



## RF Exposure evaluation

FCC ID: LTQVTREM2  
IC: 3659A-VTREM2

### RF Exposure Evaluation

| Standards                                 |
|-------------------------------------------|
| OET Bulletin 65 Edition 97-01 August 1997 |
| FCC 47 CFR §1.1307                        |
| FCC 47 CFR §1.1310                        |

#### Test limits

As specified in Table 1B of 47 CFR 1.1310 – Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure.

| Frequency range (MHz) | Power density ( $mW/cm^2$ ) |
|-----------------------|-----------------------------|
| 300 – 1,500           | $f/1500$                    |
| 1,500 – 100,000       | 1.0                         |

Equation OET bulletin 65, page 18, edition 97-01:  $S = \frac{PG}{4\pi R^2} = \frac{EIRP}{4\pi R^2}$

Where:

S = power density

P = power input to the 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

Following antenna gain values were considered as far as they apply:



BT GFSK (1-DH1)

| Band        | Channel No. | Frequency [MHz] | Peak Power [dBm] | Limit [dBm] | Margin to Limit [dB] | E.I.R.P [dBm] |
|-------------|-------------|-----------------|------------------|-------------|----------------------|---------------|
| 2.4 GHz ISM | 0           | 2402            | 8.7              | 30.0        | 21.3                 | 8.1           |
|             | 39          | 2441            | 9.4              | 30.0        | 20.6                 | 8.8           |
|             | 78          | 2480            | 9.1              | 30.0        | 20.9                 | 8.5           |

BT π/4 DQPSK (2-DH1)

| Band        | Channel No. | Frequency [MHz] | Peak Power [dBm] | Limit [dBm] | Margin to Limit [dB] | E.I.R.P [dBm] |
|-------------|-------------|-----------------|------------------|-------------|----------------------|---------------|
| 2.4 GHz ISM | 0           | 2402            | 7.2              | 21.0        | 13.8                 | 6.6           |
|             | 39          | 2441            | 8.3              | 21.0        | 12.7                 | 7.7           |
|             | 78          | 2480            | 8.0              | 21.0        | 13.0                 | 7.4           |

BT 8-DPSK (3-DH1)

| Band        | Channel No. | Frequency [MHz] | Peak Power [dBm] | Limit [dBm] | Margin to Limit [dB] | E.I.R.P [dBm] |
|-------------|-------------|-----------------|------------------|-------------|----------------------|---------------|
| 2.4 GHz ISM | 0           | 2402            | 7.4              | 21.0        | 13.6                 | 6.8           |
|             | 39          | 2441            | 8.3              | 21.0        | 12.7                 | 7.7           |
|             | 78          | 2480            | 8.0              | 21.0        | 13.0                 | 7.4           |

| Band      | Mode       | Duty Cycle | Frequency (MHZ) | Maximum Conducted output power (dBm) | Equivalent conducted output power (mW) | FCC MPE Limit (mW/cm²) | MPE Value using Max gain -0.6 dBi | Separation distance (cm) | Verdict |
|-----------|------------|------------|-----------------|--------------------------------------|----------------------------------------|------------------------|-----------------------------------|--------------------------|---------|
| Bluetooth | GFSK 1-DH1 | 100.0%     | 2480.0          | 9.4                                  | 0.870963                               | 1000                   | 0.0015                            | 20                       | PASS    |

Yours sincerely,

*Imad Hjije*

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