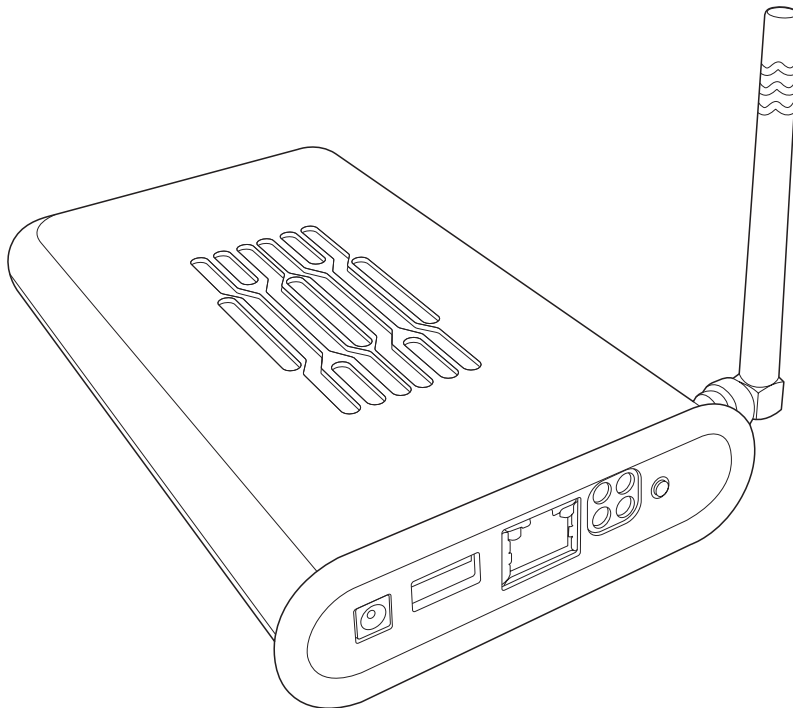




Wireless WL-HDD

(For 802.11g/b Wireless Clients)



User's Manual

E2013 / Mar 2005

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1. Introduction

Overview

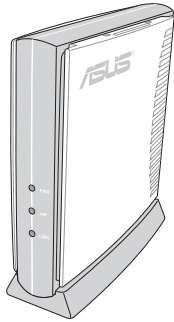
Thank you for purchasing the ASUS Wireless "WL-HDD". This device is a wireless local area network (WLAN) hard disk drive (HDD) with additional Access Point (AP) functionality. It is designed to be fully compliant with the IEEE 802.11g standard and provides data transfer at 54 Mbps using the OFDM (orthogonal frequency division multiplexing) technology. It is also backward compliant with IEEE 802.11b standards and can be adapted for wired environments for data storage.

Wireless LANs are complementary extensions to existing wired LANs, offering mobility while maintaining continuous network connectivity to both corporate and home Intranets. They add a new level of convenience for LAN users. PC users stay connected to the network anywhere throughout a building without being bound by LAN cables. This is accomplished through the Access Point functionality of the ASUS Wireless "WL-HDD". The device also has the additional advantage of providing network storage with its hard disk drive. This allows you to share information and storage capacity through the WLAN and use the hard disk like a public wireless folder. The large storage capacity of the hard disk and a high speed data transfer of 54 Mbps makes the ASUS Wireless "WL-HDD" a very useful tool to share music and video files. The ASUS Wireless "WL-HDD" also supports automatic copying of files from a flash memory disk to the hard disk.

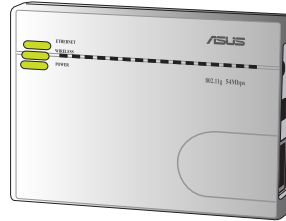
The ASUS Wireless Family

The ASUS Wireless family contains a several wireless network solutions for 802.11g & 802.11b wireless local area networks in the home or office.

Access Point/Client

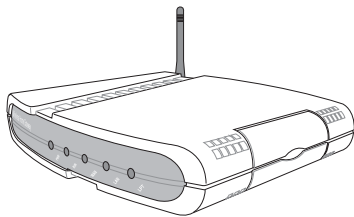


The **ASUS WLAN 802.11g Access Point (WL-300g)** creates a wireless network using the IEEE 802.11g and 802.11b wireless standards.

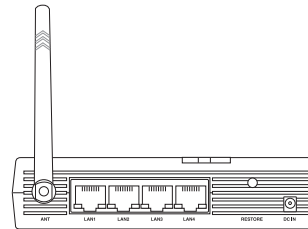


The **ASUS 3 in 1 Pocket Access Point (WL-330g)** creates a wireless network using the IEEE 802.11g/b wireless standards.

Access Point/Router

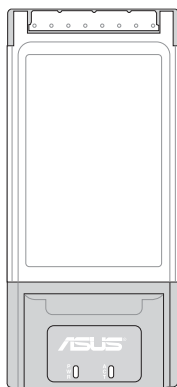


The **ASUS WLAN Gateway (WL-500g)** creates a wireless network using the IEEE 802.11g/b wireless standards and allows sharing a single Internet connection.



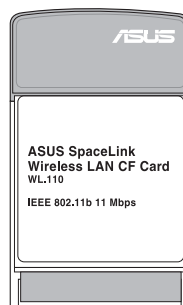
The **ASUS WLAN 802.11g Pocket Router (WL-530g)** creates a wireless network using the IEEE 802.11g and 802.11b wireless standards and allows sharing a single Internet connection.

PCMCIA Client



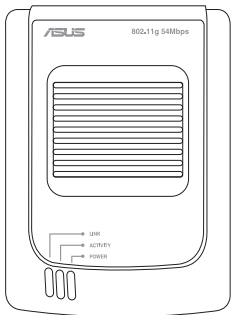
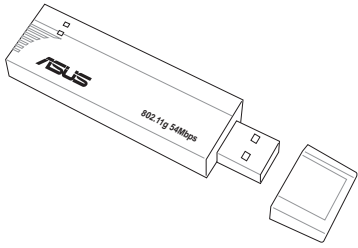

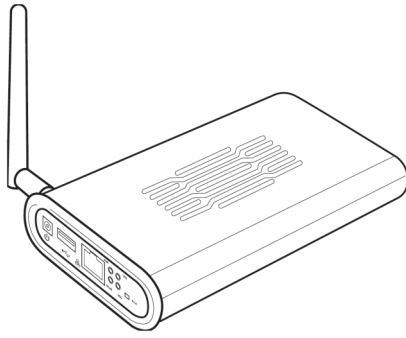
The **ASUS WLAN PC Card (WL-107g)** is a wireless LAN adapter that fits into a PCMCIA Type II slot in a Notebook PC and creates a wireless network using the IEEE 802.11g/b wireless standards.

Compact Flash (CF) Client



The **ASUS 802.11b Wireless CF Card (WL-110)** is a IEEE 802.11b wireless LAN adapter that fits into a Compact Flash Type II slot in a Portable Digital Assistant (PDA).

(The illustrations are not to scale.)

<h2>USB Access Point/Client</h2>	<h2>USB Client</h2>
 <p>The ASUS USB Wireless LAN Adapter (WL-160g) creates a wireless network using the IEEE 802.11g/b wireless standards and connects to any computer using USB2.0 connectivity.</p>	 <p>The ASUS USB Wireless LAN Adapter (WL-167g) is thumb-sized and creates a wireless network using the IEEE 802.11g/b wireless standards and connects to any computer using USB2.0 connectivity.</p>
<h2>PCI Client</h2>	<h2>Access Point/File Server</h2>
 <p>The ASUS WLAN PCI Card (WL-138g) is a wireless LAN adapter that fits into a standard PCI slot in a desktop PC and creates a wireless network using the IEEE 802.11g/b wireless standards.</p>	 <p>The ASUS WLAN 802.11g Access Point (WL-HDD) creates a wireless network using the IEEE 802.11g and 802.11b wireless standards. Also serves as a file server (wireless network attached storage).</p>

(The illustrations are not to scale.)

Features

The ASUS Wireless "WL-HDD" has the following useful features:

- 54 Mbps high speed WLAN access
 - Up to 54 Mbps transfer speeds over the 2.4 GHz frequency band
 - Compatible with existing 802.11b WLAN environments
 - Auto fallback algorithm to select transmission rate
- Secure wireless connectivity
 - AP mode: 64 / 128 bit WEP, WPA
 - Client mode: 64 / 128 bit WEP
- Standard IDE device support
 - Uses Ultra DMA 100 IDE controller
 - Adapted for 2.5-inch slim hard disk drives
- Real time clock support to synchronize the network time.
- Auto copy function to copy data from an external memory disk through USB
- Hard disk pre-scan to scan hard disk functionality at startup
- Windows-based utility to set up WLAN and hard disk data access
- Wireless profile enabling connectivity for home or office environments
- Hard disk access using Network Neighborhood in Windows or Samba in Linux
- UPnP (Universal Plug and Play) feature for Windows XP and Windows ME
- Firmware upgrade function using Ethernet or WLAN

System Requirements

To begin using the ASUS Wireless WL-HDD, your system must have the following minimum requirements:

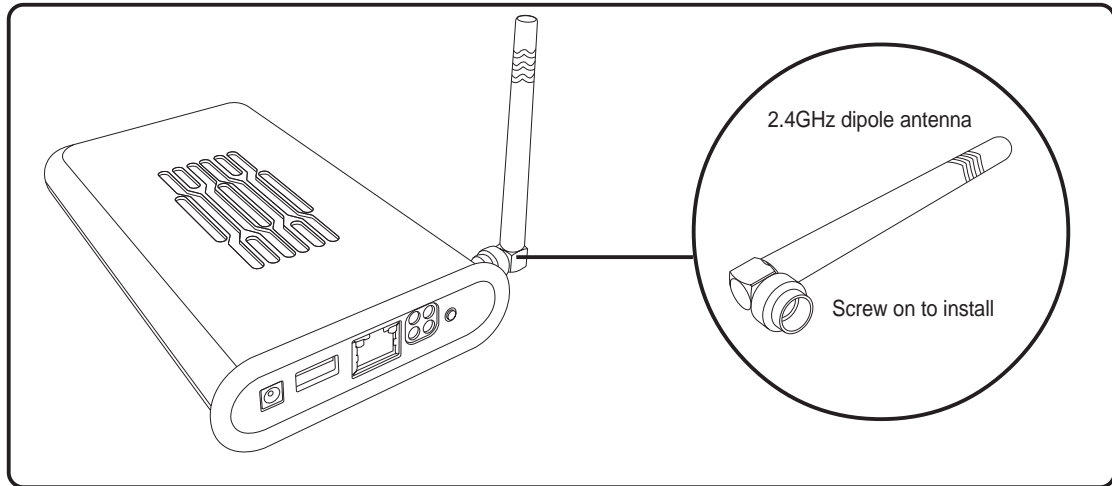
- An Ethernet (10BaseT or 10/100BaseT) adapter for wired client
- At least one 802.11g (54Mbps) or one 802.11b (11Mbps) wireless adapter for wireless mobile clients
- TCP/IP and an Internet browser installed

Power Requirements

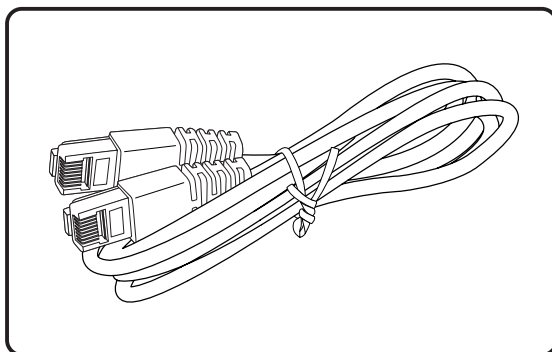
The ASUS Wireless "WL-HDD" requires power from an external power supply. Your package ships with a 5V power adapter. Use only the power adapter provided for safe operation.

