

# 4.6. 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							
Test Mode:	Transmitting mode with modulation							
Test Procedure:	<ol> <li>The testing follows FCC KDB Publication 558074 D01 15.247 Meas Guidance v05r02.</li> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>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</li> </ol>							
Test Result:	<ul> <li>paragraph shall be 30 dB instead of 20 dB per 15.247(d).</li> <li>5. Measure and record the results in the test report.</li> <li>6. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> <li>PASS</li> </ul>							

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.



N/A

Calibration Due

Feb. 19, 2025

Feb. 19, 2025

Feb. 19, 2025

N/A

FIF

HUAD		The HUAN	AND HO	HUM HUM					
	RF Test Room								
Equipment	Manufacturer	Model	Serial Number	Calibration Date					
Spectrum analyzer	Agilent	N9020A	HKE-025	Feb. 20, 2024					
RF cable	Times	1-40G	HKE-034	Feb. 20, 2024					
RF automatic control unit	Tonscend	JS0806-2	HKE-060	Feb. 20, 2024					

JS1120-3

Version

3.3.23

Tonscend

# **Test Instruments**

**RF** Test Software

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

HKE-083

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



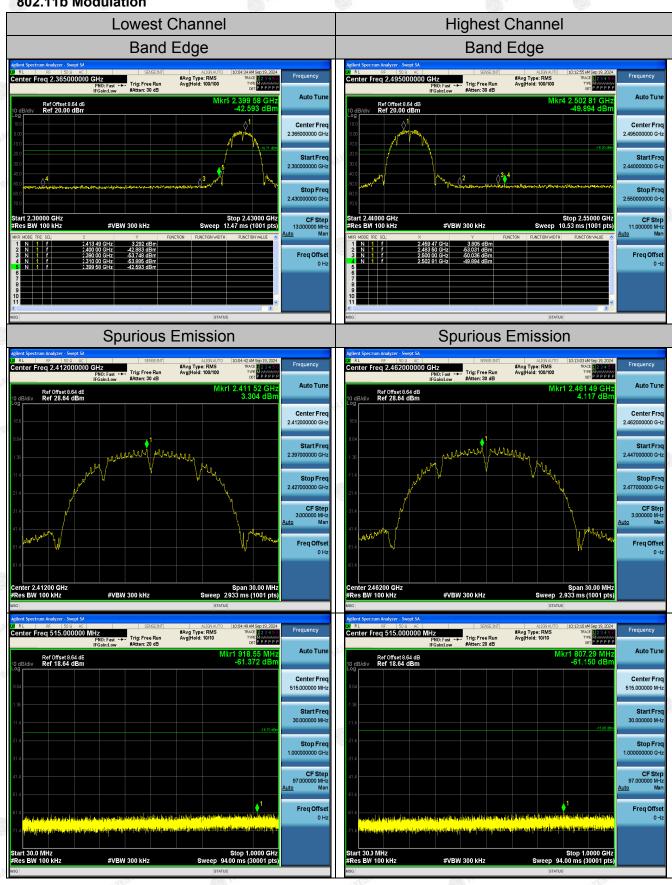
#### Page 35 of 72

NG

IE.

# Test Data





The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

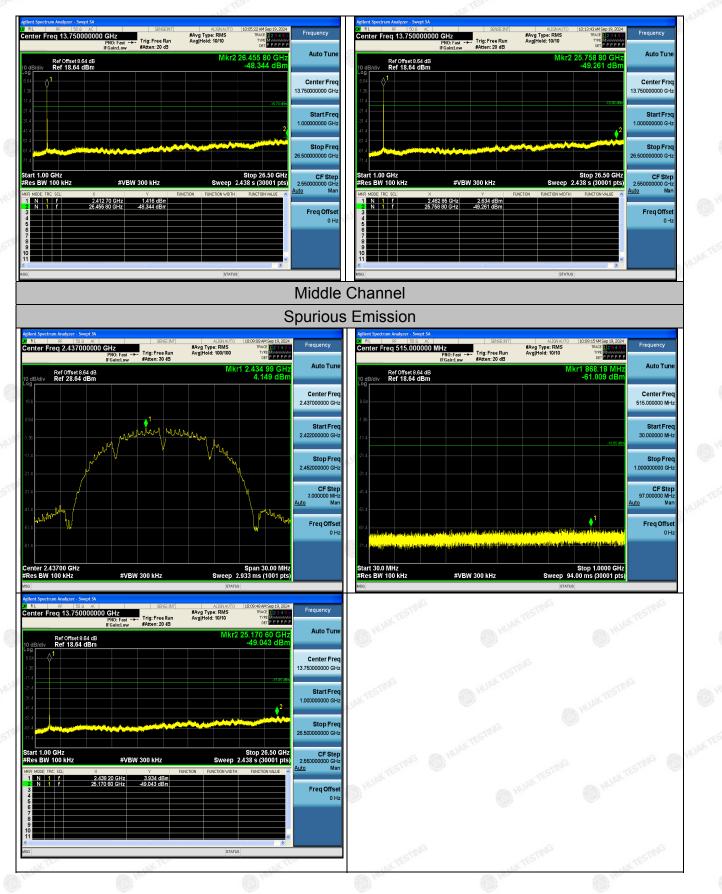
#### TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 36 of 72

