



February 19th, 2013

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Federal Communications Commission
Authorization and Evaluation Division
1435 Oakland Mills Road
Columbia, MD 21046

Subject: Digi International Inc. *XBee ZB SMT* RF module integration (FCC ID: MCQ-XBS2C)

To Whom It May Concern:

The Check-It CG-300 includes a Digi International Inc. *XBee ZB SMT* RF module which carries FCC modular certification (FCC ID: MCQ-XBS2C). The *XBee ZB SMT* is integrated as per the FCC grant notes for the module. That is, the antenna used is a 2.0dBi ¼-wave dipole connected using a reverse-polarity SMA connector to prevent end-user modification. The device will always be operating with at least 20cm separation from all persons, and this operating condition is stated in the CG-300 user manual.

With respect to Maximum Permissible Exposure (MPE) limits of the *XBee ZB SMT* module in combination with the 900MHz transmitter in the CG-300, the CG-300 falls well below the limits for general population/uncontrolled exposure set out in Title 47 §1.1310. The calculations for MPE are shown below.

Table 1: MPE Limits Calculation

	frequency	cond. pwr (dB)	ant gain (dB)	duty cycle	average EIRP (dBm)	average EIRP (mW)	Power Density @ 20 cm (mW/cm ²)	FCC limit (mW/cm ²)
900 MHz Radio	908.38- 916.29 MHz	-5	3.0	1	-2.00	0.631	0.000126	0.606
<i>XBee ZB SMT</i>	2.4 GHz	8	2.0	0.27	4.31	2.700	0.000537	1.000

Weighted summation: $\frac{0.000126 \text{ [mW/cm}^2\text{]}}{0.606 \text{ [mW/cm}^2\text{]}} + \frac{0.000537 \text{ [mW/cm}^2\text{]}}{1.000 \text{ [mW/cm}^2\text{]}} = 0.000745 = \mathbf{0.07\%}$ of MPE limit

Sincerely,

Brad Arnold, Engineer-In-Training
Hardware Design Engineer, Check-It Solutions Inc.