Network Relay Point (NRP) NIC 440 Labeling Product Requirements

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1 About the Silver Spring Networks Network Relay Point (NRP) NIC

The Network Relay Point (NRP) NIC is a network interface card (NIC) that enables machine-to-machine communication over 900 MHz and 2.4 GHz ISM bands. The NIC also incorporates an 802.15.4-compliant ZigBee® radio for Home Area Networking (HAN).

Figure 1. Silver Spring Network Relay Point (NRP) NIC

Top view   Bottom view
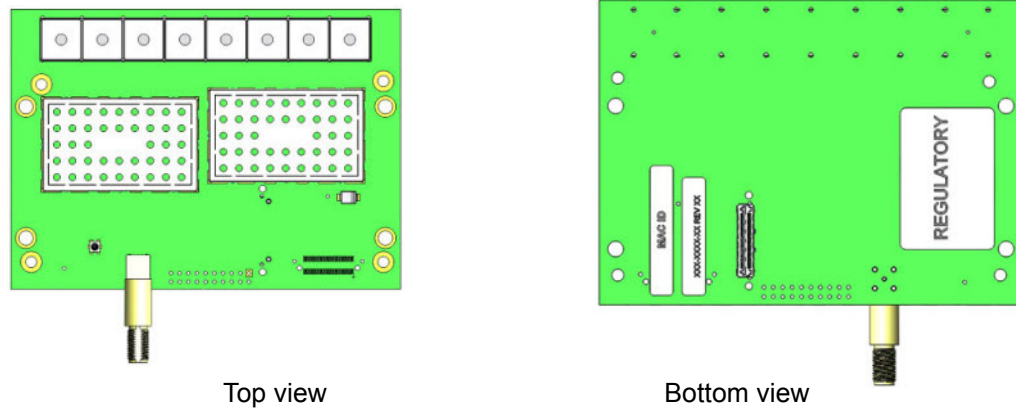
References

Guidelines for 64-bit Global Identifier (EUI-64™) Registration Authority, IEEE Standards Association.

NIC Address Labeling

For radio identification, the street light equipment shall have an auxiliary label containing the Silver Spring Networks NIC address presented in text (16 alphanumeric digits) and bar code formats.

- Bar Code Type = Code 3 of 9
- Bar Code Font Size = unknown
- Font Type = unknown
- Font Size = unknown
- Bar Code Label Dimensions = 1.0" x 1.5"
- Bar Code Material Type = Static Dissipative Polyimide

Figure 2 shows an example of the NIC address label, which is consistent with FCC requirements set forth in Chapter 2 FCC and Industry Canada Government Guidelines, and contains the Silver Spring Networks corporate name and NIC EUI-64 address.

Figure 2. Example of NIC address label for NIC 440
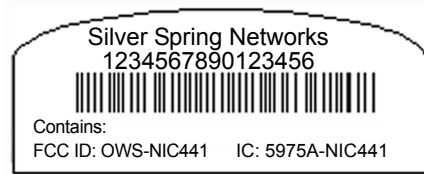
NIC Labeling

The Network Relay Point (NRP) NIC has a label relevant to NRP final assembly and RMA: the FCC and Part Number label and the Silver Spring NIC address label. Both labels are located on the bottom side of the NIC PCA.

The FCC ID label is 1" x .375" inches (2.5 x 1 cm). Figure 3 shows an example of the FCC ID label found on the NRP NIC

