

Gemtek Power Line 802.11g Wireless Router User Guide



Introduction

GT Powerline Router is a multi-function device which connects to a cable or DSL modem providing Internet connectivity to both wired and wireless computers. The Powerline Wireless Router function lets you to securely expand the range of your local area network, while Power utilizes the electric cord as the transfer media, the 11g utilizes the electric wave.

The GT Powerline Router offers a convenient way to create a simple network through the existing power line of a home or office with the additional ability to provide you with access to your network without wires. Offering several levels of security, the GT Powerline Router is built with 64/128-bit WEP encryption and 802.11i (WPA /WPA-PSK,) for the wireless pass-through and 56-bit DES encryption for the Power line pass-through There are also some Enhanced Security Management Functions: Wireless/Wired 802.1x, and Embedded RADIUS Server so your data will always be secured—guaranteed.

With high data rate and power line around everywhere, you can enjoy the high quality video or any service in any place. With a web-based UI (User Interface), the GT Powerline Router is easy to setup and maintain. All functions can be configured with the UI via web browsers.

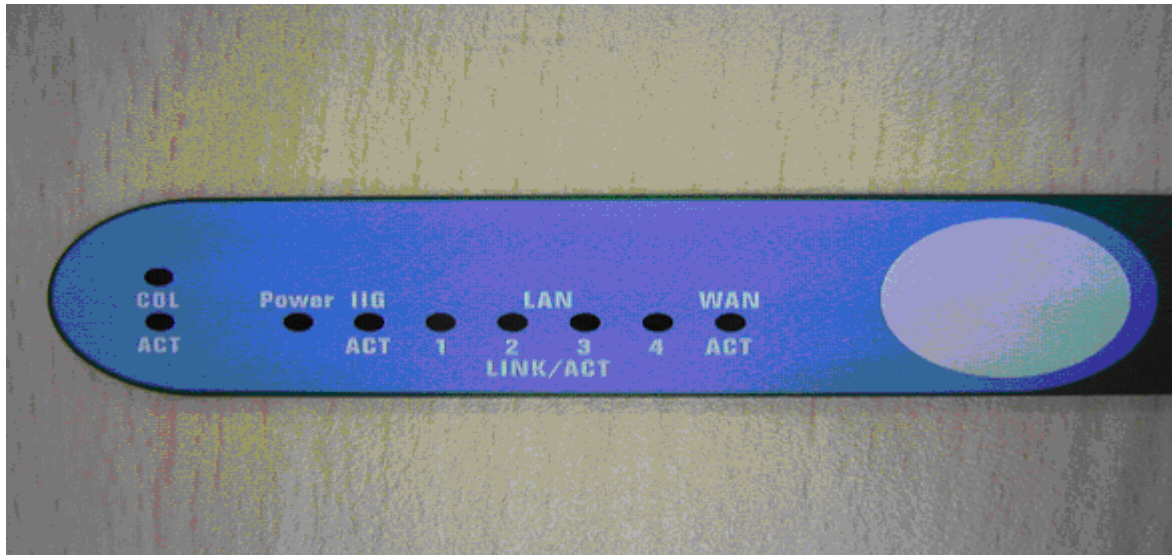
Important Safety Information

This product is intended for connection to the AC power. The following precautions should be taken when using this product.

- Read all instructions before installing and operating this product.
- Follow all warnings and instructions marked on the product.
- Do not operate this product near water.
- This product relies on a building's electrical installation for short-circuit (over current) protection.
- Do not allow anything to rest on the product.
- The HomePlug Wireless Router should be plugged directly into an AC wall outlet.
- Only a qualified technician should service this product. Opening or removing covers may result in exposure to dangerous voltage points or other risks. (Note: Opening or removing the covers will void your product warranty).
- Unplug the HomePlug Wireless Router from the AC wall outlet and refer the product to a qualified service representative for the following conditions:
 - If liquid has been spilled onto the product.
 - If the product has been exposed to rain or water.
 - If the product does not operate normally when the operating instructions have been followed.
 - If the product exhibits a distinct change in performance.

Getting start with your Powerline Device

Before installing your Powerline networking device, please examine and familiarize yourself with it. Below is a diagram of the GT Powerline Router along with a brief description of what each LED and slot represent.



Power:	Green	The Power LED illuminates when the WHRTC-100GW Homeplug Wireless Router is powered on
For Power Line ports		
Act:	Green	Blinking slow when Act and blinking very fast when data is flowing through this Power Line plug
Col:	Green	Blinking when collision is occurred on this port.
For WLAN		
IEEE 802.11b/g		
Act	Green	Steady on when link is ready, blinking with the traffic through 802.11g WLAN

What This Package Contains?

