X-CUBE-WIFI1

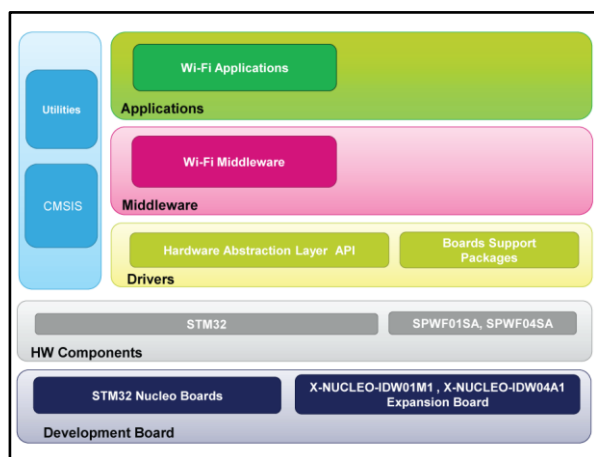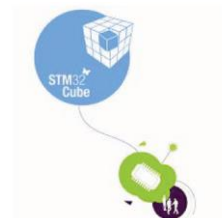## Wi-Fi software expansion for STM32Cube

Description

X-CUBE-WIFI1 is an expansion software package for STM32Cube. The software runs on STM32 and can be used for building Wi-Fi applications with the SPWF01SA/SPWF04SA module. It is built on top of the STM32Cube software technology, which eases portability across different STM32 microcontrollers.

The X-CUBE-WIFI1 software comes with sample applications, running on the X-NUCLEO-IDW01M1 or X-NUCLEO-IDW04A1 when plugged to a NUCLEO-F103RB, NUCLEO-F401RE or NUCLEO-L053R8 board.

Features

- Complete middleware to build applications using the SPWF01SA/SPWF04SA Serial-to-Wi-Fi module
- Easy to use abstract APIs to configure and use SPWF01SA/SPWF04SA
- easy portability across different MCU families, thanks to STM32Cube
- Free user-friendly license terms
- Sample implementations available on X-NUCLEO-IDW01M1 or X-NUCLEO-IDW04A1 board when plugged to a NUCLEO-F103RB, NUCLEO-F401RE, NUCLEO-L053R8 or NUCLEO-L476RG board

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What is STM32Cube?

STMCube™ is designed by STMicroelectronics to reduce development effort, time and cost across the entire STM32 portfolio.

STM32Cube version 1.x includes:

- STM32CubeMX, a graphical software configuration tool that allows the generation of C initialization code using graphical wizards.
- A comprehensive embedded software platform specific to each series (such as the STM32CubeF4 for the STM32F4 series), which includes:
  - the STM32Cube HAL embedded abstraction-layer software, ensuring maximized portability across the STM32 portfolio
  - a consistent set of middleware components such as RTOS, USB, TCP/IP and graphics
  - all embedded software utilities with a full set of examples

How does this software complement STM32Cube?

This software is based on the STM32CubeHAL hardware abstraction layer for the STM32 microcontroller. The package extends STM32Cube with a board support package (BSP) for the Wi-Fi expansion board and certain middleware components for communicating with access points or other Wi-Fi devices when the module acts as an access point.

SPWF01SA/SPWF04SA are a CE, FCC and IC certified Serial-to-Wi-Fi module with integrated amplifier and SMD antenna which. The drivers abstract low-level hardware details and allow the middleware components and applications to access the SPWF01SA/SPWF04SA device in a hardware independent fashion.

The software package also includes several sample applications that the developer can use to start experimenting with the code:

- HTTP Request: this application can be used to access resources from a web server.
- Client Socket: this application configures the Wi-Fi module in STA mode; it can be used to open a TCP socket and read/write data from/to it.
- Server Socket: this application configures the Wi-Fi module in MiniAP mode and can be used to manage multiple clients.
- VCOM example: this application can be used for direct AT command communication with the module via serial port.
- FW_Upgrade_UART: this application is used to bridge the STM32 USB/UART to the Expansion board UART. This is done so that the demonstrator GUI Flasher application on the PC can connect to the module to flash firmware directly to the module.

1 Revision history

Table 1: Document revision history

Date	Version	Changes
30-Oct-2015	1	Initial release.
13-Nov-2015	2	Updated cover page Features and Description.
24-Feb-2016	3	Added NUCLEO-L476RG compatibility information.
15-Mar-2017	4	Updated cover page Figure, Features and Description.

IMPORTANT NOTICE – PLEASE READ CAREFULLY