Shenzhen Huatongwei International Inspection Co., Ltd.
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RF EXPOSURE REPORT

Report Reference No. ..... :	**TRE1606009602**	R/C…….: 14298
FCC ID. ..... :	**ZLZEPC002**	
Applicant's name ..... :	**Shenzhen Mindray BIO-Medical electronics Co.,LTD.**	
Address.....:	Mindray Building,Keji 12th Road South,High-tech Industrial Park,Nanshan,Shenzhen, China	
Manufacturer.....:	Shenzhen Mindray BIO-Medical electronics Co.,LTD.	
Address.....:	Mindray Building,Keji 12th Road South,High-tech Industrial Park,Nanshan,Shenzhen, China	
Test item description ..... :	**ECG Patch Charger（Professional）**	
Trade Mark .....:	Mindray	
Model/Type reference.....:	EPC002	
Listed Model(s) .....:	-	
Standard ..... :	**FCC Per 47 CFR 2.1093(d)**	
Date of receipt of test sample.....:	Jun.16, 2016	
Date of testing.....:	Jun.17, 2016- Jul.08,2016	
Date of issue… .....:	Jul.08,2016	
Result..... ……..:	**PASS**	

Compiled by (position+printed name+signature)..:	File administrators Candy Liu	Candy Liu
Supervised by (position+printed name+signature)..:	Project Engineer Jeff Sun	Jeff Sun
Approved by (position+printed name+signature)..:	RF Manager Hans Hu	Hans Hu

Testing Laboratory Name ..... :	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Contents

1. SUMMARY

1.1. Client Information

Applicant:	Shenzhen Mindray BIO-Medical electronics Co.,LTD.
Address:	Mindray Building,Keji 12th Road South,High-tech Industrial Park,Nanshan,Shenzhen, China
Manufacturer:	Shenzhen Mindray BIO-Medical electronics Co.,LTD.
Address:	Mindray Building,Keji 12th Road South,High-tech Industrial Park,Nanshan,Shenzhen, China

1.2. Product Description

Name of EUT	ECG Patch Charger（Professional）
Trade Mark:	Mindray
Model No.:	EPC002
Listed Model(s):	-
Power supply:	AC 120V/60Hz
Adapter information:	-
Hardware version:	-
Software version:	-
Bluetooth	
Version:	Supported BLE 4.1
Modulation:	GFSK
Operation frequency:	2402MHz - 2480MHz
Channel number:	40
Channel separation:	2 MHz
Antenna type:	Internal Antenna
Antenna gain:	1.6dBi

Operation Frequency List:

Channel	Frequency (MHz)
00	2402
01	2404
02	2408
…	…
19	2440
…	…
37	2476
38	2478
39	2480

Note:In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

1.3. EUT operation mode

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in continous transmitting and receiving mode for testing.

Test mode:GFSK Modulation

1.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
○	Multimeter	Manufacturer :	/
		Model No. :	/

1.5. Modifications

No modifications were implemented to meet testing criteria.

2. TEST ENVIRONMENT

2.1. Address of the test laboratory

Laboratory:Shenzhen Huatongwei International Inspection Co., Ltd.
Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China
Phone: 86-755-26748019 Fax: 86-755-26748089

2.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225
Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

A2LA-Lab Cert. No. 3902.01
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until December 31, 2016.

FCC-Registration No.: 317478
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478, Renewal date Jul. 18, 2014, valid time is until Jul. 18, 2017.

IC-Registration No.: 5377A&5377B
The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Dec. 31, 2013, valid time is until Dec. 31, 2016.
Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B on Dec.03, 2014, valid time is until Dec.03, 2017.

ACA
Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

VCCI
Radiated disturbance above 1GHz measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2013. Valid time is until Dec. 23, 2016.
Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2013. Valid time is until May 06, 2016.

DNV
Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2016.

2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
lative Humidity:	30~60 %
Air Pressure:	950~1050mba

2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics;Part 1" and TR-100028-02 "Electromagnetic compatibilityand Radio spectrum Matters (ERM);Uncertainties in the measurementof mobile radio equipment characteristics;Part 2 " and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

3 . METHOD OF MEASUREMENT

3.1. Applicable Standard

According to §1.1307(b)(1), 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 of the Commission's guidelines.

According to §1.1310,KDB447498 and §2.1093 RF exposure is required.

680106 D01 RF Exposure Wireless Charging Apps v02 : RF Exposure Considerations for Low Power Consumer Wireless Power Transfer Applications

3.2. Limit

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)
Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f2)	6
30–300	61.4	0.163	1.0	6
300–1500	-	-	f/300	6
1500–100,000	-	-	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f2)	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
Friis transmission formula: Pd = (Pout*G)/(4*pi*r2)

Where
Pd = power density in mW/cm2, Pout = output power to antenna in mW;
G = gain of antenna in linear scale, Pi = 3.1416;
R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

3.3. Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

3.4. Test Result of RF Exposure Evaluation

Channel	Output power to antenna (mW)	G(dBi)	Power Density at R=20cm (mW/cm^2)	Limit (mW/cm^2)	Result
2.402	0.04	1.4454398	0.000501	1.00	Pass
2.440	0.05	1.4454398	0.000504	1.00	Pass
2.480	0.07	1.4454398	0.000507	1.00	Pass

4. CONCLUSION

So standalone SAR measurements are not required for both head and body.

.....End of Report.....