

Maximum Permissible Exposure Report

For

Shenzhen Qiyue Optronics Company Limited

Flat3, Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128, Shangmeilin, Futian District, Shenzhen, China

FCC ID: XOMRNSMU4336A

FCC Rule(s):	<u>FCC 47CFR Part 1.1310</u>
Product Description:	<u>43 inches SMART 4K UHD TV</u>
Tested Model:	<u>D43GA064-U-A-I RNSMU4336</u> <u>XXXXXXXXXXXX43XXXXXXXXXXXX</u> <u>(Where "X" can be any alphanumeric of a-z, A-Z or 0-9 or blank & "-".)</u>
Report No.:	<u>SEM1811039-2</u>
Sample Receipt Date:	<u>October 23, 2018</u>
Tested Date:	<u>October 24 ~ November 22, 2018</u>
Issued Date:	<u>November 23, 2018</u>
Tested By:	<u>Jason Su / Engineer</u> 
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Prepared By:	

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information	
Applicant:	Shenzhen Qiyue Optronics Company Limited
Address of applicant:	Flat3,Tower 3, Excellence Meilin Center Plaza, Zhongkang Road 128, Shangmeilin, Futian District, Shenzhen, China
Manufacturer:	SHENZHEN QIYUE OPTRONICS COMPANY LIMITED BRANCH
Address of manufacturer:	SEIYU INDUSTRIAL PARK, DA SAN VILLAGE, DA SHUI KENG, GUANLAN TOWN, LONGHUA NEW DISTRICT, SHENZHEN, P.R.C

General Description of EUT	
Product Name:	43 inches SMART 4K UHD TV
Trade Name:	RCA
Model No.:	D43GA064-U-A-I RNSMU4336 XXXXXXXXXXXX43XXXXXXXXXXXX (Where "X" can be any alphanumeric of a-z, A-Z or 0-9 or blank & "-".)
Test Model(s):	RNSMU4336
Rated Voltage:	AC 100-120V~ 60Hz, 68W
Power Adapter Model:	/
Note: The test data is gathered from a production sample provided by the manufacturer.	

Technical Characteristics of EUT	
Frequency Range:	IEEE 802.11b/ g / nHT20: 2412MHz~2462MHz IEEE802.11nHT40: 2422MHz~2452MHz
RF Output Power:	Max output power in total is 12.69dBm (Conducted)
Modulation:	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Quantity of Channels:	11 for 802.11b/g/n(HT20); 7 for 802.11n(HT40)
Type of Antenna:	Wi-Fi Antenna
Antenna Gain:	Antenna 1: 3 dBi Antenna 2: 3 dBi

1.2 Standard Applicable

According to § 1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(b) Limits for General Population / Uncontrolled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-100000	/	/	1	30

Note: f = frequency in MHz; * = Plane-wave equivalents power density

1.3 MPE Calculation Method

$$S = (30 \cdot P \cdot G) / (377 \cdot R^2)$$

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.4 MPE Calculation Result

Model No.: D43GA064-U-A-I

XXXXXXXXXXXX43XXXXXXXXXXXX

(Where "X" can be any alphanumeric of a-z, A-Z or 0-9 or blank & "-".)

FCC ID: XOMRNSMU4336A

Device category: Mobile device

Maximum peak output power: 11.29(dBm)

Maximum peak output power at antenna input terminal: 13.5(mW)

Prediction distance: >20(cm)

Prediction frequency: 2437 (MHz)@ N20

Antenna gain: 3.0 (dBi)

Directional gain: 2.0(numeric)

The worst case is power density at prediction frequency at 20cm: 0.0054(mw/cm²)

MPE limit for general population exposure at prediction frequency: 1 (mw/cm²)

$$0.0054(\text{mw}/\text{cm}^2) < 1 (\text{mw}/\text{cm}^2)$$

So the transmitter complies with the RF exposure requirements and the SAR is not required.