SG6200NXL/ZigBee Single Meter

Quick Start Guide

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9.2 ZigBee Configuration

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11.3 Remote Control

11.4 Remote Metering

Chapter 11: BEsmart APP testing

Chapter 1: Pair ZigBee Meter to SG6200NXL

STEP 1 Power on ZigBee Meter

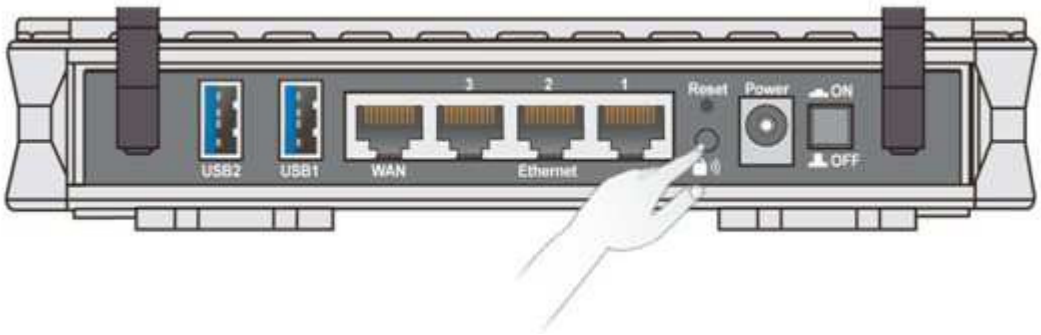
STEP 2 Check Status LED lit green or not

If Status LED lit green that mean ZigBee Meter is waiting mode, please go STEP 3

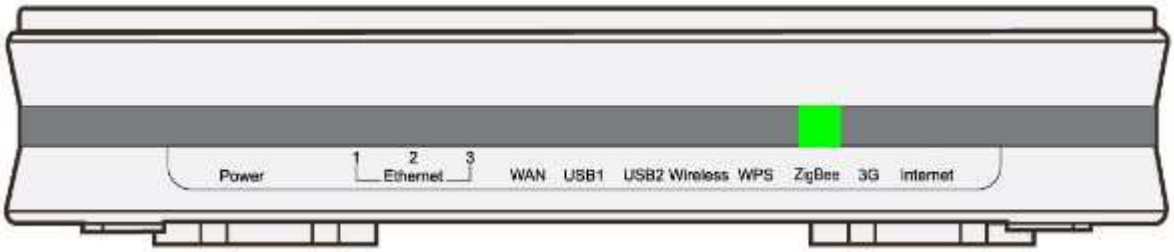
If Status LED blinking green that mean ZigBee Meter has been pair other SG6200NXL,

Before pair ZigBee Meter with SG6200NXL, please refer ZigBee Meter UM to do un-pairing.

STEP 3 Push ZigBee button on the rear panel of the ZigBee Coordinator to make a connection.



STEP 4 Then, ZigBee LED in the front panel will blink quickly around 60 seconds.



STEP 5 The smart meter will be automatically paired and joined to the ZigBee network.

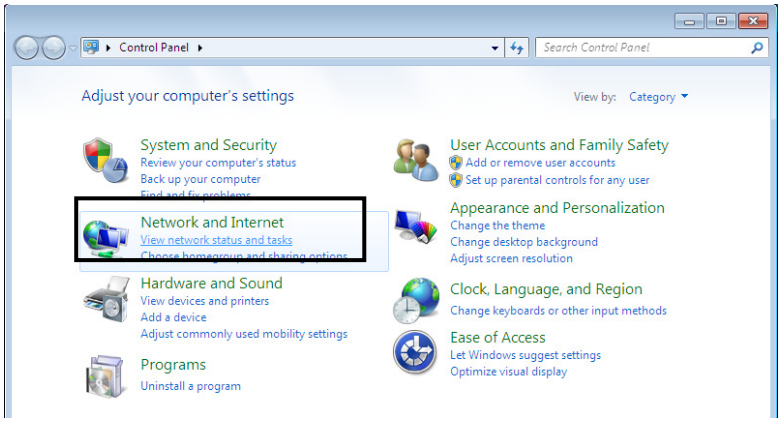
The Meter Status LED would blink slowly and steadily, indicating that the power meter is successfully paired

Chapter 2: Network Configuration

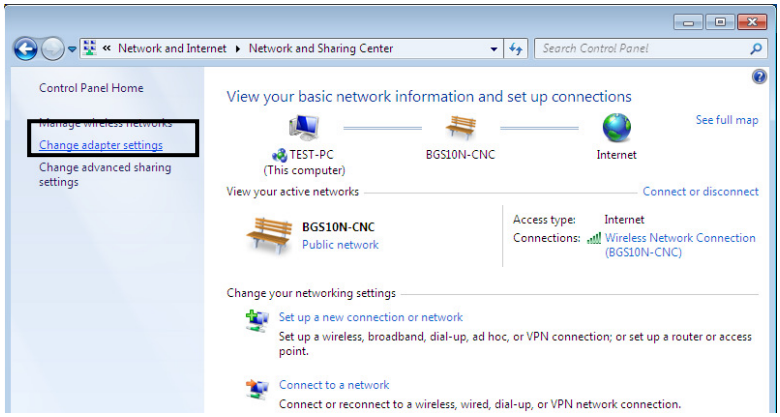
2.1Configuring a PC in Windows 7

1. Go to **Start**. Click on **Control Panel**.

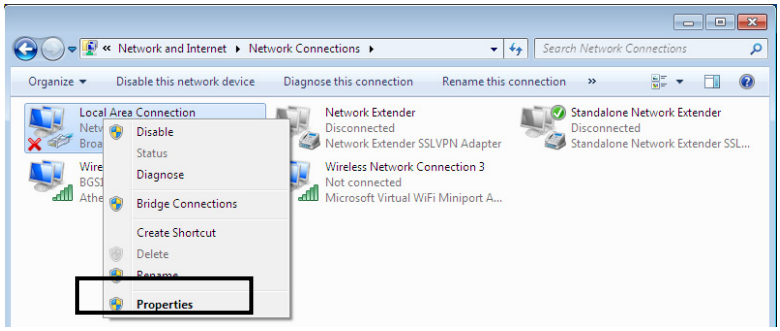
2. Then click on **Network and Internet**.



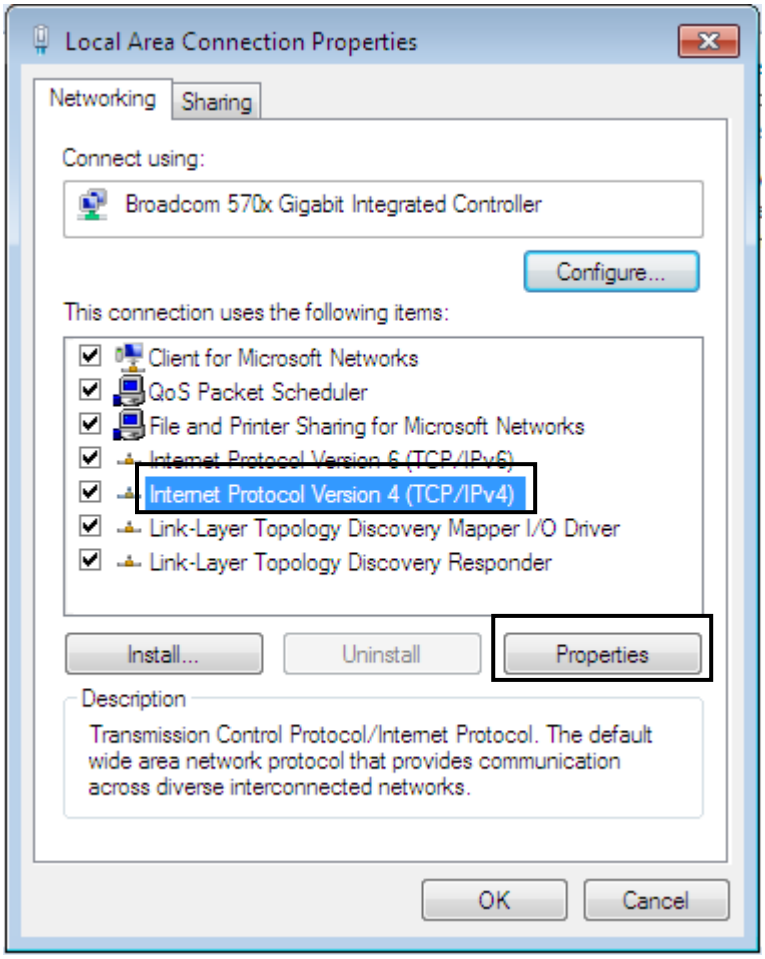
3. When the **Network and Sharing Center** window pops up, select and click on **Change adapter settings** on the left window panel.



4. Select the **Local Area Connection**, and right click the icon to select **Properties**.

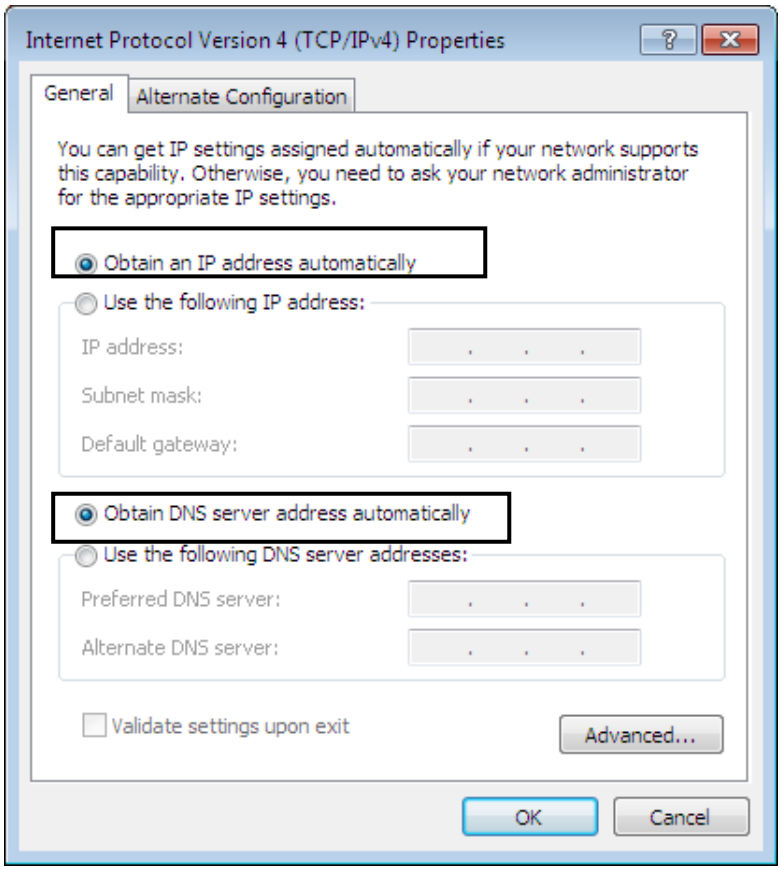


5. Select **Internet Protocol Version 4 (TCP/IPv4)** then click **Properties**.



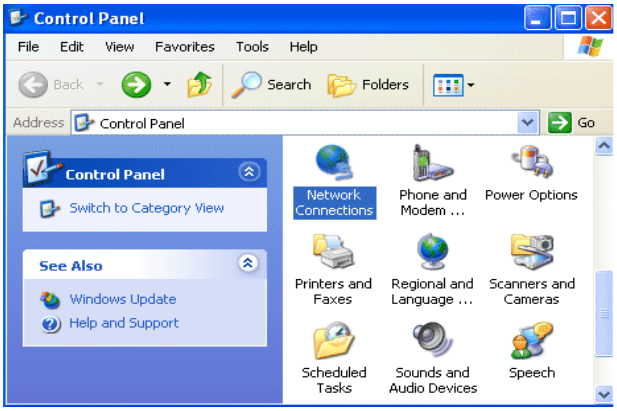
6. In the **TCP/IPv4 properties** window, select the **Obtain an IP address automatically** and **Obtain DNS Server address automatically** radio buttons. Then click **OK** to exit the setting.

