FCC ID: 2AHXCBC510
IC: 21338-BC510
Model: BC510

BlueCats Edge Relay Guide

In the Box

The BlueCats Edge kit contains:

- BlueCats Edge Bluetooth Scanner and Wireless Access Point
- Micro USB cable for power
- External Bluetooth antenna

Technical Specifications

Processor	Atheros 9331 CPU @400MHz
Memory / Storage	DDR 64MB / FLASH 16MB
Wireless	WiFi 2.4 b/g/n, BLE 4.2 (TI CC2640R2)
Transmission Rate	150Mbps
Max Tx Power	18dBm
Protocol	802.11 b/g/n
WAN / LAN	10 / 100 Mbps
Power Input	5V / 1A
Power Consumption	<1.5W
Dimension / Weight	58 x 58 x 25 mm / 60g
GPIO Count	4
Working Temperature	0-45°C (32 - 113°F)

Connecting to the Edge (With Ethernet)

The easiest way to configure the Edge is to connect it directly to your computer via Ethernet.

1. Connect an ethernet cable to your computer and to the LAN port of the Edge.
2. Attach the external bluetooth antenna.
3. Plug in the supplied micro-usb cable into the edge to power up the device. (Note that it may take 20-30 seconds to complete startup.)
4. Then go to this address 192.168.8.1.

Connecting to the Edge Through WiFi (Without Ethernet)

Start by plugging the supplied micro-usb cable into the edge and any USB port to power up the device and attach the external bluetooth antenna. Note that it may take 20-30 seconds to complete startup.

1. Look at the bottom of your Edge. There should be an SSID (i.e. bluecats-230).
2. Then look in your WiFi connections and find that WiFi Name.
3. Connect to it.
4. Then go to this address 192.168.8.1.

Sending your Data (Protocols and Formats)

For sending data to your endpoints. We currently support the data formats:

- JSON
- CSV
- binary-format

We support the protocols:

- MQTT
- UDP
- HTTP

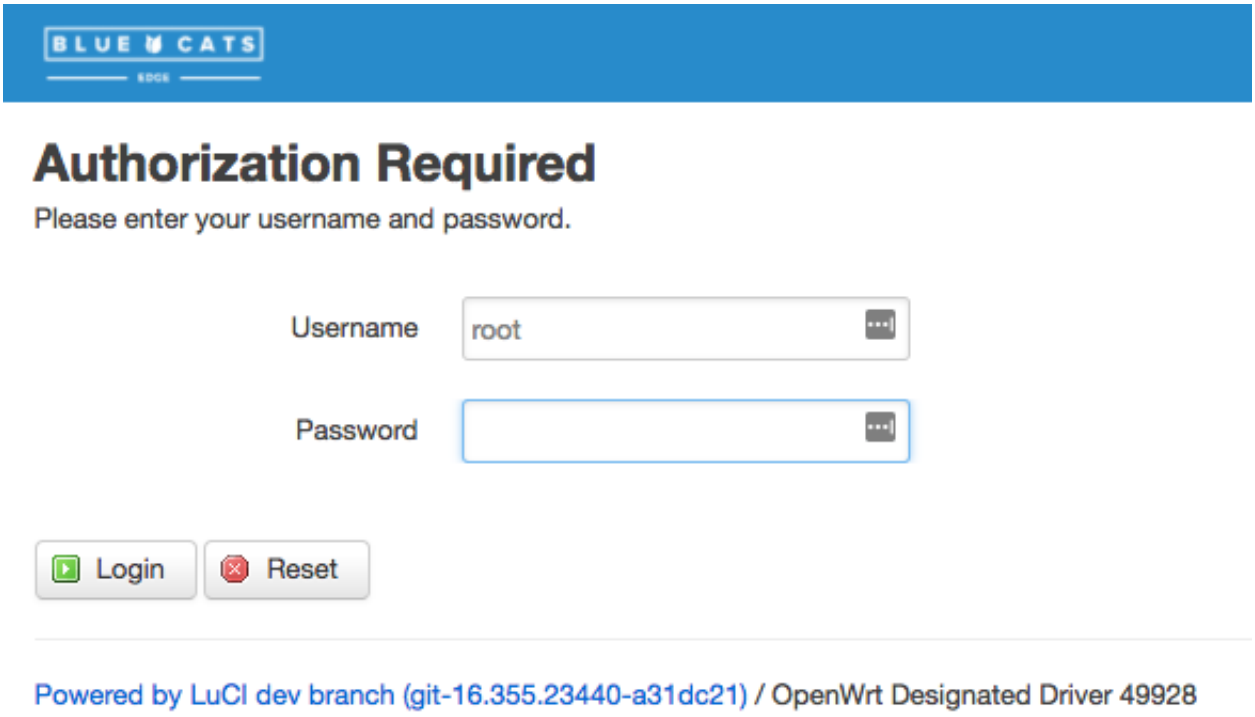
Logging In

Each edge runs a local web configuration tool to manage both network configuration and BlueCats BLE scanning settings. After your computer has connected to the Edge over Ethernet, navigate to the Edge's IP address 192.168.8.1 using your web browser.

You will be prompted to log in with the root user credentials.

