

CONTENTS

VALIDITY SHEET	i
STATEMENT OF ORIGINALITY	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
AUTHOR FOREWORD'S	vi
CONTENTS	vii
LIST OF FIGURE	x
LIST OF TABLES	xi
CHAPTER 1 INTRODUCTION	1
1.1 Background	1
1.2 Problems Formulation	3
1.3 Objectives and Benefits	4
1.4 Scope Of Research.....	4
1.5 Research Methodology	4
1.6 Structure Proposal.....	5
CHAPTER 2 BASIC CONCEPTS	6
2.1 Previous Research	6
2.2 ILS Marker Beacon	6
2.2.1 Marker Beacon Working Principle	7
2.2.2 Marker Beacon System	8
2.2.3 Marker Beacon Antenna Parameter	10
2.2.3.1 Very High Frequency-band Antenna	11
2.2.3.2 Aircraft Transmitter, Receiver Directional Determination	11
2.3 Conventional methods	13
2.3.1 Frequency Generation Method	13

2.3.1.1 Signal Transmitting and Receiving Process	13
2.3.1.2 Line of Sight Propagation	15
2.3.1.3 Free Space Loss	15
2.3.1.4 Fading	16
2.3.1.5 Field Intensity	16
2.3.1.6 Power Density	16
2.3.1.7 Antenna Gain and Directivity	16
2.3.1.8 VSWR	18
2.3.1.9 Return Loss	19
2.3.1.10 Antenna Match Impedance	20
2.3.1.11 Radiation Pattern Yagi Antenna	21
2.3.2 Antenna Reference Method	23
CHAPTER 3 ANTENNA DESIGNING AND SYSTEM MODELLING	24
3.1 Steps in The System	24
3.1.1 Planning Flowchart	25
3.2 Marker Beacon Antenna Design Simulation	26
3.3 Antenna Design Realization.....	30
3.4 Antenna Receiver Circuit Design Realization	31
3.5 Measurement Process	34
3.5.1 Measurement With Oscilloscope	34
CHAPTER 4 RESULT AND SIMULATION ANALYSIS	37
4.1 Result	37
4.1.1 Experiment Systematic.....	37
4.2 Simulation	37
4.3 Simulation analysis	38
4.4 Comparison with receiver antenna ILS Marker Beacon conventional	42
CHAPTER 5 CONCLUSION AND SUGGESTION	45
5.1 Conclusion	45

5.2 Suggestion	45
Reference	
Appendix 1 assembly proccess	
Appendix 2 Measurement Test Proccess	
Appendix 3 Antenna refference with Operation and Maintenance Manual Marker	
Appendix 4 marker Beacon Antenna Parts List	
Appendix 5 Beacon model 2130 – 572130 – 0001 Rev. B October, 2009	