



GET STARTED USER'S GUIDE

1120 ADSL Router

GET STARTED USER'S GUIDE

Version: 5.3

172160

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This equipment, for safety and hygiene purposes, complies with the specific provisions contained in *ARAB/RGPT 54 quater 3.1* (RD 20 06 1975, Art.1, Section X, Accident Prevention Policy).

Statements



<http://www.telindus.com/products/conformity/>



Hereby, TELINDUS declares that this Telindus 1120 ADSL Router is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.



Bij deze, verklaart TELINDUS dat deze Telindus 1120 ADSL Router in overeenstemming is met de essentiële vereisten en andere relevante bepalingen van Richtlijn 1999/5/EC.



Par la présente, TELINDUS déclare que ce Telindus 1120 ADSL Router est en conformité avec les exigences essentielles et autres articles applicables de la Directive 1999/5/EC.



Hiermit, TELINDUS erklärt daß dieser Telindus 1120 ADSL Router ist in Fügbarkeit mit den wesentlichen Anforderungen und anderen relevanten Bereitstellungen von Direktive 1999/5/EC.



Mediante la presente, TELINDUS declara que el Telindus 1120 ADSL Router cumple con los requisitos esenciales y las demás prescripciones relevantes de la Directiva 1999/5/CE.



A TELINDUS declara que o Telindus 1120 ADSL Router cumpre os principais requisitos e outras disposições da Directiva 1999/5/EC.



Col presente, TELINDUS dichiara che questo Telindus 1120 ADSL Router è in acquiescenza coi requisiti essenziali e stipulazioni attinenti ed altre di Direttivo 1999/5/EC.



Με το παρόν, η TELINDUS δηλώνει ότι αυτό το Crocus HDSL είναι συμμορφούμενο με τις βασικές απαιτήσεις και με τις υπόλοιπες σχετικές διατάξεις της οδηγίας 1999/5/EC.



Declaration of Conformity

issued according to ISO/IEC Guide 22 and EN45014 under the sole responsibility of the manufacturer

Hereby, TELINDUS nv/sa, manufacturer represented by the authority indicated below, declares that the product:

Product name

Telindus 1120 ADSL Router

provided that it is installed, maintained and used in the application for which it is intended for, with respect of the "professional practices", relevant installation standards and manufacturer's instructions is in conformity to all applicable essential requirements of all applicable directives and conform to the following product specifications:

- EN60950 : 1992 (A1+A2+A3+A4+A11)
- EN55022 : 1998 Class B
- EN55024 : 1998

This declaration is based on the conformity assessment procedure as described in annex II of the **R&TTE Council Directive 1999/5/EC**.

The product may be connected to the following interface(s):

- IEEE 802.3 Ethernet 10Base-T

This product is conforming to the following Technical Standards:

- G.992.1 (G.DMT)
- G.992.2 (G.Lite)
- T1.413. Issue 2

The product has been tested in a typical configuration.

The technical file is kept at the TELINDUS premises:

Geldenaaksebaan 335 ² B-3001 Leuven ² Belgium.

Leuven, 15 January 2001

Kris Adriaensens

R&D Director

Authority name, function and signature



Statement:	The Telindus 1120 ADSL Router may be used provided that it is installed, maintained and used in the application which it is intended for, with respect to the professional practice, relevant installation standards and manufacturer's instructions (see also CE declaration of conformity).
Destination of use:	The Telindus 1120 ADSL Router allows data transfer via standard twisted pair cables according to ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Interfaces:	The Telindus 1120 ADSL Router may be connected to the following interfaces: IEEE 802.3 Ethernet 10Base-T.
In case of problems:	Should you doubt or encounter problems with the Telindus 1120 ADSL Router, please contact your dealer for advice.



Verklaring:	De Telindus 1120 ADSL Router mag gebruikt worden op voorwaarde dat het wordt geïnstalleerd, onderhouden en gebruikt voor de toepassing waarvoor het ontworpen is, met betrekking tot het professioneel gebruik, de relevante installatie richtlijnen en de richtlijnen van de fabrikant (zie ook de CE verklaring van conformiteit).
Toepassingsgebied:	De Telindus 1120 ADSL Router laat een data transfer toe over standaard twisted pair draden in overeenstemming met ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Interfaces:	De Telindus 1120 ADSL Router mag aangesloten worden op de volgende interfaces: IEEE 802.3 Ethernet 10Base-T.
Bij problemen:	Indien u twijfelt of problemen hebt met de Telindus 1120 ADSL Router, contacteer uw verdeler voor advies.



Déclaration:	Le Telindus 1120 ADSL Router peut être employé à condition qu'il soit installé, entretenu et utilisé dans la fonction pour laquelle il a été conçu, en suivant les règles de pratique professionnelles, les standards d'installation d'application et les instructions du fabricant (voyez aussi la déclaration CE de Conformité).
Domaine d'utilisation:	Le Telindus 1120 ADSL Router permet le transfert de données sur des câbles à paires torsadées conformes à ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Les interfaces:	Le Telindus 1120 ADSL Router peut être connecté aux interfaces suivantes: IEEE 802.3 Ethernet 10Base-T.
En cas de problèmes:	En cas de doute ou si vous rencontrez des problèmes avec le Telindus 1120 ADSL Router, veuillez demander conseil à votre revendeur.



