



## **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: Clear RF

Model: WRE5500

Description: Five-Band Bi-Directional Cellular Amplifier

Serial Number: S2171700

FCC ID: XS7WRE5500

To

FCC Part 1.1310

Date of Issue: February 28, 2017

On the behalf of the applicant:

Clear RF  
12825 E. Mirabeau Parkway  
Suite 104  
Spokane Valley, WA 99216

Attention of:

Shawn Taylor, Chief Operating Officer  
Ph: (509)321-9520  
Email: [shawn.taylor@servatron.com](mailto:shawn.taylor@servatron.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: p16a0013

**Greg Corbin**  
**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	February 20, 2017	Greg Corbin	Original Document
2.0	February 28, 2017	Greg Corbin	Updated description on page 5 to include mobile applications

## 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:** WRE5500

**Description:** Five-Band Bi-Directional Cellular Amplifier

**Firmware:** 1.04

**Software:** N/A

**Serial Number:** S2171700

### Additional Information:

The EUT is a Direct Connect bi-directional amplifier for the boosting of cellular phone signals and data communication devices.

Frequency Band (MHz)					
Uplink	698 - 716	776 – 787 (IC, 777 – 787)	824 - 849	1850 - 1915	1710 – 1755
Downlink	728 - 746	746 – 757 (IC, 746 – 756)	869 - 894	1930 - 1995	2110 - 2155

MPE calculations were performed using the highest measured output power +20% for each band and using an antenna with 3.0 dBi gain.



### Average Power calculations

Average Power = Peak Power \* duty-cycle%

Tuned Frequency (MHz)	Conducted Peak Output Power (mW)	Duty Cycle (%)	Average Power (mW)
703.19	0.123	100	0.123
781.5	0.074	100	0.074
840.81	0.095	100	0.095
1732.5	0.065	100	0.065
1879.05	0.058	100	0.058



## MPE Evaluation

This is a Direct Connect device that is used in both fixed and mobile applications 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	703.19
Power, Conducted, mW (P)	0.148 (measured power + 20%)
Antenna Gain Isotropic	3.0 dBi
Antenna Gain Numeric (G)	2.0
Antenna Type	Omni directional
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.000059 mw/cm <sup>2</sup>

Power Density (S) = 0.000059 mw/cm <sup>2</sup>
Limit =(from above table) = 0.469 mw/cm <sup>2</sup>

The EUT is below the MPE limit at 20 cm.

Test Frequency, MHz	781.5
Power, Conducted, mW (P)	0.088 (measured power + 20%)
Antenna Gain Isotropic	3.0 dBi
Antenna Gain Numeric (G)	2.0
Antenna Type	Omni directional
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.000035 mw/cm <sup>2</sup>

Power Density (S) =0.000035 mw/cm <sup>2</sup>
Limit =(from above table) = 0.521 mw/cm <sup>2</sup>

The EUT is below the MPE limit at 20 cm.



Test Frequency, MHz	840.81
Power, Conducted, mW (P)	0.114 (measured power + 20%)
Antenna Gain Isotropic	3.0 dBi
Antenna Gain Numeric (G)	2.0
Antenna Type	Omni directional
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.000045 mw/cm <sup>2</sup>

Power Density (S) = 0.000045 mw/cm <sup>2</sup>
Limit =(from above table) = 0.469 mw/cm <sup>2</sup>

The EUT is below the MPE limit at 20 cm.

Test Frequency, MHz	1732.5
Power, Conducted, mW (P)	0.078 (measured power + 20%)
Antenna Gain Isotropic	3.0 dBi
Antenna Gain Numeric (G)	2.0
Antenna Type	Omni directional
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.000031 mw/cm <sup>2</sup>

Power Density (S) =0.000031 mw/cm <sup>2</sup>
Limit =(from above table) = 1.0 mw/cm <sup>2</sup>

The EUT is below the MPE limit at 20 cm.



Test Frequency, MHz	1879.05
Power, Conducted, mW (P)	0.070 (measured power + 20%)
Antenna Gain Isotropic	3.0 dBi
Antenna Gain Numeric (G)	2.0
Antenna Type	Omni directional
Distance (R)	20 cm

$S = \frac{P * G}{4\pi r^2}$
Power Density (S) mw/cm <sup>2</sup>
0.000028 mw/cm <sup>2</sup>

Power Density (S) = 0.000028 mw/cm <sup>2</sup>
Limit =(from above table) = 1.0 mw/cm <sup>2</sup>

The EUT is below the MPE limit at 20 cm.

END OF TEST REPORT