

# TEST REPORT

**Applicant:** Shanghai Xiangcheng Communication Technology Co., Ltd  
**Address:** 6th Floor, Building 10, No.3000, Longdong Avenue, Pudong New District, Shanghai  
**Equipment Type:** Smart Electronic Cash Register  
**Model Name:** D8C  
**Brand Name:** KOZEN  
**FCC ID:** 2A2UU-D8CA  
**Test Standard:** 47 CFR Part 2.1091  
KDB 447498 D04 v01  
**Sample Arrival Date:** N/A  
**Test Date:** N/A  
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## ISSUED BY:

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**Revision History**

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# 1 GENERAL INFORMATION

## 1.1 Test Laboratory

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Address	1-2/F., Building 1, No.222, Xuanlan Road, Xuanqiao, Pudong New District, Shanghai, China

## 1.2 Test Location

Name	Shanghai Tejet Communications Technology Co., Ltd. Testing Center
Location	1-2/F., Building 1, No.222, Xuanlan Road, Xuanqiao, Pudong New District, Shanghai, China
Accreditation Certificate	<p>The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is CN1352.</p> <p>The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 29671.</p>

## 2 PRODUCT INFORMATION

### 2.1 Applicant Information

Applicant	Shanghai Xiangcheng Communication Technology Co., Ltd
Address	6th Floor, Building 10, No.3000, Longdong Avenue, Pudong New District, Shanghai

### 2.2 Manufacturer Information

Manufacturer	Shanghai Xiangcheng Communication Technology Co., Ltd
Address	6th Floor, Building 10, No.3000, Longdong Avenue, Pudong New District, Shanghai

### 2.3 General Description for Equipment under Test (EUT)

EUT Name	Smart Electronic Cash Register
Model Name Under Test	D8C
Series Model Name	N/A
Description of Model name differentiation	N/A
Hardware Version	D08C1_MAIN_PCB V1.0
Software Version	D08C1_kozen_combo
Dimensions (Approx.)	N/A
Weight (Approx.)	N/A

## 2.4 Technical Information

Network and Wireless connectivity	Bluetooth(BR+EDR+BLE) 2.4G WIFI 802.11b,802.11g,802.11n(HT20/40) 5G WIFI 802.11a,802.11n(HT20/40),802.11ac(VHT20/40/80) NFC
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The requirement for the following technical information of the EUT was tested in this report:

Operating Mode	NFC	
Frequency Range	ASK	13.56 MHz
Antenna Type	Coil Antenna	
Exposure Category	General Population/Uncontrolled Exposure	
EUT Type	Mobile Device	

### 3 SUMMARY OF TEST RESULT

#### 3.1 Test Standards

No.	Identity	Document Title
1	KDB 447498 D04 v01	447498 D04 Interim General RF Exposure Guidance v01

#### 3.2 Limit Standards

No.	Identity	Document Title
1	47 CFR Part 2.1091	Radiofrequency radiation exposure evaluation: mobile devices

## 4 DEVICE CATEGORY AND LEVELS LIMITS

### Mobile Devices:

CFR Title 47 §2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons.

### FCC KDB 447498 D04 General RF Exposure Guidance v01 Limit

Evaluation of compliance with the exposure limits in § 1.1310 is necessary if the ERP of the device is greater than ERP<sub>20cm</sub> in Formula (B.1) [repeated from § 2.1091(c)(1) and § 1.1307(b)(1)(i)(B)].

$$P_{th} \text{ (mW)} = ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B.1})$$

If the ERP is not easily obtained, then the available maximum time-averaged power may be used (i. e., without consideration of ERP only if the physical dimensions of the radiating structure(s) do not exceed the electrical length of  $\lambda/4$  or if the antenna gain is less than that of a half-wave dipole.

SAR-based exemptions are constant at separation distances between 20 cm and 40 cm to avoid discontinuities in the threshold when transitioning between SAR-based and MPE-based exemption criteria at 40 cm, considering the importance of reflections.

The SAR-based exemption formula of § 1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold  $P_{th}$  (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).  $P_{th}$  is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B. 2})$$

where

$$x = -\log_{10} \left( \frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

and  $f$  is in GHz,  $d$  is the separation distance (cm), and  $ERP_{20 \text{ cm}}$  is per Formula (B.1). The example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

Frequency (MHz)	Distance (mm)										
		5	10	15	20	25	30	35	40	45	50
300		39	65	88	110	129	148	166	184	201	217
450		22	44	67	89	112	135	158	180	203	226
835		9	25	44	66	90	116	145	175	207	240
1900		3	12	26	44	66	92	122	157	195	236
2450		3	10	22	38	59	83	111	143	179	219
3600		2	8	18	32	49	71	96	125	158	195
5800		1	6	14	25	40	58	80	106	136	169



## 5 ASSESSMENT RESULT

### 5.1 Output Power

Mode	Calculation Frequency (MHz)	E (dB $\mu$ V/m)	ERP (dBm)
ASK	13.56	75.72	-13.54
Note: This report listed the worst case ERP, please refer to RF test report NoBL-SH2530291-402 for more details.			

### 5.2 Tune-up power

Mode		Conducted Power Range (dBm)	EIRP Range (dBm)	ERP Range (dBm)
NFC	ASK	/	/	[-14.50, -12.50]
Note1: ERP= EIRP -2.15dB.				
Note2: According KDB 447498 D04, used the greater of maximum conducted power and ERP to compare with the threshold value Pth.				

### 5.3 RF Exposure Evaluation Result

Mode	Calculation Frequency (MHz)	Tune-up limit power (dBm)	Tune-up limit power (mW)	Threshold	Verdict
				Value(mW)	
ASK	13.56	-12.50	0.0562	1	Compliance
Note: The available maximum time-averaged power is no more than 1 mW, a single RF source is exempt.					

### 5.4 Conclusion

This EUT is deemed to comply with the reference level limits, therefore the basic restrictions are compliant with human exposure limits.

## Statement

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--END OF REPORT--