7. Click **OK** again in the **Local Area Connection Properties** window to apply the new configuration.

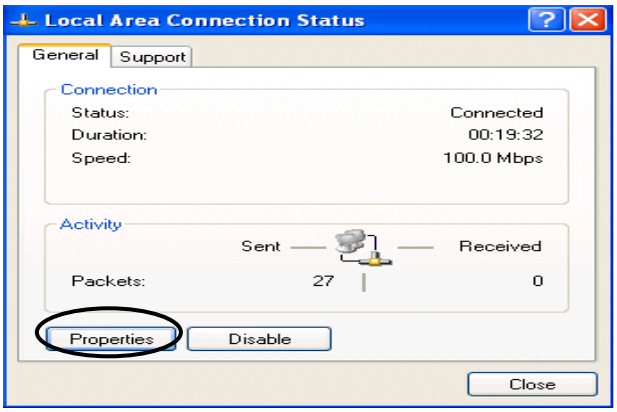


2.2Configuring a PC in Windows XP

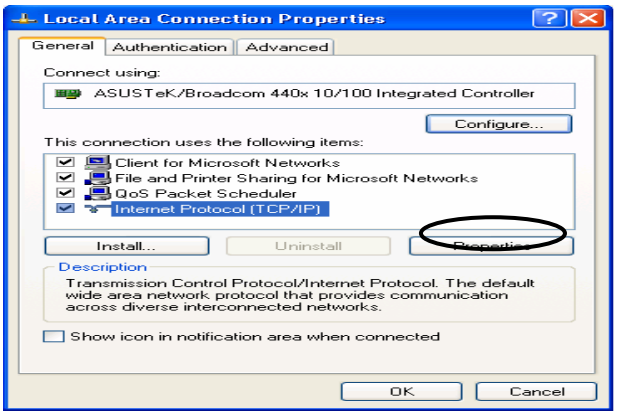
1. Go to **Start**. Click on **Control Panel.**
2. Then click on **Network and Internet**.



3. In the **Local Area Connection Status** window, click **Properties**.

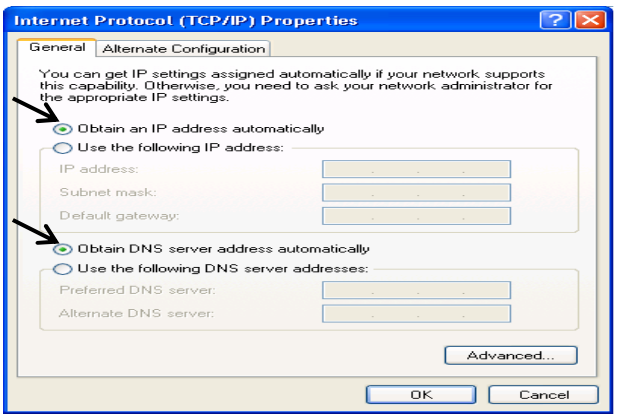


4. Select **Internet Protocol (TCP/IP)** and click **Properties**.



5. Select the **Obtain an IP address automatically** and the **Obtain DNS server address automatically** radio buttons.

6. Click **OK** to finish the configuration.



Chapter 3: Factory Default Settings

Before configuring the Billion SG6200NXL router, you need to know the following default settings.

Web Interface: (Username and Password)

- Username: admin
- Password: admin

The default username and password are “**admin**” and “**admin**” respectively.

Device LAN IP settings

- IP Address: 192.168.1.254
- Subnet Mask: 255.255.255.0

ISP setting in WAN site

- Obtain an IP Address Automatically

DHCP server

- DHCP server is enabled.
- Start IP Address: 192.168.1.100
- IP pool counts: 100

LAN and WAN Port Addresses

The parameters of LAN and WAN ports are preset at the factory. The default values are shown below

LAN Port		**WAN Port**
IP address	192.168.1.254	The DHCP function is *enabled* to automatically get the WAN port configuration from the ISP.
Subnet Mask	255.255.255.0	
DHCP server function	Enabled in ports 1, 2 and 3	
IP addresses for distribution to PCs	100 IP addresses continuing from 192.168.1.100 through 192.168.1.199	

Chapter 4: Information from your ISP

Before configuring this device, you have to check with your ISP (Internet Service Provider) what kind of services are provided, such as PPPoE, Obtain an IP Address Automatically, Fixed IP address.

Gather the information as illustrated in the following table and keep it for reference.

PPPoE	Username, Password, Service Name, and Domain Name System (DNS) IP address (it can be automatically assigned by your ISP when you connect or be set manually).
Obtain an IP Address Automatically	DHCP Client (it can be automatically assigned by your ISP when you connect or be set manually).
Fixed IP Address	IP address, Subnet mask, Gateway address, and Domain Name System (DNS) IP address (it is fixed IP address).

Chapter 5: Configuring with your Web Browser

Open your web browser, enter the IP address of your SG6200NXL, which by default is **192.168.1.254**, and click "**Go**", a user name and password window prompt appears. Enter the user name and password that your **Administrator** has set for you and select the **Account Type**, then click **Login**. When you are authorised, you will access to the router.The default username and password are **"admin"** and **"admin"** respectively for the Administrator account type.

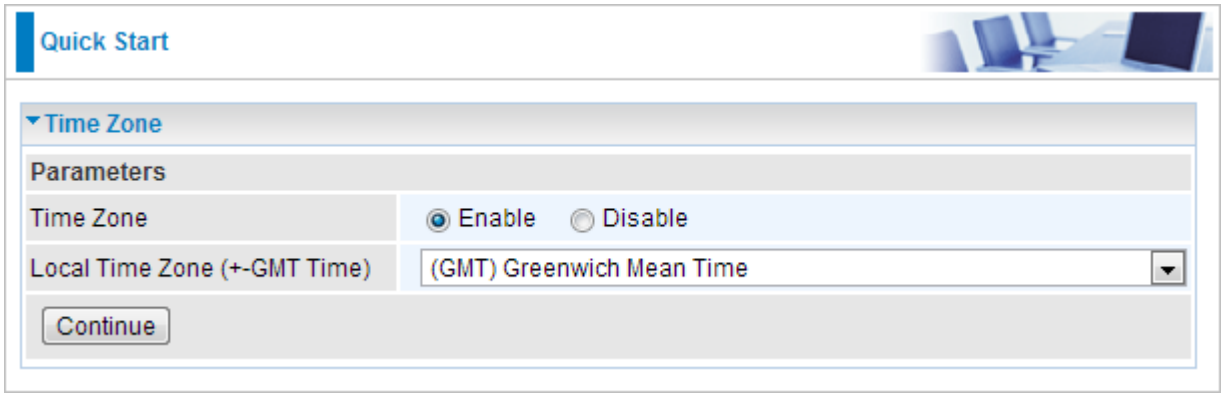
5.1: Internet Connection

First of all, set internet connection via Quick start

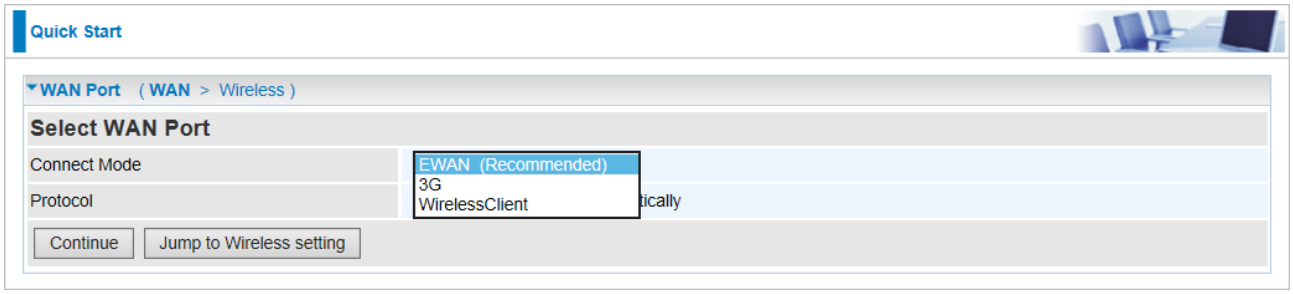
Route

Basic->Quick Start

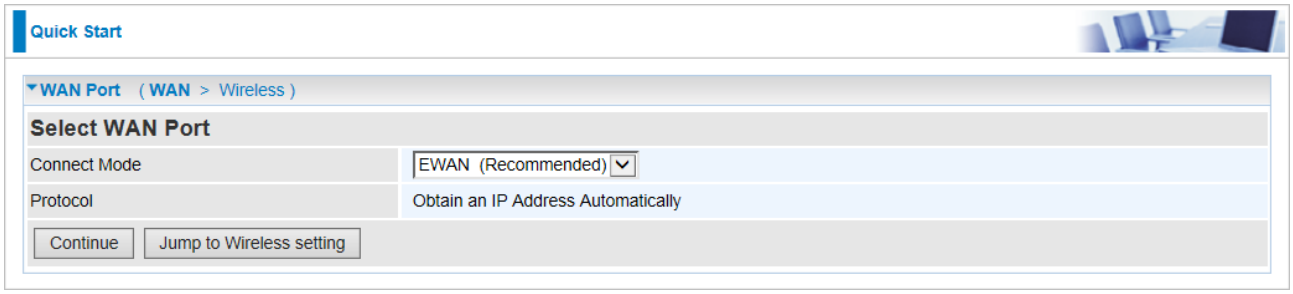
Set Time Zone of your country, then click Continue



Set WAN port interface, there are three kinds of WAN interface, EWAN, 3G, Wireless Client



5.1.1 EWAN



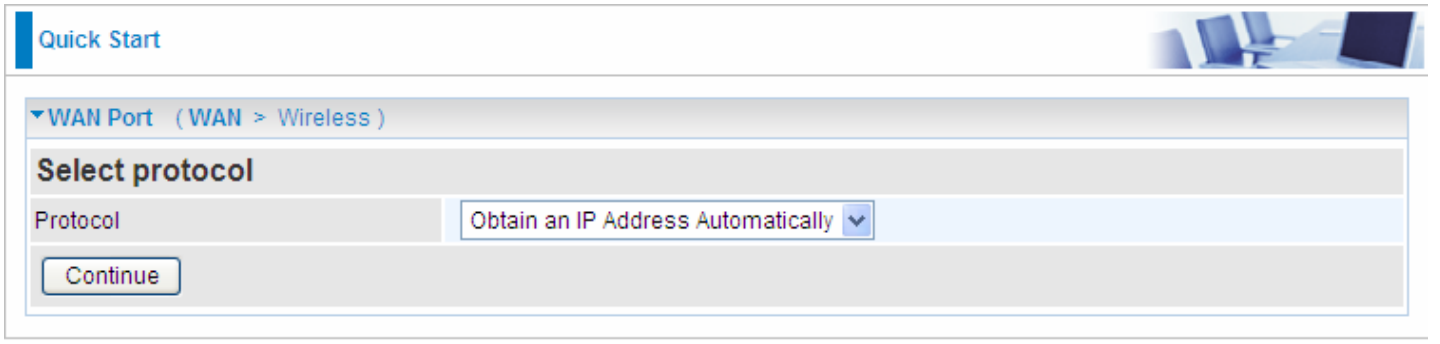
Connect mode: EWAN

Protocol: The current protocol in the device.

