



AUGUST, 2005

**Ethernet Extenders:
LB300A-R2**



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INFORMATION**

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**FEDERAL COMMUNICATIONS COMMISSION AND
CANADIAN DEPARTMENT OF COMMUNICATIONS
RADIO FREQUENCY INTERFERENCE STATEMENT**

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 B 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 the Canadian Department of Communications.

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 le ministère des Communications du Canada.

**Normas Oficiales Mexicanas (NOM)
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 de 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 debe 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.

Preface

This manual describes how to install and use LB300A-R2, Ethernet Extender. The Ethernet Extender introduced here provides one channel for Ethernet over VDSL.

LB300A-R2, Ethernet Extender fully complies with IEEE 802.3 10BaseT and IEEE 802.3u 100BaseTX standards.

In this manual, you will find:

- **Product overview**
- **Features on the LB300A-R2, Ethernet Extender**
- **Illustrative LED functions**
- **Installation instructions**
- **Specifications**

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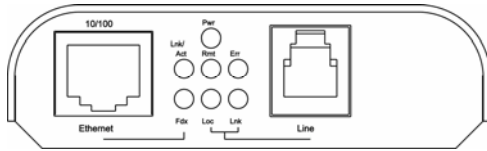
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Introduction

The Ethernet Extender provides one channel for Ethernet over VDSL. It can be used as a stand-alone device or with a standard 19" chassis.

Product Overview



Product Features

- One 10/100BaseTX (TX) Ethernet port with RJ-45 connector
- Auto negotiation of speed and duplex mode on TX port
- Auto MDIX on TX port
- Complies with IEEE 802.3 10BaseT and IEEE 802.3u 100BaseTX standards
- One Ethernet over VDSL port with RJ-11 connector
- Ethernet over VDSL port auto senses the speed of 1/3/5/10/15/20/25/30Mbps
- One DIP switch for configuring VDSL local or remote mode
- Status LEDs
- External AC to DC power adapter
- Used as a stand-alone device or with a chassis
- Hot-swappable when used with a chassis

Packing List

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- LB300A-R2, Ethernet Extender
- User's Manual
- AC to DC Power Adaptor
- Quick Installation Guide

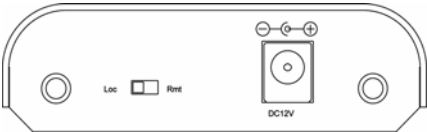
LB300A, One-Channel Ethernet Extender

Ports

LB300A, Ethernet Extender provides one TX port and one VDSL port.
For the TX port, it uses RJ-45 connector and auto senses the speed of 10/100Mbps.
For the VDSL port, it uses RJ-11 connector and auto senses the speed of 1/3/5/10/15/20/25/30Mbps.

VDSL Mode Settings

VDSL mode settings are made very simple by means of a DIP (Dual Inline Package) switch at the rear panel of LB300A-R2, VDSL Extender.



DIP switch

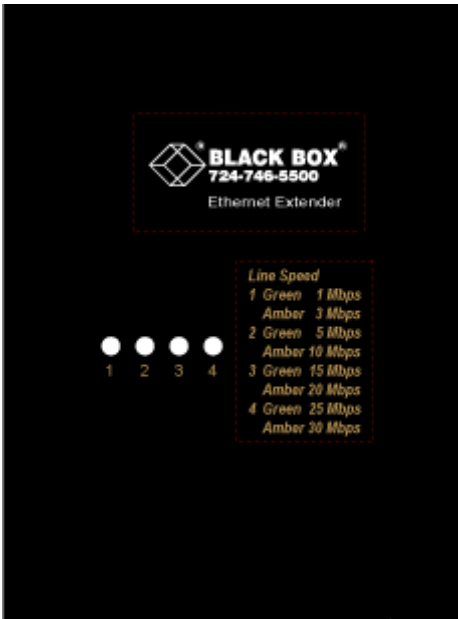
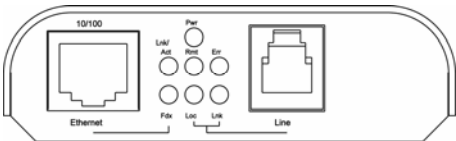
There is one pin on the DIP switch for VDSL mode settings. Refer to the table below for more details. One end must be set to Loc and the other to Rmt when two devices are connected.

