



Excellence in Compliance Testing

Certification Exhibit

FCC ID: SK9M2LG2

FCC Rule Part: 47 CFR Part 2.1091

ACS Project Number: 15-0513

Manufacturer: Itron Electricity Metering, Inc.
Model: M2 Gateway2

RF Exposure

General Information:

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

The M2 Gateway2 900 MHz LAN is collocated and transmits simultaneously with the M2 Gateway2 Zigbee radio.

Technical Information:

Table 1: Technical Information

	<i>Device 1 Details Itron M2 Gateway2 900MHz LAN Radio IC: 864G-M2LG2</i>	<i>Device 2 Details Itron M2 Gateway2 2.4GHz Zigbee Radio IC: 864G-M2LG2</i>
Frequency Band(s) (MHz)	902.4 - 927.6	2405 - 2475
Antenna Type(s)	1/4 Wave Embedded Slot Antenna	1/4 Wave Embedded Slot Antenna
Antenna Gain (dBi)	2.2	3.8
Conducted Power (dBm)	27.18	17.5
Conducted Power (mW)	522.40	56.23
Maximum Peak EIRP (mW)	866.96	134.90
Maximum Peak ERP (mW)	528.45	82.22

MPE Calculation:

The Power Density (mW/cm²) is calculated as follows:

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

Where:

S = power density (in appropriate units, e.g. mW/cm²)

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/Cm2)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm ²)	Radio
927.6	27.18	0.62	522.40	2.2	1.660	20	0.172	A
2475	17.5	1.00	56.23	3.8	2.399	20	0.027	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 ≤ 1.0.

Table 3: Summation of MPE Ratios

	Scenario 1	Scenario 2
Radio A	x	
Radio B	x	
Radio A MPE Ratio	0.278907802	
Radio B MPE Ratio	0.026836764	
MPE Ratio Summation:	0.305744566	