

# **CERIO Corporation**

## **OW-200N2-X/OW-215N2-X**

### **Quick Installation Guide**



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# 1. Introduction

**OW-200N2-X/OW-215N2-X** may connect to the WiFi mesh or WDS infrastructure and provides the subscriber with an Ethernet connection for a local access .to extend the range and increase the performance of our wireless network.. The outdoor bridge may connect to the **WiFi Mesh** or **WDS** infrastructure and provides the subscriber with an Ethernet connection for a local access . also with **included PoE**, power and data are supplied to the unit using CAT5 Ethernet cable and supports PoE the Bridge transmission functional design, when **OW-200N2-X/OW-215N2-X** uses the PoE Ethernet(LAN1) port the electricity, may Bridge(LAN2) port transmit again using PoE the Ethernet the surplus electric power for next PoE PD the electricity equipment installment use and enables you to be possible to serially connect 48V Passive PoE directly the IPCAM monitoring equipment, like this omits for needs construction 48V the PoE power source to supply again for must receive the electricity the terminal IPCAM monitoring equipment.

The **CERIO OW-200N2-X/OW-215N2-X 500mW eXtreme Power 11Na Outdoor Strengthens X** edition wireless bridge to eliminate hangs carries the newest **Cen-OS3.0** core and optimizes the operation handling ability promotion use efficiency, regardless of the wireless bandwidth and the wireless load capacity potency and so on all greatly promotes of connection to Wireless Outdoor Network for service provider deploying last mile services to business or residential broadband subscribers. Network administrators can create multiple subscriber service tier using per-subscriber rate limiting features, and manage centrally.

## Smart of PoE Bridge application

The **CERIO OW-200N2-X / OW-215N2-X** Design smart PoE Bridge function, the PoE Bridge function support provide next AP power or next PoE passive PoE(PD) Device . also can again continue provides surplus electric power PoE to supply power for next **OW-200N2-X/OW-215N2-X** or other 48V PoE the electricity PD installment use, will be structure become very convenience.





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## 2. Key Feature

- Operation Modes : Pure AP Mode , Pure WDS Mode, CPE Mode, Client Bridge + Universal Repeater Mode and CPE + AP Mode
- IEEE 802.11n Draft 2.0 Compliance in 2Tx / 2Rx Design
- Enables Bandwidth of up to 300Mbps(Tx), 300Mbps(Rx) link rate
- Support IEEE 802.11n and 802.11a, Operates in the 5GHz ISM Band
- 500mW at 5Ghz Output High Power
- Built in +15dBi , 5GHz (H65, E35) Directional Panel Antenna
- Topology : Point to Point , Point to Multi Point
- Maxmum Security with 802.1X, WAP, and WPA2
- Support Over load current protection for the board design . and 3 LEDs Wireless Signal Strength
- Weather-Proof Housing (IP67/ 68 Approved)
- Weater-Proof M-13 RJ45 Connector
- Support Power over Ethernet (PoE) & PoE Bridge by LAN Port function.
- Build in lightning arrester (15kV ESD)
- Supports wireless IGMP the v1/v2/v3 function, may pass on in the wire the immediate video and music wrapped gift.
- 8 Multiple-BSSID and supports the IAPP wireless network roaming function.
- Supports RIP and the OSPF route function (Dynamic Routing) by CPE mode
- Wide Range Voltage support (12-68VDC)
- Support Static Routing and RIP and OSPF Dynamic Routing by CPE mode
- Layer-7 Protocol Filter and Content Filter by CPE mode
- QoS(Quality of Service) for bandwidth management and traffic prioritization
- Support IEEE802.1d Spanning Tree
- Built-in Cerio Cen-OS3.0 software interface allows for communicating with CERIO AM-Series AP Management WLAN Switch or Access Controller of network management servers.
- Support Web management and SNMP MIB-II and CLI via Telnet and the SSH interface management function

### Wireless Architecture Mode

#### Pure AP Mode & AP/ AP+WDS Mode

- It can be deployed as a tradition fixed wireless Access Point
- It allow wireless clients or Stations(STA ) to access
- This enables the wireless interconnection of Access Point in an IEEE802.11 network .and accept wireless clients at the same time



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### Pure WDS Mode (Repeater)

- This enables the wireless interconnection of Access Point in an IEEE802.11 network
- It allows a wireless network to be expanded using multiple access point without the need for a wired backbone to link them
- This also be referred to as repeater mode
- It can not allow wireless clients or Stations (STA) to access

### CPE Mode

- WiFi connection as WAN , in CPE mode , the device run as DHCP server to assign IP address to clients out of a private IP address pool behind a NAT

### Client Bridge + Universal Repeater Mode

- It can be used as an Client Bridge + Universal Repeater to receive wireless signal over last mile applications, helping WISPs deliver wireless broadband Internet service to new residential and business customers.
- In this mode, OW-215N2-X is enabled with DHCP Server functions. The wired clients of OW-215N2-X are in the same subnet from Main Base Station and it accepts wireless connections from client devices

### CPE (WISP) +AP Mode

- It can be used as an Outdoor Customer Premises Equipment (CPE) to receive wireless signal over last mile application, helping WISPs deliver wireless broadband Internet service to residents and business customers
- In the CPE mode, OW-215N2 -X is a gateway enabled with NAT and DHCP Server functions. The wired clients connected to OW-215N2-X are in different subnet from those connected to Main Base Station, and, in CPE mode, it does not accept wireless association from wireless clients.