Upon you receive your wireless Router, please check that the following contents are packaged:

- HomePlug Wireless Router (GT Powerline Router)
- CD
- User's manual
- Quick Install Guide
- RJ 45
- Power cord

Necessary Equipment

- One or more computers with wireless device, and it's software already installed
- Microsoft TCP/IP networking protocol installed on each PC

- Web browser installed on each PC

Equipment that can be used with the GT Powerline Router

- Broadband modem
- GT Powerline Router Broadband router
- Additional PCs with a wireless or Powerline Device

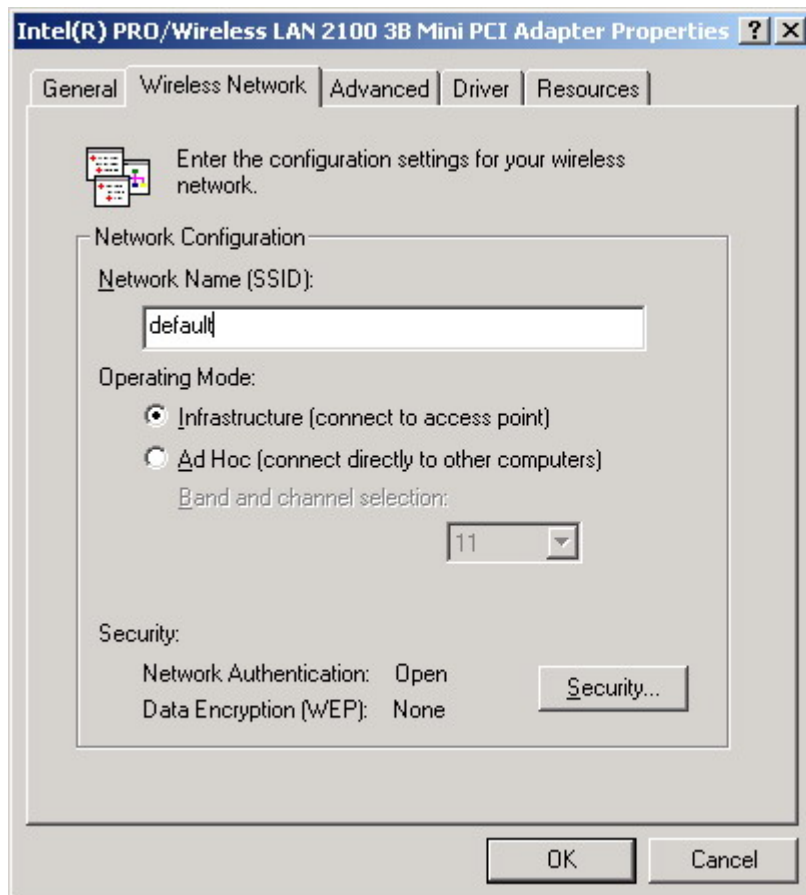
Important: After receiving the wireless Router, please check for any shipping damages to the carton before proceeding with any installations.

PC or Laptop Setup Guide

Note: If you have not installed your Wireless device to your laptop So far, please do so. For instructions on how to install your Wireless device, please contact the manufacturer of that wireless device.

To configure the Wireless device to work with your GT Powerline Router, please follow the following steps:

1. Plug GT Powerline Router into an outlet.
2. Go to the wireless card's configuration screen or window. It should resemble figure 1 or others.



PC or Laptop Setup Guide

Note: If you have not installed your Wireless device to your laptop So far, please do so. For instructions on how to install your

Wireless device, please contact the manufacturer of that wireless device.

To configure the Wireless device to work with your GT Powerline Router, please follow the following steps:

1. Plug GT Powerline Router into an outlet.
2. Go to the wireless card's configuration screen or window. It should resemble figure 1 or others.
3. Make sure Infrastructure is selected.
4. In the SSID field, type in the following: default (This is case sensitive)
5. Make sure Fully Automatic is selected.
6. Click OK to exit the configuration window.

Note: If you are using Win XP you will not need to configure the PCMCIA card because XP has an auto sense function included in the operating system.

GT Powerline Router Setup Guide

You will need to temporarily change the IP address of your PC/laptop to setup your GT Powerline Router 1. Follow these steps depending on your operating system.

Note: If you have not changed the default HomePlug password (HomePlug) or you get the same subnet on your network then there is no need to continue this setup.

