

**IEEE C95.1 2005  
KDB 447498 D01 V06  
47 C.F.R. Part 1, Subpart I, Section 1.1310  
47 C.F.R. Part 2, Subpart J, Section 2.1091**

## **RF EXPOSURE REPORT**

**For**

**Guardian Split System**

**Model:**

**G2-SY-CON2-1001272, G2-SY-CON2-1001484**

**Trade Name: GUARDIAN**

*Issued to*

**Seeing Machines**

**Level 1, 11 Lonsdale Street, Braddon, ACT 2612, Australia**

*Issued by*

**Compliance Certification Services Inc.**

**No.11, Wugong 6tj Rd., Wugu Dist.,  
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**Issued Date: March 19, 2018**



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## Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	March 19, 2018	Initial Issue	ALL	Allison Chen

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# 1. TEST RESULT CERTIFICATION

**We hereby certify that:**

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10: 2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of FCC Rules Part 15.207, 15.209, 15.247.

The test results of this report relate only to the tested sample EUT identified in this report.

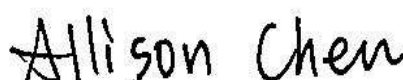
APPLICABLE STANDARDS	
STANDARD	TEST RESULT
IEEE C95.1 2005 KDB 447498 D03 47 C.F.R. Part 1, Subpart I, Section 1.1310 47 C.F.R. Part 2, Subpart J, Section 2.1091	No non-compliance noted

Approved by:



\_\_\_\_\_  
 Sam Chuang  
 Manager  
 Compliance Certification Services Inc.

Test by:



\_\_\_\_\_  
 Allison Chen  
 Report coordinator  
 Compliance Certification Services Inc.

## 2. LIMIT

According to §15.247(i), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this chapter.

## 3. EUT SPECIFICATION

<b>EUT</b>	Guardian Split System																			
<b>Model</b>	G2-SY-CON2-1001272, G2-SY-CON2-1001484																			
<b>Model Discrepancy</b>	G2-SY-CON2-1001272→ Guardian Split System has FFC Function G2-SY-CON2-1001484→ Guardian Split System doesn't have FFC Function																			
<b>Trade Name</b>	GUARDIAN																			
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WCDMA Band II: 1852.4MHz ~ 1907.6MHz <input checked="" type="checkbox"/> WCDMA Band V: 826.4MHz ~ 846.6MHz <input checked="" type="checkbox"/> Bluetooth: 2402MHz ~ 2480MHz <input type="checkbox"/> Others																			
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others																			
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )																			
<b>Antenna Specification</b>	<b>For WWAN (WCDMA)</b> WCDMA Band II: 1.30 dBi (Numeric gain: 1.35) WCDMA Band V: 2.50 dBi (Numeric gain: 1.78) Type: Extremal Antenna  <b>For Bluetooth</b> Bluetooth 2.56 dBi (Numeric gain: 1.80) Type: FPC Antenna																			
<b>Max tune up Power</b>	<table border="1"> <thead> <tr> <th>System</th> <th colspan="2">Max Tune up Power</th> </tr> </thead> <tbody> <tr> <td>WWAN</td> <td></td> <td></td> </tr> <tr> <td>WCDMA Band II:</td> <td>24.00 dBm</td> <td>(251.189 mW)</td> </tr> <tr> <td>WCDMA Band V:</td> <td>24.00 dBm</td> <td>(251.189 mW)</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Bluetooth</td> <td>12.00 dBm</td> <td>(15.849 mW)</td> </tr> </tbody> </table>		System	Max Tune up Power		WWAN			WCDMA Band II:	24.00 dBm	(251.189 mW)	WCDMA Band V:	24.00 dBm	(251.189 mW)				Bluetooth	12.00 dBm	(15.849 mW)
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Bluetooth	12.00 dBm	(15.849 mW)																		
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation* <input type="checkbox"/> SAR Evaluation <input type="checkbox"/> N/A																			

## 4. TEST RESULTS

No non-compliance noted.

### Calculation

$$\text{Given } E = \frac{\sqrt{30 \times P \times G}}{d} \quad \& \quad S = \frac{E^2}{377}$$

Where  $E$  = Field strength in Volts / meter

$P$  = Power in Watts

$G$  = Numeric antenna gain

$d$  = Distance in meters

$S$  = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

$$S = \frac{30 \times P \times G}{377d^2}$$

Changing to units of mW and cm, using:

$$P \text{ (mW)} = P \text{ (W)} / 1000 \text{ and}$$

$$d \text{ (cm)} = d \text{ (m)} / 100$$

Yields

$$S = \frac{30 \times (P/1000) \times G}{377 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2} \quad \text{Equation 1}$$

Where  $d$  = Distance in cm

$P$  = Power in mW

$G$  = Numeric antenna gain

$S$  = Power density in mW / cm<sup>2</sup>

## 5. MAXIMUM PERMISSIBLE EXPOSURE

Substituting the MPE safe distance using  $d = 20$  cm into Equation 1:

$$S = 0.000199 \times P \times G$$

Where  $P =$  Power in mW

$G =$  Numeric antenna gain

$S =$  Power density in mW / cm<sup>2</sup>

### WCDMA Band II mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
9262	1852.4	251.189	1.35	20	0.0675	1.000

### WCDMA Band V mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
4132	826.4	251.189	1.78	20	0.0890	0.551

### Bluetooth:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm <sup>2</sup>	Limit (mW/cm <sup>2</sup> )
1	2402	15.849	1.8	20	0.0057	1.000

## 6. SIMULTANEOUS TRANSMISSION SAR ANALYSIS

There are the WWAN and Bluetooth can transmit simultaneously, the formula of calculated the MPE is:

$$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} + \dots \text{etc.} < 1$$

CPD = Calculation power density

LPD = Limit of power density

The worst-case situation is  $0.0890 / 0.551 + 0.0057 / 1 = 0.1672$ , which is less than "1".