



Test report No:
20A0396R-RF-US-P20V01

FCC TEST REPORT

Product Name	Dual mode Full Color A19
Trademark	GE
Model and /or type reference	CLEDA199CD1
FCC ID	PUU-A19-DMFCII
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 Part1.1310
Verdict Summary	IN COMPLIANCE
Documented by (name / position & signature)	Kitty Li/Project Assistant 
Reviewed by (name / position & signature)	Frank He/ Technical Supervisor 
Approved by (name / position & signature)	Jack Zhang/ Supervisor 
Date of issue	2020-12-02
Report template No	Template_FCC MPE-RF-V1.0

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COMPETENCES AND GUARANTEES

DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

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The results presented in this Test Report apply only to the particular item under test established in this document.

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GENERAL CONDITIONS

Test Location	No. 99, Hongye Road, Suzhou Industrial Park Suzhou, 215006, P.R. China
Date(receive sample)	Oct. 16, 2020
Date (start test)	Oct. 17, 2020
Date (finish test)	Nov. 10, 2020

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.
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4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

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%

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

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

TEST FACILITY

USA : FCC Designation Number: CN1199

DOCUMENT HISTORY

Report No.	Version	Description	Issued Date
20A0396R-RF-US-P20V01	V1.0	Initial issue of report.	2020-11-10
20A0396R-RF-US-P20V01	V1.1	P8, added test data of simultaneous transmission	2020-12-02

REMARKS AND COMMENTS

1. The equipment under test (EUT) does meet the essential requirements of the stated standard(s)/test(s).
2. These test results on a sample of the device are for the purpose of demonstrating Compliance with KDB 447498 and FCC Part 1.1310
3. The measurement result is considered in conformance with the requirement if it is within the prescribed limit, It is not necessary to account the uncertainty associated with the measurement result.
4. The test results presented in this report relate only to the object tested.
5. The test report shall not be reproduced without the written approval of DEKRA Testing and Certification (Suzhou) Co., Ltd.
6. This report will not be used for social proof function in China market.

1. RF Exposure Evaluation

1.1.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: $Pd = (Pout \cdot G) / (4 \cdot \pi \cdot r^2)$

Where

Pd = power density in mW/cm²

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

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

Pd 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.

1.2. 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: 18°C and 78% RH.

1.3. Test Result of RF Exposure Evaluation

Product	:	Dual mode Full Color A19
Test Item	:	RF Exposure Evaluation
Test Site	:	AC-6

Antenna Information

BT

Antenna model / type number.....:	N/A		
Antenna serial number.....:	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX	
	<input type="checkbox"/>	2TX + 2RX	
	<input type="checkbox"/>	Others:.....	
Antenna technology	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> CDD
			<input type="checkbox"/> Beam-forming
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole
			<input type="checkbox"/> Sectorized
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/> Ceramic Chip
			<input type="checkbox"/> PIFA
			<input checked="" type="checkbox"/> Monopole
			<input type="checkbox"/> Others.....
Antenna Gain	1.62 dBi		

WIFI

Antenna model / type number.....:	N/A		
Antenna serial number.....:	N/A		
Antenna Delivery	<input checked="" type="checkbox"/>	1TX + 1RX	
	<input type="checkbox"/>	2TX + 2RX	
	<input type="checkbox"/>	Others:.....	
Antenna technology	<input checked="" type="checkbox"/>	SISO	
	<input type="checkbox"/>	MIMO	<input type="checkbox"/> Basic
			<input type="checkbox"/> CDD
			<input type="checkbox"/> Sectorized
			<input type="checkbox"/> Beam-forming
Antenna Type	<input type="checkbox"/>	External	<input type="checkbox"/> Dipole
			<input type="checkbox"/> Sectorized
	<input checked="" type="checkbox"/>	Internal	<input type="checkbox"/> PIFA
			<input checked="" type="checkbox"/> PCB
			<input type="checkbox"/> Metal Antenna
Antenna Gain	-0.55 dBi		

Power Density

The tune-up power is 0.5 dB, so the maximum EIRP we used to calculate RF exposure is 11.19 dBm for Bluetooth and 24.58 dBm for WIFI.

Standalone modes:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Limit of Power Density S(mW/cm ²)	Power Density at R = 20 cm (mW/cm ²)
BT	2400 ~ 2483.5	11.19	1	0.0026
WIFI	2400 ~ 2483.5	24.58	1	0.0571

Simultaneous transmission:

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)		Limit of Power Density S(mW/cm ²)	Power Density at R = 20 cm (mW/cm ²)		Rate	Limit
		BT	WIFI		BT	WIFI		
BT+WIFI	2400 ~ 2483.5	11.19	24.58	1	0.0026	0.0571	0.0597	1

Note: The safety distance is 20cm for Dual mode Full Color A19 without any other radio equipment.

_____ The End _____