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Development of D-band Microwave Receiver system

Abstract

With recent advancements in technologies, Microwave frequency range is widely used in various modes of life. Microwave receivers are used in satellites, telecommunications, plasma diagnostics etc. Radiometers, interferometers and reflectometers are some of the passive as well as active receiver systems that are used as plasma diagnostics for density and temperature measurements in various frequency bands. These receiver systems are a specific combination of microwave components like amplifiers, mixers, oscillators etc.

The present work shall include the

- Understanding of the microwave receivers systems.
- Characterization of microwave components in the D-band i.e. 110 to 170 GHz.
- Integration of the components to a D-band Receiver system that can be used as an active or passive diagnostic for plasma density or temperature measurements.
- Characterizations of the integrated system.

Academic Project Requirements:

1) **Required No. of student(s) for academic project: 01**

2) **Name of course with branch/discipline: ME (ECE)**

3) **Academic Project duration:**

(a) **Total academic project duration: 12 Months**

(b) **Student's presence at IPR for academic project work: 3 (min) Full working Days per week**

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