



TRENDNET®



User's Guide

TEW-424UB

Regulatory notes and statements

Wireless LAN, Health and Authorization for use

Radio frequency electromagnetic energy is emitted from Wireless LAN devices. The energy levels of these emissions however are far less than the electromagnetic energy emissions from wireless devices such as mobile phones. Wireless LAN devices are safe for use frequency safety standards and recommendations. The use of Wireless LAN devices may be restricted in some situations or environments for example:

- On board of airplanes, or
- In an explosive environment, or
- In case the interference risk to other devices or services is perceived or identified as harmful

In case the policy regarding the use of Wireless LAN devices in specific organizations or environments (e.g. airports, hospitals, chemical/oil/gas industrial plants, private buildings etc.) is not clear, please ask for authorization to use these devices prior to operating the equipment.

Regulatory Information/disclaimers

The installation and use of this Wireless LAN device must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The Manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device. The Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from the failure to comply with these guidelines.

USA-FCC (Federal Communications Commission) statement

This device complies with Part 15 of FCC Rules.

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 this device.

FCC Radio Frequency Exposure statement

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65 and found compliant to the requirements as set forth in CFR 47 Sections 2.1091, 2.1093, and 15.247 (b) (4) addressing RF Exposure from radio frequency devices. The radiated output power of this Wireless LAN device is far below the FCC radio

frequency exposure limits. Nevertheless, this device shall be used in such a manner that the potential for human contact during normal operation is minimized.

When nearby persons has to be kept to ensure RF exposure compliance, in order to comply with RF exposure limits established in the ANSI C95.1 standards, the distance between the antennas and the user should not be less than 20 cm.

FCC 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 radiates radio frequency energy. If not installed and used in accordance with the instructions, it 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 and correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the distance between the equipment and the receiver.
3. Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Export restrictions

This product or software contains encryption code that may not be exported or transferred from the US or Canada without an approved US Department of Commerce export license.

Safety Information

Your device contains a low power transmitter. When the device is transmitted it sends out radio frequency (RF) signal.

CAUTION: To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20 cm between the radiator and your body. Use the supplied antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be located or operating in conjunction with any other antenna or transmitter.

CE Mark Warning

This is a Class B product. In a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

Protection requirements for health and safety – Article 3.1a

Testing for electric safety according to EN 60950 has been conducted. These are considered relevant and sufficient.

Protection requirements for electromagnetic compatibility – Article 3.1b

Testing for electromagnetic compatibility according to EN 301 489-1, EN 301 489-17 and EN 55024 has been conducted. These are considered relevant and sufficient.

Effective use of the radio spectrum – Article 3.2

Testing for radio test suites according to EN 300 328-2 has been conducted. These are considered relevant and sufficient.

CE in which Countries where the product may be used freely:

Germany, UK, Italy, Spain, Belgium, Netherlands, Portugal, Greece, Ireland, Denmark, Luxembourg, Austria, Finland, Sweden, Norway and Iceland.

France: French regulations prohibit the use of all channels except channels 10 through 13.



TABLE OF CONTENT

Introduction	1
Overview of this User's Guide	1
Unpacking and Setup.....	2
Unpacking	2
Setup	2
Connecting the USB Extension Cable.....	2
Identifying external components	3
LED	3
Software Installation.....	4
Windows 98SE/ME/2000/XP Utility Installation	4
Wireless Utility Setting	10
Technical Specifications.....	16

INTRODUCTION

Congratulations on your purchase of this Wireless LAN USB 2.0 Adapter.

This manual contains detailed instructions regarding the operation of this product. Please keep this manual for future reference.

With the Wireless LAN USB 2.0 Adapter, a desktop or laptop computer can communicate with another computer wirelessly. An easy-to-use utility is bundled with the Wireless USB Adapter for configuration, monitoring, and diagnostic purposes.

The Wireless LAN USB 2.0 Adapter can wirelessly transmit and receive data, at a speed of up to 54 megabits per second.

The Wireless LAN USB 2.0 Adapter provides users with access to real-time information anywhere in their organization. The mobility of the Wireless LAN USB 2.0 Adapter provides productivity and service, which are not available under wired networks. The Wireless LAN USB 2.0 Adapter can easily adapt from peer-to-peer networks, suitable for a small number of users, to full infrastructure networks of thousands of users that allow roaming around a broad area.

Overview of this User's Guide

Introduction. Describes the Wireless LAN USB 2.0 Adapter and its features.

Unpacking and Setup. Helps you get started with the basic installation of the Wireless LAN USB 2.0 Adapter.

Hardware Installation. Describes the LED indicator on the Adapter.

Software Installation. Describes how to setup the driver and the utility setting.

Technical Specifications. Lists the technical (general, physical and environmental) specifications of the Wireless LAN USB 2.0 Adapter.

UNPACKING AND SETUP

This section provides unpacking and setup information for the Wireless LAN USB 2.0 Adapter.

Unpacking

The box should contain the following items:

- ◆ One Wireless LAN USB 2.0 Adapter
- ◆ One Driver & Utility CD-ROM
- ◆ One Quick Installation Guide
- ◆ One Type-A USB male to female extension cable

If any item is found missing or damaged, please contact your local reseller for replacement.

