



## **Compliance Testing, LLC**

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

toll-free: (866) 311-3268

fax: (480) 926-3598

<http://www.ComplianceTesting.com>

[info@ComplianceTesting.com](mailto:info@ComplianceTesting.com)

### **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](mailto:mike@avalanwireless.com)**

**Prepared By  
Compliance Testing, LLC  
1724 S. Nevada Way  
Mesa, AZ 85204  
(480) 926-3100 phone / (480) 926-3598 fax  
[www.compliancetesting.com](http://www.compliancetesting.com)  
Project No: p16c0014**

**Kenneth Lee  
Project Test Engineer**

This report may not be reproduced, except in full, without written permission from Compliance Testing  
All results contained herein relate only to the sample tested



### Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	January 18, 2017	Kenneth Lee	Original Document



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

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

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

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

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

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