

Test report No: 4394326.55

TEST REPORT

Radio Spectrum Matters (RF)

Identification of item tested	Module
Trademark	/
Model and /or type reference	ZXWCAK801AE-M3-01
FCC ID	PUU-CAN06DW
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
Approved by (name & signature)	Tim Yan
Date of issue	2023-02-05
Report template No	TRF_EMC 2017-06- FCC_Exposure

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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
4394326.55	2023-02-05	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	Module
Trademark.....	/
Model / Type number	ZXWCAK801AE-M3-01
FCC ID	PUU-CAN06DW
Ratings.....	3,3 Vdc
Manufacturer/Factory.....	Same as applicant

Operating frequency range(s).....	2402 MHz – 2480 MHz
Type of Modulation	GFSK
Maximum e.i.r.p	-2.6 dBm
Antenna type.....	Integral PCB Antenna
Operating Temperature Range.....	-40 °C – 105 °C
Antenna gain.....	2.1 dBi
Adaptive/ non-adaptive equipment	Adaptive

Rated power supply	Voltage and Frequency	Reference poles				
		L1	L2	L3	N	PE
	☐ AC: 120 V, 60 Hz	☐	☐	☐	☐	☐
	☒ 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 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 proprietary 1 Mbps	☒	☐
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
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Supplemental information: ---			

2.3 Test Configuration / Block diagram used for tests

Refer to Annex 3.

3 RF EXPOSURE EVALUATION

3.1 Limits

According to KDB 447498 D01 General RF Exposure Guidance v06: 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 Table B.2.

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)									
	5	10	15	20	25	30	35	40	45	50
300	39	65	88	110	129	148	166	184	201	217
450	22	44	67	89	112	135	158	180	203	226
835	9	25	44	66	90	116	145	175	207	240
1900	3	12	26	44	66	92	122	157	195	236
2450	3	10	22	38	59	83	111	143	179	219
3600	2	8	18	32	49	71	96	125	158	195
5800	1	6	14	25	40	58	80	106	136	169

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)	Conducted RF Power Output (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)	Maximum Power (mW)	Limit of Power (mW)
BLE	2400 ~ 2483.5	-4.7	2.1	-2.6	0.54	3

Remark:

The test separation distances at 5 mm.

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