

# **TEST REPORT**

**Applicant:** Particle Industries, Inc.  
**EUT Description:** Tachyon  
**Model:** TACH4NA, TACH8NA  
**Brand:** Particle  
**FCC ID:** 2AEMI-TACHYON  
**Standards:** FCC 47 CFR Part 15 Subpart E  
**Date of Receipt:** 2025/06/25  
**Date of Test:** Reference report SZCR240100038406  
**Date of Issue:** 2025/09/05

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility to assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



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**Jim Huang**  
**Approved By:**



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**Carey Chen**  
**Reviewed By:**

## Revision History

Rev.	Issue Date	Description	Revised by
01	2025/09/05	Original	Carey Chen

## Summary of Test Results

Clause	Test Items	Test Standard	Result
4.3.1	U-NII Detection Bandwidth	KDB 905462 Clause7.8.1	Reference report SZCR240100038406
4.3.3	Initial Channel Availability Check Time	KDB 905462 Clause7.8.2.1	
4.3.4	Radar Burst at the Beginning of the Channel Availability Check Time	KDB 905462 Clause7.8.2.2	
4.3.5	Radar Burst at the End of the Channel Availability Check Time	KDB 905462 Clause7.8.2.3	
4.3.6	In-Service Monitoring for Channel Move Time	KDB 905462 Clause7.8.3	
4.3.6	In-Service Monitoring for Channel Closing Transmission Time	KDB 905462 Clause7.8.3	
4.3.6	In-Service Monitoring for Non-Occupancy Period	KDB 905462 Clause7.8.3	
4.3.7	Statistical Performance Check	KDB 905462 Clause7.8.4	
4.2.4	User Access Restrictions	KDB 905462 Clause8.1	
Test Method: ANSI C63.10:2020, KDB 789033 D02 General UNII Test Procedures New Rules v02r01 KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02			

Remark: All the testing items in this report do not need to be tested, and all test data please refer to the previous report with report number SZCR240100038406 (FCC ID: XMR2024SG560DNA) issued by SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch.

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# 1 General Description

## 1.1 Lab Information

### 1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014  
Tel.: +86-755-27212361  
Contact Email: info@towewireless.com

### 1.1.2 Test Facility / Accreditations

#### **A2LA (Certificate Number: 7088.01)**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

#### **FCC-Designation No.: CN1353**

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

#### **ISED-CAB identifier: CN0152**

Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0152

Company Number: 31000

## 1.2 Client Information

### 1.2.1 Applicant

Applicant:	Particle Industries, Inc.
Address:	548 Market St, PMB 34833, San Francisco, CA 94104, USA

### 1.2.2 Manufacturer

Manufacturer:	Particle Industries, Inc.
Address:	548 Market St, PMB 34833, San Francisco, CA 94104, USA

### 1.3 Product Information

EUT Description:	Tachyon			
Model:	TACH4NA, TACH8NA			
Brand:	Particle			
Hardware Version:	V1.2			
Software Version:	1.0.160			
Modulation Type:	802.11a/n:	OFDM-BPSK, QPSK, 16QAM, 64QAM		
	802.11ac:	OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM		
	802.11ax:	OFDM/OFDMA-BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM		
Smart System:	<input checked="" type="checkbox"/> SISO	802.11a/n/ac/ax	/	
	<input type="checkbox"/> MIMO	802.11n/ac/ax	( )TX( )RX	
	<input type="checkbox"/> CDD	802.11a	( )TX( )RX	
EUT Function:	<input checked="" type="checkbox"/> Client	<input type="checkbox"/> Outdoor AP	<input type="checkbox"/> Indoor AP <input type="checkbox"/> Fixed P2P AP	
TPC Function:	<input checked="" type="checkbox"/> With TPC		<input type="checkbox"/> Without TPC	
DFS Function:	<input checked="" type="checkbox"/> Master <input type="checkbox"/> Slave with radar detection <input type="checkbox"/> Slave without radar detection			
Frequency Range:	U-NII-2A:	5250 ~ 5350MHz		
	U-NII-2C:	5470 ~ 5725MHz		
Channel Frequency:	20M BWch.:	U-NII-2A:	5260 ~ 5320MHz	4 Channels
		U-NII-2C:	5500 ~ 5700MHz	11 Channels
		Straddle Channel:	5720MHz	1 Channel
	40M BWch.:	U-NII-2A:	5270 ~ 5310MHz	2 Channels
		U-NII-2C:	5510 ~ 5670MHz	5 Channels
		Straddle Channel:	5710MHz	1 Channel
	80M BWch.:	U-NII-2A:	5290MHz	1 Channel
		U-NII-2C:	5530 ~ 5610MHz	2 Channels
		Straddle Channel:	5690MHz	1 Channel
	160M BWch.:	U-NII-2C:	5570MHz	1 Channel
		Straddle Channel:	5250MHz	1 Channel
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated			
Antenna Gain:	Frequency Range	Ant (dBi)		
	U-NII-2A:	2.3		
	U-NII-2C:	2.3		
Remark: 1. The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description. 2. According to the customer's Letter of model difference, TACH4NA and TACH8NA are identical with each other, except for RAM and model number difference.				

