



FCC §15.247 (i), §2.1091 – RF Exposure

FCC ID: 2AYCQ-ONYXV4

Applied procedures / limit

According to FCC §15.247(i) and §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

Limits for Occupational / Controlled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-3.0 | 614 | 1.63 | (100)* | 6 |
| 3.0-30 | 1842 / f | 4.89 / f | (900 / f)* | 6 |
| 30-300 | 61.4 | 0.163 | 1.0 | 6 |
| 300-1500 | | | F/300 | 6 |
| 1500-100,000 | | | 5 | 6 |

Note: *f* is frequency in MHz

* = Power density limit is applicable at frequencies greater than 100 MHz

Limits for General Population / Uncontrolled Exposure

| Frequency Range (MHz) | Electric Field Strength (E) (V/m) | Magnetic Field Strength (H) (A/m) | Power Density (S) (mW/ cm ²) | Averaging Time E ² , H ² or S (minutes) |
|-----------------------|-----------------------------------|-----------------------------------|--|--|
| 0.3-1.34 | 614 | 1.63 | (100)* | 30 |
| 1.34-30 | 824/f | 2.19/f | (180/f)* | 30 |
| 30-300 | 27.5 | 0.073 | 0.2 | 30 |
| 300-1500 | | | F/1500 | 30 |
| 1500-100,000 | | | 1.0 | 30 |

Note: *f* = frequency in MHz

* = Plane-wave equivalent power density



MPE PREDICTION

Predication of MPE limit at a given distance, Equation from 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, R=0.2m

TEST RESULTS

| | Tune up Produce power | Maximum output power (dBm) | Output power to antenna (mW) | Antenna Gain (numeric) | Power Density (S) (mW/ cm ²) | Limit (mW / cm ²) | Result |
|-------------------------|-----------------------------|----------------------------------|---------------------------------------|---------------------------|---|-------------------------------------|--------|
| BLE | -1±1 | 0 | 1 | 1.5(1.82dBi) | 0.000299 | 1 | Pass |
| GPRS 850 | 32±1 | 33 | 1995 | 0.8(-0.82dBi) | 0.317604 | 0.55 | Pass |
| GPRS 1900 | 29±1 | 30 | 1000 | 2.3(3.59dBi) | 0.457700 | 1 | Pass |
| LTE Band2 | 23±1 | 24 | 251.2 | 2.3(3.59dBi) | 0.114974 | 1 | Pass |
| LTE Band4 | 25±1 | 26 | 398.1 | 1.9(2.79dBi) | 0.150522 | 1 | Pass |
| LTE Band5 | 23±1 | 24 | 251.2 | 0.8(-0.82dBi) | 0.039991 | 0.55 | Pass |
| LTE Band7 | 23±1 | 24 | 251.2 | 1.6(2dBi) | 0.079982 | 1 | Pass |
| LTE Band12 | 23±1 | 24 | 251.2 | 0.5(-2.7dBi) | 0.024994 | 0.47 | Pass |
| LTE Band13 | 23±1 | 24 | 251.2 | 0.7(-1.65dBi) | 0.034992 | 0.52 | Pass |
| LTE Band17 | 23±1 | 24 | 251.2 | 0.5(-2.7dBi) | 0.024994 | 0.47 | Pass |
| LTE Band25 | 23±1 | 24 | 251.2 | 2.3(3.6dBi) | 0.114974 | 1 | Pass |
| LTE Band26 (814-824) | 24±1 | 25 | 316.2 | 0.7(-1.36dBi) | 0.044047 | 0.52 | Pass |
| LTE Band26 (824-849) | 24±1 | 25 | 316.2 | 0.7(-1.36dBi) | 0.044047 | 0.55 | Pass |
| LTE Band41 | 23±1 | 24 | 251.2 | 1.6(2.01dBi) | 0.079982 | 1 | Pass |



| | | | | | | | |
|------------|------|----|-------|--------------|----------|---|------|
| LTE Band66 | 24±1 | 25 | 316.2 | 2.1(3.12dBi) | 0.132140 | 1 | Pass |
|------------|------|----|-------|--------------|----------|---|------|

For the Max simultaneous transmission:

BT+GPRS 850

Simultaneous transmitting = $0.000299 / 1 + 0.317604 / 0.55 = 0.0578 \leq 1.0$

For the max result : $0.0578 \leq 1.0$, compliance with FCC's RF Exposure