

## Etherbus<sup>®</sup>

### Industrial CAT5E Ethernet Cable & Cordsets

Kevlar Super Cabling for the Toughest Applications

This Kevlar-reinforced super-rugged cable will protect your Ethernet connections indoors or outdoors. Its high reliability and superior ruggedness make it a perfect choice for industrial, military or any application needing extra protection. This Kevlar-reinforced cable is super strong yet highly flexible, and designed to resist UV, water and microbial penetration. It will make your job easier, and give you the assurance and peace of mind that your connections will be reliable for many years to come.



- Kevlar-reinforced for superior pulling strength**
- Category 5E for up to 1000BaseT connections**
- Doubled shielded for the best noise immunity**
- High flexibility for easy routing**
- Excellent UV, hydrolysis and microbial resistance**
- Shielded RJ45 plugs with Gold plated contacts**
- Low smoke, halogen-free, flame-retardant (HFFR) Polyurethane jacket material (UL94V-0) for personnel safety**
- Industrial operating temperature range of -50 to +85°C**

- Ideal for IP67 water-proof plugs and switches**

ET-5RS-IP67 Series  
Ethernet Ring Switch  
Real-time Ring  
EtherTRAK<sup>®</sup>  
+1 (518) 877-5173  
[www.get2support.com](http://www.get2support.com)

- UL US LISTED UL 444 / CSA**
- CE**
- Available in bulk reels or pre-assembled cordsets in standard or custom lengths**

# The World's Toughest Ethernet Cable

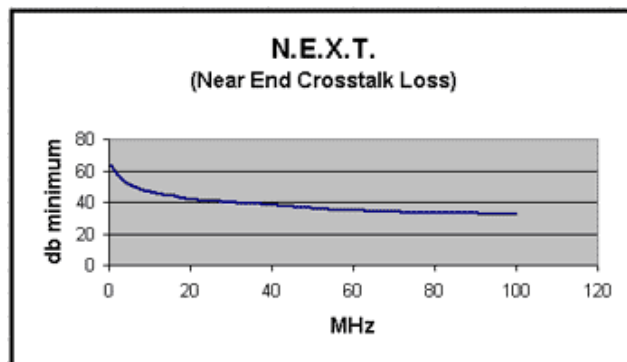
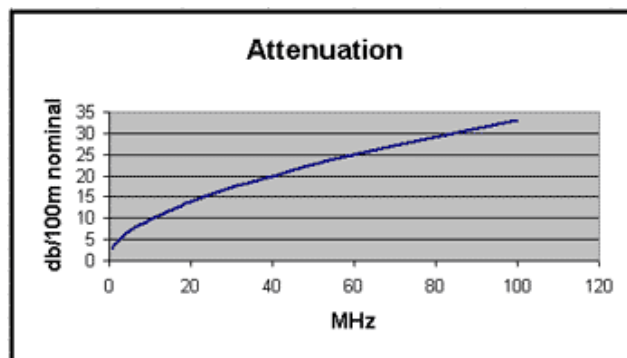
## Performance Specifications

Cable Mechanical Characteristics	
Conductors	4 pair, stranded
Conductor size	24 AWG (0.25 mm <sup>2</sup> ), 7 x 20 mm
Conductor material	Tinned copper
Insulation	Color coded per TIA / EIA-568-B
Insulation size	Dia. 0.039" (1 mm) nominal
Insulation material	Linear Low Density Polyethylene
Construction	Pairs cabled with Kevlar strands and separation tape wrapped
Inner shield	Aluminum Mylar, 100% coverage
Outer shield	Tin copper braid, 80% coverage
Jacket material	Special Yellow Polyurethane (PUR)
Jacket rating (UL94V-0)	Low-smoke, HFFR (halogen-free, flame-retardant)
Jacket protection	Resists UV, hydrolysis and microbial
Jacket chemical resistance (Contact SIXNET for details)	Highly resistant to many chemicals & substances (organic and inorganic)
Weight	0.04 lbs / ft (59 g / m)
Outer diameter (OD)	0.28" (7.1 mm) nominal
Bend radius during install	2.7" (67.5 mm) ( 9.5 x OD)
Bend radius during operation	1.5" (37.5 mm) (5.3 x OD)
Flexes to failure	Meets IEC 61156-6
Operating temperature	-50°C to +85°C (-10° to 70°C during installation)
Safety	UL444 / CSA C22.2-214, CE
Cable Electrical Characteristics	
Compliance	Category 5E per TIA / EIA-568-B And ISO/IEC11801
Attenuation	See chart to right
N.E.X.T.	See chart to right
DC resistance	96 Ohms/Km @ 20°C
Impedance	100 +/- 15 Ohms (1-100 MHz)
Capacitance	46 pF / m nominal @ 1 KHz
LCL	43 dB minimum @ 64 KHz
Capacitance unbalance	3.4 pF / m maximum @ 1 KHz
Insulation resistance	150 M Ohm minimum
Voltage rating	230 VMS
Dielectric strength	VAC / 1 minute – 700 V / Minute
Propagation delay	5.2 nS / m maximum @ 100 MHz
Delay skew	20 nS / 100 m max. @ 1-100 MHz
Resistance unbalance	3% maximum @ 20°C
Structural return loss	23 dB / 100 m min. @ 1-20 MHz
Spark test	3 KV
Velocity of propagation	67% nominal
RJ45 Plug Electrical Characteristics (Cordsets only)	
Connector type	RJ45 plug, shielded
Contact material	Phosphor bronze (CuSn)
Contact plating	Gold (Au) 1.3 um (50u")
Contact under-plating	Nickel (Ni)
Housing material	Polycarbonate
Flammability	UL94V-0
Durability / mating cycles	500 cycles minimum
Maximum current	1.5A
Maximum voltage	125V
Withstand voltage	1000 VAC
Contact resistance	20 milliohms maximum
Insulation resistance	500 Megohms minimum
Hazardous substances	ELV and RoHS compliant

