

FCC Test Report

**Test Report
On Behalf of
Hangzhou Tanlink Technology Co.,Ltd.
For
Dash Cam**

**Model No.: ZoomPix1, ZoomPix1 Plus, ZoomPix1 Pro,
ZoomPix1 Lite, ZoomPix1 Max, F9-N, F9 Lite-N, F7NP-N,
F7NP-128G, F7N-N, F11-N, A3-N, G900PRO-N,
G900 TriPro bumper-N, G900 TriPro cabin-N, G840H-N,
G840S-64G, 107-64G, F7NP-EX**

FCC ID: 2BBBN-ZOOMPIX1

Prepared For: Hangzhou Tanlink Technology Co.,Ltd.
Room 701, South Building, Building 3, No.16 Longtan Road, Cangqian Street,
Yuhang District, Hangzhou, Zhejiang, China

Prepared By: Shenzhen HUAKE Testing Technology Co., Ltd.
1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping,
Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Date of Test: Dec. 03, 2025 ~ Dec. 17, 2025

Date of Report: Dec. 17, 2025

Report Number: HK2512036397-1E

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Shenzhen HUAKE Testing Technology Co., Ltd. Tel.: +86-0755-2302 9901 E-mail: info@huak.com Web.: www.huak.com
Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

Test Result Certification

Applicant's Name.....: Hangzhou Tanlink Technology Co.,Ltd.

Address: Room 701, South Building, Building 3, No.16 Longtan Road,
Cangqian Street, Yuhang District, Hangzhou, Zhejiang, China

Manufacturer's Name: Hangzhou Tanlink Technology Co.,Ltd.

Address: Room 701, South Building, Building 3, No.16 Longtan Road,
Cangqian Street, Yuhang District, Hangzhou, Zhejiang, China

Product Description

Trade Mark: Redtiger

Product Name.....: Dash Cam

Model and/or Type Reference : ZoomPix1, ZoomPix1 Plus, ZoomPix1 Pro, ZoomPix1 Lite,
ZoomPix1 Max, F9-N, F9 Lite-N, F7NP-N, F7NP-128G, F7N-N,
F11-N, A3-N, G900PRO-N, G900 TriPro bumper-N,
G900 TriPro cabin-N, G840H-N, G840S-64G, 107-64G, F7NP-EX

Standards: FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2020

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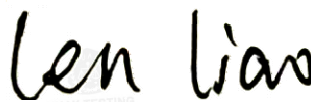
Date of Test.....:

Date (s) of Performance of Tests: **Dec. 03, 2025 ~ Dec. 17, 2025**

Date of Issue.....: **Dec. 17, 2025**

Test Result.....: **Pass**

Testing Engineer



Len Liao

Technical Manager



Sliver Wan

Authorized Signatory



Jason Zhou

Table of Contents

1. Summary	5
1.1 Test Procedures and Results.....	5
1.2 Information of the Test Laboratory	5
1.3 Measurement Uncertainty	6
2. EUT Description	7
2.1 General Description of EUT	7
2.2 Carrier Frequency of Channels.....	8
2.3 Operation of EUT during Testing.....	8
2.4 Description of Test Setup.....	9
2.5 Description of Support Units	10
3. General Information.....	11
3.1 Test Environment and Mode	11
4. Test Results and Measurement Data	13
4.1 AC Conducted Emission	13
4.2 Maximum Peak Conducted Output Power.....	17
4.3 Emission Bandwidth	20
4.4 Power Spectral Density	26
4.5 Conducted Band Edge and Spurious Emission Measurement	33
4.6 Radiated Spurious Emission Measurement	43
4.7 Antenna Requirement.....	53
5. Test Setup Photos of the EUT	54
6. Photos of the EUT.....	56

**** Issued history ****

Revision	Description	Issued Date	Remark
Revision 1.0	Initial Test Report Release	Dec. 17, 2025	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	$\pm 2.71\text{dB}$
2	RF Power, Conducted	$\pm 0.37\text{dB}$
3	Spurious Emissions, Conducted	$\pm 0.11\text{dB}$
4	All Emissions, Radiated(<1G)	$\pm 3.90\text{dB}$
5	All Emissions, Radiated(>1G)	$\pm 4.28\text{dB}$
6	Temperature	$\pm 0.1^{\circ}\text{C}$
7	Humidity	$\pm 1.0\%$

2. EUT Description

2.1 General Description of EUT

Equipment:	Dash Cam
Model Name:	ZoomPix1
Series Model(s):	ZoomPix1 Plus, ZoomPix1 Pro, ZoomPix1 Lite, ZoomPix1 Max, F9-N, F9 Lite-N, F7NP-N, F7NP-128G, F7N-N, F11-N, A3-N, G900PRO-N, G900 TriPro bumper-N, G900 TriPro cabin-N, G840H-N, G840S-64G, 107-64G, F7NP-EX
Model Difference:	All model's the function, software and electric circuit are the same, only with a product model named different. Test sample model: ZoomPix1.
FCC ID:	2BBBN-ZOOMPIX1
Antenna Type:	FPC Antenna
Antenna Gain:	3.78dBi
Operation Frequency:	802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz
Number of Channels:	802.11b/g/n20: 11CH 802.11n 40: 7CH
Modulation Type:	DSSS, OFDM
Power Source:	DC5V From Car Charger or DC5V From Type-C
Power Rating:	DC5V From Car Charger or DC5V From Type-C
Note: 1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. 2. Antenna gain Refer to the antenna specifications. 3. The cable loss data is obtained from the supplier. 4. 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)							
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)							
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)**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

The mode is used: **Transmitting mode for 802.11n (HT40)**

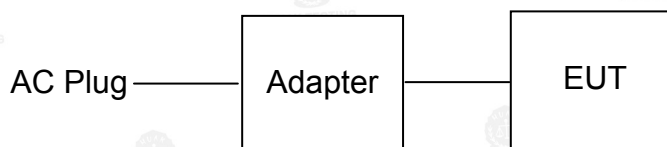
Low Channel: 2422MHz

Middle Channel: 2437MHz

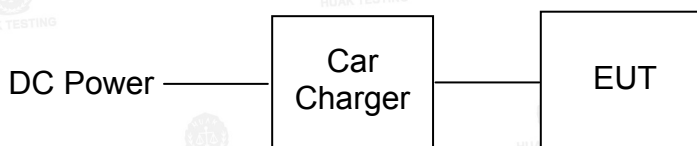
High Channel: 2452MHz

2.4 Description of Test Setup

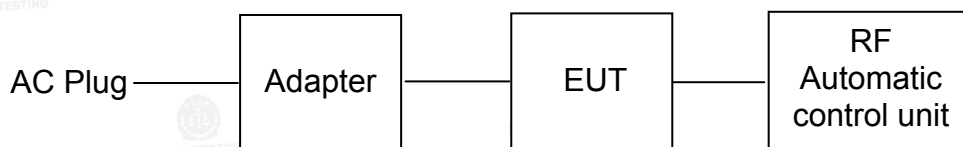
Operation of EUT during AC Conducted testing:



Operation of EUT during 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 emissions worst-case are shown in Test Results of the following pages. 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	Dash Cam	Redtiger	ZoomPix1	N/A	EUT
2	Car Charger	N/A	N/A	Input: DC12-24V Output: DC5V/2.5A USB: DC5V/2.0A	Accessory
3	Adapter	N/A	CD289	Input: AC100-240V, 50/60Hz, 2A Max USB-C1 Output: DC5V/3A, 9V3A, 12V/3A, 15V/3A, 20V/5A, 28V/5A 140W MAX USB-C2 Output: DC5V/3A, 9V/3A, 12V/3A, 15V/3A, 20V/5A 100W MAX USB-A Output: DC5V/4.5A, 4.5V/5A, 5V/3A, 9V/2A, 12V/1.5A 22.5W MAX Total Output: 140W Max	Peripheral

Note:

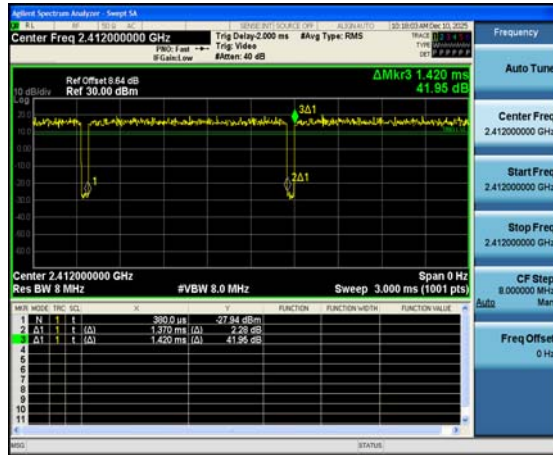
1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.
3. For conducted measurements (Output Power, 6dB Emission Bandwidth, Power 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)	6.5Mbps										
802.11n(HT40)	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), 13.5Mbps for 802.11n(HT40). 3. Mode Test Duty Cycle <table border="1"> <thead> <tr> <th>Mode</th><th>Duty Cycle</th></tr> </thead> <tbody> <tr> <td>802.11b</td><td>0.9648</td></tr> <tr> <td>802.11g</td><td>0.9648</td></tr> <tr> <td>802.11n(HT20)</td><td>0.9624</td></tr> <tr> <td>802.11n(HT40)</td><td>0.9265</td></tr> </tbody> </table>		Mode	Duty Cycle	802.11b	0.9648	802.11g	0.9648	802.11n(HT20)	0.9624	802.11n(HT40)	0.9265
Mode	Duty Cycle										
802.11b	0.9648										
802.11g	0.9648										
802.11n(HT20)	0.9624										
802.11n(HT40)	0.9265										
Test plots as follows:											