Package List

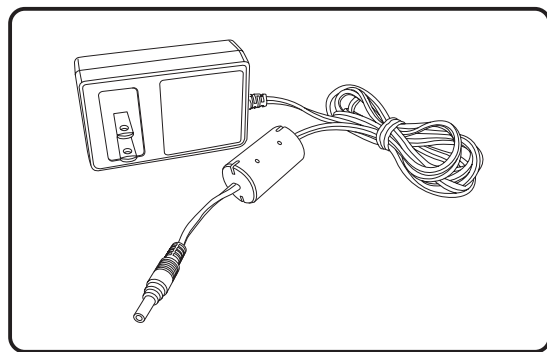
Your package contains the following items:



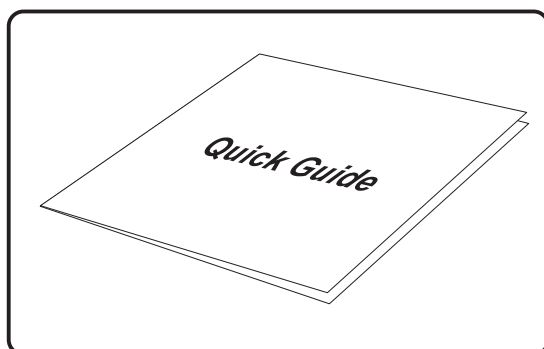
ASUS Wireless "WL-HDD" with 2.4GHz dipole antenna



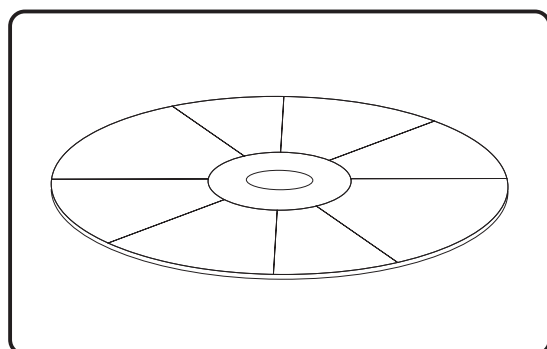
RJ-45 Ethernet cable (straight-through)



Power adapter (5 volts DC)



Quick start guide

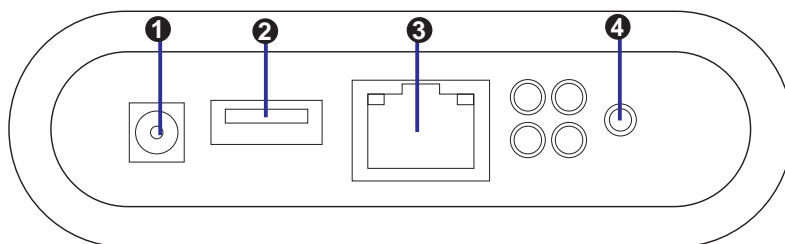


Support CD (drivers, utilities, and manuals)

Hardware Components

This section gives you a tour of the different ports and status indicators of the ASUS Wireless "WL-HDD". Refer to this section when installing and operating your device.

Ports and Buttons



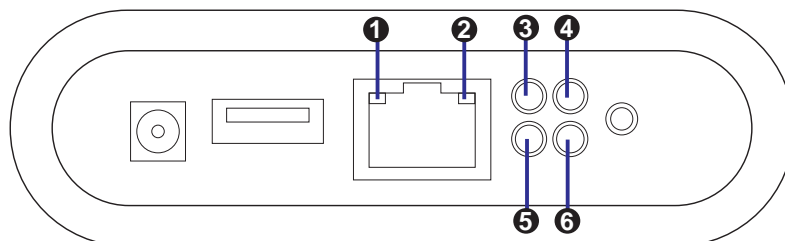
- 1 Power Connector:** Connect the power adapter here.

- 2 USB Port:** Insert a USB flash disk here.

- 3 LAN Port:** Connect one end of the RJ-45 Ethernet cable here and the other end to the RJ-45 port of a network hub, switch, or router.

- 4 Reset Button:** Press this button for 5 seconds to **shut down** the ASUS Wireless "WL-HDD". Press this button for 30 seconds to **reset** the ASUS Wireless "WL-HDD".

Status Indicators



LED	Status	Indication
1 Green	Blinking	Data is being transferred with a speed of 10Mbps
2 Yellow	Blinking	Data is being transferred with a speed of 100Mbps
3 POWER	On Blinking (slow)	Power adapter is plugged in and the device is powered on File system on the hard disk drive is inconsistent
4 USB	Off Blinking (fast) Blinking (slow) On	No USB device found Copying from the USB device to the hard disk drive Partition 1 of the hard disk drive is full USB device found
5 WLAN	On Blinking	Normal state Wireless packets are being transmitted or received
6 HDD	Off Blinking	Normal state Hard disk drive is being accessed

Wireless Performance

This section provides a few ideas to help you improve the performance of your WLAN.

Site Topography

For optimal performance, locate wireless mobile clients and the ASUS Wireless "WL-HDD" away from transformers, heavy-duty motors, fluorescent lights, microwave ovens, refrigerators, and other industrial equipment. Signal loss can occur when metal or concrete walls or floors block transmission. Locate the ASUS Wireless "WL-HDD" in open areas or add more devices (APs) as needed to improve coverage.

Microwave ovens operate in the same frequency band as the ASUS Wireless "WL-HDD". Therefore, if you use a microwave oven within range of your device, you may notice network performance degradation. However, your microwave oven and ASUS Wireless "WL-HDD" will continue to function.

Range

Every environment is unique with different obstacles, barriers, materials, and so on. Therefore, it is difficult to determine the exact range of your WLAN without testing in the specific environment. However, you can follow some of the guidelines described in this section to estimate the range of your network.

Radio signals may be reflected by some obstacles or absorbed by others depending on their construction. For example, with two 802.11b radios, you may achieve clear reception over a distance of up to 1000 feet in open spaces, with the two devices being in line of sight (meaning they have no obstacles in a straight line between them). However, the same two units may only achieve up to 300 feet of range when used indoors.

By default, the ASUS Wireless "WL-HDD" automatically adjusts the data rate to maintain a usable signal connection. Therefore, a client that is close to the ASUS Wireless "WL-HDD" may operate at higher speeds while a client that is on the fringe of coverage may operate at lower speeds. You can configure the data rates used by the ASUS Wireless "WL-HDD" to improve the performance. However, if you limit the range of data rates available to the ASUS Wireless "WL-HDD", you may reduce the effective wireless range of the WLAN coverage.

Site Surveys

A site survey analyzes the installation environment and provides users with recommendations for equipment and its placement. The optimum placement differs depending on the ASUS AP design and specifications.

Roaming Between ASUS APs

If there are multiple ASUS APs on the network, then a wireless mobile client may seamlessly roam from one ASUS AP to another.

Each ASUS AP creates its own wireless cell or coverage area. This is also known as a Basic Service Set (BSS). Any wireless mobile client can communicate with a particular ASUS AP if it is within the ASUS AP's coverage area.

If the cells of multiple ASUS APs overlap, then the wireless mobile client may switch from one ASUS AP to another as it travels throughout the building. During the hand-off from one ASUS AP to another, the wireless mobile client maintains an uninterrupted connection to the network. This is known as "roaming."

Multiple ASUS APs connected to a common Ethernet network form an Extended Service Set (ESS). All members of an Extended Service Set are configured with an ID, known as the SSID or ESSID. Wireless mobile clients must be configured with the same SSID as the ASUS APs on the network; a client can only roam between ASUS APs that share the same SSID.

Roaming Guidelines

- An ASUS WLAN card can only roam between APs of the same type.
- All ASUS APs must have the same SSID.
- All ASUS WLAN cards must have the same SSID as the APs that they will roam between.
- If WEP encryption is enabled, then all ASUS APs and client adapters must use the same encryption level and WEP Key(s) to communicate.
- ASUS APs' cells must overlap to ensure that there are no gaps in coverage and to ensure that the roaming client will always have a connection available.
- ASUS APs that use the same Channel should be installed as far away from each other as possible to reduce potential interference.
- It is strongly recommended that you perform a site survey using the utility provided with the ASUS WLAN card to determine the best location for each ASUS AP in the building.

2. Getting Started

Location Tips

- Determine the best location for the device while keeping in mind the following considerations:
- The length of the Ethernet cable that connects the device to the network must not exceed 100 meters.
- For standard placement, try to place the device on a flat, sturdy surface as far from the ground as possible, such as on top of a desk or bookcase, keeping clear of metal obstructions and away from direct sunlight.
- For external antenna mounting, install the external antennas so that they are clear of obstructions; refer to the documentation that came with the antennas for mounting and installation instructions.
- Try to centrally locate the device and its antenna so that it will provide coverage and access to its hard disk drive to all of the wireless mobile devices in the area.
- Use only the power supply that came with this unit. Other power supplies may fit but the voltage and power may not be compatible.



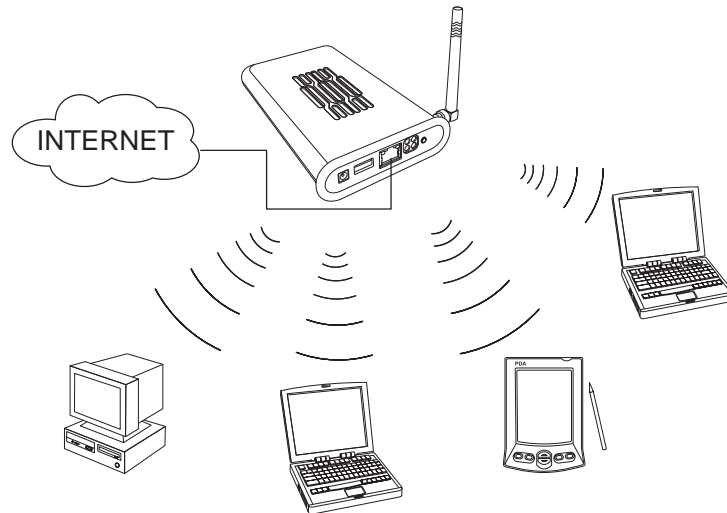
Note: It is the responsibility of the installer and users of the ASUS Wireless "WL-HDD" to guarantee that the antenna is operated at least 20 centimeters from any person. This is necessary to ensure that the product is operated in accordance with the RF Guidelines for Human Exposure which have been adopted by the Federal Communications Commission.

Making Connections

You can use your ASUS Wireless "WL-HDD" as an Access Point or as a wireless network storage device in an existing WLAN. When the ASUS Wireless "WL-HDD" is turned on, it searches for other existing Access Points in its vicinity. If no other AP is found, it acts as an AP, while at the same time allowing access to its hard disk drive. If an existing WLAN and AP is found in the vicinity, it acts as a wireless shared hard disk that can be accessed by other wireless clients in the WLAN.

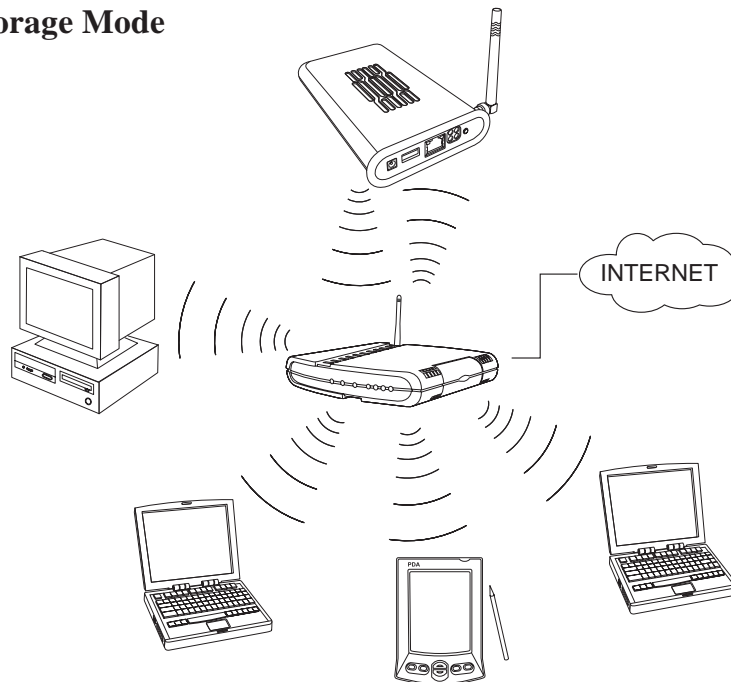
Chapter 2 - Getting Started

AP Mode



In order to use the ASUS Wireless "WL-HDD" as an AP, it has to be connected to a network hub for Internet access. Attach one end of the RJ-45 Ethernet cable to the ASUS Wireless "WL-HDD" and attach the other end to the RJ-45 port of a network hub, switch, router, or patch panel (represented by the INTERNET connection in the illustration).

