

Dynamic NFC/RFID tag IC expansion board based on ST25DV64KC for STM32 Nucleo



Features

- ST25DV64KC dynamic NFC/RFID tag for STM32 Nucleo
- Up to 4-Kbit memory with NDEF support
- 54 mm diameter, single-layer circular antenna
- Compatible with [STM32 Nucleo](#) boards
- Equipped with Arduino UNO R3 connector
- Self-powered or powered through the Arduino UNO R3 connectors
- Three general-purpose LEDs
- Scalable solution, capable of cascading multiple boards for larger systems
- Free comprehensive development firmware library and example for ST25DV64KC, compatible with [STM32Cube](#) firmware
- FCC and IC verified
- RoHS compliant

Description

The X-NUCLEO-NFC07A1 dynamic NFC/RFID tag IC expansion board is based on the ST25DV64KC dynamic NFC/RFID tag IC with a 64-Kbit dual interface EEPROM and fast transfer mode feature. It can be powered through the [STM32 Nucleo](#) development board or directly through the received carrier electromagnetic field.

The X-NUCLEO-NFC07A1 expansion board is compatible with the Arduino UNO R3 connector pin assignment and can easily be plugged onto any [STM32 Nucleo](#) development board. You can stack other expansion boards to evaluate different devices that work together with the dynamic NFC tag.

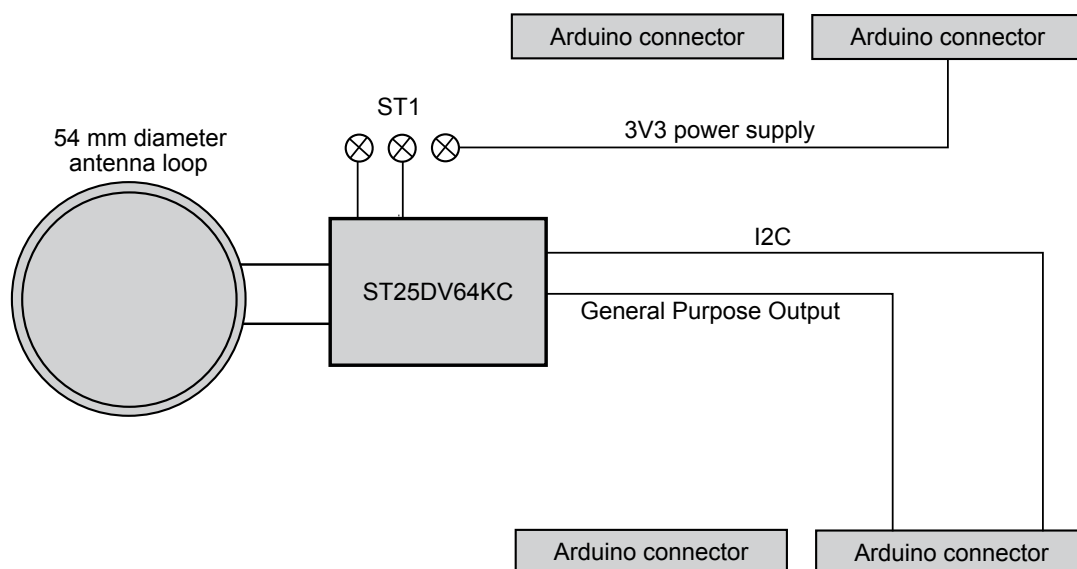
The board also features a single-layer antenna with a diameter of 54 mm and copper etched on the PCB.

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

1 Detailed description

The **X-NUCLEO-NFC07A1** is based on the **ST25DV64KC** 64-Kbit dynamic NFC/RFID tag NFC forum type V with I²C interface, fast transfer mode, and energy harvesting.

Figure 1. Functional block diagram



The **ST25DV64KC** is an NFC type V/RFID tag IC with a dual-interface 64-kBit electrically erasable programmable read-only memory (EEPROM) that also features an I²C interface. It can be powered either from an external power supply or directly by the received carrier electromagnetic field. The tag features an event-configurable interruption output and supports multi-interruption:

- Field change
- RF busy
- Mail box filled
- E² update
- RF user interrupt
- RF user set/reset

