RF Exposure Evaluation Declaration

FCC ID:	2AEZB-FZJ202106-24R
APPLICANT:	Forcome (Shanghai) Co., Ltd.
Address:	Building 109, No. 255, South Sizhuan Road Shanghai China 201612
Application Type:	Certification
Product:	Remote Wireless
Model No.:	FUS-20832000-0006, FUS-20832000-0033 (I)
Brand Name:	X-POWER
FCC Rule Part(s):	FCC Part 2 (Section 2.1091)

Reviewed By: Sunny Sun

Approved By: Robin Wu

Revision History

Report No.	Version	Description	Issue Date	Note
2108RSU043-U2	Rev. 01	Initial Report	11-22-2021	Valid

CONTENTS

1. General Information

1.1. Applicant

Forcome (Shanghai) Co., Ltd.

No.109 Lane 255 South Si Zhuan Road, Song Jiang District 201612, Shanghai, China

1.2. Manufacturer

Forcome (Shanghai) Co., Ltd.

No.109 Lane 255 South Si Zhuan Road, Song Jiang District 201612, Shanghai, China

1.3. Test 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	Remote Wireless
Model No.	FUS-20832000-0006, FUS-20832000-0033 (I)
Brand Name	X-POWER
Hardware Version	Y 1.0
Software Version	RJ 1.0
Frequency Range	2400 ~ 2482 MHz
Power Type	11.5 Vdc
Remarks: 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 only differene between the two models is different feedback signal encoding, FUS-20832000-0006 is for ratation direction,. FUS-20832000-0033 (I) is for overcurrent signal.	

1.5. RF Specification

Frequency Range	2400 ~ 2482 MHz
Channel Number	15
Type of Modulation	GFSK
Antenna Type	PCB Antenna
Antenna Gain	-1.4 dBi

1.6. Applied Standards

KDB 447498 D01v06

2. RF Exposure Evaluation

2.1. Test Limit

SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm

Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table. The equation and threshold in Note 1 must be applied to determine SAR test exclusion.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

MHz	30	35	40	45	50	mm
150	232	271	310	349	387	SAR Test Exclusion Threshold (mW)
300	164	192	219	246	274	
450	134	157	179	201	224	
835	98	115	131	148	164	
900	95	111	126	142	158	
1500	73	86	98	110	122	
1900	65	76	87	98	109	
2450	57	67	77	86	96	
3600	47	55	63	71	79	
5200	39	46	53	59	66	
5400	39	45	52	58	65	
5800	37	44	50	56	62	

Note: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:
[(max. power of channel, including tune-up tolerance, mW) / (min. test separation distance, mm)] * [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

2.2. Test Result

Product	Remote Wireless
Test Item	RF Exposure Evaluation

Test Mode	Frequency Band (MHz)	Maximum Output Power (dBm)	Tune Up Power (dBm)	Output Power (mW)	SAR Test Exclusion Threshold (mW) @ 5mm
2.4G Wi-Fi	2400 ~ 2482	-1.39	-1.0	0.79	10

Note: Per FCC KDB 447498 D01v06, the SAR exclusion threshold for distances <50mm is defined by the following equation:

$$\frac{Max\ Power\ of\ Channel\ (mW)}{Test\ Separation\ Dist\ (mm)} * \sqrt{Frequency(GHz)} \leq 3.0$$

Based on the maximum conducted power of 2.4G Wi-Fi and the antenna to use separation distance, 2.4G Wi-Fi SAR was not required;

For 2.4G Wi-Fi, (0.79 / 5) * $\sqrt{2.472}$= 0.25 < 3.00

So SAR test exclusion can be applied for the Remote Wireless.

The End

Appendix - EUT Photograph

Refer to “2107RSU041-UE” file.