X-NUCLEO-IDS01A5

Sub-1 GHz RF expansion board based on SPSGRF-915 module for STM32 Nucleo

Description

The X-NUCLEO-IDS01A5 is an evaluation board based on SPIRIT1 RF module SPSGRF-915 to allow expansion of STM32 Nucleo boards. The SPSGRF-915 module operates in the 915 MHz ISM band and is FCC certified (FCC ID: S9NSPSGRF) and IC certified (IC:8976C-SPSGRF). Identification of the operating frequency of the X-NUCLEO-IDS01Ax (x= 4 or 5) is performed through two resistors (R14 and R15). It is compatible with the ST Morpho and Arduino UNO R3 connector layout. The X-NUCLEO-IDS01A5 interfaces with the STM32 microcontroller via SPI connections and GPIO pins. The user can change some of the GPIOs by mounting or removing the resistors.

Features

- STM32 Nucleo expansion board based on the SPSGRF-915
- X-NUCLEO-IDS01A5 contains FCC and IC certified module SPSGRF-915 (FCC ID: S9NSPSGRF and IC: 8976C-SPSGRF)
- SPGRF-915:
  - 915 MHz FCC and IC certified module based on low-power, low-rate sub-1 GHz SPIRIT1 transceiver
  - Integrated Balun (BALF-SPI-01D3)
  - Chip antenna
- Compatible with STM32 Nucleo boards
- Equipped with Arduino UNO R3 connectors
- Scalable solution; can cascade multiple boards for larger systems
- Example firmware for point-to-point communication, compatible with STM32Cube firmware
- RoHS compliant

Table 1: Expansion board details

Evaluation boards	Identification resistors	RF communication frequency	Description
X-NUCLEO-IDS01A4	R14 mounted, R15 not mounted	868 MHz	868 MHz RF expansion board based on ETSI certified module SPSGRF-868 for STM32 Nucleo
X-NUCLEO-IDS01A5	R14 mounted, R15 not mounted	915 MHz	915 MHz RF expansion board based on FCC and IC certified module SPSGRF-915 for STM32 Nucleo

1 Formal notices

Formal Notices Required by the U.S. Federal Communications Commission ("FCC")

Any changes or modifications to this equipment not expressly approved by STMicroelectronics may cause harmful interference and void the user's authority to operate this equipment. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation. The X-NUCLEO-IDS01A5 contains FCC certified module SPSGRF-915 (FCC ID: S9NSPSGRF).

Formal Notices Required by the Industry Canada ("IC")

English:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

French:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. 'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The X-NUCLEO-IDS01A5 contains IC certified module SPBTLE-RF (IC:8976C-SPSGRF).

2 Schematic diagrams

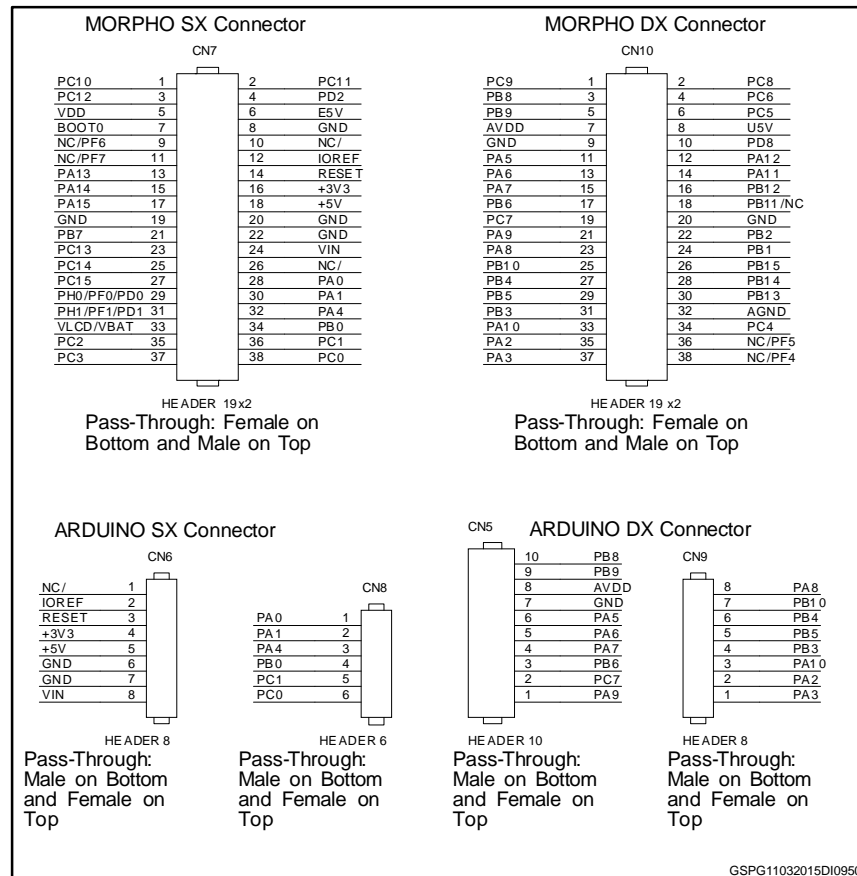**Figure 1: X-NUCLEO-IDS01A5 circuit schematic (1 of 3)**