Setup

Before installation, check the following:

- ◆ Make sure your computer is running at least a 300Mhz or above processor with 256MB RAM or above
 - ◆ Make sure the USB ports are USB 1.0, 1.1 or 2.0
 - ◆ The operating system on your computer must be the following: Windows XP/2000/ME/98SE
 - ◆ Make sure the environment has minimal interference and obstructions.
-

Connecting the USB Extension Cable

The USB extension cable that comes with the Adapter has Type A connectors on both ends. One end of the cable is a male Type A connector that plugs into the PC's USB port. The other end of the cable is a female Type A connector that plugs into the Adapter.

This USB extension cable can be adjusted to improve the wireless connection. It is recommended that the Wireless LAN USB 2.0 Adapter is perpendicular to the ground.

IDENTIFYING EXTERNAL COMPONENTS

LED

The LED blinks green when the Wireless LAN USB 2.0 Adapter is successfully connected to a wireless network. The LED is steady green when the Wireless USB Adapter is not connected to a wireless network.

SOFTWARE INSTALLATION

This section describes how to install the driver and utility for the Wireless LAN USB 2.0 Adapter.

Windows 98SE/ME/2000/XP Utility Installation

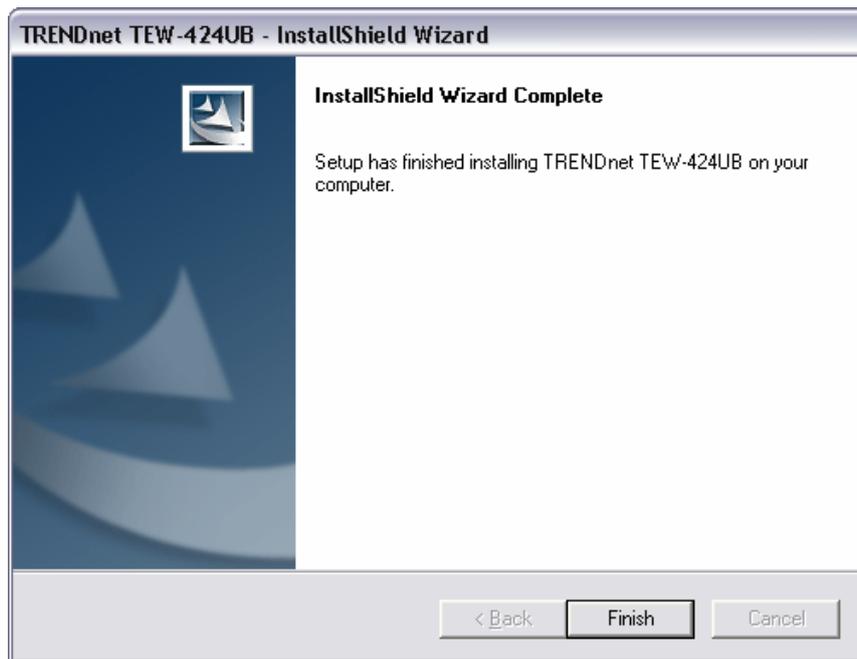
- 1) Insert the Utility and Driver CD-ROM into your computer's CD-ROM Drive and then click **Install Utility**.



- 2) Follow the InstallShield Wizard Instructions
- 3) Click **Yes** (Windows 2000) or **Continue Anyways** (Windows XP)



4) Click **Finish**.



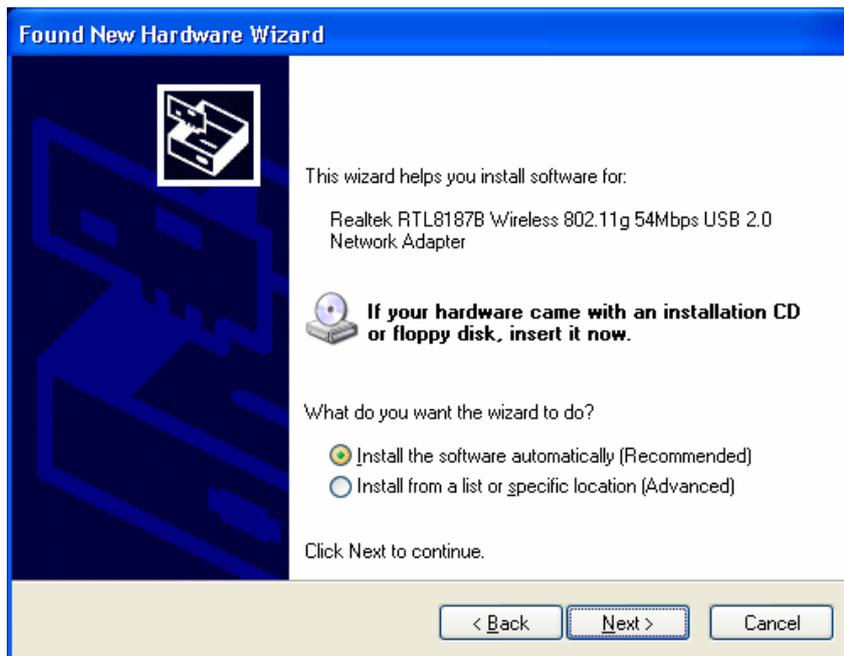
5) Plug the Wireless LAN USB 2.0 Adapter into an available USB slot on your computer

Windows XP

6) Select **No, not this time** and then click **Next**.