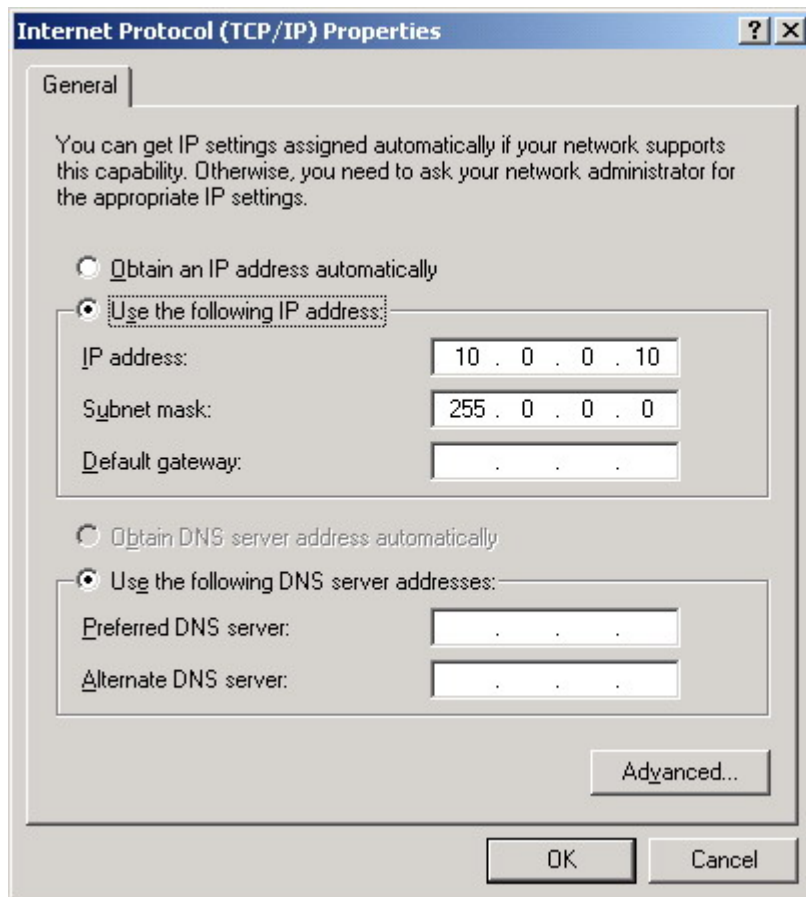
Windows 98 SE / ME

1. Click on Start, then Settings, and then Control Panel.
2. Double click on the Network icon.
3. Select the TCP/IP Protocol entry.
4. Click on the Properties button.
5. Select the IP Address tab.
6. Select Specify an IP address.
7. Type in the following address: 10.0.0.10~100.
8. For the Subnet Mask, type: 255.0.0.0.
9. Click OK to close the TCP/IP properties panel.
10. Click OK to close the Network panel.
11. Restart the PC

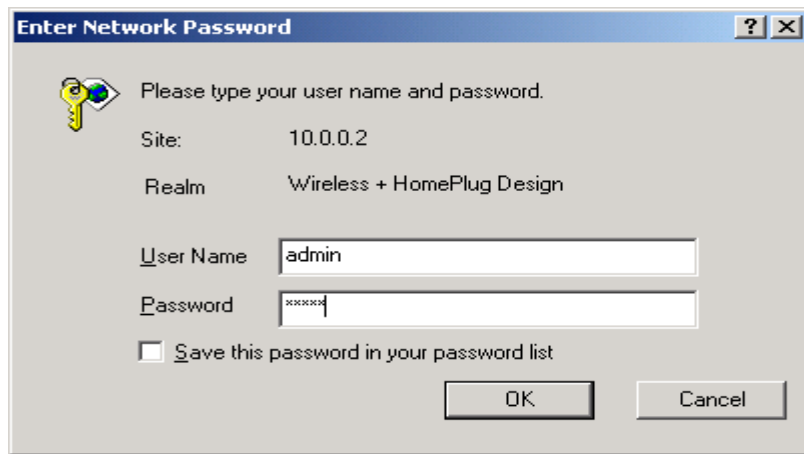
Windows 2000 / XP

1. Open Network Connections.
 - Win 2000: Click on Start, Settings, then Network, and Dial-up Connections.
 - Win XP: Click on Start, Connect To, then Show All Connections.

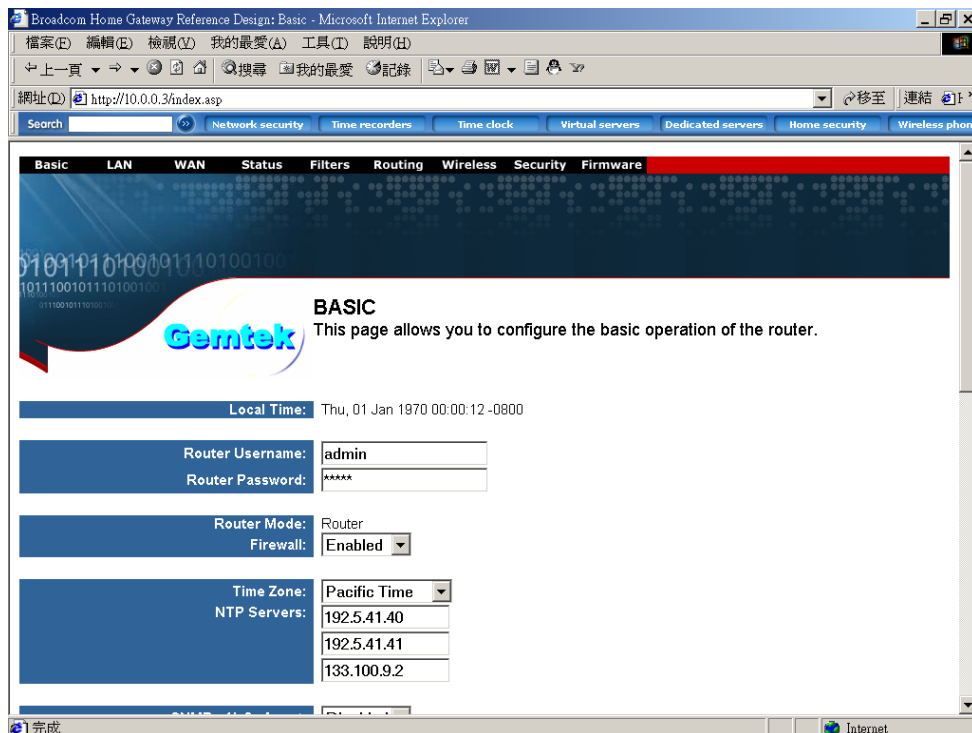
2. Right click on Local Area Connection and then select Properties.
3. Select Internet Protocol (TCP/IP) and then click on Properties.
4. Click on Use the following IP address.
5. Type in the following IP address: 10.0.0.10~100.
6. For the Subnet Mask, type: 255.0.0.0.
7. Click OK to close the TCP/IP properties panel.
8. Click OK to close the Network panel and the changes will take effect when this panel is closed.



