

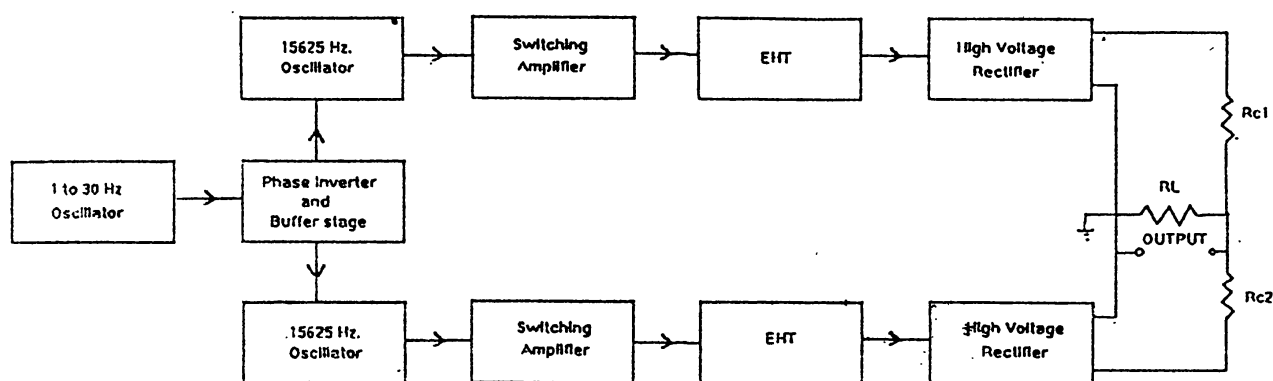
## Bipolar high voltage switching supply for solar video magnetograph

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A switchable quarter wave plate KD\*P modulator is used for the analysis of circular polarized light coming from solar photosphere. When an appropriate voltage is applied to KD\*P crystal, it converts the circular polarization into mutually perpendicular linear polarization. This principle is used in video magnetograph to analyze the two types of circular polarizations. The operation of KD\*P modulator requires a pulsating or square wave variable high voltage DC source. For this a high voltage (2.5 KV) bipolar switching power supply was developed at USO by using two EHT transformers of TV. Block diagram of the circuit is shown below. These EHTs are ferrite core transformers and operate at 15625Hz. For generating the  $\pm 2500V$  dc two square pulse oscillator are connected with the input of EHTs. The triggering pulse to the oscillators is generated internally (1-30 Hz oscillator) or externally by a computer. The rectified and filtered outputs of the two EHTs are so connected that one terminal acts as ground and other as floating high voltage point, on the KD\*P. At any time only one EHT oscillates according to its input triggering.

This power supply can be used as internal or external triggering mode at the rate of 1 - 30 Hz. By triggering at one input it can be used as a unipolar switching supply. This power supply is tested and being planned to be used for obtaining video magnetograph at USO.



Block diagram of bipolar high voltage switching power supply