



Copper Connectivity Solutions – Category 6a UTP



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Copper Connectivity Solutions – Category 6a UTP

Introduction

The CopperTen® system is the world's first UTP structured cabling system with the necessary characteristics to enable 10Gbps Ethernet transmission over a full 100 meters. Typical Category 6 cabling systems are hindered by the technical combination of insertion loss and alien crosstalk (interference from adjacent cables) at higher frequencies. Alien crosstalk greatly disrupts transmission and high-speed data communications. The CopperTen system incorporates patent-pending design and manufacturing processes that enable the products to overcome these challenges.





Copper Connectivity Solutions – Category 6a UTP

CopperTen® Augmented Category 6 Horizontal Cable

CopperTen® Category 6a Plenum Data Cable

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Features

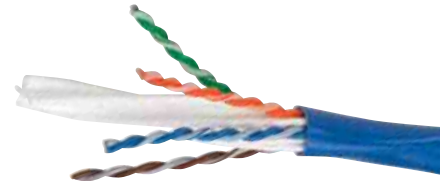
- Unique oblique elliptical offset filler for improved alien crosstalk
- Features AirES® technology
- Manufactured with lead-free materials

Common Applications

- 4/16Mbps Token Ring (IEEE 802.5)
- 10Base-T (IEEE 802.3)
- 100Mbps TP-PMD
- Broadband and baseband video
- 100Base-T (Fast Ethernet)
- 100Base-T4 (Fast Ethernet)
- 100Base-TX (Fast Ethernet)
- 100VG-Any LAN (IEEE 802.12)
- 52/155Mbps ATM (ATM Forum)
- 622Mbps ATM (ATM Forum)
- 1000Base-T (Gigabit Ethernet)
- 1 Gigabit Networking System (WGNA)
- 1.2Gbps ATM (ATM Forum)
- 77 Channel broadband video
- 10GBase-T Ethernet (802.3an)

Compliances

- UL Subject 444
- (UL)-C(UL) Type CMP
- ICEA S-90-661
- NEC 800 Type CMP
- TIA/EIA 568-B.2-10 Standards
- ISO/IEC 11801 Class EA Horizontal Cable Requirements



Ordering Information

Description	Catalog Number*
4-pair Plenum data cable 1000' reel	10G-A6TP-XX02

Additional packaging options are available, please contact ADC Technical Assistance Center.

*To order jacket color, replace XX with:

- BL = Blue WT = White
- GY = Gray GN = Green
- YL = Yellow RD = Red

Specifications

- Conductor:** 23 AWG solid bare copper
- Insulation:** All 4 pairs 100% FEP
- Separator:** Fluoropolymer
- Jacket:** Non-lead, flame retardant PVC
- Nominal outer diameter:** 0.275" (7.0mm)
- Maximum average outer diameter:** 0.275" (7.0mm)

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Copper Connectivity Solutions – Category 6a UTP

CopperTen® Augmented Category 6 Horizontal Cable

CopperTen® Category 6a Riser Data Cable

Features

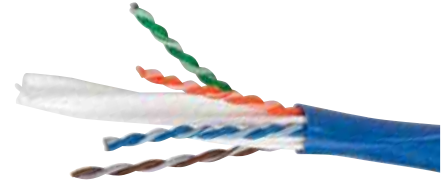
- Unique oblique elliptical offset filler for improved alien crosstalk
- Manufactured with lead-free materials

Common Applications

- 4/16Mbps Token Ring (IEEE 802.5)
- 10Base-T (IEEE 802.3)
- 100Mbps TP-PMD
- Broadband and baseband video
- 100Base-T (Fast Ethernet)
- 100Base-T4 (Fast Ethernet)
- 100Base-TX (Fast Ethernet)
- 100VG-Any LAN (IEEE 802.12)
- 52/155Mbps ATM (ATM Forum)
- 622Mbps ATM (ATM Forum)
- 1000Base-T (Gigabit Ethernet)
- 1 Gigabit Networking System (WGNA)
- 1.2Gbps ATM (ATM Forum)
- 77 Channel broadband video
- 10GBase-T Ethernet (IEEE 802.3an) proposed

Compliances

- UL Subject 444
- (UL)-C(UL) Type CMR/CMG
- ICEA S-90-661
- NEC 800 Type CMR
- TIA/EIA 568-B.2-10 Standards
- ISO/IEC 11801 Class EA Horizontal Cable Requirements
- Fire load: 822kJ/m (0.23kWh/m)



Ordering Information

Description	Catalog Number*
4-pair riser data cable 1000' reel	10G-A6TR-XX02

Additional packaging options are available, please contact ADC Technical Assistance Center.

