

FCC RF EXPOSURE REPORT

Chunghsin Technology Group CO., LTD

38.5inch HD SMART TV

Model Number: ELSW3917BF

FCC ID: 2AE2W-3917BF1

Prepared for : Chunghsin Technology Group CO., LTD

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Maximum Permissible Exposure

1、Applicable Standard

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.

(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

2、MPE Calculation Method

$$E \text{ (V/m)} = (30 \cdot P \cdot G)^{0.5} / d \quad \text{Power Density: } P_d \text{ (W/m}^2\text{)} = E^2 / 377$$

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

$$P_d = (30 \cdot P \cdot G) / (377 \cdot d^2)$$

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

3、Calculated Result and Limit

Mode	Frequency (MHz)	output power (dBm)	output power (mW)	Target power (dBm)	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
					(dBi)	(Linear)			
Antenna 0									
IEEE 802.11b	2412	15.32	34.04	15±1	1.21	1.32	0.01046	1	Compiles
	2437	14.77	29.99	14±1	1.21	1.32	0.00831	1	Compiles
	2462	14.12	25.82	14±1	1.21	1.32	0.00831	1	Compiles
IEEE 802.11g	2412	11.12	12.94	11±1	1.21	1.32	0.00417	1	Compiles
	2437	10.94	12.42	10±1	1.21	1.32	0.00331	1	Compiles
	2462	10.64	11.59	10±1	1.21	1.32	0.00331	1	Compiles
IEEE 802.11n HT20	2412	10.76	11.91	10±1	1.21	1.32	0.00331	1	Compiles
	2437	10.97	12.50	10±1	1.21	1.32	0.00331	1	Compiles
	2462	10.26	10.62	10±1	1.21	1.32	0.00331	1	Compiles
IEEE 802.11n HT40	2422	8.14	6.52	8±1	1.21	1.32	0.00209	1	Compiles
	2437	8.10	6.46	8±1	1.21	1.32	0.00209	1	Compiles
	2452	8.78	7.55	8±1	1.21	1.32	0.00209	1	Compiles
Antenna 1									
IEEE 802.11b	2412	13.28	21.28	13±1	1.21	1.32	0.00660	1	Compiles
	2437	13.33	21.53	13±1	1.21	1.32	0.00660	1	Compiles
	2462	13.74	23.66	13±1	1.21	1.32	0.00660	1	Compiles
IEEE 802.11g	2412	9.68	9.29	9±1	1.21	1.32	0.00263	1	Compiles
	2437	9.51	8.93	9±1	1.21	1.32	0.00263	1	Compiles
	2462	9.94	9.86	9±1	1.21	1.32	0.00263	1	Compiles
IEEE 802.11n HT20	2412	8.81	7.60	8±1	1.21	1.32	0.00209	1	Compiles
	2437	9.91	9.79	9±1	1.21	1.32	0.00263	1	Compiles
	2462	9.48	8.87	9±1	1.21	1.32	0.00263	1	Compiles
IEEE 802.11n HT40	2422	7.07	5.09	7±1	1.21	1.32	0.00166	1	Compiles
	2437	6.99	5.00	6±1	1.21	1.32	0.00132	1	Compiles
	2452	4.34	2.72	4±1	1.21	1.32	0.00083	1	Compiles

Mode	Frequency (MHz)	Power (W)			Limited (W)	Test Result
		Ant		Total		
		0	1			
IEEE 802.11n HT20	2412	0.00331	0.00209	0.00540	1	Compiles
	2437	0.00331	0.00263	0.00594	1	Compiles
	2462	0.00331	0.00263	0.00594	1	Compiles
IEEE 802.11n HT40	2412	0.00209	0.00166	0.00375	1	Compiles
	2437	0.00209	0.00132	0.00341	1	Compiles
	2462	0.00209	0.00083	0.00292	1	Compiles