



RF Exposure Evaluation

FCC ID: 2AZI3-F21

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	:	Caregiver Pager
HVIN/Model(s) No.	:	F21, M529+F21, M529X2+F21X2, M529X3+F21X2+F52
Model Different	:	All these models are identical in the same PCB, layout and electrical circuit, the only difference is color.
Sample ID	:	202209-0222-1-1#& 202209-0222-1-2#
Product Description	:	Operation Frequency: 433.92MHz
	:	Antenna Type: PCB Antenna(-8.76 dBi)
Power Supply	:	Input: DC CR2450 3V
Software Version	:	N/A
Hardware Version	:	KR-F21-V1.0
Note: More test information about the EUT please refer the RF Test Report.		
Flipper Zero: Portable handheld electronic device featuring virtual pet, designed for education, development and prototyping of electronics and software.		

The RF Exposure Evaluation for FCC:

SAR Test Exclusion Calculations

FCC: According to KDB 447498 D01 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies v06.

(1) Clause 4.3: General SAR test reduction and exclusion guidance

Sub clause 4.31: Standalone SAR test exclusion considerations

1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6GHz at test separation distance ≤ 5 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{(GHz)}}}] \leq 3.0$ for 1-g SAR

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation, mm})] * [\sqrt{f_{\text{(GHz)}}}] \leq 7.5.0$ for 10-g SAR

Calculation:

Frequency (MHz)	Max. Output Power (dBuV/m)	Max. Output Power (dBm)	Tolerance \pm (dB)	Output power (Max. Turn-up Procedure) (mW)	Calculation Value	Threshold Value
433.92MHz	70.63	-29.33	-29 ± 1	0.002	0.0003	3.0

Note: For conducted measurements below 1000 MHz, the field strength shall be computed as specified in item d), and then an additional 4.7 dB shall be added as an upper bound on the field strength that would be observed on a test range with a ground plane for frequencies between 30 MHz and 1000 MHz, or an additional 6 dB shall be added for frequencies below 30 MHz.

$$E = \text{EIRP} - 20 \log d + 104.8$$

where

E is the electric field strength in dBuV/m

EIRP is the equivalent isotropically radiated power in dBm

d is the specified measurement distance in m

So: $\text{EIRP} = E + 20 \log 3 - 104.8 - (4.7 \text{ or } 6)$

Note: At separation distance of ≤ 5 mm

Conclusion:

The measurement results comply with the FCC Limit per 47 CFR 2.1093 for the uncontrolled RF Exposure and SAR Exclusion Threshold per KDB 447498 v06.

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