MPE Report

Applicant	:	***Avedis Zildjian Company***
Product Name	:	***Electronic Drum Sound Module***
Trade Name	:	***Zildjian***
Model Number	:	***E·VAULT***
Applicable Standard	:	***47 CFR § 2.1091***
Received Date	:	***Jan. 16, 2024***
Issued Date	:	***May 02, 2024***

Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel：+886-3-2710188 / Fax：+886-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330

Note:
1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
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3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Approved By :

Ted Hsieh

Testing Laboratory
1330

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Revision History

Rev.	Issued Date	Description	Revised by
00	May 02, 2024	Initial Issue	Emma Chao

1. General Information

1.1 Reference Applicable Standard

Standard	Description	Version
IEEE C95.1	American National Standard safety levels with respect to human exposure to radio frequency electromagnetic fields, 300 KHz to 100 GHz, New York.	1992
47 CFR § 2.1091	Radiofrequency radiation exposure evaluation: mobile devices.	-
47 CFR § 1.1310	Radiofrequency radiation exposure limits.	-

1.2 Testing Location

Test Facilities

Company Name: Eurofins E&E Wireless Taiwan Co., Ltd.
Address: No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
Website: https://www.atl.com.tw
Telephone: +886-3-271-0188
Fax: +886-3-271-0190
E-mail: infoEETW@eurofins.com

Test Site Location

■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan
☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan

Laboratory Accreditation

Location	TAF	FCC	ISED
No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan	Accreditation No.: 1330	Designation No.: TW0010	Company No.: 7381A CAB ID: TW1330
No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan	Accreditation No.: 1330	Designation No.: TW0034	Company No.: 28922 CAB ID: TW1330

2. Description of Equipment under Test (EUT)

Applicant	Avedis Zildjian Company 22 Longwater Drive, Norwell, Massachusetts 02061, United States			
Product Name	Electronic Drum Sound Module			
Trade Name	Zildjian			
Model Number	E·VAULT			
FCC ID	2A2KDZIEV0001			
Use Distance	20 cm			
Antenna Information	Trade Name	Model No.	Type	Gain
	PSA	RFECA3216060A1T	CERAMIC ANTENNA	2.09 dBi
Accessory Information				
AC adapter	Trade Name	Zildjian	Model Number	AMS200-1202000F
	I/P: 100-240 Vac, 50/60 Hz, 0.8 A O/P: 12 Vdc, 2.0 A			
Drum	Trade Name	Zildjian	Model Number	n/a
	10 inch			
Drum	Trade Name	Zildjian	Model Number	n/a
	12 inch			
Drum	Trade Name	Zildjian	Model Number	n/a
	14 inch			
Drum	Trade Name	Zildjian	Model Number	n/a
	20 inch			
HiHat Top	Trade Name	Zildjian	Model Number	n/a
	14 inch			
HiHat Bottom	Trade Name	Zildjian	Model Number	n/a
	13 inch			
Cymbal	Trade Name	Zildjian	Model Number	n/a
	16 inch			
Cymbal	Trade Name	Zildjian	Model Number	n/a
	18 inch			
Cymbal	Trade Name	Zildjian	Model Number	n/a
	20 inch			
TRS cable	Trade Name	Zildjian	Model Number	n/a
	4.5 m			
RJ-45 cable	Trade Name	Zildjian	Model Number	n/a
	3 m			
RJ-45 cable	Trade Name	Zildjian	Model Number	n/a
	4.5 m			

Note:

The above information of DUT was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

2.1 RF Specification

Bluetooth				
Support type:	☒ BR	☒ EDR	☒ BLE-1 Mbps	☒ BLE-2 Mbps

3. RF Exposure Limit

For devices that operate at larger distances from persons, where there are minimal RF coupling interactions between a device and the user or nearby persons, RF exposure compliance using maximum permissible exposure (MPE) limits is applied. The limits for MPE is listed as below:

Limits for General Population / Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time|E|²,|H|² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824 / f	2.19 / f	(180 / f2)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	F / 1,500	30
1,500-100,000	-	-	1.0	30
Limits for Occupational / Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time|E|²,|H|² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1,842 / f	4.89 / f	(900 / f2)*	6
30-300	61.4	0.163	1.0	6
300-1,500	-	-	F / 300	6
1,500-100,000	-	-	5	6

