ELCT 221 Project 2

Transfer Functions

Will Rashley and Carson Murray

**Experiment 1: Low-Pass Filter**

Schematic Picture:

A picture containing text, whiteboard

Description automatically generated

Breadboard Connections:

A picture containing text

Description automatically generated

Measured Transfer Functions:

A screenshot of a computer

Description automatically generated with medium confidence

Spice Simulation Transfer Functions:

Chart, line chart

Description automatically generated

Estimation of Corner Frequency:

Comments:

The low-pass filter transfer functions for both the simulated and measured graphs were both a success in capturing the correct shape for a low-pass filter. Although, the measured transfer functions appear to be shifted a to the left as they should be closer to the corner frequency of 100 kHz.

**Experiment 2: High-Pass Filter**

Schematic Picture:

A picture containing text, map, whiteboard

Description automatically generated

Breadboard Connection:

A picture containing text

Description automatically generated

Measured Transfer Functions:

Graphical user interface, chart

Description automatically generated

Spice Simulation Transfer Functions:

Chart, line chart

Description automatically generated

Estimation of Corner Frequency:

Comments:

The measured high-pass transfer function and simulated high-pass transfer function both appear to capture the correct shape and correct corner frequencies.

**Experiment 3: LC Band-Pass Filter**

Schematic Picture:

Diagram, schematic

Description automatically generated

Breadboard Connection:

A picture containing electronics

Description automatically generated

Measured Transfer Functions:

Graphical user interface, chart

Description automatically generated

Spice Simulation Transfer Functions:

Chart, line chart

Description automatically generated

Estimation of Resonance Frequency:

Comments:

Both Simulated and measured graphs appear to be very similar in shape and scale. The only differences being that the measured aplitude appears to only touch 0 once (unlike the simulated which stays at zero for a couple thousand Hz) and the phase graph appears to be slightly wild towards the beginning and end of the graph.