Techno India NJR Institute of Technology

Academic Administration of Techno NJR Institute

SyllabusDeployment

Name of Faculty: Mr. Vivek Jain	Subject Code:5EC4-21
Subject Name:RF Simulation Lab	SEM: V
Department: Department of Electronicsand Communication Engineering	
Total no. of experiments: 7	

COURSE OUTCOMES

At the end of this course students will be able to:

CO1: Understand the characteristics of the rectangular and circular waveguide.

CO2: Analyze the design of impedance matching and tuning using lumped and distributed elements of different transmission line.

CO3: Analysis and study characteristics of different microwave component likecoupler, divider and ring.

CO4: Analysis and study characteristics of different microwave amplifier.

S. No.	Name of Experiments
1	Introduction: Objective, scope and outcome of the course.
2	Study of field pattern of various modes inside a rectangular and circular waveguide.
3	Find the change in characteristics impedance and reflection coefficients of thetransmission line by changing the dielectric properties of materials embeddedbetween two conductors.
4	Design and simulate the following Planar Transmission Lines: I. Strip and micro-strip lines II. Parallel coupled strip line III. Coplanar and Slot lines Determine their field patterns and characteristic impedance.
5	Design and simulate the following: I. 3-dB branch line coupler

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(Principal)

	II. Wilkinson power divider III. Hybrid ring IV. Backward wave coupler V. Low pass filters VI. Band pass filters
6	Design RF amplifier using microwave BJT.
7	Design RF amplifier using microwave FET.

TEXT/REFERENCE BOOKS

1. Stripline-like Transmission Lines for Microwave Integrated Circuits, B. Bhat and S. K. Koul, Wiley Eastern Ltd.
2. Microwave Engineering, D. M. Pozar, John Wiley & Sons.
3. Microwave Engineering, A. Das and S. Das, Tata McGraw-Hill.