CPE3300 COURSE PROJECT

MESSAGE-EXCHANGE NODES ON CSMA/CD BUS USING MANCHESTER LINE CODING

WITH BUS THAT IDLES HIGH

TEST PROCEDURE FOR SECOND MILESTONE DEMONSTRATING MANCHESTER ENCODED TRANSMISSION

February 6, 2024 (Ver. 1.0)

For convenience, record your design values here:

Pin used for transmission: _____ Pin used for channel monitoring: _____

SETUP TEST:

Ensure the unit under test (UUT) is powered on and analog Discovery 2 is connected to the correct pins. Connect logic analyzer to transmission pin, set report Manchester. and the wave generator is connected to the channel monitor pin shown above.

BEGIN TEST:

Part 1: **Connect a constant Vcc to the RECIEVE input of the UUT verify the UTT is now idle state.**

1. Connect the transmission pin to the logic analyzer and send the following message "HI", Verify that the UUT provides the expected output (HI transmissited). **Indicate Pass or Fail here: _____**

2. Connect the transmission pin to the logic analyzer and send the following message "\0", Verify that the UUT provides the expected output (\0 transmissited). **Indicate Pass or Fail here: _____**

3. Connect the transmission pin to the logic analyzer and send no message. Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

Part 2: **Connect a constant ground to the RECIEVE input of the UUT verify the UTT is now collision state.**

4. Connect the transmission pin to the logic analyzer and send the following message "HI", Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

5. Connect the transmission pin to the logic analyzer and send the following message "\0", Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

6. Connect the transmission pin to the logic analyzer and send no message. Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

Part 3: **Connect a constant square-wave frequency of 500 Hz to the RECIEVE input of the UUT and verify the UTT is now in the busy state.**

7. Connect the transmission pin to the logic analyzer and send the following message "HI", Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

8. Connect the transmission pin to the logic analyzer and send the following message "\0", Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

9. Connect the transmission pin to the logic analyzer and send no message. Verify that the UUT provides the expected output (no transmission). **Indicate Pass or Fail here: _____**

Part 4: connect an oscilloscope to the transmission pin

10. Connect the transmission pin to the logic analyzer and send the following message with only "\0"'s, verify that the UUT provides a 2kHz square wave output. **Indicate Pass or Fail here: _____**

11. Connect the transmission pin to the logic analyzer and send the following message with only "SOH"'s ascii decimal value of 1, verify that the UUT provides a 2kHz square wave output. **Indicate Pass or Fail here: _____**