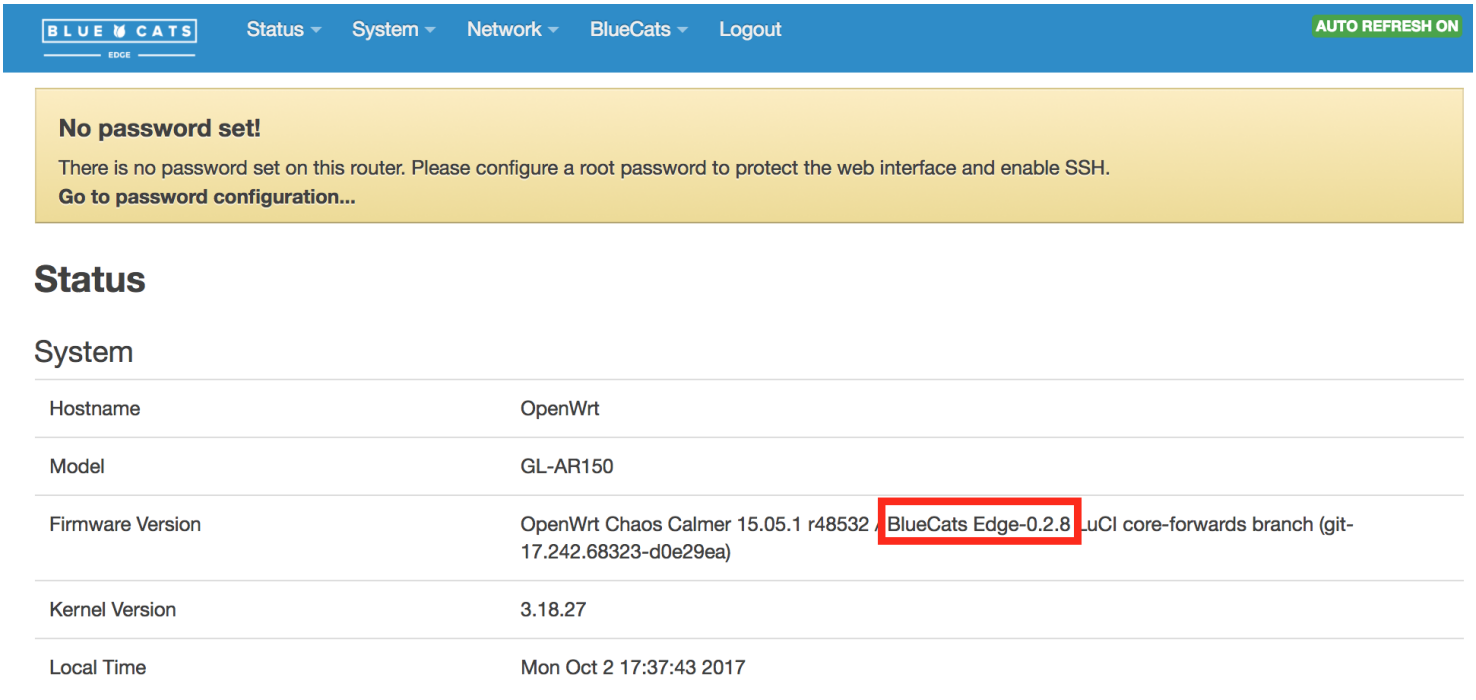
Username: `root`

Password is blank (unset) by default. After logging in without supplying a password, the Web UI will prompt to configure one.

