RADIO EXPOSURE TEST REPORT

FCC ID	:	2ABOF-G1RN6AHI042
Equipment	:	RNv SYSTEM (6 GHz)
Brand Name	:	Tarana
Model Name	:	RNv SYSTEM (6 GHz)
Model Number	:	G1RN6AHI042
Applicant	:	Tarana Wireless, Inc. 590 Alder Drive ,Milpitas , CA 95035 , USA
Manufacturer	:	Tarana Wireless, Inc. 590 Alder Drive ,Milpitas , CA 95035 , USA
Standard	:	47 CFR Part 2.1091

The product was received on Dec. 23, 2024, and testing was started from Feb. 06, 2025 and completed on Mar. 11, 2025. We, Sporton International Inc. Hsinchu Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in 47 CFR Part 2.1091 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International Inc. Hsinchu Laboratory, the test report shall not be reproduced except in full.

Approved by: Sam Chen

Sporton International Inc. Hsinchu Laboratory
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History of this test report

Report No.	Version	Description	Issued Date
FA4D1172	01	Initial issue of report	Mar. 05, 2025
FA4D1172	02	Revising the testing completed date	Mar. 13, 2025
FA4D1172	03	Update the note 1 of section 2.4	Mar. 18, 2025
FA4D1172	04	Update the description of section 2.4 power column	Mar. 21, 2025

Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
2	-	Exposure evaluation	PASS	-

Conformity Assessment Condition:
1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacturer who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the chapter "Measurement Uncertainty".
Disclaimer:
1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The test configuration, test mode and test software were written in this test report are declared by the manufacturer.

Reviewed by: Sam Chen

Report Producer: Vicky Huang

1 General Description

1.1 EUT General Information

RF General Information			
Evaluation Mode	**Frequency Range (MHz)**	**Operating Frequency (MHz)**	**Modulation Type**
RF 5GHz	5725-5850	5755 / 5795 / 5825 / 5755+5795 / 5785+5825	QPSK
RF 6GHz	5925-6425	5965 / 6165 / 6405 / 5965+6005 / 6165+6205 / 6365+6405 / 5965+6405	QPSK
	6525-6875	6545 / 6685 / 6855 / 6545+6585 / 6685+6725 / 6815+6855 / 6545+6855	

1.2 Antenna Information

Ant.	Ant. CH	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		
							5GHz UNII 3	6GHz UNII 5	6GHz UNII 7
1	0	1	Accton	KG755	Patch array	MMCX	20.0	20.5	20.4
	1	2	Accton	KG755	Patch array	MMCX	20.0	20.5	20.4
	2	3	Accton	KG755	Patch array	MMCX	20.0	20.5	20.4
	3	4	Accton	KG755	Patch array	MMCX	20.0	20.5	20.4

Note 1: The EUT is driving cross-polarized antenna: CH 1, 3 is vertical and CH 0, 2 is horizontal. Minimum number of spatial stream (Nss) is 2. it doesn't need to evaluate array gain.

Note 2: The above information was declared by manufacturer.

Note 3: **For 5GHz function (4TX/4RX):**

Port 1, 2, 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, 2, 3 and Port 4 could transmit/receive simultaneously.

For 6GHz function (4TX/4RX):

Port 1, 2, 3 and Port 4 can be used as transmitting/receiving antenna.

Port 1, 2, 3 and Port 4 could transmit/receive simultaneously.

1.3 Accessories

Accessories			
Equipment Name	**Brand Name**	**Model Name**	**Rating**
PoE	PHIHONG	POE60U-BTA	INPUT: 100-240V~1.5A, 50-60Hz OUTPUT: 56V, 0.535A, 30W

1.4 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 D04 Interim General RF Exposure Guidance v01

The following reference test guidance is not within the scope of accreditation of TAF.

- 47 CFR Part 1.1307
- 47 CFR Part 1.1310

1.5 Testing Location

Testing Location Information	
Test Lab.：Sporton International Inc. Hsinchu Laboratory	
Hsinchu	ADD: No.8, Ln. 724, Bo'ai St., Zhubei City, Hsinchu County 302010, Taiwan (R.O.C.)
(TAF: 3787)	TEL: 886-3-656-9065 FAX: 886-3-656-9085
	Test site Designation No. TW3787 with FCC.
	Conformity Assessment Body Identifier (CABID) TW3787 with ISED.

2 Maximum Permissible Exposure

2.1 Limit of Maximum Permissible Exposure

(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/ cm²)	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/f²)	<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/ cm²)	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/f²)	<30
30-300	27.5	0.073	0.2	<30
300-1500	-	-	f/1500	<30
1500-100,000	-	-	1.0	<30

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

2.2 MPE Calculation Method

The MPE was calculated at 123 cm to show compliance with the power density limit.

The following formula was used to calculate the Power Density:

E (V/m) = $\frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m²) = $\frac{E^2}{377}$

E = Electric field (V/m)

P = RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd = $\frac{30 \times P \times G}{377 \times d^2}$

2.3 MPE Exemption

Option (A): 1.1307(b)(3)(i)(A): Available maximum time-averaged power is < 1 mW

Option (B): 1.1307(b)(3)(i)(B): Device operates between 300 MHz and 6 GHz and the maximum time-averaged power or effective radiated power (ERP), whichever is greater, <= Pth.

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

Where

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

and

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

d = the separation distance (cm);

Option (C): 1.1307(b)(3)(i)(C): ERP is below a threshold calculated based on the distance R between the person and the antenna / radiating structure, where R > λ / 2 π.

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.
Note: R is in meters, f is in MHz.	

2.4 Calculated Result and Limit

Exposure Environment: General Population / Uncontrolled Exposure

Mode	DG (dBi)	Conducted Power (dBm)	Maximum Source based Time Average Power (dBm)	Maximum Source based Time Average ERP Power (dBm)	Maximum Source based Time Average ERP Power (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.8G;D1D	20.00	29.84	26.05	43.90	24547.089	123	C	29047.9	0.8454
6.2G;D1D	20.50	15.45	11.66	30.01	1002.305	123	C	29047.9	0.0345
6.7G;D1D	20.40	15.55	11.76	30.01	1002.305	123	C	29047.9	0.0345

Simultaneous Transmission Analysis Mode: RF 5GHz + RF 6GHz

Mode	DG (dBi)	Conducted Power (dBm)	Maximum Source based Time Average Power (dBm)	Maximum Source based Time Average ERP Power (dBm)	Maximum Source based Time Average ERP Power (mW)	Distance (cm)	Option	TL ERP (mW)	TL Ratio
5.8G;D1D	20.00	29.84	26.05	43.90	24547.089	123	C	29047.9	0.8454
6.2G;D1D	20.50	15.45	11.66	30.01	1002.305	123	C	29047.9	0.0345
Sum TL Ratio_C	0.8799								
Ratio Limit	1								

Note 1: According to operation description the maximum transmission duty cycle is 41.83%.
Tune-up power scaling: 35.95dBm (Max. EIRP) – 3.79 (Duty Cycle) – 2.15 = 30.01dBm (ERP).
Note 2: As required by Part2.1091(c), time-average effective radiated power applies to power density calculation.
Note 3: The above antenna gain was declared by manufacturer.

———THE END———