

HEALTH TEST REPORT

For

Arapaho Technologies

LiquidAider

Test Model: LAB-001

List Model No.: N/A

Prepared for : Arapaho Technologies
Address : 4756 McKinley Drive, Boulder, Colorado 80303 USA

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
Address : 101, 601, Xingyuan Industrial Park, Gushu Community,
Xixiang Street, Bao' an District, Shenzhen, Guangdong, China
Tel : (+86)755-82591330
Fax : (+86)755-82591332
Web : www.LCS-cert.com
Mail : webmaster@LCS-cert.com

Date of receipt of test sample : March 20, 2019
Number of tested samples : 1
Serial number : Prototype
Date of Test : March 20, 2019~March 29, 2019
Date of Report : April 02, 2019



HEALTH TEST REPORT

EN 50663: 2017

Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)

Report Reference No. : **LCS190314059AEC**

Date of Issue : April 02, 2019

Testing Laboratory Name..... : **Shenzhen LCS Compliance Testing Laboratory Ltd.**

Address : 101, 601, Xingyuan Industrial Park, Gushu Community, Xixiang Street, Bao' an District, Shenzhen, Guangdong, China

Testing Location/Procedure..... : Full application of Harmonised standards
 Partial application of Harmonised standards
 Other standard testing method

Applicant's Name..... : **Arapaho Technologies**

Address : 4756 McKinley Drive, Boulder, Colorado 80303 USA

Test Specification

Standard : EN 50663: 2017

Test Report Form No. : LCSEMC-1.0

TRF Originator : Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF : Dated 2017-06

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Test Item Description. : **LiquidAider**

Trade Mark : LiquidAider

Test Model..... : LAB-001

Ratings : DC 3.0V by CR2032 Battery

Result : **Positive**

Compiled by:

Aking Jin

Aking Jin/ File administrator

Supervised by:

Calvin Weng

Calvin Weng/ Technique principal

Approved by:

Gavin Liang


Gavin Liang/ Manager

HEALTH TEST REPORT

Test Report No. : LCS190314059AEC	<u>April 02, 2019</u> Date of issue
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Test Model..... : LAB-001
EUT..... : LiquidAider
Applicant..... : Arapaho Technologies
Address..... : 4756 McKinley Drive, Boulder, Colorado 80303 USA
Telephone..... : /
Fax..... : /
Manufacturer..... : Arapaho Technologies
Address..... : 4756 McKinley Drive, Boulder, Colorado 80303 USA
Telephone..... : /
Fax..... : /
Factory..... : Arapaho Technologies
Address..... : 4756 McKinley Drive, Boulder, Colorado 80303 USA
Telephone..... : /
Fax..... : /

Test Result	Positive
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The test report merely corresponds to the test sample.
 It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
000	April 02, 2019	Initial Issue	Gavin Liang

1. GENERAL INFORMATION

1.1. Product Description for Equipment Under Test (EUT)

EUT	:	LiquidAider
Model No.	:	LAB-001
Model Declaration	:	N/A
Test Model	:	LAB-001
Power Supply	:	DC 3.0V by CR2303 Battery
Hardware Version	:	Revision 3
Software Version	:	1.0
Radio Function		
Frequency Range	:	2.402-2.480GHz
Channel Number	:	3 channels (2402MHz, 2450MHz, 2480MHz)
Modulation Type	:	GFSK
Antenna Description	:	Chip Antenna, 0.5dBi (Max.)

1.2. Objective

According to its specifications, the EUT must comply with the requirements of the following standards:
 EN 50663: 2017 –Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz)

1.3. Test Methodology

All measurements contained in this report were conducted with EN 50663: 2017.

1.4. Description of Test Facility

FCC Registration Number is 254912.
 Industry Canada Registration Number is 9642A-1.
 EMSD Registration Number is ARCB0108.
 UL Registration Number is 100571-492.
 TUV SUD Registration Number is SCN1081.
 TUV RH Registration Number is UA 50296516-001.
 NVLAP Accreditation Code is 600167-0.
 FCC Designation Number is CN5024.

1.5. Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
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1.6. External I/O

I/O Port Description	Quantity	Cable
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1.7. Equipment

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, bi-conical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements. Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

1.8. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.10dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V

2. HUMAN EXPOSURE TO THE ELECTROMAGNETIC FIELDS

2.1 Test Methodology

2.2.1. General description of applied standards

According to its specifications, the EUT must comply with the requirements of the following standards: EN 50663 - Generic standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz - 300 GHz).

2.2.2. Description of test modes

The EUT has been tested under its typical operating condition. Pre-defined engineering program for regulatory testing used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

2.2 Test Limit

If the average power emitted by apparatus operating in the frequency range 10 MHz – 300GHz is less than or equal to 20 mw and the transmitting peak power is less than 20 W then the apparatus is deemed to comply with the basic restrictions without testing.

2.3 Test Results

Since max. output power for Radio function is 1.78mW (2.51dBm according to radio test report LCS190314059AEB) less than 20mW specified in EN 50663. This unit will not generate the harmful EM emission above the reference level as specified in EC Council Recommendation (1999/519/EC).

The unit complies with the EN 50663 for RF exposure requirement.

No non-compliance noted.

-----THE END OF REPORT-----