

**Product:** <u>4824</u> ☑



# **Product Description**

CAT6 Enhanced (600MHz), 4-Pair, U/UTP-unshielded, Zero Halogen, Premise Horizontal cable, 23 AWG solid bare copper conductors, polyolefin insulation, X-spline, ripcord, LSZH jacket.

# **Technical Specifications**

### **Product Overview**

| 0 11 1 4 11 11         | Premise Horizontal Cable, Gigabit Ethernet, 100BaseTX, 100BaseVG ANYLAN, 155ATM, 622ATM, NTSC/PAL Component or Composite Video, AES/EBU Digital Audio, |
|------------------------|--|
| Suitable Applications: | AES51, RS-422, Noisy Environments  |

# **Physical Characteristics (Overall)**

#### Conductor

| AWG   | Stranding   | Material         | No. of Pairs |
|-------|-------------|------------------|--------------|
| 23    | Solid       | BC - Bare Copper | 4            |
| Condu | ctor Count: | 8                |              |

# Insulation



### **Color Chart**

| Number | Color                        |
|--------|------------------------------|
| 1      | White/Blue Stripe & Blue     |
| 2      | White/Orange Stripe & Orange |
| 3      | White/Green Stripe & Green   |
| 4      | White/Brown Stripe & Brown   |

### Outer Jacket Material

| Material  | Material Trade Name | Nominal Diameter | Ripcord |
|---|---------------------|------------------|---------|
| LSZH - Low Smoke Zero Halogen (Flame Retardant) | Haloarrest®         | 0.245 in         | Yes     |

# **Electrical Characteristics**

# Conductor DCR

| Max. Conductor DCR | Max. DCR Unbalance | Max DCR Unbalanced Between Pairs [%] |
|--------------------|--------------------|--------------------------------------|
| 67 Ohm/km          | 3 %                | 5 %                                  |

### Capacitance

| Max. Capacitance Unbalance | Nom.Mutual Capacitance |
|----------------------------|------------------------|
| 90 pF/100m                 | 15.5 pF/ft             |

# Delay

| Frequency [MHz] | Max. Delay    | Max. Delay Skew |
|-----------------|---------------|-----------------|
| 100 MHz         | 537.6 ns/100m | 45 ns/100m      |

