



Copper Connectivity Solutions – Category 6a F/UTP



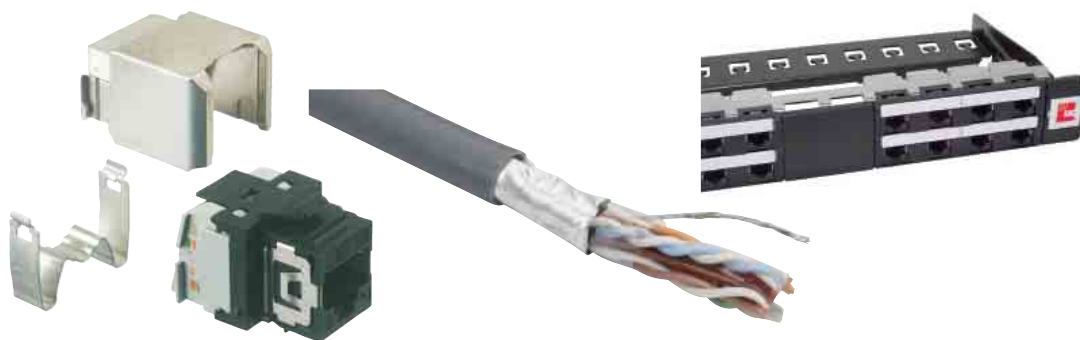
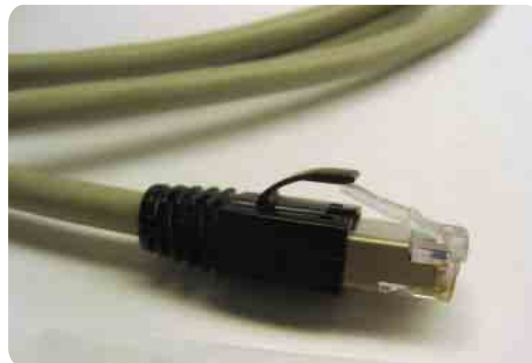
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Copper Connectivity Solutions – Category 6a F/UTP

Introduction

The TrueNet® CopperTen® F/UTP Solution supports 10 Gigabit Ethernet to a full 100m. At high frequencies associated with 10 Gigabit per second transmission speeds alien crosstalk (interference between adjacent cables) hinders performance. The shielding used in the CopperTen F/UTP solution effectively eliminates all alien crosstalk allowing data transmission rates of 10 Gigabits per second.



Features

- Exceeds the requirements of IEEE 802.3an (10GBASE-T) and ISO/IEC 11801:2002 amendment/channel requirements
- Maximizes productivity levels with 10 times the data throughput of Category 6
- True future proofing for tomorrow's network applications
- Covered by the TrueNet® System Warranty

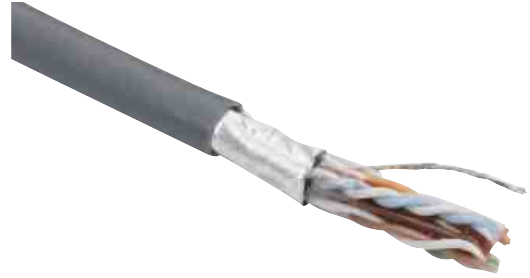
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Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Plenum Cable

ADC F/UTP CopperTen® cable can be used in data center, communications closet and work station for 10G shielded performance. Installed in high-performance networks world wide, the system's design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.