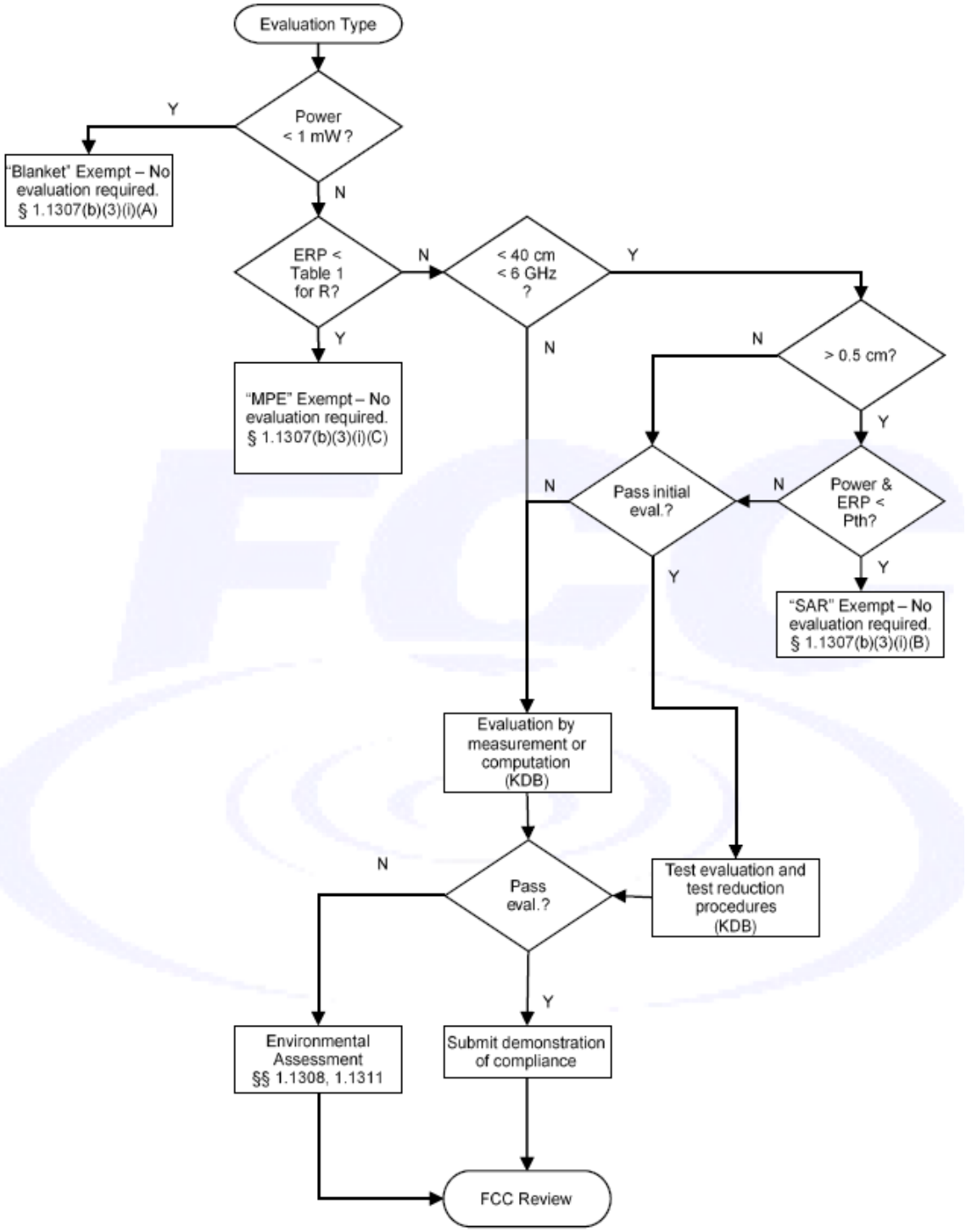
f = frequency in MHz. * = Plane-wave equivalent power density.

4. RF Exposure Assessment

4.1 Exemption Evaluation

Exemption evaluation was performed according to the appendix A and B in KDB447498 D04.

The General Sequence for Determination of Procedure demonstrated in Figure A.1 of KDB447498 D04 was applied.



4.2 Human Exposure Assessment

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”, generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons.”

Exposure evaluation

$$S_{eirp} = \frac{EIRP}{4\pi d^2} = \frac{PG}{4\pi d^2}\left(W/m^2\right)$$

Where

S: is the input power (W);

G: is the antenna gain;

d : is the distance between antennas and evaluation point (m).

5. Maximum Transmitting Mode Evaluation

Antenna transmission description
Bluetooth : 1TX (Diversity)

6. Result

Band	Frequency (MHz)	Conducted Power (dBm) [P]	ANT Gain (dBi)	Numeric Gain [G]	Power with Duty cycle (mW) [P]x[G]	Power Density (mW/cm^2) [S]	Standalone Limit (mW/cm^2)	Evaluated / Exposure Limit
Bluetooth	2402 - 2480	8.87	2.09	1.62	12.49	0.002	1.00	0.00

Note:

1. The calculation uses the minimum distance defined by the regulations of 20 cm, which is more conservative than the actual use distance of the product.

2. The maximum power and gain were applied to evaluate MPE.

3.The device does not support simultaneous transmission.

MAX MPE: 0.002 mW/cm^2

7. Conclusion

The result shows that this device is compliance with the exposure limits in 47 CFR §1.1310.

********** End of Report **********