

FINAL YEAR PROJECT REPORT

(GPS Based Anti-Collision system)



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In The Name of Allah the Most Beneficent and Merciful

Table of Contents

List of the Figure.....	(i)
List of Tables.....	(iii)
Abstract.....	(iv)
Chapter 1.....	12
Introduction.....	12
1.1 Project introduction.....	12
1.2 Aim of the project.....	13
1.3 Block Diagram.....	13
1.4 System block diagram explanation.....	14
Chapter 2.....	15
Global Positioning Segment (GPS).....	15
2.1 Introduction.....	15
2.2 Types of GPS.....	15
2.3 Segments of GPS.....	15
2.3.1 Space segment.....	16
2.3.2 Control segment.....	16
2.3.3 User segment.....	17
2.4 Working of GPS Receiver.....	17
2.4.1 Working inside the GPS Box.....	18
2.4.2 GPS Triangulation process.....	19
2.4.2.1 First satellite.....	19
2.4.2.2 Second satellite.....	19
2.4.2.3 Third satellite.....	20
2.4.2.4 Fourth satellite.....	20
2.5 GPS signal structure.....	21
2.6 Pseudorange measurements.....	22
2.7 Carrier-phase measurements.....	22
2.8 Cycle slips.....	22
2.9 GPS Error and Biases.....	23
2.9 GPS positioning modes.....	24

2.9.1 GPS point positioning	24
2.9.2 GPS relative positioning.....	24
2.10 GPS Used in our Project	25
2.10.1 Key Features.....	25
2.10.2 Block Diagram of M-89	26
2.10.3 Pin Layout	26
2.10.4 Specification.....	26
2.10.5 User Interface	27
2.10.5.1 Protocol.....	27
2.11 NMEA 0183	27
2.11.1 \$GPGGA Sentence (Fix data).....	29
2.11.2 \$GPGLL Sentence (Position).....	30
2.11.3 \$GPGSA Sentence (Active satellites).....	31
2.11.4 \$GPGSV Sentence (Satellites in view).....	33
2.11.5 \$GPRMC Sentence (Position and time).....	34
2.11.6 \$GPVTG Sentence (Course over ground).....	36
Chapter 3	40
Microcontroller	40
3.1 Description.....	40
3.2 Microcontroller used in our project Atmel AT 89S51	40
3.3 Pin configuration.....	41
3.4 BLOCK DIAGRAM.....	42
3.5 Pin Description.....	43
3.5.1 VCC.....	43
3.5.2 GND	43
3.5.3 VDD	43
3.5.4 PWRVDD.....	43
3.5.5 PWRGND.....	43
3.5.6 Port 0	43
3.5.7 Port 1	43
3.5.8 Port 2	44

3.5.9 Port 3	45
3.5.10 RST.....	45
3.5.11 ALE/PROG	46
3.5.12 PSEN	46
3.5.13 EA/VPP	46
3.5.14 XTAL1	46
3.5.15 XTAL2	46
3.5.16 Oscillator Characteristics	46
Chapter 4.....	48
RF Transceiver.....	48
4.1 RF Transceiver used in our project KYL-200U	48
4.3 Main Features.....	49
4.4 Specification	49
4.5 Interface definition.....	50
4.5 Installation dimension.....	51
4.6 Setting of channel, interface, and data format	52
4.7 Antenna configuration	52
4.8 Software to change the parameters	54
4.9 Multiplexer (IC7402).....	55
4.10 Power supply.....	56
4.10.1 IC7805	56
Chapter 5.....	59
5.0 Working of the system	59
5.0.1 GPS interfacing with Microcontroller.....	59
5.0.2 RF transceiver interfacing with microcontroller	60
5.0.3 LCD interface with microcontroller.....	61
5.0.4 Multiplexer	61
5.1 Circuit diagram of the movable vehicle.....	62
5.2 Circuit diagram of the static system.....	63
5.3 Software part of the movable vehicle of the system.....	65
5.4 Software part of the Static vehicle of the system.....	66

Chapter 6.....	68
System performance.....	68
6.1 Introduction.....	68
6.2 Equipment testing	68
6.2.1GPS (M89)	69
6.2.3 Microcontroller (AT89S52)	71
6.2.3 RF Transceiver (KYL-200U).....	72
6.3 Future improvements	73
Reference	74
Appendix A.....	75

