

# RF EXPOSURE **EVALUATION REPORT**

Issued to

Life Alert Emergency Response, Inc.

For

### Cellular Base Station

Model Name : Life Alert HELP PERS (914) : Life Alert HELP PERS (914) Trade Name

: Life Alert HELP PERS **Brand Name** 

FCC ID : 2ABZ7-914 : 47CFR 2.1091 Standard

> KDB 447498 D01 General RF Exposure Guidance v05r02

: 2014-4-28 Test date Issue date : 2014-5-12

by

Shenzhen Morlab Communications Technology Co., Ltd.

Ne. 8 Long Chang Road, Block 67, Bao An District) FL.3, Building A, FeiYang Science Par

> ShenZhen, Guang China 518101

Tested by

(Test Engineer)

2014.5.12 Date

Date

Reviewed by

Peng Huarui (SAR Manager)

The report refers only to the sample tested and does not apply to the bulk. This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen MORLAB Communication Technology Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen MORLAB Telecommunication Co., Ltd to his customer. Supplier or others persons directly concerned. Shenzhen MORLAB Telecommunication Co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report. In the event of the improper use of the report, Shenzhen MORLAB Telecommunication Co., Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate

Web site: http://www.morlab.cn/

Phone: +86 (0) 755 36698555

Fax: +86 (0) 755 36698525



# **DIRECTORY**

| TESTING LABORATORY                                   | 3                             |
|--|-------------------------------|
|  |                               |
| . IDENTIFICATION OF THE RESPONSIBLE TESTING LOCATION | 3                             |
| . ACCREDITATION CERTIFICATE                          | 3                             |
| TECHNICAL INFORMATION                                | 4                             |
| . IDENTIFICATION OF APPLICANT                        |                               |
| . IDENTIFICATION OF MANUFACTURER                     | 4                             |
| . EQUIPMENT UNDER TEST (EUT)                         | 4                             |
| .1. Photographs of the EUT                           | 5                             |
|  |                               |
| . APPLIED REFERENCE DOCUMENTS                        |                               |
|  |                               |
| DEVICE CATEGORY AND RF EXPOSURE LIMIT                | 7                             |
|  |                               |
| MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER           | 8                             |
|  |                               |
| RF EXPOSURE EVALUATION                               | <u>9</u>                      |
|  | . IDENTIFICATION OF APPLICANT |

|                                | Change History |                   |  |  |  |  |
|--------------------------------|----------------|-------------------|--|--|--|--|
| Issue                          | Date           | Reason for change |  |  |  |  |
| 1.0 May 12, 2014 First edition |                |                   |  |  |  |  |
|                                |                |                   |  |  |  |  |
|                                |                |                   |  |  |  |  |



## 1. TESTING LABORATORY

# 1.1. Identification of the Responsible Testing Location

| Name:                    | Shenzhen Morlab Communications Technology Co., Ltd.   |  |  |  |
|--------------------------|---|--|--|--|
|                          | Morlab Laboratory                                     |  |  |  |
| Address:                 | FL.3, Building A, FeiYang Science Park, No.8 LongChar |  |  |  |
|                          | Road, Block 67, BaoAn District, ShenZhen, GuangDong   |  |  |  |
|                          | Province, P. R. China 518101                          |  |  |  |
| FCC Registration Number: | 695796  |  |  |  |

# 1.2. Accreditation Certificate

Accredited Testing Laboratory: No. CNAS L3572

Shenzhen Morlab Communications Technology Co., Ltd Phone: +86 (0) 755 36698555

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Email: <a href="mailto:service@morlab.cn">Service@morlab.cn</a>
Page 3 of 10



### 2. TECHNICAL INFORMATION

Note: the following data is based on the information by the applicant.

## 2.1. Identification of Applicant

| Company Name: | Life Alert Emergency Response, Inc.                 |
|---------------|---|
| Address:      | 16027 Ventura Blvd. Suite 400, Encino, CA 91436 USA |

### 2.2. Identification of Manufacturer

| Company Name: | Life Alert Emergency Response, Inc.                |
|---------------|--|
| Address:      | 16027 Ventura Blvd. Suite 400 Encino, CA 91436 USA |

