U-MEDIA Communications, Inc.

WST-385L v1.1

User Manual

Revision 1.0

Revision History

Date	Version	Author	Remark
11/18/2009	1.0	Daphne Tseng	Preliminary

Federal Communication Commission 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 can radiate radio frequency energy and, if not installed and used in accordance with the instructions, 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 to correct the interference by one of the following measures:

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The availability of some specific channels and/or operational frequency bands are country dependent and are firmware programmed at the factory to match the intended destination. The firmware setting is not accessible by the end user.

1. Getting Started with the WST-385L v1.1

Congratulations on purchasing the WST-385L V1.1! This manual provides information for setting up and configuring the WST-385L V1.1. This manual is intended for both home users and professionals.

1.1. Package Contents

● WST-385L v1.1 Wireless N Gaming Adapter

● CD-ROM (User's Guide)

● CAT-5 Ethernet Cable

● Power Adapter (12V, 0.5A)

NOTE Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

1.2. Minimum System Requirements

Installation Requirements

● Web Browser: Internet Explorer (6 or higher) Mozilla or Safari.

● A computer with a network adapter or wireless adapter properly installed.

● CD-ROM drive

● A router with an available network LAN port.

● A RJ-45 network cable.

2. Introduction

The WST-385L V1.1 Wireless N Gaming Adapter is an high-performance, supports high-speed wireless networking at home, at work or in public places. This bridge is also back compatible with 802.11g or 11b devices. This means that you do not need to change your entire network to maintain connectivity. You may sacrifice some of 11n's speed when you mix 11n and 11b/g devices, but you will not lose the ability to communicate when you incorporate the 11n standard into your 11b/g network. You may choose to slowly change your network by gradually replacing the 11b/g devices with 11n devices.

2.1.   Features

- Wi-Fi compliant with IEEE 802.11n standard
- Backwards compatible with IEEE 802.11g and IEEE 802.11b devices
- Connects network-ready game consoles including Nintendo Wii, Xbox, Xbox 360, PlayStation 2 and PlayStation 3 to a high speed wireless n network
- Supports online gaming and head-to-head play
- Supports Multiple Input Multiple Output (MIMO) technology
- Easy setup with Wi-Fi Protected Setup (WPS) feature
- Maximum reliability, throughput and connectivity with automatic data rate switching
- Supports 64/128-bit WEP, WPA/WPA2 and WPA-PSK/WPA2-PSK
- Low interference and high susceptibility optimize performance
- Easy user setup wizard and intuitive Web browser configuration
- Coverage of up to 50 meters indoor, 100 meters outdoor.

3.   Hardware Overview

3.1.   LED Indications

LED 1	PWR	Blue: ON, while power on.
LED 2	LAN	Blue: OFF, Link failed, or not linked Blue: ON, 10/100M linked Blue: Blinking, 10/100M traffic activity
LED 3	Wireless	Blue: ON, wireless linked Blue: Blinking, wireless traffic activity
LED 4	WPS	Blue on: WPS success Blue Blinking : WPS in progress Orange Blinking: WPS error

3.2. Rear Panel

Power Jack	DC input
LAN Port	10/100Mbps

3.3 Top View

WPS Button	Trigger WPS process

3.4 Bottom View

Reset Button	Reset to factory default setting

3.3   Installation Considerations

The WST-385L V1.1 Gaming Adapter allows you to access your network by using a wireless connection from virtually anywhere within its operating range. Keep in mind that the number, thickness and location of walls, ceilings, or other objects that the wireless signals must pass through, may limit the range. Typical ranges vary depending on the types of materials and background RF (radio frequency) noise in your home or business. The key to maximizing wireless range is to follow these basic guidelines:

● Keep the number of walls and ceilings between the WST-385L V1.1 and other network devices to a minimum - each wall or ceiling can reduce your wireless product's range from 3-90 feet (1-30 meters.) Position your devices so that the number of walls or ceilings is minimized.

● Be aware of the direct line between network devices. A wall that is 1.5 feet thick (.5 meters), at a 45-degree angle appears to be almost 3 feet (1 meter) thick. At a 2-degree angle it looks over 42 feet (14 meters) thick! Position devices so that the signal will travel straight through a wall or ceiling (instead of at an angle) for better reception.

