ADDIMAX

CABLING SYSTEM

ADDIMAX

Company Profile

Addison cabling system originated as a cabling solution produced and marketed by Caledonian Cables Ltd located at Sussex, England. Founded in 1978, Caledonian Cables originally entered the market as an OEM manufacturer of data cables. Shortly after, we developed other connectivity hardware to support the cabling industries. It was not until 1997 that Caledonian entered the data cabling market with complete solutions branded under Addison for the twisted pair network environment.


QAS International

REGISTRATION CERTIFICATE

This document certifies that the administration systems of

Caledonian Cables Limited / Addison Technology Limited

Marchants Industrial Centre, Mill Lane, Laughton, Lewes, Sussex, BN8 6AJ, United Kingdom

have been assessed and approved by QAS International to the following management systems, standards and guidelines:

ISO 9001 : 2008

With the permitted exclusion of clauses 7.3 Design and Development

The approved administration systems apply to the following:

The manufacture and supply of electrical cables and ancillary power equipment to customers internationally.

Original Approval 6th September 1997
Current Certificate 7th February 2017
Certificate Expiry 7th February 2018
Certificate Number CA6211

Signed: Certification Officer

On behalf of QAS International

This certificate remains valid while the holder maintains their administration systems in accordance with the standards and guidelines stated above, which will be audited annually by QAS International. The holder is entitled to display the above registration mark for the duration of this certificate, which should be returned to QAS International upon reasonable request.
Issuing Office: QAS International, 20A Oxford Street, Malmesbury, Wiltshire SN16 9AX, UK

QAS INTERNATIONAL Registered Company

Caledonian & Addison, produces a wide range of cables for communication, power and electronics in its primary plants in UK, Italy and Spain. To stay in front, we continually keep expanding our manufacturing capabilities in more low cost region such as Romania, Taiwan, Malaysia etc. This low-cost manufacturing facilities enable us provide a flexible, scalable global system that delivers superior operational performance and optimal results for our customers.

Our extensive global network of manufacturing facilities gives us significant scale and the flexibility to fulfill our customer requirements. This global presence provides design and consultancy solutions that are combined with core cable manufacturing, logistic services, and vertically integrated with our E commerce technologies, to optimize customer operations by lowering costs and reducing time to market.

With over hundreds of different cabling & networking products, Addison offers one of the most complete lines of fiber and copper cabling solutions. Our superior product performances backed by an extensive list of value-added services, provide leading edge within every cable series and for every application.

Caledonian & Addison has been respected for its high standards of quality, excellent service level, competitive pricing and a unique and innovative spirit. With our latest technologies, we are both inspired and well-positioned to meet the changing needs of our customers. We have the resources to diversify and to enhance our product lines and services. We understand the need for change and with our accurate planning, we are ready for the future and the promise of new marketing opportunities. Our tradition of growth through excellence is assured.

Our Design Centers work closely with customers to constantly improve its standard range of products and technologies and to develop customized, country and industry-specific solutions. Caledonian & Addison has established an extensive network of design, manufacturing, and logistics facilities in the world's major markets to serve the growing outsourcing needs of both multinational and regional customers.

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Open Matrix System (OMS)

The OPEN MATRIX SYSTEM (OMS) is designed by Addison Laboratory based on the open matrix concept and designed to be equipped with superior connectivity components and cables, with the aim of delivering a system that meets or outperforms any of the top cabling connectivity solutions available today.

System Warranty

Addison extends link or channel warranty for system installations made by a certified installer in accordance with EIA/TIA 568B and ISO/IEC 11801 standard.

This 30 Year warranty assures that products comprising the system will be free from defects in material or workmanship. The product should include Addison cables together with connecting hardware from recognized suppliers.

The system will support any current or future application that supports transmission over the system in accordance with application standards at the time of manufacture. In case of a valid claim, this warranty covers repair, replacement or credit of any faulty product, and reasonable cost of labor to remedy the warranty claim. This warranty only applies to projects which have utilized 100% Addison cabling product in the network (i.e., both horizontal and backbone) and after proper certification has been obtained. Other than cables, installers are free to choose from any of the recognized connectivity suppliers or purchase Addison connectivity hardware to make up the whole OMS cabling system.

OMS Permanent Link Warranty

This warranty covers the Permanent Link of the network, which includes the cable and connecting hardware. This warranty does not cover other elements of the channel, such as patch cords, equipment cords and faceplates etc.

Addison will honor claims on this warranty for 30 years, on condition that the electrical performance provided by the combination of the different components of the permanent link have been certified by Addison to meet the industry standard, as defined by the TIA 568 latest standard for the “Permanent Link” in force at the time of purchase with the following conditions:

1. All the connectivity equipment used in the network must be supplied by one or more of the approved suppliers AND each component must be UL or ITS/ETL listed, or verified by an independent testing agency to meet the TIA 568 standard in force at the time of purchase. Please contact Addison sales for the approved connectivity manufacturers.

2. Each link or Channel in the network must be field tested and have passed all TIA 568 requirements. The whole system must be designed and installed by “BICSI Certified” or Addison approved installers.

OMS Channel Warranty

This warranty covers the channel link of the network. The OMS Channel Warranty will cover all components of the channel, which include telecommunications outlet, horizontal cabling, patch panels, patch cords and the equipment cords.

Addison will honor claims on this warranty for 30 years under the same condition of OMS Link Warranty.

Addison offers OMS program as a Lifetime Applications Assurance and Extended product warranty that ensures all the system components will exceed the applicable standard requirement together with supporting any current and future application. Addison makes this extended product warranty available to BISCI or Addison certified installers to offer identical assurances and warranties to their customers for certified OMS System installations.

Exclusion

These warranties cover the reasonable cost of labor to remedy a warranty claim, but do not cover the cost of any products or associated labor not sold or provided by Addison, and are not transferable from original installation.

Data & Fiber Optic Cables

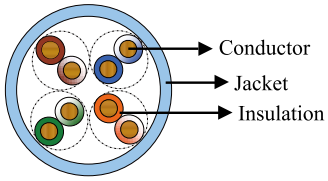
Enhanced Category 5 Cables

Applications:

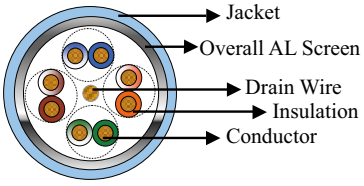
10Base-T, 100Base-T4, 100Base-TX, 100Base-VG-ANYLAN, 155Mbps ATM, 622Mbps ATM, 1000Base-T

Standards:

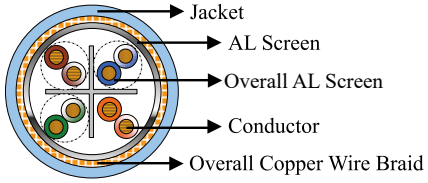
ISO/IEC 11801, ANSI/TIA/EIA-568-B



Cat5e U/UTP



Cat5e F/UTP



Cat5e SF/UTP

Product Construction Matrix:

	U/UTP	F/UTP	SF/UTP
Conductor	24AWG Solid Plain Copper	24AWG Solid Plain Copper	24AWG Solid Plain Copper
Insulation	PE	PE	PE
Screen	Nil	Overall Aluminum Tape Screen	Overall Aluminum Tape Screen & Copper Wire Braid
Drain Wire	Nil	1/0.5 mm	Nil
Jacket	PE/PVC/LSF/LSZH/LSFROH	PE/PVC/LSF/LSZH	PE/PVC/LSF/LSZH/LSFROH

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be offered in CMX, CM, CMR and CMP grade

Working Frequency:

1-100MHz

Technical Parameters:

- Characteristic Impedance: 100±15Ω (1-100MHz)
- Nominal Velocity of Propagation(NVP): CMX, CM, CMR, LSZH 69%; CMP 72%
- Maximum Mutual Capacitance: 5.6nF/100m
- Maximum Capacitance Unbalance: 330pF/100m
- Maximum DC Resistance: 9.38Ω/100m
- Maximum Resistance Unbalance: 5%
- Maximum Propagation Delay Skew: 30ns/100m
- Maximum Propagation Delay: 536ns/100m@100MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 80V rms
- Maximum Pulling Load: 80N
- Working Temperature: -5℃ ~+50℃
- Storage Temperature: -20℃ ~+60℃
- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMP Jacket); IEC 60332-1 (FRPVC& LSZH Jacket); IEC 60332-1 and IEC 60332-3C (LSFROH Jacket)

Product Certification

E222756

Cable Parameters:

Construction	Conductor Diameter (mm)	Diameter Over Insulation (mm)	Pairs	Screen	Overall Diameter (mm)	Jacket
U/UTP	0.5/0.51	0.91	4	Nil	5.1	PVC/LSZH
U/UTP	0.5/0.51	0.91	4	Nil	5.5	LSFROH
U/UTP	0.5/0.51	0.91	4	Nil	5.3	PE
F/UTP	0.53	1.00	4	Overall Aluminum Tape Screen	6.3	PVC/LSZH
F/UTP	0.53	1.00	4	Overall Aluminum Tape Screen	6.5	PE
SF/UTP	0.53	1.00	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.6	PVC /LSZH
SF/UTP	0.53	1.00	4	Overall Aluminum Tape Screen & Copper Wire Braid	7.0	LSFROH
SF/UTP	0.53	1.00	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.8	PE

Product Highlights:

- Provide excellent bandwidth beyond 100 MHz.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Different jacket materials available for choice.
- Guaranteed ACR Value > 0 dB @ 200 MHz.
- Special purpose cables can be offered according to customer request.
- Different jacket color options available for choice.

Transmission Properties:

FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	68.3/74.0/65.3	2.0	20.2/26.0/20.2	66.3/72.0/63.3	64.8/69.0/63.8	65.0/71.0/62.3	63.3/69.0/60.3	61.8/66.0/60.8
4	59.3/65.0/56.3	4.1	23.0/29.0/23.0	55.2/60.9/52.2	52.7/57.0/51.7	56.3/62.0/53.3	52.2/57.9/49.2	49.7/54.0/48.7
8	54.8/61.0/51.8	5.8	24.5/30.5/24.5	49.0/55.2/46.0	46.7/51.0/45.7	51.8/58.0/48.8	46.0/52.2/43.0	43.7/48.0/42.7
10	53.3/59.0/50.3	6.5	25.0/31.0/25.0	46.8/52.5/43.8	44.8/49.0/43.8	50.3/56.0/47.3	43.8/49.5/40.8	41.8/46.0/40.8
16	50.3/56.0/47.3	8.2	25.0/31.0/25.0	42.1/47.8/39.1	40.7/45.0/39.7	47.4/53.0/44.3	39.1/44.8/36.1	37.7/42.0/36.7
20	48.8/55.0/45.8	9.3	25.0/31.0/25.0	39.5/45.7/36.5	38.7/43.0/37.7	45.8/52.0/42.8	36.5/42.7/33.5	35.7/40.0/34.7
25	47.3/53.0/44.3	10.4	24.3/30.3/24.3	36.9/42.6/33.9	36.8/41.0/35.8	44.3/50.0/41.3	33.9/39.6/30.9	33.8/38.0/32.8
31.25	45.9/52.0/42.9	11.7	23.6/29.6/23.6	34.2/40.3/31.2	34.9/39.0/33.9	42.9/49.0/39.9	31.2/37.3/28.2	31.9/36.0/30.9
62.5	41.4/47.0/38.4	17.0	21.5/27.5/21.5	24.4/30.0/21.4	28.8/33.0/27.8	38.4/44.0/35.4	21.4/27.0/18.4	25.8/30.0/24.8
100	38.3/44.0/35.3	22.0	20.1/26.1/20.1	16.3/22.0/13.3	24.8/29.0/23.8	35.3/41.0/32.3	13.3/19.0/10.3	21.8/26.0/20.8
155	35.5/41.0/32.5	28.1	18.8/24.8/18.8	7.4/12.9/4.4	20.9/25.0/19.9	32.5/38.0/29.5	4.4/9.9/-1.4	17.9/22.0/16.9
200	33.7/40.0/30.7	32.4	18.0/24.0/18.0	1.3/7.6/-1.7	19.7/24.0/18.7	30.0/37.0/27.7	-1.7/4.6/-4.7	16.7/21.0/15.7
310	32.3/38.0/29.3	41.8	17.3/23.3/17.3	N/A	11.0/15.0/10.0	29.3/35.0/26.3	N/A	14.0/18.0/13.0
350	30.1/36.0/27.1	44.9	17.3/23.3/17.3	N/A	8.1/12.0/7.1	27.1/33.0/24.1	N/A	11.1/15.0/10.1

* Data for 100MHz above are for reference only

Ordering Information:

Model	Product Description
AD-BC-CAT5EUTP4PCM24	U/UTP Cat5e 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EFTP4PCM24	F/UTP Cat5e 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5ES-FTP4PCM24	SF/UTP Cat5e 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EUTP4PLH24	U/UTP Cat5e 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EFTP4PLH24	F/UTP Cat5e 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5ES-FTP4PLH24	SF/UTP Cat5e 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EUTP4PFRLH24	U/UTP Cat5e 4 Pairs, LSFROH Grade (IEC60332-1 & IEC60332-3C)
AD-BC-CAT5ES-FTP4PFRLH24	SF/UTP Cat5e 4 Pairs, LSFROH Grade (IEC60332-1 & IEC60332-3C)
AD-BC-CAT5EUTP4PPE24	Outdoor U/UTP Cat5e 4 Pairs (Water-blocking / UV Resistant)
AD-BC-CAT5EFTP4PPE24	Outdoor F/UTP Cat5e 4 Pairs (Water-blocking / UV Resistant)
AD-BC-CAT5ES-FTP4PPE24	Outdoor SF/UTP Cat5e 4 Pairs (Water-blocking / UV Resistant)

Cat5e U/UTP

Cat5e F/UTP

Cat5e SF/UTP

Category 6 Cables

Applications:

10Base-T4, 100Base-TX, 100Base-VG-ANYLAN, 155MbpsATM, 622 Mbps ATM, 1000Base-T, 10GBase-T

Standards:

ISO / IEC 11801, EN50173, TIA / EIA 568-B

Product Construction Matrix:

	U/UTP	F/UTP	U/FTP	SF/UTP	S/FTP
Conductor	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper
Insulation	PE	PE	PE	PE	PE
Screen	Nil	Overall Aluminum Tape Screen	Individual Aluminum Tape Screen	Overall Aluminum Tape Screen & Copper Wire Braid	Individual Aluminum Tape Screen & Overall Copper Wire Braid
Drain Wire	Nil	1/0.5 mm	1/0.5 mm	Nil	Nil
Jacket	PE/PVC/LSF/LSZH/ LSFROH	PE/PVC/LSF/LSZH		PE/PVC/LSF/LSZH/LSFROH	

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-250MHz

Technical Parameters:

- Characteristic Impedance: 100±15Ω (1-250MHz)
- Nominal Velocity of Propagation (NVP): CMX, CM, CMR, LSZH 69%; CMP 72%
- Maximum Mutual Capacitance: 5.6nF/100m
- Maximum Capacitance Unbalance: 330pF/100m
- Maximum DC Resistance: 7.5Ω/100m
- Maximum Resistance Unbalance: 3%
- Maximum Propagation Delay Skew: 30ns/100m (1-125MHz)
- Maximum Propagation Delay: 536ns/100m@100MHz
- Minimum Bending radius: 10 x Overall Diameter
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~ +60℃
- Storage Temperature: -5℃ ~ +50℃
- Flame Retardancy:
  UL 1581 (CM Jacket); UL 1666 (CMR Jacket)
  UL 910 (CMP Jacket); IEC 60332-1 (FRPVC & LSZH Jacket)
  IEC 60332-1 & IEC 60332-3C (LSFROH Jacket)

Product Certification

E222756

Product Categories:

Construction	Conductor Diameter (mm)	Diameter Over Insulation (mm)	Pairs	Screen	Overall Diameter (mm)	Jacket
U/UTP	0.57/0.58	1.02	4	Nil	6.0	PVC/LSZH
U/UTP	0.57/0.58	1.02	4	Nil	6.5	LSFROH
U/UTP	0.57/0.58	1.02	4	Nil	6.2	PE
F/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen	6.3	PVC/LSZH
F/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen	6.5	PE
U/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen	7.5	PVC/LSZH
SF/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.6	PVC/LSZH
SF/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen & Copper Wire Braid	7.1	LSFROH
S/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.0	PVC/LSZH
S/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.4	LSFROH

Product Highlights:

- Provide excellent bandwidth beyond 250 MHz.
- Support 10 Gigabit Ethernet application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Different jacket materials available for choice.
- Guaranteed ACR Value > 0dB @ 250MHz.
- Special purpose cables can be offered according to customer request.
- Different jacket color options available for choice.

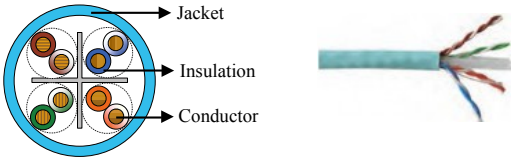
Transmission Properties:

FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/ 100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	77.3/87.0/74.3	2.0	20.0/21.5/20.0	75.2/85.0/72.2	68.8/80.0/67.8	75.3/85.0/72.3	73.2/83.0/70.2	65.8/70.0/64.8
4	68.3/77.0/65.3	3.8	23.0/24.7/23.0	64.4/73.0/61.4	56.8/66.0/55.8	66.3/74.0/63.3	62.5/71.0/59.5	53.8/63.0/52.8
8	63.8/72.0/60.8	5.3	24.5/25.5/24.5	58.4/67.0/55.4	50.7/61.0/49.7	61.8/70.0/58.8	56.5/65.0/53.5	47.7/58.0/46.7
10	62.3/70.0/59.3	6.0	25.0/28.0/25.0	56.3/64.0/53.3	48.8/57.0/47.8	60.3/68.0/57.3	54.3/62.0/51.3	45.8/54.0/44.8
16	59.2/66.0/56.2	7.6	25.0/28.0/25.0	51.6/59.0/48.6	44.7/52.0/43.7	57.2/64.0/54.2	49.6/57.0/46.6	41.7/49.0/40.7
20	57.8/65.0/54.8	8.5	25.0/28.0/25.0	49.3/57.0/46.3	42.8/50.0/41.8	55.8/63.0/52.8	47.3/55.0/44.3	39.8/47.0/38.8
25	56.3/63.0/53.3	9.5	24.3/27.0/24.3	46.8/5 4.0/43.8	40.8/47.0/39.8	54.3/61.0/51.3	44.8/52.0/41.8	37.8/44.0/36.8
31.25	54.9/61.0/51.9	10.7	23.6/26.5/23.6	44.1/51.0/41.1	38.9/45.0/37.9	52.9/59.0/49.9	42.1/49.0/39.1	35.9/42.0/34.9
62.5	50.4/57.0/47.4	15.4	21.5/24.6/21.5	34.9/42.0/31.9	32.9/38.0/31.9	48.4/55.0/45.4	32.9/40.0/29.9	29.9/35.0/28.9
100	47.3/53.0/44.3	19.8	20.1/23.7/20.1	27.4/33.0/24.4	28.8/34.0/27.8	45.3/51.0/42.3	25.4/31.0/22.4	25.8/31.0/24.8
200	42.8/48.0/39.8	29.0	18.0/22.2/18.0	13.6/21.0/10.6	22.8/27.0/21.8	40.8/46.0/37.8	11.6/19.0/8.6	19.8/24.0/18.8
250	41.3/46.0/38.3	32.8	17.3/21.6/17.3	8.3/14.0/5.3	20.8/24.0/19.8	39.3/44.0/36.3	6.3/12.0/3.3	17.8/21.0/16.8
300	37.1/45.0/37.1	36.4	16.8/20.7/16.8	0.5/11.0/0.5	18.3/23.0/18.3	35.1/43.0/35.1	-1.5/9.0/-1.5	15.3/20.0/15.3
350	36.1/44.0/36.1	39.8	16.3/20.3/16.3	-3.8/6.6/-3.8	16.9/21.0/16.9	34.1/42.0/34.1	-5.8/4.6/-5.8	13.9/18.0/13.9
400	35.3/43.0/35.3	43.0	15.9/16.8/15.9	-7.9/2.6/-7.9	15.8/20.0/15.8	33.3/41.0/33.3	-9.9/0.6/-9.9	12.8/17.0/12.8
450	34.5/42.0/34.5	46.3	15.5/16.5/15.5	-10.5/-1.1/-10.5	14.7/18.0/14.7	32.5/40.0/32.5	-12.5/-3.1/-12.5	11.7/15.0/11.7
500	33.8/41.0/33.8	48.9	15.2/16.1/15.2	-15.3/-6.2/-15.3	13.8/18.0/13.8	31.8/39.0/31.8	-17.3/-8.2/-17.3	10.8/15.0/10.8
550	33.2/41.0/33.2	51.8	14.9/15.7/14.9	-18.6/-12.0/-18.6	12.9/17.0/12.9	31.2/39.0/31.2	-20.6/-14.0/-20.6	9.9/13.0/9.9
600	32.4/33.0/32.4	54.5	14.7/15.0/14.7	-21.9/-21.0/-21.9	12.2/14.0/12.2	30.6/31.0/30.6	-23.9/-23.0/-23.9	9.2/11.0/9.2

