

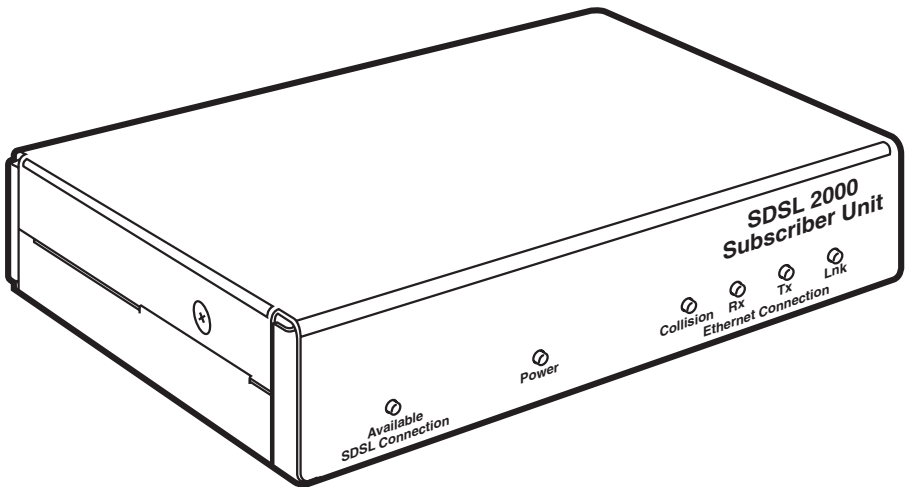


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SDSL Network Extender Subscriber



**CUSTOMER
SUPPORT
INFORMATION**

Order toll-free in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
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**FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

**NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT**

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

TRADEMARKS USED IN THIS MANUAL

Any trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.

1. Introduction

These instructions provide basic installation procedures for the SDSL Network Extender Subscriber (LRA1200A-S).

CAUTION

We strongly recommend that you use proper static-protection techniques when installing and handling this equipment.

NOTE

An SDSL Network Extender Subscriber must be connected (via the DSL line) to an IP DSLAM Access Mux Module, such as the SDSL 12-Port Access Mux 2000 Module (LRA1207C). Two subscriber units may not be connected back-to-back.

2. Installation

Step #1: Unpacking the Unit

Unpack the Network Extender and power supply. If anything appears to be broken or missing, contact Black Box immediately at 724-746-5500.

Step #2: Plug in the Power Supply

Plug the power supply into both the power source and the back of the unit. It does not matter which order. Verify that the Power LED is lit.

Step #3: Plug in the DSL Connection

Plug in the DSL connection (see the bottom label for SDSL connection pinout information).

NOTE

The length of the copper cable used between the local Network Extender and the remote Network Extender will affect the linking of the DSL connection. If the distance is greater than a particular speed will support, the units will not link up. Also, it may take anywhere from one to five minutes for the DSL connection to link up, depending on cable quality and distance.

Step #4: Verify the DSL Connection

Verify the DSL connection via the “Available SDSL Connection” LED on the front of the Extender. A steadily pulsing LED (once per second) indicates that the DSL connection is established and operational.

NOTES

For an overview of the unit’s LEDs and their functions, refer to LED Indicators on the next page.

When the DSL connection is not present, the LNK, TX, and RX LEDs on the provider unit will each glow steadily. Even though the Ethernet LNK LED is on, link is not presented to the upstream Ethernet device. When the DSL link comes up, LEDs will function as normal. The Ethernet device that is connected to the provider unit can be notified of an alarm on the DSL link. For example, if the Ethernet device (switch or router) loses Ethernet link on the port to which the provider unit is attached, a trap can be sent to the network management station that an event has occurred either on the corresponding DSL link, or the Ethernet link itself.

Step #5: Verify the Physical Link

Plug in the local Ethernet connection and verify the physical link (the LNK LED on the front of the unit will come ON steadily). See the bottom label for Ethernet connection pinout information.

NOTE

For most applications, a straight-through Ethernet cable is used when plugging the Network Extenders into a PC. Use a crossover cable when plugging into a hub or switch. Verify the pinout of the Ethernet device into which you are connecting the Network Extender to determine which type of cable is required.

Once the units have established both DSL and Ethernet links on both sides of the connection, normal data communication will flow through the units. This will provide a very long Ethernet connection at DSL speeds.

Other Information

PORT PINOUTS

Ethernet Pinout		SDSL Pinout	
Pin 1	RX+	Pin 1	
Pin 2	RX-	Pin 2	
Pin 3	TX+	Pin 3	
Pin 4		Pin 4	Ring
Pin 5		Pin 5	Tip
Pin 6	TX-	Pin 6	
Pin 7		Pin 7	
Pin 8		Pin 8	

LED Indicators

The DSL/Ethernet ports feature the following status LEDs for at-a-glance monitoring.

- **Available SDSL Connection LED:** Pulsing green (once per second) indicates that the DSL connection is operational and that the Network Extender is receiving either valid data packets or status packets from the remote unit on the other side of the DSL connection.
- **Power:** Steady green indicates normal operation.
- **Collision:** Flashing red indicates collision on the Ethernet segment.
- **Rx:** Flashing amber indicates data receive from the Ethernet segment. Steady amber indicates that the DSL connection is not present.
- **Tx:** Flashing amber indicates data transmit to the Ethernet segment. Steady amber indicates that the DSL connection is not present.
- **Lnk:** Steady green indicates that the Ethernet link has been established. Steady green (if accompanied by corresponding steady amber TX and RX LEDs) indicates that the DSL connection is not present.