

Test report No: 4394324.51

TEST REPORT

Radio Spectrum Matters (RF)

Identification of item tested	COMBO module
Trademark	1
Model and /or type reference	JXC8720-18
FCC ID	PUU-CFIXCNLRCRV
Features	3.3Vdc
Applicant´s name / address	Savant Technologies LLC dba GE Lighting, a Savant company 1975 Noble Road, Cleveland, Ohio, United States, 44112
Test method requested, standard	FCC CFR Title 47 Part15 Subpart C Section 15.247; KDB558074 D01v05r02;
Verdict Summary	COMPLIANCE
Tested by (name & signature)	Johnny Bo
Approved by (name & signature)	Tim Yan
Date of issue	2022-12-06
Report template No	TRF_EMC 2017-06- FCC_Part15C_247



INDEX

Gene	eral co	nditions	4
Unce	ertainty	·	4
Envir	ronme	ntal conditions	4
Poss	ible te	st case verdicts	4
Defir	nition a	f symbols used in this test report	5
Abbr	eviatio	ns	5
Docu	ument	History	5
Rem	arks a	nd Comments	5
1	Gene	ral Information	6
	1.1	General Description of the Item(s)	6
	1.2	Test data	7
	1.3	The environment(s) in which the EUT is intended to be used	7
	1.4	Channel List	7
2	Desc	ription of Test Setup	8
	2.1	Operating mode(s) used for tests	8
	2.2	Support / Auxiliary equipment / unit / software for the EUT	8
	2.3	Test Configuration / Block diagram used for tests	8
	2.4	Measurement procedure	8
3	Verdi	ct summary section	9
	3.1	Standards	9
	3.2	Deviation(s) from the Standard(s) / Test Specification(s)	9
	3.3	Overview of results	9
4	Trans	smitter Test Results	10
	4.1	AC Power Line Conducted Emission	10
	4.2	Emissions in non-restricted frequency bands	14
	4.3	Emissions in restricted frequency bands	31
	4.4	Band Edge	46
	4.5	Duty cycle	54
	4.6	DTS Bandwidth	57
	4.7	Fundamental emission output power	67
	4.8	Power Density	70
5	Ident	fication of the Equipment Under Test	76
Anne	ex 1 – I	Measurement Uncertainty	77
Anne	ex 2 - l	Jsed Equipment	78

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com





GENERAL CONDITIONS

- 1. This report is only referred to the item that has undergone the test.
- 2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
- 3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
- 4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.
- 5. This report will not be used for social proof function in China market.

UNCERTAINTY

For all measurements where guidance for the calculation of the instrumentation uncertainty of a measurement is specified in EN 55016-4-2 (CISPR 16-4-2), EN/IEC 61000-4 series or a product standard, the measurement instrumentation uncertainty has been calculated and applied in accordance with these standards.

Uncertainties have been calculated according to the DEKRA internal document. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	-40 °C – 105 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not tested	N/T



DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☐ Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.					
Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.					
Decimal separator used in this report 🛛 Comma (,) 🗌 Point (.)					

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	:	Equipment Under Test
QP	:	Quasi-Peak
CAV	:	CISPR Average
AV	:	Average
CDN	:	Coupling Decoupling Network
SAC	:	Semi-Anechoic Chamber
OATS	:	Open Area Test Site
BW	:	Bandwidth
AM	:	Amplitude Modulation
PM	:	Pulse Modulation
HCP	:	Horizontal Coupling Plane
VCP	:	Vertical Coupling Plane
UN	:	Nominal voltage
Тx	:	Transmitter
Rx	:	Receiver
N/A	:	Not Applicable
N/M	:	Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
4394324.51	2022-12-06	First release.

REMARKS AND COMMENTS

The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).



1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item:	COMBO module
Trademark	1
Model / Type number	JXC8720-18
FCC ID	PUU-CFIXCNLRCRV
Hardware:	JXC8720-18 V1.1
Software	cync Alpha 6.8.0.34336-5c4db77a1
Firmware	N/A
Ratings	3.3Vdc
Manufacturer	Same as applicant
Factory	Same as applicant

The product contains wireless RF module and the characteristics of radio module (WIFI) are:

Frequency Band	2412 MHz-2462 MHz
	IEEE 802.11b: DSSS(CCK, DQPSK, DBPSK)
Type of Modulation	IEEE 802.11g: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
	IEEE 802.11n-HT20: OFDM(64-QAM, 16-QAM, QPSK, BPSK)
	IEEE 802.11b: Up to 11 Mbps
Data Rate	IEEE 802.11g: Up to 54 Mbps
	IEEE 802.11n-HT20: Up to MCS7
Geo-location Capability	Not Support
Adaptivity	Adaptive
	IEEE 802.11b: 19.3 dBm
Maximum RF output power(EIRP):	IEEE 802.11g: 18.2 dBm
	IEEE 802.11n-HT20: 16.9 dBm
Antenna type	PCB Antenna
Antenna gain	2.6 dBi
	IEEE 802.11b: 11
Number of channel	IEEE 802.11g: 11
	IEEE 802.11n-HT20: 11
Operating Temperature Range:	-40 °C – 105 °C

Rated power supply:	Voltage and Frequency		Reference poles				
	Vona	ge and ricquency	L1	L2	L3	Ν	PE
		AC:					
		DC: 3.3V					
		Battery:					
Mounting position:		Table top equipment					
		Wall/Ceiling mounted equipment					
		Floor standing equipment					
		Hand-held equipment					



Other: Built-in

Intended use of the Equipment Under Test (EUT)

The apparatus as supplied for the test is COMBO module intended for residential use.

Model JXC8720-18 was chosen for full test.

Copy of marking plate:

No provide.

1.2 Test data

	DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch
Test Location	Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China
	FCC Designation Number: CN1324;
Date of receipt of test item	2022-09-02
Date (s) of performance of tests	2022-09-02 to 2022-10-19
	Normal sample: JXC8720-18 (lab on.4394324-1)
Test sample	RF conducted sample: JXC8720-18 (lab on.4394324-3)
	RF radiated sample: JXC8720-18 (lab on.4394324-2)

1.3 The environment(s) in which the EUT is intended to be used

The equipment under test (EUT) is intended to be used in the following environment(s):

\square	Residential (domestic) environment.
\square	Commercial and light-industrial environment.
	Industrial environment.

1.4 Channel List

The radio module (WIFI) operating channels are:

Channel	Frequency (MHz)	Frequency (MHz)	
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	5 2432		2462
6	2437	-	-



2 **DESCRIPTION OF TEST SETUP**

2.1 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Operating	Operating mode description	Used for methos			
mode	Operating mode description	Conducted	Radiated		
1	Transmitting at WIFI		\square		
2	On mode; Supply power by PC	\square	\boxtimes		
3					
4					
Supplemental information:					

2.2 Support / Auxiliary equipment / unit / software for the EUT

The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment / unit / software	Type / Version	Manufacturer	Supplied by	
Laptop	Latitude 5488	DELL	DEKRA	
UI_mptool (soft ware)	V2.0	-	Client	
Supplemental information:				

2.3 Test Configuration / Block diagram used for tests

Refer to Annex 3.

