EUROFINS PRODUCT SERVICE GMBH

TESTING CERT# 1983.01

RF-EXPOSURE ASSESSMENT

FCC 47 CFR 2.1093
IC RSS-102

Blood glucose meter

Mango

FCC ID: I5QM

REPORT NUMBER: G0M21102-4189-C-4

Eurofins Product Service GmbH
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1 General Information

1.1 Notes

The results of this test report relate exclusively to the item tested as specified in chapter "Description of test item" and are not transferable to any other test items.

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Operator:

Date	Eurofins-Lab.	Name	Signature
30.08.2011		C. Weber	C. Weber

Technical responsibility for area of testing:

Date	Eurofins	Name	Signature
30.08.2011		J. Zimmermann	J. Z

1.2 Testing laboratory

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Storkower Strasse 38c
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DAKKS ACCREDITED TESTING LABORATORY
DAKKS-REGISTRATION NUMBER: D-PL-12092-01-01

RECOGNIZED NOTIFIED BODY EMC
REGISTRATION NUMBER: BNetzA-bS EMV-07/61

RECOGNIZED NOTIFIED BODY R&TTE
REGISTRATION NUMBER: BNetzA-bS-02/51-53

FCC FILED TEST LABORATORY
REG.-NO. 96970

A2LA ACCREDITED TESTING LABORATORY
CERTIFICATE NO. 1983.01

BLUETOOTH QUALIFICATION TEST FACILITY (BQTF)
ACCREDITED BY BLUETOOTH QUALIFICATION REVIEW BOARD

INDUSTRY CANADA FILED TEST LABORATORY
REG. NO. IC 3470

Test location, where different:

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.
Telephone	: ./.
Fax	: ./.

1.3 Details of approval holder

Name	: LifeScan Inc.
Street	: 1000 Gibraltar Drive
Town	: CA 95035 Milpitas
Country	: USA
Telephone	: +1 407 942 3868
Fax	: +1 408 942 5600
Contact	: Mr. Sharbel Noujaim
Telephone	: +1 407 942 3868

Manufacturer:
(if applicable)

Name	: LifeScan Inc.
Street	: 1000 Gibraltar Drive
Town	: CA 95035 Milpitas
Country	: USA

1.4 Application details

Date of receipt of application	: 15.03.2011
Date of receipt of test item	: 15.03.2011
Date of assessment	: 30.08.2011

1.5 Acronyms and abbreviations

EUT	:	Equipment under Test
TX	:	Transmission
RX	:	Reception
RBW	:	Measurement Resolution Bandwidth
Pol	:	Measurement Polarization
N/A	:	Not applicable

1.6 Reference standards

Technical standards : **FCC 47 CFR 1.1310**
FCC 47 CFR 2.1091
FCC 47 CFR 2.1093

OET Bulletin 65 Supplement C : " ***Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields*** **" 2001**

RSS-102 Issue 4 : "*Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)*", 2010

Safety Code 6: "*Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3 kHz to 300 GHz*", 2009

IEEE C95.3 : "*IEEE Recommended Practice for Measurements and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100 kHz–300 GHz*", 2002

Health Canada : "*Technical Guide for Interpretation and Compliance Assessment of Health Canada's Radiofrequency Exposure Guidelines*", 2009

KDB 447498 "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies", 2009

1.7 Test item

Description of test item	:	Blood glucose meter
Type identification	:	Mango
Serial Number	:	None
Hardware version	:	DV3
Software version	:	01.00.00
Radiation sources included	:	Bluetooth
Equipment type	:	End product
Exposure Category	:	Uncontrolled / General public
Device type	:	Portable

1.8 Referenced documents

FCC/IC Bluetooth test report	:	G0M21102-4189-P-15 Eurofins Product Service GmbH

1.9 Additional information

None

2 Exposure Assessment

2.1 Device Types

Fixed

A fixed device is defined as a device physically secured at one fixed location and cannot be easily relocated.