Click on **Continue** to choose the Protocol to connect with EWAN or click **Jump to Wireless Setting** to use Protocol: Obtain an IP Address Automatically to connect and setup wireless settings at the same time.

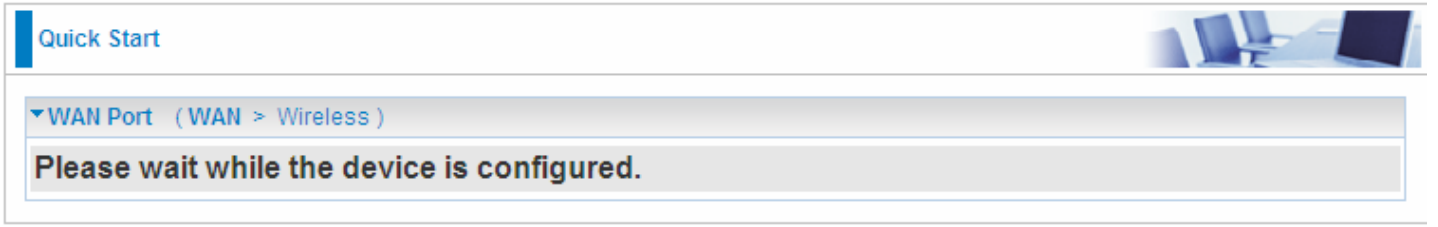
Obtain an IP Address Automatically

When connecting to the ISP, Billion SG6200NXL also functions as a DHCP client. Billion SG6200NXL can automatically obtain an IP address, subnet mask, gateway address, and DNS server addresses if the ISP assigns this information via DHCP.

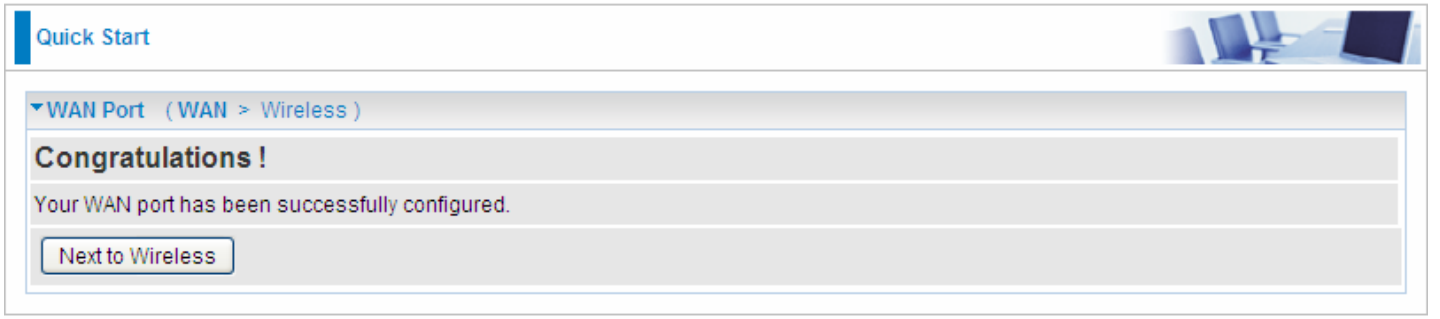


Protocol: The current protocol in the device

Click on the **Continue** button and wait for your connection to be connected.

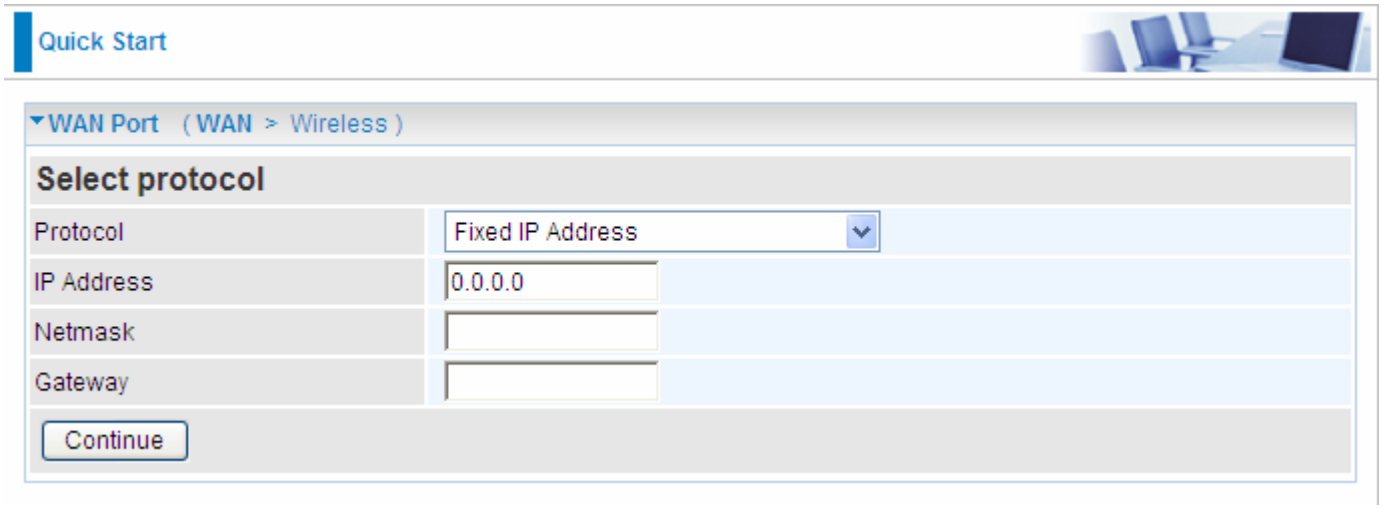


If connection is successful the following image will be shown.



Fixed IP Address

Select this option to set static IP information. You will need to enter in the Connection type, IP address, Netmask, and gateway address, provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x). The Router will not accept the IP address if it is not in this format.



Protocol: The current ATM protocol in the device

IP Address: Your WAN IP address. Leave this at 0.0.0.0 to automatically obtain an IP address from your ISP.

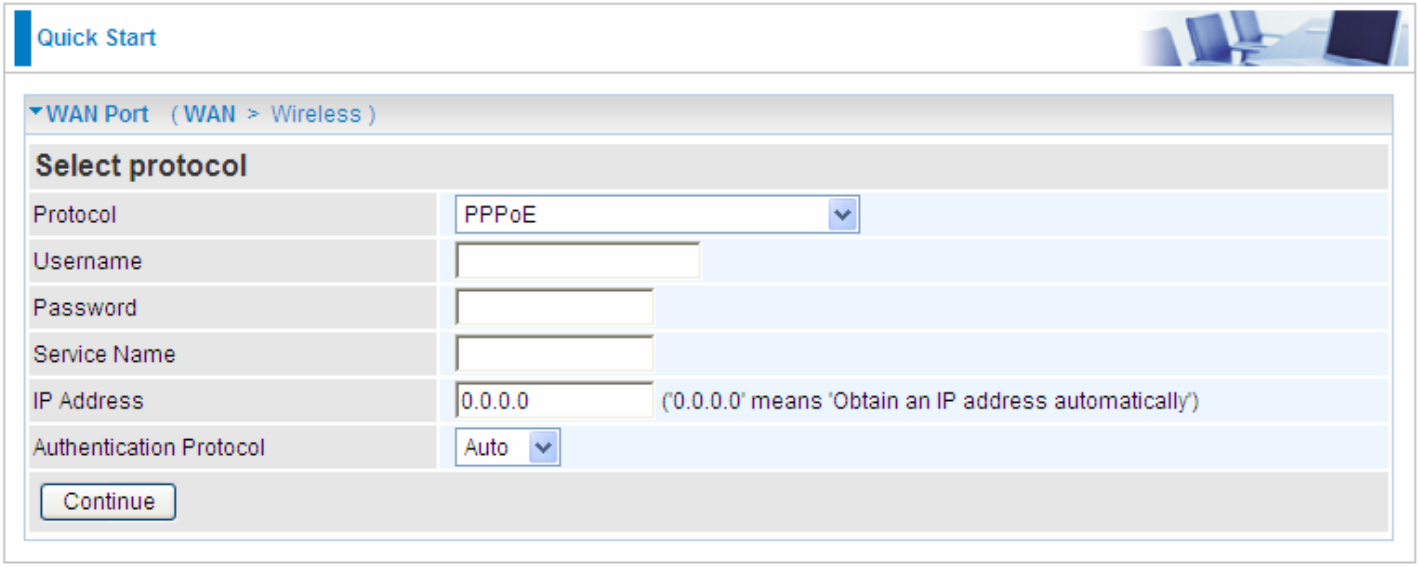
Netmask: The default is 0.0.0.0. User can change it to other such as 255.255.255.0.Type the subnet mask assigned to you by your ISP (if given).

Gateway: You must specify a gateway IP address (supplied by your ISP)

Click on the **Continue** button and wait for your connection to be connected.

PPPoE

PPPoE (PPP over Ethernet) provides access control in a manner similar to dial-up services using PPP.



Protocol: The current ATM protocol in the device

Username: Enter the username provided by your ISP. You can input up to 128 alphanumeric characters (case sensitive). This is in the format of “username@ispname” instead of simply “username”.

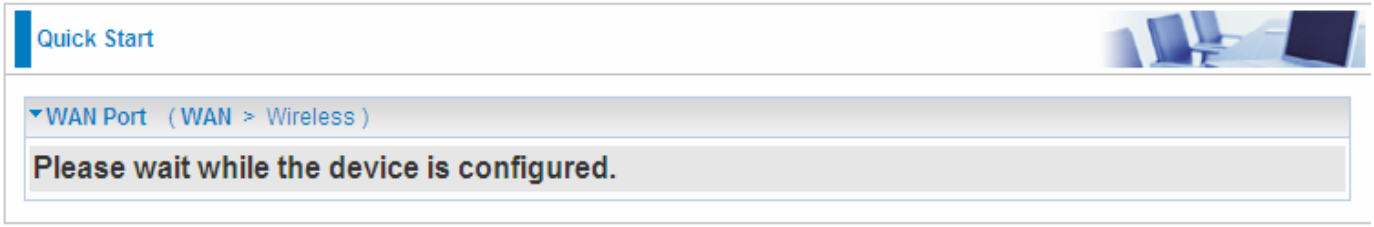
Password: Enter the password provided by your ISP. You can input up to 128 alphanumeric characters (case sensitive).

Service Name: Enter a name for this connection.

