



## MAXIMUM PERMISSIBLE EXPOSURE (MPE)

### FCC Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1091 RF exposure is calculated.

### Limits for Maximum Permissive Exposure (MPE)

| Frequency Range<br>(MHz)                            | Electric Field<br>Strength (V/m) | Magnetic Field<br>Strength (A/m) | Power Density<br>(mW/cm <sup>2</sup> ) | Averaging Time<br>(minute) |
|-----------------------------------------------------|----------------------------------|----------------------------------|----------------------------------------|----------------------------|
| 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 <sup>2</sup> )                 | 30                         |
| 30-300                                              | 27.5                             | 0.073                            | 0.2                                    | 30                         |
| 300-1500                                            | /                                | /                                | f/1500                                 | 30                         |
| 1500-15000                                          | /                                | /                                | 1.0                                    | 30                         |

f = frequency in MHz

\* = Plane-wave equipment power density

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

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## ISED Standard Applicable

This submittal(s) (test report) is intended to comply with RSS-102 issue 5 Radio frequency Radiation Exposure requirement.

This is a Mobile device, the MPE is required.

Limits for Maximum Permissible Exposure (MPE)

| Frequency Range (MHz) | Electric Field (V/m rms) | Magnetic Field Strength (A/m rms) | Power Density (W/m <sup>2</sup> ) | Reference Period (minutes) |
|-----------------------|--------------------------|-----------------------------------|-----------------------------------|----------------------------|
| 0.003-10              | 83                       | 90                                | -                                 | Instantaneous*             |
| 0.1-10                | -                        | $0.73/f$                          | -                                 | 6**                        |
| 1.1-10                | $87/f^{0.5}$             | -                                 | -                                 | 6**                        |
| 10-20                 | 27.46                    | 0.0728                            | 2                                 | 6                          |
| 20-48                 | $58.07/f^{0.25}$         | $0.1540/f^{0.25}$                 | $8.944/f^{0.5}$                   | 6                          |
| 48-300                | 22.06                    | 0.05852                           | 1.291                             | 6                          |
| 300-6000              | $3.142 f^{0.3417}$       | $0.008335 f^{0.3417}$             | $0.02619 f^{0.6834}$              | 6                          |
| 6000-15000            | 61.4                     | 0.163                             | 10                                | 6                          |
| 15000-150000          | 61.4                     | 0.163                             | 10                                | $616000/f^{1.2}$           |
| 150000-300000         | $0.158 f^{0.5}$          | $4.21 \times 10^{-4} f^{0.5}$     | $6.67 \times 10^{-5} f$           | $616000/f^{1.2}$           |

F = frequency in MHz

\* = Based on nerve stimulation (NS).

\*\* = Based on specific absorption rate (SAR)

Maximum Permissible Exposure (MPE) Evaluation

Prediction of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

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## Power Density Calculation (Worst Case)

| FCC            |                            |                         |                         |                        |                                     |                             |             | ISED                               |                            |             |
|----------------|----------------------------|-------------------------|-------------------------|------------------------|-------------------------------------|-----------------------------|-------------|------------------------------------|----------------------------|-------------|
| Operation Mode | Evaluation Frequency (MHz) | Operation Distance (cm) | Output Power EIRP (dBm) | Output Power EIRP (mW) | Power Density (mW/cm <sup>2</sup> ) | Limit (mW/cm <sup>2</sup> ) | Pass / Fail | Power Density (W/cm <sup>2</sup> ) | Limit (W/cm <sup>2</sup> ) | Pass / Fail |
| BT             | 2480.00                    | 20                      | 6.11                    | 4.08                   | 0.001                               | 1.000                       | Pass        | 0.008                              | 5.469                      | Pass        |

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