

REMOTE KEYLESS ENTRY (RKE)

DONE BY GROUP NUMBER 43

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TABLE OF CONTENTS

Sl. No	TITLE	PAGE NO.
1	INTRODUCTION	3
2	FEATURES	3
3	REQUIREMENTS	3
3.1	<i>HIGH LEVEL REQUIREMENTS</i>	3
3.2	<i>LOW LEVEL REQUIREMENTS</i>	4
4	SWOT ANALYSIS	4
5	5W'S & 1H	5
6	ARCHITECTURE	6
6.1	<i>BEHAVIORAL DIAGRAM</i>	6
6.2	<i>STRUCTURAL DIAGRAM</i>	7
6.3	<i>BLOCK DIAGRAM</i>	7
7	TEST PLANS	8
7.1	<i>HIGH LEVEL TEST PLAN</i>	8
7.2	<i>LOW LEVEL TEST PLAN</i>	8

1) INTRODUCTION

Remote keyless entry is a system which allows users to lock and unlock the doors of the vehicle from a distance remotely. Almost 70% to 80% of the vehicles in the world comes with remote keyless entry. It requires a user to press a button on a physical fob which will send/transmit a radio signal to the receiver and locks the door. It has LEDs which will tell us that what functionality currently performing. It provides high security for vehicles. Additionally it has a functionality to activate alarm or deactivate alarm and approach light.

2) FEATURES

1. Use to lock or unlock vehicles from a distance.
2. Have LEDs to indicate which functionality is currently performing.
3. Small in size and handy too.
4. Can activate/deactivate alarm of the vehicle
5. Have approach light functionality.
6. Keeps the vehicle secure.

3) REQUIREMENTS

3.1) HIGH LEVEL REQUIREMENT

Test ID	Description
HL01	The system shall have alarm activation/deactivation functionality
HL02	The system shall have approach light functionality
HL03	The system shall be secure
HL04	The system shall lock vehicle doors wirelessly
HL05	The system shall unlock vehicle doors wirelessly

3.2) LOW LEVEL REQUIREMENT

For High level requirement	Test ID	Description
HL04	LL01	All the LEDs shall turn on at the same time after single press.
HL05	LL02	All the LEDs shall turn off at the same time after two presses
HL01	LL03	All LEDs shall turn on in clockwise manner after three presses
HL02	LL04	All LEDs shall turn on in anti-clockwise manner after four presses

4) SWOT ANALYSIS

STRENGTHS

- It works wirelessly and reduce human effort and shows different vehicle status

WEAKNESSES

- It has limited range(distance).

OPPORTUNITIES

- It can be implemented on mobile phones and its range(distance) can be increased.
- More features can be added.

THREATS

- The components of the system are hard to replace.

5) 5W's & 1H

WHO

- People who have vehicle.

WHAT

- It is a system which wirelessly lock/unlock door of a vehicle and perform different functionalities from a distance.

WHEN

- Whenever the user wants to lock or unlock the door of the vehicle and wants to use its other features.