● Building Materials can impede the wireless signal - a solid metal door or aluminum studs may have a negative effect on range. Try to position wireless devices and computers with wireless adapters so that the signal passes through drywall or open doorways and not other materials.
Keep your product away (at least 3-6 feet or 1-2 meters) from electrical devices or appliances that generate extreme RF noise.

3.4   Getting Start

1.   Insert Setup Wizard CD into your CD-ROM drive.

2.   The Welcome screen appears on your monitor. Click **Setup Wizard** button.

3.   Read the License Agreement, accept the terms and click **Next** to continue the installation.

4.   Connect an Ethernet cable from the LAN port on your PC to the LAN port on the WST-385L V1.1, click **Next** to continue.

5.   Plug in the power ada The search window will detect the connected WST-385L V1.1 on our pc and display information here. Click **Configure** to continue (default WST-385L V1.1 IP Address is 192.168.10.110).

6.   Enter the password for WST-385L V1.1 the click **Login**.

7.   The default password is "blank". pter and verify the Power & Ethernet LEDs are light.

8.   To change new password, please enter the new password below then click **Change**.

   Note: To continue without changing the password, please click on the **Skip** button

9.   There are 2 options to configure this adapter, WPS (Wi-Fi Protected Setup) or Manual Setup. To setup with WPS method, continue to step 10 or to perform a Manual setup, please go to step 14.

10.   You can choose to use **Push Button Method** (PBC) or **PIN Method** to connect to your existing wireless network using WPS type connection.

   When selecting PBC method, once the **Enable WPS** is clicked, also press the WPS on your wireless router, the devices would negotiate and connection automatically.

11.   When using the **PIN Method**, please enter the Device PIN number on your router and save it. Use **Site Survey** button to find the router you would like to connect then click **Enable WPS**, then devices would negotiate and connect.
   Note: when the WPS has solid led on WST-385L V1.1, it means the connection has established, otherwise, please try again.

12.   When the connection is made, it is recommended that you save or print your wireless settings with the **Save** or **Print** buttons. Click **Apply** to continue.

13.   Disconnect the Ethernet cable from your PC to the destination game console.

14.   Congratulations you have configured you WST-385L V1.1.

15.   When using **Manual Setup**, you can select to receive an IP address dynamically from the router or to use an fix IP address that matches your network segment on WST-385L V1.1. Once you made the selection, click **Next** to continue.

To use static IP, please make sure it matches your wireless network. Click **Configure** to continue.

16. Enter a **SSID** for WST-385L V1.1, click **Next** button.

   Note: Enter the SSID of the wireless router/access point you would like to connect to. Select the wireless mode and the security mode that your current wireless network is using.

WEP Encryption

17. To use WEP security, select **WEP** and click **Next** button. Select **64-bit** or **128-bit** WEP key length, and enter your WEP key. For 64-bit encryption, enter 10 hexadecimal characters, For 128-bit encryption, enter 26 hexadecimal characters. Click **Next** to continue the setting.

WPA-PSK/WPA2-PSK

18. To use WPA or WPA2 security, select **WPA or WPA2** and click **Next** button. Select **WPA Mode: WPA Only, WPA2 Only, WPA or WPA2,** and set **Pre-Shared Key** by entering 8 ~ 10 characters. Click **Next** to continue the setting.

19. Confirm your new settings. It is recommended that you save or print your wireless settings with the **Save** or **Print** buttons. Once finished, click **Apply** to continue.

20. Disconnect the Ethernet cable from your PC to the destination game console.

21. Congratulations you have configured you WST-385L V1.1.

4. Using the Configuration Menu

Whenever you want to configure your WST-385L V1.1, you can access the Configuration Menu through your PC by opening the Web-browser and typing in the IP Address of the WST-385L V1.1. The WST-385L V1.1's default IP Address is http://192.168.10.110

- ➢ Open the Web browser.
- ➢ Type in the IP Address of the Bridge (http:// 192.168.10.110)

If you have changed the default IP Address assigned to the WST-385L V1.1, make sure to enter the correct IP Address.