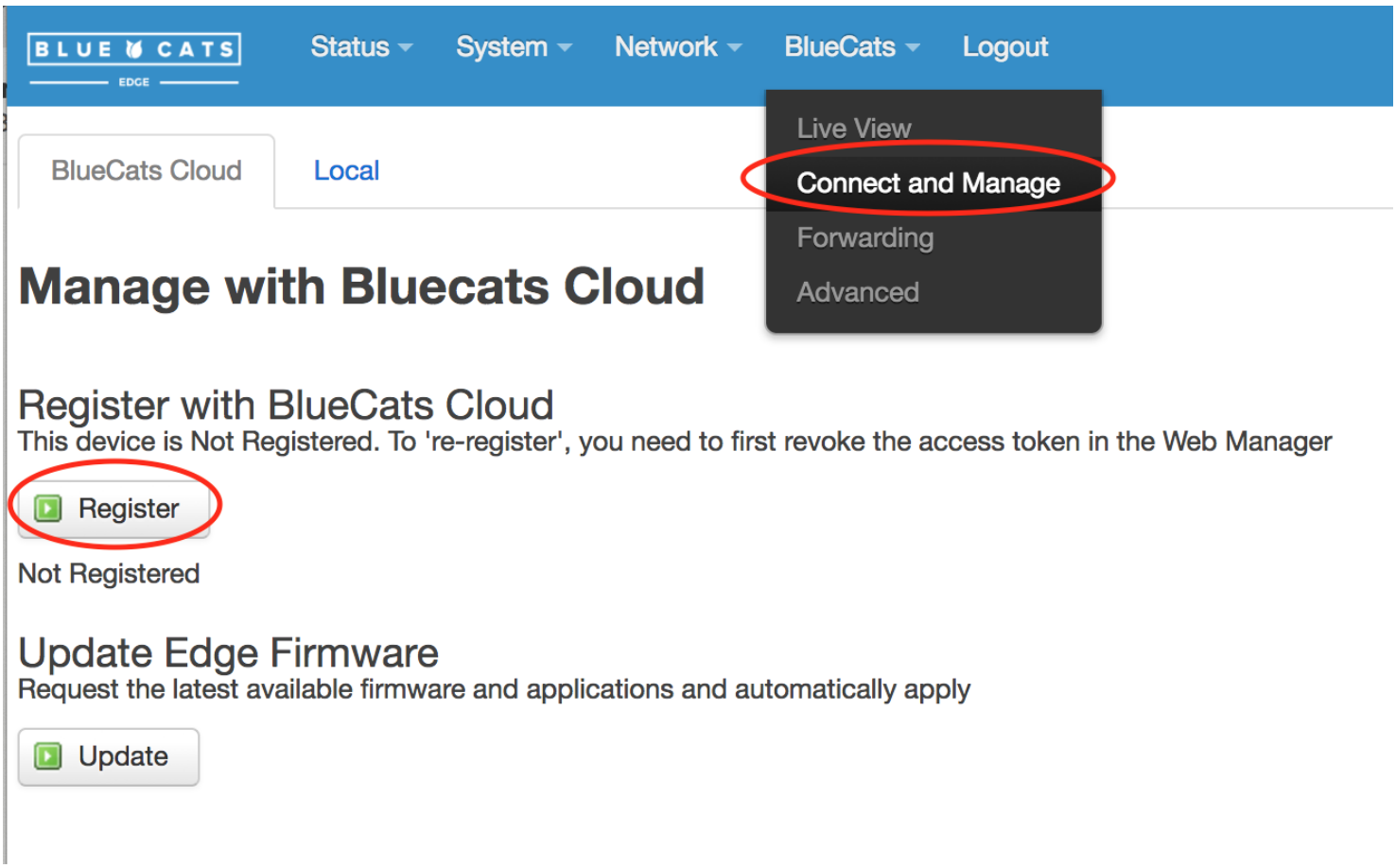


Edge Web Interface / Checking your Firmware Version

Once logged in to the web configuration tool you will land on the System Overview screen. Here you can see what Edge firmware version. You are on and this allows you to check which documenation to follow. If you need to change to documentation, here is the landing page for all of the Edge documentation.



There are a considerable number of configuration menu items but only a couple will require any changes. Some of the additional useful features are listed at the end of this document under Troubleshooting. All of the options to configure bluetooth scanning can be found under the 'BlueCats' main menu item.

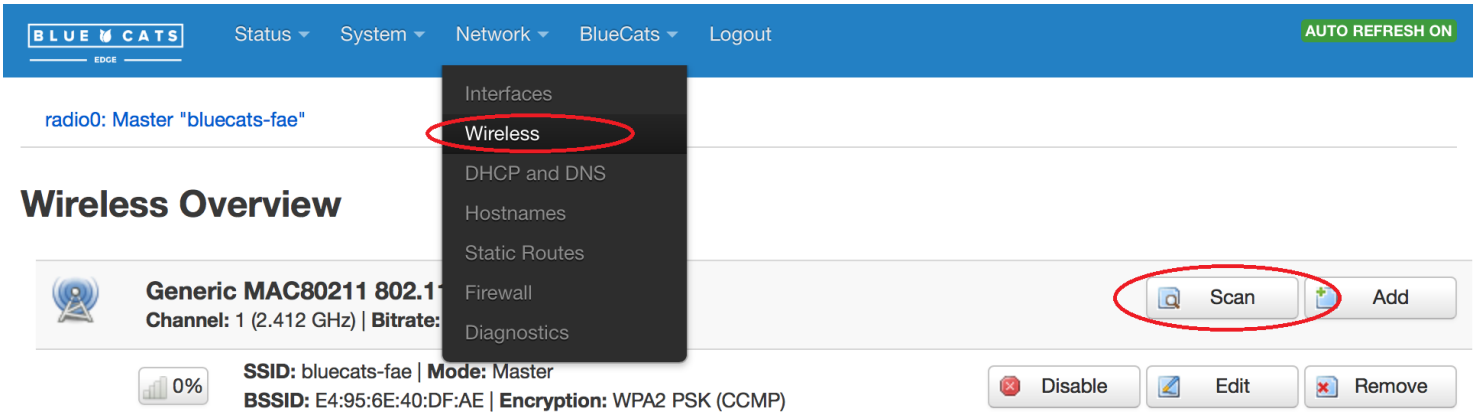


Start Configuring Edge Applications or continue below by connecting your Edge using the WiFi Setup.

