Project: ASL eFix35 Head Array

Firmware Tag: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

Performed By: Trevor Parsh

Date: 1/11/2021

**NOTE**

The firmware tag above refers to the hash generated by Git and assigned to the specific code commit for the project that this report pertains to. Each hash is unique when comparing any arbitrary code commit to another code commit. The idea is that anyone can go back at any point in time and see the code base exactly as it is at the time of this review.

# Purpose

The purpose of this document is to document the Module Inspection performed on Software Source code.

# Definitions

Module – A file that contains one or more functions.

Function – Code that performs a specific task which may have inputs, outputs and processing.

# Procedure

Each software module is to be inspected individually and feedback provided appropriately. As a software review has never been performed on this code base, all modules are under inspection except for third party and unused modules. By process of elimination referencing the “Modules Inspected” list below, the modules not inspected may be determined.

Modules Inspected:

* stdlib/user\_assert.c
* stdlib/user\_assert.h
* drivers/ha\_hhp\_interface.c
* drivers/ha\_hhp\_interface.h
* drivers/general\_output\_ctrl.c
* drivers/general\_output\_ctrl.h
* device/RS232.h
* device/RS232.c
* device/device.h
* device/inc/device\_xc8.h
* common/stopwatch.c
* common/inc/stopwatch.h
* common/inc/common.h
* common/inc/config.h
* common/inc/head\_array\_common.h
* bsp\inc\beeper\_bsp.h
* bsp\XC8\beeper\_bsp.c
* bsp\inc\bluetooth\_simple\_if\_bsp.h
* bsp\XC8\bluetooth\_simple\_if\_bsp.c
* bsp\inc\bsp.h
* bsp\XC8\bsp.c
* bsp\inc\dac\_bsp.h
* bsp\XC8\dac\_bsp.c
* bsp\inc\eeprom\_bsp.h
* bsp\XC8\eeprom\_bsp.c
* bsp\inc\general\_output\_ctrl\_bsp.h
* bsp\XC8\general\_output\_ctrl\_bsp.c
* bsp\inc\ha\_hhp\_interface\_bsp.h
* bsp\XC8\ha\_hhp\_interface\_bsp.c
* bsp\inc\head\_array\_bsp.h
* bsp\XC8\head\_array\_bsp.c
* bsp\inc\test\_gpio.h
* bsp\XC8\test\_gpio.c
* bsp\inc\user\_button\_bsp.h
* bsp\XC8\user\_button\_bsp.c
* bsp\inc\isrs.h
* app\inc\app\_common.h
* app\app\_common.c
* app\inc\beeper.h
* app\beeper.c
* app\inc\eeprom\_app.h
* app\eeprom\_app.c
* app\inc\eFix\_Communication.h
* app\eFix\_Communication.c
* app\inc\general\_output\_ctrl\_app.h
* app\inc\general\_output\_ctrl\_cfg.h
* app\general\_output\_ctrl\_app.c
* app\inc\ha\_hhp\_interface\_app.h
* app\ha\_hhp\_interface\_app.c
* app\inc\head\_array.h
* app\head\_array.c
* app\isrs.c
* app\inc\led\_app.h
* app\led\_app.c
* app\main.c
* app\inc\MainState.h
* app\MainState.c
* app\inc\user\_button.h
* app\user\_button.c
* app\inc\rtos\_task\_priorities.h
* app\inc\version.h

Modules not Inspected (with explanation):

* device/inc/chip\_def/\* – All of these files are provided by the chip manufacturer, Microchip.
* device/inc/device\_ccs.h – This file is not used at all.
* bsp/CCS/\* – These files are not used at all.

**NOTE**

File version, a field related to specific modules, is assigned the value of the firmware tag of the latest commit for the module. The header and source files may have been updated at different times, so hashes of both are provided.

**NOTE**

The question “Are the function Inputs, Outputs and return value described?” in each module/file analyzed considsers a value of “yes” to mean not that absolutely every parameter and the return are described in the header. A value of “yes” denotes that any parameter and/or return value that is not quickly clear by looking at the function name, parameter name, and use of the parameter in the function body is described in the header. Parameters and return values that are clear otherwise are not needlessly explained in the function header.

