TCT 通测检测 TESTING CENTRE TECHNOLOGY

TEST REPORT

FCC ID. ..... :	2A8TPKCCU-20	
Test Report No..... :	TCT220919E031	
Date of issue..... :	Nov. 10, 2022	
Testing laboratory ..... :	SHENZHEN TONGCE TESTING LAB	
Testing location/ address:	2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name..... :	Xiamen Hualian ELECTRONICS CORP., LTD.	
Address..... :	No.189, Fangyang South Road, high tech Industrial Park, Xiang'an District, Xiamen, Fujian, China	
Manufacturer's name ... :	Xiamen Hualian ELECTRONICS CORP., LTD.	
Address..... :	No.189, Fangyang South Road, high tech Industrial Park, Xiang'an District, Xiamen, Fujian, China	
Standard(s) ..... :	FCC CFR Title 47 Part 1.1307	
Product Name..... :	KION China Connect Unit	
Trade Mark ..... :	N/A	
Model/Type reference..... :	KCCU-20	
Rating(s)..... :	DC 80V	
Date of receipt of test item ..... :	Sep. 19, 2022	
Date (s) of performance of test..... :	Sep. 19, 2022 - Nov. 10, 2022	
Tested by (+signature) ... :	Rleo LIU	
Check by (+signature).... :	Beryl ZHAO	
Approved by (+signature):	Tomsin	

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1. General Product Information

1.1. EUT description

Product Name.....:	KION China Connect Unit
Model/Type reference.....:	KCCU-20
Sample Number.....:	TCT220919E010-0101
Operation Frequency.....:	For GSM: GPRS/EGPRS 850: TX: 824.2MHz ~ 848.8MHz, RX: 869.2MHz ~ 893.8MHz GPRS/EGPRS 1900: TX: 1850.2MHz ~ 1909.8MHz, RX: 1930.2MHz ~ 1989.8MHz For WCDMA: WCDMA Band XIX: TX: 832.4MHz ~ 842.6MHz, RX: 876.4MHz ~ 888.6MHz WCDMA Band V: TX: 826.4MHz ~ 846.6MHz, RX: 871.4MHz ~ 891.6MHz WCDMA Band IV: TX: 1712.4MHz ~ 1752.6MHz, RX: 2112.4MHz ~ 2152.6MHz WCDMA Band II: TX: 1852.4MHz ~ 1907.6MHz, RX: 1932.4MHz ~ 1987.6MHz LTE Band 2: TX: 1850MHz ~ 1910MHz, RX: 1930MHz ~ 1990MHz LTE Band 4: TX: 1710MHz ~ 1755MHz, RX: 2110MHz ~ 2155MHz LTE Band 5: TX: 824MHz ~ 849MHz, RX: 869MHz ~ 894MHz LTE Band 7: TX: 2500MHz ~ 2570MHz, RX: 2620MHz ~ 2690MHz LTE Band 12: TX: 699MHz ~ 716MHz, RX: 729MHz ~ 746MHz LTE Band 13: TX: 777MHz ~ 787MHz, RX: 746MHz ~ 756MHz LTE Band 18: TX: 815MHz ~ 830MHz, RX: 860MHz ~ 875MHz LTE Band 19: TX: 830MHz ~ 845MHz, RX: 875MHz ~ 890MHz LTE Band 25: TX: 1850MHz ~ 1915MHz, RX: 1930MHz ~ 1995MHz LTE Band 26-1: TX: 814MHz ~ 824MHz, RX: 859MHz ~ 869MHz LTE Band 26-2: TX: 824MHz ~ 849MHz, RX: 869MHz ~ 894MHz
Modulation Type.....:	GPRS: GMSK EGPRS: 8PSK WCDMA/HSDPA/HSUPA: QPSK LTE: QPSK, 16QAM

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Antenna Type.....:	Internal Antenna
Antenna Gain.....:	GPRS/EGPRS 850: 0.41dBi GPRS/EGPRS 1900: 0.95dBi WCDMA Band XIX: 0.41dBi WCDMA Band V: 0.41dBi WCDMA Band IV: 0.57dBi WCDMA Band II: 0.95dBi LTE Band 2: 0.95dBi LTE Band 4: 0.57dBi LTE Band 5: 0.41dBi LTE Band 7: 0.47dBi LTE Band 12: 0.02dBi LTE Band 13: 0.08dBi LTE Band 18: 0.27dBi LTE Band 19: 0.41dBi LTE Band 25: 0.95dBi LTE Band 26-1: 0.27dBi LTE Band 26-2: 0.41dBi
Rating(s).....:	DC 80V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

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2. General Information

2.1. Test environment and mode

Item	Normal condition
Temperature	+25ºC
Voltage	DC 80V
Humidity	56%
Atmospheric Pressure:	1008 mbar
Test Mode:	
Engineering mode:	Keep the EUT in continuous transmitting by select channel

