smôl Connectors

Bottom

3.3V

PROC_PWR_EN

1
2
3
4
5 — SCLK
6 — COPI
7 — CIPO
8 — CS0
9 — CS1
10 — CS2
11 — GPIO0
12 — GPIO1
13 — SDA
14 — SCL
15
16 — V_USB

IN

GND

3.3V

PROC_PWR_EN

1
2
3
4
SCLK — 5
COPI — 6
CIPO — 7
CS0 — 8
CS1 — 9
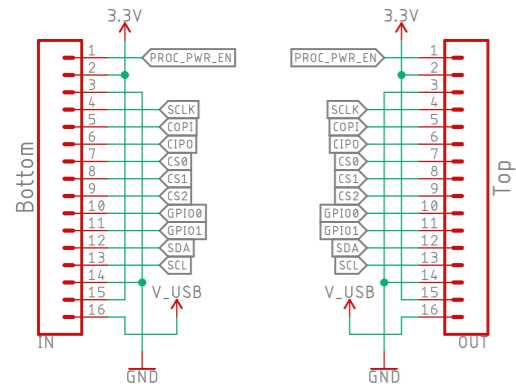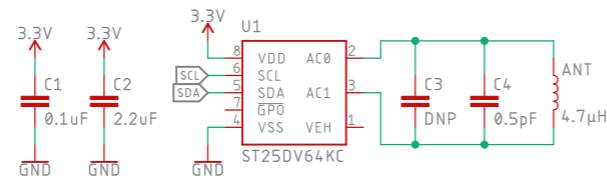CS2 — 10
GPIO0 — 11
GPIO1 — 12
SDA — 13
SCL — 14
15
V_USB — 16
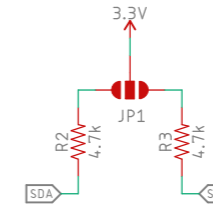
Top

OUT

GND

ST25DV64KC

Notes on antenna tuning:

The ST25DV64KC has an internal tuning capacitance of 28.5pF
The W3102 antenna has an inductance of 4.7µH
To tune the antenna circuit to 13.56MHz, the total capacitance needs to be 29.1pF
C3 and C4 may need to be tuned for best performance

3.3V

C1
0.1uF

GND

3.3V

C2
2.2uF

GND

3.3V

SCL
SDA

U1

8 — VDD
6 — SCL
5 — SDA
9 — GP0
4 — VSS

AC0 — 2
AC1 — 3
VEH — 1

ST25DV64KC

GND

C3
DNP

C4
0.5pF

ANT

4.7µH

Default I2C Address (User Memory) (Unshifted): 0x53
Default I2C Address (System Memory) (Unshifted): 0x57

I2C Pull-ups

Close jumper to enable
I2C pull-up resistors

3.3V

R2
4.7k

JP1

R3
4.7k

SDA

SCL

smôl

open hardware

SPARK X

Special Instructions

TITLE: SparkX_smol_Dynamic_NFC_RFID_Tag

Design by: Paul Clark

REV:
x02

Date: 11/11/2021 11:24   Sheet: 1/1