



TR-42 – Engineering Committee on User Premises Telecommunications Infrastructure

Date: June 6, 2003

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From: Bob Jensen, Chair TIA TR-42

Subject: 4-pair 100 ohm balanced twisted pair copper cabling for 10GBASE-T

Thank you for your request for assistance in characterizing balanced cabling as specified in ISO/IEC 11801 Ed2:2002, up to 625 MHz. TR-42 has reviewed your request and we have developed the following study items to help in this effort. Although we will be studying these issues for both TIA category 5e and category 6 cabling and components, we have agreed that any new transmission requirements (including extended test frequency specification) will be targeted for category 6.

- (1) Define a test method, set-up, and cable/cabling configuration for measuring ANEXT of cable/cabling (minimum test range is 1 to 625 MHz),
- (2) Define a the test method and set-up for measuring ANEXT of connecting hardware (minimum test range is 1 to 625 MHz),
- (3) Investigate cable transmission performance characterization of existing parameters to 625 MHz,
- (4) Investigate connecting hardware transmission performance characterization of existing parameters to 625 MHz,
- (5) Investigate cabling transmission performance characterization of existing parameters to 625 MHz,
- (6) Investigate the actual and predicted worst case ANEXT performance of cable configurations to be defined,

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- (7) Investigate the actual and predicted worst case ANEXT performance of connecting hardware configurations to be defined,
- (8) Investigate the relationship between ANEXT and balance,
- (9) Investigate field testing to 625 MHz, including field testing the parameter of ANEXT, and
- (10) Investigate possible field mitigation methods that will yield reduced ANEXT.

Although it may be possible to adequately characterize the existing installed base of TIA category 5e cabling, we do not intend to develop an enhanced version of category 5e to support the extended frequencies or alien crosstalk requirements of 10GBASE-T.

TIA category 6 cabling was designed to support anticipated future applications and has significant improvements in transmission performance. The market acceptance of TIA category 6 cabling has also grown rapidly. We believe that it would be possible to adequately augment TIA category 6 cabling standards to support the new requirements for 10GBASE-T. In addition, there is overwhelming support among member companies to authorize a project within TIA TR-42.

Sincerely,
Bob Jensen
Chair TIA TR-42