2.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

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3. Facilities and Accreditations

3.1. Facilities

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

- FCC - Registration No.: 645098

  SHENZHEN TONGCE TESTING LAB

  Designation Number: CN1205

  The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

- IC - Registration No.: 10668A-1

  SHENZHEN TONGCE TESTING LAB

  CAB identifier: CN0031

  The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

3.2. Location

SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China

TEL: +86-755-27673339

4. Test Results and Measurement Data

According to § 1.1310(e), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

Remark: 1)

For GSM 850: The maximum output power for antenna is 33.36dBm (2167.70mW) at 824.2MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)
For PCS 1900: The maximum output power for antenna is 30.06dBm (1013.91mW) at 1850.2MHz, 0.95dBi antenna gain(with 1.24 numeric antenna gain.)
For WCDMA Band XIX: The maximum output power for antenna is 23.61dBm (229.61mW) at 842.6MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)
For WCDMA Band V: The maximum output power for antenna is 23.62dBm (230.14mW) at 836.4MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)
For WCDMA Band IV: The maximum output power for antenna is 23.62dBm (230.14mW) at 1732.6MHz, 0.57dBi antenna gain(with 1.14 numeric antenna gain.)
For WCDMA Band II: The maximum output power for antenna is 23.61dBm (229.61mW) at 1907.6MHz, 0.95dBi antenna gain(with 1.24 numeric antenna gain.)
For LTE Band 2: The maximum output power for antenna is 23.62dBm (230.14mW) at 1905MHz, 0.95dBi antenna gain(with 1.24 numeric antenna gain.)
For LTE Band 4: The maximum output power for antenna is 24.46dBm (279.25mW) at 1717.5MHz, 0.57dBi antenna gain(with 1.14 numeric antenna gain.)
For LTE Band 5: The maximum output power for antenna is 24.08dBm (255.86mW) at 848.3MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)
For LTE Band 7: The maximum output power for antenna is 23.88dBm (244.34mW) at 2565MHz, 0.47dBi antenna gain(with 1.11 numeric antenna gain.)
For LTE Band 12: The maximum output power for antenna is 24.32dBm (270.40mW) at 704MHz, 0.02dBi antenna gain(with 1.00 numeric antenna gain.)
For LTE Band 13: The maximum output power for antenna is 23.90dBm (245.47mW) at 782MHz, 0.08dBi antenna gain(with 1.02 numeric antenna gain.)
For LTE Band 18: The maximum output power for antenna is 23.78dBm (238.78mW) at 822.5MHz, 0.27dBi antenna gain(with 1.06 numeric antenna gain.)
For LTE Band 19: The maximum output power for antenna is 23.93dBm (247.17mW) at 837.5MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)
For LTE Band 25: The maximum output power for antenna is 23.94dBm (247.74mW) at 1912.5MHz, 0.95dBi antenna gain(with 1.24 numeric antenna gain.)
For LTE Band 26-1: The maximum output power for antenna is 23.87dBm (243.78mW) at 819MHz, 0.27dBi antenna gain(with 1.06 numeric antenna gain.)
For LTE Band 26-2: The maximum output power for antenna is 19.76dBm (94.62mW) at 848.3MHz, 0.41dBi antenna gain(with 1.10 numeric antenna gain.)

2) For mobile or fixed location transmitters, no SAR consideration applied. The minimum separation generally be used is at least 20cm, even if the calculation indicate that the MPE distance would be lesser.

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Calculation:

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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				
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
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Mode	Power(mW)	numeric antenna gain	Power density (mW/cm^2)	Limit (mW/cm^2)	Result
GSM 850	2167.70	1.10	0.474510	0.549467	PASS
PCS 1900	1013.91	1.24	0.250192	1	
WCDMA Band XIX	229.61	1.10	0.050262	0.561733	
WCDMA Band V	230.14	1.10	0.050378	0.557600	
WCDMA Band IV	230.14	1.14	0.052210	1	
WCDMA Band II	229.61	1.24	0.056659	1	
LTE Band 2	230.14	1.24	0.056789	1	
LTE Band 4	279.25	1.14	0.063351	1	
LTE Band 5	255.86	1.10	0.056008	0.565533	
LTE Band 7	244.34	1.11	0.053972	1	
LTE Band 12	270.40	1.00	0.053810	0.469333	
LTE Band 13	245.47	1.02	0.049826	0.521333	

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LTE Band 18	238.78	1.06	0.050368	0.548333	
LTE Band 19	247.17	1.10	0.054106	0.558333	
LTE Band 25	247.74	1.24	0.061132	1	
LTE Band 26-1	243.78	1.06	0.051423	0.546000	
LTE Band 26-2	94.62	1.10	0.020712	0.565533	

********END OF REPORT********

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