## Networking

### By CPE mode

- Support Static IP, Dynamic IP(DHCP Client) and PPPoE on WiFi WAN Connection
- Support VPN Pass Throughput ( PPTP , IPsec , L2TP )
- PPPoE Reconnect : Always on , On demand, Manual
- MAC Cloning
- DHCP Server
- IEEE802.3 Bridging
- Masquerading (NAT)
- Virtual DMZ, Virtual Server (IP / Port Forwarding)
- Support IP / MAC Filter



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By other mode

- Proxy DNS ,Dynamic DNS ,NTP Client
- Bandwidth traffic Shaping

### Wireless Feature

- Transmission power control : 1~100%
- Channel selection : Manual or Auto
- No of associated clients per AP : 32
- Setting for max no associated clients : Yes
- No. of BSSID (Virtual AP ) : 8
- No. of Max. WDS setting : 8
- Preamble setting : Short/ Long
- Setting for 802.11a/n mix or 802.11a only
- Setting for transmission speed
- Dynamic Wireless re-transmission
- IEEE802.11f IAPP (Inter Access Point Protocol), hand over users to another AP
- IEEE 802.11i Preauth (PMKSA Cache )
- IEEE 802.11h - TPC(Transmission Power Control) and DFS(Dynamic Frequency Select)
- IEEE 802.11d -Multi country roaming
- Channel Bandwidth setting : 20MHz or 20/40MHz
- HT Tx/Rx Stream selection : 1 or 2
- A-MSDU and A-MPDU support
- Maximal MPDU density for TX aggregation setting
- Short Slot support

### Authentication/Encryption (Wireless Security)

- Blocks client to client discovery within a specified VLAN
- WEP 64/128 bit /EAP-TLS + Dynamic WEP , EAP-TTLS + Dynamic WEP
- PEAP/MSPEAP + Dynamic WEP
- WPA-PSK/TKIP,WPA-802.1x/TKIP, 802.11i WPA2-PSK/CCMP/AES 128/256bit, WPA2 (802.1x /CCMP / AES 128/256bit )
- Setting for TKIP/CCMP/AES 128/256bit (ASCII 63 & HEX 64 )key's refreshing period
- Hidden SSID broadcast support
- Access Control list (ACL) by MAC Address
- No. of registered RADIUS servers : 1
- VLAN assignment on BSSID



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### Quality of Service

- Download and Upload traffic control
- Packet classifications via DSCP (Differentiated Services Code Point)
- Control Policy by IP/IP Ranges/ MAC/ Service
- Layer-7 Protocol Support
- Traffic Analysis and Statistics
- DiffServ/TOS
- IEEE 802.11p/COS
- IEEE 802.1Q Tag VLAN priority control
- IEEE802.11e WMM

### Parental Control by CPE mode

- Support wisdom may depend on the port way to make the impediment control to in the network environment application formula, may make the key words or the website URL impediment control, regarding the special pornographic phrase, or the special game platform carries on the key words blockade
- According to the IP sector or MAC Address may to the TCP/UDP/ICAM agreement blocking and control

### Management

- Web-Based management interface
- Intuitive Web Management Interface
- Support Firmware Upgrade via Web , Reset to Factory Defaults,
- Support Profiles Configuration Backup and Restore
- Remote Link Test – Display connect statistics
- Support SNMP v1/v2c/v3 , MIB II
- Administrative Access : HTTP and HTTPS
- UPnP (Universal Plug and Play) by CPE mode
- NTP Time Synchronization
- SNMP Traps to a List of IP Address
- DHCP client
- Support Event log
- Support CLI access via Telnet and SSH

