

ADSL Router/Modem Quick Setup Guide

RTA770W



Important

This Guide is intended to get you started quickly. We have made the factory default setting of this router suitable for New Zealand¹. All you need is to follow through the steps we describe here.

This Guide should be read in conjunction with the RTA77x Series ADSL Router User's Manual². It is provided as a PDF file on this CD. To view or print the User's Manual, go to the previous menu ADSL Router (RTA77oW) and click the View User Manual button.

Important safety notes can be found on page III of the *User's Manual*. Advanced users or users who have other setup preferences should also read the *User's Manual*.

If you choose to connect via the Ethernet port, no driver is required. If you choose to connect via the USB port, you will need to load a driver. A driver is only available for Windows 98, ME, 2000 and XP systems. The drivers are found on this CD. To install a driver into Windows, go to the previous menu **ADSL Router (RTA770W)** and click the **Modem drivers** button.

Notes for this page:

- 1. In New Zealand the majority of ADSL subscribers get PPPoA service by default. Your router is preset to meet this requirement. If your ISP specifies the service as PPPoE, an extra step is then required to configure the router in PPPoE mode. Instructions will follow to take you to Section 6 Configuration for PPPoE service.
- 2. The User's Manual available on this CD was written for international users. In Chapter 5 Connection Mode, only references to PPPoA & PPPoE is relevant to New Zealand users. Ignore all references to the value of VPI or VCI. In New Zealand VPI is 0 and VCI is 100. These numbers are preset as factory default. Do not change, or the router will not connect.





Default Configuration for New Zealand

This router is shipped with the following factory default settings.

Router IP address **192.168.1.1** Subnet mask **255.255.25.0**

VPI **0** VCI **100**

Connect mode PPPoA VC-MUX

NAT enabled

DSL line mode auto select G.DMT / T1.413

WAN IP dynamic
DHCP enabled
DNS relay on
UPnP IGD enabled

Firewall incoming on Firewall outgoing off

Router configuration & management:
User name admin
Password admin
Telnet password admin

If your ISP specifies that your ADSL service is PPPoE, connect mode must be changed to PPPoE LLC/SNAP. Instructions will follow. Check with your ISP if you are unsure of the type of service you have subscribed to. Advanced users who have other setup preferences should first read the User's Manual.



Before you start

Make sure your computer has these installed:

- Ethernet or USB port
- ▼ TCP/IP protocol enabled
- A web browser, Internet Explorer 5.0/Netscape 6 or better.

Obtain your Internet account information from your ISP:

- Solution Login user name and password
- Public IP address (only if you subscribe for static IP)
- ONS server IP (only if specified by ISP).

Choose from your connection options:

 Ethernet (for standalone computer or multiple computers, Operating System independent)

The router comes with a built-in 4-port network switch. Up to 4 computers can be connected to the router directly. If you require more connections to more computers, purchase another network hub and connect it to the router to provide for more connections. Only one Ethernet cable is provided. Extra cables and network hub can be purchased from your supplier.

- 2. Wi-Fi, or wireless LAN (for computers that are wireless enabled)

 The router supports Wi-Fi 802.11g and 802.11b. To configure the router properly, connect a computer to the router via Ethernet and follow the Setup Procedure under Section 8 Setting up wireless of this Quick Guide.
- 3. USB (for standalone Windows 98/ME/2000/XP computers only) If one of your computers does not have an Ethernet port you may choose this option. You must then install a driver to operate the router. The drivers are found on this CD. To install a driver into Windows, go to the previous menu and click the Modem drivers button.



Connect the Router

- 1. Connect the DSL port of the router directly into your ADSL jackpoint (telephone wall socket) with the provided line cord. Do not connect through a filter, unless the filter has a designated MODEM port for this purpose.
- 2. Connect the Ethernet port of each computer to any one of the LAN ports of the router. Only one Ethernet cable is provided. If you choose to connect via the USB port, make no USB connection now. During driver installation, you will be advised to connect the USB port of the router to your computer.
- 3. Connect the provided AC/AC power adaptor to the PWR jack of the router. Plug the adaptor into a mains power outlet. Switch on the router. The DIAG light will remain on for a short time indicating self-check in progress. Wait until the DIAG light has turned off before proceeding to the next section. In normal operation these three lights shall be on: PWR, LAN (or USB) and DSL. Section 9 of this Guide explains how these indicator lights work.





