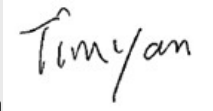


Test report No: 4394324.58

TEST REPORT

Radio Spectrum Matters (RF)

Identification of item tested	COMBO module
Trademark	/
Model and /or type reference	JXC8720-18
FCC ID	PUU-CFIXCNLRCRV
Features	3,3 Vdc
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	KDB 447498 D01V06 FCC Part 1.1310
Verdict Summary	COMPLIANCE
Tested by (name & signature)	Johnny Bo  Johnny Bo
Approved by (name & signature)	Tim Yan  Tim Yan
Date of issue	2022-12-06
Report template No	TRF_EMC 2017-06- FCC_Exposure

INDEX

	page
General conditions.....	3
Uncertainty.....	3
Environmental conditions.....	3
Possible test case verdicts	3
Definition of symbols used in this test report.....	4
Abbreviations	4
Document History	4
Remarks and Comments	4
1 General Information	5
1.1 General Description of the Item(s)	5
1.2 Test data	6
1.3 The environment(s) in which the EUT is intended to be used	6
2 Description of Test Setup	7
2.1 Operating mode(s) used for tests.....	7
2.2 Support / Auxiliary equipment / unit / software for the EUT	7
2.3 Test Configuration / Block diagram used for tests	7
3 RF Exposure Evaluation.....	8
3.1 Limits	8
3.2 Test Procedure.....	9
3.3 Test Result	9

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	15 °C – 35 °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 measured	N/M

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
U_N	: Nominal voltage
T_x	: Transmitter
R_x	: Receiver
N/A	: Not Applicable
N/M	: Not Measured

DOCUMENT HISTORY

Report nr.	Date	Description
4394324.56	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.....	/
Model / Type number	JXC8720-18
FCC ID	PUU-CFIXCNLRCRV
Ratings.....	3,3 Vdc
Manufacturer/Factory.....	Same as applicant

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

Rated power supply	Voltage and Frequency		Reference poles				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☒	DC: 3,3 V					
	☐	Battery: 3 V					
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 which intended for residential use, the product contains electronic control circuitry.

Copy of marking plate:
No provide.

1.2 Test data

Test Location	DEKRA Testing and Certification (Shanghai) Ltd. Guangzhou Branch Block 5, No.3, Qiyun Road, Huangpu District, Guangzhou, Guangdong, China FCC Designation Number: CN1324; ISED CAB identifier: CN0130
Date of receipt of test item	2022-09-02
Date (s) of performance of tests	2022-09-02 to 2022-10-19

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):

☒	Residential (domestic) environment.
☒	Commercial and light-industrial environment.
☐	Industrial environment.

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 mode	Operating mode description	Used for methos	
		Conducted	Radiated
1	Transmitting at WIFI	☒	☐
2		☐	☐
3		☐	☐
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
---	---	---	---
Supplemental information: ---			

2.3 Test Configuration / Block diagram used for tests

Refer to Annex 3.

3 RF EXPOSURE EVALUATION

3.1 Limits

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	F/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	F/1500	6
1500-100,000	--	--	1	30

F= Frequency in MHz

Friis Formula

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

3.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

The temperature and related humidity: 23°C and 50% RH.

3.3 Test Result

Test Mode	Frequency Band (MHz)	Maximum Conducted power (dBm)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm ²)	Power Density Limit (mW/cm ²)
WIFI	2412 ~ 2462	16.7	19.3	0.016	1

Note: The safe use distance of the EUT is 20cm

--- END ---