

## RF EXPOSURE EVALUATION

FCC ID : 2AFWN-EL016H4WRC  
IC : 22800-EL016H4WRC

### 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)*



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### MPE calculation

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

Where

S : Power density

EIRP :  $P \times G$

P : Maximum transmitter power

G : Antenna gain

R : distance to the centre of radiation of the antenna

### EUT RF Exposure

P : 4.11 dBm (2.576 mW)

G : -0.58 dBi (x 0.875)

R : 20 cm

$$S = 0.0004 \text{ mW/cm}^2$$

### RSS-102 Limits

$$0.02619 f^{0.6834} \Rightarrow 5.35 \text{ W/m}^2$$

### EUT RF Exposure

P : 4.11 dBm (0.003 W)

G : -0.58 dBi (x 0.001)

R : 0.20 m

$$S = 0.0045 \text{ W/m}^2$$

### Conclusion

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