

**IEEE C95.1
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**

RF EXPOSURE REPORT

For

MX-LOCare

Model: BR1

Trade Name: MobilMAX

Issued to

**MobilMax Technology Inc.
2F-5, No. 28, Tai-Yuan St., Chupei City, Hsinchu County 302, Taiwan**

Issued by

**Compliance Certification Services Inc.
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City 24891, Taiwan. (R.O.C.)
<http://www.ccsrf.com>
service@ccsrf.com
Issued Date: July 28, 2015**



Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	2015/07/28	Initial Issue	ALL	Kelly Cheng

TABLE OF CONTENTS

1. LIMIT	4
2. EUT SPECIFICATION	4
3. TEST RESULTS	6
4. MAXIMUM PERMISSIBLE EXPOSURE	7

1. 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.

2. EUT SPECIFICATION

EUT	MX-LOCare																	
Model	BR1																	
Model Discrepancy	N/A																	
Frequency band (Operating)	☒ GSM 850MHz: 824.2MHz ~ 848.8MHz ☒ GSM 1900MHz: 1850.2MHz ~ 1909.8MHz ☐ WCDMA Band II: 1852.4MHz ~ 1907.6MHz ☐ WCDMA Band IV: 1712.4MHz ~ 1752.6MHz ☐ WCDMA Band V: 826.4MHz ~ 846.6MHz ☐ Others																	
Multislot classes	☐ Class 1 ☒ Class 10 ☐ Class 12 ☐ Class 33																	
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others																	
Exposure classification	☐ Occupational/Controlled exposure ($S = 5\text{mW/cm}^2$) ☒ General Population/Uncontrolled exposure ($S=1\text{mW/cm}^2$)																	
Antenna Specification	GSM / GPRS 850MHz : 1.27 dBi (Numeric gain 1.34) GSM / GPRS 1900MHz : 1.94 dBi (Numeric gain 1.56)																	
Measurement Average output power	<table border="1"> <thead> <tr> <th>System</th><th>Power</th><th></th></tr> </thead> <tbody> <tr> <td>GSM850</td><td>33.20 dBm</td><td>(2089.30 mW)</td></tr> <tr> <td>GPRS850</td><td>32.80 dBm</td><td>(1905.46 mW)</td></tr> <tr> <td>GSM1900</td><td>29.60 dBm</td><td>(912.01 mW)</td></tr> <tr> <td>GPRS1900</td><td>29.10 dBm</td><td>(812.83 mW)</td></tr> </tbody> </table>			System	Power		GSM850	33.20 dBm	(2089.30 mW)	GPRS850	32.80 dBm	(1905.46 mW)	GSM1900	29.60 dBm	(912.01 mW)	GPRS1900	29.10 dBm	(812.83 mW)
System	Power																	
GSM850	33.20 dBm	(2089.30 mW)																
GPRS850	32.80 dBm	(1905.46 mW)																
GSM1900	29.60 dBm	(912.01 mW)																
GPRS1900	29.10 dBm	(812.83 mW)																
Power Target / Tolerance	<table border="1"> <thead> <tr> <th>System</th><th>Target Power</th><th>Tolerance</th></tr> </thead> <tbody> <tr> <td>GSM850</td><td>32.5 dBm</td><td>± 1 dB</td></tr> <tr> <td>GPRS850</td><td>32.5 dBm</td><td>± 1 dB</td></tr> <tr> <td>GSM1900</td><td>29.0 dBm</td><td>± 1 dB</td></tr> <tr> <td>GPRS1900</td><td>29.0 dBm</td><td>± 1 dB</td></tr> </tbody> </table>			System	Target Power	Tolerance	GSM850	32.5 dBm	± 1 dB	GPRS850	32.5 dBm	± 1 dB	GSM1900	29.0 dBm	± 1 dB	GPRS1900	29.0 dBm	± 1 dB
System	Target Power	Tolerance																
GSM850	32.5 dBm	± 1 dB																
GPRS850	32.5 dBm	± 1 dB																
GSM1900	29.0 dBm	± 1 dB																
GPRS1900	29.0 dBm	± 1 dB																

Max tune up Power/ Max time Average Power GPRS/EGPRS	System	Max Tune up Power	Time Average Power
	GSM850	33.5dBm (2238.721mW)	24.5dBm (281.838mW)
	GPRS850	33.5dBm (2238.721mW)	27.5dBm (562.341mW)
	GSM1900	30.0dBm (1000.000mW)	21.0dBm (125.893mW)
	GPRS1900	30.0dBm (1000.000mW)	24.0dBm (251.189mW)
Evaluation applied	☒ MPE Evaluation* ☐ SAR Evaluation ☐ N/A		

3. TEST RESULTS

No non-compliance noted.

Calculation

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

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

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

Where d = Distance in cm

P = Power in mW

G = Numeric antenna gain

S = Power density in mW / cm²

4. 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 / cm²

GSM850 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
128	824	281.838	1.34	20	0.0752	0.549

GPRS850 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
128	824	562.341	1.34	20	0.1500	0.549

GSM1900 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
512	1850	125.893	1.56	20	0.0391	1.000

GPRS1900 mode:

Ch.	Frq.(MHz)	P (mW)	Gain (num.)	D (cm)	Power density in mW / cm ²	Limit (mW/cm ²)
512	1850	251.189	1.56	20	0.0780	1.000