



# RF Test Report

**Applicant:** Tag-N-Trac Inc.  
**Address:** 4250 Executive Sq, #675, La Jolla, California, United States, 92037  
**Product:** Sense Stream Tag - Single Use  
**Model No.:** ST100-SU  
**Brand Name:** Tag-N-Trac  
**FCC ID:** 2A24I-V02G15J18  
**Standards:** 47 CFR Part 2.1091  
FCC KDB 447498 D01 v06  
**Report No.:** PD20240022RF02  
**Issue Date:** 2024/03/13  
**Test Result:** PASS \*

\* The above equipment has been tested and compliance with the requirement of the relative standards by Hefei Panwin Technology Co., Ltd.

**Reviewed By:** Jerry Zhang

**Approved By:** Alec Yang

## Hefei Panwin Technology Co., Ltd.

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## Revision History

Report No.	Version	Description	Issue Date	Note
PD20240022RF02	1	Initial Report	2024/03/13	Valid

### Remark:

- We, Hefei Panwin Technology Co., Ltd., would like to declare that the tested sample has been evaluated in accordance with 47 CFR Part 2.1091 and FCC KDB 447498 D01 v06, and pass the limit. Without written approval of Hefei Panwin Technology Co., Ltd., the test report shall not be reproduced except in full.

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## 1 Test Laboratory

### 1.1 Notes of the Test Report

This report is invalid without signature of auditor and approver or with any alterations. The report shall not be partially reproduced without written approval of the testing company. Entrusted test results are only responsible for incoming samples. If there is any objection to the testing report, it shall be raised to the testing company within 15 days from the date of receiving the report. In the test results, "NA" means "not applicable", and the test items marked with "Δ" are subcontracted projects.

### 1.2 Testing Laboratory

<b>Company Name</b>	Hefei Panwin Technology Co., Ltd.
<b>Address</b>	Floor 1, Zone E, Plant 2#, Mingzhu Industrial Park, No.106 Chuangxin Avenue, High-tech Zone, Hefei City, Anhui Province, China
<b>Telephone</b>	+86-0551-63811775
<b>Post Code</b>	230031

## 2 General Description of Equipment under Test

### 2.1 Details of Application

<b>Applicant</b>	Tag-N-Trac Inc.
<b>Applicant Address</b>	4250 Executive Sq, #675, La Jolla, California, United States, 92037
<b>Manufacturer</b>	AOVX WIRELESS SOLUTIONS CO. LTD
<b>Manufacturer Address</b>	Room 501, BlockA1, ZhongAn Valley, 900 Wangjiang West Road, High-tech Zone, HeFei, China 230088
<b>Factory</b>	Anhui Sharetronic Data Technology Co., Ltd
<b>Factory Address</b>	Hefei Sharetronic Technology Industrial Park, intersection of Innovation Avenue and Chang'an Road, High-tech Zone, Hefei, Anhui China, 230088

## 2.2 Details of EUT

<b>Product</b>		Sense Stream Tag - Single Use	
<b>Model</b>		ST100-SU	
<b>Hardware Version</b>		V2.1	
<b>Software Version</b>		/	
<b>SN</b>		/	
<b>Antenna Type</b>		<input checked="" type="checkbox"/> Internal <input type="checkbox"/> External	
<b>Frequency Band(s)</b>	<b>Band</b>	<b>Tx (MHz)</b>	<b>Rx (MHz)</b>
	LTE Band 2	1850 to 1910	1930 to 1990
	LTE Band 4	1710 to 1755	2110 to 2155
	LTE Band 12	699 to 716	729 to 746
	LTE Band 13	777 to 787	746 to 756
<b>Note:</b> The declared of product specification for EUT and/or Antenna presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.			

## 3 Test Condition

### 3.1 Laboratory Environment

<b>Temperature</b>	Min.= 20°C, Max.=30°C
<b>Relative Humidity</b>	Min.= 25%, Max.=75%
<b>Ground System Resistance</b>	< 1 Ω

Ambient noise is checked and found very low and in compliance with requirement of standards.

Reflection of surrounding objects is minimized and in compliance with requirement of standards.

## 4 Maximum Permissible Exposure (MPE)

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

Table 1 to § 1.1310(e)(1)—Limits for Maximum Permissible Exposure (MPE)				
Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3–3.0	614	1.63	*(100)	≤6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30–300	61.4	0.163	1.0	<6
300–1,500	--	--	f/300	<6
1,500–100,000	--	--	5	<6
(ii) 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 <sup>2</sup> )	<30
30–300	27.5	0.073	0.2	<30
300–1,500	--	--	f/1500	<30
1,500–100,000	--	--	1.0	<30
f = frequency in MHz. * = Plane-wave equivalent power density.				

The transmitter is using external antennas that operate at 20 cm or more from nearby persons. The maximum permitted level is calculated using the general equation:

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

Where:

**S** = power density (in appropriate units, e.g. Wm<sup>2</sup>)

**P** = power input to the antenna (in appropriate units, e.g., W)

**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 (appropriate units, e.g., m)

Solve S, the power density at 20 cm is shown in Appendix A, so the limit is kept.

## Appendix A – Test Results

### A.1 Maximum Measured Conducted Output Power and Antenna Gain

Band	TX Freq. (MHz)	Maximum conducted output power (dBm)	Maximum Antenna Gain (dBi)
LTE Band 2	1850 to 1910	25.00	2.69
LTE Band 4	1710 to 1755	25.00	2.67
LTE Band 12	699 to 716	25.00	-0.20
LTE Band 13	777 to 787	25.00	-1.14



## A.2 Test Results of Maximum Permissible Exposure

Band	Maximum Power (dBm)	Antenna Gain (dBi)	FCC EIRP Limit(dBm)	MPE Limit (mW/cm <sup>2</sup> )	Power Density at 20cm (W/m <sup>2</sup> )	FCC MPE Result / FCC MPE Limit Ratio	Conclusion
LTE Band 2	25.00	2.69	33.01	1.0000	0.1169	0.1169	Pass
LTE Band 4	25.00	2.67	30.00	1.0000	0.1163	0.1163	Pass
LTE Band 12	25.00	-0.20	40.60	0.4660	0.0601	0.1289	Pass
LTE Band 13	25.00	-1.14	35.16	0.5180	0.0484	0.0934	Pass

**Note 1:** For mobile or fixed location transmitters, minimum separation distance is 20cm, even if calculations indicate EMF distance is less.

**Note 2:** For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.

**Note 3:** Chose the maximum RF output tune up power of all antennas among same frequency WWAN bands and the maximum antenna gain to perform MPE calculation conservatively.

## Appendix B – The EUT Appearance

Refer to “Attachment A.1: External Photograph” and “ Attachment A.2: Internal Photograph” file.

\*\*\*\*\* End of the Report \*\*\*\*\*