*To order jacket color, replace XX with:

- BL = Blue WT = White
- GY = Gray GN = Green
- YL = Yellow RD = Red

Specifications

- Conductor:** 23 AWG solid bare copper
- Insulation:** 100% Polyolefin
- Separator:** Flame retardant polyolefin
- Jacket:** Non-lead, flame retardant PVC
- Nominal outer diameter:** 0.295" (7.5mm)
- Maximum average outer diameter:** 0.295" (7.5mm)



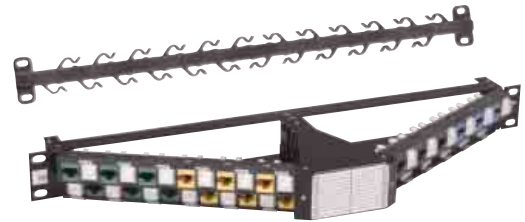
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CopperTen® Augmented Category 6 Patch Panels

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The CopperTen® Augmented Category 6 Angled Patch Panel optimizes 10 Gb/s transmission performance with offset jack positioning to counter the negative effects of alien crosstalk. The angled port design improves all aspects in managing horizontal cable and patch cables while improving density when used with Glide Cable Management. It also makes modifications easy, avoids unintended disconnects and cable damage, and protects bend radius to avoid violations that result in signal degradation.

An integral part of ADC's TrueNet® Structured Cabling System, CopperTen® is the world's first UTP structured cabling system to enable 10 Gigabit Ethernet over a full 100 meters. Installed in high-performance networks worldwide, the system's patent-pending design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.



Features

- Angled design eases stress on patch cords while maximizing 10 Gigabit performance
- UL1863 Listed
- High-density design with 24 ports in a single rack unit
- Unique polymer design helps eliminate alien crosstalk
- Rear cable manager included

Specifications

Operating Temperature Range:	-10° to 70 °C (14° to 158 °F)
Material Construction:	Molded glass filled Polycarbonate and 16 gauge cold rolled steel
Color:	Black
Dimensions:	44.45 mm x 482.6 mm x 139.7 mm (1.75" x 19.0" x 5.5")
Safety Rating:	UL 1863
Flammability Rating:	UL94 V-0

Ordering Information

Description	Catalog Number
Patch Panel	
24-port angled patch panel 1RU unloaded	TPNP-24APC10-UN
24-port angled patch panel 1RU loaded with black CopperTen Jacks	TPNP-24APC10-BK
Wire Management Bracket for Cabinets in Data Center Applications	
CopperTen Cable Manager Bracket	TPNP-NNC10-WM-BKT

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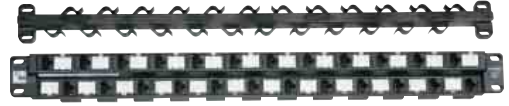
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CopperTen® Augmented Category 6 Patch Panels

CopperTen® Patch Panels

Features

- Installed with CopperTen jacks, meets TIA/EIA 568-B.2-10 standards
- Staggered port design and isolation bar provide improved alien crosstalk performance
- One rack unit, 24-port design provides high density and flexibility
- Rear wire manager included
- Write-on label area for quick, precise port labeling
- Accepts a wide range of ADC connectors
- UL 1863 safety rating
- Unique polymer design helps eliminate alien crosstalk



Loaded



Unloaded

Ordering Information

Description	Dimensions (HxWxD)	Catalog Number
1RU, 24-port patch panel	1.75" x 19" x 3" (44.45mm x 182.6mm x 76.2mm)	
Unloaded		TPNP-NNC10-NN
Loaded with black CopperTen jacks		TPNP-24NC 10-BK



