FCC 47 CFR MPE REPORT

Anhui Grizzly Vision Technology Co.,Ltd

55" ULTRA HD SMART TV(ATSC TUNER)

Model Number: RWOSU5549

Additional Model: RWOSQU5550, PLEDQ5560-UHDW, RNSMU5521,

RQSM5522, RNSMU5536-B, RTU5540-C

FCC ID: 2AXAQ-RCA-HX-55

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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^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
1500-10000			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^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
1500-10000			1.o	30

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

1.2. MPE Calculation Method

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

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=0.2m, 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)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)
0	GFSK 1M-BLE	2480	3.14	2.0606	3±1
0	GFSK-2M-BLE	2480	2.84	1.9231	2±1
0	GFSK-BT	2480	3.31	2.1429	3±1
0	8-DPSK-BT	2480	6.22	4.1879	6±1
1	IEEE 802.11b	2412	17.14	51.7607	17±1
1	IEEE 802.11g	2462	21.24	133.0454	21±1
1	IEEE 802.11n HT20 (2.4G)	2412	19.28	84.7227	19±1
1	IEEE 802.11n HT40 (2.4G)	2437	19.43	2.0606	19±1
1	IEEE 802.11a	5240	13.19	20.8449	13±1
1	IEEE 802.11n HT20 (5G)	5240	11.73	14.8936	11±1
1	IEEE 802.11ac VHT20 (5G)	5240	11.79	15.1008	11±1
1	IEEE 802.11n HT40 (5G)	5755	11.28	13.4276	11±1
1	IEEE 802.11acVHT40 (5G)	5230	11.33	13.5831	11±1
1	IEEE 802.11acVHT80 (5G)	5775	10.63	11.5611	10±1
2	IEEE 802.11b	2462	17.67	58.4790	17±1
2	IEEE 802.11g	2462	21.77	150.3142	21±1
2	IEEE 802.11n HT20 (2.4G)	2462	20.88	122.4616	20±1
2	IEEE 802.11n HT40 (2.4G)	2452	20.96	124.7384	20±1
2	IEEE 802.11a	5745	11.42	13.8676	11±1
2	IEEE 802.11n HT20 (5G)	5785	10.84	12.1339	10±1
2	IEEE 802.11ac VHT20(5G)	5785	10.63	11.5611	10±1
2	IEEE 802.11n HT40 (5G)	5795	10.56	11.3763	10±1
2	IEEE 802.11acVHT40 (5G)	5795	10.10	10.2329	10±1
2	IEEE 802.11acVHT80 (5G)	5775	9.64	9.2045	9±1

3. Calculated Result and Limit

Bluetooth Antenna 0

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm^2)	Limited of Power Density (S) (mW/cm^2)	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^2)	Limited of Power Density (S) (mW/cm^2)	Test Result
		(dBi)	(Linear)			
2.4G Band						
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	20	2	1.585	0.0315	1	Complies
IEEE 802.11n HT40	20	2	1.585	0.0315	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^2)	Limited of Power Density (S) (mW/cm^2)	Test Result
		(dBi)	(Linear)			
2.4G Band						
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
5G Band						
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^2) Antenna 1	Power Density (S) (mW/cm^2) Antenna 2	Power Density (S) (mW/cm^2) Total	Limited of Power Density (S) (mW/cm^2)	Test Result
2.4G Band					
IEEE 802.11n HT20	0.0315	0.0397	0.0712	1	Complies
IEEE 802.11n HT40	0.0315	0.0397	0.0712	1	Complies
5G Band					
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

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

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

MAX Power Density (S) (mW/cm^2) Bluetooth	MAX Power Density (S) (mW/cm^2) 2.4G WiFi ANT1+ANT2	MAX Power Density (S) (mW/cm^2) 5G WiFi ANT1+ANT2	Power Density (S) (mW/cm^2) Total	Limited of Power Density (S) (mW/cm^2)	Test Result
0.0016	0.0712	0.0090	0.0818	1	Complies

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

End of Test Report