

X-NUCLEO-NFC05A1 Operational Description

The X-NUCLEO-NFC05A1 is an NFC card reader evaluation board based on ST25R3911B integrated circuit to allow expansion of the STM32 Nucleo boards. The ST25R3911B is card reader IC for contact-less application that provides the 13.56MHz air interface, frame coding and decoding for standard application such as Near Field Communication (NFC) and that communicates with the Host through SPI interface. XNUCLEO-NFC05A1 is compatible with the Arduino UNO R3 connector assignment.

This expansion board can be plugged into the Arduino UNO R3 connectors of any STM32 Nucleo board.

The board has the following features:

- On-board NFC card reader IC: ST25R3911B
- 47 x 34 mm, 4 turns, single layer 13.56 MHz inductive antenna etched on PCB and associated tuning circuit.
- 6 general purpose LEDs

The ST25R3911B supports following RF communication @13.56MHz:

- ISO/IEC 14443 Type A and B
- ISO/IEC 15693
- Felica™
- ISO/IEC 18092

- In ISO/IEC 14443, Type A, messages are sent with 13.56Mz carrier with ASK modulation and 100% modulation index. Bit rate is 106Kbps.
- In ISO/IEC 14443, Type B, messages are sent with 13.56Mz carrier with ASK modulation and 10% modulation index. Bit rate is 106Kbps
- In ISO/IEC 15693, messages are sent with 13.56Mz carrier with ASK modulation and 10% modulation index.
- In Felica™, messages are sent with 13.56Mz carrier with ASK modulation and 10% modulation index.
- In ISO/IEC 18092, Type A, Type B or Felica™, messages are sent with 13.56Mz carrier with ASK modulation and 100% or 10% modulation index. Bit rate is 106 Kbps (Type A,B) and 212Kbps (Felica™).

Requests and reply have variable duration interval depending their respective length and on standards