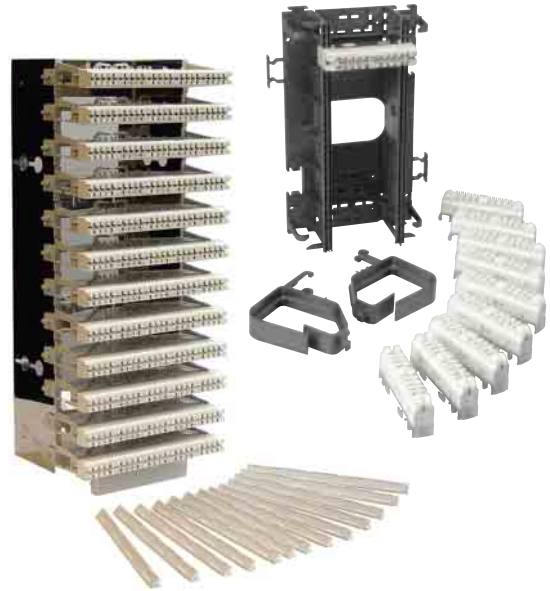
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CopperTen® Termination Blocks

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Features

- Meets performance requirements of TIA/EIA 568-B.2-10 standards
- 45-degree silver-plated IDCs provide secure, reliable gas-tight connections
- Color-coded for ease of termination
- Meets PowerSum ANEXT for 10G Base-T channel performance
- Each module accommodates five 4-pair UTP CopperTen cables
- Modules are terminated with the standard KRONE® termination tools, and may also be terminated with a 110 tool
- Four-pair to four-pair patch cords are available for Patch By Exception installations
- Four-pair to RJ45 cords are available to interface with network and other equipment



Ordering Information

Description		Catalog Number
CopperTen 12-position termination block and mounting kit Includes: stainless steel 12-position mounting frame; 12 CopperTen modules with rear cable management, each module accommodating (5) 4-pair CopperTen cables; 12 label holders		6450 1 107-00
CopperTen management kit Includes: dual cable management rings and cord cover		6450 1 103-00
Description	Dimensions (HxWxD)	Catalog Number
CopperTen 8 pair block field assembly kit		
80-pair (20 port) Supports field termination of (20) 4 pair cables. Includes (10) 8-pair CopperTen blocks, (2) horizontal wire managers, (1) black or gray universal mounting bracket and (1) type 105 label holder with label and protective cover	14.75" x 8.25" x 5.25" (374.7mm x 209.6mm x 33.4mm)	
80-pair (20 port) kit; Including black universal mounting kit		6636 1 598-46
80-pair (20 port) kit; Including gray universal mounting kit		6636 1 598-06

Copper Connectivity Solutions – Category 6a UTP



Copper Connectivity Solutions – Category 6a UTP

CopperTen® Termination Blocks

CopperTen® Augmented Category 6 8-Pair Block

A key component of the TrueNet® channel solution, ADC's highest performing termination block, offers versatility not possible with patch panels. The CopperTen® 8-pair block's unique center port eliminates the need to remove cables for testing and because patch cords are "temporary", the system saves thousands over traditional patched solutions. Installations are hardwired providing the cleanest, most secure, reliable and high performing Category 6a system available.



Features

- Supports 10 Gigabit Ethernet over UTP copper to a full 100 meters
- Center test port allows for circuit monitoring without service disruption
- Unique Patch-by-Exception functionality saves time and money while improving performance and aesthetics
- Design for use with ADC TrueNet Universal Mounting System (UMS) and Type 105 Rod-Mount Bracket
- 20 year TrueNet CopperTen warranty



