

1. Purpose

This report evaluates the RF exposure of the MCT Media Connector.

2. References

- RSS-102 issue 6
- FCC KDB 447498 DO4

3. Equipment Description

Description: DECT Media Connector
Model: MCT
Additional Model(s): None
Brand Name(s): Lightspeed Corporation
Serial Number: 03-MCT-Z-S2525-00008
HW version: Rev A
FW Version: 7.1.04
FCC ID: ORV-LSMCT
IC: 1732B-LSMCT
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]	7.49
	Antenna gain [dBi]	4.01

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).

Threshold calculation RSS-102 Issue 6

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	20	mm
Frequency 1	1928	MHz
Frequency 2	2441	MHz
Threshold 1	33	mW at MHz: 1928
Threshold 2	32	mW at MHz: 2441
FCC Limit		
separation distance	20	mm
Frequency 1	1928	MHz
Frequency 2	2441	MHz
Threshold 1	43.2	mW at MHz: 1928
Threshold 2	38.4	mW at MHz: 2441

EUT Output Power

Assessment Results DECT		
Max power	7.49	dBm
	5.61	mW
Duty cycle	0.042	(1/24 duty cycle)
Antenna gain	7.01	dBi
Power for RF	0.2	mW (conducted)
Exposure	0.21	mW (EIRP)
Pre-certified BT module		
Max power	12	dBm
	15.8	mW
Duty cycle	0.5	Worst case 50%
Antenna gain	-0.2	dBi
Power for RF	7.9	mW (conducted)
Exposure	0.48	mW (EIRP)
Total Exposure Ratio		
	Total Exposure Ratio	Total Exposure Ratio Limit
FCC	0.017361	1
IC	0.021364	1

As conducted power, EIRP, and Total Exposure Ratio are below their limits the device is exempt from rf exposure evaluation.

