



## **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: Bird Technologies**

**Model: DDRXXX**

**Description: Public Safety Fiber DAS Remote (33dBm)**

**Serial Number: 10636**

**FCC ID: V5FDDR002**

**To**

**FCC Part 1.1310**

**Date of Issue: November 11, 2015**

**On the behalf of the applicant:**

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

**Attention of:**

**Amy Sanvido, RF Engineer  
Ph: (440)519-2179  
E-Mail: [asanvido@bird-technologies.com](mailto:asanvido@bird-technologies.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: p1580020**

**Shawn McMillen  
Project Test Engineer**

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### Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	September 29, 2015	Shawn McMillen	Original Document
2.0	November 5, 2015	Shawn McMillen	MPE revised
3.0	November 11, 2015	Shawn McMillen	Corrected Separation Distance for 763MHz, Corrected Output Power Used to Compute MPE for 851MHz



## 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:** DDRXXX

**Description:** Public Safety Fiber DAS Remote (33dBm)

**Firmware:** N/A

**Software:** N/A

**S/N:** 10636

**Additional Information:** N/A



## Source Based Time Averaged Power Calculation

### Average Power calculations

Average Power = Peak Power \* duty-cycle%

Tuned Frequency (MHz)	Conducted Peak Output Power (mW)	Duty Cycle (%)	Average Power (mW)
150	891 mW	100	891 mW
470	2,213 mW	100	2,213 mW
763	1,968 mW	100	1,968 mW
851	1,730 mW	100	1,730 mW



## MPE Evaluation

This is a fixed/mobile device used in Uncontrolled/general population 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	150	
Power, Conducted, mW (P)	891 + 20%	
Antenna Gain Isotropic	8.41dBd max	10.55dBi max
Antenna Gain Numeric (G)	11.3	
Antenna Type	Omni	
Distance (R)	20 cm	

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	1069.2

Power Density (S) = 2.404
Limit =(from above table) = 0.2

Note: Power density exceeds limit therefore separation distance necessary is 69.4cm



**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	470	
Power, Conducted, mW (P)	2213 + 20%	
Antenna Gain Isotropic	-5.57dBd Max	-3.43 dBi Max
Antenna Gain Numeric (G)	0.45	
Antenna Type	Omni	
Distance (R)	20 cm	

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	2655.7

Power Density (S) = 0.24
Limit =(from above table) = 0.3



**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	763	
Power, Conducted, mW (P)	1968 + 20%	
Antenna Gain Isotropic	3.43dBd Max	5.57dBi max
Antenna Gain Numeric (G)	3.6	
Antenna Type	Omni	
Distance (R)	20 cm	

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	2361.6

Power Density (S) = 1.69
Limit =(from above table) = 0.51

Note: Power density exceeds limit therefore separation distance necessary is 36.4cm



**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	851	
Power, Conducted, mW (P)	1730 + 20%	
Antenna Gain Isotropic	-1.61dBd Max	0.53dBi max
Antenna Gain Numeric (G)	1.13	
Antenna Type	Omni	
Distance (R)	20 cm	

$S = \frac{P * G}{4\pi r^2}$	
Power Density (S) mw/cm <sup>2</sup>	Power mW (P)
	2076

Power Density (S) = 0.47
Limit =(from above table) = 0.57

END OF TEST REPORT