

 CTK Co., Ltd. (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17142, Korea Tel: +82-31-339-9970 Fax: +82-31-624-9501		
---	--	--

RF EXPOSURE EVALUATION

Applicant : MIRATEK INCORPORATION

Applicant Address : 135, Bokjeong-ro, Sujeong-gu, Seongnam-si, Gyeonggi-do,
Republic of Korea

Kind of Product : LinkTag20

Equipment Model Name : LinkTag

FCC ID : 2BAK4LINKTAG20

Standard Requirement

The following RF exposure procedures are applicable :

- FCC Rules
Part 1.1310 Radiofrequency radiation exposure limits

Table 1 below sets forth limits for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields.

Table 1—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*100	≤6
3.0-30	1 842/f	4.89/f	*900/f ²	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	<30
1.34-30	824/f	2.19/f	*180/f ²	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1 500	<30
1,500-100,000			1.0	<30

f = frequency in MHz

* = Plane-wave equivalent power density

MPE Calculations

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user. The MPE calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

$\text{EIRP} = P + G$	Where, P = Power input to the antenna (mW) G = Power gain of the antenna (dBi)
-----------------------	--

The numeric gain(G) of the antenna with a gain specified in dB is determined by:

$$G = \text{Log}^{-1} (\text{dB antenna gain} / 10)$$

Power density at the specific separation:

$S = PG / (4R^2\pi)$	Where, S = Maximum power density (mW/cm ²) P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)
----------------------	---

Estimated safe separation:

$R = \sqrt{PG / 4\pi}$	Where, P = Power input to the antenna (mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna (20cm = limit for MPE)
------------------------	--

RF Exposure Results

Frequency [MHz]	Measured Max Output Power [dBm]	Peak Gain [dBi]	Power Tolerance [dB]	EIRP [dBm]	EIRP [mW]	Power Density [mW/cm ²]	Limit [mW/cm ²]	R [cm]
902.3	20.478	4.296	± 0.5	25.274	336.822	0.067	0.602	20
914.9	20.431			25.227	333.196	0.066	0.610	
927.5	20.336			25.132	325.987	0.065	0.618	

*Minimum Safety distance (R) : ≥ 20 cm

-END-