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# RF Exposure Evaluation Report

**Report No.:** CQASZ20220500896E-04

**Applicant:** Shenzhen Median Technology Co., LTD.

**Address of Applicant:** Room1601-1603, 16/F, Tower A,KaiDAR Group Center Building, 168XiliTongShaRoad, NanShan District, ShenZhen City, Guangdong Province

**Equipment Under Test (EUT):**

**EUT Name:** XIAOAN dry burning prevention terminal

**Model No.:** MD-01

**Test Model No.:** MD-01

**Brand Name:**  小安智视

**FCC ID:** 2A643-MD-01

**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
447498 D04 Interim General RF Exposure Guidance v01

**Date of Receipt:** 2022-05-27

**Date of Test:** 2022-05-27 to 2022-06-08

**Date of Issue:** 2022-06-20

**Test Result:** **PASS\***

\*In the configuration tested, the EUT complied with the standards specified above.

**Tested By:** lewis zhou

( Lewis Zhou )

**Reviewed By:** K. Liao

( K Liao )

**Approved By:** Jack Ai

( Jack Ai )



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20220500896E-04	Rev.01	Initial report	2022-06-20

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### 3 General Information

#### 3.1 Client Information

Applicant:	Shenzhen Median Technology Co., LTD.
Address of Applicant:	Room1601-1603, 16/F, Tower A,KaiDAR Group Center Building, 168XiliTongShaRoad, NanShan District, ShenZhen City, Guangdong Province
Manufacturer:	Shenzhen Median Technology Co., LTD.
Address of Manufacturer:	Room1601-1603, 16/F, Tower A,KaiDAR Group Center Building, 168XiliTongShaRoad, NanShan District, ShenZhen City, Guangdong Province
Factory:	Shenzhen Median Technology Co., LTD.
Address of Factory:	Room1601-1603, 16/F, Tower A,KaiDAR Group Center Building, 168XiliTongShaRoad, NanShan District, ShenZhen City, Guangdong Province

#### 3.2 General Description of EUT

Product Name:	XIAOAN dry burning prevention terminal
Model No.:	MD-01
Test Model No.:	MD-01
Trade Mark:	 小安智视
Software Version:	V2.1
Hardware Version:	V01
Power Supply:	Power by DC 5V for adapter

#### 3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	1Mbps/2Mbps
Number of Channel:	40
Product Type:	<input type="checkbox"/> Mobile <input type="checkbox"/> Portable <input checked="" type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	1dBi

#### 3.4 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Transfer Rate:	1Mbps/2Mbps/3Mbps
Number of Channel:	79

Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	1dBi

### 3.5 General Description of WLAN

Operation Frequency:	IEEE 802.11b/g/n(HT20): 2412MHz to 2462MHz IEEE 802.11n(HT40): 2422MHz to 2452MHz
Modulation Type:	IEEE for 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE for 802.11g : OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE for 802.11n(HT20 and HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)
Transfer Rate:	IEEE for 802.11b: 1Mbps/2Mbps/5.5Mbps/11Mbps IEEE for 802.11g : 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps IEEE for 802.11n(HT20) : 6.5Mbps/13Mbps/19.5Mbps/26Mbps/39Mbps/52Mbps/58.5Mbps/65Mbps IEEE for 802.11n(HT40) : 13.5Mbps/27Mbps/40.5Mbps/54Mbps/81Mbps/108Mbps/121.5Mbps/135Mbps
Number of Channel:	79
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	1dBi

## 4 MPE Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Limits

The table applies to any RF source (i.e., single fixed, mobile, and portable transmitters) and specifies power and distance criteria for each of the five frequency ranges used for the MPE limits. These criteria apply at separation distances from any part of the radiating structure of at least  $\lambda/2\pi$ . The thresholds are based on the general population MPE limits with a single perfect reflection, outside of the reactive near-field, and in the main beam of the radiator. For mobile devices that are not exempt per Table B.1 [Table 1 of § 1.1307(b)(1)(i)(C)] at distances from 20 cm to 40 cm and in 0.3 GHz to 6 GHz, 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)].

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

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.

#### 4.1.2 Test Procedure

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

#### 4.1.3 EUT RF Exposure

##### 1) For BLE

###### Measurement Data

GFSK mode(1Mbps)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.45	-1.5±1	-0.5	0.891
Middle(2440MHz)	-1.28	-1.0±1	0	1.000
Highest(2480MHz)	-1.02	-1.0±1	0	1.000
GFSK mode(2Mbps)				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.4	-1.5±1	-0.5	0.891
Middle(2440MHz)	-1.24	-1.5±1	-0.5	0.891
Highest(2480MHz)	-0.77	-1.0±1	0	1.000

The maximum output power of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20220500896E-03 for EUT test Max Conducted Peak Output Power value.  
2) EUT's Bluetooth module is more than 20cm away from the human body.

**2) For BT**
**Measurement Data**

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	1.04	1.0±1	2.0	1.585
Middle(2441MHz)	2.14	2.0±1	3.0	1.995
Highest(2480MHz)	4.49	4.5±1	5.5	3.548
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.99	-4.0±1	-3.0	0.501
Middle(2441MHz)	4.26	4.0±1	5.0	3.162
Highest(2480MHz)	3.77	3.5±1	4.5	2.818
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	4.37	4.5±1	5.5	3.548
Middle(2441MHz)	4.64	4.5±1	5.5	3.548
Highest(2480MHz)	4.15	4.0±1	5.0	3.162

The maximum output power of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20220500896E-02 for EUT test Max Conducted Peak Output Power value.

2) EUT's Bluetooth module is more than 20cm away from the human body.

**3) For WLAN**
**Measurement Data**

11B mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	10.23	10.0±1	11.0	12.589
Middle(2437MHz)	11.53	11.5±1	12.5	17.783
Highest(2462MHz)	10.84	11.0±1	12.0	15.849
11G mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	4.14	4.0±1	5.0	3.162
Middle(2437MHz)	5.21	5.0±1	6.0	3.981
Highest(2462MHz)	4.81	5.0±1	6.0	3.981
11N20 mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2412MHz)	4.15	4.0±1	5.0	3.162
Middle(2437MHz)	4.98	5.0±1	6.0	3.981
Highest(2462MHz)	4.61	4.5±1	5.5	3.548
11N40 mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2422MHz)	4.07	4.0±1	5.0	3.162
Middle(2437MHz)	4.05	4.0±1	5.0	3.162
Highest(2452MHz)	4.07	4.0±1	5.0	3.162

The maximum output power of this product is less than 3060mW

Note: 1) Refer to report No. CQASZ20220500896E-01 for EUT test Max Conducted Peak Output Power value.

2) EUT's Bluetooth module is more than 20cm away from the human body.

PD1/Limit1+PD2/Limit2+.....<1,PD (Power Density)

The worst case is as below:

MAX MPE of Wi-Fi(2.4G)&BT

$$=3.548/3060+17.783/3060=0.007<1.0$$

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