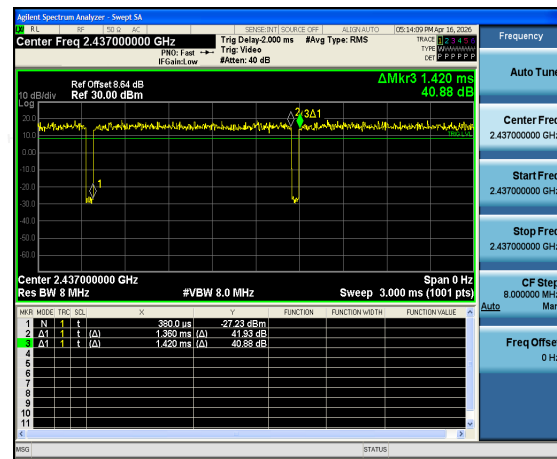
ANT.2:

Mode	Duty Cycle
802.11b	0.9645
802.11g	0.9577
802.11n(HT20)	0.9549
802.11n(HT40)	0.9265
802.11ax(HE20)	0.9621
802.11ax(HE40)	0.9265

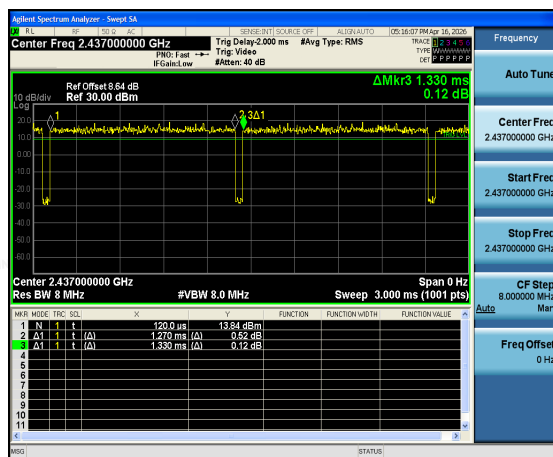
802.11b



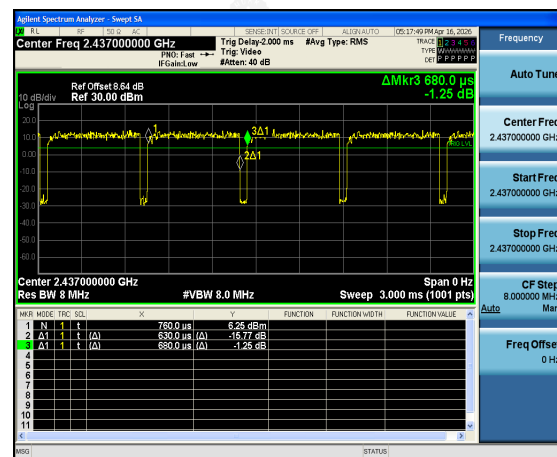
802.11g



802.11n(HT20)



802.11n(HT40)





4. Test Results and Measurement Data

4.1 AC Conducted Emission

4.1.1 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:	<table><tr><th rowspan="2">Frequency range (MHz)</th><th colspan="2">Limit (dBuV)</th></tr><tr><th>Quasi-peak</th><th>Average</th></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table>	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
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:	Reference Plane 40cm E.U.T. AC power 80cm LISN Filter AC power Test table/Insulation plane EMI Receiver Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	Charging + transmitting with modulation														
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														

4.1.2 Test Instruments

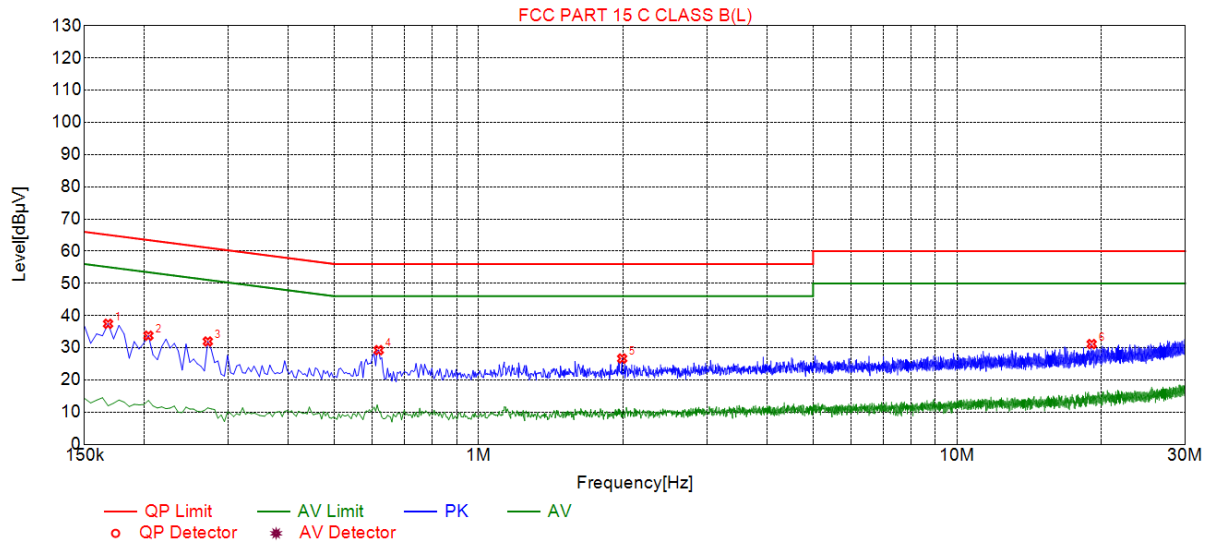
Conducted Emission Shielding Room Test Site (843)					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Receiver	R&S	ESR-7	HKE-005	Feb. 06, 2026	Feb. 05, 2027
LISN	R&S	ENV216	HKE-002	Feb. 11, 2026	Feb. 10, 2027
LISN	R&S	ENV216	HKE-059	Feb. 04, 2026	Feb. 03, 2027
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Feb. 04, 2026	Feb. 03, 2027
EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	/	/
10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 04, 2026	Feb. 03, 2027

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

4.1.3 Test Data

All the test modes completed for test. Only the worst result was reported as below:

Test Specification: Line



Suspected List

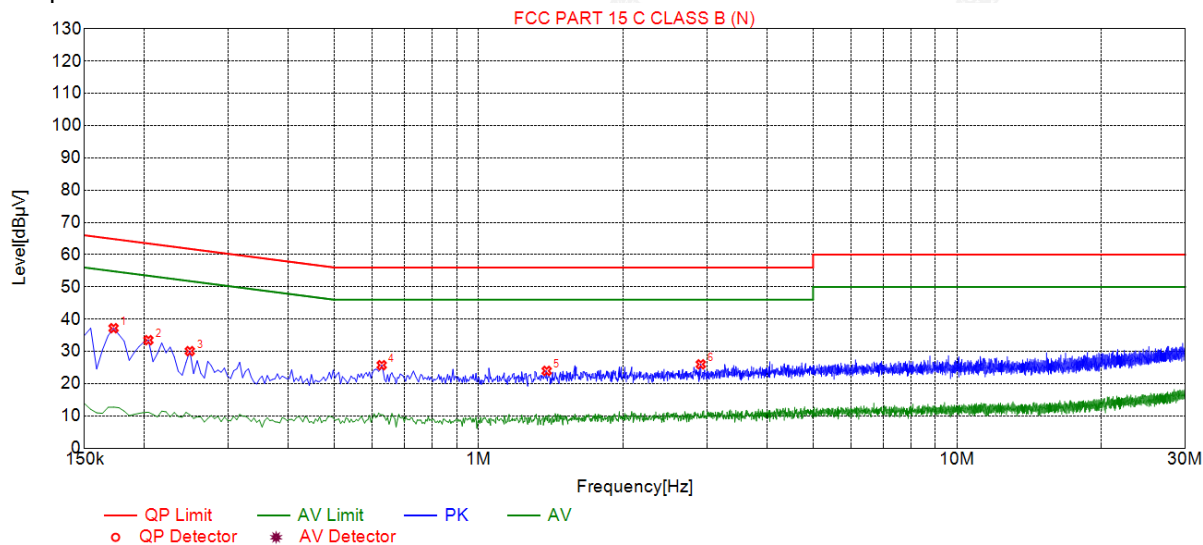
NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1680	37.45	19.81	65.06	27.61	17.64	PK	L
2	0.2040	33.76	19.75	63.45	29.69	14.01	PK	L
3	0.2715	31.95	19.77	61.07	29.12	12.18	PK	L
4	0.6180	29.25	19.91	56.00	26.75	9.34	PK	L
5	1.9950	26.65	20.07	56.00	29.35	6.58	PK	L
6	19.1175	31.16	22.88	60.00	28.84	8.28	PK	L

