

FCC 47 CFR MPE REPORT

Anhui Grizzly Vision Technology Co.,Ltd

65INCH SMART 4K UHD WEBOS TV

Model Number: RWOSU6547-B

Additional Model: RWOSBU6548, RWOSU6549, RWOSQU6550

FCC ID: 2AXAQ-RCA-HX-65

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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			1.0	30

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

1.2. MPE Calculation Method

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

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=0.2m, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Antenna	Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)
BT	GFSK	2402	3.17	2.075	3±2
BT	8-DPSK	2402	5.97	3.954	5±2
BT	BLE(1M)	2402	2.93	1.963	2±2
BT	BLE(2M)	2402	2.77	1.892	2±2
1	IEEE 802.11b	2437	15.41	34.754	15±2
1	IEEE 802.11g	2462	19.44	87.902	19±2
1	IEEE 802.11n HT20	2462	18.27	67.143	18±2
1	IEEE 802.11n HT40	2452	18.36	68.549	18±2
1	IEEE 802.11a	5745	8.58	7.211	8±2
1	IEEE 802.11n HT20	5745	10.06	10.139	10±2
1	IEEE 802.11ac VHT20	5745	10.00	10.000	10±2
1	IEEE 802.11n HT40	5755	9.94	9.863	9±2
1	IEEE 802.11ac VHT40	5190	10.65	11.614	10±2
1	IEEE 802.11ac VHT80	5775	8.98	7.907	8±2
2	IEEE 802.11b	2462	15.37	34.435	15±2
2	IEEE 802.11g	2462	19.41	87.297	19±2
2	IEEE 802.11n HT20	2462	18.26	66.988	18±2
2	IEEE 802.11n HT40	2452	18.35	68.391	18±2
2	IEEE 802.11a	5180	9.72	9.376	9±2
2	IEEE 802.11n HT20	5200	10.54	11.324	10±2
2	IEEE 802.11ac VHT20	5200	10.92	12.359	10±2
2	IEEE 802.11n HT40	5190	11.14	13.002	11±2
2	IEEE 802.11ac VHT40	5755	9.47	8.851	9±2
2	IEEE 802.11ac VHT80	5210	10.08	10.186	10±2

3. Calculated Result and Limit

BT Antenna

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						
GFSK	5	2	1.585	0.00100	1	Complies
8-DPSK	7	2	1.585	0.00158	1	Complies
BLE(1M)	4	2	1.585	0.00079	1	Complies
BLE(2M)	4	2	1.585	0.00079	1	Complies

WiFi 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	17	2	1.585	0.01580	1	Complies
IEEE 802.11g	21	2	1.585	0.03969	1	Complies
IEEE 802.11n HT20	20	2	1.585	0.03153	1	Complies
IEEE 802.11n HT40	20	2	1.585	0.03153	1	Complies
5G Band						
IEEE 802.11a	10	2	1.585	0.00315	1	Complies
IEEE 802.11n HT20	12	2	1.585	0.00500	1	Complies
IEEE 802.11ac VHT20	12	2	1.585	0.00500	1	Complies
IEEE 802.11n HT40	11	2	1.585	0.00397	1	Complies
IEEE 802.11ac VHT40	12	2	1.585	0.00500	1	Complies
IEEE 802.11ac VHT80	10	2	1.585	0.00315	1	Complies

WiFi 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	17	2	1.585	0.01580	1	Complies
IEEE 802.11g	21	2	1.585	0.03969	1	Complies
IEEE 802.11n HT20	20	2	1.585	0.03153	1	Complies
IEEE 802.11n HT40	20	2	1.585	0.03153	1	Complies
5G Band						
IEEE 802.11a	11	2	1.585	0.00397	1	Complies
IEEE 802.11n HT20	12	2	1.585	0.00500	1	Complies
IEEE 802.11ac VHT20	12	2	1.585	0.00500	1	Complies
IEEE 802.11n HT40	13	2	1.585	0.00629	1	Complies
IEEE 802.11ac VHT40	11	2	1.585	0.00397	1	Complies
IEEE 802.11ac VHT80	12	2	1.585	0.00500	1	Complies

WiFi 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	0.03153	0.03153	0.06306	1	Complies
IEEE 802.11n HT40	0.03153	0.03153	0.06306	1	Complies
5G Band					
IEEE 802.11n HT20	0.00500	0.00500	0.01000	1	Complies
IEEE 802.11ac VHT20	0.00500	0.00500	0.01000	1	Complies
IEEE 802.11n HT40	0.00500	0.00629	0.01129	1	Complies
IEEE 802.11ac VHT40	0.00500	0.00397	0.00897	1	Complies
IEEE 802.11ac VHT80	0.00315	0.00500	0.00815	1	Complies

BT Antenna +WiFi Antenna 1+2

Power Density (S) (mW/cm ²) Bluetooth	Power Density (S) (mW/cm ²) 2.4G WiFi	Power Density (S) (mW/cm ²) 5G WiFi	Power Density (S) (mW/cm ²) Total	Limited of Power Density (S) (mW/cm ²)	Test Result
0.00158	0.06306	0.01129	0.07593	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