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Features

- Supports 10 Gigabit Ethernet over shielded copper to a full 100 meters
- Covered by the 20 year TrueNet CopperTen warranty

Common Applications

- 4/16 Mb/s Token Ring (IEEE 802.5)
- 10Base-T (IEEE 802.3)
- 100 Mb/s TP-PMD
- Broadband & Baseband Video
- 100Base-T ("Fast Ethernet")
- 100Base-T4 ("Fast Ethernet")
- 100Base-TX ("Fast Ethernet")
- 100VG-Any LAN (IEEE 802.12)
- 52/155 Mb/s ATM (ATM Forum)
- 622 Mb/s ATM (ATM Forum)
- 1000Base-T (Gigabit Ethernet)
- 1 Gigabit Networking System (WGNA)
- 1.2 Gb/s ATM (ATM Forum)
- 77 Channel Broadband Video
- 10GBASE-T Ethernet (IEEE P802.3an)

Compliances

- UL Subject 444
- (UL)-C(UL) Type CMP
- ICEA S-90-661
- NEC 800 Type CMP
- TIA/EIA-568-B.2-1 Category 6 Horizontal Cable Requirements
- ETL Verified TIA/EIA-568-B.2-10 Augmented Category 6 Horizontal Cable Requirements
- ISO/IEC 11801 Category 6 Horizontal Cable Requirements
- ISO/IEC 11801 Category 6a Class EA Horizontal Cable Requirements

Copper Connectivity Solutions – Category 6a F/UTP



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Plenum Cable

Specifications

CONSTRUCTION:

Conductor:	23 AWG solid bare copper
Insulation:	Foamed FEP
Separator:	Fluoropolymer
Shield:	Aluminum/polyester foil
Drain Wire:	Stranded tinned copper
Jacket:	Lead-free, flame retardant PVC
Nominal O.D.:	.285" (7.2mm)

THERMAL CHARACTERISTICS:

Transport and Storage:	-10°C to 60°C
Installation:	4°C to 50°C
Operation:	-10°C to 60°C

MECHANICAL CHARACTERISTICS:

Bend Radius	
During Installation:	16 X O.D.
Installed:	8 X O.D.
Pull Tension:	25 lb/f (110N)

ELECTRICAL CHARACTERISTICS:

Conductor DC Resistance @ 20°C (Max):	28.6 Ω/1000 ft (9.38 Ω/100 m)
DC Resistance Unbalance (Max):	5%
Mutual Capacitance @ 20°C (Max):	17 pF/ft (5.6nF/100 m)
Operating Voltage (Max):	300 VDC
Worst Case Cable Skew:	45 ns/100 m
Nominal Velocity of Propagation:	72%



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Plenum Cable

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FREQ MHZ	Fitted Impedance Ohms	Insertion Loss dB/100m		Return Loss dB/100m		Pair-Pair NEXT dB/100m		PSNEXT dB/100m	
	Spec	Max	Spec	Min	Spec	Min	Spec	Min	Spec
1	100 +/- 15	1.7	2	24.3	20	85.9	74.3	83.2	72.3
4	100 +/- 15	3.4	3.7	27.1	23	75.9	65.3	73	63.3
8	100 +/- 15	4.8	5.2	29.4	24.5	68.6	60.8	65.4	58.8
10	100 +/- 15	5.4	5.9	31	25	61.5	59.3	59.1	57.3
16	100 +/- 15	6.8	7.4	30.4	25	63.6	56.2	62.7	54.2
20	100 +/- 15	7.6	8.3	31.6	25	65.4	54.8	62.7	52.8
25	100 +/- 15	8.6	9.3	33.1	24.3	62.6	53.3	58.6	51.3
31.25	100 +/- 15	9.7	10.4	34.2	23.6	67.1	51.9	63.5	49.9
62.5	100 +/- 15	13.9	14.9	31.1	21.5	54	47.4	52.5	45.4
100	100 +/- 15	17.9	19	28.9	20.1	52.7	44.3	50.7	42.3
155	100 +/- 15	22.6	24	33	18.8	45.3	41.4	44.7	39.4
200	100 +/- 15	26.1	27.5	23.5	18	50.7	39.8	48.7	37.8
250	100 +/- 15	29.4	31	22.9	17.3	42.3	38.3	41.1	36.3
300	100 +/- 15	32.7	34.2	26.2	16.8	43.1	37.1	40.5	35.1
350	100 +/- 15	35.8	37.2	22.9	16.3	45.2	36.1	42.2	34.1
400	100 +/- 15	38.7	40	21.9	15.9	44.7	35.3	41.4	33.3
450	100 +/- 15	41.5	42.7	22.4	15.5	39.2	34.5	37.8	32.5
500	100 +/- 15	44.1	45.3	20.1	15.2	36.7	33.8	35.2	31.8
550	100 +/- 15	46.9	-	21.7	-	39.9	-	38.6	-
600	100 +/- 15	49.5	-	17	-	36.6	-	34.4	-