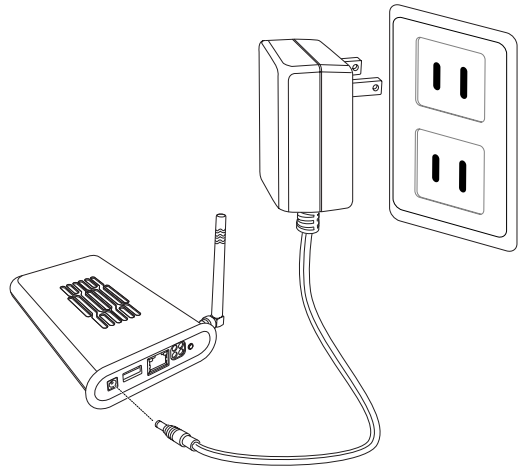
Network Storage Mode



To use the ASUS Wireless "WL-HDD" as a WLAN storage device in an existing network, no network cable connections to the device are required. The wireless network consisting of an AP and one or more wireless clients, uses the ASUS Wireless "WL-HDD" as a shared network hard drive. The clients can read or write data from the device as required.

Connecting Power

Attach one end of the AC power adapter, included in the product package, to the power jack on the device and the other end to a power outlet. The POWER LED lights up when the unit is powered ON.



Warning: Use the product only with the power adapter supplied in the product package. Using another power supply may damage the device.



Warning: To shut down the ASUS Wireless WL-HDD, click the Shut-down button on the web manager. This prevents damage to the hard disk. Unplug the power cord only after shutting down the device. See “Shutting down the ASUS Wireless WL-HDD” for details.

Configuring the Wireless Client

TCP/IP Settings

In order to access the shared hard disk drive of the ASUS Wireless "WL-HDD" or to use the device as an AP, you may need to configure the TCP/IP settings. The TCP/IP settings should be on the IP subnet of the ASUS Wireless "WL-HDD".



Note: Change the TCP/IP settings only if the wireless network does not support automatic IP addresses or if there is a problem operating the device. If you are not sure about the settings, use the default settings where the client obtains the IP address automatically.



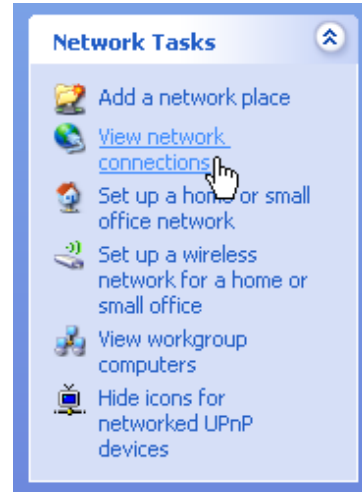
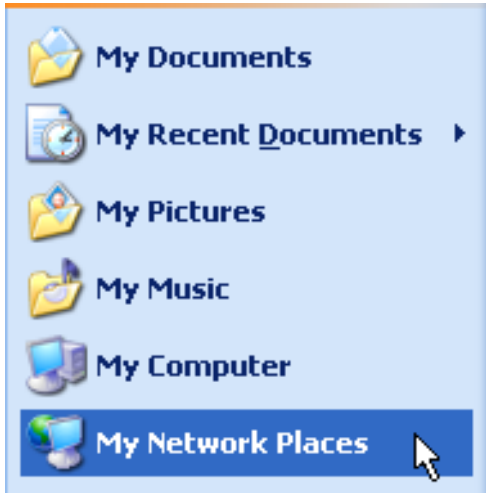
Note: Changing TCP/IP settings may require rebooting your PC (wireless client). When rebooting, the ASUS Wireless "WL-HDD" should be switched ON and in the ready state.

The following are the default IP settings of the ASUS Wireless WL-HDD:

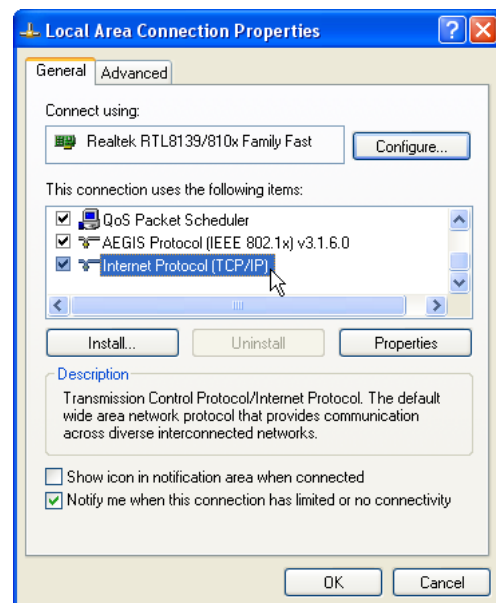
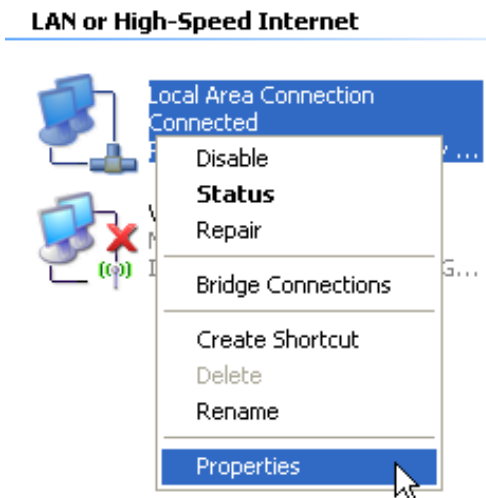
- IP address 192.168.1.220
- Subnet Mask 255.255.255.0.

Chapter 2 - Getting Started

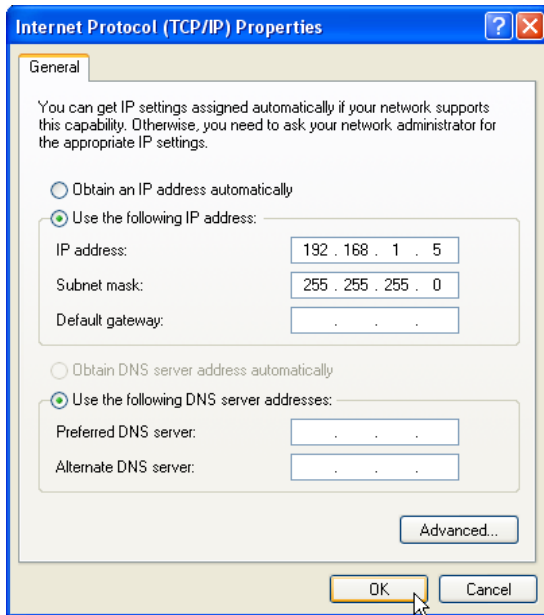
If you set your computer's (wireless client) IP manually, it needs to be on the same segment as the ASUS Wireless "WL-HDD". To set the TCP/IP settings, use the Network and Dialup Connections wizard to create a new LAN connection and configure its TCP/IP settings as follows:



1. Select "My Network Places" from Windows start.
2. Click View network connections.



3. Right-click the Local Area Connection.
4. Double-click Internet Protocol (TCP/IP)



4. Select “Use the following...”

IP address: 192.168.1.xxx (xxx can be any number between 1 and 254 that is not used by another device except 192.168.1.220 which is used by the “WL-HDD”)

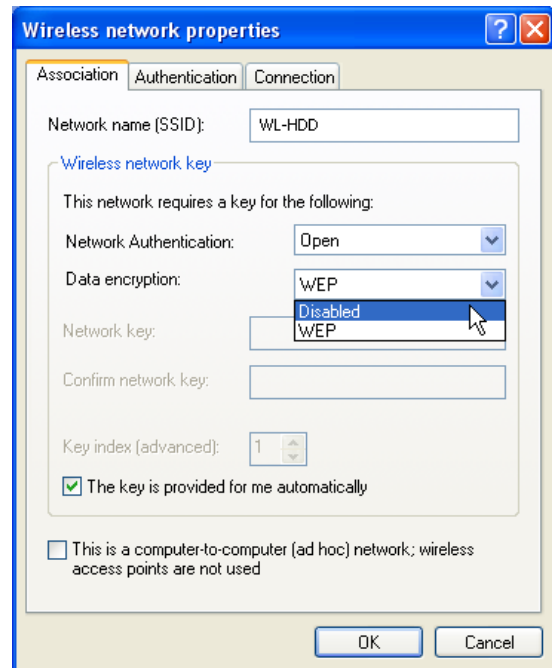
Subnet Mask: 255.255.255.0

SSID Settings

The SSID or the network name of the WLAN adapter must be configured correctly for proper operation. Click the LAN icon under “Network and Dialup Connections” and right-click to view its Properties. Click **Configure** under the General tab. Then select the **Wireless Network** tab. Make sure that the Network Name is set to “WL-HDD” and click **OK**.

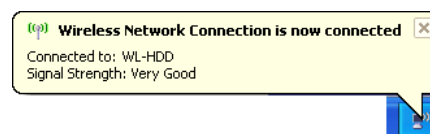


Note: Disable WEP and set the SSID to default for any existing wireless LAN device connected to your computer.



Note: The procedure described here may be slightly different for various wireless adapter utilities. Refer to the documentation for your wireless client (notebook or PDA) as well as that for the wireless adapter for specific instructions.

When the wireless client is configured correctly, connection to the “WL-HDD” should be automatic.



Chapter 2 - Getting Started

Using the Hard Disk Drive

Now that you have installed the ASUS Wireless "WL-HDD" and connected it as required, you are ready to start using the hard drive as a network storage device as described in the following sections.

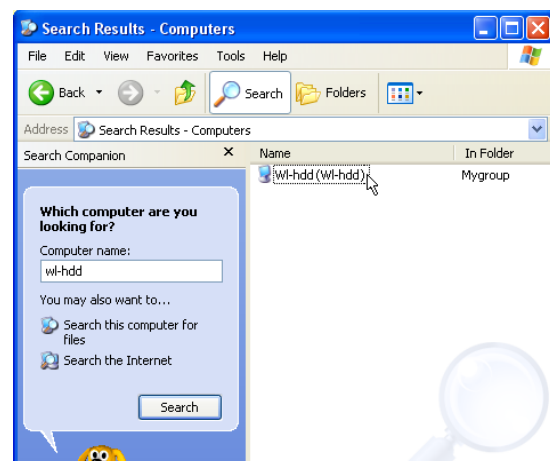
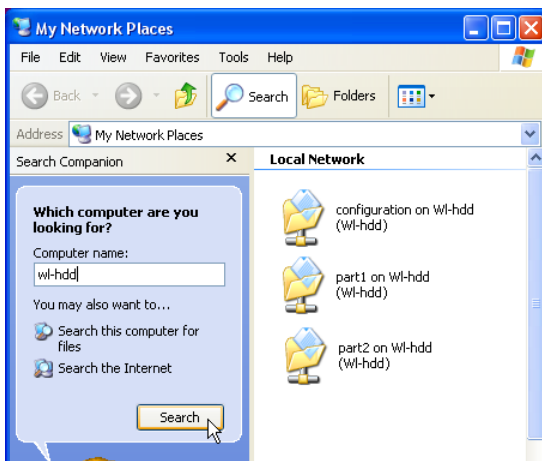
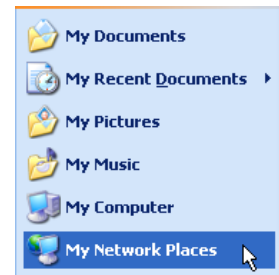
Accessing the Hard Disk Drive

You can access the hard drive in any of the following ways:

Searching for the Device

The easiest method to locate the hard disk from the network is to search for all computers on the network and then locate the hard drive as follows:

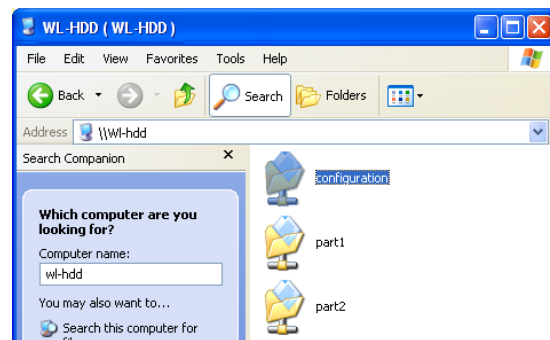
1. Select "My Network Places" from Windows **start**.
2. Click the **Search** button on the toolbar.
3. Enter "WL-HDD" and click **Search**.