### 3. Panel Function Description

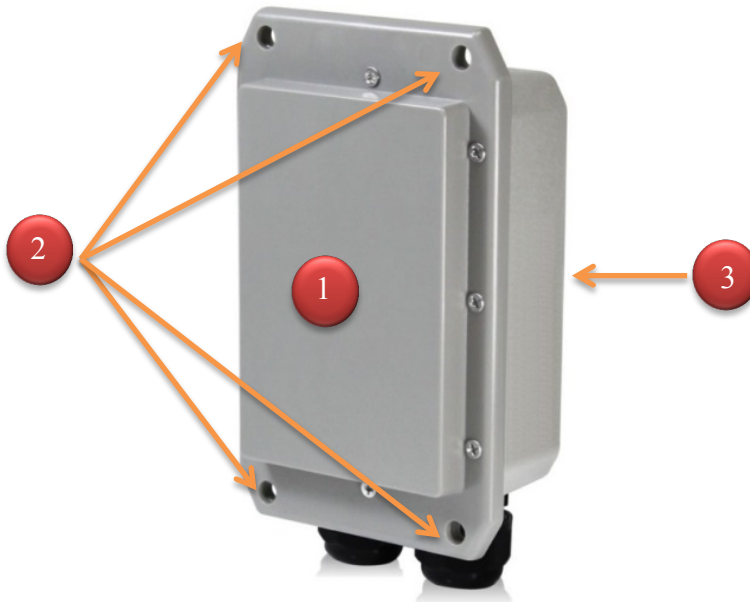
#### OW-200N2-X Antenna connectors

N-Type 1 Connector

N-Type 2 Connector



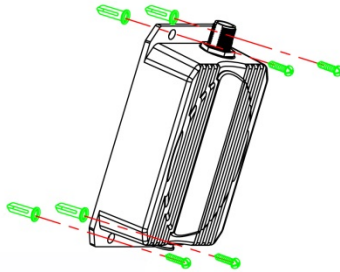
#### OW-215N2-X Front panel



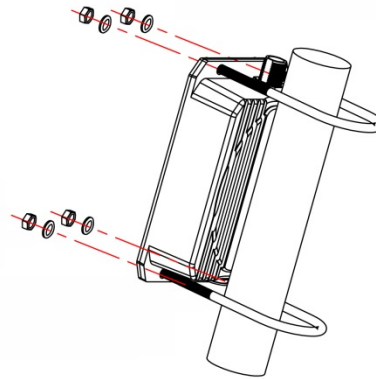
- 1) Inside set up 15dBi antenna
- 2) U shape Hoop Fixed hole
- 3) The back can wall or Mounting Bat  
(The following diagram indicates)



Sample for Mounting on Wall  
For OW-200N2

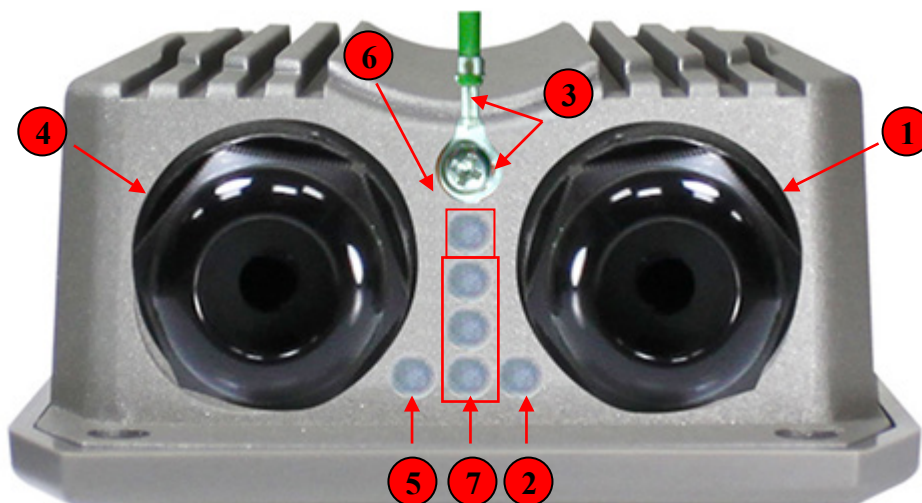


Sample for Mounting on Bat  
For OW-200N2 / OW-215N2



## OW-200N2-X/OW-215N2-X LED/Ethernet Overview

There is several LED indicators on the front of the OW-200N2-X/OW-215N2-X. Please refer to the definitions below :



- (1) The Ethernet connect of LAN2 Port / PoE out
- (2) The LED indicator of LAN2 Port
- (3) At in Reset button, and Support Ground connection
- (4) The Ethernet connect of LAN1 Port
- (5) The LED indicator of LAN1 Port
- (6) Power LED
- (7) The three LED's for strong or weakly indicator on signal bridge, and the three LED's only support "Client Bridge + Repeater AP and WISP + Repeater AP modes".

## 4. Software Configuration

OW-200N2-X/OW-215N2-X supports web-based configuration. Upon the completion of hardware installation, OW-200N2-X/OW-215N2-X can be configured through a PC/NB by using its web browser such as Internet Explorer 6.0 or later.

- ◇ **Default IP Address:** 192.168.2.254
- ◇ **Default Subnet Mask:** 255.255.255.0
- ◇ **Default Username and Password**

<b>MODE</b>	AP , WDS , ( WISP / Client Bridge )+ Repeater AP	
<b>Management Account</b>	Root Account	Admin Account
<b>Username</b>	root	admin
<b>Password</b>	default	admin

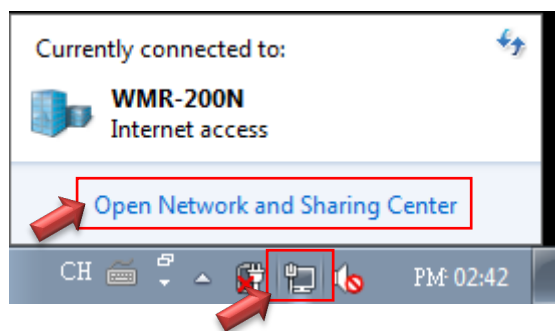
### ➤ IP Segment Set-up for Administrator's PC/NB

Set the IP segment of the administrator's computer to be in the same range as OW-200N2-X/OW-215N2-X for accessing the system. Do not duplicate the IP Address used here with IP Address of OW-200N2-X/OW-215N2-X or any other device within the network.

