

**ISH-1101-003**

# **NZ-BOX Gateway circuit Board**

## **Instruction Manual**

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Rev 1.0

2016/3/1

Kpnetworks Ltd.

# Revision History

	Description	Date
Rev 1.0	First Edition	December 15, 2015
Rev 1.1	Added Warnings.	March 1, 2016

# Table of Contents

WARNINGS.....	4
CAUTION .....	4
KEY TO SYMBOLS .....	5
NOTE.....	5
<b>OVERVIEW OF THE NZ-BOX GATEWAY CIRCUIT BOARD.....</b>	<b>7</b>
THE FRONT BOARD .....	7
THE BACK BOARD .....	8
HOW TO USE THE NZ-BOX GATEWAY CIRCUIT BOARD .....	9
INSTALLATION .....	9
POWER ON/OFF .....	10
RESET THE NZ-BOX GATEWAY CIRCUIT BOARD.....	10
STATUS OF THE NZ-BOX GATEWAY CIRCUIT BOARD.....	11
CAUTION FOR THE OPERATION.....	12
REGULATORY INFORMATION TO HOST MANUFACTURER .....	13

# Safety Warnings

## **Warnings**

- Connect the earth wire to the outlet before turning on the power, to prevent an electric shock. Place the power code in the outlet which is connected to the earth wire.
- Do not use the NZ-Box Gateway circuit Board in an environment that consists of excessive humidity or flammable gas.
- Changes or modifications not expressly approved by Kpnetworks Ltd. responsible for compliance could void the user's authority to operate the equipment.
- This equipment complies with radio frequency exposure limits set forth by the FCC and Industry Canada for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm between the device and the user or bystanders. This device must not be co-located or operating in conjunction with any other antenna or transmitter.
- Cet équipement est conforme aux limites d'exposition aux radiofréquences définies par la FCC et Industrie Canada pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre le dispositif et l'utilisateur ou des tiers. Ce dispositif ne doit pas être utilisé à proximité d'une autre antenne ou d'un autre émetteur.

## **Caution**

- The NZ-Box Gateway circuit Board is an electrostatic sensitive device. Pay sufficient attention to static electricity during the operation.

## **Key to Symbols**

**Warning** : Ensure that the operator fully understands the contents of the statements with this sign. The warning statements indicate a possibility of injury if operational procedures are not followed correctly.

**Caution** : Ensure that the operator fully understands the contents of the statements with this sign. The caution statements indicate a possibility of damage to the NZ-Box Gateway circuit Board or its peripheral equipment if operational procedures are not followed correctly.

## **Note**

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.

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

This device complies with Industry Canada's licence-exempt RSSs. 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.

