

FCC Part 1.1310

RF Exposure Evaluation REPORT

For

FCC ID : 2AFXU-DUO01

Model : DUO

Report Type : Original Report

Product Name : DUO

Report Number : RXZ250703013SA01

Report Date : 2025-09-09

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Statement of Compliance

Applicant (Certification Holder)	M2communication INC.
	17F-3, No. 32, Gaotie 2nd Rd., Zhubei City, Hsinchu County ,Taiwan (R.O.C.)
Brand (Trade) Name	M2COMM
Product (Equipment) Name	DUO
Model Name	DUO
Series Model Name	N/A
Model Discrepancy	N/A

Measurement Procedures and Standards Used:

- ☒ FCC Part 2.1091
- ☒ FCC Part 1.1310

The measurement results in this report were performed at Bay Area Compliance Laboratories Corp. (New Taipei Laboratory)

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

The determination of the test results does not require consideration of the uncertainty of the measurement, unless the assessment is required by customer agreement, regulation or standard document specification.

Bay Area Compliance Laboratories Corp. (New Taipei Laboratory) is not responsible for the authenticity of the information provided by the applicant that affects the test results.

Report Issued Date : 2025-09-09

Reviewed By : Anson Lu



Revision History

Revision	No.	Report Number	Issue Date	Description	Author/ Revised by
0.0	RXZ250703013	RXZ250703013SA01	2025.09.09	Original Report	Anson Lu

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Note: It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (New Taipei Laboratory)

1. General Information

Product Description for Equipment under Test (EUT)

Product Name	DUO
Frequency Range	LoRa : 903 ~ 927 MHz
Tune-Up EIRP Power (dBm)	LoRa Mode Chain 1 : 16.52 dBm Chain 2 : 16.52 dBm
Modulation Technique	GFSK
Antenna Specification	Dipole Antenna Gain : 0.52 dBi
Received Date	2025/07/22

**All measurement and test data in this report was gathered from production sample serial number:
RXZ250703013-1 (Assigned by BACL (New Taipei Laboratory)).*

2. RF Output Power Evaluation

Please refer to RF report No: RXZ250703013RF02.

RF Conducted Output power table(Chain 1) :

Mode	Channel	Frequency (MHz)	Conducted Peak Output Power(dBm)
LoRa	Low	903	16.0
	Middle	915	15.84
	High	927	15.61

RF Conducted Output power table(Chain 2) :

Mode	Channel	Frequency (MHz)	Conducted Peak Output Power(dBm)
LoRa	Low	903	15.48
	Middle	915	15.33
	High	927	15.14

3. FCC §1.1310 - RF Exposure

Applicable Standard

According to subpart §1.1310 (a) Specific absorption rate (SAR) shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in [§ 1.1307\(b\) of this part](#) within the frequency range of 100 kHz to 6 GHz (inclusive).

§1.1310 (d)(2) For operations within the frequency range of 300 kHz and 6 GHz (inclusive), the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits and listed in Table 1 in [paragraph \(e\)\(1\)](#) of this section, may be used instead of whole-body SAR limits as set forth in [paragraphs \(a\)](#) through [\(c\)](#) of this section to evaluate the environmental impact of human exposure to RF radiation as specified in [§ 1.1307\(b\) of this part](#), except for portable devices as defined in [§ 2.1093 of this chapter](#) as these evaluations shall be performed according to the SAR provisions in [§ 2.1093](#).

§1.1310 (d)(3) At operating frequencies above 6 GHz, the MPE limits listed in Table 1 in [paragraph \(e\)\(1\)](#) of this section shall be used in all cases to evaluate the environmental impact of human exposure to RF radiation as specified in [§ 1.1307\(b\) of this part](#).

For single RF sources (*i.e.*, any single fixed RF source, mobile device, or portable device, as defined in paragraph (b)(2) of this section): A single RF source is exempt if:

(A) The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section.

Medical implant devices may only use this exemption and that in paragraph (b)(3)(ii)(A);

(B) Or the available maximum time-averaged power or effective radiated power (ERP), whichever is greater, is less than or equal to the threshold P_{th} (mW) described in the following formula. This method shall only be used at separation distances (cm) from 0.5 centimeters to 40 centimeters and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by:

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases}$$

Where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right) \text{ and } f \text{ is in GHz;}$$

and

$$ERP_{20 \text{ cm}} \text{ (mW)} = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases}$$

(C) Or using Table 1 and the minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz) at which the source operates, the ERP (watts) is no more than the calculated value prescribed for that frequency. For the exemption in Table 1 to apply, R must be at least $\lambda/2\pi$, where λ is the free-space operating wavelength in meters. If the ERP of a single RF source is not easily obtained, then the available maximum time-averaged power may be

used in lieu of ERP if the physical dimensions of the radiating structure(s) do not exceed the electrical length of $\lambda/4$ or if the antenna gain is less than that of a half-wave dipole (1.64 linear value).

Table 1 to § 1.1307(b)(3)(i)(C) - Single RF Sources Subject to Routine Environmental Evaluation

RF Source frequency (MHz)	Threshold ERP (watts)
0.3-1.34	$1,920 R^2$.
1.34-30	$3,450 R^2/f^2$.
30-300	$3.83 R^2$.
300-1,500	$0.0128 R^2f$.
1,500-100,000	$19.2R^2$.

4. RF Exposure Evaluation Result

Chain 1 :

Mode	Freq. (MHz)	Max. Output Power (Peak/dBm)	Tune-up Power (Peak/dBm)	Ant. Gain (dBi)	Distances (mm)	Tune-up Power (Peak/mW)	ERP (dBm)	ERP (mW)
LoRa	903	16.0	16.0	0.52	200	39.81	14.37	27.35
LoRa	915	15.84	16.0	0.52	200	39.81	14.37	27.35
LoRa	927	15.61	16.0	0.52	200	39.81	14.37	27.35

Chain 2 :

Mode	Freq. (MHz)	Max. Output Power (Peak/dBm)	Tune-up Power (Peak/dBm)	Ant. Gain (dBi)	Distances (mm)	Tune-up Power (Peak/mW)	ERP (dBm)	ERP (mW)
LoRa	903	15.48	16.0	0.52	200	39.81	14.37	27.35
LoRa	915	15.33	16.0	0.52	200	39.81	14.37	27.35
LoRa	927	15.14	16.0	0.52	200	39.81	14.37	27.35

§ 1.1307(b)(3)(i)(A) method is not applicable.

§ 1.1307(b)(3)(i)(C)

Chain 1 :

Mode	Freq. (MHz)	$\lambda/2\pi$ (mm)	Distances applies	ERP Limit (mW)	Result Option B
LoRa	903	52.88	apply	462.34	exempt
LoRa	915	52.18	apply	468.48	exempt
LoRa	927	51.51	apply	474.62	exempt

Chain 2 :

Mode	Freq. (MHz)	$\lambda/2\pi$ (mm)	Distances applies	ERP Limit (mW)	Result Option B
LoRa	903	52.88	apply	462.34	exempt
LoRa	915	52.18	apply	468.48	exempt
LoRa	927	51.51	apply	474.62	exempt

Note : The smaller the frequency, the worse the result

The minimum separation distance (R in meters) from the body of a nearby person for the frequency (f in MHz)
at which the source operates

ERP (watts) is no more than the calculated value prescribed for that frequency

R must be at least $\lambda/2\pi$

λ is the free-space operating wavelength in meters

Note: The Tune-up output power was declared by the Applicant.

The EUT Chain 1 and Chain 2 can't transmit at the same time.

Result: The device compliant the MPE-Based Exemption at 20cm distances.

******* END OF REPORT *******