### Example of Segment: (Windows 7)

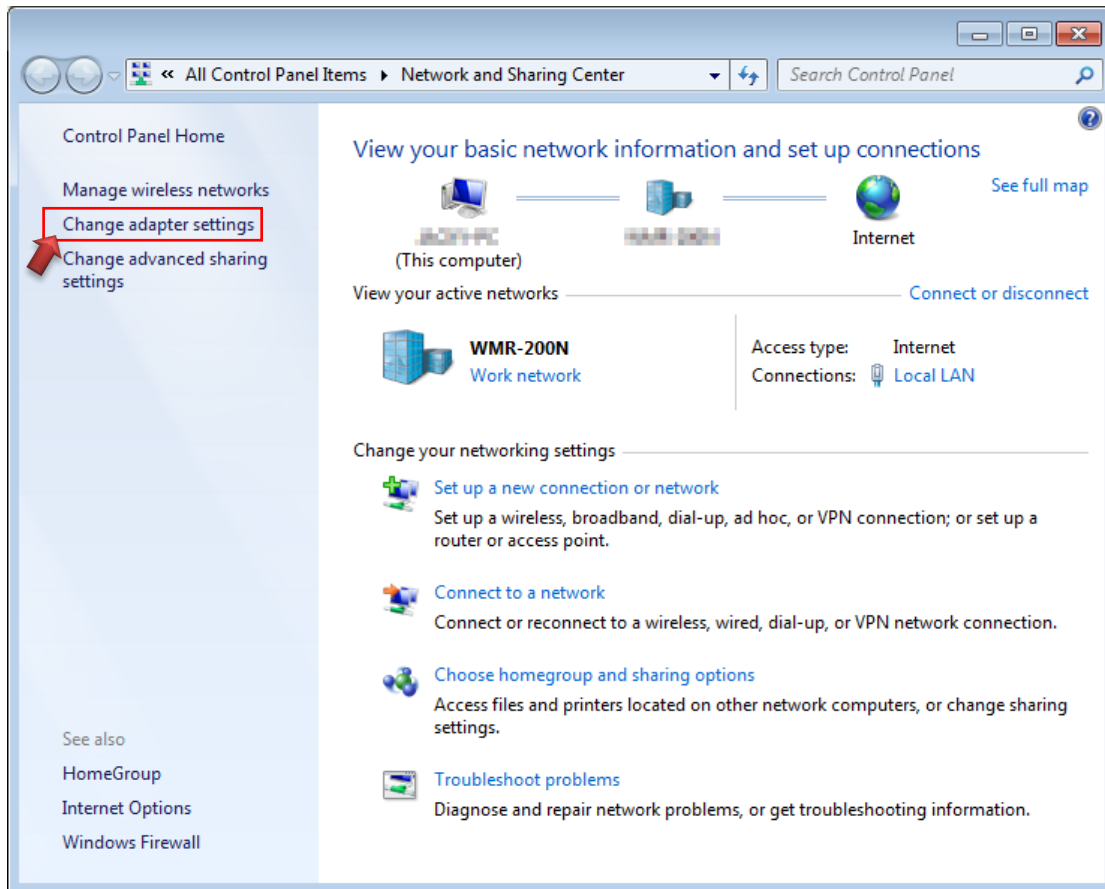
#### Step 1 :

Please click on the computer icon in the bottom right window, and click “**Open Network and Sharing Center**”



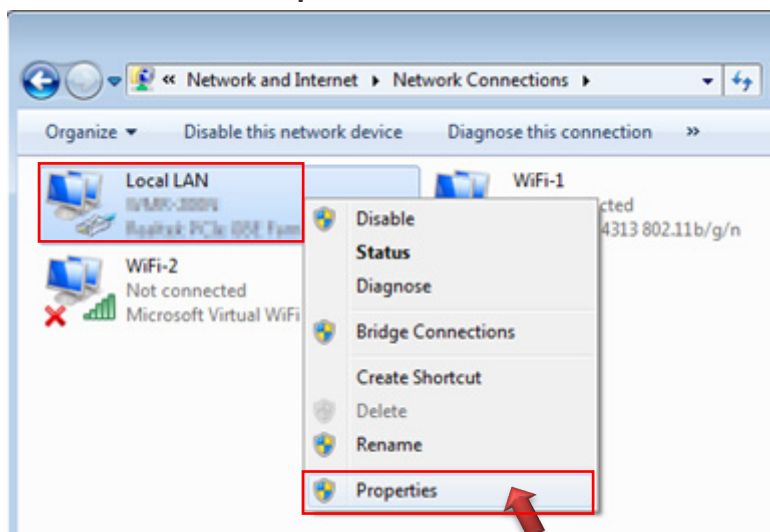
## Step 2 :

In the Network and Sharing Center page, Please click on the left side of “**Change adapter setting**” button



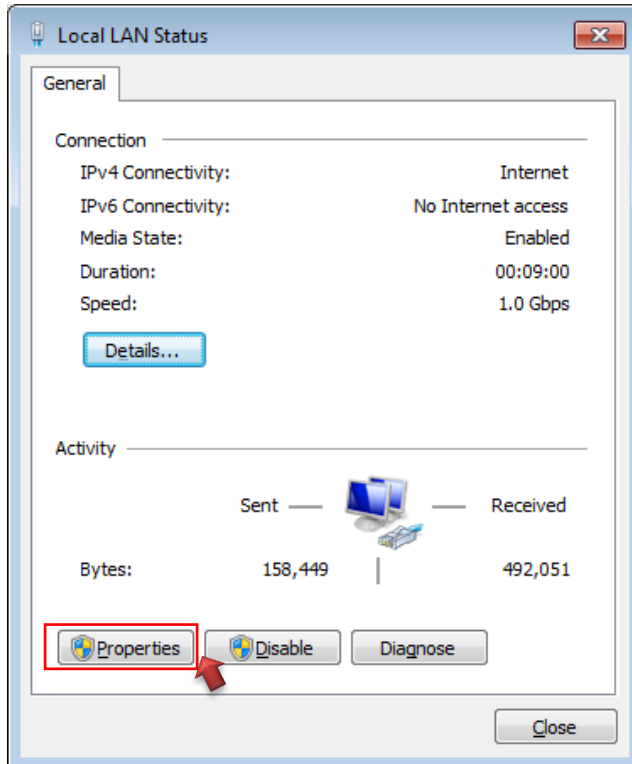
## Step 3 :

