

FCC MPE Report

Applicant : Askey Computer Corp
Product Name : Wi-Fi 6 Router
Trade Name : Askey
Model Number : EAI2326
Applicable Standard : 47 CFR § 2.1091
Received Date : Aug. 17, 2023
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Issued by

Approved By : _____

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Revision History

Version	Issued Date	Revisions	Revised By
00	Aug. 30, 2023	Initial Issue	Rowan Hsieh

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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	Askey Computer Corp 10F, No. 119, JIANKANG RD. ZHONGHE DIST, NEW TAIPEI CITY, Taiwan					
Product Name	Wi-Fi 6 Router					
Trade Name	Askey					
Model Number	EAI2326					
FCC ID	H8NEAI2326					
Use Distance	20 cm					
Frequency Range	Operate Band			Frequency Range (MHz)		
	IEEE 802.11b / IEEE 802.11g IEEE 802.11n 2.4 GHz 20 MHz(64QAM) (256QAM) IEEE 802.11ax 2.4 GHz 20 MHz			2412 - 2462		
	IEEE 802.11n 2.4 GHz 40 MHz(64QAM) (256QAM) IEEE 802.11ax 2.4 GHz 40 MHz			2422 - 2452		
	IEEE 802.11a / IEEE 802.11n 5 GHz 20 MHz / IEEE 802.11ac 20 MHz / IEEE 802.11ax 20 MHz			5180 – 5825		
	IEEE 802.11n 5 GHz 40 MHz / IEEE 802.11ac 40 MHz / IEEE 802.11ax 40 MHz			5190 – 5795		
	IEEE 802.11ac 80 MHz / IEEE 802.11ax 80 MHz			5210 – 5775		
	Antenna Information	Antenna	Model	Type	Max. Gain (dBi)	
ANT-0		N03AKANF-T-PK1-E140U	PCB Antenna	2402 – 2480	5.80	
				5150 – 5250	5.90	
				5250 – 5350	5.80	
				5470 – 5725	4.60	
				5725 – 5850	5.10	
ANT-1		N03AKANG-T-PK1-K195U	PCB Antenna	2402 – 2480	5.40	
				5150 – 5250	5.60	
				5250 – 5350	5.60	
				5470 – 5725	4.80	
ANT-2		N03AKANH-T-PK1-P85U	PCB Antenna	5725 – 5850	5.10	
				2402 – 2480	4.10	
				5150 – 5250	4.30	
				5250 – 5350	4.60	
ANT-3		N03AKANJ-T-PK1-R65U	PCB Antenna	5470 – 5725	4.40	
				5725 – 5850	4.50	
				2402 – 2480	4.50	
				5150 – 5250	5.30	
					5250 – 5350	5.00
					5470 – 5725	4.80
				5725 – 5850	5.40	

Note:

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

EUT Modify Description :

Modify Description:

Changes on the product name, trade name and model number

After the evaluation, retest of all test items is not required.

The test data refer to the original report and showed in this report.