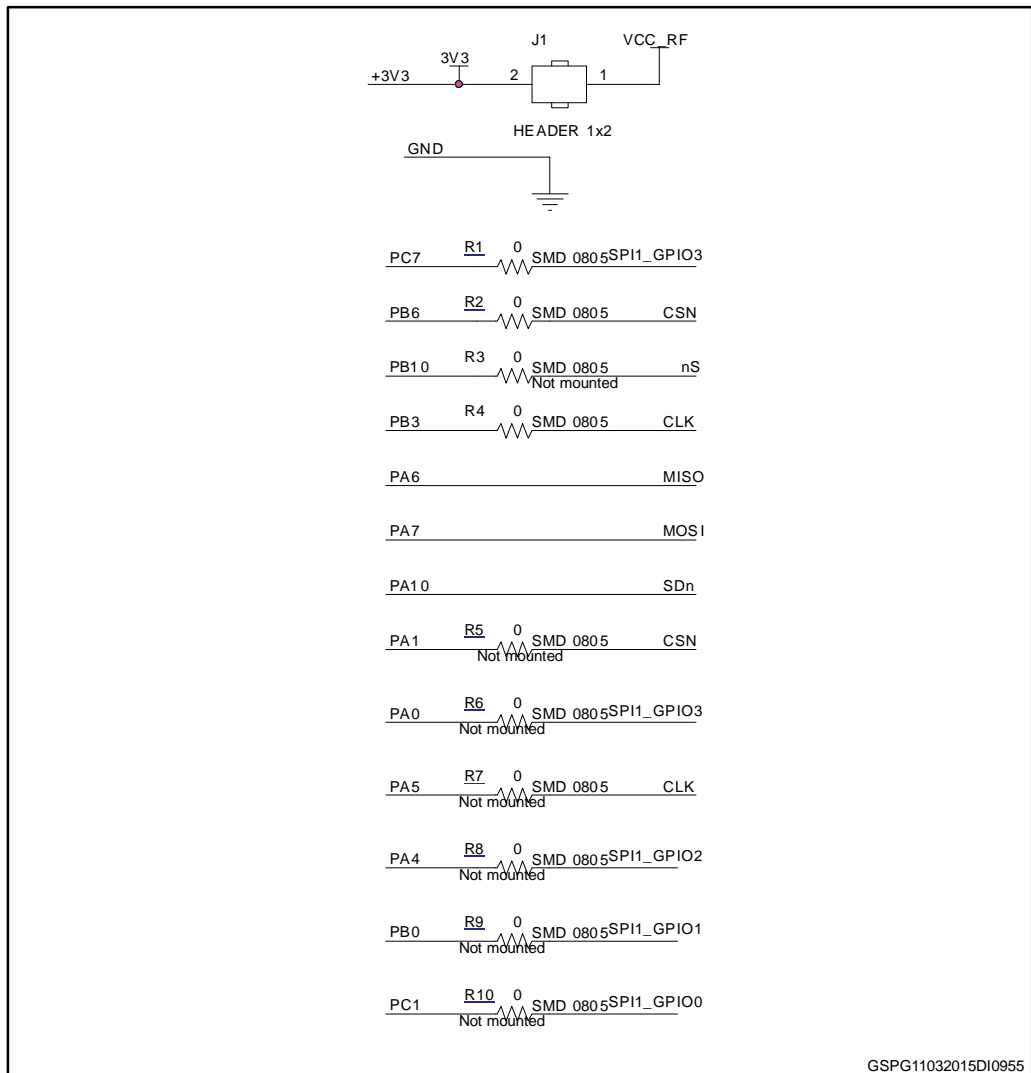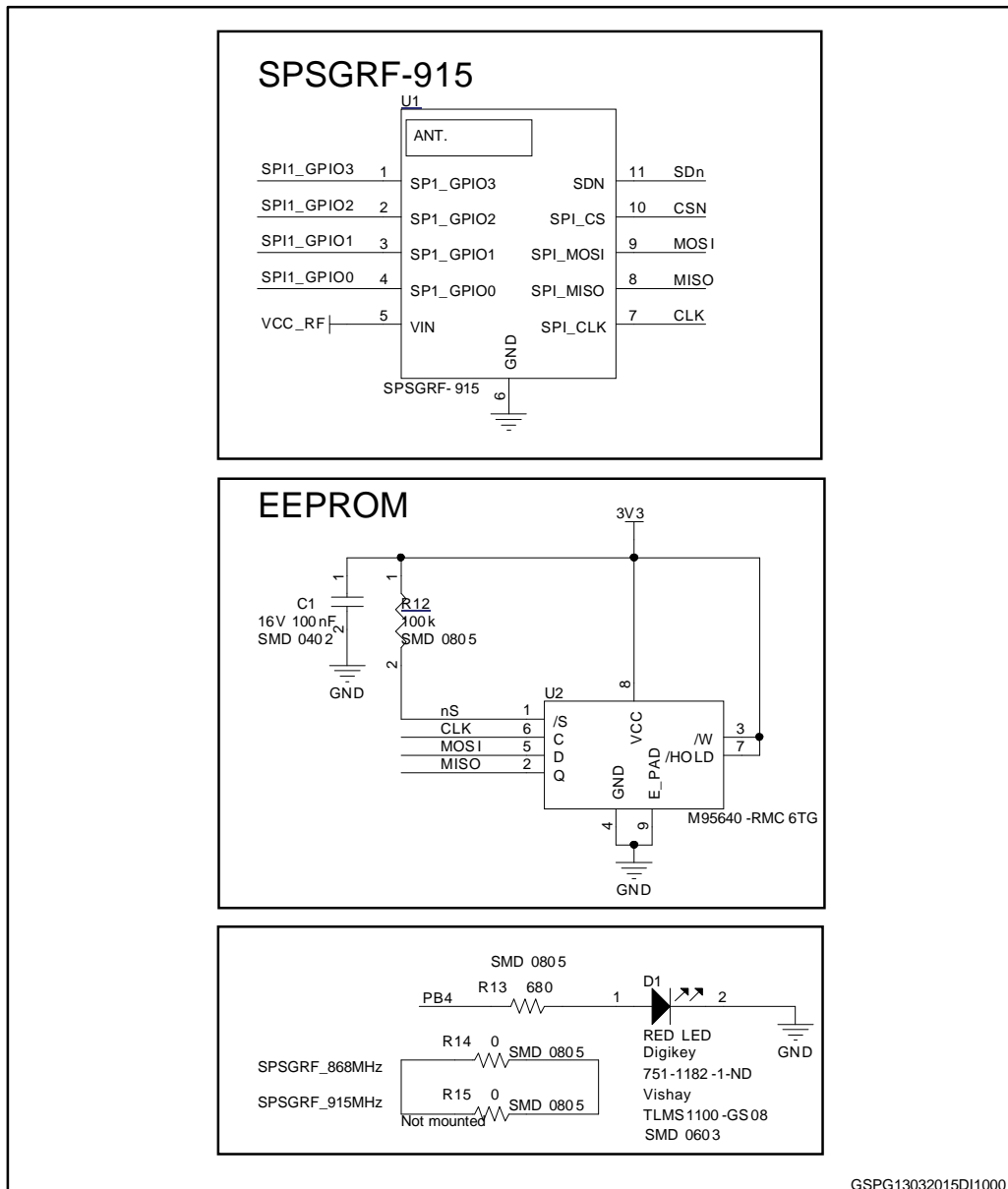**Figure 2: X-NUCLEO-IDS01A5 circuit schematic (2 of 3)**

Figure 3: X-NUCLEO-IDS01A5 circuit schematic (3 of 3)

GSPG13032015DI1000

3   Revision history

Table 2: Document revision history

Date	Rev	Changes
29-Apr-2015	1	First release.
28-May-2015	2	Updated board photo on the cover page.
23-Jun-2015	3	Added section: Formal Notices Required by the Industry Canada ("IC").

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