



## **MPE/RF EXPOSURE EVALUATION REPORT**

**FCC CFR 47 Part 1.1310**

**Report No.: ITRO77-U5 Rev A**

**Company:** Itron, Inc

**Model Name:** eNIC 551-0121-05



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**To:** FCC CFR 47 Part 1.1310

**Test Report Serial No.:** ITRO77-U5 Rev A

This report supersedes: NONE

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## 1. MAXIMUM PERMISSABLE EXPOSURE

### Calculations for Maximum Permissible Exposure Levels

$$\text{Power Density} = P_d \text{ (mW/cm}^2) = \text{EIRP}/(4\pi d^2)$$

$$\text{EIRP} = P * G$$

P = Peak output power (mW)

G = Antenna numeric gain (numeric)

d = Separation distance (cm)

$$\text{Numeric Gain} = 10 ^ (G \text{ (dBi)}/10)$$

The calculations in the table below use the highest conducted power values together with the highest antenna gain specified for the EUT. These calculations represent worst case in terms of the exposure levels.

Band	Freq (MHz)	Ant Gain (dBi)	Numeric Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Calculated Power Density (mW/cm <sup>2</sup> ) @ 20cm	Power Density Limit (mW/cm <sup>2</sup> )	Min Calculated safe distance for Limit (cm)	RATIO Power Density/Limit
902.0 - 928.0	902.0	1.00	1.26	29.48	887.16	0.22	0.60	12.16	0.37

Note: for mobile or fixed location transmitters the minimum separation distance is 20cm, even if calculations indicate the MPE distance to be less.

**SUMMARY;** Minimum safe distance to meet the RF exposure requirements = 20cm

### Specification - Maximum Permissible Exposure Limits

The Limits are defined in Table 1 of FCC §1.1310.

The Limits for General Population/Uncontrolled Exposure apply to the eNIC 551-0121-05 due to its intended use.

Table 1 to [§ 1.1310\(e\)\(1\)](#)—Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(ii) Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30



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