

## FCC 47 CFR MPE REPORT

Chunghsin Technology Group CO.,LTD

43inch UHD DLED TV

Model Number: WE43UJ4118

Additional Model: WE43UL4218

FCC ID: 2AE2W-UJ4118

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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 <sup>2</sup> )	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 <sup>2</sup> )	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、Conducted Power Result

#### 3.1 Antenna 0

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power ( dBm )	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	14.55	28.51	$14 \pm 2$	1.21	1.32
	2437	14.29	26.85	$14 \pm 2$	1.21	1.32
	2462	15.08	32.21	$15 \pm 2$	1.21	1.32
IEEE 802.11g	2412	10.19	10.45	$10 \pm 2$	1.21	1.32
	2437	10.68	11.69	$10 \pm 2$	1.21	1.32
	2462	10.74	11.86	$10 \pm 2$	1.21	1.32
IEEE 802.11n HT20	2412	8.85	7.67	$9 \pm 2$	1.21	1.32
	2437	9.91	9.79	$10 \pm 2$	1.21	1.32
	2462	11.24	13.30	$11 \pm 2$	1.21	1.32
IEEE 802.11n HT40	2422	8.52	7.11	$8 \pm 2$	1.21	1.32
	2437	9.12	8.17	$9 \pm 2$	1.21	1.32
	2452	10.17	10.40	$10 \pm 2$	1.21	1.32

#### 3.2 Antenna 1

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)	Target power ( dBm )	Antenna gain	
					(dBi)	(Linear)
IEEE 802.11b	2412	14.45	27.86	$14 \pm 2$	1.21	1.32
	2437	14.65	29.17	$14 \pm 2$	1.21	1.32
	2462	15.63	36.56	$15 \pm 2$	1.21	1.32
IEEE 802.11g	2412	10.40	10.96	$10 \pm 2$	1.21	1.32
	2437	10.69	11.72	$10 \pm 2$	1.21	1.32
	2462	10.78	11.97	$11 \pm 2$	1.21	1.32
IEEE 802.11n HT20	2412	8.96	7.87	$9 \pm 2$	1.21	1.32
	2437	10.05	10.12	$10 \pm 2$	1.21	1.32
	2462	10.69	11.72	$10 \pm 2$	1.21	1.32
IEEE 802.11n HT40	2422	8.36	6.85	$8 \pm 2$	1.21	1.32
	2437	9.24	8.39	$9 \pm 2$	1.21	1.32
	2452	10.60	11.48	$10 \pm 2$	1.21	1.32

#### 4、Calculated Result and Limit

##### 4.1 Antenna 0

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
		(dBi)	(Linear)			
IEEE 802.11b	17	1.21	1.32	0.01317	1	Compiles
IEEE 802.11g	12	1.21	1.32	0.00417	1	Compiles
IEEE 802.11n HT20	13	1.21	1.32	0.00524	1	Compiles
IEEE 802.11n HT40	12	1.21	1.32	0.00417	1	Compiles

##### 4.2 Antenna 1

Mode	Target power (dBm)	Antenna gain		Power Density (S) (mW/cm <sup>2</sup> )	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
		(dBi)	(Linear)			
IEEE 802.11b	17	1.21	1.32	0.01317	1	Compiles
IEEE 802.11g	13	1.21	1.32	0.00524	1	Compiles
IEEE 802.11n HT20	12	1.21	1.32	0.00417	1	Compiles
IEEE 802.11n HT40	12	1.21	1.32	0.00417	1	Compiles

##### 4.3 Antenna 0+1

Mode	Power Density (S) (mW/cm <sup>2</sup> ) Antenna 0	Power Density (S) (mW/cm <sup>2</sup> ) Antenna 1	Power Density (S) (mW/cm <sup>2</sup> ) Total	Limited of Power Density (S) (mW/cm <sup>2</sup> )	Test Result
2.4G Band					
IEEE 802.11n HT20	0.00524	0.00417	0.00941	1	Compiles
IEEE 802.11n HT40	0.00417	0.00417	0.00834	1	Compiles