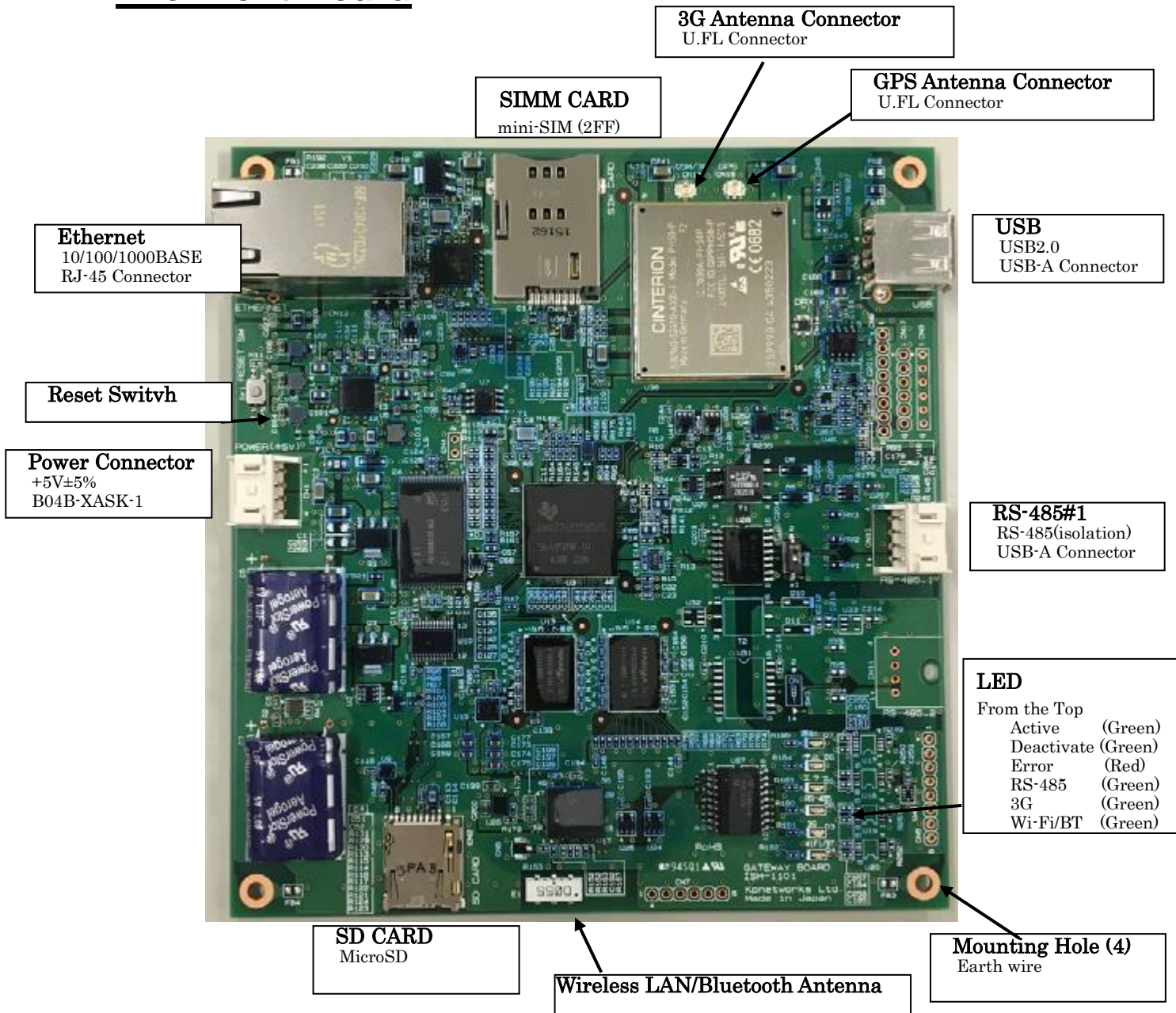
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

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

Innovation, Science and Economic Development Canada ICES-003  
Compliance Label Information: CAN ICES-3 (B) / NMB-3(B)

# Overview of the NZ-Box Gateway circuit Board

## The Front Board



Note : USB devices should be inserted to USB port directly.

Following interface can not be used.

Digital I/O , Analog Input , RS-485#2

# The Back Board





# How to Use the NZ-Box Gateway circuit Board

## Installation

Use the specified cable for the power code. The polarity must be correct. To use the mounting holes, the earth wire must be connected. Connect the NZ-Box Gateway circuit Board according to the following power requirements,

Output Voltage : +5V

Output Current : Over 1.5A

**Warning** : The earth wire must be properly grounded to prevent electric shock.

**Caution** : Before the operation, eliminate static electricity from the operator.

**Warning** : The following actions may cause fire or electric shock,

1. Damage the power cord
2. Process the power code
3. Bend the power code
4. Pull the power code
5. Twist the power code
6. Bundle the power code.

Avoid placing heavy objects or heating the power code, as it damages it and increase the risks of fire or electric shock.

## **Power ON/OFF**

The power is turned on by applying power-supply voltage of  $+5V \pm 0.5\%$ , through the power supply connector. Alternatively, the power is turned off by cutting the voltage application in the power input connector.