Figure 3. Sample FCC ID label for the NRP NIC

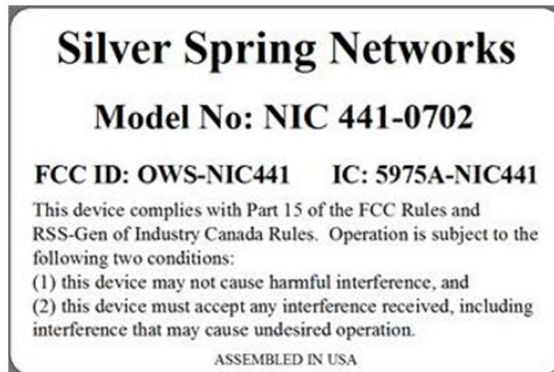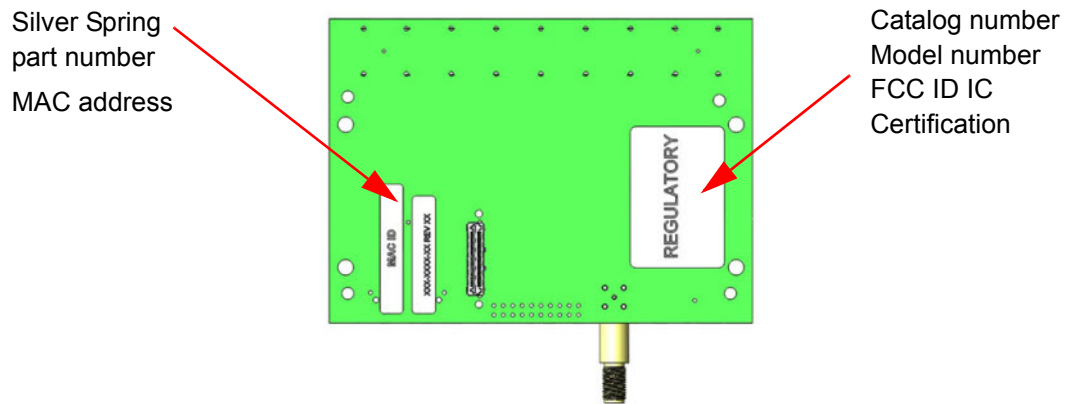Figure 4 shows the placement of the labels.

Figure 4. Label locations on the Silver Spring NRP NIC

Silver Spring part number

MAC address

Catalog number
Model number
FCC ID IC
Certification

REGULATORY

2   FCC and Industry Canada Government Guidelines

Silver Spring Networks NRP NIC

FCC ID: OWS-NIC441

IC: 5975A-NIC441

Requirements

The Network Relay Point (NRP) network interface card (NIC) is REQUIRED to be professionally installed by a properly trained technician. Improper installation could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules and Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

The antenna of this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The device should be installed so that people will not come within 20 cm (8 in.) of the antenna.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with Part 15 of the FCC Rules. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception (which can be determined by turning the equipment off and on), the user is encouraged to try to correct the interference by one or more of the following measures:

•   Reorient or relocate the receiving antenna.

•   Increase the separation between the equipment and receiver.

•   Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

•   Consult the dealer or an experienced radio/TV technician for help.

Exigences d'Industrie Canada

La carte d'interface réseau (NIC) Silver Spring Network Relay Point (NRP) DOIT être installée par un technicien ayant reçu une formation adéquate. Une installation incorrecte peut annuler l'autorisation de l'utilisateur à se servir de l'équipement.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

L'antenne de cet émetteur ne doit pas se trouver à proximité de ou fonctionner en association avec une autre antenne ou un autre émetteur.

Le dispositif doit être installé de manière à empêcher toute personne de se retrouver à moins de 20 cm (8 po) de l'antenne.

Les changements ou modifications apportés sans l'approbation expresse de l'autorité responsable de la conformité pourront entraîner l'annulation de l'autorisation d'utilisation de cet équipement.

FCC and Industry Canada Guidelines for Devices Containing a Transmitter Module

The following is an extract from FCC PART 15 UNLICENSED MODULAR TRANSMITTER APPROVAL, DA 00-1407, Released: June 26, 2000, Section 6 describing labeling requirements for devices containing a modular transmitter.

> Section 6. The modular transmitter must be labeled with its own FCC ID number, and, if the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID: XYZMODEL1" or "Contains FCC ID: XYZMODEL1." Any similar wording that expresses the same meaning may be used. The Grantee may either provide such a label, an example of which must be included in the application for equipment authorization, or, must provide adequate instructions along with the module which explain this requirement.

