EVAL-ST95HF

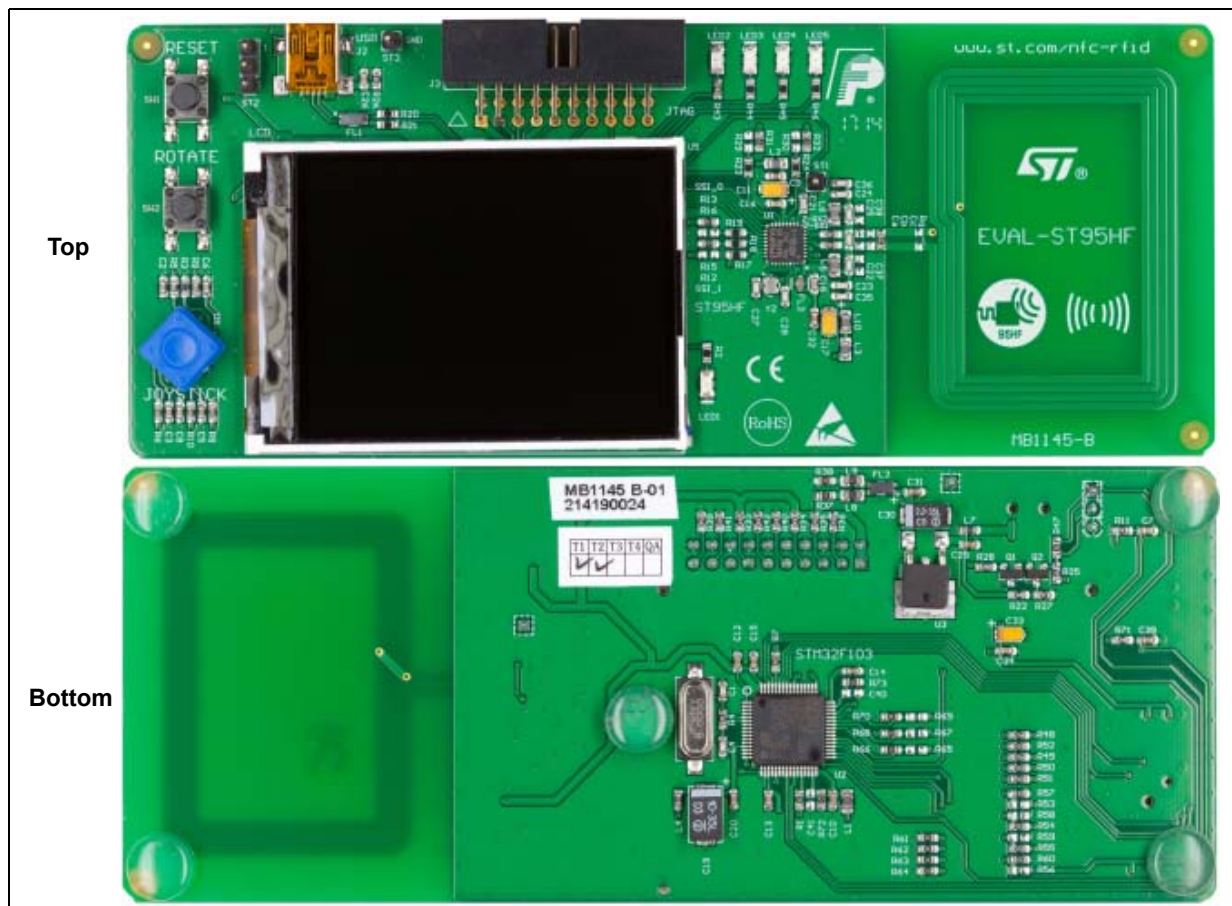## Evaluation kit for ST95HF transceiver for NFC

Features

- Ready to use printed circuit board with ST95HF 13.56 MHz transceiver (32 leads, 5x5 mm VFQFPN package):
    - Reader mode: ISO/IEC 14443 Type A; ISO/IEC 15693; ISO/IEC 18092
    - Card Emulation mode: ISO/IEC 14443 Type A

The ST95HF also supports the detection, reading and writing of NFC Forum Type 1, 2, 3 and 4 tags.

