

LIST OF FIGURES

Figure 3.1 Schematic System	10
Figure 3.2 System Design	13
Figure 3.3 Flowchart System Design	14
Figure 4.1 Microstip Antenna Flowchart	16
Figure 4.2 Initial Design	20
Figure 4.3 VSWR Initial Design	20
Figure 4.4 Gain the Initiation Antenna	21
Figure 4.5 The First Optimize	21
Figure 4.6 VSWR	22
Figure 4.7 S-Parameters	22
Figure 4.8 Axial Ratio	23
Figure 4.9 Farfield	23
Figure 4.10 Second Optimize the Antenna	23
Figure 4.11 Antenna Return Loss	24
Figure 4.12 Antenna Bandwidth	25
Figure 4.13 Antenna VSWR	25
Figure 4.14 Antenna Gain	25
Figure 4.15 Antenna Axial Ratio	26
Figure 4.16 Radiation Pattern	26
Figure 4.29 Instalation on the Body	41
Figure 5.2 Return Loss Fabricated	44
Figure 5.3 VSWR Fabricated	44
Figure 5.4 Radiation Pattern Fabricated Measurement	45
Figure 5.5 Polarization Azimuth and Elevation	48
Figure 5.6 The Antenna Test on GPS Module Neo 1-M	49
Figure 5.7 Proxy Status	51
Figure 5.8 Firebase Firestore	51
Figure 5.9 Display of sensor conditions in a left-turned state	52
Figure 5.10 Sensor condition display in a backward tilt state	53
Figure 5.11 Display of sensor conditions in a right-turn state	53
Figure 5.12 The sensor condition display is tilted forward	53
Figure 5.13 Test battery Li-Poly	54

Figure 5.14 While Riding	61
Figure 5.15 Standing	62
Figure 5.16 Figure Bowing	63
Figure 5.17 Google Maps in Monitoring App (Outdoor).....	64
Figure 5.18 Google Maps in Website (Outdoor).....	64
Figure 5.19 Standing Position (Semi Indoor).....	65
Figure 5.22 Bowing Position (Indoor)	69
Figure 5.23 Google Maps using Monitoring App (Indoor).....	71
Figure 5.24 Google Maps Based Website (Indoor).....	71