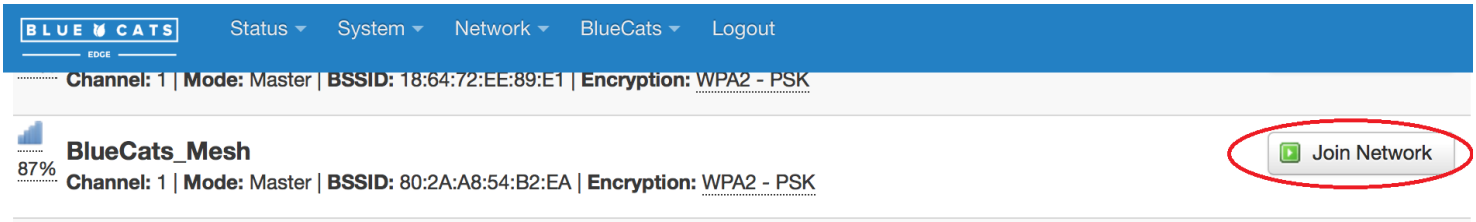
Connecting to Internet via WiFi

The Edge can be configured to send data to another machine on the local WiFi network, or connected to the internet to enable communication to the BlueCats Cloud or to download updated software.

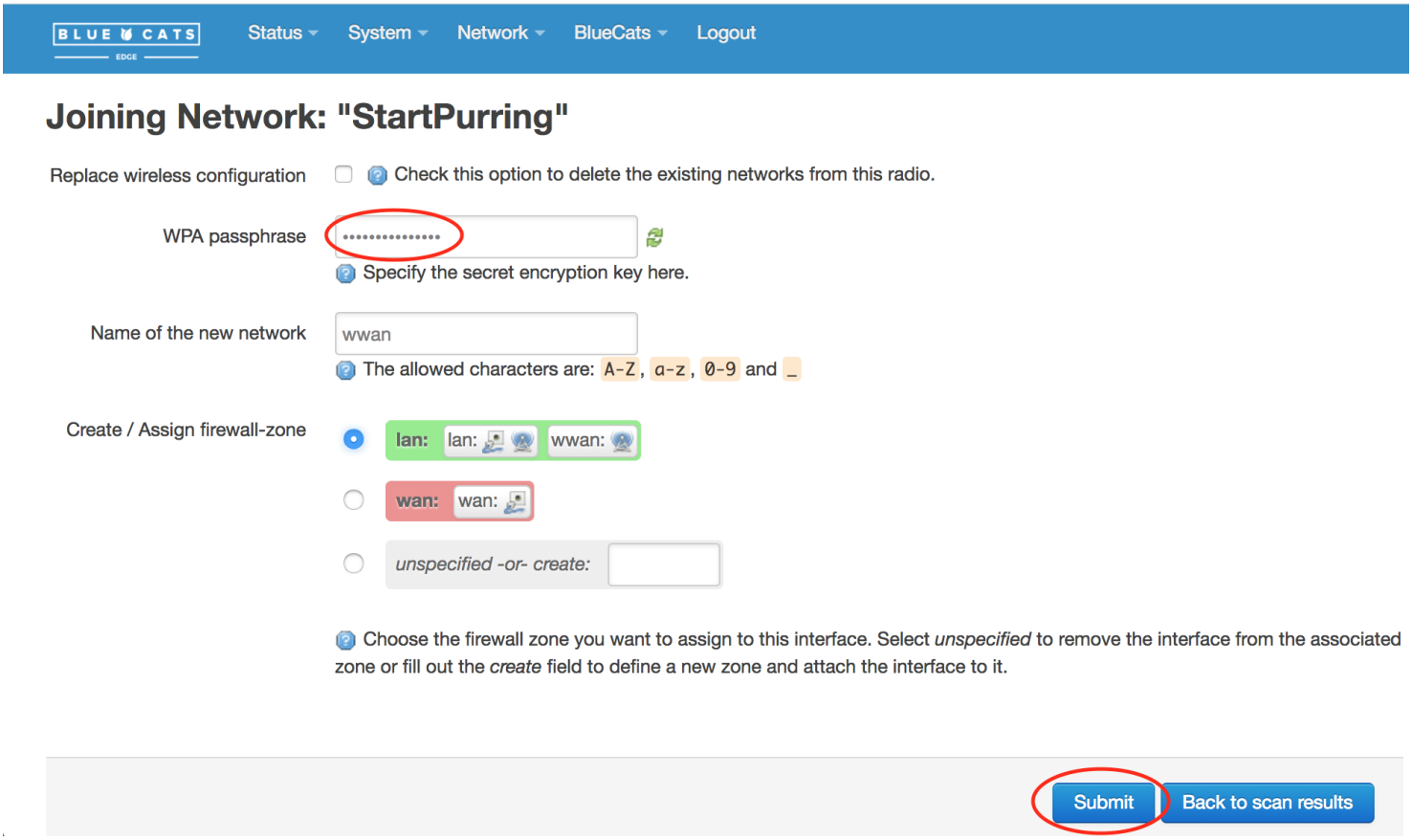
Navigate to `Network` -> `Wireless` in the main menu and scan for available networks.



