

## FCC 47 CFR MPE REPORT

Anhui Grizzly Vision Technology Co.,Ltd

58" ULTRA HD SMART TV(ATSC TUNER)

Model Number: RWOSU5847-B

Additional Model: RWOSU5849, RWOSU5850, PLED5838-UHDSM,  
RHOS583SM, RTU5850, RHOS582SM

FCC ID: 2AXAQ-RCA-HX-58

Prepared for:	Anhui Grizzly Vision Technology Co.,Ltd
	High-tech Industrial Park,High-tech Zone,Huainan,Anhui,China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R2109104
Date of Test:	Jul. 29~Sep. 07, 2021
Date of Report:	Sep. 08, 2021



## Maximum Permissible Exposure

### 1. Applicable Standards

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

#### 1.1. Limits for Maximum Permissible Exposure (MPE)

##### (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 <sup>2</sup> )	Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> 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
1500-10000			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 <sup>2</sup> )	Averaging Times   E   <sup>2</sup> ,   H   <sup>2</sup> 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
1500-10000			1.0	30

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

## 1.2. MPE Calculation Method

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: Pd (W/m}^2\text{)} = \frac{E^2}{377}$$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$$Pd = \frac{30 \times P \times G}{377 \times d^2}$$

From the peak EUT RF output power, the minimum mobile separation distance,  $d=0.2\text{m}$ , as well as the gain of the used antenna, the RF power density can be obtained

## 2. Conducted Power Result

Antenna	Mode (MHz)	Frequency (MHz)	MAX Peak output power (dBm)	MAX Peak output power (mW)	Target power (dBm)
0	GFSK 1M-BLE	2480	3.15	2.0654	3±1
0	GFSK-2M-BLE	2480	3.20	2.0893	3±1
0	GFSK-BT	2480	3.25	2.1135	3±1
0	8-DPSK-BT	2480	6.08	4.0551	6±1
1	IEEE 802.11b	2412	16.65	46.2381	16±1
1	IEEE 802.11g	2412	20.36	108.6426	20±1
1	IEEE 802.11n HT20 (2.4G)	2412	18.65	73.2825	18±1
1	IEEE 802.11n HT40 (2.4G)	2422	18.96	78.7046	18±1
1	IEEE 802.11a	5240	13.31	21.4289	13±1
1	IEEE 802.11n HT20 (5G)	5240	11.67	14.6893	11±1
1	IEEE 802.11ac VHT20 (5G)	5240	11.90	15.4882	11±1
1	IEEE 802.11n HT40 (5G)	5230	11.69	14.7571	11±1
1	IEEE 802.11acVHT40 (5G)	5230	11.41	13.8357	11±1
1	IEEE 802.11acVHT80 (5G)	5210	10.72	11.8032	10±1
2	IEEE 802.11b	2412	17.62	57.8096	17±1
2	IEEE 802.11g	2412	21.55	142.8894	21±1
2	IEEE 802.11n HT20 (2.4G)	2437	20.58	114.2878	20±1
2	IEEE 802.11n HT40 (2.4G)	2452	20.84	121.3389	20±1
2	IEEE 802.11a	5785	11.99	15.8125	11±1
2	IEEE 802.11n HT20 (5G)	5785	10.84	12.1339	10±1

2	IEEE 802.11ac VHT20(5G)	5785	10.68	11.6950	10±1
2	IEEE 802.11n HT40 (5G)	5795	10.68	11.6950	10±1
2	IEEE 802.11acVHT40 (5G)	5795	10.07	10.1625	10±1
2	IEEE 802.11acVHT80 (5G)	5775	9.71	9.3541	9±1

### 3. Calculated Result and Limit

#### Bluetooth Antenna 0

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
		(dBi)	(Linear)			
2.4G Band						
BLE	4	2	1.585	0.0008	1	Complies
BT	7	2	1.585	0.0016	1	Complies

#### W-Fi Antenna 1

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	17	2	1.585	0.0158	1	Complies
IEEE 802.11g	21	2	1.585	0.0397	1	Complies
IEEE 802.11n HT20	19	2	1.585	0.0250	1	Complies
IEEE 802.11n HT40	19	2	1.585	0.0250	1	Complies
5G Band						
IEEE 802.11a	14	2	1.585	0.0079	1	Complies
IEEE 802.11n HT20	12	2	1.585	0.0050	1	Complies
IEEE 802.11ac VHT20	12	2	1.585	0.0050	1	Complies
IEEE 802.11n HT40	12	2	1.585	0.0050	1	Complies
IEEE 802.11ac VHT40	12	2	1.585	0.0050	1	Complies
IEEE 802.11ac VHT80	11	2	1.585	0.0040	1	Complies

**Wi-Fi Antenna 2**

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
		(dBi)	(Linear)			
<b>2.4G Band</b>						
IEEE 802.11b	18	2	1.585	0.0199	1	Complies
IEEE 802.11g	22	2	1.585	0.0500	1	Complies
IEEE 802.11n HT20	21	2	1.585	0.0397	1	Complies
IEEE 802.11n HT40	21	2	1.585	0.0397	1	Complies
<b>5G Band</b>						
IEEE 802.11a	12	2	1.585	0.0050	1	Complies
IEEE 802.11n HT20	11	2	1.585	0.0040	1	Complies
IEEE 802.11ac VHT20	11	2	1.585	0.0040	1	Complies
IEEE 802.11n HT40	11	2	1.585	0.0040	1	Complies
IEEE 802.11ac VHT40	11	2	1.585	0.0040	1	Complies
IEEE 802.11ac VHT80	10	2	1.585	0.0032	1	Complies

**Wi-Fi Antenna 1+2**

Mode	Power Density (S) (mW/cm <sup>2</sup> ) Antenna 1	Power Density (S) (mW/cm <sup>2</sup> ) Antenna 2	Power Density (S) (mW/cm <sup>2</sup> ) Total	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
<b>2.4G Band</b>					
IEEE 802.11n HT20	0.0250	0.0397	0.0647	1	Complies
IEEE 802.11n HT40	0.0250	0.0397	0.0647	1	Complies
<b>5G Band</b>					
IEEE 802.11n HT20	0.0050	0.0040	0.0090	1	Complies
IEEE 802.11ac VHT20	0.0050	0.0040	0.0090	1	Complies
IEEE 802.11n HT40	0.0050	0.0040	0.0090	1	Complies
IEEE 802.11ac VHT40	0.0050	0.0040	0.0090	1	Complies
IEEE 802.11ac VHT80	0.0040	0.0032	0.0072	1	Complies

**Bluetooth+2.4G Wi-Fi+5G Wi-Fi**

MAX Power Density (S) (mW/cm <sup>2</sup> ) Bluetooth	MAX Power Density (S) (mW/cm <sup>2</sup> ) 2.4G WiFi ANT1+ANT2	MAX Power Density (S) (mW/cm <sup>2</sup> ) 5G WiFi ANT1+ANT2	Power Density (S) (mW/cm <sup>2</sup> ) Total	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
0.0016	0.0647	0.0090	0.0753	1	Complies

Note: 2.4 and 5GHz bands are share an antenna, Can't both the 2.4 and 5 GHz bands operate simultaneously.

**End of Test Report**