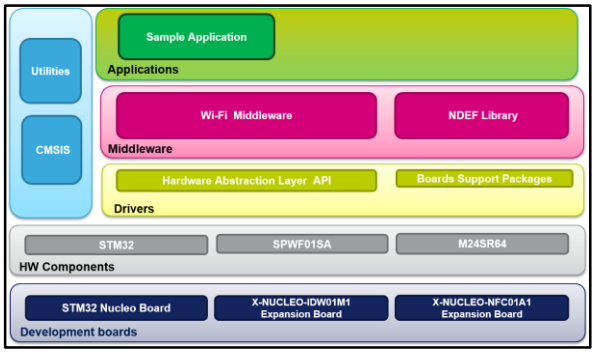
FP-SEC-WIFINFC1

Wi-Fi and dynamic NFC software expansion for STM32Cube

Data brief



Features

- Complete middleware to build applications using Wi-Fi connectivity (SPWF01SA Serial-to-Wi-Fi Module) and M24SR64-Y dynamic NFC/RFID tag using NDEF standard
- The package is compatible with the motion sensor LSM6DS3 DIL24 expansion component
- Easy portability across different MCU families, thanks to STM32Cube
- Wi-Fi network pairing parameters such as SSID and password can be written by any NFC-capable phone and can be read by the application software to connect with any wireless network.
- Sample implementation available on X-NUCLEO-NFC01A1 and X-NUCLEO-IDW01M1 boards when plugged onto NUCLEO-F401RE board

Description

Developers can use the FP-SEC-WIFINFC1 software expansion package for STM32Cube to negotiate secure Wi-Fi connections on any NFC-capable phone; Wi-Fi credentials are stored on a dynamic NFC tag device, in compliance with the NDEF standard.

The expansion is built on STM32Cube software technology to ease portability across different STM32 microcontrollers. The software runs on the STM32 microcontroller and includes drivers for the ST Wi-Fi module (SPWF01SA) and dynamic NFC tag device (M24SR64-Y).

A sample implementation of the drivers running on the X-NUCLEO-IDW01M1 and the X-NUCLEO-NFC01A1 expansion boards plugged on top of a NUCLEO-F401RE STM32 Nucleo board is bundled with the package.

Information regarding STM32Cube is available on www.st.com at *http://www.st.com/stm32cube*

What is STM32Cube?

STMCube™ represents the STMicroelectronics initiative to make developers' lives easier by reducing development effort, time and cost. STM32Cube covers the 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 by providing:

- A board support package (BSP) for the Wi-Fi and the dynamic NFC tag expansion boards
- Middleware components to enable communication with other Wireless networks and store secure Wi-Fi pairing information on an NFC/RFID tag. This information is compliant with the NDEF standard and can be read/written by any NFC-capable device.

The drivers abstract low-level hardware details so that middleware components and applications can access the dynamic NFC tag device in a hardware-independent manner.

The package includes a sample application that the developer can use to start experimenting with the code. For this purpose, the sample application was developed to enable Wi-Fi - NFC pairing and secure wireless network connection.

Revision history

Table 1: Document revision history

Date	Version	Changes
02-Mar-2016	1	Initial release.

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