2.4 Measurement procedure

The EUT was controlled by a serial PCB(TELINK BDT) which provided by manufacturer which connected to laptop through the com port. After connected, run the software "UI_mptool V2.0" supplied by manufacturer to control the EUT work in required test mode as below table.

PE Mada	Frequency
RF MODE	(MHz)
	2412
IEEE 802.11 b/g/n20	2437
	2462



3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC CFR Title 47 Part 15	2022	Operation within the bands 902–928 MHz, 2400–2483.5 MHz, and
Subpart C Section 15.247		5725–5850 MHz.
KDB 558074 D01 v05r02	2019	Guidance for performing compliance measurements on Digital
		Transmission System (DTS) operating under section 15.247
ANSI C63.10	2013	American National Standard of Procedures for Compliance Testing
		of Unlicensed Wireless Devices

3.2 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards: N/A.

3.3 Overview of results

FCC measurement					
Requirement – Test case	Basic standard(s)	Verdict	Remark		
AC Power Line Conducted Emission	FCC 15.207	PASS			
Emissions in non-restricted frequency bands	FCC 15.247(d), FCC 15.209	PASS			
Emissions in restricted frequency bands	FCC 15.247(b)(3)	PASS			
Duty cycle	ANSI C63.10:2013	PASS			
Band Edge	FCC 15.247(d)	PASS			
Fundamental emission output power	FCC 15.247(d), FCC 15.209	PASS			
DTS Bandwidth	FCC 15.247(a)(2)	PASS			
Power Spectral Density	FCC 15.247(e)	PASS			
Antenna Requirement	FCC 15.203	PASS			
Supplementary information:		· ·			

The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to calculate the uncertainty associated with the measurement result.



4 **TRANSMITTER TEST RESULTS**

4.1 AC Power Line Conducted Emission VERDICT: PASS

Limits

FCC Part 15 Subpart C Paragraph 15.207					
Frequency range [MHz]	Limit: QP [dB(µV) ¹⁾]	Limit: AV [dB(µV) 1)]	IF BW	Detector(s)	
0,15 - 0,50	66 – 56 ²⁾	56 - 46 ²⁾	9 KHz	QP, AV	
0,50 - 5,0	56	46	9 KHz	QP, AV	
5,0 - 30 60 50 9 KHz QP, AV					
¹⁾ At the transition frequency, the lower limit applies.					
²⁾ The limit decreases linearly	with the logarithm of the frequen	CV.			

Test Configuration





Test Procedure

	References Rule	Chapter	Item
\square	ANSI C63.10-2013	6.2	Standard test method for ac power-line conducted
			emissions from unlicensedwireless devices

Performed measurements

Port under test			Terminal								
\square	AC mains input power				N	\square	L1		L2		L3
	DC input power				Positive	(+)			Nega	tive (-)	
Test method applied 🛛 Artificial mains net			itwork								
Voltage probe			Voltage probe								
Test setup		\square	Table top	Artificial hand applied							
	☐ Floor standing		Floor standing	Other:							
Refer to the Annex 2 for			to the Annex 2 for	test se	tup photo	(s).					
Oper	ating mode(s) used	Mode 2									
Envir (tem	ment condition perature; humidiry)	23,0 °C; 45,0 %									
Rem	ark										



Model	JXC8720-18
Operation Mode (worst case)	Mode 2
Test voltage	120 Vac, 60 Hz

Live



Remarks:

- 1) Level (final measurement) = received value + transducer (Lisn+cable)
- 2) Delta = Level Limit

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com





Remarks:

- 1) Level (final measurement) = received value + transducer (Lisn+cable)
- 2) Delta = Level Limit



4.2 Emissions in non-restricted frequency bands

VERDICT: PASS

Emissions Limit 15.209(a)						
Frequency	Field strength	Field strength	Measurement distance			
(MHz)	(µV/m)	(dBµV/m)	(m)			
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300(Note 1)			
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30 _(Note 1)			
1.705 - 30	30	29.5	30 (Note 1)			
30 - 88	100	40	3 (Note 2)			
88 - 216	150	43.5	3 (Note 2)			
216 - 960	200	46	3(Note 2)			
Above 960	500	54	3 (Note 2)			

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).



Test Configuration





Test Procedure

	Re	ference	es Rule	Chapter	Description
\square	AN	SI C63	3.10	11.12	Emissions in restricted frequency bands
	\square	ANSI	C63.10	11.12.1	Radiated emission measurements
	\square	ANSI	C63.10	11.12.2.7	Radiated spurious emission test
			ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
			ANSI C63.10	6.5	Radiated emissions from unlicensed wireless devices in the frequency range of 30 MHz to 1000 MHz
1			ANSI C63.10	6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

Performed measurements

Port under test	Enclosure port		
Test method applied		Conducted measurement	
		Radiated measurement	
Test setup	Refer to the Annex 3 for test setup photo(s).		
Operating mode(s) used	Mode	9 1-2	
	1)The	e test frequency range, 9kHz~30MHz, 18GHz~26GHz, both of the worst	
	case	are at least 20dB below the limits, therefore no data appear in the report.	
Remark			
	2)The	e EUT are tested in three orientations. The record is the worst orientation	
	which	n refer to the Annex 3 for test setup photo(s).	



Results of 30 – 1000 MHz

Model	JXC8720-18
Operation Mode	Mode 1 @2412MHz, IEEE 802.11 b (worst case)
Test voltage	3.3 Vdc

Results

Horizontal



23.97

30.24

36.80

39.05

43.50

46.00

46.00

54.00

Remarks:

159.78

451.14

818.83

986.07

1) C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

10.32

19.53

24.98

27.11

2) Result = Reading + C.F (Correction Factor)

13.65

10.71

11.82

11.94

No other significant emissions were measured at the frequency range of interest employing the QP detectors.

19.53

15.76

9.20

14.95

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Vertical



Freq (MHz)	Reading (dBuV)	C.F (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin=limit-result (dB)
41.13	9.38	15.94	25.32	40.00	14.68
57.19	9.42	16.08	25.50	40.00	14.50
103.08	9.92	13.95	23.87	43.50	19.63
369.41	9.94	17.52	27.46	46.00	18.54
612.06	11.08	22.72	33.80	46.00	12.20
993.01	11.49	27.08	38.57	54.00	15.43

Remarks:

1) C.F (Correction Factor) = Antenna factor + Cable loss - Preamp gain

2) Result = Reading + C.F (Correction Factor)



Results of 1 – 18 GHz

Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 b
Test voltage	3.3 Vdc

Results

Horizontal

Spectrum					
Ref Level Att TDF	102.00 0	18µV 5 dB SWT 68 ms ●	RBW 1 MHz VBW 3 MHz M	ode Auto Swee;	p %
●1Pk Max●2	Av Max		172 (44		
90 dBµV				M4[2]	41.67 dBµV 7.237380 GHz 43.74 dBµV 4.824090 GHz
fee-pkspv-					
60 dBµV					
fcc-av _{3µV} -		Mg M	2		
40 dBµV					
20 авру- 10 авру-					
Start 1.0 G	Hz		30001 p	ts	Stop 18.0 GHz
Marker					
Type Ref	Trc	X-value	Y-value	Function	Function Result
M1	2	4.82409 GHz	43.74 dBµV		
M2	1	4.82396 GHz	44.86 d8µV		
M3	1	7.23511 GHz	43.81 dBµV		
M4	2	7.23738 GHz	41.67 d8µV		