Erklärung:	Der Telindus 1120 ADSL Router darf benutzt werden, vorausgesetzt, er wird installiert, unterhalten und in der Funktion benutzt für die er entwickelt wurde, in dem die Regeln der Berufsausführung, sowie die vorgeschriebenen Installationsstandards und die Anweisungen des Fabrikanten berücksichtigt werden (siehe hierzu die Konformitätserklärung der EG).
Anwendungsbereich:	Der Telindus 1120 ADSL Router erlaubt Datenübertragung über übliches verdrehtes Leitungspaar kabel nach ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Verbindung:	Der Telindus 1120 ADSL Router darf an die folgende Schnittstellen angeschlossen werden: IEEE 802.3 Ethernet 10Base-T.
Bei Problemen:	Wenn Sie zweifeln sollten oder Problemen mit dem Telindus 1120 ADSL Router begegnen sollten, bitte verständigen Sie Ihren Händler für Rat.



Declaración:	El Telindus 1120 ADSL Router puede usarse con tal de que sea instalado, mantenido y usado en la aplicación para la cual ha sido destinado ,con el respeto del las prácticas profesionales, normas de la instalación pertinentes e instrucciones del fabricante (también vea declaración de CE de Conformidad).
Destino de uso:	El Telindus 1120 ADSL Router permite los datos transfieren vía el par trenzado cablegrafía normal según ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Interfaces:	El Telindus 1120 ADSL Router puede ser conectado a los siguientes interfaces: IEEE 802.3 Ethernet 10Base-T.
En el Caso de Problema:	Si duda o encuentra problemas con el Telindus 1120 ADSL Router, por favor pida el consejo de su distribuidor.



Declaração:	O Telindus 1120 ADSL Router poderá ser fornecido, instalado, mantido e utilizado para a o fim a que se destina, desde que respeite o cumprimento de todos os standards de instalação e directivas do fabricante (consultar declaração de Conformidade da UE).
Declaração de Utilização:	O Telindus 1120 ADSL Router permite dados transferem por cabos de par trançados normais de acordo com ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Interfaces:	O Telindus 1120 ADSL Router poderá ter os seguintes interfaces: IEEE 802.3 Ethernet 10Base-T.
Problemas:	Em caso de dúvida ou se forem detectados problemas com o Telindus 1120 ADSL Router, contactar o seu fornecedor para aconselhamento.



Dichiarazione:	Il Telindus 1120 ADSL Router può essere usato a condizione che sia installato, mantenuto ed usato nella applicazione per la quale è destinato, con rispetto delle pratiche professionali, degli standard di installazione attinenti e delle istruzioni del costruttore (vedere anche la dichiarazione CE di Conformità).
Destinazione di uso:	Il Telindus 1120 ADSL Router permette trasferimento dei dati via paio torto cavi standard secondo ITU-T G.992.1, G.992.2, ANSI T1.413 Issue 2.
Interfacce:	Il Telindus 1120 ADSL Router può essere collegato agli le seguenti interfacce: IEEE 802.3 Ethernet 10Base-T.
In Caso di Problema:	In caso di dubbi o problemi di incontro col Telindus 1120 ADSL Router, per favore contatti il Suo rivenditore per consiglio.

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1. Before You Begin

This chapter includes:

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1.1 Introduction

The Telindus 1120 ADSL Router is an integrated device that allows multiple workstations to share high-speed bandwidth provided by DSL technology. In addition to fast Internet access and advanced routing technologies, the Telindus 1120 ADSL Router incorporates numerous features that facilitate network access and management.

1.2 Package Includes

- One ADSL Telindus 1120 ADSL Router
- Power cord and adapter
- Software CD-ROM (contains Telindus Installation software, Software User's Guide)
- One RJ-11 to RJ-11 ADSL phone cable (7ft)
- One RJ-45 to RJ-45 straight Ethernet cable (7ft)

1.3 Diagrams of the Telindus 1120 ADSL Router

Back Panel Interface

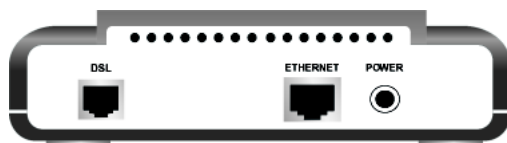


Figure 1.1 Back Panel Interface

Power

The power interface connects to the power adapter.

Ethernet

The Ethernet interface connects the Telindus 1120 ADSL Router to a 10BaseT network.

DSL

The ADSL interface connects the Telindus 1120 ADSL Router to an ADSL line.

Front Panel Interface

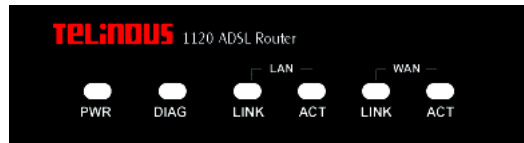


Figure 1.2 Front Panel Interface

PWR (Power)

A green LED is ON when power is supplied to the Telindus 1120 ADSL Router.