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

Test Specification: Neutral



Suspected List

NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1725	37.19	19.86	64.84	27.65	17.33	PK	N
2	0.2040	33.48	19.75	63.45	29.97	13.73	PK	N
3	0.2490	30.08	19.78	61.79	31.71	10.30	PK	N
4	0.6270	25.73	19.95	56.00	30.27	5.78	PK	N
5	1.3875	23.96	20.05	56.00	32.04	3.91	PK	N
6	2.9130	25.99	20.18	56.00	30.01	5.81	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor



4.2 Maximum Conducted Output Power

4.2.1 Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b)(3)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	30dBm
Test Setup:	 RF automatic control unit EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows the Measurement Procedure of FCC KDB 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the RF automatic control unit by RF cable. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Measure the Peak output power and record the results in the test report.
Test Result:	PASS

4.2.2 Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 06, 2026	Feb. 05, 2027
Spectrum analyzer	KEYSIGHT	N9020A	HKE-117	Feb. 06, 2026	Feb. 05, 2027
Power meter	KEYSIGHT	E4419B	HKE-144	Feb. 06, 2026	Feb. 05, 2027
Power Sensor	Aglient	E9304A H18	HKE-165	Feb. 06, 2026	Feb. 05, 2027
RF cable	Times	1-40G	N/A	Feb. 06, 2026	Feb. 05, 2027
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 06, 2026	Feb. 05, 2027
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	/	/

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).



4.2.3 Test Data

Mode	Test Channel	Frequency (MHz)	Maximum Conducted Output Power (dBm)			
			Antenna port 1	Antenna port 2	Limit (dBm)	Result
802.11b	CH01	2412	13.68	13.51	30	PASS
802.11b	CH06	2437	14.06	14.21	30	PASS
802.11b	CH11	2462	13.63	13.83	30	PASS
802.11g	CH01	2412	14.70	13.81	30	PASS
802.11g	CH06	2437	13.13	13.34	30	PASS
802.11g	CH11	2462	13.68	12.97	30	PASS
802.11n(HT20)	CH01	2412	14.26	13.95	30	PASS
802.11n(HT20)	CH06	2437	13.99	14.88	30	PASS
802.11n(HT20)	CH11	2462	13.03	12.89	30	PASS
802.11n(HT40)	CH03	2422	13.06	13.49	30	PASS
802.11n(HT40)	CH06	2437	13.06	14.02	30	PASS
802.11n(HT40)	CH09	2452	12.43	13.94	30	PASS
802.11ax(HE20)	CH01	2412	14.35	14.10	30	PASS
802.11ax(HE20)	CH06	2437	14.85	14.87	30	PASS
802.11ax(HE20)	CH11	2462	14.32	13.71	30	PASS
802.11ax(HE40)	CH03	2422	13.69	13.41	30	PASS
802.11ax(HE40)	CH06	2437	13.83	13.87	30	PASS
802.11ax(HE40)	CH09	2452	13.53	12.79	30	PASS

Note:

1. The test results including the cable lose.

For MIMO Antenna port 1 + Antenna port 2							
Mode	Test Channel	Frequency (MHz)	Antenna port 1	Antenna port 2	MIMO	Limit (dBm)	Result
802.11n(HT20)	CH01	2412	14.26	13.95	17.12	30	PASS
802.11n(HT20)	CH06	2437	13.99	14.88	17.47	30	PASS
802.11n(HT20)	CH11	2462	13.03	12.89	15.97	30	PASS
802.11n(HT40)	CH03	2422	13.06	13.49	16.29	30	PASS
802.11n(HT40)	CH06	2437	13.06	14.02	16.58	30	PASS
802.11n(HT40)	CH09	2452	12.43	13.94	16.26	30	PASS
802.11ax(HE20)	CH01	2412	14.35	14.10	17.24	30	PASS
802.11ax(HE20)	CH06	2437	14.85	14.87	17.87	30	PASS
802.11ax(HE20)	CH11	2462	14.32	13.71	17.04	30	PASS
802.11ax(HE40)	CH03	2422	13.69	13.41	16.56	30	PASS
802.11ax(HE40)	CH06	2437	13.83	13.87	16.86	30	PASS
802.11ax(HE40)	CH09	2452	13.53	12.79	16.19	30	PASS
Note: 1.The test results including the cable lose. 2. This product supports antenna 1 and antenna 2 launch, but only support 802.11 n/ax for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.							

4.3 Emission Bandwidth

4.3.1 Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	$\geq 500\text{kHz}$
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02. 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) = 1%~5%OBW. Set the video bandwidth (VBW) ≥ 3 RBW. In order to make an accurate measurement. The 6dB bandwidth must be at least 500 kHz. 4. Measure and record the results in the test report.
Test Result:	PASS

4.3.2 Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 06, 2026	Feb. 05, 2027
Spectrum analyzer	KEYSIGHT	N9020A	HKE-117	Feb. 06, 2026	Feb. 05, 2027
RF cable	Times	1-40G	N/A	Feb. 06, 2026	Feb. 05, 2027
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 06, 2026	Feb. 05, 2027
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	/	/

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

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4.3.3 Test Data

For Antenna port 1

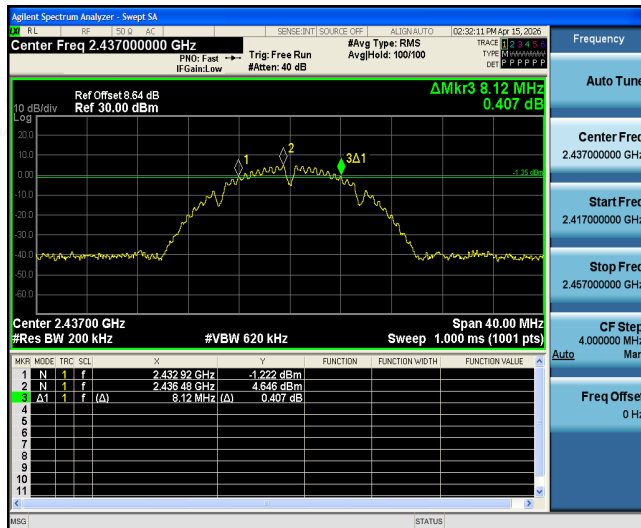
Test channel	6dB Emission Bandwidth (MHz)					
	802.11b	802.11g	802.11n (HT20)	802.11n (HT40)	802.11ax (HE20)	802.11ax (HE40)
Lowest	8.120	15.920	16.800	35.280	18.360	37.120
Middle	8.120	16.200	17.480	35.200	18.880	37.600
Highest	8.120	16.240	17.160	35.600	18.760	37.440
Limit:	$\geq 500\text{kHz}$					
Test Result:	PASS					

Test plots as follows:

Lowest channel



Middle channel

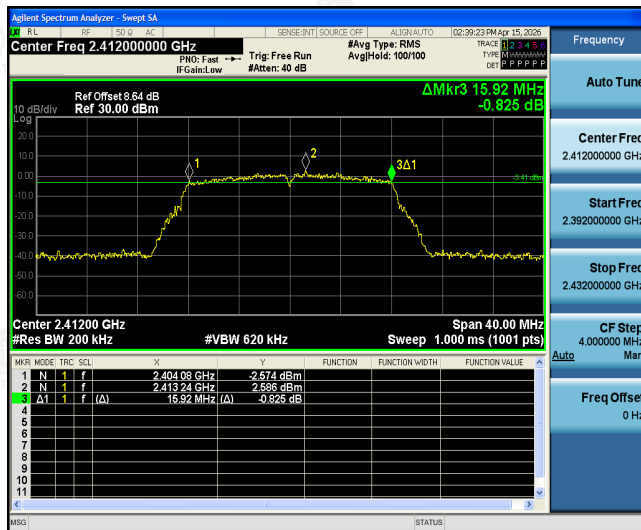


Highest channel

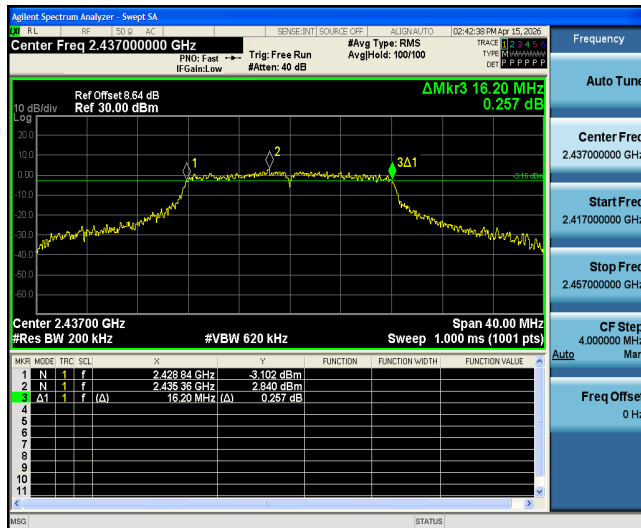


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Lowest channel



Middle channel



Highest channel



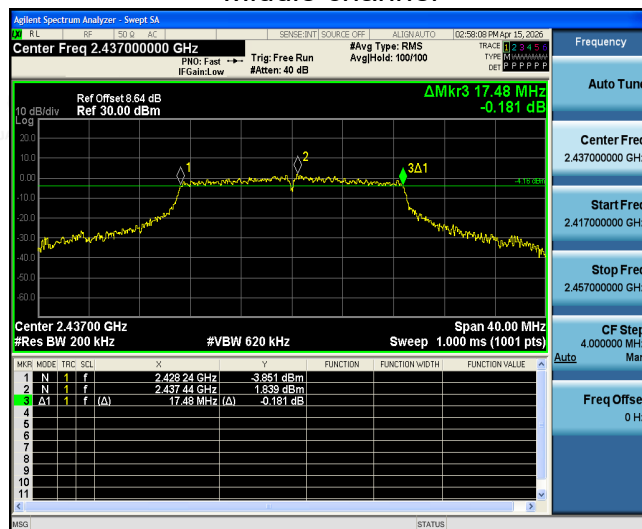
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802.11n (HT20) Modulation