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical

Spectrum					
Ref Level Att TDF	102.00	dBµ.V 5 dB SWT 68 m s ●	RBW 1 MHz VBW 3 MHz M	ode Auto Swee	р.
●1Pk Max●2	2Av Max		(1) (1)		
90 dBµV				M4[2]	39.65 dBµV 7.237380 GHz 39.18 dBµV 4.824090 GHz
fco-pkJuv-					
60 dBµV		- 16			
fcc-av _{3µV}		M2 M3			
40 dBµV	-				
20 dBµV					
10 dBµV					
Start 1.0 G	Hz	-10	30001 p	ts	Stop 18.0 GHz
Marker			010000000000000000000000000000000000000	-	
Type Ref	Trc	X-value	Y-value	Function	Function Result
M1	2	4.82409 GHz	39.18 dBuV	1	
M2	1	4.82396 GHz	42.56 dBµV		
M3	1	7.23511 GHz	44.93 dBµV		
M4	2	7.23738 GHz	39.65 dBµV		

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 g
Test voltage	3.3 Vdc

Horizontal

Spect	rum						
Ref Lo Att TDF	evel	102.00 a	18µV 5.dB SWT 68 ms 🖷	RBW 1 MHz VBW 3 MHz M	lode Auto Swi	еер	
●1Pk M	axe2/	Av Max	AN 54	5A 5A			
90 dBµ\ 80 dBµ\	v				M4[2]		36.08 dBµ 7.237380 GH 34.65 dBµ 4.824090 GH
fcc-pk3µA	v					_	
60 dBµ\	-					_	
fcc-av _{3µ} v	-		M	2		a a dia mandata	
40 dBµA	1	متانيم المرا منطق المراجع					
-ymler #	1						
20 аврл 10 аврл	v						
Start 1	1.0 GH	Iz	<u>d</u>	30001 p	ots	35	Stop 18.0 GHz
Marker							
Type	Ref	Trc	X-value	Y-value	Function	E E	unction Result
M1		2	4.82409 GHz	34.65 dBµV			
M2		1	4.82396 GHz	38.47 dBµV			
M3		1	7.23511 GHz	39.72 dBµV			
M4		2	7.23738 GHz	36.08 dBµV			

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical

Spect	rum								
Ref Le Att TDF	evel	102.00 0	18µ.V 5 dB SWT 68 ms	RBW 1 MHz VBW 3 MHz	Mode Auto	Sweep			
●1Pk Ma	axe2/	Av Max							
90 dBµV 80 dBµV	,				M4 M1	[2] [2]		7.: 4.1	35.77 dBµV 237380 GHz 35.31 dBµV 324090 GHz
fcc-pk3pv	,							-	
60 dBµV	-								
fcc-av3µV			140	642		a ana an		-	
40 dBµV	1	and a state							
20 dBµV	* / +								
10 dBµV	+						-		
Start 1	.0 GH	Iz	- 10	3000	1 pts			Sto	0 18.0 GHz
Marker									
Type	Ref	Trc	X-value	Y-value	Funct	ion	Fun	ction Resul	t
M1		2	4.82409 GHz	35.31 dB	Vu	1			
M2		1	4.82396 GHz	40.16 dB	UV.				
M3		1	7.23511 GHz	40.66 dB	Vu				
M4		2	7.23738 GHz	35.77 dBj	υV				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 n20
Test voltage	3.3 Vdc

Horizontal

Spectrum						
Ref Level Att TDF	102.00 (dBµV 5 dB SWT 68 ms ⊜	RBW 1 MHz VBW 3 MHz M	Iode Auto Swee	р	- -
●1Pk Max●2	Av Max					
90 dBµV				M2[1]		39.35 dBµV 4.837560 GHz 35.64 dBµV 4.824090 GHz
fee-pk3µv-						
60 dBµV			_		_	
fcc-av3µv-			-			
40 dBµV	والمحمد المرا	M2 M				
2D dBLA						
10 dBµV		-	_			
Start 1.0 Gi	Ηz		30001 p	l		Stop 18.0 GHz
Marker						
Type Ref	Trc	X-value	Y-value	Function	Functi	on Result
M1	2	4.82409 GHz	35.64 d8µV			
M2	1	4.83756 GHz	39.35 dBµV			
M3	1	7.23511 GHz	40.64 dBµV			
M4	2	7.23738 GHz	35.48 dBµV			

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical

Spectr	um								
Ref Le Att TDF	vel	102.00 0	‼Вµ∨ 5 dB SWT 68 m s	RBW 1 MHz VBW 3 MHz	Mode	Auto Swee	5		
1Pk Ma	ax • 2/	v Max	70 70	7.1					
90 dBµV 80 dBµV						-M2[1] -M1[2]		4.8 4.8	38.75 dBµV 37560 GHz 34.03 dBµV 24090 GHz
foo-pkspv	_				-		_		
60 dBµV	+					_	_	_	
fcc-av3µV	+			042			a real bid a marks		And the second second
40 dBµV	14			an and a strength of provide the	VERVICE TRANS				
20 dBµV									
10 dBµV	+			-	-		-	-	
Start 1.	.0 GH	z		3000	1 pts			Stop	18.0 GHz
Marker									
Type	Ref	Trc	X-value	Y-value	F	unction	F	unction Result	
M1		2	4.82409 GHz	34.03 dB	Vμ				
M2		1	4.83756 GHz	38.75 dB	ЧV				
M3		1	7.23511 GHz	39.89 dB	Vų				
M4		2	7.23738 GHz	35.20 dB					

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 b
Test voltage	3.3 Vdc

Horizontal

Spect	rum								
Ref L Att TDF	evel	102.00 d	ВµV 5 dB SWT 68 ms ●	RBW 1 MHz VBW 3 MHz M	ode Auto Sv	veep			
⊖1Pk M	lax 🛭 2/	Av Max		52 53					
90 dBµ' 80 dBµ'	v				M4[2]			7.3	35.27 dBµV 180740 GHz 35.33 dBµV 123820 GHz
fcc-pk3p	v						2 	-	
60 dBµ	-							-	
fcc-av3µ	v-		NO	13	nan Australia Austra		Inter a set office of the		A REAL PROPERTY OF
40 dBµA	1		an respect to the first state of the second state of the	Patro Area Area Area Area					
ALCONTRACTOR OF		and the second second		anto anto anto					
20 dBh	v-t								
10 dBµ	v—								
Start 1	.0 GH	z	02 02	30001 p	ts			Stop	0 18.0 GHz
Marker		5 11000			30	- 24			
Туре	Ref	Trc	X-value	Y-value	Function	6	Fund	ction Result	1 I
M1		2	4.92382 GHz	35,33 dBµV		1			
M2		1	4.93389 GHz	39.20 dBµV					
M3		1	7.38527 GHz	43.01 dBµV					
M4		2	7.38074 GHz	35.27 dBµV					

