

# Experiment 3: Voltage Dividers and Thévenin's Theorem

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## Post-Lab Report

### I. Discussion on parts A and B

- Refer to the data of Table A.1. How does the load current vary with the load resistance  $R_L$ ? Explain why.

- Refer to Table A.1. What is the effect on bleeder current  $I_1$  as the load current increases? Explain why.

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- What is the effect on the voltages  $V_A$  and  $V_B$  at the divider taps as the load current increases (Table A.1)? Explain why.

- Compare the computed values in Table A.1 with the measured values. Explain any differences.

- Compare the design values and the measured values of the circuit in Fig. B.1. Explain any differences.

## II. Discussion on parts C

- Compare the measured and theoretical values obtained for  $V_{TH}$  and  $R_{TH}$  of Fig. C.3. Explain any differences in the values of  $V_{TH}$  and  $R_{TH}$ .

- With the  $2.2\text{ K}\Omega$  resistor in branch CD of Fig. C.3 opened; calculate  $V_{TH}$  and  $R_{TH}$  of the modified circuit. Explain any differences in the values of  $V_{TH}$  and  $R_{TH}$ .

- In the Procedure of Part C,  $R_{TH}$  was derived by shorting the 15 V source in Fig. C.3 and measuring the resistance between A and B. In the statement of Thévenin's theorem,  $R_{TH}$  is derived from the current that flows when  $R_L$  is shorted. Verify the equivalence of these two methods.

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