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**Module : Getting Started with ARM Based Microcontroller**

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**CONTENT Page.no**

1. INTRODUCTION . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 04
   1. Features………………………………………….. 04
   2. SWOT Analysis……………………………… 04 – 05
2. REQUIREMENTS
   1. High Level Requirements . . . . . . . . . . . . . . . . . . . 04
   2. Low level Requirements . . . . . . . . . . . . . . . . . . . 04
3. ARCHITECTURE……. ... . . . . . . . . . . . . . . . . . . . . . . . 06 – 08
   1. Structural Diagram
   2. Behavioural Diagram
4. SYSTEM TEST PLAN. . . . ……….. . . . . . . . . . . . . ……. 09 - 10
   1. High level test plan
   2. Low level test plan
5. IMPLEMENTATION. . . . . . . . . . . . . . . . . . . . . . . . . . . 08
6. APPLICATION . . . . . . . . . . . . . . . . . . . . . . . . .. .…….. 09

1. REFERENCES . . . . . . . . . . . . . . . . . . . . . . . . . …….. 09

# Bicom System

**1. INTRODUCTION**

This Project is an BiCom System, and is designed to remotely know the statues of your automobiles, BiCom System operates by broadcasting radio waves on a particular frequency Bidirectionally.

**1.1 Features**

I. Window Status.

II. Alarm Status.

III. Battery Status.

IV. Door Status.

**1.2 SWOT ANALYSIS and 4 W’s 1H**

**Diagram

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**Who** - User who wants to know Status Remotely

**What** - Remote wireless key for car/automotives

**When** - To know status of window,Alarm,Battery,Door

**Where** - When User is away/inside the car

**Why**- To know the status of features of the car

**How** - Using Blue switch by blinking the LED's to known status of window,alaram, Battery, Door

**2. REQUIREMENTS**

* **2.1 High Level Requirements**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **HLR\_ID** | **Description** |
| 1 | HLR01 | User should be able to know status of Window |
| 2 | HLR02 | User should be able to know Status of Alarm |
| 3 | HLR03 | User should be able to know status of Battery |
| 4 | HLR04 | User should be able to know status of Door |

* **2.2 Low Level Requirements**

|  |  |  |
| --- | --- | --- |
| **S.NO** | **LLR\_ID** | **Description** |
| 1 | LLR01 | When user press button one time ON all the LED's at same time |
| 2 | LLR02 | When user press button two times OFF all the LED's at same time |
| 3 | LLR03 | When user press button three times ON all the LED's in clock wise direction |
| 4 | LLR04 | When user press button one time ON all the LED's in anticlock wise direction |

**3. ARCHITECTURE**

**3.1 Structural Diagram**

Diagram

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**High Level**

Diagram

Description automatically generated

**Low Level**

**3.2 BEHAVIORAL DIAGRAM**

Diagram

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**High Level**

Diagram

Description automatically generated

**Low Level**

**4. SYSTEM TEST PLAN**

**4.1 High Level Test Plan**

|  |  |
| --- | --- |
| **TEST\_ID** | **System Test cases** |
| TC01 | Check Car Window Status |
| TC02 | Check Car Alarm Status |
| TC03 | Check Car Battery Information Status |
| TC04 | Check Car Door Status. |

**4.2 Low Level Test Plan**

|  |  |
| --- | --- |
| **TEST\_ID** | **System Test cases** |
| TC01 | Check All LED's ON |
| TC02 | Check All LED's OFF |
| TC03 | Check All LED's ON CLOCKWISE |
| TC04 | Check All LED's ON ANTI-CLOCKWISE |

**5. IMPLEMENTATION**

**A circuit board with many chips

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**STM32F407**

**6. APPLICATIONS**

**I**. Car System.

**II**. Flight System.

**III**. Train System.

**IV**. Home Automation System.

**V**. Industrial Application.

**7. REFERENCE**

https://www.researchgate.net/publication/322886970\_A\_Remote\_Controlled\_Car\_Using\_Wireless\_Technology