

EVB-LAN9255 – EtherCAT SIP IO DC FOE firmware Release Notes

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| Microchip Technology, Inc. | | | Microchip Technology, Incorporated  2355 W. Chandler Boulevard  Chandler, Arizona 85224  480/792-7416 |
| REV | DATE | ORIGINATOR | DESCRIPTION OF CHANGE |
| 1.0 | 10/16/2020 | Rathika K | Added IO DC support in V0.7 release. |
| 1.01 | 12/01/2020 | Rathika K | Bug Fix release of 0.7 |
| 1.02 | 02/04/2021 | Rathika K | Added support for EEPROM Emulation |
| 1.03 | 04/26/2021 | Rathika K | Bug Fix Release |
| 1.04 | 6/16/2021 | VenkataDurgaPrasad | New device id support for lan 9255 |
| 1.05 | 6/17/2021 | Rathika K | Changes from 1.2 to 1.3 |

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# Introduction

|  |  |
| --- | --- |
| Component Type | Firmware Framework |
| **Target Silicon** | LAN9255 |
| **Where can an end user see the version number** |  |

This document contains the EVB- LAN9255 EtherCAT Device Controller SDK – SAME53 IO DC FOE firmware samples based on EVB-LAN9255-SQI platform.

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# Terms and abbreviations

IDE - Integrated Development Environment

ESC - EtherCAT Slave Controller

EVB - Engineering Validation Board

SQI - Serial Quad I/O Interface

SSC - Slave Stack Code

ESF - EtherCAT Software Framework

# Prerequisites

The following development tools are required for using this sample for developing EtherCAT application:

* MPLAB IDE v5.35 or above

(Refer to MPLAB IDE download link: <http://www.microchip.com/pagehandler/en-us/family/mplabx/>)

* MPLAB XC32 Compiler v3.01 or above

(Refer to MPLAB XC Compiler download link: <http://www.microchip.com/pagehandler/en-us/devtools/mplabxc/home.html>)

* EVB-LAN9255 IO DC FOE firmware for SQI from Microchip.
* SSC v5.12 code from EtherCAT.org.

Note: *For using this slave stack code (SSC), you need to be a member of EtherCAT.org.*

* MPLAB IPE V5.35 or above

(Refer to MPLAB IPE download link: <http://microchip.wikidot.com/ipe:installation>)

* TwinCAT 3.11 or above.

(Refer to Beckhoff site to download TwinCAT <http://beckhoff.com> )

* LAN9255 DFP v1.1.7 or above

# References

* Jutland Switches and Industrial Controllers DOS - <http://mchpweb:4576/Fileattach/SpecIndex/DOS1700119/DOS-02606c.pdf>

# Release notes

## Version 1.3

|  |  |
| --- | --- |
| Release date | 6/17/2021 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | Tag: IO\_DC\_FOE\_V1.3 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

None

### Features added

* Macros added to differentiate counter and IO DC related configurations.

## Version 1.2

|  |  |
| --- | --- |
| Release date | 6/16/2021 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | Tag: IO\_DC\_FOE\_V1.2 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

None

### Features added

* Added new device id support for LAN9255ZMX020 and updated the project configurations file along with the binary files.

## Version 1.1

|  |  |
| --- | --- |
| Release date | 4/26/2021 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | bugfix/IO\_DC\_UNG\_J2\_SIP\_69  Tag: IO\_DC\_FOE\_V1.1 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

* UNG\_J2\_SIP-69 – FOE feature is not working with switching mode.

### Features added

* None

### Notes

* The PDI frequency can be selected through the ESF configuration file. The frequency can be given in Mhz to ESF\_PDI\_FREQUENCY.

## Version 1.0

|  |  |
| --- | --- |
| Release date | 4/02/2021 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | feature/ethercat\_io\_dc  Tag: IO\_DC\_FOE\_V1.0 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

* UNG\_J2\_SIP-59 – Added support for EEPROM Emulation in IO DC sample application

### Features added

* None

### Notes

* The PDI frequency can be selected through the ESF configuration file. The frequency can be given in Mhz to ESF\_PDI\_FREQUENCY.

## Version 0.71

|  |  |
| --- | --- |
| Release date | 12/01/2020 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | feature/ethercat\_io\_dc  Tag: IO\_DC\_FOE\_V0.71 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

* [UNG\_J2\_SIP-14](https://jira.microchip.com/browse/UNG_J2_SIP-14) – [ETG Compliance Failure]: Failed in PDI Error Counter test

### Features added

* None

### Notes

* The PDI frequency can be selected through the ESF configuration file. The frequency can be given in Mhz to ESF\_PDI\_FREQUENCY.

## Version 0.7

|  |  |
| --- | --- |
| Release date | 10/16/2020 |
| **Release Type** | Beta |
| **Pre-requisites (if any)** | No |
| **Source code path** | https://bitbucket.microchip.com/scm/ung\_apps/lan9255\_firmware\_applications.git |
| **Source code label / branch & perforce change list number** | feature/ethercat\_io\_dc  Tag: IO\_DC\_FOE\_V0.7 |
| **Software Requirements Specification (SRS) Path and Revision Number** | NA |
| **Software Design Document (SDD) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/EVB\_LAN9255\_IO\_DC\_FoE Design.docx |
| **Software Developer Test Plan (SDTP) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/TestPlan/LAN9255-SAME53-ETHERCAT-IO-DC-FOE\_Developer\_Test Report.xlsm |
| **Software Requirements Tracker (SRT) Path and Revision Number** | //depot\_hw\_jutland2\_MCM/doc/sw/LAN9255\_CrossFunctional\_ProjectPlan.mpp |

### Not implemented / Limited functionality requirements

None

### Bug Fixes

* None

### Features added

* [UNG\_J2\_SIP-8](https://jira.microchip.com/browse/UNG_J2_SIP-8) – IO support in EVB LAN9255 - Jutland II SIP firmware

Provide support for IO (input and output GPIO) in the firmware.

* [UNG\_J2\_SIP-9](https://jira.microchip.com/browse/UNG_J2_SIP-9) - Integrate FOE implementation from "Counter FOE SAME53" firmware into EtherCAT IO DC FOE firmware.

This firmware is targeted for LAN9255 Jutland II SIP. Integrate/Port already available SAME53 SQI and FOE implementation into EtherCAT IO DC FOE firmware application.

* [UNG\_J2\_SIP-10](https://jira.microchip.com/browse/UNG_J2_SIP-10) - LAN9255 IO DC FOE firmware - PCLint setup with MISRA 2012 standard.

### Notes

* The PDI frequency can be selected through the ESF configuration file. The frequency can be given in Mhz to ESF\_PDI\_FREQUENCY.