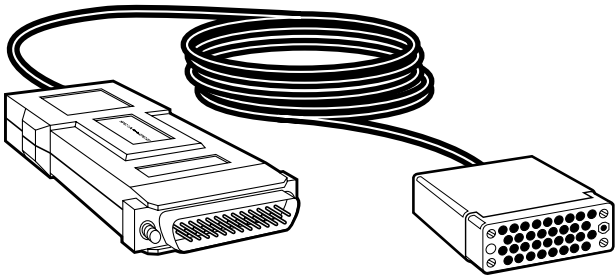




# V.24 ↔ V.35 Interface Converter



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## 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](http://www.blackbox.com) • E-mail: [info@blackbox.com](mailto: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.*

## **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.

**TRADEMARKS USED IN THIS MANUAL**

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

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# 1. Specifications

**Speed** — Up to 64 kbps

**Maximum Distance** — 6.5 ft. (2 m)

**Operation** — Synchronous

**Leads Supported** — V.35: A, B, C, D, E, F, H, P, R, S, T,  
U, V, W, X, Y, AA;  
V.24/RS-232: 1, 2, 3, 4, 5, 6, 7, 8, 15, 17, 20, 24

**Indicators** — None

**Flow Control** — Provided by attached devices  
(transparent to protocol)

**Interface** — V.24/RS-232 and V.35; both DTE/DCE  
shunt-selectable

**Connectors** — V.24: DB25 (male);  
V.35: 34-pin (male or female)

**Power** — Derives power from interface

**Size** — 0.9"H x 2.1"W x 4.3"D (2.3 x 5.3 x 10.9 cm)

**Weight** — 0.9 lb. (0.4 kg), including cable and connectors



## 2. Introduction

The V.24↔V.35 Interface Converter connects two data communications products: one has a V.24 interface and the other has a V.35 interface. The converter is used in synchronous applications and operates at data rates up to 64 kbps. It converts the physical as well as the electrical interfaces. Its circuitry converts the interface within short range – use the converter to connect devices located close to each other (less than 6.5 feet [2 m] apart).

The converter operates without AC power, using ultra-low power from the DTE and DCE equipment data and control signals. It is switch-selectable for one of the following two applications:

- Connecting a V.24 (RS-232) DTE to a V.35 DCE
- Connecting a V.24 (RS-232) DCE to a V.35 DTE

The converter offers these features:

- Cable and connectors are built into a single unit
- Transparent to protocol

- Operates at speeds up to 64 kbps
- Quick and easy install
- Works *without* AC power
- Compact and lightweight

### 3. Configuration and Installation

The converter installs between an RS-232 device configured as DTE or DCE and a V.35 device configured as DCE or DTE. (If one device is configured as DTE, the other device must be configured as DCE, and vice versa.) You configure the cable to fit your equipment by moving a jumper on the circuit board inside the RS-232 connector. A typical application appears in Figure 1.

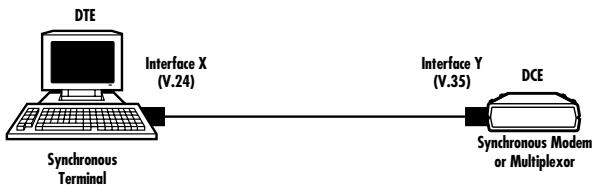
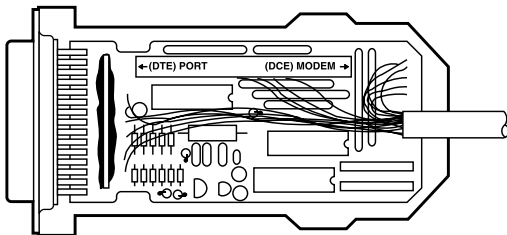


Figure 1. Typical Application of the V.24↔V.35 Interface Converter.

The converter is factory-strapped for V.24 DTE/V.35 DCE as shown in Figure 2.



