# Module -- Diagnostics Manager Fail Action

# High-Level Description

# Figures

## Component Diagram

# Variable Data Dictionary

|  |  |  |
| --- | --- | --- |
| Module Inputs | Module Outputs | |
|  | | DiagStsNonRecRmpToZeroFltPres\_Cnt\_lgc |
|  | | DiagStsCtrldDisRmpPres\_Cnt\_lgc |
|  | | DiagStsRecRmpToZeroFltPres\_Cnt\_lgc |
|  | | DiagStsHWASbSystmFltPres\_Cnt\_lgc |
|  | | DiagStsDefVehSpd\_Cnt\_lgc |
|  | | DiagStsDefTemp\_Cnt\_lgc |
|  | | DiagStsScomHWANotValid\_Cnt\_lgc |
|  | | DiagStsWIRDisable\_Cnt\_lgc |
|  | | DiagRampRate\_XpmS\_f32 |
|  | | DiagRampValue\_Uls\_f32 |
|  | | DiagRmpToZeroActive\_Cnt\_lgc |
|  | | DiagStsInverter1Inactive\_Cnt\_lgc |
|  | | DiagStsInverter2Inactive\_Cnt\_lgc |
|  | | DiagNoofActiveInverter\_Cnt\_u08 |

## Module Internal Variables

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Variable Name | Datatype | Resolution | Legal Range  (min) | Legal Range  (max) | Software Segment  {Data Type} |
| DiagSts#\_Cnt\_M\_b16[2] | Refer to Diagnostics\_Manager\_GeneratedCfg\_MDD.docx | | | | |
| ActiveRmpRate#\_UlspmS\_M\_f32[2] | Refer to Diagnostics\_Manager\_GeneratedCfg\_MDD.docx | | | | |

### User defined typedef definition/declaration

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Typedef Name | Element Name | User Defined Type | Legal Range  (min) | Legal Range  (max) |
|  |  |  |  |  |

# Constant Data Dictionary

## Calibration Constants

|  |
| --- |
| Constant Name |
|  |
|  |

## Program(fixed) Constants

### Embedded Constants

#### Local

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Units | Value |
|  |  |  |  |

#### Global

|  |
| --- |
| Constant Name |
| DIAGMGR\_NUMAPPS |
| D\_DIAGSTSNONRECRMPTOZEROBIT\_CNT\_B16 |
| D\_DIAGSTSRECRMPTOZEROBIT\_CNT\_B16 |
| D\_DIAGSTSCTRLDDISRMPBIT\_CNT\_B16 |
| D\_DIAGSTSHWASBSYSTMFLTBIT\_CNT\_B16 |
| D\_DIAGSTSDEFVEHSPDBIT\_CNT\_B16 |
| D\_DIAGSTSDEFTEMPBIT\_CNT\_B16 |
| D\_DIAGSTSSCOMHWANOTVALIDBIT\_CNT\_B16 |
| D\_DIAGSTSWIRDISABLEBIT\_CNT\_B16 |
| D\_DIAGSTSINVERTER1DISABLEBIT\_CNT\_B16 |
| D\_DIAGSTSINVERTER2DISABLEBIT\_CNT\_B16 |

### Module specific Lookup Tables Constants

|  |  |  |  |
| --- | --- | --- | --- |
| Constant Name | Resolution | Value | Software Segment |
| T\_DiagMgrDiagSts\_Ptr\_b16[SIZE] | N/A | Refer \* | AP\_DIAGMGR\_CONST |
| T\_DiagMgrRmpRate\_Ptr\_f32[SIZE] | N/A | Refer \* | AP\_DIAGMGR\_CONST |
|  |  |  |  |

Note: “ Refer \*” - Refer to Diagnostics\_Manager\_GeneratedCfg\_MDD

Note Size and elements of Table constants varies across projects. Check project configuration files Under UTP/ Contract folder for data.

# Functions/Macros used by the Sub-Modules

## Library Functions / Macros

The library and functions / Macros that are called by the various sub modules are identified below,

1. TableSize\_m()

## Data Hiding Functions

1. <None>

## Global Functions/Macros Defined by this Module

### Diagnostic Manager Periodic 1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | DiagMgr\_Per1 | Type | Min | Max |
| **Arguments Passed** | none |  |  |  |
| **Return Value** | none |  |  | |

#### Description





## Local Functions/Macros Used by this MDD only

### Read Bits

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Function Name** | ReadBit\_u16 | Type | Min | Max |
| **Arguments Passed** | Data | Uint16 | 0 | FULL |
|  | BitMask | Uint16 | 0 | FULL |
| **Return Value** |  | Boolean | FALSE | TRUE |

#### Description

IF (Data & BitMask) = 0

Return (FALSE)

ELSE  
 Return(TRUE)

END IF

# Software Module Implementation

## Runtime Environment (RTE) Initial Values

|  |  |
| --- | --- |
| Data | Value |
|  |  |

## Initialization Functions

None

## Periodic Functions

None

## Fault Recovery Functions

None

## Shutdown Functions

None

## Interrupt Functions

None

## Fault Recovery Functions

None

## Shutdown Functions

None

## Interrupt Functions

None

## Serial Communication Functions

None

# Execution Requirements

## Execution Sequence of the Module

## Execution Rates for sub-modules called by the Scheduler

This table serves as reference for the Scheduler design

|  |  |  |
| --- | --- | --- |
| Function Name | Calling Frequency | System State(s) in which the function is called |
|  |  |  |

## Execution Requirements for Serial Communication Functions

|  |  |
| --- | --- |
| Function Name | Sub-Module called by (Serial Comm Function Name) |
|  |  |

# Memory Map Definition Requirements

## Sub Modules (Functions)

This table identifies the software segments for functions identified in this module.

|  |  |
| --- | --- |
| Name of Sub Module | Software Segment |
|  |  |

## Global and Local Functions

This table identifies the software segments for local functions identified in this module.

|  |  |
| --- | --- |
| Name of Sub Module | Software Segment |
| DiagMgr\_Per1 | AP\_DIAGMGR\_CODE |
| ReadBit\_u16 | AP\_DIAGMGR\_CODE |

# Known Issues / Limitations With Design

1. (Item #1)

# Revision Control Log

|  |  |  |  |
| --- | --- | --- | --- |
| **Rev #** | **Change Description** | **Date** | **Author Initials** |
| 1 | Initial MDD version | 14-Feb-13 | VK |
| 2 | Changes made to make it more generic for all projects | 24-June-13 | NRAR |
| 3 | Updated for Inverter1 and Inverter 2 Fault response. | 21-July-15 | Selva |