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Characterizing a 26-40 GHz ultra-wideband (UWB) FMCW Reflectometer

Abstract

FMCW reflectometer is RADAR based instrument to measure the electron density profile for tokamak plasmas. A 26-40 GHz reflectometer has been developed at IPR has a microwave transceiver which is capable of sweeping the complete band in less than 5 microseconds. Detailed characterization of the transmitter and receiver sections of the reflectometer is an essential part of the development of the reflectometer. In this project the candidate will calculate and measure essential receiver parameters like noise figure, sensitivity phase noise etc. for the reflectometer transceiver

Relevant references [Publications, web links etc.]:

Academic Project Requirements:

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

Name of course with branch/discipline: M.E. (Electronics and Communications) or M.E.(Electronics Eng.)

2) **Academic Project duration:**

- (a) **Total academic project duration: 10 Months**
- (b) **Student's presence at IPR for academic project work: Four (4) Full working Days per week**

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