**Warning** : To prevent the breakage of a substrate, do not apply voltage which is not specified in this manual.

## **Reset The NZ-Box Gateway circuit Board**

A reset switch is used to restart the device. Press the reset switch once, the CPU will reset and the device will restart.

## **Status of the NZ-Box Gateway circuit Board**

LED indicates the device status. Following are details of the status.

- Active : The light turns on when the substrate is in operation.
  - Steady Green : Active
  - Lights-out : Deactivate
- Deactivate : The light turns on when the substrate is under suspension
  - Steady Green : Deactivate
  - Lights-out : Active
- Error : The light turns on if an error occurs.
  - Steady Red : Error
  - Lights-out : Normal
- RS-485#1 : The light turns on when the device is connected to the RS-485
  - Blinking Green : Connected to RS-485
  - Lights-out : Not connected to RS-485
- 3G : The light turns on when the device is connected to 3G network.
  - Blinking Green : 3G network is online
  - Lights-out : 3G network is offline (link is disconnected)
- Wi-Fi/BT : The light turns on when the device is connected to Wi-Fi or Bluetooth
  - Blinking Green : Connected to Wi-Fi or Bluetooth
  - Lights-out : Connected to neither Wi-Fi nor Bluetooth

## **Caution for the Operation**

### **If the NZ-Box Gateway circuit Board is damaged**

If the device is damaged or dropped, turn the power off immediately by disconnecting the power code and contact our support service. If a damaged device is used as is, fire or electric shock may occur.

### **If the NZ-Box Gateway circuit Board emits smoke**

Do not use the device in an event of emission of smoke or abnormal smell. It may lead to fire or electric shock. When a problem occurs, turn the power off immediately by disconnecting the power code, ensure the smoke stops and contact our support service. Do not try to repair the device by yourself for safety reasons.

### **Prohibit the use of unexpected specification**

Do not use of unexpected specification, to prevent fire or an electric shock.

### **Do not disassemble and modify**

Do not disassemble or modify the device, to prevent fire or electric shock

## **Regulatory Information to host manufacturer**

Since this radio product ISH-1101-003 is granted as Single Limited Modular Approval, this radio product is for OEM integration only.

And this radio device cannot be sold to general public.

Therefore, we Kpnetworks Ltd. will ask OEM integrator to include the following statements required by FCC and ISED on the host product and in its Installation manual.

### 1. Label of host product

1)The host manufacturer must include the following three ID numbers at the label of the host product.

" Contains FCC ID: 2AGR9ISH-1101-003"

" Contains IC: 20941-ISH1101003"

" Contains IC: 7830A-PHS8P"

ISED number 7830A-PHS8P is granted to Cinterion Wireless Modules GmbH.

2)Following sentence must be indicated on the product. It may be located in the user manual for small size products.

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.

3) ICES-003 Compliance Label must be indicated on the product.

CAN ICES-3 (\*)/NMB-3(\*)

\* Insert either "A" or "B" but not both to identify the applicable Class of ITE.

### 2. User manual of host product

This manual must include all required regulatory information/warning as shown in this manual.

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

2) Statement in accordance with FCC §15.105. Based on the class of the host product, either one of two statements must be indicated.

For Class A equipment:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

For Class B equipment:

NOTE: 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.

3) This equipment complies with radio frequency exposure limits set forth by the FCC and Industry Canada for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 cm between the device and the user or bystanders.

This device must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'exposition aux radiofréquences définies par la FCC et Industrie Canada pour un environnement non contrôlé.

Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre le dispositif et l'utilisateur ou des tiers.

Ce dispositif ne doit pas être utilisé à proximité d'une autre antenne ou d'un autre émetteur.

4) This device complies with Industry Canada's licence-exempt RSSs. 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.

Note: 2.4GHz Wireless LAN and Bluetooth transmitters are classified as licence-exempt 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;
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.