



Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community, Fuhai Street, Bao'an District, Shenzhen, China

RF Exposure MPE

Report Reference No.....: CTA26050900703

FCC ID.....: 2BHDZ-TL-WF701

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Testing Laboratory Name.....: Shenzhen CTA Testing Technology Co., Ltd.

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Applicant's name.....: Dongguan Tianluo Electronic Technology Co.,Ltd

Address.....: 201room, Block 4, Longchang Science Park No.26, Hantang Street, Dongcheng District, Dongguan,Guangdong, China

Standard: 47CFR §1.1310

47CFR §2.1091

KDB447498 D01 General RF Exposure Guidance v06

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Test item description: wireless video door phone

Trade Mark: N/A

Manufacturer: Dongguan Tianluo Electronic Technology Co.,Ltd

Model/Type reference: TL-WF701

Listed Models: TL-WF702, TL-WF703, TL-WF801, TL-WF802, TL-WF803, TL-AH701, TL-AH801

Rating: Input: 5V === 2.0A

Battery: 3.7V 5000mAh 11.1Wh

Result: PASS

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TEST REPORT

Equipment under Test : wireless video door phone

Model /Type : TL-WF701

Listed Models : TL-WF702, TL-WF703, TL-WF801, TL-WF802, TL-WF803, TL-AH701, TL-AH801

Model difference : The PCB board, circuit, structure and internal of these models are the same, Only model number and colour is different for these model. So the tests were performed on model TL-WF701 and the test results for the main test model can cover the listed models.

Applicant : **Dongguan Tianluo Electronic Technology Co.,Ltd**

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Manufacturer : **Dongguan Tianluo Electronic Technology Co.,Ltd**

Address : 201room, Block 4, Longchang Science Park No.26, Hantang Street, Dongcheng District, Dongguan,Guangdong, China

Test Result:	PASS
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The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1 TEST STANDARDS

The tests were performed according to following standards:

[ANSI C95.1-1999](#): IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.

[FCC KDB 447498 D01 General RF Exposure Guidance v06](#): Mobile and Portable Device, RF Exposure, Equipment Authorization Procedures.

[FCC CFR 47 part1 1.1310](#): Radiofrequency radiation exposure limits.

[FCC CFR 47 part2 2.1091](#): Radiofrequency radiation exposure evaluation: mobile devices

2 SUMMARY

2.1 General Remarks

Date of receipt of test sample	:	May 09, 2026
Testing commenced on	:	May 09, 2026
Testing concluded on	:	May 22, 2026

2.2 Product Description

Product Name:	wireless video door phone
Model/Type reference:	TL-WF701
Power supply:	Input: 5V--- 2.0A Battery: 3.7V 5000mAh 11.1Wh
Adapter information:	Model: YMK-18W050200A Input: AC 100-240V 50/60Hz 0.4A Output: DC 5V 2000mA
Hardware Version	N/A
Software Version	N/A
Testing sample ID:	CTA260509007-1# (Engineer sample) CTA260509007-2# (Normal sample)
Module 1: RTL8731BU	
2.4GWLAN	
WLAN CE Operation frequency	IEEE 802.11b:2412-2472MHz IEEE 802.11g:2412-2472MHz IEEE 802.11n HT20:2412-2472MHz IEEE 802.11n HT40:2422-2462MHz
WLAN CE Modulation Type	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Channel number:	11 Channel for IEEE 802.11b/g/n (HT20) 9 Channel for IEEE 802.11n (HT40)
Channel separation:	5MHz
Antenna Description	Internal Antenna, 2.0 dBi(Max.) for 2.4G Band
WIFI (5.2G/5.8G Band)	
Frequency Range	5180-5240MHz, 5745MHz to 5825MHz
Channel Number	4 Channels for 20MHz bandwidth(5180-5240MHz) 5 channels for 20MHz bandwidth(5745-5825MHz) 2 channels for 40MHz bandwidth(5190~5230MHz) 2 channels for 40MHz bandwidth(5755~5795MHz) 1 channels for 80MHz bandwidth(5210MHz) 1 channels for 80MHz bandwidth(5775MHz)
Modulation Type	IEEE 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT20: OFDM (256QAM,64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT40: OFDM (256QAM,64QAM, 16QAM, QPSK, BPSK) IEEE 802.11ac VHT80: OFDM (256QAM,64QAM, 16QAM, QPSK, BPSK)
Antenna Description	Internal Antenna, 2.0 dBi(Max.) for 5G Band.

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Module 2: ATBM6031	
2.4GWLAN	
WLAN CE Operation frequency	IEEE 802.11b:2412-2472MHz IEEE 802.11g:2412-2472MHz IEEE 802.11n HT20:2412-2472MHz IEEE 802.11n HT40:2422-2462MHz
WLAN CE Modulation Type	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
Channel number:	11 Channel for IEEE 802.11b/g/n (HT20) 9 Channel for IEEE 802.11n (HT40)
Channel separation:	5MHz
Antenna Description	External Antenna , 2.0 dBi(Max.) for 2.4G Band

2.3 Special Accessories

The following is the EUT test of the auxiliary equipment provided by the laboratory:

Description	Manufacturer	Model	Technical Parameters	Certificate	Provided by
/	/	/	/	/	/

2.4 Modifications

No modifications were implemented to meet testing criteria.

3 TEST ENVIRONMENT

3.1 Address of the test laboratory

Shenzhen CTA Testing Technology Co., Ltd.

