Maximum Permissible Exposure Evaluation
FCC ID:*2AZI3F55*

1. Client Information

Applicant	:	SHENZHEN KERUI SMART TECHNOLOGY CO., LTD
Address	:	Room 1501, T2, Jinlitong Building, No. 1100, Xingye Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China
Manufacturer	:	SHENZHEN KERUI SMART TECHNOLOGY CO., LTD
Address	:	Room 1501, T2, Jinlitong Building, No. 1100, Xingye Road, Xin'an Street, Bao'an District, Shenzhen, Guangdong, China

2. General Description of EUT

EUT Name	:	Wireless Doorbell Transmitter	
Model(s) No.	:	F55, M520+F55, M520+F55X2, M520X2+F55, M520X2+F55X2, M520X3+F55X2, M508+F55, M508+F55X2, M508X2+F55, M508X2+F55X2, M508X3+F55X2, M523+F55, M523+F55X2, M523X2+F55, M523X2+F55X2, M523X3+F55X2	
Model Difference	:	All PCB boards and circuit diagrams are the same, the only difference is that appearance color.	
Product Description	:	Operation Frequency:	433.92 MHz
		Antenna Gain:	-6.3dBi PCB Antenna
Power Supply	:	DC 3.0V by button cell	
Software Version	:	-----	
Hardware Version	:	KR-F55-CE-V1.1-2434	
Remark: The antenna gain provided by the applicant, the adapter and verified for the RF conduction test and adapter provided by TOBY test lab.			

Note: More test information about the EUT please refer the RF Test Report.

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The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to 447498 D04 Interim General RF Exposure Guidance v01.

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).

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

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_{20cm} 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

Calculations

1. **Antenna Gain:**

PCB Antenna: -6.3dBi.

2. **EUT Operation Condition:**

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3. **Exposure Evaluation:**

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 the 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. **Test Result:**

$$E = EIRP - 20\log D + 104.8$$

where:

E = electric field strength in dBμV/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

EIRP=E-104.8+20logD=67.11-104.8+20log3 = -28.15dBm

Frequency (MHz)	Measured Power (dBm)	Tune up Tolerance ± (dB)	Output power (Max. Turn-up Procedure) (mW)	Limit (mW)
433.92	-28.15	-28±1	0.002	22
Note: At separation distance of ≤5 mm				

5. **Conclusion:**

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure of mobile device.

-----END OF REPORT-----