

RF EXPOSURE REPORT



Applicant: SAF Tehnika AS
24a, Ganibu Dambis, Riga, LV-1005, Latvia
Manufacturer: SAF Tehnika AS
24a, Ganibu Dambis, Riga, LV-1005, Latvia
Product Name: Aranet Gateway Pro
Brand Name: Aranet
Model No.: TDSGWPU1
FCC ID W9Z-ARANETGW
IC: 8855A-ARANETGW
Date of EUT Received: Jun. 18, 2025
Issue Date: Aug. 19, 2025

Approved By

John Yeh

We hereby certify that:

The above equipment was evaluated by SGS Taiwan Ltd. The evaluation in this report is in compliance with FCC Rule Part §2.1091, KDB 447498 D01 v06 and RSS-102 issue 6.

The results of this report relate only to the sample identified in this report.

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Revision History

Report Number	Revision	Description	Issue Date	Revised By	Remark
TESA2506000508ES	00	Original	Aug. 06, 2025	Cindy Chou	
TESA2506000508ES	01	Update power & gain	Aug. 19, 2025	Cindy Chou	*

Note:

- The remark "*" indicates modification of the report upon requests from certification body.

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1 DESCRIPTION OF EQUIPMENT UNDER TEST (EUT)

1.1 Product Description

Product Name:	Aranet Gateway Pro
Brand Name:	Aranet
Model No.:	TDSGWPU1

1.2 Evaluation site

Laboratory	Site Address		FCC Designation number	ISED Company Number	CAB Identifier
SGS Taiwan Ltd. Central RF Lab. (TAF code 3702)	☒	No. 134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, 24803, Taiwan.	TW0027	4620A	TW3702
	☐	No. 2, Keji 1st Rd., Guishan Township, Taoyuan County, 333 Taiwan.	TW0028	4620E	
	☐	1F, No. 8, Alley 15, Lane 120, Sec. 1, Nei Hu Road, Nei Hu District, Taipei City, 222 Taiwan.	TW0029	23862	

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1.3 Antenna Information:

Operation mode	Peak Antenna Gain (dBi)
2.4GHz	3.26
BLE	3.26
LoRa	-9.70

Note: Antenna information is provided by the applicant.

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2 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

2.1 FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
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
1500-100000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equipment power density

Prediction of MPE limit at a given distance

$$S = PG / 4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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2.2 Power Density Calculation (Worst Case)

Operation Mode	Evaluation Frequency (MHz)	Operation Distance (cm)	Max. Output Power Include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (mW)	Power Density (PD) (mW/cm ²)	Limit (mW/cm ²)	Pass / Fail	Power Density / Limit	Collocated MPE
BLE	2402.00	20	9	3.26	16.83	0.0033	1.000	Pass	0.003	V
WLAN 2.4G	2442.00	20	20.5	3.26	237.68	0.047	1.000	Pass	0.047	V
LoRa	923.20	20	-4.95	-9.70	0.03	0.000	0.615	Pass	0.000	V

Conclusion: The maximum power density is below Exemption Criteria and/or Routine Evaluation MPE thresholds, therefore the device is compliant FCC RF exposure requirement.

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

2.2.1 Collocated Power Density Calculation

Operation Mode	Power Density / Limit	Σ (Power Density / Limit)
BLE	0.003	0.050
WLAN 2.4G	0.047	
LoRa	0.000	

Note:

1. Σ (Power Density / Limit): This is a summation of [(Power Density for each transmitter/antenna included in the simultaneous transmission) / (corresponding MPE limit)].
2. Considering the collocated transmitters, the aggregated (Power Density /limit) is smaller than 1, and MPE of collocated transmitters is compliant

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2.3 ISED Standard Applicable

According to RSS-102 issue 6 §6.6 RF Exposure Evaluation

Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:

below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)

at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $4.49/f^{0.5}W$ (adjusted for tune-up tolerance), where f is in MHz

at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)

at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than $1.31 \times 10^{-2} \times f^{0.6834}W$ (adjusted for tune-up tolerance), where f is in MHz

at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

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2.4 Field reference level (FRL) exposure exemption

Operation Mode	Evaluation Frequency (MHz)	Max. output Power include Tolerance (dBm)	Antenna Gain (dBi)	Max. EIRP (W)	Limit (W)	Max. EIRP / Limit	Pass / Fail	Simultaneous transmission modes						
								1	2	3	4	5	6	7
BLE	2402.00	9	3.26	0.02	2.676	0.006	Pass	V						
WLAN 2.4G	2442.00	20.5	3.26	0.24	2.707	0.088	Pass	V						
LoRa	923.20	-4.95	-9.70	0.00	1.392	0.000	Pass	V						

Note: For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

2.4.1 Exemption evaluation for simultaneous transmission

Simultaneous transmission modes	Σ Max. EIRP/Limt	Criteria
1	0.094	1

Note:

1. $\Sigma(\text{EIRP} / \text{Limit})$: This is a summation of [(EIRP for each transmitter/antenna included in the simultaneous transmission) / (corresponding exemption limit)].
2. Considering the collocated transmitters, the summation of (EIRP /limit) is smaller than 1, so the MPE of simultaneous transmission is compliant.

~ End of Report ~

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