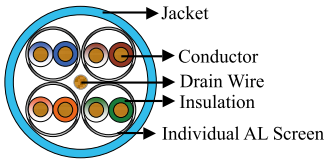
*Data for 250MHz above are for reference only

Ordering Information:

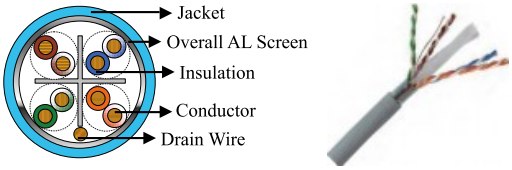
Model	Product Description
AD-BC-CAT6UTP4PCM23	U/UTP Cat6 4Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6FTP4PCM23	F/UTP Cat6 4Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6S-FTP4PCM23	SF/UTP Cat6 4Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6STP4PCM23	U/FTP Cat6 4Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6S-FTP4PCM23	SF/UTP Cat6 4Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6UTP4PLH23	U/UTP Cat6 4Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT6FTP4PLH23	F/UTP Cat6 4Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT6STP4PLH23	U/FTP Cat6 4Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT6UTP4PFRLH23	U/UTP Cat6 4Pairs, LSFROH Grade (IEC60332-1&IEC60332-3C)
AD-BC-CAT6S-FTP4PFRLH23	SF/UTP Cat6 4Pairs, LSFROH Grade (IEC60332-1&IEC60332-3C)
AD-BC-CAT6SFTP4PFRLH23	S/FTP Cat6 4Pairs, LSFROH Grade (IEC60332-1&IEC60332-3C)
AD-BC-CAT6UTP4PPE23	Outdoor U/UTP Cat6 4Pairs (Water Blocking /UV Resistant)
AD-BC-CAT6FTP4PPE23	Outdoor F/UTP Cat6 4Pairs (Water Blocking /UV Resistant)
AD-BC-CAT6S-FTP4PPE23	Outdoor SF/UTP Cat6 4Pairs (Water Blocking /UV Resistant)
AD-BC-CAT6STP4PPE23	Outdoor STP Cat6 4 Pairs (Water Blocking /UV Resistant)
AD-BC-CAT6SFTP4PPE23	Outdoor S/FTP Cat6 4 Pairs (Water Blocking /UV Resistant)



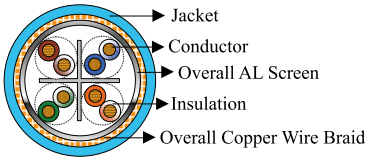
Cat6 U/UTP



Cat6 U/FTP



Cat6 F/UTP



Cat6 SF/UTP

Augmented Category 6 Cables

Applications:

10Base-T4, 100Base-TX, 100Base-VG-ANYLAN, 155MbpsATM, 622 Mbps ATM, 1000Base-T, 10GBase-T

Standards:

ISO / IEC 11801, EN50173, TIA / EIA 568-B

Product Construction Matrix:

	U/UTP	F/UTP	U/FTP	SF/UTP	S/FTP
Conductor	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper	23AWG Solid Plain Copper
Insulation	PE	PE	PE	PE	PE
Screen	Nil	Overall Aluminum Tape Screen	Individual Aluminum Tape Screen	Overall Aluminum Tape Screen & Copper Wire Braid	Individual Aluminum Tape Screen & Copper Wire Braid
Drain Wire	Nil	1/0.5 mm	1/0.5 mm	Nil	Nil
Jacket	PE/PVC/LSF/LSZH/ LFLSFROH	PE/PVC/LSF/LSZH	PE/PVC/LSF/LSZH/LSFROH		

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-500MHz

Technical Parameters:

- Characteristic Impedance: 100±15Ω (1-250MHz); 100±22Ω (100-500Mhz)
- Nominal Velocity of Propagation (NVP): CMX, CM, CMR, LSZH 69%; CMP 72%
- Maximum Mutual Capacitance: 5.6nF/100m
- Maximum Capacitance Unbalance: 330pF/100m
- Maximum DC Resistance: 7.5Ω/100m
- Maximum Resistance Unbalance: 3%
- Maximum Propagation Delay Skew: 30ns/100m (1-125MHz)
- Maximum Propagation Delay: 536 ns/100m @ 100MHz
- Minimum Bending radius: 10 x Overall Diameter
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~+ 60℃
- Storage Temperature: -5℃ ~ +50℃
- Flame Retardancy:
  UL 1581 (CM Jacket); UL 1666 (CMR Jacket);
  UL 910 (CMP Jacket); IEC 60332-1 (FRPVC & LSZH Jacket);
  IEC 60332-1 & IEC 60332-3C (LSFROH Jacket)

Product Certification

E222756

Product Categories:

Construction	Conductor Diameter (mm)	Diameter Over Insulation (mm)	Pairs	Screen	Overall Diameter (mm)	Jacket
U/UTP	0.57/0.58	1.02	4	Nil	8.5	PVC/LSZH

Construction	Conductor Diameter (mm)	Diameter Over Insulation (mm)	Pairs	Screen	Overall Diameter (mm)	Jacket
U/UTP	0.57/0.**58**	1.02	4	Nil	8.9	LSFROH
U/UTP	0.57/0.58	1.02	4	Nil	8.7	PE
F/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen	6.3	PVC/LSZH
F/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen	6.5	PE
U/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen	7.5	PVC/LSZH
SF/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen & Copper Wire Braid	6.6	PVC/LSZH
SF/UTP	0.57/0.58	1.02	4	Overall Aluminum Tape Screen & Copper Wire Braid	7.2	LSFROH
S/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.0	PVC/LSZH
S/FTP	0.57/0.58	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.4	LSFROH

*As the data,Please refer to the actual goods.

Product Highlights:

- Provide excellent NEXT and attenuation performance beyond 500 MHz.
- Support 10 Gigabit Ethernet application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Different jacket materials available for choice.
- Special purpose cables can be offered according to customer request.
- Different jacket color options available for choice.

UTP Cat 6A Transmission Properties:

FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/ 100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	74.3/95.0/74.3	2.0	20.0/28.0/20.0	72.2/94.0/72.2	67.8/92.0/67.8	72.3/92.0/72.3	70.2/90.0/70.2	64.8/85.0/64.8
4	65.3/88.0/65.3	3.7	23.0/30.0/23.0	61.4/88.0/61.4	55.8/80.0/55.8	63.3/83.0/63.3	59.5/80.0/59.5	52.8/73.0/52.8
8	60.8/85.0/60.8	5.3	24.5/33.0/24.5	55.4/83.0/55.4	49.7/75.0/49.7	58.8/80.0/58.8	53.5/76.0/53.5	46.7/70.0/46.7
10	59.3/83.0/59.3	5.9	25.0/36.0/25.0	53.3/78.0/53.3	47.8/72.0/47.8	57.3/77.0/57.3	51.3/72.0/51.3	44.8/65.0/44.8
16	56.2/80.0/56.2	7.6	25.0/36.0/25.0	48.6/74.0/48.6	43.7/68.0/43.7	54.2/74.0/54.2	46.6/68.0/46.6	40.7/61.0/40.7
20	54.8/78.0/54.8	8.3	25.0/36.0/25.0	46.3/71.0/46.3	41.8/65.0/41.8	52.8/73.0/52.8	44.3/66.0/44.3	38.8/59.0/38.8
25	53.3/77.0/53.3	9.5	24.3/35.0/24.3	43.8/69.0/43.8	39.8/63.0/39.8	51.3/71.0/51.3	41.8/63.0/41.8	36.8/57.0/36.8
31.25	51.9/76.0/51.9	10.4	23.6/34.0/23.6	41.1/67.0/41.1	37.9/62.0/37.9	49.9/70.0/49.9	39.1/60.0/39.1	34.9/55.0/34.9
62.5	47.4/70.0/47.4	14.9	21.5/33.5/21.5	31.9/57.0/31.9	31.9/56.0/31.9	45.4/65.0/45.4	29.9/51.0/29.9	28.9/49.0/28.9
100	44.3/68.0/44.3	19.0	20.1/33.0/20.1	24.4/50.0/24.4	27.8/52.0/27.8	42.3/62.0/42.3	22.4/44.0/22.4	24.8/45.0/24.8
200	39.8/65.0/39.8	27.4	18.0/31.0/18.0	10.6/38.0/10.6	21.8/46.0/21.8	37.8/58.0/37.8	8.6/32.0/8.6	18.8/39.0/18.8
250	38.3/62.0/38.3	31.0	17.3/30.5/17.3	5.3/33.0/5.3	19.8/44.0/19.8	36.3/56.0/36.3	3.3/27.0/3.3	16.8/37.0/16.8
300	37.1/61.0/37.1	34.2	16.8/29.0/16.8	0.5/29.0/0.5	18.3/42.0/18.3	35.1/55.0/35.1	-1.5/24.0/-1.5	15.3/35.0/15.3
350	36.1/60.0/36.1	37.1.	16.3/28.0/16.3	-3.8/26.0/-3.8	16.9/41.0/16.9	34.1/54.0/34.1	-5.8/20.0/-5.8	13.9/34.0/13.9
400	35.3/59.0/35.3	40.0	15.9/27.0/15.9	-7.9/21.0/-7.9	15.8/40.0/15.8	33.3/53.0/33.3	-9.9/15.0/-9.9	12.8/33.0/12.8
450	34.5/58.0/34.5	46.3	15.5/26.5/15.5	-10.5/18.0/-10.5	14.7/40.5.0/14.7	32.5/52.0/32.5	-12.5/11.0/-12.5	11.7/32.5/11.7
500	33.8/57.0/33.8	45.3	15.2/26.0/15.2	-15.3/15.0/-15.3	13.8/39.0/13.8	31.8/51.0/31.8	-17.3/9.0/-17.3	10.8/32.0/10.8
625	32.4/53.0/32.4	51.1	14.5/25.0/14.5	-23.1/31.0/-23.1	11.8/36.0/11.8	30.4/50.0/30.4	-25.1/5.0/-25.1	8.8/29.0/8.8

* Data for 250MHz above are for reference only

F/UTP & SF/UTP Cat 6A Transmission Properties:

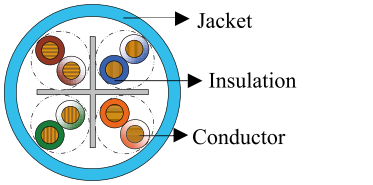
FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/ 100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	74.3/86.0/74.3	2.0	20.0/33.0/20.0	72.2/84.0/72.2	67.8/91.0/67.8	72.3/81.0/72.3	70.2/80.5/70.2	64.8/84.0/64.8
4	65.3/77.0/65.3	3.7	23.0/35.5/23.0	61.4/73.0/61.4	55.8/79.0/55.8	63.3/72.0/63.3	59.5/70.0/59.5	52.8/72.0/52.8
8	60.8/75.0/60.8	5.3	24.5/36.0/24.5	55.4/70.0/55.4	49.7/74.0/49.7	58.8/69.0/58.8	53.5/66.0/53.5	46.7/69.0/46.7
10	59.3/71.0/59.3	5.9	25.0/38.0/25.0	53.3/66.0/53.3	47.8/71.0/47.8	57.3/65.0/57.3	51.3/62.0/51.3	44.8/64.0/44.8
16	56.2/68.0/56.2	7.6	25.0/35.2/25.0	48.6/61.0/48.6	43.7/67.0/43.7	54.2/62.0/54.2	46.6/58.0/46.6	40.7/60.0/40.7
20	54.8/67.0/54.8	8.3	25.0/35.0/25.0	46.3/59.0/46.3	41.8/65.0/41.8	52.8/61.0/52.8	44.3/55.0/44.3	38.8/59.0/38.8
25	53.3/65.0/53.3	9.5	24.3/34.0/24.3	43.8/57.0/43.8	39.8/63.0/39.8	51.3/60.0/51.3	41.8/53.0/41.8	36.8/57.0/36.8
31.25	51.9/64.0/51.9	10.4	23.6/33.1/23.6	41.1/54.0/41.1	37.9/61.0/37.9	49.9/54.0/49.9	39.1/50.0/39.1	34.9/54.0/34.9
62.5	47.4/59.0/47.4	14.9	21.5/32.2/21.5	31.9/44.0/31.9	31.9/55.0/31.9	45.4/58.0/45.4	29.9/41.0/29.9	28.9/48.0/28.9
100	44.3/56.0/44.3	19.0	20.1/31.6/20.1	24.4/38.0/24.4	27.8/51.0/27.8	42.3/50.0/42.3	22.4/34.0/22.4	24.8/44.0/24.8
200	39.8/52.0/39.8	27.4	18.0/29.8/18.0	10.6/25.0/10.6	21.8/45.0/21.8	37.8/45.0/37.8	8.6/20.5/8.6	18.8/38.0/18.8
250	38.3/50.0/38.3	31.0	17.3/28.7/17.3	5.3/19.0/5.3	19.8/43.0/19.8	36.3/44.0/36.3	3.3/15.0/3.3	16.8/36.0/16.8
300	37.1/49.0/37.1	34.2	16.8/28.0/16.8	0.5/14.0/0.5	18.3/38.0/18.3	35.1/43.0/35.1	-1.5/10.0/-1.5	15.3/31.0/15.3
350	36.1/48.0/36.1	37.1	16.3/27.5/16.3	-3.8/9.0/-3.8	16.9/37.0/16.9	34.1/41.0/34.1	-5.8/7.0/-5.8	13.9/30.0/13.9
400	35.3/47.0/35.3	40.0	15.9/27.0/15.9	-7.9/7.0/-7.9	15.8/36.0/15.8	33.3/40.0/33.3	-9.9/3.0/-9.9	12.8/29.0/12.8
450	34.5/47.0/34.5	46.3	15.5/26.5/15.5	-10.5/6.0/-10.5	14.7/35.0/14.7	32.5/39.0/32.5	-12.5/2.0/-12.5	11.7/27.5/11.7
500	33.8/47.0/33.8	45.3	15.2/26.0/15.2	-15.3/5.0/-15.3	13.8/34.0/13.8	31.8/38.0/31.8	-17.3/0.0/-17.3	10.8/27.0/10.8

U/FTP & S/FTP Cat 6A Transmission Properties:

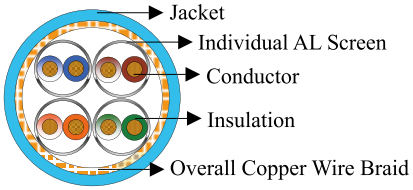
FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/ 100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	87.0/90.0/74.3	2.0	20.0/28.0/20.0	85.0/88.0/72.2	73.8/75.0/67.8	85.0/88.0/72.3	83.0/86.0/70.2	70.8/72.0/64.8
4	80.0/90.0/65.3	3.7	23.0/30.0/23.0	76.0/86.0/61.4	61.8/75.0/55.8	78.0/88.0/63.3	74.0/84.0/59.5	58.0/72.0/52.8
8	80.0/90.0/60.8	5.3	24.5/33.0/24.5	74.7/84.0/55.4	55.7/75.0/49.7	78.0/88.0/58.8	72.7/82.0/53.5	52.7/72.0/46.7
10	80.0/90.0/59.3	5.9	25.0/36.0/25.0	74.0/84.0/53.3	53.8/74.0/47.8	78.0/88.0/57.3	72.0/82.0/51.3	50.8/71.0/44.8
16	80.0/90.0/56.2	7.6	25.0/36.0/25.0	72.4/82.0/48.6	49.7/70.0/43.7	78.0/88.0/54.2	70.4/80.0/46.6	46.7/67.0/40.7
20	80.0/90.0/54.8	8.3	25.0/36.0/25.0	71.5/81.0/46.3	47.8/68.0/41.8	78.0/88.0/52.8	69.5/79.0/44.3	44.8/65.0/38.8
25	80.0/90.0/53.3	9.5	24.3/35.0/24.3	70.5/80.0/43.8	45.8/68.0/39.8	78.0/88.0/51.3	68.5/78.0/41.8	42.8/65.0/36.8
31.25	80.0/90.0/51.9	10.4	23.6/34.0/23.6	69.3/79.0/41.1	43.9/64.0/37.9	78.0/88.0/49.9	67.3/77.0/39.1	40.9/61.0/34.9
62.5	75.3/90.0/47.4	14.9	21.5/33.5/21.5	59.9/74.0/31.9	37.9/58.0/31.9	69.1/83.0/45.4	57.9/72.0/29.9	34.9/55.0/28.9
100	71.1/85.0/44.3	19.0	20.1/33.0/20.1	51.3/65.0/24.4	33.8/54.0/27.8	69.1/83.0/42.3	49.3/63.0/22.4	30.8/51.0/24.8
200	71.1/85.0/39.8	27.4	18.0/31.0/18.0	42.1/56.0/10.6	27.8/51.0/21.8	69.1/83.0/37.8	40.1/54.0/8.6	24.8/48.0/18.8
250	71.1/85.0/38.3	31.0	17.3/30.5/17.3	38.2/52.0/5.3	25.8/48.0/19.8	61.7/78.0/36.3	36.2/50.0/3.3	22.8/45.0/16.8
300	63.7/80.0/37.1	34.2	16.8/29.0/16.8	27.3/43.0/0.5	24.3/45.0/18.3	61.7/78.0/35.1	25.3/41.0/-1.5	21.2/42.0/15.3
350	63.7/80.0/36.1	37.1	16.3/28.0/16.3	23.9/40.0/-3.8	23.9/45.0/16.9	61.7/78.0/34.1	21.9/38.0/-5.8	19.9/42.0/13.9
400	63.7/80.0/35.3	40.0	15.9/27.0/15.9	20.7/37.0/-7.9	21.8/45.0/15.8	61.7/78.0/33.3	18.7/35.0/-9.9	19.7/42.0/12.8
450	63.7/80.0/34.5	46.3	15.5/26.5/15.5	17.4/33.0/-10.5	20.5/42.0/14.7	61.7/78.0/32.5	15.4/31.0/-12.5	17.5/39.0/11.7
500	63.7/80.0/33.8	45.3	15.2/26.0/15.2	14.8/31.0/-15.3	19.8/42.0/13.8	61.7/78.0/31.8	12.8/29.0/-17.3	16.8/39.0/10.8

Ordering Information:

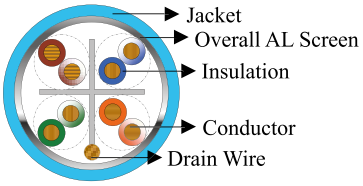
Model	Product Description
AD-BC-CAT6AUTP4PCM23	U/UTP Cat6A 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6AFTP4PCM23	F/UTP Cat6A 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6AS-FTP4PCM23	SF/UTP Cat6A 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6ASTP4PCM23	U/FTP Cat6A 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6ASFTP4PCM23	S/FTP Cat6A 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT6AUTP4PLH23	U/UTP Cat6A 4 Pairs, LSZH Grade (IEC 60332-1)
AD-BC-CAT6AFTP4PLH23	F/UTP Cat6A 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT6ASTP4PLH23	U/FTP Cat6A 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT6AUTP4PFRLH23	U/UTP Cat6A 4 Pairs, LSFROH Grade (IEC60332-1 & IEC60332-3C)
AD-BC-CAT6AS-FTP4PFRLH23	SF/UTP Cat6A 4 Pairs, LSFROH Grade (IEC60332-1 & IEC60332-3C)
AD-BC-CAT6ASFTP4PFRLH23	S/FTP Cat6A 4 Pairs, LSFROH Grade (IEC60332-1 & IEC60332-3C)
AD-BC-CAT6AUTP4PPE23	Outdoor U/UTP Cat6A 4 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT6AFTP4PPE23	Outdoor F/UTP Cat6A 4 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT6AS-FTP4PPE23	Outdoor SF/UTP Cat6A 4 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT6ASTP4PPE23	Outdoor U/FTP Cat6A 4 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT6ASFTP4PPE23	Outdoor S/FTP Cat6A 4 Pairs (Water-blocking /UV Resistant)



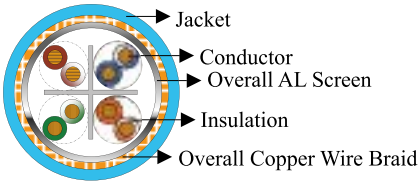
Cat6A U/UTP



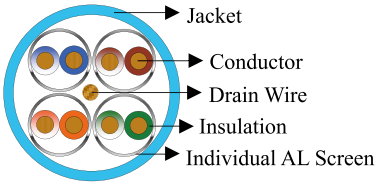
Cat6A S/FTP



Cat6A F/UTP



Cat6A SF/UTP



Cat6A U/FTP

Category 7 Cables

Applications:

155MbpsATM, 622MbpsATM, 1000Base-T, 10GBase-T

Standards:

IEC61156-5 CAT7, EN 50288-4-1

Product Construction Matrix:

	U/FTP	S/FTP
Conductor	22/23AWG Solid Plain Copper	22/23AWG Solid Plain Copper
Insulation	PE	PE
Screen	Individual Aluminum Tape Screen	Individual Aluminum Tape Screen & Overall Copper Wire Braid
Drain Wire	7/0.2 mm	Nil
Jacket	PE/PVC/LSF/LSZH/LSFROH	PE/PVC/LSF/LSZH/LSFROH

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-600MHz

Technical Parameters:

- Characteristic Impedance: 100±15Ω (1-250MHz); 100±22Ω (100-500Mhz)
- Nominal Velocity of Propagation (NVP): 79%
- Maximum Mutual Capacitance:5.6nF/100m
- Maximum DC Resistance: 5.9Ω/100m (22AWG); 7.5Ω/100m (23AWG)
- Maximum Resistance Unbalance:5%
- Maximum Propagation Delay Skew: 30ns/100m (1-125MHz)
- Maximum Propagation Delay: 536 ns/100m@100MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 60V rms
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~ +60℃
- Storage Temperature: -5℃ ~ +50℃
- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMP Jacket); IEC 60332-1 (FRPVC& LSZH Jacket); IEC 60332-1and IEC 60332-3C (LSFROH Jacket)

Product Categories:

Construction	Conductor Diameter (mm)	Diameter Over Insulation (mm)	Pairs	Screen	Overall Diameter (mm)	Jacket
S/FTP	0.57/0.64	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.4/9.1	PVC/LSZH
S/FTP	0.57/0.64	1.02	4	Individual Aluminum Tape Screen & Overall Copper Wire Braid	8.4/9.1	LSFROH
U/FTP	0.57/0.64	1.02	4	Individual Aluminum Tape Screen	7.5/8.5	PVC/LSZH
U/FTP	0.57/0.64	1.02	4	Individual Aluminum Tape Screen	7.5/8.5	LSFROH

Product Highlights:

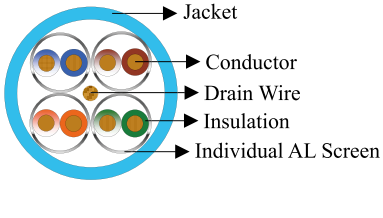
- Provide excellent bandwidth beyond 600 MHz.
- Support 10 Gigabit Ethernet application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Different jacket materials available for choice.

