COMPLIANCE INFORMATION

UL Listed
C-UL Listed (Canada)
CISPR/EN55022 Class A
EN55024

FCC Regulations

This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

Canadian Regulations

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out on the radio interference regulations 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 class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

European Regulations

Warning
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Achtung !
Dieses ist ein Gerät der Funkstörgrenzwertklasse A. In Wohnbereichen können bei Betrieb dieses Gerätes Rundfunkstörungen auftreten, in weichen Fällen der Benutzer für entsprechende Gegenmaßnahmen werantwortlich ist.

Attention !
Ceci est un produit de Classe A. Dans un environment domestique, ce produit risque de créer des interférences radioélectriques, il appartiendra alors à l'utilsateur de prende les measures spécifiques appropriées

CAUTION: RJ connectors are NOT INTENDED FOR CONNECTION TO THE PUBLIC TELEPHONE NETWORK. Failure to observe this caution could result in damage to the public telephone network.

Der Anschluss dieses Gerätes an ein öffentlickes Telekommunikationsnetz in den EG-Mitgliedstaaten verstösst gegen die jeweligen einzelstaatlichen Gesetze zur Anwendung der Richtlinie 91/263/EWG zur Angleichung der Rechtsvorschriften der Mitgliedstaaten über Telekommunikationsendeinrichtungen einschliesslich der gegenseitigen Anerkennung ihrer Konformität.

Printed in the U.S.A. 33238.B

BLACK BOX NETWORK SERVICES

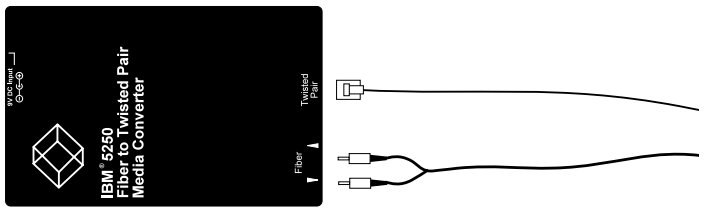
5250 Copper/Fiber

System 3x Repeaters

IC263A

USER'S GUIDE

The Black Box Corporation 5250 copper-to-fiber IC263A repeaters, designed to support all IBM® 5250 compliant devices (including devices operating at a non-standard rates), extends the signal distance of an AS/400™ or S/3x host computer or a 5x94 remote controller to terminal equipment over twisted-pair copper and over multimode or singlemode fiber.



IC263A media converters allow twisted-pair copper network extension distances up to 1524 meters (762 meters each connection on two media converters) AND fiber network extension distances up to 2 kilometers on multimode fiber and up to 8 kilometers on singlemode fiber.

IC263A

*Provides an RJ-45 twisted-pair connector to copper cable and a set of RX (receive) and TX (transmit) **ST** connectors to **multimode** fiber-optic cable.*

NOTE: devices installed at maximum distances may not function reliably due to limitations imposed by host time-outs and/or by terminal equipment time-outs.

IC263A IN THE NETWORK

IC263A repeaters can be installed:in pairs that connect a 5250-compliant host with a Multiple Twinax Repeater:

- through baluns, RJ-45 connectors, and copper cable, then
- through fiber, and then
- through copper cable and RJ-45 connectors.

Alternatively, copper connection from the second repeater can be made to a twinax connector through copper cable, RJ-45 connectors, and baluns.

TECHNICAL SPECIFICATIONS

Host Connection	IBM® S/3x (System 34, 36, 38) host, AS/400™ host or 5x94 remote controller	
Dimensions	4.75" x 3.0" x 1.0"	(119mm x 76mm x 25mm)
Shipping Weight	2 pounds	(0.9 kilograms)

Power Supply Requirements Replace power supply with only the equivalent input rating (see below) and output rating (regulated 9VDC at 0.5 A).

PN	Requirement	Location
3525	240 volts, 50 hertz	United Kingdom
3525	230 volts, 50 hertz	Europe
3518	120 volts, 60 hertz	USA/Canada/Mexico
3514	100 volts, 50-60 hertz	Japan
3525	240 volts, 50 hertz	Australia

Environment	Typical Operating Temperature*:	0° to 50°C (32° to 122°F)
	Storage Temperature:	-20° to 85°C (-4° to 185°F)
	Humidity	10-90%, non condensing
	Altitude	0-10,000 feet

BLACK BOX NETWORK SERVICES

DECLARATION OF CONFORMITY

Name of Mfg: **Black Box Corporation**
1000 Park Drive, Lawrence PA 15055 USA

Model: **IC263 Series Repeaters**

Part Number(s): **IC263A**

Regulation: **EMC Directive 89/336/EEC**

Purpose: To declare that the ***IC263A*** to which this declaration refers is in conformity with the following standards.