## 2 Test Configuration

### 2.1 Test Channel

Frequency Channels for U-NII-2A							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
50	5250MHz	54	5270MHz	58	5290MHz	62	5310MHz
52	5260MHz	56	5280MHz	60	5300MHz	64	5320MHz
Remark: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:							
Modulation Type	Test Channel		Test Frequency				
802.11a/n20 /ac20/ax20	The Lowest channel (CH52)		5260MHz				
	The Middle channel (CH60)		5300MHz				
	The Highest channel (CH64)		5320MHz				
Modulation Type	Test Channel		Test Frequency				
802.11n40 /ac40/ax40	The Lowest channel (CH54)		5270MHz				
	The Highest channel (CH62)		5310MHz				
Modulation Type	Test Channel		Test Frequency				
802.11 ac80/ax80	The Middle channel (CH58)		5290MHz				
Modulation Type	Test Channel		Test Frequency				
802.11 ac160/ax160	The Middle channel (CH50)		5250MHz				

Frequency Channels for U-NII-2C							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
100	5500MHz	110	5550MHz	120	5600MHz	132	5660MHz
102	5510MHz	112	5560MHz	122	5610MHz	134	5670MHz
104	5520MHz	114	5570MHz	124	5620MHz	136	5680MHz
106	5530MHz	116	5580MHz	126	5630MHz	140	5700MHz
108	5540MHz	118	5590MHz	128	5640MHz	/	

Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Modulation Type	Test Channel	Test Frequency
802.11a/n20 /ac20/ax20	The Lowest channel (CH100)	5500MHz
	The Middle channel (CH116)	5580MHz
	The Highest channel (CH140)	5700MHz
Modulation Type	Test Channel	Test Frequency
802.11n40 /ac40/ax40	The Lowest channel (CH102)	5510MHz
	The Middle channel (CH118)	5590MHz
	The Highest channel (CH134)	5670MHz
Modulation Type	Test Channel	Test Frequency
802.11 ac80/ax80	The Lowest channel (CH106)	5530MHz
	The Highest channel (CH122)	5610MHz
Modulation Type	Test Channel	Test Frequency
802.11 ac160/ax160	The Middle channel (CH114)	5570MHz



## 2.2 Worst-case configuration and Mode

Modulation Type	SISO - Data Rate	CDD/MIMO( )TX( )RX Data Rate
802.11a	6 Mbps	N/A
802.11n20	MCS0 (6.5 Mbps)	N/A
802.11n40	MCS0 (13.5 Mbps)	N/A
802.11ac20	MCS0 (6.5 Mbps)	N/A
802.11ac40	MCS0 (13.5 Mbps)	N/A
802.11ac80	MCS0 (29.3 Mbps)	N/A
802.11ac160	MCS0 (58.5 Mbps)	N/A
802.11ax20	MCS0 (8.6 Mbps)	N/A
802.11ax40	MCS0 (17.2 Mbps)	N/A
802.11ax80	MCS0 (36.0 Mbps)	N/A
802.11ax160	MCS0 (72.1 Mbps)	N/A
Transmitting mode:	Keep the EUT was programmed to be in continuously transmitting mode.	
Normal Link:	Keep the EUT operation to normal function.	

## 2.3 Support Unit used in test

The EUT has been tested as an independent unit.

## 2.4 Test Environment

Please reference report SZCR240100038406.