Windows may or may not have already found the "WL-HDD".

4. When ASUS Wireless "WL-HDD" is found, double-click to view the contents of the drive.

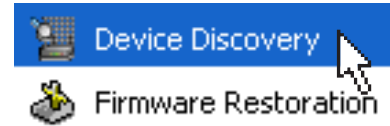
The hard disk shows the configuration folder and the partitions (part1, part2, etc.) on the hard disk drive. You can set the access permissions for the hard disk drive using the configuration utility.



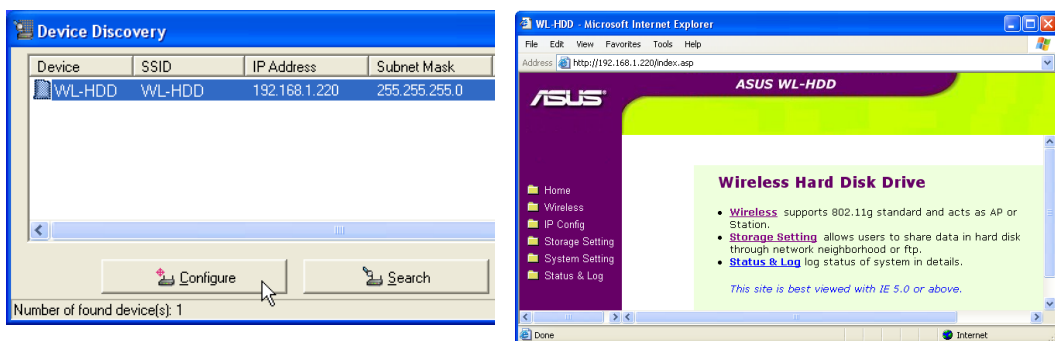
Using the ASUS Utility

We recommend that you install the ASUS utility provided on the software CD included in your package. The utility enables you to search for the device and connect to the device to access the hard drive and configure the settings. Follow these steps to use the ASUS utility:

1. Using Windows, click Start | Programs | ASUS Utility | Wireless HD | Device Discovery.

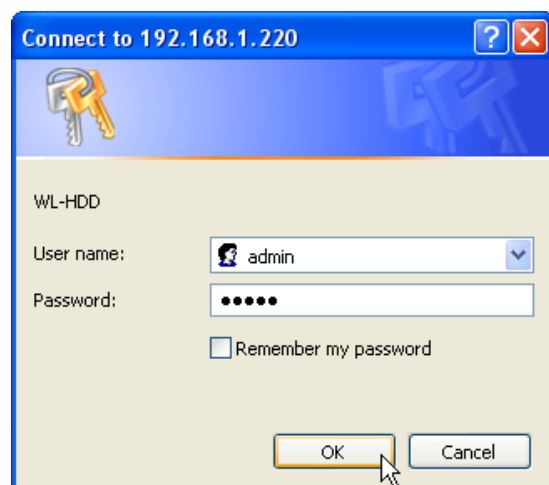


2. The utility displays the ASUS Wireless "WL-HDD" and other available wireless devices in the device list. Select the ASUS Wireless "WL-HDD" and click Configure to access the device.



Note: You can also enter the "WL-HDD" default IP address (<http://192.168.1.220>) manually in Internet Explorer. The default IP address is not applicable if a DHCP server assigned an IP addresses to the ASUS Wireless "WL-HDD". The IP address of the ASUS Wireless "WL-HDD" is shown in the Device Discovery utility.

3. Default User name: **admin**
Default Password: **admin**



Chapter 2 - Getting Started

Hard Drive Pre-scan Function

When the ASUS Wireless "WL-HDD" is first turned on, it performs a pre-scan of the hard disk drive to ensure that it is functioning correctly and does not have any corrupt data. If the hard drive is not working, has not been formatted, or has been corrupted, a message is displayed on the screen asking you to format the hard disk.

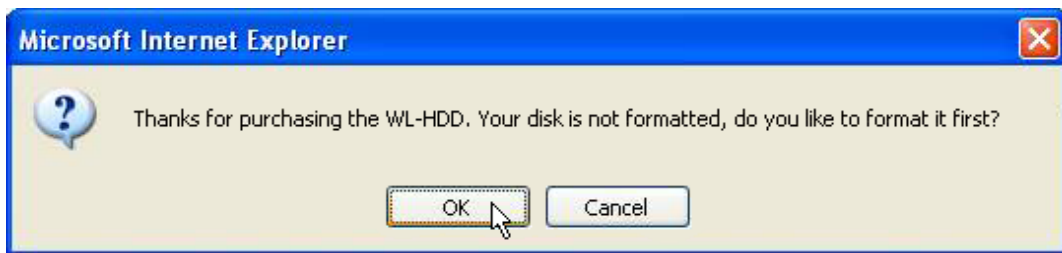


Note: We recommend that you format the hard disk at least once before using it.

Formatting the Hard Disk

To format the hard disk, do the following:

1. The pre-scan function detects the unformatted disk and prompts you to start formatting. Click **OK**.



2. The Disk Tool from the Storage Setting menu opens in your browser. This tool formats the hard disk and creates up to four (4) partitions. Specify the size of the partitions in megabytes and click Apply to start formatting.

Storage Setting - Disk Tool	
The Disk Tool allows you to format a new disk and create up to 4 partitions on it. Any data and existing partitions on this disk, will be lost if format operation is performed. So, formatting to maximum size is recommended.	
Device Type:	IDE
Disk Space(MB):	76351
Disk Space of Partition 1(MB):	76351
Disk Space of Partition 2(MB):	
Disk Space of Partition 3(MB):	
Disk Space of Partition 4(MB):	
<input type="button" value="Apply"/>	

Chapter 2 - Getting Started

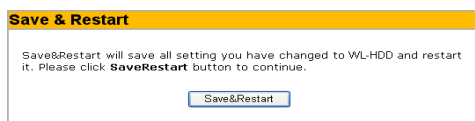
3. A message is displayed on the screen to warn you that formatting will erase all data on the disk. Click **OK** to continue.



4. Formatting of the hard disk begins and the browser window displays the formatting status.



5. After formatting is completed, you are asked to restart the system. Click **Save&Restart** to restart the system.



6. The browser window displays the status while the ASUS Wireless "WL-HDD" restarts. Wait till the screen is refreshed before using the system.



Note: If you view the disk status using the software configuration tool and if the disk is corrupted (see "Status"), the following information is displayed.

Status & Log - Status	
Sytem Time:	Sat, 2 Sep 1922 00:04:39 UTC-00:00 <input type="button" value="Sync"/>
Internal Disk	
Model Name:	SAMSUNG MP0804H
Partition 1:	29981.7, free: 29981.6
Partition 2:	46351.6, free: 46285.7
Partition 3:	
Partition 4:	
Status:	File system ready
Action:	<input type="button" value="File System Check"/>
External USB Disk:	
Partition 1:	
Partition 2:	
Partition 3:	
Partition 4:	
Status:	
Action:	<input type="button" value="Filesystem Check"/> <input type="button" value="Eject"/>
LAN Interface	
IP Address:	192.168.1.220
Subnet Mask:	255.255.255.0
Default Gateway:	
<input type="button" value="Refresh"/>	

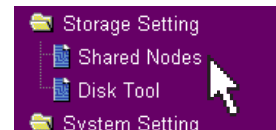
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Setting up Permissions

You can set up the hard drive permissions so that only the specified users can access it and write data to hard drive. This is a useful feature so as to limit the data that is put on the network storage.

Click the **Storage Setting** icon in the left pane to display the hard disk settings. Refer to the next two sections to learn how to edit the user and shared file lists.

Editing the User List



The user list is a list of people who are allowed to access to the ASUS Wireless "WL-HDD". You can add users and their passwords to the list and you can also specify how many users are allowed simultaneous access to the hard drive for optimum performance. To add users to the user list, do the following:

1. Under the User List on the Storage Setting - "Shared Nodes" page, type the desired User Name and Password. Click **Add** to add the user to the list.

User List		Add	Del
User Name	Password		
user3	pass3		
user1	pass1		
user2	pass2		

2. Select a User Name from the list, then click **Del** to delete the user from the list.
3. Click **Apply** to apply the changes or **Finish** to save the changes and restart the device.

Editing the Shared Nodes List

The shared nodes list is a list of all the folders and partitions on the ASUS Wireless "WL-HDD" showing the sharing and writing permissions for each node. You can specify which folder or partition is shared and which can be written to. To modify the shared nodes list, do the following:

Chapter 2 - Getting Started

1. Under the Shared Nodes List on the Storage Setting - Shared Nodes page, scroll to select the desired folder or partition from the Folders and Partitions drop-down box.

Shared Nodes List				Add	Del	Edit
Folders and Partitions		part1/USBpart001				
Path	Shared Name	Shared	Write			
part1/USBpart001	USBpart001	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
part2/	part2	on	on			

2. Type the desired name in the Shared Name field. This is the name by which users can access a specific folder or partition using their wireless clients and even map them as logical drives if needed.
3. Click the **Shared** check box to enable the folder or partition to be shared between all users.
4. Click the **Write** check box to enable all users to write data to the folder or partition.
5. Click **Add** to add the folder or partition to the shared nodes list.
6. Select a folder or partition from the list, then click **Del** to delete it from the list.
7. Select a folder or partition from the list and click **Edit** to modify permissions for the user in user list.

Storage Setting - Access Right	
Shared Path	part1/music
Shared Name	music
Comment	
Guest	Guest <input checked="" type="checkbox"/> Share <input type="checkbox"/> Write
User Account 1:	user2 <input checked="" type="checkbox"/> Share <input type="checkbox"/> Write
User Account 2:	user1 <input checked="" type="checkbox"/> Share <input type="checkbox"/> Write
User Account 3:	administrator <input checked="" type="checkbox"/> Share <input checked="" type="checkbox"/> Write
User Account 4:	None <input type="checkbox"/> Share <input type="checkbox"/> Write
User Account 5:	None <input type="checkbox"/> Share <input type="checkbox"/> Write
User Account 6:	None <input type="checkbox"/> Share <input type="checkbox"/> Write
Apply	

Chapter 2 - Getting Started

The Access Right screen is displayed. Type in the Shared Name and any Comments if required. Set the user permissions for the Guest account and up to six user accounts. Select the appropriate user account names from the drop-down box and check the Share and Write check boxes to enable sharing and writing to the folder. Click Apply to apply the changes to the access rights to the folder.

- Click Apply to apply the changes or Finish to save the changes and restart the device.

Applying permissions

After adding users who can access the hard drive and setting up access rights for the hard drive's partitions and folders, use the Network Neighborhood Mode option to apply the permissions. Scroll to select Apply rules in shared node list from the field and click Finish to save the changes and restart the system.