#### Report No.: HK2409095219-E

J,



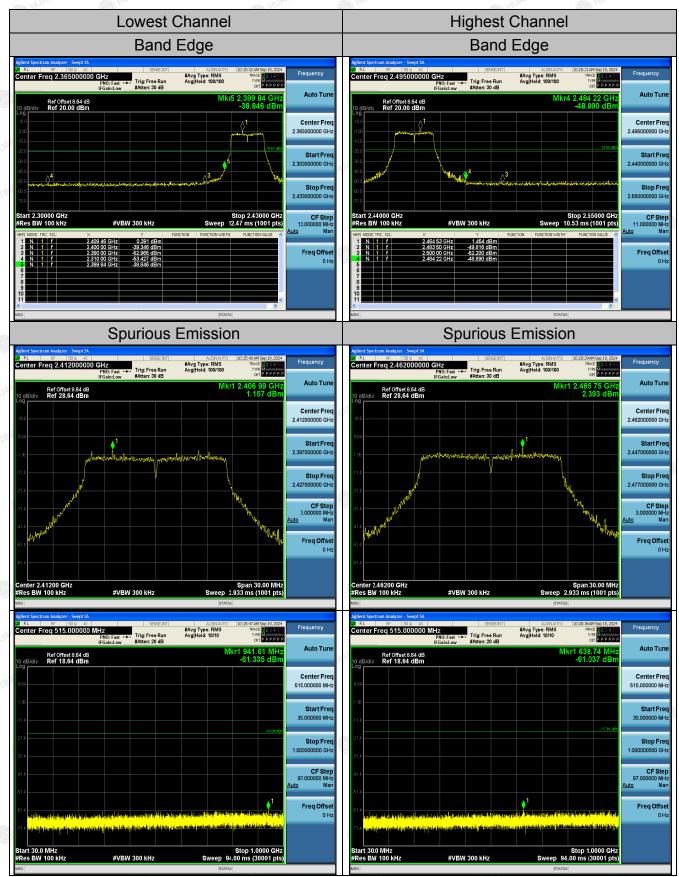
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 37 of 72

## 802.11g Modulation



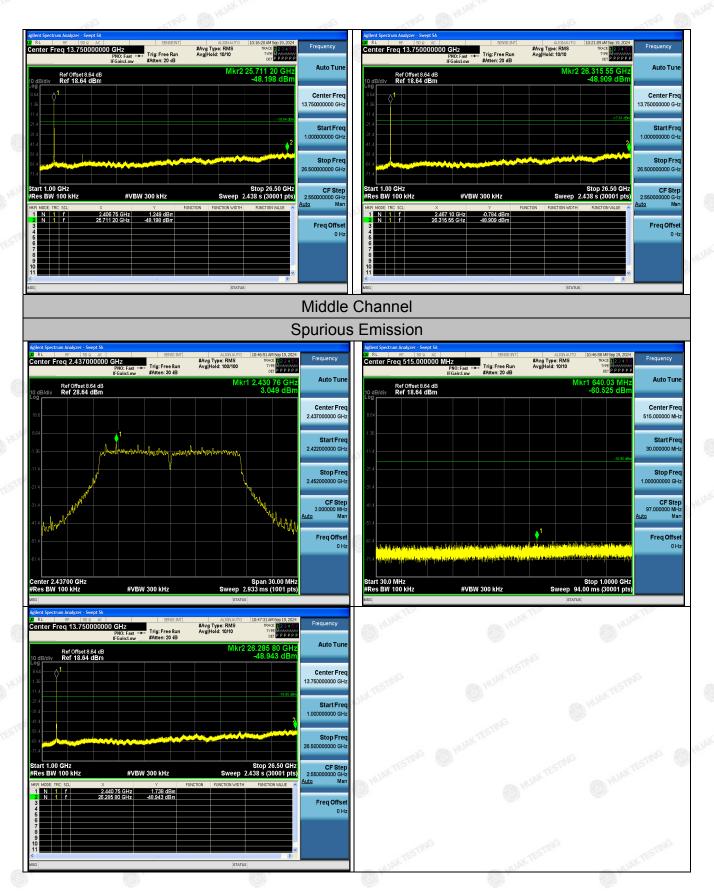
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

#### TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 38 of 72

FICATION



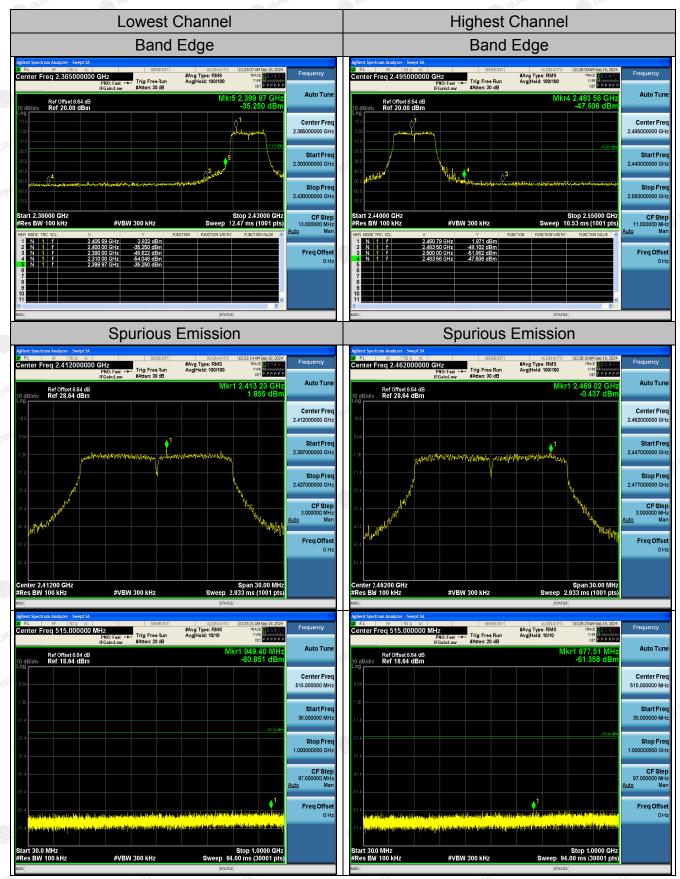
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 39 of 72

