



CTK Co., Ltd.  
The Manufacturer of UWB Technology Components

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## RF EXPOSURE EVALUATION

**FCC ID : 2AFWN-SLG-EN102S**  
**IC : 22800-SLGEN102S**

### Standard Requirement

The following FCC Rule Parts and procedures are applicable :

*Part 1.1310 Radiofrequency radiation exposure limits*

*Part 2.1091 Radiofrequency radiation exposure evaluation : Mobile device*

*KDB447498 D01 v06 Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies*

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 <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			<u>1.0</u>	30

*f = frequency in MHz \* = Plane-wave equivalent power density*

### RSS-102(Issue5) Exposure Limits

*Table : RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)*

Frequency range (MHz)	Electric field strength (V/m rms)	Magnetic field strength (A/m rms)	Power density (W/m <sup>2</sup> )	Reference Period (minutes)
0.003-10 <sup>21</sup>	83	90	-	Instantaneous*
0.1-10	-	0.73 / f	-	6**
1.1-10	87 / f <sup>0.5</sup>	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07 / f <sup>0.25</sup>	0.1540 / f <sup>0.25</sup>	8.944 / f <sup>0.5</sup>	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 f <sup>0.3417</sup>	0.008335 f <sup>0.3417</sup>	<u>0.02619 f<sup>0.6834</sup></u>	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000 / f <sup>1.2</sup>
150000-300000	0.158 f <sup>0.5</sup>	4.21 x 10 <sup>-4</sup> f <sup>0.5</sup>	6.67 x 10 <sup>-05</sup> f	616000 / f <sup>1.2</sup>

*f is frequency in MHz,*

*\*:Based on nerve stimulation(NS), \*\*:Based on specific absorption rate(SAR)*



**MPE calculation**

$S = \text{EIRP} / (4\pi R^2)$

Where

S : Power density

EIRP : P x G

P : Maximum transmitter power

G : Antenna gain

R : distance to the centre of radiation of the antenna

Note

P : 11.17 dBm (13.092 mW)(0.013 092 W)

G : 4.9 dBi (x 3.090)

R : 20.00 cm (20.00 cm)(0.20 m)

**Limits**

FCC MPE : 1 mW/cm<sup>2</sup>

RSS-102 : 0.02619 f<sup>0.6834</sup> => 5.41 W/m<sup>2</sup>

**Test Data(Maximum RF Power)**

Frequency	Measurement data	Limit	Result
2 440 MHz	0.008 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>	Complies
	0.080 W/m <sup>2</sup>	5.41 W/m <sup>2</sup>	Complies

**Conclusion**

This confirms compliance to the required Radio frequency radiation exposure limit.