Audio Release Notes

MPLAB Harmony Integrated Software Framework

Release Information for Audio

Release Notes

This topic provides the release notes for this version of MPLAB Harmony Audio.

Description

MPLAB Harmony Audio Version: 3.1.0 **Release Date:** December 2018

Software Requirements

Before using MPLAB Harmony Audio, ensure that the following are installed:

- MPLAB X IDE 5.10 or later
- MPLAB XC32 C/C++ Compiler V2.10 or later
- MPLAB Harmony Configurator 3.1.0
- Harmony audio repository, 3.1.0
- Harmony bsp repository, 3.1.0
- Harmony csp repository, 3.10.0
- Harmony core repository, 3.1.0
- Harmony dev_packs repository, 3.1.0
- Harmony mhc repository, 3.1.0
- Harmony mplabx_plugin repository, 3.1.0
- CMSIS-FreeRTOS repository, 10.0.1 if building a FreeRTOS project (from www.github.com/arm-software/cmsis-freertos)

What is New and Known Issues

The following tables list the features that have been changed or added and any known issues that have been identified. Any known issues that have yet to be resolved were retained from the previous release.

Drivers:

Feature	Additions and Updates	Known Issues
Codec Driver	**Additions:** • Added WM8904 Codec Driver	None

Application Templates:

Template	Additions and Updates	Known Issues
Audio	**Additions:** • Added WM8904 Template	None

Applications:

Feature	Additions and Updates	Known Issues
Audio Demonstrations	**Added the following demonstrations:** Audio demonstrations for SAM E70: • audio_player_basic using SSC • audio_tone using I2SC and SSC, including one FreeRTOS project • audio_tone_linkeddma using I2SC and SSC • microphone_loopback using I2SC Audio demonstrations for SAM V71: • audio_tone using SSC • microphone_loopback using SSC	audio_player_basic demonstration: • A clicking sound is heard before the playback of a track. • When using the ICD4 debugger to program the SAM E70 X Plained Ultra board, USB MSD Host dynamic un/mounting may fail after the first mount and unmount. The app will need to be restarted in order to mount a storage device if this takes place. • Playback of only 8 and 16 bit data samples are currently supported. The app will skip any files with different data sample sizes. • Playback of files with more than 2 channels is not supported. May result in garbled audio and longer playback times. audio_tone_linkeddma demonstration: • When changing the frequency the first time, SW1 must be pressed twice.

Release Contents

This topic lists the contents of this release and identifies each module.

Description

This table lists the contents of this release, including a brief description, and the release type (Alpha, Beta, Production, or Vendor).
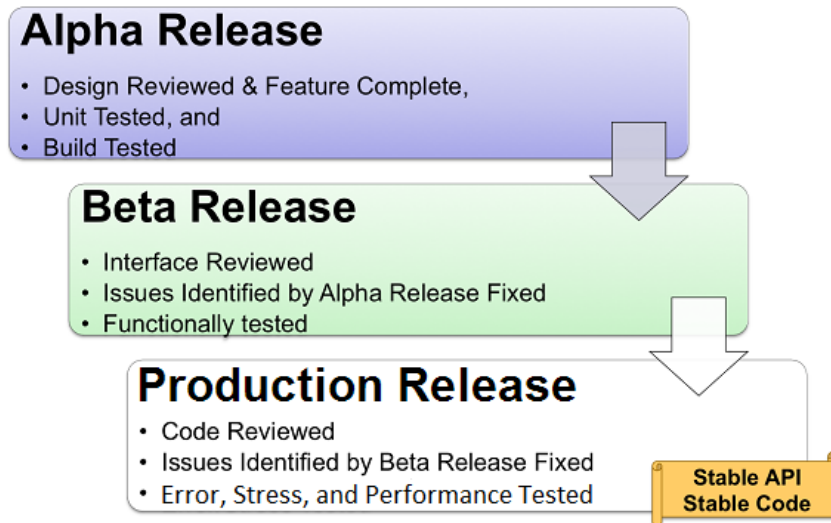
Folder	Description	Release Type
audio\apps\audio_player_basic	audio_player_basic application	Beta
audio\apps\audio_tone	audio_tone application	Beta
audio\apps\audio_tone_linkeddma	audio_tone_linkeddma application	Beta
audio\apps\microphone_loopback	microphone_loopback application	Beta
audio\driver\codec\WM8904	WM8904 Codec Driver	Beta
audio\templates\wm8904	Audio application template for SAM E70 Xplained Ultra	Beta

Release Types

This section describes the release types and their meaning.

Description

MPLAB Harmony module releases can be one of three different types, as shown in the following illustration.

Alpha Release

- Design Reviewed & Feature Complete,
- Unit Tested, and
- Build Tested

Beta Release

- Interface Reviewed
- Issues Identified by Alpha Release Fixed
- Functionally tested

Production Release

- Code Reviewed
- Issues Identified by Beta Release Fixed
- Error, Stress, and Performance Tested

**Stable API
Stable Code**

Alpha Release

An alpha release version of a module is usually an initial release. Alpha releases will have complete implementations of their basic feature set, they are functionally unit tested and will build correctly. An alpha release is a great "preview" of what a new development Microchip is working on and it can be very helpful for exploring new features. However, it has not gone through the complete formal test process and it is almost certain that some of its interface will change before the production version is released, and therefore, is not recommended for production use.

Beta Release

A beta release version of a module has gone through the internal interface review process and has had formal testing of its functionality. Also, issues reported from the alpha release will have been fixed or documented. When a module is in a beta version, you can expect it to function correctly in normal circumstances and you can expect that its interface is very close to the final form (although changes can still be made if required). However, it has not had stress or performance testing and it may not fail gracefully if used incorrectly.

Production Release

By the time a module is released in a production form, it is feature complete, fully tested, and its interface is "frozen". All known issues from previous releases will have been fixed or documented. The existing interface will not change in future releases. It may be expanded with additional features and additional interface functions, but existing interface functions will not change. This is stable code with a stable Application Program Interface (API) that you can rely on for production purposes.

Version Numbers

This section describes the meaning of MPLAB Harmony version numbers.

Description

MPLAB Harmony Version Numbering Scheme

MPLAB Harmony uses the following version numbering scheme:

`<major>.<minor>[.<dot>][<release type>]`

Where:

`<major>` = Major revision (significant change that affects many or all modules)

`<minor>` = Minor revision (new features, regular releases)

`[.<dot>]` = Dot release (error corrections, unscheduled releases)

`[<release type>]` = Release Type (a for alpha and b for beta, if applicable). Production release versions do not include a release type letter.

Version String

The SYS_VersionStrGet function will return a string in the format:

`"<major>.<minor>[.<patch>][<type>]"`

Where:

`<major>` is the module's major version number

`<minor>` is the module's minor version number

`<patch>` is an optional "patch" or "dot" release number (which is not included in the string if it equals "00")

`<type>` is an optional release type of "a" for alpha and "b" for beta. This type is not included if the release is a production version (i.e., not an alpha or a beta)

> **Note:**   The version string will not contain any spaces.

Example:
```
"0.03a"
"1.00"
```

Version Number

The version number returned from the SYS_VersionGet function is an unsigned integer in the following decimal format (not in a BCD format).

```
<major> * 10000 + <minor> * 100 + <patch>
```

Where the numbers are represented in decimal and the meaning is the same as described in Version String.

> **Note:**   There is no numerical representation of the release type.

Example:

For version "0.03a", the value returned is equal to: 0 * 10000 + 3 * 100 + 0.

For version "1.00", the value returned is equal to: 1 * 100000 + 0 * 100 + 0.

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