



**F2 Labs**  
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**MPE REPORT**

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**Manufacturer:** **Avuity, LLC**  
**302 West Third**  
**Suite 810**  
**Cincinnati, Ohio 45208 USA**

**Applicant:** **Same as Above**

**Product Name:** **VuAi**

**Product Description:** Battery-powered IoT device that uses Machine Learning and Artificial Intelligence to detect and classify objects in its field of view.

**Model:** **V1**

**FCC ID:** **2AUPP-VUAI01**

**IC:** **266619-VUAI01**

**Testing Commenced:** 2024-05-10

**Testing Ended:** 2024-05-13

**Test Results:** **In Compliance**

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.

**Standards:**

- **KDB447498**
- **FCC 1.1310**
- **Safety Code 6**
- **RSS-102**



Order No(s): 21720-R1

Applicant: Avuity, LLC  
Model: V1

**Evaluation Conducted by:**

Julius Chiller, Senior Wireless Project Engineer

**Report Reviewed by:**

Ken Littell, Vice President of Operations

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## TABLE OF CONTENTS

- 1 [ADMINISTRATIVE INFORMATION](#)
- 2 [SUMMARY OF TEST RESULTS/MODIFICATIONS](#)
- 3 [ENGINEERING STATEMENT](#)
- 4 [EUT INFORMATION AND DATA](#)
- 5 [RF EXPOSURE FOR DEVICE >20cm FROM HUMAN](#)
  - [FCC](#)
  - [IC](#)



Order No(s): 21720-R1

Applicant: Avuity, LLC  
Model: V1

## 1 ADMINISTRATIVE INFORMATION

### 1.1 Measurement Location:

F2 Labs in Middlefield, Ohio.

Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

Site description and attenuation data are on file with the Certification and Engineering Bureau, Industry Canada, Site Number 4730B.

### 1.2 Measurement Procedure:

All measurements were performed according to:

- KDB558074
- FCC 15.249
- RSS-210

### 1.4 Document History

Document Number	Description	Issue Date	Approved By
F2P21720-R1-02E	First Issue	2024-05-31	K. Littell



Order No(s): 21720-R1

Applicant: Avuity, LLC  
Model: V1

## 2 SUMMARY OF TEST RESULTS

Test Name	Standard(s)	Results
<b>RF Exposure for Device &gt;20cm from Human</b>	<b>KDB447498 FCC 1.1310 Safety Code 6 RSS-102</b>	<b>Complies</b>

Modifications Made to the Equipment
<b>None</b>



Order No(s): 21720-R1

Applicant: Avuity, LLC  
Model: V1

### 3 ENGINEERING STATEMENT

This report has been prepared on behalf of Avuity, LLC to provide documentation for the calculations described herein, based on the measurements taken in supporting Test Reports. This equipment has been tested and calculations were found to comply with KDB447498, FCC 1.1310, Safety Code 6 and RSS-102. The test results found in this test report relate only to the item(s) tested.



Order No(s): 21720-R1

Applicant: Avuity, LLC  
Model: V1

## 4 EUT INFORMATION AND DATA

### 4.1 Equipment Under Test:

Product: VuAi IoT Device  
Model: V1  
Serial No.: BABAC2072182  
FCC ID: 2AUUPP-VUAI01  
IC: 266619-VUAI01

### 4.2 Trade Name:

Avuity, LLC

### 4.3 Power Supply:

Battery-powered

### 4.4 Applicable Rules:

- KDB447498
- FCC 1.1310
- Safety Code 6
- RSS-102

### 4.5 Antenna:

Integral

### 4.6 Accessories:

Device	Manufacturer	Model Number	Serial Number
Battery	EXPOCELL	ER26500	None Specified
Gateway	Avuity	VuAI	2492

### 4.7 Test Item Condition:

The equipment to be tested was received in good condition.



## 5. RF EXPOSURE FOR DEVICE >20cm FROM HUMAN

### 5.1 Requirements: Distance used is 20cm

FCC	
<b>Limit:</b>	1mW/cm <sup>2</sup>
<b>Formula used for result:</b>	$\frac{\text{E.I.R.P.}}{4 \pi R^2}$
<b>Results:</b>	<p>E.I.R.P. = 138.044mW with FCC ID 2ABCB-RPI32</p> <p>E.I.R.P of 0.044mW was determined by using the worst case E.I.R.P. on the High Channel (2480 MHz), 81.7 dBuV/m @ 3m, which equals:</p> $P(dBm) = E(dBuVm) + 20LOG(d) - G - 104.77$ $81.7 + 9.542425 + 0 - 104.77 = -13.53dBm$ $P(dBm) = -13.53dBm \text{ which is } 0.044mW$ <p>Wi-Fi from FCC ID 2ABCB-RPI32 = 138mW</p> <p>Combined E.I.R.P. (Wi-Fi + Module) = 138mW + 0.044mW = 138.044mW</p> <p>Combined MPE (Maximum allowed Wi-Fi + Module) = <math>138.044mW / (4 (3.1416)(20 \times 20)) = 138.044/5026 = 0.027 \text{ mW/cm}^2</math>.</p> <p>Combined Ratio = <math>\frac{0.027 \text{ mW/cm}^2}{1\text{mW/cm}^2} = \text{Ratio of } 0.027</math></p> <p>The calculated combined MPE is below the MPE limit when the module is co-located with Wi-Fi device FCC ID 2ABCB-RPI32.</p>



IC	
<b>Limit:</b>	5.47W/m <sup>2</sup>
<b>Formula used for result:</b>	$\frac{\text{E.I.R.P.}}{4 \pi R^2}$
<b>Results:</b>	<p>E.I.R.P. = 138.044mW with IC: 20953-RPI32</p> <p>E.I.R.P of 0.044mW was determined by using the worst case E.I.R.P. on the High Channel (2480 MHz),</p> <p>81.7 dBuV/m @ 3m, which equals: <math display="block">P(dBm) = E(dBuVm) + 20LOG(d) - G - 104.77</math></p> <p><math display="block">81.7 + 9.542425 + 0 - 104.77 = -13.53\text{dBm}</math> <math display="block">P(dBm) = -13.53\text{dBm} \text{ which is } 0.044\text{mW}</math></p> <p>Wi-Fi from IC: 20953-RPI32 = 138mW</p> <p>Combined E.I.R.P. (Wi-Fi + Module) = <math display="block">138\text{mW} + 0.044\text{mW} = 138.044\text{mW}</math></p> <p>Combined MPE (Maximum allowed Wi-Fi + Module) = <math display="block">138.044\text{mW} / (4 (3.1416)(20 \times 20)) =</math> <math display="block">138.044/5026 = 0.27 \text{ W/m}^2</math></p> <p>Combined Ratio = <math display="block">\frac{0.27 \text{ W/m}^2}{5.47\text{W/m}^2} = \text{Ratio of } 0.050</math></p> <p>The calculated combined MPE is below the MPE limit when the module is co-located with Wi-Fi device IC: 20953-RPI32.</p>