Copper Connectivity Solutions – Category 6a F/UTP



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Plenum Cable

FREQ MHZ	Pair-Pair ACR dB/100m		PSACR dB/100m		Pair-Pair ELFEXT dB/100m		PSNEXT dB/100m		TCL
	Max	Spec	Min	Spec	Min	Spec	Min	Spec	Spec
1	84.2	72.3	81.5	70.3	83.8	67.8	83.1	64.8	40.0
4	72.7	61.5	69.8	59.5	75.8	55.8	75.2	52.8	40.0
8	64.1	55.5	60.9	53.5	64.2	49.7	62.5	46.7	40.0
10	56.5	53.4	54.0	51.4	64.0	47.8	60.3	44.8	40.0
16	57.2	48.8	56.3	46.8	63.7	43.7	61.2	40.7	38.0
20	58.1	46.5	55.1	44.5	59.9	41.8	58.4	38.8	37.0
25	54.4	44.0	50.4	42.0	57.5	39.8	56.9	36.8	36.0
31.25	57.5	41.5	53.8	39.5	55.4	37.9	55.6	34.9	35.1
62.5	40.8	32.5	39.3	30.5	52.4	31.9	50.6	28.9	32.0
100	35.7	25.3	33.4	23.3	52.9	27.8	51.1	24.8	30.0
155	23.7	17.5	22.1	15.5	45.4	24.0	43.8	21.0	28.1
200	25.8	12.3	23.8	10.3	46.0	21.8	43.4	18.8	27.0
250	14.2	7.4	12.5	5.4	43.0	19.8	41.0	16.8	26.0
300	11.9	3.0	9.3	1.0	43.0	18.3	39.3	15.3	-
350	11.0	-1.0	8.1	-3.0	39.0	16.9	38.3	13.9	-
400	7.5	-4.7	3.4	-6.7	37.5	15.8	35.7	12.8	-
450	-0.7	-8.2	-2.2	-10.2	38.9	14.7	36.2	11.7	-
500	-5.7	-11.4	-7.2	-13.4	39.5	13.8	35.4	10.8	-
550	-5.6	-	-6.9	-	31.9	-	32.3	-	-
600	-12.9	-	-14.4	-	31.2	-	29.2	-	-

NOTE: The above listed discrete frequency electrical performance values are provided for engineering information only. Actual compliance testing is based on swept frequency measurements. The spec values are based on TIA/EIA-568-B.2-10 specification.

Ordering Information

Description	Catalog Number
1000 foot reel, 42lbs 62kg	10G-A6TPF-XX02

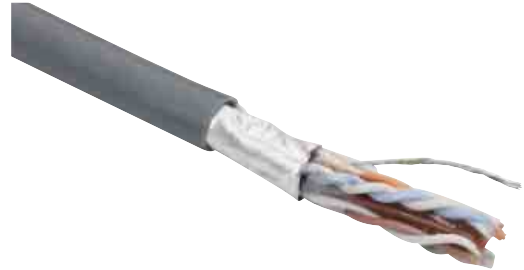
NOTES: XX = Jacket color - BL = Blue, WT = White, GY = Gray



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Riser Cable

ADC F/UTP CopperTen® cable can be used in data center, communications closet and work station for 10G shielded performance. Installed in high-performance networks world wide, the system's design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.