Get your computer ready for networking

The description below assumes you are connecting the router via Ethernet. If you are connecting the router via USB, refer to **Chapter 2** - USB Driver Installation on page 4 of the User's Manual on CD.

You have two options. Following option (1) is simplest. This is the Windows default network setting.

OPTION 1. CONFIGURE COMPUTER TO GET IP ADDRESS FROM DHCP

If your computer is already configured to obtain an IP address automatically (from a DHCP server), do nothing. By default the router is a DHCP server. Now go to **Section 5 – Getting On-Line**.

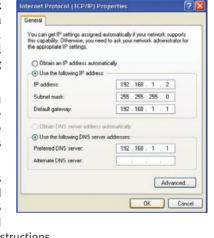
If you are unsure of your computer's network setting refer to Chapter 3 – Configure PC to get IP address from DHCP on page 18 of the User's Manual.

OPTION 2. MANUALLY ASSIGN IP ADDRESS TO COMPUTER

The router's default address is 192.168.1.1. If you prefer to assign an IP address manually, use 192.168.1.x (x is a number between 2 and 254).

Windows XP/2000:

- Go to Control Panel Network Connections. Open Local Area Connections and click Properties. Double click Internet Protocol (TCP/IP). Select Use the following IP address.
- Enter 192.168.1.x (x is a number you pick between 2 and 254). This is the IP address you assign to the computer. Subnet Mask is 255.255.255.0.
- 3. Enter the router's IP 192.168.1.1 as
 Default gateway, and as Preferred
 DNS server If your ISP specifies DNS
 server addresses, enter the specified
 addresses according to the ISP's instructions.
- 4. Click OK to finish.



You have now finished with configuring your computer.

Windows 98/ME:

- From Control Panel, double click Network. Scroll down to highlight TCP/IP -> (your network card). Click Properties.
- 2. Select the **IP Address** tab. Specify **192.168.1**.x (x is a number you pick between **2** and **254**). This is the IP address you assign to the computer. **Subnet Mask is 255.255.255.0**.
- Select Gateway tab. Enter the router's IP address 192.168.1.1.
 Click Add. If your ISP specifies DNS server addresses, go to the tab DNS Configuration. Enter the specified addresses according to the ISP's instructions.
- 4. Click **OK** & then **OK** to finish. The system may ask to read the Windows CD, and then ask to restart the computer.

You have now finished with configuring your computer. Go to Section 5 – Getting On-line.





5

Getting On-line It takes only 2 easy steps.

STEP1 GO TO THE 'CONNECT TO INTERNET' PAGE

Start your web browser. Enter the default address http://192.168.1.1. Type admin for both User name and Password.

See Q1 in Section 10 - Troubleshooting if you cannot get this screen.

Next you will be in the **Quick Start** > **Connect to Internet** page.

If your ISP specifies that your ADSL service is PPPoE, you must now follow Section 6 to change the router's connect mode to PPPoE. Check with

Connect to 19	2.168.1.1
DSL Router	
User name:	② admin
Password:	••••
	Remember my password
	OK Cancel

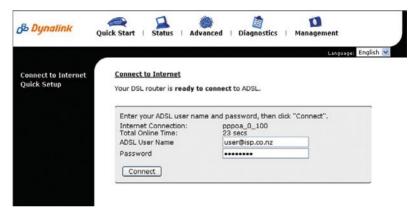
your ISP if you are unsure of the type of service you have subscribed to.