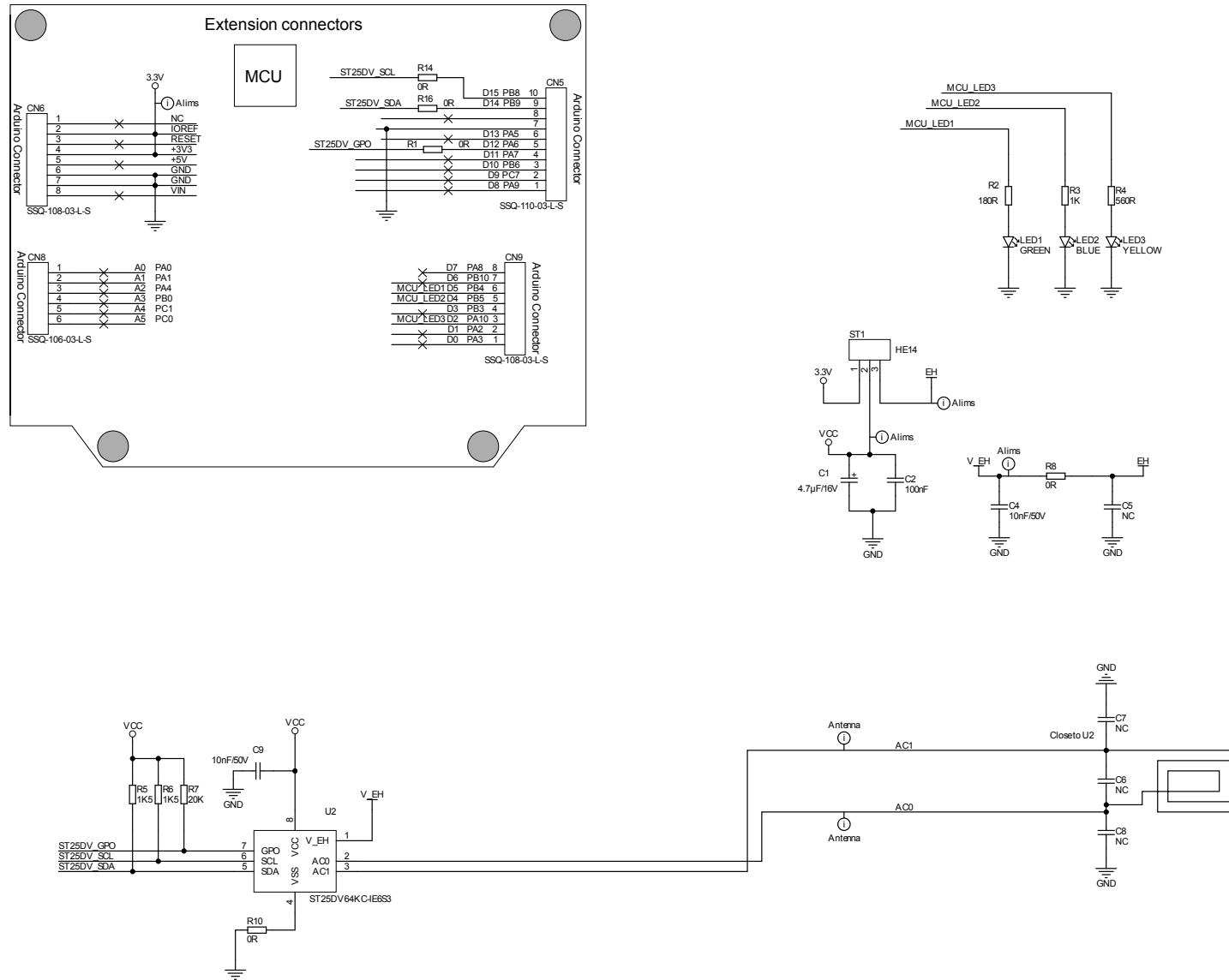
The **ST25DV64KC** also features an energy harvesting mode. When activated, the **ST25DV64KC** delivers a voltage on the V_{OUT} analog pin. In case the RF field strength is not sufficient or when the energy harvesting mode is disabled, the V_{OUT} pin goes into high-Z state. The energy harvesting mode is then automatically stopped.

The **X-NUCLEO-NFC07A1** is compatible with the Arduino UNO R3 connector pin assignment. It interfaces with the STM32 microcontroller via the I²C pins.

2

Schematic diagrams

Figure 2. X-NUCLEO-NFC07A1 circuit schematic



3 Board versions

Table 1. X-NUCLEO-NFC07A1 versions

Finished good	Schematic diagrams	Bill of materials
X\$NUCLEO-NFC07A1 ⁽¹⁾	X\$NUCLEO-NFC07A1 schematic diagrams	X\$NUCLEO-NFC07A1 bill of materials

1. This code identifies the X-NUCLEO-NFC07A1 evaluation board first version.

Revision history

Table 2. Document revision history

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

IMPORTANT NOTICE – PLEASE READ CAREFULLY

STMicroelectronics NV and its subsidiaries ("ST") reserve the right to make changes, corrections, enhancements, modifications, and improvements to ST products and/or to this document at any time without notice. Purchasers should obtain the latest relevant information on ST products before placing orders. ST products are sold pursuant to ST's terms and conditions of sale in place at the time of order acknowledgement.

Purchasers are solely responsible for the choice, selection, and use of ST products and ST assumes no liability for application assistance or the design of Purchasers' products.

No license, express or implied, to any intellectual property right is granted by ST herein.

Resale of ST products with provisions different from the information set forth herein shall void any warranty granted by ST for such product.

ST and the ST logo are trademarks of ST. For additional information about ST trademarks, please refer to www.st.com/trademarks. All other product or service names are the property of their respective owners.

Information in this document supersedes and replaces information previously supplied in any prior versions of this document.

© 2022 STMicroelectronics – All rights reserved