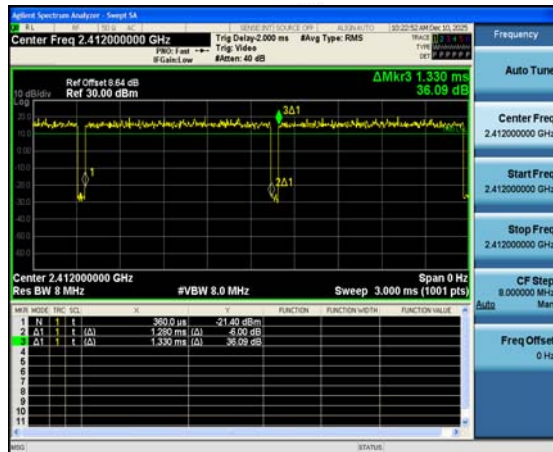
802.11b



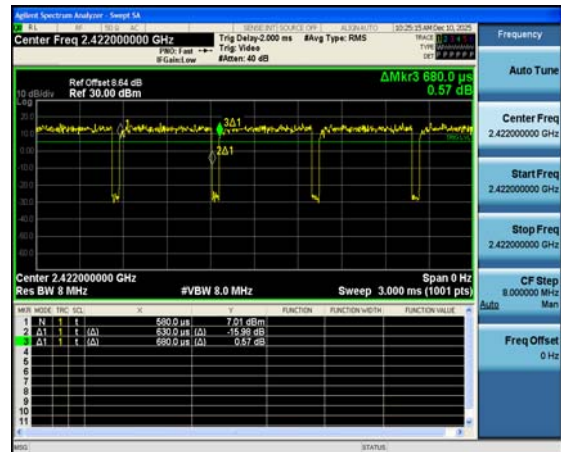
802.11g



802.11n(HT20)



802.11n(HT40)



4. Test Results and Measurement Data

4.1 AC Conducted Emission

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 Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m														
Test Mode:	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														

Test Instruments

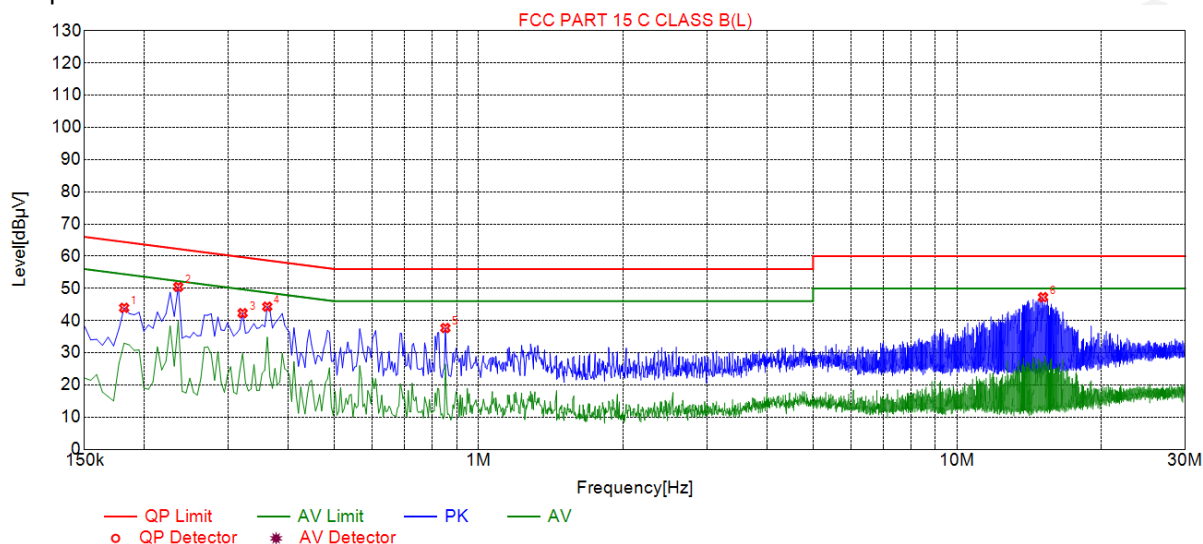
Conducted Emission Shielding Room Test Site (843)					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Receiver	R&S	ESR	HKE-005	Feb. 19, 2025	Feb. 18, 2026
LISN	R&S	ENV216	HKE-002	Feb. 19, 2025	Feb. 18, 2026
LISN	R&S	ENV216	HKE-059	Feb. 19, 2025	Feb. 18, 2026
Coax cable (9KHz-30MHz)	Times	381806-002	N/A	Feb. 19, 2025	Feb. 18, 2026
EMI Test Software	Tonscend	JS32-CE 2.5.0.6	HKE-081	N/A	N/A
10dB Attenuator	Schwarzbeck	VTSD9561F	HKE-153	Feb. 19, 2025	Feb. 18, 2026

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

Test Result

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

Test Specification: Line



Suspected List

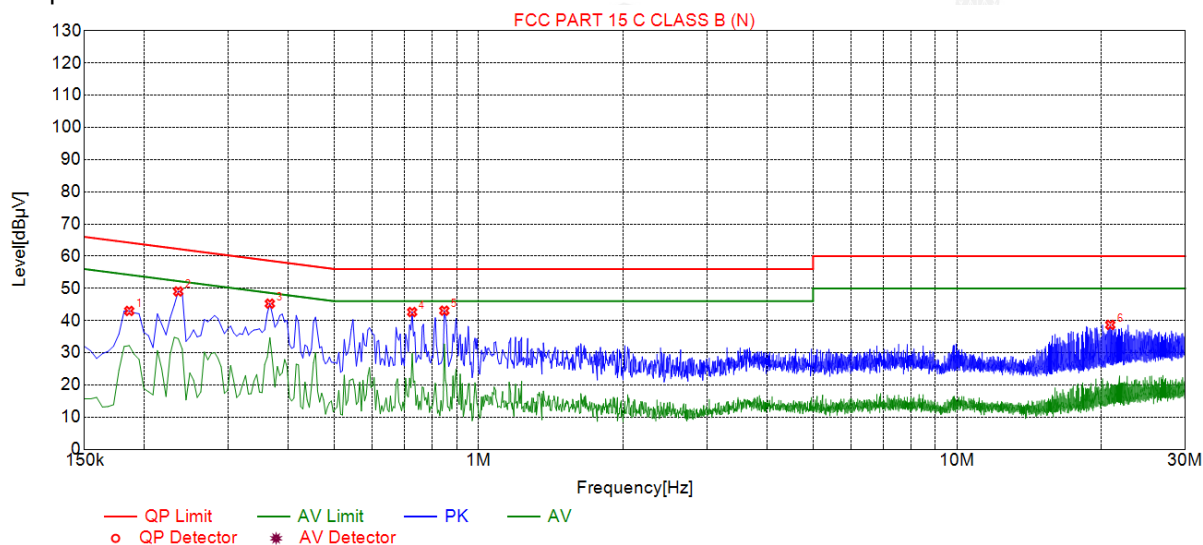
NO.	Freq. [MHz]	Level [dBμV]	Factor [dB]	Limit [dBμV]	Margin [dB]	Reading [dBμV]	Detector	Type
1	0.1815	43.96	19.75	64.42	20.46	24.21	PK	L
2	0.2355	50.46	19.83	62.25	11.79	30.63	PK	L
3	0.3210	42.31	19.85	59.68	17.37	22.46	PK	L
4	0.3615	44.33	19.84	58.69	14.36	24.49	PK	L
5	0.8520	37.69	19.71	56.00	18.31	17.98	PK	L
6	15.1260	47.26	21.88	60.00	12.74	25.38	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	0.1860	43.00	19.65	64.21	21.21	23.35	PK	N
2	0.2355	49.04	19.64	62.25	13.21	29.40	PK	N
3	0.3660	45.26	19.70	58.59	13.33	25.56	PK	N
4	0.7260	42.65	19.76	56.00	13.35	22.89	PK	N
5	0.8475	43.07	19.76	56.00	12.93	23.31	PK	N
6	20.9085	38.67	23.33	60.00	21.33	15.34	PK	N

Remark: Margin = Limit – Level

Correction factor = Cable lose + LISN insertion loss

Level=Test receiver reading + correction factor

4.2 Maximum Peak Conducted Output Power

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

Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	Feb. 18, 2026
Power meter	Agilent	E4419B	HKE-085	Feb. 19, 2025	Feb. 18, 2026
Power Sensor	Agilent	E9300A	HKE-086	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

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

Test Data

Mode	Test Channel	Frequency	Maximum Peak Conducted Output Power	LIMIT
		(MHz)	(dBm)	dBm
802.11b	CH01	2412	13.15	30
802.11b	CH06	2437	12.76	30
802.11b	CH11	2462	12.79	30
802.11g	CH01	2412	12.89	30
802.11g	CH06	2437	13.77	30
802.11g	CH11	2462	13.97	30
802.11n(HT20)	CH01	2412	12.39	30
802.11n(HT20)	CH06	2437	12.54	30
802.11n(HT20)	CH11	2462	12.48	30
802.11n(HT40)	CH03	2422	14.38	30
802.11n(HT40)	CH06	2437	14.45	30
802.11n(HT40)	CH09	2452	13.59	30

Note: The test results including the cable loss.