DIAG (Diagnostic)

When Telindus 1120 ADSL Router is powered on, the DIAG LED flashes while the router is booting up. After 10 to 15 seconds, the DIAG LED stops flashing and remains off.

LAN LINK

The LAN LINK LED displays the connection between the router and your Ethernet network. The green LED remains solid while there is a valid connection to the 10BaseT system.

LAN ACT (Activity)

A flashing yellow LED indicates data activity between the Ethernet network and the router. If the data traffic is heavy, then frequency of the flashing yellow LED becomes higher and will appear to be solid.

WAN LINK

Displays the connection between the router and the remote DSL line. The green LED flashes slowly if the DSL line is not connected or is being trained. The green LED remains solid if the DSL line is trained and ready between the router and the remote switch.

WAN ACT (Activity)

A flashing yellow LED indicates data activity between the DSL network and the router. If the data traffic is heavy, the frequency of the flashing yellow LED becomes higher and will appear to be solid.

1.4 Minimum System Requirements

- ADSL line
- 10BaseT Ethernet interface
- CD-ROM drive

Telindus 1120 ADSL Router gives you the option of configuring the router using Telindus Windows-based management software. The system requirements are listed below:

Using the Telindus 9100 Maintenance Application:

- Ethernet card
- PC* with at least a 486 microprocessor (Pentium® recommended)
- At least 4 MB of space available on the hard disk drive
- Microsoft® Windows® 95/98/2000 or Windows® NT Operating System

* You may configure the Telindus 1120 ADSL Router from any PC attached to the Local Area Network (LAN) with the requirements listed above.

1.5 Internet Service

Many Internet Service Providers (ISPs) offer different types of Internet access accounts. Typically, you will have the option to choose either a Single User or a Multiple User account, routers are compatible with both types of accounts. With a Single User account, which is the same as terminal adapter or digital modem account, the Network Address Translation (NAT) option should be selected during the configuration of your Telindus 1120 ADSL Router. If you ordered a Multiple User account from your ISP, they will assign a specific IP Address for your router and a range of IP Addresses for your network. You will need this information when you configure the Telindus 1120 ADSL Router. In this case, the NAT option should not be selected.

1.6 Information You Will Need

To configure your router, you will need to receive information from your ISP and the remote network to which you connect, such as an Internet Service Provider (ISP) or a company server. Consult the sections below for a detailed list of information on utilizing the Ethernet interface and ADSL interface. If you are unfamiliar with any of the terms listed, please see *Appendix A: Understanding Configuration Parameters*.

Utilizing the Ethernet Interface:

The following information should be obtained from your ISP or company server:

- IP Address
- Subnet Mask
- Gateway IP Address

Utilizing the ADSL Interface:

The following information related to your ADSL connection should be obtained from your ISP or a company server:

- VPI
- VCI
- PPP User name & Password (Only if encapsulation mode is PPP)
- DNS Address (Optional)

2. Hardware Installation

This chapter includes:

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2.3	Connect to the ADSL Line	4
2.4	Connect to the Power Adapter	5

SAFETY PRECAUTION: Turn off all electronic devices, including your personal computer, before you begin to connect and disconnect cables.

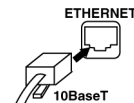
2.1 Setup Instructions

- Step 1. Choose a location for the Telindus 1120 ADSL Router close to a power outlet and the ADSL line outlet. Preferably, select a convenient location that does not experience too much foot traffic and away from sunlight.
- Step 2. Choose a level surface for the Telindus 1120 ADSL Router – such as a desktop, shelf, or table.
- Step 3. Place the Telindus 1120 ADSL Router on the predetermined surface, so you can see the back panel.

2.2 Connect to the Ethernet

10BaseT Interface Connection

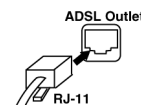
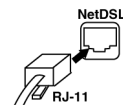
- Step 1. Locate your Ethernet cable (included).
- Step 2. Attach the Ethernet cable to the Ethernet interfaces of your Telindus 1120 ADSL Router.
- Step 3. Plug in the loose end of the Ethernet cable to your Ethernet network.
- Option 1. Attach the included Ethernet cable to the Ethernet port on a PC.
- Option 2. Attach the included Ethernet cable to the uplink port on a hub. If the uplink port is unavailable, then you can use a crossover Ethernet cable (Not included) and attach it to the non-uplink ports on a hub.
- Step 4. The LAN Link LED on the front panel should be lit green to indicate a valid Ethernet connection. If the LAN Link LED is not lit, then repeat steps 1 through 3.



Note: See *Appendix B: Ethernet Cable Pinout* for further information about the differences between a straight-through and a crossover Ethernet cable.