Specifications are subject to change. Consult factory for latest information.

## Common Applications:

- Industrial automation and control
- Process, machine and motion control
- Railway (on-board and side-track)
- Maritime, marine and off-shore
- Military and aerospace
- Extreme temperature
- And much more ...



## Ordering Guide

Part Number	Description
EB-CAT5E-xCC	Cordset with preinstalled RJ45 plugs (shielded), x = length in meters up to 100
CF (w/ 1 IP67 plug)	Replace the CC above to specify having 1 or 2 of the EB-RJF-PLUG-1 pre-installed.
FF (w/ 2 IP67 plugs)	
EB-CAT5E-100B	100 meters bulk reel cable
EB-CAT5E-300B	300 meters bulk reel cable

# SIXNET®

331 Ushers Road, P.O. Box 767 • Clifton Park, NY 12065 USA • +1 (518) 877-5173 • Fax +1 (518) 877-8346  
 Email: <mailto:sales@sixnetswitch.com> • Web: <http://www.etherbus.com> • Store: <http://www.sixnetstore.com>

# Jacket Chemical resistance Chart - CAT5E

## Key to Reaction:

- **Nil:** Excellent resistance over a prolonged period
- **Nil to slight:** Very good resistance over a prolonged period
- **Slight:** Good resistance (after prolonged exposure some affect my be noticeable)
- **Poor:** Short term contact possible under certain conditions
- **No resistance:** Pronounced attack

Inorganic Substances	Temp °C	Concentration	Reaction
ACETIC ACID	Room	20%	nil to slight
ACETIC ACID 3N	Room		poor
ALUMINIUM CHLORIDE, AQU.	Room	5%	nil
AMMONIA, AQU.	Room	10%	nil
ANILINE	Room		no resistance
BARIUM SALTS	Room	cold saturated	nil to slight
BORIC ACID	Room	100%	nil to slight
CALCIUM CHLORIDE	Room	cold saturated	nil to slight
CALCIUM NITRATE	Room	cold saturated	nil to slight
CHROMIUM SALTS, AQU.	Room	cold saturated	nil to slight
COPPER SALTS, AQU.	Room	cold saturated	nil to slight
Fe CHLORIDE, AQU 5%	40°C		slight
HYDROCHLORIC ACID 20%	Room	20%	nil to slight
HYDROGEN PEROXIDE	Room	3%	nil to slight
HYDROGEN SULPHIDE	Room		nil to slight
MAGNESIUM SALTS, AQU.	Room	cold saturated	nil to slight
MERCURY	Room	100%	nil to slight
MERCURY SALTS, AQU.	Room	cold saturated	nil to slight
NICKEL SALTS, AQU.	Room	cold saturated	nil to slight
NITRIC ACID	Room	20%	no resistance
PHOSPHORIC ACID	Room	50%	nil to slight
POTASSIUM CARBONATE, AQU. (POTASH)	Room		nil to slight
POTASSIUM CHLORIDE	Room	cold saturated	nil to slight
POTASSIUM DICHROMATE, AQU.	Room		slight
POTASSIUM IODIE	Room		nil to slight
POTASSIUM NITRATE, AQU.	Room		nil to slight
POTASSIUM PERMANGANATE	Room		nil to slight
POTASSIUM SULPHATE, AQU.	Room		nil to slight
SEA WATER	Room	100%	nil
SILVER SALTS, AQU.	Room		nil to slight
SODIUM BICARBONATE, AQU. (SODA)	Room		slight
SODIUM CHLORIDE, AQU.	Room		nil to slight
SODIUM CHLORIDE SOLUTION, CONC.	Room		nil
SODIUM HYDROXIDE SOLUTION 1N	Room		slight
SODIUM THIOSULPHATE, AQU.	Room		nil to slight
SULPHUR	Room	100%	nil to slight
SULPHUR DIOXIDE	Room		slight
SULPHURIC ACID 20%	Room		slight
TOLUENE	Room	35%	poor
WATER	100°C		poor
WATER	Room		Nil
WATER	80°C		nil to slight

