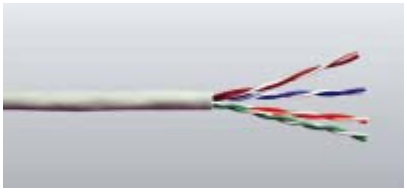
About Cat5E Cable

What is Cat5E Cable? How is it terminated? What is a Patch lead? Cat 5E Explained!



What is Cat5E Cable?

Category 5e

Cat 5 e cable is an enhanced version of Cat 5 that adds specifications for far end crosstalk. It was formally defined in 2001 as the TIA/EIA-568-B standard, which no longer recognizes the original Cat 5 specification. Although 1000BASE-T was designed for use with Cat 5 cable, the tighter specifications associated with Cat 5e cable and connectors make it an excellent choice for use with 1000BASE-T. Despite the stricter performance specifications, Cat 5e cable does not enable longer cable distances for Ethernet networks: cables are still limited to a maximum of 100 m (328 ft) in length (normal practice is to limit fixed ("horizontal") cables to 90 m to allow for up to 5 m of patch cable at each end). Cat 5e cable performance characteristics and test methods are defined in TIA/EIA-568-B.2-2001.

Cat 5E Connectors and other information

The cable exists in both stranded and solid conductor forms. The stranded form is more flexible and withstands more bending without breaking and is suited for reliable connections with insulation piercing connectors, but makes unreliable connections in insulation-displacement connectors. Stranded Cat5E Cable is used to make Cat 5E Patch Leads.

The solid form is less expensive and makes reliable connections into insulation displacement connectors, but makes unreliable connections in insulation piercing connectors. Taking these things into account, building wiring (for example, the wiring inside the wall that connects a wall socket to a central patch panel) is solid core, while patch cables (for example, the movable cable that plugs into the wall socket on one end and a computer on the other) are stranded. Outer insulation is typically PVC or LSOH.

Cable types, connector types and cabling topologies are defined by TIA/EIA-568-B. Nearly always, 8P8C modular connectors, often incorrectly referred to as "RJ-45", are used for connecting category 5 cable. The specific category of cable in use can be identified by the printing on the side of the cable.

The cable is terminated in either the T568A scheme or the T568B scheme. It doesn't make any difference which is used as they are both straight through (pin 1 to 1, pin 2 to 2, etc); however mixed cable types should not be connected in series as the impedance per pair differs slightly and could cause signal degradation. The article Ethernet over twisted pair describes how the cable is used for Ethernet, including special "cross-over" cables.

What is a Patch Cable?

A **patch cable** or **patch cord** (sometimes **patch cable** or **patch cord**) is an electrical or optical cable, used to connect ("patch-in") one electronic or optical device to another for signal routing. Devices of different types (ie: a switch connected to a computer, or switch to router) are connected with patch cords.

Patch cords are usually produced in many different colours so as to be easily distinguishable, and are relatively short, perhaps no longer than two metres. Patch cords typically only refer to those short ones used with patch panels.

Patch cords may be:

- Ethernet Cat5, Cat5e, or Cat6 cables using "RJ-45" connectors with TIA/EIA-568-A or TIA/EIA-568-B wiring
- Optical fiber cables