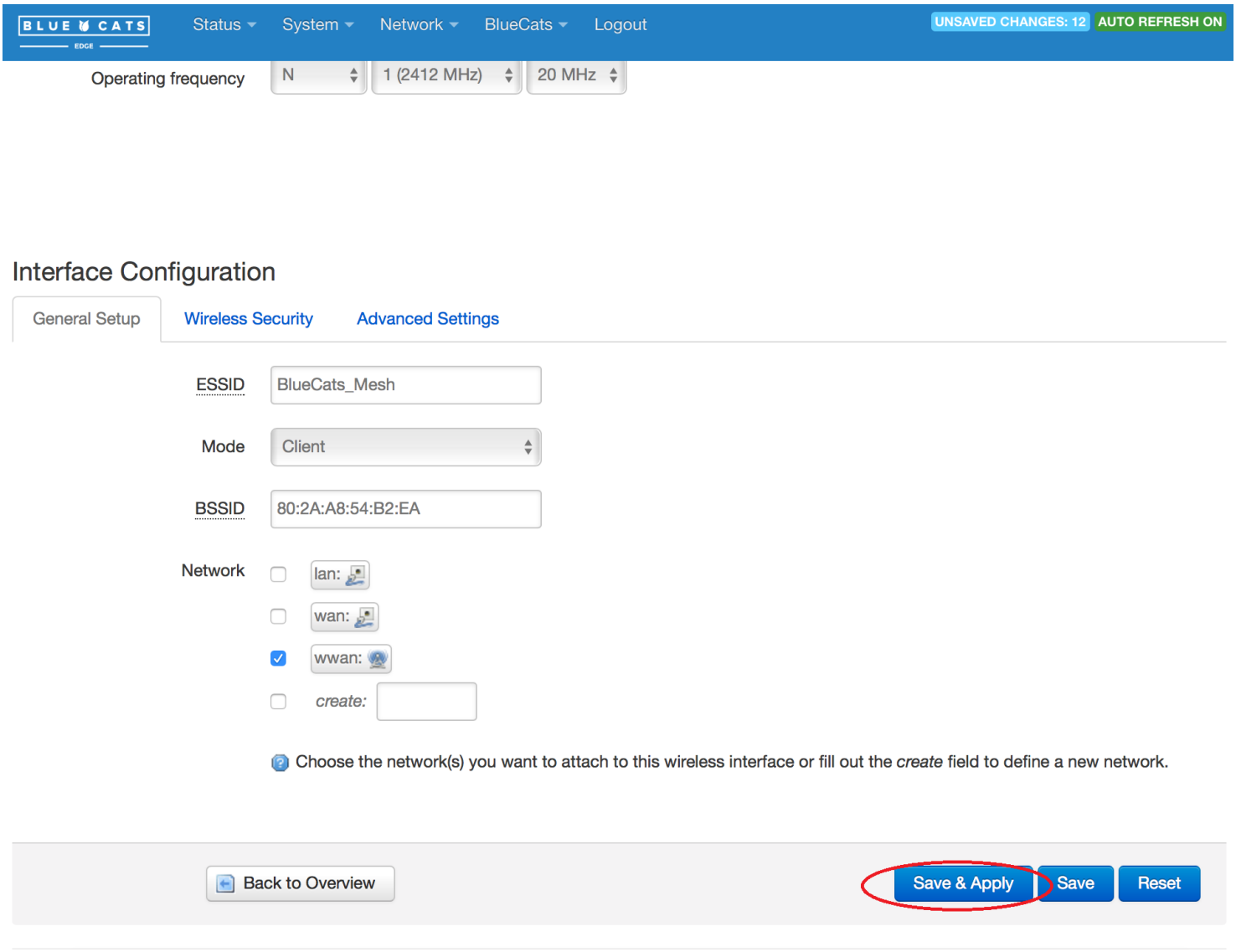
Join an available network



Enter network key and submit



Save and apply changes

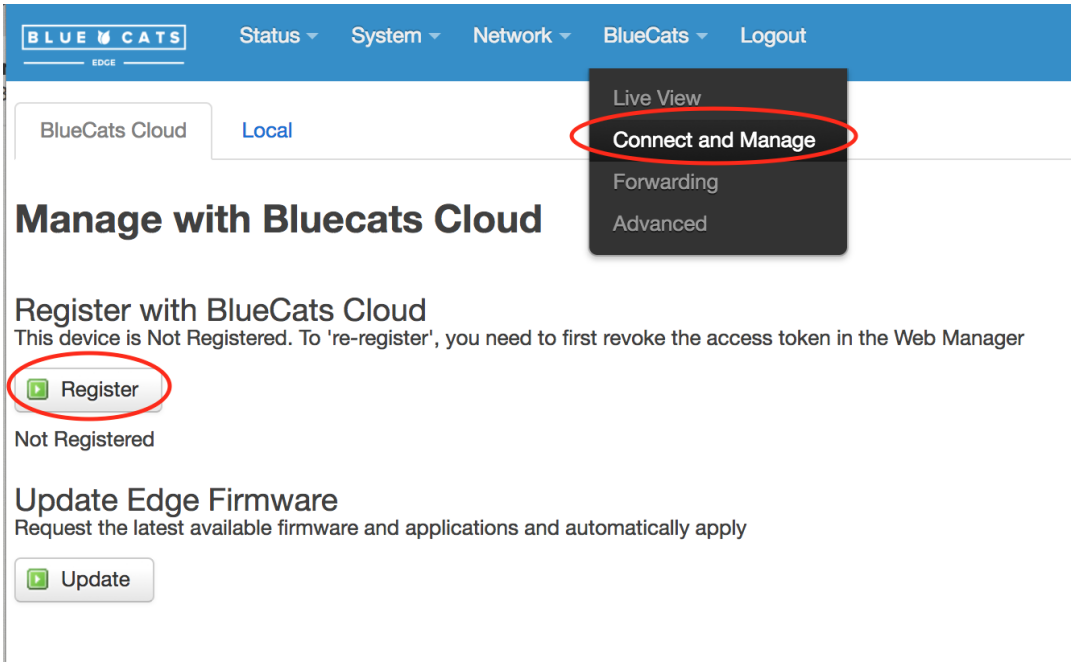


Once connected to the local WiFi network, the Edge can be [configured to send to an IP address] on that network and the ethernet cable can then be disconnected as the Edge will continue sending data over the local WiFi connection while powered.

