Experiment - 1: Study of Microwave Bench

1. **Aim:** To study the Microwave Bench and its components.

2. **Requirements:** Klystron power supply. Klystron tube with klystron mount isolator, circulator, frequency meter (direct and indirect-reading type), fixed and variable attenuator, detector mount, matched termination, movable short circuit, waveguide junctions, directional coupler, slotted line carriage, pyramidal horn antenna and waveguide stand.

3. **Pre-experiment Exercise**

   Brief Theory

4. Laboratory Exercise

4.1 Procedure:

Explanation of bench

4.2 Observations:

Block Diagram of the Microwave Bench

5. Post Experiment Exercise:

5.1 Conclusion/Comments

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5.2 Questions:

1. What are microwaves? List IEEE band designations with one application of each band.

2. Explain the advantages, disadvantages and applications of microwaves.

3. Explain in brief the various components used in microwave bench. (Attach an image for each component).

4. Microwave test bench is used in which band of the electromagnetic spectrum? Which rectangular waveguide is used in the microwave bench and what are the dimensions and its cut-off frequency?