MPE Report

Applicant	:	Medimaging Integrated Solution Inc.
Product Name	:	VS Tabletop Tonometer
Trade Name	:	Twenty/Twenty Therapeutics LCC
Model Number	:	IOP 100W
Applicable Standard	:	47 CFR § 2.1091
Received Date	:	Sep. 21, 2022
Issue Date	:	Dec. 19, 2022

Issued by

Approved By : Kris Pan

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Testing Laboratory 1330

Taiwan Accreditation Foundation accreditation number: 1330

Note:

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Revision History

Rev.	Issued Date	Revisions	Revised By
00	Dec. 19, 2022	Initial Issue	Abby Hsu

Contents

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

Site Name: Site Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: □ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

2. Description of Equipment under Test (EUT)

Applicant	Medimaging Integrated Solution Inc. 3F, No. 24-2, Industry E. Rd. IV, Hsinchu Science Park, Hsinchu, Taiwan 30077
Manufacturer	Medimaging Integrated Solution Inc. 3F, No. 24-2, Industry E. Rd. IV, Hsinchu Science Park, Hsinchu, Taiwan 30077
Product Name	VS Tabletop Tonometer
Trade Name	Twenty/Twenty Therapeutics LCC
Model Number	IOP 100W
FCC ID	2AFB3-IOP100W
Frequency Range	WLAN 2.4 GHz：2412 - 2472 MHz Bluetooth：2402 - 2480 MHz
Supported Modulations	WLAN 2.4 GHz : 802.11b / g / n HT20
	Bluetooth：BR / EDR / LE
Device Category	Mobile

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

Antenna Information			
Model	Type	Frequency	Max. Gain (dBi)
RFA-02-AP303-70-200	Dipole Antenna	2400 ~ 2483.5 MHz	2

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/cm^2)	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	($180 / f^2$)*	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/cm^2)	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	($900 / f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	-	-	F / 300	6
1,500-100,000	-	-	5	6

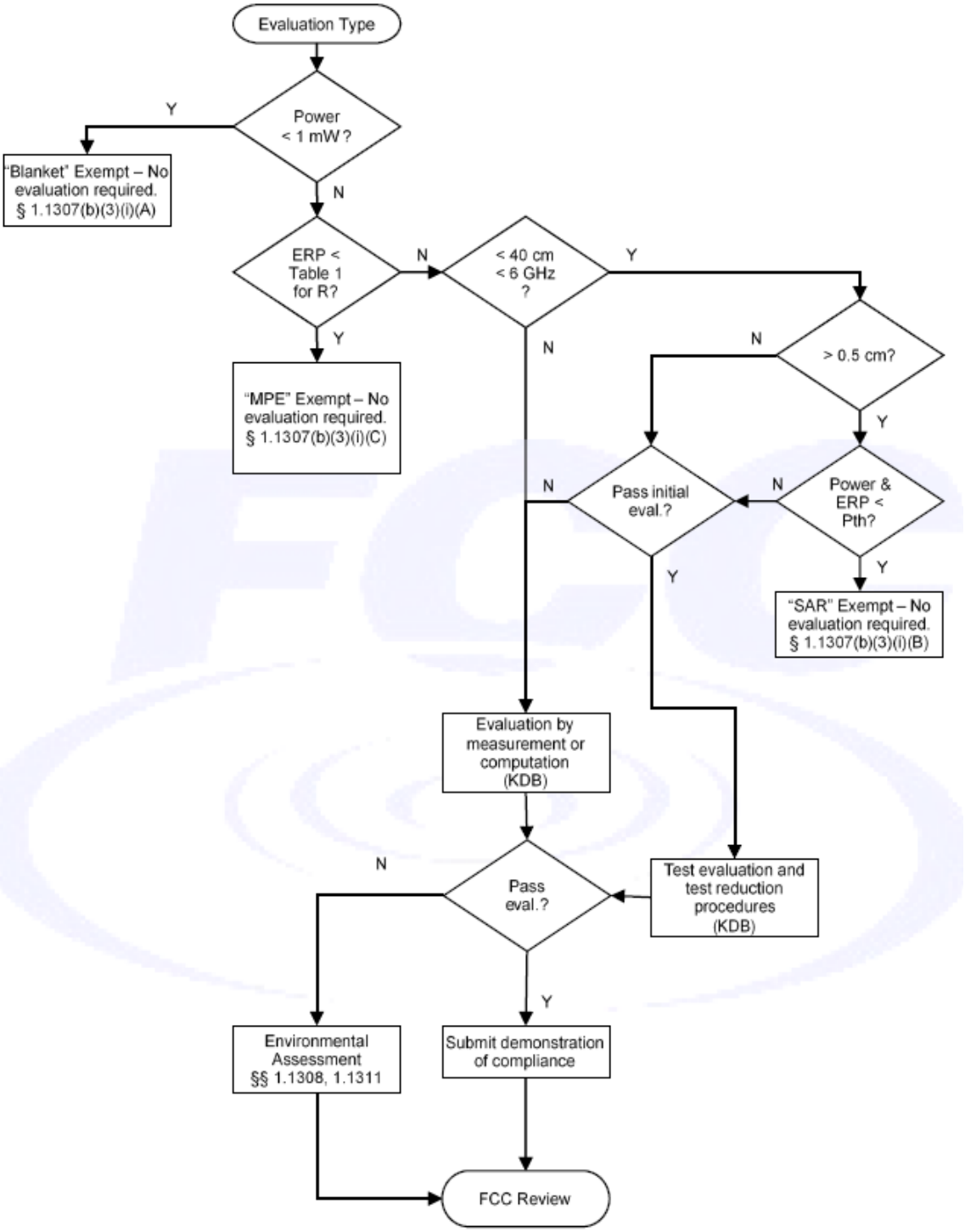
f = frequency in MHz. * = Plane-wave equivalent power density.

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 Tune-up Power

Operate Band	Frequency (MHz)	ANT 0
2.4 GHz	2412 - 2472	17.5
Bluetooth	2402 - 2480	10.5

6. Test Result

Band	Frequency (MHz)	Distance (cm) [R]	Tune-up Power (dBm) [P]	ANT Gain (dBi)	Numeric Gain [G]	Duty Cycle	Power with Duty cycle (mW) [P]x[G]	Power Density (mW/cm^2) [S]	Standalone Limit (mW/cm^2)
2.4 GHz	2412 - 2472	20.0	17.50	2.00	1.58	1	88.85	0.018	1.00
Bluetooth	2402 - 2480	20.0	10.50	2.00	1.58	1	17.73	0.004	1.00

Note:

1. The Numeric Gain calculated by 10^(ant. Gain(dBi) /10).
2. Each band max power which perform MPE of any configurations.
3. MPE results are evaluated by lowest data rate for WLAN.
4. The device operating IEEE 802.11 b/g/n mode is 1TX (SISO).

Simultaneous Transmitting：

Total MPE = Wi-Fi MPE + Bluetooth MPE = 0.021 mW/cm^2 < 1 mW/cm^2

7. Conclusion

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

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