Register with BlueCats Cloud

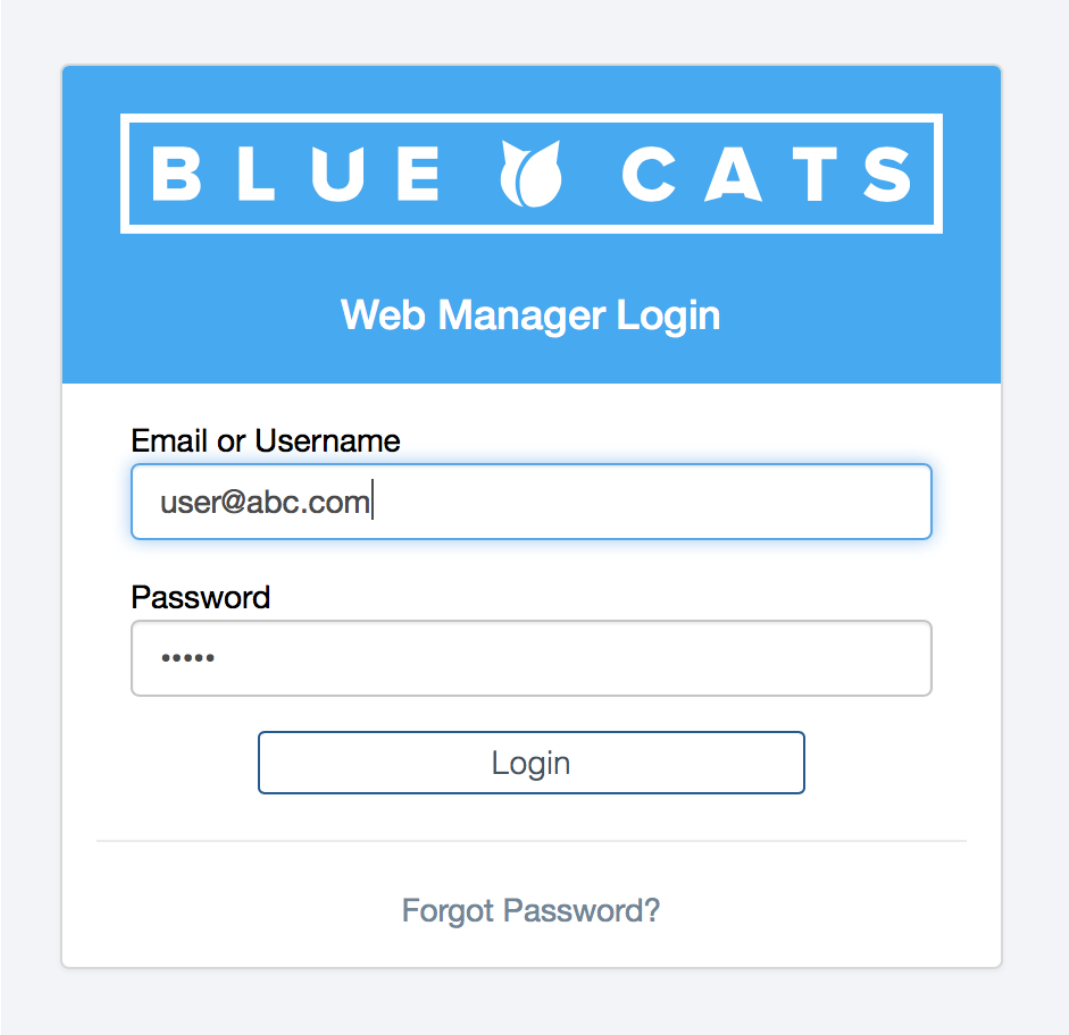
By registering the edge device with BlueCats cloud, you can monitor uptime and request the latest available firmware.

Navigate to `BlueCats` -> `Connect and Manage`. If the 'Device Register Status' is 'Registered' then the edge device is successfully connected with the BlueCats cloud services.

