



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

Maximum Permissible Exposure Evaluation

FCC ID: 2BDTQ-FRONT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

EUT Specification

Product Name	LTE Smart IP Phone
Trade Mark	/
Model/Type reference	DT-200D
Listed Model(s)	DT-200A
Model Different:	All these models are identical in the same PCB, layout and electrical circuit, The difference is DT-200D With voice calling function, DT-200A Without voice calling function
Frequency band (Operating)	BT: 2402 MHz ~ 2480MHz WLAN: 2412MHz ~ 2462MHz RLAN: 5180MHz ~ 5240MHz 5745MHz ~ 5825MHz WCDMA Band II: UL: 1852.4MHz~1907.6MHz, DL: 1932.6MHz~1987.4MHz WCDMA Band IV: UL: 1712.4MHz~1752.6MHz, DL: 2112.6MHz~2152.4MHz WCDMA Band V: UL: 826.4MHz~846.6MHz, DL: 871.6MHz~1891.4MHz LTE FDD Band 2: UL: 1850.7MHz~1909.3MHz, DL: 1930.7MHz~1989.3MHz LTE FDD Band 4: UL: 1710.7MHz~1754.3MHz, DL: 2110.7MHz~2154.3MHz LTE FDD Band 5: UL: 824.7MHz~848.3MHz, DL: 869.7MHz~893.3MHz LTE FDD Band 12: UL: 699.7MHz~715.3MHz, DL: 729.7MHz~745.3MHz LTE FDD Band 13: UL: 779.5MHz~784.5MHz, DL: 748.5MHz~751.0MHz LTE FDD Band 14: UL: 790.5MHz~795.5MHz, DL: 760.5MHz~765.5MHz LTE FDD Band 66: UL: 1710.7MHz~1779.3MHz, DL: 2110.7MHz~2179.3MHz LTE FDD Band 71: UL: 665.5MHz~695.5MHz, DL: 619.5MHz~649.5MHz
Device category	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others ____
Antenna diversity	☐ Single antenna ☒ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	BT: 5.7dBi WLAN: 5.3dBi RLAN U-NII-1: 4.1dBi RLAN U-NII-3: 5.3dBi WCDMA Band 2: 5.3dBi WCDMA Band 4: 6.3dBi WCDMA Band 5: 4.5dBi LTE Band 2: 5.3dBi

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



	LTE Band 4: 6.3dBi LTE Band 5: 4.5dBi LTE Band 12: 1.1dBi LTE Band 13: 3.2dBi LTE Band 14: 3.2dBi LTE Band 66: 6.3dBi LTE Band 71: 1.1dBi
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	30
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

Measurement Result

Band	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
BLE	5.7	1.727	2±1	3	0.00147	1.000
GFSK	5.7	6.71	7±1	8	0.00466	1.000
π /4-DQPSK	5.7	5.08	5±1	6	0.00294	1.000
8-DPSK	5.7	5.42	5±1	6	0.00294	1.000
802.11b	5.3	17.07	17±1	18	0.04253	1.000
802.11g	5.3	16.58	16±1	17	0.03379	1.000
802.11n(HT20)	5.3	16.23	16±1	17	0.03379	1.000
802.11n(HT40)	5.3	14.42	14±1	15	0.02132	1.000
802.11a	4.1	16.10	16±1	17	0.02563	1.000
802.11n(HT20)	4.1	15.91	16±1	17	0.02563	1.000
802.11ac(VHT20)	4.1	16.54	16±1	17	0.02563	1.000
802.11n(HT40)	4.1	16.17	16±1	17	0.02563	1.000
802.11ac(VHT40)	4.1	16.42	16±1	17	0.02563	1.000
802.11ac(VHT80)	4.1	14.38	14±1	15	0.01617	1.000

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



WCMDA Band 2	5.3	25.00	25 ± 1	26	0.26838	1.000
WCMDA Band 4	6.3	25.00	25 ± 1	26	0.33786	1.000
WCMDA Band 5	4.5	25.00	25 ± 1	26	0.22323	0.550
LTE Band 2	5.3	25.00	25 ± 1	26	0.26838	1.000
LTE Band 4	6.3	25.00	25 ± 1	26	0.33786	1.000
LTE Band 5	4.5	25.00	25 ± 1	26	0.22323	0.550
LTE Band 12	1.1	25.00	25 ± 1	26	0.10203	0.470
LTE Band 13	3.2	25.00	25 ± 1	26	0.16548	0.520
LTE Band 14	3.2	25.00	25 ± 1	26	0.16548	0.199
LTE Band 66	6.3	25.00	25 ± 1	26	0.33786	1.000
LTE Band 71	1.1	25.00	25 ± 1	26	0.10203	0.450

The WCDMA, WLAN and BT can transmit simultaneously

WCDMA Band V Power density at 20cm (mW/cm ²)	WLAN Power density at 20cm (mW/cm ²)	BT Power density at 20cm (mW/cm ²)	Total Power density at 20cm	Power density Limits
0.22323	0.04253	0.00466	0.45306	1

Total E-field strength = ((E-field strength)/ (Limit) + (E-field strength)/ (Limit)...) ≤ 1

Note:

1. For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****