Integration Manual – PWMCdd

Table of Contents

[1 Dependencies 2](#_Toc378235257)

[1.1 SWCs 2](#_Toc378235258)

[1.2 Global Functions(Non RTE) to be provided to Integration Project 2](#_Toc378235259)

[2 Configuration 3](#_Toc378235260)

[2.1 Build Time Config 3](#_Toc378235261)

[2.2 Configuration Files to be provided by Integration Project 3](#_Toc378235262)

[2.2.1 Da Vinci Parameter Configuration Changes 3](#_Toc378235263)

[2.2.2 DaVinci Interrupt Configuration Changes 3](#_Toc378235264)

[2.2.3 Manual Configuration Changes 3](#_Toc378235265)

[3 Integration 4](#_Toc378235266)

[3.1 Required Global Data Inputs 4](#_Toc378235267)

[3.2 Required Global Data Outputs 4](#_Toc378235268)

[3.3 Specific Include Path present 4](#_Toc378235269)

[4 Runnable Scheduling 5](#_Toc378235270)

[5 Memory Mapping 6](#_Toc378235271)

[5.1 Mapping 6](#_Toc378235272)

[5.2 Usage 6](#_Toc378235273)

[5.3 Non RTE NvM Blocks 6](#_Toc378235274)

[5.4 RTE NvM Blocks 6](#_Toc378235275)

[6 Compiler Settings 6](#_Toc378235276)

[6.1 Preprocessor MACRO 6](#_Toc378235277)

[6.2 Optimization Settings 6](#_Toc378235278)

[7 Revision Control Log 7](#_Toc378235279)

# Dependencies

## SWCs

|  |  |
| --- | --- |
| Module | Required Feature |
| CDD\_Data | Global variables for DC Phs Comp (for using in Nhet/) |

Note : Referencing the external components should be avoided in most cases. Only in unavoidable circumstance external components should be referred. Developer should track the references.

## Global Functions(Non RTE) to be provided to Integration Project

CDDPorts\_ClearPhsReasSum(uint16 DataAccessBfr\_Cnt\_T\_u16)

CDD\_ApplyPWMMtrElecMechPol(sint8 MtrElecMechPol\_Cnt\_s8)

# Configuration

## Build Time Config

|  |  |  |
| --- | --- | --- |
| Modules | Notes |  |
| None |  |  |

## Configuration Files to be provided by Integration Project

<Configuration file that will generated from this components that will require Da Vinci Config generation or manual generation. Describe each parameter >

### Da Vinci Parameter Configuration Changes

|  |  |  |
| --- | --- | --- |
| Parameter | Notes | SWC |
| None |  |  |

### DaVinci Interrupt Configuration Changes

|  |  |  |  |
| --- | --- | --- | --- |
| ISR Name | VIM # | Priority Dependency | Notes |
| None |  |  |  |

### Manual Configuration Changes

|  |  |  |
| --- | --- | --- |
| Constant | Notes | SWC |
| d\_PwmFreq\_Hz\_Cnt\_u16  d\_PWMFreqDither\_Hz\_u16 |  |  |

# Integration

## Required Global Data Inputs

The following global symbols must be defined in CDD\_Data.c and .h (populated by PwmCdd):

* uint16: CDD\_DCPhsComp\_Cnt\_G\_u16[3]
* uint16: CDD\_PWMPeriod\_Cnt\_G\_u16

**NHET/EPWM** version corresponding PWMCdd component spilt and using global variables CDD\_DCPhsComp\_Cnt\_G\_u16 and CDD\_PWMPeriod\_Cnt\_G\_u16 should be used.

* CDD\_Read\_PhaseAdvanceFinal\_Rev\_u0p16
* CDD\_Read\_CorrectedMtrPos\_Rev\_u0p16
* CDD\_Read\_CommOffset\_Cnt\_u16
* PwmCdd\_Read\_ModIdxFinal\_Uls\_u16p16

## Required Global Data Outputs

* CDD\_Write\_DCPhsBComp\_Cnt\_u16p0
* CDD\_Write\_DCPhsCComp\_Cnt\_u16p0

## Specific Include Path present

Yes - The “include” directory of this SWC needs to be included in the integration project include search path.

# Runnable Scheduling

This section specifies the required runnable scheduling.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Init | Scheduling Requirements | | Trigger | |
| PwmCdd\_Init | | Place in EcuStartup. Execute along with NHET initialization. | | ISR |

|  |  |  |
| --- | --- | --- |
| Runnable | Scheduling Requirements | Trigger |
| PwmCdd\_Per1 | Must be placed in the motor control ISR, before Nhet (or whichever function populates the global variables used byNhet). | Cyclic (ISR) \* |

**.**

# Memory Mapping

## Mapping

|  |  |  |
| --- | --- | --- |
| Memory Section | Contents | Notes |
| PWMCDD\_START\_SEC\_VAR\_CLEARED\_16 | Variable Definitions |  |
|  |  |  |

\* Each …START\_SEC… constant is terminated by a …STOP\_SEC… constant as specified in the AUTOSAR Memory Mapping requirements.

## Usage

|  |  |  |
| --- | --- | --- |
| Feature | RAM | ROM |
| Full driver |  |  |

Table 1: ARM Cortex R4 Memory Usage

## Non RTE NvM Blocks

|  |
| --- |
| Block Name |
| None |

Note : Size of the NVM block if configured in developer

## RTE NvM Blocks

|  |
| --- |
| Block Name |
| None |

Note : Size of the NVM block if configured in developer

# Compiler Settings

## Preprocessor MACRO

None

## Optimization Settings

None

# Revision Control Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev #** | **Change Description** | **Date** | **Author** |
| 1 | Initial version | 14-Feb-13 | Selva |
| 2 | Added cal k\_PWMBaseFrequency\_Hz to replace constant d\_PWMFreqBase\_Hz\_u16. | 21-Jan-14 | LK |
| 3 | Added PwmCdd\_Read\_ModIdxFinal\_Uls\_u16p16() in Cfg template | 20-Aug-15 | Selva |