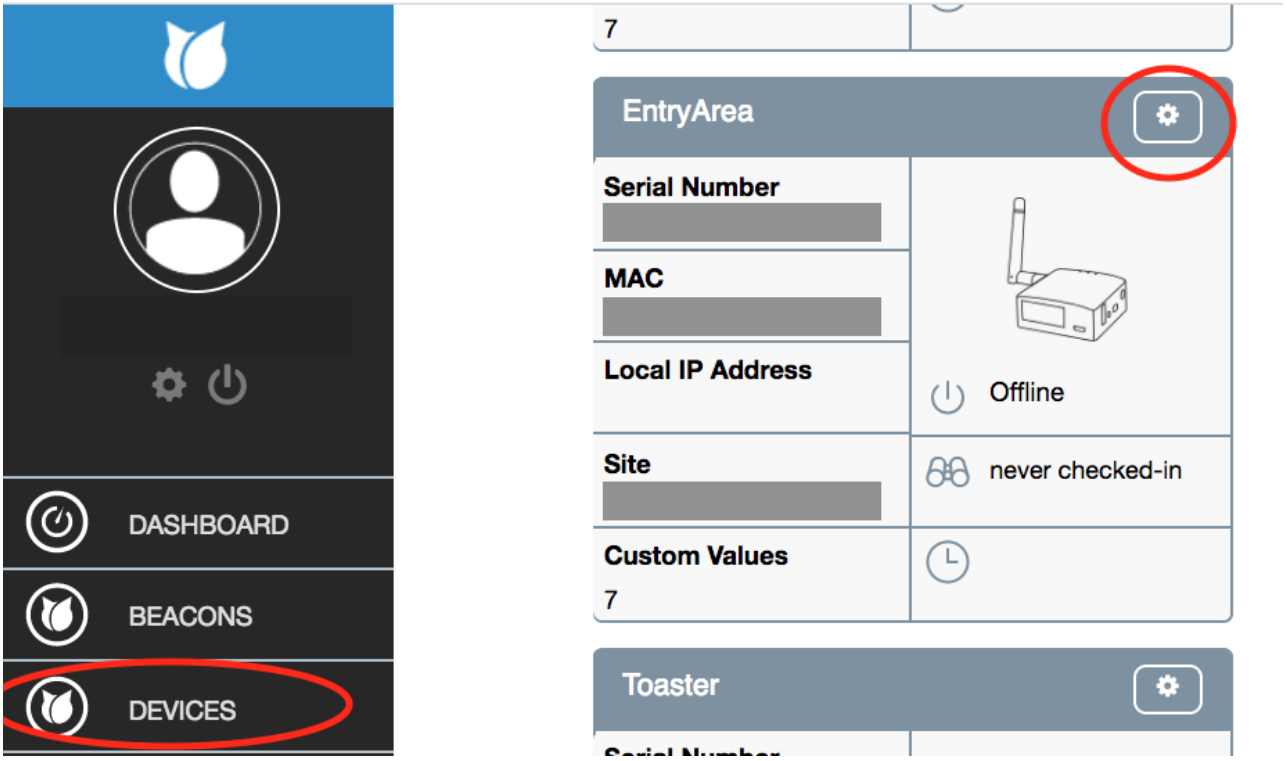


If the status is ‘Invalid’, then follow the steps below to register the device.

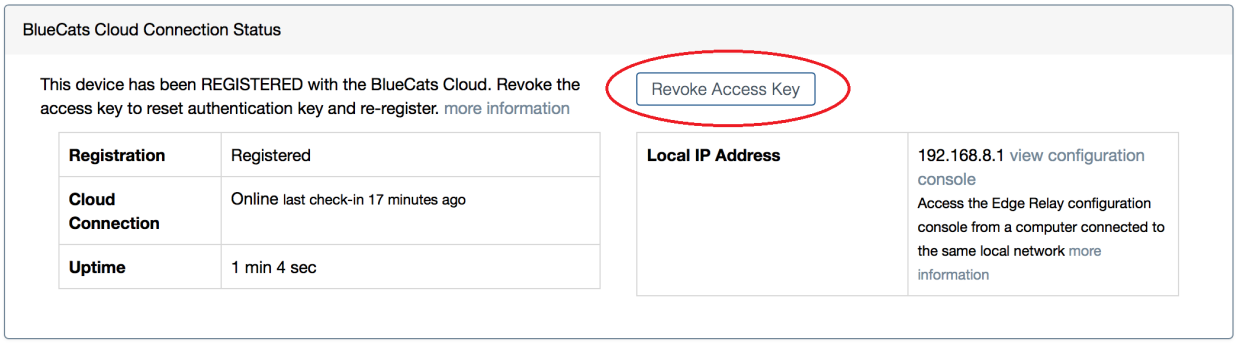
- If you have your Edge, but don’t yet have a BlueCats account follow these steps to create an account and claim your devices
- Log into https://app.bluecats.com/devices



