Data Cables

INTRODUCTION

Carlisle Interconnect Technologies (CarlisleIT) manufactures a wide variety of high performance data cables designed to meet the needs of aerospace, defense, military, ground transportation, industrial and RF communication applications. Typical applications include: Ethernet Backbone, Avionics, High Definition Video, Cabin Management Systems, In-Flight Entertainment and Bus applications.

Gigabit Series Ethernet cables have been developed in a wide variety of configurations to provide 1 and 10 Gb performance in the most demanding applications. Our proven NETflight® Ethernet cables in single pair, dual pair and quadrax configurations are widely used throughout the aerospace industry and provide superior electrical and mechanical performance. Our Maxflite™ series provides high speed performance for the popular video and data bus protocols: HDMI, DVI, USB, and Firewire. In addition to the standard protocols, when a custom solution is required, CarlisleIT has experienced on-site engineering to design a cable to meet your needs.

Should assembly capability be needed, CarlisleIT provides this service as well.

FEATURES & BENEFITS

» Exceptional electrical and mechanical performance
» Operating performance from -55°C to as high as 200°C
» Meets the requirements of aerospace and other harsh environments including FAR 25.853 flammability and Boeing/ Airbus smoke and toxicity requirements
» Multiple configurations to meet the needs of almost any application
» Lightweight versions to address weight and space requirements
» Advanced technologies such as Bonded-Pairs and an innovative X-Web reduces cross talk and ensures installable performance

Learn more: CarlisleIT.com/products/wire-cable
This specification describes a RoHS-compliant, 24 AWG, 100-ohm, four-pair, shielded and jacketed Ethernet cable designed for use in aerospace applications.

**CONDUCTOR**
- Material: Silver-coated Copper
- Size: AWG 24
- Construction: 19 x 36

**INSULATION**
- Material: Fluoropolymer

**PAIR CABLE**
Two (2) of the above insulated conductors are cabled together.

**PAIR SHIELD**
- Material: Aluminum/Polyimide Tape (Aluminum Up)

**OVERALL CABLE**
Four (4) of the above shielded pairs are cabled around a PTFE filler.

**OVERALL SHIELD**
- Material: Silver-coated Round Copper Braid
- Coverage (min): 90%

**OVERALL JACKET**
- Material: Laser-markable FEP
- OD (nom): .282"

**COLOR**
- Pair #1: Blue-Gray
- Pair #2: Orange-Yellow
- Pair #3: Green-White
- Pair #4: Brown-Red
- Jacket: White

**CABLE CHARACTERISTICS**
- Differential Impedance: 100 ohms ± 10%
- Capacitance (nom): 13 pF/ft
- Velocity of Propagation (nom): 77%
- Weight (nom): 45 lbs/1,000 ft

**Attenuation (100m)**

<table>
<thead>
<tr>
<th>Impedance (100 MHz)</th>
<th>100 MHz</th>
<th>250 MHz</th>
<th>500 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 AWG</td>
<td>26.4 dB</td>
<td>24 dB</td>
<td>48 dB</td>
</tr>
<tr>
<td>26 AWG</td>
<td>31.6 dB</td>
<td>29 dB</td>
<td>48 dB</td>
</tr>
</tbody>
</table>

**Other**
- ROHS Compliant
- Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity
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*24773/1A042X-8(LD) and 26463/1A042X-8(LD) are cables designed specifically for use with an Octax™ connector.*

Learn more: CarlisleIT.com/products/wire-cable
### CABLE CROSS SECTIONS

<table>
<thead>
<tr>
<th>100 Base-T – Twisted Pair</th>
<th>100 Base-T – Shielded Quad</th>
<th>100 Base-T – Single Twisted Pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number</td>
<td>NF22P100</td>
<td>NF22Q100</td>
</tr>
<tr>
<td>Impedance (Ohms)</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Velocity of Propagation</td>
<td>80%</td>
<td>80%</td>
</tr>
<tr>
<td>Attenuation at 100 MHz (db/100ft)</td>
<td>5.6/6.7</td>
<td>5.8/6.7</td>
</tr>
<tr>
<td>Weight (lbs/100ft)</td>
<td>43</td>
<td>18.0</td>
</tr>
<tr>
<td>Size (in.)</td>
<td>0.195x0.290 (4.95x7.37)</td>
<td>0.190 (4.83)</td>
</tr>
<tr>
<td>Bend Radius (in.)</td>
<td>1.95 (49.5)</td>
<td>1.90 (48.3)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-55 to 150°C</td>
<td>-55 to 150°C</td>
</tr>
<tr>
<td>Other</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
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</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Part Number</th>
<th>Impedance (Ohms)</th>
<th>Velocity of Propagation</th>
<th>Attenuation (dB/100ft)</th>
<th>Cable Weight (lbs/1000ft)</th>
<th>Cable Diameter: in.(mm)</th>
<th>Min. Bend Radius: in.(mm)</th>
<th>Operating Temperature</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>1586-305</td>
<td>100</td>
<td>70%</td>
<td>17 at 300 MHz</td>
<td>72 (107.0)</td>
<td>0.315</td>
<td>1.89</td>
<td>-55 to 150°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>26453/1K017LX-15-DL</td>
<td>100</td>
<td>75%</td>
<td>30 dB/ft at 1 GHz</td>
<td>64 (95.1)</td>
<td>0.295</td>
<td>1.5</td>
<td>-55 to 135°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>24463/05099X-8(LD)</td>
<td>100</td>
<td>75%</td>
<td>42 at 1.6 GHz</td>
<td>105 (156.0)</td>
<td>0.40</td>
<td>4.0</td>
<td>-55 to 150°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>24483/0363LX-6(LD)</td>
<td>110</td>
<td>79%</td>
<td>70 dB/ft at 3 GHz</td>
<td>78 (116.0)</td>
<td>0.34</td>
<td>3.40</td>
<td>-55 to 150°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>NF26/22USB(A)</td>
<td>90</td>
<td>70%</td>
<td>11 at 200 MHz</td>
<td>15 (23.0)</td>
<td>0.133</td>
<td>1.3</td>
<td>-55 to 150°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>USB3.0/24(AM)</td>
<td>90</td>
<td>70%</td>
<td>2.0 dB/ft at 100 GHz</td>
<td>60 (89.4)</td>
<td>0.27</td>
<td>2.7</td>
<td>-55 to 150°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
<tr>
<td>26443/1K016LX-16-DL</td>
<td>100</td>
<td>75%</td>
<td>Attenuation: dB/5m</td>
<td>73 (108.6)</td>
<td>(4.7)</td>
<td>(1.5)</td>
<td>-55 to 200°C</td>
<td>Meets FAR 25.853 and Boeing/Airbus Smoke and Toxicity</td>
</tr>
</tbody>
</table>

**CABLE CROSS SECTIONS**

- **HDMI**
  - IEEE 1394 Firewire
  - USB 2.0
  - USB 3.0

See CarlisleIT’s line of Composite Wire & Cable products at: CarlisleIT.com/products/wire-cable

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