Component Design Document

For

<Button >

**<Air Conditioner >**

**Table of Contents**

[*1.* *1. Introduction* 4](#_Toc512016214)

[1.1 Objective 4](#_Toc512016215)

[1.2 Context Diagram 4](#_Toc512016216)

[2. *External Interface* DIO\_cfg.h 4](#_Toc512016217)

[2.1.1 Types 4](#_Toc512016218)

[2.1.2 Interface 5](#_Toc512016219)

[2.1.3 Const 5](#_Toc512016220)

[2.1.4 Symbol <#defines> 5](#_Toc512016221)

[3. *Static Design* 5](#_Toc512016222)

[3.1 Files 5](#_Toc512016223)

[3.1.1 Used Files 5](#_Toc512016224)

[3.1.2 Files Inclusion 5](#_Toc512016225)

[3.2 Types 6](#_Toc512016226)

[3.3 Symbol define 6](#_Toc512016227)

[3.4 Const 6](#_Toc512016228)

[3.5 Interface (Services) 7](#_Toc512016229)

[*4.* *Dynamic Design* 7](#_Toc512016230)

[4.1 Mode Management 7](#_Toc512016231)

[4.2 Sequence Diagram 7](#_Toc512016232)

[*5.* *Shared Resources* 8](#_Toc512016233)

[5.1 Analysis 8](#_Toc512016234)

[5.2 Protection 8](#_Toc512016235)

[6. *Configuration Parameters* 8](#_Toc512016236)

[6.1 Pre-compile time 8](#_Toc512016237)

[6.2 Link time 8](#_Toc512016238)

[6.3 Post-build 8](#_Toc512016239)

[*7.* *Configuration Constrains* 8](#_Toc512016240)

[*8.* *Integration Constrains* 8](#_Toc512016241)

[*9.* *History* 8](#_Toc512016242)

**Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
| Hager mohamed | 16th April 2018 | Create the file | 1.0 |
| Hager mohamed | 19th April 2018 | Editing the missing sections | 1.1 |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# *1. Introduction*

## Objective

Knowing which button has been pressed to make the suitable action.

Getting the button status pressed or released.

## Context Diagram

Get\_ButtonStatus ()

|

|  |  |
| --- | --- |
| **Init ()** | **Button H** |

|

DIO\_ReadPin ()

# *External Interface* DIO\_cfg.h

### Types

|  |  |
| --- | --- |
| Req ID | DIO\_001 |
| Covers |  |
| Name | DIO\_PinName |
| Type | Enumeration |
| Range | Contains the pin names of the used micro controller from PA0 to PA7, from PB0 to PB7, from PC0 to PC7 and from PD0 to PD7. |
| Description | Contains the pin names of the used micro controller. |

### Interface

|  |  |
| --- | --- |
| Function | Description |
| DIO\_ReadPin(); | Reading the pin value to know which button has been pressed |

### Const

There are not any constants in this component.

### Symbol <#defines>

There are not any defines required from the user.

# *Static Design*

## Files

### Used Files

|  |  |
| --- | --- |
| FILE NAME | Description |
| Stdtypes. H | Includes the standard types |
| Button\_H.c | Includes the function implementation |
| Button\_H.h | Includes the function prototype |
| Button\_cfg.h | Include the configuration symbol |
| Button\_cfg.c | Include the configuration symbol |

### Files Inclusion

## Types

|  |  |
| --- | --- |
| REQ ID | BUTTON\_001 |
| Name | Buttons number |
| Type | enumeration |
| Range | Depend on pin range |
| Description | The number of button used in the system |

## Symbol define

|  |  |
| --- | --- |
| REQ ID | BUTTON\_001 |
| Name | Buttons number |
| Type | u8 |
| Range | Depend on pin range |
| Description | The number of button used in the system |

## Const

|  |  |
| --- | --- |
| #define BUTTON\_RELEASE | 0 |
| #define BUTTON \_PRESSED | 1 |

## Interface (Services)

|  |  |
| --- | --- |
| Get\_ButtonStatus (); | Getting the button status pressed or released. |

# *Dynamic Design*

## Mode Management

Waiting for the implementation.

## Sequence Diagram

User Button\_H DIO

Get\_ButtonStatus () DIO\_ReadPin ()

Pressed Button

# *Shared Resources*

## Analysis

## Protection

# *Configuration Parameters*

## Pre-compile time

#define BUTTON \_RELEASE 0

#define BUTTON\_PRESSED 1

## Link time

Not included in BUTTON\_H

## Post-build

Not included in BUTTON\_H

# *Configuration Constrains*

Depend on pin number you can include the same number of buttons.

# *Integration Constrains*

call Init () and make required configuration

# *History*

**Appendix A: Glossary**