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 g
Test voltage	3.3 Vdc

Horizontal

Spectru	m								
Ref Leve Att TDF	el 102.0)dBµV 5dB SWT €	● R 58 ms ● V	BW 1 MHz BW 3 MHz 1	Mode Aut	o Sweep	5		÷
😑 1 Pk Maxe	2Av Ma	x		54 - SA					
90 dBµV					M	4[2] 1[2]		7.:	34.75 dBµV 380740 GHz 34.18 dBµV 923820 GHz
fco-pkjuv-	-					-			
60 dBµV—		_						-	-
fcc-av _{3µV} -	-							and the state start	and the second second
40 dBµV-	No. of Concession, Name	Ma	M3	AND HAND AND A TREAD	in the second stands	AS WITCH			
Providence in the local division of the loca			and a second second					1	
′20 dBµV—			6			5		1	
10 dBµV									
Start 1.0	GHz	- 19 - 19 - 19 - 19 - 19 - 19 - 19 - 19	5	30001	pts			Sto	18.0 GHz
Marker			1.0						
Type R	ef Trc	X-value	e i i	Y-value	Func	tion	Fur	nction Resul	t
M1	2	4.9238	32 GHz	34.18 dBµ\	1				
M2	1	4.9338	39 GHz	38.99 dBµV	6				
M3	1	7.3852	27 GHz	39.93 dBµ\					
M4	2	7.3803	74 GHz	34.75 dBµ\	6. L				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 n20
Test voltage	3.3 Vdc

Horizontal

Spectr	um								
Ref Le Att TDF	vel	102.00 c	‼8µ∨ 5dB SWT 68ms	RBW 1 MHz VBW 3 MHz	Mode Au	to Swee	р		į
⊖1Pk Ma	x 🛛 2/	Av Max		84	2				
90 dBµV 80 dBµV					N	13[1] 11[2]		7. 4.	37.77 dBµV 429470 GHz 33.62 dBµV 923820 GHz
fcc-pk3µV	-					-		-	
60 dBµV						-	_	-	
fcc-av3µV	-		M2		sector and		The Design Labor		
40 dBµV		1010	a partition and a state of	Manale and a state of the	al har "Reading of				
a public p									
20 dBµV									
10 dBµV									
Start 1.	0 GH	z	10 10	3000	1 pts	18	812	Sto	p 18.0 GHz
Marker				v .					
Type	Ref	Trc	X-value	Y-value	Fund	tion	E	unction Resul	lt
M1		2	4.92382 GHz	33.62 dBµ	VI.				
M2		1	4.97469 GHz	40.17 dBµ	JV.				
M3		1	7.42947 GHz	37.77 dBµ	JV.				
M4		2	7.38074 GHz	36.48 dBp	.Vt				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



PASS

4.3 Emissions in restricted frequency bands VERDICT:

Restricted Bands of operation of FCC						
Frequency	Frequency	Frequency	Frequency			
(MHz)	(MHz)	(MHz)	(GHz)			
0.090 – 0.110	16.42 – 16.423	399.9 – 410	4.5 – 5.15			
0.495 - 0.505	16.69475 –16.69525	608 – 614	5.35 - 5.46			
2.1735 – 2.1905	16.80425 – 16.80475	960 - 1240	7.25 – 7.75			
4.125 – 4.128	25.5 – 25.67	1300 – 1427	8.025 - 8.5			
4.17725 – 4.17775	37.5 – 38.25	1435 – 1626.5	9.0 - 9.2			
4.20725 - 4.20775	73 – 74.6	1645.5 – 1646.5	9.3 – 9.5			
6.215 – 6.218	74.8 – 75.2	1660 – 1710	10.6 – 12.7			
6.26775 – 6.26825	108 – 121.94	1718.8 – 1722.2	13.25 – 13.4			
6.31175 – 6.31225	123 – 138	2200 – 2300	14.47 – 14.5			
8.291 - 8.294	149.9 – 150.05	2310 – 2390	15.35 – 16.2			
8.362 - 8.366	156.52475 – 156.52525	2483.5 - 2500	17.7 – 21.4			
8.37625 - 8.38675	156.7 – 156.9	2690 – 2900	22.01 – 23.12			
8.81425 – 8.81475	162.0125 – 167.17	3260 - 3267	23.6 - 24.0			
12.29 – 12.293	167.72 – 173.2	3332 - 3339	31.2 – 31.8			
12.51975-12.52025	240 – 285	3345.8 – 3358	36.43 - 36.5			
12.57675-12.57725	322 – 335.4	3600 - 4400				
13.36 – 13.41						
Restricted Bands of oper	ation for IC					
0.090 - 0.110	13.36 - 13.41	960 - 1427	9.0 - 9.2			
0.495 - 0.505	16.42 - 16.423	1435 - 1626.5	9.3 - 9.5			
2.1735 - 2.1905	16.69475 - 16.69525	1645.5 - 1646.5	10.6 - 12.7			
3.020 - 3.026	16.80425 - 16.80475	1660 - 1710	13.25 - 13.4			
4.125 - 4.128	25.5 - 25.67	1718.8 - 1722.2	14.47 - 14.5			
4.17725 - 4.17775	37.5 - 38.25	2200 - 2300	15.35 - 16.2			
4.20725 - 4.20775	73 - 74.6	2310 - 2390	17.7 - 21.4			
5.677 - 5.683	74.8 - 75.2	2483.5 - 2500	22.01 - 23.12			
6.215 - 6.218	108 - 138	2655 - 2900	23.6 - 24.0			
6.26775 - 6.26825	149.9 - 150.05	3260 - 3267	31.2 - 31.8			
6.31175 - 6.31225	156.52475 - 156.52525	3332 - 3339	36.43 - 36.5			
8.291 - 8.294	156.7 - 156.9	3345.8 - 3358	Above 38.6			
8.362 - 8.366	162.0125 - 167.17	3500 - 4400				
8.37625 - 8.38675	167.72 - 173.2	4500 - 5150				
8.41425 - 8.41475	240 - 285	5350 - 5460				
12.29 - 12.293	322 - 335.4	7250 - 7750				
12.51975 - 12.52025	399.9 - 410	8025 - 8500				
12.57675 - 12.57725	608 - 614					



Restricted Band Emissions Limit								
Frequency (MHz)	Field strength (μV/m)	Field strength (dBµV/m)	Measurement distance (m)					
0.009 - 0.49	2400/F(kHz)	48.5 – 13.8	300 _(Note 1)					
0.49 - 1.705	24000/F(kHz)	33.8 - 23	30(Note 1)					
1.705 - 30	30	29.5	30(Note 1)					
30 - 88	100	40	3 (Note 2)					
88 - 216	150	43.5	3 (Note 2)					
216 - 960	200	46	3(Note 2)					
Above 960	500	54	3 (Note 2)					

Note 1: At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Note 2: At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

Test Configuration





Test Procedure

	Ref	erenc	es Rule	Chapter	Description
\square	ANSI C63.10			11.12	Emissions in restricted frequency bands
	ANSI C63.10			11.12.1	Radiated emission measurements
	ANSI C63.10			11.12.2.7	Radiated spurious emission test
			ANSI C63.10	6.4	Radiated emissions from unlicensed wireless devices below 30 MHz
		ANSI C63.10 6		6.5	Radiated emissions from unlicensed wireless devices in the frequency range
					of 30 MHz to 1000 MHz
		ANSI C63.10		6.6	Radiated emissions from unlicensed wireless devices above 1 GHz

