Experiment No.- 9

Objective of the Experiment: **To Study Step Up Chopper with R and motor load.**

Equipment Needed:

1. Scientech 2725 Trainer Kit.
2. Resistor and Motor Load.
3. Patch Cords.
4. DSO.
5. Multi-Meter

Circuit Diagram:

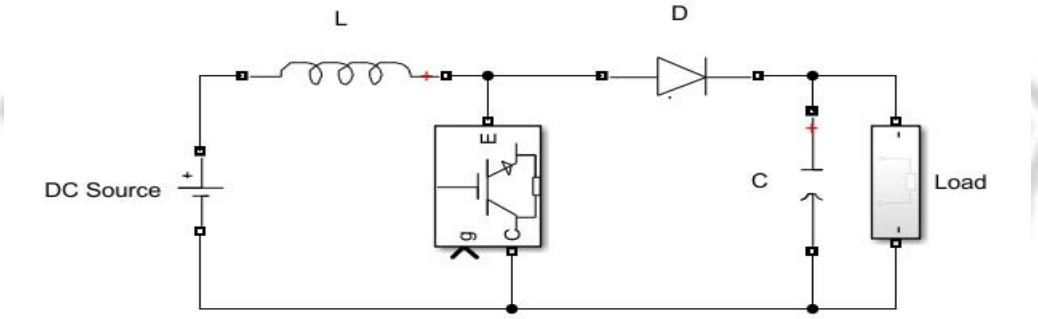


Fig. 1: Step Up Chopper R and Motor Load.

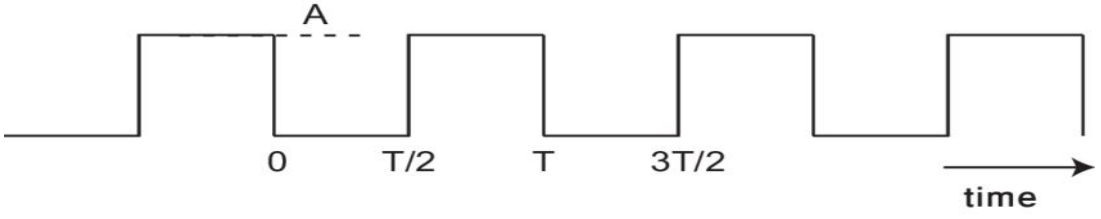
Note: Gate pulse will be given by firing circuit unit internally.

Procedure:

1. Make the connections as per the given circuit diagram.
2. Give the gate pulses from the firing circuit unit to the MOSFET carefully.
3. Connect the given resistor then motor load.
4. Connect the DSO probe and multi-meter across the load.
5. Make sure the connections are **OK** and patch cords are **not loose**.
6. Switch on the main supply**.**
7. Vary PWM & Frequency and take the required readings from the DSO and multi-meter.
8. Calculate the desired result from the observed data.

Pulse Train for Step Up Chopper:

Note: Varry the PWM for different reading.



Observation Table:

Source Voltage (V_S) = V						
Sl. No.	**Time period T (sec)**	**T_{ON} (sec)**	**PWM α (%)**	**Measured Output Voltage (V)**	**Calculated Output Voltage (V)**	**% Error**
1.						
2.						
3.						
4.						
5.						
6.						

Calculations:

For Step-Up Chopper:

$$\mathbf{Vo} = \frac{V_S}{1-\alpha}$$

Where, $\alpha = \frac{T_{ON}}{T}$

Discussion:

****