Tech Tips and Info

Unshielded (UTP) vs. Shielded (STP) Twisted Pair Cables
Shielded cables protect data against electromagnetic interference and radio-frequency interference (EMI/RFI). It is recommended that STP cables be used if the environment has "noisy" interference. In "noisy" environments it is recommended that STP cables be used in order to keep data in its original form.

Choosing Solid & Stranded Patch Cables
1. Use UTP Solid Cables for runs between 2 wiring closets or from the wiring closet to a wall plate. They should not be flexed, bent, or twisted repeatedly.
2. Use Stranded Patch Cables to connect workstations to the wall plate with patch panels and other equipment such as hubs. They are excellent for applications that require repeated flexing.
3. Since attenuation is higher in stranded cables than in solid conductor cables, the stranded cable runs should be minimized to reduce the chance of introducing more attenuation into the system.

Fiber Optic Cables

Fiber Styles: Fiber optic cable is offered in two basic styles: Single-Mode and Multi-Mode. Single-Mode fiber is generally used in long distance, high-capacity voice applications. Multi-Mode fiber is the computer industry standard for data applications, including most local area networks or LANs.

Fiber Advantages: Fiber offers some superb advantages to copper cable. It has the ability to move massive amounts of data at very high speeds without electro-magnetic or radio frequency interference. It is compact, highly secure and maintains excellent data integrity even over great distances.

Fiber Optic Cable Cross Section

Core
Cladding
Buffer
Strength Members
Outer Jacket

FDDI (Fiber Optic Distributed Data Interface): FDDI is the standard that establishes minimum performance characteristics for cable fiber sizes and its recommended redundant ring topology.

Fiber optic cable typically comes in pairs, with one fiber for data transmission and the other for receiving. Zipcord, or duplex cabling is used in environments that experience high electromagnetic interference. It is compact, highly secure and maintains excellent data integrity even over great distances.

Construction: The heart of the fiber optic cable is the glass fiber itself. This glass strand, called the Core, is surrounded by additional glass or Cladding, shown in the illustration. The light pulses of data travel down the cable within the core, while the cladding reflects errant light waves back into the core.

Fiber size is the specified diameter in microns of the fiber itself during installations and while hanging. The Outer Jacket typically consists of either Plenum or PVC. PVC is commonly used for outdoor or external cabling, while Plenum is required for cabling through airways and walls.

Outdoor cable can have additional features, such as corrugated steel armor for protection against rodents and below-ground hazards. What cable to use and what features it should have will depend on your individual needs and the particular installation environment. What ever you require, you can be sure that CALRAD will deliver!
CALTAD
Network CAT 5 Products -
rubber boots, surface mounts, keystone jacks & inserts

UL 350MHz, RJ45 ENHANCED KEYSTONE JACKS
Gold plated 50 microns.
72-102-BK-E black
72-102-BU-E blue
72-102-GN-E green
72-102-IV-E ivory
72-102-OR-E orange
72-102-RD-E red
72-102-WH-E white
72-102-YL-E yellow

RJ45 SNAPLESS RUBBER BOOTS
Available in black, blue, ivory, orange, red, white or yellow. Used with round cable.
72-104-BK black
72-104-BU blue
72-104-IV ivory
72-104-OR orange
72-104-RD red
72-104-WH white
72-104-YL yellow

FIELD INSTALLABLE 2-PIECE SNAP-ON RJ45 SNAPLESS BOOTS
72-105-BK black
72-105-BU blue
72-105-GN green
72-105-IV ivory
72-105-OR orange
72-105-RD red
72-105-WH white
72-105-YL yellow

SINGLE ENHANCED SURFACE MOUNT JACK
Up to 350MHz PCB surface mount jack with 110 IDC, allows for quick and easy installation. UL certified to meet EIA/TIA 568A or B, TSB 40A specifications. 1 RJ45 jack. Includes mounting hardware.
72-107-WH white

DUPLEX ENHANCED SURFACE MOUNT JACK
Up to 350MHz PCB surface mount jack with 110 IDC, allows for quick and easy installation. UL certified to meet EIA/TIA 568A or B, TSB 40A specifications. 2 RJ45 jacks. Includes mounting hardware.
72-108-WH white

