



FCC 47 CFR MPE REPORT

TCL OVERSEAS MARKETING LTD

Wireless Subwoofer

Model Number: SW9

Additional Model:

Q95K-SW, Q95K Pro-SW, Q91K-SW, Q92K-SW, Q93K-SW, Q94K-SW, Q9CK-SW,
Q91C-SW, Q9CC-SW, Q95KS-SW, Q9*****-SW, Q85K-SW, Q85K Pro-SW,
Q81K-SW, Q82K-SW, Q83K-SW, Q84K-SW, Q85KS-SW, Q8*****-SW,
(* can be any numerica number"0~9" or alphebtical number "A~Z" or blank)

FCC ID: 2BEHESW9

Applicant:	TCL OVERSEAS MARKETING LTD
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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 & KDB 447498 D04 V01 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, $d=0.2\text{m}$, as well as the gain of the used antenna, the RF power density can be obtained

2. Conducted Power Result

Mode	Frequency (MHz)	Peak output power (dBm)	Peak output power (mW)
IEEE 802.11a	5180	16.83	48.195
	5200	17.13	51.642
	5240	17.27	53.333
	5260	19.30	85.114
	5300	19.45	88.105
	5320	19.25	84.140
	5500	17.63	57.943
	5580	17.45	55.590
	5700	20.22	105.196
	5720	19.04	80.168
	5745	19.72	93.756
	5785	20.62	115.345
	5825	18.59	72.277
IEEE 802.11ax HE20	5180	16.6	45.709
	5200	17.88	61.376
	5240	17.34	54.200
	5260	18.44	69.823
	5300	18.96	78.705
	5320	18.60	72.444
	5500	18.17	65.615
	5580	18.01	63.241
	5700	18.57	71.945
	5720	17.88	61.376
	5745	17.91	61.802
	5785	19.73	93.972
	5825	18.18	65.766

3. Calculated Result and Limit

Mode	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW /cm ²)	Limited of Power Density (S) (mW /cm ²)	Test Result
				(dBi)	(Linear)			
5G Band								
IEEE 802.11a	20.62	20±1	21	3.49	2.234	0.05594	1	Complies
IEEE802.11ax HE20	19.73	19±1	20	3.49	2.234	0.04444	1	Complies

End of Test Report