FCC 47 CFR MPE REPORT

Anhui Grizzly Vision Technology Co.,Ltd

70INCH SMART 4K UHD WEBOS TV

Model Number: RWOSU7047

Additional Model: RWOSU7049, RWOSQU7050

FCC ID: 2AXAQ-RCA-HX-70

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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	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)
3	GFSK	2402	3.16	2.070	3±2
3	8-DPSK	2402	5.96	3.945	5±2
3	BLE(1M)	2402	2.91	1.954	2±2
3	BLE(2M)	2402	2.78	1.897	2±2
1	IEEE 802.11b	2412	14.95	31.261	14±2
1	IEEE 802.11g	2412	18.35	68.391	18±2
1	IEEE 802.11n HT20	2412	16.68	46.559	16±2
1	IEEE 802.11n HT40	2422	16.90	48.978	16±2
1	IEEE 802.11a	5745	9.01	7.962	9±2
1	IEEE 802.11n HT20	5745	10.53	11.298	10±2
1	IEEE 802.11ac VHT20	5745	10.28	10.666	10±2
1	IEEE 802.11n HT40	5755	10.48	11.169	10±2
1	IEEE 802.11ac VHT40	5755	9.88	9.727	9±2
1	IEEE 802.11ac VHT80	5775	9.19	8.299	9±2
2	IEEE 802.11b	2412	14.86	30.620	14±2
2	IEEE 802.11g	2412	18.40	69.183	18±2
2	IEEE 802.11n HT20	2412	16.72	46.989	16±2
2	IEEE 802.11n HT40	2422	16.86	48.529	16±2
2	IEEE 802.11a	5745	9.87	9.705	9±2
2	IEEE 802.11n HT20	5200	11.24	13.305	11±2
2	IEEE 802.11ac VHT20	5200	11.41	13.836	11±2
2	IEEE 802.11n HT40	5190	11.83	15.241	11±2
2	IEEE 802.11ac VHT40	5230	10.85	12.162	10±2
2	IEEE 802.11ac VHT80	5210	10.70	11.749	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	16	2	1.585	0.0126	1	Complies
IEEE 802.11g	20	2	1.585	0.0315	1	Complies
IEEE 802.11n HT20	18	2	1.585	0.0199	1	Complies
IEEE 802.11n HT40	18	2	1.585	0.0199	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	12	2	1.585	0.00500	1	Complies
IEEE 802.11ac VHT40	11	2	1.585	0.00397	1	Complies
IEEE 802.11ac VHT80	11	2	1.585	0.00397	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	16	2	1.585	0.0126	1	Complies
IEEE 802.11g	20	2	1.585	0.0315	1	Complies
IEEE 802.11n HT20	18	2	1.585	0.0199	1	Complies
IEEE 802.11n HT40	18	2	1.585	0.0199	1	Complies
5G Band						
IEEE 802.11a	11	2	1.585	0.00397	1	Complies
IEEE 802.11n HT20	13	2	1.585	0.00629	1	Complies
IEEE 802.11ac VHT20	13	2	1.585	0.00629	1	Complies
IEEE 802.11n HT40	13	2	1.585	0.00629	1	Complies
IEEE 802.11ac VHT40	12	2	1.585	0.00500	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	0.0199	0.0199	0.0398	1	Complies
IEEE 802.11n HT40	0.0199	0.0199	0.0398	1	Complies
5G Band					
IEEE 802.11n HT20	0.00500	0.00629	0.01129	1	Complies
IEEE 802.11ac VHT20	0.00500	0.00629	0.01129	1	Complies
IEEE 802.11n HT40	0.00500	0.00629	0.01129	1	Complies
IEEE 802.11ac VHT40	0.00397	0.00500	0.00897	1	Complies
IEEE 802.11ac VHT80	0.00397	0.00500	0.00897	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	0.0398	0.01129	0.05267	1	Complies

End of Test Report