WHERE

- It can be use anywhere

WHY

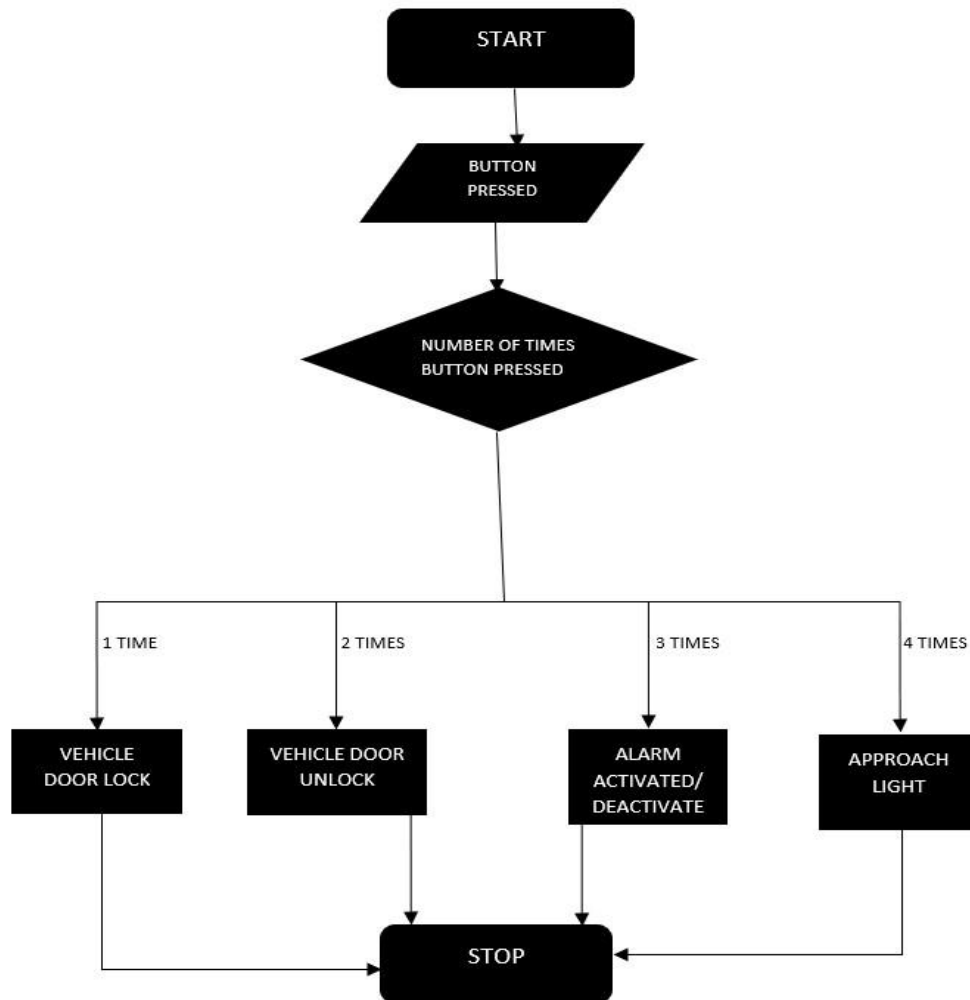
- For an easy use of vehicle and to ensure security.

HOW

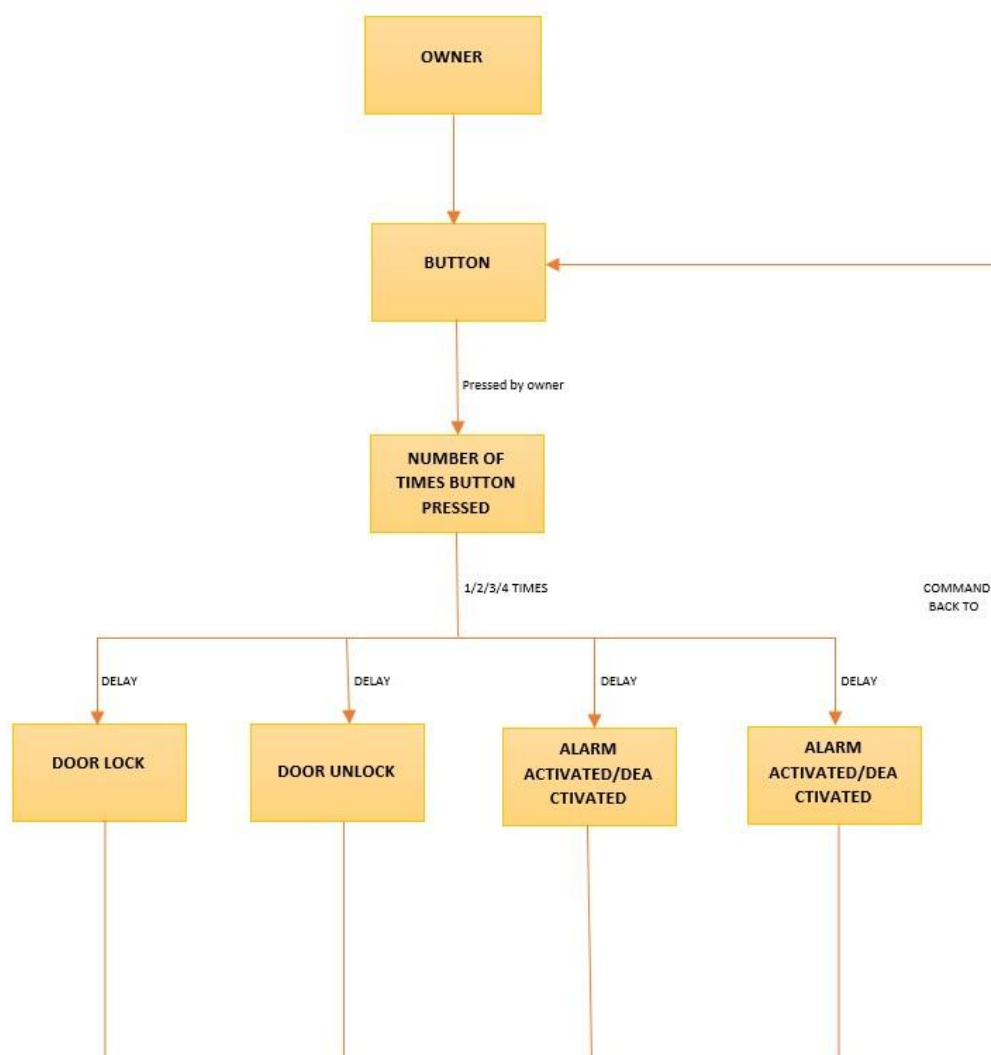
- The system can be operated by just clicking a button .

