

Twisted Pair Cable

Twisted pair cable is the most common form of cable used by the residential integrator. It is used for telephone, home networking, and as a general communication cable for devices, such as keypads, thermostats, and other integrated devices. Two insulated wires are twisted around each other, and combined with others into a cable.

Twisted pair cable is provided in two forms, UTP (unshielded twisted pair) and STP (shielded twisted pair). STP cable has a ground shield, which helps to reduce signal interference from external sources, thus making the signal traveling down the cable less prone to alteration or change. UTP cable has no ground shield. UTP is the choice for most residential applications, including telephone, data, and control. However, some manufacturers are recommending STP cable for certain products, such as active loudspeakers, which send balanced audio signals over the cable.

UTP cable requirements are covered by the ANSI/TIA/EIA-568-B.2 standard. The cable that residential integrators are familiar with is a 4-pair UTP cable with a category 5e or greater rating. Each conductor consists of either a solid single strand core of cable or a stranded core of cable. Solid core UTP cables are used predominately as telecommunications outlet (TO) cables within the home because they have stronger pull strength. Stranded conductors have superior flexibility and are

used mainly for patch cords. Within a pair, one conductor has a solid colored insulation while the other has a white insulation with a same color stripe. The solid color conductor is known as the tip and the striped conductor is the ring.

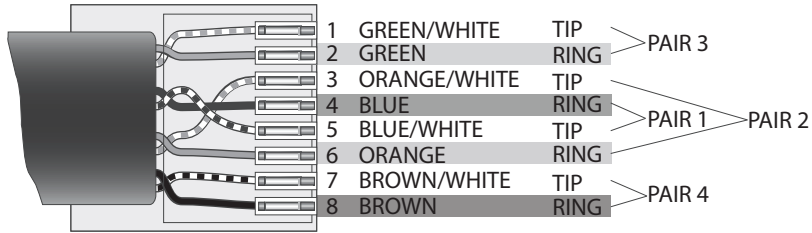
4-pair UTP Terminations

T568A is the designation for connections for new installations as set by the TIA-570-B standard. Before the TIA/EIA standard was created in 1985, AT&T had been developing

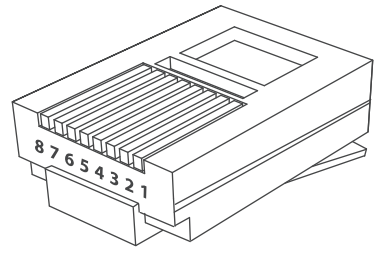
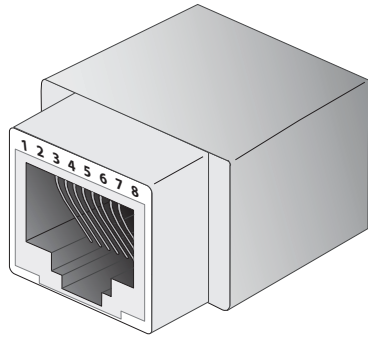
networks designed to run over existing telecommunications infrastructure, and used USOC as its termination method. To provide backward compatibility for a single line phone, AT&T created its own way of terminating cables for UTP networks; this specification was named 258A. In 1991 the existing AT&T standard 258A was included in TIA/EIA 568A and referred to as TIA/EIA-568B. This standard is not used in current residential networks.

4-Pair UTP Terminations

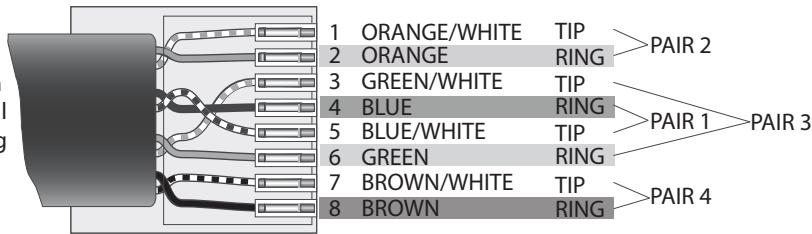
Termination as called for by TIA-570.B



INDUSTRY DESIGNATION
T568A



Unused termination in residential structured cabling



INDUSTRY DESIGNATION
T568B

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