



Compliance Testing, LLC

Previously Flom Test Lab

EMI, EMC, RF Testing Experts Since 1963

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Test Report

Prepared for: Solid Technologies

Model: Alliance 5W ROU

Description: Multiple-Enclosure Booster System

Chassis: MROU_C_M_AC – ALLIANCE 5W Optical Unit Chassis, AC Power

FCC ID: W6UHM700L (Module MRDU-700LTEF - 5 Watt 700 MHz Full Band LTE Amplifier)
FCC ID: W6UHM80I85C (Module MRDU-800IDEN/850CEL - 5 Watt 800 & 850 MHz Amplifier)
FCC ID: W6UHM1900P (Module MRDU-1900PCS - 5 Watt 1900 MHz Amplifier)
FCC ID: W6UHMAWS1 (Module MRDU-AWS-1 - 5 Watt 2100 MHz Amplifier)

To

FCC Part 1.1310

Date of Issue: April 23, 2014

On the behalf of the applicant:

Solid Technologies
4332 E Siesta Lane
Phoenix, AZ 85050

Attention of:

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Project No: p13a0006

Mike Graffeo
Project Test Engineer

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Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	April 23, 2014	Mike Graffeo	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



Description:

5W 700MHz Full Band LTE Amplifier

This is a permanently mounted (fixed) cell phone booster device used in Controlled Exposure environment.

Limits - Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:

Limit [mW/cm²] = 100

3.0-30 MHz:

Limit [mW/cm²] = (900/f²)

30-300 MHz:

Limit [mW/cm²] = 1.0

300-1500 MHz:

Limit [mW/cm²] = f/300

1500-100,000 MHz

Limit [mW/cm²] = 5

Test Frequencies: **742 MHz**

Power, Conducted: 5000 mW (P)

Antenna Gain Isotropic: 11.0 dBi

Antenna Gain Numeric (G): 12.59

Antenna Type: Stadium

PI = 3.1414

Limit (S): 2.473 mW/cm²

Minimum Safe Distance
Calculations

$$\text{Formula} = R = ((PG)/(4 \cdot \pi \cdot S))^{0.5}$$

Minimum Safe Distance (R) = 45.02 cm



Description:

5 Watt 800/850MHz Amplifier

This is a permanently mounted (fixed) cell phone booster device used in Controlled Exposure environment.

Limits - Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm²] = f/300
1500-100,000 MHz	Limit [mW/cm ²] = 5

Test Frequencies: **865.5 MHz**

Power, Conducted: 5000 mW (P)

Antenna Gain Isotropic: 11.6 dBi

Antenna Gain Numeric (G): 14.45

Antenna Type: Stadium

PI = 3.1414

Limit (S): 2.885 mW/cm²

Minimum Safe Distance
Calculations

$$\text{Formula} = R = ((PG)/(4 \cdot \pi \cdot S))^{0.5}$$
$$\text{Minimum Safe Distance (R)} = 44.65 \text{ cm}$$

Test Frequencies: **881.5 MHz**

Power, Conducted: 5000 mW (P)

Antenna Gain Isotropic: 11.6 dBi

Antenna Gain Numeric (G): 14.45

Antenna Type: Stadium

PI = 3.1414

Limit (S): 2.938 mW/cm²

Minimum Safe Distance
Calculations

$$\text{Formula} = R = ((PG)/(4 \cdot \pi \cdot S))^{0.5}$$
$$\text{Minimum Safe Distance (R)} = 44.25 \text{ cm}$$



Description:

5 Watt 1900MHz Amplifier

This is a permanently mounted (fixed) cell phone booster device used in Controlled Exposure environment.

Limits - Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm ²] = f/300
1500-100,000 MHz	Limit [mW/cm²] = 5

Test Frequencies: **1962.5 MHz**
Power, Conducted: 5000 mW (P)
Antenna Gain Isotropic: 11.6 dBi
Antenna Gain Numeric (G): 14.45
Antenna Type: Stadium
PI = 3.1414
Limit (S): 5 mW/cm²

Minimum Safe Distance
Calculations

Formula = $R = ((PG)/(4 \cdot PI \cdot S))^{0.5}$
Minimum Safe Distance (R) = 33.92 cm



Description:

5 Watt 2100MHz Amplifier

This is a permanently mounted (fixed) cell phone booster device used in Controlled Exposure environment.

Limits - Controlled Exposure
47 CFR 1.1310
Table 1, (A)

0.3-3.0 MHz:	Limit [mW/cm ²] = 100
3.0-30 MHz:	Limit [mW/cm ²] = (900/f ²)
30-300 MHz:	Limit [mW/cm ²] = 1.0
300-1500 MHz:	Limit [mW/cm ²] = f/300
1500-100,000 MHz	Limit [mW/cm²] = 5

Test Frequencies: **2132.5 MHz**

Power, Conducted: 5000 mW (P)

Antenna Gain Isotropic: 11.6 dBi

Antenna Gain Numeric (G): 14.45

Antenna Type: Stadium

PI = 3.1414

Limit (S): 5 mW/cm²

Minimum Safe Distance
Calculations

Formula = $R = ((PG)/(4 \cdot \pi \cdot S))^{0.5}$
Minimum Safe Distance (R) = 33.92 cm



Description:

Worse case composite 20Watt: if all 4 amplifiers are simultaneously transmitting within the single enclosure (20000mW). Minimum Safe Distance is based off the highest antenna gain of 14.45 and the strictest limit of 2.473 mW/cm².

Minimum Safe Distance
Calculations

$$\text{Formula} = R = \left(\frac{PG}{4 \cdot \pi \cdot S} \right)^{0.5}$$
$$= \left(\frac{20000 \cdot 14.45}{4 \cdot \pi \cdot 2.473} \right)^{0.5}$$

$$\text{Minimum Safe Distance (R)} = 96.44 \text{ cm}$$

END OF TEST REPORT