#### 802.11n (HT20) Modulation



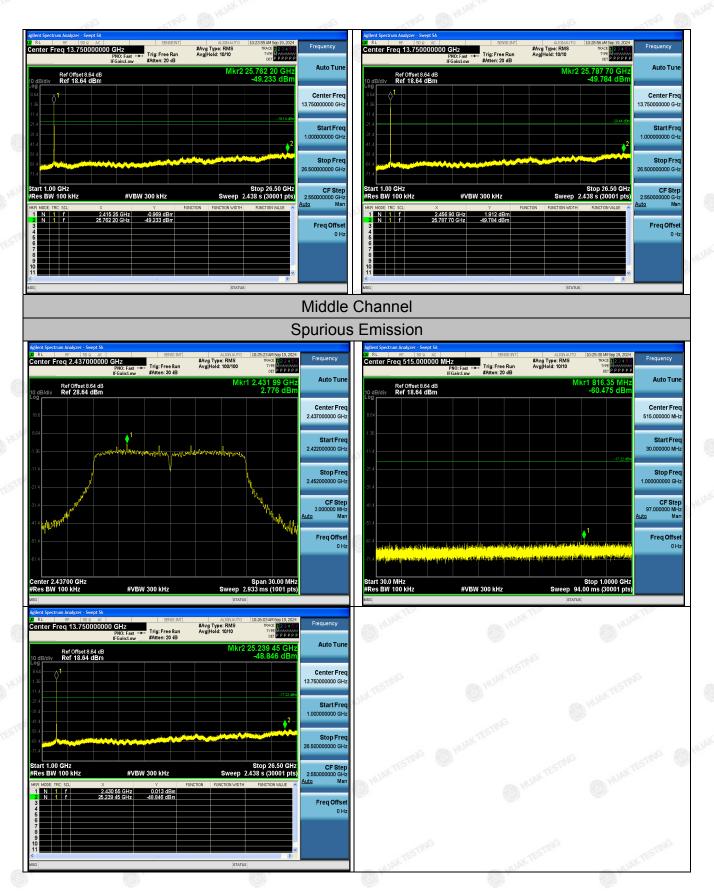
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

#### TEL:+86-755 2302 9901 FAX:+86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 40 of 72

EST FIF



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com

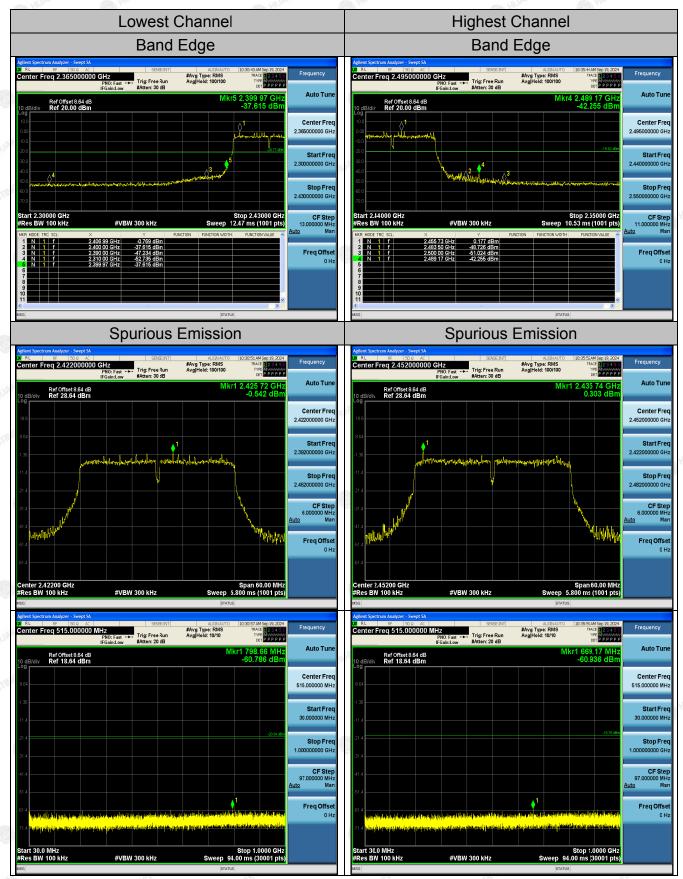


#### Page 41 of 72

NG

¦К

#### 802.11n (HT40) Modulation



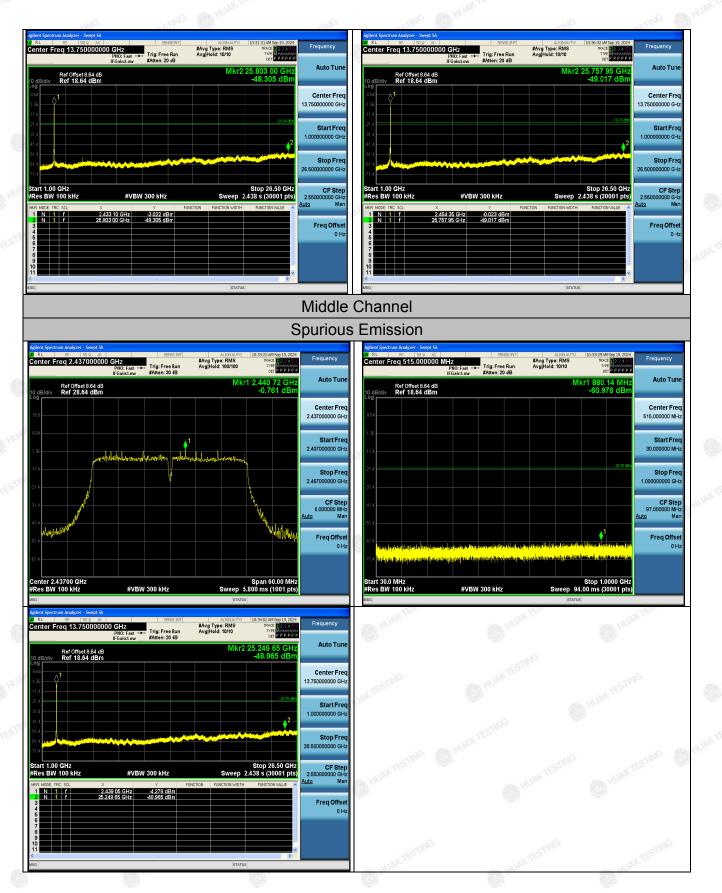
The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

#### TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 42 of 72

J,



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# 4.7. Radiated Spurious Emission Measurement

# **Test Specification**

Test Requirement:	FCC Part15	C Section	15.209				
Test Method:	ANSI C63.10	ANSI C63.10: 2013					
Frequency Range:	9 kHz to 25	GHz	CTING				
Measurement Distance:	3 m	K TESTING	(A) HU	AK TE		K TESTING	
Antenna Polarization:	Horizontal &	Vertical		.6	0	HOM	
Operation mode:	Transmitting	mode with	modulati	ion			
	Frequency	Detector	RBW	VBW	STING	Remark	
Receiver Setup:	<u>9kHz- 150kHz</u> 150kHz- 30MHz	Quasi-peak Quasi-peak	200Hz 9kHz	1kHz 30kHz		i-peak Valu i-peak Valu	
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quas	i-peak Valu	
		Peak	1MHz	3MHz	-	eak Value	
	Above 1GHz	Peak	1MHz	10Hz	Ave	erage Value	
	Frequer	ncy	Field Stre (microvolts)			asurement nce (meters	
	0.009-0.4		2400/F(KHz)		300		
	0.490-1.1		24000/F(KHz)		30		
	1.705-3		<u> </u>		I I I I I I I I I I I I I I I I I I I	30	
	30-88		150			3 3	
Limit:	216-96		200		TING	3	
	Above 960			HUAKT		3	
	Frequency		Strength olts/meter)	Measure Distan (mete	ce	Detector	
	Above 1GH:	7	500 6000	3		Average Peak	
Test setup:	For radiated	emissions 3 m Turn Tale Ground Plane				unk testing	
	30MHz to 10	GHz					

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

HUAK TESTING

AFICATION

E2 TOTAL	NAK TES.	AAKTEST	WAXT
() ()	0.8 m	Ant. feed point EUT Turs Take Ground Plane	HUAKTESTING
HUNKTES HUNKTES	Above		JAK TESTING
		Ground Plane	600
Test Procedure:	Th ab int or EL the (fr re for 2. For PL 1.4 ar en wh the sig ma	the radiated emission test below 1GHz: the EUT was placed on a turntable with 0.3 bove ground. The EUT was set 3 meters for terference receiving antenna, which was in the top of a variable height antenna towe UT was arranged to its worst case and the e antenna tower (from 1 m to 4 m) and tu om 0 degree to 360 degrees) to find the rading. A pre-amp and a high PASS filter a r the test in order to get better signal leve r the radiated emission test above 1GHz: ace the measurement antenna on a turnt 5 meter above ground, which is away from ea of the EUT determined to be a source nissions at the specified measurement dis nile keeping the measurement antenna ai e source of emissions, with polarization orien aximum response. The measurement anten ay have to be higher or lower than the EU epending on the radiation pattern of the emission of the emission at the specified measurement anten ay have to be higher or lower than the EU	from the mounted er. The en tune irntable maximum are used il. able with m each of stance, imed at of nted for tenna JT,
	an	nd staying aimed at the emission source f ceiving the maximum signal.	

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



Page 45 of 72

	- 103 <sup>-</sup>
6)	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.
D 1400	3. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
AKTES	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
line.	<ul><li>measurement will be repeated using the quasi-peak detector and reported.</li><li>5. Use the following spectrum analyzer settings:</li></ul>
	<ul> <li>(1) Span shall wide enough to fully capture the emission being measured;</li> <li>(2) Set RBW=120 kHz for f &lt; 1 GHz; VBW ≥RBW; Sweep = auto; Detector function = peak; Trace = may hold.</li> </ul>
D HILP	max hold; (3) Set RBW = 1 MHz, VBW= 3MHz for f > 1 GHz for peak measurement.
parties	6.For average measurement: VBW = 10 Hz, when duty cycle is no less than 98 percent.VBW ≥ 1/T, when duty cycle is less than 98 percent where T is the
TRIG	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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# **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. 20, 2024	Feb. 19, 2025							
Spectrum analyzer	R&S	FSV3044	HKE-126	Feb. 20, 2024	Feb. 19, 2025							
Preamplifier	EMCI	EMC051845S	HKE-006	Feb. 20, 2024	Feb. 19, 2025							
Preamplifier	Schwarzbeck	BBV 9743	HKE-016	Feb. 20, 2024	Feb. 19, 2025							
Preamplifier	A.H. Systems	SAS-574	HKE-182	Feb. 20, 2024	Feb. 19, 2025							
6dB Attenuator	Pasternack	6db	HKE-184	Feb. 20, 2024	Feb. 19, 2025							
EMI Test Receiver	Rohde & Schwarz	ESR-7	HKE-010	Feb. 20, 2024	Feb. 19, 2025							
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	N/A	N/A							
RSE Test Software	Tonscend	JS36-RSE 5.0 .0	HKE-184	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).