4.3 Emission Bandwidth

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(2)
Test Method:	KDB 558074 D01 15.247 Meas Guidance v05r02
Limit:	≥500kHz
Test Setup:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication 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

Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

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

Test Data

Test Channel	6dB Emission Bandwidth (MHz)			
	802.11b	802.11g	802.11n(HT20)	802.11n(HT40)
Lowest	9.120	16.360	17.200	36.000
Middle	9.120	16.360	17.360	36.000
Highest	9.120	16.360	17.520	36.400
Limit:	≥500kHz			
Test Result:	PASS			

Test plots as follows:



HUAKE TESTING

802.11b Modulation

Lowest Channel



Middle Channel



Highest Channel



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Shenzhen HUAKE Testing Technology Co., Ltd. Tel.: +86-0755-2302 9901 E-mail: info@huak.com Web.: www.huak.com
Add.: 1-2/F., Building B2, Junfeng Zhongcheng Zhizao Innovation Park, Heping, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

802.11g Modulation

Lowest Channel



Middle Channel



Highest Channel



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HUAKE TESTING

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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4.4 Power Spectral Density

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 558074 D01 15.247 Meas Guidance v05r02. 2. 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. 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 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

Test Instruments

RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	Feb. 18, 2026
RF cable	Times	1-40G	HKE-034	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test Software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

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

Test Data

EUT Set Mode	Channel	Result (dBm/30KHz)	Result (dBm/3kHz)
802.11b	Lowest	1.02	-8.98
	Middle	1.88	-8.12
	Highest	3.28	-6.72
802.11g	Lowest	0.67	-9.33
	Middle	1.60	-8.40
	Highest	1.33	-8.67
802.11n(HT20)	Lowest	0.35	-9.65
	Middle	1.76	-8.24
	Highest	1.52	-8.48
802.11n(HT40)	Lowest	-1.97	-11.97
	Middle	-1.93	-11.93
	Highest	-3.11	-13.11
PSD Test Result (dBm/3kHz)= PSD Test Result (dBm/30kHz)-10			
Limit: 8dBm/3kHz			
Test Result:	PASS		

Test plots as follows:

802.11b Modulation

Lowest Channel



Middle Channel



Highest Channel



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802.11g Modulation

Lowest Channel



Middle Channel



Highest Channel



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802.11n (HT20) Modulation

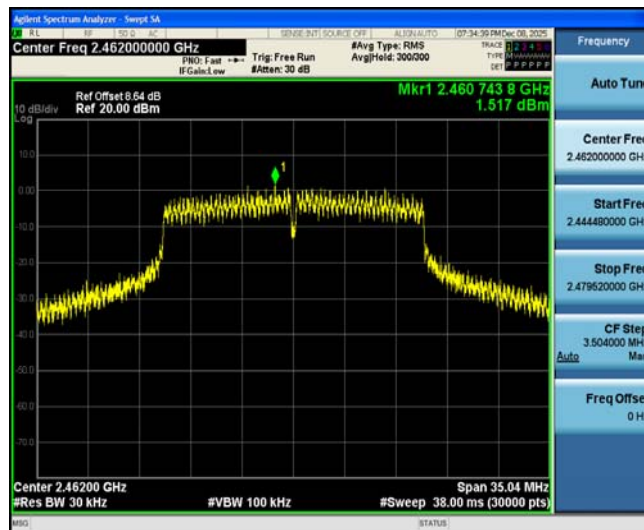
Lowest Channel



Middle Channel



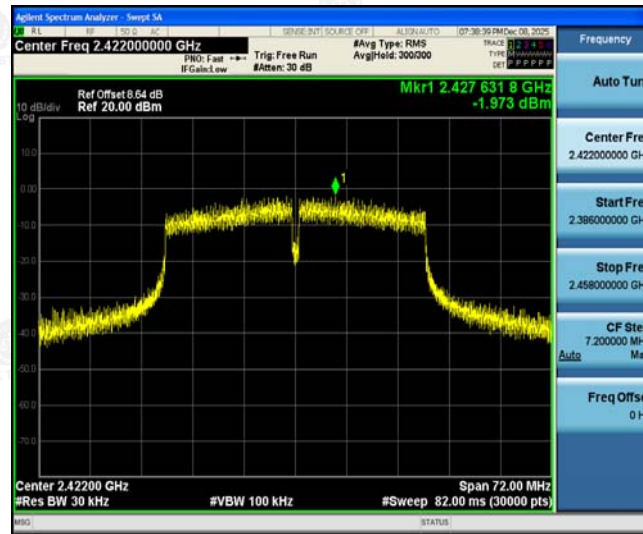
Highest Channel



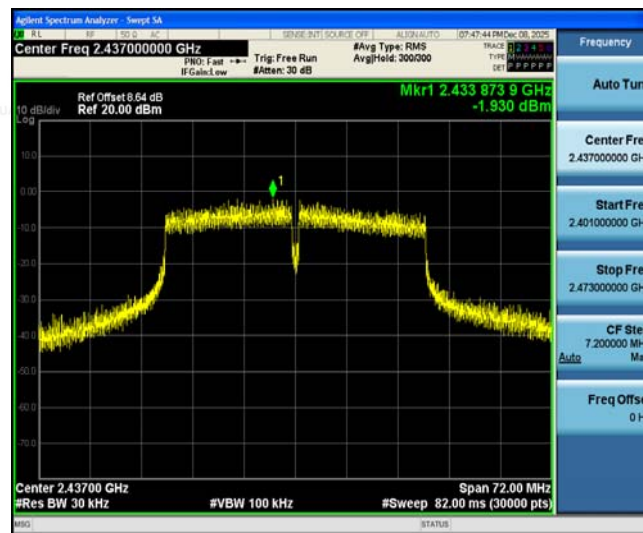
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802.11n (HT40) Modulation

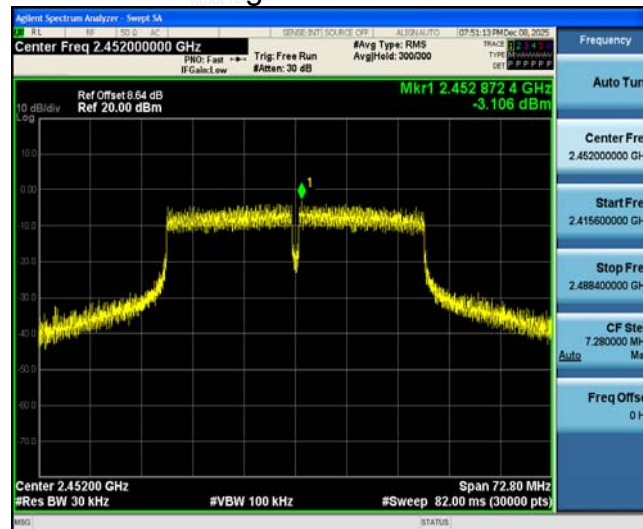
Lowest Channel



Middle Channel



Highest Channel



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4.5 Conducted Band Edge and Spurious Emission Measurement

Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB 558074 D01 15.247 Meas Guidance 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:	 Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	1. The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02. 2. 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. 3. Set to the maximum power setting and enable the EUT transmit continuously. 4. 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). 5. Measure and record the results in the test report. 6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS

