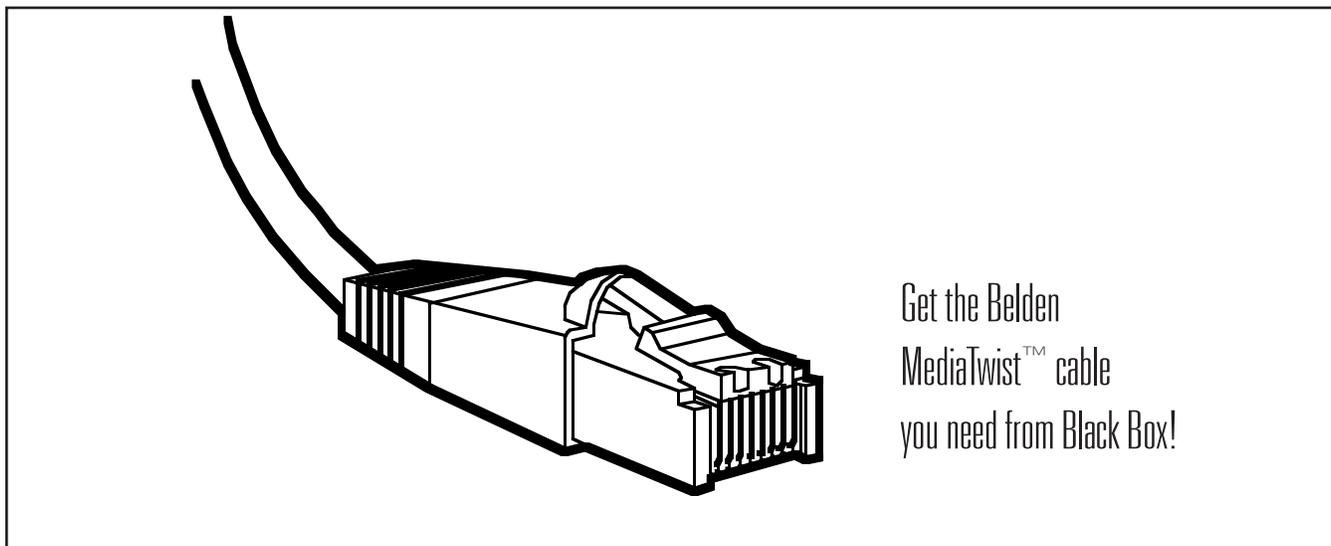


# BLACK BOX<sup>®</sup>

## NETWORK SERVICES

### LEVEL 7 PATCH CABLES



Get the Belden  
MediaTwist™ cable  
you need from Black Box!

### Key Features

- ▶ **Certified to meet or exceed Level 7 specifications.**
- ▶ **Cable is Belden MediaTwist™—and the jacks are certified to meet Level 7.**
- ▶ **Molded snag-free boot.**
- ▶ **TSB 568B wired.**
- ▶ **Custom lengths available.**
- ▶ **Superior Attenuation-to-Crosstalk Ratio (ACR).**
- ▶ **Gives you more headroom for future growth.**
- ▶ **Ideal for ATM or Gigabit Ethernet networks.**

### Technically Speaking

#### Categories vs. Levels

Category 5 cable, the highest category stipulated by the TIA/EIA 568 standard, supports speeds up to 100 Mbps and voice/data transmission frequencies up to 100 MHz. But what if you have an ATM or Gigabit Ethernet network? You'll need cable that supports even higher speeds. This is what prompted computer-industry vendors to take the problem into their own hands. In the absence of any formally approved enhancements, cable vendors and manufacturers have created their own standards, known as Level 5, Level 6, and Level 7.

While Category designations are based on measuring near-end crosstalk (NEXT) and attenuation, Level designations take into account the difference between attenuation and near-end crosstalk, known as the attenuation-to-crosstalk ratio, or ACR. And even though ACR isn't officially cited in TIA/EIA 568, it reveals far more about a cable's performance capabilities and construction than mere attenuation ratings.

A fourth factor, called delay skew, distinguishes between Category 5 cable and Level 5 cable. It's the difference in

nanoseconds (ns) between the time when the first and last bits of a single, parallel data byte are received over a cable. Like ACR, Delay Skew is not called out in TIA/EIA 568. But both measurements distinguish enhanced Level 5, 6, and 7 cables from Category 5 cable.