In “**Change adapter setting**” Page. Please find Local LAN and Click the right button on the mouse and Click “**Properties**”

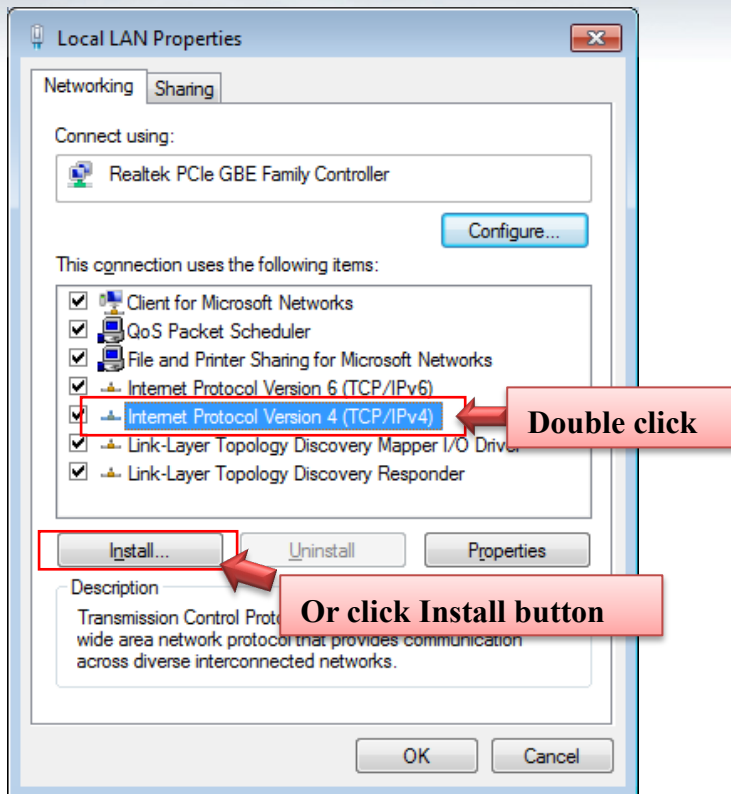


**Step 4 :**

In “**Properties**” page, please Click “**Properties**” button to TCP/IP setting

**Step 5 :**

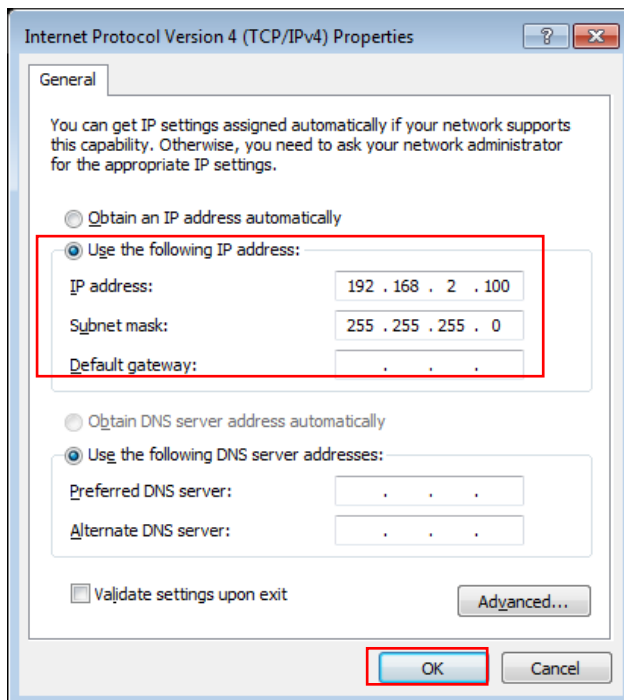
In Properties page to setting IP address, please find “**Internet Protocol Version 4 (TCP/IPv4)**” and double click or click “**Install**” button.

**Step 6 :**

Select “Use the following IP address”, and fix in IP Address : 192.168.2.X  
*ex. The X is any number by 1 to 253*

