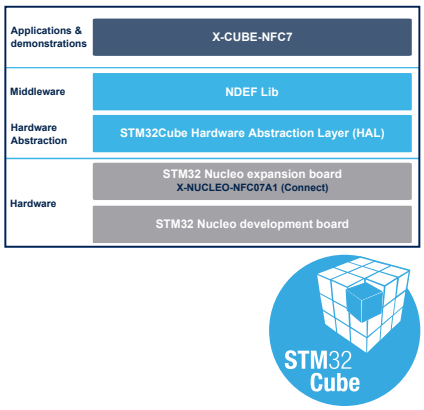
X-CUBE-NFC7

Data brief

Dynamic NFC/RFID tag IC software expansion for STM32Cube



Features

- Complete middleware to build applications using the ST25DV64KC dynamic NFC/RFID tag IC
- Easy portability across different MCU families, thanks to STM32Cube
- Sample applications to:
  - Enable energy harvesting
  - Activate GPO interrupt
  - Activate low power down
  - Set I²C protection
  - Use ST25DV64KC mailbox
  - Write URI NDEF
- Free, user-friendly license terms
- Sample implementation available on the X-NUCLEO-NFC07A1 expansion board, plugged into a NUCLEO-F401RE, NUCLEO-L053R8, or NUCLEO-L476RG development board
- Package compatible with STM32CubeMX: it can be downloaded from and installed directly into STM32CubeMX

Description

The X-CUBE-NFC7 software expansion for STM32Cube provides a complete middleware for STM32 to build applications using the ST25DV64KC dynamic NFC/RFID tag IC.

The software is based on STM32Cube technology and expands STM32Cube-based packages. It is built on top of STM32Cube software technology to ease portability across different STM32 microcontrollers.

The software comes with sample implementations of the drivers running on the X-NUCLEO-NFC07A1 expansion board plugged on top of a NUCLEO-F401RE, NUCLEO-L053R8, or NUCLEO-L476RG development board.

Product summary	
Dynamic NFC/RFID tag IC software expansion for STM32Cube	X-CUBE-NFC7
Dynamic NFC/RFID tag IC expansion board based on ST25DV64KC for STM32 Nucleo	X-NUCLEO-NFC07A1
Dynamic NFC/RFID tag IC with 64-Kbit EEPROM and fast transfer mode capability	ST25DV64KC-IE6S3
Applications	NFC

1 Detailed description

1.1 What is STM32Cube?

STM32Cube is a combination of a full set of PC software tools and embedded software blocks running on STM32 microcontrollers and microprocessors:

- STM32CubeMX configuration tool for any STM32 device; it generates initialization C code for Cortex-M cores and the Linux device tree source for Cortex-A cores
- STM32CubeIDE integrated development environment based on open-source solutions like Eclipse or the GNU C/C++ toolchain, including compilation reporting features and advanced debug features
- STM32CubeProgrammer programming tool that provides an easy-to-use and efficient environment for reading, writing and verifying devices and external memories via a wide variety of available communication media (JTAG, SWD, UART, USB DFU, I2C, SPI, CAN, etc.)
- STM32CubeMonitor family of tools (STM32CubeMonRF, STM32CubeMonUCPD, STM32CubeMonPwr) to help developers customize their applications in real-time
- STM32Cube MCU and MPU packages specific to each STM32 series with drivers (HAL, low-layer, etc.), middleware, and lots of example code used in a wide variety of real-world use cases
- STM32Cube expansion packages for application-oriented solutions.

1.2 How does this software complement STM32Cube?

The proposed software is based on the STM32CubeHAL, which is the hardware abstraction layer for the STM32 microcontroller.

The package extends STM32Cube by providing a board support package (BSP) for the X-NUCLEO-NFC07A1 expansion board for STM32 Nucleo. It also provides some middleware components for the NDEF application drivers and the PC software communication library.

The drivers abstract low-level details of the hardware and allow the middleware components and applications to access the NDEF data in a hardware-independent manner. They also allow performing the communication with a PC software through the USB link.

The package also includes some examples that the developers can use to start experimenting with the code. The examples were developed to allow the user to activate the ST25DV64KC features.

The project includes the following examples:

- Enable energy harvesting
- Activate GPO interrupt
- Activate LPD
- Set I²C protection
- Use ST25DVxxKC mailbox
- Write URI NDEF

Revision history

Table 1. **Document revision history**

Date	Revision	Changes
19-Jan-2022	1	Initial release.

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