1. Open a web browser and type in the following address:
10.0.0.2.
2. A login screen should appear. Type the login name: admin and the password: admin.



3. The basic information screen should now appear in the browser window.



4. Click on the Powerline Tab.

5. The default HomePlug password is HomePlug. If your existing HomePlug password is different, change this password accordingly.

Setting up the IP address on the GT Powerline Router

1. Click on the LAN Tab.

2. The default IP address of GT Powerline Route is 10.0.0.2. You can change this IP address to matches your network configuration (Example: 192.168.1.10)

3. You can change the Subnet mask and Gateway values as well.

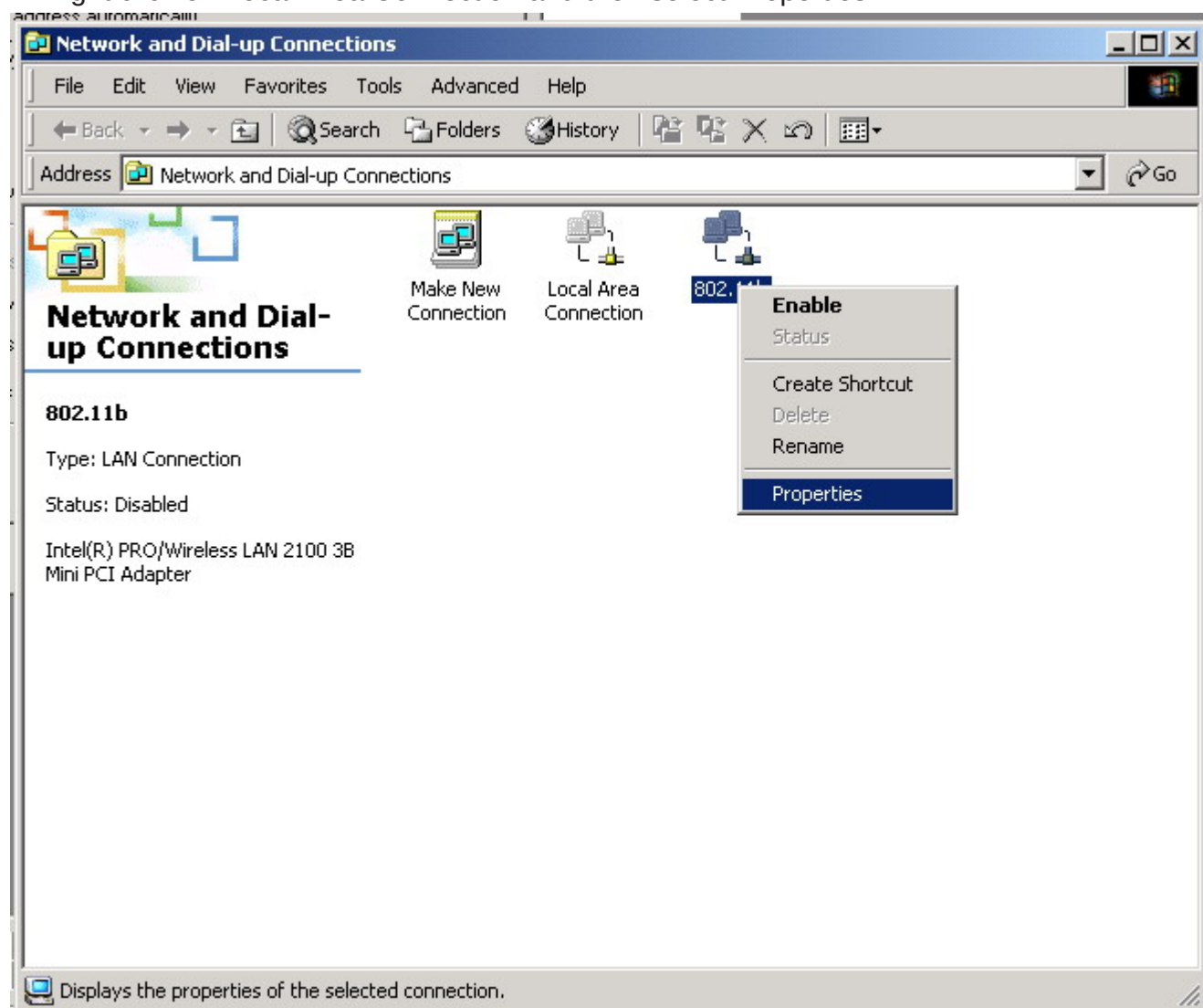
At this point, you will need to change the PCs IP address back to it's original settings. Follow these steps depending on your operating system.