Copper Connectivity Solutions – Category 6a UTP

CopperTen® Termination Blocks

CopperTen® Augmented Category 6 8-Pair Block

Specifications

Environment for use:	Indoors or in dry enclosure rated IP54 or greater
Operating temperature range:	-20°C to +80°C
Maximum relative humidity:	93% non-condensing
Wire range for solid & stranded copper conductors:	0.4-0.65 (26-22 AWG)*
Wire insulation diameter range (PE, PVC):	Typically 0.7-1.4
Number of wire re-terminations:	Up to 200
Wire insertion force (0.5 conductor diameter):	6N
Wire pull out force, radial (0.5 conductor diameter):	5N
Wire pull out force, axial (0.5 conductor diameter):	35N
Number of patching cycles	
Modules:	Up to 750
Patch plugs:	Up to 200
Transmission & reliability:	≥ TIA/EIA 568-B.2-1, TIA/EIA 568-B.2-10 standard Category 6a ≥ ISO/IEC 11801 Class F
Change of contact interface resistance after reliability testing to ISO/IEC 11801 and TIA/EIA 568B per through connection. ie. 2 insulation displacement and 1 disconnection contact joint:	
Voltage/current rating at 25°C ambient:	< 5m Typical 150V AC at 2.5A max.
Dielectric strength:	1.5kV AC
Surge voltage strength (1.2/50 sec wave shape):	2.5kV
Surge current strength (8/20 sec wave shape)	
Modules:	3kA
Patch plugs:	0.5kA
Insulation resistance:	50,000 M at 500 VDC
Safety:	UL 1863
Flammability rating of plastic housing:	UL 94 V0

RoHS compliant to the European Union Directive 2002/95/EC

* Should there be a requirement to terminate cables other than 10 Gigabit cable, a maximum of 2 equal, solid conductors only, of up to 0.5 conductor diameter can be terminated per slot. Only 1 conductor of stranded wires per slot can be terminated. If any conductors >0.5 have been terminated, reversal to smaller conductors is no longer possible.

Ordering Information

Description	Catalog Number
CopperTen Disconnection Module, 8 pair	6468 5 070-00

BX (Box=10 each)

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CopperTen® Modular Jack

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Features

- Meets or exceeds performance requirements of TIA/EIA 568-B.2-10 standards
- 45-degree silver-plated IDCs provide secure, reliable gas-tight connections
- Accepts KRONE® or 110 tool for wire termination
- Universal A/B wiring label
- Modular jacks fit port openings of 0.585" x 0.757" (14.86mm x 19.23mm) with plate thickness from 0.048" to 0.060" (1.23mm x 1.52mm)



Ordering Information

Description	Catalog Number*
CopperTen RJ45 UTP modular 568A/B jack Quantity: 1	6830 1 835-XX

Replace XX with:

01 = White	06 = Blue
02 = Ivory	07 = Green
03 = Gray	08 = Yellow
04 = Black	09 = Purple
05 = Red	10 = Orange
22 = Electrical Ivory	



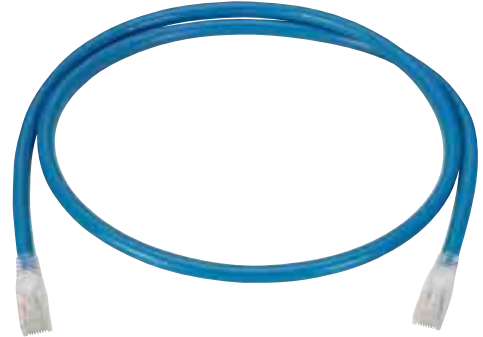
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CopperTen® Patch Cords

6 / 1 0 • 1 0 2 0 9 4 A E TrueNet® Structured Cabling

Features

- Meets or exceeds performance requirements TIA/EIA 568-B.2-10 standards
- Copper conductors in the cable pairs are stranded for superior flexibility and compacted to a near-round shape for optimum signal strength
- Snag-less plug design with built-in strain relief
- UL 1863 safety rating



Ordering Information

Description	Catalog Number*
RJ45 to RJ45 patch cord	
568B wiring	6645-2-8X5-YY
568A wiring	6645-2-8X0-YY

*Replace X for color:

- | | |
|-----------|------------|
| 0 = White | 3 = Yellow |
| 1 = Red | 4 = Green |
| 2 = Blue | 6 = Gray |

*Replace YY for length:

- | | |
|----------|----------|
| 04 = 4' | 15 = 15' |
| 07 = 7' | 25 = 25' |
| 10 = 10' | 50 = 50" |

Contact ADC for information on additional colors and custom lengths

Copper Connectivity Solutions – Category 6a UTP



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Augmented Category 6 Patch Cords For CopperTen® 8-pair and 20-pair Termination Blocks

Impedance matched for use in TrueNet® structured cabling systems; these CopperTen termination block patch cords exceed all performance requirements for Augmented Category 6. These cords allow direct patching capability between CopperTen 8-pair and 20-pair blocks or patching from a CopperTen termination block to an active device or an RJ45 patch panel. The plug is designed with integrated strain relievers that prevent the cable from moving at the termination point when the cable is flexed, safeguarding circuit integrity and guaranteeing maximum performance.