Room 106, Building 1, Yibaolai Industrial Park, Qiaotou Community,
Fuhai Street, Bao'an District, Shenzhen, China

3.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 517856 Designation Number: CN1318

Shenzhen CTA Testing Technology Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

A2LA-Lab Cert. No.: 6534.01

Shenzhen CTA Testing Technology Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

ISED#: 27890 CAB identifier: CN0127

Shenzhen CTA Testing Technology Co., Ltd. has been listed by Innovation, Science and Economic Development Canada to perform electromagnetic emission measurement.

3.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen CTA Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen CTA Testing Technology Co., Ltd. :

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	9KHz~30MHz	3.02 dB	(1)
Radiated Emission	30~1000MHz	4.06 dB	(1)
Radiated Emission	1~18GHz	5.14 dB	(1)
Radiated Emission	18-40GHz	5.38 dB	(1)
Conducted Disturbance	0.15~30MHz	2.14 dB	(1)
Output Peak power	30MHz~18GHz	0.55 dB	(1)
Power spectral density	/	0.57 dB	(1)
Spectrum bandwidth	/	1.1%	(1)
Radiated spurious emission (30MHz-1GHz)	30~1000MHz	4.10 dB	(1)
Radiated spurious emission (1GHz-18GHz)	1~18GHz	4.32 dB	(1)
Radiated spurious emission (18GHz-40GHz)	18-40GHz	5.54 dB	(1)
Time	/	±2%	(1)

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4 Test limit

4.1 Requirement

Limits for Maximum Permissible Exposure (MPE)/Controlled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	/	/	f/300	6
1500 – 100,000	/	/	5	6

Limits for Maximum Permissible Exposure (MPE)/Uncontrolled Exposure

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for Occupational/Controlled Exposure				
0.3 – 3.0	614	1.63	(100) *	30
3.0 – 30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	/	/	f/1500	30
1500 – 100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

4.2 MPE Calculation Method

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S=PG/4\pi R^2$$

Where: S=power density

P=power input to antenna

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna

4.3 Conducted Power Results

Module 1:

Type	Channel	Output power PK (dBm)
802.11b	01	14.36
	06	14.53
	11	14.60
802.11g	01	13.93
	06	14.05

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	11	14.12
802.11n(HT20)	01	13.60
	06	13.80
	11	14.04
802.11n(HT40)	03	13.99
	06	14.28
	09	14.23

Module 2:

Type	Channel	Output power PK (dBm)
802.11b	01	14.46
	06	14.66
	11	14.78
802.11g	01	15.01
	06	15.15
	11	15.41
802.11n(HT20)	01	14.88
	06	15.20
	11	15.16
802.11n(HT40)	03	15.32
	06	15.50
	09	15.48

Test Mode	Antenna	Freq(MHz)	Result [dBm]
11A	Ant1	5180	15.40
		5220	15.70
		5240	15.56
		5745	15.12
		5785	14.99
		5825	14.62
11N20SISO	Ant1	5180	15.11
		5220	15.58
		5240	15.36
		5745	14.77
		5785	14.86
		5825	14.77
11N40SISO	Ant1	5190	15.38
		5230	15.58
		5755	15.04
		5795	15.05
		5180	15.02
11AC20SISO	Ant1	5220	15.34
		5240	15.20
		5745	14.63
		5785	14.57
		5825	14.49
11AC40SISO	Ant1	5190	15.00
		5230	15.23

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11AC80SISO	Ant1	5755	14.71
		5795	14.55
		5210	15.31
		5775	15.01

4.4 Manufacturing tolerance

Mode		Max. Peak Conducted Output Power (dBm)	Max. tune-up
2.4GWIFI	Module 1	14.60	15.0 ± 1
	Module 2	15.50	15.0 ± 1
Mode		Max. Average Conducted Output Power (dBm)	Max. tune-up
5.2GWIFI		15.70	15.0 ± 1
5.8GWIFI		15.12	15.0 ± 1

4.5 Standalone MPE Result

As declared by the Applicant, the EUT is a wireless device used in a fix application, at least 20 cm from any body part of the user or nearby persons; from the maximum EUT RF output power, the minimum separation distance, $r = 20\text{cm}$, as well as the gain of the used antenna is refer to section 2.2, the RF power density can be obtained.

Modulation Type		Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
		dBm	mW				
2.4GWIFI	Module 1	16.0	39.8107	2.0	1.5849	0.0126	1.0000
	Module 2	16.0	39.8107	2.0	1.5849	0.0126	1.0000
5.2GWIFI		16.0	39.8107	2.0	1.5849	0.0126	1.0000
5.8GWIFI		16.0	39.8107	2.0	1.5849	0.0126	1.0000

Remark:

1. Output power (Peak) including turn-up tolerance;
2. MPE evaluate distance is 20cm from user manual provide by manufacturer.

4.6 Simultaneous Transmission for MPE Result

2.4GWIFI Module 1 MPE (Ratio)	2.4GWIFI Module 2 MPE (Ratio)	5G MPE (Ratio)	simultaneous MPE (Ratio)	MPE Limits (Ratio)
0.0126	0.0126	0.0126	0.0378	1.0000

5 Conclusion

The measurement results comply with the FCC Limit per 47 CFR 2.1091 for the uncontrolled RF Exposure of mobile device Threshold per KDB 447498 D01v06

***** End of Report *****

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