



**F2 Labs**  
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## CERTIFICATION TEST REPORT

**Manufacturer:** Elster Solutions, LLC  
208 South Rogers Lane  
Raleigh, North Carolina 27610-2144 USA

**Applicant:** Same As Above

**Product Name:** Wireless Light Control Module

**Product Description:** The Elster Model ELIR1 wireless light control module contains a frequency hopping spread spectrum (FHSS) radio operating in the 902-928 MHz ISM frequency band. The ELI NIC (Elster Lighting Intelligence Network Interface Card) PCB is installed on top of the Logic PCB. These two PCB are combined on top of additional PCB that controls power functions. These boards together form the model ELIR1 module which can be mounted on a light fixture to form a complete setup. Some installations of the module can comprise part of an Advanced Metering Infrastructure (AMI) system that utilizes a proprietary network architecture and protocol devised by Elster Electricity LLC., referred to here as the Energy Axis (EA) network. Other installations of the module can comprise a Smart Metering Utility Network (SUN) using a network architecture and protocol conforming to the IEEE 802.15.4g LR\_WPAN Standard, referred to as Next Generation Communications (NGC) network.

**Model:** ELIR1

**FCC ID:** QZC-ELIR1

**Testing Commenced:** Feb. 17, 2016

**Testing Ended:** Feb. 19, 2016

**Test Results:** In Compliance

The EUT complies with the EMC requirements when manufactured identically as the unit tested in this report, including any required modifications. Any changes to the design or build of this unit subsequent to this testing may deem it non-compliant.



Order Number: F2LQ8116

Applicant: Elster Solutions, LLC

Model: ELIR1

**Standards:**

- **KDB447498**
- **FCC Part 1.1310**

**Evaluation Conducted by:**

Ken Littell, Director of EMC & Wireless Operations

**Report Reviewed by:**

Wendy Fuster, President

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Issue Date: Apr. 8, 2016



Order Number: F2LQ8116

Applicant: Elster Solutions, LLC

Model: ELIR1

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Order Number: F2LQ8116

Applicant: Elster Solutions, LLC

Model: ELIR1

## 1 ADMINISTRATIVE INFORMATION

### 1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

### 1.2 Measurement Procedure:

All measurements were performed according to KDB558074.

### 1.4 Document History

Document Number	Description	Issue Date	Approved By
F2LQ8116-05E	First Issue	Apr. 8, 2016	W. Fuster

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Order Number: F2LQ8116

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## 2 SUMMARY OF TEST RESULTS

Test Name	Standard(s)	Results
RF Exposure for Device >20cm from Human	KDB447498 FCC Part 1.1310	Complies

Modifications Made to the Equipment
None

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Order Number: F2LQ8116

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### 3 ENGINEERING STATEMENT

This report has been prepared on behalf of Elster Solutions LLC to provide documentation for the testing described herein. This equipment has been tested and found to comply with KDB447498 and the limits listed in FCC Part 1.1310. The test results found in this test report relate only to the item(s) tested.



Order Number: F2LQ8116

Applicant: Elster Solutions, LLC

Model: ELIR1

## 4 EUT INFORMATION AND DATA

### 4.1 Equipment Under Test:

Product: Wireless Light Control Module  
Model: ELIR1  
Serial No.: 42, 20  
FCC ID: QZC-ELIR1

### 4.2 Trade Name:

Elster Solutions, LLC

### 4.3 Power Supply:

120V 60Hz

### 4.4 Applicable Rules:

- KDB447498
- FCC Part 1.1310

### 4.5 Equipment Category:

Frequency Hopping Spread Spectrum

### 4.6 Antenna:

1.5dBi Integral Antenna

### 4.7 Accessories:

N/A

### 4.8 Test Item Condition:

The equipment to be tested was received in good condition.



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Applicant: Elster Solutions, LLC

Model: ELIR1

## 5. RF EXPOSURE FOR DEVICE >20cm FROM HUMAN

### 5.1 Requirements:

Limit: .618mW/cm<sup>2</sup>

Formula used for result: 
$$\frac{\text{E.I.R.P.}}{4 \pi R^2}$$

Results: E.I.R.P. with 1.5 dBi antenna = 1135mW

1135mW was at the 927.6MHz high channel in the 50FSK mode which is the highest.

$$\frac{1135\text{mW}}{4 \pi R^2} = \frac{1135\text{mW}}{5026.55} = .2258\text{mW/cm}^2$$

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