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DEMO-CR95HF-A

Demonstration kit for the CR95HF 13.56 MHz transceiver IC

Data brief

Features

- Ready to use printed circuit board
  - CR95HF cut 1.2 multiprotocol transceiver IC
  - STM32F103CB 32-bit microcontroller
  - 47 x 34 mm 13.56 MHz inductive etched antenna and tuning components
  - USB-B connector for communication with host PC and demonstration board powering
  - USB connect/disconnect jumper (must be left in default state)
  - LED indicating the presence of an RFID or NFC tag
  - Microcontroller reset button
  - JTAG connector for microcontroller firmware upgrade and debug
- USB cable
- Demonstration tags
  - ISO15693 tag: LRI2K mounted on a 45 x 75 mm antenna
  - ISO 15693 dual interface EEPROM memory: M24LR64-R mounted on a 15 x 15 mm double side etched antenna
- Associated Firmware and PC software
  - On-board demonstration firmware to communicate with the host PC through the USB bus.
  - The CR95HF developement software enable discovery and useof all the functionalities of the CR95HF transceiver.
  - The M24LRXX application software is dedicated to the Dual interface EEPROM and ISO/IEC 15693 contactless tag.

Description

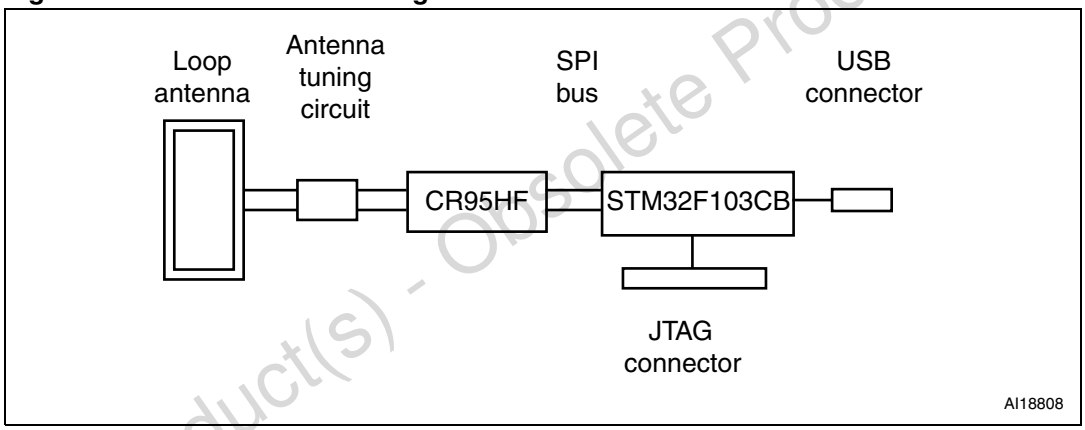
The DEMO-CR95HF-A is a demonstration kit which allows to evaluate the performances of ST CR95HF 13.56 MHz multiprotocol contactless transceiver. It includes a ready-to-use board to interface with the CR95HF host PC demonstration software through an USB interface.

The DEMO-CR95HF-A is powered through the USB bus and no external power supply is required. It includes a CR95HF contactless transceiver, a 47 x 34 mm 13.56 MHz inductive etched antenna and its associated tuning components.

By default, the CR95HF communicates with the STM32F103CB 32-bit MCU via the SPI bus. The interface can then be changed to UART.

At the end of the initialization, the DEMO-CR95HF-A launches a tag tracking operation. When an RFID or NFC tag is identified, the LED is turned on.

Figure 1. Functional block diagram



The DEMO-CR95HF-A is delivered with the following firmware and software which can be downloaded from http://www.st.com:

- STM32 DEMO-CR95HF-A-application-firmware: on-board demonstration firmware allowing the CR95HF and the host PC to communicate through the USB bus
- M24LRxx_application_software: a PC software that manages the communications with the ISO15693 and Dual Interface EEPROM tags.

Hardware configuration

The DEMO-CR95HF-A demonstration board can use either the UART or the SPI as external serial interface. Two solder bridges, SSI0 and SSI1, allow choosing the serial interface (see *Table 1*).

The SPI or UART is then automatically enabled by the CR95HF at power-on.

Figure 2 shows the board configured to use the SPI interface (default configuration).

Table 1. Solder bridge configuration

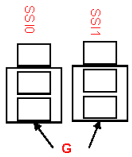
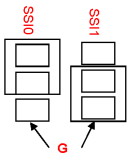
Hardware configuration	Serial interface
	UART
	SPI

Figure 2. DEMO-CR95HF-A with SPI selected

Revision history

Table 2. Document revision history

Date	Revision	Changes
22-Apr-2011	1	Initial release.
25-Jul-2011	2	Changed inductive etched antenna to 47x34 mm. Added *Section : Hardware configuration* . Updated disclaimer on last page.
10-Sep-2012	3	Updated *Features* and *Description*.