BNC KEYSTONE JACK
3/8" D" bulkhead BNC jack mounted in a keystone insert.
72-210-IV ivory
72-210-WH white

'F' CONNECTOR KEYSTONE INSERT
1/2" bulkhead F81 BNC jack mounted in a keystone insert.
72-211-IV ivory
72-211-WH white

KEYSTONE BLANK CONNECTOR INSERT
Blank insert with 3/8" hole. For use with Calrad connectors and Keystone cavity wall plates. Hex nut cutout on rear of insert.
72-212-IV ivory
72-212-WH white

KEYSTONE BLANK INSERT
Blank insert for use with Calrad Keystone cavity wall plates.
72-213-IV ivory
72-213-WH white

MULTIMEDIA LARGE CAVITY KEYSTONE INSERTS
72-215-BK black
72-215-WH white
For use with Calrad 72-232 series wall plates. Punched .5" D" hole for use with .5" O.D. feedthrough connectors. Calrad 30-410-1/2, 75-552, 75-696, & 75-521.

MULTIMEDIA LARGE CAVITY KEYSTONE INSERTS
72-218-BK black
72-218-WH white
For use with Calrad 72-232 series wall plates.

FIBER-OPTIC SIMPLEX CONNECTOR, ST-ST KEYSTONE JACK
72-216-BK black
72-216-WH white
### CATRAD Network CAT 5 Products -

**keystone audio/video and data keystone accessories**

#### ‘F’ CONNECTOR BEZEL INSERTS
- 72-217-BK ........................... black
- 72-217-WH ........................... white
Blank insert with 3/8” hole. For use with F-81 connectors. Hex nut cutout on front of insert.

#### RGB+VIDEO RCA KEYSTONE INSERTS
- RCA female to female jacks with colored inserts of RED, GREEN, BLUE, or YELLOW. Nickel plated. Specify colors when ordering.
- 72-300-IV .............................. ivory
- 72-300-WH .............................. white

#### RGB+VIDEO BNC KEYSTONE INSERTS
- BNC female to female jacks with colored washers of RED, GREEN, BLUE, or YELLOW. Nickel plated. Specify colors when ordering.
- 72-302-IV .............................. ivory
- 72-302-WH .............................. white

#### SVHS VIDEO KEYSTONE INSERTS
- SVHS female to female jack, 4 pin.
- 72-304-IV .............................. ivory
- 72-304-WH .............................. white
- 72-304G-IV .............................. ivory w/ gold connector
- 72-304G-WH .............................. white w/ gold connector

#### KEYSTONE WALL JACKS WITH INSERTS
- White color duplex style Keystone wall jacks with blank inserts and wall plate. Includes mounting hardware.
- 72-229-1 .............................. 1 port
- 72-229-2 .............................. 2 port
- 72-229-3 .............................. 3 port
- 72-229-4 .............................. 4 port

#### KEYSTONE WALL PLATE INSERTS
- Includes mounting hardware.
- 72-230-1 .............................. 1 port, white
- 72-230-2 .............................. 2 port, white
- 72-230-3 .............................. 3 port, white
- 72-230-4 .............................. 4 port, white
- 72-230-5 .............................. 5 port, white
- 72-230-6 .............................. 6 port, white
- 72-230-7 .............................. 7 port, white
- 72-230-8 .............................. 8 port, white

#### KEYSTONE BLANK PATCH PANELS
- Numbered prepunched panels with durable black finish.
- 72-226-12 ............................. 12 ports
- 72-226-16 ............................. 16 ports
- 72-226-24 ............................. 24 ports
- 72-226-48 ............................. 48 ports

#### KEYSTONE PLASTIC WALL PLATES
- White in color. Includes ID labels and mounting hardware.
- 72-232-1 .............................. 1 port
- 72-232-2 .............................. 2 port
- 72-232-3 .............................. 3 port
- 72-232-4 .............................. 4 port

