Experiment No.- 6

Objective of the Experiment: **To Study the 1-Phase Half & Full Bridge Inverter with Resistive load.**

Equipment Needed:

1. Scientech 2712 Trainer Kit.
2. Resistor Load.
3. Patch Cords.
4. DSO.
5. Multi-Meter

Circuit Diagrams:

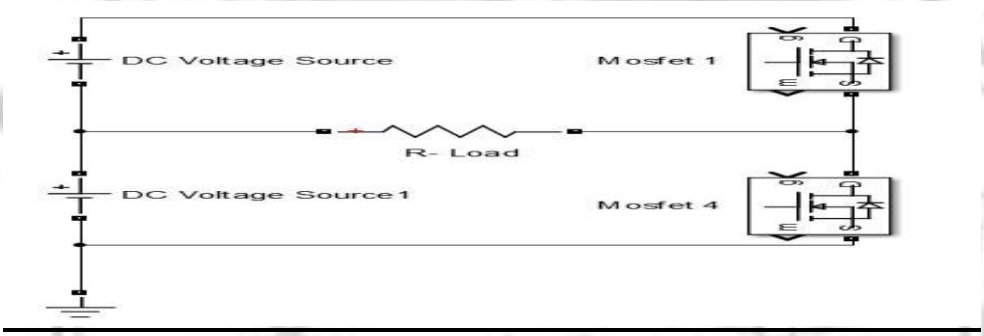


Fig.1: 1-phase half bridge inverter with R-Load

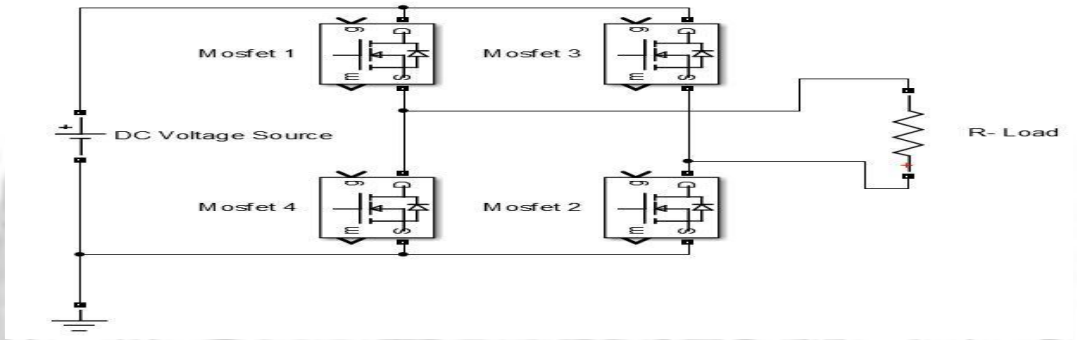


Fig. 2: 1- phase full bridge inverter with Resistor Load.

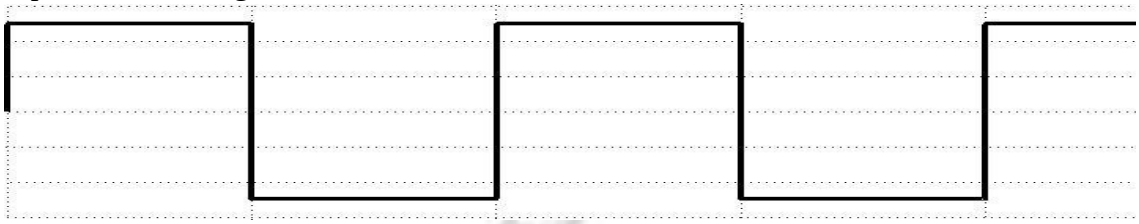
Note: Gate pulse will be given by firing circuit unit internally.

Procedure:

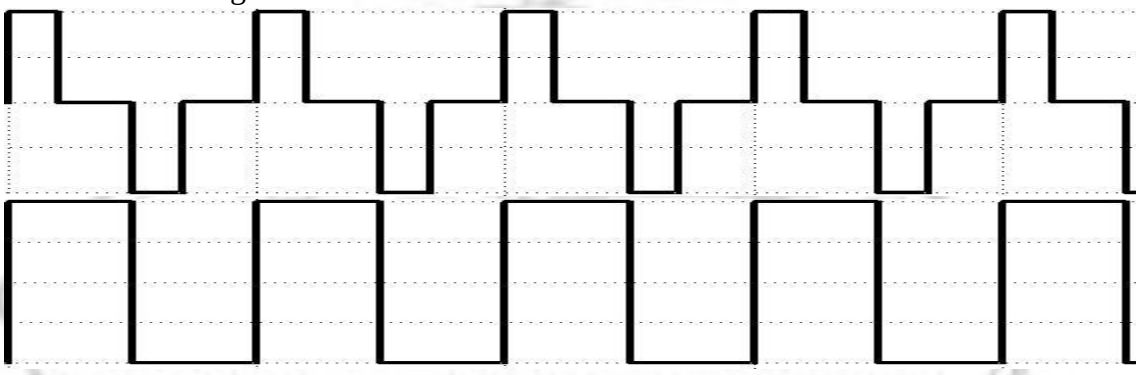
1. Make the connections as per the given circuit diagram.
2. Give the gate pulses from the firing circuit unit to the MOSFETs carefully.
3. Connect the given resistor load.
4. Connect the DSO probe and multi-meter across the load.
5. Make sure the connections are **OK** and patch cords are **not loose**.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

Expected Output Voltage Waveforms:

1. 1-phase Half Bridge Inverter



2. 1-Phase Full Bridge Inverter



Observation Table:

Source Voltage (V_S) = V						
Sl No.	Pulse Width T_{ON}(sec.)	Time Period T(sec.)	%PWM	RMS Output Voltage (V_O) (Volt)		% Error
				V_O(Meas.)	V_O(Cal.)	
1.						
2.						
3.						
4.						
5.						

Note: Observation table will be same for both the Inverters.

Calculation:

$$V_{o,\,rms} = V_S \sqrt{\frac{T_{ON}}{T}}$$

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