Test Instruments

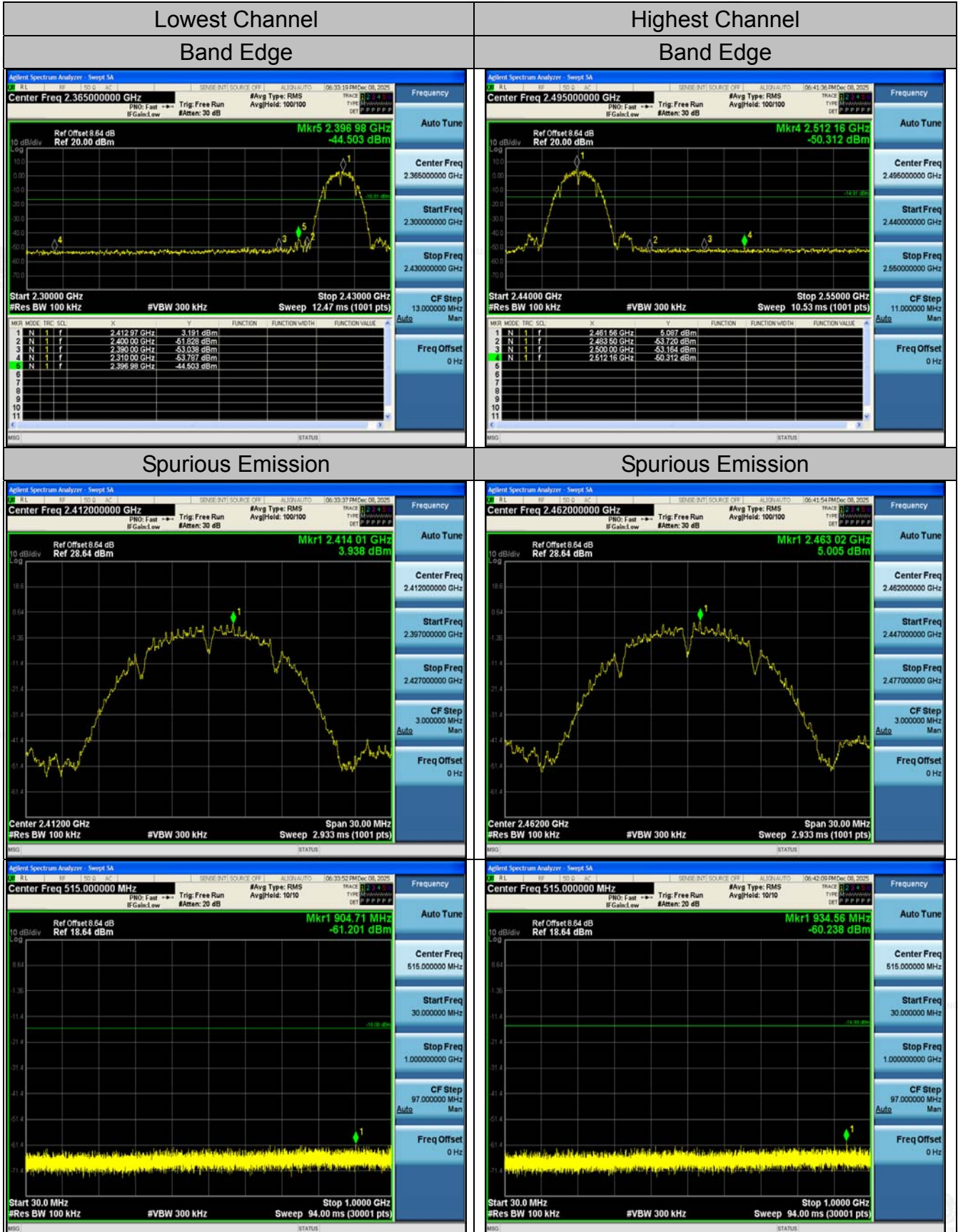
RF Test Room					
Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	Feb. 18, 2026
High pass filter unit	Tonscend	JS0806-F	HKE-055	Feb. 19, 2025	Feb. 18, 2026
RF Cable (9KHz-26.5GHz)	Tonscend	170660	N/A	Feb. 19, 2025	Feb. 18, 2026
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 19, 2025	Feb. 18, 2026
RF Test software	Tonscend	JS1120-3 Version 3.5.39	HKE-083	N/A	N/A

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

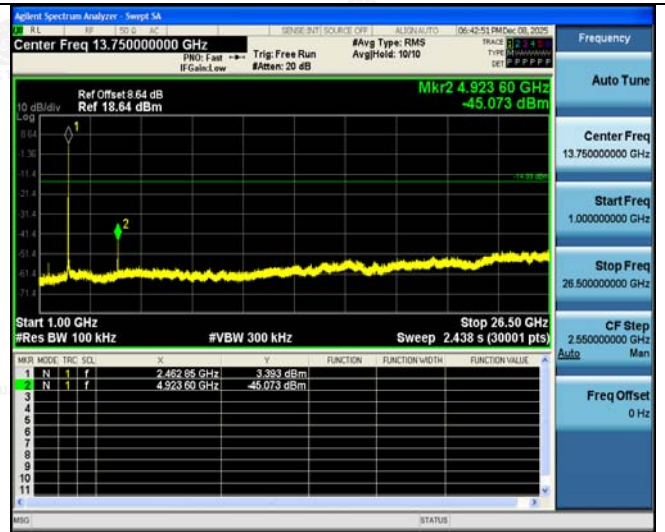


HUAKE TESTING

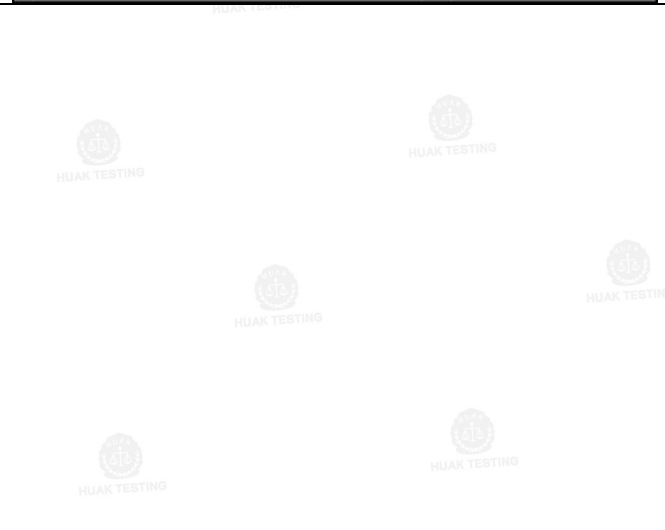
Test Data 802.11b Modulation



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Middle Channel Spurious Emission



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HUAKE TESTING

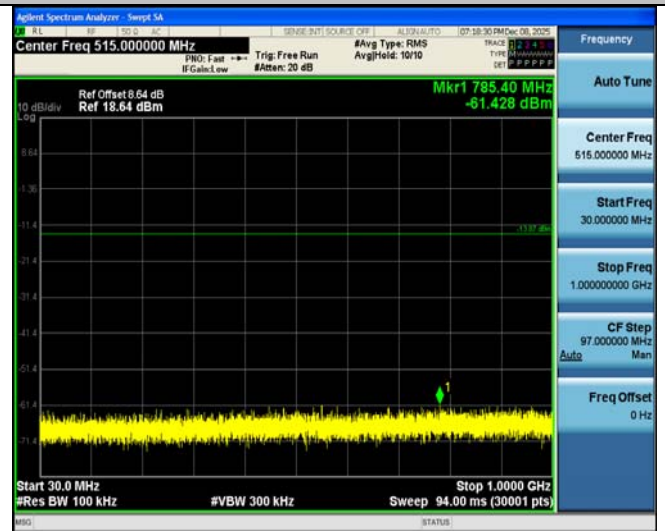
802.11g Modulation



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Middle Channel Spurious Emission



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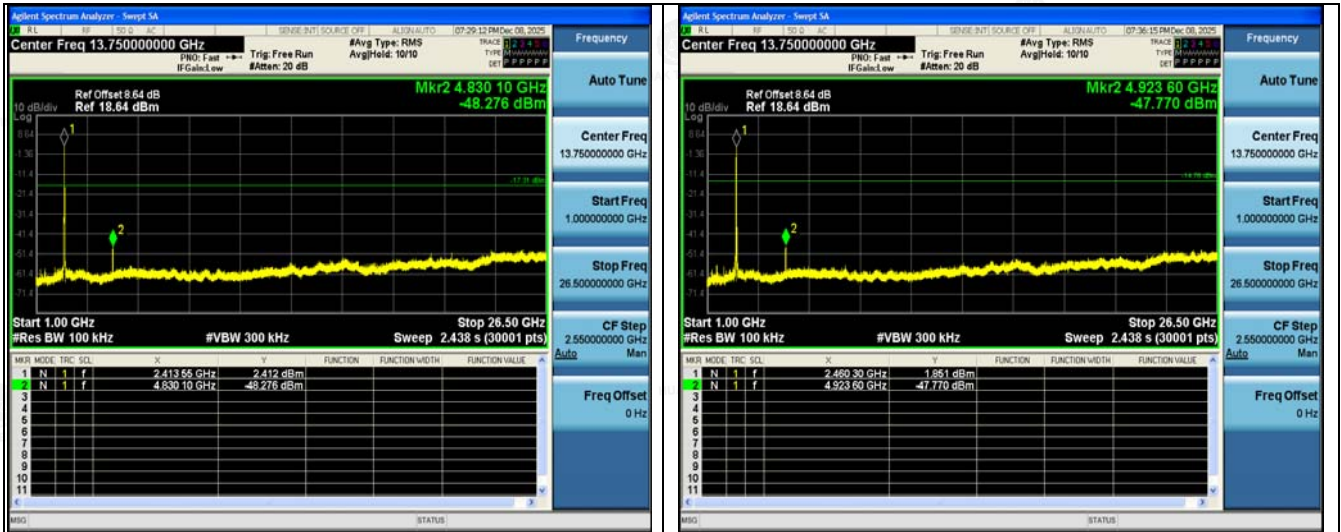