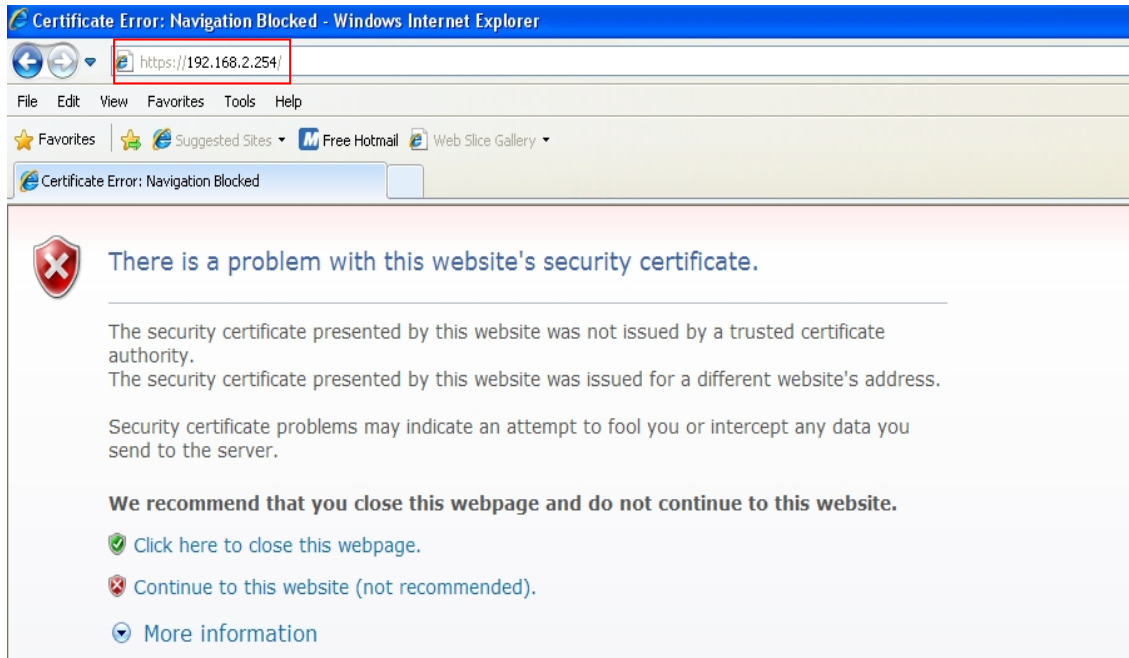
Subnet mask : 255.255.255.0

And Click "OK" to complete the fixed computer IP setting



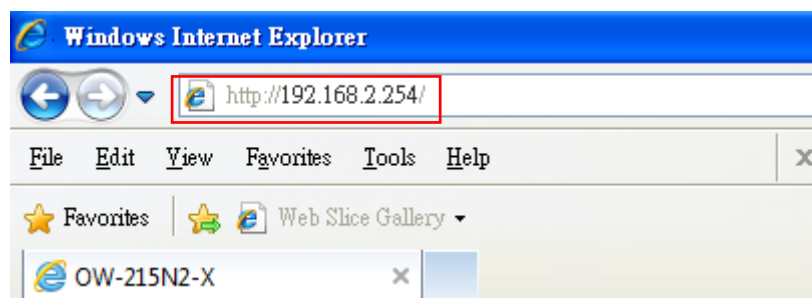
## Open Web Browser

Without a valid certificate, users may encounter the following problem in IE7 when they try to access system's WMI (<https://192.168.2.254/>). There will be a "Certificate Error", because the browser treats system as an illegal website.



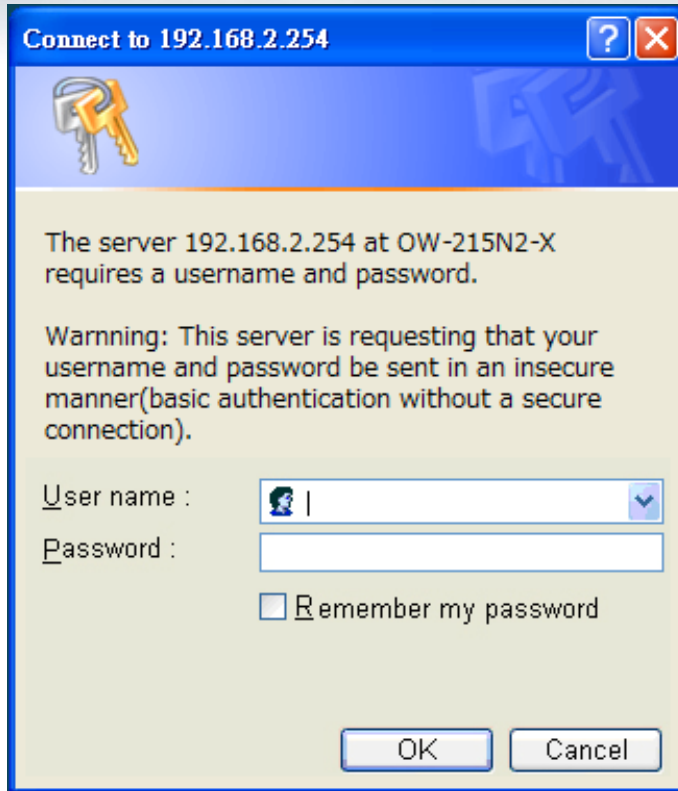
Click "**Continue to this website**" to access the system's WMI. The system's Overview page will appear.

Launch as web browser to access the web management interface of system by entering the default IP Address, <http://192.168.2.254/>, in the URL field, and then press Enter. Browser will pop up "login" page. Please key in username and password into the system on OW-215N2-X.



The system manager Login Page then appears.

