

CONCEPTRONIC C300BRS4A

Version 1.0

802.11n Wireless Broadband Router



User Manual

About This Manual

This manual provides descriptions of the Conceptronic C300BRS4A 802.11n Wireless Broadband Router, its hardware and software features, and how to set up and use the device on your small office or home network.

Before You Start

Please read and make sure you understand all the prerequisites for proper installation of your new Wireless Broadband Router. Have all the necessary information and equipment on hand before beginning the installation. A packing list is included at the end of this section.

Installation Overview

The procedure to install the Wireless Broadband Router can be described in general terms in the following steps:

1. Gather information and equipment needed to install the device. Check the contents of the package to be certain that everything listed on the packing list is included. A packing list is included at the end of this section. The information you will need includes the account name or number and the password used to gain access to your service provider's network, and ultimately to the Internet.
2. Install the hardware, that is, connect the Ethernet cables to the device to establish the necessary network links to your computer and connect the power adapter to power on the Wireless Broadband Router.
3. Check the IP settings on your computer and change them if necessary so the computer can access the web-based software built into the Wireless Broadband Router. Without the correct IP settings your computer will not be able to communicate with the device or access the software used to configure the Wireless Broadband Router. Without compatible IP settings on your computer, you will not be able to use a web browser to access the Internet.
4. Use the web-based management software to configure the device. Many users can install the Wireless Broadband Router with the Setup Wizard. Some users may not need to change any of the device settings that establish and maintain the network connection. Follow the instructions of your service provider to find out what is required for your account.

Requirements for Installation

To install and use the Wireless Broadband Router you need a computer equipped with an Ethernet port (such as an Ethernet NIC) and a web browser.

WLAN Ethernet Adapter

Any computer that uses the Wireless Broadband Router must be able to connect to it through the Wireless Ethernet (WLAN) on the Wireless Broadband Router. This connection is a Wireless Ethernet (WLAN or WiFi) connection and therefore requires that your computer be equipped with a Wireless Ethernet Adapter as well. Many notebook computers are now sold with a Wireless Ethernet Adapter already installed. There is also a Wired Ethernet port that is used to connect the WLAN adapter to your wired network. This port can be used to configure the Wireless Broadband Router. Most fully assembled desktop computers come with an Ethernet NIC adapter as standard equipment. If your computer does not have an Ethernet port, you must install an Ethernet NIC adapter before you can configure the Wireless Broadband Router. If you must install an adapter, follow the installation instructions that come with the Ethernet NIC adapter.

Operating System

The Wireless Broadband Router uses an HTML-based web interface for setup and management. The web configuration manager may be accessed using any operating system capable of running web browser software.

Web Browser

Any common web browser can be used to configure the Wireless Broadband Router using the web configuration management software. The program is designed to work best with more recently released browsers such as Microsoft Internet Explorer® version 6.0, Netscape Navigator® version 6.2.3, or later versions. The web browser must have JavaScript enabled. JavaScript is enabled by default on many browsers. Make sure JavaScript has not been disabled by other software (such as virus protection or web user security packages) that may be running on your computer.

Packing List

Open the shipping carton and carefully remove all items. Make sure that you have the items listed here.

- 1x Conceptronic C300BRS4A - 802.11n Wireless Broadband Router
- 3x Antenna for C300BRS4A
- 1x CD-ROM containing this User's Guide
- 1x Straight-through Ethernet cable
- 1x Power Adapter, 5V, 2A DC
- 1x Quick Installation Guide
- 1x Warranty Card

Wireless LAN

A Wireless LAN is a cellular computer network that transmits data using radio signals instead of cables. Wireless LAN technology is commonly used for home, small office and large corporate networks. Wireless LAN devices have a high degree of mobility and flexibility that allow network to be quickly set up or dismantled and allow them to roam freely throughout the network.

The IEEE 802.11n Wireless LAN standard is an improvement on the IEEE 802.11g standard. The 802.11n embedded Wireless LAN access point is fully compatible with legacy IEEE 802.11b and IEEE 802.11g devices.

Some basic understanding of wireless technology and terminology is useful when you are setting up the Wireless Broadband Router or any wireless access point. If you are not familiar with wireless networks please take a few minutes to learn the basics.

For home users who will not incorporate a RADIUS server in their network, the security for the Conceptronic C300BRS4A, used in conjunction with other WPA-compatible 802.11 products, will still be much stronger than ever before. Utilizing the **Pre-Shared Key mode** of WPA, the Wireless Broadband Router will obtain a new security key every time it connects to the 802.11 network. You only need to input your encryption information once in the configuration menu. No longer will you have to manually input a new WEP key frequently to ensure security. With the Wireless Broadband Router, you will automatically receive a new key every time you connect, vastly increasing the safety of your communication.

The Wireless Broadband Router is an ideal solution for quickly creating and extending a wireless local area network (WLAN) in offices or other workplaces, trade shows and special events. The 802.11n standard is backwards compatible with 802.11b and 802.11g devices.

The Wireless Broadband Router has the newest, strongest, most advanced security features available today. When used with other 802.11n WPA (WiFi Protected Access) compatible products in a network with a RADIUS server, the security features include:

WPA: WiFi Protected Access, which authorizes and identifies users, based on a secret key that change automatically at regular intervals. **WPA** uses **TKIP (Temporal Key Integrity Protocol)** to change the temporal key every 10,000 packets (a packet is a kind of message transmitted over a network.) This insures much greater security than the standard WEP security. (By contrast, the previous WEP encryption implementation required the keys to be changed manually.)

Radio Transmission

Wireless LAN devices use electromagnetic waves within a broad, unlicensed range of the radio spectrum to transmit and receive radio signals. When a wireless access point is present, it becomes a base station for the Wireless LAN nodes in its broadcast range. Wireless LAN nodes transmit digital data using FM (frequency modulation) radio signals. Wireless LAN devices generate a carrier wave and modulate this signal using various techniques. In this way, digital data can then be superimposed onto the carrier signal. This radio signal carries data to Wireless LAN devices within range of the transmitting device. The antennae of Wireless LAN devices listen for and receive the signal.

Range

Range should not be a problem in most homes or small offices. If you experience low or no signal strength in some areas, consider positioning the device in a location between the Wireless LAN devices maintaining a roughly equal straight-line distance to all devices that need to access the Wireless Broadband Router through the wireless interface. Adding more 802.11n access points to rooms where the signal is weak can improve signal strength.

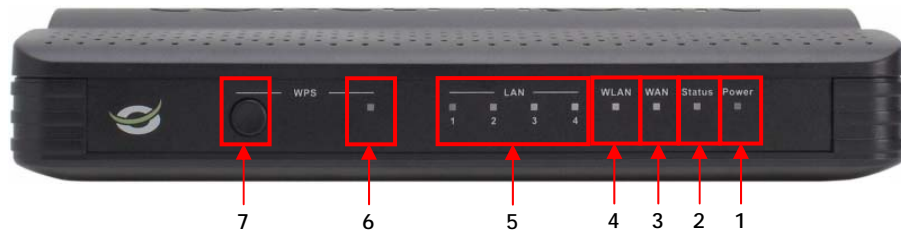
SSID

Wireless networks use an SSID (Service Set Identifier) to allow wireless devices to roam within the range of the network. Wireless devices that wish to communicate with each other must use the same SSID. Several Wireless Broadband Routers or access points can be set up using the same SSID so that wireless stations can move from one location to another without losing connection to the wireless network.

The Wireless Broadband Router operates in Infrastructure mode. It controls network access on the wireless interface in its broadcast area. It will allow access to the wireless network to devices using the correct SSID after a negotiation process takes place. The Conceptronic C300BRS4A broadcasts its SSID so that any wireless station in range can learn the SSID and ask permission to associate with it. Many wireless adapters are able to survey or scan the wireless environment for access points. An access point in Infrastructure mode allows wireless devices to survey that network and select an access point with which to associate.

Front Panel LED Display

Place the Router in a location where the LED indicators on the front panel can be viewed. The LED indicators on the front panel include the Power, Status, WAN, WLAN and WPS indicators. Each Ethernet LAN port displays an indicator for monitoring link status and activity (Link/Act).



Nr	Description	Status	Status Explanation
1	Power LED	OFF ON	The device is turned off The device is turned on
2	Status LED	OFF BLINK	The device is turned off / System Failure* The device is turned on and ready for use
3	WAN LED	OFF ON - STEADY ON - BLINK	No WAN Connection is created A WAN Connection is created Data is sent or received through the WAN Port
4	WLAN LED	OFF BLINK	Wireless interface is disabled Wireless interface enabled and active
5	LAN LED's (1,2,3,4)	OFF ON - STEADY ON - BLINK	No Network Link is created to the LAN Port A Network Link is created on the LAN Port Data is sent or received through the LAN Port
6	WPS LED	ON - BLINK	When the WPS Button is pressed, the WPS LED will blink for 120 seconds while searching for WPS Clients. **
7	WPS Button	Press the WPS Button to activate the WPS feature. The router will search for WS Clients for 120 seconds. **	

* In normal use, the Status LED will turn on and blink within 45 seconds after the device is turned on or restarted. When a system failure happens with the device, the Status LED will not turn on.

You can use the following options to solve the system failure:

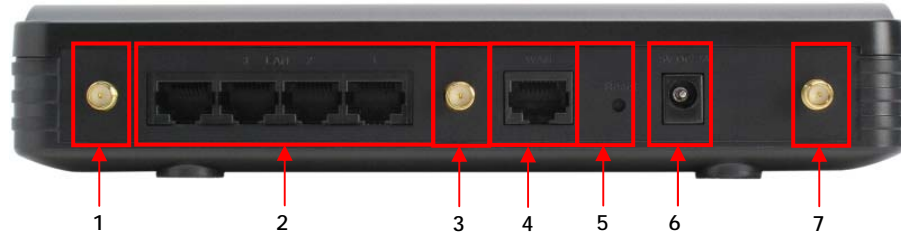
- a. Power down the device, wait 10 seconds and reconnect the power to the device.
- b. Reset the device to factory defaults by pressing the reset button on the back of the device for +/- 15 seconds.

If the Status LED does not turn on after you tried above options, please contact Conceptronic Support at: support@conceptronic.net

** For more information about the WPS feature, see the chapter 'Configuring Router Settings' of this Manual.

Rear Panel Cable Connections

Connect the power adapter cord and network cables on the rear panel. The power switch and reset button are also located on the back of the device. Connect the antennas to the antenna posts.



Nr	Description	Explanation
1	Antenna Connection	Reverse-SMA Connector for Wireless Antenna
2	LAN Ports	Connect your Computer(s) to the router
3	Antenna Connection	Reverse-SMA Connector for Wireless Antenna
4	WAN Port	Connect your Broadband connection to the router
5	Reset Button	Reset the router to the Factory Default Settings
6	Power Connection	Connect the Power Supply to the router
7	Antenna Connection	Reverse-SMA Connector for Wireless Antenna

Hardware Installation

Place the Wireless Broadband Router in a location where it can be easily connected to the wired interface (Ethernet link to a broadband modem, for example) as well as function effectively as a Wireless LAN access point. Make sure the Wireless Broadband Router is near a suitable power source.

Connect the bundled power supply to the power connection on the back of the C300BRS4A and to a free wall power outlet. The Power LED of the C300BRS4A will turn on.

Wireless LAN Performance and Environment

Many environmental factors can affect the effective wireless function of the Wireless Broadband Router. If this is your first time setting up a wireless network device, read and consider the points listed below.

The Wireless Broadband Router can be placed on a shelf or desktop, ideally you should be able to see the LED indicators on the front if you need to view them for troubleshooting.

The Wireless Broadband Router lets you access your network within range of the device. However, walls, ceilings, or other objects that the wireless signals must pass through can limit signal range. Typical ranges vary depending on the types of materials and background RF noise in your home or business. For maximum range and signal strength, use these basic guidelines:

- 1. Keep the number of walls and ceilings to a minimum:**

The signal emitted from Wireless LAN devices can penetrate through ceilings and walls. However, each wall or ceiling can reduce the range Wireless LAN devices from 1 to 30M. Position your wireless devices so that the number of walls or ceilings obstructing the signal path is minimized.