Lowest channel



Middle channel



Highest channel



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802.11n (HT40) Modulation

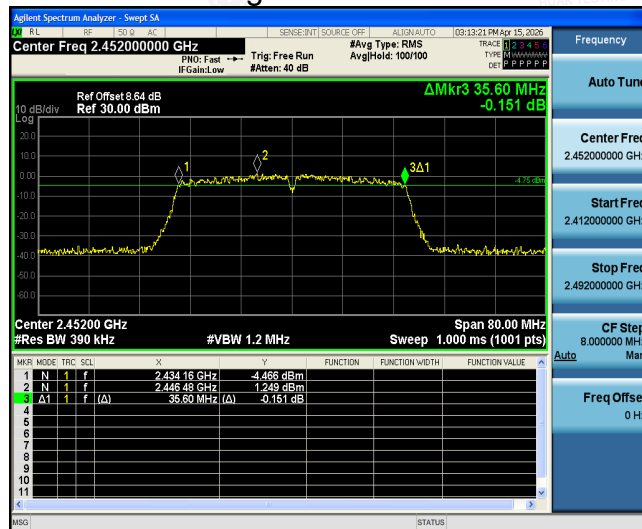
Lowest channel



Middle channel



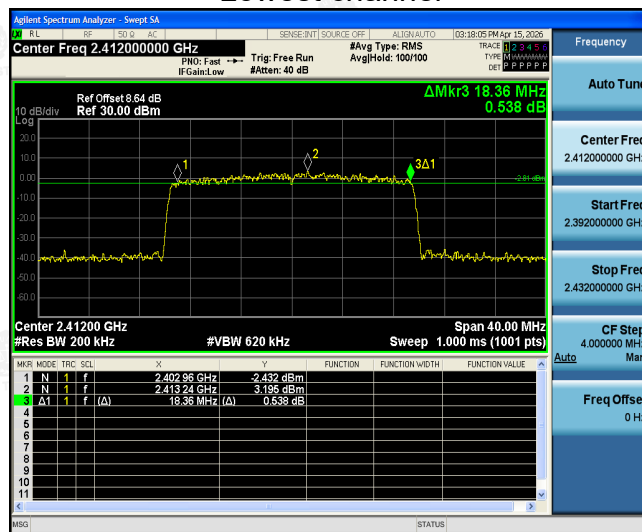
Highest channel



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802.11ax (HE20) Modulation

Lowest channel



Middle channel



Highest channel



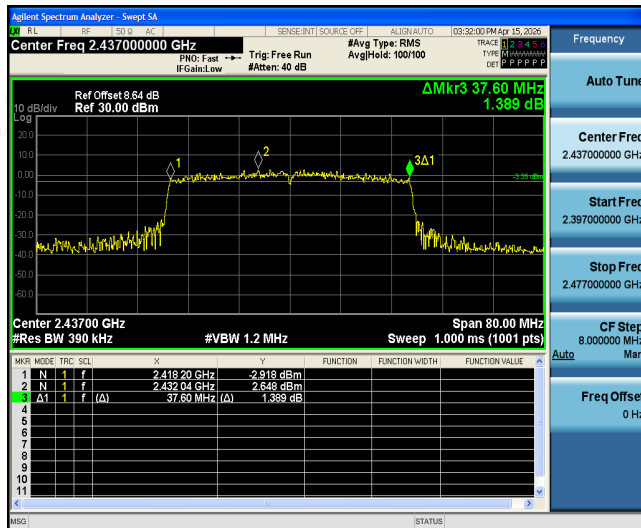
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802.11ax (HE40) Modulation

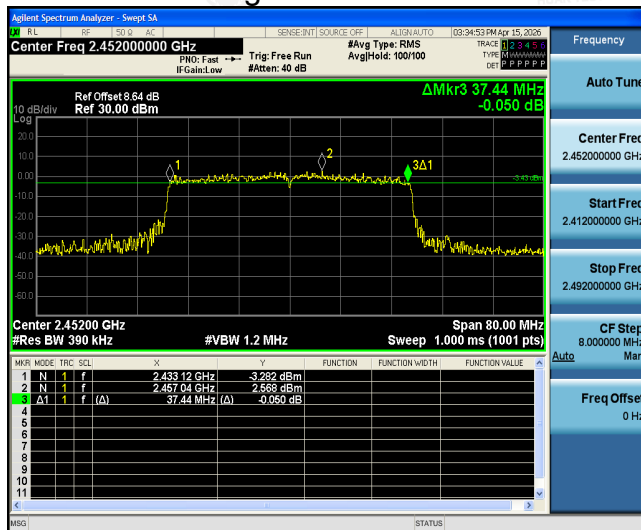
Lowest channel



Middle channel



Highest channel



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For Antenna port 2

Test channel	6dB Emission Bandwidth (MHz)					
	802.11b	802.11g	802.11n (HT20)	802.11n (HT40)	802.11ax (HE20)	802.11ax (HE40)
Lowest	8.080	15.960	17.240	35.840	18.360	37.520
Middle	8.080	16.040	17.280	34.240	18.840	37.520
Highest	8.080	16.160	17.440	35.600	18.680	36.400
Limit:	$\geq 500\text{kHz}$					
Test Result:	PASS					

Test plots as follows:

Lowest channel



Middle channel

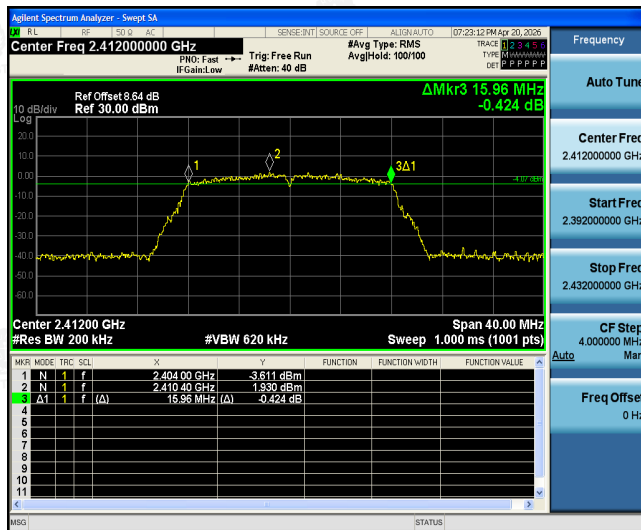


Highest channel



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Lowest channel



Middle channel



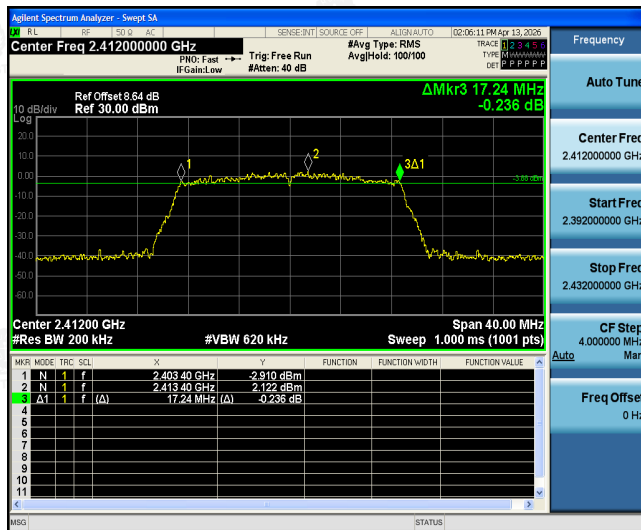
Highest channel



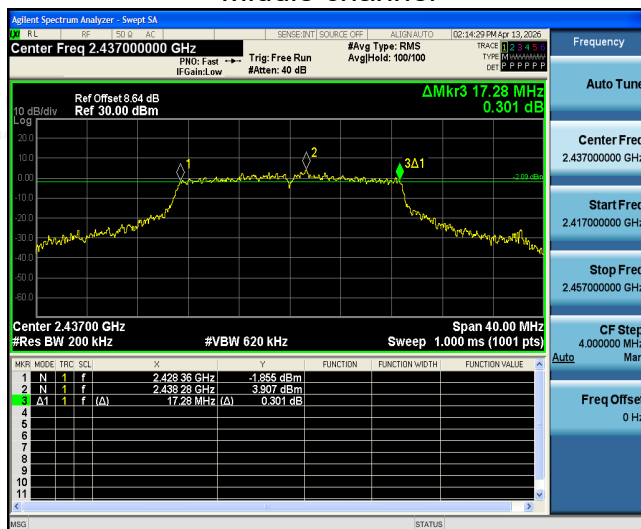
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802.11n (HT20) Modulation