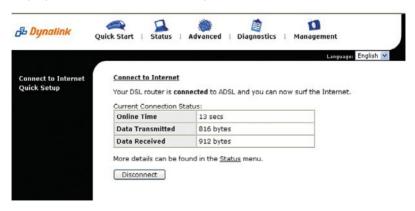
STEP 2 ENTER INTERNET ACCOUNT DETAILS

Enter your Internet account User Name & Password in the exact format as specified by the ISP. Make sure the page displays "Your DSL router is ready to connect" before clicking Connect.

See Q2 in Section 10 – Troubleshooting, if after several minutes the message "Your DSL router is not ready to connect" still shows.



Once connected the screen changes to display the on-line time. Click **Disconnect** only if you wish to disconnect manually.



Your Internet account user name & password will be saved automatically.

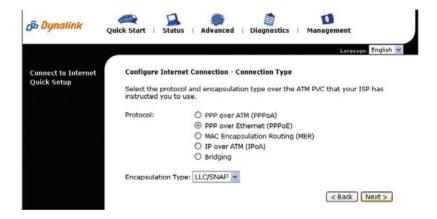


Configuration for PPPoE service

Follow this procedure ONLY if your ISP specifies the service as PPPoE. Caution - do not set your router to PPPoE mode if your ADSL service is PPPoA. It will not connect. Reset to factory default will restore router to PPPoA mode.

From the **Quick Start** menu click on **Quick Setup** to configure for PPPoE.

- **1.** Untick the **Auto Scan Internet Connection** box. VPI and VCI shall be set to o and 100 respectively. Click Next for the **next** page.
- **2.** Select **PPP over Ethernet (PPPoE)**. Encapsulation shall be **LLC/SNAP** as illustrated below. Go to the next page, change nothing and then **Next**.



- **3.** You can enter your Internet account User Name & Password now. If you leave the space as blank, you will be asked to do it later. Go **Next**.
- Do not change the network configuration unless you are an advanced user having your own preferences. Go Next.
- 5. A summary of the configuration is displayed. Check carefully that the setting is **VPI/VCI = o/100**, **Connection Type is PPPoE LLC/SNAP**. Then click **Finish** to confirm the changes. The router will restart itself automatically to activate the new setting.
- **6.** Now follow *Step 2 of Section 5 Getting On-line*. The screen will show the changes made: pppoe_o_1oo has replaced the default pppoa_o_1oo.







Some advanced functions of your router

Firewall, port forwarding, DMZ & traffic restrictions

By default a preset firewall is invoked to block all incoming requests including *Ping* from the Internet to your private network. In the reverse direction all requests sent from your network can freely pass through to the Internet.

If you want servers on your network accessible to Internet users, set up port forwarding in **Advanced > Virtual Servers > Port Forwarding**. Refer to *Chapter 4 – NAT Virtual Servers* on page 43 of the *User's Manual*.

If you run applications that require unrestricted 2-way traffic between computer and the Internet, set computer up as DMZ Host in **Advanced** > **Virtual Servers** > **DMZ Host**. Refer to *Chapter 4 – NAT DMZ Host* on page 45 of the *User's Manual*. Caution – any DMZ host computers are no longer protected by the firewall.

You can restrict Internet services to some computers on your network by setting up IP Filtering. Refer to *Chapter 4 – Filtering by IP address* on page 47 of the *User's Manual.*

IP extension bridging

In IP Extension Mode the ADSL router resembles a modem. Firewall protection and Internet sharing are not available. The router becomes a bridge between WAN & LAN. A computer or network device connected behind it receives a public WAN IP directly. This arrangement is suitable for certain applications that require a computer or network device to receive a public IP.

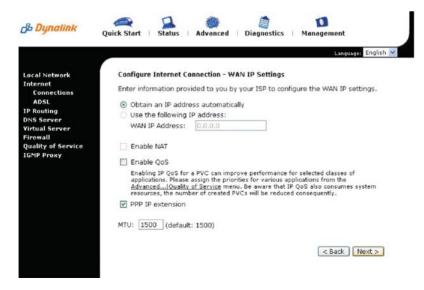
To set up IP extension, go to **Advanced** > **Internet**. Click on the "modify icon" under **Edit**:



The next screen displays VPI and VCI as o and 100. Do not change these numbers.