Tranmission Properties:

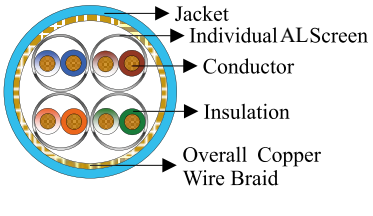
FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PP ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	90.0/100.0/80.0	2.0	20.0/23.0/20.0	88.0/98.0/78.0	85.0/90.0/80.0	87.0/97.0/77.0	85.0/95.0/75.0	82.0/87.0/77.0
4	90.0/100.0/80.0	3.6	23.0/26.0/23.0	86.4/96.0/76.4	85.0/90.0/80.0	87.0/97.0/77.0	83.4/93.0/73.4	82.0/87.0/77.0
10	90.0/100.0/80.0	5.7	25.0/28.0/25.0	84.3/94.0/74.3	79.0/90.0/74.0	87.0/97.0/77.0	81.3/91.0/71.3	76.0/87.0/71.0
16	90.0/100.0/80.0	7.2	25.0/28.0/25.0	83.3/92.0/72.8	74.9/90.0/69.9	87.0/97.0/77.0	80.3/89.0/69.8	71.9/87.0/66.9
20	90.0/100.0/80.0	8.1	25.0/28.0/25.0	82.5/91.0/71.9	73.0/90.0/68.0	87.0/97.0/77.0	79.5/88.0/68.9	70.0/87.0/65.0
31.25	90.0/100.0/80.0	10.1	23.6/26.0/23.6	80.0/90.0/69.9	69.1/90.0/64.1	87.0/97.0/77.0	77.0/87.0/66.9	66.1/87.0/61.1
62.5	90.0/100.0/75.5	14.5	21.5/24.0/21.5	76.0/85.0/61.0	63.1/85.0/58.1	80.0/97.0/72.5	73.0/82.0/58.0	60.1/82.0/55.1
100	90.0/100.0/72.4	18.5	20.1/23.0/20.1	72.5/75.0/53.9	59.0/80.0/54.0	87.0/97.0/69.4	69.5/72.0/50.9	56.0/77.0/51.0
200	90.0/100.0/67.9	26.8	18.0/23.0/18.0	65.0/70.0/41.1	53.0/75.0/78.0	87.0/97.0/64.9	62.0/67.0/38.1	50.0/72.0/45.0
250	95.0/90.0/66.5	30.2	17.3/23.0/17.3	50.0/58.0/36.3	51.0/70.0/46.0	92.0/87.0/63.5	47.0/55.0/33.3	48.0/67.0/43.0
300	95.0/90.0/65.3	33.3	17.3/23.0/17.3	59.0/55.0/32.0	49.5/66.0/44.5	92.0/87.0/63.3	56.0/52.0/29.0	46.5/63.0/41.5
600	80.0/90.0/60.8	48.9	17.3/20.0/17.3	32.0/50.0/11.9	43.4/60.0/38.4	77.0/87.0/57.8	29.0/47.0/8.9	40.4/57.0/35.4

Ordering Information:

Model	Product Description
AD-BC-CAT7STP4PCM22	U/FTP Cat7 22AWG 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT7STP4PCM23	U/FTP Cat7 23AWG 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT7SFTP4PCM22	S/FTP Cat7 22AWG 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT7SFTP4PCM23	S/FTP Cat7 23AWG 4 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT7STP4PLH22	U/FTP Cat7 22AWG 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT7STP4PLH23	U/FTP Cat7 23AWG 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT7SFTP4PLH22	S/FTP Cat7 22AWG 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT7SFTP4PLH23	S/FTP Cat7 23AWG 4 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT7STP4PFRLH22	U/FTP Cat7 22AWG 4 Pairs, LSFROH Grade (IEC6060332-1 & IEC6060332-3C)
AD-BC-CAT7STP4PFRLH23	U/FTP Cat7 23AWG 4 Pairs, LSFROH Grade (IEC6060332-1 & IEC6060332-3C)
AD-BC-CAT7SFTP4PFRLH22	S/FTP Cat7 22AWG 4 Pairs, LSFROH Grade (IEC6060332-1 & IEC6060332-3C)
AD-BC-CAT7SFTP4PFRLH23	S/FTP Cat7 23AWG 4 Pairs, LSFROH Grade (IEC6060332-1 & IEC6060332-3C)



Cat7 U/FTP



Cat7 S/FTP

Category 3 Multipair Cables

Applications:

10Base-T, 100Base-T4

Standards:

ISO/IEC11801, ANSI/TIA/EIA-568-B

Product Construction Matrix:

		U/UTP	F/UTP
Conductor	Material	Solid Plain Copper	Solid Plain Copper
	Stranding(No./mm)	1/0.5	1/0.5
	Gauge	24AWG	24AWG
Insulation	Material	PE	PE
	Diameter	0.86 mm	0.86 mm
Screen	Material	Nil	Aluminum /Polyester Tape
Drain Wire	Material	Nil	1/0.5 mm
Assembly	No of Pairs	25/50/100	25/50/100
Jacket	Material	PE/PVC/LSF/LSZH	PE/PVC/LSF/LSZH

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-16MHz

Product Certification

E222756

Technical Parameters:

- Characteristic Impedance: 100±15Ω
- Nominal Velocity of Propagation (NVP): 69%
- Maximum DC Resistance: 9.38Ω/100m
- Maximum Resistance Unbalance: 5%
- Maximum Propagation Delay Skew: 30 ns/100m
- Maximum Propagation Delay: 536 ns/100m@100 MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 60V rms
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~ +60℃
- Storage Temperature: -5℃ ~ +50℃
- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMP Jacket); IEC 60332-1 (FRPVC & LSZH Jacket); IEC 60332-1 and IEC 60332-3C (LSFROH Jacket)

Product Categories:

FREQ (MHz)	NEXT(dB/100m) Minmum Value/Typical Value/ Standard Value	IL (dB/100m)	SRL(dB/100m) Minmum Value/Typical Value/Standard Value
1	43.0/48.0/41.0	2.6	13.0/16.0/12.0
4	34.0/38.0/32.0	5.6	13.0/16.0/12.0
8	29.0/33.0/26.0	8.5	13.0/16.0/12.0
10	28.0/33.0/26.0	9.8	13.0/16.0/12.0
16	25.0/30.0/23.0	13.1	11.0/14.0/10.0

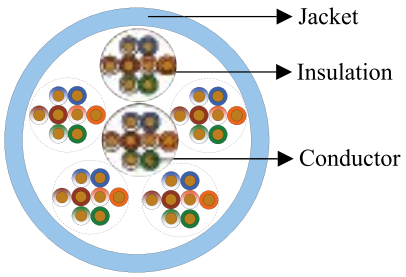
Product Highlights:

- Provide excellent bandwidth beyond 600 MHz.
- Support 10 Gigabit Ethernet application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.

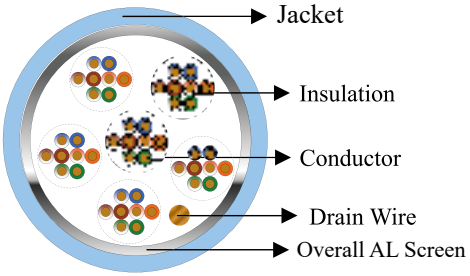
• Different jacket materials available for choice.

Ordering Information:

Model	Product Description
AD-BC-CAT3UTP25PCM24	U/UTP Cat3 25 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3UTP50PCM24	U/UTP Cat3 50 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3UTP100PCM24	U/UTP Cat3 100 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3UTP25PLH24	U/UTP Cat3 25 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3UTP50PLH24	U/UTP Cat3 50 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3UTP100PLH24	U/UTP Cat3 100 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3UTP25PPE24	Outdoor U/UTP Cat3 25 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT3UTP50PPE24	Outdoor U/UTP Cat3 50 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT3UTP100PPE24	Outdoor U/UTP Cat3 100 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT3FTP25PCM24	F/UTP Cat3 25 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3FTP50PCM24	F/UTP Cat3 50 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3FTP100PCM24	F/UTP Cat3 100 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT3FTP25PLH24	F/UTP Cat3 25 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3FTP50PLH24	F/UTP Cat3 50 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3FTP100PLH24	F/UTP Cat3 100 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT3FTP25PPE24	Outdoor F/UTP Cat3 25 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT3FTP50PPE24	Outdoor F/UTP Cat3 50 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT3FTP100PPE24	Outdoor F/UTP Cat3 100 Pairs (Water-blocking /UV Resistant)



Cat3 U/UTP



Cat3 F/UTP

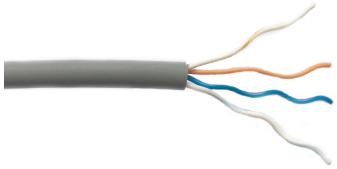
Telephone Cables

Applications:

10Base-T, 100Base-T4

Standards:

ISO/IEC11801, ANSI/TIA/EIA-568-B



Product Construction Matrix:

		U/UTP
Conductor	Material	Solid Plain Copper
	Stranding(No./mm)	1//0.4/0.5
	Gauge	26AWG/24AWG
Insulation	Material	PE
	Diameter	0.86 mm
Screen	Material	Nil
Drain Wire	Material	Nil
Assembly	No of Pairs	1/2/10
Jacket	Material	PE/PVC/LSF/LSZH

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CM

Working Frequency:

1-16MHz

Product Certification

E222756

Technical Parameters:

- Characteristic Impedance: 100±15Ω
- Nominal Velocity of Propagation (NVP): 69%
- Maximum DC Resistance: 9.38Ω/100m
- Maximum Resistance Unbalance: 5%
- Maximum Propagation Delay Skew: 30 ns/100m
- Maximum Propagation Delay: 536 ns/100m@100 MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 60V rms
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~ +60℃
- Storage Temperature: -5℃ ~ +50℃

- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMP Jacket); IEC 60332-1 (FRPVC & LSZH Jacket); IEC 60332-1 and IEC 60332-3C (LSFROH Jacket)

Product Categories:

FREQ (MHz)	NEXT(dB/100m) Minmum Value/Typical Value/ Standard Value	IL (dB/100m)	SRL(dB/100m) Minmum Value/Typical Value/Standard Value
1	43.0/48.0/41.0	2.6	13.0/16.0/12.0
4	34.0/38.0/32.0	5.6	13.0/16.0/12.0
8	29.0/33.0/26.0	8.5	13.0/16.0/12.0
10	28.0/33.0/26.0	9.8	13.0/16.0/12.0
16	25.0/30.0/23.0	13.1	11.0/14.0/10.0

Product Highlights:

- Provide excellent bandwidth beyond 600 MHz.
- Support 10 Gigabit Ethernet application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Different jacket materials available for choice.

Ordering Information:

Model	Product Description
AD-TC-1PUTP04CM	U/UTP 1Pairs, 0.4mm,CM Grade (Non-Plenum)
AD-TC-1PUTP05CM	U/UTP 1Pairs, 0.5mm,CM Grade (Non-Plenum)
AD-TC-2PUTP04CM	U/UTP 2Pairs, 0.4mm,CM Grade (Non-Plenum)
AD-TC-2PUTP05CM	U/UTP 2Pairs, 0.5mm,CM Grade (Non-Plenum)
AD-TC-10PUTP04CM	U/UTP 10Pairs, 0.4mm,CM Grade (Non-Plenum)
AD-TC-10PUTP05CM	U/UTP 10Pairs, 0.5mm,CM Grade (Non-Plenum)

Category 5 Multipair Cables

Applications:

10Base-T, 100Base-T4, 100Base-TX, 100Base-VG-ANYLAN, 155Mbps ATM, 622Mbps ATM

Standards:

ISO/IEC 11801, ANSI/TIA/EIA-568-B

Product Construction Matrix:

		U/UTP	F/UTP	SF/UTP
Conductor	Material	Solid Plain Copper	Solid Plain Copper	Solid Plain Copper
	Stranding(No./mm)	1/0.5	1/0.5	1/0.5
	Gauge	24AWG	24AWG	24AWG
Insulation	Material	PE	PE	PE
	Diameter	0.86 mm	0.86 mm	0.86 mm
Screen	Material	Nil	Overall Aluminum Tape Screen	Overall Aluminum Tape Screen & Copper Wire Braid
Drain Wire	Material	Nil	1/0.5 mm	1/0.5 mm
Assembly	No of Pairs	25/50/100	25/50/100	25/50/100
Jacket	Material	PE/PVC/LSF/ LSZH	PE/PVC/LSF/LSZH	PE/PVC/LSF/LSZH

Remark: PE-Polyethylene; PVC-Polyvinyl Chloride; LSF-Low Smoke & Fume; LSZH-Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-100MHz

Product Certification

E222756

Technical Parameters:

- Characteristic Impedance: 100±15Ω
- Nominal Velocity of Propagation(NVP): 69%
- Maximum DC Resistance: 9.38Ω/100m
- Maximum Mutual Capacitance: 5.6 nF/100m
- Maximum Capacitance Unbalance: 330 pF/100m
- Maximum Resistance Unbalance: 5%
- Maximum Propagation Delay Skew: 30 ns/100m
- Maximum Propagation Delay: 536 ns/100m@100 MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 60V rms
- Maximum Pulling load: 80N
- Working Temperature: -20 ℃ ~ +60 ℃
- Storage Temperature: -5 ℃ ~ + 50 ℃
- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMP Jacket); IEC 60332-1 (FRPVC& LSZH Jacket); IEC 60332-1 & IEC 60332-3C (LSFROH Jacket)

Product Highlights:

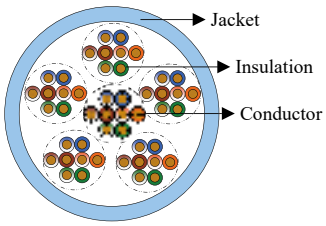
- Provide excellent bandwidth beyond 100 MHz.
- Designed for use in data and voice backbone application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Easily identifiable color code for ease of installation.

Transmission Properties:

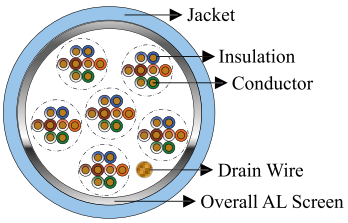
FREQ (MHz)	NEXT(dB/100m) Minimum Value/Typical Value/Standard Value	IL (dB/100m)	SRL (dB/100m) Minimum Value/Typical Value/Standard Value
1	64.0/71.0/62.0	2.0	24.5/26.0/23.0
4	55.0/62.0/53.0	4.0	24.5/26.0/23.0
8	49.5/57.0/48.0	5.7	24.5/26.0/23.0
10	49.0/56.0/47.0	6.4	24.5/26.0/23.0
16	44.9/52.0/44.0	8.2	24.5/26.0/23.0
20	42.5/48.0/42.0	9.2	24.5/26.0/23.0
25	42.0/48.0/41.0	10.3	24.5/26.0/23.0
31.25	40.6/48.0/39.0	11.6	22.5/24.0/21.0
62.5	36.1/43.0/35.0	16.9	19.5/22.0/18.0
100	34.0/40.0/32.0	21.8	17.5/20.0/16.0

Ordering Information:

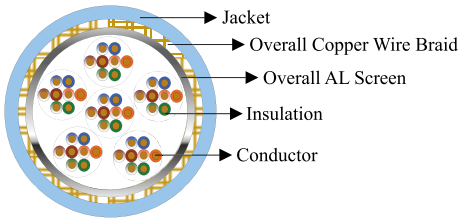
Model	Product Description
AD-BC-CAT5UTP25PCM24	U/UTP Cat5 25 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5UTP50PCM24	U/UTP Cat5 50 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5UTP100PCM24	U/UTP Cat5 100 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5UTP25PLH24	U/UTP Cat5 25 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5UTP50PLH24	U/UTP Cat5 50 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5UTP100PLH24	U/UTP Cat5 100 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5UTP25PPE24	Outdoor U/UTP Cat5 25 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT5UTP50PPE24	Outdoor U/UTP Cat5 50 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT5UTP100PPE24	Outdoor U/UTP Cat5 100 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT5FTP25PCM24	F/UTP Cat5 25 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5FTP50PCM24	F/UTP Cat5 50 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5FTP100PCM24	F/UTP Cat5 100 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5FTP25PLH24	F/UTP Cat5 25 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5FTP50PLH24	F/UTP Cat5 50 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5FTP100PLH24	F/UTP Cat5 100 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5FTP25PPE24	Outdoor F/UTP Cat5 25 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT5FTP50PPE24	Outdoor F/UTP Cat5 50 Pairs (Water-blocking /UV Resistant)
AD-BC-CAT5FTP100PPE24	Outdoor F/UTP Cat5 100 Pairs (Water-blocking /UV Resistant)



Cat5 U/UTP



Cat5 F/UTP



Cat5 SF/UTP

Enhanced Category 5 Multipair Cables

Applications:

10Base-T, 100Base-T4, 100Base-TX, 100Base-VG-ANYLAN, 155Mbps ATM, 622Mbps ATM, 1000Base-T

Standards:

ISO/IEC 11801, ANSI/TIA/EIA-568-B

Product Construction Matrix:

		U/UTP	F/UTP	SF/UTP
Conductor	Material	Solid Plain Copper	Solid Plain Copper	Solid Plain Copper
	Stranding(No./mm)	1/0.5	1/0.5	1/0.5
	Gauge	24AWG	24AWG	24AWG
Insulation	Material	PE	PE	PE
	Diameter	0.86 mm	0.86 mm	0.86 mm
Screen	Material	Nil	Overall Aluminum Tape Screen	Overall Aluminum Tape Screen & Copper Wire Braid
Drain Wire	Material	Nil	1/0.5 mm	1/0.5 mm
Assembly	No of Pairs	25/50/100	25/50/100	25/50/100
Jacket	Material	PE/PVC/LSF/LSZH		

Remark: PE- Polyethylene; PVC- Polyvinyl Chloride; LSF- Low Smoke & Fume; LSZH- Low Smoke Zero Halogen; LSFROH-Low Smoke Flame Retardant Zero Halogen (to IEC60332-3C); PVC can be classified as CMX, CM, CMR and CMP

Working Frequency:

1-100MHz

Product Certification

E222756

Technical Parameters:

- Characteristic Impedance: 100±15Ω
- Nominal Velocity of Propagation(NVP): 69%
- Maximum DC Resistance: 9.38Ω/100m
- Maximum Mutual Capacitance: 5.6nF/100m
- Maximum Capacitance Unbalance: 330pF/100m
- Maximum Resistance Unbalance: 5%
- Maximum Propagation Delay Skew: 30 ns/100m
- Maximum Propagation Delay: 536ns/100m@100MHz
- Minimum Bending radius: 10 x Overall Diameter
- Voltage Rating: 60V rms
- Maximum Pulling load: 80N
- Working Temperature: -20℃ ~ +60℃
- Storage Temperature: -5℃ ~+50℃
- Flame Retardancy: UL 1581 (CM Jacket); UL 1666 (CMR Jacket); UL 910 (CMPJacket); IEC 60332-1 (FRPVC & LSZH Jacket); IEC 60332-1 & IEC 60332-3C (LSFROH Jacket)

Product Highlights:

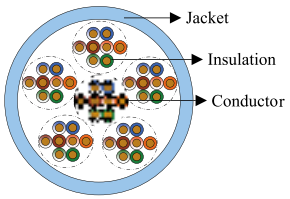
- Provide excellent bandwidth beyond 200 MHz.
- Designed for use in data and voice backbone application.
- Meet the strict flame retardancy and environmental requirements in Europe and US.
- Easily identifiable color code for ease of installation.
- Different jacket options available for choice.