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Features

- Supports 10 Gigabit Ethernet over shielded copper to a full 100 meters
- 20 year TrueNet CopperTen warranty

Common Applications

- 4/16 Mb/s Token Ring (IEEE 802.5)
- 10Base-T (IEEE 802.3)
- 100 Mb/s TP-PMD
- Broadband & Baseband Video
- 100Base-T ("Fast Ethernet")
- 100Base-T4 ("Fast Ethernet")
- 100Base-TX ("Fast Ethernet")
- 100VG-Any LAN (IEEE 802.12)
- 52/155 Mb/s ATM (ATM Forum)
- 622 Mb/s ATM (ATM Forum)
- 1000Base-T (Gigabit Ethernet)
- 1 Gigabit Networking System (WGNA)
- 1.2 Gb/s ATM (ATM Forum)
- 77 Channel Broadband Video
- 10GBASE-T Ethernet (IEEE P802.3an)

Compliances

- UL Subject 444
- (UL)-C(UL) Type CMR
- ICEA S-90-661
- NEC 800 Type CMR
- TIA/EIA-568-B.2-1 Category 6 Horizontal Cable Requirements
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- ISO/IEC 11801 Category 6 Horizontal Cable Requirements
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Copper Connectivity Solutions – Category 6a F/UTP



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Riser Cable

Specifications

CONSTRUCTION:

Conductor:	23 AWG solid bare copper
Insulation:	HDPE
Separator:	HDPE
Shield:	Aluminum/polyester foil
Drain Wire:	Stranded tinned copper
Jacket:	Lead-free, flame retardant PVC
Nominal O.D.:	.280" (7.1mm)

THERMAL CHARACTERISTICS:

Transport and Storage:	-10°C to 60°C
Installation:	4°C to 50°C
Operation:	-10°C to 60°C

MECHANICAL CHARACTERISTICS:

Bend Radius	
During Installation:	16 X O.D.
Installed:	8 X O.D.
Pull Tension:	25 lb/f (110N)

ELECTRICAL CHARACTERISTICS:

Conductor DC Resistance @ 20°C (Max):	28.6 Ω/1000 ft (9.38 Ω/100 m)
DC Resistance Unbalance (Max):	5%
Mutual Capacitance @ 20°C (Max):	17 pF/ft (5.6nF/100 m)
Operating Voltage (Max):	300 VDC
Worst Case Cable Skew:	45 ns/100 m
Nominal Velocity of Propagation:	72%



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Riser Cable

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FREQ MHZ	Fitted Impedance Ohms	Insertion Loss dB/100m		Return Loss dB/100m		Pair-Pair NEXT dB/100m		PSNEXT dB/100m	
	Spec	Max	Spec	Min	Spec	Min	Spec	Min	Spec
1	100 +/- 15	1.7	2.0	24.3	20.0	85.9	74.3	83.2	72.3
4	100 +/- 15	3.4	3.7	27.1	23.0	75.9	65.3	73.0	63.3
8	100 +/- 15	4.8	5.2	29.4	24.5	68.6	60.8	65.4	58.8
10	100 +/- 15	5.4	5.9	31.0	25.0	61.5	59.3	59.1	57.3
16	100 +/- 15	6.8	7.4	30.4	25.0	63.6	56.2	62.7	54.2
20	100 +/- 15	7.6	8.3	31.6	25.0	65.4	54.8	62.7	52.8
25	100 +/- 15	8.6	9.3	33.1	24.3	62.6	53.3	58.6	51.3
31.25	100 +/- 15	9.7	10.4	34.2	23.6	67.1	51.9	63.5	49.9
62.5	100 +/- 15	13.9	14.9	31.1	21.5	54.0	47.4	52.5	45.4
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200	100 +/- 15	26.1	27.5	23.5	18.0	50.7	39.8	48.7	37.8
250	100 +/- 15	29.4	31.0	22.9	17.3	42.3	38.3	41.1	36.3
300	100 +/- 15	32.7	34.2	26.2	16.8	43.1	37.1	40.5	35.1
350	100 +/- 15	35.8	37.2	22.9	16.3	45.2	36.1	42.2	34.1
400	100 +/- 15	38.7	40.0	21.9	15.9	44.7	35.3	41.4	33.3
450	100 +/- 15	41.5	42.7	22.4	15.5	39.2	34.5	37.8	32.5
500	100 +/- 15	44.1	45.3	20.1	15.2	36.7	33.8	35.2	31.8
550	100 +/- 15	46.9	-	21.7	-	39.9	-	38.6	-
600	100 +/- 15	49.5	-	17.0	-	36.6	-	34.4	-

