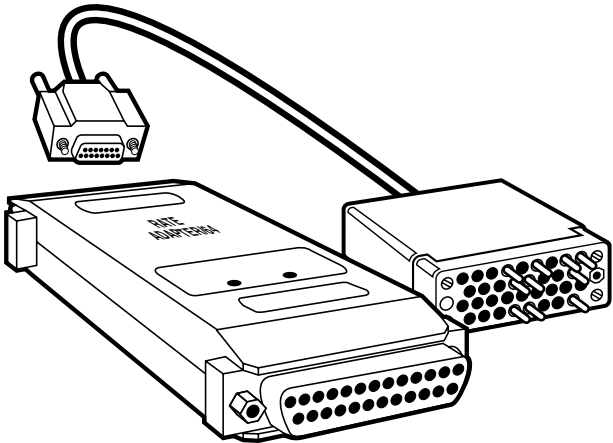




V.35 Rate Adapter/64

X.21 Rate Adapter/64



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

Web site: www.blackbox.com • E-mail: info@blackbox.com

**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 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 Industry Canada.

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

TRADEMARKS USED IN THIS MANUAL

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

**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 connectado 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 fisica 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 energia.
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 liquidos 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.

1. Specifications

Speed – DTE side: 1200, 2400, 4800, 7200, 9600, 14,400, 19,200 bps; DCE (ISDN) side: 64 kbps (in compliance with Bearer [B] Channel specifications of ISDN)

Operation – Asynchronous or synchronous; full duplex

Character length – Selectable: 8, 9, 10, 11 bits in asynchronous mode

Control signals – RTS, DTR, CD, DSR, CTS passed through according to CCITT I.463 (V.110)

Interface – Terminal side: EIA 232-C/CCITT V.24; DCE side: CCITT V.35 (IC610A model) or X.21 (IC612A model)

Connectors – Terminal side: DB25 female; DCE side: DB15 female (IC612A) or 34-pin M block female (IC610A)

Indicators – Power: green LED; Sync loss: red LED (lights up at loss of synchronization)

Temperature – 32 to 122°F (0 to 50°C);

Humidity – Up to 95% noncondensing

Power – 115 VAC, 7.5 V at 300 mA, supplied by 120 V wallmount adapter; PS321E: 230 VAC, 50 Hz

Size – 1.2"H x 2"W x 5.3"D (3 x 5.1 x 13.5 cm)

Weight – 0.2 lb. (0.1 kg)

2. Introduction

2.1 Features of the Rate Adapter/64

- Connects EIA 232/V.24 DTEs to the B-channel (64 kbps) of an ISDN connection
- Can be used as a rate adapter in non-ISDN applications
- Converts EIA-232 data rates of 1200–19,200 bps
- Handles asynchronous or synchronous data
- Compatible with CCITT I.463 or I.460 (V.110) recommendations
- Compatible with CCITT V.35 or X.21

2.2 Description

The Rate Adapter/64 lets your EIA 232-compliant DTEs running at up to 19.2 kbps exchange data over 64-kbps channels on an ISDN circuit.

The Rate Adapter/64 converts the DTE speed (up to 19.2 kbps) of your PCs, terminals, etc., to the Bearer (B) channel 64-kbps rate associated with high-speed digital transmission service (ISDN, unformatted DDS). Thus you can use the same data equipment you were using with analog data service when you tap into a high-speed digital line.

With the Rate Adapter/64, you can exchange asynchronous or synchronous data in full-duplex operation. The control signals RTS, DTR, CD, DSR, and CTS are passed through end-to-end, in compliance with CCITT I.463 (V.110) and I.460 recommendations. Two LEDs indicate when the unit is powered on and when there is a loss of signal synchronization.

The Rate Adapter/64 is not limited to the ISDN environment. It can be used in *any* application that requires conversion from EIA 232/V.24 low-speed data rates (up to 19.2 kbps) to a V.35 or X.21 high-speed (64-kbps) channel.

The lightweight and compact Rate Adapter/64 is easy to install; average installation time is about 10 minutes. Power is supplied by an external wall-mount power supply for 120 VAC. A 230-VAC, 50-Hz power supply is also available (our part number PS321E).

3. Installation

1. Open the unit. With your thumbs, press the marked areas on the sides of the unit. The top and bottom covers should separate. You can use a small screwdriver to pry open the box; Insert the screwdriver into the slot *at an angle*. Gently lift the handle so that the tip of the tool levers downward. Repeat this procedure for all the marked areas.

Warning

Do not insert the screwdriver straight into the middle of the slot; this may break off the prongs that secure the covers.

2. Set Switch 1 (SW1) to the proper EIA-232 data rate for your DTE, according to the table below.

SW1 SWITCH POSITIONS			RATE
1	2	3	
OFF	OFF	OFF	600
ON	OFF	OFF	1200
OFF	ON	OFF	2400
ON	ON	OFF	4800
OFF	OFF	ON	7200
ON	OFF	ON	9600
OFF	ON	ON	14,400
ON	ON	ON	19,200

NOTE: SW1 Switch Position 4 is not connected.

3. Set Switch 2 (SW2) to establish synchronous or asynchronous operation. Use Switch Position 1 of SW2 to choose either sync or async operation:

- Switch Position 1 OFF = SYNC
- Switch Position 1 ON = ASYNC

4. If you select the asynchronous mode, you will need to set the Rate Adapter/64 to accommodate the proper character length (including start and stop bits). Use Switch Positions 2 and 3 of SW2 to set async data character length.

SW2 SWITCH POSITIONS		TOTAL BITS
2	3	
OFF	ON	8 bits
ON	ON	9 bits
OFF	OFF	10 bits
ON	OFF	11 bits

NOTE: SW2 switch position 4 is not connected.

5. Close the unit by pressing both halves together.
6. Plug the connector into the AC power supply.
7. Plug the AC power supply into a power outlet.

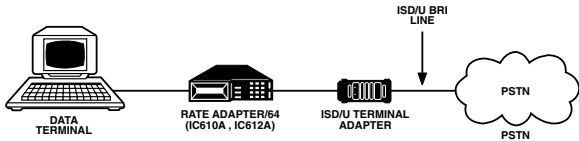


Figure 1. Rate Adapter/64 connected to an ISDN terminal

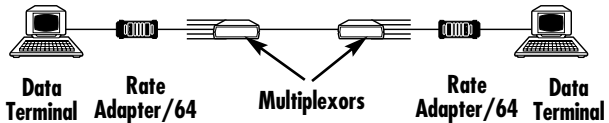


Figure 2. Rate Adapter/64 connected to an ISDN U interface multiplexor

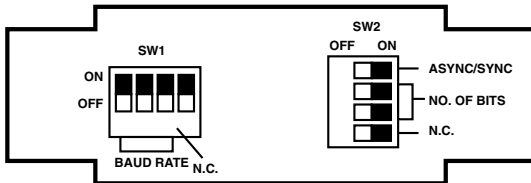


Figure 3. Rate Adapter/64 strapping diagram.



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