Wi-Fi Ethernet Smart Client

T-316

User's Manual

Revision 1.0

Gemtek systems

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Contents

1. Introduction

Thank you for purchasing the T316 Wireless Ethernet Smart Client.
This manual will assist you with the installation procedure.

The package you have received contains the following items:
• 11Mbps Wireless Ethernet Client
• Cat.5 Ethernet with USB power extractor cable
• CD

Note: if anything is missing, please contact your vendor.

T316 allows for one Ethernet-enabled device (e.g., Windows/MAC/Linux/UNIX Desktop PC or laptop) to be instantly connected to an existing 802.11b wireless network. Taking full advantage of the integrated Web server capability, T316 is performed through a simple Web browser user interface for easy configuration.

Besides laptop or desktop environment, T316 is also the ideal solution to make other network device such as network printer or camera becomes a wireless station.

2. Installation

1. Mount T316 Wireless Ethernet Smart Client to your device firmly.
2. Insert the power connector.
3. Attach the Wireless Ethernet Client to the Ethernet network using a UTP Ethernet cable.

At the front of the Wireless Ethernet Client you will see three LEDs.
If all go well, the Power LED is red and the LINK and ACT LED will be blinking whenever there is traffic on the wired and wireless networks respectively.
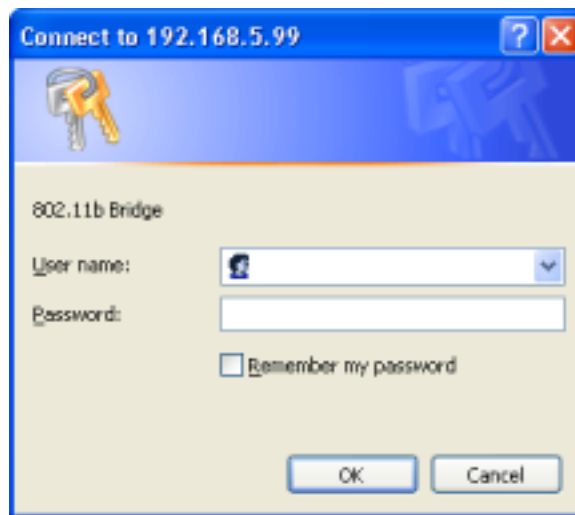
Reset the Wireless Ethernet Client

If you press the reset button for more than four seconds, the Wireless Ethernet Client will be reset to the default factory settings. All changes you made to the configuration will be lost.

1. Insert one end of a paper clip into the hole of reset button and keep it pressed for more than four seconds. LINK LED will be blinking during the process.

2. Release the reset button after ACT LED goes off. All settings will be deleted and back to the default. You can refer to this manual and reconfigure the Wireless Ethernet Client by yourself.

3 Configuring the Wireless Ethernet Client

The Wireless Ethernet Client is a ready-to-use device. It is delivered with default settings that allow you to have access to it without configuring it. When this message window pops up, press OK to access web configuration page. No user name and password needed.

You can configure the Wireless Ethernet Client via *a JavaScript-enabled web-browser such as Internet Explorer 4.0 or higher, or Netscape Navigator 4.0 or higher.*