Copper Connectivity Solutions – Category 6a F/UTP



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Four-Pair F/UTP Riser Cable

FREQ MHZ	Pair-Pair ACR dB/100m		PSACR dB/100m		Pair-Pair ELFEXT dB/100m		PSNEXT dB/100m		TCL
	Max	Spec	Min	Spec	Min	Spec	Min	Spec	Spec
1	84.2	72.3	81.5	70.3	83.8	67.8	83.1	64.8	40.0
4	72.7	61.5	69.8	59.5	75.8	55.8	75.2	52.8	40.0
8	64.1	55.5	60.9	53.5	64.2	49.7	62.5	46.7	40.0
10	56.5	53.4	54.0	51.4	64.0	47.8	60.3	44.8	40.0
16	57.2	48.8	56.3	46.8	63.7	43.7	61.2	40.7	38.0
20	58.1	46.5	55.1	44.5	59.9	41.8	58.4	38.8	37.0
25	54.4	44.0	50.4	42.0	57.5	39.8	56.9	36.8	36.0
31.25	57.5	41.5	53.8	39.5	55.4	37.9	55.6	34.9	35.1
62.5	40.8	32.5	39.3	30.5	52.4	31.9	50.6	28.9	32.0
100	35.7	25.3	33.4	23.3	52.9	27.8	51.1	24.8	30.0
155	23.7	17.5	22.1	15.5	45.4	24.0	43.8	21.0	28.1
200	25.8	12.3	23.8	10.3	46.0	21.8	43.4	18.8	27.0
250	14.2	7.4	12.5	5.4	43.0	19.8	41.0	16.8	26.0
300	11.9	3.0	9.3	1.0	43.0	18.3	39.3	15.3	-
350	11.0	-1.0	8.1	-3.0	39.0	16.9	38.3	13.9	-
400	7.5	-4.7	3.4	-6.7	37.5	15.8	35.7	12.8	-
450	-0.7	-8.2	-2.2	-10.2	38.9	14.7	36.2	11.7	-
500	-5.7	-11.4	-7.2	-13.4	39.5	13.8	35.4	10.8	-
550	-5.6	-	-6.9	-	31.9	-	32.3	-	-
600	-12.9	-	-14.4	-	31.2	-	29.2	-	-

NOTE: The above listed discrete frequency electrical performance values are provided for engineering information only. Actual compliance testing is based on swept frequency measurements. The spec values are based on TIA/EIA-568-B.2-10 specification.

Ordering Information

Description	Catalog Number
1000 foot reel, 41lbs 61kg	10G-A6TRF-XX02

NOTES: XX = Jacket color - BL = Blue, WT = White, GY = Gray



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Augmented Category 6 F/UTP Patch Panels

ADC's F/UTP CopperTen patch panels can be used in data center, communications closet and workstation for 10G shielded performance. Installed in high-performance networks world wide, the system's design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.



Features

- Mounts in standard EIA 19-inch (482.6mm) rack
- Designed specifically to be used with ADC Augmented Category 6 shielded jack

Specifications

Operating Temperature Range:

-40° C to 70° C (-40° F to 158° F)

Safety Rating:

UL 1863

Flammability Rating:

UL 94-V0

Ordering Information

Description	Catalog Number
CopperTen Augmented Category 6 F/UTP Patch Panels	
1U Patch Panel, Category 6 KM8 shielded 24 ports	7022 1 155-24
1U Patch Panel, Category 6 KM8 shielded 24 ports (unloaded)	7022 2 155-24



Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Augmented Category 6 Shielded RJ45 Jack

ADC shielded CopperTen jacks can be used in data center, communications closet and work station for 10G shielded performance. Installed in high-performance networks world wide, the system's design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.



