

## FCC 47 CFR MPE REPORT

KONKA GROUP CO.,LTD

LED TV

Model Number: UDG43MK662UN

FCC ID: 2AQX743MK662UN

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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

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

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

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

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	12.20	16.60	12±2	2	1.58
	2437	12.39	17.34	12±2	2	1.58
	2462	12.13	16.33	12±2	2	1.58
IEEE 802.11g	2412	7.78	6.00	8±2	2	1.58
	2437	7.69	5.87	8±2	2	1.58
	2462	7.80	6.03	8±2	2	1.58
IEEE 802.11n HT20	2412	8.00	6.31	8±2	2	1.58
	2437	8.45	7.00	8±2	2	1.58
	2462	8.20	6.61	8±2	2	1.58
IEEE 802.11n HT40	2422	5.95	3.94	6±2	2	1.58
	2437	6.79	4.78	7±2	2	1.58
	2452	7.06	5.08	7±2	2	1.58

#### 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	13.38	21.78	13±2	2	1.58
	2437	14.19	26.24	14±2	2	1.58
	2462	12.41	17.42	12±2	2	1.58
IEEE 802.11g	2412	9.04	8.02	9±2	2	1.58
	2437	9.32	8.55	9±2	2	1.58
	2462	8.41	6.93	8±2	2	1.58
IEEE 802.11n HT20	2412	8.10	6.46	8±2	2	1.58
	2437	8.65	7.33	9±2	2	1.58
	2462	8.17	6.56	8±2	2	1.58
IEEE 802.11n HT40	2422	5.23	3.33	5±2	2	1.58
	2437	6.36	4.33	6±2	2	1.58
	2452	6.40	4.37	6±2	2	1.58

#### 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	14	2	1.58	0.0079	1	Compiles
IEEE 802.11g	10	2	1.58	0.0032	1	Compiles
IEEE 802.11n HT20	10	2	1.58	0.0032	1	Compiles
IEEE 802.11n HT40	9	2	1.58	0.0025	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	16	2	1.58	0.0126	1	Compiles
IEEE 802.11g	11	2	1.58	0.0040	1	Compiles
IEEE 802.11n HT20	11	2	1.58	0.0040	1	Compiles
IEEE 802.11n HT40	8	2	1.58	0.0020	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
IEEE 802.11n HT20	0.0032	0.0040	0.0072	1	Compiles
IEEE 802.11n HT40	0.0025	0.0020	0.0045	1	Compiles