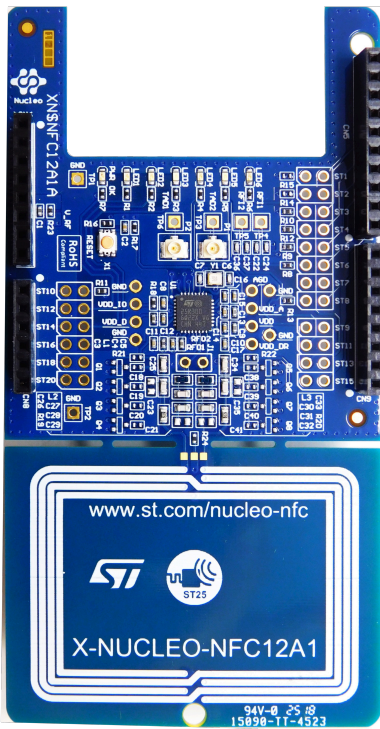


NFC card reader expansion board based on ST25R300 for STM32 Nucleos



Features

- On-board NFC card reader and host card emulation IC: **ST25R300**
- NFC Forum NFC-A, NFC-B, NFC-F and NFC-V poller
- NFC Forum NFC-A, NFC-F listener
- 13.56 MHz inductive antenna, 47 mm x 34 mm, four turns, etched on PCB and associated tuning circuit
- Possibility of driving two antennas in single-ended configuration
- Six general-purpose LEDs
- Equipped with Arduino UNO R3 connector
- Free comprehensive development firmware library compatible with **STM32Cube** and samples for **ST25R300**
- FCC certified
- RoHS and WEEE compliant

Description

The X-NUCLEO-NFC12A1 NFC card reader expansion board is based on the ST25R300 device.

The expansion board is configured to support all five NFC Forum tag types in reader mode.

The **ST25R300** manages frame coding and decoding in reader mode for standard applications.

It supports ISO/IEC 14443 type A/B and ISO/IEC 15693 (single subcarrier only) and ISO/IEC 18092 communication protocols as well as the detection, reading and writing of NFC Forum type 1, 2, 3, 4, and 5 tags.

Integrated HF reader/NFC initiator/NFC target IC with an antenna etched on the PCB and the related tuning circuit.

Product summary

NFC card reader expansion board based on ST25R300 for STM32 Nucleos	X-NUCLEO-NFC12A1
High-end NFC reader for NFC charging, payment and consumer applications	ST25R300-AQET
High-performance HF reader/NFC initiator IC software expansion for STM32Cube	X-CUBE-NFC12
Applications	Wireless Connectivity

1 Schematic diagrams

Figure 1. X-NUCLEO-NFC12A1 circuit schematic (1 of 3)

