

RF EXPOSURE REPORT



FCC Applicant: ID TECH
10721 Walker Street, Cypress, California 90630, United States Of America

IC Applicant: ID TECH
10721 Walker Street, Cypress, California 90630, United States Of America

FCC Manufacturer: ID TECH TAIWAN
No. 16, Lane 22, GaoQing Rd., YanMei Dist., TaoYuan City 326, Taiwan

IC Manufacturer: ID TECH
10721 Walker Street, Cypress, California 90630, United States Of America

Product Name: Kiosk V

Brand Name: IDTECH

Model No.: Kiosk V

Model Difference: N/A

Report Number: TESA2206000157E5

FCC ID WQJ-KIOSKV

IC: 9847A-KIOSKV

Issue Date: October 27, 2022

Date of EUT Received: June 08, 2022

Approved By _____

John Yeh

We hereby certify that:

The above equipment was evaluate by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §1.1307 and RSS-102.

The results of this report relate to the specific sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2206000157E5	00	Original.	September 02, 2022	Winnie Huang	
TESA2206000157E5	01	Update the test results	September 26, 2022	Winnie Huang	*
TESA2206000157E5	02	Update ISED standard	September 30, 2022	Winnie Huang	
TESA2206000157E5	03	Update FCC, IC applicant and manufacturer information	October 24, 2022	Susan Lin	*
TESA2206000157E5	04	Update data on page 7, 9	October 27, 2022	Susan Lin	*

Note:

- The remark "*" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Kiosk V
Brand Name:	IDTECH
Model No.:	Kiosk V
Model Difference:	N/A
Hardware Version:	A
Firmware Version:	v1.00
EUT Series No.:	218K000053
Power Supply:	5 Vdc

1.2 Evaluation site

Laboratory	Site Address	FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	<input type="checkbox"/> No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	<input checked="" type="checkbox"/> No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	<input type="checkbox"/> 1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Neihu District, Taipei City, 222 Taiwan.	TW0029	23862	

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2 DETERMINATION OF MPE EXEMPTION

2.1 FCC

2.1.1 Single RF Source

As per §1.1307(b)(3)(i),

- (A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section. Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);
- (B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

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

Where

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

and

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

d = the separation distance (cm);

Note: when 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.

- (C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be used in lieu of ERP 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 (1.64 linear value).

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**Table 1 to § 1.1307(b)(3)(i)(C) –
Single RF Sources Subject to Routine Environmental Evaluation**

RF Source frequency (MHz)			Minimum Distance			Threshold ERP (W)
fL		fH	$\lambda L / 2\pi$		$\lambda H / 2\pi$	
0.3	-	1.34	159m	-	35.6m	1920 R ²
1.34	-	30	35.6m	-	1.6m	3450 R ² /f ²
30	-	300	1.6m	-	159mm	3.83 R ²
300	-	1500	159mm	-	31.8mm	0.0128 R ² f
1500	-	100000	31.8mm	-	0.5mm	19.2R ²

R= minimum separation distance in meter

f = frequency in MHz

2.1.2 Multiple RF Sources

In the case of fixed RF sources operating in the same time-averaging period, or of multiple mobile or portable RF sources within a device operating in the same time averaging period, if the sum of the fractional contributions to the applicable thresholds is less than or equal to 1 as indicated in the following equation.

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

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2.1.3 Single RF Source Evaluation Results

Chain 0	Frequency (MHz)	Max. tune-up power (dBm)	Max. tune-up power (mW)	Threshold (mW)
BLE	2402	-0.23	0.948	1

Chain 1	Frequency (MHz)	Max. tune-up power (dBm)	Max. tune-up power (mW)	Threshold (mW)
NFC	13.56	-32.57757	0.001	1

2.2 Multiple RF Sources Evaluation Results

Simultaneous transmission modes	Σ Power	Threshold (mW)
1	0.949	1

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3 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

3.1 Standard Applicable

According to RSS-102 issue 5 §2.5.2 RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);

at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $22.48/f_{0.5}W$ (adjusted for tune-up tolerance), where f is in MHz;

at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834} W$ (adjusted for tune-up tolerance), where f is in MHz;

This is a Mobile device, at which separation distance between the user and the device's antenna is 20cm. Therefore, section 2.5.2 shall be complied with.

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3.1.1 EIRP Calculation (Worst Case)

Operation Mode	Evaluation Frequency (MHz)	Max. output Power include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (W)	Limit (W)	Max. EIRP / Limit	Pass / Fail	Simultaneous transmission modes
								1
BLE	2402.00	-0.23	3.19	0.00	2.676	0.000	Pass	V
NFC	13.56	-32.57757	0.00	0.00	1.000	0.000	Pass	V

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

3.1.2 Collocated EIRP Calculation

Simultaneous transmission modes	Σ Max. EIRP/Limit	Criteria
1	0.000	1

Note:

1. Σ (EIRP / Limit): This is a summation of [(EIRP for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].
2. Considering the collocated transmitters, the aggregated (EIRP /limit) is smaller than 1, and MPE of collocated transmitters is compliant

~ End of Report ~

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