Transmission Properties:

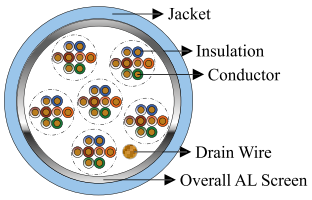
FREQ (MHz)	NEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	IL (dB/100m)	RL (dB/100m) Minimum Value/ Typical Value/ Standard Value	ACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	ELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSNEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSACR (dB/100m) Minimum Value/ Typical Value/ Standard Value	PSELFEXT (dB/100m) Minimum Value/ Typical Value/ Standard Value
1	68.3/74.0/65.3	2.0	20.2/26.0/20.2	66.3/72.0/63.3	64.8/69.0/63.8	65.3/71.0/62.3	63.3/69.0/60.3	61.8/66.0/60.8
4	59.3/65.0/56.3	4.1	23.0/29.0/23.0	55.2/60.9/52.2	52.7/57.0/51.7	56.3/62.0/53.3	52.2/57.9/49.2	49.7/54.0/48.7
8	54.8/61.0/51.8	5.8	24.5/30.5/24.5	49.0/55.2/46.0	46.7/51.0/45.7	51.8/58.0/48.8	46.0/52.2/43.0	43.7/48.0/42.7
10	53.3/59.0/50.3	6.5	25.0/31.0/25.0	46.8/52.5/43.8	44.8/49.0/43.8	50.3/56.0/47.3	43.8/49.5/40.8	41.8/46.0/40.8
16	50.3/56.0/47.3	8.2	25.0/31.0/25.0	42.1/47.8/39.1	40.7/45.0/39.7	47.4/53.0/44.3	39.1/44.8/36.1	37.7/42.0/36.7
20	48.8/55.0/45.8	9.3	25.0/31.0/25.0	39.5/45.7/36.5	38.7/43.0/37.7	45.8/52.0/42.8	36.5/42.7/33.5	35.7/40.0/34.7
25	47.3/53.0/44.3	10.4	24.3/30.3/24.3	36.9/42.6/33.9	36.8/41.0/35.8	44.3/50.0/41.3	33.9/39.6/30.9	33.8/38.0/32.8
31.25	45.9/52.0/42.9	11.4	23.6/29.6/23.6	34.2/40.3/31.2	34.9/39.0/33.9	42.9/49.0/39.9	31.2/37.3/28.2	31.9/36.0/30.9
62.5	41.4/47.0/38.4	17.0	21.5/27.5/21.5	24.4/30.0/21.4	28.8/33.0/27.8	38.4/44.0/35.4	21.4/27.0/18.4	25.8/30.0/24.8
100	38.3/44.0/35.3	22.0	20.1/26.1/20.1	16.3/22.0/13.3	24.8/29.0/23.8	35.3/41.0/32.3	13.3/19.0/10.3	21.8/26.0/20.8
155	35.5/41.0/32.5	28.1	18.8/24.8/18.8	7.4/12.9/4.4	20.9/25.0/19.9	32.5/38.0/29.5	4.4/9.9/1.4	17.9/22.0/16.9
200	33.7/40.0/30.7	32.4	18.0/24.0/18.0	1.3/7.6/-1.7	19.7/24.0/18.7	30.0/37.0/27.7	-1.7/4.6/-4.7	16.7/21.0/15.7

Ordering Information:

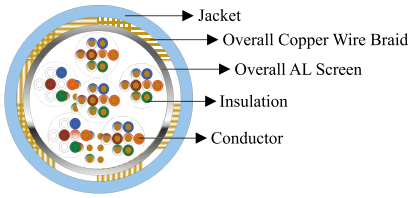
Model	Product Description
AD-BC-CAT5EUTP24PCM24	U/UTP Cat5e 24 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EUTP48PCM24	U/UTP Cat5e 48 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EUTP24PLH24	U/UTP Cat5e 24 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EUTP48PLH24	U/UTP Cat5e 48 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EFTP24PCM24	F/UTP Cat5e 24 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EFTP48PCM24	F/UTP Cat5e 48 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EFTP24PLH24	F/UTP Cat5e 24 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EFTP48PLH24	F/UTP Cat5e 48 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5ES-FTP24PCM24	SF/UTP Cat5e 24 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5ES-FTP48PCM24	SF/UTP Cat5e 48 Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5ES-FTP24PLH24	SF/UTP Cat5e 24 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5ES-FTP48PLH24	SF/UTP Cat5e 48 Pairs, LSZH Grade (IEC60332-1)
AD-BC-CAT5EUTP24PPE24	Outdoor U/UTP Cat5e(4×6) Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EUTP48PPE24	Outdoor U/UTP Cat5e(4×12) Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EFTP24PPE24	Outdoor U/UTP Cat5e(4×6) Pairs, CM Grade (Non-Plenum)
AD-BC-CAT5EFTP48PPE24	Outdoor U/UTP Cat5e(4×12) Pairs, CM Grade (Non-Plenum)



Cat5e U/UTP

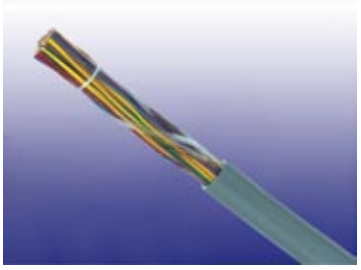


Cat5e F/UTP



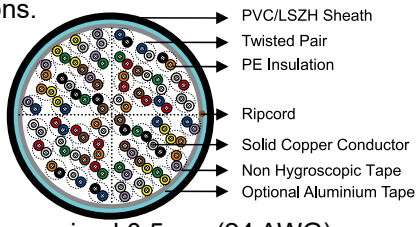
Cat5e SF/UTP

Category 3 Cables (Indoor/Outerdoor)



Application

The cables are designed for medium frequency data or telephone systems, suitable for indoor or outdoor insulations.



Standards

TIA/EIA-568B,
IEC 6 156-4, UL-44,
ANSI/ICEA S-80-576

Construction

- Conductors: Solid annealed bare copper sized 0.5mm (24 AWG) as per ASTM-B3/class 1 of IEC 60228.
- Insulation: Solid polyethylene as per ASTM D 1248/IEC 60708.
- Twisted Pairs Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- Cable Core Assembly: The 50-pair cable is composed of 4 units having 12 or 13 pairs each. All other cables are composed of 25-pair units. Units are identified by colour coded binders.
- Core Wrapping: Non-hygroscopic dielectric tape fully enclosing the core with an overlap.
- Screen (optional): An optional Aluminium/Polyester tape placed in contact with solid copper drain wire may be provided as an option.
- Sheath: PVC or LSZH.
- Ripcord: Nylon ripcord may be placed parallel to the cores to facilitate sheath removal.

Electrical Properties

Nominal Conductor Diameter	mm	0.5
Maximum DC Resistance	Ω/100m	9.38
Maximum Resistance Unbalance	%	5
Maximum Capacitance Unbalance pair-to-ground @1KHz	pF/100m	330
Minimum Worst Pair Structural Return Loss (SRL):		
Up to 10 MHz	dB	12
Between 10 and 16 MHz	dB	10
Impedance @1-16 MHz	Ω	85-115
Maximum Attenuation at 20°C		
@64KHz	dB/100m	0.9
@256KHz	dB/100m	1.3
@512KHz	dB/100m	1.8
@772KHz	dB/100m	2.2
@1MHz	dB/100m	2.6
@8MHz	dB/100m	5.6
@10MHz	dB/100m	8.5
@16MHz	dB/100m	9.7
Minimum Worst pair-to-pair NEXT Loss		13.1
@772KHz	dB	
@1MHz	dB	43
@4MHz	dB	41
@8MHz	dB	32
@10MHz	dB	26
@16MHz	dB	23
Minimum Relative Velocity of Propagation @10MHz	dB	0.585

Mechanical and Themal Properties

Temperature range during operation (fixed state): -30°C – +70°C
Temperature range during installation (mobile state): -20°C – +50°C
Minimum bending radius: 10 x Overall Diameter (unarmoured cables);15 x Overall Diameter (armoured cables)

Color Code

Standard Colour Code is per TIA/EIA 568B or ICEA S-80-576 as given in Colour Code Chart.

Dimensions and Weight

PE INSULATED CATEGORY 3 UTP CABLES

Cable Code	Number of Pairs	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.5mm Conductor, 0.9mm Insulated Wire, UTP, PVC Sheathed, Indoor				
AD-TP568-2YY-10P05-UTPC3	10	0.9	9.5	77
AD-TP568-2YY-25P05-UTPC3	25	0.9	12.5	155
AD-TP568-2YY-50P05-UTPC3	50	1.0	17.0	260
AD-TP568-2YY-100P05-UTPC3	100	1.1	21.5	530
AD-TP568-2YY-200P05-UTPC3	200	1.2	29.5	1100
AD-TP568-2YY-300P05-UTPC3	300	1.3	33.5	1550
0.5mm Conductor, 0.9mm Insulated Wire, UTP, LSZH Sheathed, Indoor & Outdoor				
AD-TP568-2YH-10P05-UTPC3	10	0.9	10.0	80
AD-TP568-2YH-25P05-UTPC3	25	0.9	14.0	150
AD-TP568-2YH-50P05-UTPC3	50	1.1	16.5	280
AD-TP568-2YH-100P05-UTPC3	100	1.4	21.5	530
AD-TP568-2YH-200P05-UTPC3	200	1.7	30.0	900
AD-TP568-2YH-300P05-UTPC3	300	1.7	36.0	1300
0.5mm Conductor, 0.9mm Insulated Wire, UTP, PE Sheathed, Outdoor				
AD-TP568-2Y2Y-10P05-UTPC3	10	0.9	9.5	80
AD-TP568-2Y2Y-25P05-UTPC3	25	0.9	13.0	150
AD-TP568-2Y2Y-50P05-UTPC3	50	1.0	16.0	280
AD-TP568-2Y2Y-100P05-UTPC3	100	1.1	21.5	550
AD-TP568-2Y2Y-200P05-UTPC3	200	1.2	28.5	1050
AD-TP568-2Y2Y-300P05-UTPC3	300	1.3	34.5	1550

PE INSULATED CATEGORY 3 FTP CABLES

Cable Code	Number of Pairs	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.5mm Conductor, 0.9mm Insulated Wire, FTP, PVC Sheathed, Indoor				
AD-TP568-2YY-10P05-FTPC3	10	0.9	9.5	77
AD-TP568-2YY-25P05-FTPC3	25	0.9	12.5	155
AD-TP568-2YY-50P05-FTPC3	50	1.0	17.0	260
AD-TP568-2YY-100P05-FTPC3	100	1.1	21.5	530
AD-TP568-2YY-200P05-FTPC3	200	1.2	29.5	1100
AD-TP568-2YY-300P05-FTPC3	300	1.3	33.5	1550
0.5mm Conductor, 0.9mm Insulated Wire, FTP, LSZH Sheathed, Indoor & Outdoor				
AD-TP568-2YH-10P05-FTPC3	10	0.9	10.0	80
AD-TP568-2YH-25P05-FTPC3	25	0.9	14.0	150
AD-TP568-2YH-50P05-FTPC3	50	1.1	16.5	280
AD-TP568-2YH-100P05-FTPC3	100	1.4	21.5	530
AD-TP568-2YH-200P05-FTPC3	200	1.7	30.0	900
AD-TP568-2YH-300P05-FTPC3	300	1.7	36.0	1300
0.5mm Conductor, 0.9mm Insulated Wire, FTP, PE Sheathed, Outdoor				
AD-TP568-2Y2Y-10P05-FTPC3	10	0.9	9.5	80

Cable Code	Number of Pairs	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
AD-TP568-2Y2Y-25P05-FTPC3	25	0.9	13.0	150
AD-TP568-2Y2Y-50P05-FTPC3	50	1.0	16.0	280
AD-TP568-2Y2Y-100P05-FTPC3	100	1.1	21.5	550
AD-TP568-2Y2Y-200P05-FTPC3	200	1.2	28.5	1050
AD-TP568-2Y2Y-300P05-FTPC3	300	1.3	34.5	1550

Fiber Cable Design

Product Highlights:

• Central Strength Members:

For high strength and flexibility required for outdoor cables to be easily pulled or blow into ducts, the preferred central strength member material is steel. The steel is hot-rolled with anti-corrosion treatment. The steel central member is continuous throughout the cable length. It is coated with plastic, having a diameter dictated by the cable geometry. Stranded steel is used when light cable and high flexibility are required. Stranded steel is characterized by high modulus and tensile strength, not easily generated Hydrogen due to oxidization, which in turn may effect the fiber attenuation. As an alternative option to steel, FRP can be used as central strength member. The dielectric nature of glass fibers renders them immune to electromagnetic interference (EMI) and lighting. Dielectric cables can be laid in unprotected conduits and even in air handing spaces and plenums, as there is no danger of electrical shock.

• Jelly :

Jelly is characterized by higher dripping point and long term stability.

• Corrugated Steel Tape:

Steel tape is usually coated with polymer on both sides. The polymer coating enhances the adhesion of the steel to the jacket material during extrusion, creating an extremely rugged cable. The steel tape provides protection against water penetration and corrosion, also providing necessary physical protection. The steel tape can be corrugated to increase the tensile strength, thus enhancing cable flexibility. Besides, steel tape also renders the cables immune to lighting and provides rodent protection.

• Aluminum Moisture Barrier:

The aluminum moisture barrier prevents ingress from water penetration and also provides good physical protection. It is a critical element for providing water-blocking protection for the fiber cables.

• Jacket Materials:

PE:

Polyethylene (PE) is used as cable jackets mostly for outdoor applications. It is characterized by high tensile strength and resistance to abrasion. PE will not crack or become brittle at low temperature and will retain its mechanical properties and stability at high temperature. With the inclusion of carbon black in the formulation. PE can have extremely good aging properties and high UV and weather resistance to most chemicals and solvents.

PVC:

Polyvinyl Chloride (PVC) is used mostly for indoor applications. PVC material is flexible and flame retardant. It does not allow fire to propagate along the cable when ignited. PVC is characterized by high tensile strength and abrasion resistance. It will not crack or deteriorate when used indoors and at moderate temperatures.

LSZH:

Low Smoke Zero Halogen compound (LSZH) is used mostly for indoor applications. LSZH material is flexible and flame retardant, meeting flammability requirements of IEC 60332-1 and IEC 60332-3C. Besides, LSZH material emits low amounts of smoke, complying to IEC 61034 and does not emit toxic, corrosive halogen gases complying to IEC 60754-1 standard.

Standards:

1) Fiber testing is carried out in accordance to TIA/EIA-455, IEC-794-1 and EN-187000 standards.

2) Fiber optic cables meet Bellcore standard in the outdoor environment.

3) LSZH jacket meets IEC60332-1 & IEC60332-3C standards.

Fiber Characteristics:

SINGLE MODE FIBERS

Parameter	Standard Single Mode Fiber per ITU-T G.652D	Non-Zero Dispersion Shifted Fiber per ITU-T G.655	Non-Zero Dispersion Shifted Fiber per ITU-T G.656	Units
Fiber Code	9	8	7	
Attenuation, Loose Tube Cables @1310nm @1550nm @1625nm	 ≤0.35 ≤0.22 ≤0.25	 - ≤0.22 ≤0.26	 - ≤0.22 ≤0.26	dB/km
Attenuation Tight Buffer Cables @1310nm @1550nm	 ≤0.38 ≤0.28	 - -		dB/km
Dispersion 1260-1360nm (O Band) 1460-1530nm (S Band) 1530-1565nm (C Band) 1565-1565nm (L Band)	 ≤0.35 - ≤18.0 ≤22.0	 N/A - 1-10 7-12	 - 2-7 7-10 10-14	ps/(nm*km)
Zero Dispersion Wavelength	1311±11	<1520	<1420	nm
Mode Field Diameter @1310nm @1550nm	 9.2±0.5 10.4±1.0	 N/A 8.5±0.6	 - 9.0±0.5	μm
Cable Cut-off Wavelength	≤1260	<1450	<1310	nm
Cladding Diameter	125±1.0	125±1.0	125±1.0	μm
Core/Cladding Concentricity Error	≤0.5	≤0.5	≤0.6	μm
Cladding Non-Circularity	≤1.0	≤1.0	≤1.0	%
Coating Diameter	245±10	245±10	245±10	μm
Proof-Test Level	0.7	0.7	0.7	GN/㎡

MULTIMODE FIBERS

Parameter	50/125μm		62.5/125μm	Units
Fiber Code	5	4	6	
ISO/IEC11801	OM2	OM3	OM1	
Attenuation, Loose Tube Cables @850nm @1300nm	 ≤2.8 ≤0.9		 ≤3.2 ≤1.0	dB/km
Attenuation Tight Buffer Cables @850nm @1300nm	 ≤3.0 ≤1.0		 ≤3.5 ≤1.0	dB//km
Bandwidth @850nm @1300nm	 ≥500 ≥800	 ≥2000 ≥500	 ≥200 ≥500	MHz*km
Numerical Aperture	0.20±0.015		0.275±0.015	-
Core Diameter	50±3		62.5±3	μm
Cladding Diameter	125±2		125±2	μm
Core Non Circularity	≤6		≤6	%
Cladding Non-Circularity	≤2		≤2	%
Core/Cladding Offset	≤3		≤3	μm
Coating Diameter	245±10		245±10	μm
Proof-Test Level	0.7		0.7	GN/㎡

Multi Loose Tube Fiber Optic Cables

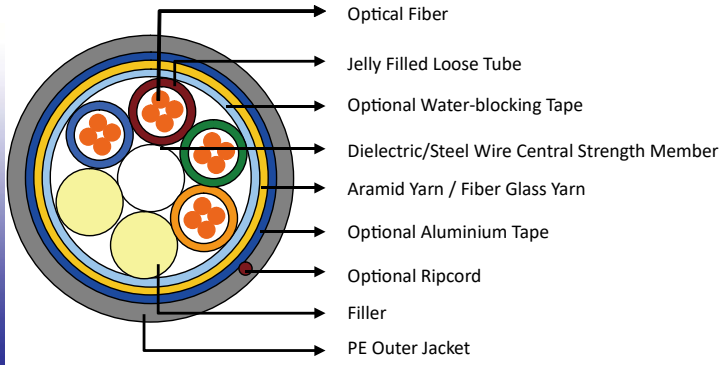
Application

The multi loose tube non metallic cable is designed for outside plant, which is prone to electrical interference.

Description

The cable consists of 5 to 36 fi bers containing tubes or fi llers stranded in up to 3 layers around a central strength member and bound under a PE jacket. Each tube contains 4 -12 fi bers. Solid or stranded steel wire coated with polyethylene is usually used as central strength member. Fiber glass reinforced plastics (FRP) will be used as central strength member if non metallic construction is required. Either aramid yarn or fi ber glass is wound around the tube to provide physical protection and tensile strength. The cable can be jacketed with either PE, PVC or LSZH though PE is the preferred option for water protection purpose. For direct burial, steel wire armour or corrugated steel tape armour is applied with an optional inner jacket of either PVC or PE. An Aluminium moisture tape can be incorporated under the jacket for water blocking and shielding purpose. A ripcord is located under the jacket to facilitate jacket removal.

