



**Federal Communications Commission**  
Authorization and Evaluation Division

Re: FCC ID: QZC-RX2EA4

January 28, 2010

Elster Solutions  
208 S Rogers Lane  
Raleigh, NC 27610-2144  
United States  
T +1 919 212 4800  
F +1 919 250 5486  
[www.elster.com](http://www.elster.com)

The purpose of this letter is to request limited modular approval of the Elster Solutions Energy Axis Model RX2EA4, printed circuit board assembly, which operates as a frequency-hopping spread-spectrum transceiver for automatic meter reading in the 902-928 MHz ISM band under the provisions of FCC Part 15.247.

To address the specific numbered items of Public Notice DA 00-1407:

1. The RX2EA4 board incorporates two shields, one over the wireless transceiver IC and one over the RF power amplifier, both attached (soldered) to the printed-circuit board. The bottoms of the shields are enclosed by a copper plane that is part of the printed-circuit board.
2. The RX2EA4 transmitter incorporates digital buffers on the data inputs, which are part of the transceiver IC. The peak modulation is set by firmware that is stored within the transceiver IC. The data rate is set by the same stored firmware. For this reason, over-driving the modulation input, or applying excessive data rates to the data input cannot produce over-modulation.
3. The RX2EA4 has its own power supply regulation. It receives unregulated power from the host metering devices and this is applied to a switching regulator which is followed by a linear regulator to supply the lower voltage sections of the device. For this reason, varying the supply voltage to the RX2EA4 cannot vary the transmitter power, which is set and measured at the time of manufacture.
4. **Antennas.** The RX2EA4 can be configured to operate with either an internal printed circuit board antenna that is integral to the module itself, or with an external antenna. Elster has approved three external antennas as described in the installation leaflet provided to Elster customers and detailed in the TCB submittal. The normal configuration for the RX2EA4 is with its internal antenna. External antennas are only used in special situations.
5. The RX2EA4 module is intended to be installed in Rex2 electricity meters and metering equipment supplied by Elster Solutions. The module has been tested in representative configurations.
6. The RX2EA4 has a label to identify the module's FCC ID. This label is silkscreen printed on the RX2EA4 printed circuit board assembly and is thus permanent. Additionally, the FCC ID appears on the front-panel nameplate of Elster Solutions meters and devices that contain the RX2EA4 module.
7. The RX2EA4 complies and is certified for compliance with all of the applicable provisions of FCC Part 15.247 for frequency-hopping spread-spectrum devices.



8. The RX2EA4 is a low-power (182 mW) device and operates with a low duty cycle. The RX2EA4 has been demonstrated and certified to comply with the MPE RF exposure requirements for mobile devices. Installation and operating instructions specify the required minimum distance from humans for installed electricity meters

Respectfully,

A handwritten signature in black ink that reads "John Holt".

John Holt  
Principal Engineer  
Telephone 919-250-5557  
e-mail: John.Holt@us.elster.com