List of Figure

Figure 1.1	Train and Car Collision.....	6
Figure 1.2	System for movable vehicle.....	7
Figure 1.3	System for Fixed vehicle.....	7
Figure 2.1	GPS Segments.....	10
Figure 2.2	Space Segment.....	10
Figure 2.3	Control Station in Colorado.....	11
Figure 2.4	Inside GPS box.....	12
Figure 2.5	Step 1: triangulation from satellite.....	13
Figure 2.6	Step 2: triangulation from satellite.....	13
Figure 2.7	Step 3: triangulation from satellite.....	13
Figure 2.8	Step 4: triangulation from satellite.....	14
Figure 2.9	GPS errors and biases.....	18
Figure 2.10	Principal of Point Positioning.....	19
Figure 2.11	Principal of Relative Positioning.....	19
Figure 2.12	Block diagram of M89.....	20
Figure 3.1	Pin Configuration of Microcontroller.....	30
Figure 3.2	Block diagram of Microcontroller.....	31
Figure 3.3	Oscillator Connections.....	36
Figure 4.1	Transceiver installation dimension.....	40
Figure 4.2	KYL 200U RF Transceiver.....	41

Figure 4.3	Antenna for RF Transceiver.....	41
Figure 4.4	Software to change the parameter.....	42
Figure 4.5	IC 7402 internal diagram.....	44
Figure 4.6	7805 Voltage Regulator.....	45
Figure 5.1	Pins of M89 GPS.....	46
Figure 5.2	Pin configuration of RF Transceiver.....	47
Figure 5.3	Circuit diagram of LCD Interfacing.....	48
Figure 5.4	Multiplexer inside.....	48
Figure 5.5	Circuit diagram for Movable vehicle.....	49
Figure 5.6	Implemented Circuit for Movable vehicle.....	50
Figure 5.7	Circuit diagram for Static vehicle.....	51
Figure 5.6	Implemented Circuit for Static vehicle.....	51
Figure 6.1	M89 GPS Testing.....	54
Figure 6.2	Test of Transceiver.....	56

List of Table

Table 2.1	Pin layout of GPS.....	21
Table 2.2	Specification of M89 GPS.....	21, 22
Table2.3	NMEA Protocols.....	23
Table 2.4	\$GPGGA Sentence (Fix data).....	24
Table 2.5	\$GPGLL Sentence (Position).....	24, 25
Table 2.6	\$GPGSA Sentence (Active satellites).....	25, 26
Table 2.7	\$GPGSV Sentence (Satellites in view).....	26, 27
Table 2.8	\$GPRMC Sentence (Position and time).....	27, 28
Table 2.9	\$GPVTG Sentence (Course over ground).....	28
Table 3.1	Port 1 of AT89S51.....	33
Table 3.2	Port 3 of AT89S51.....	34
Table 4.1	RF Transceiver Interface.....	39
Table 4.2	Channel frequency.....	40
Table 4.3	NOR table.....	44

Abstract

The GPS Based Anti-Collision System is basically a vehicle collision preventing system which could be used as Anti-Collision and navigation system in cars while traveling on motorway. Anti-Collision System fitted in the vehicle act as a watchdog in the dark as they constantly remain in lookout for other vehicle bound Anti-Collision System, within the braking distance required for the vehicle to stop. They take inputs from GPS satellite system for position updates and network among themselves for exchanging information using Radio Frequency transceiver. By getting the information through transceiver and GPS, microcontroller suggests the safety distance, and the system alarms the driver after crossing the safety distance. After alarming of the system they communicate through their radios and identify each other. If they happen to find themselves on the same track and coming closer to each other, they could be slowdown and stopped their vehicle respectively, thereby preventing dangerous **head-on** and **rear-end** collisions. The overall delay we countered in this system is 1-2 seconds which is bearable for the system.

Chapter 1

Introduction

1.1 Project introduction

The fatalities attributed to collision of vehicles have been in play since from the very beginning. A major cause of these accidents is that vehicles are not equipped with collision avoidance systems due to their cost. These vehicles only rely on visual acquisition to avoid collisions.

There are limitations to using visual acquisition as a means of collision avoidance even for slow moving automobiles such as. Human vision can also be limited due to many reasons and many conditions such as zero visibility due to fog, rain or snow etc.

As can be seen, there is a need for vehicles to have a small, reliable and cost effective system for collision avoidance that does not rely heavily on visual acquisition.



Figure 1.1 Car collisions