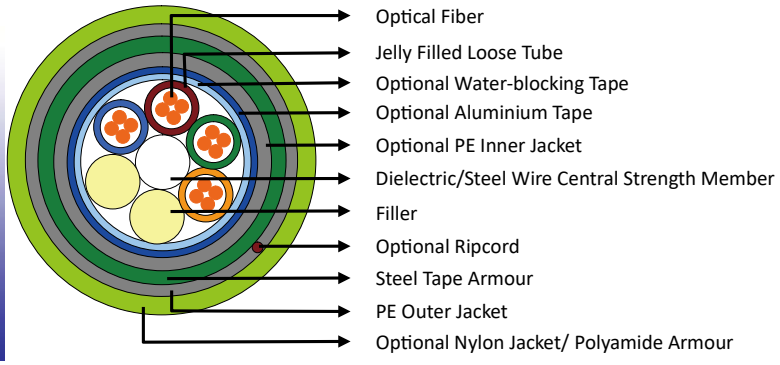
Construction



Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	110.0	73.83	12.0	0.472	2670/600	800/180
38-72	120.0	80.54	12.6	0.496	2670/600	800/180
74-84	135.0	90.60	13.5	0.531	2670/600	800/180
98-108	170.0	114.09	15.0	0.590	2670/600	800/180
110-120	190.0	127.52	15.5	0.610	2670/600	800/180
122-132	210.0	140.94	16.5	0.649	2670/600	800/180
134-144	230.0	154.36	17.5	0.688	2670/600	800/180
146-216	250.0	167.79	18.0	0.708	2670/600	800/180
218-264	300.0	201.34	19.5	0.767	2670/600	800/180
266-312	350.0	234.90	21.0	0.826	2670/600	800/180
314-360	400.0	268.46	22.5	0.885	2670/600	800/180

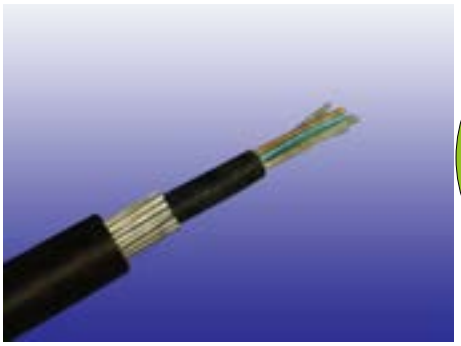
Construction

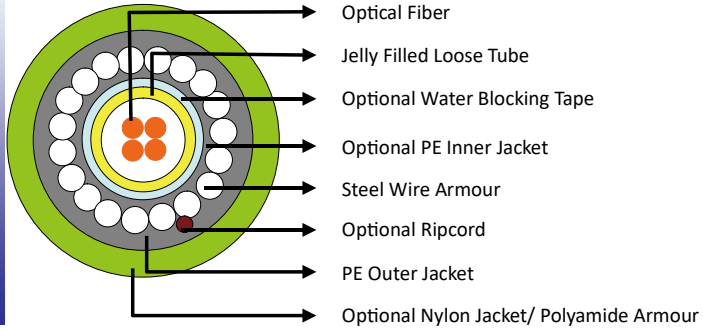


Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	210.0	140.94	15.0	0.590	2670/600	800/180
38-72	230.0	154.36	15.5	0.610	2670/600	800/180
74-84	250.0	167.79	16.5	0.649	2670/600	800/180
98-108	270.0	181.21	17.0	0.669	2670/600	800/180
110-120	295.0	197.98	17.5	0.688	2670/600	800/180
122-132	320.0	214.77	18.5	0.728	2670/600	800/180
134-144	355.0	238.26	19.0	0.748	2670/600	800/180
146-216	390.0	261.74	21.0	0.826	2670/600	800/180
218-264	455.0	305.37	22.5	0.885	2670/600	800/180
266-312	515.0	345.64	24.0	0.944	2670/600	800/180
314-360	580.0	389.26	26.0	1.023	2670/600	800/180

Construction





Physical Properties

Fiber Count	1600.0Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-36	700.0	469.90	21.0	0.826	8000/1800	2650/595
38-72	830.0	557.05	23.5	0.925	8000/1800	2650/595
74-84	870.0	583.89	24.0	0.944	8000/1800	2650/595

Fiber Count	1600.0Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
76-96	900.0	604.03	24.5	0.964	8000/1800	2650/595
98-108	950.0	637.58	26.0	1.023	8000/1800	2650/595
110-120	1000.0	671.14	27.0	1.062	8000/1800	2650/595
122-132	1050.0	704.70	28.0	1.102	8000/1800	2650/595
134-144	1100.0	738.26	29.0	1.141	8000/1800	2650/595
146-216	1300.0	872.48	31.0	1.220	8000/1800	2650/595
218-264	1400.0	939.60	33.0	1.299	8000/1800	2650/595
266-312	1500.0	1006.71	35.0	1.377	8000/1800	2650/595
314-360	1600.0	1073.83	37.0	1.456	8000/1800	2650/595

Mechanical Properties

Minimum Bending Radius:

Under installation: 20 × OD; During operation: 10×OD for unarmoured cables, 20×OD for armoured cables

Maximum Compressive Load:4000N for unarmoured cables; 6000N for armoured cables

Repeated Impact: 4.4 N.m (J)

Twist (Torsion): 180×10 times, 125×OD

Cyclic Flexing: 25 cycles for armoured cables ; 100 cycles for unarmoured cables

Temperature Range:

Operating Temperature Range: -40℃ (-40 ℉) to +70℃ (+158 ℉) 100 cycles for unarmoured cables.

Storage Temperature Range: -50℃ (-58 ℉) to +70℃ (+158 ℉)

Crush Resistance: 220N/cm(125lb/in)

Fiber Compliance

Temperature Cycling: IEC60794-1-2-F2

Tensile Strength: IEC60794-1-2-E1A

Crush: IEC60794-1-2-E3

Impact: IEC60794-1-2-E4

Repeated Bending: IEC60794-1-2-E6

Torsion: IEC60794-1-2-E7

Kink: IEC60794-1-2-E10

Cable Bend: IEC60794-1-2-E11

Cool Bend: IEC60794-1-2-E11

Safety Compliance

General Purpose Grade	Flammability Test: OFN(UL1581)
Riser Grade	Flammability Test: OFNR/FT4 (UL1666)
Plenum Grade	Flammability Test: OFNP/FT6(UL 910)
FRPVC Grade	Flammability Test: IEC60332-1
LSZH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2
LSFROH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2; Flammability Test: IEC60332-1 & IEC 60332-3C/A
FR Grade	Fire Resistance Test: IEC 60331 / BS 6387 CWZ

Standard Compliance

Telcordia GR-20, RUS 7 CFR 1755.900 (REA PE-90), ICEA S 87-640

Features

- Loose Tube construction provides environmental protection
- Loose tube jelly fi lled for superior fi ber protection
- Colored coded fi bers and binders for quick and easy identifi cation during installation.
- UV resistant for outdoor application
- Dry water blocking core design for ease of handling
- Anti-termite and rodent protection as options
- Optional Aluminium moisture barrier for EMI protection and water protection

Ordering Information:

AD-MLA-B-C- D-E-F-G-H-I-J-K-L
A: Loose Tube Diameter
B = 2.1 mm; C = 2.5 mm; D = 2.8 mm; E = 3.0 mm; F = 3.2 mm
B: Fiber Types
0=Fibers and copper conductors in cable; 1=Two or more fiber type
in a cable
4=50/125 Multimode (OM3); 5=50/125 Multimode (OM2);
6=62.5/125 Multimode (OM1); 7= NZDS SM fiber per G.656
8=NZDS SM fiber per G.655; 9=Standard SM fiber per G.65
C: No. of Tubes: 1-36
D: No. of Fibers per Tube: 2 - 12
E: Central Member: S=Solid steel; SR-Stranded Steel; F=Dielectric (FRP)
F: Inner jacket options
2Y =PE; Y =PVC; H =LSZH
G: Armour options
Blank=No armour; T=Corrugated steel tape armour; W=Steel wire armour
B=Bronze armour; D=Fiber glass armour; TW= Steel tape + Steel wire armour
H: Jacket material options
2Y =PE; Y =PVC; H =LSZH; 8Y= PA
11Y=PU; A=Aluminium moisture barrier; T=Anti-termite protection
I: Water-blocking options for cable core
X=No water-blocking; J= Water-blocking gel in tubes; JD=Water-blocking gel
in tubes+ dry water-blocking in cable core interstices; JJ= Water-blocking gel in
tubes and cable core interstices
J: Water-blocking options or cables with more than one jacket
X=No water-blocking; J=Water-blocking gel between jackets; D=Dry water-blocking between cable jackets;
K: Strength member options
A=Aramid yarn; AG=Aramid yarn and fiber glass yarn; G=Fiber glass yar
L: General options
SS=Fig-8 self-supporting; UW=Under Water

Central Loose Tube Fiber Optic Cables

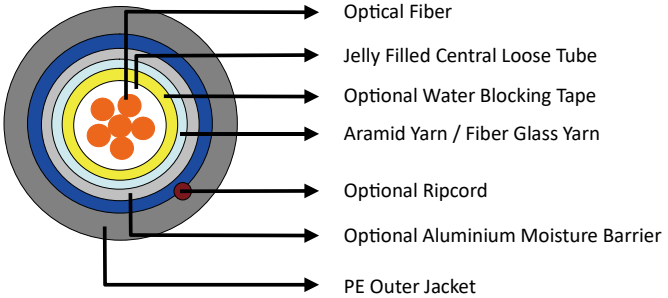
Application

This cable is characterized by light weight and small diameter, suitable for both aerial and duct installation. The cable can also be used for direct burial for armoured option.

Description

Central loose tube cable contains one tube with 2 - 24 fi bers, which is fi lled with water blocking gel. Either aramid yarn or fi ber glass is wound around the tube to provide physical protection and tensile strength. The cable can be jacketed with either PE or LSZH. PE is the preferred option in outdoor environment for water protection purpose. For direct burial, either steel wire armour or corrugated steel tape armour is applied with an optional inner jacket of either PVC, PE or LSZH. An Aluminium moisture tape can be incorporated under the jacket for water blocking and shielding purpose. A ripcord is located under the jacket to facilitate jacket removal.

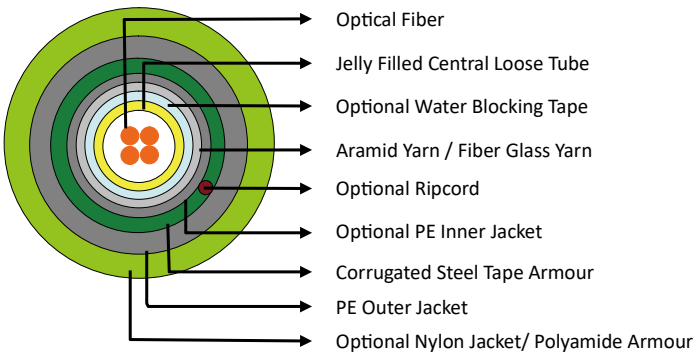
Construction



Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-12	60.0	40.27	7.5	0.296	1500/337	445/100
14-24	65.0	43.62	8.5	0.335	1500/337	445/100

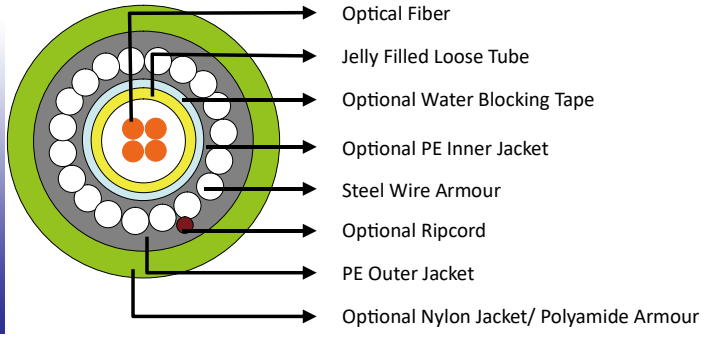
Construction



Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-12	125.0	83.89	10.5	0.414	2670/600	890/200
14-24	145.0	97.32	12.0	0.473	2670/600	890/200

Construction



Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-12	170.0	114.09	10.5	0.414.	8000/1800	2650/595
14-24	245.0	164.43	12.0	0.473	8000/1800	2650/595

Mechanical Properties

Minimum Bending Radius:

Under installation: 20 × OD; During operation: 10×OD for unarmoured cables, 20×OD for armoured cables

Maximum Compressive Load: 3000N

Repeated Impact: 4.4 N.m (J)

Twist (Torsion): 180×10 times, 125×OD

Cyclic Flexing: 25 cycles for armoured cables ; 100 cycles for unarmoured cables

Temperature Range:

Operating Temperature Range: -40℃ (-40 ℉) to +70℃ (+158 ℉) 100 cycles for unarmoured cables.

Storage Temperature Range: -50℃ (-58 ℉) to +70℃ (+158 ℉)

Crush Resistance: 263N/cm(150lb/in)

Fiber Compliance

Temperature Cycling: IEC60794-1-2-F2

Tensile Strength: IEC60794-1-2-E1A

Crush: IEC60794-1-2-E3

Impact: IEC60794-1-2-E4

Repeated Bending: IEC60794-1-2-E6

Torsion: IEC60794-1-2-E7

Kink: IEC60794-1-2-E10

Cable Bend: IEC60794-1-2-E11

Cool Bend: IEC60794-1-2-E11

Safety Compliance

General Purpose Grade	Flammability Test: OFN(UL1581)
Riser Grade	Flammability Test: OFNR/FT4 (UL1666)
Plenum Grade	Flammability Test: OFNP/FT6(UL 910)
FRPVC Grade	Flammability Test: IEC60332-1
LSZH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2
LSFROH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2; Flammability Test: IEC60332-1 & IEC 60332-3C/A
FR Grade	Fire Resistance Test: IEC 60331 / BS 6387 CWZ

Standard Compliance

Telcordia GR-20, RUS 7 CFR 1755.900 (REA PE-90), ICEA S 87-640

Ordering Information:

AD-CLA-B-C-D-E-F-G-H-I-J
A: Loose Tube Diameter
A = 2.1 mm; B = 2.5 mm
B: Fiber Types:
0=Fibers and copper conductors in cable; 1=Two or more fiber type
in a cable
4=50/125 Multimode (OM3); 5=50/125 Multimode (OM2);
6=62.5/125 Multimode (OM1); 7= NZDS SM fiber per G.656
8=NZDS SM fiber per G.655; 9=Standard SM fiber per G.652
C: No of Tubes: 1-24
D: Inner jacket options
2Y =PE; Y =PVC; H =LSZH
E: Armour options
Blank=No armour; T=Corrugated steel tape armour; W=Steel wire armour;
B=Bronze armour; D=Fiber glass armour; TW= Steel tape + Steel wire armour
F: Jacket material options
2Y =PE; Y =PVC; H =LSZH; 8 Y =PA; 11Y =PU;
A=Aluminium moisture barrier; T=Anti-termite protection
G: Water-blocking options for Cable Cores
X=No water-blocking; J= Water-blocking gel in tubes; JD=Water-blocking gel in tubes + dry
water-blocking in cable core interstices; JJ= Water-blocking gel in tubes and cable core interstices.
H: Water-blocking options for Cables with more than one Jacket
X=No water-blocking; J=Water-blocking gel between jackets; D=Dry water-blocking between cable jackets
I: Strength member options
A=Aramid yarn; AG=Aramid yarn and fibe glass yarn; G=Fiberglass yarn
J: General options:
SS=Fig-8 self-supporting; UW=Under Water

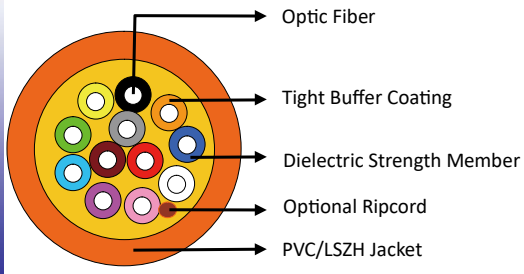
Tight Buffer Distribution Fiber Optic Cables

Application

This cable is used for interconnection of the distribution boxes and end devices. The cable is very suitable for various indoor and outdoor applications, including routing between buildings within ducts and inside building up to riser shafts.

Description

The Distribution Cable consists of color-coded PVC tight buffered fi bers. The fi bers are reinforced with aramid yarn for superior strength and contains no metallic elements. The fi bers are jacketed with Flame Retardant PVC or LSZH compound.



Physical Properties

Fiber Count	Nominal Weight (kg/km)	Nominal Weight (lb/kft)	Nominal Outer Diameter (mm)	Nominal Outer Diameter (in)	Maximum Pulling/Tensile Load	
					Installation (N/lb)	In Service (N/lb)
2-6	26.0	17.45	5.0	0.197	1000/225	290/65
8-12	50.0	33.56	7.5	0.296	1425/320	500/112
14-24	140.0	93.96	13.0	0.512	2670/600	890/200
26-36	200.0	134.23	16.5	0.650	4448/1000	1490/335
38-48	300.0	201.34	18.0	0.709	4448/1000	1490/335

Mechanical Properties

Minimum Bending Radius:

Under installation: 20 × OD; During operation: 10×OD for unarmoured cables, 20×OD for armoured cables

Maximum Compressive Load: 2000N

Repeated Impact: 2.9 N.m (J)

Twist (Torsion): 180×10 times, 125×OD

Cyclic Flexing: 25 cycles for armoured cables ; 100 cycles for unarmoured cables

Temperature Range:

Operating Temperature Range: -40℃ (-40 ℉) to +70℃ (+158 ℉) 100 cycles for unarmoured cables.

Storage Temperature Range: -50℃ (-58 ℉) to +70℃ (+158 ℉)

Crush Resistance: 1485N/cm(850lb/in)

Fiber Compliance

Temperature Cycling: IEC60794-1-2-F2

Tensile Strength: IEC60794-1-2-E1A

Crush: IEC60794-1-2-E3

Impact: IEC60794-1-2-E4
Repeated Bending: IEC60794-1-2-E6
Torsion: IEC60794-1-2-E7
Kink: IEC60794-1-2-E10
Cable Bend: IEC60794-1-2-E11
Cool Bend: IEC60794-1-2-E11

Safety Compliance

General Purpose Grade	Flammability Test: OFN(UL1581)
Riser Grade	Flammability Test: OFNR/FT4 (UL1666)
Plenum Grade	Flammability Test: OFNP/FT6(UL 910)
FRPVC Grade	Flammability Test: IEC60332-1
LSZH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2
LSFROH Grade	Halogen Content Test: IEC 60754-1; Acidity Test: IEC 60754; Smoke Emission Test: IEC61034-1/2; Flammability Test: IEC60332-1 & IEC 60332-3C/A
FR Grade	Fire Resistance Test: IEC 60331 / BS 6387 CWZ

Standard Compliance

GR409-CORE, TIA/EIA 568B.3, ICEA-S-83-596

Features

- Used in LAN and distribution applications where compact size and lightweight are require
- Suitable for both indoor and outdoor use - no need for splicing at the building entranc
- Flame-retardant or LSZH version for indoor installation
- Fungus-resistant, wate -resistant, and UV-resistant for outdoor installations
- Cable can be armoured for additional protection in direct burial and aerial installation
- Highest speci c strength-to-weight ratio for limited conduit space
- Economical for longer distance runs where cable cost is signi cant
- High quality tight-bu fered coating on fi ber for environmental and mechanical protection

Ordering Information:

AD-MTA-B-C-D-E-F-G-H-I-J-K-L
A: Small Unit Diameter
A=0.9mm (12 core);
B=3.6mm (12-16 core);
C=4.2mm (24-72 core)
B: Fiber Types
0=Fibers and copper conductors in cable; 1=Two or more fiber types in a cable
4=50/125 Multimode (OM3); 5=50/125 Multimode (OM2)
6=62.5/125 Multimode (OM1); 7= NZDS SM fiber per G.656
8=NZDS SM fiber per G.655; 9=Standard SM fiber per G.65
C: No of Fibers per Tubes: 4-72
D: Subunit Jacket Material
Y=PVC; H=LSZH
11Y=PU; 0=No subunit (0-12 core fiber E: Central Member
A=Aramid yarn; F=Dielectric (FRP)
F: Inner Jacket Options
2Y=PE; Y=PVC; H=LSZH

G: Armour Options
Blank=No armour; T=Corrugated steel tape armour; W=Steel wire armour
B=Bronze armour; D=Fiber glass armour; TW= Steel tape + Steel wire armour
H: Jacket Material Options
2Y=PE; Y=PVC; H=LSZH
11Y=PU; A=Aluminium moisture barrier; T=Anti-termite protection
I: Water-blocking Options for Cable Cores
X= No water-blocking; J=Cable core gel in tubes; D=Dry water-blocking in cable core interstices
J: Water-blocking Options for Cables with more than one Jacket
X=No Water-blocking; J= Water-blocking gel between jackets; D=Dry water-blocking between cable jackets
K: Tight Buffer Types
VT=Standard TB; YT=Tactical level
CG=Jelly filled, Semi tight buffered; CD=D , Semi tight buffere
L: Strength member options
A=Aramid yarn; AG=Aramid yarn and fiber glass yarn; G=Fiber glass yar

Connecting Hardware

Cat5e & Cat6/6A Keystone Jacks

CAT5e Unshielded Keystone Jack

Basic Features:

- Significant margin over ANSI/TIA 568-B, ISO/IEC 11801and EN 50173.
- Twists are maintained to within 1/2" (12.7mm).
- Work in standard keystone jack opening (0.58" x 0.78" or 14.7mm x 20.1mm).
- Unshielded and shielded versions available for choice.
- Accept 110 punch down tools or Krone punch down tools.
- Color coded for 568A and 568B wiring scheme.
- Swept frequency tested up to 150MHz for Cat5e jacks, 300 MHz for Cat 6 jacks and 500 MHz for Cat6A jacks.

CAT5e Shielded Keystone Jack

Technical Parameters:

- Made of UL-94V high impact and fire-retardant ABS material. ABS material is characterized by good impact, chemical & fire resistance.UL94V-0 is the highest standard on fire resistance.
- Beryllium copper contacts for superior connectivity, with 100μ" nickel baseboard furnished with 50μ" gold plating.
- Support 22 -26AWG wire gauge.
- Plug Retention Force: 10kg (minimum)
- Plug & Keystone Jack Contact Force: 100 g.
- Insertion Life Cycle: 1,000 cycles (minimum) / I.D.C 250 cycles (minimum)
- Insulation Resistance: 500MΩ
- Contact Resistance: 20MΩ
- Current Rating: 1.5 Amps
- DC Resistance: Max.0.1Ω
- Dielectric Withstand Voltage: 1,000VAC RMS @ 60Hz/1 min
- Operating Temperature: - 10℃ ~ 60℃
- Storage Temperature: -40℃ ~ 70℃

CAT6 Unshielded Keystone Jack

Product Certification

E223921

Product Highlights:

- Full seal design ensures reliable termination and stability.
- Supplied with a color coded dust cover for dust and dampness protection.
- IDC contact design eliminates need to strip individual conductors and ensures reliable termination.
- With a patented technology, all twists are maintained to within 1/2", improving the NEXT value to a great extent.
- Dust caps/retention caps offer termination with strain relief.
- Rear part of the jack printed with EIA 568B pin assignment to ensure fast termination.
- Being component tested, the jacks can work in harmony with lower class products.
- Provide extra NEXT margin in support of future gigabit application.
- Provide fully shielded design to ensure the best screening performance.
- Toolless design can speed up the installation process and save installation costs.
- 100% full shield design can improve EMI/RFI performance. Shield at the jack rear part can effectively protect IDC termination against EMI interference.

