

Wire and Cable Characteristics Lab Activity

Wayne Phillips
Chabot College
Hayward, CA



A presentation of eSyst.org



Wire and Cable Lab Activity

- Objectives
 - Characterize wire resistance and skin effect
 - Observe cable propagation and standing waves
- Scope Skills
 - Multi-channel voltage and phase measurements
 - Triggering
 - Sample averaging
- Data summary
 - Tabulate and graph data
 - Compare presentation of linear vs. log-log scale

Wire and Cable Lab Activity

Part 1: Wire resistance and skin effect

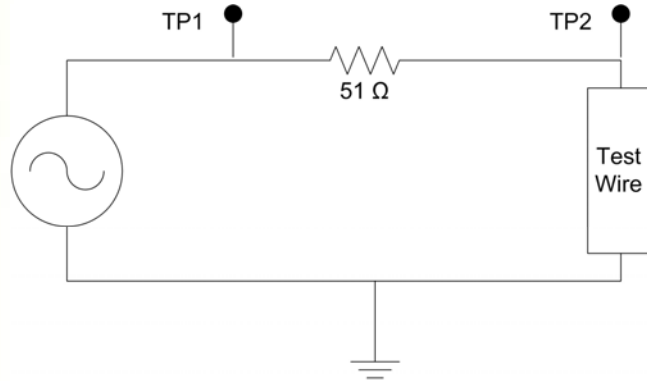
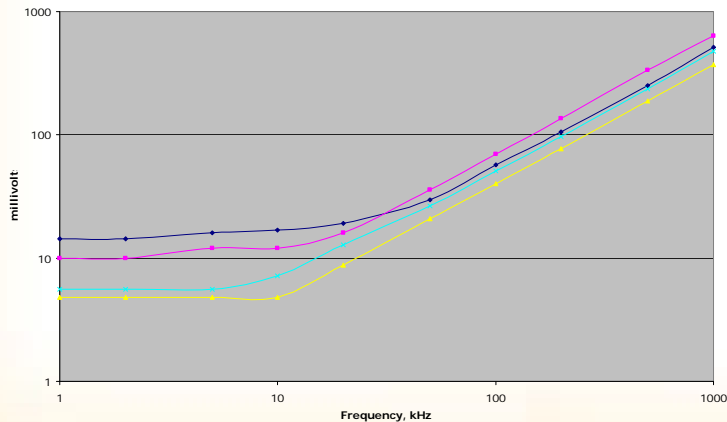


Figure 1
Skin Effect Test Circuit
Skin Effect Lab Exercise
Test Circuit 1 TP2 Voltages

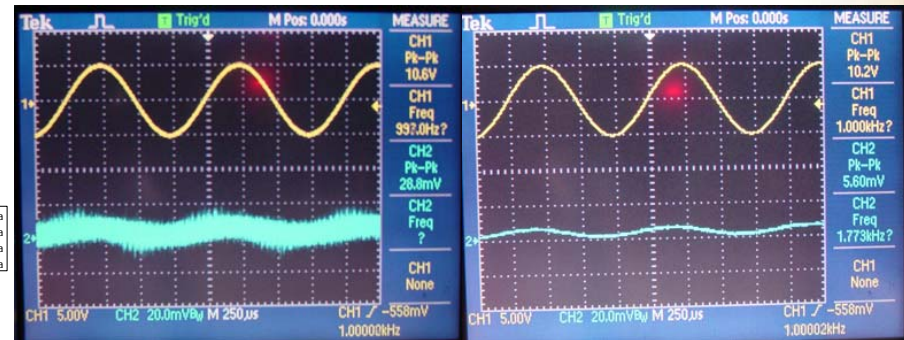


Scope skills:

triggering

sample averaging

voltage and time/phase measurements

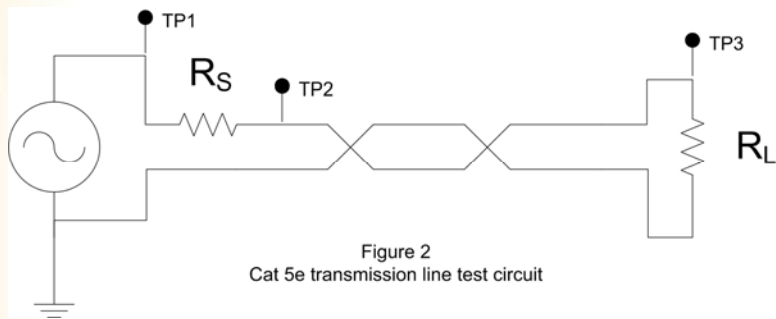


1 sample

128 averaged

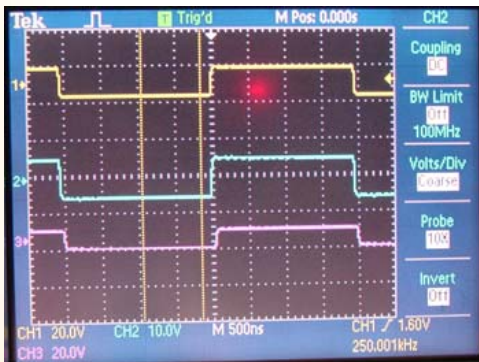
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Part 2: Transmisison Line

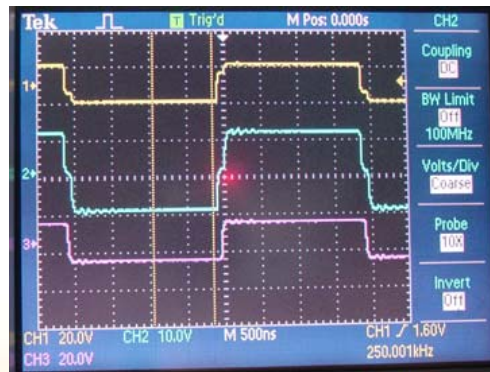


Observe the effects pulse reflection and standing waves on 100 feet of CAT5e cable

100 Ω termination



Open load



Shorted load

