RN0046
Release note

Simple MAC library for STM32W108xx starter and extension kits

1 Introduction

About this release note

This release note is related to the Simple MAC library of the STM32W108xx starter and extension kits (part numbers are STM32W-SK and STM32W-EXT, respectively). This document describes the library software and documentation tree.

The Simple MAC library provides a set of APIs used to access the lower-MAC IEEE 802.15.4 functions of the STM32W108HB and STM32W108CD microcontrollers (STM32W108xx). It supports point-to-point communications based on the IEEE 802.15.4 protocol.

This release note is updated periodically to keep you abreast of all software updates and of any problems or limitations found in this release. Check the ST Internet website at www.st.com/mcu for the latest version of this release note (STM32W section).

Contents

1.1 Overview of the release note

This document concerns release 1.0.1 of the Simple MAC library for the STM32W108xx starter and extension kits.

New features

- HAL
  - HAL enhancement including parts previously delivered in binary form and now in source form for clock management, MCU initialization and Flash memory management.
  - Added support for the in-application programming (IAP) bootloader (OTA and UART modes).
  - Clean-up of comments.
  - Removed unused APIs and defines.
- Simple MAC library
  - Simple MAC library now targets only the radio and not parts of the HAL.
- Demonstration applications
  - Added IAR project and prebuilt binary image for the IAP bootloader.
  - Added IAR workspaces for the talk, sample_sun and sample_planet demonstration applications supporting the IAP bootloader.
  - Added IAR project and source codes for the bootloader demonstration application showing the OTA bootloader feature (bootloader_demo.eww).
- stm32w_flasher utility
  - Added new options for supporting the OTA bootloader through the OTA by-pass application.
  - Added new option for device already in Bootloader mode (only for RS-232 interface).
- Documentation
  - Added HTML documentation for the OTA bootloader demonstration application.
  - Added document describing the Simple MAC nodetest application.
  - Added HTML documentation describing the stm32w_flasher utility.

Limitations

Refer to *Section 4*.

Customer support

For more information or help concerning this software, please refer to the Internet website www.st.com/mcu (STM32W section).

Software updates

You can download software updates together with the latest documentation from the STM32W section of the ST Internet website, www.st.com/mcu.

2 Read me first

This section provides important information about release 1.0.1 of the Simple MAC library for the STM32W108xx starter and extension kits.

Host PC system requirements

Release 1.0.1 of the Simple MAC library requires a PC and compatible hardware running with the Windows XP® operating system.

You must have administrator privileges to install the IAR Embedded Workbench for ARM (version 5.40.7 or 5.41) used for building the Simple MAC demonstration applications.

3 Release 1.0.1 overview

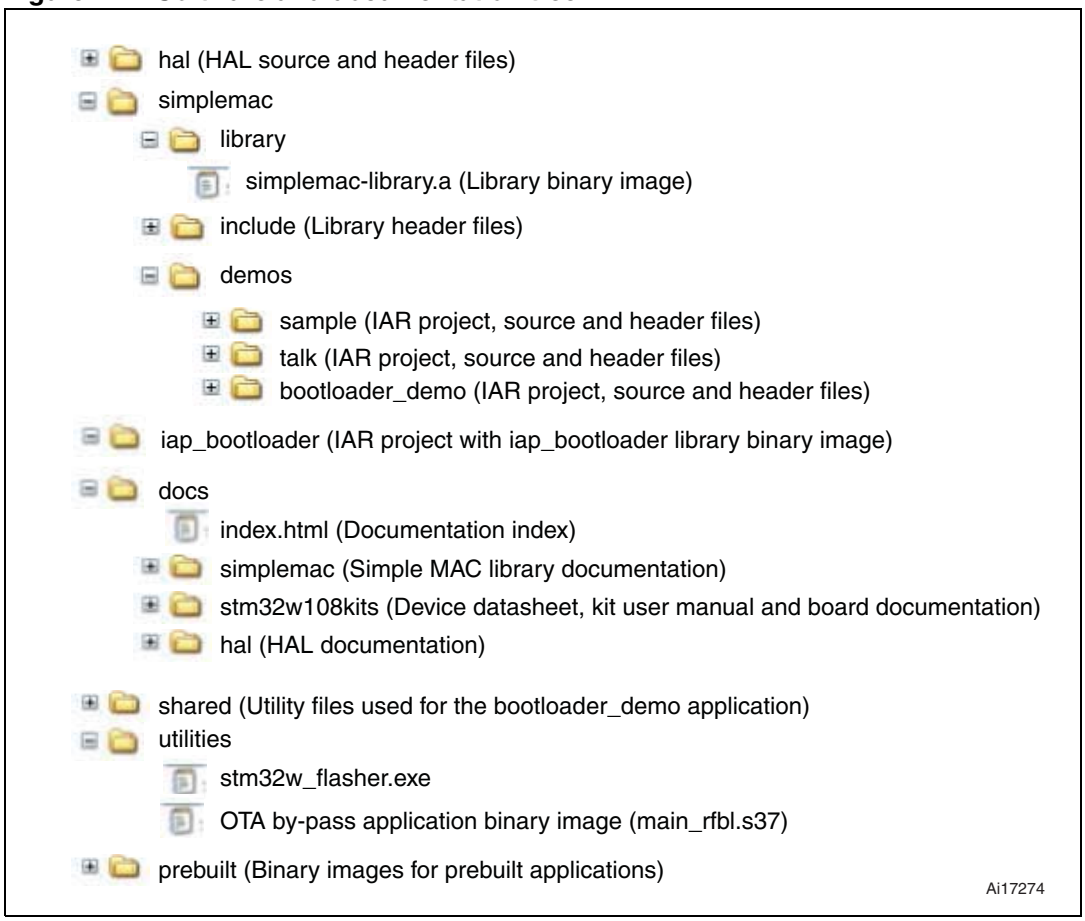
The installer file for the Simple MAC library software and documentation tree is available from www.st.com/mcu, under the STM32W section. The installer file contains the following software and documentation:

