Component Design Document

For

<PWM module>

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Revision History

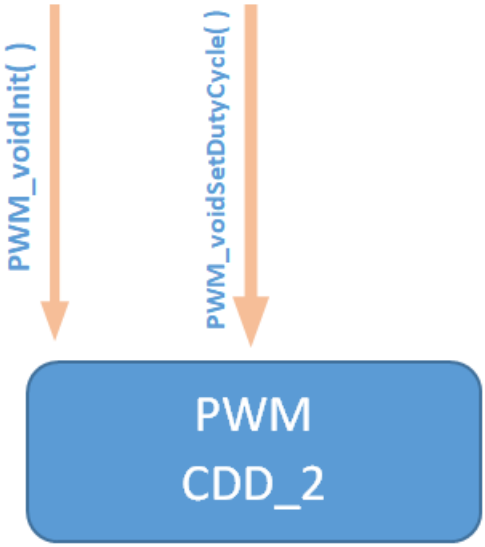
Name	Date	Reason For Changes	Version
Ahmed Raafat	18th April 2018	Create the template	1.0

1. Introduction

1.1 Objective

The purpose of this module is to generate PWM signal with certain frequency and certain duty cycle. This module uses the hardware peripheral PWM in order to generate the signal. This module provides interfaces for the upper layers in order to generate the PWM signal.
This module uses timer2 peripheral and makes it work in the PWM mode.

1.2 Context Diagram



2. External Interface

2.1 <STD_TYPES.h>

2.1.1 Types

Data Type	Description
U8	Unsigned 8 bits

2.1.2 Interface

Function	Description
NA	There is no external interface

2.1.3 Const there is no const from external interfaces

2.1.4 Symbol there is no symbols for external interfaces

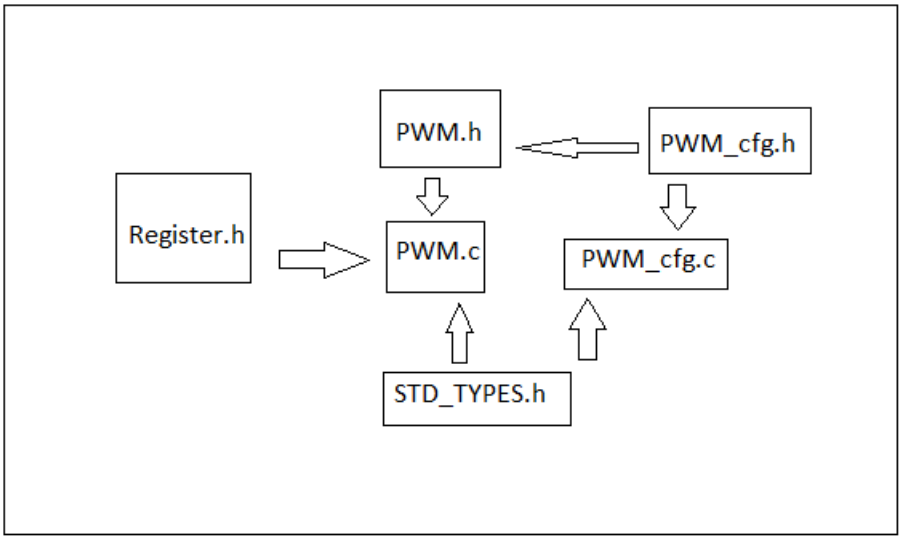
3. *Static Design*

3.1 Files

3.1.1 Used Files

FILE NAME	Description
PWM.c	Implementation of the interfaces
PWM.h	Prototypes
PWM cfg.h	The configurations

3.1.2 Files Inclusion



Types

There are no special interfaces types for this module

3.2 Symbol Define

There are no special symbol interfaces for this module

3.3 Const

There are no special const interfaces for this module

3.4 Interface (Services)

Req ID	PWM_000	
Covers	HLD_002	
Name/protoTypes	PWM_voidInit	
Service ID	0x00	
Re-entrant / Non re- entrant	Reentrant	
Synchronous/Asynchronous	Synchronous	
Return Value	Void	No return value for this interface
Input parameter	void	No input parameter for this interface
Output parameter	NA	Not available for this interface
Input /Output Parameter	NA	Not available for this interface

Req ID	PWM_002	
Covers	HLD_002	
Name/protoTypes	PWM_voidSetDutyCycle	
Service ID	0x01	
Re-entrant / Non re- entrant	Reentrant	
Synchronous/Asynchronous	Asynchronous	
Return Value	void	DESCRIPTION
Input parameter	U8	Get value from 0 to 255 that represents the duty cycle
Output parameter	NA	Not available for this interface
Input /Output Parameter	NA	Not available for this interface

4. *Dynamic Design*

4.1 Mode Management

<Not applicable for this module>

4.2 Sequence Diagram

<Not applicable for this module>

5. *Shared Resources*

5.1 Analysis

<Not applicable for this module>

5.2 Protection

<Not applicable for this module>

6. *Configuration Parameters*

6.1 Pre-compile time

6.1.1 Define the PWM frequency and mode either fast or phase correct PWM

6.2 Link time

6.2.1 There is no link build configurations in this Document

6.3 Post-build

6.3.1 There is no Post build configurations in this Document

7. Configuration Constrains

The generated PWM signal must be On OC2 pin as this module uses timer2 peripheral

8. Integration Constrains

The DIO_init() function in the DIO module should be called before the PWM_init() function

9. History

<The changes happened in the documents>

Appendix A: Glossary