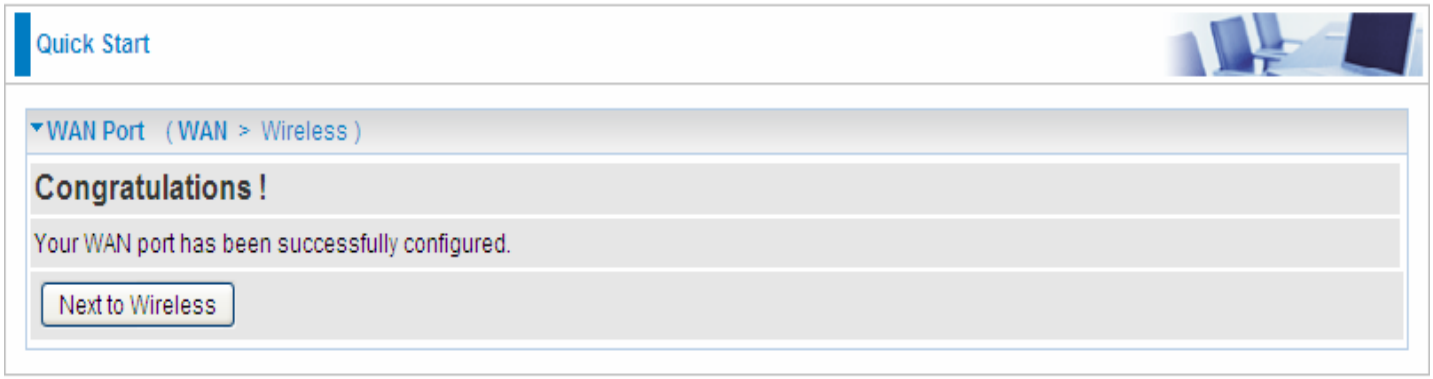
IP Address: Your WAN IP address. Leave this at 0.0.0.0 to automatically obtain an IP address from your ISP.

Auth. Protocol: Default is Auto. Your ISP advises on using Chap or Pap.

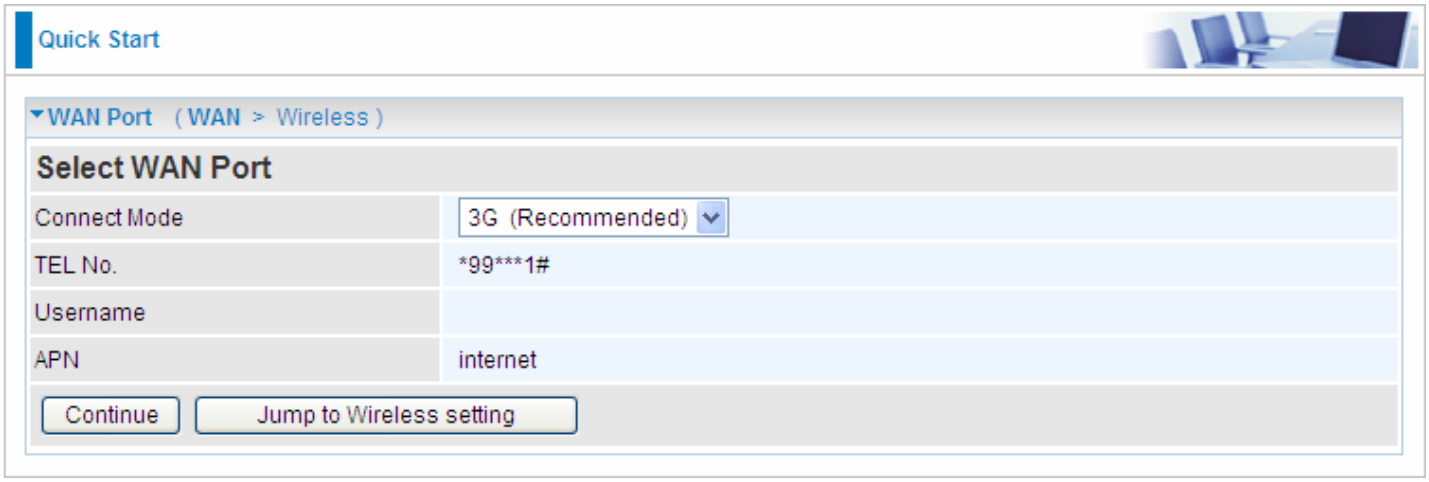
Click on the **Continue** button and wait for your connection to be connected.



If connection is successful the following image will be shown.



5.1.2 3G



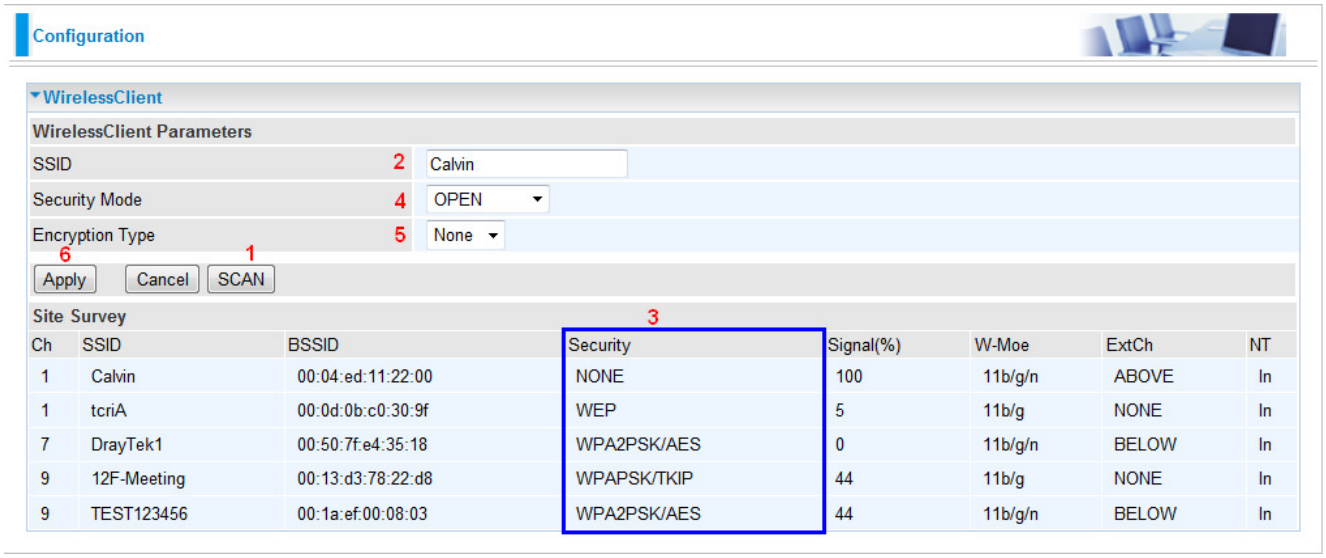
Connect mode: 3G

TEL No.: The dial string to make a GPRS / 3G user internetworking call. It may be provided by your mobile service provider.

Username: Enter the username provided by your service provider.

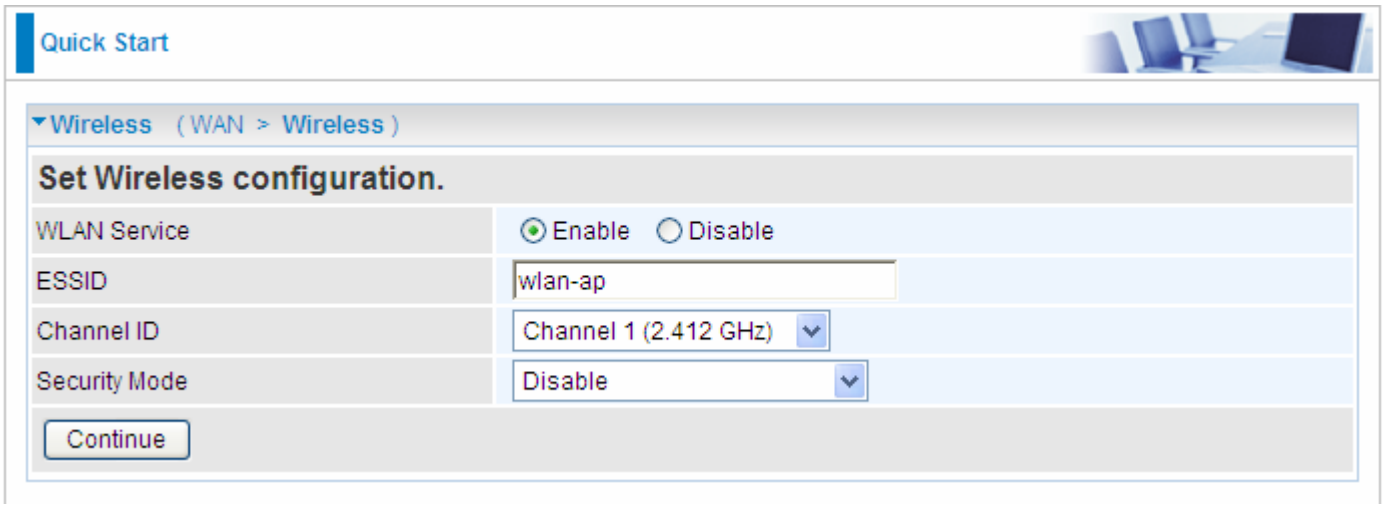
APN: An APN is similar to a URL on the WWW, it is what the unit makes a GPRS / UMTS call. The service provider is able to attach anything to an APN to create a data connection. Requirements for APN assignment varies between different service providers. Most service providers have an internet portal which they connect a DHCP Server to, giving you access to the internet i.e. Some 3G operators use the APN ‘internet’ for their portal. The default value of APN is “internet”.

5.1.3 Wireless Client



1. Click SCAN to search for the available Wi-Fi device
2. Choose Wi-Fi device you want
3. Confirm the security type
4. Choose security mode
5. Choose security type
6. Click Apply, then the internet would be connected through wireless client.

5.2 Set Wireless configuration



WLAN Service: Default setting is set to **Enable**.

ESSID: The ESSID is the unique name of a wireless access point (AP) to be distinguished from another. For security propose, change to a unique ID name to the AP which is already built-in to the router's wireless interface. It is case sensitive and must not excess 32 characters. Make sure your wireless clients have exactly the ESSID as the device, in order to get connected to your network.

Channel ID: Select the ID channel that you would like to use.

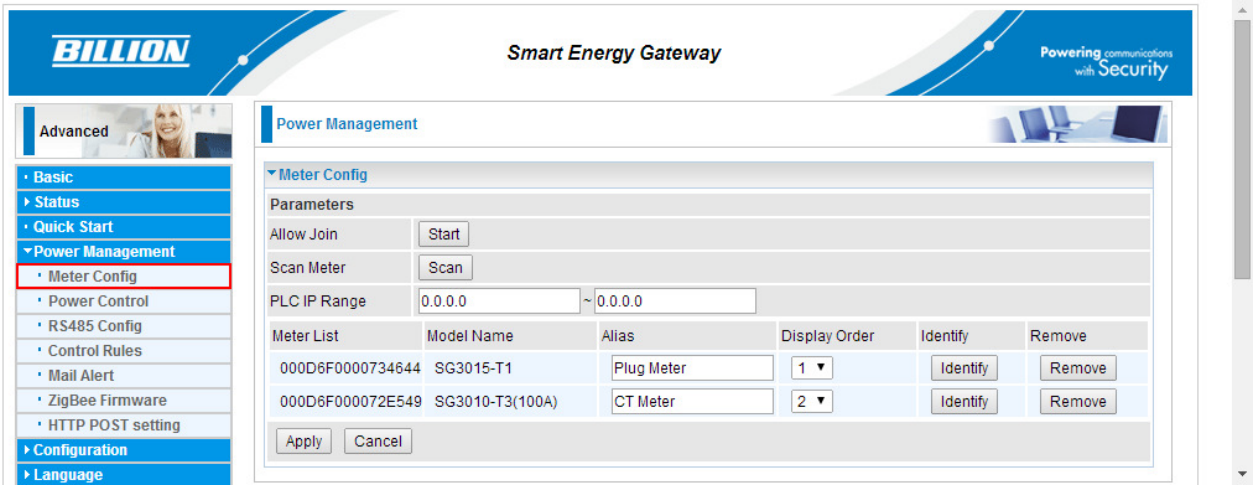
Security Mode: You can disable or enable with WPA or WEP for protecting wireless network. The default mode of wireless security is **Disable**.