Windows 98 SE / ME

1. Click on Start, then Settings, and then Control Panel.
2. Double click on the Network icon.
3. Select the TCP/IP Protocol entry.
4. Click on the Properties button.
5. Select the IP Address tab.
6. Select Obtain an IP Address Automatically.
7. Click OK to close the TCP/IP properties panel.
8. Click OK to close the Network panel.
9. Restart the PC.

Windows 2000 / XP

1. Open Network Connections.
 - Win 2000: Click on Start, Settings, then Network and Dial-up Connections.
 - Win XP: Click on Start, Connect To, then Show All Connections.
2. Right click on Local Area Connection and then select Properties.



3. Select Internet Protocol (TCP/IP) and then click on Properties.

4. Select Obtain an IP Address Automatically and Obtain a DNS server automatically.

5. Click OK to close the TCP/IP properties panel.

6. Click OK to close the Network panel.

The changes will take a few minutes.

Open a new web browser and type in the new IP address of ALL1681 to ensure the changes worked.

Other Features

Wireless Tab

- Change the value for the SSID (Note: If you change the value here, you will also need to change the value on each PC.)
- Change the Country where you are
- Change the Band
- Change the Channel
- Change the transmission Mode
- Change the Transmission Mb rates
- Change the Multicast rates
- Enable XPress Technology
- Enable Afterburner Technology
- Change WDS Operation Mode (Note: It depend on you network environment)
- Enable MAC Restrict Mode (Note: Type the MAC address of devices you want to restrict here)

Security Tab

Here you can adjust the following:

- Setup the information of External/ Internal RADIUS Server
- Enable Wired 802.1x
- Open the Network Authentication
- Enable WEP Encryption
- Setup WPA Pre-Shared Keys

Firmware Tab

- Here you can update the new firmware. (Note: You should download the new firmware first)

Routing tab

Filter tab

1.2 Homeplug network Encryption key setting

Broadcom Home Gateway Reference Design: Basic - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

網址(D) http://10.0.0.3/index.asp

Search Network security Time recorders Time clock Virtual servers Dedicated servers Home security Wireless phone

Remote HTTP Proxy Server Port:

DDNS Client: Disabled

DDNS Username:

DDNS Password:

DDNS Service Provider: DynDNS.org

DDNS Desired HostName/DomainName:

DDNS Desired MX: Backup? false

DDNS Sub-system: dyndns

DDNS Wildcard: Disabled

DDNS Offline: Disabled

Syslog IP Address:

UPnP: Disabled

Connection Logging: Disabled

HomePlug Encryption Key Select: 1

HomePlug Network Encryption Key: hinetadsl

Apply Cancel Restore Defaults Reboot

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Internet

1. Set the Homeplug network encryption key

LAN setting

Broadcom Home Gateway Reference Design: LAN - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址栏: http://10.0.0.3/lan.asp

Search [] Address finder Address search Home security Security camera Dedicated server Wireless phones Att wireless

Basic LAN WAN Status Filters Routing Wireless Security Firmware

LAN
This page allows you to configure the LAN of the router.

MAC Address: 00:00:59:33:33:31
IP Address: 10.0.0.3
Subnet Mask: 255.255.255.0

DHCP Server: Enabled
DHCP Starting IP Address: 10.0.0.100
DHCP Ending IP Address: 10.0.0.150
DHCP Lease Time: 86400

Active DHCP Leases: Hostname MAC Address IP Address Expires In

Spanning Tree Protocol: Disabled

1. Set the LAN IP and subnet mask
2. Set the LAN DHCP server enable or disable

Broadcom Home Gateway Reference Design: LAN - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址栏: http://10.0.0.3/lan.asp

Search [] Address finder Address search Home security Security camera Dedicated server Wireless phones Att wireless

Basic LAN WAN Status Filters Routing Wireless Security Firmware

MAC Address: 00:00:59:33:33:31
IP Address: 10.0.0.3
Subnet Mask: 255.255.255.0

DHCP Server: Enabled
DHCP Starting IP Address: 10.0.0.100
DHCP Ending IP Address: 10.0.0.150
DHCP Lease Time: 86400

Active DHCP Leases: Hostname MAC Address IP Address Expires In

Spanning Tree Protocol: Disabled

Static Routes:

IP Address	Subnet Mask	Gateway	Metric

Apply Cancel

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3. After setting press apply to let the setting work

WAN SETTING

Broadcom Home Gateway Reference Design: WAN - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(D) http://10.0.0.3/wan.asp

Search Name a star Home security Security camera Address finder Virtual servers Merchant service Wireless phone

Basic LAN WAN Status Filters Routing Wireless Security Firmware

Gemtek

WAN
This page allows you to configure the WAN connections of the router.

