Hitachi Cable Manchester

Facts about 10-gigabit Ethernet.

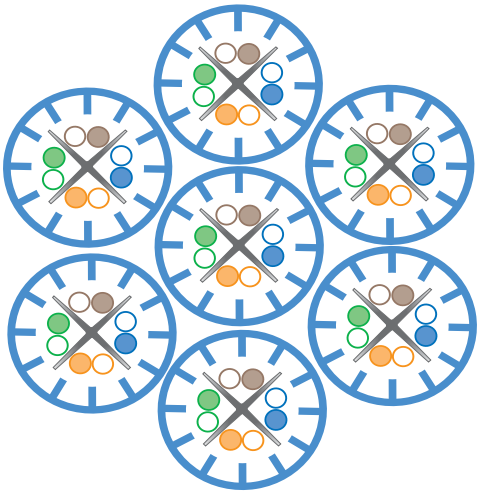
Why do I need 10-gigabit Ethernet?
The ever growing throughput demands created by the Internet and increased data sharing have created a need for faster networks. Today's 10/100-megabit and 1-gigabit Ethernet based networks meet the current needs of many users, but for others, such as medical facilities, universities and government agencies, faster data rates are necessary. 10-gigabit Ethernet over copper, known as 10G Base-T, will allow average users to increase their throughput speeds by 10 to 100 times. For example, If your are utilizing 100Base-T Ethernet, what is now taking 20 seconds to send or recieve will take .2 seconds over 10GBase-T. However, to ensure that you are ready for the implementation of 10-gigabit Ethernet, the correct infrastructure must be installed.

Why 10-gigabit over copper?
For those companies looking to ensure that their data infrastructure will support the applications of the future, HCM has developed it's Supra 10G line of cables. Referred to as Augmented Category 6 cables (Category 6A), Supra 10G cables are designed to accommodate the current and future needs of bandwidth hungry applications. Supra 10G will allow users to achieve 10 gigabit data rates to a full 100 meters. Existing Category 6 cables may handle 10-gigabit Ethernet up to a maximum of 55 meters and Category 5e cabling was determined to be an unacceptable medium for 10-gigabit Ethernet.

What are the choices for Category 6A cable?
HCM manufactures two versions of Category 6A Supra 10G cable, an unshielded version (UTP) and a shielded version (FUTP). The FUTP version consists of four twisted pairs surround by an overall foil shield then an outer jacket. Both cables are recognized for use with 10-gigabit Ethernet. The Category 6A FUTP cable, due to the foil shield, is resistant to radio frequency interference and electromagnetic interference. It is also exceptional at reducing or eliminating alien crosstalk. Alien crosstalk, also known as ANEXT, occurs when a signal from one cable jumps over to an adjacent cable, thus corrupting its ability to properly send and receive data.

And, since the standard for Category 6A, TIA-568-C.2, requires testing to 500 MHz, up from 250MHz for Category 6, ANEXT is a concern. The main disadvantage of a shielded cable, however, is its cost and the associated installation costs. A shielded solution requires shielded jacks and patch panels, as well as proper bonding and grounding. Due to the nature of the components in a shielded solution, requires some additional steps during installation and this add slightly to installation costs. Unshielded twisted pair cable (UTP), on the other hand, is less expensive, is easier to install and terminate, and has effectively established itself as the cable of choice for network cabling. But, what about alien crosstalk?

How does the Supra 10G UTP overcome ANEXT?
HCM's Supra 10G UTP cable utilizes a patented design that incorporates a non-concentric (slightly off-center) core and a splined jacket. By creating space between adjacent cables and providing superior electrical performance, the Supra 10G is able to cancel out ANEXT and provide 10-gigabit Ethernet up to 100 meters. The diagram below shows how Supra 10G UTP cables interact when bundled.



Is Category 6A cable currently available?
Yes. Supra 10G, in both UTP and FUTP, is currently available from authorized HCM distributors.

For more information about Supra 10G cables, contact HCM.