**NOTE**

Modules that have issues that need attention and possible resolutions have the following line towards the top of the first page of module review:

**NOTICE: ISSUES TO RESOLVE**

Filename: stdlib/user\_assert.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X | There is only one function and is dead simple. |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: stdlib/user\_assert.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X | There is only one function and is dead simple. |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: drivers/ha\_hhp\_interface.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? |  | X |  | Could do with checking to make sure that rx\_buff does not point to a NULL buffer |
| Is all executable? |  | x |  |  |

Consider removing this file from the project as it is not used since it will only be called if OK\_TO\_USE\_HHP\_CODE symbol is defined.

Filename: drivers/ha\_hhp\_interface.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Consider removing this file from the project as it is not used since it will only be called if OK\_TO\_USE\_HHP\_CODE symbol is defined.

Filename: drivers/general\_output\_ctrl.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

Filename: drivers/general\_output\_ctrl.h

File Version: 7d2579f43b84202069128d8d64a1b042abcc43c5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: device/RS232.h

File Version: 38b693a4f148c8bd5403b1ed7cb1bfdc40813688

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: device/RS232.c

File Version: 82a7968dd3b3f1db9b759e8ebddafc7013a9a023

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

**Line 49:** There is commented out code that should either be removed or added in with appropriate commenting:

Filename: device/device.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: device/inc/device\_xc8.h

File Version: c2841fe82550c33e66ca31d9baaddfc3b198fce7

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: common/stopwatch.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  | X |  | All instances of stop\_watch param should be checked for NULL value. |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

**Line 98:** It should be “zero\_after\_check” and not “return”

Filename: common/inc/stopwatch.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: common/inc/common.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: common/inc/config.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: common/inc/head\_array\_common.h

File Version: 00d3b44e5be434983e3330a7e98e4786bfad0fe4

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Remove the enum DacSelect\_t if it has no use. If it “may be brought back in the future”, make a comment that explains this as the reasoning for keeping it around.

Filename: bsp\inc\beeper\_bsp.h

File Version: 988017c56276d2af35239da62e2aeab271d1d8b2

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: bsp\XC8\beeper\_bsp.c

File Version: f1668cc29f96bdd0842b4597bb3d6f65c406269d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | Line 87: Remove the extra space between function name and left paran for params. |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

Filename: bsp\inc\bluetooth\_simple\_if\_bsp.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

There are TODOs, but it is OK to release without addressing them. Performance and intended functionality is not impacted by not addressing them.

Filename: bsp\XC8\bluetooth\_simple\_if\_bsp.c

File Version: 9ea6b8696bd159b292aa1be1e23d60d54ceb95de

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

There are TODOs, but it is OK to release without addressing them. Performance and intended functionality is not impacted by not addressing them.

Filename: bsp\inc\bsp.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: bsp\XC8\bsp.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

Filename: bsp\inc\dac\_bsp.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

This module is not used at all. Consider removing completely or at least making a comment in the file header saying “this file is unused for now, may be used some time”. Remove inclusions of this file in other files.

Filename: bsp\XC8\dac\_bsp.c

File Version: 7183049dc37ca92c3290d56de990d7cb741f5067

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

This module is not used at all. Consider removing completely or at least making a comment in the file header saying “this file is unused for now, may be used some time”.

Filename: bsp\inc\eeprom\_bsp.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

This module is not used at all. Consider removing completely or at least making a comment in the file header saying “this file is unused for now, may be used some time”.

Filename: bsp\XC8\eeprom\_bsp.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

This module is not used at all. Consider removing completely or at least making a comment in the file header saying “this file is unused for now, may be used some time”.

Filename: bsp\inc\general\_output\_ctrl\_bsp.h

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | Change GenOutCtrlBsp\_INIT to GenOutCtrlBsp\_Init |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: bsp\XC8\general\_output\_ctrl\_bsp.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | Change GenOutCtrlBsp\_INIT to GenOutCtrlBsp\_Init. Add function header to GenOutCtrlBsp\_INIT |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

Various case statements in the file: either remove or add comments to explain why all GEN\_OUT\_CTRL\_ID\_INTERNAL\_SYS\_ACTION and GEN\_OUT\_CTRL\_ID\_BT\_LED are commented out.

Filename: bsp\inc\ha\_hhp\_interface\_bsp.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Consider removing this file from the project as it is not used since it will only be called if OK\_TO\_USE\_HHP\_CODE symbol is defined.

Filename: bsp\XC8\ha\_hhp\_interface\_bsp.c

File Version: 7183049dc37ca92c3290d56de990d7cb741f5067

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Consider removing this file from the project as it is not used since it will only be called if OK\_TO\_USE\_HHP\_CODE symbol is defined.

