

RF Exposure Evaluation Report

Under:
47 CFR Part 2.1091
KDB 447498 D01 Interim General RF Exposure Guidance v06
Operation within the band

Prepared for:
AiWave Technologies
ul. Niska 3, 27-200 Starachowice Poland

FCC ID: 2BCCA-6235ZRRB

EUT: RTL8735 Module

Model: 6235Z-RRB

December 15, 2023

Issue Date:

Original Report

Report Type:



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Report Revision History

Report #	Version	Description	Issued Date
KSZ2023053101J03_NII_MPE	Rev.01	Initial issue of report	September 27, 2023
KSZ2023053101J03_NII_MPE	Rev.02	Update the section 1.6 & 1.7 of report	December 15, 2023

1. General Information

1. 1 Notes

The test results of this report relate exclusively to the test item specified in 1.6. The Ke Mei Ou Laboratory does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of the Ke Mei Ou Laboratory.

1. 2 Testing Laboratory

Test Firm Name:	Ke Mei Ou Lab Co., Ltd.
Test Firm Address:	2013-2016, 20th Floor, Business Center, Jiahui Xin Cheng, No 3027, Shen Nan Road, Fu Tian, Shen Zhen, Guang Dong, P. R. China
FCC Designation Number:	CN1532
Test Firm Registration Number:	344480
Internet:	www.kmolab.com
Email:	kmo@kmolab.com
ANSI-ASQ National Accreditation Board/ACLASS ISO/IEC 17025 Accredited Lab for telecommunication standards. The Registration Number is AT-1532. The testing quality system meets with ISO/IEC-17025 requirements. This approval results is accepted by MRA of ILAC.	

1. 3 Details of Applicant

Name	AiWave Technologies
Address	ul. Niska 3, 27-200 Starachowice Poland

1. 4 Application Details

Date of Receipt of Application	: May 31, 2023
Date of Receipt of Test Item	: July 28, 2023
Date of Test	: July 28, 2023 ~ September 27, 2023

1. 5 Details of Manufacturer

Name	AiWave Technologies
Address	ul. Niska 3, 27-200 Starachowice Poland

1. 6 Test Item

EUT Feature	
EUT Description:	RTL8735 Module
Brand Name:	FN-LINK
Basic Mode:	6235Z-RRB
Family Model:	-
HW Version:	-
SW Version:	-
EUT RF Technology:	☒ IEEE Std. 802.11a/n
Equipment Class:	☒ NII-Unlicensed National Information Infrastructure TX ☒ Single-modular
EUT Stage:	☒ Identical Prototype
Note:	The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Additional Information

Standard Product Specification		
Tx/Rx Frequency Range	☒ 5150~5250 MHz	☐ 5250~5350 MHz
	☐ 5470~5725 MHz	☒ 5725~5850 MHz
Operating Mode	☒ Other	
	☐ Slave without radar detection	
Type of EUT	☒ Stand-alone	
Operational Condition	☐ AC à ☐ Other	
	☒ DC à ☒ Other à ☐ From Battery ☐ 2.0~3.3Vdc	

Specification of Accessory			
☐ AC/DC Adapter # (Charger)	Brand Name	N/A	Model Name
	Power Rating	N/A	

Antenna Type / Gain						
Ant.		Manufacture		Other		-
1		N/A		☒ PCB		☐ -
Ant.	Port	☐ BT	☐ Zigbee	☐ WiFi_2.4G	☒ WiFi_5G	☐ WiFi_6G
		Gain (dBi)				
1	1	-	-	-	0.84	-
Note: ☐ 2.4G - ☐ BT - ☒ 5G 1Tx_1Rx ☐ Zigbee - ☐ 6G -						

Standard Product Specification à General			
IEEE Standard	Frequency Range (MHz)	CH. Frequency (MHz)	Number of Channel
☒ 802.11a(HT20)	5150-5250	5180-5240	36-48 à 4
☒ 802.11n(HT20)	5725-5850	5745-5825	149-165 à 5
☒ 802.11n(HT40)	5150-5250	5190-5230	36-46 à 2
	5725-5850	5755-5795	151-159 à 2

1. 7 Applicable Standards

Applicable Standards	
According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards: 47 CFR Part 2.1091 KDB 447498 D01 Interim General RF Exposure Guidance v06 47 CFR Part 1.1307 47 CFR Part 1.1310	
Note:	All test items were verified and recorded according to the standards and without any deviation during the test.

2. Technical Test

2.1 Summary of Test Results

The EUT has been tested according to the following specifications:

FCC Rules	Test Type	Limit	Result	Notes
47 CFR Part 2.1091	Exposure Evaluation	< 1.0m W/cm ²	PASS	Complies.

Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule ($w = 0$).

3. EUT Modifications

No modification by test lab.

4. FCC Maximum Permissible Exposure (MPE)

4.1 Limit of MPE

(A) 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	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

(B) 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/1500	30
1500-100,000	--	--	1.0	30

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

4.2 RF Exposure Requirements

RF Exposure Requirements	
The MPE was calculated to show compliance with the power density limit.	
☒ $S = \frac{P * G}{4 * \pi * r^2}$ Where: - Ø S=Power density - Ø P=Power input to antenna - Ø G=Power gain of the antenna relative to an isotropic radiator - Ø R=Distance to the center of radiation of the antenna	☐ $E(V/m) = \frac{\sqrt{30 * P * G}}{r}; S(W/m^2) = \frac{E^2}{377} \text{ or } S = \frac{30 * P * G}{377 * r^2}$ Where: - Ø E=Electric field (V/m) - Ø P=Power output power (W) - Ø G=Power gain of the antenna relative to an isotropic radiator - Ø R= Distance to the center of radiation of the antenna

4.3 Conclusion

☒ Test Mode 1	Compliance with FCC Rules				
Mode/Band	Maximum Antenna gain (dBi)	Maximum tune-up Conducted Power (dBm)	Evaluation Distance(cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
5.725-5.85 GHz	0.84	8.24	20	0.0161	1.0
Conclusion: EUT complies with the FCC requirement.					
Device Category:	☒ Other				
Exposure Evaluation:	☒ MPE				

Note: BT and 2.4GHz or 5GHz Wi-Fi can't transmit simultaneously.

-----End of Report -----