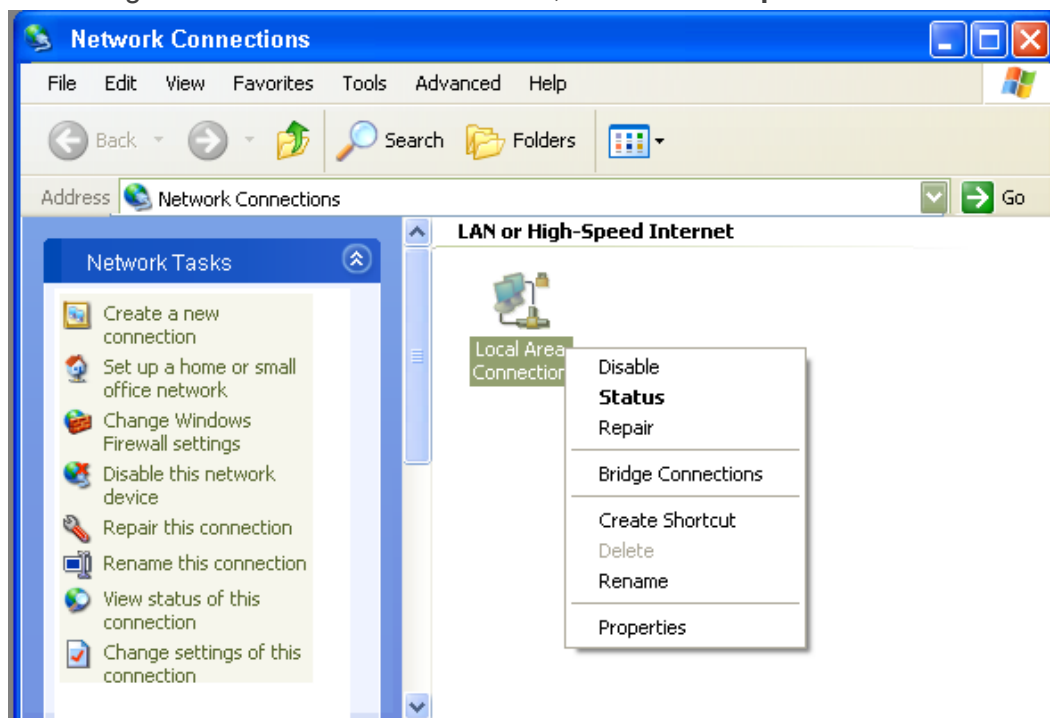
Enter "**root**" as User name and "**default**" as Password, and then click OK to login to the system.



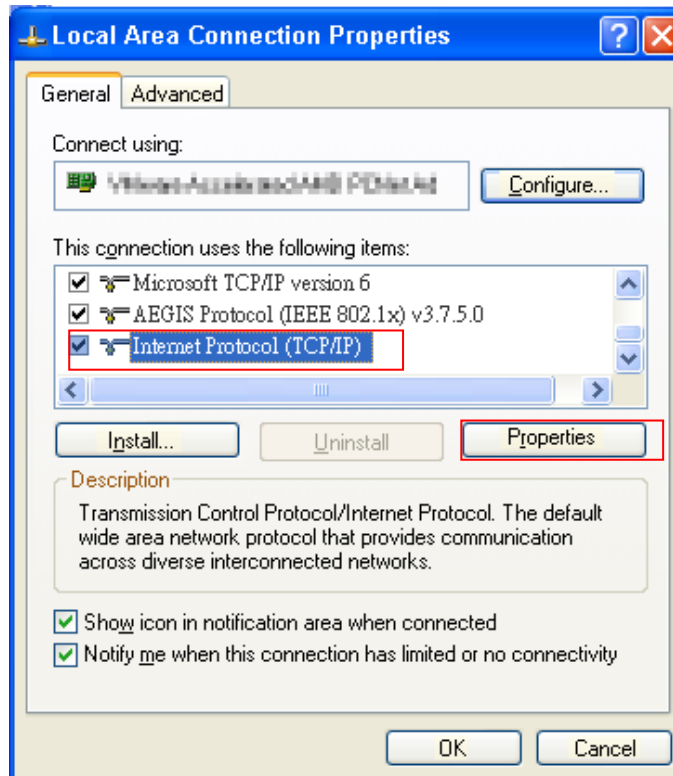
The OW-215N2-X system login default As follows  
 User Name : **root**  
 Password : **default**

## Example of Segment: (Windows XP)

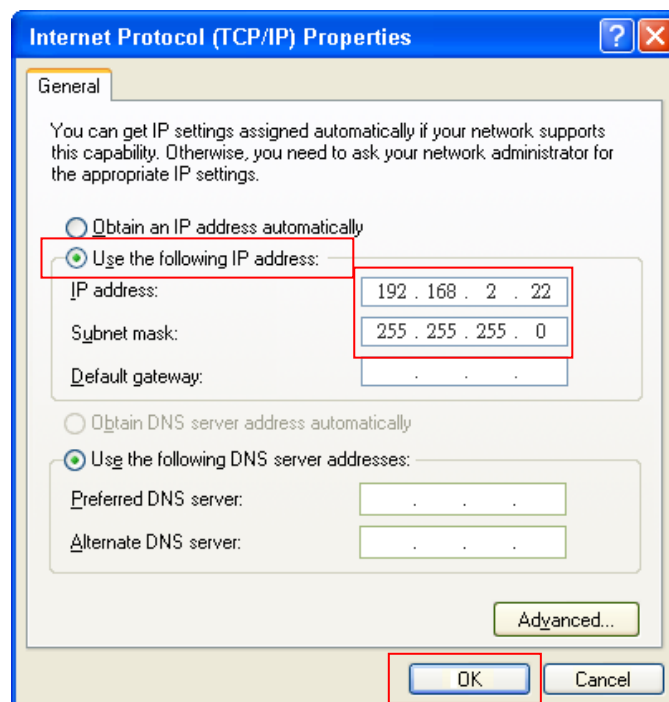
- Click **Start** -> **Settings** -> **Control Panel**, and then “**Control Panel**” window appears. Click on “**Network Connections**”, and then “**Network Connections**” window appears.
- Click right on “**Local Area Connection**”, and select **Properties**.



