



# **Compliance Testing, LLC**

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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## **Test Report**

**Prepared for: Bird Technologies**

**Model: DDLxxx**

**Description: Low Power Indoor Cellular Remote Unit**

**Serial Number: N/A**

**FCC ID: V5DDL0001**

**To**

**FCC Part 1.1310**

**Date of Issue: August 18, 2016**

**On the behalf of the applicant:**

**Bird Technologies  
30303 Aurora Road  
Cleveland, OH 44139**

**Attention of:**

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Project No: p1680003**

**Alex Macon  
Project Test Engineer**

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All results contained herein relate only to the sample tested



### Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	August 12, 2016	Alex Macon	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:** DDLxxx

**Description:** Low Power Indoor Cellular Remote Unit

**Firmware:** N/A

**Software:** N/A

**Serial Number:** N/A

**Additional Information:**

Note: the UL is directly connected to a base station and therefore does not radiate.

The EUT was setup in an end to end configuration. Signals were injected into the head end unit and measured from the remote unit.

All equations are completed with a 0dBi antenna in mind.

Downlink
728 - 756
869 - 894
1930 - 1995
2110 - 2180



### Average Power calculations

Average Power = Peak Power \* duty-cycle%

Tuned Frequency (MHz)	Conducted Peak Output Power (mW)	Duty Cycle (%)	Average Power (mW)
747.08	528	100	528 mW
889.88	447	100	447 mW
1988.45	604	100	604 mW
2162.6	469	100	469 mW



This is a Fixed device evaluated to general population (Uncontrolled Exposure) environment.

### MPE Evaluation

This is a fixed device used in Uncontrolled Exposure environment.

### 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	747.08
Power, Conducted, mW (P)	528 + 20%
Antenna Gain Isotropic	0dBi
Antenna Gain Numeric (G)	1
Antenna Type	
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.126

Power Density (S) =0.126
Limit =(from above table) = 0.485



**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	889.88
Power, Conducted, mW (P)	447 + 20%
Antenna Gain Isotropic	0 dBi
Antenna Gain Numeric (G)	1 dB
Antenna Type	
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	0.106

Power Density (S) = 0.106
Limit =(from above table) = 0.579



**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	1988.45
Power, Conducted, mW (P)	604 + 20%
Antenna Gain Isotropic	0 dBi
Antenna Gain Numeric (G)	1 dB
Antenna Type	
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	0.144

Power Density (S) = 0.144
Limit =(from above table) = 1.0



**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	2162.6
Power, Conducted, mW (P)	469 + 20%
Antenna Gain Isotropic	0 dBi
Antenna Gain Numeric (G)	1 dB
Antenna Type	
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	0.112

Power Density (S) = 0.112
Limit =(from above table) = 1.0

END OF TEST REPORT