Front Panel & LEDs

Loc	Rmt
The device operates in local mode	The device operates in remote mode

LED Indicators

The LED indicators give you instant feedback on status of LB300A-R2, Ethernet Extender:



LEDs	State	Indication
Pwr	Steady	Power on Pwr stands for POWER
	Off	Power off
Ethernet		
Lnk/Act	Steady	A valid Ethernet connection established Lnk stands for LINK
	Flashing	Transmitting or receiving Ethernet data Act stands for ACTIVITY
	Off	Neither valid Ethernet connection established nor transmitting/receiving Ethernet data
Fdx	Steady	Ethernet Connection in full duplex mode Fdx stands for FULL-DUPLEX
	Flashing	Collision occurred
	Off	Ethernet Connection in half-duplex mode
Ethernet over VDSL		
1	Green	The VDSL port transmitting/receiving at 1Mbps, up to 1900M
	Amber	The VDSL port transmitting/receiving at 3Mbps, up to 1700M
2	Green	The VDSL port transmitting/receiving at 5Mbps, up to 1600M
	Amber	The VDSL port transmitting/receiving at 10Mbps, up to 1500M
3	Green	The VDSL port transmitting/receiving at 15Mbps, up to 1400M
	Amber	The VDSL port transmitting/receiving at 20Mbps, up to 1000M
4	Green	The VDSL port transmitting/receiving at 25Mbps, up to 800M
	Amber	The VDSL port transmitting/receiving at 30Mbps, up to 600M
Rmt	Steady	The device operates in remote mode
Loc	Steady	The device operates in local mode
Err	Steady	Error occurred
Lnk	Steady	A valid VDSL connection established

Installation

This chapter gives step-by-step installation instructions for the LB300A-R2, Ethernet Extender.

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

The ambient temperature should be between 0 to 60 degrees Celsius.

The relative humidity should be less than 90 percent, non-condensing.

Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards for IEC 801-3, Level 2 (3V/M) field strength.

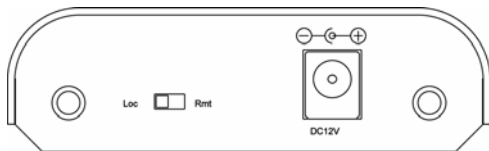
Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes on each side of the equipment.

The power outlet should be within 1.8 meters of the product.

Connecting to Power

This LB300A-R2, Ethernet Extender is a plug-and-play device.

Connect the supplied AC to DC power adaptor to the receptacle on the rear panel of LB300A-R2, Ethernet Extender, and then attach the plug into a standard AC outlet with a voltage range from 100 to 240VAC.



LB300A-R2, Ethernet Extender can be fit into any of the expansion slots on a special designed chassis.

First, install LB300A-R2, Ethernet Extender onto a carrier supplied with the chassis:

Step 1- Unscrew the carrier from the desired expansion slot on the chassis.



Step 2- Fit LB300A-R2, Ethernet Extender onto the carrier.



When LB300A-R2, Ethernet Extender is completely seated onto the carrier, insert the carrier to the guide rails of the expansion slot.



Carefully slide in the carrier until it is fully and firmly fit the chassis. Fasten the screws onto the carrier.

<NOTE> Never insert any LB300A-R2, Ethernet Extender into the chassis directly without using the supplied carriers. The carriers allow secure and consistent placement of LB300A-R2, Ethernet Extenders into the chassis backplane without causing any damage.

Use panel mount kit

LB300A-R2, Ethernet Extender can use panel mount kit to fix on the panel.



Step 1- Loosen the screws by the side of the unit.



Step 2- Fit the panel mount kit onto the unit and fasten the screws.

LB300A-R2 Specifications

Applicable Standards	IEEE 802.3 10BaseT IEEE 802.3u 100BaseTX Ethernet over VDSL
Fixed Ports	1 x 10/100Mbps Ethernet port with RJ-45 connector 1 x Ethernet over VDSL port with RJ-11 connector
Speed 10BaseT 100BaseTX Ethernet over VDSL	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex 1, 3, 5, 10, 15, 20, 25, 30Mbps
Cable 10BaseT 100BaseTX Ethernet over VDSL	2-pair UTP/STP Cat. 3, 4, 5 2-pair UTP/STP Cat. 5 Straight telephone wires
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,800pps for 10/100Mbps
LED Indicators	Per Unit- (7 LEDs): Pwr; Rmt, Loc, 1, 2, 3, 4
	Per Port- RJ-45 (2 LEDs): Lnk/Act; Fdx RJ-11 (2 LEDs): Err, Lnk
Dimensions	W80.3 × D109.2 × H23.8 mm (3.2 x 4.3 x 0.94 in.)
Weight	0.15kg (5.3 oz.)
Power	External power adaptor 12VDC, 0.2A
Power Consumption	2.4W Max.
Operating Temperature	0°C ~ 60°C
Storage Temperature	-25°C ~ 70°C
Humidity	10 ~ 90%, non-condensing
Emissions	FCC part 15 Class A, CE Mark