- 2. Consider the direct line between access points and workstations:**

A wall that is 0.5 meters thick, at a 45-degree angle appears to be almost 1 meter thick. At a 2-degree angle, it is over 14 meters thick. Be careful to position access points and client adapters so the signal can travel straight through (90° angle) a wall or ceiling for better reception.

- 3. Building Materials make a difference:**

Buildings constructed using metal framing or doors can reduce effective range of the device. If possible, position wireless devices so that their signal can pass through drywall or open doorways, avoid positioning them so that their signal must pass through metallic materials. Poured concrete walls are reinforced with steel while cinderblock walls may have little or no structural steel.

- 4. Keep the Wireless Broadband Router away (at least 1-2 meters) from electrical devices:**

Position wireless devices away from electrical devices that generate RF noise such as microwave ovens, monitors, electric motors, etc.

5. Position antenna for best reception:

Adjust the antenna position to see if the signal strength improves. Some adapters or access points allow the user to judge the strength of the signal. Use this method, if available, to test signal strength.

WAN Connection

Use a LAN Cable to connect the C300BRS4A to your Broadband Gateway (Cable Modem, DSL Modem, Fiber Gateway, etc.)

The WAN LED on the front side of the C300BRS4A will turn on.

Note: If the WAN LED on the front side does not turn on, make sure that:

- The C300BRS4A is powered (the Power LED should burn).
- The Broadband Gateway is turned on.
- The LAN cable between both devices is connected correctly.

LAN / Wireless LAN Connection

For LAN Cable Users:

Connect the LAN Cable to 1 of the 4 LAN ports on the back panel of the C300BRS4A and to the Network Card in your computer.

The LAN LED of the used LAN port will turn on, indicating that the computer is connected. (Your LAN Connection must be enabled and your computer turned ON).

For Wireless Users:

You can connect wireless to the C300BRS4A in 2 different ways:

- Manually, without encryption.
- Automatically with the WPS feature, with encryption.

If you have 1 or more clients which do not support WPS, it is advised to manually connect to the C300BRS4A, or secure the wireless connection manually before you connect to the C300BRS4A.

You can secure your connection manually with the configuration wizard, explained in the chapter 'Configuring Router Settings'.

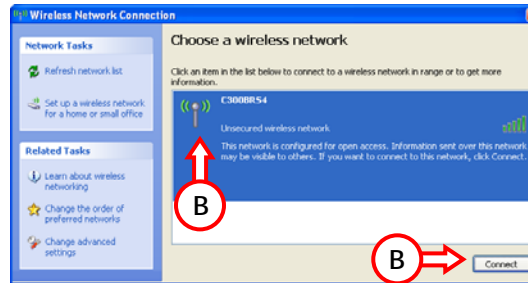
In this chapter you will find the steps how to connect manually to your unsecured network.

For more information about the WPS feature and the configuration steps, see the chapter 'Configuring Router Settings' of this Manual.

- A. Right click the Wireless Network Icon in your System tray and select "View Available Wireless Networks".



- B. Select the Network "C300BRS4A" from the list of available wireless networks and click "Connect".



- C. You will receive a warning about connecting to an unsecured wireless network. Click "Connect anyway" to proceed with the connection.



- D. When the connection is built, you will see the active wireless icon in the system tray. If you move your mouse over the icon you will receive an information popup (about the speed, signal strength and status of your connection).



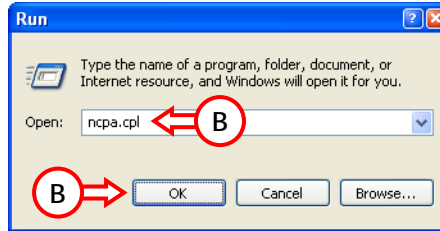
Computer Configuration

Configure your IP address

The C300BRS4A is equipped with a built-in DHCP Server. The DHCP Server will automatically assign an IP address to a connected computer if the connected computer is set to “obtain an IP address automatically”.

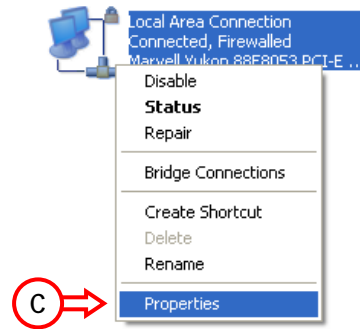
To configure your computer for Automatic IP follow the instructions below:

- A. Click “Start” → “Run”.
- B. Enter the command “NCPA.CPL” and press “OK”.



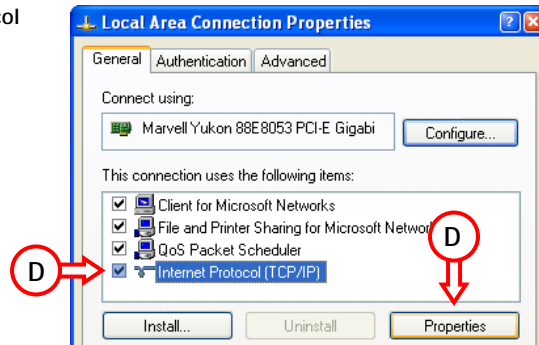
The Network Connections window will appear.

- C. Right click your “Local Area Connection” (Wired or Wireless, depending on the connection you use) and select “Properties”.



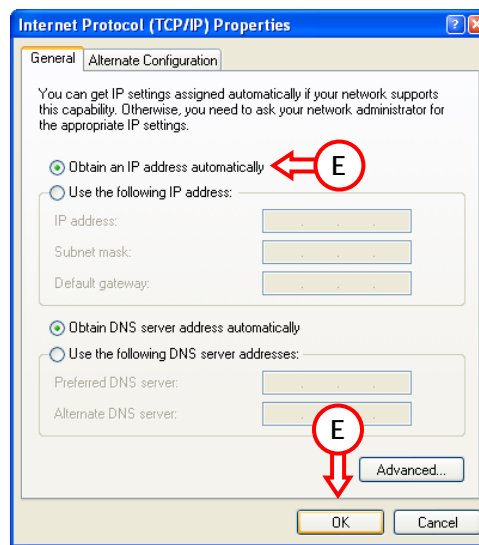
The Properties window of your Local Area Connection will appear.

- D. Select the "Internet Protocol (TCP/IP)" and click "Properties".



The Properties window of the Internet Protocol (TCP/IP) will appear.

- E. Set the properties to "Obtain an IP address automatically" and press "OK" to save the settings.
- F. Press "OK" in the properties window of the Local Area Connection to save the settings.



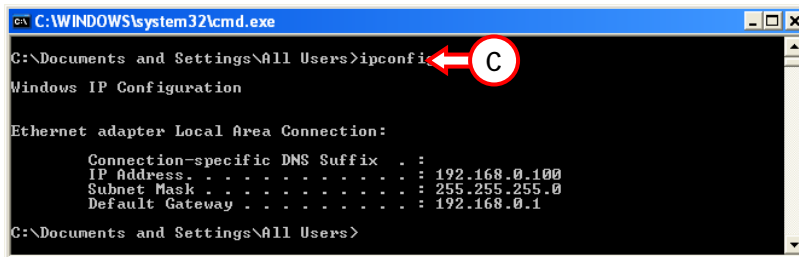
Checking your connection with the C300BRS4A

With the Command prompt of Windows you can verify if you have received a correct IP address on your Local Area Connection:

- A. Click "Start" → "Run".
- B. Enter the command "CMD" and press "OK".

The Command Prompt will appear.

- C. Enter the command "IPCONFIG" and press ENTER.



You should see the following information

IP Address : 192.168.0.xxx (Where xxx can vary between 100 ~ 199).

Subnet Mask : 255.255.255.0

Default Gateway : 192.168.0.1

If the information shown above matches your configuration you can continue the configuration of the device in Chapter 5.

If the shown information above does not match your configuration (i.e. your IP address is 169.254.xxx.xxx) please check the options below:

- 1. Power OFF and Power ON the device.
- 2. Reconnect the LAN Cable to the device and to your computer.
- 3. Renew the IP address of your computer with the following commands:
 - "IPCONFIG /RELEASE" to release the wrong IP address.
 - "IPCONFIG /RENEW" to receive a new IP address from the device.

```

c:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\All Users>ipconfig /release
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 0.0.0.0
    Subnet Mask . . . . . : 0.0.0.0
    Default Gateway . . . . . : 

C:\Documents and Settings\All Users>ipconfig /renew
Windows IP Configuration

Ethernet adapter Local Area Connection:

    Connection-specific DNS Suffix  . : 
    IP Address . . . . . : 192.168.0.100
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.0.1

C:\Documents and Settings\All Users>
    
```

If above steps do not solve the IP address problem, you can reset the device to the factory default settings with the Reset Button on the back of the device.

Press and hold the Reset Button for +/- 15 seconds to load the Factory Default Settings. When the Status LED is active again, repeat step C to renew your IP address.

Configuring Router Settings

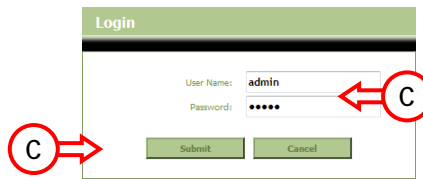
This chapter describes how to configure the Wireless Broadband Router the first time you use it or if you are configuring it after resetting the device to the factory default settings. The following sections describe how to configure the router through the Web based configuration.

The configuration of your C300BRS4A is web based. You will need a web browser for the configuration of the device.

Note: For configuration of the router it is advised to use a LAN Cable connection to the device instead of a Wireless connection.

- A. Start your web browser (like: Internet Explorer, FireFox or Safari).
- B. Enter the IP address of the device in the address bar of your web browser (By default: <http://192.168.0.1/>).

The Login page of the C300BRS4A will be shown.



- C. Enter the Username and Password (Default: 'admin' & 'admin') and click "Submit" to enter the configuration pages.

When the Username and Password are correct the router will display the "Device Settings" overview.

The "Device Settings" overview shows all configured settings for the LAN, WAN and Wireless part of the router.

The "Home" menu of the configuration contains the following configuration options: Wizard, Wireless, WAN, LAN and DHCP.

The screenshot displays the configuration interface for the Conceptronic C300BRS4A router. The interface has a green header with the text "NETWORKING WIRELESS BROADBAND ROUTER" and the "CONCEPTRONIC" logo. A navigation menu on the left includes "Wizard", "Wireless", "WAN", "LAN", and "DHCP". The main content area is titled "Device Settings" and shows the following configuration details:

- LAN:**
 - MAC Address: 00:80:5a:0bd2:a1
 - IP Address: 192.168.0.1
 - Subnet Mask: 255.255.255.0
 - DHCP Server: Enabled
 - Start IP Address: 192.168.0.100
 - End IP Address: 192.168.0.199
- WAN:**
 - Current Device Mode: Router Mode
 - MAC Address: 00:80:5a:0bd2:a2
 - Host Name: c300brs4
 - Connection Type: DHCP
 - Connection Status: Disconnected (with "DHCP Renew" and "DHCP Release" buttons)
 - IP Address: 0.0.0.0
 - Subnet Mask: 0.0.0.0
 - Default Gateway: 0.0.0.0
 - DNS 1: 0.0.0.0
 - DNS 2: 0.0.0.0
- Wireless:**
 - MAC Address: 00:80:5a:0bd2:a1
 - Mode: Mixed(b/g/n)
 - SSID: C300BRS4
 - Channel: 6
 - Encryption: Disabled
 - SSID Broadcast: Enabled

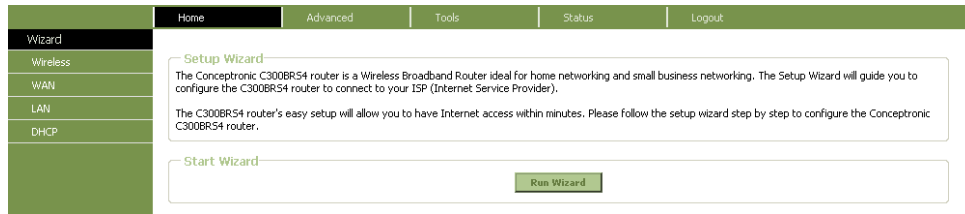
System Time: 15:17:37 04/05/2007
Firmware Version: 1.00

Device Settings Overview

HOME - WIZARD

You can setup the C300BRS4A through the build-in Wizard. This Wizard will help you configuring the basic settings of the C300BRS4A step by step.

