10GBASE-T
Cabling Model Development

Alien Crosstalk Measurements

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Cabling Model Development - Alien Crosstalk

- **Measurement objectives-**

- **Develop Alien Crosstalk Limits based on measurement configurations that are representative of the installed cabling**
  - **conduit fill capacity**
  - **tie-wrap separation distances**

- **Cabling**
  - **Category 5e or Category 6 - (UTP or ScTP)**

Measurement Data

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  - **Frequency characterization: 1 MHz ≤ f ≤ 625 MHz**
  - **401 points minimum, linear sweep**
  - **Operating temperature: measurements at 20 °C.**
  - **Data Format:**
    - **Report: Magnitude (dB) versus frequency (two columns)**
    - **Save: real and imaginary (two columns) versus frequency (one column)**
    - **either Excel or Excel compatible**

Measurement Procedure

1. Lay-out seven 90 meter 4-pair cables along a nonconducting surface or supported in an aerial span. Tie-wrap every 5 ft - (90 meters)

- **Measure NEXT between all of the seven 4-Pair cable pair combinations**
- **Mark measured end**
- **Calculate Power Sum**

2. Remove tie-wraps. Pull the seven 90 meter 4-Pair cables into a conduit with a length of ≥ 30 meters; pull from measured end marked in step (1). Pull-out a maximum of 1 meter of cable for attachment to the measurement equipment. Conduit size designator= (1 in) diameter.

- **Measure NEXT (measured end marked in step (1) between all of the seven 4-Pair cable pair combinations.**
- **Calculate Power Sum**

Measurement Procedure

3. Pull-out 5 meters of the seven 90 meter 4-Pair Cables from the conduit and tie-wrap every meter.

- **Measure NEXT (measured end marked in step (1)) between all of the seven 4-Pair cable pair combinations**
- **Calculate Power Sum**

4. Terminate (marked end) cable pairs to adjacent Category compatible connecting hardware patch panel positions. Use a 1 meter test cord.

- **Measure NEXT between all of the seven 4-Pair cabling pair combinations**
- **Calculate Power Sum**