PREFACE

The research work is carried out to investigate the conducted and radiated Electromagnetic-Interference due to various sources like, conductor and ground, two conductors and ground of different layouts. Parameters are estimated using analytical calculations and simulated using MATLAB. The estimated parameter values of electric field intensity, magnetic field intensity, frequencies and impedance are validated. Antenna factor of micro strip antenna are validated with dipole antenna and rectangular waveguide.

These proposed solutions will primarily focus on causes of Electromagnetic-interference and later eradication of Electromagnetic-interference, using shielding design. For the major issues which contribute to radiate Electromagnetic-interference, electronic devices and circuits are designed to classify the contributions for Electromagnetic-interference emissions.

The thesis is organized into seven chapters as follows:

**Chapter 1:** introduction to EMI/EMC, units, objective and motivation are described.

**Chapter 2:** The literature survey on numerical methods, EMI, EMC, micro strip antenna, shielding and micro strip filter are discussed.

**Chapter 3:** Describes various EMI Standards, different numerical methods and proposed MGM method.

**Chapter 4:** Theoretical analysis for conducted and radiated emission, susceptibility are investigated.
Chapter 5: experimental setup and simulation analysis for conducted and radiated emission, susceptibility are investigated. Explains the design of adaptive microstrip antenna.

Chapter 6: discussed about Shielding, based on proposed MGM method and micro-strip filter design, followed by comparision.

Chapter 7: conclusion and future scope is discussed.