Still another measurement is called Power Sum NEXT, which is a more rigorous crosstalk measurement that indicates the total sum of all interference that can possibly occur between one wire pair and all adjacent pairs in the same cable sheath.

(continued on page 2)

### Typical Application

**Perfect for your Gigabit or ATM network, this Level 7 cable achieves at least a 10-dB ACR at 200 MHz.**



Order your Level 7 cables from Black Box today!

Technically Speaking (continued from page 1)

Level 7 Cable Requirements

Level 7 cables promise at least twice the bandwidth of Category 5 cable. To be classified as Level 7, these cables must achieve at least a 10-dB ACR at 200 MHz and support power-sum NEXT levels in excess of Level 6 cables.

Level 7 cable is ideal for bandwidth-hungry applications like Gigabit Ethernet or other emerging applications that require increased throughput rates or various operating frequencies over multiple wire pairs contained within a single jacket.

Signal-to-noise ratio (SNR) is another cable factor to consider at these much higher operating frequencies. It measures the general network system's overall immunity to noise. For example, an SNR margin of 3 dB means the network can only tolerate three more decibels of noise before violating the system's bit-error ratio. In general, maintaining an SNR of around 16 dB will prevent this degradation. Remember that SNR is normally only a consideration for the highest-Level cables in high-frequency applications, since the high frequency is what affects the attenuation, which in turn is what affects signal strength.

Glossary

Brief definitions of terms mentioned in this document:

**Attenuation**—Measured in decibels, it's the decrease of signal strength as it travels through a medium or system.

**Attenuation-to-Crosstalk Ratio**—The difference between attenuation and near-end crosstalk.

**Crosstalk**—Interference from an adjacent communication channel.

**Delay Skew**—The difference in nanoseconds (ns) between the time when the first and last bits of a single, parallel data byte are received over a cable.

**Power Sum NEXT**—The total sum of all interference that can possibly occur between one wire pair and all adjacent pairs in the same cable sheath.

**Signal-to-Noise Ratio(SNR)**—The ratio between the amplitude of a transmitted signal to that of the crosstalk.

Specifications

**Cable Construction** — PVC; polyolefin insulated PVC jacket

**Cable Type** — 4-pair stranded, copper UTP

**Frequency** — Up to 350 MHz

**Impedance** — 100 ±15% ohms

**Maximum Conductance** — 27.4 ohms/1000 ft.

**Nominal Capacitance** — 15 pF/ft.

**Nominal Delay Skew** — 25 NS/100 m

**Nominal Velocity of Propagation** — 69%

**Standards** — TIA/EIA 568-A Category 5

For these and other components...

**Call our expert Technical Support Staff for all your cable needs. They'll help you find the best equipment for your application.**

# Ordering Information

*This information will help you place your order quickly.*

PRODUCT NAME	ORDER CODE				
	Blue	Green	Red	Yellow	Beige
Level 7 Patch Cable with Snagless, Molded Boots, TSB568B (RJ-45 to RJ-45), 4-Pair					
1-ft. (0.3-m)	EVNSL91-0001	EVNSL92-0001	EVNSL93-0001	EVNSL94-0001	EVNSL95-0001
3-ft. (0.9-m)	EVNSL91-0003	EVNSL92-0003	EVNSL93-0003	EVNSL94-0003	EVNSL95-0003
6-ft. (1.8-m)	EVNSL91-0006	EVNSL92-0006	EVNSL93-0006	EVNSL94-0006	EVNSL95-0006
10-ft. (3.0-m)	EVNSL91-0010	EVNSL92-0010	EVNSL93-0010	EVNSL94-0010	EVNSL95-0010
20-ft. (6.0-m)	EVNSL91-0020	EVNSL92-0020	EVNSL93-0020	EVNSL94-0020	EVNSL95-0020
25-ft. (7.6-m)	EVNSL91-0025	EVNSL92-0025	EVNSL93-0025	EVNSL94-0025	EVNSL95-0025
50-ft. (15.2-m)	EVNSL91-0050	EVNSL92-0050	EVNSL93-0050	EVNSL94-0050	EVNSL95-0050
100-ft. (30.4-m)	EVNSL91-0100	EVNSL92-0100	EVNSL93-0100	EVNSL94-0100	EVNSL95-0100
Custom Lengths	EVNSL91	EVNSL92	EVNSL93	EVNSL94	EVNSL95