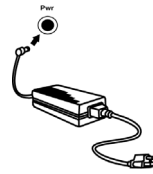
2.3 Connect to the ADSL Line

- Step 1. Plug one of the RJ-11 connector end of the ADSL phone cable (included) into the ADSL interface of the Telindus 1120 ADSL Router (RJ-11 to RJ-11).
- Step 2. Plug the other RJ-11 connector end of the ADSL phone cable into the ADSL outlet on the wall.



2.4 Connect to the Power Adapter

- Step 1. Plug the power adapter into the power interface of the Telindus 1120 ADSL Router.
- Step 2. Connect one end of the power cord to the power adapter, and insert the other end of the power cord to the power outlet on the wall.
- Step 3. Switch your Telindus 1120 ADSL Router to ON.



3. Software Installation & Configuration

This chapter includes:

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To gain high-speed and shared access to another Local Area Network (LAN) or the Wide Area Network (WAN), your LAN needs to be configured for the Telindus 1120 ADSL Router. You must install a network protocol on each workstation on your LAN so they can communicate with the Telindus 1120 ADSL Router. The Telindus 1120 ADSL Router requires the TCP/IP network protocol. The TCP/IP Properties window in Windows® 95/98/2000 or NT connects the workstation's Ethernet information to the network's protocol data. Make sure that each PC on your LAN has TCP/IP available. To ensure smooth setup, you should install the TCP/IP network protocol on the network PCs **before** you install the Telindus 1120 ADSL Router.

Note: To ensure that your Telindus 1120 ADSL Router will assign an IP address to your PCs, if you set them to get IP addresses automatically, we have already configured your Telindus 1120 ADSL Router prior to shipping. The Telindus 1120 ADSL Router is configured with the **default IP address of 192.168.1.1** and **subnet mask of 255.255.255.0**. The Telindus 1120 ADSL Router's **DHCP server is enabled** with IP pool addresses starting from 192.168.1.2.

3.1 Detecting TCP/IP in Windows® 95/98

- Step 1. Turn on your computer and start Windows® 95/98.
- Step 2. Click the *Start* button and then select *Settings*.
- Step 3. Choose *Control Panel* and double click *Network* icon.
- Step 4. Click the *Configuration* tab.
 - A. If you see TCP/IP listed under Network Components, you already have TCP/IP on your Windows® 95/98. Proceed to the section titled "*Configuring TCP/IP in Windows® 95/98*".
 - B. If you do not see TCP/IP listed under Network Components, you do not have TCP/IP on your Windows® 95/98. Proceed to "*Installing TCP/IP in Windows® 95/98*" in the next section.

3.2 Installing TCP/IP in Windows® 95/98

- Step 1. From the *Configuration* tab in the Network window, click *Add*.
- Step 2. Select *Protocol* for the type of network component, and click *Add*.
- Step 3. Choose *Microsoft* for Manufacturers list box and *TCP/IP* for Network Protocols list box, then click OK.
- Step 4. Check to see if *TCP/IP* is listed under Network Components.
 - A. If you do not see *TCP/IP* listed under Network Components, you have not installed TCP/IP. Repeat steps 1 - 4.
 - B. If you see TCP/IP listed under Network Components, you already have TCP/IP on your Windows® 95/98. Proceed to “*Configuring TCP/IP in Windows® 95/98*” in the next section.

3.3 Configuring TCP/IP in Windows® 95/98

- Step 1. From the *Configuration* tab, select *TCP/IP* (for Ethernet adapters) listed under Network Components and then click *Properties*.

- Step 2. Select the *IP Address* tab.

You now have the option of using either dynamic or static IP addressing.

To enable dynamic IP addressing:

- Step 1. Click *Obtain an IP Address automatically*.
- Step 2. **OPTIONAL:** Click the *DNS Configuration* tab and select *Disable DNS*. If you previously entered any parameters, clear all pre-existing settings.*
- Step 3. Select the *Gateway* tab and then click *Remove* to clear all preexisting settings.
- Step 4. Click *OK* to exit *TCP/IP Properties* window and click *OK* to exit *Network* window. When prompted, restart Windows® 95/98. If you are not prompted to restart Windows® 95/98, do so manually. Proceed to the section titled “*Configuring Your Router*.”

* If specifically required by your ISP, you may need to enter DNS information.

To enable static IP addressing:

- Step 1. Click *Specify an IP Address* and then type the *IP Address* and *Subnet Mask* (for your PC).
- Step 2. Click the *Gateway* tab.
- Step 3. Type in your *Gateway IP Address* (the IP address for the Telindus 1120 ADSL Router) from your ISP and then click *Add*.
- Step 4. Click the *DNS* tab. Enter the *Host name*, *Domain name*, and *DNS Service Search Order* (for your LAN) and then click *Add*.
- Step 5. Click *OK* to exit *TCP/IP Properties* window and click *OK* to exit *Network*.
- Step 6. When prompted, restart Windows® 95/98. If you are not prompted to restart Windows® 95/98, please do so manually. Proceed to the section titled “*Configuring Your Router*.”