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

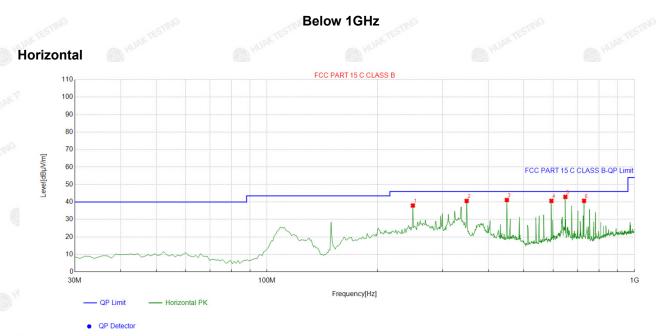
TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



NG

# Test Data

# All the test modes completed for test. only the worst result of (802.11b at 2412MHz) was reported as below:



	Suspected List											
		Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle			
	NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity		
	1	249.43943	-13.41	51.40	37.99	46.00	8.01	100	250	Horizontal		
g.	2	349.44944	-10.04	50.65	40.61	46.00	5.39	100	298	Horizontal		
	3	449.45945	-8.78	49.93	41.15	46.00	4.85	100	0	Horizontal		
	4	594.13413	-5.06	45.70	40.64	46.00	5.36	100	176	Horizontal		
	5	648.50850	-5.07	48.01	42.94	46.00	3.06	100	288	Horizontal		
1	6	729.09909	-3.57	44.24	40.67	46.00	5.33	100	309	Horizontal		

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Vertical FCC PART 15 C CLASS B 110 100 90 80 70 60 FCC PART 15 C CLASS B-QP Limi 50 40 30 10 0 30M 100M 1G Frequency[Hz] **OP** Limit Vertical PK

QP Detector

Suspected List

L	-									
		Freq.	Factor	Reading	Level	Limit	Margin	Height	Angle	
	NO.	[MHz]	[dB]	[dBµV/m]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
	1	149.42942	-18.08	52.00	33.92	43.50	9.58	100	336	Vertical
	2	249.43943	-13.41	44.37	30.96	46.00	15.04	100	100	Vertical
	3	349.44944	-10.04	45.48	35.44	46.00	10.56	100	3	Vertical
	4	431.98198	-8.85	43.76	34.91	46.00	11.09	100	259	Vertical
	5	621.32132	-5.49	46.72	41.23	46.00	4.77	100	65	Vertical
	6	729.09909	-3.57	43.68	40.11	46.00	5.89	100	103	Vertical

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

# Harmonics and Spurious Emissions

#### Frequency Range (9kHz-30MHz)

5	Frequency (MHz)	Level@3m (dBµV/m)	Limit@3m (dBµV/m)			
	A TESTING A		HUM WTESTRAL			
	A HUM	100 1 <u>40</u> 11				
		NG	-STING			
			UNC			

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.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL:+86-755 2302 9901 FAX:+86-755 2302 9901 E-mail: service@cer-mark.com



#### Above 1GHz

## **Radiated Emission Test**

#### LOW CH1 (802.11b Mode)/2412

Horizontal:

Reading Result	Factor	Emission Level	Limits	Margin	Detector
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
50.78	-3.64	47.14	74	-26.86	peak
40.24	-3.64	36.6	54	-17.4	AVG
48.94	-0.95	47.99	74	-26.01	peak
39.17	-0.95	38.22	54	-15.78	AVG
	(dBµV) 50.78 40.24 48.94	(dBµV)     (dB)       50.78     -3.64       40.24     -3.64       48.94     -0.95	(dBµV)         (dB)         (dBµV/m)           50.78         -3.64         47.14           40.24         -3.64         36.6           48.94         -0.95         47.99	(dBµV)     (dB)     (dBµV/m)     (dBµV/m)       50.78     -3.64     47.14     74       40.24     -3.64     36.6     54       48.94     -0.95     47.99     74	(dBµV)         (dB)         (dBµV/m)         (dBµV/m)         (dB)           50.78         -3.64         47.14         74         -26.86           40.24         -3.64         36.6         54         -17.4           48.94         -0.95         47.99         74         -26.01

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

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	52.19	-3.64	48.55	74	-25.45	peak
4824	40.62	-3.64	36.98	54	-17.02	AVG
7236	48.23	-0.95	47.28	74	-26.72	peak
7236	39.16	-0.95	38.21	54	-15.79	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 50 of 72

FICATION

#### MID CH6 (802.11b Mode)/2437

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	52.98	-3.51	49.47	74	-24.53	peak
4874	42.21	-3.51	38.7	54	-15.3	AVG
7311	48.48	-0.82	47.66	74	-26.34	peak
7311	36.53	-0.82	35.71	54	-18.29	AVG
Remark: Factor	r = Cable loss + An	tenna factor +	Attenuator – Prean	nplifier; Level =	Reading + Fac	tor; Margin =

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

Vertical:

Frequency	Frequency Reading Result	Factor Emission L	Emission Level	vel Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	55.03	-3.51	51.52	74	-22.48	peak
4874	42.92	-3.51	39.41	54	-14.59	AVG
7311	52.24	-0.82	51.42	74	-22.58	peak
7311	40.25	-0.82	39.43	54	-14.57	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### HIGH CH11 (802.11b Mode)/2462

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	54.89	-3.43	51.46	74	-22.54	peak
4924	41.28	-3.43	37.85	54	-16.15	AVG
7386	49.88	-0.75	49.13	74	-24.87	peak
7386	39.78	-0.75	39.03	54	-14.97	AVG

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

#### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	52.32	-3.43	48.89	74	-25.11	peak
o 4924	40.65	-3.43	37.22	54	-16.78	AVG
7386	49.82	-0.75	49.07	74	-24.93	peak
7386	38.33	-0.75	37.58	54	-16.42	AVG

#### Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.

