### TEW-226PC/TEW-228PI Quick Installation Guide

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This Installation Guide will lead you through the installation of CardBus/PCI Wireless Adapter and the configuration utility. To establish your wireless network connection, the following steps should be executed.

- 1. Install the software using the installation CD.
- 2. Install the Adapter card in the computer.
- 3. Configure the Wireless Configuration Utility.

The product is designed to operate in Windows 98, Windows ME, Windows 2000, and Windows XP. And, the installation procedure for each operating system is very similar.

#### Minimum Hardware Requirements

- Computer with an available 32-bit CardBus or PCI slot
- 300 MHz processor and 32 MB of memory (Recommended)
- CardBus Controller properly installed and working in the computer
- An 802.11b Access Point (for Infrastructure Mode) or another 802.11b wireless adapter (for Ad-Hoc <Peer-to-Peer> networking mode).
   (Not required for driver and configuration utility installation)

<*Important*> DO NOT install the adapter in the computer. Please follow the instructions below to install the driver and utility before installing the adapter in the computer.

#### Installing the Driver and Wireless Utility for Windows 98/ME/2000/XP

- Insert the Driver & Utility CD-ROM into computer's CD-ROM Drive and it will automatically start a setup menu. Simply follow the instructions on the screen to install the driver and the utility. If your computer does not start the setup menu automatically, you can to run the software manually by clicking on "Start", choose "Run", type D:\autorun.exe in the dialog box (assuming D: drive is your CD-ROM drive) and click "OK".
- 2. Click "Install Software" button, the InstallShield Wizard screen appears, and then click "Next".



3. At the Country Domain Selection screen, select the country domain (please see the Regulatory Domain table on the next page). If you are not sure which domain to select, click on the domain to see a list of the included countries for that domain. Click "Next".

Warning: please note that selecting the incorrect "domain" may result in a violation of applicable law in your country. After completing the installation, if you need to change the domain, please re-insert the attached CD-Rom, repeat step 1 and 2 to **remove** the driver/wireless utility, restart the computer, reinstall the driver/wireless utility from Step 1, and select the desired domain.

#### **Regulatory Domains**

Channel	802.11b	Regulatory Domains				
Number	Frequency (GHz)	FCC (North America)	ETSI (Europe)	France	Israel	MKK (Japan)
1	2.412	Х	Х			Х
2	2.417	Х	Х			х
3	2.422	Х	х		Х	х
4	2.427	Х	Х		Х	Х
5	2.432	Х	Х		Х	Х
6	2.437	Х	Х		Х	Х
7	2.442	Х	Х		Х	Х
8	2.447	Х	Х		Х	Х
9	2.452	Х	Х		Х	Х
10	2.457	Х	Х	Х		Х
11	2.462	Х	Х	Х		Х
12	2.467		Х	Х		Х
13	2.472		Х	Х		Х
14	2.484					х

Regulatory Domain	Antenna Gain (dBi)	Maximum Power Level (mW)
Americas (ECC)	0	100
Americas (100)	2	100
Europe (ETSI)	0	100
	2	50
Israel	0	100
131401	2	50
Japan (MKK)	0	100
Japan (Mitth)	2	50

Maximum Radio Output Power for Each Domain

Note: some countries may have domain that is different from the domains in the above table. It is users' responsibility to ensure that the wireless channel configuration is compliant with the regulatory standards of these countries.

- 4. Click "Ok" to accept the domain selection.
- Click "Next" to install the software at the default location (C:\program files\802.11b Wireless CardBus & PCI Adapter HW.11V1.10) or click on "Browse" and select a desired destination folder.
- 6. Click "Next" to accept the default program folder (802.11 Wireless LAN).
- 7. Click "Finish".

Note: For Win 98/ME, windows may prompt you to restart the computer, clock on "No".

- 8. Click "Exit" on the menu screen and remove the CD-ROM.
- 9. Shut down the computer (power off), install the CardBus/PCI Adapter to the computer, and boot up the computer.
- 10. After the computer boots to Windows, Windows automatically loads the driver and starts the Wireless Utility.