Performed measurements

Port under test	Enclosure port			
Test method applied	Conducted measurement			
	Radiated measurement			
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1			
Remark				



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 b
Test voltage	3.3 Vdc

Horizontal

Spectru	ım								
RefLev	vel 1	07.00 dB	uV	- F	BW 1 MHz				
Att	0.000	10	dB SWT	1 ms	BW 3 MHz	Mode	Auto Sween		
SGL Cou	nt 10	0/100	TDF				mane encop		
1Pk Max	e2R	n AvgLog	1						
Limit	t ¢he	ck		8	PASS		M2[2]		29.40 dBµV
100 days	FCC	KB 2310	AV		PASS	-	_		2.389870 GHz
Line	FCC	RB 2310	PK		PASS		M1[1]		38.76 dBµV
90 dBHYe	FCC	RB 2500	AV		PASS	1	- T	12	2.389870 GHz
no dine	FCC	RB 2500	PK		PASS	11	NI		
so asha-						15	N		
FCC RB 23	10 PK		8			1	1		FCC RB 2500 PK_
	T			1		1	8		
60 dBiA/~	-			-			N		
FCC RB 23	10 AV	6				1			FCC RB 2500 AV
50 dBµV-	-				_	11			
				252	MI		hereit		EM
49. dBWYT	Mou	1444044	Authorit	arturate	apple 18 4		- warde	Warden ter and and	topologica the state of the sta
	100	Margaret and	120523-01/2020	Contractor	M2	X	ha		M4
.3Q.dBLAC=	un-		and the second						a the second sec
20 gBhA-				1					
10 dB 0/-									
Start 2.2	CU	2	2		60	1 nte		_	Stop 2 5 CHz
Markor	GHZ				09	1 pts			atup 2.5 GH2
Tunn	and 1	Terel	Manada	- 1	V-ualua	- 1	Cupetion	Ex	metion Docult
Type 1	(e)	1	2 300	97 CU7	29.76 d	9.42	runction	FU	Inction Result
M2	-	2	2,309	B7 GHz	29.40 d	BoV Bov			
M3	-	1	2,483	36 GHz	40.04 d	BuV			
M4	-	2	2.483	36 GHz	29.78 d	8µV			

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com

Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18					
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 b					
Test voltage	3.3 Vdc					

Horizontal

Spectrun	n										
Ref Leve Att Count 100	107. /100	00 dBj 10	JV dB SWT TDF	9 F 1 ms 9 V	BW	1 MHz 3 MHz MO	de Auto) Sweep		4.10	
●1Pk Maxe	2Rm A	vgLog									
Limit Chec		2310 AV		PASS PASS PASS		5	M2[2]			29.22 dBµ 2.389870 GH 39.55 dBu	
90 dBille F	CC RB	2500 2500	AV PK		PAS	5		1		2.389870 GH	
FCC RB 2310	PK_	_						-		FCC RB 2500 PK	
60 dBi M-	AV			-	-			-		FCC RB 2500 AV	
50 dBµV			8			M1			1. Landerson and	M3	
30.d8uV-			and the second	un den wich wird		M2	different sorta			M4	
20 dBµV											
10 dBµV				1					_		
Start 2.3 (GHz		8	785	- 3.9	691 pt:	5	200	11	Stop 2.5 GHz	
Marker				1.9			-		2		
Type Re	f Tro		X-value		- 3	Y-value	Function		Function Result		
M1		1	2.38987 GHz			39.55 dBµV	1 				
M2		2	2.38987 GHz			29.22 dBµV					
M3		1	2.48336 GHz		- 3	42.02 dBµV					
M4		2	2.48	336 GHz		30.52 dBµV					

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)


Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 g
Test voltage	3.3 Vdc

Horizontal

Spectrum									
Ref Level	107.00 df	βuV	RB	W 1 MHz					
Att	10	dB SWT	1 ms - VB	W 3 MHz N	Ande Autr	Sween			
SGL Count	100/100	TDF			1040 11410	- en ege			
●1Pk Max●2	Rm AvgLo	q							
Limit ¢I	neck	1	PA	88	N	12[2]			30.18 dBµV
100 CRAYTE	C.KR.731	VAV	PA	SY .				2.:	89870 GHz
Line FC	C RB 231	OPK	PA	88	N	11[1]			39.11 dBµV
90 dBhye FC	C RB 250	VA 0	PA	ss	- allow they	la l		2.3	389870 GHz
Line FC	C RB 250	DPK	PA	88	1				
BO GRHA-					Jours	1			
FCC R8 2310	PK	1			1	11		FCC I	RB 2500 PK_
				1	11	14			1
60 dBiA/-		-	2	(1	11	_	-	
FCC RB 2310	AV				1	11 6		FCC F	RB 2500 AV
50 dBµV					<u> </u>	11 1	_		
				M1.0	ł	16 %		-	M3
A BARKAN IN TH	Jung Mary	mentand	montheast	and the first of		15 .	alacor alacore porte	when a subscription	- Sugardine
		190010-100-100	and 1000000000000000	M2		1 he	10000	123 - 101	M4
30 0808	يول المستخدم الم	- manana	- and the second se			1 2			and the second second
20 49.44									
20 uopv									
10 dBuV								_	
Start 2.3 GH	Ηz	1.		691 (ats			Ste	p 2.5 GHz
Marker									
Type Ref	Trc	X-value	e	Y-value	Fund	tion	Fu	Inction Resul	t [
M1	1	2.389	87 GHz	39.11 dBµ	1	1			
M2	2	2.389	87 GHz	30.18 dBµ\	V				
M3	1	2.483	36 GHz	38.48 dBµ%	V				
M4	2	2.483	36 GHz	30.04 dBµ\	V.				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 g
Test voltage	3.3 Vdc

Horizontal

Spectru	m)							
Ref Lev Att SGL Cour	el 107.	.00 dB 10	uV dB SWT TDF	● RB 1 ms ● VB	WI1MHz WI3MHz	Mode Au	to Sweep	2	
●1Pk Max	e2Rm /	vgLog	1						
Limit 100 dhuy	Check FCC RB	2310	AV	PA PA	88 5 5		M2[2]		28.95 dBpV 2.389870 GHz
90 dBHYe	FCC RB	2500	AV PK	PA	88 89				2.389870 GHz
FCC RB 23:	10 PK_								FCC RB 2500 PK_
FCC RB 23	10 AV				-		-		FCC RB 2500 AV
50 dBµV-					M1			1	Ma
30 dBuV-	vul-untre			June marked	M2				M4
20 dBµV—	-							-	
10 d8µV-					1				
Start 2.3	GHz		2		691	. pts	- 20		Stop 2.5 GHz
Marker						<i>V</i> 1			
Type R	ef Tr	c	X-value	3	Y-value	Fur	nction	Fu	nction Result
M1		1	2.389	87 GHz	37.52 dB	μV			
M2		2	2.389	87 GHz	28.95 dB	μV			
M3	_	1	2.483	36 GHz	39.10 dB	μV			
M4		2	2.483	36 GHz	29.72 dB	μV			

