

LIST OF FIGURES

2.1 General Description of Planar Antenna: (a)top layer (b)bottom layer	7
2.2 Circular Patch Element	8
2.3 Transmission Line Element	9
2.4 Designing AMC Illustration	10
3.1 Flowchart Designing Antenna and AMC	11
3.2 Radius of Patch	13
3.3 Width and Length Transmission Line	14
3.4 Width and length Substrate	15
3.5 Initial Unit Cell AMC structure Proposed	16
3.6 Initial 5x5 Unit Cell AMC structure Proposed	16
3.7 Gap Between UWB Antenna and AMC	16
3.8 Initial Antenna	17
3.9 Iteration 0 Antenna Design:(a)toplayer (b)bottom layer	18
3.10 Iteration 0 Gain Simulation Result	18
3.11 Iteration 0 VSWR Simulation Result	19
3.12 Iteration 1 Antenna Design:(a)toplayer (b)bottom layer	20
3.13 Iteration 1 Gain Simulation Result	20
3.14 Iteration 1 VSWR Simulation Result	21
3.15 Iteration 1 Antenna Design:(a)toplayer (b)bottom layer	22
3.16 Iteration 3 Gain Simulation Result	22
3.17 Iteration 3 VSWR Simulation Result	23
3.18 Antenna With Additional Patch:(a)toplayer (b)bottom layer	24
3.19 Iteration 3 Antenna Design:(a)toplayer (b)bottom layer	24
3.20 Iteration 3 Gain Simulation Result	25
3.21 Iteration 3 VSWR Simulation Result	25
3.22 Iteration 4 Antenna And AMC Design	27
3.23 Iteration 4 VSWR Simulation Result	28
3.24 Modified AMC Unit Cell	28
3.25 Iteration 5 Antenna And AMC 8x8 array Design	29
3.26 Iteration 5 Gain Simulation Result	29
3.27 Iteration 5 VSWR Result	29

3.28	Iteration 6 Antenna And AMC 6x6 array Design	30
3.29	Iteration 6 Gain Simulation Result	30
3.30	Iteration 6 VSWR Result	31
3.31	Modified AMC Unit Cell	31
3.32	Iteration 7 Antenna And AMC Design	32
3.33	Iteration 7 Gain Simulation Result	32
3.34	Iteration 7 VSWR Simulation Result	33
3.35	Fabrication of UWB Antenna : (a)Front view (b)Back view	33
3.36	Fabrication of AMC : (a)Front view (b)Back view	34
3.37	Fabrication of UWB Antenna and AMC	34
4.1	VSWR Measurement Scheme	36
4.2	Measured VSWR result of UWB antenna design	37
4.3	Measured VSWR result of UWB antenna design with AMC	38
4.4	Gain Measurement Scheme	38
4.5	Radiation Pattern Measurement Scheme	40
4.6	Measured Radiation Pattern result of UWB antenna design with AMC	40
4.7	Measured Radiation Pattern result of UWB antenna design with AMC	41
4.8	Measured Radiation Pattern result of UWB antenna design with AMC	41
4.9	Measured Radiation Pattern result of UWB antenna design with AMC	41
4.10	Simulated and measured VSWR result of UWB antenna design with and without AMC	42
4.11	VSWR variation for different gap dist between antenna and AMC . .	42
4.12	Dimension array variation VSWR result for different dimension array	43
4.13	Simulated and measured Gain result of UWB antenna design with and without AMC	44
4.14	Gain variation for different gap dist between antenna and AMC . .	44
4.15	Dimension array variation gain result for different dimension array .	45
4.16	Radiation Pattern Simulated and Measured at 3.6 GHz	45
4.17	Radiation Pattern Simulated and Measured at 6 GHz	46
4.18	Radiation Pattern Simulated and Measured at 8.5 GHz	47
4.19	Radiation Pattern Simulated and Measured at 10.6 GHz	47