Note: for Win 98/ME, the "found new hardware wizard" window appears. Select "automatic search the driver...", click "Next", click "Finish", and click "Yes" to restart the computer.

You can find the Wireless Configuration Utility icon on the Windows task

bar at the lower right hand corner of the screen. If the icon is not on the screen, please go to "Start", "Programs", "802.11Wireless LAN", "802.11b Wireless CardBus & PCI Adapter HW.11…", and select "Wireless Configuration Utility".

11. In default, the wireless adapter is configured to connect to the nearest Access Point (the one with the highest signal strength and without the encryption). The Utility icon turns green after making the wireless connection. The icon turns red when it is not connected (no connection).



#### Wireless Modes

**Ad-Hoc** (peer-to-peer or computer-to-computer) **mode**: the Channel, SSID, and WEP (encryption) must be the same among all wireless devices.

**Infrastructure** (Access Point) **mode**: requires a wireless Access Point (AP) or Access Point Router to allow wireless clients to communicate with wired Ethernet network. The wireless adapter's SSID and WEP must match the AP's settings.

Moreover, all connected wireless devices should have the IP address under same range and same subnet (e.g. IP address: 192.168.1.5, subnet mask: 255.255.255.0), you can follow the procedures in **APPENDIX** on **page 8** to check and configure the network adapter's IP address.

#### Wireless Utility

With the Wireless Utility, users can configure all the functions provided by the Wireless Utility. Double-click the Configuration Utility icon that appears in the taskbar to open the utility.

The Utility includes seven tabs: Status, Configuration, Advanced, Profile, Network, Statistics and About.

Wireless Configurat Status Configuration	ion Utility Advanced Profile Network Statistics Abou
Connected To:	PM : 00-00-01-00-01
Network Mode:	Infrastructure
Channel:	1
Transmit Rate:	11 Mbps
Encryption:	64-bit WEP
Data Transmitted:	7659 Data Received: 7355
Signal Strength:	84 %
	01.9/

#### Making a Connection

**Using Network Survey Tool:** from the "Wireless Configuration Utility", click on "Network", the Utility scans and displays available wireless network connections in the surrounding area. The connections' configurations, including SSID, MAC Address, Channel, Signal, WEP (encryption), and Mode are displayed on the screen (you may need to scroll to the right to see the configurations on the right).



If the available network's WEP is "No" (no encryption), click on its **SSID** and click "Connect" to connect to this network.

If the network's WEP is "Yes", after clicking "Connect", manually enter the "Security" information, and click "Apply".

Status Configuration	Advar	nced Profile	Network S	Statistics About
_ Network				
Network Mode:	Infrast	ructure (Access	: Point)	
Network SSID:	TNET			•
Channel:	1			7
- Security-				
Enable Encry	ption	Key Length:	40 / 64 Bit	•
Manual Er	ntry:	Format:	Hex	•
Key 1:	. [			
C Key 2:				
🔿 Key 3:	. [			
C Key 4:				
C Create with Passphrase:				
		пк	Cancel	Ánolu

- Network Mode: select "Infrastructure" when connecting to an "Access Point" or "Wireless Router". Select "802.11 Ad-Hoc for peer-to-peer (computer-to-computer) connection.
- Network SSID: this is the wireless network's name. To make the connection, the wireless devices in the same network need to have the same SSID.
- Channel: Available in "802.11 Ad-Hoc" mode only. Wireless devices in the same network need to use the same channel number.
- Enable Encryption: check this box to enable the encryption.
- Format: select the encryption format in "ASCII" or "HEX" (hexadecimal).
- Key Length: select the encryption key length.
  - 40/64-bit: ASCII: 5 alphanumeric characters, any combination of numbers 0 ~ 9 and letters a ~ z (upper and/or lower case). Hex: 10 characters, with any combination of numbers 0 ~ 9 and letters a ~ f (upper or lower case).
    - 128-bit: ASCII: 13 alphanumeric characters, any combination of numbers 0 ~ 9 and letters a ~ z (upper and/or lower case).