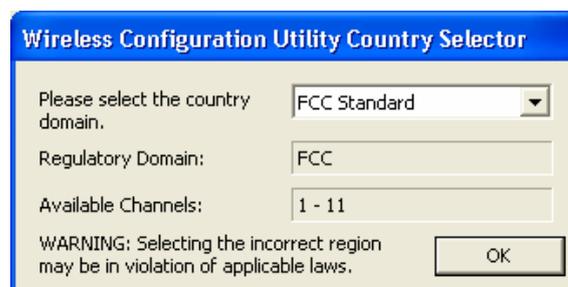
7) Click **Install the software automatically (Recommended)**, and then click **Next**.



8) Click **Continue Anyways**.

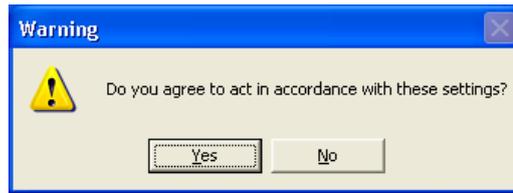


9) Select the appropriate country domain and then click ok.

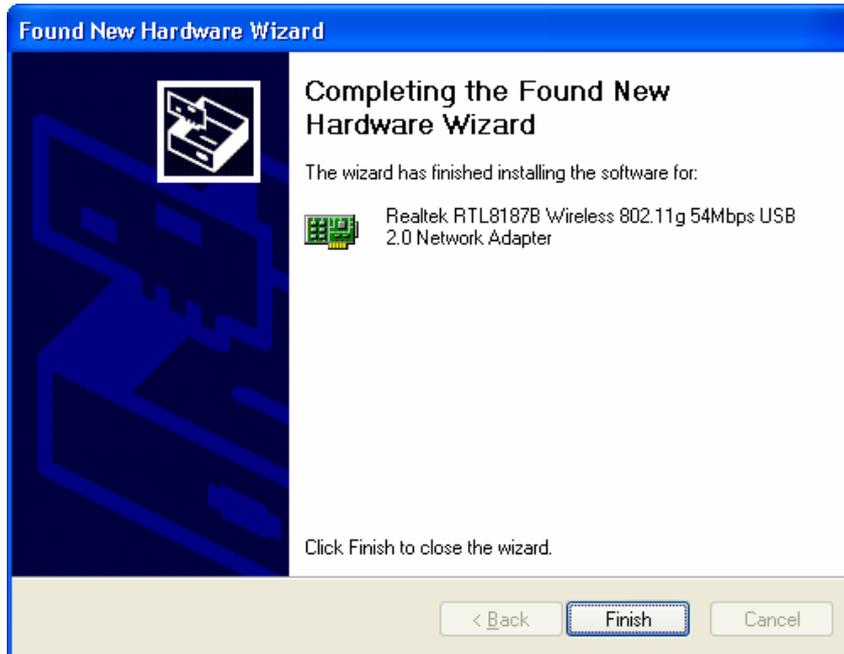


Warning: *Selecting the incorrect country domain may result in violation of applicable law.*

10) Click **Yes**.



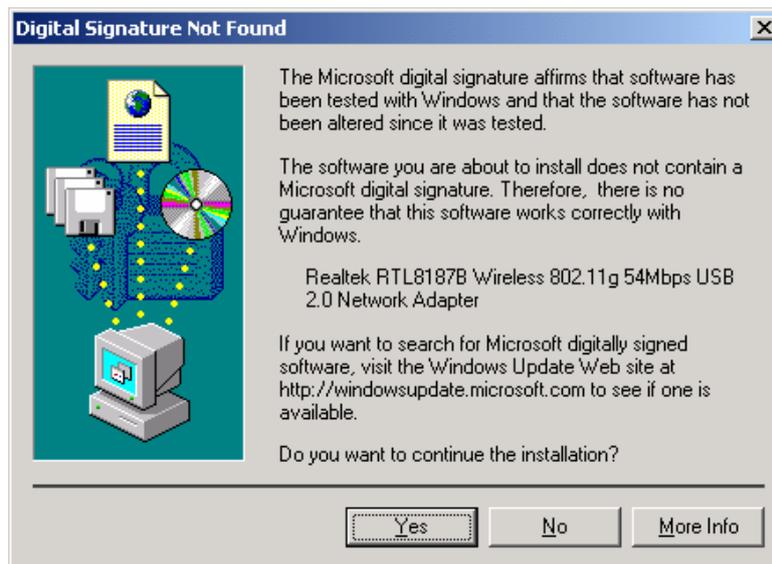
11) Click **Finish**.



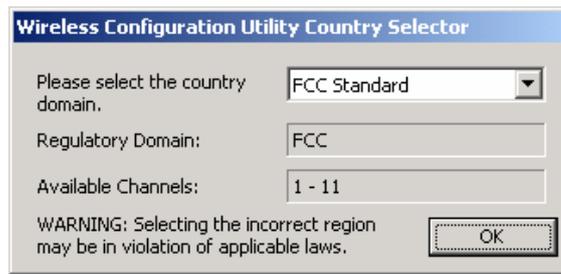
Windows 2000

12) The drivers will install automatically.