Features

- Meets or exceeds TIA/EIA and ISO Augmented Category 6 requirements
- Protective shroud to assist in protecting the user from electrical transfer on the contacts
- Impedance matched patch cord for maximum throughput
- Flexible strain relief boot maintains proper bend radius to ensure peak performance
- UL 1863 listed
- Durable design to be in operation beyond 20-year product warranty

Specifications

Environment for use:	Indoors, in dry closed rooms
Operation temperature range:	-10°C to + 60°C
Maximum relative humidity:	≤93% non-condensing
Insulation resistance:	100MΩ at 500 VDC
Flammability rating of plastic housing:	UL 94 V0change
No. of PCB insertion cycles:	Typically 200
Plug Material:	Tough Thermoplastic Polymer
Safety:	UL1863



Copper Connectivity Solutions – Category 6a UTP

Augmented Category 6 Patch Cords

For CopperTen® 8-pair and 20-pair Termination Blocks

Ordering Information

Description	Catalog Number
CopperTen 4-pair to CopperTen 4-Pair	
CopperTen 4-Pair to CopperTen 4-Pair wired 568B	TP6ATH-XXYY
CopperTen 4-Pair to CopperTen 4-Pair wired 568A	TP6ATH0XXYY
CopperTen 4-pair to RJ45	
CopperTen 4-Pair to RJ45 Plug wired 568B	TP6ATB-XXYY
CopperTen 4-Pair to RJ45 Plug wired 568A	TP6ATB0XXYY

Sub XX for color: BL=Blue, BK=Black, GY=Gray, RD=Red, GN=Green, YL=Yellow, WT=White
Call ADC for additional colors

Sub YY for length: 04= 4 feet, 07= 7 feet, 10=10 feet, 15=15 Feet, 25=25 feet, 50=50 feet
Call ADC for additional lengths

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Copper Connectivity Solutions – Category 6a UTP



Copper Connectivity Solutions – Category 6a UTP

CopperTen® 4-Port Staggered Faceplate

Features and Benefits

- Unique staggered four-port design supports 10 Gigabit Ethernet performance by countering the negative effects of alien crosstalk
- Fits standard single gang box
- UL 1863 listed
- Increases workstation density in a single gang mounting platform while optimizing Augmented Category 6 performance



CopperTen® 4-port Staggered Faceplate shown with CopperTen® Modular Jacks

Applications

- Workstation mounting platform for modular voice, video and data connectors delivering high performance solutions

Ordering Information

Description	Catalog Number*
CopperTen 4-port staggered faceplate Includes: 2 blank paper labels, 2 clear plastic protectors, 1 logo insert, 6 reversible ID tabs numbered 1–6 (ID tabs match faceplate colors), mounting screws (#6-32 x 15/16")	TNSCSFPSO4-XX

*Replace XX with:
 WT = White, IV = Ivory, GY = Grey, BK = Black



Copper Connectivity Solutions – Category 6a UTP

CopperTen® 6-Port Surface Mount Box

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Features and Benefits

- Unique six-port design supports 10 Gigabit Ethernet performance by countering the negative effects of alien crosstalk
- Fits standard single gang box or any furniture raceway opening
- Knockouts allow cable and raceway access
- UL 1863 listed
- Increases workstation density in a single gang mounting platform while optimizing Augmented Category 6 performance
- Six-port surface mount box design allows proper bend radius for Augmented Category 6 cables



CopperTen® 6-port surface mount box shown with CopperTen® Modular Jacks

Applications

- Workstation mounting platform for modular voice, video and data connectors delivering high performance solution

Ordering Information

Description	Catalog Number*
CopperTen 6-port surface mount box Includes: 2 blank paper labels, 2 clear plastic protectors, 1 logo insert, 6 reversible ID tabs numbered 1–6 (ID tabs match faceplate color), 1 hook-and-loop fastener strip, 1 millie tie for cable management, 2 mounting screws (#6-32 x 15/16")	TNSCSSB6-XX

*Replace XX with:
 WT = White, IV = Ivory, GY = Grey, BK = Black

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