Hex: 26 characters, with any combination of numbers  $0 \sim 9$  and letters a  $\sim f$  (upper or lower case).

- Manual Entry: input the keys manually.
- Key 1 ~ 4: to increase the security level, you can input up to 4 Keys for the wireless connection, and then activate different key on different time/date. Only one Key is activated at one time.
- Create with Passphrase: type in any easy to remember phrase (name and/or numbers), click "Apply", and the utility generates the 4 keys automatically. The same passphrase generates the same set of keys.

After making the connection, the Utility's "Status" page displays the "Signal Strength" and "Link Quality" for this connection.

# *Note: the Signal Quality and Link Quality meters are for your reference only. It does not reflect the connection's actual speed (bandwidth).*

#### <Important>

To save the current settings, click on "Profile" tab, enter a desired profile, name, click on "Save", and then click on "Activate". You can save multiple profiles for different wireless connections (e.g. home, office, coffee shop, and hotel). To activate a saved profile, click on "Profile" tab, select the desired "Profile Name" from the drop-down menu, and click "Activate". To delete a profile, select the "profile name" and click "Delete".

If you do not save the settings into a profile, you will lose these settings after turning off the computer.

Please refer to the User's Guide for more information on other configuration settings.

#### **Checking Your Wireless Connection**

- 1. Check the LED indicators of the CardBus/PCI Adapter. A solid/blinking green LED indicates the link is successful.
- 2. Check the Wireless Utility Icon that appears in the Windows taskbar. If the icon is green, the connection is successful.
- 3. Check if the SSID is the same between the linking devices/stations.
- 4. Check if the security key is the same between the linking devices/stations.
- 5. Make sure all the wireless devices' IP addresses are in the same range/class.

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## **APPENDIX**

### How to Check/Configure Network Adapter's IP Address in Windows 98/ME/2000/XP

General Wireless Networks Advanced To connect to a network, make sure the proper Connect using: Bealtek RTL8180 Wireless LAN (Mini-)PCI NIC #2 network settings are configured for the wireless Configure. adapter. This connection uses the following items: ✓ % NWLink NetBIOS \* Image: State S Internet Protocol (TCP/IP) For Microsoft Windows XP: From the desktop, right click on My Network <u>U</u>ninstall Install. Description Places > select Properties > Double-click on Enables this computer to log on to NetWare servers access their resources. the Realtek Wireless Network Connection. Show icon in notification area when connected Click Internet Protocol (TCP/IP) ΠK Cancel Click Properties Internet Protocol (TCD/ID) Propertie 

	General Alternate Configuration	
Select Obtain an IP address	You can get IP settings assigned automatically if your network supports	
automatically (if the Wireless	the appropriate IP settings.	
Router or Access Point has	Dtain an IP address automatically	
	O Use the following IP address:	
DHCP server feature enabled)	IP address:	
	Sybnet mask:	
Select Obtain DNS server	Default gateway:	
	Obtain DNS server address automatically	
address automatically	O Use the following DNS server addresses:	
	Preferred DNS server:	
	Alternate DNS server:	
	Advanced	
	Cancel	
CIICK UK		

#### <Important>

If your network's "Wireless Access Point" or "Wireless Router" has DHCP Server feature, for ease of configuration, please enable the feature, and set the wireless adapter to "Obtain IP Automatically". After the wireless adapter connects to the Access Point or Router, it will receive the IP addresses automatically.

Static IP address Setup	Internet Protocol (TCP/IP) Properties
Select <b>Use the following IP</b> address (if you don't have a DHCP server in the network)	General         You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.         O Dotain an IP address automatically         O Uge the following IP address:         IP address:
Input IP address, Subnet mask,	Sybnet mask:     255 . 255 . 0       Default gateway:        Obtain DNS server address automatically       Outge the following DNS server addresses:
Input DNS	Alternate DNS server:
Click OK	K Cancel

