

MPE Calculation

for

Project Name: **Ericsson Fixed Wireless Terminal**
Project Code: **ERIFWT102**
Product: **G3x FWT Product Series**

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Last saved: 3-Jul-06

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1. MPE CALCULATION FOR THE FWT G30 PRODUCT SERIES

1.1 Introduction

The FCC requires that the calculated MPE be equal to or less than the limits for general population/uncontrolled exposure as detailed in Part 1.1310 of the FCC regulations at a distance of 20cm from the device to the body of the user. The equation for the calculation is given in OET Bulletin 65, page 19 as:

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

Where S = Power density

$EIRP$ = Effective Isotropically Radiated Power

R = distance to the centre of the radiation of the antenna

1.2 For 850 MHz

Values $S = 0.566 \text{ mW/cm}^2$ (f/300) for general population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)
 $ERP = 27.4 \text{ dBm}$ (550 mW)
 $ERP \times 1.64 = EIRP$
 $R = 20 \text{ cm}$

Calculation

$$\begin{aligned} S &= 550 \times 1.64 / 12.56 \times (20)^2 \\ S &= 820 / 12.56 \times (20)^2 \\ S &= 820 / 5024 \end{aligned}$$

$$\mathbf{S = 0.163 \text{ mW}^2}$$

1.3 For 1900 MHz

Values $S = 1 \text{ mW/cm}^2$ for general population uncontrolled exposure (FCC Part 1.1310
Radiofrequency radiation exposure limits)

EIRP = 29.6 dBm (912 mW)

R = 20 cm

Calculation

$$S = 912 / 12.56 \times (20)^2$$

$$S = 912 / 5024$$

$$\mathbf{S = 0.182 \text{ mW}^2}$$

1.4 Conclusion

The MPE values of the FWT G30 Product Series at 20 cm meet the RF exposure limits.