Storage Setting - Shared Nodes

Network Neighborhood Mode:

Work Group:

FTP Mode:

Maximum Login User:

Shared Nodes List

Folders and Partitions	part1/		
Path	Shared Name	Shared	Write
		<input type="checkbox"/>	<input type="checkbox"/>
part2/	part2	on	on
part1/USBpart001	USBpart001	on	
part1/music	music	on	
part1/movies	movies	on	

User List

User Name	Password
user2	pass2
user1	pass1
administrator	add

Sharing files on the ASUS Wireless WL-HDD

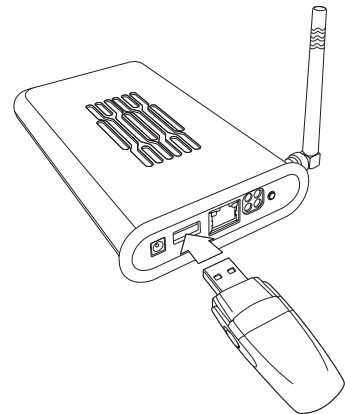
The ASUS Wireless "WL-HDD" is primarily designed to help you share data, music, video, or other files over the wireless LAN. You can set up this device in your house, office, or dormitory, such that anyone can access media files from it using a wireless connection. In order to share data from the ASUS Wireless WL-HDD, you must access the hard disk drive using a valid user name. See "Editing the User List" for more details about creating users. If you want to copy any data to the hard drive, the destination folder or partition must be write-enabled. Make sure that the access rights (see "Editing the Shared Nodes List") are set to Share – on and Write – on and then copy data to the drive.

Transferring Data from External Flash Memory

The ASUS Wireless "WL-HDD" supports USB flash disks or external flash memory cards through a USB connection to enable you to transfer data. The device copies data automatically from the flash memory to the hard disk when inserted into the USB slot.

Auto-copy Function

To transfer data automatically from the flash memory, connect the USB flash memory disk to the USB port of the ASUS Wireless "WL-HDD". Alternatively, to transfer the contents of other types of flash memory cards such as CF, SD, MMC, and so on, insert the card into an external card reader (not supplied) and connect it to the USB port using a USB cable.



The device copies the contents of the memory disk automatically to the hard disk. The USB light blinks quickly when copying data.

The data from the USB flash memory is copied to a folder named USBpartxxx, where xxx is a number from 001 to 999 indicating the order in which the data was transferred.



Notes: When copying data automatically from a flash disk, the first partition – part1 – is used first. All the data is copied as long as there is free space in the first partition.

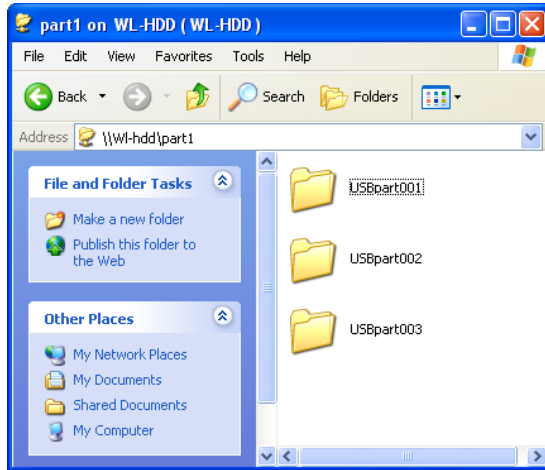
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Notes: If you remove the flash disk from the ASUS Wireless "WL-HDD" and insert it again, the data is copied again to the hard disk in a new folder with the folder name incremented by 1. For instance, if the first time the data was copied under USBpart005, then after removing and inserting the disk, the data is copied again to a new folder named USBpart006.

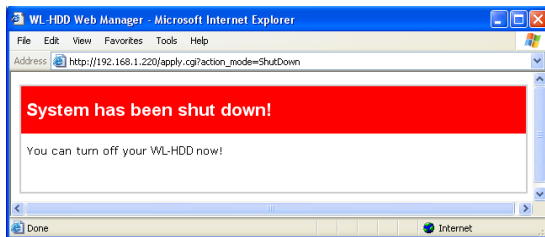
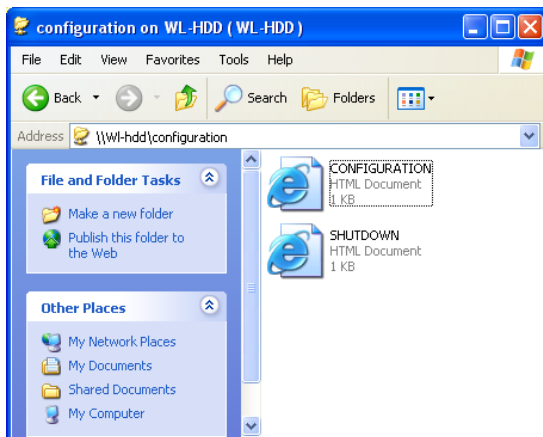
Locating the Copied Files on the Hard Disk Drive

To view the data transferred to the hard disk from your flash memory, double-click the hard drive partition (part1) icon (see "Accessing the Hard Disk Drive" for more details). The contents of the flash memory are stored under the USBpartxxx folder (where xxx is a number from 001 to 999 indicating the order in which the data was transferred).



Shutting down the ASUS Wireless WL-HDD

Use the SHUTDOWN link to shut down the ASUS Wireless "WL-HDD" after using it to prevent damage to the hard disk and loss of data.



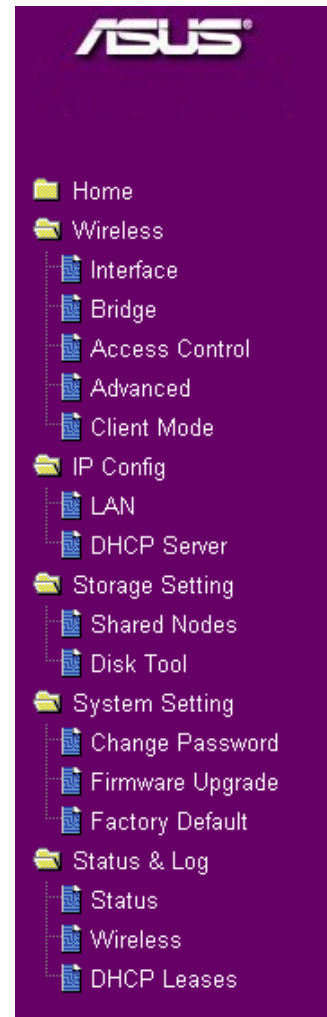
1. Click the **SHUTDOWN** link.
2. The device shuts down and the following message is displayed.
3. Disconnect the power cord and shut down the system safely.

3. Software Configuration

The ASUS Wireless "WL-HDD" can be configured to meet various usage scenarios. Some of the factory default settings may suit your usage; however, others may need to be changed.

Configuring the ASUS Wireless WL-HDD

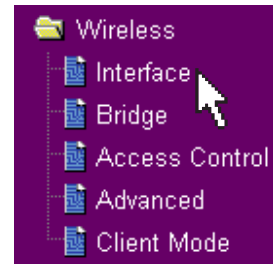
After logging in, the Wireless Hard Drive home page opens. Links to the various parameters that can be adjusted are shown in the left panel. Click a link to configure the ASUS Wireless "WL-HDD" as desired. Click Restore to clear the changes you have made and restore the previous settings. Click Finish to confirm all your settings and restart the ASUS Wireless "WL-HDD". Click Apply to confirm your settings and continue without restarting the device. The following sections describe the various configuration settings.



Chapter 3 - Software Configuration

Wireless

Click the Wireless option on the left panel to display its submenus. The wireless menu enables you to configure the wireless interface of the ASUS Wireless WL-HDD, to configure its bridge settings, to set up access blocks or bypass, and to enable the ASUS Wireless "WL-HDD" to act as an AP if no other AP is detected in its vicinity.



Interface

Wireless - Interface	
Region:	USA
SSID:	WL-HDD
Channel:	Auto
Data Rate(Mbps):	Auto
54g Mode:	Auto <input type="checkbox"/> 54g Protection
Authentication Method:	Open System or Shared Key
Encryption:	None
Passphrase:	
WEP Key 1 (10 or 26 hex digits):	
WEP Key 2 (10 or 26 hex digits):	
WEP Key 3 (10 or 26 hex digits):	
WEP Key 4 (10 or 26 hex digits):	
Default Key:	Key1
Hide SSID:	<input type="radio"/> Yes <input checked="" type="radio"/> No
Basic Rate Set:	Default
WPA Re-key Timer:	0
Restore Finish Apply	

The Interface submenu has the following options:

Region

Scroll through this drop-down box to select the appropriate region where you are located.

SSID

The SSID is an identification string of up to 32 ASCII characters unique to every AP. The SSID is also referred to as the “ESSID” or “Extended Service Set ID.” By default, the SSID is set to “WL-HDD”. All the wireless clients in the vicinity must have the same SSID in order to use the ASUS Wireless "WL-HDD". This field is also used as the device name when you are looking for the ASUS Wireless "WL-HDD" through the Windows Network Neighborhood function.

Channel

The 802.11g and 802.11b specification supports up to 14 overlapping channels for radio communication. Choose an appropriate channel for the operating radio frequencies or choose Auto to select a channel automatically. The available channels change according to the Region selected.

Data Rate (Mbps)

This field allows you to specify the transmission rate. Select Auto to maximize performance.

54g Mode

This field indicates the 802.11g interface mode. Selecting Auto allows both 802.11g and 802.11b clients to connect to the ASUS Wireless "WL-HDD". Selecting 54g Only maximizes performance, but prevents 802.11b clients from connecting to the device. If 54g Protection is checked, G-Mode protection of 802.11g traffic is enabled automatically in the presence of 802.11b traffic.

Authentication Method

This field enables you to set different authentication methods for determining various encryption schemes. The relationship between Authentication Method, Encryption, Passphrase and WEP Keys is listed in the following table:

Chapter 3 - Software Configuration

Relationship among keys

Authentication Method	Encryption	Passphrase	WEP Key 1~4
Open System or Shared Key	None	Not required	Not required
	WEP-64 bits	1~64 characters	10 hex digits
	WEP-128 bits	1~64 characters	26 hex digits
Shared Key	WEP-64 bits	1~64 characters	10 hex digits
	WEP-128 bits	1~64 characters	26 hex digits
WPA-PSK	TKIP only	8~63 characters	Not required
	AES only	8~63 characters	Not required

Encryption

If the Open System or Shared Key or Shared Key authentication method is used, WEP (Wired Equivalent Privacy) encryption is applied. If the WPA-PSK method is used, a newly proposed TKIP or AES encryption in WPA is applied.

Enabling WEP can protect your data from eavesdroppers. If you do not need this feature, select None to skip the following setting. The ASUS Wireless "WL-HDD" supports both 64-bit and 128-bit encryption using the WEP algorithm. Select the type of encryption you want to use (64 or 128 bit) and configure one to four WEP Keys. The 128-bit method is more secure than the 64-bit method.

64/128 bits versus 40/104 bits

You may be confused about configuring WEP encryption, especially when using multiple wireless LAN products from different vendors. There are two levels of WEP Encryption: 64 bits and 128 bits. 64-bit WEP and 40-bit WEP are the same encryption method and can interoperate in the wireless network. This lower level of WEP encryption uses a 40 bit (10 hex digits [0~9, a~f, and A~F]) as a "secret key" (set by user), and a 24 bit "initialization vector" (not under user control). This together makes 64 bits (40 + 24). Some vendors refer to this level of WEP as 40 bits and others refer to this as 64 bits. ASUS WLAN products use the term 64 bits when referring to this lower level of encryption. Secondly, 104 bit WEP and 128 bit WEP are the same encryption method and can interoperate in the wireless network. This higher level of WEP encryption uses 104 bits (26 hex digits) as a "secret key" (set by user), and a 24 bit "initialization vector" (not under user control). This together makes 128 bits (104 + 24). Some vendors refer to this level of WEP as 104 bits and others refer to this as 128 bits. ASUS WLAN products use the term 128 bits when referring to this higher level of encryption.