13) Click **Yes**.



14) Select the appropriate country domain and then click ok.



Warning: *Selecting the incorrect country domain may result in violation of applicable law.*

15) Click **Yes**.



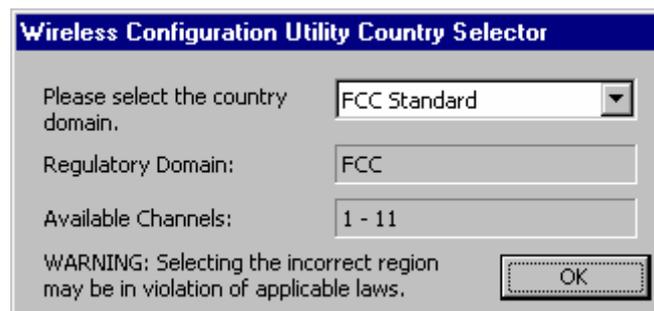
Windows 98SE/ME

16) The drivers will install automatically.

17) Select **Yes, I want to restart my computer now** and click **OK**.

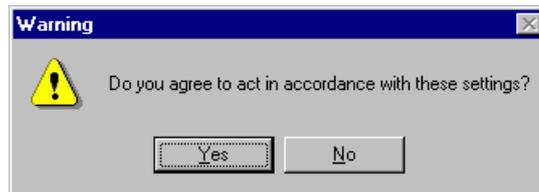


18) Select the appropriate country domain and then click ok.



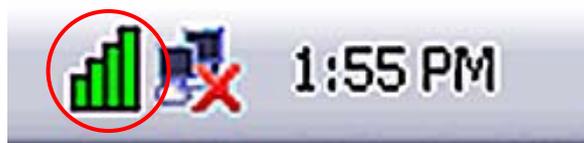
Warning: *Selecting the incorrect country domain may result in violation of applicable law.*

19) Click **Yes**.



Wireless Utility Setting

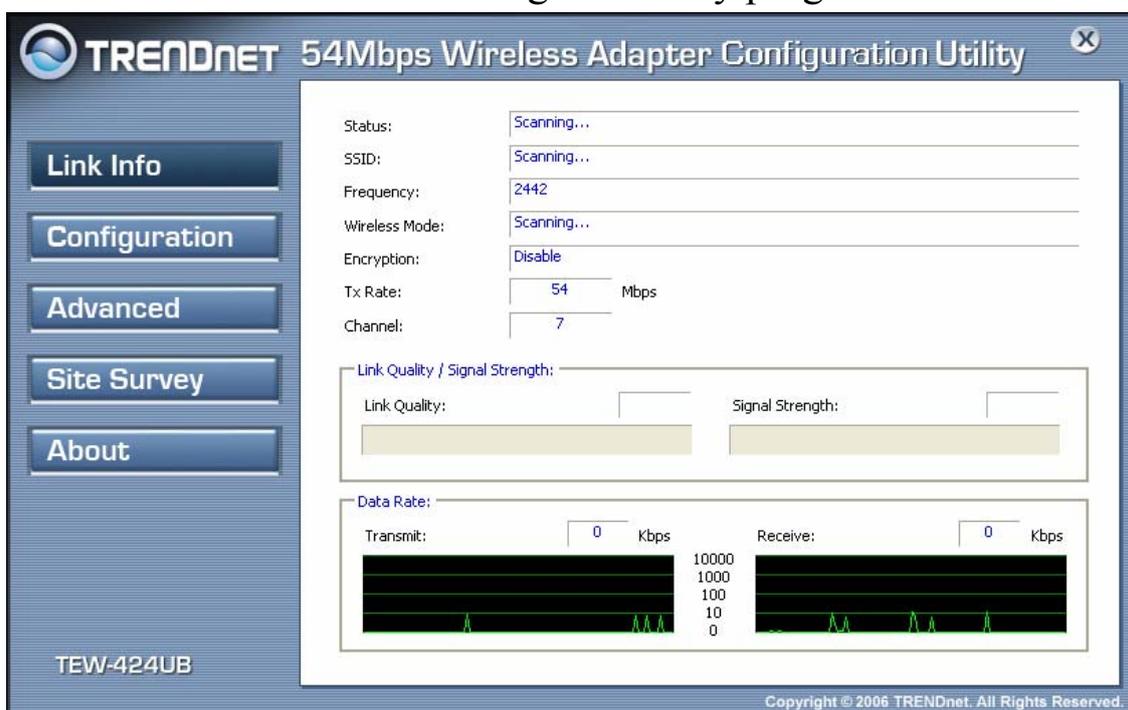
The user can configure the wireless settings using the Wireless Adapter Configuration Utility. Double-click the utility icon that appears in the taskbar.



The Wireless Adapter Configuration Utility is divided into five sections: Link Info, Configuration, Advanced, Site Survey and About.

I. Link Information

This is the default screen after launching the Utility program.



Status: Shows the associated BSSID, which can be used to identify the wireless access point.

SSID: Shows the current SSID, which must be the same on the wireless client and AP in order for communication to be established.

Frequency: Shows the current frequency used for the wireless network.

