

MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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 §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Averaging Time (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 ²) | 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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Maximum Permissible Exposure (MPE) Evaluation (Worst Case)

| 802.11b Main | | | | | |
|--------------|-------------|-----------|-------------------------|--------------------|--------|
| CH | Freq. (MHz) | Data Rate | Peak Output Power (dBm) | Limit | RESULT |
| 1 | 2412 | 1 | 18.54 | 1 Watt = 30.00 dBm | PASS |
| 6 | 2437 | 1 | 18.57 | 1 Watt = 30.00 dBm | PASS |
| 11 | 2462 | 1 | 18.49 | 1 Watt = 30.00 dBm | PASS |
| 802.11b Main | | | | | |
| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) | Limit | RESULT |
| 1 | 2412 | 1 | 16.07 | 1 Watt = 30.00 dBm | PASS |
| 6 | 2437 | 1 | 16.26 | 1 Watt = 30.00 dBm | PASS |
| 11 | 2462 | 1 | 16.35 | 1 Watt = 30.00 dBm | PASS |

MPE Prediction (802.11b 2412~2462)

Prediction of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

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

| | | |
|---|-----------|-----------|
| Max. output power including tune-up tolerancel: | 16.35 | (dBm) |
| Max. output power including tune-up tolerancel: | 43.151908 | (mW) |
| Duty cycle: | 99.52 | (%) |
| Maximum Pav : | 42.944779 | (mW) |
| Peak Antenna gain (Maximum): | 2.1 | (dBi) |
| Peak Antenna gain (linear): | 1.6218101 | (numeric) |
| Prediction distance: | 20 | (cm) |
| Prediction frequency: | 2462 | (MHz) |
| MPE limit for uncontrolled exposure at prediction frequency: | 1 | (mW/cm2) |
| Power density at predication frequency at 20 (cm) distance | 0.014 | (mW/cm2) |
| Measurement Result | | |
| The predicted power density level at 20 cm is 0.014 mW/cm2. | | |
| This is below the uncontrolled exposure limit of 1 mW/cm2 at 2462MHz. | | |

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