Passphrase

If you select TKIP only or AES only as the Encryption method, this field will be used as a password for the encryption process. A password with 8 to 63 characters is required. If you select WEP-64 bits or WEP-128 bits as the Encryption method, this field will be used to generate four WEP keys automatically. A WEP key is either 10 or 26 hexadecimal digits based on whether you select 64 bit or 128 bit in the WEP pull-down menu. Type a combination of up to 64 letters, numbers, or symbols in this field, which will be used to generate the four WEP keys. If you want to type in the keys manually, leave this field blank. The ASUS WLAN family of products uses the same algorithm to generate the keys so that all the products can use the same WEP key.



Note: This function saves users from having to remember their passwords and is compatible for all ASUS WLAN products. However, this is not as secure as the manual assignment of the keys.

WEP Key

At most four WEP keys can be set. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP pull-down menu. The ASUS Wireless "WL-HDD" and ALL of its wireless clients MUST have the same default key.

Default Key

The Default Key field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. As long as the ASUS Wireless "WL-HDD" or a wireless mobile client with which you are communicating has the same key in the same position, you can use any of the keys as the default key. If the ASUS Wireless "WL-HDD" and ALL of its wireless clients use the same four WEP keys, select key rotation to maximize security. Otherwise, choose one key in common as the default key.

Hide SSID

By default, No is selected so that wireless mobile users can see your ASUS Wireless WL-HDD's SSID and join the network. If Yes is selected, your ASUS Wireless "WL-HDD" will not show in site surveys by wireless mobile clients and they will have to manually enter your device's SSID. If you want to restrict access to your ASUS Wireless WL-HDD, this is a simple way to do it.

Basic Rate Set

This field indicates the basic rates that wireless clients must support. Use 1 & 2 Mbps only when backward compatibility is needed for some older wireless LAN cards with a maximum bit rate of 2 Mbps.

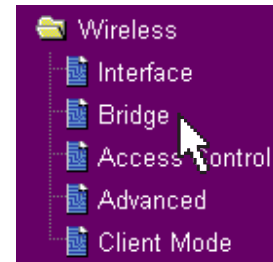
WPA-PSK

This field specifies the time interval after which the WPA group key is changed in seconds. 0 means no periodic key-change is required.

Chapter 3 - Software Configuration


Bridge

The bridge or WDS (Wireless Distribution System) enables you to connect to one or many APs through a wireless connection. Choose an AP mode and configure the WDS settings as follows:



Wireless - Bridge

Wireless bridge (also known as Wireless Distribution System or WDS) function allows you to connect to one or many APs through wireless.



AP Mode:	AP Only
Channel:	Auto
Connect to APs in Remote Bridge List?	<input type="radio"/> Yes <input checked="" type="radio"/> No
Allow anonymous?	<input type="radio"/> Yes <input checked="" type="radio"/> No

Remote Bridge List Add Del

MAC Address
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

Restore Finish Apply

AP Mode

AP Mode configures the ASUS Wireless "WL-HDD" for a specific purpose. By default, the device is set to serve as an Access Point (AP only) where a wireless mobile client can connect wirelessly to a wired Ethernet network. Choose WDS only for communicating with other APs. Hybrid allows you to use the device both as an AP as well as a wireless bridge.

Channel

All the Access Points in a Wireless Bridge mode must be set to the same channel. The channel is set to 1 for WDS and Hybrid AP modes.

Connect to APs in Remote Bridge List (Yes/No)

Select Yes to connect to access points in the remote bridge list.

Allow anonymous? (Yes/No)

Select Yes to allow users without accounts to connect to the AP.



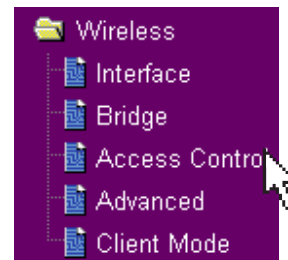
Note: If Connect to APs in Remote Bridge List and Allow Anonymous are both set to No, it means that this AP will not connect with other APs and therefore the AP mode setting is set automatically to AP Only.

Remote Bridge List

Use the remote bridge list to set up the MAC addresses of the devices in the wireless bridge. Enter the MAC address of the target APs in order to designate partners for your device. Click Add to add the address or click Del to delete a selected address.

Access Control

For additional security, the ASUS Wireless "WL-HDD" has the ability to only associate with or not associate with wireless mobile clients that have their MAC address specified in this menu. The Access Control menu enables you to block the access from certain wireless stations or to bypass access from certain wireless stations. The menu has the following options:



Wireless - Access Control

Access Control allows you to block the access from certain wireless stations or to bypass access from certain wireless stations only. In Accept mode, WLHDD will only accept wireless access from stations with MAC address in the control list. In Reject mode, WLHDD will reject wireless access from stations with MAC address in the control list.

MAC Access Mode:

Access Control List

MAC Address
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>
<input type="text"/>

Chapter 3 - Software Configuration

MAC Access Mode

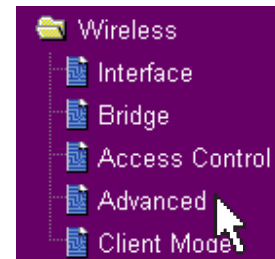
The default setting of Disable allows any wireless mobile client to connect to this device. The Accept option only allows clients with their MAC addresses specified in the Access Control List, to connect to the device. The Reject option prevents devices with their MAC addresses specified in the Access Control List from connecting to this device.

Access Control List

To add a MAC address to the Access Control List, enter the 12 hexadecimal digits into the white box under MAC Address and click the Add button. The MAC address will be placed in the control list below. A total of 31 MAC addresses can be entered into this page. For optimum use, determine which will be the lesser value; addresses you wish to accept connections from, or addresses you wish to reject connections from. Then, choose the appropriate MAC Access Mode.

Advanced

The Advanced menu allows you to set up additional settings for the ASUS Wireless "WL-HDD". However, it is recommended that you use the default values for correct operation.



Wireless - Advanced	
This section allows you to set up additional parameters for wireless. But default values are recommended.	
Fragmentation Threshold:	<input type="text" value="2346"/>
RTS Threshold:	<input type="text" value="2347"/>
DTIM Interval:	<input type="text" value="3"/>
Beacon Interval:	<input type="text" value="100"/>
Enable Frame Bursting?	<input type="radio"/> Yes <input checked="" type="radio"/> No
<input type="button" value="Restore"/> <input type="button" value="Finish"/> <input type="button" value="Apply"/>	
Restore:	Clear the above settings and restore the settings in effect.
Finish:	Confirm all settings and restart WLHDD now.
Apply:	Confirm above settings and continue.

Fragmentation Threshold (256~2346)

Fragmentation is used to divide 802.11 frames into smaller pieces (fragments) that are sent separately to the destination. The use of fragmentation can increase the reliability of frame transmissions. This field allows you to enable fragmentation by setting a specific packet size threshold. The default value (2346) is recommended.

RTS Threshold (0~2347)

The RTS/CTS (Request to Send/Clear to Send) function is used to minimize collisions among wireless stations. If you enable RTS/CTS, it will refrain from sending a data frame until another RTS/CTS handshake in the air is completed. This field allows you to enable RTS/CTS by setting a specific packet size threshold. Default value 2347 is recommended.

DTIM Interval (1~255)

DTIM (Delivery Traffic Indication Message) is a kind of wireless message used to inform clients in Power Saving Mode when to wake up to receive broadcast and multicast messages. This field indicates the time interval in multiples of the Beacon Interval that the system broadcasts DTIMs for clients in Power Saving Mode. The default value (3) is recommended.

Beacon Interval (1~65535)

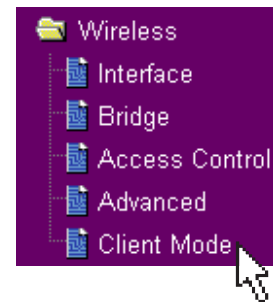
This field indicates the time interval in milliseconds after which the system broadcast packet, called beacon, is sent to synchronize the wireless network. The default value (100 milliseconds) is recommended.

Enable Frame Bursting?

This field allows you to enable frame-bursting mode to improve performance with wireless clients that also support frame bursting.

Client Mode

This menu page enables you to connect to the AP using a wireless connection and has the following options:



Wireless - Client Mode				
Wireless Client mode allows you to connect to AP through wireless.				
Become an AP if no AP can be connected?	<input checked="" type="radio"/> Yes <input type="radio"/> No			
Client Mode:	Disabled			
Preferred AP	None			
Profile List				
<input type="button" value="Add"/> <input type="button" value="Del"/> <input type="button" value="Edit"/>				
SSID				
<table border="1"><tr><td> </td></tr><tr><td> </td></tr><tr><td> </td></tr></table>				
<input type="button" value="Restore"/> <input type="button" value="Finish"/> <input type="button" value="Apply"/>				

Become an AP if no AP can be connected?

Click Yes to enable the ASUS Wireless "WL-HDD" to be an Access Point in a wireless network, if no other AP is detected.

Client Mode

Select Disabled if you do not want to connect to other APs in the network. Select Connect to AP in profiles to enable the device to connect to the APs specified in the Profile List.

Preferred AP

Scroll through this drop-down box to specify which AP (from the Profile List) should be given preference when connecting to other APs.

Profile List

Use this option to add the SSIDs of other APs in the WLAN, to which the ASUS Wireless "WL-HDD" connects. Type the SSID of the AP under the SSID field, then click Add to add it to the Profile List. Select an existing AP SSID, then click Del to remove it from the list and disable connection to it. Select an existing AP SSID and click Edit to modify its connection parameters as follows:

Wireless - Client Mode	
SSID	<input type="text" value="3com1"/>
Channel	<input type="text" value="Auto"/>
Network Type	<input type="text" value="Infra Structure"/>
Authentication Method	<input type="text" value="Open System"/>
Encryption Type	<input type="text" value="None"/>
Passphrase	<input type="password"/>
WEP Key 1	<input type="password"/>
WEP Key 2	<input type="password"/>
WEP Key 3	<input type="password"/>
WEP Key 4	<input type="password"/>
Default Key	<input type="text" value="Key1"/>
<input type="button" value="Apply"/>	
Apply:	Confirm above settings and continue.

SSID

Type the SSID of the AP in this field.

Channel

Scroll through this drop-down box to specify the channel for this AP. Auto is the default option.

Network Type

Specify if the network consists of other APs by selecting the Infrastructure option or choose Ad Hoc if the network consists of direct connections between computers.

Authentication Method

This option enables you to set the authentication method for various encryption schemes for the selected AP. Choose Open System or Shared

Chapter 3 - Software Configuration

Key depending on the AP's encryption system. The authentication method for the AP should be the same as that chosen for the ASUS Wireless "WL-HDD" (see "Authentication Method").

Encryption Method

Select WEP - 64 bits or WEP - 128 bits for the encryption method to protect your data by encrypting it. The encryption scheme for the AP should be the same as that chosen for the ASUS Wireless "WL-HDD" (see "Encryption").

Passphrase

Type in the passphrase that will be used to create one to four WEP encryption keys. A password with 8 to 63 characters is required. If you leave this field blank, the WEP keys are randomly generated.

WEP Keys (1 ~ 4)

The WEP keys are generated randomly or based on your passphrase. A WEP key is either 10 or 26 hexadecimal digits (0~9, a~f, and A~F) based on whether you select 64 bit or 128 bit in the WEP pull-down menu.

Default Key

The Default Key field lets you specify which of the four encryption keys you use to transmit data on your wireless LAN. The selected AP and ALL of its wireless clients MUST have the same default key.

IP Config

Click the IP Config option on the left panel to display its submenus. The IP Config submenus provide options for your LAN and DHCP settings as described in the following sections.