Wireless Mode: Shows the current wireless mode used for wireless communication.

Encryption: Shows the current encryption mode used on the wireless network.

TxRate: Shows the current data rate used for transmitting.

Channel: Shows the current channel for communication.

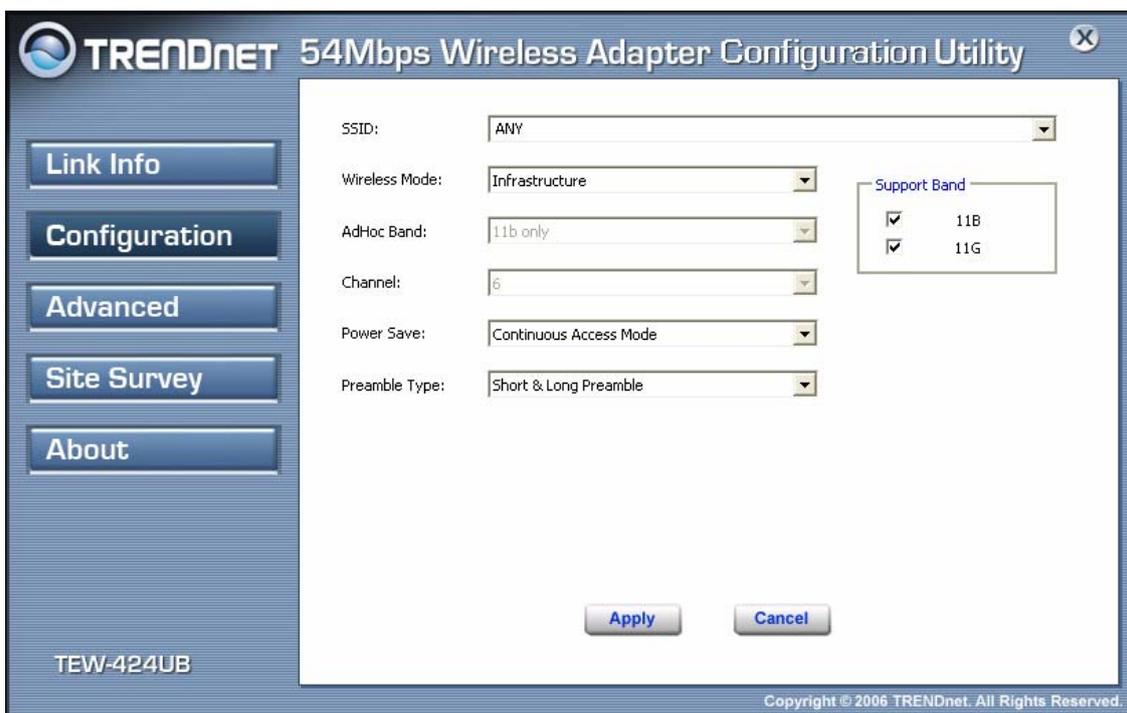
Link Quality: Shows the link quality of the Wireless LAN USB 2.0 Adapter with the Access Point when operating under Infrastructure mode.

Signal Strength: Shows the wireless signal strength of the connection between the Wireless LAN USB 2.0 Adapter with the Access Point.

Data Rate: Shows the statistics of data transfer, and the calculation is based on the number of packets transmitted and received.

II. Configuration

This screen is where you set the basic wireless settings for the Wireless LAN USB 2.0 Adapter



SSID: Service Set Identifier, which is a unique name shared among all clients in a wireless network. The SSID must be identical for each client in the wireless network.

Wireless Mode: There are two modes available for selection

- Infrastructure – to establish wireless communication with the LAN and other wireless clients through the use of Access Points.
- Ad-Hoc – to establish point-to-point wireless communication directly with other wireless client devices.

AdHoc Band: There are two bands available for selection- 11B and 11G

Channel: The channel the AP operates on. Users can select the channel range of 1 to 11 for North America (FCC) domain and 1 to 13 for European (ETSI) and Japan (MCK) domains.

Power Mode: There are 3 modes to choose from.

- Continuous Access Mode (default) – the Wireless LAN USB 2.0 Adapter is constantly operating with full power. This mode consumes the most power.