- In “Local Area Connection Properties” window, select “Internet Protocol (TCP/IP)” and click on **Properties** button.



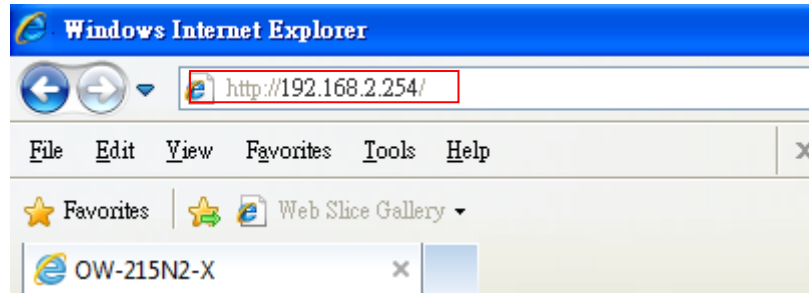
- Select “Use the following IP address”, and type in





➤ **Launch Web Browser**

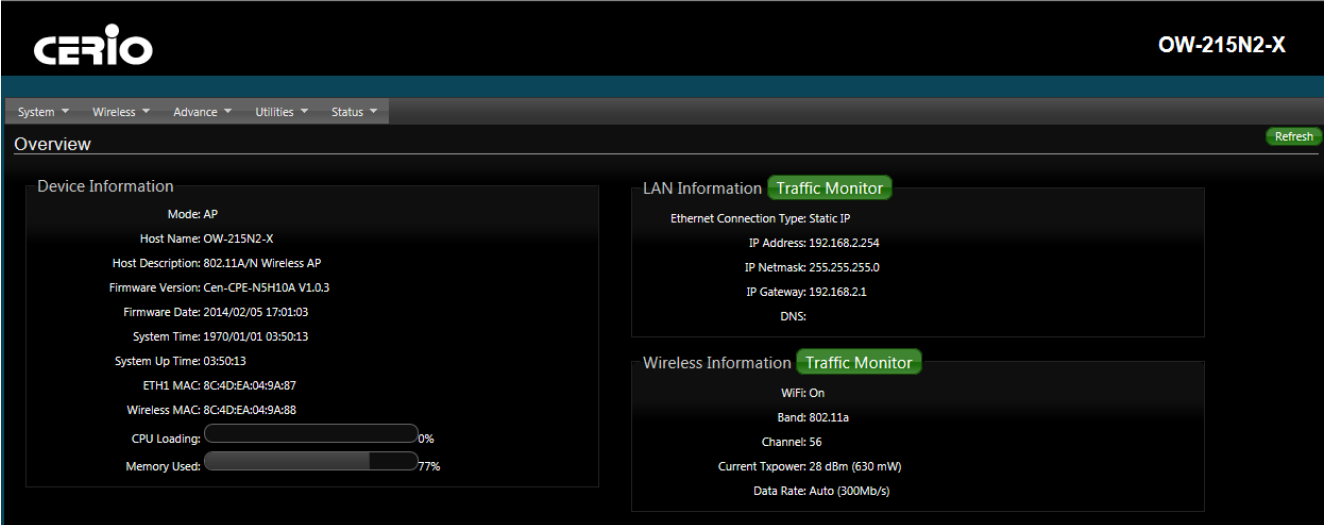
Launch as web browser to access the web management interface of system by entering the default IP Address, <http://192.168.2.254>, in the URL field, and then press Enter.



➤ **System Login**



- System Overview page will appear after successful login.



The screenshot displays the CERIO web interface for device OW-215N2-X. The interface includes a navigation menu with options: System, Wireless, Advance, Utilities, and Status. The main content area is titled "Overview" and features three panels:

- Device Information:**
  - Mode: AP
  - Host Name: OW-215N2-X
  - Host Description: 802.11A/N Wireless AP
  - Firmware Version: Cen-CPE-N5H10A V1.0.3
  - Firmware Date: 2014/02/05 17:01:03
  - System Time: 1970/01/01 03:50:13
  - System Up Time: 03:50:13
  - ETH1 MAC: 8C4D:EA:04:9A:87
  - Wireless MAC: 8C4D:EA:04:9A:88
  - CPU Loading: 0%
  - Memory Used: 77%
- LAN Information:**
  - Ethernet Connection Type: Static IP
  - IP Address: 192.168.2.254
  - IP Netmask: 255.255.255.0
  - IP Gateway: 192.168.2.1
  - DNS:
- Wireless Information:**
  - WiFi: On
  - Band: 802.11a
  - Channel: 56
  - Current Txpower: 28 dBm (630 mW)
  - Data Rate: Auto (300Mb/s)