FCC-ID	F53113G3070
IC-ID (Industry Canada)	**160A-3G3070**

MPE Prediction

Calculations can be made to predict RF field strength and power density levels around typical RF sources using the general equations (3) and (4) on page 19 of the following FCC document: "OET Bulletin 65, Edition 97-01 - Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields".

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure:

Frequency Range (MHz)	Power density (mW/cm^2)	Averaging time (minutes)
300 – 1500	f (MHz) /1500	30
1500 – 100.000	1.0	30

Based on the above table the limits are:

For 850 MHz frequency band device: 0.57 mW/cm^2
For 1900 MHz frequency band device: 1 mW/cm^2

Using the equation from page 19 of OET Bulletin 65, Edition 97-01:

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

where: S = power density (in appropriate units, e.g. mW/cm^2)
        P = power input to the antenna (in appropriate units, e.g., mW)
        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 (appropriate units, e.g., cm)

Note:
This device is to be used only for fixed and mobile applications.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all the persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

§ 2.1091:
The limit for 850 MHz mobile operations where no routine evaluation is required is: 1.5W ERP
The limit for 1700 / 1900 MHz mobile operations where no routine evaluation is required is: 3W EIRP

Max permissive power according to §24.232 : 2W EIRP
Max permissive power according to §§22.913 (a): 7W ERP

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For the unit tested by Cetecom Inc., the power density at a distance of 20cm can be deducted as follows-

Operation in cellular band (824-849 MHz)
EIRP= 36.31 dBm (ERP) + 2.14 = 38.42 dBm = 6950.24 mW
Power density= $EIRP*DutyCycle/(4\pi R^2)$
$= 6950.24*0.375/(4*\pi*20^2)$
$= 0.51$ mW/cm^2
where duty cycle is 0.375 (worst case) and R is 20cm.

A duty cycle of 0.375 was used because the highest conducted output power was measured in Power Class 11 where 3 time slots are used.

The power density limit for 850 band operation is 0.55 mW/cm^2. Hence the device is compliant with the rules on RF exposure.

Operation in PCS band (1850-1910 MHz)
EIRP= 32.29 dBm= 1694.33 mW
Power density= $EIRP*DutyCycle/(4\pi R^2)$
$= 1694.33*0.5/(4*\pi*20^2)$
$= 0.17$ mW/cm^2
where duty cycle is 0.5 (worst case) and R is 20cm.

The power density limit for 1900 band operation is 1 mW/cm^2. Hence the device is compliant with the rules on RF exposure.