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2412 MHz, IEEE 802.11 n20
Test voltage	3.3 Vdc

Horizontal

Spectrum									
Ref Level	107.00 d	Βμ٧	🖷 R	BW 1 MHz					
Att	10	dB SWT	1 ms 🖷 V	BW 3 MHz /	Mode Auto	Sweep			
SGL Count	100/100	TDF				105			
●1Pk Max●2	Rm AvgLo	og							
Limit ¢	heck		- F	PASS	M	2[2]			29.30 dBµV
100 CANYTE	C.KR.731	U AV	1	ASS				2.3	89870 GHz
Line FC	C RB 231	O PK		ABS	M	1[1]			38.10 dBµV
90 dBHYe FC	C RB 250	VA DI	F	ASS		e and a start	12	2.3	89870 GHz
BO dBUY	C RB 250	рк	F	ASS	moun			_	
FCC R8 2310	PK			-	from	1	_	FCC F	B 2500 PK_
60 dBi M-	AX 4		÷		1	1	_	TOO T	0.0500 AV
FUC RB 2310	AV.	-		1	ſ			FUCE	8 2500 AV
50 dBµV	- 1			MI		15			M3
AQue Blockmonth	Anala Maryak	and warman and	hall marked	which which which	/	1 114	tomation	and a support of the	a survey and the
30, dBLW				M2		1			M4
20 dBµV				-					
10 dBµV		-						_	
Start 2.3 G	Ηz		(S)	691	pts	ð.		Sto	p 2.5 GHz
Marker									
Type Ref	Trc	X-value	e	Y-value	Func	tion	EL	Inction Result	8
M1	1	2.389	87 GHz	38.10 dBµ	NV V	1			
M2	2	2.389	87 GHz	29.30 dBµ	W.				
MЗ	1	2.483	36 GHz	37.76 dBµ	N.				
M4	2	2.483	36 GHz	29.43 dBµ	W.				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Model	JXC8720-18
Operation Mode (worst case)	Mode 1 @2462 MHz, IEEE 802.11 n20
Test voltage	3.3 Vdc

Horizontal

Spectr	um									
Ref Le	vel 1 unt 10	107.00 dB 10 00/100	μV dB SWT TDF	● RB 1 ms ● VB	W 1 MHz W 3 MHz	Mode Auto	o Sweep			
• 1Pk Ma	xe2R	m AvgLos	1							
100 day	it chi YFCC	eck RB 23TU	AV	P/ 17	188 188		12[2]			28.85 dBµV 2.389870 GHz
90 dBill	FCC	RB 2310	PK AV	P/ P/	155 155	N	11[1]	ĩ.	. ale Alexan	38.32 dBµV 2.389870 GHz
BO GRAN	FCC	RB 2500	РК	P/	155	-	-			
FCC RB 2	310 PI	к				-	-			FCC RB 2500 PK_
FCC RB 2	310 A	V							-	CC RB 2500 AV
50 dBµV	-						-	1	-	L Ma
HR. dBulk	inhan	whitements	minuter	edroghan web	MI	attration	all which a	and f	-	M4
.3Q.dB144		www.www.		and superson		and a start of the	Constant and			
20 dBµV	+		-	, c	-		-	-	-	
10 dBµV	-						1	_	_	
Start 2.	3 GH	z	21	24	691	pts	20	20	10	Stop 2.5 GHz
Marker										
Type	Ref	Trc	X-valu	B	Y-value	Fune	ction	F	unction R	esult
M1	1	1	2.389	87 GHz	38.32 dBj	VL				
M2		2	2,389	87 GHz	28.85 dBp	JV				
M3		1	2.483	36 GHz	39.42 dBp	JV.				
M4		2	2,483	36 GHz	30.04 dBp	IV				

Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



Vertical



Remarks: Y-Value = received value + Correction Factor (Antenna factor + Cable loss - Preamp gain)



4.4 Band Edge

VERDICT: PASS

Standard FCC Part 15 Subpart C Paragraph 15.247(d)		
RF Output power (I	Detection methods)	Limit(dB)
RF Output power(Average detector)	30dBc(Note1)
RF Output pow	er(PK detector)	20dBc(Note2)

Note 1: If maximum conducted (average) output power was used to demonstrate compliance as described in 9.2, then the peak power in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at by LEast 30 dB relative to the maximum in-band peak PSD by LEvel in 100 kHz (i.e., 30 dBc).

Note 2: If the maximum peak conducted output power procedure was used, then the peak output power measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at by least 20 dB relative to the maximum in-band peak PSD by level in 100 kHz (i.e., 20 dBc).

Test Configuration





Test Procedure

	References Rule Chapt			Chapter	Description
\square	ANSI C63.10			6.10	Band-edge testing
		ANSI C63.10		6.10.5	Restricted-band band-edge measurements
1		ANSI C63.10		6.10.6	Marker-delta method
\square	ANSI C63.10		11.12	Emissions in restricted frequency bands	
		ANSI C63.10		11.12.2	Antenna-port conducted measurements
1			ANSI C63.10	11.12.2.3	Quasi-peak measurement procedure
		\boxtimes	ANSI C63.10	11.12.2.4	Peak power measurement procedure
			ANSI C63.10	11.12.2.5	Average power measurement procedures

Performed measurements

Port under test	Antenna port			
Test method applied	Conducted measurement			
		Radiated measurement		
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1			
Remark				



IEEE 802.11 b Results @2412 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2412.0000	6.6

Measurements

RBW	100.000 kHz
VBW	300.000 kHz

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2399.975000	-41.9	28.5	-13.4	PASS
2399.925000	-43.6	30.3	-13.4	PASS
2399.825000	-43.7	30.4	-13.4	PASS
2399.875000	-43.8	30.4	-13.4	PASS
2394.575000	-44.1	30.7	-13.4	PASS
2394.525000	-44.2	30.8	-13.4	PASS
2399.625000	-44.2	30.8	-13.4	PASS
2399.375000	-44.2	30.8	-13.4	PASS
2399.325000	-44.3	30.9	-13.4	PASS
2399.425000	-44.3	30.9	-13.4	PASS
2399.475000	-44.5	31.1	-13.4	PASS
2399.575000	-44.6	31.3	-13.4	PASS
2399.725000	-44.7	31.3	-13.4	PASS
2399.775000	-44.7	31.3	-13.4	PASS
2394.625000	-44.8	31.5	-13.4	PASS



IEEE 802.11 b Results @2462 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2462.0000	6.0

Measurements	
RBW	100.000 kHz
VBW	300.000 kHz

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2486.375000	-46.8	32.8	-14.0	PASS
2486.425000	-47.1	33.1	-14.0	PASS
2496.025000	-47.2	33.2	-14.0	PASS
2495.975000	-47.3	33.3	-14.0	PASS
2488.825000	-47.6	33.6	-14.0	PASS
2485.825000	-47.6	33.6	-14.0	PASS
2493.175000	-47.8	33.8	-14.0	PASS
2498.025000	-47.8	33.8	-14.0	PASS
2493.825000	-47.8	33.8	-14.0	PASS
2490.125000	-47.8	33.8	-14.0	PASS
2493.875000	-47.8	33.8	-14.0	PASS
2485.775000	-47.9	33.9	-14.0	PASS
2488.775000	-47.9	33.9	-14.0	PASS
2485.675000	-48.0	33.9	-14.0	PASS
2498.675000	-48.0	34.0	-14.0	PASS