(3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54dBuV/m(AV Limit), the Average Detected not need to completed.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com



#### Page 52 of 72

E F

# LOW CH1 (802.11g Mode)/2412

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	52.14	-3.64	48.5	74	-25.5	peak
4824	40.11	-3.64	36.47	54	-17.53	AVG
7236	52.03	-0.95	51.08	74	-22.92	peak
7236	39.72	-0.95	38.77	54	-15.23	AVG

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	53.55	-3.64	49.91	74	-24.09	peak
4824	36.7	-3.64	33.06	54	-20.94	AVG
7236	53.2	-0.95	52.25	74	-21.75	peak
7236	37.94	-0.95	36.99	54	-17.01	AVG

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 53 of 72

NG

¦К РВ

# MID CH6 (802.11g Mode)/2437

Horizontal:

Frequency	Frequency Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	51.78	-3.51	48.27	74	-25.73	peak
4874	42.35	-3.51	38.84	54	-15.16	AVG
7311	50.27	-0.82	49.45	74	-24.55	peak
7311	39.92	-0.82	39.1	54	-14.9	AVG
Remark: Factor	r = Cable loss + An	tenna factor +	Attenuator – Pream	nolifier: Level =	Reading + Fac	tor: Margin =

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

Vertical:

Frequency	Reading Result	Factor Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	52.07	-3.51	48.56	74	-25.44	peak
4874	39.6	-3.51	36.09	54	-17.91	AVG
7311	48.06	-0.82	47.24	74	-26.76	peak
7311	41.37	-0.82	40.55	54	-13.45	AVG

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### HIGH CH11 (802.11g Mode)/2462

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	dBµV/m)	(dBµV/m)	(dB)	Туре
4924	49.27	-3.43	45.84	74 💍	-28.16	peak
4924	41.03	-3.43	37.6	54	-16.4	AVG
7386	46.83	-0.75	46.08	74	-27.92	peak
7386	39.14	-0.75	38.39	54	-15.61	AVG

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

#### Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4924	50.88	-3.43	47.45	74 🔘	-26.55	peak
4924	40.41	-3.43	36.98	54	-17.02	AVG
7386	47.06	-0.75	46.31	74	-27.69	peak
7386	39.23	-0.75	38.48	54	-15.52	AVG

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

#### Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.

(3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54dBuV/m(AV Limit), the Average Detected not need to completed.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com



#### LOW CH1 (802.11n/H20 Mode)/2412

Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	<sup>©</sup> (dBµV/m)	(dB)	Туре
4824	54.31	-3.64	50.67	74 🔊	-23.33	peak
of 4824	40.94	-3.64	37.3	54	-16.7	AVG
7236	50.19	-0.95	49.24	74	-24.76	peak
7236	37.22	-0.95	36.27	54	-17.73	AVG

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

#### Vertical:

Frequency	Frequency Reading Result	Factor E	Emission Level	Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4824	50.72	-3.64	47.08	74	-26.92	peak
4824	42.89	-3.64	39.25	54	-14.75	AVG
7236	49.51	-0.95	48.56	74	-25.44	peak
7236	38.46	-0.95	37.51	54 same	-16.49	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 56 of 72

FICATION

## MID CH6 (802.11n/H20 Mode)/2437

Horizontal:

Frequency	equency Reading Result	Factor Emission Level	Limits	Margin	Detector	
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	51.52	-3.51	48.01	74.00	-25.99	peak
4874	40.99	-3.51	37.48	54.00	-16.52	AVG
7311	51.29	-0.82	50.47	74.00	-23.53	peak
7311	39.32	-0.82	38.50	54.00	-15.50	AVG

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

Vertical:

Frequency	Reading Result	Factor	Emission Level	📣 Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре
4874	48.97	-3.51	45.46	74.00	-28.54	peak
4874	40.90	-3.51	37.39	54.00	-16.61	AVG
7311	47.31	-0.82	46.49	74.00	-27.51	peak
7311	38.98	-0.82	38.16	54.00	-15.84	AVG

Level-Limit.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 57 of 72

#### HIGH CH11 (802.11n/H20 Mode)/2462

#### Horizontal:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Turc
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4924	52.49	-3.43	49.06	74	-24.94	peak
4924	39.24	-3.43	35.81	54	-18.19	AVG
7386	49.72	-0.75	48.97	74	-25.03	peak
7386	36.89	-0.75	36.14	54	-17.86	AVG
Remark: Factor	r = Cable loss + Ani	tenna factor +	Attenuator – Pream	nplifier: Level =	I Reading + Fac	tor: Margin =

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

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Data atau Tura
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4924	49.77	-3.43	46.34	74	-27.66	peak
4924	40.71	-3.43	37.28	54	-16.72	AVG
7386	47.35	-0.75	46.6	74	-27.4	peak
7386	40.09	-0.75	39.34	54	-14.66	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 58 of 72

FIF

#### LOW CH3 (802.11n/H40 Mode)/2422

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Ture
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Detector Type
4844	51.40	-3.63	47.77	74	-26.23	peak
4844	43.12	-3.63	39.49	54	-14.51	AVG
7266	48.62	-0.94	47.68	74	-26.32	peak
7266	40.55	-0.94	39.61	54	-14.39	AVG
Remark: Factor	= Cable loss + Ant	enna factor +	Attenuator – Pream	plifier; Level =	Reading + Fac	tor; Margin =

Vertical:

Level-Limit.