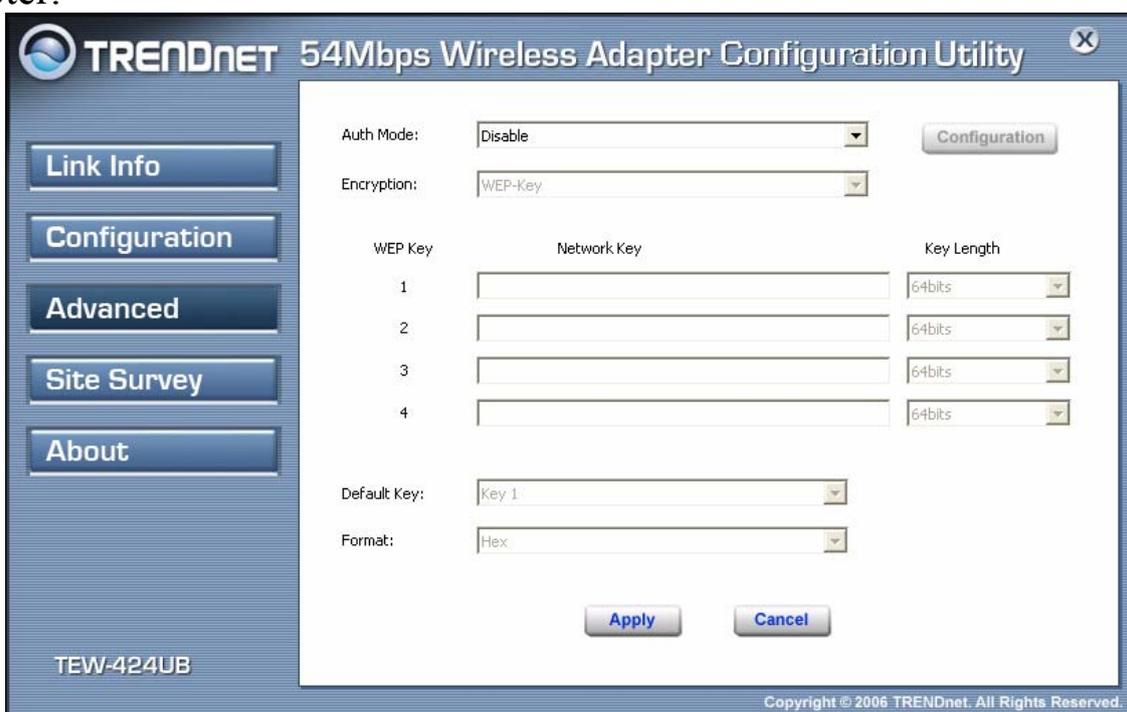
- **Maximum Power Save** – the Wireless LAN USB 2.0 Adapter consumes the least power. This mode only operates when there is wireless network activity.
- **Power Save** – the Wireless LAN USB 2.0 Adapter consumes moderate level of power.

Preamble: Select Long or Short & Long Preamble type. Preamble is a sequence of bits transmitted at 1Mbps that allows the PHY circuitry to reach steady-state demodulation and synchronization of bit clock and frame start. Two different preambles and headers are defined: the mandatory supported Long Preamble and header, which interoperates with the 1Mbps and 2Mbps DSSS specification (as described in IEEE 802.11), and an optional Short Preamble and header (as described in IEEE 802.11b). At the receiver, the Preamble and header are processed to aid in demodulation and delivery of the PSDU. The Short Preamble and header may be used to minimize overhead and, thus, maximize the network data throughput. However, the Short Preamble is supported only for the IEEE 802.11b (High- Rate) standard and not for the original IEEE 802.11 standard. That means that stations using Short-Preamble cannot communicate with stations implementing the original version of the protocol. Click “Apply” to save the changes.

Support Band: There are 2 modes the user can select; 11B and 11G. By default, 11B and 11G are enabled.

III. Advanced

This screen is where you configure the Security settings for the Wireless LAN USB 2.0 Adapter.



Encryption: The following options are available: **Open System**, **Shared Key**,

Auto, WPA/WPA2 and WPA-PSK/WPA2-PSK. Select **Open System, Shared Key** or **Auto** for WEP data encryption feature.

Open System and **Shared Key** requires the user to set a WEP key to exchange data with other wireless clients that have the same WEP key. **Auto** automatically selects the proper authentication mode.

The following will only be activated when **Open, Shared Key or Auto** is enabled:

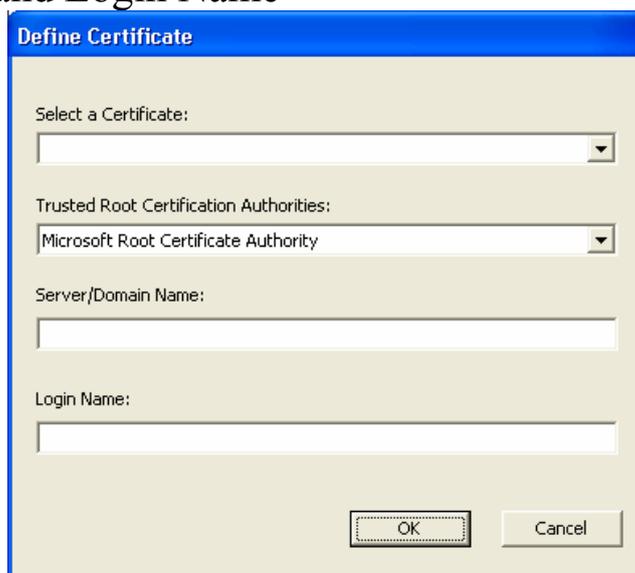
Network Key: choose the encryption way, either in HEX or ASCII formats, and enter the password in the blank space.

Key Length: select 64 or 128 bits as the length of the keys

Default Key: select one of the 4 keys to use.