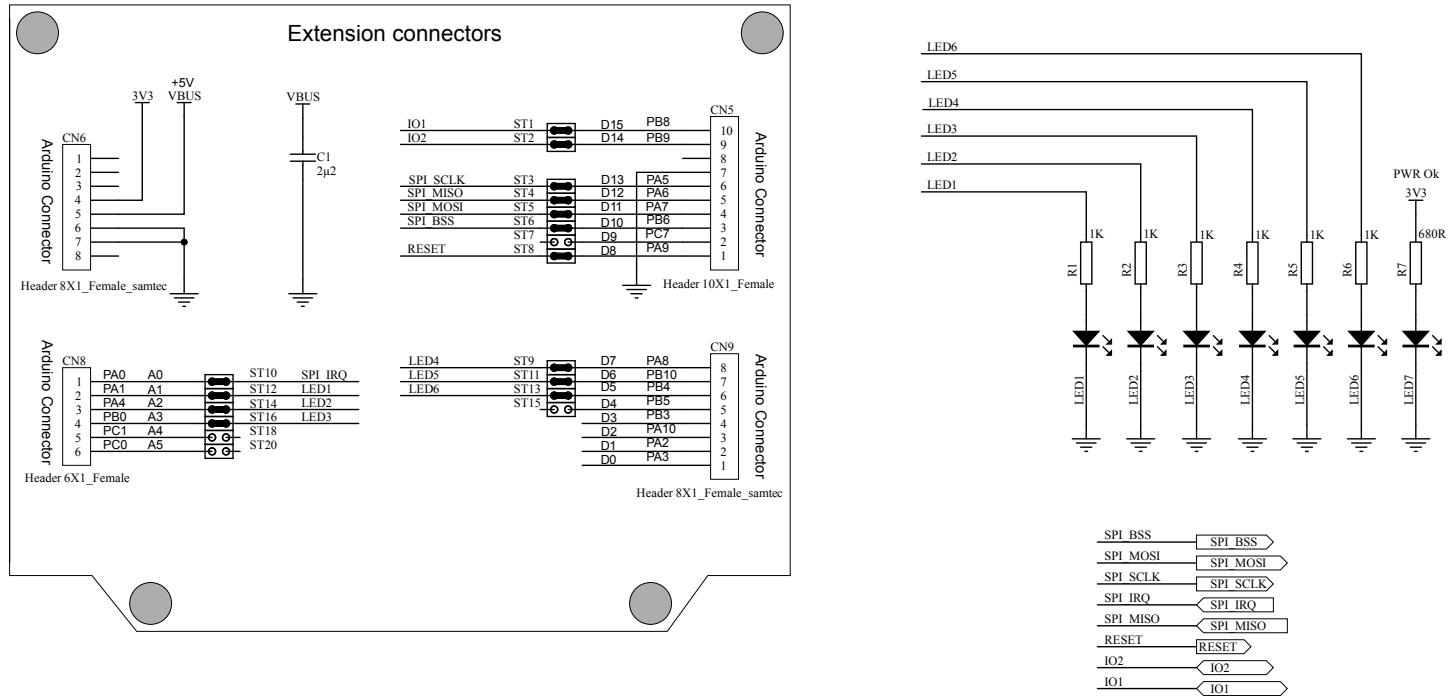


Figure 2. X-NUCLEO-NFC12A1 circuit schematic (2 of 3)