Lowest channel



Middle channel

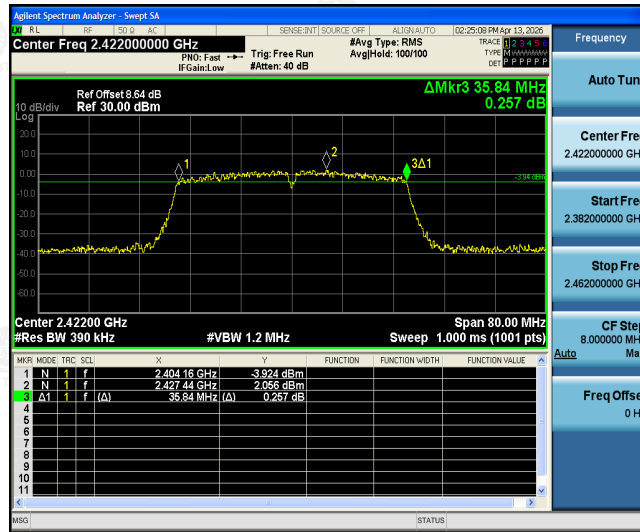


Highest channel

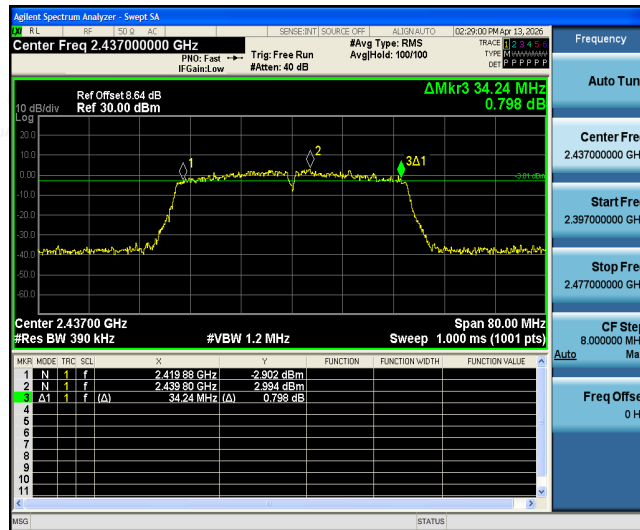


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Lowest channel



Middle channel



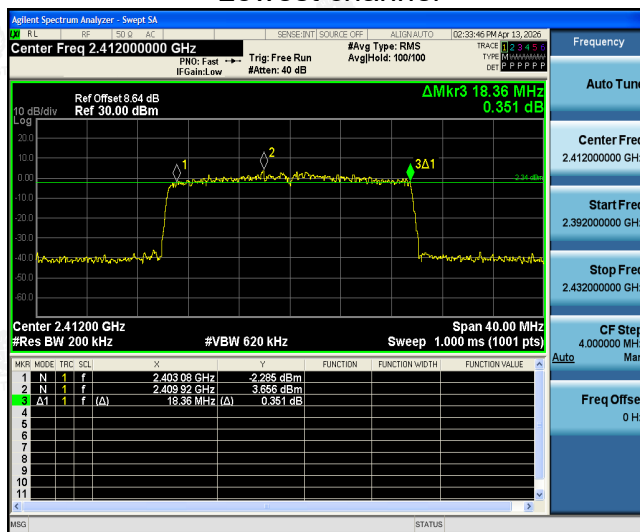
Highest channel



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802.11ax (HE20) Modulation

Lowest channel



Middle channel



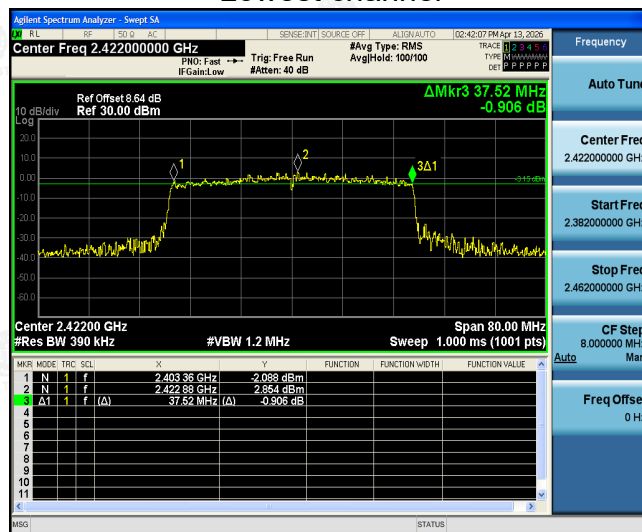
Highest channel



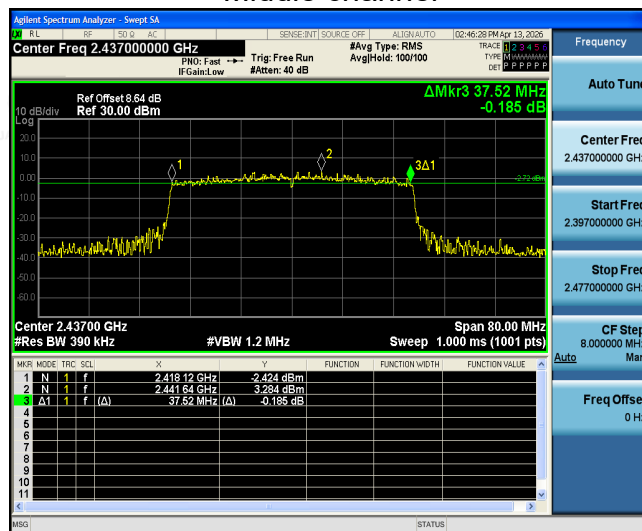
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 15 days only. The document is issued by Shenzhen HUAK Testing Technology Co., Ltd., this document cannot be reproduced except in full with our prior written permission.

802.11ax (HE40) Modulation

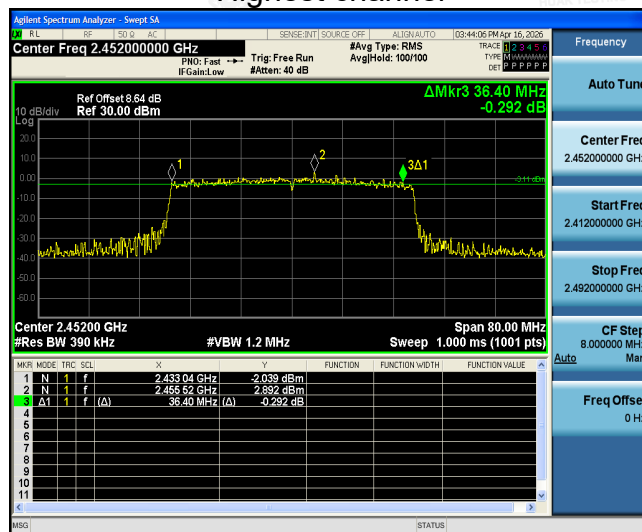
Lowest channel



Middle channel



Highest channel



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4.4 Power Spectral Density

4.4.1 Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (e)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	The average power spectral density shall not be greater than 8dBm in any 3kHz band at any time interval of continuous transmission.
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows Measurement procedure 10.2 method PKPSD of FCC KDB Publication No. 558074 D01 15.247 Meas Guidance v05r02. 2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW): $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$. Video bandwidth $\text{VBW} \geq 3 \times \text{RBW}$. Set the span to at least 1.5 times the OBW. 5. Detector = Peak, Sweep time = auto couple. 6. Employ trace averaging (Peak) mode over a minimum of 100 traces. Use the peak marker function to determine the maximum power level. 7. Measure and record the results in the test report.
Test Result:	PASS

4.4.2 Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 06, 2026	Feb. 05, 2027
Spectrum analyzer	KEYSIGHT	N9020A	HKE-117	Feb. 06, 2026	Feb. 05, 2027
RF cable	Times	1-40G	N/A	Feb. 06, 2026	Feb. 05, 2027
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 06, 2026	Feb. 05, 2027
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	/	/