3.4 Detecting TCP/IP in Windows® 2000

- Step 1. Turn on your computer and log-in to Windows® 2000.
- Step 2. Click the *Start* button and select *Settings*.
- Step 3. Choose *Control Panel*, and then double click *Network and Dial-up Connections* icon.
- Step 4. Double click on the *Local Area Connection* icon. In the *Local Area Connection Status* window, click on the *Properties* button.
- Step 5. In the *Local Area Connection Properties* window:
 - A. If you see the *Internet Protocol (TCP/IP)* listed, you already have TCP/IP on your Windows® 2000. Proceed to the section titled “*Configuring TCP/IP in Windows® 2000*”.
 - B. If you do not see *Internet Protocol (TCP/IP)*, you do not have TCP/IP on your Windows® 2000. Proceed to the next section, “*Installing TCP/IP in Windows® 2000*.”

3.5 Installing TCP/IP in Windows® 2000

- Step 1. From the *General* tab in the *Local Area Connection Properties* window, click *Install*.
- Step 2. In the *Select Network Component Type* window, select the *Protocol* icon for the type of network component and click *Add*.
- Step 3. Choose the *Internet Protocol (TCP/IP)* icon from the *Network Protocol* list box, then click *OK*.
- Step 4. Check to see if *Internet Protocol (TCP/IP)* is listed under *Network Components*.
 - A. If you do not see *TCP/IP* listed under *Network Components*, you have not installed TCP/IP. Repeat steps 1 - 4.
 - B. If you see *TCP/IP* listed under *Network Components*, you already have TCP/IP on your Windows® 2000. Proceed to “*Configuring TCP/IP in Windows® 2000*” in the next section.

3.6 Configuring TCP/IP in Windows® 2000

- Step 1. From the *General* tab in the *Local Area Connection Properties* window, select *Internet Protocol (TCP/IP)* listed under *Network Components* and click *Properties*.

To enable dynamic IP addressing:

- Step 1. Click *Obtain an IP Address automatically*.
- Step 2. **OPTIONAL:** You can either click *Obtain DNS server address automatically* or *Use the following DNS server addresses* options. If you choose to *Use the following DNS server addresses* option, then you need to enter the *Preferred* and *Alternate DNS server* IP addresses.
- Step 3. Click *OK* to exit the *Internet Protocol (TCP/IP) Properties* window. Proceed to the section titled “*Configuring Your Router*.”

To enable static IP addressing:

- Step 1. Click *Use the following IP Address* and then type the *IP Address*, *Subnet Mask*, and *Default gateway*.
- Step 2. Enter the *Preferred* and *Alternate DNS server* IP addresses.
- Step 3. Click *OK* to exit the *Internet Protocol (TCP/IP) Properties* window. Proceed to the section titled “*Configuring Your Router*.”

3.7 Detecting TCP/IP in Windows[®] NT

- Step 1. Turn on your computer and log-in to Windows[®] NT.
- Step 2. Click the *Start* button and select *Settings*.
- Step 3. Choose *Control Panel*, and then double click *Network* icon.
- Step 4. Click the *Protocols* tab.
 - A. If you see TCP/IP listed under Network Protocols, you already have TCP/IP on your Windows[®] NT. Proceed to the section titled “*Configuring TCP/IP in Windows[®] NT*”.
 - B. If you do not see TCP/IP listed under Network Protocols, you do not have TCP/IP on your Windows[®] NT. Proceed to the next section, “*Installing TCP/IP in Windows[®] NT*.”

3.8 Installing TCP/IP in Windows[®] NT

Note: Consult your Network Administrator if you do not have authorization to change settings for your PC.

- Step 1. From the *Protocols* tab in the Network window, click *Add*.
- Step 2. Select *TCP/IP Protocol* listed under Network Protocols, Click *OK*.
- Step 3. Check to verify TCP/IP listed under Network Protocols, then click *OK*.
 - A. If you do not see TCP/IP listed under Network Protocols, you have not installed TCP/IP. Repeat steps 1 - 3.
 - B. If you see TCP/IP listed under Network Protocols, then you have successfully installed TCP/IP. Proceed to the section titled “*Configuring TCP/IP in Windows[®] NT*”.

3.9 Configuring TCP/IP in Windows[®] NT

- Step 1. From the *Protocols* tab, select *TCP/IP* (for Ethernet adapters) listed under Network Protocol and then click *Properties*.
 - Step 2. Select the *IP Address* tab.
- You now have the option of using either dynamic or static IP addressing.

To enable dynamic IP addressing

- Step 3. Click *Obtain an IP Address from DHCP Server*.
- Step 4. **OPTIONAL:** Click the *DNS* tab and select *Disable DNS*. If you previously entered any parameters, clear all pre-existing settings.*
- Step 5. Click *OK* to exit Network Properties window. Proceed to the section titled “*Configuring Your Router*.”

* If specifically required by your ISP or remote server, you may need to enter DNS information.

To enable static addressing

- Step 6. Click *Specify an IP Address* and then type the *IP Address* and *Subnet Mask* (for your PC).
- Step 7. Click the *DNS* tab. Enter the *Host* name, *Domain* name, and *DNS Service Search Order* (for your LAN).
- Step 8. Click *OK* to exit Network Properties window. Proceed to the section titled “*Configuring Your Router*.”

