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Black Box EYN870A-PB-1000

Black Box CAT6 550-MHz Solid Bulk Cable User Manual

1. PRODUCT OVERVIEW

This manual provides essential information for the proper installation, operation, and maintenance of your Black Box CAT6 550-MHz Solid Bulk Cable. The Black Box GigaTrue CAT6, 550-MHz Solid Bulk Cable (UTP) is engineered for high-performance data and digital video networks, supporting high-speed and high-bandwidth applications.

Key Features:

- PVC-rated violet CMR flame-retardant PVC jacket and polyolefin insulation for safety and durability.
- Ideal for digital video, 100-Mbps TP-PMD, and 155-Mbps ATM networks.
- Tested to 550 MHz/1 Gbps transmission rate with 23-AWG construction.
- UTP 4-pair solid copper wire with cross-member for added strength and reduced crosstalk.
- High-speed cabling intended for Cat6 PVC Riser applications.



Figure 1: Black Box CAT6 550-MHz Solid Bulk Cable in its pull-box packaging.

This image displays the Black Box CAT6 550-MHz Solid Bulk Cable, typically supplied in a pull-box for convenient deployment. The cable features a violet PVC jacket, indicating its CMR (Communications Multipurpose Riser) rating, suitable for vertical runs in building risers.

2. INSTALLATION AND SETUP

Proper installation is crucial for optimal performance of your CAT6 cable. Follow these guidelines:

2.1 Unboxing and Inspection

- Carefully remove the cable from its pull-box.
- Inspect the entire length of the cable for any visible damage, such as cuts, kinks, or abrasions, before installation.

2.2 Cable Pulling

- When pulling the cable, avoid sharp bends, kinks, and excessive tension. Excessive force can damage the internal conductors and degrade performance.
- Maintain a minimum bend radius to prevent signal loss. For CAT6, this is typically four times the cable's outside diameter.

- The pull-box design facilitates smooth cable deployment, minimizing tangles.

2.3 Termination

- This bulk cable requires termination with appropriate RJ45 connectors or patch panels.
- Follow TIA/EIA-568-B wiring standards (T568A or T568B) for proper pinout configuration. Consistency in wiring standard across your network is essential.
- Ensure secure and consistent connections to maintain signal integrity. Use proper crimping tools for RJ45 connectors.

2.4 Environmental Considerations

- This cable is suitable for both indoor and outdoor usage.
- The CMR (Communications Multipurpose Riser) flame-retardant PVC jacket makes it suitable for vertical runs in building risers.

3. OPERATION

The Black Box CAT6 cable is designed for high-speed data networking. Once properly installed and terminated, it functions as a reliable medium for network communication.

- **Data Transfer Rate:** Supports up to 1 Gigabit per second (Gbps) for distances up to 100 meters (328 feet).
- **Frequency:** Operates at frequencies up to 550 MHz, providing ample bandwidth for demanding applications.
- **Compatible Devices:** Connects various network devices including computers, servers, routers, and switches.
- **Applications:** Ideal for digital video transmission, 100-Mbps TP-PMD, and 155-Mbps ATM networks, as well as standard Ethernet applications (10BASE-T, 100BASE-TX, 1000BASE-T).

4. MAINTENANCE AND CARE

To ensure the longevity and consistent performance of your Black Box CAT6 cable, follow these maintenance guidelines:

- **Physical Inspection:** Regularly inspect exposed cable sections for any signs of physical damage, such as cuts, abrasions, or severe kinks. Address any damage promptly.
- **Avoid Stress:** Do not place heavy objects on the cable or route it through areas where it can be pinched, crushed, or subjected to excessive tension.
- **Cable Management:** Keep cable pathways clear and organized. Use cable ties or other management solutions to prevent tangles and accidental disconnections.
- **Environmental Control:** Ensure proper ventilation around cable runs, especially in enclosed spaces or conduits, to prevent heat buildup which can degrade cable performance over time.
- **Connector Care:** Ensure all RJ45 connectors are clean and free of dust or debris. Re-seat connectors if an intermittent connection is suspected.

5. TROUBLESHOOTING

If you encounter issues with your network connection, consider the following troubleshooting steps related to your CAT6 cable:

5.1 No Network Connectivity

- **Verify Connections:** Ensure that both ends of the cable are properly terminated and securely connected to the network devices (e.g., computer, switch, router).
- **Inspect Cable:** Check the entire length of the cable for visible damage, such as cuts or severe kinks, which can interrupt signal transmission.
- **Test with Another Cable:** If possible, swap the cable with a known working cable to determine if the issue lies with the cable itself or other network components.

5.2 Slow Network Speed

- **Device Compatibility:** Ensure all connected devices and network equipment (network cards, switches) support CAT6 specifications and are configured for Gigabit Ethernet.
- **Cable Length:** Verify that the cable length does not exceed the maximum recommended distance for CAT6 (100 meters for 1 Gbps). Longer runs can lead to signal degradation.
- **Electromagnetic Interference (EMI):** Check for potential sources of EMI near the cable run, such as power lines, fluorescent lights, or heavy machinery, which can interfere with data transmission.
- **Cable Quality:** Ensure the cable was terminated correctly and that the conductors are not damaged or improperly twisted.

5.3 Intermittent Connection

- **Re-terminate Connectors:** If connections are loose or appear faulty, re-terminate the RJ45 connectors on both ends of the cable.
- **Check for Kinks/Bends:** Ensure the cable is not severely kinked or bent, as this can cause intermittent signal loss.
- **Port Issues:** Test the cable in different network ports on your devices to rule out a faulty port.

6. TECHNICAL SPECIFICATIONS

Specification	Detail
Brand	Black Box
Model	EYN870A-PB-1000
Cable Type	Ethernet, Cat 6
Frequency	550 MHz
Data Transfer Rate	Up to 1 Gigabits Per Second
Gauge	23 AWG
Conductor Type	Solid Copper Wire, UTP 4-pair
Jacket Material	PVC (CMR Flame-Retardant)
Color	Violet (Multicolor)
Length	1000 Feet (approx. 305 meters)
Indoor/Outdoor Usage	Indoor, Outdoor

Specification	Detail
Compatible Devices	Computer, Server, Router, Switch
Connector Type	RJ45 (requires termination)
Specification Met	ANSI, EIA, IEC, ISO, TIA
UPC	700736522912
Item Weight	0.01 Ounces (per unit, bulk weight will vary)

7. WARRANTY AND SUPPORT

7.1 Warranty Information

According to the manufacturer's specifications, this product comes with **No Warranty**. Please review your purchase documentation for any specific retailer or distributor warranty policies that may apply.

7.2 Technical Support

For technical assistance, installation guidance, or further inquiries regarding the Black Box CAT6 550-MHz Solid Bulk Cable, please contact Black Box customer support directly. Refer to the official Black Box website (www.blackbox.com) for the most current contact information, including phone numbers, email addresses, and support resources.