Lab 4.2.9c Fluke 620 Cable Tester – Length – Instructor Version

Objective

- Learn the Cable Length feature of the Fluke 620 LAN CableMeter or its equivalent.
- Learn how to use a cable tester to check the length of Ethernet cabling to verify that it is within the standards specified and that the wires inside are the same length.

Background / Preparation

Cable length tests can be very helpful in troubleshooting cabling problems with UTP. The Cabling infrastructure or cable plant in a building is expected to last at least ten years. Cabling related problems are one of the most common causes of network failure. The quality of cabling components used, the routing and installation of the cable, and quality of the connector terminations will be the main factors in determining how trouble-free the cabling will be.

Prior to starting the lab, the teacher or lab assistant should have several correctly wired Category 5 cables to test. The cables should be both straight- through and crossover. Cables should be numbered to simplify the testing process and to maintain consistency. A cable tester should be

available that can do cable length tests for UTP. Work individually or in teams. The following resources will be required:

- Category 5 straight-through or crossover cables of different colors, some good and some bad
- Cable Tester, which is Fluke 620 LAN CableMeter or similar, to test cable length

Step 1

Turn the rotary switch selector on the tester to the LENGTH position. Press the SETUP button to enter the setup mode and observe the LCD screen on the tester. The first option should be CABLE. Press the UP or DOWN arrow buttons until the desired cable type of UTP is selected. Press ENTER to accept that setting and go to the next one. Continue pressing the UP/DOWN arrows and pressing ENTER until the tester is set to options in the chart below. Once the options have been properly selected, press the SETUP button to exit setup mode.

Tester Option	**Desired Setting – UTP**
CABLE:	UTP
WIRING:	10BASE-T or EIA/TIA 4PR
CATEGORY:	CATEGORY 5
WIRE SIZE	AWG 24
CAL to CABLE?	NO
BEEPING:	ON or OFF
LCD CONTRAST	From 1 through 10 (brightest)

Step 2

For each cable to be tested use the following procedure. Place the near end of the cable into the RJ-45 jack labeled UTP/FTP on the tester. Place the RJ-45-RJ-45 female coupler on the far end of the cable, and then insert the cable identifier into the other side of the coupler. The coupler and the cable identifier are accessories that come with the Fluke 620 LAN CableMeter.

Step 3

Using the tester LENGTH function and a UTP Cable ID Unit, the length of the cable can be determined. Perform a basic cable test on each of the cables provided. Then fill in the following table based on the result for each cable tested. For each cable, write down the number and color, the cable length, the tester screen test results, and what the problem is, if there is a problem. For UTP cables, press the **DOWN** arrow or **UP** arrow to see all pairs.

Cable No.	Cable Color	Cable Length	Tester Test Results	Problem
1	Answers will vary	25’	Pass 25’	None – good cable
2	Answers will vary	Answers will vary	FAIL 3 OPEN @ 2’	Pin 3 open at near end
3	Answers will vary	Answers will vary	FAIL 3&6 SHORT <30’	Wires 3 & 6 shorted within 30’
4	Answers will vary	Answers will vary	FAIL MISWIRE	Use down arrow to identify which pair(s) is miswired

Answers to the problem cable tests in rows 2, 3, and 4 will vary depending on the problem, but could be as shown.