In the latter case, a copy of these instructions must be included in the application for equipment authorization.

The following is an extract from RSS-GEN, General Requirements and Information for the Certification of Radio Apparatus, Section 3.2.1, describing labeling requirements for a host device integrating a radio module.

The host device shall be properly labelled to identify the modules within the host device.

The Industry Canada certification label of a module shall be clearly visible at all times when installed in the host device, otherwise the host device must be labelled to display the Industry Canada certification number of the module, preceded by the words "Contains transmitter module", or the word "Contains", or similar wording expressing the same meaning, as follows:

Contains transmitter module IC: XXXXXX-YYYYYYYYYY

where XXXXXX-YYYYYYYYYY is the module's certification number.

L'extrait suivant provient du Cahier des charges sur les normes radioélectriques (CNR); exigences générales et information relatives à la certification des appareils radio, section 3.2.1, et décrit les exigences en matière d'étiquetage pour un dispositif hôte intégrant un module radio.

Le dispositif hôte doit être correctement étiqueté afin d'identifier les modules qu'il comprend.

L'étiquette de certification Industrie Canada d'un module doit toujours être bien visible lors de l'installation sur un dispositif hôte. Dans le cas contraire, le dispositif hôte doit être étiqueté de façon à afficher le numéro de certification Industrie Canada du module, précédé de l'expression « Contains transmitter module » ou du mot « Contains », ou d'une formulation similaire ayant la même signification. Par exemple :

Contains transmitter module IC : XXXXXX-YYYYYYYYYY

où XXXXXX-YYYYYYYYYY représente le numéro de certification du module.

The applicant for equipment certification of the module shall provide with each unit of the module either a label such as described above, or an explanation and instructions to the user as to the host device labelling requirements.

Figure 5. Sample FCC ID label for devices containing an NRP NIC (NIC 440)

Contains FCC ID: OWS-NIC441   IC: 5975A-NIC441

NIC 440 External Antenna Integration

This radio transmitter 5975A-NIC441 has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

- Omnidirectional antennas: 3 dBi at 900 MHz, 4 dBi at 2.4 GHz

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

- Antennes omnidirectionnelles : 3 dBi à 900 MHz, 4 dBi à 2.4 GHz

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

Safety Information

X   **WARNING:** **Severe shock and explosion hazard! Touching energized parts can result in massive equipment damage, and severe injury or death. Short-circuiting energized parts will result in blinding flash and explosion. Opening and closing electrical circuits can also produce dangerous and explosive arc flashes. Involuntary muscular reactions associated with electrical shock may result in other injuries. Observe the following safety guidelines.**

Careful planning of every job is essential. Nothing should be taken for granted. Do not take chances!

- Read and follow all approved policies and procedures provided by your employer associated with the procedures in this manual.

- The procedures in this manual must only be performed by qualified workers in accordance with local utility safety practices, utility requirements, and applicable OSHA and NFPA standards.

- The information contained in this document is intended to aid qualified personnel, and is not a replacement for the proper training required to make a person qualified.

- Silver Spring Networks assumes no liability for the customer's failure to follow these safety guidelines.

General Electrical Safety

- Perform the procedures in this manual in accordance with applicable workplace standards established by the following agencies:

  — Occupational Safety and Health Act (OSHA).

  — The National Electrical Code published by the National Fire Protection Association (NFPA-70).

  — National Electrical Manufacturers Association (NEMA).

  — Electronics Industries Association (EIA).

  — Insulated Power Cable Engineers Association (IPCEA).

- American National Standards Institute (ANSI). Whenever possible, de-energize all circuits or equipment before working on them.

- Maintain a minimum clearance of 10 feet (3 meters) between line potential and all unqualified persons at all times.

- Keep unauthorized people out of the work area. Be especially cautious of children, who tend to be drawn to work activity.