Original Report : 2111FS11

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

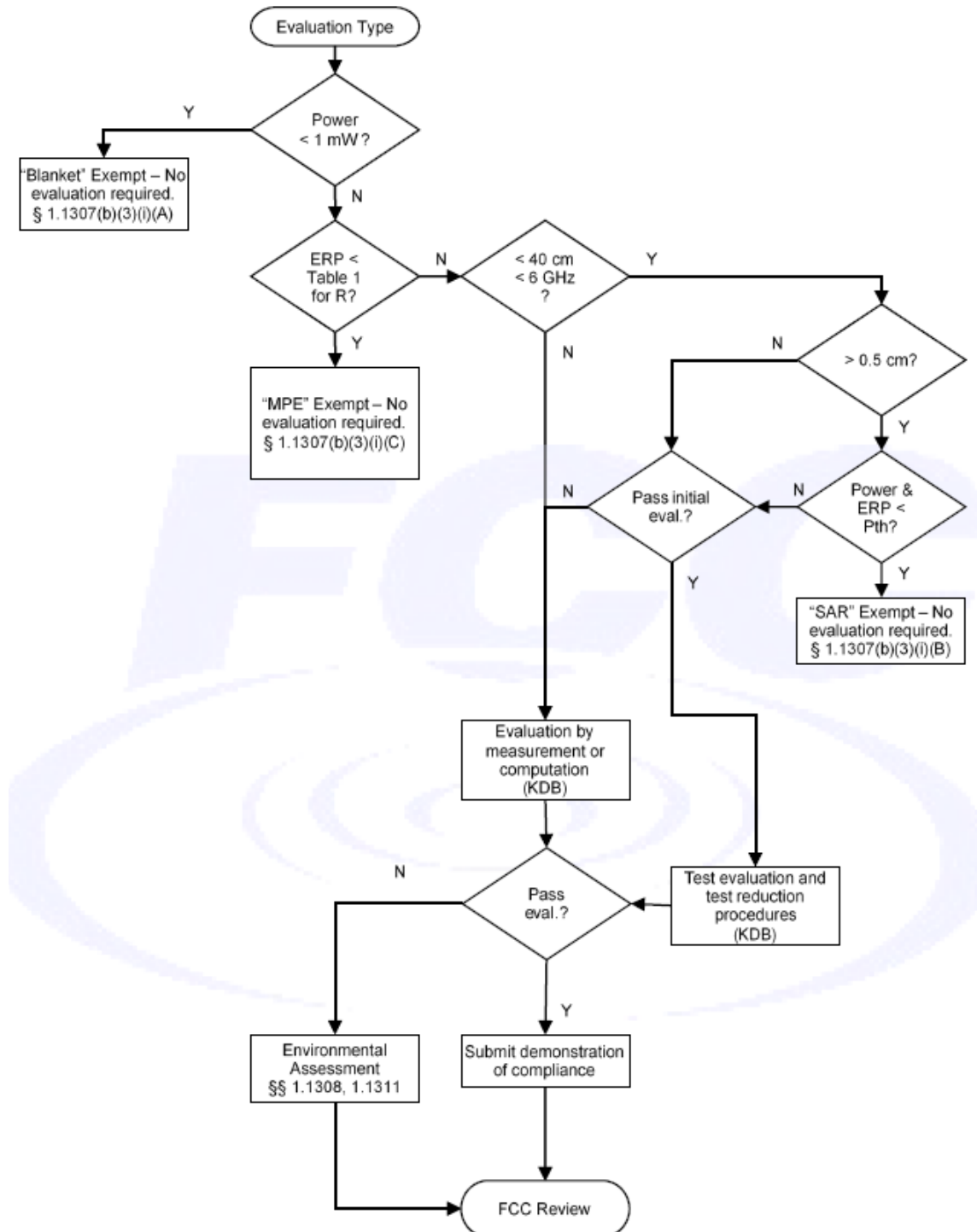
f = frequency in MHz. * = Plane-wave equivalent power density.

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

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

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
IEEE 802.11b : 1TX IEEE 802.11g : 4TX (CDD) IEEE 802.11a : 4TX (CDD) IEEE 802.11n 2.4 GHz(64QAM) (256QAM) / 802.11ax : 4TX (CDD / Beamforming on) IEEE 802.11n 5 GHz / 802.11ac / 802.11ax : 4TX (CDD / Beamforming on)

6. Result

Antenna	Band	Frequency (MHz)	Limit (mW)/cm ²	Distance	Tune-up Power	ANT Gain	Numeric Gain	Duty Cycle	Power with Duty cycle	Power Density
				(cm)	(dBm)				(mW)	(mW)/cm ²
				[R]	[P]	(dBi)	[G]	[P]x[G]		[S]
Wi-Fi Antenna	2.4GHz	2412-2462	1.0	20	29.50	5.80	3.80	1	3386.75	0.674
	5GHz	5150-5250	1.0	20	26.00	5.90	3.89	1	1548.64	0.308
		5250-5350	1.0	20	22.50	5.80	3.80	1	675.75	0.134
		5470-5725	1.0	20	23.50	4.80	3.02	1	676.09	0.135
		5725-5850	1.0	20	30.00	5.40	3.47	1	3470.00	0.690
Wi-Fi Antenna (Beamforming)	2.4GHz	2412-2462	1.0	20	24.00	11.00	12.59	1	3162.47	0.629
	5GHz	5150-5250	1.0	20	24.00	11.32	13.55	1	3403.61	0.677
		5250-5350	1.0	20	19.00	11.28	13.43	1	1066.78	0.212
		5470-5725	1.0	20	20.00	10.67	11.67	1	1167.00	0.232
		5725-5850	1.0	20	25.00	11.05	12.74	1	4028.74	0.801

Note:

1. Mobile or fixed location transmitters, minimum separation distance is 20 cm, even if calculations indicate MPE distance is less.
2. We used the maximum power and gain to provide MPE results.
3. The Numeric Gain calculated by $10^{(\text{ant. Gain(dBi)} / 10)}$.
4. MPE results are evaluated by lowest data rate for WLAN.

Simultaneous Transmitting :

Total MPE = 0.801 < 1 (mW)/cm²

7. Conclusion

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

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