EMC-CISPR 22: 1985 Class A&B; EN 55022: 1988 Class A&B; EN 50082-1:1992; EN 60950 A4:1997; IEC 801.2, IEC 801.3, and IEC 801.4; IEC 950

I, the undersigned, hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Stephen Anderson, Vice-President of Engineering

January 6, 2001
Date

CABLE SPECIFICATIONS

The physical characteristics of the cable must meet or exceed the following:

Fiber Cable

MULTIMODE

Fiber Optic Cable Recommended:	62.5 / 125 µm multimode fiber	
Fiber Optic Transmitter Power:	min: -19.0 dBm	max: -14.0 dBm
Fiber Optic Receiver Sensitivity:	min: -32.5 dBm	max: -14.0 dBm
Wavelength:	850nM	
Bit error rate:	$\leq 10^{-9}$	
Maximum Cable Distance:	2 kilometers	

SINGLEMODE

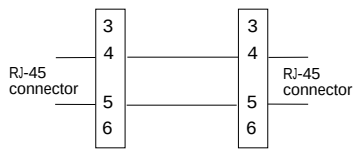
Fiber Optic Cable Recommended:	9 µm singlemode fiber	
Fiber Optic Transmitter Power:	min: -27.0 dBm	max: -17.0 dBm
Fiber Optic Receiver Sensitivity:	min: -32.5 dBm	max: -13.0 dBm
Wavelength:	1300nM	
Bit error rate:	$\leq 10^{-9}$	
Maximum Cable Distance:	8 kilometers	

Copper Cable

Category 3 wire or better is required; category 5 wire is recommended. Either shielded twisted pair (STP) or unshielded twisted pair (UTP) can be used. DO NOT USE FLAT OR SILVER SATIN WIRE.

Category 3:	
Gauge	24 to 22 AWG
Attenuation	28 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ±10% @ 10 MHz
Category 5:	
Gauge	24 to 22 AWG
Attenuation	20 dB/1000' @ 10 MHz
Differential Characteristic Impedance	100 Ω ±10% @ 10 MHz
Minimum UTP/STP Cable Distance:	7.6 meters (25 feet)
Maximum UTP/STP Cable Distance:	762 meters (2500 feet)
Connector:	RJ-45 connectors with active pair pins 4 & 5.

Straight Through Cable



NOTE: The active pair in a twisted-pair copper 5250-compliant network are pins 4 & 5. Use only dedicated wire pairs (such as blue/white & white/blue, orange/white & white/orange) for the active pins.

INSTALLATION

All cable connections to the IC263A MUST be AT LEAST 7.6 meters (25 feet) in length.

Install Cable

Connect Host Signal to IC263A Repeater:

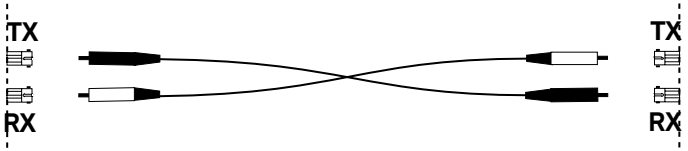
1. Locate or build twisted-pair cables that are compliant with cable specifications and with male RJ-45 plug connectors installed at both cable ends.

NOTE: Install Black Box Corporation balun part number: 3-4554 between RJ-45 cable and Twinax connector.

2. Install balun at host Twinax connector.
3. Connect male RJ-45 plug connector at one end of twisted pair cable to balun on host Twinax connector.
4. Connect male RJ-45 plug connector at other end of twisted pair cable to female RJ-45 connector on IC263A repeater.

Connect IC263A Repeater Pair:

1. Locate or build fiber cable that conforms to cable specifications and with male fiber connectors installed at both ends.



2. Connect one end of *first* fiber cable to IC263A repeater **TX** connector.
3. Connect other end of *that* fiber cable to *second* IC263A repeater **RX** connector.
4. Connect one end of *second* fiber cable to IC263A repeater **RX** connector.
5. Connect other end of *that* fiber cable to *second* IC263A repeater **TX** connector.

INSTALLATION (continued)

Install Cable (continued)

Connect Second IC263A Repeater to Terminal Equipment through Copper Cable:

UTP to RJ-45 Connector:

If connecting to RJ-45 connector on terminal equipment (as at front of Multiple Twinax Repeater):

1. Connect male RJ-45 plug connector to female RJ-45 connector marked "link" on terminal equipment.

UTP to Twinax Connector:

If connecting to twinax connector on terminal equipment:

NOTE: Install Black Box Corporation balun part number: 3-4554 between RJ-45 cable and Twinax connector.

1. Install balun at terminal equipment Twinax connector.
2. Connect male RJ-45 plug connector to balun.

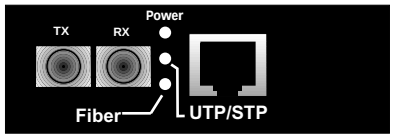
Power the Repeater

1. Install power adapter cord at back of repeater.
2. Connect power adapter plug to AC power.
3. Verify that repeater is powered by observing illuminated LED(s).

OPERATION

Using Status LEDs

Use the status LEDs to monitor repeater operation in the network.



Power Steady green LED indicates connection to external AC power.

UTP/STP Blinking green LED indicates network traffic on unshielded or shielded twisted-pair link.

Fiber Blinking green LED indicates network traffic on fiber link.

FAULT ISOLATION and CORRECTION

If the repeater fails, isolate and correct the fault by determining the answers to the following questions and then taking the indicated action:

1. Is the *P(o)W(e)R* LED on the repeater illuminated?

NO

- Is the power cord properly installed in the repeater and at the external power source?
- Does the external power source provide power?
- Contact Technical Support.

YES

- Proceed to step 2.

2. Is the *UTP/STP* LED on the repeater illuminated?

NO

- Check twisted-pair cables for proper connection.
- Check twisted-pair cables for connection of ***all four pairs***.
- Contact Technical Support.

YES

- Proceed to step 3.

3. Is the *Fiber* LED on the repeater illuminated?

NO

- Check fiber cables for proper connection.
- Verify that TX and RX cables on repeater are connected to RX and TX ports, respectively, on other device.
- Contact Technical Support.

YES

- Contact Technical Support.