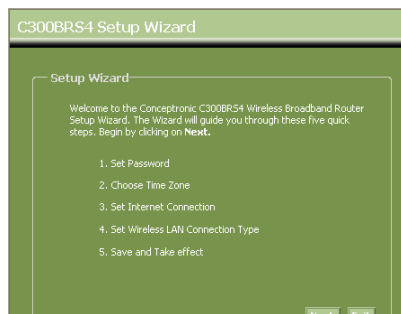
To use the Setup Wizard, click the Run Wizard button.



Setup Wizard window

Note: Before you begin with the Wizard Configuration, make sure you have all information for your internet settings available. (For example: Account information, connection type, etc.)

- A. The welcome screen lists five steps of the wizard. Click “Next” to continue.



- B. You are recommended to set an admin password here. Enter the new password and re-enter it for confirmation.

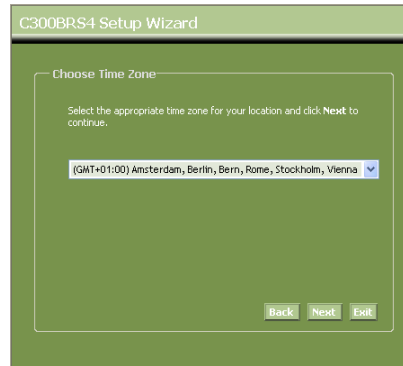
When completed, click “Next”.



- C. For system management purpose, a correct time setting is critical to have accurate time stamps on the system logs.

Set an appropriate Time Zone in this step.

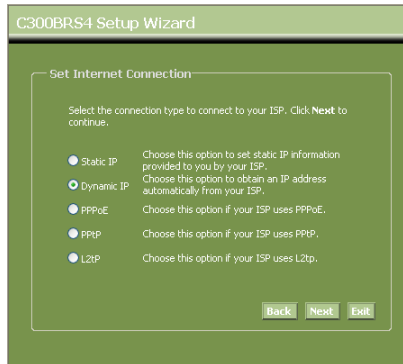
When completed, click "Next".



- D. Select the Internet Connection method which corresponds with your provider settings.

If you don't know which option you need for your internet connection, please check the documentation of your provider or contact your provider helpdesk.

When completed, click "Next".

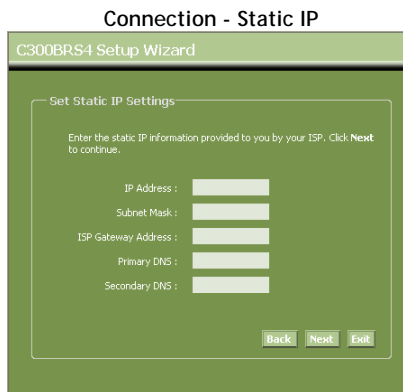


- E. When your provider requires a Static IP connection, select the "Static IP" option.

Enter the requested information:

- *IP Address*
- *Subnet Mask*
- *ISP Gateway Address*
- *Primary DNS*
- *Secondary DNS (Optional)*

When completed, click "Next".

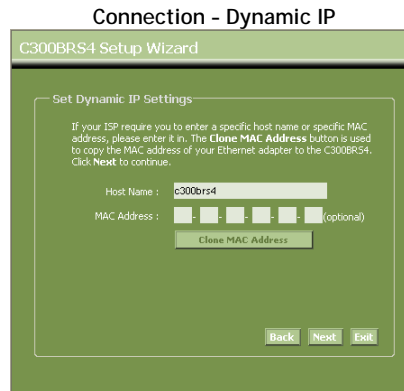


- F. When your provider requires a Dynamic IP connection, select the "Dynamic IP" option.

Some providers require a specific Hostname for their connections. If your provider requires a specific Hostname, enter the Host Name in the field.

Some providers only allow 1 specific MAC address to connect to the internet. If your PC Network Card works with the specific required MAC address, press the "Clone MAC Address" button or enter the MAC Address manually.

When completed, click "Next".

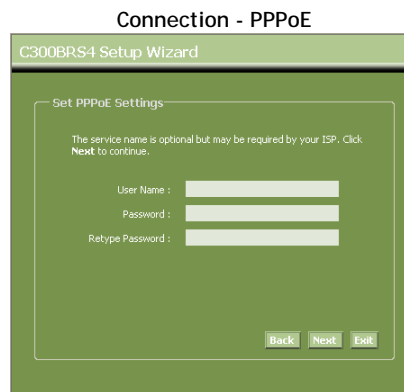


- G. When your provider requires a PPPoE connection, select the "PPPoE" option.

Enter the requested information:

- *User Name*
- *Password*
- *Retype Password*

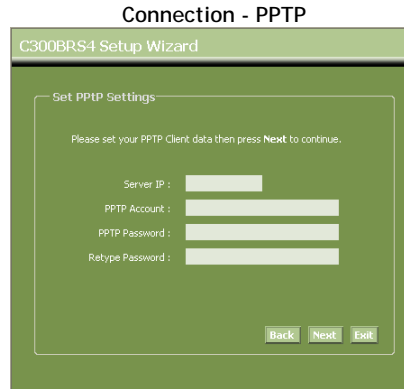
When completed, click "Next".



- H. When your provider requires a PPTP connection, select the "PPTP" option.

Enter the requested information:

- *Server IP*
- *PPTP Account*
- *PPTP Password*
- *Retype Password*

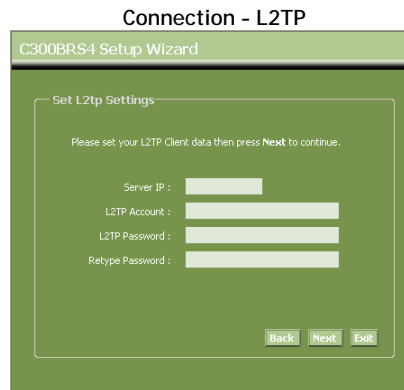


When completed, click "Next".

- I. When your provider requires a L2TP connection, select the "L2TP" option.

Enter the requested information:

- *Server IP*
- *L2TP Account*
- *L2TP Password*
- *Retype Password*



When completed, click "Next".

When the WAN configuration is complete, the Wizard will continue with the Wireless configuration:

- J. You can change the SSID of the router. The SSID is the name which will be broadcasted through the Wireless part.

You can change the channel between channel 1 and 13. If you experience slow connections or break-downs, there can be another accesspoint in your area which can interfere with your wireless channel. In that case, you can try another channel.

When completed, click "Next".



You can secure your Wireless Connection with encryption. By default, the Wireless Connection is not secured. To prevent unauthorized access to your network, set a security level through the Setup Wizard.

If you want to use the WPS feature of the C300BRS4A, you can skip the wireless configuration and continue the Setup Wizard without encryption. To setup your WPS security, please proceed to the section 'HOME - WIRELESS' of this chapter.

Note: All security options of the Setup Wizard are explained, but it is advised to secure your network with "WPA-PSK/WPA2-PSK" security if your Clients do not support WPS. This is the highest WPA2 security level, with backwards compatibility to WPA only clients.

Note: Remember or write down the entered wireless security information. You will need it when you want to configure a Wireless Client to connect to the C300BRS4A!

- K. Select a security level for your Wireless Network.

When a security level is chosen, the Wizard will show fields for the required information.



- L. If you want to secure your network with WEP encryption, select “WEP” from the drop-down list. Enter the WEP key in ASCII format (input: A-Z, 0-9).

Note:

Through the Wizard you can only configure WEP 64Bits.

- M. If you want so secure your network with WPA or WPA2 (with Radius Server), select “WPA” or “WPA2” from the drop-down list.

Enter the IP Address of the Radius Server, the Shared Key and confirm the Shared Key in the second field.

- N. If you want to secure your network with WPA-PSK or WPA2-PSK, select “WPA-PSK”, “WPA2-PSK” or “WPA-PSK/WPA2-PSK” from the drop-down list.

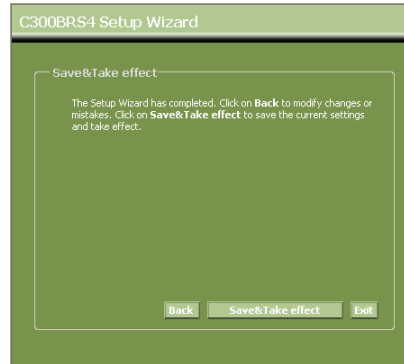
Enter the Passphrase for your encryption and confirm the Passphrase in the second field.

- O. When all Wireless settings are made, click “Next” to continue.

- P. The Setup Wizard is now complete. If you want to apply your settings, click "Save & Take Effect".

If you want to change any setting, click "Back" to return to the previous screen.

If you want to close the Setup Wizard without any changes, click "Exit".



When you select "Save & Take Effect", the router will apply the configured settings. Please wait for the message "Save Complete".

- Q. The configuration is now complete. Click "Close" to exit the Setup Wizard.

You will return to the "Device Settings" overview which will show you the configured settings for your WAN and Wireless connection.

HOME - WIRELESS

To configure the Router's basic configuration settings without running the Setup Wizard, you can access the windows used to configure Wireless, WAN, LAN, and DHCP settings directly from the Setup directory. To access the **Wireless Settings** window, click on the **Wireless** link button on the left side of the first window that appears when you successfully access the web manager.

Wireless Settings window

Click the **Set Wireless Radio** radio-button to allow the router to operate in the wireless environment.

The **SSID** identifies members of the Service Set. Accept the default name or change it to something else. If the default SSID is changed, all other devices on the wireless network must use the same SSID.

Enable **SSID Broadcast** if you want users to be able to join your wireless network based on the SSID information broadcast by the Router. If this is disabled, each new user will have to be manually configured.

What channels are available for use by the access point depends on the local regulatory environment. Remember that all devices communicating with the device must use the same channel (and use the same SSID). Use the drop-down menu to select the **Channel** used for your 802.11n wireless LAN. Click **Apply**.

WEP Encryption

WEP (Wireless Encryption Protocol) encryption can be enabled for security and privacy. WEP encrypts the data portion of each frame transmitted from the wireless adapter using one of the predefined keys. The router offers 64- or 128-bit encryption with four keys available.

To bring up the **Wireless Settings** window for WEP, select **WEP** from the **Set Wireless Security Mode** radio-buttons.

Wireless Settings window for WEP

1. Select an **Authentication** type, **Open System** or **Shared Key**.
2. Select the desired level of **WEP Encryption**, *64Bit* or *128Bit*.
3. Select the desired key input format, *HEX (hexadecimal)* or *ASCII*.
4. Select a key by clicking a radio button on the left and then enter the proper-length key.
5. Click **Apply**.

Note: If encryption of any kind, at any level is applied to the Wireless network, all devices on the network must comply with all security measures.

WPA Encryption

WiFi Protected Access was designed to provide improved data encryption, perceived as weak in WEP, and to provide user authentication, largely nonexistent in WEP. There are two versions, WPA and WPA2; both are supported by the Access Point. WPA includes the option of using a Pre-Shared Key similar to WEP, or a RADIUS server can be used for verification. In addition, WPA2-Auto is offered for user convenience.

WPA/WPA2 Encryption with Radius Server

Wireless Settings window for WPA and WPA2

1. Select the type of WPA encryption for your Radius Server, **WPA** or **WPA2**.
2. Select the desired **Cipher Type**, TKIP, AES, or TKIP/AES.
3. Enter the **RADIUS Server** IP Address and the **RADIUS Port** for your Radius Server.
4. Enter the **Shared Key** (between 1 and 63 characters) which is needed for the Radius server.
5. Re-enter the Shared Key in the second field.
6. Click **Apply**.

Note: The values needed for RADIUS authentication can be obtained from your Internet Service Provider (ISP).