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

4.4.3 Test Data

For Antenna port 1

EUT Set Mode	Channel	Test Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	-2.19	-12.19
	Middle	2.33	-7.67
	Highest	1.92	-8.08
802.11g	Lowest	-2.94	-12.94
	Middle	-3.19	-13.19
	Highest	-2.70	-12.70
802.11n(HT20)	Lowest	-3.31	-13.31
	Middle	-3.67	-13.67
	Highest	-4.74	-14.74
802.11n(HT40)	Lowest	-6.16	-16.16
	Middle	-5.92	-15.92
	Highest	-6.50	-16.50
802.11ax(HE20)	Lowest	-2.22	-12.22
	Middle	-2.34	-12.34
	Highest	-1.57	-11.57
802.11ax(HE40)	Lowest	-6.24	-16.24
	Middle	-5.94	-15.94
	Highest	-6.23	-16.23
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10			
Limit: 8dBm/3KHz			
Test Result:		PASS	

Test plots as follows:



HUAKE TESTING

802.11b Modulation

Lowest channel



Middle channel



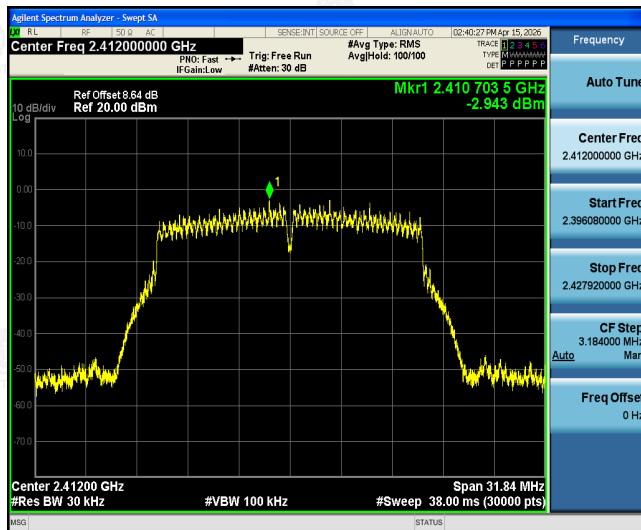
Highest channel



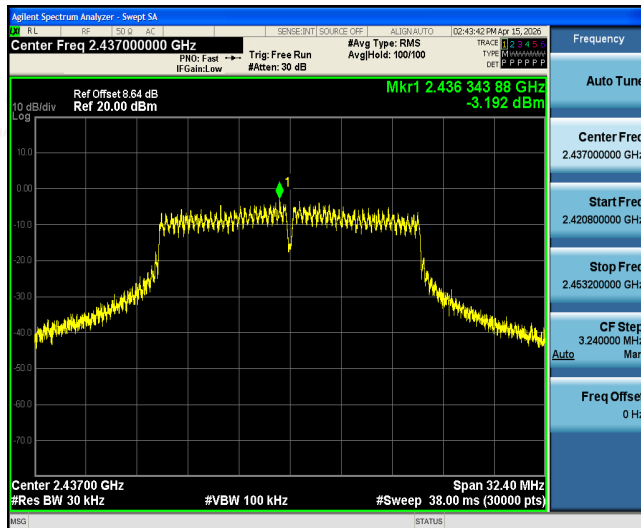
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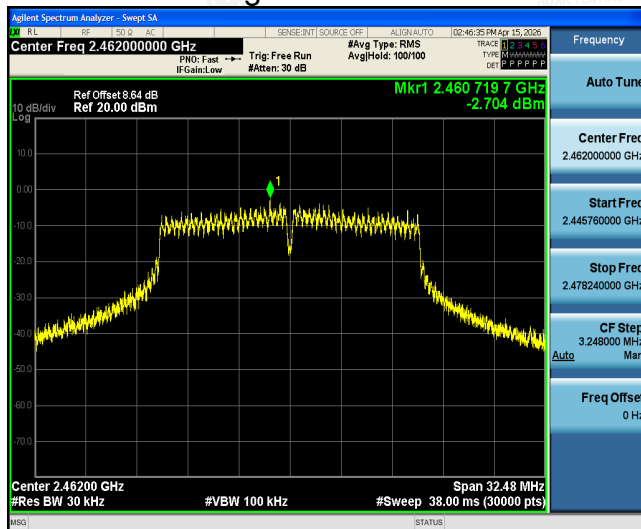
Lowest channel



Middle channel



Highest channel





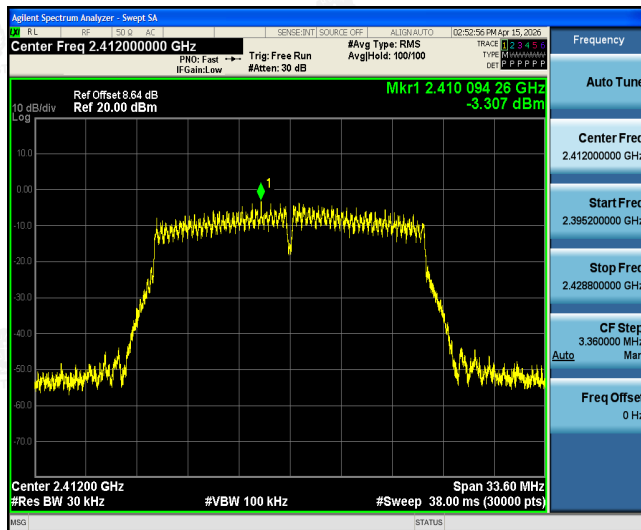
HUAKE TESTING

802.11n (HT20) Modulation

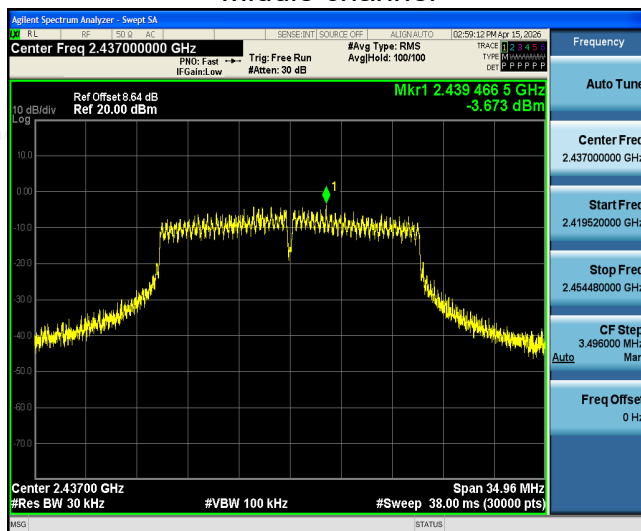
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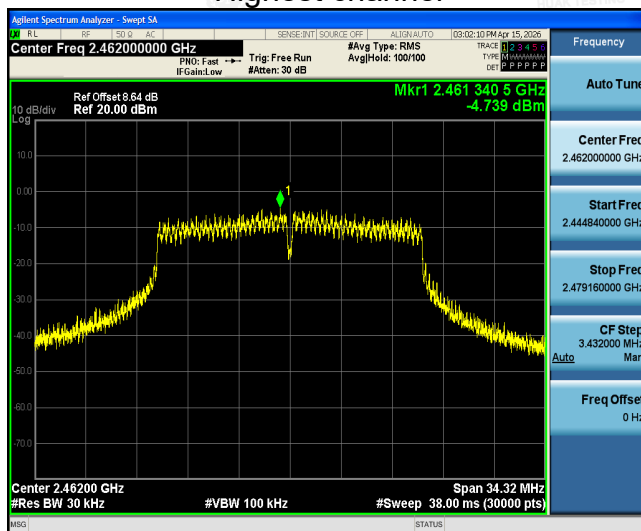
Lowest channel



Middle channel



Highest channel



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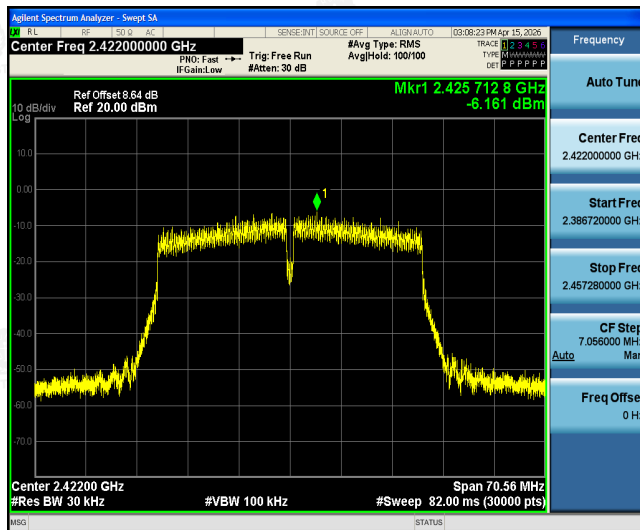
HUAKE TESTING