#### DECORA STYLE CAT-5 KEYSTONE WALL PLATE INSERTS
- Includes mounting screws.
- 72-233-1 .............................. 1 port, white
- 72-233-1-IV ........................... 1 port, ivory
- 72-233-2 .............................. 2 ports, white
- 72-233-2-IV ........................... 2 ports, ivory
- 72-233-3 .............................. 3 ports, white
- 72-233-3-IV ........................... 3 ports, ivory

#### PLASTIC CAT-5, CAT-5e BACK BOX
- For use with Calrad 72-229-1, 72-229-2 duplex style Keystone wall plates. Includes mounting hardware.
- 72-236-WH .............................. white

#### WIRE MANAGEMENT PANEL
- 4 stand offs for routing cables. 1-3/4” x 1-3/4” stand off openings for cable passage. The panel measures 19”W x 1-3/4”H x 1-3/4”D. Durable black finish.
- 72-225 ................................. black

#### LARGE CAVITY MULTIMEDIA ANGLED KEYSTONE PLASTIC WALL PLATES
- White in color. Includes ID labels and mounting hardware.
- 72-232-1 .............................. 1 port
- 72-232-2 .............................. 2 port
- 72-232-3 .............................. 3 port
- 72-232-4 .............................. 4 port

#### PLASTIC CAT-5e INLINE COUPLER
- Connect 2 CAT-5, CAT-5e cables together. Bandwidth up to 500Mbs. Meets FCC part 68. Contacts are plated with 50 microns of gold over 100 microns of nickel on phosphor. Size: 1.02”W x .98”H x 1.88”D.
- 72-109 ............................ white

#### KEYSTONE PLASTIC WALL PLATES
- Includes mounting hardware.
- 72-230-1 .............................. 1 port, white
- 72-230-2 .............................. 2 port, white
- 72-230-3 .............................. 3 port, white
- 72-230-4 .............................. 4 port, white
- 72-230-5 .............................. 5 port, white
- 72-230-6 .............................. 6 port, white
- 72-230-7 .............................. 7 port, white
- 72-230-8 .............................. 8 port, white

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**CAT 5e**

**NEW Item**

**NEW Item**

**NEW Item**

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**F’ CONNECTOR BEZEL INSERTS**

**RGB+VIDEO RCA KEYSTONE INSERTS**

**RGB+VIDEO BNC KEYSTONE INSERTS**

**SVHS VIDEO KEYSTONE INSERTS**

**KEYSTONE WALL JACKS WITH INSERTS**

**KEYSTONE PLASTIC WALL PLATES**

**LARGE CAVITY MULTIMEDIA ANGLED KEYSTONE PLASTIC WALL PLATES**

**DECORA STYLE CAT-5 KEYSTONE WALL PLATE INSERTS**

**PLASTIC CAT-5, CAT-5e BACK BOX**

**WIRE MANAGEMENT PANEL**

**KEYSTONE BLANK PATCH PANELS**

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**CAT 5e**

**NEW Item**
Network CAT 5 Products - tools, testers, & cables

RJ45 MODULAR PLUG
Crimp style connector for use with twisted pair data cables. Gold plated 50 microns of gold.
72-497R-25 pack of 25  
72-497R-100 pack of 100

72-240 MULTI-PURPOSE MODULAR CRIMP TOOL
RJ45 crimping tool cuts, strips and crimps quickly and easily. For RJ45 Ethernet and RJ11 plugs. Provides repeatability and reliability of crimp. High impact plastic construction. Compact size, easy to handle.

72-241 7.3" MODULAR CRIMP TOOL
Cuts, strips, and crimps two types of plugs 6P & 8P in one. For crimping: 8P8C/RJ45, 6P6C/RJ12, 6P4C/RJ11 and 6P2C plugs. Steel body with easy grip plastic handles.

72-242 7.6" PRO MODULAR CRIMP TOOL
For crimping 6P/RJ11 & RJ12 & 8P-RJ45, suitable for both stranded and solid wire. Provides precision crimping, cutting and stripping wire in one operation. Ratchet style mechanism.

72-234 ADJUSTABLE IMPACT PUNCH DOWN TOOL
Provides consistant action for seating wire into terminal blocks. Adjustable impact pressure control. The back of the handle is a storage compartment for 1 spare blade. For use with Calrad 72-245, 72-246, 72-247 blades.