- Determining if a circuit is OFF can be difficult in some instances. Check for circuit voltage with an appropriate voltmeter before working on equipment presumed to have been de-energized. Tiebreakers, double throw disconnect switches, automatic transfer switches and emergency generators can supply power through an alternate circuit or from another source.

- 120V current can be just a lethal as higher voltages because current flow through a body depends upon the body's resistance.

- Do not trust insulation and/or weatherproofing on a wire as protection from shock.

- Use electrically insulated tools. Inspect portable electrical equipment or tools for defects and remove any defective devices from service immediately. All portable electrical equipment must have Ground Fault Circuit Interrupter (GFCI) protection.

- Select the right tool for the job. Use tools properly. Keep tools in good working order.

- Make sure the work area is free of any flammable material. Flammable vapors can be ignited by an arc flash.

- Keep the work area clean and dry. Cluttered work areas cause accidents and injuries.

- Provide good lighting in the work area. You cannot work safely if you cannot see what you are doing.

- Report unsafe conditions or defective equipment to your immediate supervisor.

- Handle material carefully. Lift and carry properly.

Personal Protective Equipment (PPE)

- Always wear Personal Protective Equipment (PPE), in accordance with OSHA and ANSI standards.

- Wear eye protection and electrically insulated gloves. Test gloves in accordance with ANSI standards before use. Do not use gloves that do not pass appropriate test procedures.

- Wear protective clothing such as long sleeve shirts and long pants made of flame resistant materials.

- Remove all jewelry.

- Do not pass any objects to or from other persons not protected by insulating platforms or tested, electrically insulated gloves.

Fall Protection

When performing work at any elevation:

- Always use a fall protection system, in accordance with OSHA standards, whenever performing work at any elevation.

- Never use conductors, guy wires, pins, or cross-arm braces, etc. to support your weight.

- Whenever using aerial lift devices such as hoists, man-lifts, vehicle-mounted work platforms and overhead lifts, read and follow the manufacturer's guidelines for safe and proper operation.

- Use ladders and scaffolding only in accordance with the manufacturer's guidelines and/or according to OSHA standards.

- Only use ladders made of non-metallic, non-conductive material. They should be the proper size and type for the work intended. Inspect ladders for wear and breakage. Remove any oil, grease, or other slippery materials.

- Do not set the ladder at too steep or too shallow of an angle. A rule of thumb is to stand erect with your toes against the bottom rails of the ladder, with your arms extended straight out. If you can set your palms on top of the rung that is at eye level, the ladder should be at the proper angle. If a ladder angle label is provided, follow its recommendations.

- If the ladder is to remain in place for an extended period, secure it at the top. The support point at the top of the ladder should be at least 24 inches (60 centimeters) wide to maintain support in the event of sideways movement. For jobs of short duration, have a fellow worker support the ladder at the base.

- Evaluate all tasks to be performed from a ladder for potential fall hazards, such as complex tasks or situations that require leaning from the side of the ladder.

- The use of scaffolding or a work platform should be considered as an alternative solution in such cases.

Shock Accident First Aid

- Do not touch the victim with your bare hands; use something non-conductive to separate the victim from the energy source.

- Call for emergency medical help immediately. Keep the victim lying down, warm, and comfortable until help arrives. Avoid moving the victim in case of injury to neck or back. Position an unconscious victim on a side to let fluids drain.

- Check the victim's breathing and heartbeat. If properly trained, apply mouth-to-mouth resuscitation and/or CPR if necessary.

- Remove constricting items from the victim, such as shoes, belts, jewelry, and tight collars; they could cut off circulation if the victim experiences swelling.

- Apply water or saline for a few minutes to any burns until the skin returns to normal temperature. Do not attempt to remove clothing that is stuck to a burn. If possible, elevate burned areas to reduce swelling.

- Make sure the victim receives professional medical attention, even if they feel fine. Electric shock can cause heart failure hours after the shock is received.