802.11n (HT40) Modulation

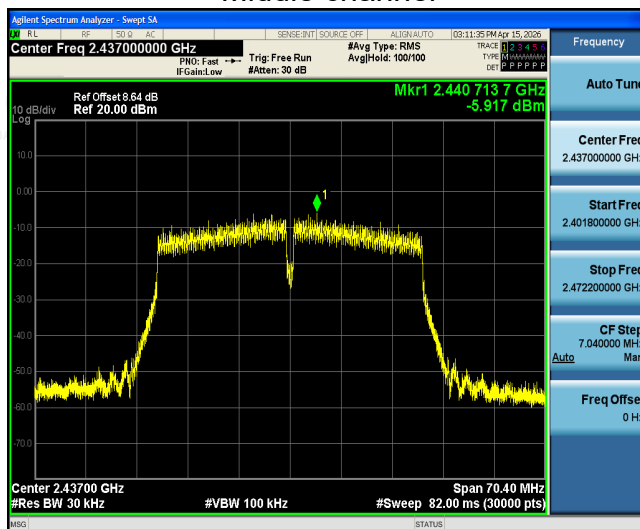
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Report No.: HK2604100402-3E

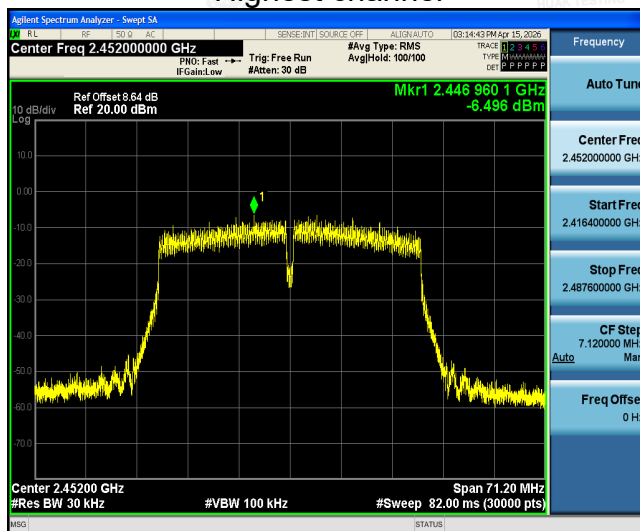
Lowest channel



Middle channel



Highest channel



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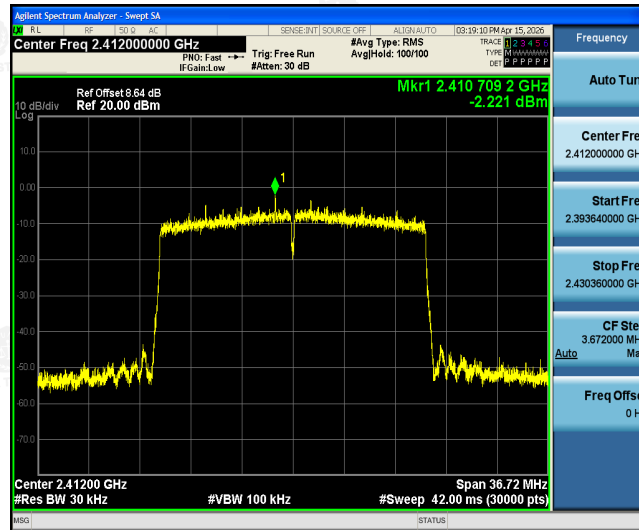
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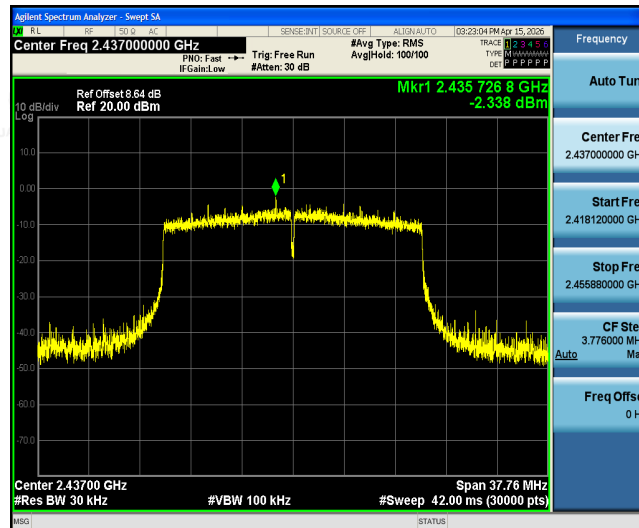
HUAKE TESTING

802.11ax (HE20) Modulation

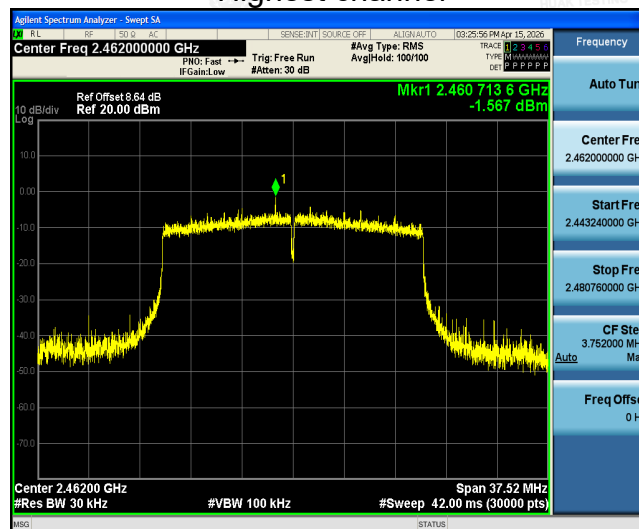
Lowest channel



Middle channel



Highest channel



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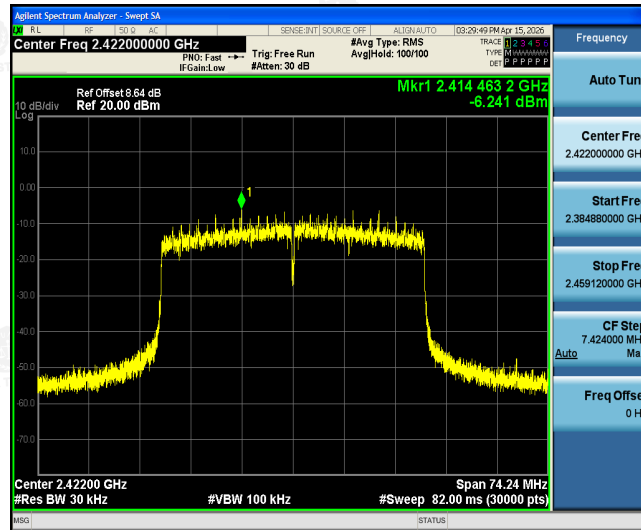
HUAKE TESTING

802.11ax (HE40) Modulation

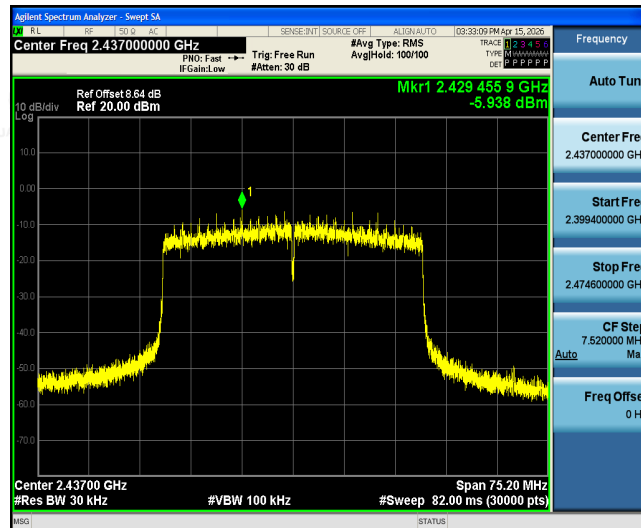
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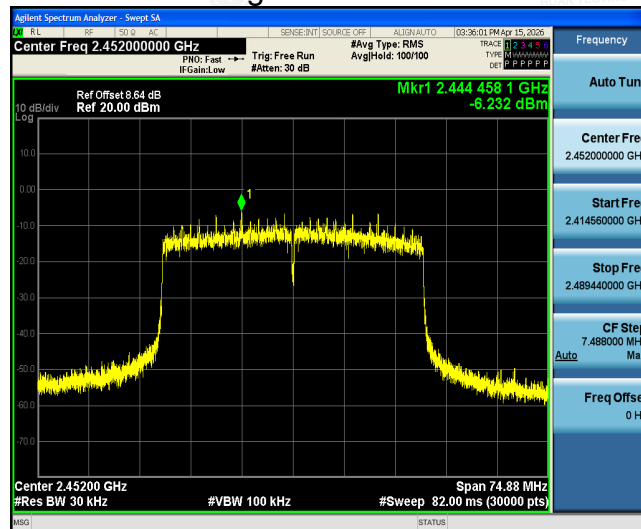
Lowest channel