NOTE

- ➢ Select admin in the User Name field.
- ➢ Leave the Password blank.
- ➢ Click Login In.

4.1. Network

4.1.1 LAN Setting

LAN Connection Type
Choose "Static IP (fixed IP)" if your router does not support DHCP or if for any other reason you need to assign a fixed address to the AP. In this case, you must also configure the following fields.

IP Address
The IP address of this gaming adapter on the local area network. Assign any unused IP address in the range of IP addresses available from your network. For example, 192.168.10.110

Subnet Mask
The subnet mask of the local area network.

Default Gateway
The IP address of the router on the local area network.

4.2 Wireless

4.2.1 Profile

Create a custom connection to a specific wireless network. Use this option to make custom profiles and store new profile for later use.

Configure the setting to connect to a wireless network, selection option for network type, SSID, and wireless security. The profile can be edited, deleted and made active from this option. There are several ways to connect to your wireless network, go through the setup wizard, add a new profile or search using site survey feature.

When adding an Profile, please make sure your information matches your existing wireless network.

System Configuration

Profile Name	PROF001
SSID	
Network Type	Infrastructure ▾
Power Saving Mode	◉ CAM (Constantly Awake Mode) ○ Power Saving Mode
RTS Threshold	☐ Used 2347 (range 1 - 2347)
Fragement Threshold	☐ Used 2346 (range 256 - 2346)

Security Policy

Security Mode	OPEN ▾

Wire Equivalence Protection (WEP)

WEP Key Length	64 bit (10 hex digits / 5 ascii keys) ▾
WEP Key Entry Method	Hexadecimal ▾
WEP Key 1 :	
WEP Key 2 :	
WEP Key 3 :	
WEP Key 4 :	
Default Key	Key 1 ▾

Apply Cancel

Security Mode
> Unless one of these encryption modes is selected, wireless transmissions to and from your wireless network can be easily intercepted and interpreted by unauthorized users.

None
> No encryption.

WEP (Open or Shared)
> A method of encrypting data for wireless communication intended to provide the same level of privacy as a wired network. WEP is not as secure as WPA encryption. To gain access to a WEP network, you must know the key. The key is a string of characters that you create. When using WEP, you must determine the level of encryption. The type of encryption determines the key length. 128-bit encryption requires a longer key than 64-bit encryption. Keys are defined by entering in a string in HEX (hexadecimal - using characters 0-9, A-F) or ASCII (American Standard Code for Information Interchange - alphanumeric characters) format. ASCII format is provided so you can enter a string that is easier to remember. The ASCII string is converted to HEX for use over the network. Four keys can be defined so that you can change keys easily. A default key is selected for use on the network.

Key Length	Hex	ASCII
64-bit	10 characters	5 characters
128-bit	26 characters	13 characters

WPA-Personal or WPA2-Personal

This option uses Wi-Fi Protected Access with a Pre-Shared Key (PSK).

Pre-Shared Key: The key is entered as a pass-phrase of up to 63 alphanumeric characters (AES or TKIP type) in ASCII (American Standard Code for Information Interchange) format at both ends of the wireless connection. It cannot be shorter than eight characters, although for proper security it needs to be of ample length and should not be a commonly known phrase. This phrase is used to generate session keys that are unique for each wireless client.

4.2.2 Site Survey

Use the Site Survey tool to search for wireless networks around the WST-385L V1.1 adapter. Click on the **Scan** button to search for wireless network to join. From this window, you can also add the selected network to your profile by clicking the **Add Profile** button. To connect to the desire wireless network, click on the **Connect** button to join a wireless network from this site survey window.

4.2.3 Statistics

View the current operating status of the WST-385L V1.1, see the Transmit and Receive data.

4.2.4 Advance

Use this setting to adjust the wireless environment.

Wireless Modes

2.4GHz 802.11b/g mixed mode - This wireless mode works in the 2.4GHz frequency range and will allow both wireless b and wireless g client to connect and access the WST-385L V1.1 at 11Mbps for wireless b, at 54Mbps for wireless g and share access at the same time. Although the wireless b/g operates in the 2.4GHz frequency, it will allow the use of other 2.4GHz client devices (Wireless n/g @ 54Mbps) to connect and access at the same time.

