PREFACE

This thesis presents the research and developmental work that has been carried out to improve the performance of passive matrix liquid crystal displays. A technique for displaying multiple waveforms with lower hardware complexity and supply voltage forms the first part of the research. A technique based on successive approximation and using multi-line addressing has been developed to display gray shades with low hardware complexity. Both these techniques have been demonstrated by developing suitable controllers using CPLDs. Theoretical analysis on reduction in supply voltage by using hybrid addressing techniques with low hardware complexity while using liquid crystal mixtures with steep electro-optic characteristics is presented in the last part of this thesis.

The research work presented in this thesis has been carried out in the Liquid Crystal Laboratory, Raman Research Institute, Bangalore and is submitted to the Jawaharlal Nehru University, Delhi.