4. Configuring Your Router

This chapter includes:

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The Telindus 9100 Maintenance Application gives you access to the configuration and administrative controls for the Telindus 1120 ADSL Router. Install the Telindus 9100 Maintenance Application software on PCs that you want to access to these controls.

There are many ways to configure your router. However, for the purposes of this Get Started manual, we are going to guide you through the process of configuring your router for the first time by using the Windows-based Telindus 9100 Maintenance Application, so that you can easily access the Internet through Telindus 1120 ADSL Router.

If you have difficulties configuring your router, consult the *Troubleshooting* section of this guide, or the help menu in the Telindus 9100 Maintenance Application, or refer to the FAQs located on TELINDUS's website (<http://www.telindus.com>).

Note: To connect to the Internet after configuration, simply type in a web address in your browser and hit *enter*.

IMPORTANT: You must install the TCP/IP network protocol on the PCs **before** you install the Telindus 9100 Maintenance Application. For more information on installing and configuring TCP/IP, refer to the instructions in the previous section.

4.1 Load Telindus 9100 Maintenance Application Installation Software

- Step 1. Start Windows® 95/98/NT/2000.
- Step 2. Insert *TELINDUS CD* into your CD-ROM drive.
- Step 3. Click *Start*, then choose *Run*.
- Step 4. Click the *Browse* button and look in your CD-ROM drive.
- Step 5. Select the *TELINDUS* folder, and then the *Telindus 9100 Maintenance Application* folder.
- Step 6. Select the *setup.exe* file and click the *Open* button.
- Step 7. Click the *OK* button.

4.2 Multiple Router Selection Window

When you run the Telindus 9100 Maintenance Application, the *Multiple Router Selection* window will appear. The first thing the Telindus 9100 Maintenance Application will do is search for one or more TELINDUS routers attached to the same network as your PC. You will see the *Detection* window telling you that it is searching. This procedure may take a few seconds. When it has finished searching, it will list all the detected Telindus 1120 ADSL Router, both configured and unconfigured. From this list you can select the specific router that you wish to configure or re-configure.

Note: If the Telindus 9100 Maintenance Application is unable to detect any router or if it gives you an error message, consult the on-line help menu for more detailed instructions.

Select the Telindus 1120 ADSL Router that you wish to manage and click *Enter* to open the Telindus 9100 Maintenance Application, which is where you can configure your router, check your router's status, or use some router maintenance tools. If you do not want to use the Telindus 9100 Maintenance Application at this time, click *Exit*. You may configure your router at any time, however, inter-networking is not possible with an unconfigured router.

4.3 Basic Internet Access Configuration

The Telindus 9100 Maintenance Application is a flexible tool that can accommodate many networking configurations. For the purposes of this Get Started User's Guide, we will provide a simple, step-by-step guide for creating a basic Internet access configuration for your router. You will need to enter information that you received from your ISP, phone company, or network administrator – refer to the "*Information You Will Need*" section for configuration parameters.

- Step 1. Launch your Telindus 9100 Maintenance Application.
- Step 2. From the Multiple Router Selection window, select the router that you wish to configure and click *Enter*.
- Step 3. From the Telindus 9100 Maintenance Application window, click the *Configuration* icon.
- Step 4. Configure the Administrative Security Setup (optional):
 - A. Double-click the *General Configuration* icon.
 - B. Select the *Administrative Security* feature from the list located in the left panel.
 - C. In the right panel, provide a **Router Name** and select the **Password Protected** checkbox.
 - D. Click *Change Password*, enter the **New Password**, and confirm the new password. Click *OK*.

Note: Be sure to record your Router Name and Password for future reference. Without them you will not be able to access the configuration feature of the Telindus 9100 Maintenance Application.

- Step 5. Specify the Domain Name Server (optional):
 - A. Select the *DNS Server* feature from the list located in the left panel.
 - B. Enter the **Primary DNS IP Address** and **Secondary DNS IP Address**.
 - C. Double-click *Back to Configuration Menu*.

- Step 6. Configure the LAN Interface:
- Double-click the *LAN Configuration* icon.
 - Enter the **Primary LAN IP Address** supplied by your Internet Service Provider (The default LAN IP address for the Telindus 1120 ADSL Router is 192.168.1.1).
 - Enter the **Subnet Mask** supplied by your Internet Service Provider (The default LAN Subnet Mask is 255.255.255.0).
- Step 7. Enable DHCP (optional):
- Select the *DHCP* feature from the list located in the left panel.
 - Specify whether the primary or secondary IP address and subnet address will be used for running Dynamic Host Control Protocol (DHCP).
 - Reserve IP addresses as needed.
- Step 8. Enable RIP and IGMP (optional):
- Select the *Protocol Configuration* feature from the list located in the left panel.
 - Select the **Enable RIP on LAN Interface** checkbox and choose the **Version** and **RIP Update**.
 - Select the **Enable IGMP** checkbox.