72-244 IMPACT PUNCH DOWN TOOL
Provides consistant action for seating wire into terminal blocks. For use with Calrad 72-245, 72-246, 72-247 blades.

PUNCH DOWN BLADES FOR 72-234 AND 72-244 PUNCH DOWN TOOLS
72-245 66 punch down blade
72-246 110/88 punch down blade
72-247 66, 110/88 punch down blade

72-239 PLASTIC PUNCH TOOL
Inexpensive disposable punch down tool with cable stripping blade for outer PVC jacket. Suitable for small jobs. Works with 5-6mm O.D. UTP/STP cable. Terminates conductors on 110 blocks.

72-248 LAN & VOICE CABLE TESTER

350MHz CAT-5E, RJ45 SNAGLESS CABLES
72-110-length-BK UTP/UTP black
72-110-length-BU UTP/UTP blue
72-110-length-GY UTP/UTP gray
72-110-length-RD UTP/UTP red
72-110-length-YL UTP/UTP yellow

72-150-Length FIBER OPTIC FC-FC SIMPLEX JUMPER CABLES
Low insertion loss optical patch cord. Fiber diameter 8.3/125um single mode. 3mm cable O.D., Length in meters. Available in 1m, 2m, 3m, 4m, 5m, 6m. Specify length when ordering.

72-152-Length FIBER OPTIC FC-FC DUPLEX JUMPER CABLES
Low insertion loss optical patch cord. Fiber diameter 8.3/125um single mode. 3mm cable O.D., Length in meters. Available in 1m, 2m, 3m, 4m, 5m, 6m. Specify length when ordering.
This type of IEEE 1394 cable carries a new standard of speed to the USB market. New high speed USB cables give more versatility to computers and peripherals than ever before. USB 2.0 increases signal transmission from standard USB 1.1 tapping out at 12MB/s up to 480MB/s for USB 2.0. The cables are completely backward compatible with standard USB ports, so there isn’t any need to worry that you will not be able to use USB 2.0 cables on the standard USB products you already own.

Universal Serial Bus 2.0 (USB 2.0) brings a new standard of speed to the USB market. These new high speed USB cables give more versatility to computers and peripherals than ever before. USB 2.0 increases signal transmission from standard USB 1.1 tapping out at 12MB/s up to 480MB/s for USB 2.0. The cables are completely backward compatible with standard USB ports, so there isn’t any need to worry that you will not be able to use USB 2.0 cables on the standard USB products you already own.

Connect 2 PC’s without a hub. Rubber strain reliefs with RJ45 connectors. Includes female to female coupler for connecting standard CAT-5 cables for any desired length.
Network CAT 5 Products

**NEW Item**

**72-190-6, -10**  
**SHIELDED MINI-DIN EXTENSION CABLE**  
6-pin mini din male to female extension cable, wired pin to pin. Available in 6 ft. and 10 ft.

**NEW Item**

**DB-9 MOUSE/MONITOR MALE TO MALE CABLES**  
72-195-6 .......................... 6 ft.  
72-195-10 ........................ 10 ft.  
**DB-9 MOUSE/MONITOR MALE TO FEMALE CABLES**  
72-196-6 .......................... 6 ft.  
72-196-10 ........................ 10 ft.  
9 wire 26-28 awg conductors with foil shielding. Pin to pin wiring. Rugged molded construction with long grip-textured slotted thumb screws.

**NEW Item**

**72-250** (solid)  
**72-250-S** (stranded)  
**CAT-5e CABLE 350Mhz**  
1000’ roll solid twisted pair unshielded UL/CSA, 24 AWG 4 pair. PVC jacket. UL/CSA for fast ethernet 10/100/350 Base-T. Colors may vary.

**NEW Item**

**72-251** (solid)  
**72-251-S** (stranded)  
**CAT-5 CABLE**  
1000’ roll solid twisted pair unshielded UL/CSA, 24 AWG 4 pair. 100MBps. UL/CSA for fast ethernet 10/100 Base-T. PVC jacket. Colors may vary.