WPA/WPA2-PSK With Passphrase Encryption

Set Wireless Security Mode

Disable
 WEP
 WPA
 WPA-PSK
 WPA2
 WPA2-PSK
 WPA-PSK/WPA2-PSK

Cipher Type : TKIP AES

Key Type : ASCII HEX

Passphrase : (8 ~ 63 characters, or 64 HEX characters)

Passphrase Confirm : (8 ~ 63 characters, or 64 HEX characters)

Key Renewal : (300 ~ 1800 Seconds)

Apply Cancel

Wireless Settings window for WPA-PSK, WPA2-PSK and WPA-PSK/WPA2-PSK

1. Select the type of WPA encryption for use with your Passphrase, WPA-PSK, WPA2-PSK or WPA-PSK/WPA2-PSK.

Note: If you select WPA-PSK/WPA2-PSK, the router will work with the highest WPA2-PSK encryption. If clients try to connect which do not support WPA2-PSK, the router will automatically authorize the client on WPA-PSK Level.

2. Select the desired Cipher Type, TKIP or AES.
3. Select the Key Type, ASCII or HEX (Hexadecimal).
4. Enter the Passphrase you want to use for your WPA-PSK encryption (8 - 63 characters ASCII, or 64 characters HEX).
5. Re-enter the Passphrase in the second field.
6. Click Apply.

WPS Security

The Conceptronic C300BRS4A supports WPS (Wi-Fi Protected Setup). WPS is a standard for easy and secure establishment of a wireless network. With WPS you can setup and protect your wireless network in just a few easy steps.

Note: To use WPS with the C300BRS4A, you need to have Wireless Clients which supports WPS. If you have 1 or more Wireless Clients without WPS support, it is advised to secure your network manually using the Setup Wizard.

Note: For more (technical) information about WPS, you can visit the following website:
http://en.wikipedia.org/wiki/Wi-Fi_Protected_Setup

The C300BRS4A supports 2 ways to activate and establish a WPS connection:

- Push Button technology
- Pin Code technology

WPS - Push Button technology

The WPS Push Button technology requires a (virtual) button on your Wireless Client to establish a connection between the C300BRS4A and your Wireless Client. Some Wireless Clients work with a real button to activate the WPS Push Button technology; some Wireless Clients use a software-based virtual button.

Follow the steps below to activate and establish a WPS connection with the Push Button technology:

- A. Press the WPS Button at the front of the C300BRS4A until the WPS LED blinks.
- B. Press the WPS Button at your Wireless Client. This can be a hardware button or a virtual button in the software of your Wireless Client.

The C300BRS4A will activate WPA security over your wireless network and accepts the wireless connection of your Wireless Client.

Note: The C300BRS4A will keep the WPS authentication active for 120 seconds. During this process, the WPS LED will blink. If there is no connection in these 120 seconds, the LED will turn off and the WPS authentication process is stopped.
If the WPS feature is not used earlier, the wireless network will still be unencrypted.

If the authentication of the Wireless Client is succeeded, the WPS LED will burn steady blue for 5 minutes. After these 5 minutes, the LED will turn off.

Your Wireless Client is now connected to the C300BRS4A and your network is secured with WPA Encryption.

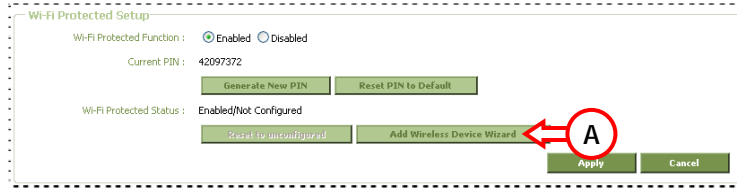
You can add more Wireless WPS Clients without loosing the connection to previous Wireless WPS Clients.

If you want to add more Wireless WPS clients, repeat step A & B.

Note: The WPA Key generated by the C300BRS4A is random.

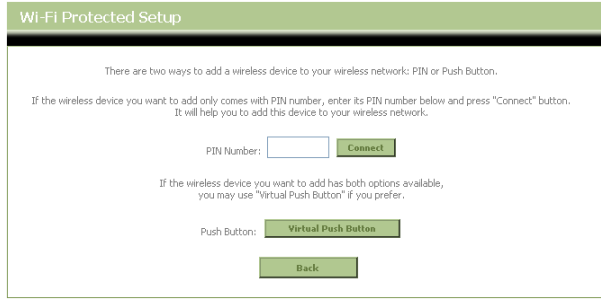
WPS - Pin Code technology

At the bottom of the Wireless Configuration page, you can find the "Wi-Fi Protected Setup" section.



- A. Click the "Add Wireless Device Wizard" button on the screen.

The WPS Wizard will be shown on your screen:



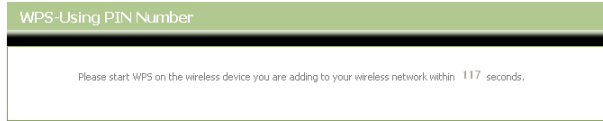
In this Wizard, you can activate the Pin Code feature. To start with the Pin Code authentication, you need the Pin Code generated by your Wireless Client.

- B. Select the WPS Pin Code feature in the software of your Wireless Client. The Wireless Client will generate a Pin Code and shows it on your screen.



- C. Enter the Pin Code given by your Wireless Client in the WPS Wizard of the C300BRS4A and press "Connect".

The C300BRS4A will activate WPA security on your wireless network and accepts the wireless connection of your Wireless Client with the entered Pin Code.



The C300BRS4A will keep the WPS authentication active for 120 seconds. During this process, the WPS LED will blink. If there is no connection in these 120 seconds, the LED will turn off and the WPS authentication process is stopped.



Click "Continue" to return to the WPS Wizard screen.

Note: If the WPS feature is not used earlier, the wireless network will still be unencrypted.

If the authentication of the Wireless Client is succeeded, the Wizard will show "WPS - Adding Wireless Device Success". The WPS LED will burn steady blue for 5 minutes. After these 5 minutes, the LED will turn off.



Click "Continue" to return to the Wireless Configuration page.

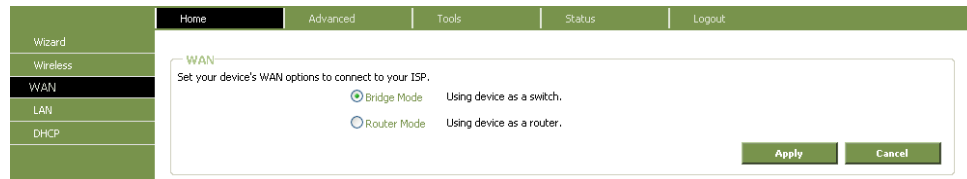
Your Wireless Client is now connected to the C300BRS4A and your network is secured with WPA Encryption.
If you want to add more Wireless Clients with the WPS feature, repeat step A t/m C.

HOME - WAN

To access this window click on the **WAN** button in the left menu of the web manager.

You can configure the C300BRS4A as Router, or as Switch/Accesspoint.

- When you select the **“Router”** option, you can configure a connection for your provider which is described further in this manual.
- When you select the **“Bridge”** function, the C300BRS4A will disable all router functions and will work as a 5 ports switch with accesspoint. This can be useful if you want to use the C300BRS4 just as a switch and accesspoint, instead of all the router functions.



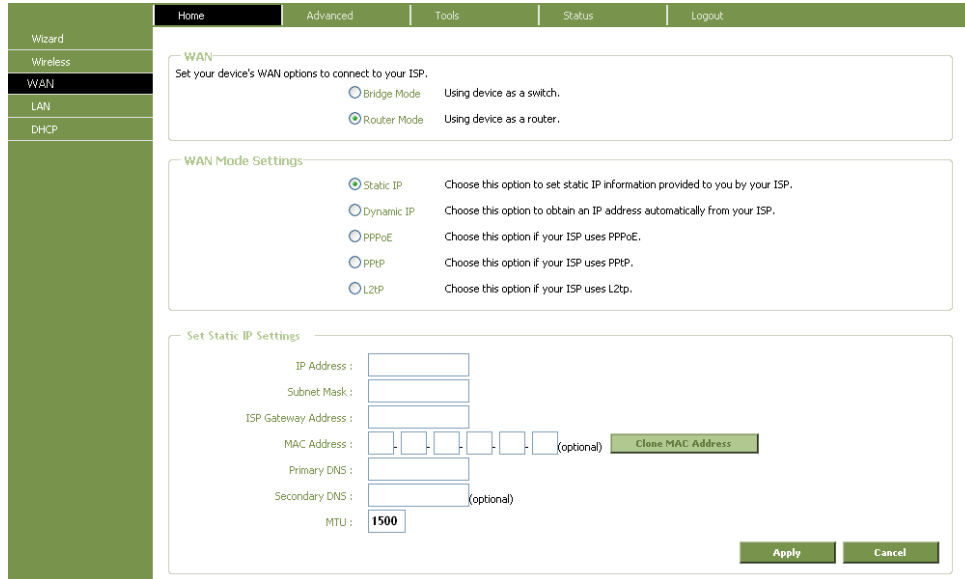
WAN - Bridge or Router Mode

Note: If you select the **“Bridge”** option, the DHCP Server also will be disabled. You cannot access the configuration pages of the C300BRS4A anymore on **192.168.0.1**, but you need to check the DHCP Server in your network which IP Address is assigned to the C300BRS4A.

Static IP Address

When the Router is configured to use Static IP Address assignment for the WAN connection, you must manually assign a global IP Address, Subnet Mask and Gateway IP Address used for the WAN connection. Follow the instruction below to configure the Router to use Static IP Address assignment for the WAN connection.

To configure a Static IP Address connection, perform the steps listed below. Some of the settings do not need to be changed the first time the device is set up, but can be changed later if you choose. See the table below for a description of all the settings available in this window.



WAN Settings window for Static IP Address

To configure a Static IP type connection for the WAN, follow these steps:

1. Click the **Static IP** radio button at the top of the window.
2. Enter an **IP Address**, **Subnet Mask**, **ISP Gateway Address**, **Primary DNS Address**, and (if available) **Secondary DNS Address** as instructed by your ISP. These are the global IP settings for the WAN interface. This is the “visible” IP address of your account. Your ISP should have provided these IP settings to you.
3. Some ISPs record the unique MAC address of your computer’s Ethernet adapter when you first access their network. This can prevent the Router (which has a different MAC address) from being allowed access to the ISPs network (and the Internet). To clone the MAC address of your computer’s Ethernet adapter, press the “**Clone MAC Address**” button or enter the MAC Address manually.

4. Leave the MTU value at the default setting (default = 1500) unless you have specific reasons to change this (see table below).
5. When you are satisfied that all the WAN settings are configured correctly, click on the **Apply** button.
6. The new settings must be saved and the Router must be restarted for the settings to go into effect. To save and reboot the Router, click on the **Tools** button in the top menu and select the **System** button in the left menu. In the **System Management** window, click the **Save** button under Save Settings to Local Hard Drive and then click the **Reboot** button to reboot the C300BRS4A.
7. The Router will save the new settings and restart. Upon restarting the Router will automatically establish the WAN connection.

Additional settings for Static IP Address connections:

Static IP Parameters	Description
IP Address	This is the permanent global IP address for your account. This is the address that is visible outside your private network. Get this from your ISP.
Subnet Mask	This is the Subnet mask for the WAN interface. Get this from your ISP.
ISP Gateway Address	This is the IP address of your ISP's Gateway router. It provides the connection to the Router for IP routed traffic that is outside your ISP's network. That is, this will be the primary connection from the Router to most of the Internet. Get this IP address from your ISP.
MAC Address	To use the Clone MAC Address feature, enter a MAC address in this field and then click the Clone MAC Address button.
Primary DNS Address	This is the IP address of the first choice for Domain Name Service (DNS) used to match the named URL web address used by most browsers with the actual global IP address used for a web server. Usually this will be a server owned by the ISP. Get this IP address from your ISP.
Secondary DNS Address	This is the second choice for a DNS server. Get this IP address from your ISP.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1500 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.

Dynamic IP Address

A Dynamic IP Address connection configures the Router to automatically obtain its global IP address from a DHCP server on the ISP's network. The service provider assigns a global IP address from a pool of addresses available to the service provider. Typically the IP address assigned has a long lease time, so it will likely be the same address each time the Router requests an IP address. To configure a Dynamic IP Address connection, perform the steps listed below. Some of the settings do not need to be changed the first time the device is set up, but can be changed later if you choose. See the table below for a description of all the settings available in this window.