Middle channel



Highest channel



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For Antenna port 2

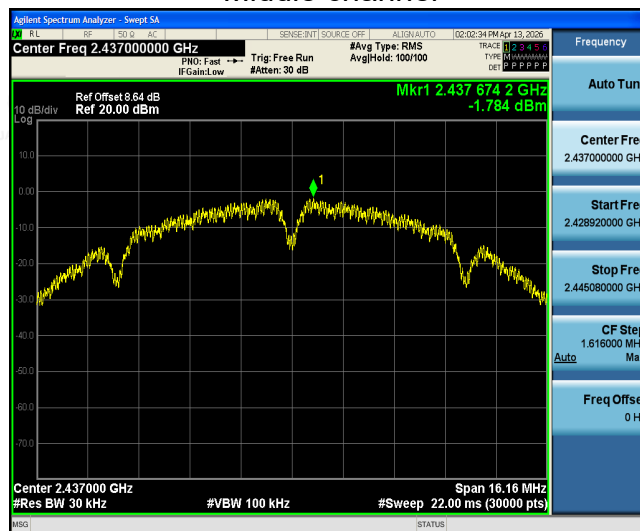
EUT Set Mode	Channel	Test Result (dBm/30kHz)	Result (dBm/3kHz)
802.11b	Lowest	0.86	-9.14
	Middle	-1.78	-11.78
	Highest	2.04	-7.96
802.11g	Lowest	-3.86	-13.86
	Middle	-3.38	-13.38
	Highest	-3.90	-13.90
802.11n(HT20)	Lowest	-3.65	-13.65
	Middle	-2.84	-12.84
	Highest	-5.39	-15.39
802.11n(HT40)	Lowest	-5.46	-15.46
	Middle	-5.14	-15.14
	Highest	-3.15	-13.15
802.11ax(HE20)	Lowest	-3.88	-13.88
	Middle	-3.45	-13.45
	Highest	-3.75	-13.75
802.11ax(HE40)	Lowest	-6.61	-16.61
	Middle	-5.96	-15.96
	Highest	-6.87	-16.87
PSD test result (dBm/3kHz)= PSD test result (dBm/30kHz)-10			
Limit: 8dBm/3KHz			
Test Result:	PASS		

Test plots as follows:

Lowest channel



Middle channel



Highest channel





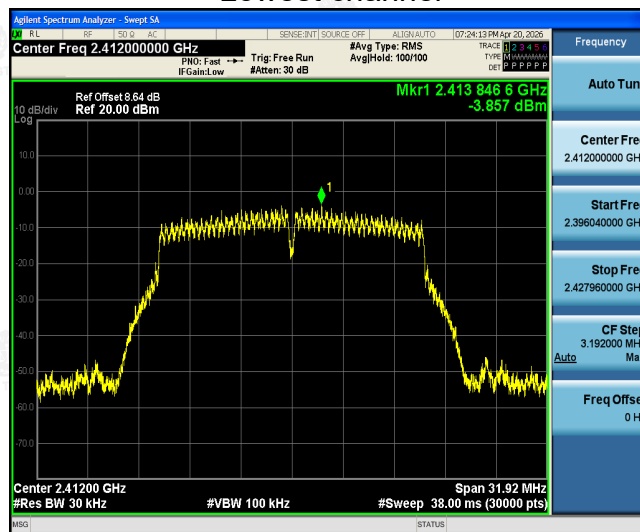
HUAKE TESTING

802.11g Modulation

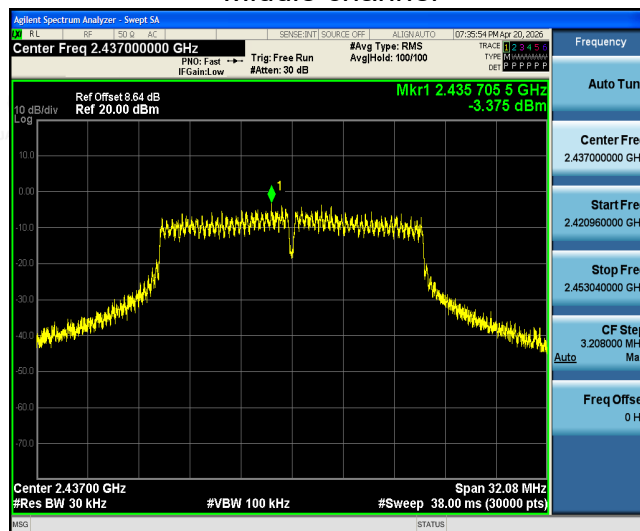
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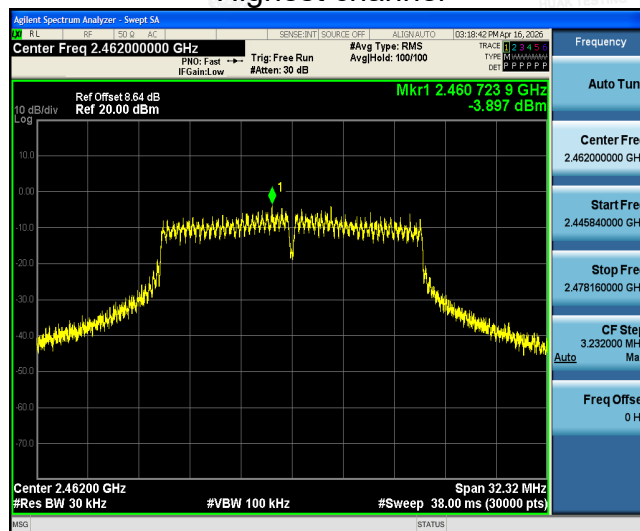
Lowest channel



Middle channel



Highest channel



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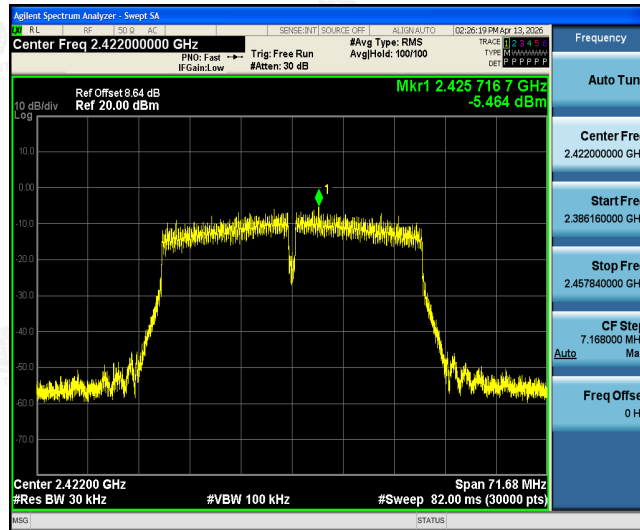
HUAKE TESTING

802.11n (HT40) Modulation

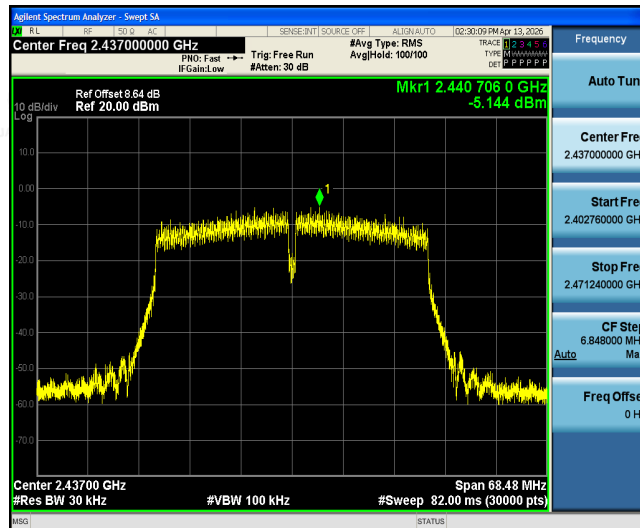
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Report No.: HK2604100402-3E