IEEE 802.11 g Results @2412 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2412.0000	-0.2

Measurements

RBW	100.000 kHz
VBW	300.000 kHz

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2399.975000	-33.2	13.0	-20.2	PASS
2399.925000	-33.4	13.2	-20.2	PASS
2399.875000	-34.5	14.2	-20.2	PASS
2399.825000	-34.8	14.6	-20.2	PASS
2399.525000	-34.9	14.7	-20.2	PASS
2399.725000	-35.1	14.8	-20.2	PASS
2399.775000	-35.1	14.9	-20.2	PASS
2399.475000	-35.1	14.9	-20.2	PASS
2399.575000	-35.6	15.4	-20.2	PASS
2399.625000	-36.3	16.1	-20.2	PASS
2399.675000	-36.3	16.1	-20.2	PASS
2399.325000	-36.5	16.2	-20.2	PASS
2399.375000	-36.7	16.5	-20.2	PASS
2399.125000	-37.0	16.8	-20.2	PASS
2399.425000	-37.0	16.8	-20.2	PASS



IEEE 802.11 g Results @2462 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2462.0000	-1.6

Measurements	
RBW	100.000 kHz
VBW	300.000 kHz

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2484.025000	-47.1	25.5	-21.6	PASS
2484.075000	-47.2	25.6	-21.6	PASS
2483.975000	-47.7	26.0	-21.6	PASS
2486.025000	-47.7	26.0	-21.6	PASS
2493.975000	-47.8	26.1	-21.6	PASS
2485.975000	-47.9	26.3	-21.6	PASS
2484.425000	-47.9	26.3	-21.6	PASS
2486.375000	-48.0	26.4	-21.6	PASS
2494.025000	-48.0	26.4	-21.6	PASS
2484.825000	-48.1	26.5	-21.6	PASS
2484.875000	-48.1	26.5	-21.6	PASS
2486.425000	-48.2	26.6	-21.6	PASS
2484.125000	-48.2	26.6	-21.6	PASS
2484.375000	-48.2	26.6	-21.6	PASS
2486.325000	-48.4	26.8	-21.6	PASS



IEEE 802.11 n20 Results @2412 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2412.0000	-1.1

Measurements		
RBW	100.000 kHz	
VBW	300.000 kHz	

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2399.875000	-34.2	13.1	-21.1	PASS
2399.925000	-34.3	13.2	-21.1	PASS
2399.975000	-34.5	13.4	-21.1	PASS
2399.825000	-34.9	13.8	-21.1	PASS
2399.625000	-35.7	14.6	-21.1	PASS
2399.775000	-35.8	14.7	-21.1	PASS
2399.725000	-35.9	14.8	-21.1	PASS
2399.575000	-36.0	14.9	-21.1	PASS
2399.675000	-36.2	15.1	-21.1	PASS
2399.525000	-36.7	15.6	-21.1	PASS
2399.375000	-36.8	15.7	-21.1	PASS
2399.325000	-37.2	16.1	-21.1	PASS
2399.475000	-37.2	16.1	-21.1	PASS
2399.425000	-37.3	16.2	-21.1	PASS
2399.225000	-37.7	16.6	-21.1	PASS



IEEE 802.11 n20 Results @2462 MHz



Inband Peak

Frequency	Level
(MHz)	(dBm)
2462.0000	-1.4

Measurements		
RBW	100.000 kHz	
VBW	300.000 kHz	

Frequency	Level	Margin	Limit	Result
(MHz)	(dBm)	(dB)	(dBm)	
2493.875000	-44.5	23.2	-21.4	PASS
2493.925000	-45.1	23.7	-21.4	PASS
2493.825000	-45.4	24.0	-21.4	PASS
2483.525000	-46.4	25.0	-21.4	PASS
2483.575000	-46.4	25.1	-21.4	PASS
2485.125000	-46.7	25.4	-21.4	PASS
2483.625000	-47.3	25.9	-21.4	PASS
2485.075000	-47.3	25.9	-21.4	PASS
2496.325000	-47.3	26.0	-21.4	PASS
2496.375000	-47.4	26.0	-21.4	PASS
2484.475000	-47.4	26.0	-21.4	PASS
2484.525000	-47.4	26.0	-21.4	PASS
2485.175000	-47.4	26.0	-21.4	PASS
2494.925000	-47.5	26.1	-21.4	PASS
2494.975000	-47.5	26.2	-21.4	PASS



4.5 Duty cycle

VERDICT: PASS

Test Configuration



Test Procedure

Refe	ences Rule	Chapter	Description
\boxtimes	ANSI C63.10	11.6	Duty cycle (D), transmission duration (T), and maximum
			power control level

Performed measurements

Port under test	Antenna port		
Test method applied	Conducted measurement		
		Radiated measurement	
Test setup	Refer to the Annex 3 for test setup photo(s).		
Operating mode(s) used	Mode 1		
Remark			





Test Mode	Tx On (ms)	Tx On + Tx Off (ms)	Duty Cycle
IEEE 802.11 g			100%

Note 1: T means 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.

Note 2: According to KDB 558074, when test for Radiated Emission Band Edge and Radiated Emission, for average detector set: VBW ≥ 1/T will be used.









4.6 DTS Bandwidth VERDICT: PASS

Standard	FCC Part 15 Subpart C Paragraph 15.247 (a)(2)			

Systems using digital modulation techniques operate in the 2400-2483.5 MHz .The minimum 6 dB bandwidth shall be at by least 500 kHz

Test Configuration



Test Procedure

	Reference Rule		Chapter	Description
\square	ANSI	C63.10	11.8	DTS bandwidth
		ANSI C63.10	11.8.1	Option 1
		ANSI C63.10	11.8.2	Option 2

Performed measurements

Port under test	Antenna port			
Test method applied	Conducted measurement			
	Radiated measurement			
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1			
Remark				

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com













Report no.: 4394324.51









Report no.: 4394324.51





















Report no.: 4394324.51







4.7 Fundamental emission output power VERDICT: PASS

Standard FCC Pa			FCC Pa	art 15 Subpart C Paragraph 15.247 (b)(3)	
\boxtimes	GTX <	GTX <6dBi		Pout≤30dBm	
	GTX 🗆	>6dBi			
		Non-Fix point-point		Pout≤30-(GTX -6)	
		Fix point-point		Pout≤30-[(GTX-6)]/3	
		Point-to-multipoint		Pout≤30-(GTX-6)	
		Overlap Beams		Pout≤30-[(GTX-6)]/3	
		Aggregate power transmitted simultaneously on all beams		Pout≤30-[(GTX-6)]/3	
	singby LE directional beam		l	Pout≤30-[(GTX-6)]/3+8dB	
Note Note	Note 1 : GTX directional gain of transmitting antennas. Note 2 : Pout is maximum peak conducted output power .				