Go **Next**. Select **PPPoA VC MUX** or **PPPoE LLC/SNAP**. If your ISP did not specify PPPoE you can assume it is PPPoA. Go **Next**.

On the next screen untick **Enable NAT**, and tick **PPP IP extension** as illustrated. Go **Next**.





Enter your Internet account user name and password. Go Next.

The new configuration is displayed. Click **Apply** to confirm changes. The router will restart itself to activate the new setting.

You will notice all NAT or firewall settings disappear from the **Advanced** menu hereafter. Now follow Step 2 of Section 5 – Getting On-line.

Quality of Service (QoS)

The router allows prioritising of upstream traffic (to the Internet) by allowing the user to overwrite the Type of Service (TOS) field in the IP datagram header. TOS parameters such as Precedence, Delay, Throughput & Reliability are described in the RFC791 Internet Protocol specification.

The user specifies the traffic conditions and traffic rules. The router has three queues for traffic priority: high, medium and low. Low priority packets are not sent when there are higher priority queues. When QoS is enabled a received packet has the TOS field in its header overwritten by the traffic rule, subject to traffic conditions are met.

The router supports both Bridge (layer 2) and IP (layer 3) QoS. The difference is how traffic conditions can be set. With Bridge QoS, IEEE 802.1p priorities are used as conditions for a traffic rule to apply. With IP QoS, it is the IP criteria defined by the user that determines the rule to apply.

Please refer to the *User's Manual* for other advanced functions. Always restart the router to activate any changes to configuration.



Setting up wireless

A full description on this topic is found on *Chapter 4 – Wireless* on pages 51-59 of the *User's Manual*.

Wireless support is activated by default. The WLAN light comes on indicating the wireless link is ready. The router supports both 802.11g and 802.11b wireless standards. For indoor operations, typical ranges of operation are 20m and 60m respectively.

Wireless security features are disabled for ease of install. It is essential to have some form of wireless security enabled after you have verified that wireless stations can communicate with the router. To the minimum, have Access Control enabled to deny access from unwanted wireless stations.

Setup procedure

 Connect the router via the Ethernet port from any computer to configure for wireless operation. Start your web browser. Enter the router's IP address

(default http://192.168.1.1). You will be prompted to enter the router's administrative user name and password. By default, user name and password are both admin.

- Go to Wireless > Basic. It is recommended that you use a SSID of your choice. Next, pick a desired channel. Wireless clients will scan all channels and settle on the same channel as the router. Click Apply.
- Setup wireless client stations according to the vendor's instructions. Select infrastructure mode for associating with access point. Adhoc (or peer-to-peer) mode cannot be used. Every wireless client should have identical SSID as the router.
- 4. To verify that a wireless station is associated with the router, go to Status > Wireless Client. The table will display the MAC address of every wireless client that is associated with the router.

Once a wireless station can communicate with the router, it is strongly recommended that you consider having a suitable level of wireless security and/or access control enabled. To the minimum, have Access Control enabled to deny access from unwanted wireless stations.

Security setup

To enable wireless security, go to **Wireless > Security**. Available options listed under Wi-Fi Protected Access are: None (WEP), 802.1x, WPA and WPA-PSK.

In order to use either 802.1x or WPA, a central authentication server (RADIUS Server) must be present on the network. All wireless clients must also support 802.1x or WPA.

Either WEP or WPA-PSK can be used without authentication servers. These options are for users who have no external server for wireless client authentication.

For details, refer to page 53-58 of the *User's Manual*.

Access Control setup

This allows you to specify which wireless stations are permitted to connect to the router. Go to **Wireless** > **Access Control** and follow the instructions. For details, refer to page 59 of the *User's Manual*.