> *The computer that you are using for initial configuration must have an IP Address within the same range as the IP Address of the Wireless Ethernet Client.*
> *The Wireless Ethernet Client has a default IP Address of 192.168.5.99 with a subnet mask of 255.255.0.0*
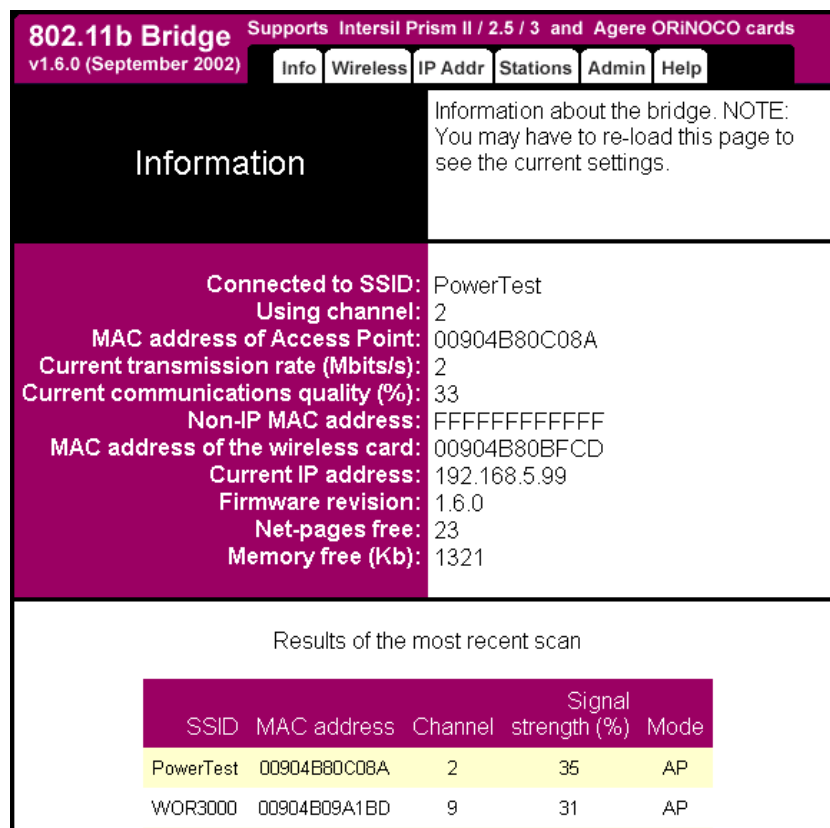
Factory Default Settings for the Wireless Ethernet Client

SSID	default
Channel	6
Transmission rates	Auto
WEP enable	No
IP Address mode	Static
IP Address	192.168.5.99
Subnet mask	255.255.0.0
User Name	Blank
Administrator or password	Blank (no password needed)

4. Contents of Web Interface

4.1 Info Page

The **Info** window displays the current setup status of the Wireless Ethernet Client.

Communication Quality

Specifies the Communications Quality of the Basic Service Set to which the station is currently connected. The value for the field of this record is based on signal level and noise level measurements.

Firmware Version

This indicates the Wireless Ethernet Client's firmware version.

Current setting of IP Address

It shows IP address of the wireless Ethernet Client.

Non-IP MAC Address
The MAC Address of Ethernet port that bridges to Wireless Ethernet Client.

4.2 Wireless Settings

The settings of the wireless device are displayed here, and you can edit some of these settings.

Operating Mode: Infrastructure
This is the default setting. Switch to **Ad-Hoc** mode when communicating to another client device without the presence of Access Point.

SSID
The SSID is also known as Service Set ID. This is the name of your wireless network. Only Wireless Ethernet Clients and clients that share the same SSID are able to communicate with each other.
P.S. You can leave this blank and then reboot it to scan the environment
       You will see what AP available around you at Info page.

Channel
This is the channel that the Wireless Ethernet Client uses to transmit and receive data. The channel that you select here is restricted to the channels that can be

used within your regulatory domain.

TX rate

The transmit rate identifies the preferred data transmission speed of the Wireless Ethernet Client. Transmissions at faster rates allow for higher data throughput and quicker network response times. However, transmissions at lower rates are usually more reliable and cover longer distances than the higher rates.

Access Point Density

When connecting to the Access Point, it is generally necessary to specify an Access Point Density. This provides some control over handoff of clients during roaming between Access Points. Three values, Low, Medium, and High

4.3 Bridging Table

The table lists your device that is bridging with the Wireless Ethernet Client.

4.4 IP Setting

Static

Select **Static (recommended)** to assign the IP, Subnet Mask and Gateway Address.

DHCP

If the Wireless Ethernet Client is part of a network with a DHCP server, the DHCP server will assign the IP settings to the Wireless Ethernet Client automatically. **(This is not recommended because a DHCP-assigned IP Address will change frequently, making the Wireless Ethernet Client impossible to configure.)**

Device Name

Assign the name of the Wireless Ethernet Client.

Allow Upgrade Uploads

Select this checkbox when performing firmware upgrade.

4.5 Administration

Change Username and Password
You can use a password to prevent tampering with the configuration of the Wireless Ethernet Client. By default, no username and password is required. However, if you choose to use a password, key in a password that is no more than 15 letters in length. Re-enter the password in the next field, and click **Change Password** for the change to take effec*t.*

Reboot Bridge
Click **Reboot** to restart the Wireless Ethernet Client.