## High Freq

| Frequency<br>[MHz] | Max. Insertion<br>Loss (Attenuation) | Min.<br>NEXT<br>[dB] | Min.<br>PSNEXT<br>[dB] | Min.<br>ACR<br>[dB] | Min.<br>PSACR<br>[dB] | Min. ACRF<br>(ELFEXT) [dB] | Min. PSACRF<br>(PSELFEXT) [dB] | Min. RL<br>(Return<br>Loss) [dB] | Max./Min. Input<br>Impedance<br>(unFitted) | Max./Min.<br>Fitted<br>Impedance | Min.<br>TCL<br>[dB] | Min.<br>ELTCT<br>[dB] |
|--------------------|--------------------------------------|----------------------|------------------------|---------------------|-----------------------|----------------------------|--------------------------------|----------------------------------|--|----------------------------------|---------------------|-----------------------|
| 0.772 MHz          | 1.7 dB/100m                          | 83.0 dB              | 82.0 dB                | 81.3 dB             | 80.3 dB               | 77.0 dB                    | 75.0 dB                        |                                  |  | 102 ± 15 Ohm                     | 40.0 dB             | 37.2 dB               |
| 1 MHz              | 1.9 dB/100m                          | 81.3 dB              | 80.3 dB                | 79.4 dB             | 78.4 dB               | 74.8 dB                    | 72.8 dB                        | 20.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 40.0 dB             | 35.0 dB               |
| 4 MHz              | 3.5 dB/100m                          | 72.3 dB              | 71.3 dB                | 68.8 dB             | 67.8 dB               | 62.8 dB                    | 60.8 dB                        | 23.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 40.0 dB             | 23.0 dB               |
| 8 MHz              | 4.9 dB/100m                          | 67.8 dB              | 66.8 dB                | 62.8 dB             | 61.8 dB               | 56.7 dB                    | 54.7 dB                        | 24.5 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 40.0 dB             | 16.9 dB               |
| 10 MHz             | 5.5 dB/100m                          | 66.3 dB              | 65.3 dB                | 60.8 dB             | 59.8 dB               | 54.8 dB                    | 52.8 dB                        | 25.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 40.0 dB             | 15.0 dB               |
| 16 MHz             | 7.0 dB/100m                          | 63.2 dB              | 62.2 dB                | 56.3 dB             | 55.3 dB               | 50.7 dB                    | 48.7 dB                        | 25.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 38.0 dB             | 10.9 dB               |
| 20 MHz             | 7.8 dB/100m                          | 61.8 dB              | 60.8 dB                | 54.0 dB             | 53.0 dB               | 48.8 dB                    | 46.8 dB                        | 25.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 37.0 dB             | 9.0 dB                |
| 25 MHz             | 8.7 dB/100m                          | 60.3 dB              | 59.3 dB                | 51.6 dB             | 50.6 dB               | 46.8 dB                    | 44.8 dB                        | 25.0 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 36.0 dB             | 7.0 dB                |
| 31.25 MHz          | 9.8 dB/100m                          | 58.9 dB              | 57.9 dB                | 49.1 dB             | 48.1 dB               | 44.9 dB                    | 42.9 dB                        | 24.3 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 35.1 dB             |                       |
| 62.5 MHz           | 14.1 dB/100m                         | 54.4 dB              | 53.4 dB                | 40.3 dB             | 39.3 dB               | 38.9 dB                    | 36.9 dB                        | 22.2 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 32.0 dB             |                       |
| 100 MHz            | 18.0 dB/100m                         | 51.3 dB              | 50.3 dB                | 33.3 dB             | 32.3 dB               | 34.8 dB                    | 32.8 dB                        | 20.8 dB                          | 100 ± 15 Ohm                               | 100 ± 15 Ohm                     | 30.0 dB             |                       |
| 155 MHz            | 22.8 dB/100m                         | 48.4 dB              | 47.4 dB                | 25.7 dB             | 24.7 dB               | 31.0 dB                    | 29.0 dB                        | 19.5 dB                          | 100 ± 22 Ohm                               | 100 ± 15 Ohm                     | 28.1 dB             |                       |
| 200 MHz            | 26.2 dB/100m                         | 46.8 dB              | 45.8 dB                | 20.6 dB             | 19.6 dB               | 28.8 dB                    | 26.8 dB                        | 18.7 dB                          | 100 ± 22 Ohm                               | 100 ± 15 Ohm                     | 27.0 dB             |                       |
| 250 MHz            | 29.6 dB/100m                         | 45.3 dB              | 44.3 dB                | 15.8 dB             | 14.8 dB               | 26.8 dB                    | 24.8 dB                        | 18.0 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     | 26.0 dB             |                       |
| 300 MHz            | 32.7 dB/100m                         | 44.1 dB              | 43.1 dB                | 11.4 dB             | 10.4 dB               | 25.3 dB                    | 23.3 dB                        | 17.5 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 350 MHz            | 35.6 dB/100m                         | 43.1 dB              | 42.1 dB                | 7.5 dB              | 6.5 dB                | 23.9 dB                    | 21.9 dB                        | 17.0 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 400 MHz            | 38.4 dB/100m                         | 42.3 dB              | 41.3 dB                | 3.9 dB              | 2.9 dB                | 22.8 dB                    | 20.8 dB                        | 16.6 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 450 MHz            | 41.0 dB/100m                         | 41.5 dB              | 40.5 dB                | 0.5 dB              |                       | 21.7 dB                    | 19.7 dB                        | 16.2 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 500 MHz            | 43.6 dB/100m                         | 40.8 dB              | 39.8 dB                |                     |                       | 20.8 dB                    | 18.8 dB                        | 15.9 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 550 MHz            | 46.0 dB/100m                         | 40.2 dB              | 39.2 dB                |                     |                       | 20.0 dB                    | 18.0 dB                        | 15.6 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 600 MHz            | 48.4 dB/100m                         | 39.6 dB              | 38.6 dB                |                     |                       | 19.2 dB                    | 17.2 dB                        | 15.4 dB                          | 100 ± 32 Ohm                               | 100 ± 15 Ohm                     |                     |                       |
| 650 MHz            | 50.6 dB/100m                         | 39.1 dB              | 36.1 dB                |                     |                       | 18.5 dB                    | 15.5 dB                        | 15.1 dB                          |  |                                  |                     |                       |
| 750 MHz            | 55.0 dB/100ft                        | 38.2 dB              | 35.2 dB                |                     |                       | 17.3 dB                    | 14.3 dB                        | 14.7 dB                          |  |                                  |                     |                       |
| 860 MHz            | 59.6 dB/100ft                        | 37.3 dB              | 34.3 dB                |                     |                       | 16.1 dB                    | 13.1 dB                        | 14.3 dB                          |  |                                  |                     |                       |

