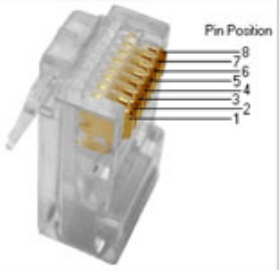
CAT6A Cables

Data Sheet - Part #: CAT6A-xx-BL

Pin	T568A Pair	T568B Pair	Wire	T568A Color	T568B Color
1	3	2	tip	white/green stripe	white/orange stripe
2	3	2	ring	green solid	orange solid
3	2	3	tip	white/orange stripe	white/green stripe
4	1	1	ring	blue solid	blue solid
5	1	1	tip	white/blue stripe	white/blue stripe
6	2	3	ring	orange solid	green solid
7	4	4	tip	white/brown stripe	white/brown stripe
8	4	4	ring	brown solid	brown solid

Pins on plug face (socket is reversed)



The latest standard from the TIA for enhanced performance standards for twisted pair cable systems was defined in February 2008 in ANSI/TIA/EIA-568-B.2-10. **Category 6a** (or **Augmented Category 6**) is defined at frequencies up to 500 MHz—twice that of Cat. 6.

Category 6a performs at improved specifications, in particular in the area of alien crosstalk as compared to Cat 6 UTP (unshielded twisted pair), which exhibited high alien noise in high frequencies.

The global cabling standard ISO/IEC 11801 has been extended by the addition of amendment 2. This amendment defines new specifications for Cat. 6A components and Class EA permanent links. These new global Cat. 6A/Class EA specifications require a new generation of connecting hardware offering far superior performance compared to the existing products that are based on the American TIA standard.

The most important point is a performance difference between ISO/IEC and EIA/TIA component specifications for the NEXT transmission parameter. At a frequency of 500 MHz, an ISO/IEC Cat., 6A connector performs 3 dB better than a Cat. 6A connector that conforms with the EIA/TIA specification. 3 dB equals 100% increase of near-end crosstalk noise reduction when measured in absolute magnitudes

Confusion therefore arises because of the different naming conventions and performance benchmarks laid down by the International ISO/IEC and American TIA/EIA standards, which in turn are different from the regional European standard, EN 50173-1. In broad terms, the ISO standard for Cat6A is the highest, followed by the European standard and then the American.

Maximum length

When used for 10/100/1000BASE-T, the maximum allowed length of a Cat 6 cable is 100 meters or 328 feet. This consists of 90 meters (300 ft) of solid "horizontal" cabling between the patch panel and the wall jack, plus 10 meters (33 ft) of stranded patch cable between each jack and the attached device. Since stranded cable has higher attenuation than solid cable, exceeding 10 metres of patch cabling will reduce the permissible length of horizontal cable.

When used for 10GBASE-T, Cat 6 cable's maximum length is 55 meters (180 ft) in a favourable alien crosstalk environment, but only 37 meters (121 ft) in a hostile alien crosstalk environment, such as when many cables are bundled together. However, because the effects of alien crosstalk environments on cables are difficult to determine prior to installation, it is highly recommended that all Cat6 cables being used for 10GBASE-T are electrically tested once installed. With its improved specifications, Cat6A does not have this limitation and can run 10GBASE-T at 100 meters (330 ft) without electronic testing.

Installation caveats

Category 6 and 6a cable must be properly installed and terminated to meet specifications. The cable must not be kinked or bent too tightly (the bend radius should be at least four times the outer diameter of the cable). The wire pairs must not be untwisted and the outer jacket must not be stripped back more than 1/2 inch (1.27 cm).

All shielded cables must be grounded for safety and effectiveness and a continuous shield connection maintained from end to end. Ground loops develop when there is more than one ground connection and the difference in common mode voltage potential at these ground connections introduces noise into the cabling.

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