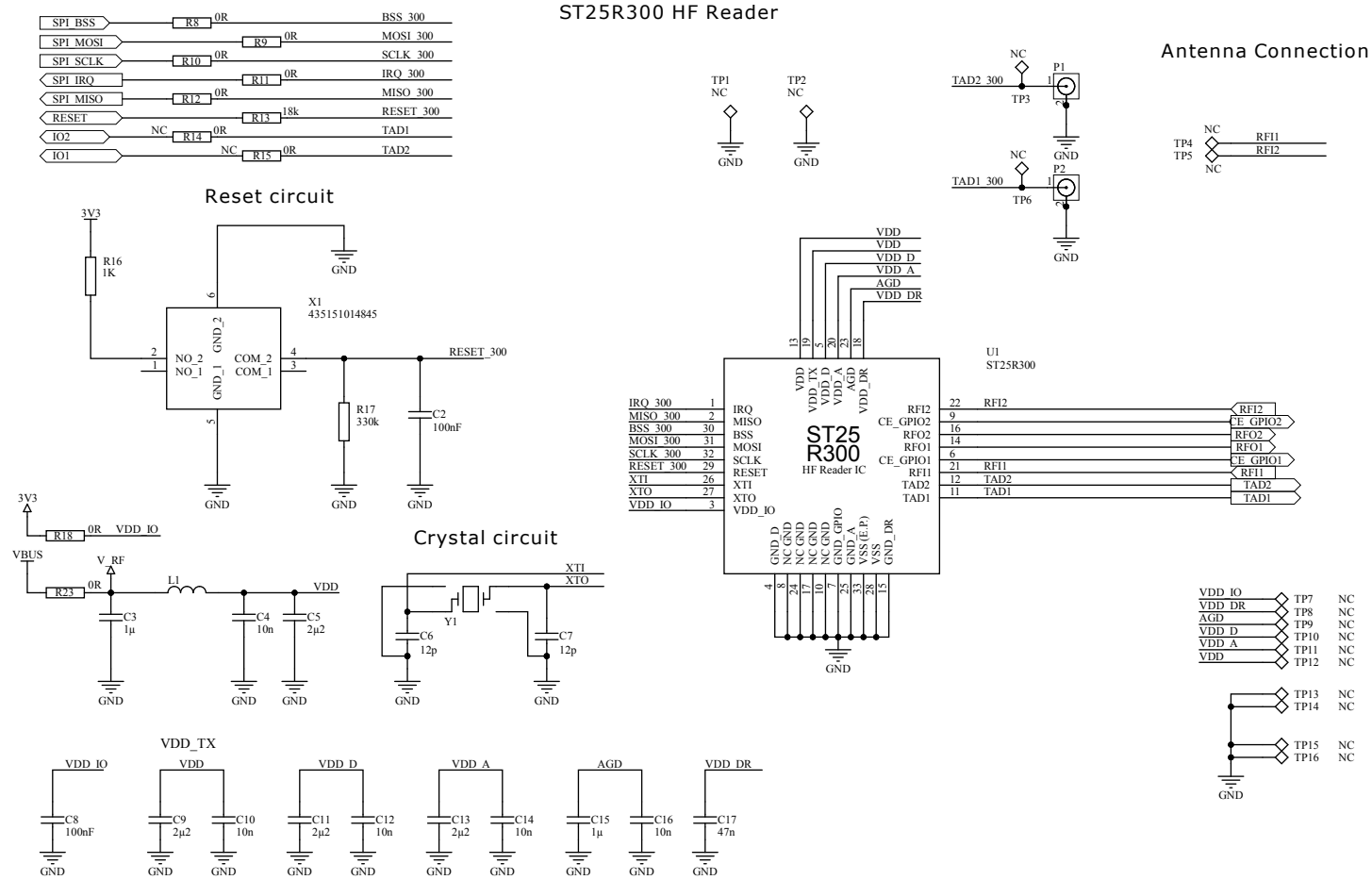
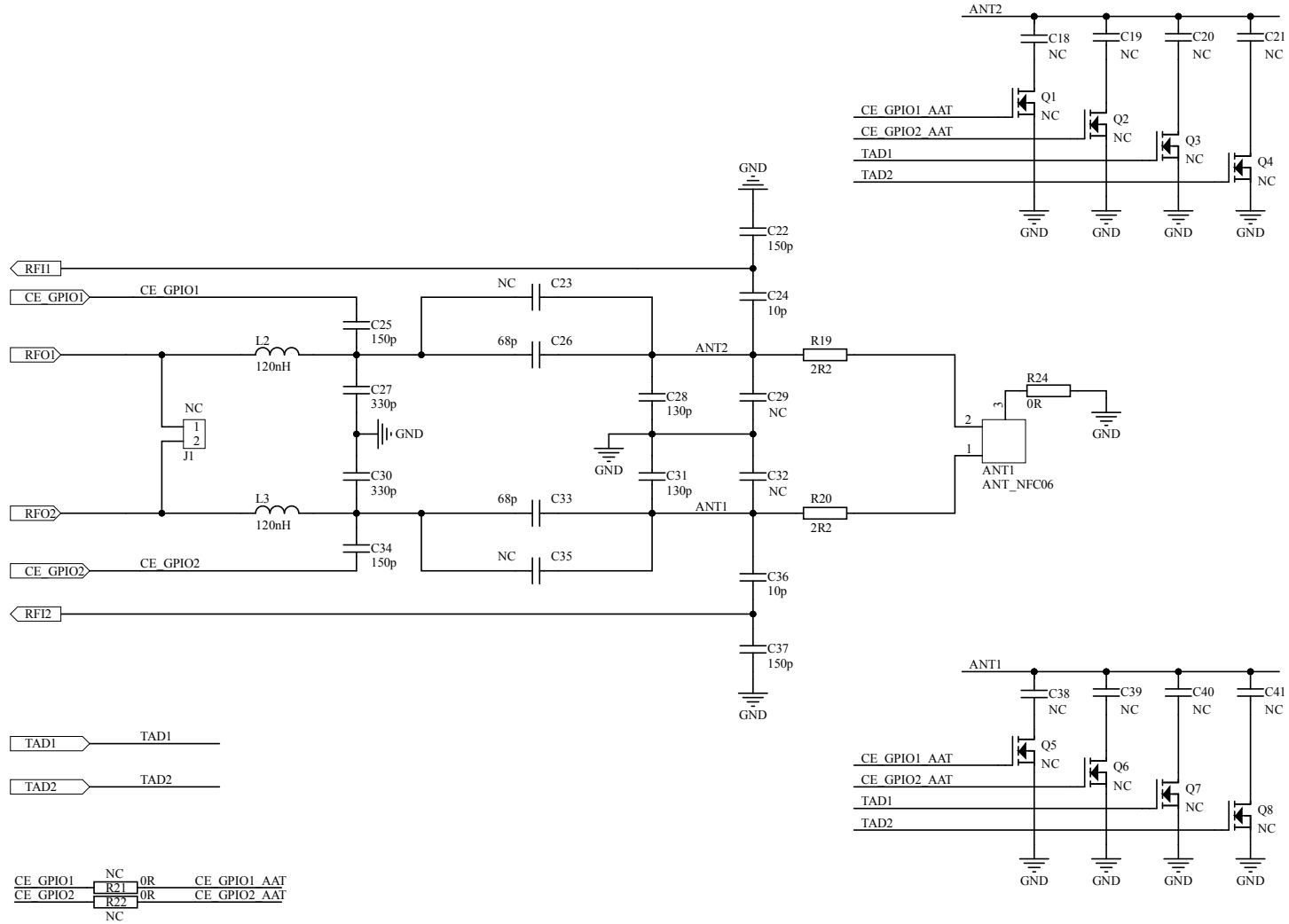


Figure 3. X-NUCLEO-NFC12A1 circuit schematic (3 of 3)



2 Board versions

Table 1. X-NUCLEO-NFC12A1 versions

PCB version	Schematic diagrams	Bill of materials
XN\$NFC12A1A ⁽¹⁾	XN\$NFC12A1A schematic diagrams	XN\$NFC12A1A bill of materials

1. This code identifies the X-NUCLEO-NFC12A1 expansion board first version. It is printed on the board PCB.

Revision history

Table 2. Document revision history

Date	Revision	Changes
05-Mar-2025	1	Initial release.
25-Jun-2025	2	Updated cover image.
22-Dec-2025	3	Updated Schematic diagrams.

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