Reset to Factory Defaults
Click on **Factory Reset** to return all settings to the Factory Default values. (Press and release the Reset button on the back of the unit to its factory default settings.)

4.6 Security

WEP Enabled

The default setting is **Disable.** Encryption (WEP)—additional measure of security on your wireless network which can be achieved by using WEP (Wired Equivalent Privacy) encryption. When an encrypted frame is received it will only be accepted if it decrypts correctly. This happens only if the receiver has the WEP Key used by the transmitter. All devices on the network, and the Wireless Ethernet Client, must share the same WEP selection – either **Enable** or **Disable.**
To enable WEP Encryption, click on **WEP Enable**.

WEP Key Length

The default Key Length is **64-bit.** The WEP key is generated from **Hexadecimal** entries that are either 64 or 128-bit in length. (This is also sometimes referred to as 40-bit or 104-bit encryption) When enabling encryption, select the Key Length, either 64 or 128-bit, and then input the Hexadecimal digits. For 64 bit keys you must enter 10 hex digits into the key fields, for 128 bit keys you must enter 26 hex digits. If you leave the key field blank this means a key of all zeros.

Note: Only the following alphanumeric characters are allowed in the entry, which is 0 to 9, a to f.

WEP Key to Use

Use the pull-down menu to select the WEP key. All devices on the network must use the same key to communicate with one another.

Deny Unencrypted Data

For additional security when WEP is enabled, select **Deny Unencrypted Data.** Data received without a WEP key is rejected when **Deny Unencrypted Data** is selected.

Authentication Type

You may choose between **Open System, Shared Key, and Both.** The Authentication Type default is set to **Open System. Shared Key** is when both the sender and the recipient share a secret key. All points on your network must use the same authentication type. It is recommended that you use the default setting.

5. Troubleshooting

Q: It's difficult to connect this device with exist wireless network.

A: There are several possible causes based on the way the Wireless Ethernet Client is connected to the network.

a. Problems on the wireless side

Always check the status of the LEDs to verify if you have:

•electricity problems,

•radio signal problems,

•networking problems.

1. Possible cause: Is the Wireless Ethernet Client powered up?

    Solution: Check the power LED. Check if the Wireless Ethernet Client is connected.

2. Possible cause: Is the Wireless Ethernet Client is in range of the Access Point?

    Solution: Check the ACT signal LED. Check for possible problems with respect to range.

3. Possible cause: Is there a network connection? Check the network LINK LED.

    Solution: The Wireless Ethernet Client may take up to a minute to find an IP address.

b. Problems on the wired side

Always check if your cables and connections are in good order and properly installed.

1. Possible cause: Has the proper cable been used?

    Solution: • If the Wireless Ethernet Client is connected to a hub, a 'normal' (not a crossover) cable must be used.

        • If the Wireless Ethernet Client is connected directly to a computer, a crossover cable must be used.

6. Technical Specifications

Standards supported

- IEEE 802.11 standard for Wireless LAN
- All major networking standards (including IP, IPX)

Environmental

Operating temperature (ambient):

- -10 ~ 50°C

Humidity:

- Max. 95% Non-condensing

Power specifications

DC power supply

- Input : DC 100-240 50-60 Hz 2A
- Output: 5V DC 2A converter incl.

Radio specifications

Range:

- per cell indoors approx. 35-75 meters
- per cell outdoors up to 100-250 meters

Transmit power:

- Nominal Temp Range: 15 dBm, 12min.

Frequency range:

- 2.4-2.4835 GHz, direct sequence spread spectrum

Number of Channels:

- Most European countries: 13 (1-13)
- US and Canada: 11 (1-11) (3 non-overlapping)
- France: 4 (10-13) (1 non-overlapping)
- Japan : 14 (1-14)

Specific features

Supported bit rates:

- 11 Mbps : CCK
- 5.5 Mbps : CCK
- 1 Mbps : DBSK

- 2 Mbps : DQPSK

Data encryption:

- 64-bits WEP Encryption
- 128-bits WEP Encryption

Utility Management:

- Web management and TFTP firmware upgrade