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MPE REPORT

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:

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Report Reviewed by:

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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 |



2 SUMMARY OF TEST RESULTS

| Test Name | Standard(s) | Results |
|--|---|----------|
| RF Exposure for Device >20cm from Human | KDB447498 FCC 1.1310 Safety Code 6 RSS-102 | Complies |

| Modifications Made to the Equipment |
|-------------------------------------|
| None |



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.



4 EUT INFORMATION AND DATA

4.1 Equipment Under Test:

Product: VuAi IoT Device

Model: V1

Serial No.: BABAC2072182

FCC ID: 2AUPP-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 | |
|---------------------------------|--|
| Limit: | 1mW/cm ² |
| Formula used for result: | $\frac{E.I.R.P.}{4 \pi R^2}$ |
| <u>Results:</u> | <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: $P(dBm) = E(dBuV/m) + 20 \log(d) - G - 104.77$ $81.7 + 9.542425 + 0 - 104.77 = -13.53dBm$ $P(dBm) = -13.53dBm$ which is 0.044mW</p> <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) = $138.044mW / (4 (3.1416)(20 \times 20)) =$ $138.044/5026 = 0.027 \text{ mW/cm}^2$.</p> <p>Combined Ratio = $\frac{0.027 \text{ mW/cm}^2}{1mW/cm^2}$ = Ratio of 0.027</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 | |
|--------------------------|--|
| Limit: | 5.47W/m ² |
| Formula used for result: | $\frac{E.I.R.P.}{4 \pi R^2}$ |
| Results: | <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: $P(dBm) = E(dBuV/m) + 20 \log(d) - G - 104.77$</p> <p>$81.7 + 9.542425 + 0 - 104.77 = -13.53dBm$ $P(dBm) = -13.53dBm$ which is 0.044mW</p> <p>Wi-Fi from IC: 20953-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) = $138.044mW / (4 (3.1416)(20 \times 20)) =$ $138.044/5026 = 0.27 W/m^2.$</p> <p>Combined Ratio = $\frac{0.27 W/m^2}{5.47W/m^2} =$ Ratio of 0.050</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> |