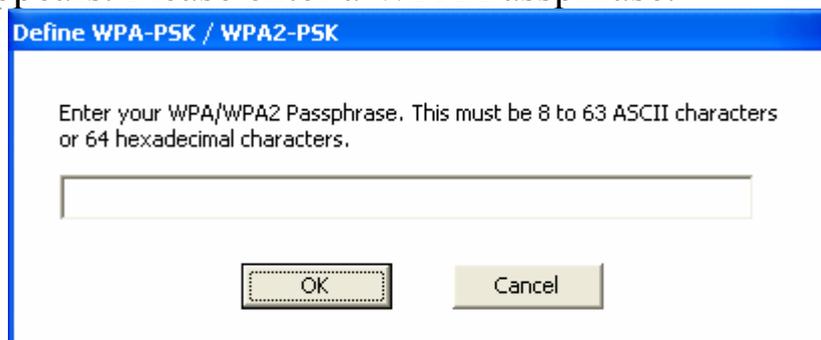
Key Format: **ASCII** or **HEX**

If **WPA/WPA2** is selected, configuration is enabled. Please click the “**configuration**” button. The following window appears. Select the desired Certification, select the desired Certification Authority and then enter the Server/Domain name and Login Name



The image shows a dialog box titled "Define Certificate". It contains four input fields: "Select a Certificate:" (a dropdown menu), "Trusted Root Certification Authorities:" (a dropdown menu with "Microsoft Root Certificate Authority" selected), "Server/Domain Name:" (a text box), and "Login Name:" (a text box). At the bottom right, there are "OK" and "Cancel" buttons.

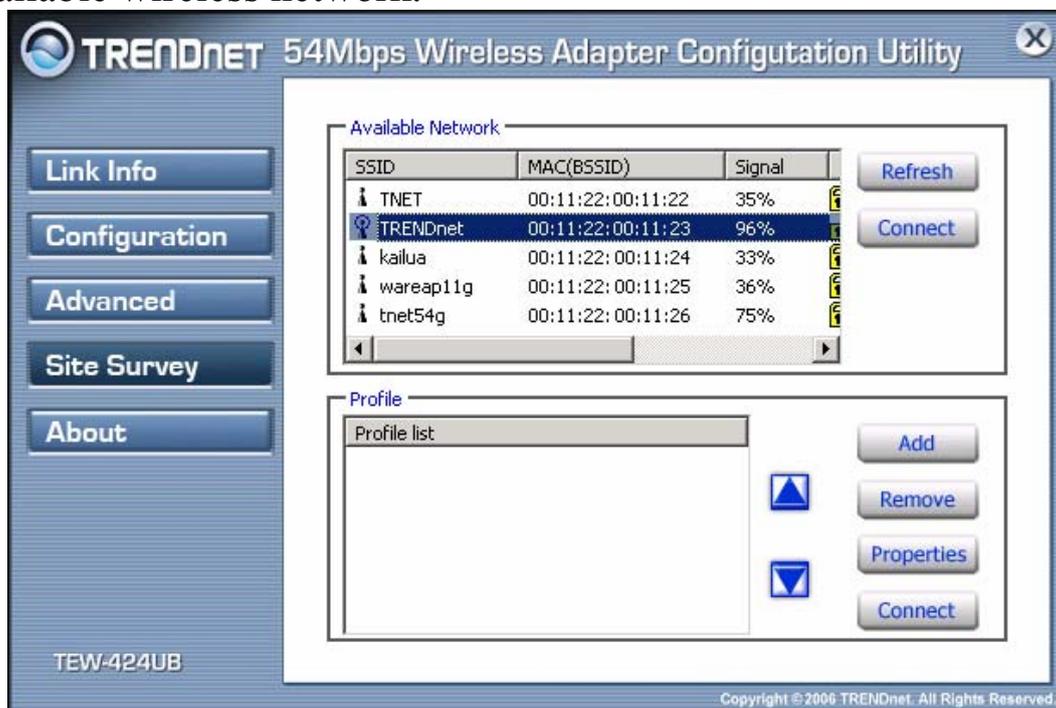
If **WPA-PSK/WPA2-PSK** is selected, click the “**configuration**” button. The below window appears. Please enter a WPA Passphrase.



The image shows a dialog box titled "Define WPA-PSK / WPA2-PSK". It contains a text box for entering a WPA/WPA2 Passphrase. Above the text box, it says "Enter your WPA/WPA2 Passphrase. This must be 8 to 63 ASCII characters or 64 hexadecimal characters." At the bottom, there are "OK" and "Cancel" buttons.

IV. Site Survey

This screen allows the user to scan for available wireless networks (wireless clients and Access Points). It also allows the user to establish wireless communications with an available wireless network.



Available Network – displays the wireless networks (wireless clients and access points) that are within range.

Select any one of the wireless networks by **double-clicking** on it or clicking on the “**Connect**” button.

Click the “**Refresh**” button to scan for available networks.

Profile – The user can create and manage the created profiles for home, work or public areas. By double-clicking on one of the created profile, the setting will adjust to the specific setting such as SSID, channel, and WEP as saved by that particular profile.

Remove: Deletes the selected profile

Properties: To view and change the settings of the profile.

Add: Adds a profile. The following screen will appear. The user can enter the necessary information required for accessing Access Points or Wireless Router.

Profile

Profile Name:

SSID:

Wireless Mode:

AdHoc Band:

Channel:

Power Mode:

Auth. Mode:

Encryption:

Support Band

11B

11G

Default Key

	Network Key	Key Length
1	<input type="text"/>	64 bits
2	<input type="text"/>	64 bits
3	<input type="text"/>	64 bits
4	<input type="text"/>	64 bits

V. About

This screen displays information about the Wireless LAN USB 2.0 Adapter, such as the Driver and Utility version. When a new version of the utility becomes available for upgrade, users will be able to identify by version numbers.