For Windows 2000 users:	L Wireless Network Connection 10 Properties
From the <b>desktop,</b> right click on <b>my network</b>	General   Wireless Networks   Advanced
places and select Properties > Double-click	Connect using: Bealtek RTL8180 Wireless LAN (Mini-)PCI NIC #2
on the Local Area Connection associated	, Configure
with the Realtek wireless adapter > select	This connection uses the following items:
Properties.	ママーマン WWLink IPX/SPX/NetBIOS Compatible Transport Prot マーマー Transport Protocol (TCP/IP)
Click Internet Protocol (TCP/IP)	Install
Click Properties	Enables this computer to log on to NetWare servers and access their resources.
	OK Cancel

DHCP IP address Setup	Internet Protocol (TCP/IP) Properties
	General Alternate Configuration
Select Obtain an IP address	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
automatically (if the Wireless	illbrau an IR addees a tomaticalli
Router or Access Point has	Olgo the following IP address:     IP address:     Subnet mask:     Default gateway:
Select Obtain DNS server address automatically	Obtain DNS server address automatically     O Use the following DNS server addresses:     Preferred DNS server:     Alternate DNS server:
Click OK	Advanced

	Internet Protocol (TCP/IP) Properties	<u>?  ×</u>
Static IP address Setup	General	
	You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.	
Select Use the following IP	C Dbtain an IP address automatically	
address (if you don't have a DHCP	Use the following IP address:	٦
converting the network)	IP address: 192 . 168 . 0 . 51	
server in the network)	Sybnet mask: 255 . 255 . 255 . 0	
	Default gateway:	
Input IP address, Subnet	C Obtain DNS server address automatically	
mask, and Default gateway	Use the following DNS server ad resses:	٦
	Preferred DNS server: 192 . 152 . 81 . 1	
	Alternate DNS server:	
Input DNS Addresses		-
	Advanced	-
Click <b>OK</b>		

For Windows Me and 98 users: From the Desktop, right click on Network Neighborhood > select Properties. Click TCP/IP → Realtek Wireless Adapter	Network     Image: Configuration     Indentification     Access Control       The following petwork components are installed:     Image: Configuration     Image: Configuration       The following petwork components are installed:     Image: Configuration     Image: Configuration       Image: Configuration     Configuration     Image: Configuration       Image: Configuration     Image: Configuration     Image: Configuration
DHCP IP address Setup	Elle and Print Sharing         Description         OK         CP/IP Properties         QK         Cencel         Bindings         Advanced         NetBIOS         DNS Configuration         Gateway         WINS Configuration

	Divis configuration   datendy   write configuration
Select Obtain an IP address	An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in
automatically (if the Wireless	the space below.
Router or Access Point has	Obtain an IP address automatically
	O Specify an IP address:
DHCP server enabled)	I <sup>p</sup> Address:
	Sybnet Mask:
Click OK	Detect connection to network media
	OK Cancel

Static IP address Setup	TCP/IP Properties
<u></u>	Bindings Advanced NetBIOS
	DNS Configuration Gateway WINS Configuration IP Address An IP address can be automatically assigned to this computer.
Select Specify an IP Address (if	If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in
you don't have a DHCP server in	the space below.
the network)	O Obtain an IP address automatically
	Specify an IP address:
	<u>IP Address:</u> 192.168.0.51
Input IP address and Subnet mask	Subnet Mask: 255.255.255.0
Check Detect connection to network	Detect connection to network media
media	
Click OK	OK Cancel

#### Checking the Adapter's IP Address

**Windows 2000/XP**: go to "start", select "run", type in **cmd** and click ok. At the command prompt (C:\), type in **ipconfig/all** and hit "Enter".

**Windows 98/ME**: go to "Start", select "Run", type in **winipcfg** and click "OK". From the drop-down menu, select the name of the network adapter (not the PPP Adapter).

**Ping Command**: If you know a networked device's IP address, in the command prompt (c:\), type in **ping xxx.xxx.xxx** (where xxx.xxx.xxx is the device's IP address) and hit "Enter". If you see replies from this IP address, your computer should be able to communicate with this device.

# **Technical Support**

You can find the most recent driver/firmware/software and user documentations on the **TRENDware website**. **TRENDware** provides **free technical support** for all customers for the duration of the warranty period on this product.

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