Features

- TrueNet impedance matched jacks guarantee maximum throughput
- Forty-five degree silver-plated IDCs provide secure, reliable gas-tight connections
- Universal A/B wiring label

Specifications

Operating Temperature Range:	-40° to 70 °C (-40° to 158 °F)
RJ Socket, 8 Positions, General Specification:	FCC Part 68.500 (IEC 603-7)
Transmission Performance and Reliability:	≥ EIA/TIA 568-B.2-10 standard
Number of Plug Insertion Cycles:	≥ 750 (IEC/EN 60603-7)
LSA-PLUS® Insulation Displacement	
Wire Diameter Range for Solid and 22-24 AWG	
Stranded Copper Conductors:	0.50 mm to 0.65 mm (0.016" to 0.025")
Wire Insulation Diameter Range (PE,PVC):	1.04 mm to 1.60 mm (0.041" to 0.063")
Contact Resistance:	≤ 1 mΩ typical
Contact Re-terminations:	≥ 200
Insulation Resistance at 40 °C (104 °F) and 93% RH:	≥ 500 MΩ (IEC 512-2-3a)
Safety Rating:	UL 1863
Flammability Rating:	UL 94 V-0

Ordering Information

Description	Catalog Number
C6a shielded 568A/B RJ45 jack	6830 1 811-XX

Substitute XX for jack colors- 01=White, 02=Ivory, 03=Gray and 04=Black. Call ADC for other colors

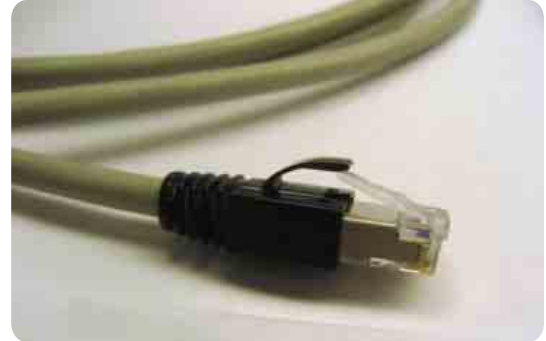


Copper Connectivity Solutions – Category 6a F/UTP

CopperTen® Augmented Category 6 F/UTP Patch Cords

ADC F/UTP CopperTen® patch cords can be used in data center, communications closet and work station for 10G shielded performance. Installed in high-performance networks world wide, the system's design minimizes alien crosstalk and insertion loss and meets the performance requirements of IEEE 802.3an and TIA 568-B.2-10 standards.

The high performance plug design with integrated strain relief boot prevents the cable from being moved at the termination point when the cable is flexed. The strain relief boot also ensures that correct bend radius is maintained.



Features

- Supports 10 Gigabit Ethernet over shielded copper to a full 100 meters
- Snag less plug design with integrated strain relief
- 20 year TrueNet CopperTen warranty

Specifications

Operating Temperature Range:	-20° to 75 °C (-4° to 167°F)
RJ45 Plug Interface According to:	IEC 60603-7
Transmission Performance and Reliability:	TIA/IEA 568-B.2-10 standards
Number of Plug Insertion Cycles:	≥ 750 (IEC/EN 60603-7)
Conductor:	26 AWG 7x32 stranded tinned copper
Jacket:	Lead-free PVC
Bend Radius:	2 x outer diameter
Nominal Outer Diameter:	7.239 mm ± .13 mm (0.285" ± 0.005")
Safety Rating:	UL 1863
Flammability Rating:	UL 94 V-0

Ordering Information

Description	Catalog Number
F/UTP RJ45 to RJ45 Patch Cords	
Blue	TP10GTF-BLXX
White	TP10GTF-WTXX
Gray	TP10GTF-GYXX

Sub XX for length. 04= 4 feet, 07= 7 feet, 10=10 feet, 15=15 Feet, 25=25 feet, 50=50 feet



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