RF Exposure Evaluation Declaration

FCC ID:	XCO-QCC3031
Applicant:	Hansong(Nanjing) Technology Ltd.
Product:	Bluetooth Module
Model No.:	HSBT3031-08-EA, HSBT3031-08-IA
Brand Name:	Platin
FCC Classification:	Digital Transmission System (DTS) FCC Part 15 Spread Spectrum Transmitter (DSS)
FCC Rule Part(s):	FCC Part 2 (Section 2.1091) KDB 447498 D01 General RF Exposure Guidance v0

Reviewed By: Jame Yuan

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

Revision History

Report No.	Version	Description	Issue Date	Note
2112RSU099-U4	Rev. 01	Initial Report	02-23-2022	Valid

CONTENTS

1. General Information

1.1. Applicant

Hansong(Nanjing) Technology Ltd.

8th Kangping Road Jiangning Economy and Technology Development Zone Nanjing 211106 China

1.2. Manufacturer

Hansong(Nanjing) Technology Ltd.

8th Kangping Road Jiangning Economy and Technology Development Zone Nanjing 211106 China

1.3. Testing Facility

☒	**Test Site – MRT Suzhou Laboratory**				
	Laboratory Location (Suzhou - Wuzhong)				
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China				
	Laboratory Location (Suzhou - SIP)				
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China				
	Laboratory Accreditations				
	A2LA: 3628.01		CNAS: L10551		
	FCC: CN1166		ISED: CN0001		
	VCCI:	☐R-20025	☐G-20034	☐C-20020	☐T-20020
		☐R-20141	☐G-20134	☐C-20103	☐T-20104
☐	**Test Site – MRT Shenzhen Laboratory**				
	Laboratory Location (Shenzhen)				
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China				
	Laboratory Accreditations				
	A2LA: 3628.02		CNAS: L10551		
	FCC: CN1284		ISED: CN0105		
☐	**Test Site – MRT Taiwan Laboratory**				
	Laboratory Location (Taiwan)				
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)				
	Laboratory Accreditations				
	TAF: L3261-190725				
	FCC: 291082, TW3261		ISED: TW3261		

1.4. Product Information

Product Name	Bluetooth Module
Model No.	HSBT3031-08-EA, HSBT3031-08-IA
Brand Name	Platin
Sample No.	20211230Accessory#27
Bluetooth Specification	V5.1 (Dual mode)
Antenna Information	Refer to section 1.5
Working Voltage	3.3V

Remark:

1. The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.
2. The difference between the above two models is the antenna type and the antenna's matching circuits.

1.5. Antenna Details

Antenna Type	Frequency Band (GHz)	T_X Paths	Max Antenna Gain (dBi)
Bluetooth Antenna			
External Dipole Antenna	2402 ~ 2480	1	2.00
Onboard PCB Antenna	2402 ~ 2480	1	1.97
External PCB Antenna	2402 ~ 2480	1	4.15

2. RF Exposure Evaluation

2.1. Test 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: $Pd = (Pout*G)/(4*pi*r^2)$

Where

Pd = power density in mW/cm^2

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 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

Product	Bluetooth Module
Test Item	RF Exposure Evaluation

Antenna Gain: Refer to clause 1.5.

Test Mode	Frequency Band (MHz)	Maximum Peak Conducted Power (dBm)	Antenna Gain (or Beamforming Gain) (dBi)	Maximum EIRP (dBm)
Bluetooth-BR/EDR	2402 ~ 2480	10.07	4.15	14.22
Bluetooth-LE	2402 ~ 2480	2.98	4.15	7.13

Test Mode	Frequency Band (MHz)	Maximum EIRP (dBm)	Compliance Distance (cm)	Power Density (mW/cm^2)	Limit of Power Density (mW/cm^2)
Bluetooth-BR/EDR	2402 ~ 2480	14.22	20.00	0.0053	1
Bluetooth-LE	2402 ~ 2480	7.13	20.00	0.0027	1

CONCLUSION:

The max Power Density at R (20.00 cm) = $0.0053mW/cm^2 < 1mW/cm^2$.

So the compliance distance is 20.0cm for device installed without any other radio equipment.

The End