Buzzer Driver CDD

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# **Introduction**

This document is created to demonstrate the Tactile Switch component and its used APIs.

This component supports up to 16 switch at the same time.

## **Goals and Objectives**

To Provide demonstration of the used APIs and components to get any switch able to work with any type of microcontroller and to handle the bouncing problem of the switch without delaying the microcontroller to get the right timing

## **Component APIs and variables**

|  |  |
| --- | --- |
| **Interface** | **Description** |
| *Buzzer* | *The driver is able to interface with Buzzer.* |
| *DIO Driver* | *It is required to interface with microcontroller through DIO peripheral* |

Table 1: Interfaces description

|  |  |  |  |
| --- | --- | --- | --- |
| ***API*** | ***Description*** | ***Inputs*** | ***Return Value*** |
| Buzzer\_void Run  (Buzz\_00\_03\_01) | This API is used to Start running the buzzer | None | None |
| Buzzer\_voidstop  (Buzz\_00\_03\_02) | This API is used to Stop running the Buzzer | None | None. |

Table 2: API description

|  |  |  |
| --- | --- | --- |
| **Variable** | **Type** | **Description** |
| **DIO\_u8PIN0** | Preprocessor | This variable defines the pin number the Buzzer are connected to. |
| **u8ZERO** | Preprocessor | It is the variable in which the state of the DIO pin is Low. |
| **u8one** | Preprocessor | It is the variable in which the state of the DIO pin is High. |

Table 3: Variables of the component

# **Design Constraints**

## **Hardware Constraints**

You have to wait (delay) the between running the buzzer and stopping it.

## **Constraints on Initialization**

The Micro-controller pins that are used in the system must be configured in output direction before using the driver so as to make sure you get the correct result of the API.

# **Configuration**

|  |  |  |
| --- | --- | --- |
| **Configuration Parameters** | **Description** | **Comment** |
| DIO\_u8PIN0\_INITDIR | number of pin that used | Must be output |
| DELAY\_u32SYSCLOCK | Clock Cycle for the Microcontroller | Must be 4000000 |

Table 4: Configuration Parameters

## **File Description**

|  |  |
| --- | --- |
| **File Name** | **Description** |
| Buzzer\_interface.h | It contains the prototypes of the APIs |
| Buzzer\_prog.c | It contains the written code of the APIs |
| main.c | It contains the test code for the component |
| delay.h | it contains the macro function for delay . |
| types.h | it contains the predefined data types |
| util.h | it contains predefined macros using for micro-controller register(used by DIO\_driver) |
| conc.h | it contains predefined macros using for micro-controller register(used by DIO\_driver) |
| DIO\_config.h | It contains the configuration parameters of the DIO driver |
| DIO\_private.h | It contains private APIs for DIO driver |
| DIO\_prog.c | It contains the written code of the DIO driver APIs |

Table 5: Files Description