Frequency	Meter Reading	Factor	Emission Level	imits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	<ul> <li>Detector Type</li> </ul>
4844	51.69	-3.63	48.06	74	-25.94	peak
4844	42.27	-3.63	38.64	54	-15.36	AVG
7266	49.02	-0.94	48.08	74	-25.92	peak
7266	39.40	-0.94	38.46	54	-15.54	AVG

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL:+86-755 2302 9901 FAX:+86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 59 of 72

NG

IΕ

#### MID CH6 (802.11n/H40 Mode)/2437

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Data atau Tura
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	<ul> <li>Detector Type</li> </ul>
4874	53.09	-3.51	49.58	74	-24.42	peak
4874	39.96	-3.51	36.45	54	-17.55	AVG
7311	50.52	-0.82	49.7	74	-24.3	peak
7311	37.6	-0.82	36.78	54	-17.22	AVG

Vertical:

Frequency	Meter Reading	Factor	Emission Level	🔊 Limits	Margin	Detector
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	- Detector Type
4874	52.52	-3.51	49.01	74	-24.99	peak
4874	41.8	-3.51	38.29	54	-15.71	AVG
7311	50.39	-0.82	49.57	74	-24.43	peak
7311	40.26	-0.82	39.44	54	-14.56	AVG

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



#### Page 60 of 72

#### HIGH CH9 (802.11n/H40 Mode)/2452

Horizontal:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Trees
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	<ul> <li>Detector Type</li> </ul>
4904	53.71	-3.43	50.28	74	-23.72	peak
4904	37.39	-3.43	33.96	54	-20.04	AVG
7356	50.73	-0.75	49.98	74	-24.02	peak
7356	38.70	-0.75	37.95	54	-16.05	AVG

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

Vertical:

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Turne
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	<ul> <li>Detector Type</li> </ul>
4904	53.49	-3.43	50.06	74	-23.94	peak
4904	43.48	-3.43	40.05	54	-13.95	AVG
7356	48.95	-0.75	48.2	74	-25.8	peak
7356	41.06	-0.75	40.31	54	-13.69	AVG

Level-Limit.

#### Remark:

(1) Measuring frequencies from 1 GHz to the 25 GHz.

(2) "F" denotes fundamental frequency; "H" denotes spurious frequency; "E" denotes band edge frequency.
(3) \* denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.

(4) The emissions are attenuated more than 20dB below the permissible limits are not recorded in the report.

(5) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

(6) When the test results of Peak Detected below the limits of Average Detected, the Average Detected is not need completed. For example: Top Channel at Fundamental 73.16dBuV/m(PK Value) <93.98(AV Limit), at harmonic 53.20 dBuV/m(PK Value) <54 dBuV/m(AV Limit), the Average Detected not need to completed.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.



#### Test Result of Radiated Spurious at Band edges

#### **Operation Mode:**

## 802.11b Mode TX CH Low (2412MHz)

Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	TESTING
HUAN HUAN		9	HUAN	<u> </u>	(1)	Detector Typ
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	51.08	-5.81	45.27	74	-28.73	peak
2310.00	43.25	-5.81	37.44	54	-16.56	AVG
2390.00	50.4	-5.84	44.56	74	-29.44	peak
2390.00	39.69	-5.84	33.85	54	-20.15	AVG

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

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	53.6	-5.81	47.79	74	-26.21	peak
2310.00	43.95	-5.81	38.14	54	-15.86	AVG
2390.00	50.87	-5.84	45.03	74	-28.97	peak
2390.00	40.66	-5.84	34.82	s <sup>66</sup> 54	-19.18	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



NCATION

## Operation Mode: TX CH High (2462MHz)

#### Horizontal

4000						
Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
6 (MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	51.92	-5.81	46.11	74 100	-27.89	peak
2483.50	39.8	-5.81	33.99	54	-20.01	AVG
2500.00	47.86	-6.06	41.8	74	-32.2	peak
2500.00	39.38	-6.06	33.32	54	-20.68	AVG

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	53.72	-5.81	47.91	74	-26.09	peak
2483.50	39.21	-5.81	33.4	54	-20.6	AVG
2500.00	51.66	-6.06	45.6	74	-28.4	peak
2500.00	39.45	-6.06	33.39	54	-20.61	AVG

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Operation Mode: 802.11g Mode TX CH Low (2412MHz)

#### Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	53.09	-5.81	47.28	74 <sub>10</sub> 2	-26.72	peak
2310.00	38.45	-5.81	32.64	54	-21.36	AVG
2390.00	51.52	-5.84	45.68	74	-28.32	peak
2390.00	37.45	-5.84	31.61	54	-22.39	AVG

Vertical:

W/W	- all the	MAN	all the		Hannell	NK IL
Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	51.52	-5.81	45.71	74	-28.29	peak
2310.00	42.23	-5.81	36.42	54	-17.58	AVG
2390.00	48.68	-5.84	42.84	74	-31.16	peak
2390.00	38.05	-5.84	32.21	54	-21.79	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



## Page 64 of 72

# Operation Mode: TX CH High (2462MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
<sup>©</sup> 2483.50	52.03	-5.65	46.38	74	-27.62	peak
2483.50	40.77	-5.65	35.12	54	-18.88	AVG
2500.00	46.24	-5.65	40.59	74	-33.41	peak
2500.00	40.04	-5.65	34.39	54	-19.61	AVG

Vertical:

ano	100	1	0	(NP)	100	100
Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	52.67	-5.65	47.02	74	-26.98	peak
2483.50	41.64	-5.65	35.99	54	-18.01	AVG
2500.00	48.95	-5.65	43.3	74	-30.7	peak
2500.00	37.56	-5.65	31.91	54	-22.09	AVG

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

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



le:

Operation Mode: 802.11n/H20 Mode TX CH Low (2412MHz)

# Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	51.96	-5.81	46.15	74	-27.85	peak
2310.00	39.34	-5.81	33.53	54	-20.47	AVG
2390.00	49.45	-5.84	43.61	74	-30.39	peak
2390.00	39.23	-5.84	33.39	54	-20.61	AVG

