FCC 47 CFR MPE REPORT

Chunghsin Technology Group CO., LTD

32inch HD DLED TV

Model Number: ELST3216H

FCC ID: 2AE2W-3216

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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/cm2)	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/cm2)	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

2、MPE Calculation Method

E (V/m) = (30*P*G) 0.5/d Power Density: Pd (W/m2) = E2/377

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*P*G) / (377*d2)

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	14.34	27.164	14±2	1.21	1.321
	2437	14.95	31.261	14±2	1.21	1.321
	2462	12.34	17.140	12±2	1.21	1.321
IEEE 802.11g	2412	9.92	9.817	9±2	1.21	1.321
	2437	10.58	11.429	10±2	1.21	1.321
	2462	8.18	6.577	8±2	1.21	1.321
IEEE 802.11n HT20	2412	10.78	11.967	10±2	1.21	1.321
	2437	10.42	11.015	10±2	1.21	1.321
	2462	8.18	6.577	8±2	1.21	1.321
IEEE 802.11n HT40	2422	7.62	5.781	7±2	1.21	1.321
	2437	7.58	5.728	7±2	1.21	1.321
	2452	7.94	6.223	7±2	1.21	1.321

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	15.63	36.559	15±2	1.21	1.321
	2437	15.10	32.359	15±2	1.21	1.321
	2462	12.74	18.793	12±2	1.21	1.321
IEEE 802.11g	2412	12.04	15.996	12±2	1.21	1.321
	2437	11.85	15.311	11±2	1.21	1.321
	2462	9.43	8.770	9±2	1.21	1.321
IEEE 802.11n HT20	2412	12.32	17.061	12±2	1.21	1.321
	2437	11.84	15.276	11±2	1.21	1.321
	2462	9.41	8.730	9±2	1.21	1.321
IEEE 802.11n HT40	2422	10.06	10.139	10±2	1.21	1.321
	2437	8.95	7.852	8±2	1.21	1.321
	2452	9.00	7.943	9±2	1.21	1.321

4、Calculated Result and Limit

4.1 Antenna 0

Mode	Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	16	1.21	1.321	0.01046	1	Compiles
IEEE 802.11g	12	1.21	1.321	0.00417	1	Compiles
IEEE 802.11n HT20	12	1.21	1.321	0.00417	1	Compiles
IEEE 802.11n HT40	9	1.21	1.321	0.00209	1	Compiles

4.2 Antenna 1

Mode	Target power（dBm）	Antenna gain		Power Density (S) (mW /cm2)	Limited of Power Density (S) (mW /cm2)	Test Result
		(dBi)	(Linear)			
2.4G Band						
IEEE 802.11b	17	1.21	1.321	0.01317	1	Compiles
IEEE 802.11g	14	1.21	1.321	0.00660	1	Compiles
IEEE 802.11n HT20	14	1.21	1.321	0.00660	1	Compiles
IEEE 802.11n HT40	12	1.21	1.321	0.00417	1	Compiles

4.3 Antenna 0+1

Mode	Power Density (S) (mW /cm2) Antenna 0	Power Density (S) (mW /cm2) Antenna 1	Power Density (S) (mW /cm2) Total	Limited of Power Density (S) (mW /cm2)	Test Result
2.4G Band					
IEEE 802.11n HT20	0.00417	0.00660	0.01077	1	Compiles
IEEE 802.11n HT40	0.00209	0.00417	0.00626	1	Compiles