Test Configuration





Test Procedure

	References Rule			Chapter	Description		
\square	ANSI C63.10			11.9	Fundamental emission output power		
	ANSI C63.10			11.9.1	Maximum peak conducted output power		
	ANSI C63.10		11.9.1.1	RBW ≥ DTS bandwidth			
	ANSI C63.10		11.9.1.2	Integrated band power method			
		\square	ANSI C63.10	11.9.1.3	PKPM1 Peak power meter method		

Performed measurements

Port under test	Antenna port			
Test method applied	Conducted measurement			
	Radiated measurement			
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1			
Remark				

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Results

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)	Result
	1	2412	16.2	≤30	18.8	≤36	Pass
IEEE 802 11 b	6	2437	16.7	≤30	19.3	≤36	Pass
002.115	11	2462	14.6	≤30	17.4	≤36	Pass
	1	2412	12.4	≤30	15.0	≤36	Pass
IEEE 802 11 a	6	2437	15.6	≤30	18.2	≤36	Pass
002.11 g	11	2462	13.3	≤30	15.9	≤36	Pass
	1	2412	11.8	≤30	14.4	≤36	Pass
IEEE 802 11 n20	6	2437	14.3	≤30	16.9	≤36	Pass
002.111120	11	2462	12.1	≤30	14.7	≤36	Pass



4.8 Power Density VERDICT: PASS

Standard	FCC Part 15 Subpart C Paragraph 15.247 (b)(3)				
Power Spectral Density≤8dBm/3kHz					

Test Configuration



Test Procedure

	References Rule		Chapter	Description	
\boxtimes	ANSI C63.10		11.10	Maximum power spectral density level in the fundamental emission	
	ANSI C63.10		11.10.2	Method PKPSD (peak PSD)	
	ANSI C63.10 ANSI C63.10 ANSI C63.10 ANSI C63.10 ANSI C63.10 ANSI C63.10		11.10.3	Method AVGPSD-1(Duty cycle≥98%)	
			11.10.4	Method AVGPSD-1A(Duty cycle≥98%)	
			11.10.5	Method AVGPSD-2(Duty cycle<98%)	
			11.10.6	Method AVGPSD-2A(Duty cycle<98%)	
		ANSI C63.10	11.10.7	Method AVGPSD-3	
		ANSI C63.10	11.10.8	Method AVGPSD-3A	

Performed measurements

Port under test	Antenna port			
Test method applied		Conducted measurement		
		Radiated measurement		
Test setup	Refer to the Annex 3 for test setup photo(s).			
Operating mode(s) used	Mode 1			
Remark				

DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China

Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China Tel +86 20 6661 2000 Fax +86 20 6661 2001 www.dekra-certification.com



Results

Mode	Channel	Test Frequency (MHz)	Power Output (dBm)	Limit (dBm/3kHz)	Result
	1	2412	6.500	≤8	Pass
IEEE 802.11 b	6	2437	3.280	≤8	Pass
	11	2462	6.186	≤8	Pass
	1	2412	-0.318	≤8	Pass
IEEE 802.11 g	6	2437	-1.791	≤8	Pass
	11	2462	-1.619	≤8	Pass
	1	2412	-1.248	≤8	Pass
IEEE 802.11	6	2437	-2.454	≤8	Pass
	11	2462	-1.491	≤8	Pass

Data of IEEE 802.11 b



Peak Power Spectral Density

RBW=100 KHz, VBW=300 KHz



Peak Power Spectral Density



RBW=100 KHz, VBW=300 KHz

Peak Power Spectral Density





Data of IEEE 802.11 g


Peak Power Spectral Density





Peak Power Spectral Density



RBW=100 KHz, VBW=300 KHz



Peak Power Spectral Density



RBW=100 KHz, VBW=300 KHz



Peak Power Spectral Density



RBW=100 KHz, VBW=300 KHz



Peak Power Spectral Density



RBW=100 KHz, VBW=300 KHz





RBW=100 KHz, VBW=300 KHz



5 **IDENTIFICATION OF THE EQUIPMENT UNDER TEST**

The photographs show the tested device.

Refer to documents External photo and Internal photo.



ANNEX 1 – MEASUREMENT UNCERTAINTY

Test Item	Uncertainty		
Occupied Channel Bandwidth	±0,7%		
RF Output power, conducted	±0,6dB		
Power Spectral Density, Conducted	±0,6dB		
Unwanted Emissions, Conducted	±0.7dB		
Spurious (30-1000MHz)	±4,4dB		
Spurious (1-18GHz)	±4,4dB		



ANNEX 2 - USED EQUIPMENT

Continuous disturbances conducted (150 kHz to 30 MHz)

Item	Instrumentation	Manufacturer	Model No.	Serial No.	DEKRA No.	Cal. Due date
1	EMI Receiver	R&S	ESCI	101206	G/L858	2023/07/21
2	LISN	R&S	ENV216	101336	G/L859	2023/07/21
3	Shielding Room	Changzhou Feite	/	/	G/L861	2023/06/17

Emissions in non-restricted frequency bands/ Emissions in restricted frequency bands

Item	Instrumentation	Manufacturer	Model No.	Serial No.	DEKRA No.	Cal. Due date
1	EMI receiver	R&S	ESCI	101205	G/L857	2023/07/21
2	Antenna (30MHz-3GHz)	SCHWARZBECK	VULB9163	506	G/L864	2022/10/26
3	Chamber	ETS	/	/	G/L856	2024/06/10
4	Antenna (1GHz-18GHz)	R&S	HF907	102306	G/L1236	2023/02/23
5	Horn antenna preamplifier	Schwarzbeek	SCU-18	102234	G/L1236-1	2023/02/21
6	Spectrum analyzer	R&S	FSV40	SN101012	G/L1235	2023/01/17
7	HF antenna (18 – 26.5 GHz)	ETS	3160-09	00164643	G/L1237	2023/01/16
8	High frequency antenna preamplifier (18 – 26.5 GHz)	Schwarzbeck	SCU-26	1879064	G/L1237-1	2023/01/10
9	Broadband horn antenna (15 – 40 GHz)	Schwarzbeck	BBHA9170	00908	GZ1901	2023/05/06
10	High frequency antenna preamplifier (18 – 26.5 GHz)	Schwarzbeck	SCU-26	1879064	G/L1237-1	2023/01/10
11	Annular magnetic field antenna	TESEQ	HLA6121	540045	GZ1905	2023/05/12
12	Test software	AUDIX	e3	Version 6.130520		

Duty cycle/Band Edge/Fundamental emission output power/DTS Bandwidth/Power Spectral Density

ltem	Instrumentation	Manufacturer	Model	Serial no.	DEKRA No.	Cal Due date
1	Spectrum analyzer	R&S	FSV	SN101012	G/L1235	2023/01/17
2	Chamber	ETS	/	/	G/L856	2024/06/10
3	OSP	R&S	OSP 150	101907	GZ1894	2023/04/27
4	Test software	R&S	WMS32	Version		
				11.40.00		



ANNEX 3 - TEST PHOTOS

Refer to document Test setup.

--- END ---