They allow flexible grounding for shielded cable for each IDC.

- Shielded panels incorporate 3℃ 60 stainless steel for full EMI (Electro-magnetic Immunity) shielding required by EN 50173.
- Compact design can support high density installation.

CAT6 Shielded Keystone Jack

CAT6A shielded Keystone Jack

Transmission Properties:

Cat5e Jacks

FREQ (MHz)	IL (dB/100m)	NEXT(dB/100m) MinimumValue/Typical Value/ Standard Value	ELFEXT (dB/100m) MinimumValue/Typical Value/ Standard Value	RL (dB/100m) MinimumValue/Typical Value/ Standard Value
1	0.1	85.0/65.0	80.0/65.0	52.0/30.0
4	0.1	75.0/65.0	71.0/63.1	50.0/30.0
8	0.1	68.0/64.9	66.0/57.0	46.0/30.0
10	0.1	66.0/63.0	64.0/55.1	44.0/30.0
16	0.2	62.0/58.9	60.0/51.0	40.0/30.0
20	0.2	60.0/57.0	58.0/49.1	38.0/30.0
25	0.2	58.0/55.0	56.0/47.1	37.0/30.0
31.25	0.2	56.0/53.1	54.0/45.2	35.0/30.0
62.5	0.3	50.0/47.1	48.0/39.2	29.0/24.0
100	0.4	47.0/43.0	44.0/35.1	26.0/20.0

Cat6 Jacks

FREQ (MHz)	IL (dB/100m)	NEXT(dB/100m) MinimumValue/Typical Value/ Standard Value	ELFEXT(dB/100m) MinimumValue/Typical Value/ Standard Value	RL(dB/100m) MinimumValue/Typical Value/ Standard Value
1	0.1	85.0/75.0	83.0/75.0	52.0/30.0
4	0.1	80.0/75.0	74.0/71.1	53.0/30.0
8	0.1	77.0/75.0	69.0/65.0	55.0/30.0
10	0.1	76.0/74.0	67.0/63.1	56.0/30.0
16	0.1	72.0/69.9	62.0/59.0	57.0/30.0
20	0.1	72.0/68.0	61.0/57.0	59.0/30.0
25	0.1	69.0/66.0	59.0/55.1	59.0/30.0
31.25	0.11	67.0/64.1	58.0/53.2	56.0/30.0
62.5	0.16	61.0/58.1	52.0/47.2	42.0/28.0
100	0.20	57.0/54.0	48.0/43.1	33.0/24.0
200	0.28	52.0/48.0	42.0/37.1	21.0/18.0
250	0.32	47.0/46.0	40.0/35.1	17.0/16.0

Cat6A Jacks

FREQ (MHz)	IL (dB/100m)	NEXT(dB/100m) MinimumValue/Typical Value/ Standard Value	ELFEXT(dB/100m) MinimumValue/Typical Value/ Standard Value	RL(dB/100m) MinimumValue/Typical Value/ Standard Value
1	0.1	104.0/94.0	120.0/110	84.0/68.0
4	0.1	92.0/82.0	108.0/98.0	82.0/56.0
8	0.1	86.0/75.9	102.0/91.9	66.0/49.9
10	0.1	84.0/74.0	100.0/90.0	64.0/48.0
16	0.1	80.0/69.9	96.0/85.9	60.0/43.9
20	0.1	78.0/68.0	94.0/84.0	59.0/42.0
31.25	0.11	75.0/64.1	90.0/80.1	54.0/38.1
62.5	0.16	68.0/58.1	84.0/74.1	48.0/32.1
100	0.20	64.0/54.0	80.0/70.0	44.0/28.0
200	0.28	58.0/48.0	74.0/64.0	38.0/22.0
250	0.32	56.0/46.0	72.0/62.0	36.0/20.0
300	0.36	53/42.9	70.0/60.5	34.0/18.5
350	0.41	50/40.2	69.0/59.1	33.0/17.1
400	0.45	48/37.9	68.0/58.0	32.0/16.0
450	0.49	36.0/35.8	67.0/56.9	31.0/14.9
500	0.53	44.0/34.0	66.0/56.0	30.0/14.0

Voice Keystone Jacks

Transmission Properties:

FREQ (MHz)	IL (dB/100m)	NEXT (dB/100m) Typcial Value/Standard Value	ELFEXT (dB/100m) Typcial Value/Standard Value	RL (dB/100m) Typcial Value/Standard Value
1	0.1	85.0/65.0	80.0/65.0	52.0/30.0
4	0.1	75.0/65.0	71.0/63.1	50.0/30.0
8	0.1	68.0/64.9	66.0/57.0	46.0/30.0
10	0.1	66.0/63.0	64.0/55.1	44.0/30.0
16	0.2	62.0/58.9	60.0/51.0	40.0/30.0

CATV Jacks

Transmission Properties:

FREQ (MHz)	IL (dB/100m)	NEXT (dB/100m) Typcial Value/Standard Value	ELFEXT (dB/100m) Typcial Value/Standard Value	RL (dB/100m) Typcial Value/Standard Value
1	0.1	85.0/65.0	80.0/65.0	52.0/30.0
4	0.1	75.0/65.0	71.0/63.1	50.0/30.0
8	0.1	68.0/64.9	66.0/57.0	46.0/30.0
10	0.1	66.0/63.0	64.0/55.1	44.0/30.0
16	0.2	62.0/58.9	60.0/51.0	40.0/30.0

Ordering Information:

Part No.	Description
AD-KM-C5E-A/B-XX	CAT5e Unshielded T568A/B Keystone Jack
AD-KM-C5EU-A/B-XX	CAT5e Unshielded T568A/B Tooless Keystone Jack
AD-KM-C5ES-A/B-XX	CAT5e Shielded T568A/B Keystone Jack
AD-KM-C5ESU-A/B-XX	CAT5e Shielded T568A/B Tooless Keystone Jack
AD-KM-C6-A/B-XX	CAT6 Unshielded T568A/B Keystone Jack
AD-KM-C6U-A/B-XX	CAT6 Unshielded T568A/B Tooless Keystone Jack
AD-KM-C6S-A/B-XX	CAT6 Shielded T568A/B Keystone Jack
AD-KM-C6SU-A/B-XX	CAT6 Shielded T568A/B Tooless Keystone Jack
AD-KM-C6A-A/B-XX	CAT6A Unshielded T568A/B Keystone Jack
AD-KM-C6AS-A/B-XX	CAT6A Shielded T568A/B Keystone Jack
AD-KM-C7S-A/B-XX	CAT7 Shielded T568A/B Keystone Jack
AD-TM-90-XX	T568A/B Keystone Voice Jack

*XX is the color code:
BK= Black; RD= Red; GN= Green; YL= Yellow; BL= Blue; WH= White; OR= Orange; GY= Gray; IV= Ivory White

Keystone Faceplates

Basic Features:

- Work with RJ45, BNC, ST, F connectors or others.
- USA, UK & European style for selection.
- Flat & angled types for selection.
- Available in 1,2,4,6 ports for USA style; 1,2,4 ports for UK & European style; 1,2,3 ports for Horizontal style.
- Come with mounting screws and built-in identification labels.
- Complete system for flush (in wall) and modular furniture.
- Able to match with the keystone modules. Keystone jacks can be snapped in and out individually.
- Dimension:
  UK style: 86mm x 86mm
- Apply UL94V-0 high-impact, fire-retardant ABS material.
- Dust cover is provided for dust and dampness protection.

Product Highlights:

- Provide full product series for the multimedia applications.
- The screws are covered up by peripheral frame, providing elegant appearance.
- Fine modular design.
- Aesthetic design.
- Come with shutters for different installation environment.
- The surface undergoes special treatment, preventing the faceplate from being damaged by scratching.
- The faceplate can be disassembled on one side, providing ease of installation.
- Highly stable and high density plastic can ensure product durability, preventing discoloration.
- Angled design can provide more elegant and aesthetic outlook.
- Most suitable for SOHO environment.

Ordering Information:

Part No.	Description	Size	Type
AD-KF-UK-01-180	1 Port UK Keystone Faceplate	86mm×86mm	180°
AD-KF-UK-02-180	2 Port UK Keystone Faceplate	86mm×86mm	180°
AD-KF-UK-04-180	4 Port UK Keystone Faceplate	86mm×86mm	180°
AD-KF-UK-01-45	1 Port UK Keystone Angled Faceplate	86mm×86mm	45°
AD-KF-UK-02-45	2 Port UK Keystone Angled Faceplate	86mm×86mm	45°

Fiber Faceplate

Basic Features:

- Work with SC, ST, FC,LC connectors or others.
- 1,2,3,4gang frames for selection.
- Come with mounting screws and built-in identification or labels.
- Apply UL94V-0 high-impact and fire retardant ABS material.
- Come with transparent designation labels.

Multimedia Gang Frames

Ordering Information:

Part No.	Description	Type
AD-OFKF-K1-XX	1 Port Fiber Faceplate	86mm×86mm
AD-OFKF-K2-XX	2 Port Fiber Faceplate	86mm×86mm
AD-OFKF-K3-XX	3 Port Fiber Faceplate	86mm×86mm
AD-OFKF-K4-XX	4 Port Fiber Faceplate	86mm×86mm

Surface Mount Boxes

Basic Features:

- House any keystone jacks available in the market.
- Secure the box to any surface, baseboard and furniture.
- Mount easily with supplied screws or double-sided adhesive tapes.
- Provide labeling behind a transparent clip-on cover.
- Built in optional shutter door to keep the jack clean.
- Color icons to indicate data or voice ports.
- Apply UL94V-0 high-impact and fire retardant ABS materials.
- Dust covers for dust and dampness protection.

Ordering Information:

Part No.	Description
AD-SMB-K1	1 Port Surface Mount Box
AD-SMB-K2	2 Port Surface Mount Box
AD-SMB-K4	4 Port Surface Mount Box
AD-SMB-K6	6 Port Surface Mount Box
AD-SMB-K8	8 Port Surface Mount Box

Remarks: Mounting screws and adhesive backing included

Cat5e & Cat6/6A Patch Panels

Basic Features:

- Significant margin over ANSI/TIA-568-A(TSB-40A), ISO/IEC 11801 & 50173 standard.
- Meet EIA 310D standard.
- A pair punch sequence enables a pair twist within 1/2" (12.7mm) of termination.
- Shielded and unshielded version for selection.
- Snap in and integrated design for choice.
- 110 and Krone type for selection.
- 568A and 568B wiring for selection.
- 16, 24 & 48 ports for selection.

Product Certification

E223921

Technical Parameters:

- Made of UL-94V-0 high-impact & fire retardant ABS material.
- Beryllium copper contact: 50 micro inch gold-plated pins over 100 micro inch nickel layer.
- Support 22 -26AWG wire gauge.
- Insertion Life Cycle: 1,000 cycles (minimum) / I.D.C 250 cycles (minimum)
- Current Rating: 1.5 Amps
- Dielectric Withstand Voltage: 1,000VAC RMS @ 60Hz/min
- The modular design allows different types of modules to be placed in the same patch panel, saving space in the compact environment. The patch panels use the same RJ45 jacks as that used in the work area, thus reducing spare part quantity and maintenance cost.
- Provide superior performance for internal, cross connect and consolidation point installation.
- Optional titanium design provides more elegant outlook.
- Cables can be fixed at the front part of the panel by use of wiring, providing strain relief for the cables, maintaining the bending radius of the cables and improving the attenuation and return loss performance.
- Patented design in PCB board enhances NEXT performance and innovative punch down and cable management design enhances the product durability, providing more convenient management of the patch panels.
- All panels are power sum swept frequency tested for Cat5e up to 155Mz and Cat6 up to 300 Mz.
- Operating Temperature: 0℃ ~+60℃
- Storage Temperature: -40℃ ~+60℃

Transmission Properties:

- Please refer to the technical data of the keystone jack.

Product Highlights:

- Space saving & high density 19 panel design for 24 ports.
- Color coded icon identification tag for ease of installation.
- Write-on designation labels with clear holders on the front panel for system identification.
- 100% full shield design can improve EMI/RFI performance. They allow flexible grounding for shielded cable for each IDC pin.
- Shielded panels incorporate 360℃ stainless steel for full EMI (Electro-magnetic Immunity) shielding required by EN 50173.
- IDC connectors with large space on each pair help improve crosstalk performance.
- Cat 6 patch panels can be backward compatible with Cat5e or lower class products.
- Contacts are plated with galvanized platinum, achieving better conductivity and NEXT performance.

Ordering Information:

• Unshielded CAT5e Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C5E-A/B	Unshielded CAT5e 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C5E-A/B	Unshielded CAT5e 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-IS-PP-24-C5E-A/B	Unshielded CAT5e 24 Port Smart Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C5E-A/B	Unshielded CAT5e 48 Port Patch Panel	3.6"×19"	2U	T568A/B
A D-IS-PP-48-C5E-A/B	Unshielded CAT5e 48 Port Smart Patch Panel	3.6"×19"	2U	T568A/B

• Unshielded CAT6 Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C6-A/B	Unshielded CAT6 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C6-A/B	Unshielded CAT6 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-IS-PP-24-C6-A/B	Unshielded CAT6 24 Port Smart Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C6-A/B	Unshielded CAT6 48 Port Patch Panel	3.6"×19"	2U	T568A/B
AD-IS -PP-48-C6-A/B	Unshielded CAT6 48 Port Smart Patch Panel	3.6"×19"	2U	T568A/B

• Unshielded CAT6A Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C6A-A/B	Unshielded CAT6A 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C6A-A/B	Unshielded CAT6A 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C6A-A/B	Unshielded CAT6A 48 Port Patch Panel	3.6"×19"	2U	T568A/B

• Shielded CAT5e Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C5ES-A/B	Shielded CAT5e 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C5ES-A/B	Shielded CAT5e 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-IS-PP-24-C5ES-A/B	Shielded CAT5e 24 Port Smart Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C5ES-A/B	Shielded CAT5e 48 Port Patch Panel	3.6"×19"	2U	T568A/B

• Shielded CAT6 Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C6S-A/B	Shielded CAT6 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C6S-A/B	Shielded CAT6 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-IS-PP-24-C6S-A/B	Shielded CAT6 24 Port Smart Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C6S-A/B	Shielded CAT6 48 Port Patch Panel	3.6"×19"	2U	T568A/B

• Shielded CAT6A Patch Panel

Part No.	Description	Size	Dimension	Wiring
AD-PP-16-C6AS-A/B	Shielded CAT6A 16 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-24-C6AS-A/B	Shielded CAT6A 24 Port Patch Panel	1.8"×19"	1U	T568A/B
AD-PP-48-C6AS-A/B	Shielded CAT6A 48 Port Patch Panel	3.6"×19"	2U	T568A/B

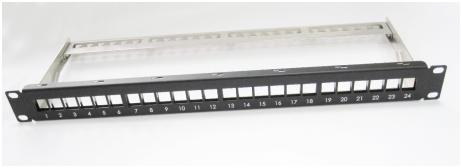
Blank Patch Panels

Features:

- Available in 16, 24 and 48 ports.
- Come with standard size in EIA 19".
- Come with exchangeable multimedia inserts for different connectors.
- Write on & erasable designation label for each port on the front panel.

Ordering Information:

Part No.	Description	Size
AD-PP-BB-16	16 port Blank Patch Panel	1.8"×19"
AD-PP-BB-24	24 port Blank Patch Panel	1.8"×19"
AD-PP-BB-48	48 port Blank Patch Panel	5.4"×19"



110 Patch Panels

Basic Features:

- Being UL approved, the panels provide optimum performance, exceeding TIA/EIA 568-A & ISO/IEC 11801 requirement.
- Made of UL94V-0 high-impact and fire retardant ABS material.
- Insertion Life Cycle: 500 cycles (minimum)
- Available with/without legs on the block base. Panels without leg are suitable for mounting in the cabinets. Patch panels with legs are suitable for mounting on the wall.
- Available in 32, 50, 64, 100, 200, 300 pairs for selection.
- Accept 22-26 AWG (0.4mm-0.64mm) solid or stranded cable.
- Available in Cat 5e and Cat 6 options for selection.
- Come with wire management and cover for selection.
- Block base and wiring connectors can be ordered separately for maximum flexibility.
- Fit for connection between patch cords and consolidation points.
- Connecting blocks are 110 IDC type phosphor bronze termination.

Product Highlights:

- Working in harmony with 110 wiring connectors, the Cat5e patch panels can be component and tested with significant margin up to 155 MHz and Cat 6 products can be component and channel tested with significant margin up to 250 MHz.
- 360 degree pair isolation enhances near-end crosstalk performance.
- The conductors on the 110 patch panel can be easily stripped during termination to save installation time.
- Come with wire management bars to secure the cables in place for ease of termination.
- Termination can be done easily with Spudger tool.

110 Wiring Connectors

Basic Features:

- 4 and 5 pair 110 connectors available.
- Available in Cat5e and Cat 6 options.
- Contacts are plated with 2μm silver.

Technical Parameters:

- Minimum Insertion Life Cycles: 1,000 cycles
- Operating Temperature: 0℃ ~ +60℃
- Storage Temperature: - 40℃ ~ +60℃
- Maximum Current Rating: 0.1Ω
- Maximum Direct Resistance Unbalance: 5 MΩ

Product Highlights:

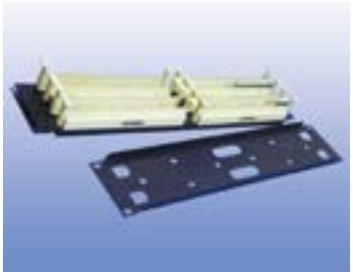
- Cat5e and Cat 6 connectors provide optimum performance for NEXT in support of 10G Ethernet application.
- Each panel comes with colored designation labels and independent pair separator to ensure easy plug and play installation.
- Can be marked with color designation label to identify the pair configuration on each connector.
- Accept both 110 and Krone type termination.
- Connectors are stackable for space saving.
- Easy insertion for ease of installation.

110 Backplanes

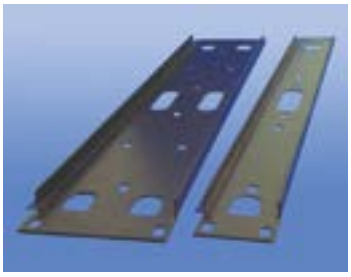
Basic Features:

- Made of fine steel, not easily damaged by scratching.
- Designed for 110 system, suitable for data patch panels & cable management panels.
- 1U backplane fits for fixing the cable management panels in the cabinet; 2U backplane fits for fixing patch panels in the cabinet.

1U Cable Management Panel



CAT5e 100 Pairs 110 Wiring Block w/o Legs



1U/2U 110 Patch Panel

Product Highlights:

- Light & durable.
- Specially designed for cable routing.

Ordering Information:

Part No.	Description
AD-110C5E-WBP-200-2U	CAT5e 200 Pairs 110 Wiring Block w/o Legs (Panel Type in 2U)
AD-110C5E-WBP-100-1U	CAT5e 100 Pairs 110 Wiring Block w/o Legs (Panel Type in 1U)
AD-110C5E-WB-100	CAT5e 100 Pairs 110 Wiring Block w/o Legs
AD-110C5E-WB-50	CAT5e 50 Pairs 110 Wiring Block w/o Legs
AD-110C5E-WB-100L	CAT5e 100 Pairs 110 Wiring Block with Legs
AD-110C5E-WB-50L	CAT5e 50 Pairs 110 Wiring Block with Legs
AD-110C5E-C5	CAT5e 5 pair Wiring Connector
AD-110C5E-C4	CAT5e 4 pair Wiring Connector
AD-110-BB-1U	1U Backplane for Patch Panel/Cable Management Panel
AD-110-BB-2U	2U Backplane for Patch Panel/Cable Management Panel
AD-110-C5E-100	CAT5e 100 Pairs Patch Panel

Cable Management Panels

Basic Features:

• Manage cables at the front and rear of racks for managing cable installations in an extremely neat appearance.
• Maintain cable bending radius.
• Available in both 1U and 2U options.
• Fit for data patch panels & 110 patch panels.
• Metal and plastic types for selection.
• Normal & duct types for selection.
• Large capacity duct for managing cables quickly.
• Mounting to standard rackmount 19" racks.
• Manage patch cords, providing appropriate route for the horizontal or backbone wiring and patch cords.

Product Highlights:

• Each cable management panel can work independently, not interfering with other cable management panels.
• Provide cable management at the rear of rack, suitable for different cable installation requirement. Cables can be managed quickly at the rear part, thus providing effective cable management in a compact environment.
• Metal design enhances the product durability.
• The special routing design of the panel can maintain the bending radius of the cables effectively.

