SDSL and IDSL Network Extenders

SDSL Network Extender 2000

BLACK BOX®
724-746-5500

Available
SDSL Connection

Power

Collision
Rx
Tx
Lnk
Ethernet Connection

Use fast, flexible SDSL or IDSL
to extend your Ethernet network.

FEATURES

- **Low-cost, high-speed LAN and Internet connections for home or business.**
- **Operates over existing copper lines—no pricey T1 lines and no new installation expenses.**
- **Switch-selectable data rates for high- and low-bandwidth applications.**
- **Simple setup and little configuration means no substantial training or operating costs.**
- **1U rack height saves cabinet space.**

OVERVIEW

Our SDSL and IDSL Network Extenders provide home users and businesses with dedicated digital Internet and LAN connections over copper pairs. They're ideal for use in situations where the local network and the gateway to the ISP aren't close enough to be directly attached to each other—places like campus-based businesses, multiple-unit apartment buildings, and urban areas.

They work over the existing copper cables already installed at your site. So you won't be paying for new installations or expensive T1 connections—and you don't even have to subscribe to DSL service! Because installation is simple and the only thing you have to configure is the data rate, you won't incur extra training costs.

All models do symmetrical data transfer, which makes them ideal for applications in which two network segments—two clinics at a hospital, for instance—need to be able to send and receive data at equally fast rates.

A broadcast-limiting feature ensures that broadcast traffic only consumes up to 20% of the total bandwidth. However, this only applies to pure broadcast traffic; unicast and multicast traffic are guaranteed at least 80% of the available bandwidth.

SDSL Network Extender 2000 and IDSL Network Extender Kits

These kits—and the Extender 2000 is one too, even if it's not named that way—consist of a single-port provider unit and a single-port subscriber unit. They create a point-to-point digital link between two 10BASE-T Ethernet network segments.

Both the 10BASE-T network interface and the unit-to-unit DSL interface are carried on RJ-45 connectors.

IDSL Subscriber Unit

The LR0012A is a 1-port subscriber unit that connects to our discontinued 12-port provider units with AC (LR0011A-AC) or DC (LR0011A-DC) power.

The 12-to-1 configuration is intended for applications in which high-speed LAN and Internet access are essential for distributed local sites—an on-site office with various local clients, for instance.

Data Rates

The SDSL and IDSL Network Extender Kits don't require software. In fact, they almost don't require configuration or control at all. The one exception is the data rate at which they operate.
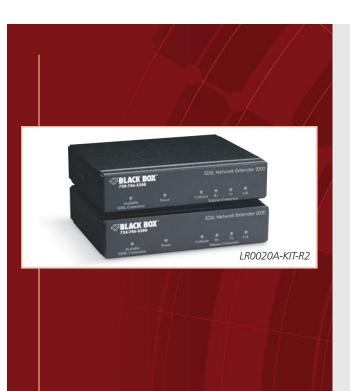
Each provider unit has one DIP switch that you can use to control this function. At installation time, you can try the highest available data rate, and if the provider and subscriber units fail to link at that rate, just step down to the next and try again. You can keep doing this until you reach a data rate at which the units can communicate successfully.

For point-to-point applications that need plenty of bandwidth, the SDSL Network Extender 2000 can transmit data at any of eight rates from 272 kbps to 2.32 Mbps. Even on 26 AWG cable, 2.32-Mbps data can be sent as far as 11,300 feet (3444.2 m), and slower data can be sent farther—up to 20,200 feet (6156.9 m) for 272 kbps.

The IDSL Network Extenders are designed for networks that will send only a low volume of data across the DSL link. You can set these extenders for either 128 or 144 kbps, which is double the top V.90 modem speed and the equal or better of ISDN. (Plus it's all on your own equipment, so you don't have to pay—or depend on—the telco.) The extenders can send and receive data at these rates across as much as 18,000 feet (5486.4 m) of cable, no matter what the cable's wire gauge is.

For additional information, see the Data Rate and Distance (Maximum) specification on the next page.

