



# WSMS-116\_AS Installation Guide

## RFID IOT Node Adapter

(Date: 12/10/2015)

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**Revision History:**

Date/Version	Editor	Remark
06/20/2015 v0.0	Cory Lam	Initial draft
06/25/2015 v1.0	Cory Lam	Add antenna specification
12/10/2015 v0.2	Cory Lam	Add FCC Statement

**Abbreviation:**


**Outline:**

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**Tables:**

N/A

## 1 Application

This document is to describe the installation procedure and application of the wireless RFID IOT Node Adapter

Project Code : WSMS-116\_AS

## 2 Product Overview

The RFID IOT Node Adapter is the client adapter for our wireless IOT solution. It is designed to interface to electric meter or an industrial PC that acts as a concentrator for collecting meter readings. The interface is based on RS-485. The RFID IOT Node Adapter will forward data from the meter or IPC to the cloud server where data can be analyze and used for billing purpose.



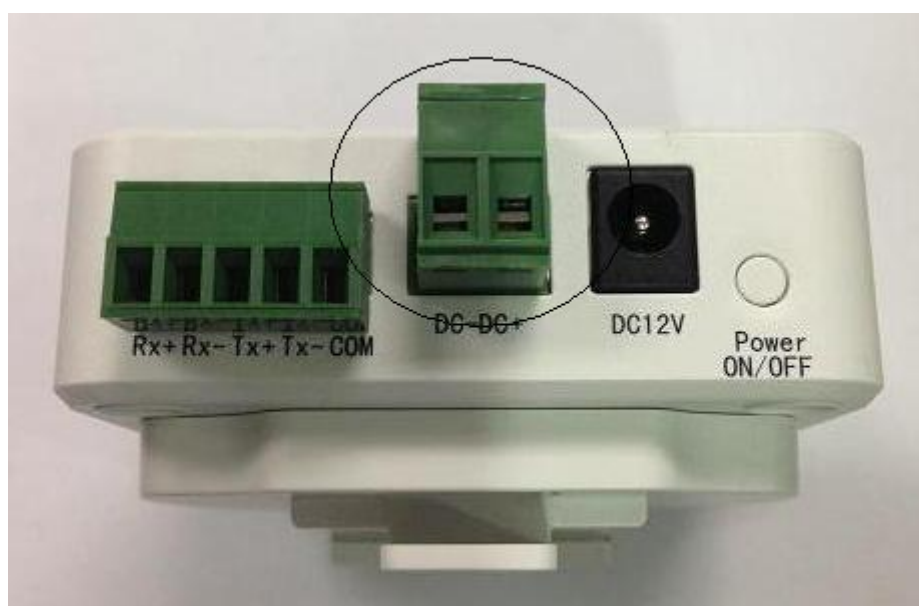
## 2.1 Enclosure Features

The RFID IOT Node Adapter is designed to be connected to an electric meter or an IPC acting as concentrator via the RS-485 interface. The enclosure has the slide bracket option for sliding into the railing in a typical electrical box.



## 2.2 Power Source

For installation in an electric box, the DC power supply shall be provided by the power supply in the electric box and connect through the adapter as circle in the following picture:



## 3 Installation

### 3.1 Professional Installation

The RFID IOT Node Adapter and any associated accessories require professional installation; a) installation of the equipment must be controlled, b) installation must be performed by professionals, c) installation of the equipment requires special training.

### 3.2 Mounting

As described earlier, the Node has a slide bracket option for sliding into the mounting rail in an electric box as shown below:





### 3.3 Cabling

Connect the RS-485 wiring and the DC Power wiring as shown:





### 3.4 LED Indicators

There are four LED indicators on the front panel:

- Transmit (Tx) – blinks when transmitting data
- Receive (Rx) – blinks when receiving data
- Power – On when there is power
- FUCT – Used by watchdog timer, blinks when device is proper functioning



## 4 Antenna Parameters

This device has been tested with the antenna listed below, and has a peak gain of 0 dBi. Antennas not included here having a gain greater than 0 dBi are strictly prohibited for use with this device. The required antenna impedance is 50 ohms.

**Table 1 Typical Antenna**

Manufacturer	Part Number	Gain	Type
TSKY Co., Ltd.	A8-A003-00106	0	Dipole

Additional equivalent antennas from other manufactures may be substituted and then marketed with this equipment. Equivalent antennas must be of the same type (e.g. Omni-Directional) and must be equal or less gain and must be for 915 MHz band and have same out of band characteristics.

## 5 Appendix

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### FCC Statement

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#### **Federal Communication Commission Interference Statement**

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 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.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

#### **IMPORTANT NOTE:**

##### **Radiation Exposure Statement:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20cm** between the radiator & your body.

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

Country Code selection feature to be disabled for products marketed to the US/CANADA.

**Professional installation instruction**

The product will be distributed through controlled distribution channel and installed by trained professional and will not be sold directly to the general public through retail store.

**1. Installation personal**

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

**2. Installation location**

The product shall be installed at a location where the radiating antenna can be kept 20cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

**3. External antenna**

Use only the antennas which have been approved by the applicant. The non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC limit and is prohibited.

**4. Installation procedure**

Please refer to user's manual for the detail.

**5. Warning**

Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.