Ordering Information:

Part No.	Description	Dimensions
AD-RP-M-FR-1U	1U Cable Management Panel (Metal Type) with rings at the front and rear	1.8"×19"
AD-RP-M-F-1U	1U Cable Management Panel (Metal Type) with rings at the front	1.8"×19"
AD-RP-M-FR-2U	2U Cable Management Panel (Metal Type) with rings at the front and rear	3.6"×19"
AD-RP-M-F-2U	2U Cable Management Panel (Metal Type) with rings at the front	3.6"×19"
AD-DP-M-FR-1U	1U Duct Panel (Metal Type) with ducts at the front and rear	1.8"×19"
AD-DP-M-F-1U	1U Duct Panel (Metal Type) with 1 duct at the front	1.8"×19"
AD-DP-M-FR-2U	2U Duct Panel (Metal Type) with ducts at the front and rear	3.6"×19"
AD-DP-M-F-2U	2U Duct Panel (Metal Type) with 1 duct at the front	3.6"×19"
AD-110WM	110 Cable Management Panel without legs	3.6"×19"
AD-110-WM-L	110 Cable Management Panel with legs	3.6"×19"
AD-110-WM-1U	1U 110 Cable Management Panel without legs	1.8"×19"


1U Cable Management Panel


Duct Type Cable Management Panel


110 Cable Management Panel

Data Patch Cords

Basic Features:

- Using 24, 26AWG 4 pairs UTP, FTP, STP patch cables.
- Cord Length: 1m to 15m for selection.
- Outer Jacket: PVC/FRPVC/LSZH.
- Two ends terminated with 50μ" gold plated RJ 45 plug by moulding in one motion.
- Pin assignment for RJ 45 plug follows the T568B wiring scheme.
- Being UL approved, the cords are compliant with TIA/EIA 568B, ISO/IEC 11801 Cat 5e/Cat 6 Standard.
- Wide range of cord colors for selection for meeting different color coding requirement, in compliant with EIA/TIA 606 standard. Cord colors: Yellow, Blue, Green, White, Orange, Purple, Red, Grey.
- Used for interconnection between patch panels and data jacks.

Technical Parameters:

- Compatible with RJ45 plug.
- Impedance: 100Ω±15%
- Diameter over conductor: 0.18mm
- Overall Diameter: 5.1mm (UTP Cat5e); 5.4mm (FTP Cat5e); 6.0mm (UTP Cat6); 6.5mm (FTP/STP Cat6)
- Number of Pairs: 4 prs
- Minimum Insertion Cycle: 1000 cycles
- Minimum Plug Force: 30 lb
- Operating Temperature: -20℃ ~ +60℃

Product Highlights:

- Every patch cords are strictly tested for NEXT and return loss, complying to TIA/EIA 568 & ISO/IEC 11801 component standard. To ensure component compliancy, each patch cord will be individually tested with Fluke DSP-PCI patch cord adaptor for component testing.
- Contacts feature gold plating, complying with FCC part 68 F to achieve longer product life cycle.
- Twists are maintained within 1/2" (12.7mm) for superior NEXT performance. 37mm long boots are used to ensure the best bending radius and which are critical for achieving the best return loss performance.
- Durable plugs provide good resistance to corrosion, extreme temperature and air contaminants.
- Innovative 360 degree crimp can provide excellent strain relief and prevent the cord from pair deforming.
- Cat 6 patch cords are backward compatible with Cat5e and lower class products.
- Using stranded patch cable for better flexibility in accordance with EIA/TIA 606 standard.
- The RJ45 plugs and the cables are terminated with PVC injection moulding to prevent the plug and the plating parts to get oxidized.

Ordering Options:

AD-AAAAA-BBB-CCC-DEEE-FFF-GG-XX

AAAAA: Cable Standard

CAT3, CAT5, CAT5e, CAT6, CAT6A

BBB: Cable Type Family

UTP = Unscreened Cable; FTP = Overall Screened Cable; STP= Individually Screened Cable

CCC: No of Cable Pairs

4P= 4 Pairs; 25P= 25 Pairs

DEEE: Length

F003=3 Feet; F005 =5 Feet; F007 = 7 Feet

M001=1 Meter; M002 =2 Meter; M003 = 3 Meter

*FFF**: Fire Performance Rating

CM=Normal PVC, CM grade; CMR= FRPVC, CMR Riser Grade; CMP=FEP, CMP Plenum Grade; FR=FRPVC, to

IEC 60332-1; LH=LSZH grade, to IEC60754-1 & IEC 61034 P1/2

GG: Cable Gauge Size

24A = 24 AWG; 26A = 26 AWG

XX: Jacket Color

01=Yellow; 02=Blue; 03=Green 04=White; 05=Orange; 06=Purple; 07=Red; 08=Grey




110 Patch Cords

Basic Features:

- Using stranded 24/26 AWG patch cables for cord assembly.
- Cord length available in 1m to 15m for selection.
- Connector Types: 110 connectors or RJ45 8 port plugs.
- One end terminated with 50μ"gold plated RJ 45 plug and another end terminated with 110 connector.
- Outer Jacket: PVC, FRPVC, LSZH.
- Applicable Standards: ANSI/TIA/EIA-568B , ISO/IEC 11801Cat5e/Cat6 Standard.
- Cord Colors: Yellow, Blue, Green, White, Orange, Purple, Red, Grey.
- Used to connect the network card to the hub or switch.

Technical Parameters:

- Can accommodate RJ45 jacks.
- Impedance: 100Ω±15%
- Number of Termination pairs: 1- 4 Pairs
- Minimum Insertion Life Cycle: 1,000 cycles
- Minimum Plug Retention Force: 30 lbs

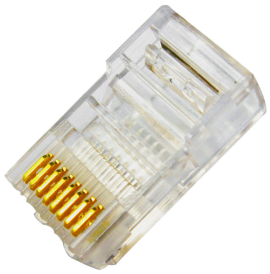
Product Highlights:

- Every patch cord is individually tested for NEXT and return loss, complying to TIA/EIA-568B, ISO/IEC 11801 standard for component testing.
- With a patented technology, all twists are maintained within 1/2", improving the NEXT value to a great extent.
- Durable jack design features to be corrosion resistant, heat resistant and not to be easily contaminated.
- Using stranded patch cables for higher flexibility and better bending radius, complying to EIA/TIA 606 standard.

Ordering Options:

AD-AAAAA-BBB-CCC-D-EEE-FFF-GG-HH-II-J
Ordering Code is the same as that for data patch cords except for the inclusion of the connector types and number of termination pairs.
II: Connector Types
1A=110 to RJ45 (T568A); 1B=110 to RJ45 (T568B);11=110 to 110
J: Number of termination pairs
1P=1pr; 2P=2pr; 3P=3pr; 4P=4pr

Modular Plugs

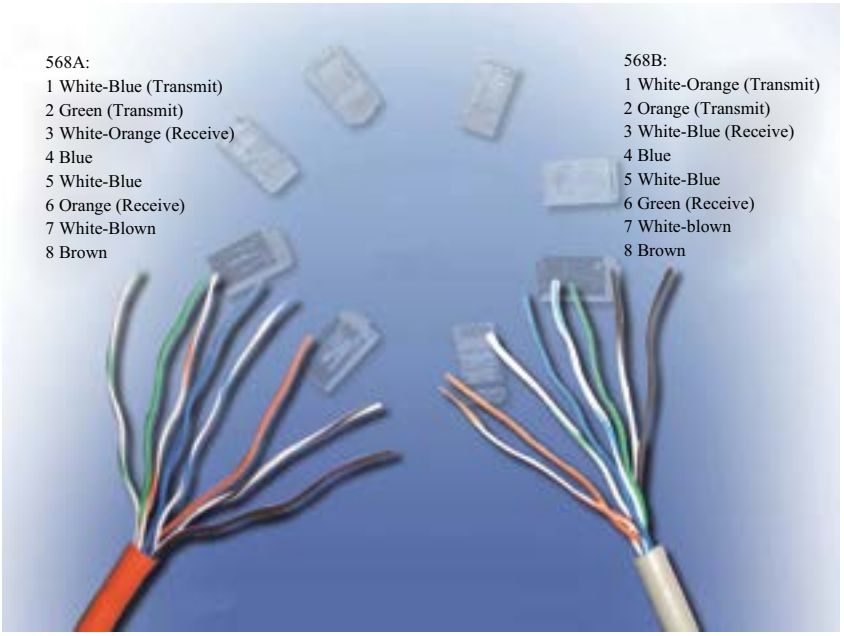


Basic Features:

- Fit for both stranded or solid cable for flexibility.
- Eight-conductor modular plug works with round cable.
- Used with standard termination tools.
- Load bar eases wire insertion while maintaining 1/2" twist requirements.
- Clear plastic cover keeps the conductor colors and positions visible for termination.

Ordering Information:

Part No.	Description
AD-MP-RJ11-44-AB	4P4 C RJ-11 Connector
AD-MP-RJ12-64-AB	6P4C RJ-12 Connector
AD-MP-RJ12-66-AB	6P6C RJ-12 Connector
AD-MP-RJ45-88-AB	8P8C RJ-45 Connector
AD-MP-RJ45-88S-AB	8P8C Shielded RJ-45 Connector



Fiber Patch Cords

Basic Features:

- Simplex or duplex fibers for selection.
- Different fiber connectors for selection.
- Ferrule Material: Ceramic, stainless steel, polymer
- Outer Jacket: PVC, FRPVC, LSZH
- Connector Types: ST/SC/FC/SMA905 or 906/D4/BICONIC/FDDI/MTRJ/LC/E2000/ DIN/EC
- FC, SC, ST, LC, MU connectors offered in either PC, UPC, APC polishing.
- Complying to applicables standards such as TIA/EIA-568 and IEC 874-1.
- Used for Ethernet, fiber optic system, video transmission, CATV and cable TV etc.

Technical Parameters:

- Cladding Diameter: 125μm
- Core Diameter: 50/62.5μm (multimode); 9/125μm (single-mode)
- Tensile Strength: 15Kgf (except for 0.9mm)
- Diameter: 3mm/2mm
- Minimum Bending Radius: 10 x Overall Diameter
- Working Temperature: -40℃ ~ +75℃
- Storage Temperature: -50℃ ~ +85℃
- Minimum Insertion Life Cycles: 1000 times
- Single mode fiber patch cord (in general): Insertion Loss ≤ 0.3 dB (APC/UPC);
  Return Loss≥50dB (UPC); ≥ 60dB (APC)
- MTRJ single mode fiber patch cord: Insertion loss ≤ 0.5 dB; Return Loss ≥ 35 dB
- Multimode fiber patch cord (in general):
  Insertion Loss ≤ 0.3 dB (PC); ≤ 0.3 dB (UPC); ≤ 0.3 dB (APC)
  Return Loss ≥ 35 dB (PC); ≥ 50 dB (UPC); ≥ 60 dB (APC)
- MTRJ multimode fiber patch cord: Insertion loss ≤ 0.5 dB; Return Loss≥20 dB
- Change on insertion loss for mechanical characteristics:
  Interchangeability: 0.2dB
  Repeatability (Insertion: 1,000 times): 0.2dB
  Anti pulling load: 0.2dB (10Kg tension/3.0mm fiber)
  Anti Vibration: 0.2dB (Vibration: 10-58Hz; Amplitude: 1.5mm, 10Hz/min, 2 hrs)
- Change on insertion loss for environmental characteristics:
  Temperature Cycle: 0.2dB (-40℃ ~ +80℃ 5 cycles)
  High Temperature Test: 0.2dB (High Temperature: 85℃ ,100 hrs)
  Low Temperature Test: 0.2dB (Low Temperature: -40℃ , 100 hrs)
  Humidity Test: 0.2dB (65℃ , 93% relative humidity, 100 hrs)

Product Highlights:

- Using extra high precision ceramic ferrule with small concentricity error and core diameter, better insertion loss and return loss can be achieved for optimized transmission performance.
- All fiber surface parameters such as the apex offset, fiber height and radius of curvature comply to IEC standard.
- Besides attenuation and back reflection testing, cords are also checked by interferometer for fiber surface parameters, including radius of curvature, apex offset and fiber heights for different FC, ST, SC, LC and MU connector types.
- Simplex, duplex and fan-outs can be offered.
- Different jacket such as PVC and LSOH grade available for selection.
- Low insertion loss and high return loss, with excellent interchangeability and repeatability.
- Durability, damp-proofing, resistant to coupling stress, high pull tension and adaptation to different harsh environment such as dampness, extreme temperature, impact and vibration in accordance to ANSI/TIA and ISO/IEC standard.
- Environmentally stable, meeting Telcordia requirement.

ST, SC, FC (PC/UPC/APC) Fiber Patch Cord

Basic Features:

- PC, UPC or APC polishing for selection.
- Low insertion loss and high return loss.
- The SC connectors for SC-SC fiber patch cords are of push pull design, being fit for 3.0mm fiber patch cords.
- The ST connectors for ST-ST fiber patch cords are of metal ring design, being fit for 3.0mm fiber patch cords.
- The ST connectors of LC-ST fiber patch cords are of metal ring design, being fit for 2.0mm fiber patch cords.
- The SC connectors of LC-SC fiber patch cords are of push pull design, being fit for 2.0mm fiber patch cords.
- Significant margin over ANSI/TIA/EIA 568 standard.
- Fiber Surface Parameters
  Radius of Curvature: 5~12cm (APC); 7~25cm (PC)
  Apex Offset: ≤ 100μm
  Fiber Height: +100 ~ -100 nm
  Deviation Angle: 8℃ ±0.3℃

Technical Parameters:

	PC		UPC	APC
	Simplex	Duplex		
Insertion Loss	≤0.3dB		≤0.3dB	≤0.3dB
Return Loss	≥45dB	≥35dB	≥50dB	≥60dB
Working Temperature	-20℃~70℃		-20℃~70℃	-20℃~70℃
Storage Temperature	-25℃~80℃		-25℃~80℃	-25℃~80℃
Maximum change in Insertion Loss with repeated insertion	0.1dB		0.1dB	0.1dB
Maximum Insertion /Withdrawal	≥1000 times		≥1000 times	≥1000 times

ST-ST Duplex Patch Cord

SC-SC Duplex Patch Cord

FC-FC Simplex Patch Cord

MTRJ、MU、LC Fiber Patch Cords

Basic Features:

- Push-pull connection, fast and reliable.
- Low insertion loss and high return loss.
- Being compact and light weight, it can provide high-density installation.
- 1.25um ceramic ferrule sfis for both single mode and multimode cables.
- MTRJ connector/adaptors are fit for duplex zip and round cords together with ribbon fiber cables.
- LC connector/adaptors are fit for simplex /duplex zip cords and MU connector /adaptor is fit for simplex zip cords.
- Used for different fiber optic system, fiber optic connector, CATV and testing equipment etc.

Technical Parameters: (LC/MU)

	PC		UPC
	Simplex	Duplex	
Insertion Loss	≤0.4dB		≤0.4dB
Return Loss	≥45dB	≥35dB	≥50dB
Working Temperature	-20℃~70℃		-20℃~70℃
Storage Temperature	-25℃~80℃		-25℃~80℃
Maximum change in Insertion Loss with repeated insertion	0.1dB		0.1dB
Maximum Insertion / Withdrawal	≥1000 times		≥1000 times


LC Simplex Patch Cord


MU Simplex Patch Cord

Electrical Specification Parameter: (MTRJ

	PC		UPC
	Simplex	Duplex	
Insertion Loss	≤0.5dB		≤0.6dB
Return Loss	≥35dB	≥20dB	≥45dB
Working Temperature	-20℃~70℃		-20℃~70℃
Storage Temperature	-25℃~80℃		-55℃~85℃
Maximum change in Insertion Loss with repeated insertion	0.1dB		0.1dB
Maximum Insertion / Withdrawal	≥1000 times		≥1000 times


MTRJ Simplex Patch Cord


MTRJ Duplex Patch Cord

SMA、FDDI Fiber Patch Cords

Basic Features:

- SMA connectors are interchangeable and come with good surface polishing.
- FDDI connectors are equipped with built-in identification labels.
- FDDI connectors meet ANSI3T95 FDDI PMD standard.
- SMA connectors are suitable for use in LAN and low speed system test.
- FDDI connectors are suitable for duplex system, FDD backbone network and IEEE802.4 Token Bus.

Technical Parameters: (SMA, FDDI)

	SMA	FDDI
Insertion Loss	≤0.3dB	≤0.3dB
Return Loss	≥35dB	≥45dB
Working Temperature	-40℃~80℃	-40℃~80℃
Storage Temperature	-55℃~85℃	-55℃~85℃
Maximum change in Insertion Loss with repeated insertion	0.2dB	0.2dB
Maximum Insertion /Withdrawal	≥1000 times	≥1000 times


SMA Simplex Patch Cord


FDDI Duplex Patch Cord

Ordering Code:

AD-AB-C-D-EFFF-G-HH-II-JJ
ABLeft/Right Connector Types
ST=ST; SC=SC; FC=FC; SMA905=SMA905; SMA906=SMA906; FD=FDDI; MT=MTRJ; LC=LC (FC, SC, ST, LC, MU Connector: PC, UPC, APC for selection)
CCable Type Family
S=Simplex; D=Duplex Zip
DFiber Types
9=Single-mode 9/125μm; 6=Multimode 62 5/125 μm; 5=Multimode 50/125μm; 4=Multimode 50/125μm (OM3)
EFFFLength
F003 =3 Feet; F005 =5 Feet; F007 =7 Feet; M001 =1 Meter; M002 =2 Meter; M003 =3 meter
GFerrule Types
C=Ceramic; S= Stainless Steel; P= Polymer
HH Fire Performance Rating
ON = Normal PVC, OFN grade; OR = FRPVC, OFNR Riser Grade; OP=FEP, OFNP Plenum Grade; FR=FRPVC, to IEC 60332 -3C; LH= LSZH grade to IEC 60754-1, IEC 61034 P1/2
IIJacket colors
01-Yellow; 02-Blue; 03-Green; 04-White; 05-Orange; 06-Purple; 07-Red; 08-Grey
JJFiber Outer Diameter
09=ф0.9mm; 20=ф2.0mm; 30=ф3.0mm

Fiber Optic Adapters

Basic Features:

- Low insertion Loss.
- Low back reflection.
- Compliant with JIS, IEC and Bellcore Standard.
- Excellent concentricity.
- Ease of installation.

Physical Properties:

- Fiber Types: 3.0mm or 900μm tight buffer type
- Core Diameter: 62.5/125μm; 50/125μm, 9/125 μm

Electrical Properties:

- High Durability: 0.2dB loss after 500 cycles.
- Insertion Loss: 0.15dB (Single mode); 0.2dB (Multimode)

Ordering Information:

AD-FA-A-B-C-D

A: In/Out Connector Types
FC=FC/PC; MTM=MTRJ/Pin Type; SC/FC=SC-FC;
FCA=FC/APC; MTF=MTRJ/Hole Type; SC/LC=SC-LC;
SC=SC/PC; E2000=E2000; FD/ST=FDDI-ST;
SCA=SC/APC; FD=FDDI; ES/ST=ESCON-ST;
ST=ST; LC=LC; ES=ESCON

B: Sleeve Types
SC = Single mode Zirconia Sleeve
MC = Multimode Zirconia Sleeve
MB = Multimode Phosphor Bronze Sleeve

C: Cord Types
S= Simplex
M= Duplex

D: Housing Types
P=Plastic
MS=Metal Square Type (FC)
MD=Metal D Type (FC)
ML=Metal Thread Type (ST)

Fiber Optic Connectors

Basic Features:

- 25μm zirconia ferrules with wide range of fiber optic connector sizes (125μm-128μm) for choice.
- Fit for single-mode or multimode fiber cables.
- Pre-radiused ferrules for fast polishing.
- Wide range of the boot colors and diameter for selection.
- APC version available for single mode connectors.
- Low insertion loss and high return loss.

Physical Properties:

- Fiber Optic Connector Types: 3.0 mm jacketed or 900μm tight- buffered.
- Fiber Optic Connector Compatibility: 62.5/125μm and 50/125μm (Multimode); 9/125μm (Single-mode)

Electrical Properties:

- Insertion Loss: ≤ 0.15dB (Single mode); ≤ 0.3dB (Multimode).
- Return Loss: ≥ 30dB (PC Polishing)
  ≥ 40dB (SPC Polis hing)
  ≥ 50dB (UPC Polishing)
  ≥ 60dB (APC Polishing)

Ordering Information:

AD-FC- A-B-C-D-E

A: Fiber Optic Connectors Types
FC=FC/PC; ST=ST; E2000=E2000; SMA905=SMA905;
FCA=FC/APC; LC=LC; FD=FDDI; SMA906=SMA906;
SC=SC/PC; MTM=MTRJ/Male Type; MU=MU; D4=D4;
SCA=SC/APC; MTF=MTRJ/ Female Type; ES=ESCON; DIN=DIN47256 (LSA)

B: Mode Types
S= Single mode
M= Multimode

C: Fiber Optic Connector Sizes
125=125μm
126=126μm
127=127μm
128=128μm

D: Housing Types
S= One Piece Type
D= Typical Type

E: Cable Boot Types
09 = For 0.9 mm cable
16 = For 1.6 mm cable
18 = For 1.8 mm cable
20 = For 2.0 mm cable
24 = For 2.4 mm cable
30 = For 3.0 mm cable

Wall Mount Fiber Patch Panels

Basic Features

- Available in beige or black colour.
- Available for mounting on wall directly.
- Available for 12, 16, 24 port terminations.
- Metal door with optional lock for security.
- Available for FC, SC, and ST adaptor panels.
- Compact design with two compartments in one box, one is for incoming fiber cables and pigtails for splicing, and the other is for patch cord terminations.
- Housing made of high-strength stainless steel.
- Protection standard: IP55, IP65, IP66 for selection.
- All cable holes sealed by rubber grommets for fiber protection.
- Reliable cable fixing, stripping, grounding and protection devices.
- Made of stainless steel for protection against oxidization.