**Figure 2. V.24 DTE , V.35 DCE.**

To configure the cable for V.35 DTE/V.24 DCE, follow these steps:

1. Locate the RS-232 connector on the cable.
2. To remove the cover of the connector, press in on the four tabs located on each side of the connector and lift the top half of the cover from the bottom half.
3. Locate the 40-pin DTE/DCE socket on the connector circuit board. Figure 2 illustrates the board's factory configuration.

## V.24↔V.35 INTERFACE CONVERTER

4. Remove the DTE/DCE socket by gently grasping both sides and *slowly* moving it from side to side.
5. Turn the socket around and replace it so that the DCE side (labeled on the socket) faces the V.24 connector of the cable and the DTE faces the V.35 device (see Figure 3). Make sure that the pins are aligned with the socket.

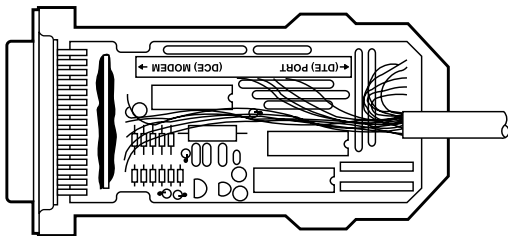


Figure 3. V.35 DTE, V.24 DCE.

6. To close the unit, press the two plastic covers together.
- To install the converter, plug the RS-232 connector into your RS-232 device and plug the V.35 connector into your V.35 device. The converter is now ready for operation.

## 4. Schematic Diagrams

The following diagrams apply to V.35 DTE/V.24 DCE and V.24 DTE/V.35 DCE configurations.

## V.24 ↔ V.35 INTERFACE CONVERTER

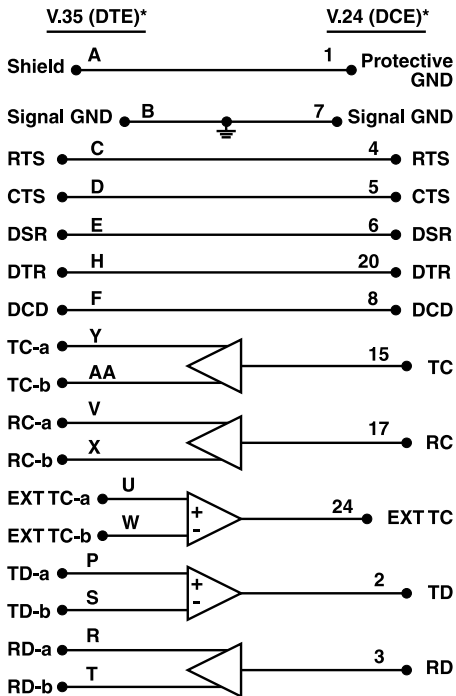


Figure 4. V.35 DTE/V.24 DCE.

\*NOTE: DTE/DCE defines the device to which the converter is attached, not the converter.

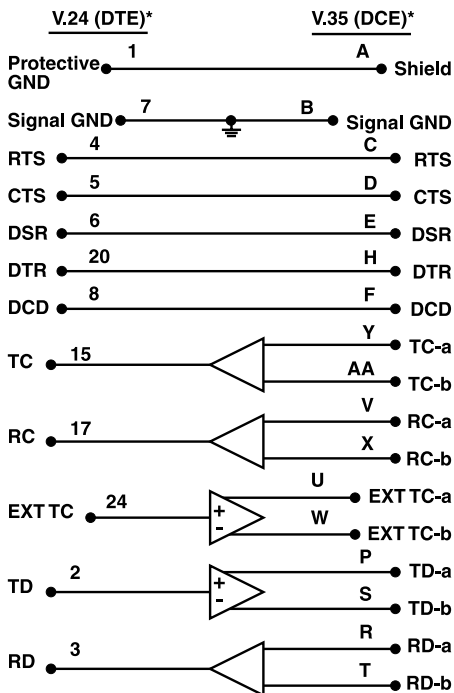


Figure 5. V.24 DTE/V.35 DCE.

**\*NOTE:** DTE/DCE defines the device to which the converter is attached, not the converter.





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