ACKNOWLEDGEMENT

At the outset, I would like to express my appreciation to Dr. K. PADMA PRIYA, Professor & Head of the department of Electronics and Communication Engineering, UCEK, JNTUK, Kakinada, A.P., (INDIA) for her guidance and advice during my doctoral research endeavor. As my supervisor, she has constantly instigated me to remain focused on achieving my goal. Her observations and comments helped me to establish the overall direction of the research and to move forward with investigation in depth. I thank her for providing me an opportunity to work.

I would like to express my sincere gratitude to the Management of V.V Sangha, Bellary, Chairman, Principal, Teaching & Non Teaching Staff of RYM Engineering College, Bellary, Karnataka, for giving me support and permission to complete my research work.

My thanks are due to Dr. V Sumalatha, Head of the Dept. of Electronics & Communication Engineering, JNTUA College of Engineering, Ananthapuramu, for her selfless support and encouragement. I gratefully acknowledge the motivational words and encouragement extended towards me by Dr. M. N. Giriprasad, Professor, JNTUA College of Engineering, Ananthapuramu.

I am extremely indebted to Prof. S.V. Satyanarayana, Director, Research & Development, JNTUA, Ananthapuramu for providing necessary infrastructure and resources to accomplish my research work. I warmly thank Dr. K Rama Naidu, Director of Evaluation, JNTUA for his valuable advice, constructive criticism and his extensive discussions about my work.

My special words of thanks also go to Prof. G Abbaiah, Director, Sports and Games, JNTUK, Kakinada for always being so kind, helpful and motivating. He has taught me another aspect of life, that, “goodness can never be defined and good human beings can never be denied”. His guidelines, cooperation and support have always kept me going ahead. I owe a debt of gratitude to him.
I would like to express my sincere thanks to the people who have directly or indirectly helped me in the successful completion of this work.

My special acknowledgements go to Sri. Y Palakshi Goud, Mr. Y Rajashekar Goud, Mr. Y Manjunath Goud and Mr. Veeresh K M for giving me the strength and patience to work through all these years.

Last, but not least, I would like to dedicate this thesis to my Parents, my wife Smt. Hemalatha and my sons Mr. B Vinay Kumar and Mr. B Shiva Shanth, for their love, help and understanding the situation. This gesture of theirs has enabled me to concentrate on the work of this thesis.