Chapter 6: Energy management of WEB GUI

SG6200NXL build simple ZigBee Application in WEB GUI, System Integrator can monitor real time power information and remote control ZigBee meter (SG3010, SG3015 serials) on the WEB GUI.

6.1 ZigBee Configuration

Once ZigBee Meter joined ZigBee Network, this page will show on ZigBee information.
Advance->Power Management-> Meter Config



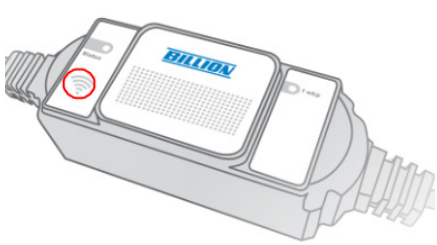
Allow Join: SG6200NXL will start allow ZigBee node joining to ZigBee Network. **(Billion API support)**

Scan Meter: Show the current ZigBee nodes on the WEB GUI. **(Billion API support)**

Meter List: Show the EUI64 of ZigBee nodes.

Alias: Setup alias name for ZigBee nodes. **(Billion API support)**

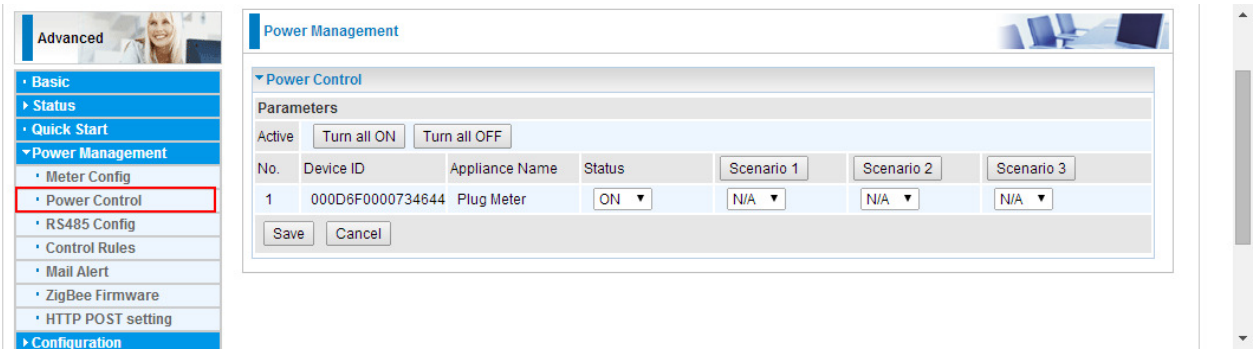
Identify: Click Identify button the hidden LED will be blinking orange, it can help System Integrator can find out right ZigBee node after ZigBee node has been installed. **(Billion API support)**



Remove: Remove ZigBee nodes from ZigBee Network. **(Billion API support)**

6.2 Remote Control

Advance->Power Management-> Meter Config



Turn all ON: Turn all ZigBee nodes (within Relay) ON **(Billion API support)**

Turn all OFF: Turn all ZigBee nodes (within Relay) OFF **(Billion API support)**

Device ID: EUI64 of ZigBee nodes

Application Name: Base on Alias name

Status: Turn ON/OFF one ZigBee node (within Relay) **(Billion API support)**

Scenario: Do group control **(Billion API support)**

Support List:

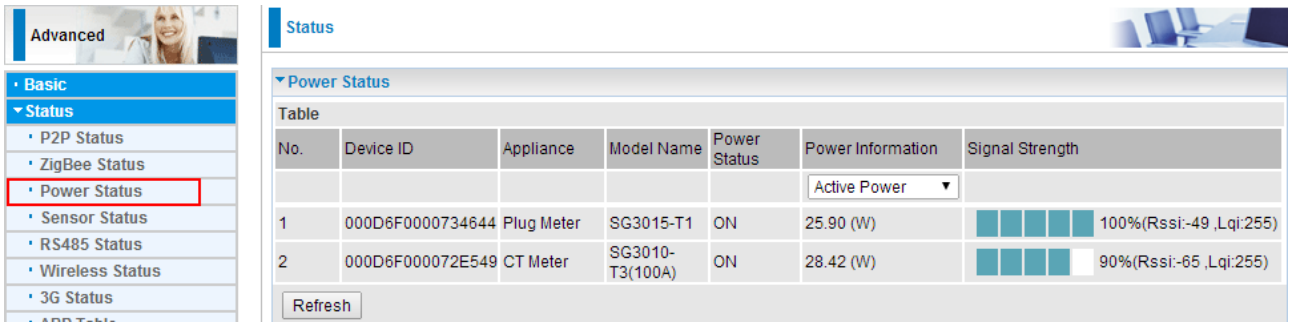
SG3010-T1, SG3010-T2, SG3015-T1, SG3015-T2, SG3010-iCB, SG200

6.3 Remote monitor

Show various power information from ZigBee Meters measured

Route

Advance->Status->Power Status



Device ID: EUI64 of ZigBee Meters

Appliance: Base on Alias Name

Power Status: The current relay status of ZigBee Meter **(Billion API support)**

Power information:

Show Power information include Voltage, Current, Frequency, PF, Active Power, Apparent Power, Main Energy **(Billion API support)**

Signal Strength: Show the Signal Strength between ZigBee nodes and next ZigBee nodes.

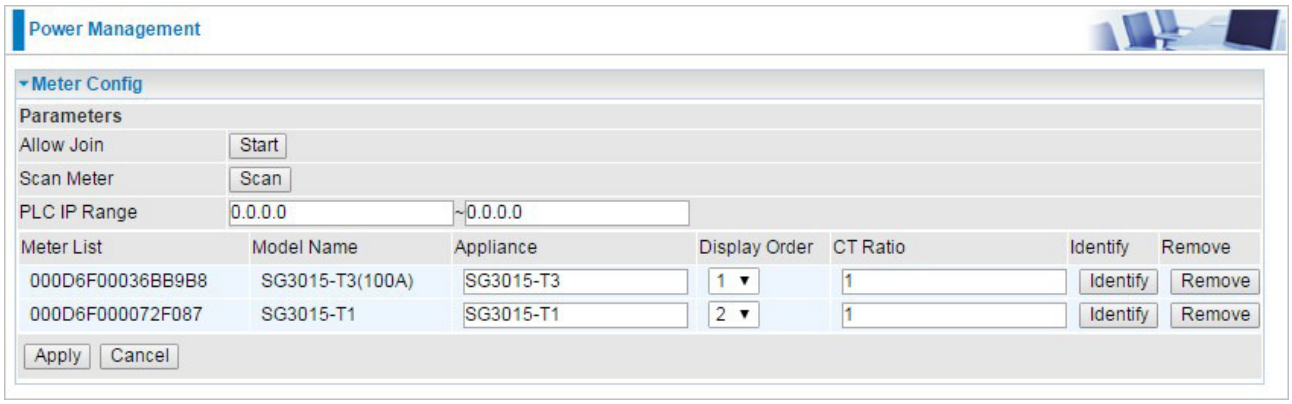
Chapter 7: SG3010-T1/SG3015-T1 Testing

7.1 Quick Installation for testing

Regarding the installation for real environment, please refer UM of SG3015

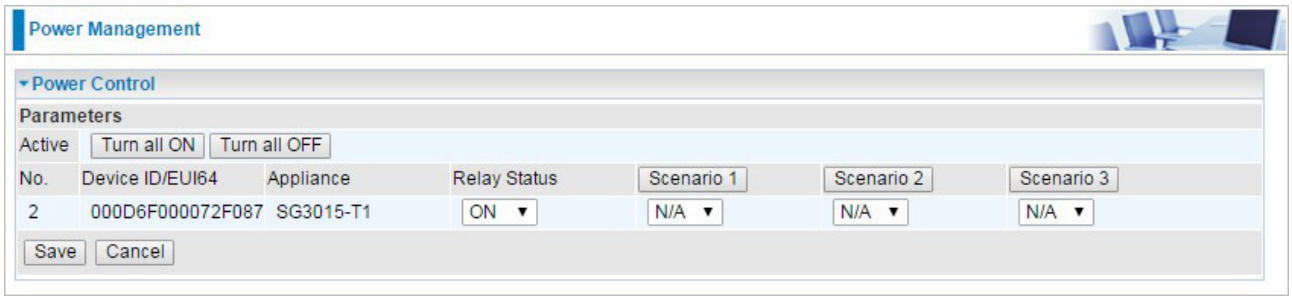
7.2 ZigBee Configuration

Advance->Power Management->Meter Config



7.3 Remote Control

Advance->Power Management->Power Control



7.4 Remote Metering

Advance->Status->Power Status

Click Blue Link can see detail power information.