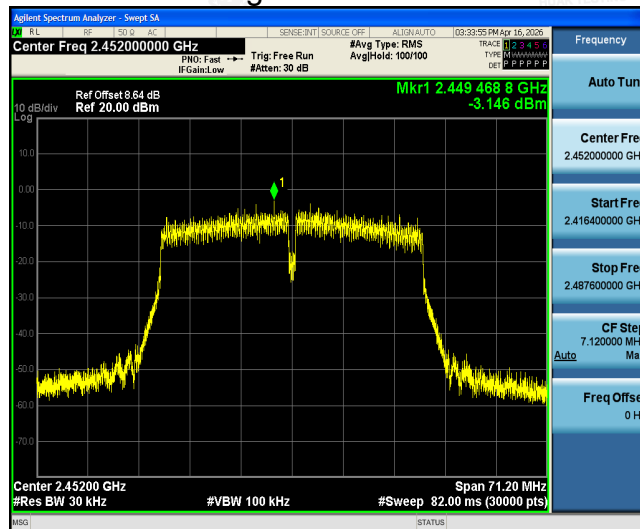
Lowest channel



Middle channel



Highest channel



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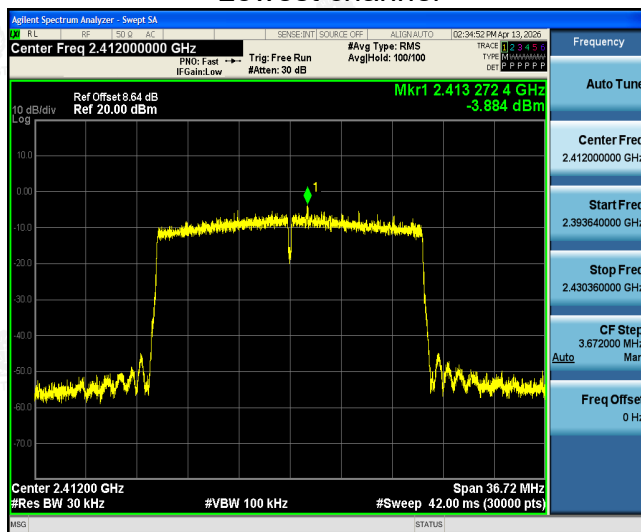
HUAKE TESTING

802.11ax (HE20) Modulation

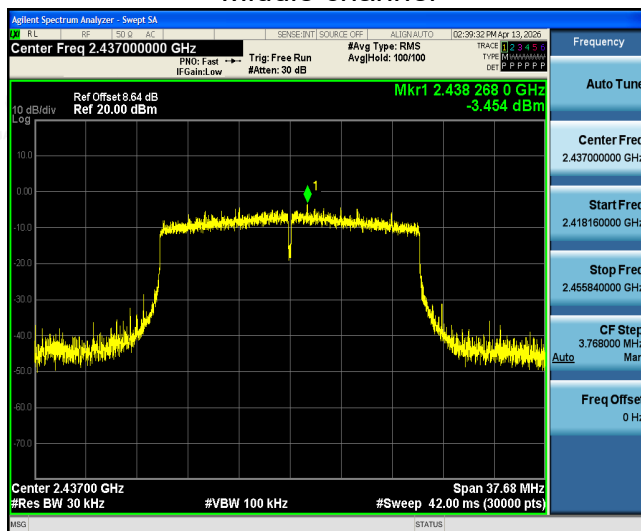
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Report No.: HK2604100402-3E

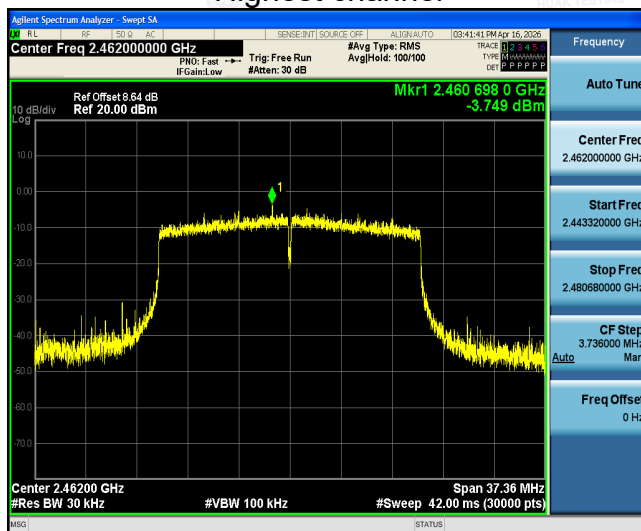
Lowest channel



Middle channel



Highest channel



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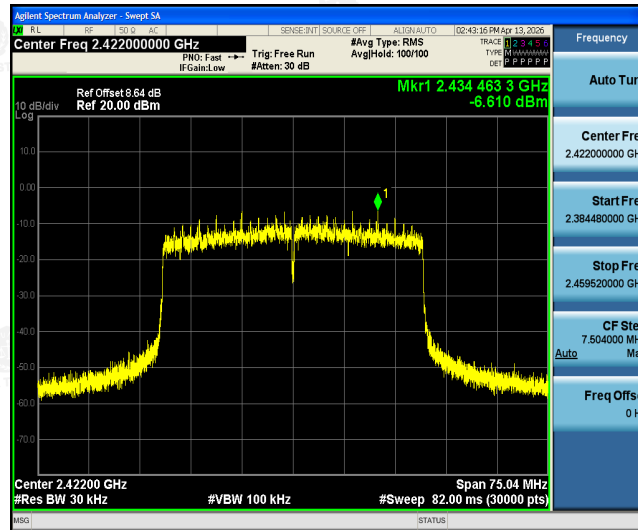
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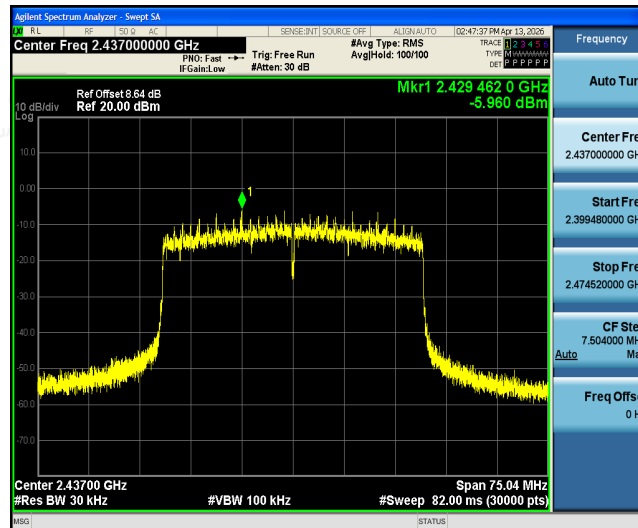
HUAKE TESTING

802.11ax (HE40) Modulation

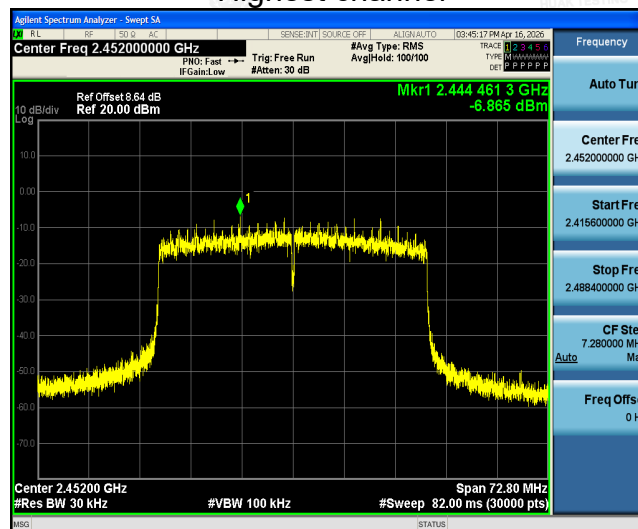
Lowest channel



Middle channel



Highest channel



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 15 days only. The document is issued by Shenzhen HUAKE Testing Technology Co., Ltd., this document cannot be reproduced except in full with our prior written permission.



For MIMO antenna port 1+antenna port 2			
Frequency	Power Density (dBm/3KHz)	Limit (dBm/3KHz)	Result
TX 802.11n/HT20 Mode			
2412 MHz	-10.47	8	PASS
2437 MHz	-10.22	8	PASS
2462 MHz	-12.04	8	PASS
TX 802.11n/HT40 Mode			
2422 MHz	-12.79	8	PASS
2437 MHz	-12.50	8	PASS
2452 MHz	-11.50	8	PASS
TX 802.11ax/HE20 Mode			
2412 MHz	-9.96	8	PASS
2437 MHz	-9.85	8	PASS
2462 MHz	-9.51	8	PASS
TX 802.11ax/HE40 Mode			
2422 MHz	-13.41	8	PASS
2437 MHz	-12.94	8	PASS
2452 MHz	-13.53	8	PASS
Note: 1. According to KDB 662911, Result power = $10\log(10^{(\text{ant1}/10)} + 10^{(\text{ant2}/10)})$. 2. limit=8dBm/3KHz 3. This product supports antenna 1, and antenna 2 launch, but only support 802.11 n/802.11ax for MIMO mode, not support 802.11 b and 802.11 g for MIMO mode.			