

FCC 47 CFR MPE REPORT

CHOICE FORTUNE HOLDINGS LIMITED

LED TV

Model Number: SC-50UA950N

FCC ID: 2AMYC-SC-50UA950N

Prepared for:	CHOICE FORTUNE HOLDINGS LIMITED
	Room 1315,13/F,Tin King Estate,Tin Lok House,Tuen Mun,N.T.,
	HongKong,China
Prepared By:	EST Technology Co., Ltd.
	Chilingxiang, Qishantou, Santun, Houjie, Dongguan, Guangdong, China
Tel: 86-769-83081888-808	

Report Number:	ESTE-R1911073
Date of Test:	Oct. 24~Nov. 25, 2019
Date of Report:	Nov. 28, 2019



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 1

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	17.32	53.951	17 ± 2	3.1	2.04
	2437	16.85	48.417	16 ± 2	3.1	2.04
	2462	16.63	46.026	16 ± 2	3.1	2.04
IEEE 802.11g	2412	19.52	89.536	19 ± 2	3.1	2.04
	2437	19.12	81.658	19 ± 2	3.1	2.04
	2462	18.72	74.473	18 ± 2	3.1	2.04
IEEE 802.11n HT20	2412	17.06	50.816	17 ± 2	3.1	2.04
	2437	16.66	46.345	16 ± 2	3.1	2.04
	2462	16.32	42.855	16 ± 2	3.1	2.04
IEEE 802.11n HT40	2422	17.85	60.954	17 ± 2	3.1	2.04
	2437	17.60	57.544	17 ± 2	3.1	2.04
	2452	17.34	54.200	17 ± 2	3.1	2.04

Antenna 2

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power (dBm)	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	17.97	62.661	17 ± 2	3.1	2.04
	2437	17.33	54.075	17 ± 2	3.1	2.04
	2462	17.61	57.677	17 ± 2	3.1	2.04
IEEE 802.11g	2412	20.18	104.232	20 ± 2	3.1	2.04
	2437	19.50	89.125	19 ± 2	3.1	2.04
	2462	19.86	96.828	19 ± 2	3.1	2.04
IEEE 802.11n HT20	2412	18.43	69.663	18 ± 2	3.1	2.04
	2437	17.81	60.395	17 ± 2	3.1	2.04
	2462	18.27	67.143	18 ± 2	3.1	2.04
IEEE 802.11n HT40	2422	18.15	65.343	18 ± 2	3.1	2.04
	2437	17.70	58.884	17 ± 2	3.1	2.04
	2452	17.65	58.210	17 ± 2	3.1	2.04

3. Calculated Result and Limit

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	19	3.1	2.04	0.03226	1	Compiles
IEEE 802.11g	21	3.1	2.04	0.05114	1	Compiles
IEEE 802.11n HT20	19	3.1	2.04	0.03226	1	Compiles
IEEE 802.11n HT40	19	3.1	2.04	0.03226	1	Compiles

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	19	3.1	2.04	0.03226	1	Compiles
IEEE 802.11g	22	3.1	2.04	0.06438	1	Compiles
IEEE 802.11n HT20	20	3.1	2.04	0.04062	1	Compiles
IEEE 802.11n HT40	20	3.1	2.04	0.04062	1	Compiles

Antenna 1+2

Mode	Directional Antenna Gain (Numeric)	Peak Output Power (mW)	Power Density (S) (mW/cm ²) Total	Limited of Power Density (S) (mW/cm ²)	Test Result
2.4G Band					
IEEE 802.11n HT20	4.08 (6.11dBi)	120.5	0.061	1	Compiles
IEEE 802.11n HT40	4.08 (6.11dBi)	126.3	0.073	1	Compiles

End of Test Report