Status

Meter Status

Device Information			
Model Name	SG3015-T1	Relay Status	ON
Device ID/EUI64	000D6F000072F087	Time Stamp	Thu Jul 2 18:22:48 2015
Appliance	SG3015-T1	Signal Strength	100%(Rssi:-59)
Power Information			
Voltage	110.36 (V)	Active Power	25.40 (W)
Current	0.23 (A)	Apparent Power	25.40 (VA)
Frequency	60.10 (HZ)	Main Energy	7.177 (kWh)
Power Factor	100 %	Negative Main Energy	N/A (kWh)

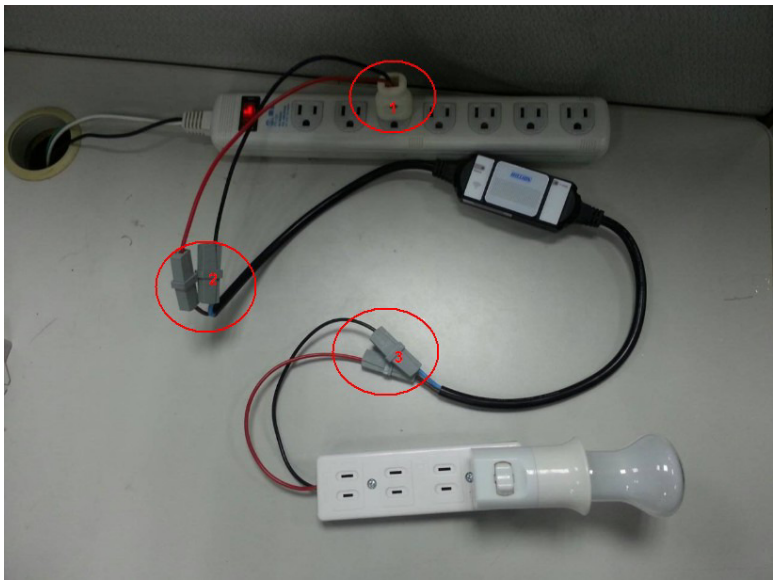
Refresh Return

Chapter 8: SG3010-T2/SG3015-T2 Testing

8.1 Quick Installation for testing

If you would like to quickly install SG3010-T2/SG3015-T2 for testing, you can refer the picture as below. Regarding the installation for real environment, please refer UM of SG3015

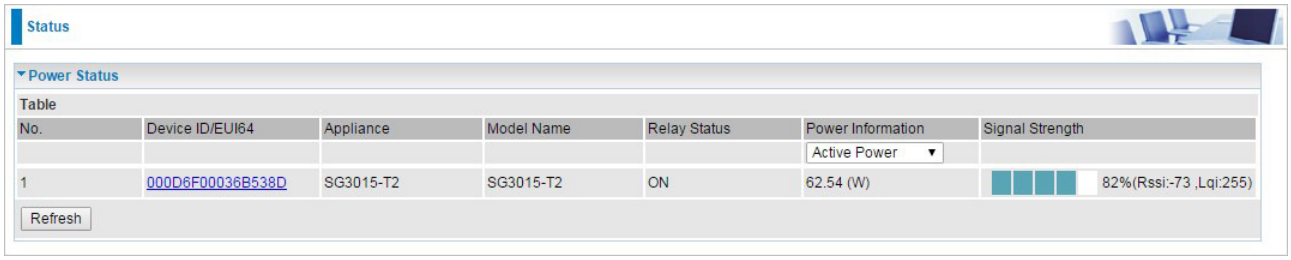
1. Voltage input of SG3015-T2
2. Voltage output of SG3015-T2
3. Prepare two connectors in order to connect between meter and power cable
4. Prepare a plug with power cable
5. Prepare a outlet with power cable.



1. Voltage input connects power cable with plug by connectors.
2. Plug into power outlet in order to measure the voltage.
3. Voltage output connects power cable with outlet by connectors.

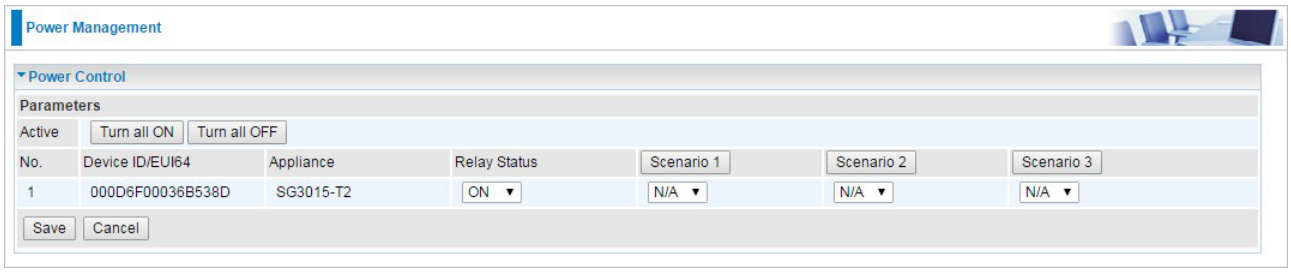
8.2 ZigBee Configuration

Advance->Power Management->Meter Config



8.3 Remote Control

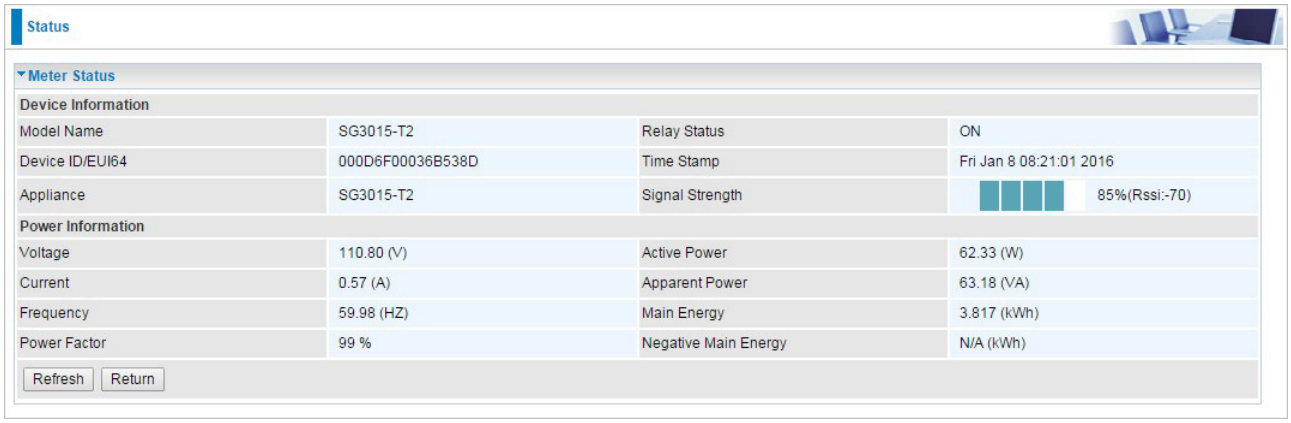
Advance->Power Management->Power Control



8.4 Remote Metering

Advance->Status->Power Status

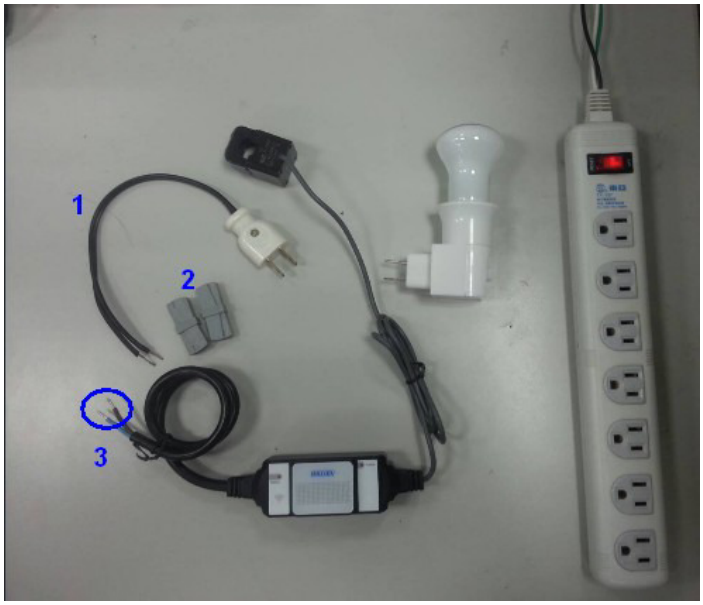
Click Blue Link can see detail power information.



Chapter 9: SG3010-T3/SG3015-T3 Testing

9.1 Quick Installation for testing

If you would like to quickly install SG3010-T3/SG3015-T3 for testing, you can refer the picture as below. Regarding the installation for real environment, please refer UM of SG3015

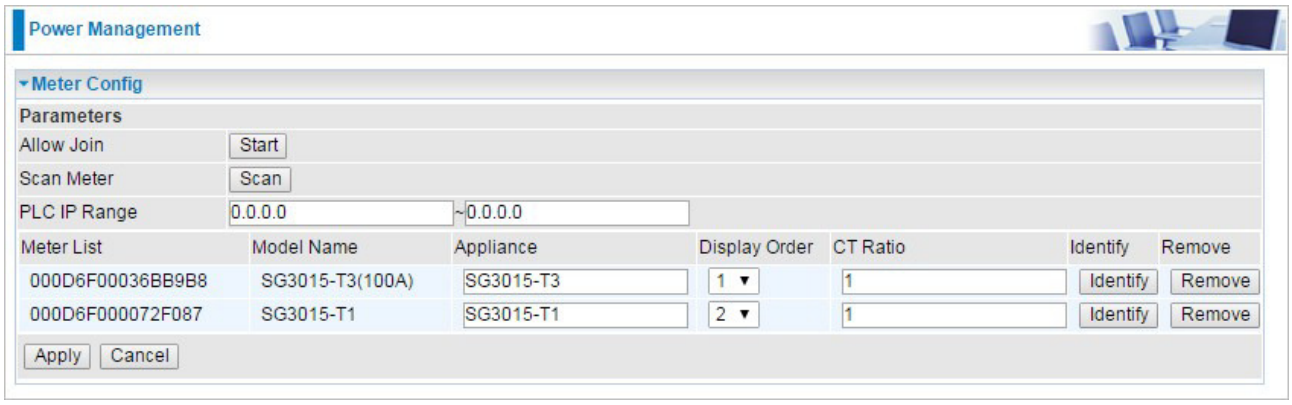


1. Prepare a plug with power cable
2. Prepare two connectors in order to connect between meter and power cable.
3. Voltage input of SG3015-T3

1. SG3015-T3 connects power cable with plug by connectors.
2. Plug into power outlet in order to measure the voltage.
3. Current Transformer of SG3015-T3 clamps power cable of power outlet in order to measure the current value of power outlet.

9.2 ZigBee Configuration

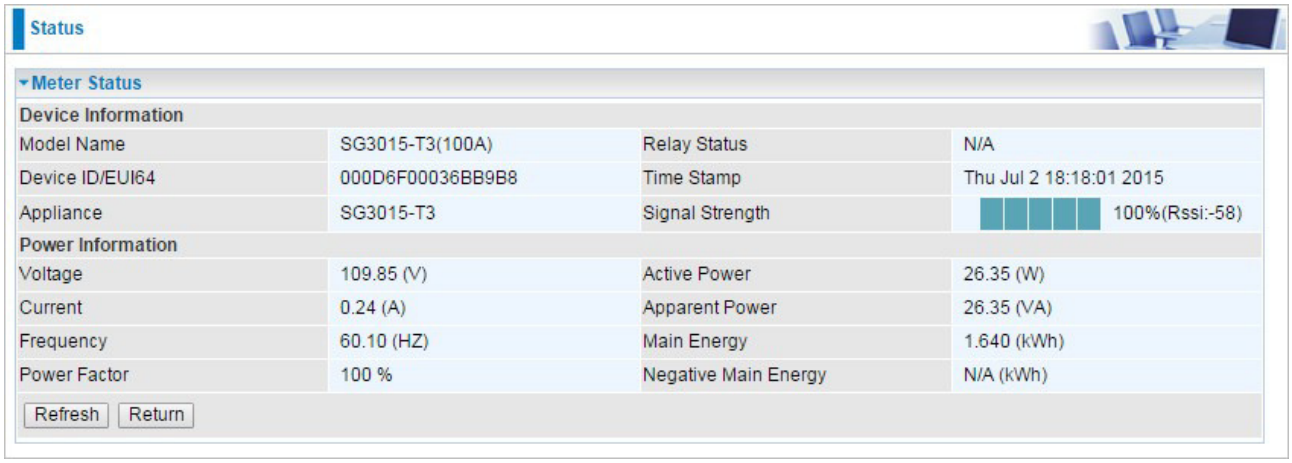
Advance->Power Management->Meter Config



9.3 Remote Metering

Advance->Status->Power Status

Click Blue Link can see detail power information.