TRENDNET 54Mbps Wireless Adapter Configuration Utility

Link Info

Configuration

Advanced

Site Survey

About

TEW-424UB

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Wireless LAN Configuration Utility

Adapter Information

MAC Address:	00-11-22-00-11-33
Utility Version:	2.4.3.321
Driver Version:	5.1039.1201.2006
Regulatory Domain:	FCC

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TECHNICAL SPECIFICATIONS

Hardware	
Interface	USB 2.0, 1.1, 1.0 Compliant
Standards	IEEE 802.11b and IEEE 802.11g
Antenna	2dBi Integrated Printed Antenna
LED Indicator	Link
Power Consumption	Receive Mode: 280mA Transmit Mode: 410 mA
Supported OS	Windows 98(SE), ME, 2000, XP
Dimensions (LxWxH)	80 x 30 x 12 mm (3.1 x 1.2 x 0.5 inches)
Weight	15 g (0.5 oz.)
Temperature	Operating: 0° ~ 40° C (32° ~ 104° F) Storage: -10° ~ 70° C (14° ~ 158° F)
Humidity	10% ~ 95% max (Non-condensing)
Certification	FCC Part 15.247 for US, ETS 300, 328 for Europe
Wireless	
Module Technique	802.11b: CCK (11 and 5.5Mbps), DQPSK (2Mbps), DBPSK (1Mbps) 802.11g: OFDM
Frequency	2.412 to 2.484 GHz (Industrial Scientific Medical Band)
Media Access Protocol	CSMA/CA with ACK
Data Rate (auto fallback)	802.11b: 11Mbps, 5.5Mbps, 2Mbps, and 1Mbps 802.11g: 54Mbps, 48Mbps, 36Mbps, 24Mbps, 18Mbps, 12Mbps, 9Mbps and 6Mbps **6Mbps for 802.11g using USB 1.1 or 1.0 Connection
Output Power	15dBm (typically) @ 802.11b 12dBm (typically) @ 802.11g
Receiving Sensitivity	54Mbps 10% PER @ -68 dBm (typical) 11Mbps 8% PER @ -83 dBm (typical)
Security	64/128-bit WEP (Hex/ASCII), WPA/WPA2, WPA-PSK/WPA2-PSK
Channels	1~11 Channels (FCC); 1~13 Channels (ETSI)

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

Wireless	Three years
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If a product does not operate as warranted above during the applicable warranty period, TRENDnet shall, at its option and expense, repair the defective product or deliver to customer an equivalent product to replace the defective item. All products that are replaced will become the property of TRENDnet. Replacement products may be new or reconditioned.

TRENDnet shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to TRENDnet pursuant to any warranty.

There are no user serviceable parts inside the product. Do not remove or attempt to service the product through any unauthorized service center. This warranty is voided if (i) the product has been modified or repaired by any unauthorized service center, (ii) the product was subject to accident, abuse, or improper use (iii) the product was subject to conditions more severe than those specified in the manual.

Warranty service may be obtained by contacting TRENDnet office within the applicable warranty period for a Return Material Authorization (RMA) number, accompanied by a copy of the dated proof of the purchase. Products returned to TRENDnet must be pre-authorized by TRENDnet with RMA number marked on the outside of the package, and sent prepaid, insured and packaged appropriately for safe shipment.

WARRANTIES EXCLUSIVE: IF THE TRENDNET PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, THE CUSTOMER'S SOLE REMEDY SHALL BE, AT TRENDNET'S OPTION, REPAIR OR REPLACEMENT. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. TRENDNET NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF TRENDNET'S PRODUCTS.

TRENDNET SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THAT THE ALLEGED DEFECT IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO REPAIR OR MODIFY, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OR OTHER HAZARD.

LIMITATION OF LIABILITY: TO THE FULL EXTENT ALLOWED BY LAW TRENDNET ALSO EXCLUDES FOR ITSELF AND ITS SUPPLIERS ANY LIABILITY, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE OR PROFITS, LOSS OF BUSINESS, LOSS OF INFORMATION OR DATA, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF THE POSSIBILITY OF SUCH DAMAGES, AND LIMITS ITS LIABILITY TO REPAIR, REPLACEMENT, OR REFUND OF THE PURCHASE PRICE PAID, AT TRENDNET'S OPTION. THIS DISCLAIMER OF LIABILITY FOR DAMAGES WILL NOT BE AFFECTED IF ANY REMEDY PROVIDED HEREIN SHALL FAIL OF ITS ESSENTIAL PURPOSE.

Governing Law: This Limited Warranty shall be governed by the laws of the state of California.

Note: AC/DC Power Adapter, Cooling Fan, Cables and Power Supply carry 1-Year Warranty



TRENDnet[®]

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24/7 Tech Support



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Worldwide

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English/Espanol - 24/7

Francais/Deutsch - 11am-8pm, Monday - Friday MET

Product Warranty Registration

Please take a moment to register your product online.

Go to TRENDnet's website at <http://www.trendnet.com>

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