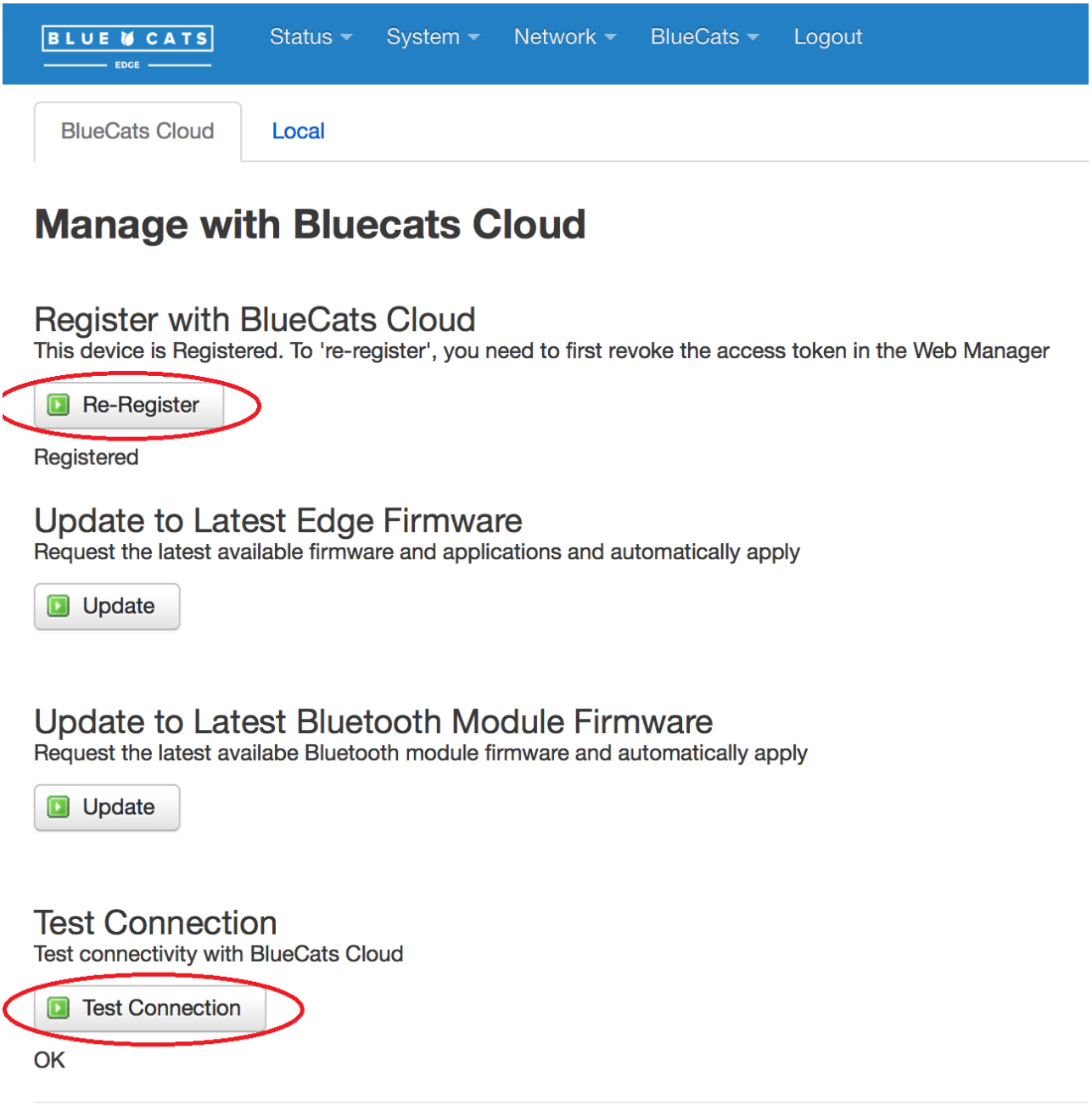
- Find the Edge you are updating under Devices (you can search by the serial number printed on the label of each Edge) and view its details.



- Click the ‘Revoke Access Token’ button.



- Go back to the Edge UI and click the ’Re-Register' button.



- You can test the connectivity to BlueCats Cloud by clicking the ‘Test Connection’ button. The status will be ‘Unknown’ when there is no connection and ‘Unauthorized’ when not registerd.

Now that your Edge is connected to your local machine or network, you can update edge firmware, update BLE module firmware and start configuring Edge Applications.

Support

Warranty

- Each router has a **one-year warranty**. Accessories have **three-month warranty**.
- Please use a standard USB power adapter 5V/1A.
- Any damage to the router caused by not following the instructions will render this warranty null and void.
- Andy damage to the router caused by modifying the PCB, components or case will render this warranty null and void.
- Issues caused by the use of third party firmware may not get official support from us
- Any damage to the router caused by inappropriate use, e.g. inappropriate voltage input, high temperature, dropping in the water or on the group will render this warranty null and void.
- Pictures on the instructions are only for reference. We reserve the right to change or modify these materials without further notice.

Technical Support & General Enquiry

- For more detailed and updated instructions, please visit our website https://bluecats.github.io/documentation/edge/getting-started-edge
- For further questions, you can get help from the following ways:

    1. Send us an email at support@bluecats.com
    2. Open a ticket and check our FAQs http://support.bluecats.com/
    3. Ask in other forums e.g. OpenWRT, LEDE or other professional websites

- **Austin Office:** 301 Chicon Street, Suite A Austin, Texas, 78702, USA

- **Sydney Office:** Level 10, 56 Berry Street North Sydney NSW 2060, Australia

- **London Office:** St Bride’s House 10 Salisbury Square London EC4Y 8EH

FCC Warning

This device complies with Part 15 of the FCC Rules. 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.

Note 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. 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.

Note 2: 1.Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

2. RF exposure: The minimum separation distance between antenna and body shall be at least 20 cm.

IC warning

This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions:
(1) This device may not cause interference and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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.

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.

This radio transmitter (identify the device by certification number, or model number if Category II) 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.

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.

2. Les utilisateurs ne sont pas autorisés à remplacer l'antenne