Final Year Project Handbook

Transverse ElectricModes of Asymmetric Dielectric Slab Waveguide

This project is submitted to the University of Management and Technology (UMT), Lahore for the degree of BS Telecommunication & Networks

By

Mohsin Pervaiz

12002106023

Project Supervisor: Mr. Muhammad Fahad Zia

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Dedication

Every inspiring work requires hard work andsupervision of elders especially those who are very close to our heart. My humble effort devotes to my sweet and caring**Parents**whose prayers have made this effort successful.

My humble dedication also goes to my **Advisor**whose untiring support and assistance have made possible the fruition of my efforts.

Most of all my dedication to my great creator our **Almighty God**the author of knowledge and wisdom who made this possible.

FINAL APPROVAL

Panel of Examiners

- **Dean of Department**
  Department of Informatics and Systems
  UMT Lahore

- **Program Director (Final Year Projects)**
  Department of Informatics and Systems
  UMT Lahore

- **Advisor**
  Department of Informatics and Systems
  UMT Lahore

Project Title

TE modes of asymmetric dielectric slab waveguide

Undertaken By

Mohsin Pervaiz

Supervised By

Mr. Muhammad Fahad Zia

Starting Date
20/04/2015

Completion Date
05/02/2016

Tools Used
Mat Lab, MS Paint

Operating System
Windows

Documentation
Functional/ Non-Functional Requirements

Acknowledgement

I would like to sincerely thank my Al Mighty ALLAH, Who has helped me at every stage of my life for His continuous guidance, love, protection and blessings, and I am sincerely grateful to my beloved parents for the love, care and support they have provided me in my life.

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Abstract

Thisreport discussestheTE typesof unequal slab waveguide.The Eigenvalue equationanddispersion relationTEtypesof unequalslabwaveguidearederived.
Therelationsofasymmetry,effectivethicknessandfractionofpowerpropagating incore layer arealsoderived. Thenumberofshowedtypesandtheirauthentictablesandotherparameters of waveguidearenumericallycomputedusing ModeSolvermethod.Theguidedandradiated modesprofilesaresimulatedusingsamemethod.Thepropagationofguidedmodesalongthe core layer ofwaveguide is simulatedand analyzed using Beam Propagation Method.