Chapter 10: SG3010-T4/SG3015-T4 Testing

10.1 Quick Installation for testing

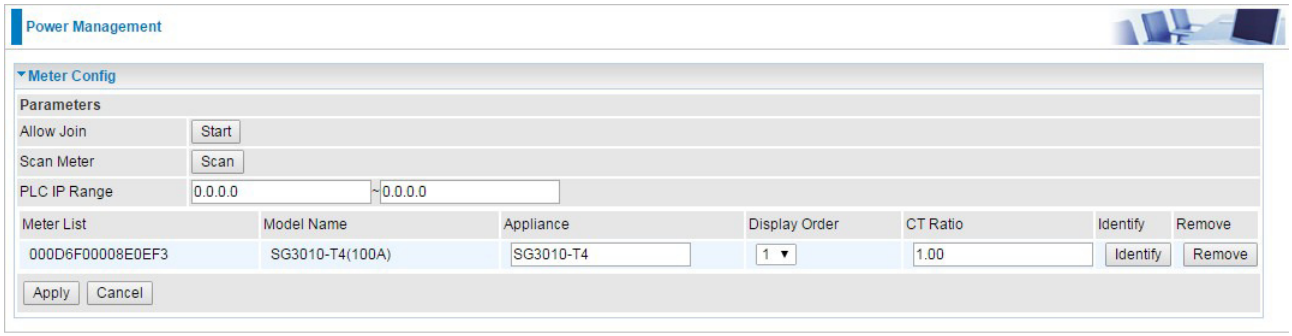
If you would like to quickly install SG3010-T4/SG3015-T4 for testing, you can refer the picture as below. Regarding the installation for real environment, please refer UM of SG3015

1. Prepare a plug with power cable
2. Prepare two connectors in order to connect between meter and power cable.
3. Voltage input of SG3015-T4

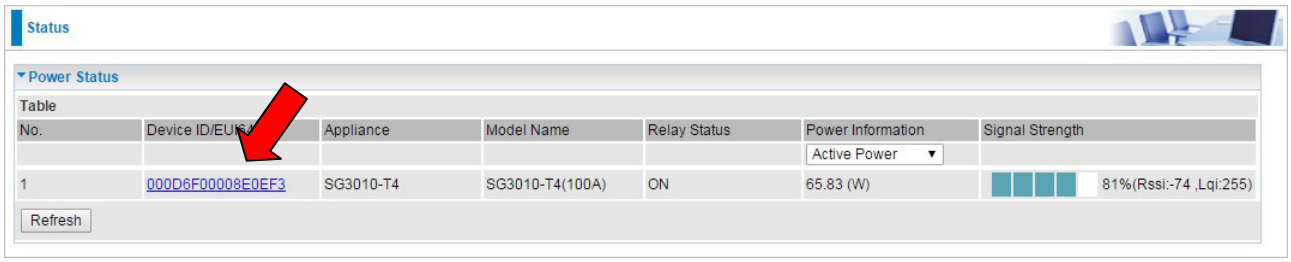
1. SG3015-T4 connects power cable with plug by connectors.
2. Plug into power outlet in order to measure the voltage.
3. Current Transformers of SG3015-T4 clamps same power cable of power outlet in order to measure the current value of power outlet.

10.2 ZigBee Configuration

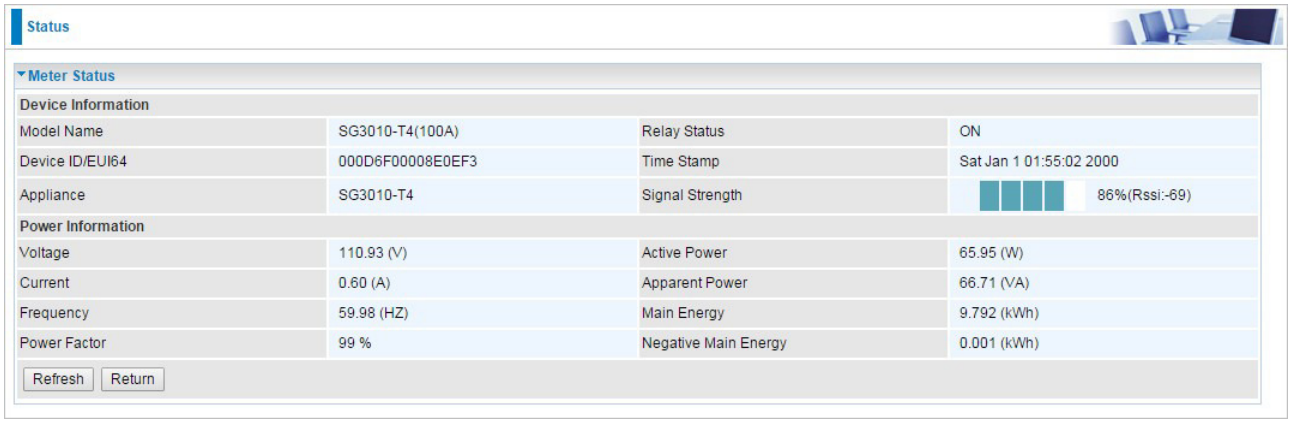
Advance->Power Management->Meter Config



10.3 Remote Metering



Click Blue Link can see detail power information.

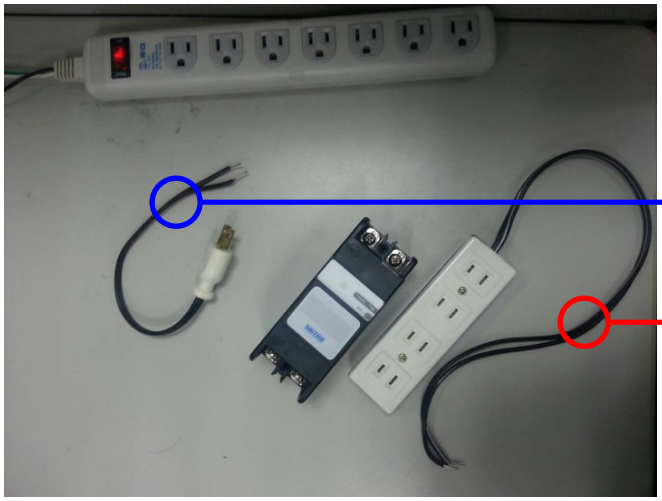


Chapter 11: SG3010-iCB Testing

11.1 Quick Installation for Testing

If you would like to quickly install SG3010-iCB for testing, you can refer the picture as below.

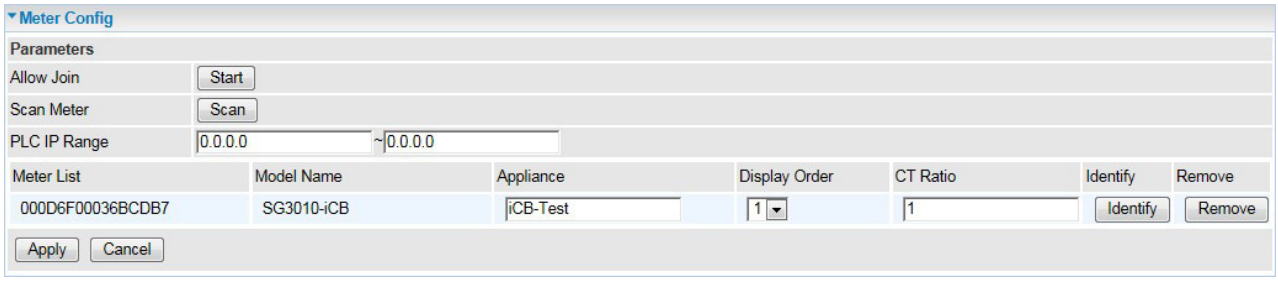
Regarding the installation for real environment, please refer UM of SG3010-iCB.