- STM32W108 Simple MAC library
- HAL APIs used for driving the STM32W108xx microcontrollers.
- Simple MAC demonstration applications:
  - Sample demonstration application which allows setting up a basic star network
  - Talk demonstration application which consists in a simple chat program illustrating point-to- point IEEE 802.15.4 wireless communications
  - Bootloader demonstration application which allows uploading over the air the STM32W108 Flash image with a fixed application image
- Simple MAC nodetest application meant for functional testing of RF modules (delivered only in binary format)
- stm32w_flasher utility which allows uploading the STM32W108xx with a binary image
- IAP bootloader application and IAP bootloader library binary image
- STM32W108xx starter and extension kits (Simple MAC library) release note (RN0046)
- STM32W108xx Simple MAC library user manual (UM0893)
- Doxygen documentation for the STM32W108 Simple MAC library APIs
- Doxygen documentation for HAL APIs
- STM32W108 Simple MAC demonstration applications documentation
- STM32W108 Simple MAC nodetest application user manual (UM0978)
- stm32w_flasher utility documentation
- STM32W-SK and STM32W-EXT starter and extension kits user manual (UM0894)
- STM32W108xx datasheet
- STM32W108 MB850 and MB851 schematics, bill of materials and Gerber files

3.1 Simple MAC library software and documentation tree

After the installation process, the following software and documentation tree is available in the selected user installation folder.

Figure 1. Software and documentation tree



3.1.1 Release 1.0.1 main features

The STM32W108 Simple MAC library supports the following API classes:

- Radio power state control APIs which control the overall radio initialization and power state
- Radio channel APIs which control channel selection and calibration
- Radio power APIs
- Radio transmit APIs which handle the transmission of packets
- Radio receive APIs which handle the reception of packets
- Radio Cryptography APIs which provide an interface to the hardware AES coprocessor
- Radio MAC timer APIs to interface with the MAC timer
- Miscellaneous radio APIs which perform MAC diagnostic and configuration actions

3.1.2 Corrections/changes

None.

3.2 Hardware and targets supported by release 1.0.1

The STM32W108xx Simple MAC library supports STM32W108 engineering samples and STM32W108xBU64 microcontrollers. The demonstration applications run on the following platforms:

- STM32-Primer2 with the MB850 extension board
- The MB851 application board

Note: These platforms are delivered within the STM32W108-SK and STM32W108-EXT starter and extension kits. For information about the STM32W108 kits, refer to user manual UM0894 available from www.st.com/mcu (STM32W section).

4 Known problems and limitations

4.1 Installer

None.

4.2 IAR toolset

None.

4.3 Simple MAC library

None.

5 Summary of previous releases

This section lists the information related to the previous major releases of the Simple MAC library for the STM32W108xx starter and extension kits.

Release 1.0.1 (July 2010)

- Added support for IAP bootloader (Over-the-air and UART modes)
- Reviewed HAL and Simple MAC library (APIs, comments clean-up and enhancement)
- Added new options to the stm32w_flasher utility
- Added description for the OTA bootloader demonstration application
- Added html document describing stm32w_flasher utility
- Added documentation for the Simple MAC nodetest application

Release 1.0.0

Initial release.

6 Revision history

Table 1. Document revision history

Date	Revision	Changes
04-Mar-2010	1	Initial release.
19-Aug-2010	2	New release supporting the OTA bootloader, reviewed HAL and Simple MAC library and stm32w_flasher with new options.
25-Aug-2010	3	Added comments related to the IAP bootloader (OTA and UART modes).