# 2.3. Equipment Under Test (EUT)

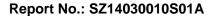
Web site: http://www.morlab.cn/

| Model Name:        | Life Alert HELP PERS (914)                       |
|--------------------|--|
| Trade Name:        | Life Alert HELP PERS (914)                       |
| Brand Name:        | Life Alert HELP PERS                             |
| Hardware Version:  | V. 914   |
| Software Version:  | 914: V1.00                                       |
| Frequency Bands:   | GSM 850: 824-849MHz; GSM 1900: 1850-1910MHz;     |
|                    | WCDMA 850: 824-849MHz; WCDMA 1900: 1850-1910MHz; |
| Modulation Mode:   | GSM: GSMK; WCDMA: QPSK;                          |
| Antenna type:      | Fixed Internal Antenna                           |
| Development Stage: | Identical prototype                              |

Shenzhen Morlab Communications Technology Co., Ltd Phone: +86 (0) 755 36698555

Fax: +86 (0) 755 36698525

Email: Service@morlab.cn Page 4 of 10



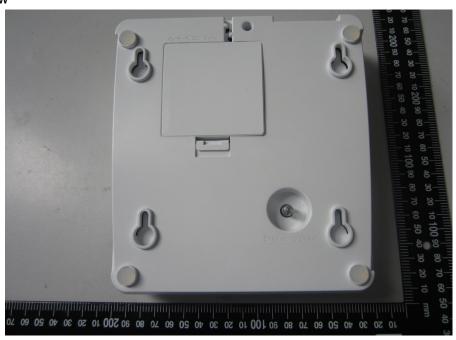


## 2.3.1. Photographs of the EUT

### 1. EUT front view



### 2. EUT rear view



Shenzhen Morlab Communications Technology Co., Ltd

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Email: <a href="mailto:Service@morlab.cn">Service@morlab.cn</a>



### 2.3.2. Identification of all used EUT

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

| EUT<br>Identity | Hardware Version Software Version |            |
|-----------------|-----------------------------------|------------|
| 1#              | V. 914                            | 914: V1.00 |

# 2.4. Applied Reference Documents

Leading reference documents for testing:

| No. | Identity             | Document Title                                       |  |  |  |
|-----|----------------------|--|--|--|--|
| 1   | 47 CFR§2.1091        | Radiofrequency Radiation Exposure Evaluation: mobile |  |  |  |
|     |                      | devices  |  |  |  |
| 2   | KDB 447498 D01v05r02 | General RF Exposure Guidance                         |  |  |  |

Shenzhen Morlab Communications Technology Co., Ltd Phone: +86 (0) 755 36698555

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Fax: +86 (0) 755 36698525
Email: <a href="mailto:Service@morlab.cn">Service@morlab.cn</a>
Page 6 of 10



### 3. DEVICE CATEGORY AND RF EXPOSURE LIMIT

Per user manual, this device is a cellular base station. Based on 47CFR 2.1091, this device belongs to mobile device category with General Population/Uncontrolled exposure.

#### **Mobile Devices:**

47CFR 2.1091(b)

For purposes of this section, a mobile device is defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure(s) and the body of the user or nearby persons. In this context, the term "fixed location" means that the device is physically secured at one location and is not able to be easily moved to another location. Transmitting devices designed to be used by consumers or workers that can be easily re-located, such as wireless devices associated with a personal computer, are considered to be mobile devices if they meet the 20 centimeter separation requirement.

#### **GENERAL POPULATION / UNCONTROLLED EXPOSURE**

The general population/uncontrolled exposure limits are applicable to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Members of the general public would come under this category when exposure is not employment-related; for example, in the case of a wireless transmitter that exposes persons in its vicinity. Warning labels placed on low-power consumer devices such as cellular telephones are not considered sufficient to allow the device to be considered under the occupational/controlled category, and the general population/uncontrolled exposure limits apply to these devices.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency range | Electric field strength | Magnetic field strength   | Power density          | Averaging time |
|-----------------|-------------------------|---------------------------|------------------------|----------------|
| (MHz)           | (V/m)                   | (A/m) Population/Uncontro | (mW/cm²)               | (minutes)      |
| (1              | by Ellinia for General  | T Opulation/Oncontro      | iieu Exposure          | <del> </del>   |
| 0.3-1.34        | 614                     | 1.63                      | *(100)                 | 30             |
| 1.34-30         | 824/f                   | 2.19/f                    | *(180/f <sup>2</sup> ) | 30             |
| 30-300          | 27.5                    | 0.073                     | 0.2                    | 30             |
| 300-1500        | -                       | -                         | f/1500                 | 30             |
| 1500-100,000    | -                       | -                         | 1.0                    | 30             |

f = frequency in MHz

Shenzhen Morlab Communications Technology Co., Ltd

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Fax: +86 (0) 755 36698525
Email: Service@morlab.cn
Page 7 of 10