Filename: bsp\inc\head\_array\_bsp.h

File Version: 00d3b44e5be434983e3330a7e98e4786bfad0fe4

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | x |  |  |  |

Filename: bsp\XC8\head\_array\_bsp.c

File Version: 2fa3850231129562ef4c03b942dec1d64da28cd8

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | x |  |  |  |

Filename: bsp\inc\test\_gpio.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Consider removing this file from the project as it is not used anywhere.

Filename: bsp\XC8\test\_gpio.c

File Version: 92a416955ac02ce50da235511da439d0c32be704

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Consider removing this file from the project as it is not used anywhere.

Filename: bsp\inc\user\_button\_bsp.h

File Version: f1668cc29f96bdd0842b4597bb3d6f65c406269d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See notes below. |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Consider removing the following function: userButtonBspIsActive

Psuedo-name spacing of functions is not consistent. Should make them all consistent.

Filename: bsp\XC8\user\_button\_bsp.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | Y |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  | X |  | See comments below |
| Are comments appropriate? | Y |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See comments below |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  | X |  |  |
| Is error checking appropriately performed on inputs and outputs? |  | X |  |  |
| Is all executable? | X |  |  |  |

1. Consider removing the following function: userButtonBspIsActive
2. Psuedo-name spacing of functions is not consistent. Should make them all consistent.
3. Lot’s of commented out code with no explanation. Either remove or explain it.
4. Remove MODE\_BTN\_INIT and USER\_BTN\_INIT. If keeping them, add code to the functions and make them static local with function headers.
5. Remove the macro MODE\_BTN\_IS\_ACTIVE and put the code where the macro is used. This is to be consistent with other code in the file and also because it makes sense.

Filename: bsp\inc\isrs.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: app\inc\app\_common.h

File Version: 12ea09f5a4d1567f0edd3839218bf562e2b6031d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See comments below |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Remove commented out code or explain why it is commented out.
2. Inconsistent pseudo-name spacing between using appCommon and AppCommon.

Filename: app\app\_common.c

File Version: 12ea09f5a4d1567f0edd3839218bf562e2b6031d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

1. Remove commented out and code removed from compilation by “#ifdef ASL110” or explain why it is not active.
2. Change line 35 to “#include "beeper.h"”

Filename: app\inc\beeper.h

File Version: f1668cc29f96bdd0842b4597bb3d6f65c406269d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Remove commented out code or explain why it is commented out.
2. Consider adding comments for members of the BeepMsg\_t structure. The Use is not immediately clear.

Filename: app\beeper.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

1. Remove commented out code or explain why it is commented out.
2. At the very least, it looks like Beep\_t\_DONT\_USE\_CUZ\_BAD\_THINGS\_HAPPEN should be removed.

Filename: app\inc\eeprom\_app.h

File Version: 2645a542416db742c010f85a76d5854c63a283f7

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\eeprom\_app.c

File Version: 2645a542416db742c010f85a76d5854c63a283f7

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\inc\eFix\_Communication.h

File Version: 82a7968dd3b3f1db9b759e8ebddafc7013a9a023

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Psuedo-name spacing of functions is not consistent. Should make them all consistent.
2. Xc.h file inclusion unnecessary, nothing is used from it. Consider removing.
3. Microchip copyright statement is here, but this looks like all original code. Consider removing the Copyright.

Filename: app\eFix\_Communication.c

File Version: 9ea6b8696bd159b292aa1be1e23d60d54ceb95de

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  | X |  | All “buffer” params in the file are not checked for NULL pointer before use. |
| Is error checking appropriately performed on inputs and outputs? |  | X |  | See above. |
| Is all executable? | X |  |  |  |

1. Psuedo-name spacing of functions is not consistent. Should make them all consistent.
2. Consider getting rid of all of the magic numbers used to stuff and send the buffer to the eFix. E.G. line 282, lines 320->322, etc.
3. Line 264 should be expounded on. If the exact delay and reason for delay really does not matter, then say this. Otherwise, measure (providing actual delay time) and add explanation.
4. Consider using int8\_t for both parameters for SetSpeedAndDirection
5. Consider commenting on all variables. Make all variables static local instead of available to the whole program.
6. Remove all variables between and including lines 88->96
7. This is an 8-bit processor. I believe ints must be 16-bit otherwise this program wouldn’t work. Consider using int16\_t types for the two int type variables.

Filename: app\inc\general\_output\_ctrl\_app.h

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\inc\general\_output\_ctrl\_cfg.h

File Version: 4a1ffd636d7e925bbf10ef0d6610fca67e2fdd1c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\general\_output\_ctrl\_app.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\inc\ha\_hhp\_interface\_app.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\ha\_hhp\_interface\_app.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Not used at all, consider removing the module entirely.

