X-NUCLEO-NFC03A1 (MB1171) Operational Description

The X-NUCLEO-NFC03A1 is an NFC card reader evaluation board based on CR95HF integrated circuit to allow expansion of the STM32 Nucleo boards. The CR95HF 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 UART or SPI interface. X-NUCLEO-NFC03A1 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: CR95HF
- 47 x 34 mm, 4 turns, single layer 13.56 MHz inductive antenna etched on PCB and associated tuning circuit.
- 4 general purpose LEDs

The CR95HF supports following RF communication @13.56MHz:
- ISO/IEC 14443 Type A and B
- ISO/IEC 15693
- 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 ISO/IEC 18092, Type B, messages are sent with 13.56Mz carrier with ASK modulation and 100% or 10% modulation index. Bit rate is 212 Kbps.

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