Connection: Default Connection Select

New Delete

Description: Default Connection

Interface: vlan1 (00:90:4B:33:33:33)

Protocol: DHCP

Primary: DHCP

Host Name:

Domain Name:

MAC Address: 00:90:4B:33:33:33

完成 Internet

1. The WAN can set to DHCP client, static IP, PPPoE or Disabled

Broadcom Home Gateway Reference Design: WAN - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(D) http://10.0.0.3/wan.asp

Search Name a star Home security Security camera Address finder Virtual servers Merchant service Wireless phone

Basic LAN WAN Status Filters Routing Wireless Security Firmware

Gemtek

WAN
This page allows you to configure the WAN connections of the router.

PPPoE Username:

PPPoE Password:

PPPoE Service Name:

PPPoE Access Concentrator:

PPPoE Connect on Demand: Disabled

PPPoE Max Idle Time: 60

PPPoE Keep Alive: Disabled

PPPoE MRU: 1492

PPPoE MTU: 1492

Connection Status: Unknown

IP Address Expires In: Expired

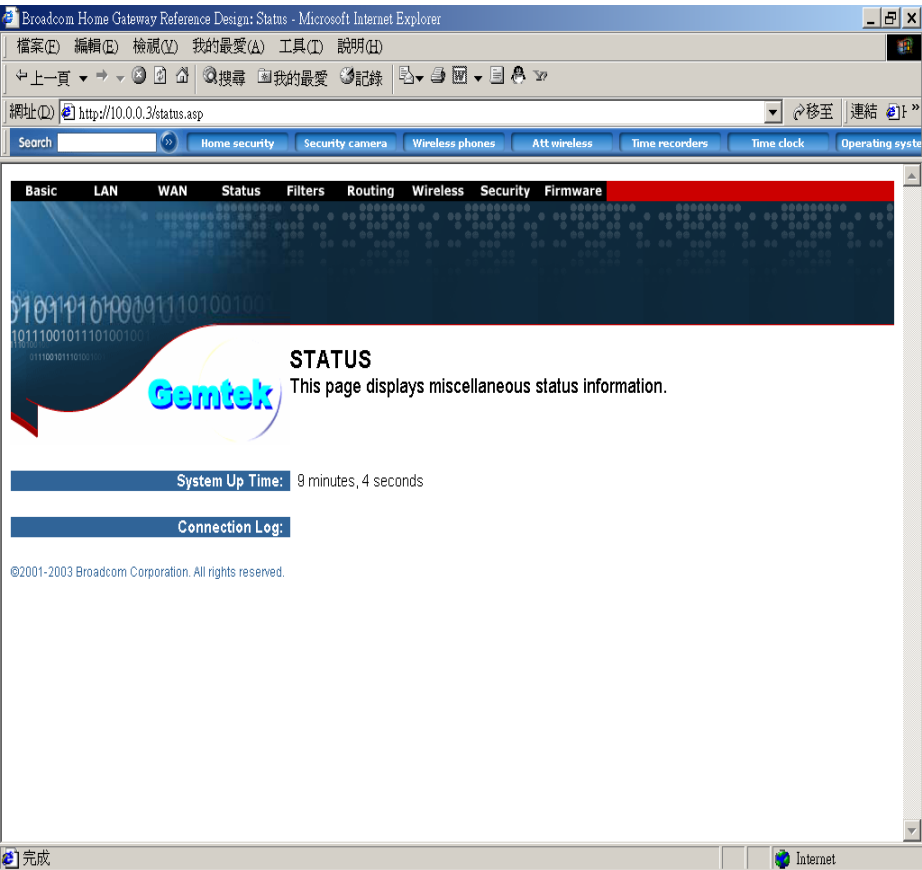
IP Address	Subnet Mask	Gateway	Metric

Apply Cancel Release Renew

完成 Internet

2. After setting ok, press apply to let the setting work

Router Status



Show the router status information

Filters Setting

Broadcom Home Gateway Reference Design: Filters - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(I) 說明(H)

網址(AD) http://10.0.0.3/filter.asp

Search the lord of the ring Air filters Water filters The firm Chicks with dicks Home security Security camera

Basic LAN WAN Status Filters Routing Wireless Security Firmware

Filters

This page allows you to configure LAN filters for the router. The LAN machines affected by the filters will not be able to communicate through the WAN but will be able to communicate with each other and with the router itself.