Filename: app\inc\head\_array.h

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See below |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Psuedo-name spacing of functions is not consistent. Should make them all consistent.
2. Remove space in “PadsInNeutralState (void)”
3. Remove the include: #include <stdint.h>

Filename: app\head\_array.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See below |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? | X |  |  |  |
| Is all executable? | X |  |  |  |

1. Psuedo-name spacing of functions is not consistent. Should make them all consistent.
2. Remove space in “PadsInNeutralState (void)”
3. Remove commented out code or provide an explanation as to why it should live. This includes code left out of compilation due to “USE\_OLD\_CODE” being undefined. Also, remove code in the “TEST\_BASIC\_DAC\_CONTROL” block as it cannot be used as far as I can tell.

Filename: app\isrs.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: app\inc\led\_app.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Completely unused and unreferenced, remove this file.

Filename: app\led\_app.c

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Completely unused and unreferenced, remove this file.

Filename: app\main.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Consider filling in information for the “Modified for ASL on Date:” at the top of the file. Either fill it in, or just remove that line from all files that have it.
2. Should move “DEV\_TEST\_MirrorPadsOnBluetoothOutputs” function to its own module. It has use so it would be good to keep it in the code base.
3. Remove commented out code or provide an explanation as to why it should live.

Filename: app\inc\MainState.h

File Version: f1668cc29f96bdd0842b4597bb3d6f65c406269d

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See below. |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Should remove Microchip copyright as this is entirely written by ASL associated folks.
2. Fill in file header information
3. Pseudo-name spacing of functions is inconsistent.
4. Xc.h file inclusion unnecessary, nothing is used from it. Consider removing.

Filename: app\MainState.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  | X |  | Not on all functions. See below. |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? | X |  |  |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Remove commented out code or provide an explanation as to why it should live.
2. Just a suggestion: move the function prototype headers to the function definitions to stay consistent with the rest of the code base.
3. Remove line 73.
4. Remove “inc/” from include files as the relative path to the sub-directory should be added to the Include Folders path in the MPLAB X project.
5. Add comments for all file local variables as their use is not immediately clear without comments.
6. Add function definition headers to functions without one (e.g. Annunciate\_DrivingReady\_State).
7. Consider grouping private and public functions together.

Filename: app\inc\user\_button.h

File Version: 988017c56276d2af35239da62e2aeab271d1d8b2

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Pseudo-name spacing of functions is inconsistent.
2. ButtonAction\_t is not used at all, remove it.

Filename: app\user\_button.c

File Version: 7f20e4c723247b9a6d5b547b7859cb9c888fc39c

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? | X |  |  |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  | X |  | See below |
| Are endless loops appropriate? | X |  |  |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

1. Pseudo-name spacing of functions is inconsistent.
2. Remove commented out code or provide an explanation as to why it should live.
3. Remove the following functions as they are not used: ResetButtonMonitoring, CarryOutShortPressAction, CarryOutLongPressAction, FeatureIsValid
4. Did not deep dive, but, I imagine after ripping out unused code there are a few including header files whose inclusion may be removed.
5. Group private and public function definitions together.

Filename: app\inc\rtos\_task\_priorities.h

File Version: 4a1ffd636d7e925bbf10ef0d6610fca67e2fdd1c

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? | X |  |  |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? | X |  |  |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? | X |  |  |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? | X |  |  |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? | X |  |  |  |

Filename: app\inc\version.h

File Version: 5534de8c003d9140de813bd1365b962ccff39961

**NOTICE: ISSUES TO RESOLVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Description** | **Yes** | **No** | **N/A** | **Comments** |
| Is the File Header including Copyright Information included and File Name? |  |  | X |  |
| Are Function headers included?  Are the function Inputs, Outputs and return value described? |  |  | X |  |
| Are comments appropriate? |  |  | X |  |
| Is the format of the code appropriate? For example, are the Curly Braces and indentation consistent? |  |  | X |  |
| Are endless loops appropriate? |  |  | X |  |
| Are global functions and data clearly identified? |  |  | X |  |
| Are pointers evaluated for validity as appropriate? |  |  | X |  |
| Is error checking appropriately performed on inputs and outputs? |  |  | X |  |
| Is all executable? |  |  | X |  |

Consider removing. This file is a carry over and has not been used since the code base was created.