Vertical:

aniG	Olar		G	NG	-NIG	Ole
Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	52.8	-5.81	46.99	74 M <sup>UM</sup>	-27.01	peak
2310.00	40.82	-5.81	35.01	54	-18.99	AVG
2390.00	53.48	-5.84	47.64	74	-26.36	peak
2390.00	37.58	-5.84	31.74	54	-22.26	AVG
0.0		- 40	ACRES Y		- 00	ACTION AND A DECIMAL OF A

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com

## Operation Mode: TX CH High (2462MHz)

#### Horizontal

HUAK TESTING

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	48.85	-5.65	43.2	74	-30.8	peak
2483.50	40.66	-5.65	35.01	54	-18.99	AVG
2500.00	50.52	-5.65	44.87	74	-29.13	peak
2500.00	40.81	-5.65	35.16	54	-18.84	AVG

Vertical:

Reading Result			10.00		(1573);
County result	Factor	Emission Level	Limits	Margin	Detector Type
(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	W TESTING
50.12	-5.65	44.47	74	-29.53	peak
43.02	-5.65	37.37	54	-16.63	AVG
49.56	-5.65	43.91	74	-30.09	peak
39.33	-5.65	33.68	54	-20.32	AVG
	50.12 43.02 49.56	50.12     -5.65       43.02     -5.65       49.56     -5.65	50.12     -5.65     44.47       43.02     -5.65     37.37       49.56     -5.65     43.91	50.12     -5.65     44.47     74       43.02     -5.65     37.37     54       49.56     -5.65     43.91     74	50.12     -5.65     44.47     74     -29.53       43.02     -5.65     37.37     54     -16.63       49.56     -5.65     43.91     74     -30.09

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

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



Operation Mode: 802.11n/H40 Mode TX CH Low (2422MHz)

Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	56.88	-5.81	51.07	74	-22.93	peak
2310.00	I I	-5.81	THINK TESTIN	54	/	AVG
2390.00	54.08	-5.84	48.24	74	-25.76	peak
2390.00	HUA MUA	-5.84	/	54	/	AVG

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2310.00	53.17	-5.81	47.36	74	-26.64	peak
2310.00	/	-5.81	· /	54	/ (0)	AVG
2390.00	52.33	-5.84	46.49	74	-27.51	peak
2390.00	JAN TE /	-5.84	AUNK TE	54	HUAKTEST	AVG

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

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



VCATION

# Operation Mode: TX CH High (2452MHz)

#### Horizontal

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	56.87	-5.65	51.22	74	-22.78	peak
2483.50	1	-5.65	· /	54	/ 🤍	AVG
2500.00	54.29	-5.65	48.64	74	-25.36	peak
2500.00	HUAKTE /	-5.65	AUDA TE	54	- HUAK TEST	AVG

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

Vertical:

Frequency	Reading Result	Factor	Emission Level	Limits	Margin	Detector Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
2483.50	53.66	-5.65	48.01	74	-25.99	peak
2483.50	STINCE O HUA	-5.65		54	I	AVG
2500.00	52.37	-5.65	46.72	74	-27.28	peak
2500.00	/	-5.65	/	54	1	AVG

Remark: All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Remark:

1. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

In restricted bands of operation, the spurious emissions below the permissible value more than 20dB.
 The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# 4.8. 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 than6dBi 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 1.82dBi.

# 

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



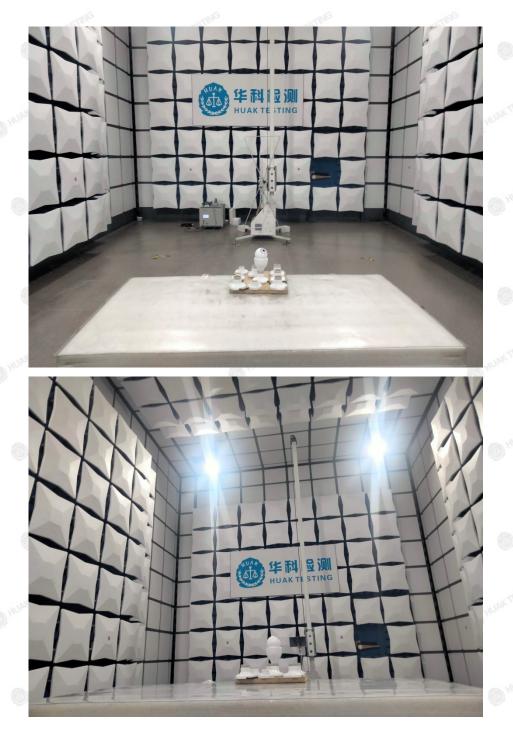
# Page 70 of 72

TING

HK

# 5. Photograph of Test

# **Radiated Emissions**



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

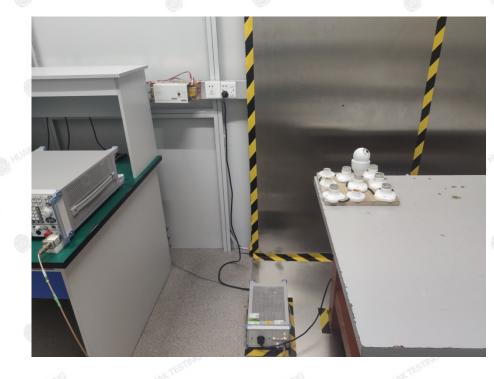
TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



# Page 71 of 72

Report No.: HK2409095219-E

# Conducted Emission



The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com



IFICATION

# 6. Photos of the EUT

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

----End of test report--

The results shown in this test report refer only to the sample(s) tested unless otherwise stated and the sample(s) are retained for 30 days only. The document is issued by HUAK, this document cannont be reproduced except in full with our prior written permission. The more details and the authenticity of the report will be confirmed at http://www.cer-mark.com.

TEL: +86-755 2302 9901 FAX: +86-755 2302 9901 E-mail: service@cer-mark.com