



Compliance Testing, LLC

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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Test Report

Prepared for: Avalan Wireless Systems Incorporated

Model: MOD090-HP

Description: Wireless Ethernet Communication Radio

Serial Number: #2

FCC ID: R4N-AW900G2HP

To

FCC Part 1.1310

Date of Issue: February 13, 2017

On the behalf of the applicant:

**Avalan Wireless Systems Incorporated
125A Castle Drive
Madison, AL 35758**

Attention of:

**Mike Derby, CTO
Ph: (650)384-0000
Email: mike@avalanwireless.com**

**Prepared By
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Project No: p16c0014**

**Kenneth Lee
Project Test Engineer**

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Test Report Revision History

| Revision | Date | Revised By | Reason for Revision |
|----------|------------------|-------------|---------------------|
| 1.0 | January 18, 2017 | Kenneth Lee | Original Document |
| | | | |
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ILAC / A2LA

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer joint ISO-ILAC-IAF Communiqué dated January 2009)

The tests results contained within this test report all fall within our scope of accreditation, unless below

Please refer to <http://www.compliancetesting.com/labscope.html> for current scope of accreditation.

Testing Certificate Number: **2152.01**



FCC Site Reg. #349717

IC Site Reg. #2044A-2

Non-accredited tests contained in this report:

N/A

EUT Description

Model: MOD090-HP

Description: Wireless Ethernet Communication Radio

Firmware: 1.10

Software: 1.10

Serial Number: #2

Additional Information: The data in this test report was taken with the 6 dBi antenna. The device can be sold with antennas that have a higher gain, in these cases; the power shall be reduced by 1 dB for every dB the antenna's gain exceeds 6 dBi.



MPE Evaluation

This is a fixed device used in Uncontrolled Exposure environment.

Limits Controlled Exposure 47 CFR 1.1310 Table 1, (A)

| | |
|------------------|---|
| 0.3-3.0 MHz: | Limit [mW/cm ²] = 100 |
| 3.0-30 MHz: | Limit [mW/cm ²] = (900/f ²) |
| 30-300 MHz: | Limit [mW/cm ²] = 1.0 |
| 300-1500 MHz: | Limit [mW/cm ²] = f/300 |
| 1500-100,000 MHz | Limit [mW/cm ²] = 5 |

Limits Uncontrolled Exposure 47 CFR 1.1310 Table 1, (B)

| | |
|------------------|---|
| 0.3-1.234 MHz: | Limit [mW/cm ²] = 100 |
| 1.34-30 MHz: | Limit [mW/cm ²] = (180/f ²) |
| 30-300 MHz: | Limit [mW/cm ²] = 0.2 |
| 300-1500 MHz: | Limit [mW/cm ²] = f/1500 |
| 1500-100,000 MHz | Limit [mW/cm ²] = 1.0 |

Test Data

| | |
|--------------------------|-------|
| Test Frequency, MHz | 904.4 |
| Power, Conducted, mW (P) | 982 |
| Antenna Gain Isotropic | 6dBi |
| Antenna Gain Numeric (G) | 3.98 |
| Antenna Type | Omni |
| Distance (R) | 20 cm |

| |
|--------------------------------------|
| $S = \frac{P * G}{4\pi r^2}$ |
| Power Density (S) mw/cm ² |
| |

| | |
|-----------------------------|---------|
| Power Density (S) = | 0.77756 |
| Limit =(from above table) = | 0.60293 |



Minimum Safe Distance Evaluation

This is a fixed device used in Uncontrolled Exposure environment.

Limits Controlled Exposure 47 CFR 1.1310 Table 1, (A)

| | |
|------------------|---|
| 0.3-3.0 MHz: | Limit [mW/cm ²] = 100 |
| 3.0-30 MHz: | Limit [mW/cm ²] = (900/f ²) |
| 30-300 MHz: | Limit [mW/cm ²] = 1.0 |
| 300-1500 MHz: | Limit [mW/cm ²] = f/300 |
| 1500-100,000 MHz | Limit [mW/cm ²] = 5 |

Limits Uncontrolled Exposure 47 CFR 1.1310 Table 1, (B)

| | |
|------------------|---|
| 0.3-1.234 MHz: | Limit [mW/cm ²] = 100 |
| 1.34-30 MHz: | Limit [mW/cm ²] = (180/f ²) |
| 30-300 MHz: | Limit [mW/cm ²] = 0.2 |
| 300-1500 MHz: | Limit [mW/cm ²] = f/1500 |
| 1500-100,000 MHz | Limit [mW/cm ²] = 1.0 |

Test Data

| | |
|--------------------------|---------|
| Test Frequency, MHz | 904.4 |
| Power, Conducted, mW (P) | 982 |
| Antenna Gain Isotropic | 6dBi |
| Antenna Gain Numeric (G) | 3.98 |
| Antenna Type | Omni |
| Limit (L) | 0.60293 |

| | | | |
|--------------------------|--------------|------------------|-----------|
| $R = \sqrt{(PG/4\pi L)}$ | | | |
| Distance (R) cm | Power mW (P) | Numeric Gain (G) | Limit (L) |
| | 982 | 3.98 | 0.60293 |

The minimum safe distance is 22.71794 cm.

END OF TEST REPORT