

14 MAXIMUM PERMISSIBLE EXPOSURE (MPE)

14.1 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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SGS Taiwan Ltd.

台灣檢驗科技股份有限公司

No.134,WuKungRoad,NewTaipeiIndustrialPark,WukuDistrict,NewTaipeiCity,Taiwan24803/新北市五股區新北產業園區五工路 134 號

t (886-2) 2299-3279

f (886-2) 2298-0488

www.tw.sgs.com

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14.2 Maximum Permissible Exposure (MPE) Evaluation

| 802.11b Main | | | | | | | |
|--------------|-------------|-----------|-------------------------|--------------------|------------|------------|--------|
| CH | Freq. (MHz) | Data Rate | Avg. Output Power (dBm) | Antenna Gain (dBi) | EIRP (dBm) | Limit | RESULT |
| 1 | 2412 | 1 | 19.54 | -2.56 | 16.98 | 4W= 36 dBm | PASS |
| 6 | 2437 | 1 | 19.59 | -2.56 | 17.03 | 4W= 36 dBm | PASS |
| 11 | 2462 | 1 | 19.07 | -2.56 | 16.51 | 4W= 36 dBm | PASS |

MPE Prediction (802.11g 2412~2462)

Prediction of MPE limit at a given distance

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

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

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

| | | |
|---|-----------|-----------------------|
| Max. output power including tune-up tolerancel: | 19.59 | (dBm) |
| Max. output power including tune-up tolerancel: | 90.991327 | (mW) |
| Duty cycle: | 96.02 | (%) |
| Maximum Pav : | 87.369872 | (mW) |
| Peak Antenna gain (Maximum): | -2.56 | (dBi) |
| Peak Antenna gain (linear): | 0.5546257 | (numeric) |
| Prediction distance: | 20 | (cm) |
| Prediction frequency: | 2437 | (MHz) |
| MPE limit for uncontrolled exposure at prediction | 1 | (mW/cm ²) |
| Power density at predication frequency at 20 (cm) | 0.009645 | (mW/cm ²) |

Measurement Result

The predicted power density level at 20 cm is 0.009645 mW/cm².

This is below the uncontrolled exposure limit of 1 mW/cm² at 2437MHz.

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