4.4 ADSL Configuration

- Step 1. Create a ADSL Connection Profile:
- From the *Configuration* menu, double-click the *DSL Configuration* icon.
 - You have the option to choose **ANSI T1.413**, **G.LITE**, **G.DMT**, or **Multi Mode** as your DSL line mode.

Note: The DSL line mode refers to the entire Telindus 1120 ADSL Router unit and not each individual ATM PVC profile. Once you have made your choice, all subsequent ATM PVC profiles created will be using the same line mode.

- Double-click the *Make New ATM PVC* icon.
- Assign a name to the ATM interface. Click *OK*.
- In the *ATM PVC Properties* window, enter the **VPI (Virtual Path Identifier)** and **VCI (Virtual Channel Identifier)** value given by your ISP.
- Select the *ATM Service Type* feature from the list located in the left panel.
- In the *ATM Service Type* window, select either *UBR (Unspecified Bit Rate)* or *CBR (Constant Bit Rate)* as the desired **ATM Service Type**. Also enter a desired **PCR (Peak Cell Rate)** specified by your ISP.
- Select the *Protocol Configuration* feature from the list located in the left panel.
- In the *Protocol Configuration* window, you can select the following three **Encapsulation Types**: *SNAP/IP*, *VC MUX over ATM*, *LLC PPP over ATM*, *PPP over Ethernet*, or *SNAP/Bridge*.
 - In case you select *VC MUX PPP over ATM*, *LLC PPP over ATM*, or *PPP over Ethernet* as your encapsulation type, then you can check the **Enable Network Address Translation (NAT)** checkbox if you have a single user account for the *NAT Properties* feature. You can then select the **Specified NAT IP Address** checkbox and enter the desired IP address, or you can select the **Specified NAT Pool IP Addresses** and enter the requested values. Also, you **MUST** select the *PPP Configuration* feature from the list located in the left panel, and enter the **User Name** and **Password**. Move on to substep J.
 - If you select *SNAP/IP* as your encapsulation type, then you can check the **Enable Network Address Translation (NAT)** checkbox if you have a single user account for the *NAT Properties* feature. You can then select the **Specified NAT IP Address** checkbox and enter the desired IP address, or you can select the **Specified NAT Pool IP Addresses** and enter the requested values.

Move on to substep J.

Option 3. If you select *SNAP/Bridge* as your encapsulation type, then you can check the **Enable Network Address Translation (NAT)** checkbox if you have a single user account for the *NAT Properties* feature. You can then select the **Specified NAT IP Address** checkbox and enter the desired IP address, or you can select the **Specified NAT Pool IP Addresses** and enter the requested values.

Move on to substep J.

J. Click *Apply*, and review the summary of your basic configuration.

K. Click *Finish* to save the parameters to Telindus 1120 ADSL Router.

Congratulations! You are ready to begin using your Telindus 1120 ADSL Router for shared Internet access. Enjoy!

5. Troubleshooting

This chapter includes:

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5.2	Router and PC Are Not in the Same Subnet	15
5.3	Cannot Upgrade the Firmware	15

If you can not find the answers to your problems here, consult the help menu in the Telindus 9100 Maintenance Application or refer to the FAQs located on TELINDUS's website (<http://www.telindus.com>).

5.1 I Cannot Detect the Router

1. Verify that your router is connected to your Ethernet LAN.
 - If you are connecting your Telindus 1120 ADSL Router to an Ethernet network hub, use a straight-through Ethernet cable, and make sure you are connecting to the uplink port of the hub.
 - If you are connecting your Telindus 1120 ADSL Router to an Ethernet network PC, then use a straight-through Ethernet cable.

Note: See *Appendix B: Ethernet Cable Pinout* for further information about the differences between a straight-through and a crossover Ethernet cable.

Another way you can confirm that there is a physical connection to your LAN is by checking the LED located on the front panel of the Telindus 1120 ADSL Router. The LAN Link LED of will lit green to indicate a valid LAN connection. If the LAN Link LED of is not green, then check the connection between the router and your LAN. Re-start the Telindus 9100 Maintenance Application to see if it can detect the router.

2. Your PC is configured as "Obtain an IP Address Automatically" in TCP/IP Properties in Windows® 95/98/2000 or Windows® NT, and the Telindus 1120 ADSL Router is set to "Enable DHCP."

Since you cannot detect the Telindus 1120 ADSL Router, you must configure the PC to "Specify an IP Address" first. If your ISP has given you IP Addresses for your LAN for a Multiple User LAN Access account, then configure your PC with the information provided. If you have a Single User account from your ISP, you can still configure your PC to "Specify an IP Address." In TCP/IP Properties for Windows® 95/98/2000 or Windows® NT set your IP Address to a value between 192.168.1.2 and 192.168.1.254, the Subnet Mask to 255.255.255.0, and the Gateway as 192.168.1.1. When prompted, restart your computer otherwise do so manually. Re-start Telindus 9100 Maintenance Application to see if it can detect the router.

3. Your PC is configured to dynamically receive the IP address from the router's DHCP server, and the Telindus 9100 Maintenance Application still cannot detect the router.