HUAKE TESTING

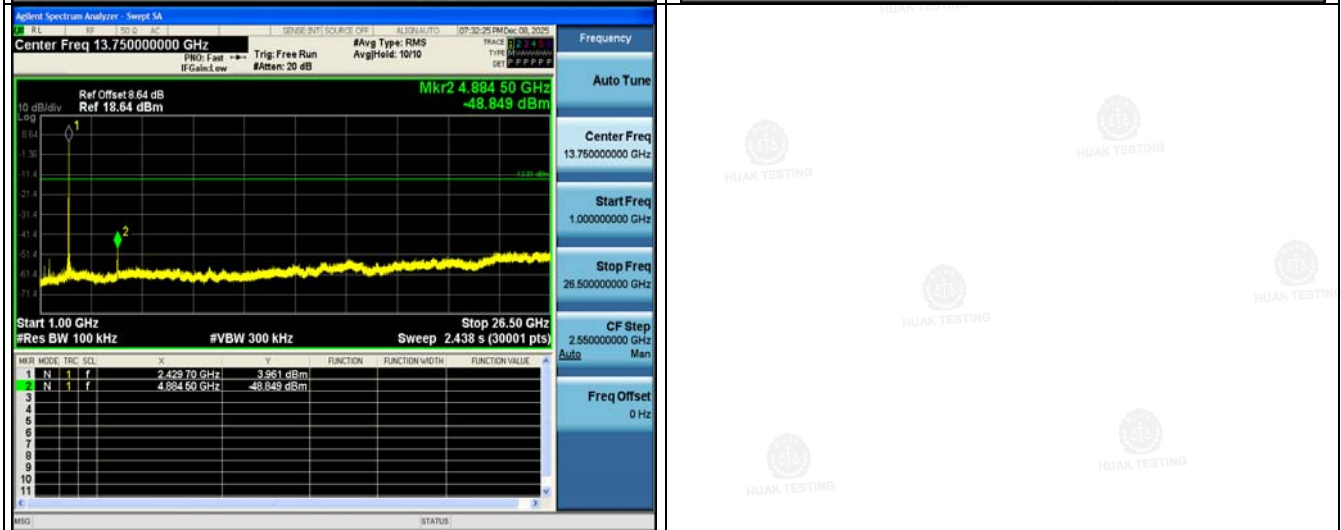
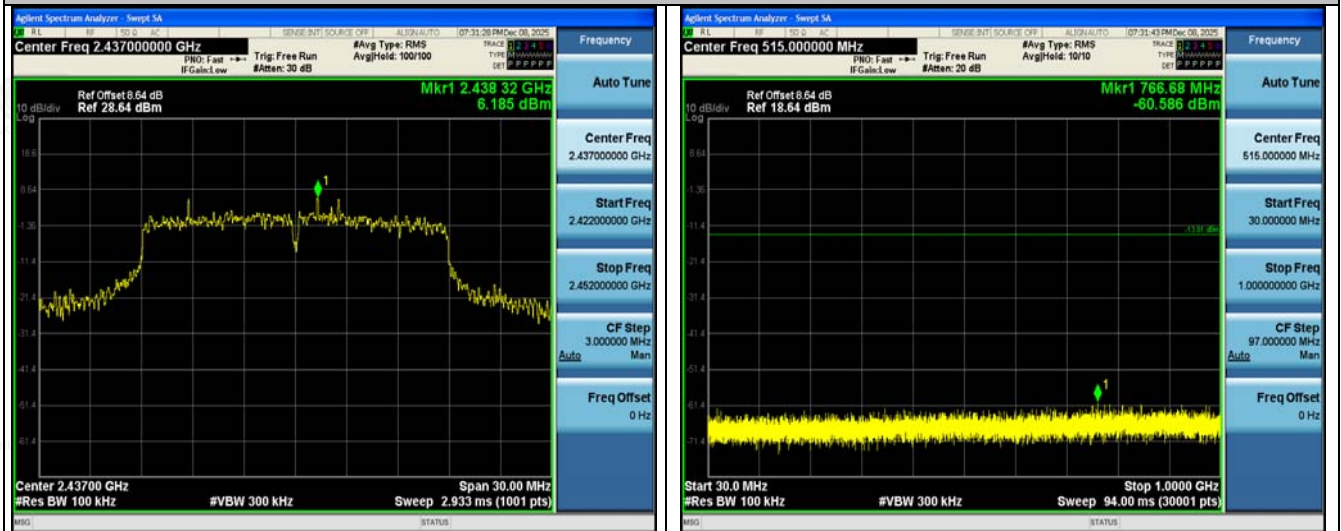
802.11n (HT20) Modulation



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Middle Channel Spurious Emission



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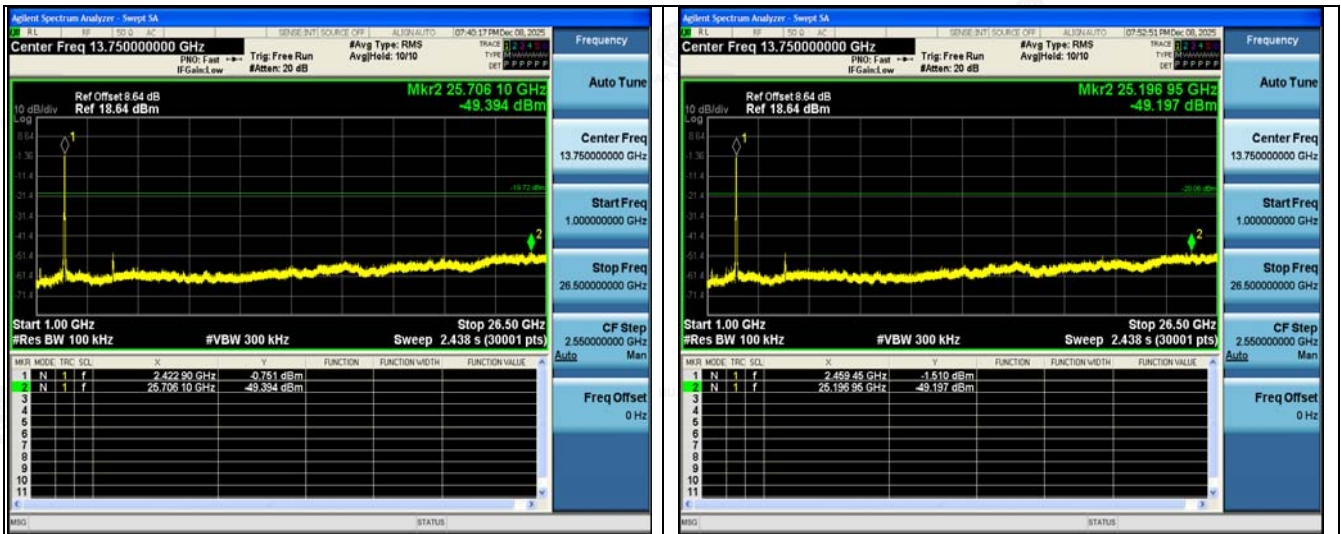


HUAKE TESTING

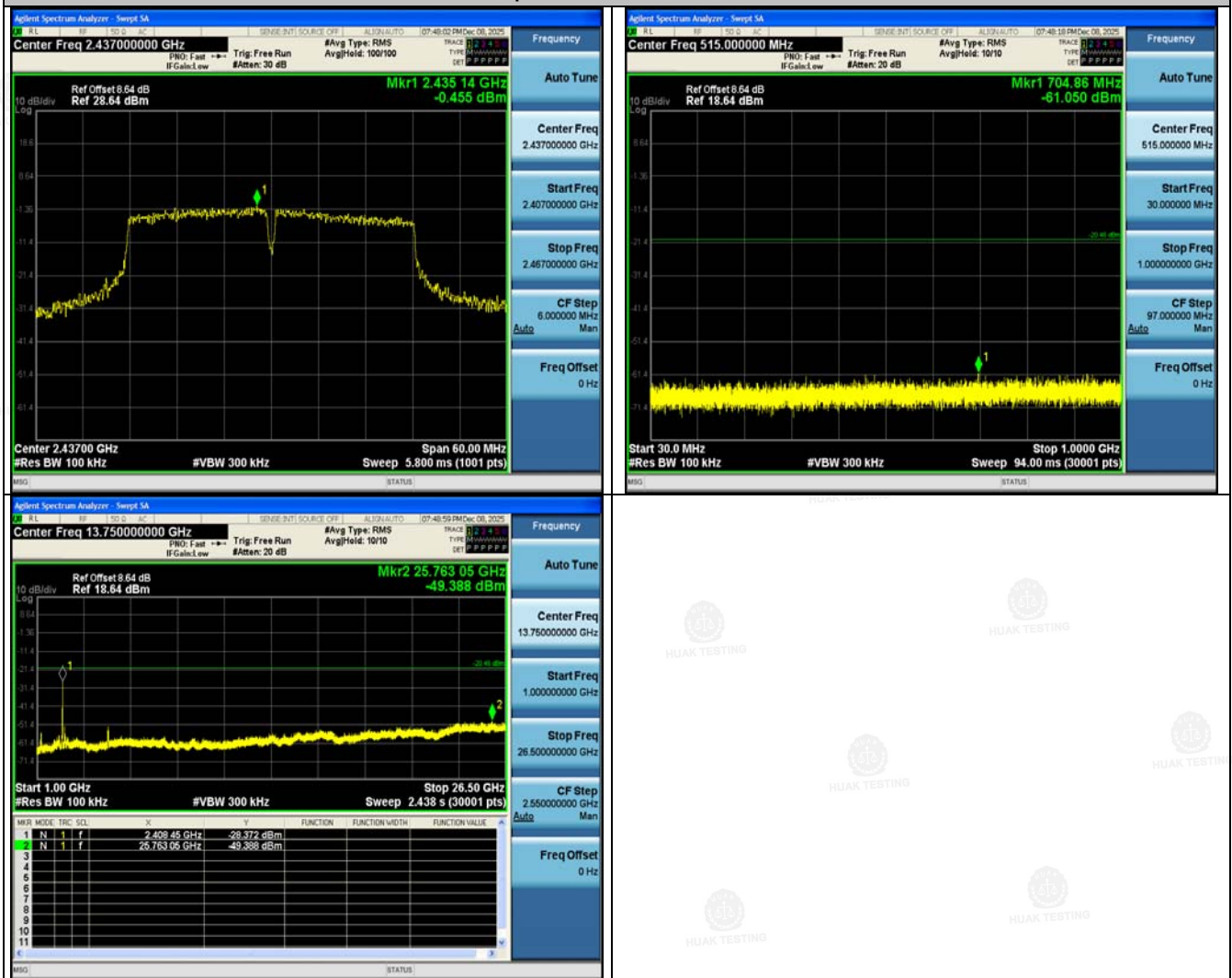
802.11n (HT40) Modulation



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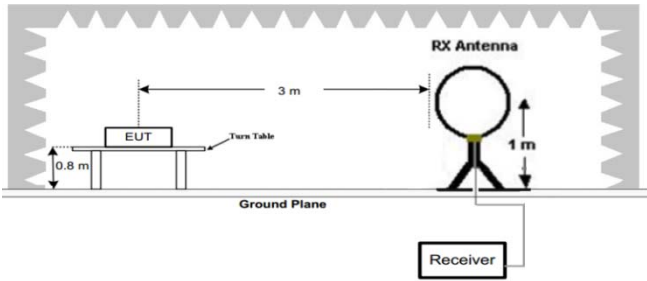
Middle Channel Spurious Emission