LAN MAC Filter Mode: Deny

LAN MAC Filters:

LAN Client Filters:	LAN IP Address Range	Protocol	Destination Port Range	From Day	To Day	From Hour	To Hour
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM

完成 Internet

1. Set LAN MAC filter to allow or deny. to use the router

Broadcom Home Gateway Reference Design: Filters - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(I) 說明(H)

網址(AD) http://10.0.0.3/filter.asp

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Basic LAN WAN Status Filters Routing Wireless Security Firmware

Filters

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		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM
		TCP		Sunday	Sunday	12:00 AM	12:00 AM

Apply Cancel

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完成 Internet

2. After setting , press apply to let the setting work

Routing setting

Broadcom Home Gateway Reference Design: Routing - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(D) http://10.0.0.3/forward.asp

Search TCPUDP Home security Security camera Wireless phones Att wireless Address finder Lands end

Basic LAN WAN Status Filters Routing Wireless Security Firmware

ROUTING

This page allows you to configure port forwarding for the router. Requests to the specified WAN port range will be forwarded to the port range of the LAN machine. You may also configure static routes here.

Dynamic Routing - RIP: Enabled

RIP Password: gemtek

RIP Version: RIPv2

RIP Mode: Gateway(RIP on WAN)

Port Forwards:

Protocol	WAN Port Start	WAN Port End	LAN IP Address	LAN Port Start	LAN Port End	Enabled
TCP						☐
TCP						☐
TCP						☐
TCP						☐
TCP						☐
TCP						☐

1. Set the router routing mode to RIPv1 or RIPv2

Broadcom Home Gateway Reference Design: Routing - Microsoft Internet Explorer

檔案(E) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(D) http://10.0.0.3/forward.asp

Search TCPUDP Home security Security camera Wireless phones Att wireless Address finder Lands end

Port Forwards:

TCP						☐
TCP						☐
TCP						☐
TCP						☐

Application Specific Port Forwards:

Outbound Protocol	Outbound Port Start	Outbound Port End	Inbound Protocol	Inbound Port Start	Inbound Port End	To Port Start	To Port End	Enabled
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐
TCP			TCP					☐

DMZ IP Address:

Apply Cancel

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2. After setting , press apply to let the setting work

Wireless Setting

Broadcom Home Gateway Reference Design: Wireless - Microsoft Internet Explorer

http://10.0.0.3/wireless.asp

United states Network security Remote access New mexico South africa Czech republic Hong kong

Basic LAN WAN Status Filters Routing Wireless Security Firmware

WIRELESS
This page allows you to configure the wireless LAN interfaces.

Wireless Interface: Gemtek (00:00:59:33:33:32) Select

Network Name (SSID): Gemtek

Network Type: Open

Country: UNITED STATES Current: US

Radio: Enabled

Band: 802.11g (2.4 GHz) Current: 802.11g

Channel: 11 Current: 11

54g™ Mode: 54g Performance

54g Protection: Off

Rate: Auto

Basic Rate Set: Default

1. Set the wireless SSID, country, channel, etc. (Default SSID was "default")

Broadcom Home Gateway Reference Design: Wireless - Microsoft Internet Explorer

http://10.0.0.3/wireless.asp

United states Network security Remote access New mexico South africa Czech republic Hong kong

Basic LAN WAN Status Filters Routing Wireless Security Firmware

WIRELESS
This page allows you to configure the wireless LAN interfaces.

Beacon Interval: 100

Preamble Type: Long

Enable XPress™ Technology: Off

Mode: Access Point

Bridge Restrict: Disabled

Remote Bridges:

MAC Restrict Mode: Disabled

MAC Addresses:

Apply Cancel

2. After setting , press apply to let the setting work

Security

Broadcom Home Gateway Reference Design: Security - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(DD) http://10.0.0.3/security.asp

Search Network security Dedicated server Home security Key west Wireless phones Att wireless Dish network

Basic LAN WAN Status Filters Routing Wireless Security Firmware

SECURITY
This page allows you to configure security for the wireless LAN interfaces.

Wired 802.1x: Disabled

Wireless Interface: Gemtek (00:00:59:33:33:32) Select

Network Authentication: Disabled

WPA Pre-Shared Key:

WPA Group Rekey Interval: 0

RADIUS Server: ☒ External RADIUS Server ☐ Embedded RADIUS Server(EAP-MD5 Only)

RADIUS Server IP Address:

RADIUS Port: 1812

RADIUS Key:

完成 Internet

1. Set the router wireless security (802.1X, WEP, etc...)

Broadcom Home Gateway Reference Design: Security - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

地址(DD) http://10.0.0.3/security.asp

Search Network security Dedicated server Home security Key west Wireless phones Att wireless Dish network

Network Authentication: Disabled

WPA Pre-Shared Key:

WPA Group Rekey Interval: 0

RADIUS Server: ☒ External RADIUS Server ☐ Embedded RADIUS Server(EAP-MD5 Only)

RADIUS Server IP Address:

RADIUS Port: 1812

RADIUS Key:

Data Encryption: Off

Shared Key Authentication: Optional

Network Key 1:

Network Key 2:

Network Key 3:

Network Key 4:

Current Network Key: 1

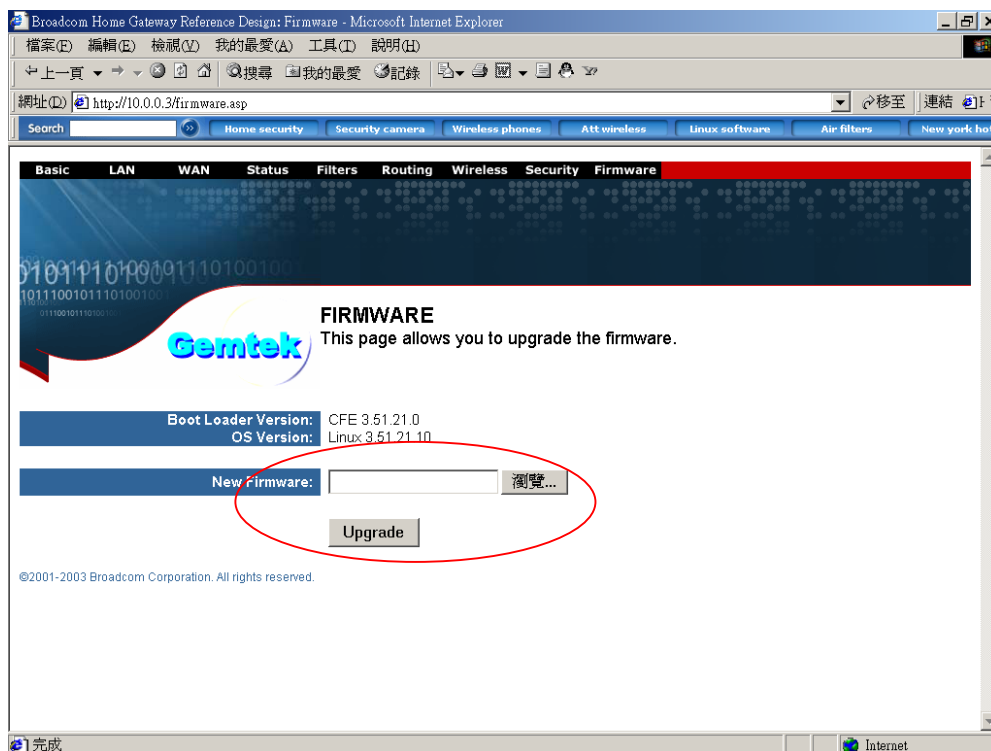
Apply Cancel

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完成 Internet

2. After setting , press apply to let the setting work

Upgrade Firmware



1. Upgrade the router firmware
2. The router will auto reboot after upgraded

Notes

Appendix A: Features

Supports 802.11g wireless LAN

Support Home-Plug 1.0 Power-line network

Simultaneously operation on 802.11g wireless LAN and Power-line network

Enhanced Security Management Functions: Wireless/Wired 802.1x, Embedded RADIUS Server

Supports 64/128 bits WEP Key in wireless 802.11g LAN

Supports 56-bits DES Key for Power-line network

The wireless 11g operation provide data rate at 6, 9, 12, 18, 24, 36, 48, 54Mbps with auto fallback at 11b data rate at 1, 2, 5.5, and 11Mbps.

For 802.11g, support 11 channels for North America, 13 for Europe (ETSI) and 14 for Japan

Supports Wireless Distribution System (WDS) –Wireless Bridge, Wireless Repeater

Supports 802.11i – WPA / TKIP, AES, PSK

Easily Configurable through your networked PC's Web browser

Administrators can block specific internal users' Internet access with 802.1x

TCP, UDP, ICMP, IGMP

IEEE 802.1D (self learning transparent bridge)

IEEE 802.1D Spanning Tree Protocol

SNMP V1/V2c Agent

Remote administration and remote upgrades available over the Internet

Supports Traffic and Event Logging

Appendix B: Limited Warranty

Gemtek warrants that (a) the hardware components of the Gemtek product will be free from defects in materials and workmanship under normal use for one (1) year from the date of purchase, and (b) the software components will perform substantially in accordance with Gemtek's published specifications for ninety (90) days from the date of purchase, but does not warrant that the software will be error-free or free of all defects. If a defect or nonconformance exists during the applicable warranty period, at its option Gemtek will repair or replace the defective parts or nonconforming software using new or refurbished replacement parts or media at no additional charge to you. This warranty extends only to you, the original purchaser and is not transferable to any subsequent purchasers.

This Limited Warranty does not extend to any product not purchased or licensed from Gemtek or its authorized resellers or retailers. This Limited Warranty does not apply: (a) to damage caused by accident, abuse, misuse, misapplication, unusual electrical fluctuation, or improper transportation upon return to Gemtek; (b) if you use parts not manufactured or sold by Gemtek; or (c) to damage caused by modification of the product or as a result of service by anyone other

Appendix C: FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of

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.

This device complies with Part 15 of 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.

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.

FCC RF Radiation Exposure Statement:

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

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