WAN Settings window for Dynamic IP Address

To configure a Dynamic IP Address connection for the WAN, follow these steps:

1. Click the **Dynamic IP** radio button at the top of the window.
2. Some ISPs record the unique MAC address of your computer's Ethernet adapter when you first access their network. This can prevent the Router (which has a different MAC address) from being allowed access to the ISP's network (and the Internet). To clone the MAC address of your computer's Ethernet adapter, press the "Clone MAC Address" button or enter the MAC Address manually.
3. Fill in the **Primary DNS Address**. This information should be available from your ISP.
4. Fill in the **Secondary DNS Address** (if available from your ISP).
5. Leave the **MTU** value at the default setting (default = 1500) unless you have specific reasons to change this (see table below).
6. When you are satisfied that all the WAN settings are configured correctly, click on the **Apply** button.

7. The new settings must be saved and the Router must be restarted for the settings to go into effect. To save and reboot the Router, click on the **Tools** button in the top menu and select the **System** button in the left menu. In the **System Management** window, click the **Save** button under Save Settings to Local Hard Drive and then click the **Reboot** button to reboot the C300BRS4A.
8. The Router will save the new settings and restart. Upon restarting, the Router will automatically establish the WAN connection.

Additional settings for Dynamic IP Address connections:

Dynamic IP Parameters	Description
Host Name	This is not always necessary, but may be required for some ISPs. Type in the MAC address of your computer's Ethernet adapter in the MAC Address field and click the Clone MAC Address button. This will copy the information to a file used by the Router to present to the ISP's server used for DHCP. Some ISPs record the unique MAC address of your computer's Ethernet adapter when you first access their network. If you want to later replace the cloned MAC address with the factory default setting, type in all zeros - 0:0:0:0:0:0 - and click the Clone MAC Address button.
MAC Address	This is not always necessary, but may be required for some ISPs. Type in the MAC address of your computer's Ethernet adapter in the Cloned MAC Address field and click the Clone MAC Address button. This will copy the information to a file used by the Router to present to the ISP's server used for DHCP. Some ISPs record the unique MAC address of your computer's Ethernet adapter when you first access their network. If you want to later replace the cloned MAC address with the factory default setting, type in all zeros - 0:0:0:0:0:0 - and click the Clone MAC Address button.
Clone MAC Address	To clone the MAC address of your computer's Ethernet adapter, type in the MAC address in the MAC Address field and then click this Clone MAC Address button.
Primary DNS Address	Enter the Primary DNS Address. This information should be provided to you by your Internet Service Provider.
Secondary DNS Address	The Secondary DNS Address is optional. See your Internet Service Provider for further information.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1500 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.

PPPoE

Follow the instructions below to configure the Router to use a PPPoE for the Internet connection. Make sure you have all the necessary information before you configure the WAN connection.

The screenshot shows the WAN Settings window for PPPoE configuration. The window is divided into three sections:

- WAN:** Set your device's WAN options to connect to your ISP.
 - Bridge Mode: Using device as a switch.
 - Router Mode: Using device as a router.
- WAN Mode Settings:**
 - Static IP: Choose this option to set static IP information provided to you by your ISP.
 - Dynamic IP: Choose this option to obtain an IP address automatically from your ISP.
 - PPPoE: Choose this option if your ISP uses PPPoE.
 - PPP: Choose this option if your ISP uses PPP.
 - L2tp: Choose this option if your ISP uses L2tp.
- Set PPPoE Settings:**
 - PPPoE Mode: Static PPPoE Dynamic PPPoE
 - User Name: [Text Field]
 - Password: [Text Field]
 - Retype Password: [Text Field]
 - AC Name: [Text Field] (optional)
 - Service Name: [Text Field] (optional)
 - IP Address: [Text Field]
 - MAC Address: [Text Field] (optional)
 - Primary DNS: [Text Field]
 - Secondary DNS: [Text Field] (optional)
 - Maximum Idle Time: [0] (Seconds)
 - MTU: [1492]
 - Connect Mode Select: Always on Manual Connect on demand

WAN Settings window for PPPoE

To set up a PPPoE connection:

1. If not already selected, click the PPPoE radio button at the top of the window.
2. Under the PPPoE Settings heading, type the User Name and Password used for your ADSL account. A typical User Name will be in the form user1234@isp.co.uk. The Password may be assigned to you by your ISP or you may have selected it when you set up the account with your ISP.
3. Leave the MTU value at the default setting (default = 1492) unless you have specific reasons to change this (see table below).
4. Typically the globally IP settings (i.e. IP address for the WAN interface) for a PPPoE connection will use Dynamic IP assignment from the ISP. Some accounts may be assigned a specific global IP address.

5. Choose the desired **Connect mode select** setting. Select from: Always on, Manual, or Connect on demand. Most users will want to choose the default connection setting, Always on.
6. When you are satisfied that all the WAN settings are configured correctly, click on the **Apply** button.
7. The new settings must be saved and the Router must be restarted for the settings to go into effect. To save and reboot the Router, click on the **Tools** directory tab and then click the **System** button. In the **System Settings** window, click the **Save** button under Save Settings to Local Hard Drive and then click the **Reboot** button under Reboot the CONCEPTRONIC C300BRS4A.
8. The Router will save the new settings and restart. Upon restarting the Router will automatically establish the WAN connection.

Additional settings for PPPoE/PPPoA connections:

PPPoE/PPPoA Parameters	Description
User Name	For PPP connections, a User Name and Password are used to identify and verify your account to the ISP. Enter the User Name for your ADSL service account. User names and passwords are case-sensitive, so enter this information exactly as given to you by your ISP.
Password	Together with the User Name , this is used to verify your account to the ISP. Enter the Password exactly as given to you by your ISP.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1492 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.
IP Address	If you have selected the <i>Static PPPoE</i> option, type in the global IP address used for your WAN interface. Your ISP should provide this IP address to you.
MAC Address	To use the Clone MAC Address feature, enter a MAC address in this field and then click the Clone MAC Address button.
Primary DNS	Enter the Primary DNS Address. This information should be provided to you by your Internet Service Provider.
Maximum Idle Time	A value of 0 means that the PPP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in minutes). This will disconnect the Router after the WAN connection has been idle for the amount of time specified.

MTU

The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1500 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.

Connect mode select

Select the desired option: *Always on*, *Manual*, or *Connect on demand*. Most users will want to choose the default connection setting, *Always on*.

PPTP

The Point to Point Tunneling Protocol is used to transfer information securely between VPNs (Virtual Private Routers). Encryption methods are employed in the transfer of information between you and your ISP using a key encryption. This option is specific for European users whose ISPs support the PPTP protocol for the uplink connection. To connect to your ISP's server using this protocol, the information in this window must be provided to you by your ISP and then properly implemented.

The screenshot shows the WAN Settings window for PPTP configuration. The interface includes a navigation menu on the left with options: Wizard, Wireless, WAN (selected), LAN, and DHCP. The main content area is divided into three sections: 1. WAN: 'Set your device's WAN options to connect to your ISP.' with radio buttons for Bridge Mode (Using device as a switch) and Router Mode (Using device as a router). 2. WAN Mode Settings: Radio buttons for Static IP (Choose this option to set static IP information provided to you by your ISP.), Dynamic IP (Choose this option to obtain an IP address automatically from your ISP.), PPPoE (Choose this option if your ISP uses PPPoE.), PPTP (Choose this option if your ISP uses PPTP.), and L2TP (Choose this option if your ISP uses L2tp.). 3. Set PPTP Settings: Radio buttons for Static PPTP and Dynamic PPTP. Below are input fields for IP Address, Subnet Mask, ISP Gateway Address, DNS, Server IP, User Name, Password, and Retype Password. A Maximum Idle Time field is set to 0 (Seconds) and an MTU field is set to 1400. At the bottom, there are radio buttons for Connect Mode Select: Always on (selected), Manual, and Connect on demand. 'Apply' and 'Cancel' buttons are located at the bottom right.

WAN Settings window for Others (PPTP)

PPTP Parameters	Description
IP Address	Enter the IP address for your Router based on the information provided to you by your ISP.
Subnet Mask	Enter the Subnet Mask for your Router based on the information provided to you by your ISP.
ISP Gateway Address	Enter the Gateway IP address based on the information provided to you by your ISP.
DNS	Enter the Domain Name Server IP address.
Server IP	Enter the IP address of the ISP server with which your router will be conveying encrypted information. This field is based on information provided to you by your ISP.
Username	Enter the name of the PPTP account as provided to you by your ISP.
Password	Enter the PPTP password as provided to you by your ISP.
Retype Password	Retype the password entered in the Password field.
Maximum Idle Time	A value of 0 means that the PPP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in minutes). This will disconnect the Router after the WAN connection has been idle for the amount of time specified.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1400 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.
Connect mode select	Select the desired option: Always on, Manual, or Connect on demand. Most users will want to choose the default connection setting, Always on.

L2TP

Some ISPs may require the user to uplink using the Layer 2 Protocol Tunneling (L2TP) method. L2TP is a VPN protocol that will ensure a direct connection to the server using an authentication process that guarantees the data originated from the claimed sender and was not damaged or altered in transit. Once connected to the VPN tunnel, it seems to the user that the client computer is directly connected to the internal network. To set up your L2TP connection, enter the following data that was provided to you by your ISP.

The screenshot shows the WAN Settings window for L2TP configuration. The interface includes a navigation menu on the left with options: Wizard, Wireless, WAN (selected), LAN, and DHCP. The main content area is divided into three sections:

- WAN:** Set your device's WAN options to connect to your ISP. Options include Bridge Mode (Using device as a switch) and Router Mode (Using device as a router). Router Mode is selected.
- WAN Mode Settings:** Options include Static IP (Choose this option to set static IP information provided to you by your ISP.), Dynamic IP (Choose this option to obtain an IP address automatically from your ISP.), PPPoE (Choose this option if your ISP uses PPPoE.), PPTP (Choose this option if your ISP uses PPTP.), and L2TP (Choose this option if your ISP uses L2tp.). L2TP is selected.
- Set L2tp Settings:** L2tp Mode: Static L2tp and Dynamic L2tp (selected). Fields include IP Address, Subnet Mask, ISP Gateway Address, DNS, Server IP, User Name, Password, Retype Password, Maximum Idle Time (0 Seconds), MTU (1400), and Connect Mode Select: Always on (selected), Manual, and Connect on demand.

Buttons for Apply and Cancel are located at the bottom right of the window.

WAN Settings window for Others (L2TP)

L2TP Parameters	Description
IP Address	The IP address that will be assigned to your router for this connection, as stated by your ISP.
Subnet Mask	The IP address of the corresponding Subnet Mask, as stated to you by your ISP.
ISP Gateway Address	The IP address of the gateway device, as stated to you by your ISP.
DNS	Enter the Domain Name Server IP address.
Server IP	The IP address of your ISP's server computer, as stated to you by your ISP.
User Name	The account name of the L2PT account that has been assigned to you by your ISP.
Password	The password of the L2PT account that was supplied to you by your ISP.
Retype Password	Retype the password that was entered in the L2PT field. Ensure that these two passwords are identical or an error will occur.
Maximum Idle Time	A value of 0 means that the PPP connection will remain connected. If your network account is billed according to the amount of time the Router is actually connected to the Internet, enter an appropriate Idle Time value (in minutes). This will disconnect the Router after the WAN connection has been idle for the amount of time specified.
MTU	The Maximum Transmission Unit size may be changed if you want to optimize efficiency for uploading data through the WAN interface. The default setting (1400 bytes) should be suitable for most users. Some user may want to adjust the setting to optimize performance for wireless traffic or when low latency is desired (such as with Internet gaming). It is highly recommended that the user research how adjusting the MTU may affect network traffic for better or worse.
Connect mode select	Select the desired option: Always on, Manual, or Connect on demand. Most users will want to choose the default connection setting, Always on.

HOME - LAN

You can configure the LAN IP address to suit your preference. Many users will find it convenient to use the default settings together with DHCP service to manage the IP settings for their private network. The IP address of the Router is the base address used for DHCP. In order to use the Router for DHCP on your LAN, the IP address pool used for DHCP must be compatible with the IP address of the Router. The IP addresses available in the DHCP IP address pool will change automatically if you change the IP address of the Router. See the next section for information on DHCP setup.

