

### Solid State DC Switch Modulator - Technical Highlights

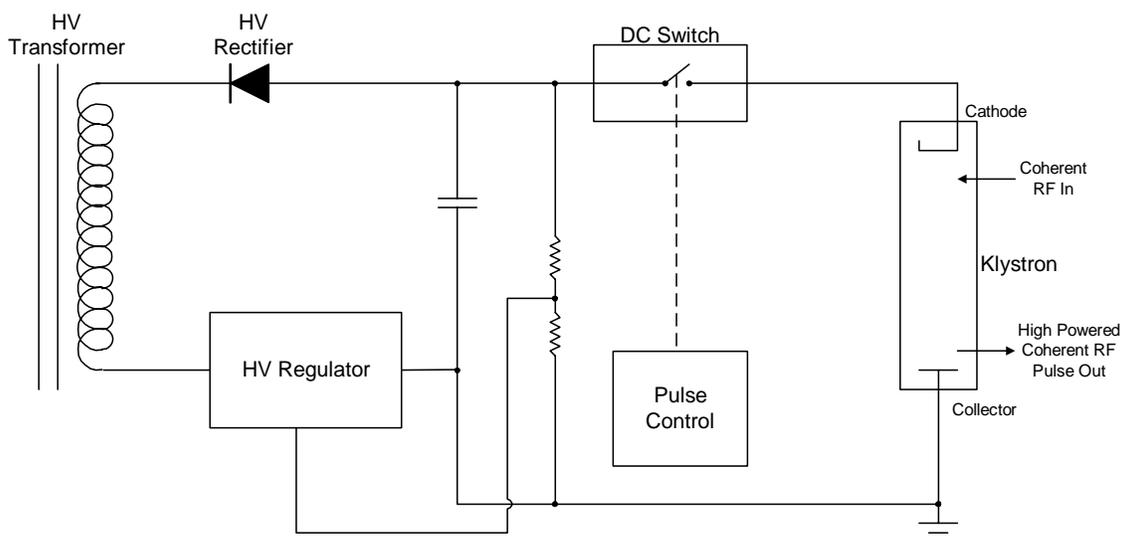
- Pulse width and rate are independent of modulator component values
- Can produce pulses of very large width if required
- Pulse width and rate are programmable and are independent of each other
- Can produce complex sequences of pulses with varying rate and width
- Well suited to Klystron and TWT radars to take advantage of high duty cycle capability of Klystron's and TWT's

A DC Switch modulator is the only technology which can take full advantage of the high duty cycle capability of either Klystron or TWT transmitter tubes. Simply using a Klystron in place of a magnetron with the same type of modulator used with a magnetron wastes a significant portion of the advantage of a Klystron.

The DC switch modulator simply turns the high voltage DC power to the transmitter tube on and off at the rate specified by the pulse rate and pulse width. This is done with solid state electronic switching elements configured to operate at the high voltages and high currents required by magnetron, Klystron and TWT tubes.

In a DC switch modulator, there are no pulse forming networks, or time sensitive capacitors or inductors. The length and rate of the pulses are not determined by component values in the modulator.

The end result is that pulses can begin and end at any time, limited only by the duty cycle of the components involved. Thus, a DC switch modulator can easily do complex pulse sequences with staggered pulse rates and multiple pulse widths that would be impossible with any other type of modulator.



**Simplified Diagram Of A DC Switch Modulator**

The following photograph shows the Radtec solid state DC switch modulator in a test fixture. The high voltage electronic switch modules are visible on the right side of the modulator.



**Radtec TDR 43-250 DC Switch Modulator Test Stand**