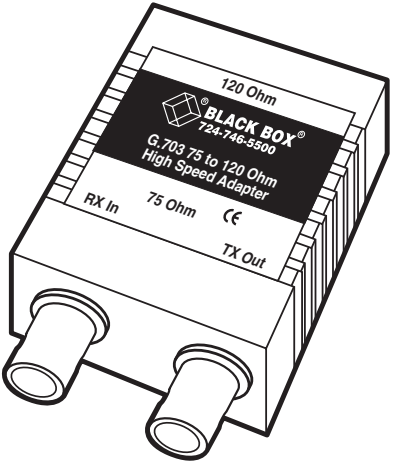
BLACK BOX®
NETWORK SERVICES

FEBRUARY 1999
MT260A-F
MT260A-M
MT261A-F
MT261A-M

G.703—120 High Speed Adapters



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 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 classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

CE

The CE symbol on your High Speed Adapters indicates that they comply with the Electromagnetic Compatibility (EMC) directive and the Low Voltage Directive (LVD) of the Union European (EU).

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 lineas 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 objectos 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: Objectos 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.

CONTENTS

1. Specifications

Transmission Medium—75-ohm coax to 120-ohm shielded twisted pair (STP)

Transmission Rate—MT260A: 8 Mbps; MT261A: 34 Mbps

Connectors—MT260A-F: (2) BNC coax female, (1) RJ-45 female; MT260A-M: (2) BNC coax male, (1) RJ-45 female; MT261A-F: (2) BNC coax female, (1) RJ-45 female; MT261A-M: (2) BNC coax male, (1) RJ-45 female

Power—None required

Size—0.8"H x 1.7"W x 2.7"D (2 x 4.3 x 6.9 cm)

Weight—0.1 lb. (0.06 kg)

2. Introduction

2.1 Description

The G.703—120 High Speed Adapter allows 75-ohm coax hardware to communicate with twisted-pair equipment up to 120 ohms. Supporting G.703 data rates to 8 Mbps, the MT260A converts 75-ohm coax signals to 100-ohm twisted pair and vice versa. The MT261A operates at speeds up to 34 Mbps and bi-directionally converts 75-ohm coax to 120-ohm twisted pair. The following models are available:

- G.703—120 High Speed Adapter—8 Mbps female (part number MT260A-F)
- G.703—120 High Speed Adapter—8 Mbps male (part number MT260A-M)
- G.703—120 High Speed Adapter—34 Mbps female (part number MT261A-F)
- G.703—120 High Speed Adapter—34 Mbps female (part number MT261A-M)

2.2 Features

- Solves mismatches between coax and twisted-pair G.703 terminations
- Speeds up to 8 or 34 Mbps, depending on model
- Choose from male or female coax connectors to fit your system—no gender adapters needed
- MT261A models convert signals bidirectionally

3. Configuration

The Adapters are pre-set to work in most applications without additional configuration. The only parameter that you can configure is the shield connection between 75-ohm coax and twisted-pair interfaces. The shield is connected between the modular jack and the dual BNC connectors. Removing the jumper breaks the connection.

Table 3-1. Jumpers.

Coax BNC (75 Ohm)	Jumper	RJ-45 (100 to 120 Ohm)
TX Shield	JP1	RJ-45 Shield, RJ-45 Pin 3
TX Shield	JP2	RJ-45 Shield, RJ-45 Pin 6

The factory setting leaves both jumpers JP1 and JP2 in place, thus passing both shield connections through. To break one or both of the shield connections, follow these instructions.

1. Insert a small flat-blade screwdriver into the slot on the side of the Adapter case and twist. The case will pop open, exposing the PC board.

2. Holding the PC board with the modular jack facing left, locate jumper JP1 toward the top of the board and JP2 toward the bottom of the board.

Remove the desired jumper(s) from the three pins on the right (for JP1) and from the three pins on the left (for JP2) to break one or both shield connections.

3. Re-align the case halves and end inserts and snap the case halves back together.

4. Installation

The Adapter is easy to install and requires no AC power or batteries for operation. After making any necessary configuration changes (see **Chapter 3**), simply plug in the modular and coax cables as indicated on the case. The pin assignments of the 100- to 120-ohm RJ-45 connectors are shown in **Table 4-1**.

Table 4-1. Pin Assignments of the RJ-45 Connector.

RJ-45 Pin(s)	Function
1 & 2	TX Pair
3	TX Shield
4 & 5	RX Pair
6	RX Shield

Appendix: Insertion and Return Loss Measurements

Table A-1. Insertion Loss for the MT260A.

F (MHz)	Actual loss each unit (dB)
0.2	0.665
0.211	0.6575
0.3	0.65
0.4	0.64
0.422	0.64
0.5	0.63
0.6	0.6225
0.7	0.61
0.8	0.6
0.9	0.5875
1	0.5825
2	0.53
3	0.5625
4	0.645
5	0.5575
6	0.53
7	0.5325
8	0.54
8.448	0.55
9	0.57
10	0.565
11	0.57
12	0.575
12.672	0.5575
13	0.575

Table A-2. Return Loss for the MT260A.

F (MHz)	Return Loss (dB)
0.2	24.79
0.211	25.29
0.3	27.39
0.4	27.85
0.422	28.77
0.5	29.42
0.6	29.95
0.7	29.7
0.8	30.78
0.9	30.78
1	30.98
2	31.43
3	31.6
4	31.03
5	29.49
6	28.56
7	27.47
8	26.56
8.448	25.65
9	25.3
10	24.76
11	24.02
12	23.38
12.672	22.54
13	21.97

Table A-3. Insertion Loss for the MT261A.

F (MHz)	Actual loss each unit (dB)
0.86	0.225
1	0.215
1.72	0.1925
2	0.1975
4	0.195
6	0.21
8	0.225
10	0.2425
15	0.275
20	0.2925
25	0.3225
30	0.59
34.368	0.345
40	0.3525
45	0.37
50	0.38
51.55	0.385

Table A-4. Return Loss for the MT261A.

F (MHz)	Return Loss (dB)
0.86	23.53
1	23.27
1.72	23.08
2	22.85
4	21.48
6	22.22
8	21.79
10	21.41
15	20.69
20	19.94
25	19.12
30	18.95
34.368	18.23
40	17.43
45	16.74
50	16.45
51.55	16.39

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