Mobile

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. (47 CFR 2.1091)

Portable

A portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 20 centimeters of the body of the user. (47 CFR 2.1093)

2.2 Exposure Categories

Occupational / Controlled Exposure

In general, occupational/controlled exposure limits are applicable to situations in which persons are exposed as a consequence of their employment, who have been made fully aware of the potential for exposure and can exercise control over their exposure. This exposure category is also applicable when the exposure is of a transient nature due to incidental passage through a location where the exposure levels may be higher than the general population/uncontrolled limits, but the exposed person is fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means. Awareness of the potential for RF exposure in a workplace or similar environment can be provided through specific training as part of a RF safety program. If appropriate, warning signs and labels can also be used to establish such awareness by providing prominent information on the risk of potential exposure and instructions on methods to minimize such exposure risks.

General Public / 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.

2.3 SAR Limits

FCC/IC SAR exposure limits		
Exposure region	**Exposure characteristics specific SAR [W/kg]**	
	Occupational	**General public**
Whole-body	0.4	0.08
Partial-body SAR averaging mass = 1g	8.0	1.6
Hands, Wrists, Feet and Ankles SAR averaging mass = 10g	20	4

2.4 SAR Evaluation exemptions

The FCC defines the following exemption conditions from SAR evaluation:

Excerpt from KDB 447498:

Unlicensed intentional radiators and licensed devices can be approved as either a transmitter or a module for use in stand-alone portable exposure conditions that do not allow simultaneous transmission. Based on the SAR or output power level, the following three conditions may be applied;

> **A device may be used in portable exposure conditions with no restrictions on host platforms when either the source-based time-averaged output power is ≤ 60/*f*(GHz) mW** or all measured 1-g SAR are < 0.4 W/kg. When SAR evaluation is required, the most conservative exposure conditions for all expected operating configurations must be tested.
>
> A device may be approved for use in multiple host platforms, each with similar family attributes, for example, PDA, laptop/notebook/netbook computers, and tablet computers, when each host platform is tested in the most conservative exposure conditions and the 1-g SAR is < 0.8 W/kg for all configurations.
>
> A device may be approved for use in a single platform when all hosts within the same platform have the same operating configurations and exposure conditions, with only minor configuration and construction differences. The most conservative exposure conditions among all host configurations within the platform must be fully tested using the procedures in item 2) b) according to the required platform test configurations, such as those in item 4); the remaining less restrictive exposure conditions and host configurations may apply. The 1-g SAR must be < 1.2 W/kg for all configurations.

Industry Canada defines the following exemption conditions from SAR evaluation:

Excerpt from RSS-102 Issue 4:

SAR evaluation is required if the separation distance between the user and the radiating element of the **device is less than or equal to 20 cm, except** when the device operates as follows:

> from **3 kHz up to 1 GHz** inclusively, and with **output power** (i.e. the higher of the conducted or equivalent isotropically radiated power (e.i.r.p.) source-based, time-averaged output power) that is **less than or equal to 200 mW for general public use** and **1000 mW for controlled use**;
>
> **above 1 GHz and up to 2.2 GHz** inclusively, and with **output power** (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is **less than or equal to 100 mW for general public use** and **500 mW for controlled use**;
>
> **above 2.2 GHz and up to 3 GHz** inclusively, and with **output power** (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is **less than or equal to 20 mW for general public use** and **100 mW for controlled use**;
>
> **above 3 GHz and up to 6 GHz** inclusively, and with **output power** (i.e. the higher of the conducted or radiated (e.i.r.p.) source-based, time-averaged output power) that is **less than or equal to 10 mW for general public use** and **50 mW for controlled use**.

2.5 Exposure assessment

Bluetooth	
TX frequency range	2400 - 2483.5MHz
Channels	0 – 78 (Hopping Channels)
Transmission modes	BR
Modulation	GFSK
Maximum duty cycle	46%
Maximum conducted power	3.0dBm / 2.00mW
Maximum radiated power	3.5dBm / 2.24mW
Antenna type	Integrated chip antenna
Antenna gain	0.5dBi
Antenna diameter	1cm
TX mode	Stand-alone
Exposure Category	Uncontrolled / General public
Device type	Portable
SAR evaluation required	Yes
FCC SAR evaluation exemption threshold power	60/2.480 = 24.19mW
IC SAR evaluation exemption threshold power	20mW
SAR evaluation exemption condition fulfilled	Yes
Verdict	The peak conducted and radiated power values emitted by the EUT are below the FCC/IC SAR evaluation exemption thresholds. No SAR evaluation is required; EUT directly complies to the FCC/IC RF-Exposure restrictions.