

1. Purpose

This report evaluates the RF exposure of the SMT Microphone.

2. References

- RSS-102 issue 6
- FCC KDB 447498 DO4

3. Equipment Description

Description: DECT 6 Microphone
Model: SMT
Additional Model(s): None
Brand Name(s): Lightspeed Corporation
Serial Number: 03-SMT-Z-L2528-00033
HW version: Rev A
FW Version: 7.1.04
FCC ID: ORV-LSSMT
IC: 1732B-LSSMT
Equipment type: End Product

3.1. Radiation Sources

Mode	Description	
UPCS	Frequency Range	1921.536 – 1928.448 MHz
	Channels	5
	Modulations	GFSK
	Max Conducted power [dBm]	13.55
	Antenna gain [dBi]	-4.5

4. Rf Exposure Classification

Threshold calculation, KDB 447498 D04

$$ERP_{20\text{ cm}} (\text{mW}) = \begin{cases} 2040f & 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz} \\ 3060 & 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz} \end{cases} \quad (\text{B. 1})$$

$$P_{\text{th}} (\text{mW}) = \begin{cases} ERP_{20\text{ cm}} (d/20\text{ cm})^x & d \leq 20\text{ cm} \\ ERP_{20\text{ cm}} & 20\text{ cm} < d \leq 40\text{ cm} \end{cases}$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20\text{ cm}} \sqrt{f}} \right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{ cm}}$ is per Formula (B.1).

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Section 6.3 SAR exemption limits

Table 11: Power limits for exemption from routine SAR evaluation based on the separation distance

Frequency (MHz)	≤ 5 mm(mW)	10 mm (mW)	15 mm(mW)	20 mm(mW)	25 mm(mW)	30 mm(mW)	35 mm(mW)	40 mm(mW)	45 mm(mW)	> 50 mm(mW)
≤ 300	45	116	139	163	189	216	246	280	319	362
450	32	71	87	104	124	147	175	208	248	296
835	21	32	41	54	72	96	129	172	228	298
1900	6	10	18	33	57	92	138	194	257	323
2450	3	7	16	32	56	89	128	170	209	245
3500	2	6	15	29	50	72	94	114	134	158
5800	1	5	13	23	32	41	54	74	102	128

5. Assessment

The results of the assessment are shown below:

IC Limit		
separation distance	5	mm
frequency	1921.536	MHz
Threshold 1	6	mW at MHz: 1921.536
Threshold 2	N/A	mW at MHz: 2400
Pth	6	mW
FCC Limit		
separation distance	5	mm
frequency	1921.536	MHz
Threshold 1	3.3	mW at MHz: 1921.536
Threshold 2	N/A	mW at MHz: 2400
Pth	3.3	mW

EUT Output Power

Assessment Results		
Max power	13.55	dBm
	22.6	mW
Duty cycle	0.042	(1/24 duty cycle)
Antenna gain	-4.5	dBi
Power for RF	0.9	mW (conducted)
Exposure	0.01	mW (EIRP)
	0.01	mW (ERP)

As both conducted power and EIRP are below P_{th} the device is exempt from rf exposure evaluation.