elster
Vital Connections

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Federal Communications Commission
P.O. Box 429
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Re: Application for Limited Modular Approval Certification for the Elster Solutions Synergynet Mini Network Interface Card (MNIC) (FCC ID: QZC-MNIC)

To whom it may concern:

The following information addresses the requirements to support a limited modular approval as required by FCC Part 15.212, Modular Transmitters.

1. The MNIC printed circuit board incorporates two shield cans, one over the 900 MHz radio section, and one over the communications processor, soldered to the printed-circuit board. The bottom of the shield cans are enclosed by a copper plane that is part of the printed-circuit board. Testing has been performed to assure compliance.
2. The MNIC incorporates digital buffers on the data inputs 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, it is not possible to over-drive the modulation input, or apply excessive data rates to the data inputs to produce over-modulation.
3. The MNIC module does not contain all of its own power supply regulation circuitry, it requires a regulated 4.0VDC power supply provided from an external host. The MNIC transmitter power amplifier and receiver front end amplifier are powered from the externally regulated 4.0VDC supply. The MNIC printed circuit board contains filtering on the DC input to the transmitter power amplifier and on the RF output. The MNIC module contains a 3.3VDC linear regular, which is powered by the external 4.0VDC supply. The internally regulated 3.3VDC supply powers the transceiver IC and the communications processor. The MNIC module will be integrated into a host electricity meter or metering equipment that provides a regulated 4.0VDC supply. This integration is done by the manufacturer at the time of initial manufacture and cannot be changed after that time. Electricity meters are only installed by trained and authorized electric utility professionals, and access to the MNIC module is not possible after installation.
4. The MNIC printed circuit board incorporates an MCX connector for connecting to an antenna, and does not include a permanently attached antenna. The MNIC module can be configured to use an antenna either internal or external to the host electricity meter, both meeting FCC parts 15.203, 15.204(b), and 15.204(c). The internal antenna is integrated into plastic that conforms to the shape of the electricity meter

and is directly connected to the MNIC module. External antennas are directly connected to an isolation board for safety, which is turn is directly connected to the MNIC module.

5. The MNIC module was tested in a stand-alone configuration for compliance with the FCC Part 15 requirements. The module also complies with the AC line conducted requirements found in FCC Part 15.207. The MNIC module is intended to be installed in Elster Solutions electricity meters and metering equipment supplied by Elster Solutions.
6. The MNIC has a label to identify the module's FCC ID. This label is either silkscreen printed or permanently affixed to the MNIC 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 MNIC module.
7. The MNIC complies and is certified for compliance with all of the applicable provisions of FCC Part 15.247 for frequency-hopping spread-spectrum devices for the 900 MHz radio.
8. The MNIC is a low-power (1 W) device and operates with a low duty cycle. The MNIC 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,

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