LAN Settings window

To change the LAN IP Address or Subnet Mask, type in the desired values and click the **Apply** button. Your web browser should automatically be redirected to the new IP address. You will be asked to login again to the Router's web manager.

In addition, the Router can be configured to relay DNS from your ISP or another available service to workstations on your LAN. When **DNS Relay** is *Enabled*, the Router will accept DNS requests from hosts on the LAN and forward them to the ISP (or alternative) DNS servers. Alternatively, you may also disable the DNS relay and configure hosts on your LAN to use DNS servers directly. Most users, who are using the Router for DHCP service on the LAN and are using DNS servers on the ISP's network, will leave DNS relay enabled.

HOME - DHCP

The DHCP server is enabled by default for the Router's Ethernet LAN interface. DHCP service will supply IP settings to workstations configured to automatically obtain IP settings that are connected to the Router through the Ethernet port. When the Router is used for DHCP it becomes the default gateway for DHCP client connected to it. Keep in mind that if you change the IP address of the Router the range of IP addresses in the pool used for DHCP on the LAN will also be changed. The IP address pool can be up to 253 IP addresses.

The screenshot shows the DHCP configuration page with a left-hand navigation menu containing: Wizard, Wireless, WAN, LAN, and DHCP (selected). The main content area is titled 'HOME - DHCP' and includes the following sections:

- DHCP Server:** A message stating 'The ROUTER can be setup as a DHCP Server to distribute IP addresses to the LAN network.'
- Dynamic Clients List:** A table with columns: Host Name, IP Address, MAC Address, and Lease Time(Seconds). It contains one entry:

Host Name	IP Address	MAC Address	Lease Time(Seconds)
1 wxp	192.168.0.100	00:15:F2:20:FE:EB	604456
- Static Clients List:** A table with columns: Host Name, IP Address, and MAC Address. All entries are 'N/A'.
- Set DHCP Server Settings:**
 - DHCP Server: Enabled Disabled
 - Start IP: 192 . 168 . 0 . 100
 - End IP: 192 . 168 . 0 . 199
 - Lease Time: 1 Week
- Set Static DHCP Settings:**
 - Static DHCP: Enabled Disabled
 - Host Name: [Text Input]
 - IP Address: 192 . 168 . 0 . [Text Input]
 - MAC Address: [Text Input]
 - DHCP Client: [-Select a Client-] [Clone]

At the bottom right of the form are 'Apply' and 'Cancel' buttons.

DHCP window

To display this window, click the DHCP button in left menu. Any active DHCP Clients appear at the top of the window in the DHCP Clients List. The IP address and MAC address for active DHCP clients are displayed in the list.

The two options for DHCP service are as follows:

- You may use the Router as a DHCP server for your LAN.
- You can disable DHCP service and manually configure IP settings for workstations.

Follow the instructions below according to which of the above DHCP options you want to use. When you have configured the DHCP Settings as you want them, click the **Apply** button to commit the new settings.

Use the Router for DHCP

To use the built-in DHCP server, click to select the **DHCP Server** option if it is not already selected. The IP Address Pool settings can be adjusted. The **Starting IP Address** is the lowest available IP address. If you change the IP address of the Router this will change automatically to be 1 more than the IP address of the Router.

The **Ending IP Address** is the highest IP address number in the pool. Select the desired **Lease Time** from the drop-down menu. This is the amount of time that a workstation is allowed to reserve an IP address in the pool if the workstation is disconnected from the network or powered off.

Disable the DHCP Server

To disable DHCP, click the **Disabled DHCP Server** radio button and then click the **Apply** button. Choosing this option requires that workstations on the local network must be configured manually or use another DHCP server to obtain IP settings.

If you configure IP settings manually, make sure to use IP addresses in the subnet of the Router. You will need to use the Router's IP address as the Default Gateway for the workstation in order to provide Internet access.

Create Static DHCP Server rules

You can also create static DHCP Server rules to assign the same IP address every time to the same network client. To create a static DHCP Server rule, enter the MAC Address of the network client in the **MAC Address** field, or select it from the **DHCP Client** list if it is connected and press the **Clone** button.

Enter the **IP Address** you want to use for the network client. Enter the **Hostname** for the network client and set the **Static DHCP** to **Enabled**. Click **Apply** to save the static DHCP rule.

Note: If you want to use the Wake-on-LAN feature of the router, make sure you have defined the network clients you want to wake in the Static DHCP Server rules.

Menu - Advanced

The Advanced folder contains main windows for Virtual Server, Special Applications, Firewall Rules, DMZ, IP Filters, MAC Filters, URL Blocking, Domain Blocking, Wireless Performance, and Dynamic DNS.

ADVANCED - VIRTUAL SERVER

Use this window to set up forwarding rules applied to inbound (WAN-to-LAN) traffic. The Virtual Server function allows remote users to access services on your LAN such as FTP for file transfers or SMTP and POP3 for e-mail. The Wireless Broadband Router will accept remote requests for these services at your Global IP Address, using the specified TCP or UDP protocol and port number, and then redirect these requests to the server on your LAN with the LAN IP address you specify. Remember that the specified Private IP Address must be within the useable range of the subnet occupied by the Router.

UDP/TCP port redirection is used to direct inbound traffic to the specified servers or workstations on your private network. Port redirection can also be used to direct potentially hazardous packets to a proxy server outside your firewall. For example, you can configure the Router to direct HTTP packets to a designated HTTP server in the DMZ. You can define a set of instructions for a specific incoming port or for a range of incoming ports. Each set of instructions or rule is indexed and can be modified or deleted later as needed.

Below you will find a list of some common used ports and their corresponding application:

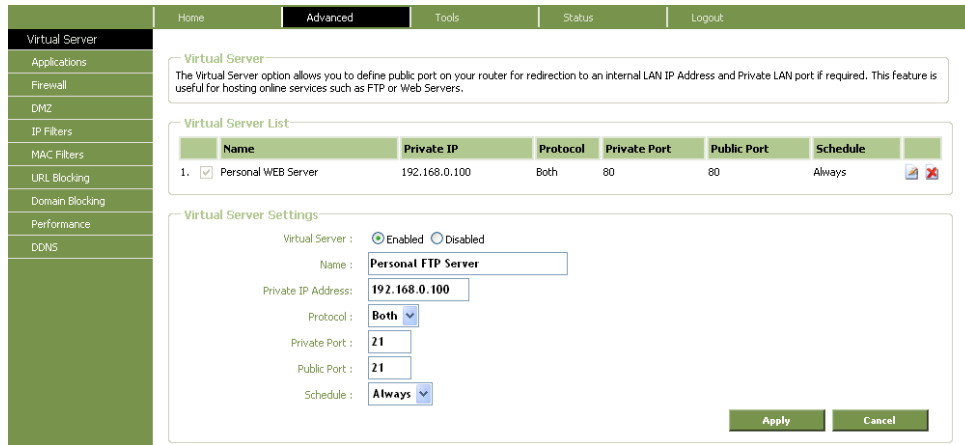
Port	Application	Port	Application
20	FTP Data (FTP Server)	80	HTTP (Web Server)
21	FTP (FTP Server)	110	POP3 (Mail Server - Incoming)
22	SSH (Secure Shell)	2000	Remotely Anywhere
23	Telnet	5800	VNC
25	SMTP (Mail Server - Outgoing)	5900	VNC

For more ports and their corresponding applications, see: <http://portforward.com/cports.htm>

Note: When you are using an application which supports UPnP Port Mapping, the router can be automatically configured by the application when needed. In that case, you don't need to setup your port mappings manually.

Note: When using Virtual Server rules, it is advised to configure the computer(s) with a Fixed IP Address instead of a Dynamic IP Address.

Note: In the next picture you will see an example of a Virtual Server configuration.



Virtual Server window

1. Set the Virtual Server rule to “Enabled”.
2. Enter a name for your Virtual Server Rule in the “Name” field.
3. Enter the IP Address of your computer/server which needs the Virtual Server rule.
4. Select the Protocol for your Virtual Server rule: “TCP”, “UDP” or “Both”.

Note: If you do not know which protocol you need for your Virtual Server Rule, select “Both”. This option will pass both TCP and UDP traffic to the configured IP Address of your computer/server.

5. Enter the desired Port of your computer/server which needs the Virtual Server rule.
6. Enter the port which must be visible on the outside of your internet connection.
7. Click “Apply” to apply the created Virtual Server rule.

When the Virtual Server rule is saved, it will be shown in the “Virtual Server List”. To create more Virtual Server rules, repeat step 1 - 7.

ADVANCED - APPLICATIONS

Use this window to run special applications that require multiple connections. To use the Special Applications feature, enter the requested information for your application and click the **Apply** button.

The screenshot shows the 'Special Application' configuration window. On the left is a navigation menu with 'Applications' highlighted. The main content area has three sections:

- Special Application:** A text box with the description: "Special Application is used to run applications that require multiple connections."
- Special Applications List:** A table with the following data:

Name	Trigger	Public	Schedule
N/A	N/A	N/A	N/A
- Set Special Application:** A form with the following fields:
 - Special Application: Enabled Disabled
 - Name:
 - Trigger Port:
 - Trigger Type:
 - Public Port:
 - Public Type:
 - Schedule:

Special Application window

To configure a new application triggered port forwarding rule, follow these steps:

1. Click on the Enabled option for **Special Application**.
2. Type a **Name** for the rule being created.
3. Type the **Trigger Port** or port range used for the rule.
4. Select the **Trigger Type** used for the rule, TCP, UDP or Both.
5. Type the **Public Port** number normally used for the application.
6. Select the **Public Type** used for the rule, TCP, UDP or Both.
7. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
8. Click the **Apply** button to put the rule into effect. The newly created forwarding rule appears listed in the **Special Applications List**.

To modify an existing rule, click on the notepad icon in the last column of the Special Applications List. To remove a rule, click the X to delete it.

ADVANCED - FIREWALL

This window allows the user to allow or deny traffic from passing through the Wireless Broadband Router. Once you have completed your Firewall settings, click **Apply** to save your changes.

Home | **Advanced** | Tools | Status | Logout

Virtual Server
Applications
Firewall
DMZ
IP Filters
MAC Filters
URL Blocking
Domain Blocking
Performance
DDNS

Firewall Rules
Firewall Rules can be used to allow or deny traffic from passing through the Conceptronic C54BR54A router.

Firewall Rules List

Action	Name	Protocol	Source	Destination	Schedule
N/A	N/A	N/A	N/A	N/A	N/A

Set Firewall Rule

Firewall Rules : Enabled Disabled

Name :

Action : Allow Deny

Interface	IP Range Start	IP Range End	Protocol	Port Range
Source: ANY	<input type="text"/>	<input type="text"/>		
Destination: ANY	<input type="text"/>	<input type="text"/>	ALL	<input type="text"/> - <input type="text"/>
Schedule: Always				

Firewall Rules window

Configure the filter rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the Firewall Rule List.

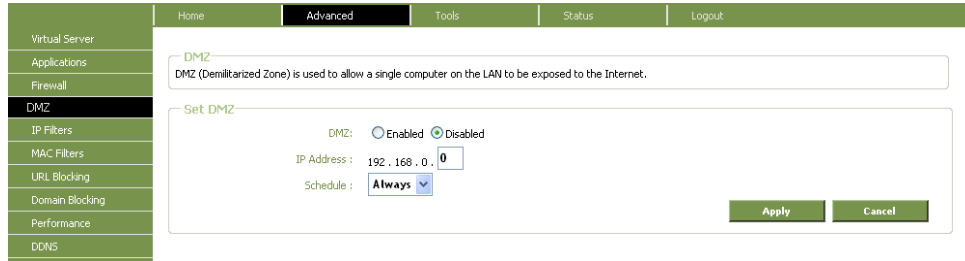
To configure a new application triggered port forwarding rule, follow these steps:

1. Click on the Enabled option for **Firewall Rules**.
2. Type a **Name** for the rule being created.
3. Choose the **Action** to be applied, Allow or Deny (block) the traffic to pass through.
4. For the **Source** interface of the traffic, choose LAN, WAN or Any and type an IP address range to which to action specified in the rule.
5. For the **Destination** interface of the traffic, choose LAN, WAN or Any and type an IP address range to which to action specified in the rule. There is an option to specify the protocol, Any, TCP, UDP or ICMP. For TCP and UDP traffic, a port or port range must be specified.
6. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
7. Click the **Apply** button to put the rule into effect. The newly created forwarding rule appears listed in the **Firewall Rules List**.

