



Excellence in Compliance Testing

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## **Certification Exhibit**

**FCC ID: SK9ACT1**

**FCC Rule Part: 47 CFR Part 2.1091**

**ACS Project Number: 16-0130**

Manufacturer: Itron, Inc.  
Model: ACT1

## **RF Exposure**

**General Information:**

Applicant: Itron, Inc.  
Device Category: Mobile  
Environment: General Population/Uncontrolled Exposure

The 900MHz LAN radio is collocated and transmits simultaneously with the 2.4GHz WiFi radio.

**Technical Information:****Table 1: Technical Information**

	<b>900MHz LAN Radio</b>	<b>2.4GHz WiFi Radio</b>
<b>Frequency Band(s) (MHz)</b>	902.4 - 927.6	2412 - 2462
<b>Antenna Type(s)</b>	1/4 Wave Embedded Slot Antenna	1/4 Wave Embedded Slot Antenna
<b>Antenna Gain (dBi)</b>	2.0	2.5
<b>Conducted Power (dBm)</b>	29.88	18.54
<b>Conducted Power (mW)</b>	972.75	71.45
<b>Maximum Peak EIRP (mW)</b>	1541.70	127.06
<b>Maximum Peak ERP (mW)</b>	939.72	77.45

**MPE Calculation:**

The Power Density (mW/cm<sup>2</sup>) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm<sup>2</sup>)

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)

**Table 2: MPE Calculation (Including Collocated Devices)**

Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm <sup>2</sup> )	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm <sup>2</sup> )	Radio
915.2	29.88	0.61	972.75	2	1.585	20	0.307	A
2437	18.54	1.00	71.45	2.5	1.778	20	0.025	B

**Summation of MPE ratios – Simultaneous Transmissions**

This device contains multiple transmitters which can operate simultaneously; therefore the maximum RF exposure is determined by the summation of MPE ratios. The limit is such that the summation of MPE ratios is  $\leq 1.0$ .

**Table 3: Summation of MPE Ratios**

Scenario 1	
Radio A	x
Radio B	x
Radio A MPE Ratio	0.502695957
Radio B MPE Ratio	0.025277269
MPE Ratio Summation:	0.527973226