Organic Substances	Temp °C	Concentration	Reaction
ACETIC ACID	Room	20%	slight
ACETONE	Room	40%	poor
ASTM FUEL A	Room	4%	nil
ASTM FUEL B	Room	10%	nil
ASTM FUEL C	Room	18%	nil to slight
ASTM OIL 1	80		nil
ASTM OIL 2	80	3%	nil
ASTM OIL 3	80	6%	nil
BENZENE	Room		poor
BUTANOL	Room		poor
BUTYLE ACETATE	Room	40%	poor
CITRIC ACID	Room		slight
CUTTING OIL	Room		nil to slight
CYCLOHEXANOL	Room	5%	slight
DIBUTYLPHTHALATE	Room	40%	slight
DIESEL OIL	Room		nil to slight
DIESEL OIL	Room	5%	nil
DIETHYLETHER	Room		nil to slight
DIETHYLPRESTONE	Room		nil to slight
DIMETHYLFORMAMIDE	Room		soluable
ETHYL ALCOHOL	Room	100%	slight
ETHYLACETATE	Room	40%	poor
ETHYLETHER	Room		slight
GLYCERIN	Room		nil
GLYCOL	Room	2%	nil
GLYSANTIN / WATER 1:1	Room		slight
GLYSANTIN / WATER 1:1	80		slight
HYDRAULIC OIL	Room		slight
ISOPROPANOL	Room	12%	slight
ISOPROPYL ALCOHOL	Room	100%	slight
KEROSENE	Room	3%	nil
MACHINE OIL	Room		nil to slight
METHANOL	Room	10%	slight
METHYL ALCOHOL	Room	100%	slight
METHYLEN CHLORIDE	Room		no resistance
METHYLETHYLKETONE	Room	45%	poor
MINERAL OIL	80		nil
OLIVE OIL	Room		nil
PARAFFIN OIL	Room		nil to slight
SICCINIC ACID, AQU.	Room	cold saturated	nil to slight
VEGETABLE OIL AND FATS	Room		nil

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# A Complete Family of Etherbus® Solutions



## Etherbus® Industrial Ethernet PoE Switch

The EB-5ES-PSE combines the ultra-reliability of a five port EtherTRAK Real-time Switch with four industrial PoE sourcing outputs. Simply power this switch with 48 VDC to source the PoE lines. The four PoE ports automatically sense and support both PoE and non-PoE (traditional) Ethernet devices. Or power this switch with 10-30 VDC and it functions as a robust industrial switch that is PoE future-ready. **Check out the separate datasheet for more details.**

## Etherbus® Industrial Power Injectors

These space saving industrial PoE injectors convert any standard Ethernet cable into a PoE (Etherbus) channel. Now you do not have to run a separate power cable to your remote devices. The one cable supplies both power and data to your PoE-enabled, non-PoE or even non-Ethernet devices (see the PoE splitter below). The EB-PSE-48V-2 model runs on 48 VDC and can source two PoE channels. The EB-PSE-24V-1 model runs directly on your 24 VDC (no extra supply needed) and can source one PoE channel. Stack these slim units on your DIN rail to create multiple PoE sourcing cables. **Check out the separate datasheet for more details.**



## Etherbus® Industrial Power Splitters

These space saving industrial PoE splitters give you all the benefits of Power over Ethernet (PoE) without needing to upgrade your existing non-PoE Ethernet devices. These splitters generate isolated 24 VDC power for your non-PoE or even non-Ethernet devices. Think of this splitter as an industrial 24 VDC power supply that is powered by your incoming PoE (Etherbus) cable. The Ethernet output can be connected to any traditional (non-PoE) Ethernet device. **Check out the separate datasheet for more details.**

## Etherbus® Industrial Ethernet Connectors

Etherbus features the Amphenol RJField reverse-bayonet quick latching (1/4 turn) connector system. These IP67 rated connectors and plugs are water and corrosion proof. The bulk-head connector allows you to interface between standard Ethernet wiring inside a cabinet to industrial cabling outside. The mating plugs can be easily field installed around an existing Ethernet cable without the need for tools. **Check out the separate datasheet for more details.**



## Etherbus® Industrial Power Supplies

SIXNET offers several industrial power supplies to meet your PoE, 24 VDC or 48 VDC power needs. AC to 48 VDC models are available with up to 120 Watts or more. Plus a 48 VDC to 24 VDC compact unit gives you 15 watts of power. This supply is ideal for powering industrial equipment from the 48 VDC power sources found in telecommunication or Etherbus systems. **Check out the separate datasheet for more details.**

**Request Your  
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