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TECH SPECS

Compliance —
    EMI/RFI: LR0020A-KIT-R2: CE (EN 55022), FCC Part 15 Subpart B Class A, IC Class/classe A, CSA C108.8;
    LR0010A-KIT, LR0012A: FCC Part 15 Subpart B Class B, IC Class/classe B;
    Safety: All models: UL® 1950, CSA C22.2 No. 950, EN 60950, IEC 950

Data Rate and Distance (Maximum) —
    LR0020A-KIT-R2: Depends on the length of standard telephone wire between the provider and subscriber units, and are user-configurable to any of these settings over 26 AWG wire: 2.32 Mbps at up to 11,300 ft. (3444.2 m); 2.064 Mbps at up to 12,200 ft. (3718.6 m); 1.552 Mbps at up to 12,800 ft. (3901.4 m); 1.04 Mbps at up to 16,000 ft. (4876.8 m); 784 kbps at up to 16,800 ft. (5120.6 m); 528 kbps at up to 18,400 ft. (5608.3 m); 400 kbps at up to 19,400 ft. (5913.1 m); 272 kbps at up to 20,200 ft. (6156.9 m);
    LR0010A-KIT, LR0012A: 128 or 144 kbps over up to 18,000 ft. (5486.4 m) of standard telephone wire of any gauge

NOTE: Connections made with cable of a lesser gauge (for example, 24 AWG) will link up at greater distances.

Enclosure — Steel
Encoding — LR0020A-KIT-R2: G.SHDSL (TC-PAM); LR0010A-KIT, LR0012A: 2B1Q
Leads/Signals Supported —
    On RJ-45 Ethernet ports: Standard 10BASE-T pinning (RX+ on Pin 1, RX- on Pin 2, TX+ on Pin 3, TX- on Pin 4);
    On RJ-45 DSL ports: Tip on Pin 4, Ring on Pin 5; corresponds to Pin 2 and Pin 3 respectively of any 4-wire RJ-11 cable you might connect to these
Standard — IEEE 802.3 Ethernet v2
User Controls — All on provider units;
    LR0020A-KIT-R2: (1) Rear-mounted 3-position DIP switch for data rate;
    LR0010A-KIT: (1) Rear-mounted 2-position DIP switch: (1) position for data rate, (1) position reserved for future use
Interface —
    All models: 10BASE-T;
    LR0020A-KIT-R2: SDSL;
    LR0010A-KIT, LR0012A: IDSL
Connectors — (1) RJ-45 for Ethernet; (1) RJ-45 designed to accept both RJ-45 and RJ-11 plugs for DSL
Indicators — (6) front-mounted LEDs: WAN Connection, Power, Ethernet Collision, Ethernet Rx, Ethernet Tx, and Ethernet Link
Temperature Tolerance —
    Operating: 32 to 122°F (0 to 50°C);
    Storage: -40 to +158°F (-40 to +70°C)
Humidity Tolerance — 5 to 95% noncondensing
Altitude Tolerance — -200 to +16,400 ft. (-60.9 to +4998.7 m)
Power —
    LR0020A-KIT-R2: For provider or subscriber unit:
      Input: 100 to 125 VAC (1 A) at 47 to 63 Hz;
      Output: 5 VDC at a maximum of 1.5 A;
      Consumption: 7.5 W maximum;
    LR0010A-KIT, LR0012A: 100 to 120 VAC, 60 Hz
Size — 1.25"H x 5.5"W x 4.6"D (3.2 x 14 x 11.7 cm)
Weight — 0.6 lb. (0.3 kg)

LR0020A-KIT-R2

Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

Recognize any of these situations?

- **You wait more than 30 minutes to get through to a vendor's tech support.**
- **The so-called "tech" isn't of much help to you.**
- **You don't have a purchase order number and the tech refuses to help you.**
- **It's 9 p.m. and you need help, but your vendor's tech support line is closed.**

According to a survey by Data Communications magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.

Item	Code
For SDSL, order…	
SDSL Network Extender 2000	**LR0020A-KIT-R2**
For IDSL, choose…	
IDSL Network Extender Kit	**LR0010A-KIT**
IDSL Subscriber Unit	**LR0012A**
You may also need…	
CAT5 Solid-Conductor Cables (UTP), 100-MHz, 24 AWG, RJ-45, 4-Pair, T568B, PVC, NEC® CMR	
Straight-Pinned	**EYN737MS**
CAT5 Unshielded 100-MHz Bulk Cable, 24 AWG, Solid, 4-Pair	
Spool	**EYN840A-1000**
Box	**EYN840A-B**
CAT3 Telco Connector Cables, 24 AWG, Straight-Wired, AVAYA Style, 25-Pair, 50-Pin Telco Male to Open End (Blunt Cut)	
PVC	**ELN25T-M**
Plenum	**ELN25TP-M**
CAT5 100BASE-TX Surge Protectors	
Primary (to 2.0 kV)	**SP250A-R2**
Secondary (to 0.5 kV)	**SP251A-R2**

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