To modify an existing rule, click on the notepad icon in the last column of the Firewall Rules List. To remove a rule, click the X to delete it.

ADVANCED - DMZ

Since some applications are not compatible with NAT, the Router supports use of a DMZ IP address for a single host on the LAN. This IP address is not protected by NAT and will therefore be visible to agents on the Internet with the right type of software. Keep in mind that any client PC in the DMZ will be exposed to various types of security risks. If you use the DMZ, take measures (such as client-based virus protection) to protect the remaining client PCs on your LAN from possible contamination through the DMZ.



DMZ window

To designate a DMZ IP address, select the **Enabled** radio button, type in the **IP Address** of the server or device on your LAN, and click the **Apply** button. To remove DMZ status from the designated IP address, select the **Disabled** radio button and click **Apply**. It will be necessary to save the settings and reboot the Router before the DMZ is activated.

ADVANCED - IP FILTERS

This window allows the user to allow or deny LAN IP addresses access to the Internet. Rules are based on IP address and TCP/UDP port. Configure the filter rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the IP Filters List at the top of the window.

The screenshot shows the 'IP Filters' configuration window. At the top, there's a navigation bar with 'Home', 'Advanced', 'Tools', 'Status', and 'Logout'. A sidebar on the left lists various settings: Virtual Server, Applications, Firewall, DMZ, IP Filters (selected), MAC Filters, URL Blocking, Domain Blocking, Performance, and DDNS. The main content area is titled 'IP Filters' and includes a sub-header 'Use IP Filters to deny LAN IP addresses access to the Internet.' Below this is the 'IP Filters List' table:

Name	IP Range	Protocol & Ports	Schedule
N/A	N/A	N/A	N/A

Below the table is the 'Set IP Filters' section with the following fields:

- IP Filters: Enabled Disabled
- Name:
- IP Range: .
- Protocol: **ALL** (dropdown)
- Port: -
- Schedule: **Always** (dropdown)

At the bottom right of the 'Set IP Filters' section are 'Apply' and 'Cancel' buttons.

IP Filters window

Configure the filter rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the IP Filters List.

To configure a new IP Filter rule, follow these steps:

1. Click on the Enabled option for IP Filters.
2. Type a **Name** for the rule being created.
3. Type the **IP Range** of address to which the rule applies.
4. (Optional) Select the **Protocol** used for the rule, TCP, UDP or Both, and type the **Port** or port range to which the rule is applied.
5. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
6. Click the **Apply** button to put the rule into effect. The newly created IP filter rule appears listed in the **IP Filters List**.

To modify an existing rule, click on the notepad icon in the last column of the Firewall Rules List. To remove a rule, click the X to delete it.

ADVANCED - MAC FILTERS

MAC filters are used to block or allow various types of packets through the WAN interface. This may be done for security or to improve network efficiency. The rules are configured for individual devices based on MAC address. Filter rules can be set up for source, destination or both. You can set up filter rules and disable the entire set of rules without losing the rules that have been configured. Configure the MAC filter rules as desired and click the **Apply** button to create the rule.

MAC Filters window

Configure the MAC filter rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the MAC Filters List.

To configure a new IP Filter rule, follow these steps:

1. Click on the option for **Set MAC Filters** to allow or deny access to the MAC filters on the list.
2. Type a **Name** for the rule being created.
3. Type the **MAC Address** to which the rule applies or select an active client from the **DHCP Client** pull-down menu and click on the **Clone** button to select that client, the MAC address will appear.
4. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
5. Click the **Apply** button to put the rule into effect. The newly created MAC filter rule appears listed in the **MAC Filters List**.

To modify an existing rule, click on the notepad icon in the last column of the MAC Rules List. To remove a rule, click the X to delete it.

ADVANCED - URL BLOCKING

URL blocks are used to block or allow access to specific websites. Enter the URLs in the **URL Keyword** field and click the **Apply** button to add the Website to be blocked.

The screenshot shows the 'URL Blocking' configuration window. On the left is a navigation menu with options like Virtual Server, Applications, Firewall, DMZ, IP Filters, MAC Filters, URL Blocking (selected), Domain Blocking, Performance, and DDNS. The main content area has tabs for Home, Advanced (selected), Tools, Status, and Logout. Below the tabs, there's a 'URL Blocking' section with a sub-header 'Set URL Blocking settings to Allow or Deny to access some URLs.' This is followed by a 'URL Blocking List' table with columns: Action, Name, URL Keyword, and Schedule. The table currently has one row with 'N/A' in all columns. Below the table is the 'Set URL Blocking Action' section with three radio buttons: 'Disabled' (selected), 'Only Allow computers to access the listed URL', and 'Only Deny computers to access the listed URL'. At the bottom is the 'Set URL Blocking' section with input fields for 'Name', 'URL Keyword', and a 'Schedule' dropdown menu set to 'Always'. There are 'Apply' and 'Cancel' buttons at the bottom right.

URL Blocking window

Configure the URL blocking rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the **URL Blocking List**.

To configure a new URL blocking rule, follow these steps:

1. Click on the option for **Set URL Blocking Action** to allow or deny access to the URL being added to the list.
2. Type a **Name** for the rule being created.
3. Type the **URL Keyword** to which the filter is applied.
4. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
5. Click the **Apply** button to put the rule into effect. The newly created URL blocking rule appears listed in the **URL Blocking List**.

To modify an existing rule, click on the notepad icon in the last column of the URL Blocking List. To remove a rule, click the X to delete it.

Note: The URL keyword blocking is applied to all forms of the word whether or not it appears separated in the URL. For example, blocking any URL with the word "sex" would block a URL with "sex" as part of it, so websites with "essex" or "sextant" in the URL would be blocked.

ADVANCED - DOMAIN BLOCKING

Domain blocks are used to block or allow access to specific domains. Enter a domain in either the **Blocked Domains** field or the **Permitted Domains** and click the **Apply** button to either add or subtract the domain to be blocked.

Domain Blocking window

Configure the Domain blocking rules as desired and click the **Apply** button to create the rule. The newly created rule appears listed in the **Domain Blocking List**.

To configure a new Domain blocking rule, follow these steps:

1. Click on the option for **Set Domain Blocking Action** to allow or deny access to the Domain being added to the list.
2. Type a **Name** for the rule being created.
3. Type the **Domain** to which the filter is applied.
4. Choose an available **Schedule** for the rule to be applied. Schedules can be created using the **Schedule** menu in the **Tools** directory.
5. Click the **Apply** button to put the rule into effect. The newly created domain blocking rule appears listed in the **Domain Blocking List**.

To modify an existing rule, click on the notepad icon in the last column of the Domain Blocking List. To remove a rule, click the X to delete it.

ADVANCED - PERFORMANCE

This window allows the user to change wireless performance features pertaining to the Access Point portion of the Wireless Broadband Router. Click **Apply** to save your changes.

The screenshot shows the 'Advanced' tab of the router's web interface. On the left is a navigation menu with 'Performance' selected. The main content area is titled 'Wireless Performance' and contains a 'Set Wireless Performance' section. This section includes several configuration options:

- Beacon Interval:** A text input field containing '100'. To its right, it says '(Default: 100 Milliseconds, Range: 20 ~ 1000)'.
- RTS Threshold:** A text input field containing '2346'. To its right, it says '(Default: 2346, Range: 256 ~ 2346)'.
- Fragmentation Threshold:** A text input field containing '2346'. To its right, it says '(Default: 2346, Range: 256 ~ 2346, even)'.
- DTIM Interval:** A text input field containing '1'. To its right, it says '(Default: 1, Range: 1 ~ 255)'.
- CTS Mode:** Three radio buttons: 'Auto' (unselected), 'Enabled' (unselected), and 'Disabled' (selected).
- WMM Function:** Two radio buttons: 'Enabled' (selected) and 'Disabled' (unselected).
- Transmission Rate:** A pull-down menu showing 'Auto' and '(Mbps)'.
- Transmission Power:** A pull-down menu showing 'Full'.

At the bottom right of the configuration area are two buttons: 'Apply' and 'Cancel'.

Wireless Performance window

- Beacon Interval** Beacons are packets sent by an access point to synchronize a network. Specify the beacon value for the selected device(s) here. The default value of *100* is recommended.
- RTS Threshold** The RTS value should not be changed unless you encounter inconsistent data flow. Only minor modifications to the value range between 256 and 2,346 are recommended. The default value is *2346*.
- Fragmentation** This sets the fragmentation threshold (specified in bytes) and determines whether packets will be fragmented. Packets exceeding the byte setting will be fragmented before transmission. The default is *2346* bytes.
- DTIM Interval** Delivery Traffic Indication Message is a countdown informing clients of the next window for listening to broadcast and multicast messages. The default value is *1*.
- CTS Mode** The Clear To Send mode is designed to minimize collisions among wireless devices. Most users will want to keep the default setting of *Auto*.
- WMM Function** Enable or disable the Wireless MultiMedia function.
- TX Rate** A pull-down menu for selecting the transmitting rate: *Auto, 1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, and 54*.
- Transmit Power** A pull-down menu for selecting the transmit power of the device. You can choose among: *100%, 50%, 25%, and 12.5%*.

ADVANCED - DDNS

The Router supports DDNS (Dynamic Domain Name Service). The Dynamic DNS service allows a dynamic public IP address to be associated with a static host name in any of the many domains, allowing access to a specified host from various locations on the Internet. This is enabled to allow remote access to a host by clicking a hyperlinked URL in the form hostname.dyndns.org. Many ISPs assign public IP addresses using DHCP, and this can make it difficult to locate a specific host on the LAN using standard DNS. If for example you are running a public web server or VPN server on your LAN, this ensures that the host can be located from the Internet if the public IP address changes. DDNS requires that an account be set up with one of the supported DDNS providers.

Dynamic DNS window

Please note that DDNS requires that an account be setup with one of the supported DDNS servers prior to engaging it on the Router. This function will not work without an accepted account with a DDNS server. Enter the required DDNS information and click **Apply** to set this information in the Router.

Option	Description
Server Address	Select one of the DDNS registration organizations from those listed in the pull-down menu. Available servers include DynDns.org and No-IP.com
Host Name	Enter the host name of the DDNS server.
Username	Enter the username given to you by your DDNS server.
Password	Enter the password or key given to you by your DDNS server

Menu „Tools“

TOOLS - ADMIN

If you click on Tools menu and then Admin, the following page will open.

Administrator Settings window

Enter your new password in the **New Password** field and then type it again in the **Confirm New Password** field. The default User Name is "admin."

The **Administration** window is also used to enable remote management access to the Router. To enable remote management of the Router, select the **Enabled** radio button and type the IP Address of the remote network used for management. Click the **Apply** button to activate remote management from the chosen IP address. Be sure to save the new setting.

TOOLS - TIME

The Router provides a number of options to maintain current date and time including SNTP.

The screenshot shows the 'Time Settings' page in the router's web interface. The page title is 'Time Settings' with the subtitle 'Set the router's system time.' Below this, there is a section titled 'Set Time Options' which displays the 'Current Device Time' as 14:33:48 on 12/19/2007. The 'Synchronize the device's clock with:' section has three radio buttons: 'Automatic (Simple Network Time Protocol)', 'Your computer's clock' (which is selected), and 'Manual (Enter your own settings)'. The 'Time Zone:' is set to '(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna'. The 'Daylight Saving:' checkbox is unchecked. The 'NTP Server:' field contains 'clock.fisc.org' and is marked as '(Optional)'. The 'Interval:' is set to '24 Hours'. The 'Time:' section shows a date and time picker with Year: 2005, Month: 01, Day: 01, Hour: 00, Minute: 00, and Second: 00. At the bottom right of the form are 'Apply' and 'Cancel' buttons.

Time window

To configure system time on the Router, select the method used to maintain time. The options available include SNTP, using your computer's system clock (default) or set the time and date manually. If you opt to use SNTP, you must enter the SNTP server URL or IP address. Click the **Apply** button to set the system time.