Technical Parameters:

- Working Temperature: -40℃ ~ +85℃
- Insulation Resistance (between the cabinet and the earthing device): >1000MΩ/500V(DC)
- Dielectric Strength (between the cabinet and the earthing device): on-puncture, no arc-over under 3000VDC/ 1min

Product Highlights:

- Housing protected by double layer coating gives a shiny and elegant outlook.
- Metal door designed to be re-openable for ease of installation and maintenance.
- All the cable holes are sealed by dust proof rubber grommets which can be removed easily for fiber splicing.
- IP 55/56 rated housing features high tensile strength, weather and corrosion resistance, offering protection against accidental damage.
- All the corners of the panels are rounded off and the surfaces are treated with electrostatic spraying for more elegant appearance.
- The double layer heat insulating housing improve the heat preservation performance, avoiding water condensation on the surface.
- The metal door protected by waterproof lock and 3 point locking system provides a tight seal of the body.
- Suitable for ribbon and non ribbon fiber cables.
- Clear designation labels for the fiber route.

Ordering Information:

Part No.	Description
AD-WFTB-12S	12 Port Wall Mount Fiber Patch Panel
AD-WFTB-24S	24 Port Wall Mount Fiber Patch Panel
AD-WFTB-48S	48 Port Wall Mount Fiber Patch Panel

12 Port Wall Mount Fiber Patch Panel

24 Port Wall Mount Fiber Patch Panel

Rackmount Fiber Patch Panels

Basic Features:

- One enclosure accommodates 12, 24 and 48 port terminations.
- Modular adaptor panels for ease of installation and maintenance.
- Available for FC, SC and ST adaptor panels.
- Slide out feature as an option.
- Fit for 19" Rack Cabinet.
- Cable holes sealed by rubber grommets.

Technical Parameters:

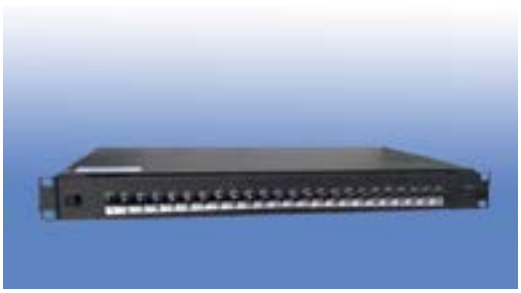
- Working Temperature: -40℃ ~ +85℃
- Insulation Resistance: ≥ 1000 MΩ/500V(DC)

Product Highlights:

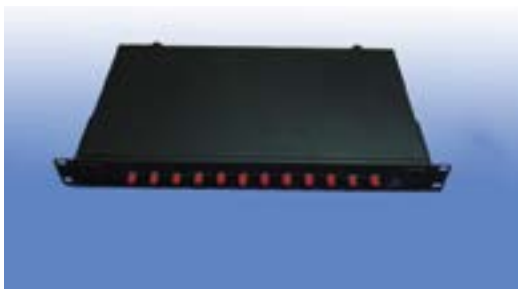
- All the cable holes are sealed by dust proof rubber grommets which can be removed easily for fiber splicing.
- High density fiber management, accommodating up to 288 fibers in 4U space.
- Splicing tray equipped with inlet device at the front and rear part for ease of installation.
- Adjustable clamp ring fit for fixing the fiber patch cord and cables, reducing the tension caused by the use of splicing tray.
- Fiber panels are stackable to save space for future expansion.
- Fixing device provided for fixation of the cables for maintaining the bending radius of the cables.
- Splicing kits provided for direct fiber splicing inside the fiber panel.

Ordering Information:

Part No.	Description
AD-RFTB-12-1U	12 Port 1U Rackmount Fiber Patch Panel
AD-RFTB-24-1U	24 Port 1U Rackmount Fiber Patch Panel
AD-RFTB-48-2U	48 Port 2U Rackmount Fiber Patch Panel
AD-RFTB-12S-1U	12 Port 1U Rackmount Fiber Patch Panel with Splicing
AD-RFTB-24S-1U	24 Port 1U Rackmount Fiber Patch Panel with Splicing



24 Port 1U Rackmount Fiber Patch Panel



12 Port 1U Rackmount Fiber Patch Panel With Splicing

Open Racks

Basic Features:

- Attractive appearance.
- There are 3 types of open rack in sizes ranging form 28U to 46U.
- Maximum Load Capacity: 440lbs (200kg)
- Fabricated entirely from heavy steel for good stability.
- Base holes for Floor installation (A type) and base installation (B type).
- Side holes per each frame used for the passage of cables in the event of inter-connecting of open rack. 3 to 12 interconnecting holes per each frame for row inter-connecting purposes.
- Face mounting holes complying to the EIA/TIA standard.
- Mounting holes on the rear channel used for fixing cables and accessories.

Ordering Information:

- A Type (Floor-Mounting Format) - Standard configuration is recommended if the access floor is well established.
- B Type (Free-Standing Format) - With the addition of base, it is fit when many cables have to be arranged through cable tray.
- C Type (Mobile-Format) - With the addition of base and casters, it is fit for easy access to the equipment.

Part No.	Unit	Height		W550/19"		Weight	
		mm	inch	Depth	Type	kg	lbs
AD-OR-35A-2235	46U	2200	86.61	350	A	26	57
AD-OR-35A-1835	37U	1800	70.86	350		23	50
AD-OR-35A-1435	28U	1400	55.11	350		20	44
AD-OR-35B-2260	46U	2500	88.58	600	B	35	77
AD-OR-35B-1860	37U	1850	72.83	600		32	70
AD-OR-35B-1460	28U	1450	57.08	600		29	74
AD-OR-35C-2235	46U	2285	89.96	600	C	81	81
AD-OR-35C-1835	37U	1885	74.21	600		74	74
AD-OR-35C-1435	28U	1458	58.46	600		68	68

※ Standard items include frame L/R, top & bottom brackets together with cage nuts/screws.
※ Optional items include base plate, base moulding and casters/ leveling feet.

Cabinets

Basic Features:

- Standard components include top & bottom base, 4 frames, top panel, 2 side panels, rear door, 5 cable tie bars (for 37U or higher), mounting hardware kit, and leveling feet.
- Made of high tensile strength die castings, aluminum extrusions and aluminum sheet.
- Having removable side panels for easy access or for interconnecting purposes.
- Standard color for the win rack cabinets is light beige or dark beige; custom colors are available.

Product Categories:

- There are three types of cabinets which are designed for different installation purposes.

  A Type (Floor Mounting Format) - A standard configuration is recommended where access floor is established.

  B Type (Free Standing Format) - It has base cable tray at the bottom part and it serves as the substitute for access

  C Type (Mobile Format) - With the wheels at the bottom, it is easy for moving.

Standard Components:

- Top & bottom base.
- Basic frame.
- Top and side panel.
- Rear door can be easily detached with the spring pin hinges. The ventilation holes are at the top and bottom of the rear door. Air filter units are installed in both areas.
- Front door has option of flexi glass, steel, or safety glass which are right-hand hinged normally.
- Eye bolt holes are ready by knock-out-punch on the top cover panel.
- Cable tie bars and accessory kit.
- Fixing bracket is optional for A & C Type but basic for B Type. This prevents cabinets from shaking and falling down due to vibration or external shock.

Fire Performance Standard

Fire Performance Standard

At present, in cable industry, Fire Retardant, Low Smoke Halogen Free (LSZH), Low Smoke Fume (LSF) and Fire Resistant cables are all described as Fire survival Cables.

Flame Retardant

Fire retardant cables are designed for use in fire situations where the spread of flames along a cable route needs to be retarded. Due to relative low cost, fire retardant cables are widely used as fire survival cables. No matter the cables are installed in single wire or in bundles, during a fire, the flame spread will be retarded and the fire will be confined to a small area, thus reducing the fire hazard due to fire propagation.

Low Smoke & Halogen Free & Fire Retardant (LSZH)

LSZH cables are not only characterized by the fire retardant performance but also by the halogen free properties, thus offering low corrosivity and toxicity. During a fire, the LSZH cables will emit less smoke and acid gases which may damage the human being and expensive equipment. Compared with normal PVC cables, LSZH cables outperform by their fire retardancy, low corrosivity and low smoke emission properties, however, normal PVC cables have better mechanical and electrical properties.

Low Smoke Fume (LSF)

The low halogen content and low corrosivity of low smoke fume cables lies somewhat in between that of fire retardant cables and LSZH cables. LSF cables also contain halogen but the content is much less than that of PVC cables. LSF cables are designed to reduce the spread of fire, toxic gases and smoke during fire. The LSF cables are usually manufactured from flame retardant PVC blended with HCL additive and smoke absorbent. These materials help improve the fire performance of the LSF cables.

Fire Resistant (FR)

Fire resistant cables are designed to maintain circuit integrity of those vital emergency services during the fire. The individual conductors are wrapped with a layer of fire resisting mica/glass tape which prevents phase to phase and phase to earth contact even after the insulation has been burnt away. The fire resistant cables exhibit same performance even under fire with water spray or mechanical shock situation.

Fire Performance Class

The main concerns for the cables in their fire survival properties are their flame spread, smoke characterization and gas toxicity. In American fire standard, the concern lies more on the first two and it differs from the European standard which concerns all these aspects. In USA, it is believed that the fire hazard is mainly due to CO toxic gas emitted and the heat release during the conversion of CO to CO2 during the fire. Therefore, to control the heat release is the most important concern for reducing the fire hazard. However, in European countries, halogen content, the corrosivity of the gases, the smoke density and the toxicity of the gas are equally important factors affecting the safety and survival of human during a fire.

IEC Standard for Flame Retardancy

The European Electrical Committee categorizes the fire performance of the cables into three classes, namely IEC 60332-1, IEC 60332-2, IEC 60332-3, IEC 60332-1 and IEC 60332-2 are used to assess the flame propagation characteristics of a single wire. IEC 60332-3 is used to assess the flame propagation characteristics of bundled cables. Comparatively speaking, IEC 60332-3 for bundled cables is more demanding than IEC 60332-1 for single wires.

IEC 60332-1/BS 4066-1 (Flame Test On Single Vertical Insulated Wires/Cables)

This test details a method of test for the assessment of the flame propagation characteristics of a single wire or cable. In this test, a 60cm cable sample is fixed vertically inside a metallic box and a 175mm long flame is applied at 45℃ from a gas burner placed at 450mm from the top at the upper portion. The specimen is deemed to have passed this test, if after burning has ceased, the charred or affected position does not reach within 50mm of the lower edge of the top clamp which is equivalent to 425mm above the point of flame application. The test method is not suitable for the testing of some small wires due to the melting of the conductors during the time of application of the flame.

IEC 60332-3/BS 4066-3 (Flame Test On Bunched Wires/Cables)

IEC60332-3C describes a method of type approval testing to define the ability of bunched cables to resist fire propagation. In this test, a cable specimen, consisting of number of 3.5m length of cables are fixed to a vertical ladder tray where they are applied with a flame from a gas burner for a specified times under controlled air flow. Four categories (A, B, C & D) are defined and distinguished by test duration and the volume of non metallic material of the sample under test. The cable specimen is deemed to have met the requirements of the standard if, after burning has ceased, the extent of charred or affected portion does not reach a height exceeding 2.5m above the bottom edge of the burner.

UL Standard for Fire Retardancy

If a cable can pass a specified UL fire standard, an UL performance verification mark can be applied onto the cable jacket illustrating both the UL class and the number. There are five primary fire testing standards as follows.

CMP (Plenum Flame Test/ Steiner Tunnel Test)

Plenum rated cables meet the NFPA -262 standard (formerly known as UL910) which provides the most stringent requirement of all the tests. Cable samples on a horizontal tray in a tunnel type of chamber are burned at 87.9KW (300,000 BTU/Hr) for 20 minutes. To qualify for a plenum rating the cable specimen musthave the flame spread of less than 5 feet or 1.5 meters with a smoke density during the test of (a) 0.5 peak and 0.15 maximum average. The CMP cables are usually installed in air ventilation ducts and air returns widely used in Canada and USA. The fire retardant properties of CMP cables are much better than that of normal LSZH cables complying with IEC 60332-1 and IEC 60332-3.

CMR (Riser Flame Test)

Riser rated cables meets UL1666. Cable samples on a vertical shaft are burned at 154.5KW (527,500 BTU/Hr) for 30 minutes. To qualify for a riser rating, cable specimen must have the flame spread of less than 12 feet beyond the ignition point. This test does not look at the smoke density or toxicity. Riser rated cables are suitable for vertical shafts not defined as an environmental air plenum.

CM (Vertical Tray Flame Test)

General purpose cables meet UL 1581. Cable samples on a 8 feet vertical tray are burned at 20KW (70,000 BTU/Hr) for 20 minutes. The cable specimen is deemed to pass the test if the flame spread will not extend to the upper portion and extinguish by itself. UL 1581 is similar to IEC 60332-3C except for that the number of testing samples is different. This test does not look at the smoke density or toxicity. The CMG cables are usually used in runs penetrating single floor. These cables cannot be installed in vertical pathways.

CMG (Vertical Tray Flame Test)

These general purpose cable also meet UL1581. CM and CMG are similar and both are recognized in Canada and USA. This test does not look at the smoke density or toxicity. The CMX cables are usually used in runs penetrating single floor. The cables cannot be installed in vertical pathways.

CMX (Vertical Wire Flame Test)

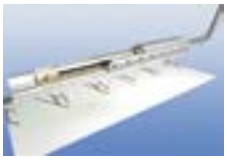
The restricted cables meet UL1581 Limited-use. The test consists of 25 feet long ventilated tunnel. The cable specimen is placed on a ladder inside the tunnel and the flame of 30,000 BTU/Hr is applied to the cable 15 seconds on and 15 seconds off five times for a total exposure to the flame of 1 minute and 15 seconds. To qualify for this test, after the test flame is removed the cable specimen can flame for not more than 60 seconds and the charred portion will not exceed by 25%. UL 1581 VW-1 is similar to IEC 60332-1 except for the difference in the time for flame applied. This test does not look at the smoke density or toxicity. The CMG cables are suitable for use in dwellings and for use in raceway. These cables cannot be installed in bundles and must be protected in metal conduit. This type of cable is chosen as the minimum requirement for commercial installations.

Standard for Fire Resistance

Fire resistant cables are designed for maintaining circuit integrity during a fire. The IEC and the BS adopted two different standards, namely the IEC 60331 and BS 6387. Comparatively speaking, the fire performance requirement for BS 6387 is more demanding.

IEC60331 Fire Resistance Test

A cable sample is placed over a gas burner and connected to an electrical supply at its rated voltage. Fire is applied for a period of 3 hours. The temperature on the cable is between 750℃ and 800℃ After 3 hours, the fire and the power is switched off. 12 hours later, the cable sample is reenergized and must maintain its circuit integrity.



BS6387 Fire Resistance Test

BS6387 specifies the performance requirements for cables required to maintain circuit integrity under fire conditions. It details the following methods to categorize the cables according to cable withstand capacities.

Resistance to fire alone - the cables is tested by gas burner flame while passing a current at its rate voltage. Four survival categories are defined Cat A (3 hours at 650℃), Cat B (3 hours at 750℃), Cat C (3 hours at 950℃), and Cat S (20 minutes at 950℃).

Resistance to fire with water spray - a new sample of cable is exposed to flame at 650℃ for 15 minutes while passing a current at its rated voltage and then the spray is turned on to give exposure to both fire and water for a further 15 minutes. A single survival category W is defined if the cables surpassed the testing requirement.

Resistance to fire with mechanical shock - the final requirement is mechanical shock damage. A fresh sample is mounted on a backing panel in an S bend and is exposed to flames while the backing panel is stuck with a steel bar with the same diameter as the cables under test every 30 seconds for 15 minutes. The cables will be tested under the following temperatures: X (650℃ /15min), Y(750℃ /15min) and Z (950℃ /15min). The highest standard for BS 6387 is CWZ.

Horizontal Burning Test

Water Spray Burning Test

Mechanical-Shock Burning Test

IEC 60754-1/BS6425-1 (Emission of Halogen)

This specifies a test for determination of the amount of halogen acid gas other than the hydrofluoric acid evolved during combustion of compound based on halogenated polymers and compounds containing halogenated additives taken from cable constructions. Halogen includes Florine, Chlorine, Bromine, Iodine and Astatine. All these elements are toxic by their nature. In this test, when the burner is heated to 800℃ , 1g sample is placed inside and the HCL is absorbed into water inside the chamber fed with air flow. The water is then tested with its acidity. If the hydrochloric acid yield is less than 5 mg/g, the cable specimen is categorized as LSZH. If the hydrochloric acid yield lies between 5mg/g to 15mg/g, the cable specimen is categorized as LSF. IEC60754-1 cannot be used for measuring the exact HCL yield if the yield is less than 5mg/g. This test cannot determine if the cable is 100% halogen free or not. To determine if the cable specimen is 100% halogen free or not, IEC60754-2 has to be employed.

Standard for Halogen & Smoke Emission, Corrosivity & Toxicity

IEC 60754-2 (Corrosivity)

This test specifies a method for the determination of degree of acidity of gases evolved during combustion of the cable specimen by measuring its pH and conductivity. The specimen is deemed to pass this test if the pH value is not less than 4.3 when related to 1 litre of water and conductivity is less than 10us/min. When the HCL yield lies between 2mg/g and 5mg/g, a cable specimen can pass IEC 60754-1 but its pH value will likely be less than 4.3 and therefore cannot pass the IEC 60754-2 test.

IEC 61034-1/ASTM E662 (Emission of Smoke)

This specifies a test for determination of smoke density. The 3 metre cube test measures the generation of smoke from electric cables during fire. A light beam emitted from a window is projected across the enclosure to a photo cell connected to a recorder at the opposite window. The recorder is adjusted to register from 0% for complete obscuration to 100% luminous transmissions. A 1 metre cable sample is placed in the centre of the enclosure and is applied with a fire. The minimum light transmission is recorded. The result is expressed as percentage of light transmitted. The specimen is deemed to pass this test (IEC61034-1 & 2) if the value is greater than 60%. The higher the light transmittance, the less smoke emitted during a fire.

ISO4589-2/BS2863 (Oxygen Index LOI)

This is a test for assessing the oxygen index of the material in accordance with the test method specified in ASTM D2863-95 (Measuring the minimum oxygen concentration to support candle-like combustion of plastics). At room temperature when the oxygen content in the air exceeds the oxygen index, the material will burn by itself automatically. The higher the oxygen index, the more retardant the cable will be. For example, if the oxygen index of a material is 21%, it means that the material will burn by itself even at room temperature because at room temperature the normal oxygen content is 21%. In general, the oxygen index of a LSZH cables ranges from 33% to 42%.

ISO4589-3/BS2782.1 (Temperature Index TI)

This is a test for assessing the performance of a material when it is tested in accordance with BS2782 Part 1 Method 143A and 143B. The oxygen index of a material will drop when the temperature rises. When the temperature rises and the oxygen index drops to 21%, the material will burn automatically. This temperature is defined as temperature index. For example, the temperature index of coal is 50%. When the temperature climbs to 150□, its oxygen index drop to 21% and the coal will burn by itself automatically. The temperature index of the coal will then be defined as 150□ In general, the temperature index of LSZH cables ranges from 250℃ to 300□.

ES713 (Toxicity Index)

This is a test defined by Naval Engineering Standard which is a directed at the analysis of a specified set of gaseous species which are commonly present in the combustion products of materials used in military application and which may cause lethality at the time of a fire. In this test, a 1g cable specimen is completely burnt inside a sealed chambers of

volume 0.7-1m3 using a burner fed with air and gas to give a non-luminous flame. The resulting chamber atmosphere is quantitatively analysed for a specified set of gases. For each gas, the measured concentration (Ci) is scaled up for 100g and the concentration is recalculated as though the combustion products is diffused into a volume of exactly 1m3. The resulting concentration (C8) is expressed as the ratio of critical factor (Cf) which is equal to the concentration of this gas considered fatal to human for 30 minutes exposure. The ratio C8/Cf is summed for all gases detected to give the toxicity index. The higher the toxicity index, the more toxic the cable materials is. In general, the toxicity index of LSZH materials are less than 5. LSZH cable will also emit toxic CO and if the cable materials contains P, N and S, the toxic gases generated will even be greater. Thus LSZH cables cannot be categorized as toxic free. CM, CMR and CMP cables in general contains halogen elements which are essential for passing the strict fire retardancy testing. For example, CMP cables are made from FEP which contains Flourine and are much toxic than normal LSZH cables.

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