FCC MPE Report

Applicant	:	Meter Inc
Product Name	:	Meter wireless access point
Trade Name	:	Meter
Model Number	:	MW03, MW04
Applicable Standard	:	47 CFR § 2.1091
Received Date	:	Jun. 01, 2023
Issued Date	:	Aug. 01, 2023

Issued by

Approved By : 

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.
2.This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
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.

Revision History

Version	Issued Date	Revisions	Revised By
00	Aug. 01, 2023	Initial Issue	Rowan Hsieh

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.	-
KDB 447498 D04	RF exposure procedures and equipment authorization policies for mobile and portable devices	v01

1.2 Testing Location

Lab 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	Meter Inc 548 Market St., PMB 22716, San Francisco, CA 94104
Manufacturer	Meter Inc 548 Market St., PMB 22716, San Francisco, CA 94104
Product Name	Meter wireless access point
Trade Name	Meter
Model Number	MW03, MW04
FCC ID	2AVVV-MW03
USE DISTANCE	20 cm
Antenna information	Brand: SENAO Model: 5718A0346300 Type: Metal PIFA Antenna Gain: 2.86 dBi
	Brand: SENAO Model: 5718A0347300 Type: Metal PIFA Antenna Gain: 3.12 dBi
	Brand: SENAO Model: 5718A0348300 Type: Metal PIFA Antenna Gain: 3.14 dBi
	Brand: SENAO Model: 5718A0349300 Type: Metal PIFA Antenna Gain: 3.29 dBi

Antenna information	Brand: SENAO Model: 5718A0350300 Type: Metal PIFA Antenna Gain: 5150~5250 MHz: 4.78 dBi 5250~5350 MHz: 4.54 dBi 5470~5725 MHz: 5.65 dBi 5725~5850 MHz: 5.07 dBi
	Brand: SENAO Model: 5718A0351300 Type: Metal PIFA Antenna Gain: 5150~5250 MHz: 4.61 dBi 5250~5350 MHz: 4.61 dBi 5470~5725 MHz: 4.59 dBi 5725~5850 MHz: 5.50 dBi
	Brand: SENAO Model: 5718A0352300 Type: Metal PIFA Antenna Gain: 5150~5250 MHz: 4.31 dBi 5250~5350 MHz: 4.25 dBi 5470~5725 MHz: 5.84 dBi 5725~5850 MHz: 5.36 dBi
	Brand: SENAO Model: 5718A0353300 Type: Metal PIFA Antenna Gain: 5150~5250 MHz: 4.15 dBi 5250~5350 MHz: 4.15 dBi 5470~5725 MHz: 4.98 dBi 5725~5850 MHz: 5.84 dBi
	Brand: N/A Model: 5718A0643300 Type: Dipole Antenna Gain: 2.4 GHz: 2.91 dBi 5 GHz: 5.14 dBi

Note:

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

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

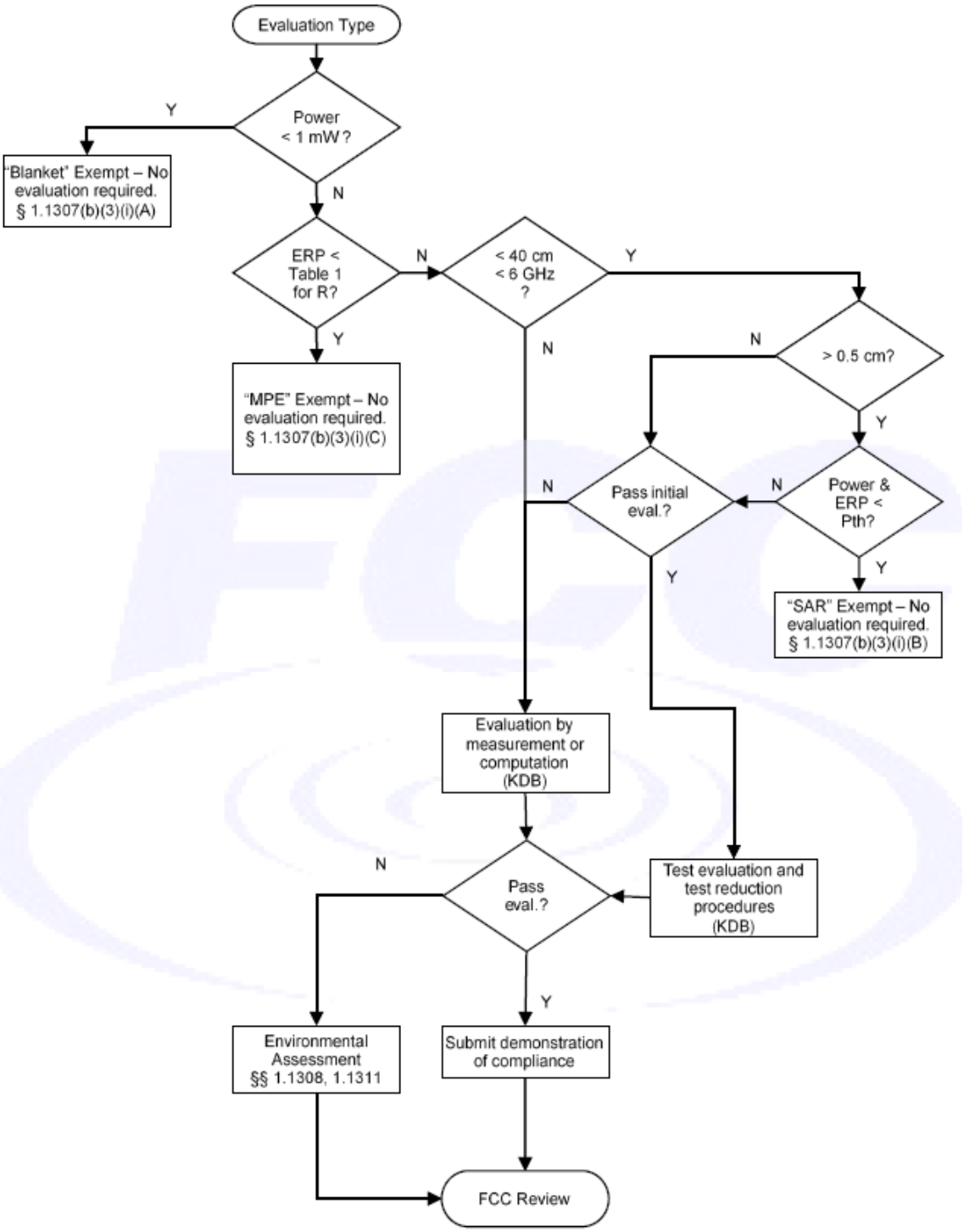
f = frequency in MHz. * = Plane-wave equivalent power density.

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. Result

Band	Freq.(Min)	Freq.(Max)	Distance (cm) [R]	Tune-up Power (dBm) [P]	ANT Gain (dBi)	ERP(W)	MPE Exemption <§1.1307(b)(3)(i)(C)> Threshold ERP (W)	MPE Exemption <§1.1307(b)(3)(i)(C)> considerations
WLAN5.3G	5250	5350	20.00	23.68	4.61	0.411	0.768	Qualified
WLAN5.6G	5470	5725	20.00	23.89	5.84	0.573	0.768	Qualified

Note:

1. This device is qualified for exemption under §1.1307(b)(3)(i)(C).
2. Each band max power which perform MPE of any configurations.

6. Conclusion

The result shows that this device is qualified for MPE-Based Exemption in KDB447498. Therefore, MPE testing is not required.

---END---