

MPE REPORT

Report No.: SRTC2020-9004(F)-20110604(I)

Product Name: 5G Wireless Router

Product Model: MC8010CA

Applicant: ZTE Corporation.

Manufacturer: ZTE Corporation.

Specification: FCC Part §2.1091, §2.1093, §1.1307(b), §1.1310 (2019)

FCC ID: SRQ-MC8010CA

The State Radio_monitoring_center Testing Center (SRTC)

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1 GENERAL INFORMATION

1.1 Notes of the test report

The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written permission of The State Radio_monitoring_center Testing Center (SRTC). The test results relate only to individual items of the samples which have been tested. The certification and accreditation identifiers used in this report shall not be applicable to the tested or calibrated samples thereof. The manufacturer shall not mark the tested samples or items (or a separate part of the item) with the identifiers of certification and accreditation to mislead relevant parties about the tested samples or items.

1.2 Information about the testing laboratory

Company:	The State Radio_monitoring_center Testing Center (SRTC)
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1.3 Applicant's details

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1.4 Manufacturer's details

Company:	ZTE Corporation.
Address:	ZTE Plaza, Keji Road South, Hi-Tech, Industrial Park, Nanshan District, Shenzhen, Guangdong, P.R.China
City:	Shenzhen
Country or Region:	China
Contacted person:	Gong Yu
Tel:	021-68895397
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Email:	gongyu@zte.com.cn

2 DESCRIPTION OF THE DEVICE UNDER TEST

2.1 Final Equipment Build Status

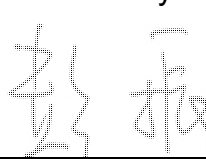
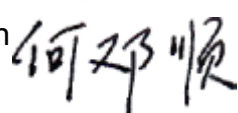
Frequency Bands	WCDMA Band II/IV/V LTE Band 2/4/5/7/12/13/17/25/26/30/66 5G NR n66: 1710 MHz – 1780 MHz 5G NR n71: 663 MHz – 698 MHz DC_2A_n66A, DC_5A_n66A, DC_7A_n66A, DC_12A_n66A, DC_13A_n66A, DC_30A_n66A DC_2A_n71A, DC_7A_n71A, DC_66A_n71A WIFI2.4GHz: 2400MHz – 2483.5MHz WIFI5GHz UNII-1: 5150MHz – 5250MHz WIFI5GHz UNII-3: 5725MHz – 5850MHz
Mode	WCDMA: RMC 12.2Kbps/HSDPA/HSUPA/DC-HSDPA/HSPA+ LTE: QPSK/16QAM/64QAM NR: DFT-s-OFDM (PI/2 BPSK/QPSK/16QAM/64QAM/256QAM) CP-OFDM (QPSK/16QAM/64QAM/256QAM) WIFI2.4GHz: 802.11b/g/n HT20/n HT40/ax HE20/ax HE40 WIFI5GHz: 802.11a/n HT20/n HT40/ac VHT20/ac VHT40 /ac VHT80/ax HE20/ax HE40
Power Supply	Charger
Hardware Version	MC8010CAHW1.0
Software Version	MC8010CAV1.2
IMEI	867428050000731

3 REFERENCE SPECIFICATION

Specification	Version	Title
2.1091	2019	Radio frequency radiation exposure evaluation: mobile devices.
2.1093	2019	Radio frequency radiation exposure evaluation: portable devices.
1.1307(b)	2019	Actions that may have a significant environmental effect, for which Environmental Assessments (EAs) must be prepared.
1.1310	2019	Radio frequency radiation exposure limits.
KDB447498	October 23, 2015	RF exposure procedures and equipment authorization policies for mobile and portable devices

4 RESULT SUMMARY

No.	Test case	FCC reference
1	MPE Calculation	FCC Part §2.1091, FCC Part §2.1093, FCC Part §1.1307(b) FCC Part §1.1310 KDB 447498

This Test Report Is Issued by: Mr. Peng Zhen 	Checked by: Mr. Li Bin 
Tested by: Mr. He Dengshun 	Issued date: 20210104

5 TEST RESULTS

5.1 Average Power Output Test Result

	Mode	Maximum Average power(dBm)
WCDMA	Band II	24.00
	Band IV	24.00
	Band V	24.00
LTE	Band 2	24.00
	Band 4	24.00
	Band 5	24.00
	Band 7	24.00
	Band 12	24.00
	Band 13	24.00
	Band 17	24.00
	Band 25	24.00
	Band 26	24.00
	Band 30	24.50
	Band 66	24.00
5G NR	N66	25.50
	N71	26.00
WLAN	WiFi2.4GHz	18.00
	WiFi5.2GHz	16.00
	WiFi5.8GHz	18.00

5.2 Calculation result

FCC 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 Time 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 ²	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	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 Time 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 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

Calculation procedure:

According to §2.1091, §2.1093, §1.1307(b) and §1.1310, 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 MPE was calculated at 20 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

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

Where S = power density in mW/cm²

P = transmit power in mW

G = numeric gain of transmit antenna

R = distance (cm)

The calculations in the table below use the highest gain of antenna for client EUT. These calculations represent worst case in terms of the exposure levels.

Band	Freq. (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Maximum EIRP (dBm)	Average EIRP (mW)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)	Power Density / Limit
WCDMA Band 2	1852.4	2.00	24.00	26.00	398.107	0.079	1.000	0.079
WCDMA Band 4	1712.4	2.00	24.00	26.00	398.107	0.079	1.000	0.079
WCDMA Band 5	826.4	1.00	24.00	25.00	316.228	0.063	0.551	0.114
LTE Band 2	1850.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 4	1710.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 5	824.7	1.00	24.00	25.00	316.228	0.063	0.550	0.114
LTE Band 7	2502.5	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 12	699.7	1.00	24.00	25.00	316.228	0.063	0.466	0.135
LTE Band 13	779.5	1.00	24.00	25.00	316.228	0.063	0.520	0.121
LTE Band 17	706.5	1.00	24.00	25.00	316.228	0.063	0.471	0.134
LTE Band 25	1850.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
LTE Band 26	814.7	1.00	24.00	25.00	316.228	0.063	0.543	0.116
LTE Band 30	2307.5	2.00	24.50	26.50	446.684	0.089	1.000	0.089
LTE Band 66	1710.7	2.00	24.00	26.00	398.107	0.079	1.000	0.079
5G NR n66	1710	2.00	25.50	27.50	562.341	0.112	1.000	0.112
5G NR n71	663	1.00	26.00	27.00	501.187	0.100	0.442	0.226
WLAN2.4GHz Band	2412	5.10	18.00	23.10	204.174	0.041	1.000	0.041
WLAN5.2GHz Band	5180	7.00	16.00	23.00	199.526	0.040	1.000	0.040
WLAN5.8GHz Band	5745	7.00	18.00	25.00	316.228	0.063	1.000	0.063

Note:

For conservativeness, the lowest frequency of each band is used to determine the MPE limit of that band.

Worst Simultaneous Transmission Result

WWAN Power Density / Limit	WLAN Power Density / Limit	Σ(Power Density / Limit) of WWAN + WLAN
0.226	0.063	0.289

Note: Simultaneous Transmission Limit=Power Density₁/ limit₁ + Power Density₂/ limit₂<1

According to the KDB447498 D01 section 7.1 determine the device is exclusion from SAR test.

---End of Test Report---