6) ARCHITECTURE

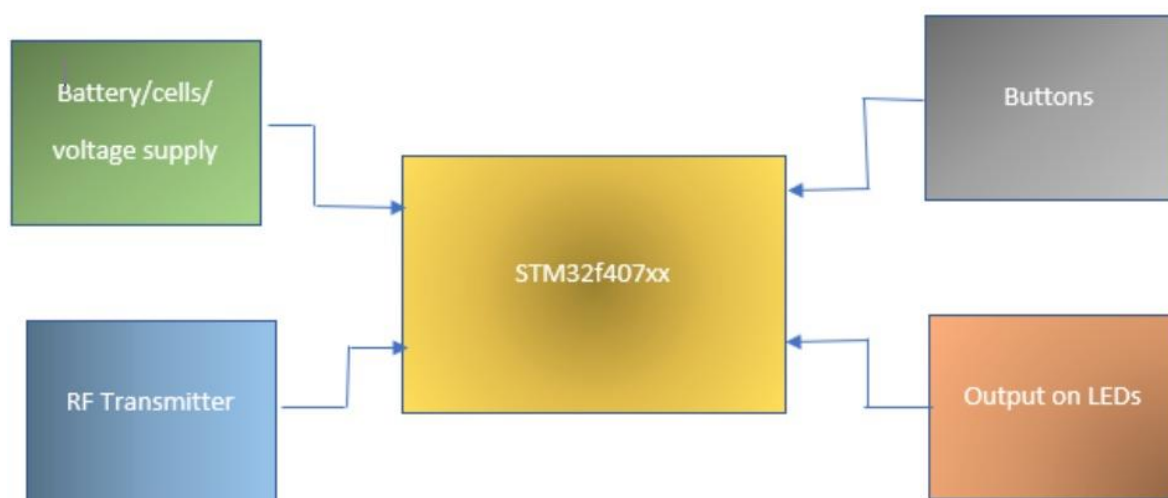
6.1) BEHAVIOURAL DIAGRAM



6.2) STRUCTURAL DIAGRAM



6.3) BLOCK DIAGRAM



7) TEST PLANS

7.1) HIGH LEVEL TEST PLAN

Test ID	Description	Input	Expected Output	Actual Output	Pass/Fail
01	Vehicle door lock	1 press button	Vehicle locked	Vehicle locked	Pass
02	Vehicle door unlock	2 press button	Vehicle unlocked	Vehicle unlocked	Pass
03	Alarm activation/deactivation	3 press button	Activated/deactivated	Activated/deactivated	Pass
04	Approach light	4 press button	On	On	Pass

7.2) LOW LEVEL TEST PLAN

Test ID	Description	Input	Expected Output	Actual Output	Pass/Fail
01	All LEDs shall on at same time	1 press button	All LEDs on	All LEDs on	Pass
02	All LEDs shall off at same time	2 press button	All LEDs off	All LEDs off	Pass
03	All LEDs shall on in clockwise	3 press button	All LEDs on in clockwise manner	All LEDs on in clockwise manner	Pass
04	All LEDs shall on in anti-clockwise	4 press button	All LEDs on in anti-clockwise manner	All LEDs on in anti-clockwise manner	Pass