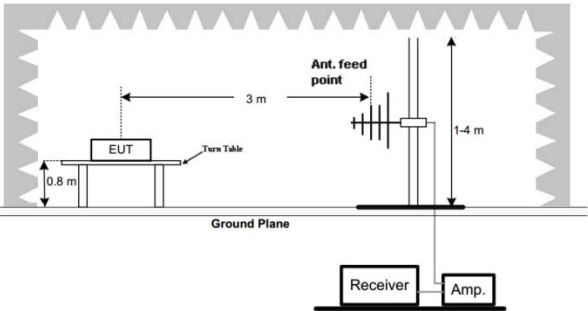
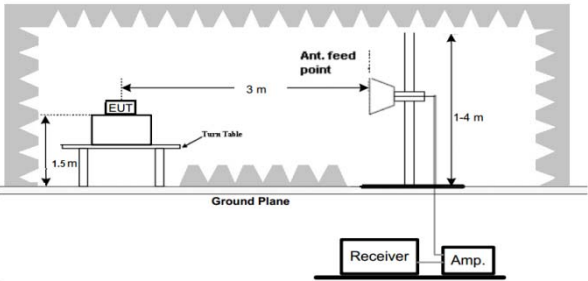


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4.6 Radiated Spurious Emission Measurement

Test Specification

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10: 2020				
Frequency Range:	9 kHz to 26 GHz				
Measurement Distance:	3 m				
Antenna Polarization:	Horizontal & Vertical				
Operation Mode:	Transmitting mode with modulation				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	9kHz- 150kHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit:	Frequency		Field Strength (microvolts/meter)		Measurement Distance (meters)
	0.009-0.490		2400/F(KHz)		300
	0.490-1.705		24000/F(KHz)		30
	1.705-30		30		30
	30-88		100		3
	88-216		150		3
	216-960		200		3
	Above 960		500		3
	Frequency		Field Strength (microvolts/meter)	Measurement Distance (meters)	Detector
	Above 1GHz		500	3	Average
			5000	3	Peak
	For radiated emissions below 30MHz				
					

	30MHz to 1GHz  Above 1GHz 
Test Procedure:	- For the radiated emission test below 1GHz: The EUT was placed on a turntable with 0.8 meter above ground. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high PASS filter are used for the test in order to get better signal level. - For the radiated emission test above 1GHz: Place the measurement antenna on a turntable with 1.5 meter above ground, which is away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal.

	The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane. 3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level 4. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported. 5. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=120 kHz for $f < 1$ GHz; VBW $\geq$ RBW; Sweep = auto; Detector function = peak; Trace = max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement. 6. For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent. VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Test Results:	PASS

Test Instruments

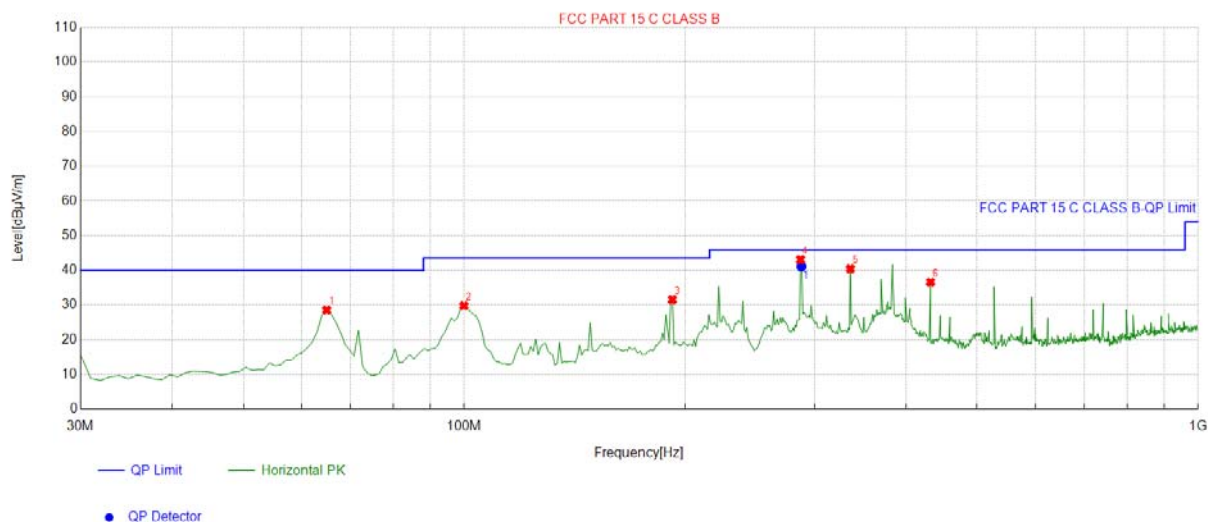
Radiated Emission Test Site (966)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	Agilent	N9020A	HKE-117	Feb. 19, 2025	Feb. 18, 2026
Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 19, 2025	Feb. 18, 2026
Preamplifier	EMCI	EMC051845S	HKE-006	Feb. 19, 2025	Feb. 18, 2026
Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 19, 2025	Feb. 18, 2026
Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 19, 2025	Feb. 18, 2026
6dB Attenuator	Pasternack	6db	HKE-184	Feb. 19, 2025	Feb. 18, 2026
EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 19, 2025	Feb. 18, 2026
Broadband Antenna	Schwarzbeck	VULB9168	HKE-167	Feb. 21, 2024	Feb. 20, 2026
Loop Antenna	COM-POWER	AL-130R	HKE-014	Feb. 21, 2024	Feb. 20, 2026
Horn Antenna	Schwarzbeck	9120D	HKE-013	Feb. 21, 2024	Feb. 20, 2026
EMI Test Software	Tonscend	JS32-RE 5.0.0	HKE-082	/	/
RSE Test Software	Tonscend	JS36-RSE 5.0.0	HKE-184	/	/

Test Data

Below 1GHz Test Results:

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

Antenna polarity: Horizontal

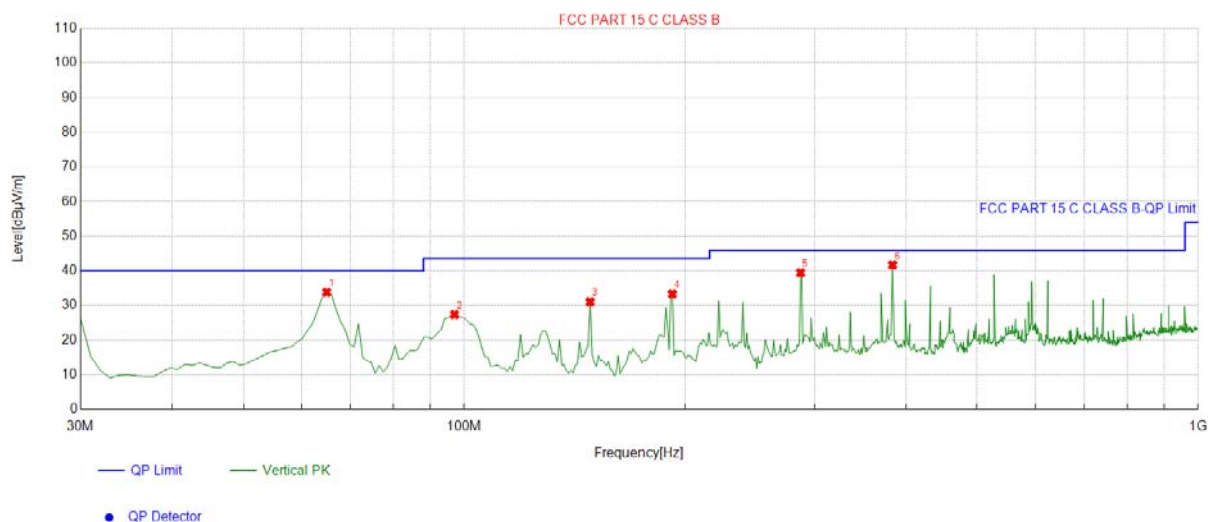


Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	64.9550	-15.33	43.87	28.54	40.00	11.46	100	23	Horizontal
2	99.9099	-14.70	44.53	29.83	43.50	13.67	100	149	Horizontal
3	192.1522	-15.74	47.30	31.56	43.50	11.94	100	106	Horizontal
4	287.3073	-12.28	55.34	43.06	46.00	2.94	100	131	Horizontal
5	335.8559	-10.57	51.03	40.46	46.00	5.54	100	2	Horizontal
6	431.9820	-8.85	45.43	36.58	46.00	9.42	100	232	Horizontal

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Reading [dBμV/m]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	288.032	-12.28	53.43	41.15	46.00	4.85	100	131	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected List									
NO.	Freq. [MHz]	Factor [dB]	Reading [dBμV/m]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	64.9550	-15.33	49.16	33.83	40.00	6.17	100	85	Vertical
2	96.9970	-14.95	42.31	27.36	43.50	16.14	100	117	Vertical
3	148.4585	-18.14	49.24	31.10	43.50	12.40	100	268	Vertical
4	192.1522	-15.74	49.07	33.33	43.50	10.17	100	110	Vertical
5	287.3073	-12.28	51.78	39.50	46.00	6.50	100	63	Vertical
6	383.4334	-9.11	50.83	41.72	46.00	4.28	100	351	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Harmonics and Spurious Emissions

Frequency Range (9kHz-30MHz)

Frequency (MHz)	Level@3m (dBμV/m)	Limit@3m (dBμV/m)
--	--	--
--	--	--
--	--	--
--	--	--

Note:1. Emission Level=Reading+ Cable loss-Antenna factor-Amp factor.

