Statement of compliance to Maximum Permissible Exposure (MPE)

Applicant	:	TCT Mobile Limited 5F, C building, No. 232, Liang Jing Road ZhangJiang High-Tech Park, Pudong Area Shanghai, P.R. China. 201203
Manufacturer	:	TCL COMMUNICATION TECHNOLOGY HOLDINGS LIMITED 70 Huifeng 4rd, ZhongKai Hi-tech Development District, Huizhou,Guangdong 516006 P.R.China
Equipment	:	one touch H200Y
Type/Model	:	H200Y-3ATLMX1

According to §2.1091, §2.1093 and §1.1307(b), 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 of the Commission's guidelines.

The $S = PG / (4\pi R^2)$
Where S = power density in mW/cm^2
P = transmit power in mW
G = numeric gain of transmit antenna
R = distance (cm)

R is chosen to be 20cm, the gain of antenna G = 3.00dBi = 1.995

As we can see from the test reports 130800216SHA-002:

For Wi-Fi band:

The maximum output power for Wi-Fi = 23.37 dBm
The MPE of Wi-Fi = $PG / (4\pi R^2)$ = 217.270 * 1.995 / (4 * 3.14 * 20 * 20) = 0.043 mW/cm^2

As we can see from the tune up procedure:

For GSM 850MHz band:

The max power of one time slot for GSM 850 = 35 dBm
The E.I.R.P of one time slot for GSM 850 = 38 dBm = 6309.573mW
The MPE of GSM 850 = $PG / (4\pi R^2)$ = 6309.57 /8* (4 * 3.14 * 20 * 20) = 0.157mW/cm^2 < 0.57 mW/cm^2

For GPRS 850, the transmitter support multi-timeslot.

Uplink timeslot	Output Power(dBm)	duty cycle
1	35	0.125
2	33	0.250
3	31	0.375
4	29	0.500

The MPE of one time slot = PG / (4πR ²) = 6309.573*0.125 / (4 * 3.14 * 20 * 20) = 0.157mW/cm ²< 0.57 mW/cm ²

The MPE of two time slots = PG / (4πR ²) = 3981.072*0.250 / (4 * 3.14 * 20 * 20) = 0.198mW/cm ²< 0.57 mW/cm ²

The MPE of three time slots = PG / (4πR ²) = 2511.886*0.375 / (4 * 3.14 * 20 * 20) = 0.187mW/cm ²< 0.57 mW/cm ²

The MPE of four time slots = PG / (4πR ²) = 1584.893*0.500 / (4 * 3.14 * 20 * 20) = 0.158mW/cm ²< 0.57 mW/cm ²

The MPE of two times slots is the biggest.

Because the EDGE's output power is smaller than the GPRS's output power, so here the calculation is abbreviated.

For WCDMA 850MHz band:

The max output power for WCDMA 850 = 25 dBm
The E.I.R.P for WCDMA 850 = 28 dBm = 630.957mW
The MPE of WCDMA 850 = PG / (4πR ²) = 630.957 / (4 * 3.14 * 20 * 20) = 0.126mW/cm ²< 0.57 mW/cm ²

Because the HSPA's output power is smaller than the WCDMA's output power, so here the calculation is abbreviated.

For GSM 1900MHz band:
The max power of one time slot for GSM 1900 = 32 dBm
The E.I.R.P of one time slot for GSM 1900 = 35 dBm = 3126.278 mW
The MPE of GSM 1900 = PG / (4πR ²) = 3126.278 /8* (4 * 3.14 * 20 * 20) = 0.079mW/cm ²< 1.0 mW/cm ²

For GPRS 1900, the transmitter support multi-timeslot.

Uplink timeslot	Output Power(dBm)	duty cycle
1	32	0.125
2	30	0.250
3	28	0.375
4	26	0.500

The MPE of one time slot = PG / (4πR ²) = 3126.278*0.125 / (4 * 3.14 * 20 * 20) = 0.079mW/cm ²< 1.0 mW/cm ²

The MPE of two time slots = PG / (4πR ²) = 1995.262*0.250 / (4 * 3.14 * 20 * 20) = 0.099mW/cm ²< 1.0 mW/cm ²

The MPE of three time slots = PG / (4πR ²) = 1258.925*0.375 / (4 * 3.14 * 20 * 20) = 0.094mW/cm ²< 1.0 mW/cm ²

The MPE of four time slots = PG / (4πR ²) = 794.328*0.500 / (4 * 3.14 * 20 * 20) = 0.079mW/cm ²< 1.0 mW/cm ²

The MPE of two times slots is the biggest.

Because the EDGE's output power is smaller than the GPRS's output power, so here the calculation is abbreviated.

For WCDMA 1900MHz band:
The max output power for WCDMA 1900 = 25 dBm
The E.I.R.P for WCDMA 1900 = 28 dBm = 630.957mW
The MPE of WCDMA 1900 = PG / (4πR ²) = 630.957 / (4 * 3.14 * 20 * 20) = 0.126mW/cm ²< 1.0 mW/cm ²

The biggest of MPE of 2G/3G is 0.198 mW/cm ².

For the device can support simultaneous transmission of Wi-Fi and 2G/3G, according to 447498 D01 General RF Exposure Guidance v05r01,
The sum of the MPE ratios = 0.043 / 1.0 + 0.198 / 0.57 = 0.390

This level is below the simultaneous transmission MPE test exclusion requirements (≤1.0).

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Prepared by: Reviewed by:

Nemo Li (*Project Engineer*) Daniel Zhao (*Reviewer*)

Appendix I

Definition below must be outlined in the User Manual:

To satisfy FCC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.