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Software Release Notes
EtherCAT Software Framework (ESF)

	Microchip Technology, Incorporated 2355 W. Chandler Boulevard Chandler, Arizona 85224 480/792-7416	
MICROCHIP Microchip Technology, Inc.		
REV	DATE	DESCRIPTION OF CHANGE

1.00	Aug 26, 2020	Dummy cycle support for SPI & SQI firmware with all modes Addressed code review comments and code cleanup and Bug fixes Make ESF compliant to PC-Lint 2012 standard and as error free
1.01	Oct 5, 2020	Changes from 1.00 to 1.01

Table of Contents

1 Introduction

Component Type	Firmware Framework
Target Silicon	LAN9253
Where can an end user see the version number	Version number included in ESF > Source > ESC > ProjectVersion.h

This document contains the EVB- LAN9253 EtherCAT Slave Controller SDK – SAMD51 firmware samples based on EVB-LAN9253-SAMD51 platform.

2 Release notes

2.1 Version 1.01

Release date	5-Oct-2020
Release Type	Production
Pre-requisites (if any)	EVB-LAN9253-SAMD51Rev B
Source code path	https://bitbucket.microchip.com/scm/ung_apps/ethercatsoftware-framework-public-new.git
Source code label / branch & perforce change list number	Tag: ESF_V1.01

2.1.1 Not implemented / Limited functionality requirements

None

2.1.2 Bug Fixes

- UNG_JUTLAND2-278: Odd address read with any length is failing in ESF - SQI mode
- UNG_JUTLAND2-279: PDRAM write is failing in Indirect mode - ESF SQI Interface

2.1.3 Features added

- None

2.1.4 Notes

- The PDI frequency can be selected through the ESF configuration file. The frequency can be given in MHz to ESF_PDI_FREQUENCY.
- The PDI selection along with access mode (Direct/indirect/Beckhoff) can be selected through the project configuration.

2.2 Version 1.00

Release date	26-Aug-2020
Release Type	Production

Pre-requisites (if any)	EVB-LAN9253-SAMD51Rev B
Source code path	https://bitbucket.microchip.com/scm/ung_apps/ethercatsoftware-framework-public-new.git
Source code label / branch & perforce change list number	Tag: ESF_V1.00

2.2.1 Not implemented / Limited functionality requirements

None

2.2.2 Bug Fixes

- ESF-226: ETG compliance failed with minimum cycle time response test

    The minimum cycle time is a device parameter which will be read by the master. In our setup, TwinCAT master has the provision to read the device configured parameters. the configured parameters will be listed in SSC configuration file. The configured parameter should be compliant to the device. Currently the "Minimum cycle time" parameter configured with 100 Microseconds, whereas the device is not compliant to that. So updated the "minimum cycle time" parameter, so that the device is compliant to that value. The value updated through "SSC configuration file".

- ESF-214: ERROR LED test in Compliance is failing

    ECAT_LED has access to UC instead of ESC. Updated the ESC config files and ESI files, which provides ECAT_LED access to ESC. Also, EEPROM config data updated, which enables RUN and ERROR LED operation.

- ESF-189: LAN9253 - Direct mode SPI unable to enter OP mode

    The Issue observed only in the case of SPI Direct mode. Debug the Read and write API's by enabling the SW break points and its observed that the API works fine and able to read proper values. Whenever there is a state change from PreOP to SafeOP, then there is an interrupt, and which needs to be served by reading proper AL event register. In Direct mode, we missed to add the Read piece of code, So AL event register gets loaded with old value, which results the error in state change. Added the read part in HW_EventReadIsr.

2.2.3 Features added

- ESF-243: PDI Frequency as a configurable parameter through ESF Config file

    Enable the PDI frequency selection as a configurable parameter through ESF configuration file.

- ESF-250: Dummy cycle support for SPI modes

    Provide the Dummy cycle support for SPI demo application with all the modes, such as Direct, Indirect and Beckhoff modes.

- ESF-237: PCLint setup with MISRA 2012 standard

    Make the ESF to be compliant to MISRA 2012 standard and lint error-free code

- ESF-245: LAN9253- Some ESF source files do not have Microchip license disclaimer

    All the files under the ESF code base should be having Microchip license disclaimer note.

- ESF-233: SQI support for SAMD51 Indirect mode

    Enable the QSPI support for SAMD51 indirect mode and setup with 20Mhz and 60Mhz and the device should be able to enter OP mode.

- ESF-234: ESF - Integration of SQI and SPI into a single demo

We have separate Demo for SQI sample application. The SPI demo should be single and configuration option should be provided through IDE configuration. So that separate build happens based on the selected configuration.

- ESF-229: ESF - SQI support for SAMD51 Direct mode

    Enable the QSPI support for SAMD51 direct mode and setup with 20Mhz and 60Mhz and the device should be able to enter OP mode.

- ESF-227: SPI access times xls updated - FIRMWARE code needs to be modified accordingly

    The dummy cycle must be integrated to the code and should be dynamic. The dummy cycle code should use the latest SPI access times.

2.2.4 Notes

- The PDI frequency can be selected through the ESF configuration file. The frequency can be given in MHz to `ESF_PDI_FREQUENCY`.
- The PDI selection along with access mode (Direct/indirect/Beckhoff) can be selected through the project configuration.