TOOLS - SCHEDULE

The screenshot shows the 'Tools - Schedule' configuration page. On the left is a navigation menu with 'Schedule' selected. The main content area has a top navigation bar with 'Home', 'Advanced', 'Tools', 'Status', and 'Logout'. Below this is a 'Schedule' section with a description: 'The Schedule configuration option is used to manage schedule rules for various firewall and parental control features.' Underneath is a 'Schedule List' table with columns for Name, Time, and Days, containing one row with 'N/A' in each column. The 'Schedule Setting' section includes a 'Name' text box, a 'Day(s)' section with radio buttons for 'All Week' and 'Select Day(s)', and checkboxes for 'Sun', 'Mon', 'Tue', 'Wed', 'Thu', 'Fri', and 'Sat'. There is also an 'All Day - 24 hrs' checkbox, 'Start Time' and 'End Time' dropdown menus (both set to 00:00), and 'Apply' and 'Cancel' buttons at the bottom right.

Schedule window

The Schedule configuration option is used to manage scheduled rules for various firewall and parental control features. Enter the information needed for your schedule setting and press **Apply** to add it to the Schedule List.

TOOLS - SYSTEM

Once you have configured the Router to your satisfaction, it is a good idea to back up the configuration file to your computer. To save the current configuration settings to your computer, click the **System** button in the **Tools** directory to display the **System Settings** window. Click the **Save** button to Save Settings to Local Hard Drive. You will be prompted to select a location on your computer to put the file.

To load a previously saved configuration file, click the **Browse** button and locate the file on your computer. Click the **Restore** button to *Load Settings from Local Hard Drive*. Confirm that you want to load the file when prompted and the process is completed automatically. The Router will reboot and begin operating with the configuration settings that have just been loaded.

To reset the Router to its factory default settings, click the **Reset** button. You will be prompted to confirm your decision to reset the Router. The Router will reboot with the factory default settings including IP settings (192.168.0.1) and Administrator password (admin).

To simply restart the Router, click the **Reboot** button.

	Home	Advanced	Tools	Status	Logout
Admin					
Time					
Schedule					
System					
Firmware					
Misc.					

System Management
Manage system options, include backup your configuration, reset device, restart device.

Backup And Restore
Save Device Settings To Your Local Hard Drive:

Load Settings From Your Local Hard Drive To Device :

Reset
Reset to Factory Default Settings :

Reboot
Reboot The Router :

System Settings window

TOOLS - FIRMWARE

Use this window to load the latest firmware for the device. Note that the device configuration settings may return to the factory default settings, so make sure you save the configuration settings with the **System Settings** window described above.

The screenshot shows the router's web interface with the 'Tools' tab selected. On the left is a navigation menu with options: Admin, Time, Schedule, System, Firmware (highlighted), Misc., and Wake On LAN. The main content area has a top navigation bar with 'Home', 'Advanced', 'Tools', 'Status', and 'Logout'. Below this, there are two sections for 'Set Firmware Upload'. The first section contains instructions: 'To upgrade firmware, locate the upgrade file on the local hard drive with the Browse button. Once you have found the file to be used, click the APPLY button below to start the firmware upgrade.' The second section shows 'Current Firmware Version : 2.00', a text input field, a 'Browse...' button, and 'Apply' and 'Cancel' buttons at the bottom right.

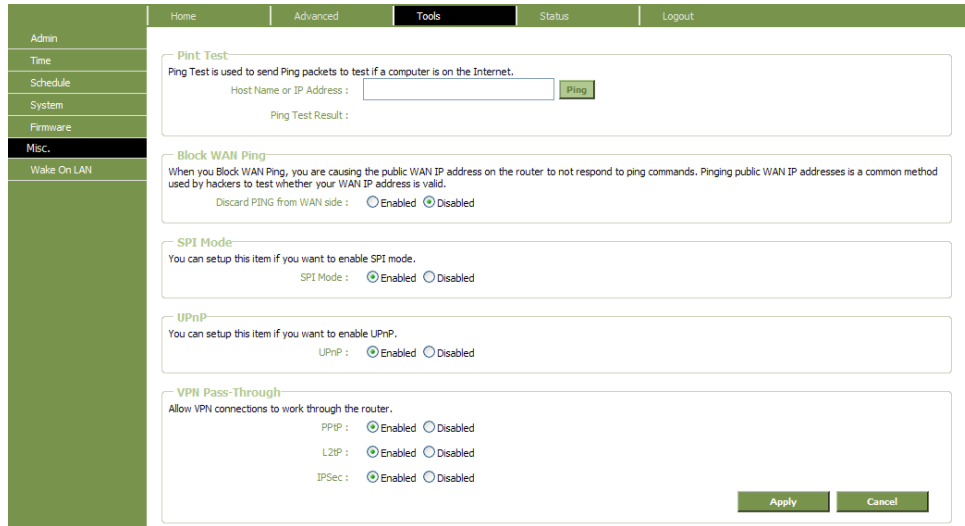
Firmware Upgrade window

To upgrade firmware to the router, type in the name and path of the file, or click on the **Browse** button to search for the file. Click the **Apply** button to begin copying the file. The file will load and restart the Router automatically.

Performing a Firmware Upgrade can sometimes change the configuration settings. Be sure to back-up the Router's configuration settings before upgrading the firmware.

TOOLS - MISC

To perform a standard Ping test for network connectivity as well as a number of miscellaneous network tasks, click the Misc. button in the Tools menu to view the Miscellaneous Configuration window.



Ping Test window

Ping Test

The Ping test functions on the WAN and LAN interfaces. Type the Host Name or IP Address you want to check in the space provided and click the Ping button. Read the Ping test result in the space immediately below

Block WAN Ping

The Block WAN Ping feature allows the user to block hackers who may be trying to test whether your WAN IP address is valid.

SPI mode

Stateful Packet Inspection mode is an active firewall the user can enable to keep track of the state of network connections.

UPnP Settings

UPnP supports zero-configuration networking and automatic discovery for many types of networked devices. When enabled, it allows other devices that support UPnP to dynamically join a network, obtain an IP address, convey its capabilities, and learn about the presence and capabilities of other devices. DHCP and DNS service can also be used if available on the network. UPnP also allows supported devices to leave a network automatically without adverse effects to the device or other devices on the network. UPnP is a protocol supported by diverse networking media including Ethernet, Firewire, phone line, and power line networking.

VPN Pass-Through

This feature allows VPN connections to pass through the Router. It is enabled by default.

TOOLS - WAKE ON LAN

To wake LAN Clients in your network, you can use the Wake On LAN page in the router configuration. This page shows all active DHCP leases and the created Static DHCP entries.

Host Name	IP Address	MAC Address	Wake Up
N/A	N/A	N/A	N/A
1 WOL-PC	192.168.0.10	00:80:5A:AA:BB:CC	Wake Up Ping
2 WOL-Notebook	192.168.0.20	00:80:5A:DD:EE:FF	Wake Up Ping

Wake On LAN window

If there are clients present in the **Wake Up** list (like in the example above), you can awake them by pressing the **Wake Up** button behind the client.

When you press this button, the router will send a Magic Packet to the client. If Wake On LAN is supported and activated on the LAN Client, the system will turn on automatically after receiving such package.

Menu "Status"

Use this window to quickly view basic current information about the LAN, WAN, and wireless interfaces and device information including Firmware Version and MAC address.

STATUS - LOG

The system log displays chronological event log data. Use the navigation buttons to view or scroll log pages.

Home Advanced Tools **Status** Logout

Log
Wireless Clients
Statistics

Log
Log record the activities occurring on the router.

Log Information List

1/1	Time	Message	1/1
	Apr 1 14:19:53	Remote management is disabled.	
	Apr 1 14:19:53	Block WAN PING is disabled.	
	Apr 1 14:19:53	DMZ disabled.	
	Apr 1 14:19:52	DHCP: Client receive ACK from 172.20.0.251, IP=172.20.0.41, Lease time=3600.	
	Apr 1 14:19:52	DHCP: Client send REQUEST to server 172.20.0.251, request IP=172.20.0.41.	
	Apr 1 14:19:52	DHCP: Client performing a DHCP renew.	
	Apr 1 14:19:38	Log message was cleared.	

First Page Previous Page Next Page Last Page Clear Log Refresh

Set Log Options

SMTP Server / IP Address :

Email Address :

Save Log File To Local Hard Drive :

Log Type : System Activity Debug Information Attacks Dropped Packets Notice

View Log window

You may also save a log by sending it to an admin e-mail address. Complete the information on this window and then click the **Apply** button.

STATUS - WIRELESS CLIENTS

This window displays all the wireless clients currently connected to the AP portion of the Wireless Broadband Router.

The screenshot shows the router's status page with the 'Status' tab selected. The left sidebar has 'Wireless Clients' and 'Statistics' options. The main content area is titled 'Wireless Clients' and contains a sub-section 'Connected Wireless Client List'. Below this title is a table with three columns: 'Connected Time', 'MAC Address', and 'Mode'. Each column contains the text 'N/A'.

Connected Time	MAC Address	Mode
N/A	N/A	N/A

Connected Wireless Client List window

STATUS - STATISTICS

Use this window to monitor traffic on the WAN, LAN, and Wireless connections.

The screenshot shows the router's status page with the 'Status' tab selected. The left sidebar has 'Wireless Clients' and 'Statistics' options. The main content area is titled 'Traffic Statistics' and contains a sub-section 'Statistics'. Below this title is a table with three columns: 'Interface', 'Receive', and 'Transmit'. The 'Receive' column shows 1382 Packets for WAN, 1378 Packets for LAN, and 0 Packets for Wireless. The 'Transmit' column shows 413 Packets for WAN, 1939 Packets for LAN, and 49 Packets for Wireless. There are 'Refresh' and 'Reset' buttons at the bottom right of the table.

Interface	Receive	Transmit
WAN	1382 Packets	413 Packets
LAN	1378 Packets	1939 Packets
Wireless	0 Packets	49 Packets

Traffic Statistics window

Click Refresh to view traffic information.
Click Reset to reset the traffic information.

Technical Specifications

Standards

IEEE 802.11b
IEEE 802.11g
IEEE 802.11n Draft 2.0
IEEE 802.3
IEEE 802.3u

Device Management

Web-Based - Internet Explorer v6 or later; Netscape Navigator v6 or later; or other Java-enabled browsers.

Data Rate

For 802.11n:

MCS - 0 - 15 at 20MHz & 40MHz mode.

64 data rates supported in C300BRS4A.

(Max data rate: 300Mbps)

For 802.11g:

108, 54, 48, 36, 24, 18, 12, 9 and 6Mbps

For 802.11b:

11, 5.5, 2, and 1Mbps

Security

64- and 128-bit WEP

WPA - WiFi Protected Access (WPA-TKIP/PSK/AES)

802.1x (EAP-MD5/TLS/TTLS/PEAP)

MAC Address Access Control List

Wireless Frequency Range

2.412 GHz to 2.4672 GHz (2400 - 2483.5MHz ISM band)

Wireless Operating Range*

802.11n (Full Power with 3x 2dBi gain diversity dipole antenna)

Indoors up to 100 meters (328 feet)

Outdoors up to 400 meters (1312 feet)

Antenna Type

3x Dipole antenna with 2dBi gain

Operating Voltage

5VDC, 2A

Radio and Modulation Type

For 802.11n:

BPSK, QPSK, 16QAM, 64QAM, OFDM

For 802.11g:

BPSK, QPSK, 16QAM, 64QAM, OFDM

For 802.11b:

DQPSK, DBPSK, DSSS, and CCK

LEDs

Power
Status
WAN
WLAN
LAN
WPS

Temperature

Operating: 32°F to 113°F (0°C to 45°C)

Storing: -4°F to 149°F (-20°C to

Humidity

Operating: 10%-95% (non-condensing)

Storing: 5%-95% (non-condensing)

Certifications

FCC Class B
CE Class B
C-Tick
UL
TUV

Dimensions

L = 199mm

W = 118mm

H = 35mm

Weight

313,5g

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2. buildroot
3. busybox-1.00
4. vconfig
5. iptable-1.2.9
6. mathopd
7. pppd-2.4.2
8. dnrd-2.10
9. klogd
10. syslogd
11. telnetd
12. wireless tools
13. bpalogin
14. hostapd-0.3.7
15. smtpclient
16. ntpclient

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Version 2, June 1991

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