LAN

IP Config - LAN	
LAN IP Setting	
Get IP Automatically?	<input type="radio"/> Yes <input checked="" type="radio"/> No
IP Address:	<input type="text" value="192.168.1.220"/>
Subnet Mask:	<input type="text" value="255.255.255.0"/>
Default Gateway:	<input type="text"/>
<input type="button" value="Restore"/> <input type="button" value="Finish"/> <input type="button" value="Apply"/>	
Restore:	Clear the above settings and restore the settings in effect.
Finish:	Confirm all settings and restart WLHDD now.
Apply:	Confirm above settings and continue.

The LAN menu page has the following settings:

Get IP Automatically

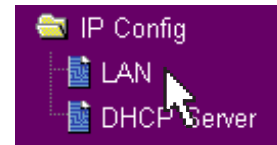
Select Yes (default) or No to get an IP address automatically from a DHCP server.

If you select Yes, this means that the ASUS Wireless "WL-HDD" will send out a DHCP request during bootup. If you have a DHCP (Dynamic Host Configuration Protocol) server on the network, set this option so that the ASUS Wireless "WL-HDD" can receive an automatic IP address and subnet mask assignment. The DHCP server automatically assigns the ASUS Wireless "WL-HDD" an IP address when it is powered up. To determine what settings have been assigned to the ASUS Wireless WL-HDD, check the Status page (see "Status").

If you select No, the ASUS Wireless "WL-HDD" accepts a static IP address. You can manually configure the IP address and subnet mask in this case. Enter an IP address and a subnet mask in the field provided to assign the ASUS Wireless "WL-HDD" a static IP address. If you don't know your Gateway setting, leave it empty (not 0.0.0.0).

DHCP server

The ASUS Wireless "WL-HDD" is set up to be a DHCP server by default. This enables it to support up to 254 IP addresses on the WLAN. The IP address for a wireless client can be designated by the network administrator or can be assigned by the ASUS Wireless "WL-HDD" automatically. The following options are available on this page:



IP Config - DHCP Server	
WLHDD supports up to 253 IP addresses for your local network. The IP address of a local machine can be assigned manually by the network administrator or obtained automatically from WLHDD if the DHCP server is enabled. This DHCP Server is useful while you use WLHDD as a standalone device. But, if you want to use WLHDD in your network with other DHCP server, please disable this function.	
Enable the DHCP Server Automatically?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Domain Name:	<input type="text"/>
IP Pool Starting Address:	<input type="text" value="192.168.1.100"/>
IP Pool Ending Address:	<input type="text" value="192.168.1.150"/>
Lease Time:	<input type="text" value="86400"/>
<input type="button" value="Restore"/> <input type="button" value="Finish"/> <input type="button" value="Apply"/>	
Restore:	Clear the above settings and restore the settings in effect.
Finish:	Confirm all settings and restart WLHDD now.
Apply:	Confirm above settings and continue.

Enable the DHCP Server Automatically

Select Yes to enable the DHCP server and No to disable it automatically.

Domain Name

Type a domain name that will be used by the DHCP clients.

IP Pool Starting Address

Type the IP address of the first device in the group of DHCP clients. Make sure that it is on the same subnet mask as the ASUS Wireless "WL-HDD".

IP Pool Ending Address

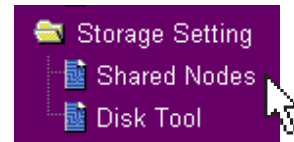
Type the IP address of the last device in the group of DHCP clients. Make sure that it is on the same subnet mask as the ASUS Wireless "WL-HDD".

Lease Time

Type in the period of time over which a DHCP client can lease an IP address.

Storage Setting

Click the Storage Setting option on the left panel to display its submenus. The Storage Setting menus enable you to configure the various parameters of the hard disk drive that is shared on the WLAN. Refer to the following sections for more details.



Shared Nodes

Storage Setting - Shared Nodes	
Network Neighborhood Mode:	Share all partitions in disk <input type="button" value="v"/>
Device Name:	<input type="text"/>
Work Group:	mygroup
FTP Mode:	Login to first partition <input type="button" value="v"/>
Maximum Login User:	12
USB Device Mode:	Auto Copy <input type="button" value="v"/>
Initial Script:	<input type="text"/>
Enable UPnP Advertisement?	<input checked="" type="radio"/> Yes <input type="radio"/> No

Shared Nodes List	Add	Del	Edit
WLHDD supports the shared folders with "Path" not exceeding 32 letters and "Shared Name" not exceeding 16 letters.			

Folders and Partitions	part1/ <input type="button" value="v"/>		
Path	Shared Name	Shared	Write
<input type="text"/>	<input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>
part2/	part2	on	on
part1/USBpart001	music	on	

User List	Add	Del								
<table border="1"> <thead> <tr> <th>User Name</th> <th>Password</th> </tr> </thead> <tbody> <tr> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>user1</td> <td>pass1</td> </tr> <tr> <td>user2</td> <td>pass2</td> </tr> </tbody> </table>	User Name	Password	<input type="text"/>	<input type="text"/>	user1	pass1	user2	pass2		
User Name	Password									
<input type="text"/>	<input type="text"/>									
user1	pass1									
user2	pass2									

User Name	Password
<input type="text"/>	<input type="text"/>
user1	pass1
user2	pass2

<input type="button" value="Restore"/>	<input type="button" value="Finish"/>	<input type="button" value="Apply"/>
--	---------------------------------------	--------------------------------------

Chapter 1 - Introduction

The Shared Nodes menu page enables you to set the sharing rights and privileges for the shared partitions on the hard disk drive of the ASUS Wireless "WL-HDD". The following options are available:

Network Neighborhood Mode

Select the default setting of Share all partitions on disk to enable sharing of all partitions on the disk.

Work Group

Specify the name of the work group to which the device belongs. The default is Mygroup.

FTP Mode

Select the FTP Mode to specify which partitions is the default when used by FTP clients for logging in.

Maximum Login User

Specify the maximum number of users that can log in to access the hard disk drive and its partitions. The default is 6.

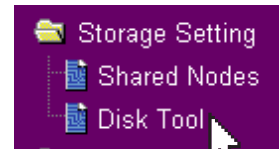
Shared Nodes List

This option enables you set up the various partitions on the hard disk drive. The partitions are all Linux partitions. Enter in the path for a folder or partition to be shared under Path. Type in a name for the partition under Shared Name that will be used by wireless clients when accessing the hard disk drive. Click the Shared check box to enable sharing of the selected folder. Click the Write check box to enable writing access of the selected folder. Click Add to create the partition. To edit the properties of an existing partition, scroll through the Folders and Partitions drop-down box to choose a partition for making changes. Make the changes desired, then click Edit to save your changes. Click Del after selecting a partition to delete it.

User List

You can specify which users can access your hard disk drive by creating a user list. Type in a name under User Name and its password under Password. Only the users specified in this list will be able to access the hard disk drive. Click Add to add the user and Del to delete a selected user in the list.

Disk Tool



The Disk Tool enables you to specify the sizes of the partitions on the hard disk drive. You can create up to 4 partitions on the hard disk drive. The total disk space is specified in the Disk Space field. Enter the size in MB for each of the desired partitions in the Disk Space of Partition x (where x goes from 1 through 4) fields.

Storage Setting - Disk Tool	
The Disk Tool allows you to format a new disk and create up to 4 partitions on it. Any data and existing partitions on this disk, will be lost if format operation is performed. So, formatting to maximum size is recommended.	
Device Type:	IDE <input type="button" value="v"/>
Disk Space(MB):	<input type="text" value="38154"/>
Disk Space of Partition 1(MB):	<input type="text" value="38154"/>
Disk Space of Partition 2(MB):	<input type="text"/>
Disk Space of Partition 3(MB):	<input type="text"/>
Disk Space of Partition 4(MB):	<input type="text"/>
<input type="button" value="Apply"/>	
Apply:	Confirm above settings and continue.



Warnings: Any data on the hard disk will be lost after creating new partitions. Make sure that the data is backed up before using this tool.

The hard disk is formatted using Linux partitions (EXT2). It cannot be connected directly to a Windows system without reformatting. Reformatting will erase all your data.



Note: We recommend that you format the hard disk at least once before using it.

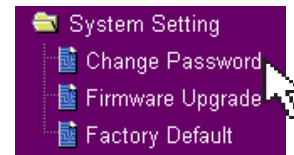
Chapter 3 - Software Configuration

System Setting

Click the System Setting option on the left panel to display its submenus. This set of menus enables you to make changes to the system parameters of the ASUS Wireless "WL-HDD". You can change the password, upgrade the firmware from a file provided by ASUS, or restore the device to its default factory settings using this set of menus.

Change Password

The Change Password menu allows you to change the system password of the ASUS Wireless "WL-HDD". (The default password is admin.) To change the password, enter the new password in the New Password field and enter it again for confirmation in the Retype New Password field. Click Save to confirm your changes. You can enter any password between 1-16 characters long (cannot be left blank). If you forget the password at any time, you can use the Factory Default menu (see "Factory Default") to restore the password to its default (admin) value.

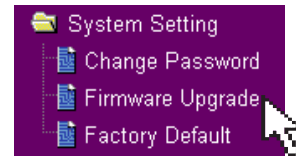


System Setting - Change Password	
New Password:	<input type="text"/>
Retype New Password:	<input type="text"/>
<input type="button" value="Save"/> <input type="button" value="Clear"/>	



Note: The password is case sensitive.

Firmware Upgrade



The Firmware Upgrade menu enables you to upload new firmware upgrades to the ASUS Wireless "WL-HDD".

Follow the instructions on the screen to upgrade the firmware. The menu page displays the device name under Product ID and the current Flash Code (Firmware) version installed in the device under Firmware Version. Periodically, a new flash code is available for the ASUS 802.11g APs on ASUS's Web site. Click Browse to specify the location of the new firmware file provided by the manufacturer. Click Upload to start uploading.

System Setting - Firmware Upgrade	
Follow instructions listed below:	
<ol style="list-style-type: none">1. Check if any new version of firmware is available on ASUS website.2. Download a proper version to your local machine.3. Specify the path of and name of the downloaded file in the "New Firmware File".4. Click "Upload" to upload the file to WLHDD. It spends about 10 seconds.5. After receiving a correct firmware file, WLHDD will automatically start the upgrade process. It takes a few time to finish the process and then the system will reboot.	
Product ID:	<input type="text" value="WLHDD"/>
Firmware Version:	<input type="text" value="1.2.3.4"/>
New Firmware File:	<input type="text"/> <input type="button" value="Browse..."/>
	<input type="button" value="Upload"/>

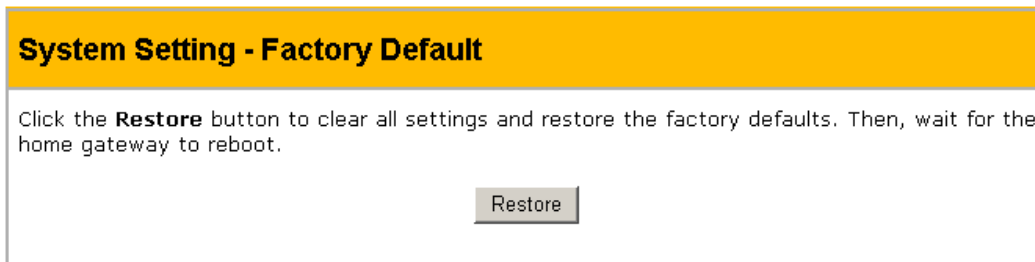
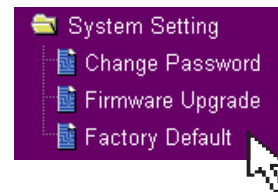


Note: The firmware upgrade takes approximately 80 seconds. The device reboots after the upload is complete. When the firmware upgrade is completed, you will be directed to the home page menu automatically.

Chapter 3 - Software Configuration

Factory Default

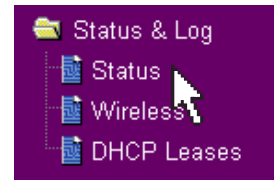
Use this menu to restore the ASUS Wireless "WL-HDD" to its default factory settings. Click the Restore button to clear all settings and restore the factory defaults. The device reboots after this function.



