Full

RF Exposure Evaluation Report

No. I16D00100-MPE

For

Client : Medical Alarm Concepts

Production : 2.4G RF transmitter

Model Name : CS399-RB

Hardware Version: V1.0

Software Version: V1.0

Issued date: 2016-06-14

FCC ID: XWI-RB

Test Laboratory:

ECIT Shanghai, East China Institute of Telecommunications

Add: 7F, G Area, No.668, Beijing East Road, Huangpu District, Shanghai, P. R. China

Tel: (+86)-021-63843300, E-Mail: welcome@ecit.org.cn

CONTENTS

1 Test Laboratory

1.1 Testing Location

Company Name:	ECIT Shanghai, East China Institute of Telecommunications
Address:	7-8F, G Area, No. 668, Beijing East Road, Huangpu District, Shanghai, P. R. China
Postal Code:	200001
Telephone:	(+86)-021-63843300
Fax:	(+86)-021-63843301

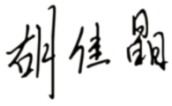
1.2 Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	20-75%
Ambient noise & Reflection:	< 0.012 W/kg

1.3 Project Data

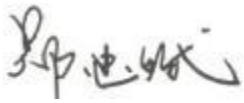
Project Leader:	Liu Jianquan
Testing Start Date:	2016-06-14
Testing End Date:	2016-06-14

1.4 Signature



Hu Jiajing
(Prepared this test report)

Yu Naiping
(Reviewed this test report)



Zheng Zhongbin
Director of the laboratory
(Approved this test report)

2 Client Information

2.1 Applicant Information

Company Name:	Medical Alarm Concepts
Address:	200 West Church Rd., Suite B, King of Prussia, PA, USA
Telephone:	1-215-850-4600
Postcode:	19406

2.2 Manufacturer Information

Company Name:	Xi'an iHelp Wearable Electronic Co.Ltd
Address:	Innovative Business Building No. 2,#69 JinyeRoad,Xi'an,China
Telephone:	029-88311435-8003
Postcode:	710077

3 Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1 About EUT

Description:	2.4G RF transmitter
Model name:	CS399-RB
Operation Model(s):	FSK
Tx Frequency:	2408MHz
Test device Production information:	Production unit
Device type:	Portable device
UE category:	3
Antenna type:	Inner antenna

3.2 Internal Identification of EUT used during the test

EUT ID*	SN or IMEI	HW Version	SW Version
N01	N/A	V1.0	V1.0

*EUT ID: is used to identify the test sample in the lab internally.

3.3 Internal Identification of AE used during the test

AE ID*	Description	Model	SN	Manufacturer
N/A	N/A	N/A	N/A	N/A

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Applicable Standards

The MPE report was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47 Part 2.1091 and Rss102_issue4.
The limits standard is based on the Council Recommendation 1999/519/EC.
FCC CFR 47, Part 2, FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS, Oct 1,2011
Section 2.1091 Radiofrequency radiation exposure evaluation: mobile devices, Oct 1,2011

4.2. Test Limits

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 level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2m normally can be maintained between the user and the device.

Limits for Occupational / Controlled Exposure

Frequency Range [MHz]	Electric Field Strength (E) [V/m]	Magnetic Field Strength (H) [A/m]	Power Density (S) [mW/cm2]	Averaging Times |E|2, |H|2 or S [miniutes]
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1824/f	4.89/f	(900/f)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	F/300	6
1500 - 100000	--	--	5	6

Limits for General Population / Uncontrolled Exposure

Frequency Range [MHz]	Electric Field Strength (E) [V/m]	Magnetic Field Strength (H) [A/m]	Power Density (S) [mW/cm2]	Averaging Times |E|2, |H|2 or S [miniutes]
0.3 – 1.34	614	1.63	(100)*	30
1.34 – 30	824/f	2.19/f	(180/f)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	F/1500	30
1500 - 100000	--	--	1.0	30

Note: f=frequency in MHz; *Plane-wave equivalent power density

For the DUT, the limits for General Population / Uncontrolled Exposure are applicable.

5. Test Results

5.1. Conducted RF Power Output

Table 5.1: The Conducted Power For FSK

The Peak conducted power for WiFi is as following:

2408 MHz
19.7

5.2. Calculation Information

From the antenna specifications provided by the applicant, the antenna gain is 1.0 dBi in FSK.

So for conservative evaluation consideration, only maximum power of each frequency band based on the tighter limits respectively are used to calculate the boundary power density.

5.3. Result of Bluetooth

Test Results: MPE Limit Calculation: the EUT's operating frequencies @ 2408 MHz; The maximum tune up procedure power is 19.7 dBm .
The maximum gain is 1.0 dBi.
The resulted power density at a distance of 20cm can be deducted as follows:

EIRP=19.7+1.0 =-20.7 dBm=117.5 mW

Power Density=EIRP*Duty Cycle/(4 π R^2)=117.5*1/(4* π *20^2)=0.023 mW/cm^2

Where Duty Cycle is 1 and R is 20cm.

The MPE limit for Occupational/Controlled Exposure is shown in the FCC KDB 447498 D01 and 47 CFR §2.1091, can be calculated as follows:

MPE limit =1 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore the DUT in this band is compliant with the FCC rules on RF exposure.

So the product is under the MPE limits. All is pass.

*****END OF REPORT*****