Segregation class according EN50174-2:

## Voltage

UL Voltage Rating 300 V RMS

# **Temperature Range**

| Installation Temp Range: | +5°C To +50°C  |
|--------------------------|----------------|
| Non-UL Temp Rating:      | +75°C          |
| Storage Temp Range:      | -20°C To +75°C |
| Operating Temp Range:    | -20°C To +75°C |

# **Mechanical Characteristics**

| Bulk Cable Weight:                   | 31 lbs/1000ft |
|--------------------------------------|---------------|
| Max. Pull Tension:                   | 25 lbs        |
| Min Bend Radius During Installation: | 2.5 in        |
| Min Bend Radius/Minor Axis:          | 1.0 in        |

# **Standards**

| IEC Compliance:     | 11801 ed 2.2 (2011) Class E                          |  |  |
|---------------------|--|--|--|
| Data Category:      | Category 6   |  |  |
| ANSI Compliance:    | -116-732-2013 Category 6, ANSI/NEMA WC-66 Category 6 |  |  |
| TIA/EIA Compliance: | ANSI/TIA-568-C.2 Category 6                          |  |  |

# **Applicable Environmental and Other Programs**

| Environmental Space:               | LSZH |
|------------------------------------|------|
| EU Directive 2000/53/EC (ELV):     | Yes  |
| EU Directive 2002/95/EC (RoHS):    | Yes  |
| EU Directive 2002/96/EC (WEEE):    | Yes  |
| EU Directive 2003/11/EC (BFR):     | Yes  |
| EU Directive 2003/96/EC (BFR):     | Yes  |
| EU Directive 2011/65/EU (ROHS II): | Yes  |

| EU Directive 2012/19/EU (WEEE):        | Yes        |
|--|------------|
| EU Directive 2015/863/EU:              | Yes        |
| EU Directive Compliance:               | Yes        |
| EU CE Mark:                            | No         |
| EU REACH SVHC Compliance (yyyy-mm-dd): | 2017-07-10 |
| EU RoHS Compliance Date (yyyy-mm-dd):  | 2004-01-01 |
| MII Order #39 (China RoHS):            | Yes        |

#### Suitability

| Suitability - Aerial:              | No  |
|------------------------------------|-----|
| Suitability - Burial:              | No  |
| Suitability - Hazardous Locations: | No  |
| Suitability - Indoor:              | Yes |
| Suitability - Non-Halogenated:     | Yes |
| Suitability - Oil Resistance:      | No  |
| Suitability - Outdoor:             | No  |
| Suitability - Sunlight Resistance: | No  |

## Flammability, LS0H, Toxicity Testing

| UL voltage rating: 300 V RI | 0 V RMS |  |  |  |
|-----------------------------|---------|--|--|--|

## Plenum/Non-Plenum

| Plenum (Y/N):  | No   |
|----------------|------|
| Plenum Number: | 4813 |

### **Part Number**

| Non-Plenum Number: | 4812 |  |  |
|--------------------|------|--|--|

#### **Product Notes**

| Notes: | Electrical values are expected performance based on cable testing and representative performance within a typical Belden system. Values above 600 MHz are for Engineering Information Only. Print Includes Descending Footage/Meter Markings from Max. Put-Up Length to 0. |
|--------|--|
|--------|--|

## History

| Update and Revision: |
|----------------------|
|----------------------|

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