## 2.5 Test RF Cable

**For all conducted test items:** The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.

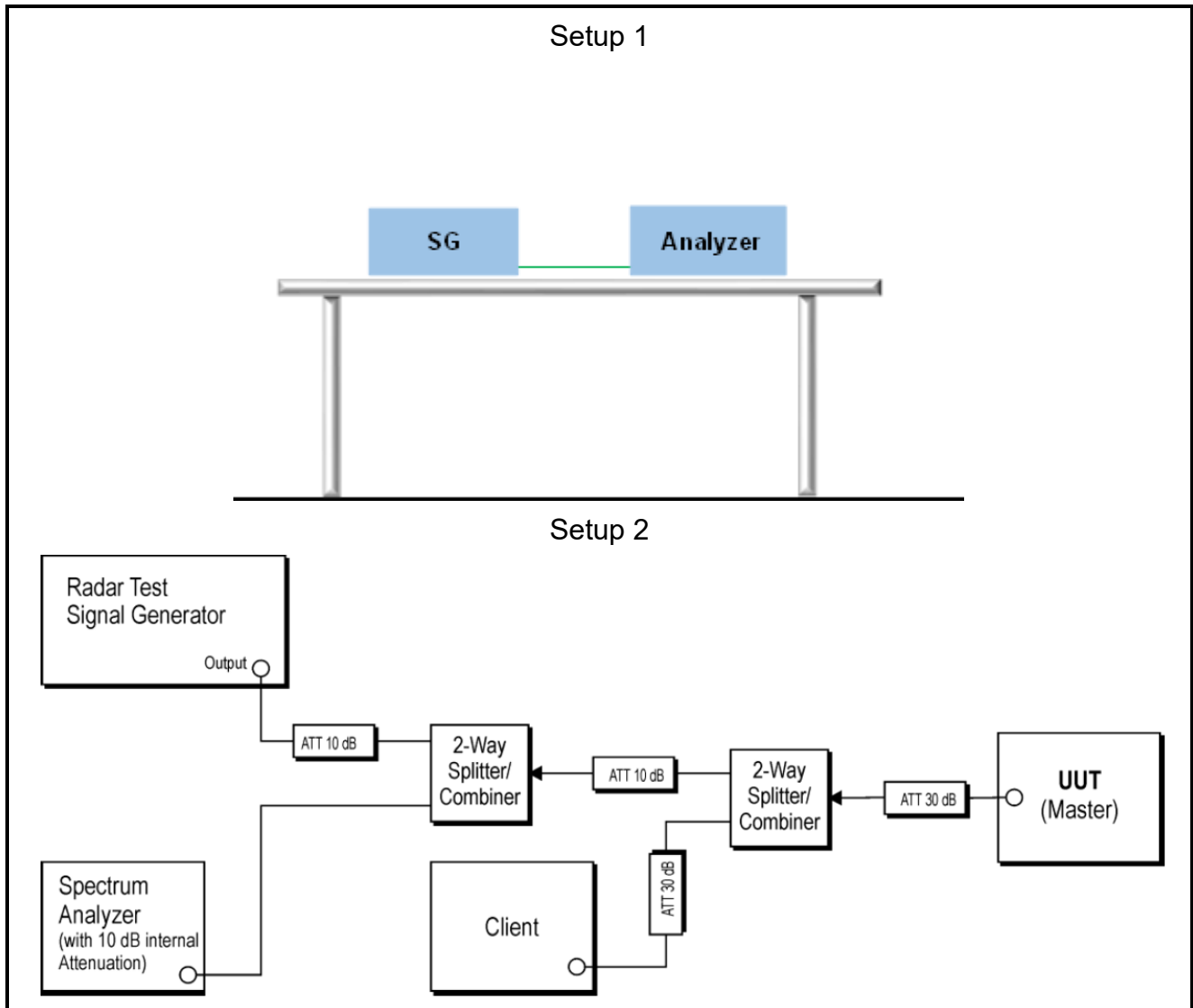
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

## 2.6 Modifications

No modifications were made during testing.

## 2.7 Test Setup Diagram



### **3 Equipment and Measurement Uncertainty**

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable to recognized national standards.

#### **3.1 Test Equipment List**

Please reference report SZCR240100038406.

#### **3.2 Measurement Uncertainty**

Please reference report SZCR240100038406.

### **4 Test Results**

Please reference report SZCR240100038406.

~The End~