KDB 447498 D03
47 C.F.R. Part 1, Subpart I, Section 1.1310
47 C.F.R. Part 2, Subpart J, Section 2.1091

RF EXPOSURE REPORT

For

VP3350

Model: IDMR-SBT93D

Trade Name: ID TECH

Issued to

ID TECH
10721 Walker Street Cypress, CA 90630 United States

Issued by

Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City, Taiwan. (R.O.C.)
Issue Date: May 10, 2022

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Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 10, 2022	Initial Issue	ALL	Doris Chu

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1. TEST RESULT CERTIFICATION

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15 and Part 25.

The test results of this report relate only to the tested sample EUT identified in this report.

APPLICABLE STANDARDS	
STANDARD	**TEST RESULT**
KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	Compliance
Statements of Conformity	
Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.	

Approved by:

Kevin Tsai
Deputy Manager
Compliance Certification Services Inc.

2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of the chapter.

TABLE 1 - LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	* 100	6
3.0-30	1842/f	4.89/f	* 900/f^2	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	* 100	30
1.34-30	824/f	2.19/f	* 180/f^2	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Note 1 to Table 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when a person is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

3. EUT SPECIFICATION

EUT	VP3350
Model	IDMR-SBT93D
Trade Name	ID TECH
Model Discrepancy	N/A
Received Date	February 15, 2022
Frequency band (Operating)	☒ Bluetooth: 2402MHz ~ 2480MHz ☒ 13.56MHz ☐ Others
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others
Exposure classification	☐ Occupational/Controlled exposure (S = 5mW/cm^2) ☒ General Population/Uncontrolled exposure (S=1mW/cm^2)
Antenna Specification	**13.56MHz** Loop Antenna **BLE** Chip Antenna / Gain: 1 dBi BT: Gain : 1.00 dBi (Numeric gain: 1.26) Worst
Maximum Measurement Average Power include tune up power	**13.56MHz** 13.56MHz 65.89 dBuV/m (3m) **BLE** BLE | 0.00 dBm | (1.000 mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A
HW Version	Rev:A
SW Version	Rev:A
EUT Serial #	150T858806

Remark:
1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
3. The BLE tune up power referred the average output power of the test report TMWK2202000584KR for RF Exposure assessment purpose.
4. The 13.56 MHz power referred of the test report TMWK2202000585KR for RF Exposure assessment purpose.

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4. TEST RESULTS

Compliance.

<u>Calculation</u>

Given $E = \dfrac{\sqrt{30 \times P \times G}}{d}$ & $S = \dfrac{E^2}{377}$

Where E = Field strength in Volts / meter
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377\, d^2}$$

Changing to units of mW and cm, using:

P (mW) = P (W) / 1000 and

d (cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$ **Equation 1**

Where d = Distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power density in mW / cm^2

If, Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

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5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using d = 20 cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where   P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm^2

BLE:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm^2	Limit (mW/cm2)
0	2402	1.000	1.26	20	0.00025	1

13.56MHz:

EUT parameter (data from the separate report)	
Result Power in dBuV/m	65.89 dBuV/m (3m)
Limit of E-field strength (V/m)	60.77 V/m

Exposure evaluation	
Given $R = R_3 + 40\log(3/0.2)$ or $R = R_3 + 40\log(3/0.15)$ $E = 10^{((R-120)/20)}$	Where: ● E: E field Strength ● R$_3$: Result Power on 3m ● R: Result Power on 0.2m or 0.15m

Evaluation distance (m)	Frq. (MHz)	Result power (dBuV/m)	Electric Field Strength (V/m)	Limit of Electric Field Strength (V/m)
0.2	13.56	65.89	0.44328	60.77

--End of Report--