2.4GHz 802.11 n only – This wireless mode works in the 2.4GHz frequency range and will only allow the use of wireless n client devices to connect and access the WST-385L V1.1. Although the wireless n operates in the 2.4GHz frequency, this mode will only permit wireless n client devices to work and will exclude any other wireless mode and devices that are not wireless n only.

2.4 GHz 802.11b/g/n mixed mode - This wireless mode works in the 2.4GHz frequency range and will only allow the use of wireless g client devices to connect and access the WST-385L V1.1 at 11Mbps for wireless b, 54Mbps for wireless g and up to 150Mbps transmitting/300Mbps receiving for wireless n and share access at the same time.

TX Rate

Select the desire transmitting rate on the adapter. For best performance, please leave the selection on Auto.

HT Mode

Mixed Mode: In this mode packets are transmitted with a preamble compatible with the legacy 802.11g/n, the rest of the packet has a new format. In this mode the receiver shall be able to decode both the Mixed Mode packets and legacy packets.

Green Field: In this mode high throughput packets are transmitted without a legacy compatible part.

Channel Bandwidth

Set channel width of wireless radio.
20 Channel Width = 20 MHz
20/40 Channel Width = 20/40 MHz (additional channel provides better performance)

Guard Interval

Support Short/Long GI, the purpose of the guard interval is to introduce immunity to propagation delays, echoes and reflections, to which digital data is normally very sensitive.

Long

Auto

Using "Auto" option can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections. Select the option that works best for your installation.

MCS

Fix MCS rate for HT rate. (Auto, 0~32)
The Modulation and Coding Scheme (MCS) is a value that determines the modulation, coding and number of spatial channels.

This parameter represents transmission rate. By default (Auto) the fastest possible transmission rate will be selected. You have the option of selecting the speed if necessary.

4.2.5 QoS

WMM (Wireless Multi-Media)
use this feature allows wireless devices to take advantage of the wireless environment over other wireless devices.

WMM Power Saving
An option that allows wireless clients such as notebooks or Laptops to save battery life by sending less transmission during idle times. Add a check mark to enable this option.

PS Mode
Used for specific application when using WMM Power Saving mode is enabled, use this feature to help with Quality of Service (QoS) settings; these settings are polled by the priority given to the option in this section.

AC_BE= Best Effort
AC_BK= Background
AC_VI= Video signal
AC_VO=Voice signal

The options allow users to select which Access Category is needed to turn on while the power saving mode is enabled.

4.2.6 WPS

You can setup security easily by choosing PIN or PBC method to do Wi-Fi Protected Setup.

PIN Start or PBC Start
> Enable the WPS feature.

PIN Settings
> A PIN is a unique number that can be used to add to the router and use that as an authentication key to join the existing wireless network.

> **Client PIN**
> Shows the current value of the adapter.

> **Renew PIN**
> Create a random number that is a valid PIN. This becomes the adapter's PIN. You can then copy this PIN to the wireless router's WPS section.

PBC Settings
> The push button method can be used to allow wireless clients to connect to the router without entering/remember any encryption keys. The user can use the PBC method by pressing the WPS button on the side of the router or select the **Start PBC** option here.

4.3 Administrator

4.3.1 Management
At this page, you can configure administrator account and password.

4.3.2 Upload Firmware
By assigning firmware location, you can upload firmware at this page.
Once you have a firmware saved on your computer, use this option to browse for the file and then click **Apply** to upload the file into the adapter.

4.3.3 Setting Management
You can save system settings by exporting them to a configuration file, restore them by importing the file, or reset them to factory default.

Export Settings
> This option allows you to export and then save the router's configuration to a file on your computer. Be sure to save the configuration before performing a firmware upgrade.

Import Settings
> Use this option to restore previously saved router configuration settings.

Load Factory Defaults
> This option restores all configuration settings back to the settings that were in effect at the time the router was shipped from the factory. Any settings that have not been saved will be lost. If you want to save your router configuration settings, use the Export Settings option above.

System Reboot
This restarts the router. It is useful for restarting when you are not near the device.

4.3.4 Status

You can check system information and network configurations on this page.