- STM32F103RGT6, an STM32 32-bit ARM® Cortex® microcontroller in LQFP64 package, with 1 Mbyte of Flash memory

- 47 mm x 34 mm, four turns, 13.56 MHz inductive antenna etched on PCB, and associated tuning circuit

- Mini USB connector for board powering

- Five different color LEDs, indicating the presence of RF field and protocol used to communicate

- JTAG connector for microcontroller firmware download and debug

- Joystick for menu selection

- LCD color screen (320 x 200 pixels)

- USB cable: Type A / mini B

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1 Description

The EVAL-ST95HF kit is created to evaluate the features of ST95HF.

This component is a 13.56 MHz near field communication transceiver featuring two modes, Tag emulation and NFC Reader, making it possible the use of two ST95HF evaluation boards face to face.
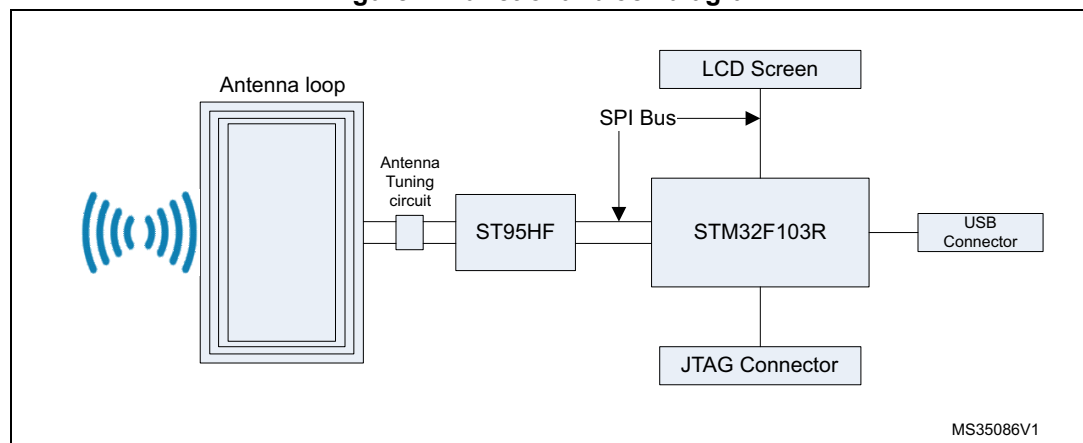
The EVAL-ST95HF board is powered through the USB bus. It consists of a ST95HF transceiver on a 47 mm x 34 mm, four turns 13.56 MHz inductive etched antenna and its associated tuning circuit components. The ST95HF communicates with the STM32F103RGT6 and the LCD screen via an SPI bus.

In Tag emulation mode it can be used with an NFC Reader (NFC smartphone, CR95HF or with another ST95HF) to exchange NDEF messages (URI, VCARD, URL). Communication protocol is based on ISO/IEC 14443 Type A.

In reader mode the ST95HF supports ISO/IEC 14443 Type A and B communications, ISO/IEC 15693 and ISO/IEC 18092 protocols.

The mode can be selected on screen by using a joystick.

Figure 1. Functional block diagram

2 Evaluation kit environment

The EVAL-ST95HF kit includes hardware and software components:

– STMicroelectronics Tag samples (as LRI2K pairing card, ST25TA card)
– EVAL-ST95HF hardware (MB1145): schematics, BOM, Gerber files
– STM32-EVAL-ST95HF application firmware

The complete firmware description and required material can be downloaded from *www.st.com*.

3 Revision history

Table 1. Document revision history

Date	Revision	Changes
19-Jun-2014	1	Initial release.
26-Jul-2016	2	Updated *Features*, *Section 1: Description* and *Section 2: Evaluation kit environment*.

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