



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: DDH-1900

Description: 43dBm High Power Remote

Serial Number: 13046

FCC ID: V5FDDH1900

To

FCC Part 1.1310

Date of Issue: November 30, 2017

On the behalf of the applicant:

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

Attention of:

**Amy Sanvido, RF Engineer
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**Prepared By
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Project No: p1790025**

**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	November 16, 2017	Alex Macon	Original Document
2.0	November 29, 2017	Alex Macon	Updated formula to represent a 17dBi antenna



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

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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: DDH-1900

Description: 43dBm High Power Remote

Serial Number: 13046

Additional Information:

The EUT (equipment under test) is a remote unit connected to a DAS (Distributed Amplifier System) base station via fiber optic cables.

The downlink signal was input to the FOI (Fiber optic interface).

The gains were preset by the manufacturer.

The EUT operated at 120 VAC.

The EUT frequency band of operation was 869 – 894 MHz (downlink) and 824 – 849 MHz (uplink).

EUT Operation during Tests

The EUT was tested under normal operation.

Operational parameters are controlled via a web based browser.

A 30 dB, 50 watt attenuator was installed on the downlink output.

The EUT was setup in an end to end configuration.

Signals were injected into the head end unit and measured from the remote unit.

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



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)
1966.5	20000	100	20000mW



Minimum Safe Distance Evaluation

This is a mobile/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 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	1966.5
Power, Conducted, mW (P)	20000
Antenna Gain Isotropic	17dBi
Antenna Gain Numeric (G)	50.12
Antenna Type	N/A
Limit (L)	1.0

$R = \sqrt{(PG/4\pi L)}$			
Distance (R) cm	Power mW (P)	Numeric Gain (G)	Limit (L)
282.5047207	20000	50.12	1

Note: Max output power value is obtained from associated report. A 17dBi antenna was used in this report as a reference only

The minimum safe distance with a 17dBi antenna is 282.5cm

END OF TEST REPORT