

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

|  |  |  |  |
| --- | --- | --- | --- |
| 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 |

Table of Contents

[1 Introduction 4](#_Toc74758222)

[2 Legal Information 4](#_Toc74758223)

[3 Terms and abbreviations 5](#_Toc74758224)

[4 Prerequisites 5](#_Toc74758225)

[5 References 5](#_Toc74758226)

[6 Release notes 6](#_Toc74758227)

[6.1 Version 1.2 6](#_Toc74758228)

[6.1.1 Not implemented / Limited functionality requirements 6](#_Toc74758229)

[6.1.2 Bug Fixes 6](#_Toc74758230)

[6.1.3 Features added 6](#_Toc74758231)

[6.2 Version 1.1 7](#_Toc74758232)

[6.2.1 Not implemented / Limited functionality requirements 7](#_Toc74758233)

[6.2.2 Bug Fixes 7](#_Toc74758234)

[6.2.3 Features added 7](#_Toc74758235)

[6.2.4 Notes 7](#_Toc74758236)

[6.3 Version 1.0 8](#_Toc74758237)

[6.3.1 Not implemented / Limited functionality requirements 8](#_Toc74758238)

[6.3.2 Bug Fixes 8](#_Toc74758239)

[6.3.3 Features added 8](#_Toc74758240)

[6.3.4 Notes 8](#_Toc74758241)

[6.4 Version 0.71 9](#_Toc74758242)

[6.4.1 Not implemented / Limited functionality requirements 9](#_Toc74758243)

[6.4.2 Bug Fixes 9](#_Toc74758244)

[6.4.3 Features added 9](#_Toc74758245)

[6.4.4 Notes 9](#_Toc74758246)

[6.5 Version 0.7 10](#_Toc74758247)

[6.5.1 Not implemented / Limited functionality requirements 10](#_Toc74758248)

[6.5.2 Bug Fixes 10](#_Toc74758249)

[6.5.3 Features added 10](#_Toc74758250)

[6.5.4 Notes 11](#_Toc74758251)

# 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.

# Legal Information

Information contained in this publication regarding device applications and the like is provided only for your convenience and can be superseded by updates. It is your responsibility to ensure that your application meets with your specifications. MICROCHIP MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, STATUTORY OR OTHERWISE, RELATED TO THE INFORMATION, INCLUDING BUT NOT LIMITED TO ITS CONDITION, QUALITY, PERFORMANCE, MERCHANTABILITY OR FITNESS FOR PURPOSE**.**

Microchip disclaims all liability arising from this information and its use. Use of Microchip devices in life support and/or safety applications is entirely at the buyer’s risk, and the buyer agrees to defend, indemnify and hold harmless Microchip from any and all damages, claims, suits, or expenses resulting from such use. No licenses are conveyed, implicitly or otherwise, under any Microchip intellectual property rights.

**Trademarks**

The Microchip name and logo, the Microchip logo, dsPIC, FlashFlex, flexPWR, JukeBlox, KEELOQ, KEELOQ logo, Kleer, LANCheck, MediaLB, MOST, MOST logo, MPLAB, OptoLyzer, PIC, PICSTART, PIC32 logo, RightTouch, SpyNIC, SST, SST Logo, SuperFlash and UNI/O are registered trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

The Embedded Control Solutions Company and mTouch are registered trademarks of Microchip Technology Incorporated in the U.S.A.

Analog-for-the-Digital Age, BodyCom, chipKIT, chipKIT logo, CodeGuard, dsPICDEM, dsPICDEM.net, ECAN, In-Circuit Serial Programming, ICSP, Inter-Chip Connectivity, KleerNet, KleerNet logo, MiWi, MPASM, MPF, MPLAB Certified logo, MPLIB, MPLINK, MultiTRAK, NetDetach, Omniscient Code Generation, PICDEM, PICDEM.net, PICkit, PICtail, RightTouch logo, REAL ICE, SQI, Serial Quad I/O, Total Endurance, TSHARC, USBCheck, VariSense, ViewSpan, WiperLock, Wireless DNA, and ZENA are trademarks of Microchip Technology Incorporated in the U.S.A. and other countries.

SQTP is a service mark of Microchip Technology Incorporated in the U.S.A.

Silicon Storage Technology is a registered trademark of Microchip Technology Inc. in other countries.

GestIC is a registered trademarks of Microchip Technology Germany II GmbH & Co. KG, a subsidiary of Microchip Technology Inc., in other countries.

All other trademarks mentioned herein are property of their respective companies.

© 2015, Microchip Technology Incorporated, Printed in the U.S.A., All Rights Reserved.

EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

# 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 1.2

|  |  |
| --- | --- |
| 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.