Note: You can also clear all settings and restore factory default values by pressing and holding down the Reset button for 5 seconds.

Status and Log

Click the Status and Log option on the left panel to display its submenus. These submenus enable you to view the status and a log report of the ASUS Wireless "WL-HDD". Various system parameters are displayed on the Status page.



Status

Status & Log - Status	
System Time:	Sun, 13 Feb 2005 01:50:12 UTC-00:00 <input type="button" value="Sync"/>
Internal Disk	
Model Name:	TOSHIBA MK4025GAS
Partition 1:	12150.9, free: 12118.9
Partition 2:	25345.1, free: 25313.1
Partition 3:	
Partition 4:	
Status:	File system ready
Action:	<input type="button" value="File System Check"/>
External USB Disk:	
Partition 1:	
Partition 2:	
Partition 3:	
Partition 4:	
Status:	
Action:	<input type="button" value="Filesystem Check"/> <input type="button" value="Eject"/>
LAN Interface	
IP Address:	192.168.123.45
Subnet Mask:	255.255.255.0
Default Gateway:	192.168.123.1
<input type="button" value="Refresh"/>	

The Status submenu displays the following settings:

System Time

This field displays the current system time of the ASUS Wireless "WL-HDD". Click Sync to synchronize the system with that of your wireless client.

Chapter 3 - Software Configuration

Disk

The disk properties of the hard disk drive are displayed in this part of the menu page. The Model Name, Size of Partitions in megabytes along with the number of free partitions, and File System Status are shown. Click File System Check under Action to check the status of the file system. This verifies that the file system on the hard disk drive is intact and not corrupt. The screen displays the status while the file system is being checked.

DISK Utilities

DISK tool is working, please wait for the next instruction ...

Status

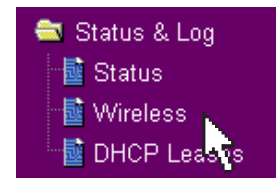
checking part1 pass:1: 29%

LAN Interface

The LAN Interface displays the IP Address, Subnet Mask, and Default Gateway (if any) for the ASUS Wireless "WL-HDD".

Wireless

The Wireless submenu (11g Interface) displays a log of activities performed on the device. Any settings changed are displayed in this log file.

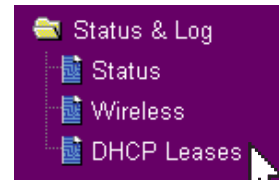


Status & Log - 11g Interface

```
Mode: AP
SSID: WL-HDD
Authentication: Open System or Shared Key
Encryption: None
Association List
-----
STA 0:00:0c:f1:21:2d:c8
```

DHCP Leases

The DHCP Leases log file shows a list of devices (clients) that access the ASUS Wireless "WL-HDD" when DHCP is enabled. The MAC address of each device, along with its IP address and lease time are displayed in this log file.



Mac Address	IP Address	Lease Time
00:0c:f1:21:2d:c8	192.168.1.100	23 hours, 57 minutes, 29 seconds

Refresh

4. Troubleshooting

Refer to the following tips to resolve any problems that you may encounter when using the ASUS Wireless "WL-HDD".

The ASUS Wireless "WL-HDD" cannot be found using the Search for computer technique.

- Use the Device Discovery tool of the wireless utility on your wireless client to search for the "WL-HDD". If the "WL-HDD" is found with a different subnet mask from your client, set the IP of your client to the same subnet.
 - If the ASUS Wireless "WL-HDD" is not found using Device Discovery, please check your network connection.
-

Only the Configuration folder found on the "WL-HDD".

- Check if the hard disk drive is mounted correctly on the ASUS Wireless "WL-HDD".
 - Check if the hard disk drive is formatted.
 - Check if the partitions and folders are shared using the Shared Nodes utility (see "Shared Nodes").
-

Shared folders cannot be accessed using Windows 98 or Windows ME.

- If you use Windows 98 or Windows ME to access the shared folders that are protected by username and password, you can only view the contents of the folder which uses the same username and password pair as your wireless client.
-

5. Appendix

Specifications

LAN Ethernet port	Support	Ethernet and 802.3 with maximum bit rate 10/100 Mbps and auto crossover function (MDI/MDI-X)
	Connector	1 x RJ-45 for 10/100BaseT
Antenna	Support	2 (One internal inverted-F PCB antenna, one external dipole antenna)
	Connector	Reverse-SMA antenna connector
LED	Power x 1 HDD access x 1 Wireless activity x 1 USB copy x 1 LAN port x 2 (Ethernet Link/Activity with 10/100 Mbps)	
USB	USB 1.1	
RTC	Supports real time clock	
Reset button	Push for 5 seconds to restore factory settings.	
Hard disk drive	2.5-inch slim attachable hard drive	
IDE controller	Ultra DMA 100, Conforms to ATA-5 specifications	
DC power adapter	AC input: 100V~240V (50~60 Hz) DC output: 5V with maximum 2A current	
Emissions	CE mark, FCC Part 15	
Size	180 mm x 90 mm x 25 mm	
Weight	200g	
Operating frequency	2.4 - 2.5 GHz	
Spreading	OFDM and DSSS	
Modulation	OFDM, CCK, DQPSK, DBPSK	
Data rate	802.11g: 6, 9, 12, 18, 24, 26, 54 Mbps 802.11b: 1, 2, 5.5, 11 Mbps	
Operation channels	11 for North America, 14 for Japan, 13 for Europe, 3 for non-overlapping	
Range	11 Mbps: Indoor 130 ft. (40m), outdoor (Line-of-Sight) 300 ft. (100m) 54 Mbps: Indoor 80 ft. (25m), outdoor (Line-of-Sight) 200 ft. (60m)	
Output power	802.11g: 13 to 16 dBm (at normal temperature range) 802.11b: 13 to 15 dBm (at normal temperature range)	
Encryption	64/128 bit WEP, WPA-PSK	
Network protocols	HTTP server, UPnP (upgradeable), DHCP client, TCP/IP, Samba server, FTP server, DHCP server,	
Web server	HTTP based, Dynamic or static address	
Utilities	Device discovery Firmware restoration: Restore the firmware while system enters rescue mode.	

Chapter 5 - Appendix

Management

Web-based configuration	Internet Explorer 6 or later Netscape Navigator 6 or later Other Java-enabled browsers
System settings	Server name Workgroup (upgradeable) Time zone and current time DHCP and static IP Auto IP
Folder access	Shared, Password setting, Read or Read and Write
System tools	Reboot, Shutdown, Format, Scan disk, Firmware upgrade

HDD functionality and limitations

Supported file systems	FAT, FAT32, NTFS (read-only), EXT2
Supported disk size	Less than 40GB
Supported file size	Less than 2GB
System tool	File system check for EXT2 only Format and partition for EXT2 only
Supported USB flash	USB flash identified as USB mass storage. External power is required for USB hard disk.

Safety Statements

Federal Communications Commission

This device complies with FCC Rules Part 15. Operation is subject to the following two conditions:

- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the Federal Communications Commission (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 or more 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.



WARNING! The use of a shielded-type power cord is required in order to meet FCC emission limits and to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used. Use only shielded cables to connect I/O devices to this equipment. You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

Reprinted from the Code of Federal Regulations #47, part 15.193, 1993. Washington DC: Office of the Federal Register, National Archives and Records Administration, U.S. Government Printing Office.

FCC Radio Frequency Interference Requirements

MPE Statement: Your device contains a low power transmitter. When device is transmitted it sends out Radio Frequency (RF) signal.

This device is restricted to INDOOR USE due to its operation in the 5.15 to 5.25GHz frequency range. FCC requires this product to be used indoors for the frequency range 5.15 to 5.25GHz to reduce the potential for harmful interference to co-channel of the Mobile Satellite Systems.

High power radars are allocated as primary user of the 5.25 to 5.35GHz and 5.65 to 5.85GHz bands. These radar stations can cause interference with and / or damage this device.



This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

FCC RF Exposure Guidelines (Access Points)

This Wireless LAN radio device has been evaluated under FCC Bulletin OET 65C 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 radiation 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 – as a mobile or portable device but use in a body-worn way is strictly prohibit. When using this device, a certain separation distance between antenna and nearby persons has to be kept to ensure RF exposure compliance. In order to comply with the RF exposure limits established in the ANSI C95.1 standards, Access Point equipment should be installed and operated with minimum distance [20cm] between the radiator and your body.



CAUTION: Any changes or modifications not expressly approved in this manual could void your authorization to use this device.

FCC RF Exposure Guidelines (Wireless Cards)

This device has been tested for compliance with FCC RF Exposure (SAR) limits in typical portable configurations.

In order to comply with SAR limits established in the ANSI C95.1 standards, it is recommended when using a PC card adapter that the integrated antenna is positioned more than [2.5cm] from your body or nearby persons during extended periods of operation. If the antenna is positioned less than [2.5cm] from the user, it is recommended that the user limit the exposure time.

FCC Radio Frequency Exposure Caution Statement

Use only with supplied antenna. Unauthorized antenna, modification, or attachments could damage the transmitter and may violate FCC regulations. Any changes of modifications not expressly approved by the grantee of this device could void the users authority to operate the equipment.

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 (including the antennas) 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, or the substitution or attachment of connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

Canadian Department of Communications

This digital apparatus does not exceed the Class B limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.



**This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe B est conforme à la norme
NMB-003 du Canada.**

Declaration of Conformity (R&TTE directive 1999/5/EC)

The following items were completed and are considered relevant and sufficient:

- Essential requirements as in [Article 3]
- Protection requirements for health and safety as in [Article 3.1a]
- Testing for electric safety according to [EN 60950]
- Protection requirements for electromagnetic compatibility in [Article 3.1b]
- Testing for electromagnetic compatibility in [EN 301 489-1] & [EN 301 489-2]
- Testing according to [489-17]
- Effective use of the radio spectrum as in [Article 3.2]
- Testing for radio test suites according to [EN 300 328-2]

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.

Operation Channel for Different Domains

N. America	2.412-2.462 GHz	Ch01 through CH11
Japan	2.412-2.484 GHz	Ch01 through Ch14
Europe ETSI	2.412-2.472 GHz	Ch01 through Ch13

France Restricted Frequency Band

Some areas of France have a restricted frequency band. The worst case maximum authorized power indoors is:

- 10mW for the entire 2.4 GHz band (2400 MHz–2483.5 MHz)
- 100mW for frequencies between 2446.5 MHz and 2483.5 MHz



NOTE: Channels 10 through 13 inclusive operate in the band 2446.6 MHz to 2483.5 MHz.

There are few possibilities for outdoor use: On private property or on the private property of public persons, use is subject to a preliminary authorization procedure by the Ministry of Defense, with maximum authorized power of 100mW in the 2446.5–2483.5 MHz band. Use outdoors on public property is not permitted.

In the departments listed below, for the entire 2.4 GHz band:

- Maximum authorized power indoors is 100mW
- Maximum authorized power outdoors is 10mW

Departments in which the use of the 2400–2483.5 MHz band is permitted with an EIRP of less than 100mW indoors and less than 10mW outdoors:

01 Ain Orientales	02 Aisne	03 Allier	05 Hautes Alpes
08 Ardennes	09 Ariège	11 Aude	12 Aveyron
16 Charente	24 Dordogne	25 Doubs	26 Drôme
32 Gers	36 Indre	37 Indre et Loire	41 Loir et Cher
45 Loiret	50 Manche	55 Meuse	58 Nièvre
59 Nord	60 Oise	61 Orne	63 Puy du Dôme
64 Pyrénées Atlantique	66 Pyrénées	67 Bas Rhin	68 Haut Rhin
70 Haute Saône	71 Saône et Loire	75 Paris	82 Tarn et Garonne
84 Vaucluse	88 Vosges	89 Yonne	90 Territoire de Belfort
94 Val de Marne			

This requirement is likely to change over time, allowing you to use your wireless LAN card in more areas within France. Please check with ART for the latest information (www.art-telecom.fr)



NOTE: Your WLAN Card transmits less than 100mW, but more than 10mW.

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