

CONTENTS

ENDORSEMENT LETTER

STATEMENT OF ORIGINALITY

ABSTRACT iv

GRATITUDE NOTE v

Contents vii

List of Figures x

List of Tables xii

I INTRODUCTION 1

- 1.1 Background 1
- 1.2 Problem Identification 3
- 1.3 Objective 3
- 1.4 Research Boundary 3
- 1.5 Research Method 4
- 1.6 Writing Systematic 4

II BASIC CONCEPTS 5

- 2.1 Internet of Things 5
 - 2.1.1 Technical Overview of IoT 6
 - 2.1.2 IoT Sub-system 7
- 2.2 Air Quality Measurement 11
- 2.3 Drone Technology 12

III SYSTEM METHOD 13

- 3.1 System Method of Sensor 13
 - 3.1.1 Overall Algorithm 15
 - 3.1.2 Design Tool 16
 - 3.1.2.1 Electronic schematic 16
 - 3.1.2.2 Wiring Diagram 16

3.1.2.3	Flowchart of Sensor	17
3.2	System Method of Connectivity	18
3.2.1	Connectivity Algorithm	18
3.3	System Method of Platforms	19
3.4	System Method of Application	19
3.4.1	Flowchart of Application	20
3.4.2	User Interface Design	21
3.5	System Method of Drone	22
3.5.1	Algorithm of Drone	23
3.5.2	Flowchart of Drone	24
3.5.3	Design Drone	25
3.5.3.1	Initial Drone Design	25
3.5.3.2	Drone Components	25
3.5.3.3	Drone Load	30
3.6	Testing Scenarios	30
IV RESULT AND ANALYSIS		32
4.1	Realization	32
4.1.1	Realization of Sensor	32
4.1.2	Realization of Connectivity	33
4.1.3	Realization of Platform	33
4.1.4	Realization of User Case	34
4.2	Calibration	36
4.2.1	Calibration of Drone	36
4.2.2	Calibration of Sensor MQ-135	37
4.3	Testing Result	37
4.3.1	Making a prototype of IoT control sub-system	37
4.3.2	Functional Testing Results	38
4.3.3	Reliability and Validity of Measurement Results	39
4.3.3.1	Quality Measurement	40
4.3.3.2	Humidity Measurement	41
4.3.3.3	Temperature Measurement	42
4.3.4	Quality of Service	44
V CONCLUSION AND SUGGESTION		48
5.1	Conclusion	48
5.2	Suggestion	48