Tips for security

This Dynalink series of Broadcom chipset powered routers are highly powerful, secure and stable devices. To ensure that you get the maximum benefit from your Dynalink router Dynalink makes the following strong recommendations:

Do:

- Change and keep secret your router's admin user name and password. This will ensure that no unauthorised changes can be made to your settings and will prevent any unauthorised changes to the embedded code. A router has both a processor and memory and unauthorised access is highly undesirable.
- Back up your router's configuration. This function can be found in the router's Management > Backup Config menu.
- Disable UPnP if you don't need this function. Go to Advanced > Local Network > UPnP to disable UPnP.
- Read about the more advanced functions of this router. They can be found in Chapter 4 of the User's Manual on this CD.

Don't:

- Enable any form of remote access to the router unless you are confident in handling the security implications. Beware that an attacker may compromise the router and attempt to exploit the system without your knowledge. Remote administration of the router opens up the opportunity to breach the security of your router and network. Use the built in access control list to restrict access to only authorised Internet hosts.
- Enable IP extension bridging without firewall protection. If the router operating in this mode is connected to a computer, to the minimum use a "personal firewall" (software) to protect the computer.
- Send your router away for repair or replacement without resetting to factory default, or wiping out your Internet account login details. Use the Backup Configuration option to store your router's setting elsewhere. This function can be found in the router's Management > Backup Config menu. When a replacement unit is received, restore the original setting from the backup file.

10 Indicator lights

There are 8 indicators on the front panel. Every time the router is powered on or reset, the DIAG light will come on indicating self-test is in progress.

INDICATOR	STATUS	DESCRIPTION
PWR	Off Solid	Power off. Power on.
DIAG	Off Flashing Solid	Power off, or initial self-test OK. Firmware uploading or updating. Initial self-test failed. The unit is faulty.
LAN1 - LAN4	Off Flashing Solid	Power off, or no Ethernet link is present. Data are going through the Ethernet port. The Ethernet link is ready.
USB	Off Flashing Solid	Power off, or no link to USB port. Data are going through the USB port. The USB link is ready.
WLAN	Off Flashing Solid	Power off or wireless failed to function. Data is going through the wireless link. The wireless link is ready.
DSL	Off Flashing Solid	Power off, or ADSL line training is in progress. Data are going through the ADSL link. ADSL link is ready.



Troubleshooting

Q1. Cannot open the router control panel from my browser.

- 1. Check that the router's LAN (or USB) light is on. If not, check your Ethernet (or USB) cable.
- 2. Perform a PING test. Go to Start-Programs-MS DOS/Command Prompt (In Windows XP or 2000 you may click **Start-Run**. Enter **cmd** then **OK**). Type ping 192.168.1.1 then press Enter. The response should be:

Pinging 192.168.1.1 with 32 bytes of data: Reply from 192.168.1.1: bytes=32 time=4ms TTL=30

If you see a similar response, the router is communicating with your computer correctly and the problem lies elsewhere. If the result is Request timed out or similar failures, there may be a networking problem. Check that the LAN or USB cable is firmly plugged in.



- 3. Disable any personal firewall or virus checker temporarily. If you are using Internet Explorer, go to Tools-Internet options-Security. Reset security level of all 4 icons to default. You can revert to your customised settings after configuring the router.
- 4. If previously the computer had a dialup modem, check browser setting. For example in Internet Explorer, go to Tools—Internet options—Connections, and select Never dial a connection. Also check LAN Settings that the option Use a Proxy Server is not selected.
- 5. If the router is connected to a network hub, try connecting the router directly to the computer in a standalone setup to eliminate any possible problem associated with the hub.
- **6.** The router's private IP address is 192.168.1.1. To access the browser control panel your computer must be on the same subnet as the router. See also Q3.