11.2 ZigBee Configuration

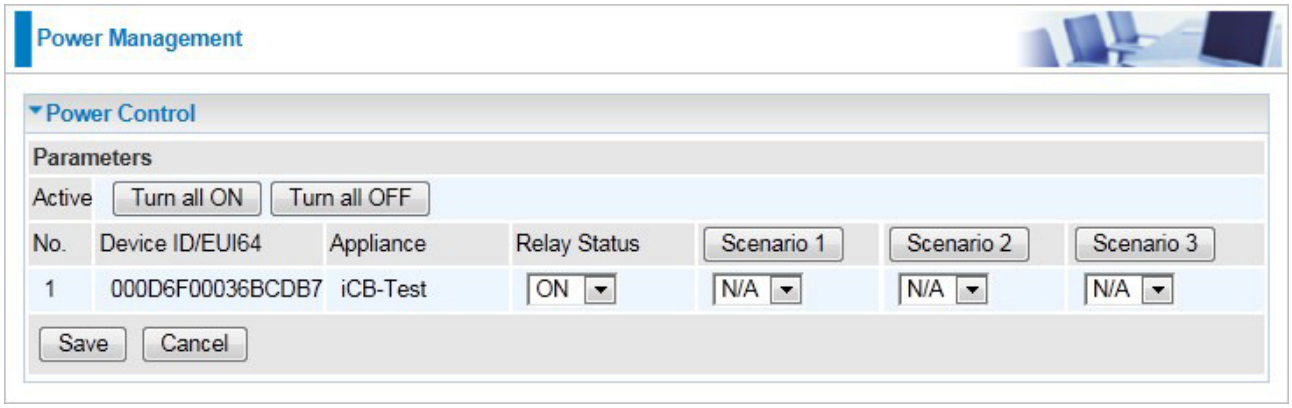
Advance->Power Management->Meter Config

Configured your meter



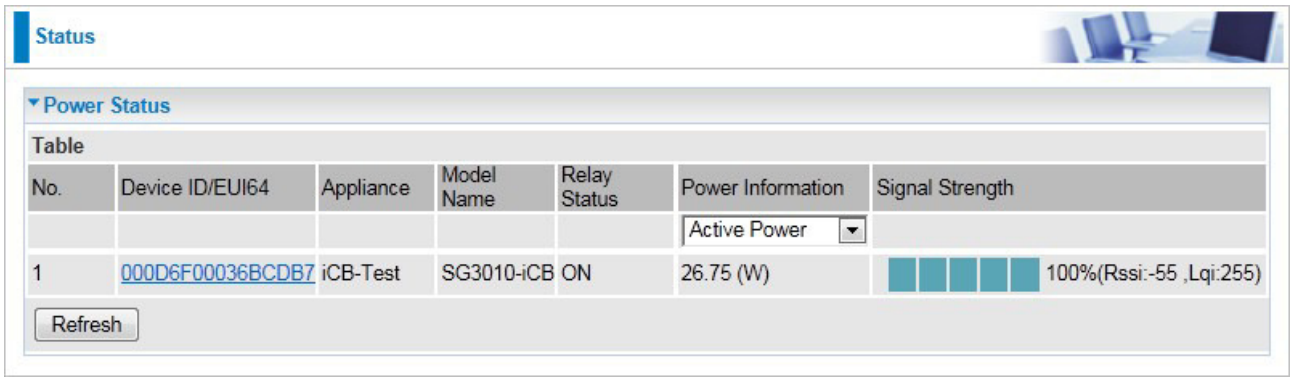
11.3 Remote Control

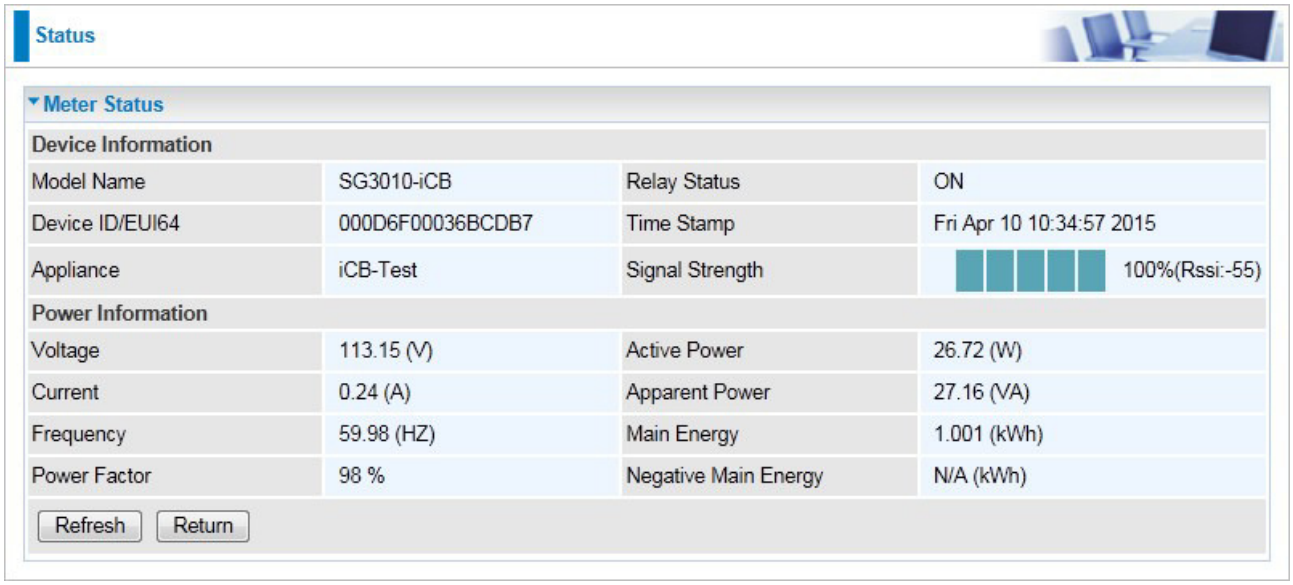
Advance->Power Management->Power Control



11.4 Remote Metering

Advance->Status->Power Status





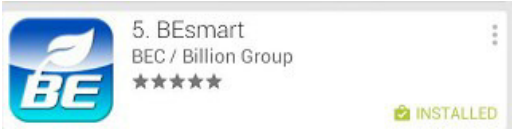
Chapter 12: BEsmart APP testing

Diagram

The BEsmart APP connects SG6200NXL by WIFI, user can use BEsmart APP to control and monitor the ZigBee device from SG6200NXL.

Download BEsmart APP

Before using BEsmart APP, please download BEsmart APP from Google Play or APP store.

Please search for “BEsmart”, 

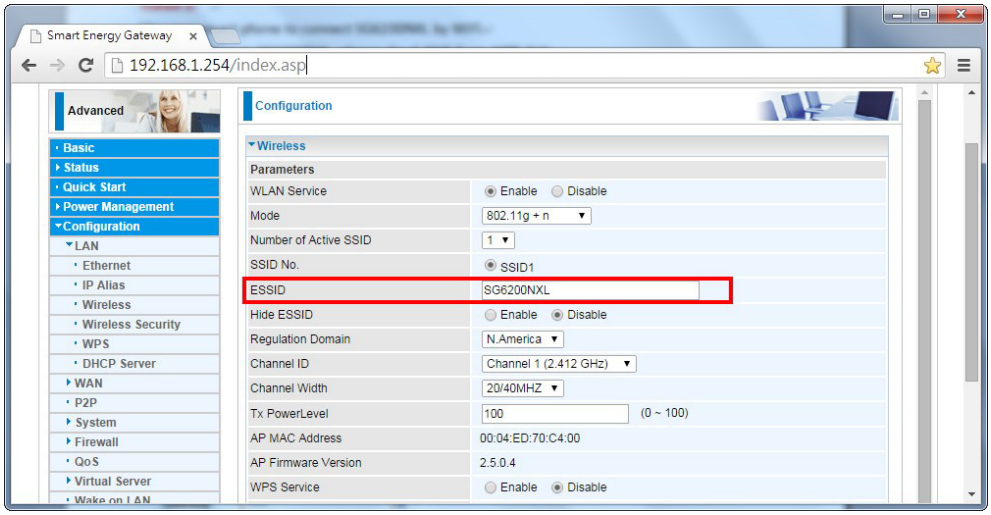
and then click install to download the APP to your smart phone.

BEsmart APP Login

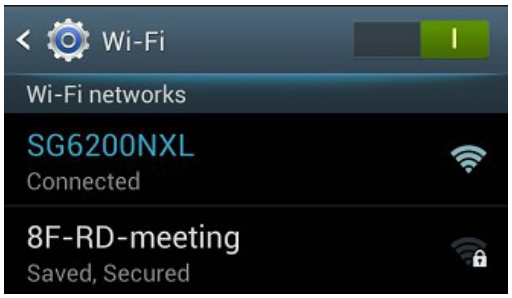
STEP-1 Check and modify SSID of SG6200NXL

Before connect to SG6200NXL, please check SSID from WEB GUI.

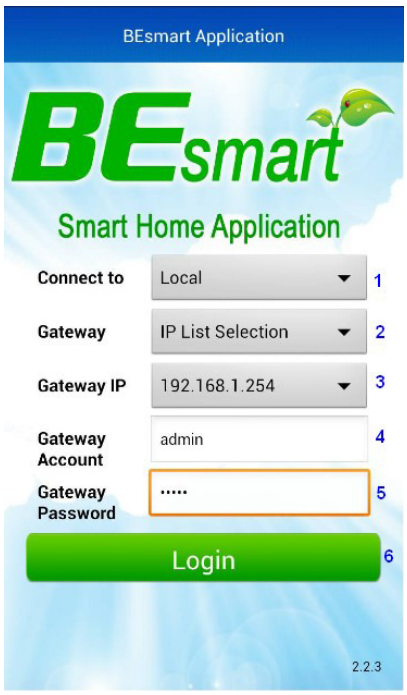
Advance->Configuration->LAN->Wireless



STEP-2 Connect to SG6200NXL by WiFi



STEP-3 Click BEsmart icon to login BEsmart APP



1. Choose connect to Local
2. Chose Gateway Auto
3. Check Gateway IP is 192.168.1.254
4. Gateway Account is admin
5. Gateway Password is admin
6. Click Login

BEsmart APP Main Page

Power Metering:

1. Read real time power data from meter reading

Remote Control:

1. Real time power control ZigBee meters.
2. Schedule power control.

Temperature/Humidity

1. Read real time temperature and humidity data from sensor monitoring.
2. Control Rule for sensors

Smart Lighting Control

1. Real time power control Lighting device.
2. Real time dimming lighting device.
3. Schedule power control and dimming.

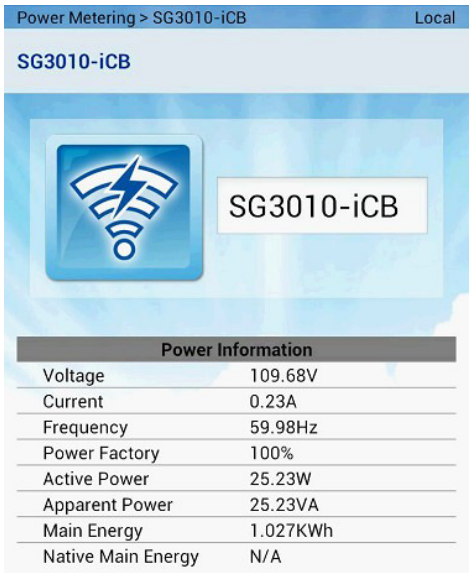
Settings:

1. Set BEsmart setting.

Power Metering:

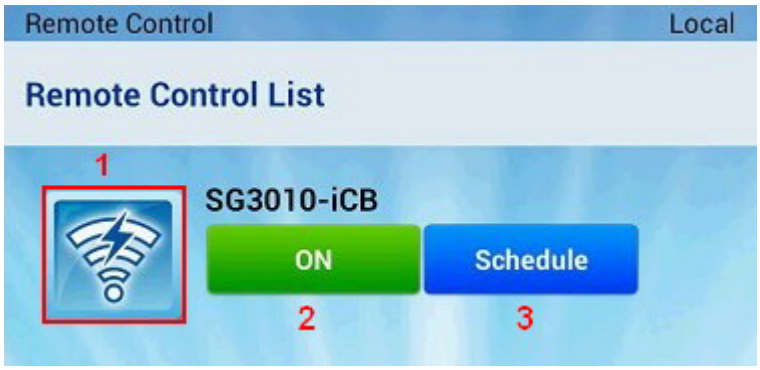
1. Check detail information of ZigBee device

2. Check detail power information of ZigBee meter measured.

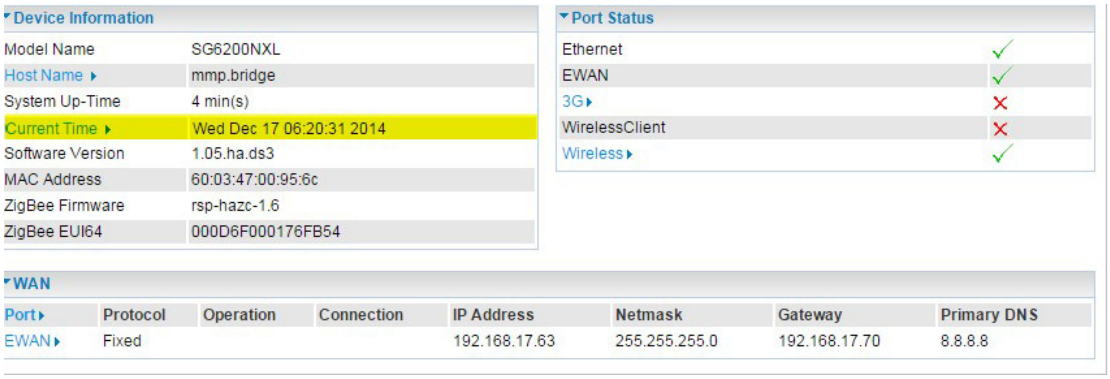


3. Check what ZigBee device you are checking now.
   After click Identify button, the ZigBee device will blink orange.
   Then you will know what device you are checking now.

Remote Control



If you would like to test the schedule function, please ensure the SG6200NXL connected to internet and get correct time.



Device Information

Model Name	SG6200NXL
Host Name	mmp.bridge
System Up-Time	4 min(s)
Current Time	Wed Dec 17 06:20:31 2014
Software Version	1.05.ha.ds3
MAC Address	60:03:47:00:95:6c
ZigBee Firmware	rsp-hazc-1.6
ZigBee EUI64	000D6F000176FB54

Port Status

Ethernet	✓
EWAN	✓
3G	✗
WirelessClient	✗
Wireless	✓

WAN

Port	Protocol	Operation	Connection	IP Address	Netmask	Gateway	Primary DNS
EWAN	Fixed			192.168.17.63	255.255.255.0	192.168.17.70	8.8.8.8