

Class B Library Release Notes

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1. What is Class B Library?

The dsPIC33A Class B Library is a collection of implemented diagnostics APIs of various modules of a microcontroller. These diagnostic APIs help in achieving the IEC 60730 standard to support the Class B compliance. These routines can be directly integrated with the end user's application to test and verify the critical functionalities of a microcontroller.

Note: This Class B library must be used along with other documents as specified in [Frequently Asked Questions](#)

2. Tool Requirements

- MPLAB X IDE v6.25 and above
- XC DSC Compiler v3.31 and above
- dsPIC33AK512MPS512 DFP 1.3.135

3. Installing Class B Library

The library is provided as a zip file. Users can integrate the code with their application. While integrating, users should not modify the source code and shall only configure the library through config files and APIs. See [Frequently Asked Questions](#)

4. What's New?

In v3.0.0

This is the first version of the Class B library developed for the dsPIC33A family of devices. This release has the diagnostics developed for the dsPIC33AK512MPS512 device family with the following 10 modules.

1. ADC
2. CLOCK
3. CPU
4. CRC
5. FLASH
6. GPIO
7. INTERRUPT
8. PC
9. SRAM
10. TIMER

5. Migration Issues

NIL

6. Repairs and Enhancements

Nil

7. Known Issues

NIL

8. Frequently Asked Questions

Q. What is the starting point to use this Class B library?

A. After unzipping the library, refer to the **"readme"** file at the base folder

Q. Can the code be modified while integrating with the application?

A. Other than the configuration header files, the code is not meant to be modified. Any such code changes could potentially invalidate the test reports. If there are any queries, improvement suggestions or any bugs, please contact Microchip.

Q. What are config files?

A. The header files under the **"inc"** folder of individual modules can contain some user configurable items along with the function prototypes. The files under **"src"** folder are **not** user configurable.

Q. What additional documents must be used along with this Library?

A. Refer to the **"readme"** file at the base folder

Q. Can the diagnostics be used with any device?

A. The short answer is NO. The diagnostics are developed for the highest variant in a particular family of devices. These diagnostics have to be ported to the lower variant of the same family of devices. The **"porting guide"** document provided with the release provides all the information needed to do this porting. The diagnostics are not guaranteed to work if they are used in the lower variants, without porting.

9. Supported Device Families

- dsPIC33AK512MPS512 www.microchip.com/dspic33ak512mps512

10. Devices And Modules Support

	SRAM	FLASH	INTERRU PT	GPIO	CPU	ADC	TIMER	PC	CRC	CLOCK
dsPIC33A K512MPS 512	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

11. List of Supported Diagnostics

Note: Implemented Periodicity

S - Startup

P - Periodic

O - On demand

Module	Supported Diagnostics
SRAM	<ul style="list-style-type: none"> SW_SRAM_REPLICATION_PRACTICE_01 (O) SW_SRAM_ECC_SINGLE_DOUBLE_ERROR_DETECTION_TEST_01(S,P,O)
FLASH	<ul style="list-style-type: none"> SW_FLASH_ECC_SINGLE_DOUBLE_ERROR_DETECTION_TEST_01(S,P,O) SW_FLASH_INTEGRITY_READ_PRACTICE_01(P,O) SW_FLASH_WRITE_VERIFY_PRACTICE_01(O) SW_FLASH_MEMORY_CRC_PRACTICE_01(S,P,O)
GPIO	<ul style="list-style-type: none"> SW_GPIO_PORTS_INPUT_PRACTICE_01(S,P,O) SW_GPIO_PORTS_OUTPUT_TEST_01(S,P,O) SW_GPIO_ACTIVITY_CHECK_01(O) SW_GPIO_PORTS_INTERRUPT_GENERATION_TEST_01(S,P,O) SW_GPIO_PPS_OUTPUT_CONNECTION_TEST_01 (S,P,O) SW_IO_MONITOR_TEST_01 (S,P,O)
INTERRUPTS	<ul style="list-style-type: none"> SW_INTERRUPT_SERVICING_TEST_01 (S,P,O) SW_EXTERNAL_INTERRUPT_TEST_01 (S,P,O) SW_INTERRUPT_FREQUENCY_CHECK_01(O) SW_HARD_TRAP_TEST_01(S,P,O) SW_ISR_CLEARED_CHECK_01(O)
TIMER	<ul style="list-style-type: none"> SW_TIMER_FUNCTIONAL_TEST_02(S,P,O) SW_TIMER_LINEARITY_TEST_01(P)
CPU	<ul style="list-style-type: none"> SW_CPU_REGISTER_RESET_STATE_TEST_01(S) SW_CPU_CONTROL_REGISTER_TEST_01(S,P,O) SW_CPU_SELF_TEST_01(P,O)
ADC	<ul style="list-style-type: none"> SW_ADC_BOUNDARY_MONITOR_TEST_01(S,P,O) SW_ADC_LINEARITY_MONOTONICITY_TEST_01(S,P,O) SW_ADC_STARTUP_TEST_01 (S,P,O)
CRC	<ul style="list-style-type: none"> SW_CRC_FUNCTIONAL_TEST_01(S,P,O)
CLOCK	<ul style="list-style-type: none"> SW_FAIL_SAFE_CLOCK_MONITOR_TEST(S,P,O)
PC	<ul style="list-style-type: none"> SW_PROGRAM_COUNTER_TEST(S,P,O)

12. Software License Information

This software is not re-distributable. A License file is usually distributed along with the software in the 'doc' folder. If it is not found, then check with the Microchip representative to get the relevant license before using this software.

13. Customer Support

Users of Microchip products can receive assistance through several channels:

- Distributor or Representative
- Local Sales Office
- Embedded Solutions Engineer (ESE)
- Technical Support

Customers should contact their distributor, representative or ESE for support. Local sales offices are also available to help customers. A listing of sales offices and locations is included in this document.

Technical support is available through the website at: www.microchip.com/support

14. The Microchip Website

Microchip provides online support via our website at www.microchip.com/. This website is used to make files and information easily available to customers. Some of the content available includes:

- **Product Support** – Data sheets and errata, application notes and sample programs, design resources, user’s guides and hardware support documents, latest software releases and archived software
- **General Technical Support** – Frequently Asked Questions (FAQs), technical support requests, online discussion groups, Microchip design partner program member listing
- **Business of Microchip** – Product selector and ordering guides, latest Microchip press releases, listing of seminars and events, listings of Microchip sales offices, distributors and factory representatives