RF Exposure Evaluation Declaration

FCC ID: XCO-QCC3007

APPLICANT: Hansong (Nanjing) Technology Ltd.

Application Type: Certification

Product Name: Bluetooth Module

Model No.: HSBT3007-IA, HSBT3007-EA

Brand Name: Platin

FCC Classification: FCC Part 15 Spread Spectrum Transmitter (DSS)
Digital Transmission System (DTS)

Reviewed By: Jame Yuan
(Jame Yuan)

Approved By: Robin Wu
(Robin Wu)

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

Revision History

Report No.	Version	Description	Issue Date	Note
2005RSU040-U3	Rev. 01	Initial Report	08-20-2020	Valid

1. PRODUCT INFORMATION

1.1. Equipment Description

Product Name:	Bluetooth Module
Model No.:	HSBT3007-IA, HSBT3007-EA
Brand Name:	Platin
Radio Specification:	Bluetooth
Bluetooth Version:	V5.0 (Dual mode)
Hardware Version:	V1_0
Software Version:	V1_0
Serial No.:	Product Configured with Onboard PCB Antenna: H208HSBT3007G00011 Product Configured with External PCB Antenna or External Dipole Antenna: H208HSBT3007G00001

Note: HSBT3007-IA is corresponded with the product configured with onboard PCB antenna, HSBT3007-EA is corresponded with the module configured with external PCB antenna or external dipole antenna.

1.2. Product Specification Subjective

For BR/EDR:

Operating Frequency:	2402~2480MHz
Channel Number:	79
Type of Modulation:	GFSK, Pi/4 DQPSK, 8DPSK
Data Rate:	1Mbps (GFSK), 2Mbps (Pi/4 DQPSK), 3Mbps (8DPSK)

For Bluetooth-LE:

Frequency Range:	2402 ~ 2480MHz
Channel Number:	40
Type of modulation:	GFSK
Data Rate:	1Mbps

1.3. Antenna Specification

Antenna Type	Antenna Gain (dBi)
Onboard PCB Antenna	1.14
External PCB Antenna	2.00
External Dipole Antenna	2.93

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^2)	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^2

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, $1mW/cm^2$. 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	Bluetooth Module
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to the section 1.3

Test Mode	Frequency Band (MHz)	Maximum Peak Power		Max Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm^2)	Limit (mW/cm^2)
		(dBm)	(mW)			
Bluetooth BR/EDR	2402 ~ 2480	6.35	4.315	2.93	0.0017	1
Bluetooth-LE	2402 ~ 2480	-3.98	2.500	2.93	0.0002	1

CONCLUSION:

The Bluetooth BR/EDR and Bluetooth-LE cannot transmit simultaneously.

The max Power Density at R (20 cm) = 0.0017mW/cm^2 < 1mW/cm^2.

Therefore, the Min Safety Distance is 20cm.

The End

Appendix A - EUT Photograph

Refer to “2005RSU040-UE” file.