

## RF Exposure Evaluation Declaration

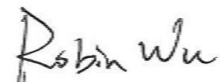
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**FCC ID:** 2ASR8SC3832  
**APPLICANT:** Qingdao Haier Biomedical Co Ltd  
**Application Type:** Certification  
**Product:** Touch screen main control board  
**Model No.:** SC3832V  
**FCC Classification:** Digital Transmission System (DTS)  
FCC Part 15 Spread Spectrum Transmitter(DSS)  
**Test Procedure(s):** KDB 447498 D01v06  
**Test Date:** March 24, 2019

**Reviewed By:**

  
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( Kevin Guo )

**Approved By:**

  
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( Robin Wu )



The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standards through the calibration of the equipment and evaluated measurement uncertainty herein.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

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## Revision History

Report No.	Version	Description	Issue Date	Note
1902RSU012-U4	Rev. 01	Initial report	04-26-2019	Valid

## 1. PRODUCT INFORMATION

### 1.1. Equipment Description

Product Name:	Touch screen main control board
Model No.:	SC3832V
Wi-Fi Specification:	802.11b/g/n
Bluetooth Version:	V4.2 dual mode
Working Voltage:	12VDC

### 1.2. Product Specification Subjective to this Standard

WiFi Specification	
Frequency Range:	802.11b/g/n-HT20: 2412 ~ 2462MHz
Channel Number:	802.11b/g/n-HT20: 11
Type of Modulation:	802.11b: DSSS 802.11g/n: OFDM
Data Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n: up to 72.2Mbps
Antenna Type:	PCB Antenna
Antenna Gain:	3.9dBi
Bluetooth Specification	
Operating Frequency:	2402~2480MHz
Channel Number:	For Bluetooth: 79 For BT-LE: 40
Type of modulation:	GFSK, Pi/4 DQPSK, 8DPSK
Data Rate:	1Mbps(GFSK), 2Mbps(Pi/4 DQPSK), 3Mbps (8DPSK)
Antenna Type:	PCB Antenna
Antenna Gain:	3.9dBi

## 2. RF Exposure Evaluation

### 2.1. Limits

According to FCC 1.1310: 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/cm <sup>2</sup> )	Average Time (Minutes)
(A) Limits for Occupational/ Control Exposures				
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6
(B) Limits for General Population/ Uncontrolled Exposures				
300-1500	--	--	f/1500	6
1500-100,000	--	--	1	30

f= Frequency in MHz

Calculation Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = 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

$P_d$  is the limit of MPE, 1mW/cm<sup>2</sup>. 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.

## 2.2. Test Result of RF Exposure Evaluation

Product	Touch screen main control board
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.2.

Test Mode	Frequency Band (MHz)	Max Conducted Power (dBm)	Antenna Gain (dBi)	Maximum EIRP (dBm)
BT	2402 ~ 2480	9.05	3.9	12.95
802.11b/g/n	2412 ~ 2462	16.71	3.9	20.61

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
BT	2402 ~ 2480	12.95	0.0039	1
802.11b/g/n	2412 ~ 2462	20.61	0.0229	1

### CONCLUSION:

Both of the WLAN 2.4GHz Band and Bluetooth cannot transmit simultaneously.

The max Power Density at R (20 cm) = 0.0229mW/cm<sup>2</sup> < 1mW/cm<sup>2</sup>.

Therefore, the Min Safety Distance is 20cm.

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## **Appendix A - Test Setup Photograph**

Refer to "1902RSU012-UT" file.

## **Appendix B - EUT Photograph**

Refer to "1902RSU012-UE" file.