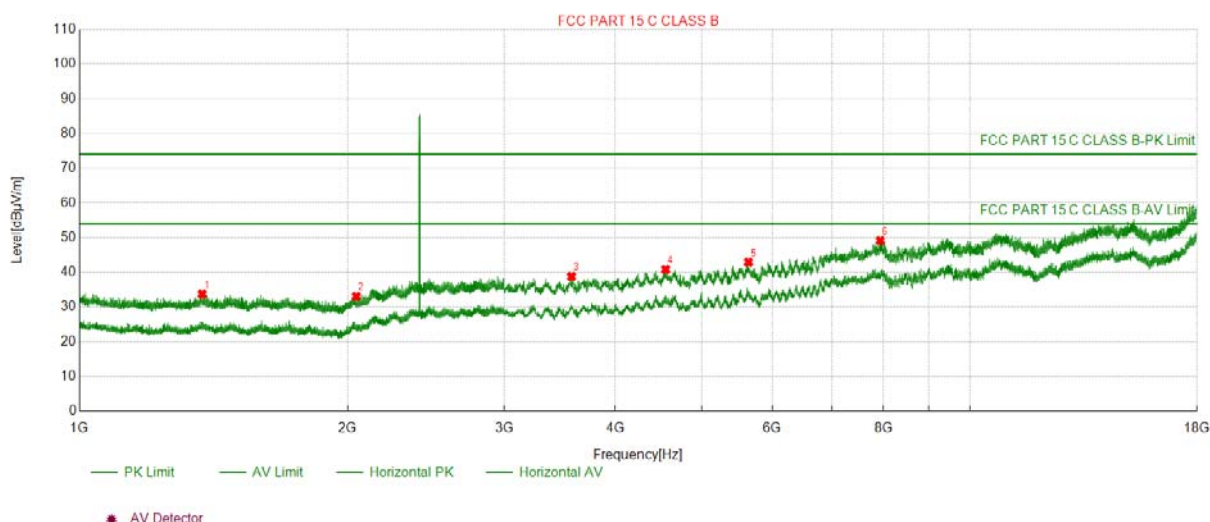
2. The emission levels are 20 dB below the limit value, which are not reported. It is deemed to comply with the requirement.

Above 1GHz Test Results

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

For 1GHz to 18GHz

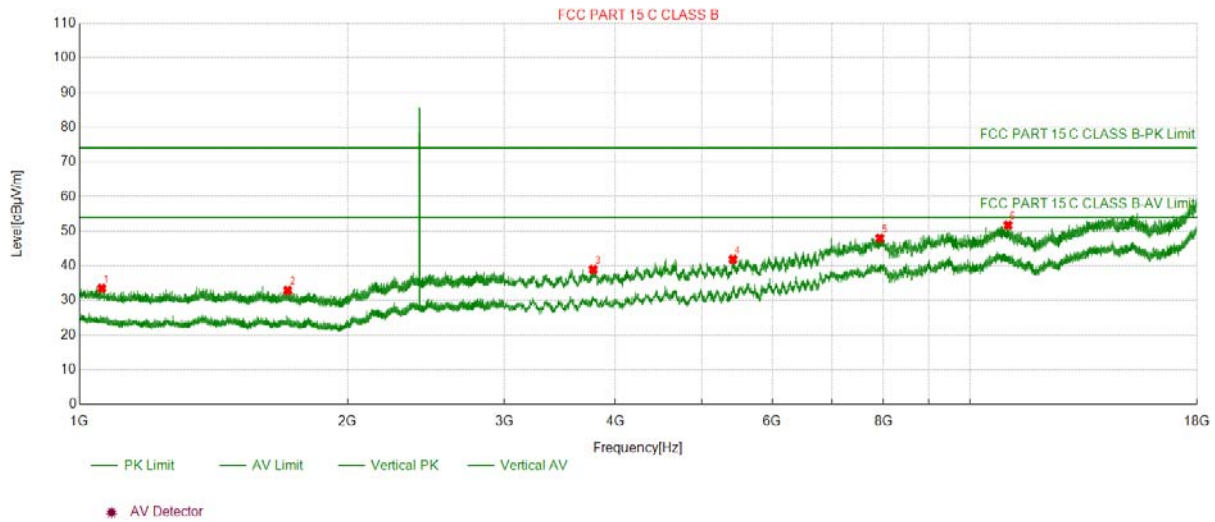
Antenna polarity: Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1373.437	52.44	33.70	-18.74	74.00	40.30	150	350	Horizontal
2	2046.104	49.89	33.05	-16.84	74.00	40.95	150	340	Horizontal
3	3570.057	52.16	38.87	-13.29	74.00	35.13	150	50	Horizontal
4	4554.155	51.05	40.82	-10.23	74.00	33.18	150	120	Horizontal
5	5641.764	50.80	42.89	-7.91	74.00	31.11	150	30	Horizontal
6	7932.493	51.36	49.15	-2.21	74.00	24.85	150	190	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Pre-amplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1059.205	52.36	33.50	-18.86	74.00	40.50	150	50	Vertical
2	1713.471	51.38	32.90	-18.48	74.00	41.10	150	180	Vertical
3	3775.577	50.93	38.99	-11.94	74.00	35.01	150	310	Vertical
4	5419.742	51.10	41.88	-9.22	74.00	32.12	150	130	Vertical
5	7923.492	50.40	48.00	-2.40	74.00	26.00	150	310	Vertical
6	11037.80	49.35	51.71	2.36	74.00	22.29	150	240	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

For 18GHz to 26GHz

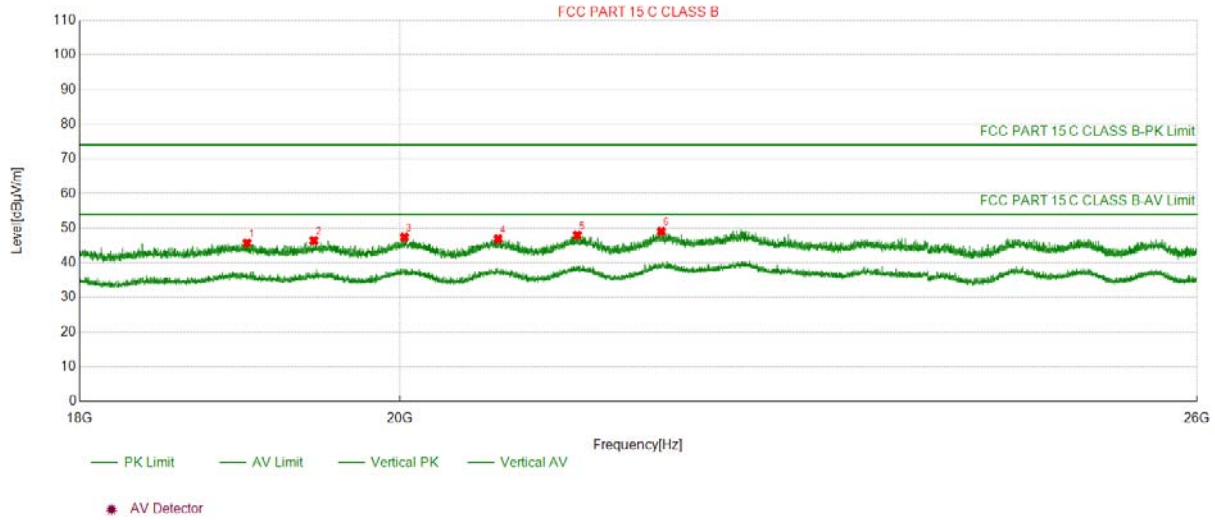
Antenna polarity: Horizontal



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18942.49	40.44	46.08	5.64	74.00	27.92	150	350	Horizontal
2	19528.15	40.42	46.52	6.10	74.00	27.48	150	120	Horizontal
3	20102.61	41.23	47.37	6.14	74.00	26.63	150	130	Horizontal
4	20664.26	41.11	46.91	5.80	74.00	27.09	150	180	Horizontal
5	21205.12	42.56	47.85	5.29	74.00	26.15	150	50	Horizontal
6	21877.18	43.14	48.77	5.63	74.00	25.23	150	30	Horizontal

