

Subject: TIA TSB-155

Since the introduction of 10G-Base-T to the cabling world several years ago, the escalation in the number of people actually looking to run that type of system in their horizontal has multiplied exponentially. Some are buying cables built to meet the TIA 568-B.2-10 standard to get the guaranteed transmission of 10 Gig over 100 Meters, but others who have recently changed over their cabling before the 10 Gig bang had already installed lesser grades of Category 6 cable and are now looking to get 10 Gig performance over certain pathways in their facilities. Because of this increased awareness in achieving 10 Gig over various networking topologies TIA has come up with a Technical Bulletin to help understand both the testing requirements and the performance that must be achieved to assure operability for 10G-Base-T applications over Category 6 cabling.

TSB-155 is titled, "Guidelines for the Assessment and Mitigation of Installed category 6 Cabling to Support 10G-Base-T." The document provides recommendations and guidelines needed to have currently installed 100 Ohm 4 pair Category 6 cabling support 10 Gig applications. Included in this document are the necessary test parameters when measuring a Category 6 cable from the standard 250 MHz to 500 MHz as well as the guidelines for testing Alien Crosstalk.

The most important part of this document is the section that discusses the supported distances that an end user can expect 10-G Base-T to operate. The document states,

" 10G Base-T should operate over channel lengths of up to 37 meters of Category 6 cabling, and should operate over channel lengths between 37 and 55 meters of Category 6 cabling depending on the alien crosstalk environment. Channel lengths over 55 meters may require mitigation."

The mitigation that is referred to above is the mitigation of the alien crosstalk environment between cables in channels or permanent links. This needs to be done if the original testing of the alien crosstalk does not pass to the required specifications. There are several procedures that may be attempted in order to enhance the current crosstalk environment and achieve passing results. The mitigation techniques are listed below,

- 1) When possible at the patch panels, separate the equipment cords and the horizontal cables as much as possible. The spacing of the cables in the Near End of the channel reduces the amount of crosstalk coupling at the area where noise can be most susceptible.
- 2) Employ non adjacent patch panel positions where possible
- 3) Replace equipment cords with Cat 6a cords or shielded Cat 6 cords
- 4) Replace currently installed connectors with Cat 6A connectors

In Conclusion Mohawk supports the following statements:

- 1) All of Mohawk's Category 6 cables will support 10GBASE-T to the accepted parameters of the TIA TSB-155 document up to 37 Meters.
- 2) Testing of longer lengths up to 55 meters may be attempted using the mitigation guidelines found in TSB-155.

Should you have any questions or require additional information please do not hesitate to contact me directly at 1-800-422-9961.

Joseph Barry
Sales Engineer - Copper Products