O2. Cannot connect to Internet or cannot browse

- 1. Check router's DSL light is on. Normally it takes less than one minute to establish a link with the telephone exchange. The link will establish as long as there is signal. If the DSL light does not come on the router is not seeing any signal. Check that:
 - ADSI service has been enabled.
 - If there is a designated ADSL jackpoint for the service, make sure the router is connected directly into this jackpoint. Other jackpoints cannot be used.
 - If there is no designated ADSL jackpoint, any jackpoints may be used. Connect the router directly into a jackpoint, or through the port marked MODEM on a filter
- 2. If the router's DSL light is already on, check if router is on line. Go to the *Quick Start* menu as described in *Section 5 Getting On-line*. If the router reports "Your DSL router is ready to connect", you are not on line. Make sure the user name and password have been entered in the exact format as specified by the ISP.
- 3. Check the configuration of computer and router. If you still cannot browse, perform a PING test as described in Q1-2, using these addresses:
 - (A) Ping www.dynalink.co.nz (or any valid web address)
 - (B) Ping 205.178.180.16 (or any valid public IP address)
 - If both (A) & (B) reported failed response such as "request time out", and you assigned an IP address to your computer manually. Go to Procedure (2) of Section 4. Check that the router's IP (192.168.1.1) is entered as gateway & DNS. If these settings are correct ping the computer's IP (eg. Ping 192.168.1.2). If there is still no reply your network card may be faulty.

- If both (A) & (B) show a response, your router is actually on line. The problem may be with your browser setting. Try returning any custom settings of the browser to default. If you have a personal firewall, disable it to see if it makes any difference. Also you may try shutting down the computer and restarting.

Q3. Need to install router on a network that uses a different subnet

If the existing network already has a DHCP server, disconnect one computer from the network. Connect the computer to the router. The host computer will be assigned 192.168.1.2. You can change the router's IP so that it is consistent with the network. Disable DHCP on the router

Q4. Browsing is fine but I cannot run certain applications.

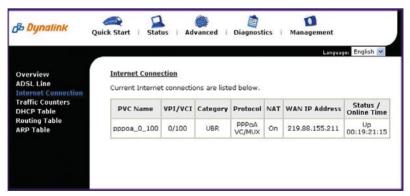
You need to set up virtual servers or DMZ host. See Section 7 on Firewall & traffic restrictions.

Q5. The router's IP and/or administrative password have been modified. But the details have now been forgotten.

You can restore the router to factory default by pushing a pin into the hidden reset button located next to the power on/off button at the back of the router. Push and hold for 5 seconds then release to reset router.

Q6. I need to know the dynamically assigned WAN IP when the router goes on line

Go to Status > Internet Connection, the WAN IP is displayed here.



Q7. How to find the MAC addresses of wireless clients

If the wireless client has not been installed, follow the vendor's instructions to find the device's MAC address. Often it is printed on a label affixed to the device.



If the wireless client is already installed on the computer, an alternative is to go to the DOS prompt, type ipconfig /all. The MAC address is shown under physical address as a group of 6 double digits.

Q8. Can a wireless link suffer from radio interference

Other wireless devices and appliances on site may share the same 2.4 GHz band. If undesirable effects are observed, try switching the router to a different channel. Alternatively, switch the other devices to use a different channel.

Q.9 How to get information update

This Quick Guide and User's Manual on CD are the primary source of information about the product. Please check the Dynalink website http://www.dynalink.co.nz regularly for updates, links, or to download a more current version of this Quick Set-up Guide.

Warranty



Dynalink warrants this product against defects in materials and workmanship for a period of twelve months from the original date of purchase. We will, at our discretion, repair or replace the faulty unit, free of charge, provided it is returned to us with proof of purchase from an authorised dealer within the warranty period. Return delivery after repair will be paid for by Dynalink. We reserve the right not to repair or replace goods that:

- have been mishandled, abused or not installed according to the guidelines as outlined in the instructions.
- have been subjected to a power surge from other equipment or other external factors.
- have been altered or modified.

Help



Always check that your hardware is installed correctly. Check our web site for the latest information and troubleshooting guide. If you have difficulties, contact Dynalink Technical Support for issues relating to installation and operation.

If possible, visit Dynalink's on-line support area at:

New Zealand www.dynalink.co.nz/support www.dynalink.com.au/support



Contact Dynalink's Technical Support:

New Zealand Australia

 Phone
 0800 653 962
 Phone
 1800 653 962

 Fax
 0800 503 962
 Fax
 1800 063 962

(Monday-Friday: 8:30am-7:30pm) (Monday-Friday: 8:30am-5:30pm)