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

Antenna polarity: Vertical



Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	PK Level [dBμV/m]	Factor [dB]	PK Limit [dBμV/m]	PK Margin [dB]	Height [cm]	Angle [°]	Polarity
1	19020.10	40.05	45.75	5.70	74.00	28.25	150	230	Vertical
2	19443.34	40.36	46.44	6.08	74.00	27.56	150	10	Vertical
3	20031.40	41.26	47.45	6.19	74.00	26.55	150	110	Vertical
4	20657.86	41.13	46.95	5.82	74.00	27.05	150	100	Vertical
5	21203.52	42.71	48.00	5.29	74.00	26.00	150	230	Vertical
6	21797.97	43.49	49.05	5.56	74.00	24.95	150	350	Vertical

Remark: Factor = Cable loss + Antenna factor + Attenuator – Preamplifier; Level = Reading + Factor; Margin = Limit – Level

4.7 Antenna Requirement

Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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. And according to FCC 47 CFR Section 15.247, if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

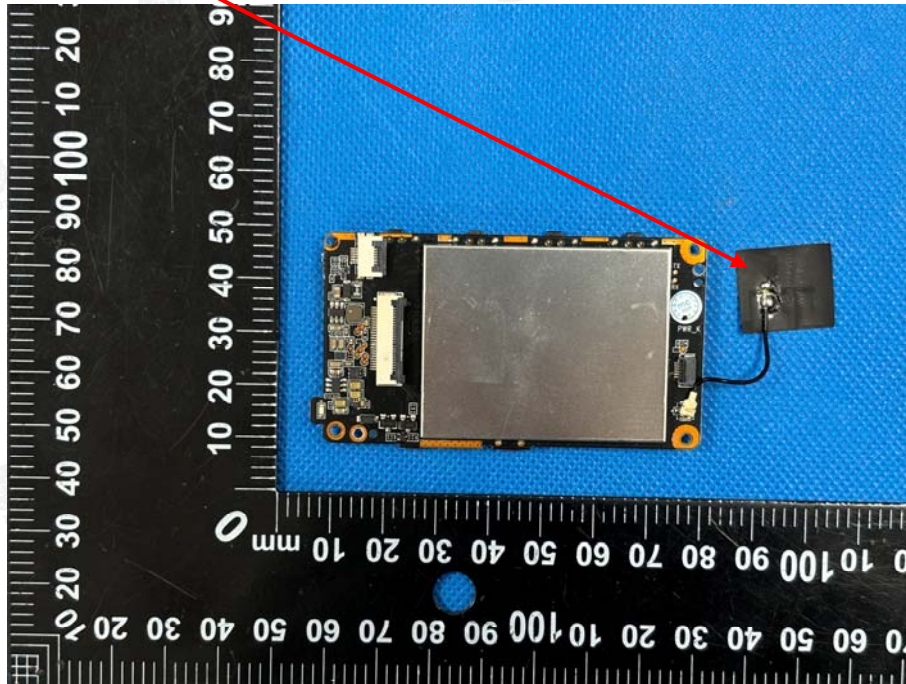
Refer to statement below for compliance.

The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

Antenna Connected Construction

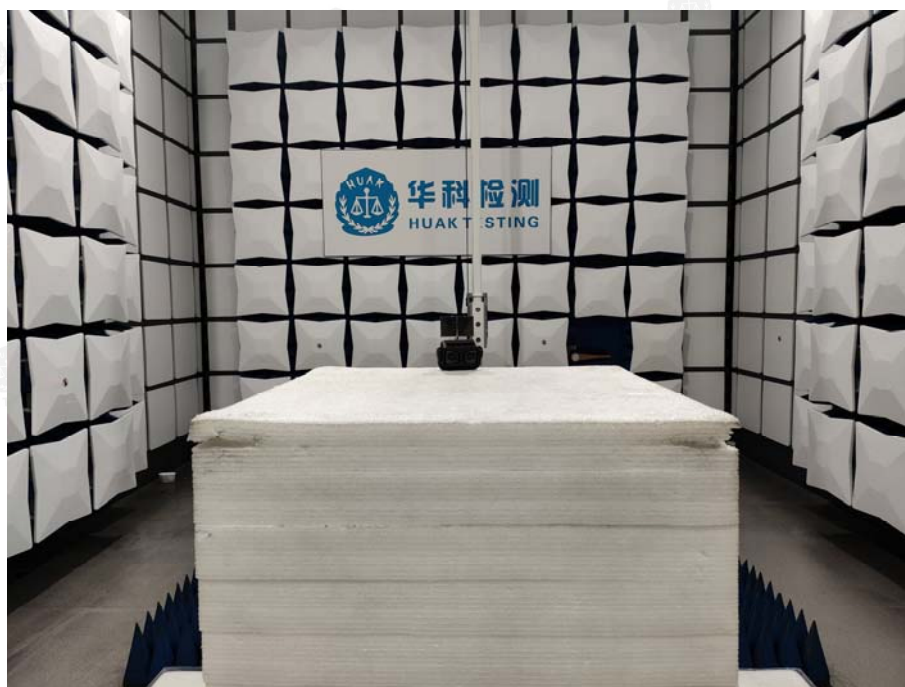
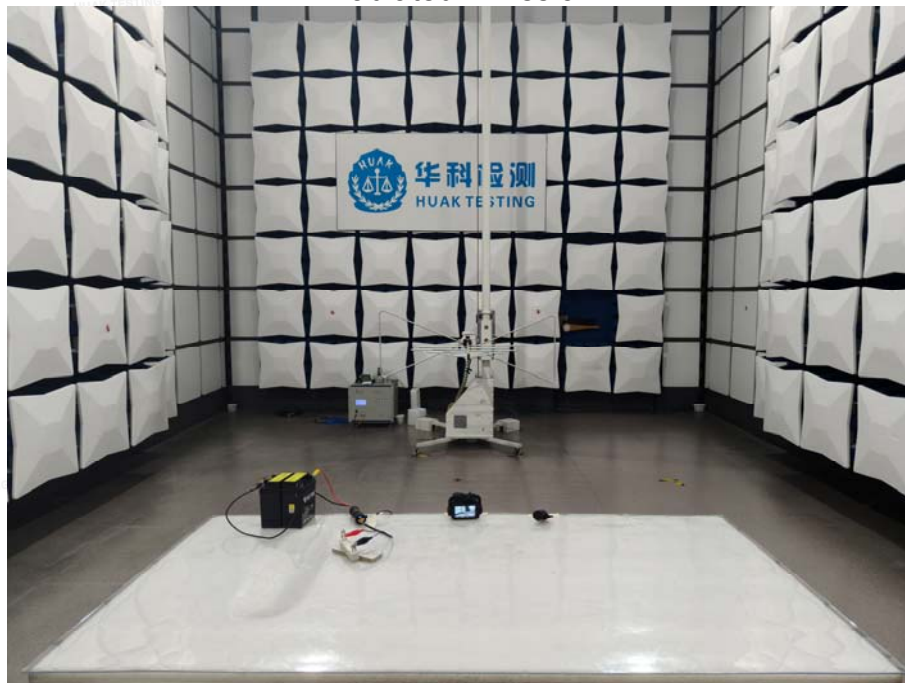
The antenna used in this product is a FPC antenna, need professional installation, not easy to remove. It conforms to the standard requirements. The directional gains of antenna used for transmitting is 3.78dBi.

WIFI ANTENNA



5. Test Setup Photos of the EUT

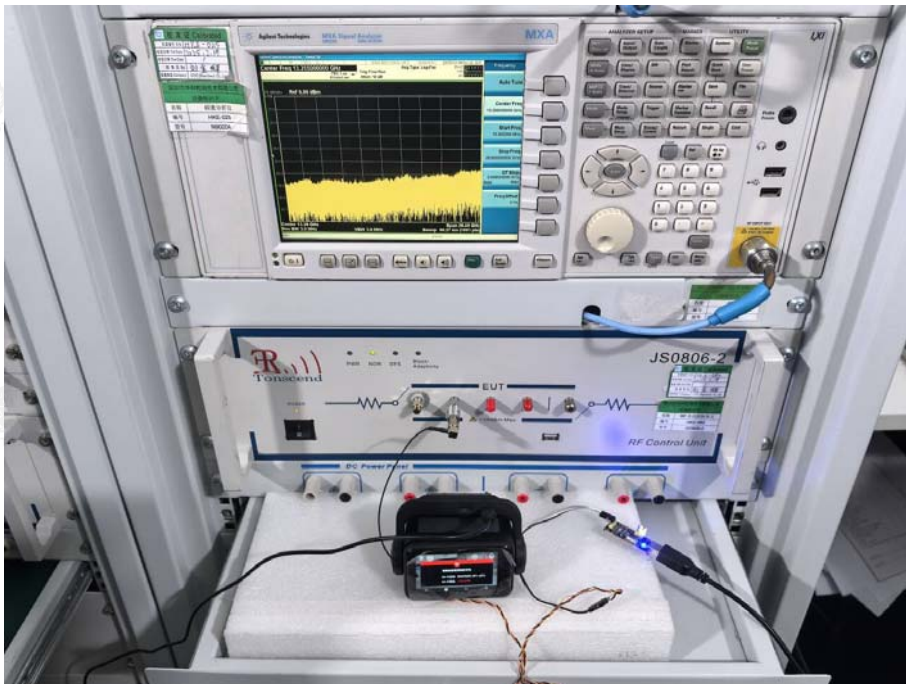
Radiated Emission



AC Conducted Emission



RF Conducted Emission



6. Photos of the EUT

Reference to the report: ANNEX A of external photos and ANNEX B of internal photos.

-----End of test report-----