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## Test Report

Prepared for: Bird Technologies

Model: DDRXXX

Description: 33dBm Cellular Remotes

Serial Number: N/A

FCC ID: V5FDDR003

To

FCC Part 1.1310

Date of Issue: October 17, 2016

On the behalf of the applicant:

Bird Technologies  
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Attention of:

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Project No: p1620031

**Greg Corbin**  
Project Test Engineer

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### Test Report Revision History

<b>Revision</b>	<b>Date</b>	<b>Revised By</b>	<b>Reason for Revision</b>
1.0	October 17, 2016	Greg Corbin	Original Document



## ILAC / A2LA

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

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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:** 33dBm Cellular Remotes

**Additional Information:** N/A

### **EUT Operation during Tests**

The EUT is classified as a Part 20 CMRS industrial DAS signal booster

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.

The signal booster uses the following frequency bands.

Frequency Band (MHz)	
Downlink	728-746

Per the user manual, the 700 MHz band uses an antenna with a maximum gain of 5.5 dBi.

The lowest frequency and highest measured power are used to calculate the power density.



## 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)
746 MHz	2223	100	2223



## MPE Evaluation

This is a Fixed device used in an **Uncontrolled** Exposure environment.

### Limits Uncontrolled Exposure

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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	746
Power, Conducted, mW (P)	2223
Antenna Gain Isotropic	5.5 dBi
Antenna Gain Numeric (G)	3.55
Distance (R)	20 cm

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

Power Density (S) = 1.57 mw/cm <sup>2</sup>
Limit =(from above table) = 0.485 mw/cm <sup>2</sup>

EUT does not meet the power density requirements at 20 cm, so the minimum safe distance was calculated below.

R=√(PG/4πL)	Distance (R) cm	Power mW (P)	Numeric Gain (G)	Limit (L)
	36.0	2223	3.55	0.485

The minimum safe distance is 36.0 cm.

END OF TEST REPORT