Distinguish, differentiate, compare and explain what is the main difference between Travelling Wave Tube and Klystron Tube in Microwave Communication. Comparison and Differences.

Difference between Travelling Wave Tube and Klystron

1. In TWT, field travels along with the beam. In Klystron, the field is stationary and only beam travels.
2. The interaction of an electron beam and RF field in the TWT is continuous over the entire length of the circuit. Interaction of the electron in the Klystron occurs only at the gaps of a few resonant cavities.
3. In traveling wave tube, the microwave circuit is non-resonant while Klystron circuit is a resonant type.
4. The wave in the TWT is the propagating wave. In klystron, the wave is not propagative wave.
5. TWT uses non-resonant wave circuits for input and output and is a wide band device. Klystron uses cavities for input and output circuits and is a narrow band device.
6. In coupled cavity TWT there is a coupling effect between the cavities. In klystron, each cavity operates independently.
7. TWT has high power output whereas klystron tube has low power output.
8. Travelling wave tube has a long life as compared to Klystron.