You may need to manually force the PC to request an IP Address from the router. In Windows Explorer for Windows® 95/98/2000, open the *Winipcfg.exe* from the Windows directory. This application shows the IP Addresses for your Ethernet Adapter. Click *Release* and then click *Renew*. You should receive a valid IP Address, such as 192.168.1.2. For Windows NT, use the DOS Command Prompt, type *ipconfig/release* and press the *Enter* key, and then type *ipconfig/renew* and press the *Enter* key. You should receive a valid IP Address, such as 192.168.1.2. Re-start the Telindus 9100 Maintenance Application to see if it can detect the router.

5.2 Router and PC Are Not in the Same Subnet

Your router and PC must be in the same subnet. Otherwise, you will be unable to access the Telindus 9100 Maintenance Application and configure your router. Verify that you have entered the correct information provided by your Internet Service Provider (ISP) for your router's and PC's IP Address and Subnet Mask. For more specific information about your account, consult your ISP.

5.3 Cannot Upgrade the Firmware

1. You may have inadvertently tried to download the wrong file to your router. The Telindus 1120 ADSL Router can only use upgrades created by TELINDUS, NV. The upgrades are available by downloading the file from TELINDUS's website (www.telindus.com). The correct file format is **.bin*. The serial number of the Telindus 1120 ADSL Router unit is needed when you are obtaining the firmware from TELINDUS's website. The serial number is located on the bottom label of your Telindus 1120 ADSL Router device.
2. There may have been an illegal operation on your router. Please re-boot your router by disconnecting the power adapter and reconnecting it after 30 seconds. You may have to do this more than once.

Appendix A: Understanding Configuration Parameters

When you order Internet service your provider will give you a great deal of information. A list of the information presented to you by the remote network you will be dialing (ISP, company server, POP account) is provided to you in *Section 1.5 "Internet Service."* Definitions of common configuration terms are available below. Please note that terminology used by various remote networks may vary.

Explaining IP Addresses

LAN IP Address

In the most basic terms, the Primary LAN IP address is the logical location of the Telindus 1120 ADSL Router on the local Ethernet network. If there is another subnet in the Ethernet network you would like Telindus 1120 ADSL Router to be able to access, you can specify a Secondary LAN IP Address.

DNS Server IP Address

The IP address of the primary DNS (Domain Name System) server should be assigned by the ISP. Specifying a secondary DNS server IP address is optional.

NAT IP Address

Network Address Translation (NAT) IP Address is a Public IP Address. It can be a single, fixed Public IP address, or an ISP assigned Public IP address. NAT is used to translate Private IP addresses to a Public IP address. Many Private IP addresses can be translated through the single Public NAT IP address. The router keeps track of all the translation traffic so that information arriving at the single NAT IP Address can seamlessly be forwarded to the appropriate Private IP address.

DHCP IP Address Assignment

Dynamic Host Control Protocol (DHCP) IP Address Assignment is a method the router uses to dynamically assign LAN IP addresses within its local network. The router has a subnet (range) of available LAN IP addresses with which to assign to other network devices on its local network. It "leases" these LAN IP addresses for a user-defined amount of time. After the lease time expires, the LAN IP address is made available for assigning to other network devices.

The subnet of LAN IP addresses that the router assigns are based on a single DHCP IP Address. All traffic going to and from the subnet of Private IP addresses goes through the DHCP IP Address.

For situations where a LAN IP address is assigned as the DHCP IP Address, a WAN IP address will have to be assigned to the NAT IP Address, and NAT has to be enabled so that the DHCP IP Address can be translated into a WAN IP address.

Unnumbered WAN IP Address

Some network devices do not use WAN IP addresses when negotiating a connection. This is known as unnumbered IP. When running unnumbered IP, no WAN IP addresses are used, but the LAN IP addresses are used instead.

Terminology for Configuration Parameters

Domain Name System (DNS) IP Address

The DNS IP Address is the IP Address for your Domain Name Server. This IP Address or Internet Protocol Address identifies the domain name's server to the network and the Internet.

IP Packet Filtering

Establishing IP packet filters allows you to monitor and selectively filter packets that enter or leave the Telindus 1120 ADSL Router. You can use filtering to protect your network from unauthorized access, and restrict certain web traffic from leaving your LAN. This is done by examining each packet that enters the Telindus 1120 ADSL Router to see if the following characteristics match the criteria for the filter (true), or whether they do not match (false):

- IP address:* identifies each device on a TCP/IP network and the Internet
- Subnet mask:* a series of bits designed to 'mask' certain portions of an IP address
- TCP/IP port:* used to distinguish between requests for different services, such as telnet, ftp, or the web.
- Protocol type:* a set of rules governing the information flow within a communications infrastructure

For either true/false condition, the following packet dispositions can be set:

- Pass:* automatically pass through the router
- Restrict:* pass only if there is an available connection
- Discard:* packet is blocked and discarded
- Pass to next filter:* packet goes to the next filter in sequence

The IP Packet Filtering allows for up to 32 sequential filters, and each filter can be set to examine source packets, destination packets, or both.

Appendix B: Ethernet Cable Pinout

