RF Exposure Evaluation

FCC ID: 2ALN5-RL180060

1. Client Information

Applicant	:	Siffron
Address	:	8181 Darrow Road Twinsburg, OH 44087 USA
Manufacturer	:	Shenzhen Allcomm Electronic Company Limited
Address	:	No. 272 Guangtian Road, Tangxiayong, Yanluo Street, Baoan District, Shenzhen City, Guangdong Province, P.R. China

2. General Description of EUT

EUT Name	:	LM Tag Loop with Sonr	
Models No.	:	RL-18006-0	
Model Difference	:	N/A	
Product Description	:	Operation Frequency:	433.92 MHz
		Output Power:	73.04 dBuV/m (PK Max.) 60.01 dBuV/m (AV Max.)
		Antenna Gain:	Integral Antenna(0 dBi)
		Modulation Type:	ASK
Power Rating	:	DC 3.0V by button Battery(CR2430).	
Software Version	:	V1.0	
Hardware Version	:	V1.0	
Remark	:	The antenna gain provided by the applicant, the verified for the RF conduction test provided by TOBY test lab.	

Note: More test information about the EUT please refer the RF Test Report.

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Standard Requirement

Portable Device

According to § 15.247(i) and § 1.1307b(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 levels in excess of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance V6, section 4.3.1.

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,16 where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation17
- The result is rounded to one decimal place for comparison

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 is applied to determine SAR test exclusion.

Measurement Result:

Test separation: 5mm						
Frequency (GHz)	Max. E (dBuV/m)	D (m)	Max Output power (dBm)	Max Output power (mW)	Calculation Value (Note 1)	Threshold Value
433.92	73.04	3	-22.22	0.0060	0.0008	3.0

Note:

$$E = EIRP - 20\log D + 104.8$$

where:

E = electric field strength in dBμV/m,
EIRP = equivalent isotropic radiated power in dBm
D = specified measurement distance in meters.

EIRP=E-104.8+20logD
Note 1: Calculation Value =[(max. power of channel, mW)/(min.test separation distance, mm)] ·[√f(GHz)].
Fox example: 0.0060/5*√0.43392=0.0008≤3.0

According to KDB447498 D01 V6, threshold at which no SAR required is ≤3.0 for 1-g SAR, separation distance is 5mm, and no simultaneous SAR measurement is required.

Standard Applicable

According to 2.1093 this is a portable device. According to KDB 447498 D01 V6, Appendix A SAR test exclusion thresholds for below table, the power level 22mW at 5mm.

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	

Measurement Result:

This is a portable device and the Max. peak output power is ***-22.22dBm(0.0060mW)*** lower than low threshold 22mW at 5mm in general population category;

The SAR measurement is not necessary.

-----END OF REPORT-----