Phone: +86 (0) 755 36698555

<sup>\* =</sup> Plane-wave equivalent power density



# 4. MEASUREMENT OF CONDUCTED PEAK OUTPUT POWER.

### 1. GSM Mode

| Band       | Channel | Frequency<br>(MHz) | Output<br>Power(dBm) |
|------------|---------|--------------------|----------------------|
| CCM        | 128     | 824.2              | 32.72                |
| GSM<br>850 | 190     | 836.6              | 33.16                |
| 650        | 251     | 848.8              | 33.54                |
| PCS        | 512     | 1850.2             | 30.55                |
| 1900       | 661     | 1880.0             | 29.96                |
|            | 810     | 1909.8             | 29.02                |

## 2. WCDMA mode conducted output power

|   | band      | WCDMA 850 |        |       | WCDMA 1900 |       |       |
|---|-----------|-----------|--------|-------|------------|-------|-------|
| Item  | ARFCN     | 4132      | 4175   | 4233  | 9262       | 9400  | 9538  |
|   | subtest   | dBm       |        |       | dBm        |       |       |
| 5.2(WCDMA)                                      | non       | 26.54     | 26.52  | 26.93 | 25.43      | 25.69 | 25.17 |
| The Conducted RF Output Power test of WCDMA was |           |           |        |       | was        |       |       |
| Note:   | tested by | power n   | neter. |       |            |       |       |

Shenzhen Morlab Communications Technology Co., Ltd

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Email: <a href="mailto:Service@morlab.cn">Service@morlab.cn</a>

Phone: +86 (0) 755 36698555 Fax: +86 (0) 755 36698525

Page 8 of 10



### 5. RF EXPOSURE EVALUATION

#### Standalone transmission MPE evaluation

|           | Antonna         | Conducted        | Time everesing          | Power    | Limit for |
|-----------|-----------------|------------------|-------------------------|----------|-----------|
| Bands     | Antenna<br>Gain | Average<br>Power | Time-averaging EIRP(mW) | density  | MPE       |
|           | (dBi)           | (dBm)            |                         | (mW/cm²) | (mW/cm²)  |
| GSM850    | 0.92            | 33.54            | 349.1                   | 0.069    | 0.566     |
| GSM1900   | 0.88            | 30.55            | 173.8                   | 0.035    | 1.0       |
| WCDMA850  | 0.92            | 26.93            | 609.5                   | 0.121    | 0.566     |
| WCDMA1900 | 1.07            | 25.69            | 474.2                   | 0.094    | 1.0       |

### Note:

### 1. Timeslot consignations

| Band           | GSM850  | GSM1900 | WCDMA850 | WCDMA1900 |
|----------------|---------|---------|----------|-----------|
| Duty Cycle     | 1:8     | 1:8     | 1:1      | 1:1       |
| Correct Factor | -9.03dB | -9.03dB | 0dB      | 0dB       |

### Time-averaging Power

| Band          | Channel | Frequency<br>(MHz) | Output<br>Power(dBm) |
|---------------|---------|--------------------|----------------------|
| GSM<br>850    | 128     | 824.2              | 23.69                |
|               | 190     | 836.6              | 24.13                |
|               | 251     | 848.8              | 24.51                |
| PCS<br>1900   | 512     | 1850.2             | 21.52                |
|               | 661     | 1880.0             | 20.93                |
|               | 810     | 1909.8             | 19.99                |
| WCDMA<br>850  | 4132    | 826.4              | 26.54                |
|               | 4175    | 835.0              | 26.52                |
|               | 4233    | 846.6              | 26.93                |
| WCDMA<br>1900 | 9262    | 1852.4             | 25.43                |
|               | 9400    | 1880.0             | 25.69                |
|               | 9538    | 1907.6             | 25.17                |

### 2. MPE calculation method

Power Density = EIRP/ $4\pi$ R<sup>2</sup>

Where: EIRP =  $P \cdot G$ 

P = Peak out power

G = Antenna gain

R = Separation distance (20cm)

Shenzhen Morlab Communications Technology Co., Ltd

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>
Fax: +86 (0) 755 36698525
Email: <a href="mailto:Service@morlab.cn">Service@morlab.cn</a>
Page 9 of 10

Phone: +86 (0) 755 36698555



### **Simultaneous transmission MPE evaluation**

There is only one transmitter incorporated in this cellular base station, so simultaneous transmission is not required.

Web site: <a href="http://www.morlab.cn/">http://www.morlab.cn/</a>

Email: Service@morlab.cn

Phone: +86 (0) 755 36698555 Fax: +86 (0) 755 36698525

Page 10 of 10