RFID Reader - Serial   RFID Reader - USB
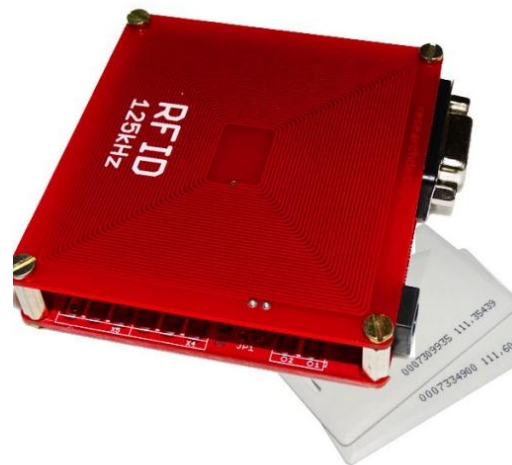
RFID READER SERIAL/USB

Contents

OVERVIEW

Radio-frequency identification (RFID) is the wireless use of electromagnetic fields to transfer data, for the purposes of automatically identifying and tracking tags attached to objects. The tags contain electronically stored information. Some tags are powered by electromagnetic induction from magnetic fields produced near the reader. Some types collect energy from the interrogating radio waves and act as a passive transponder. Other types have a local power source such as a battery and may operate at hundreds of meters from the reader. Unlike a barcode, the tag does not necessarily need to be within line of sight of the reader, and may be embedded in the tracked object. Radio frequency identification (RFID) is one method for Automatic Identification and Data Capture (AIDC).

RFID tags are used in many industries. An RFID tag attached to an automobile during production can be used to track its progress through the assembly line. Pharmaceuticals can be tracked through warehouses. Livestock and pets may have tags injected, allowing positive identification of the animal.

Since RFID tags can be attached to cash, clothing, possessions, or even implanted within people, the possibility of reading personally-linked information without consent has raised serious privacy concerns.

RFID READER-SERIAL

RFID Reader - Serial

This is a low frequency (125 KHz) RFID Reader With serial Output with range upto 15cms. The RFID Reader is designed specifically for low-frequency (125 kHz) passive tags.Frequency refers to the size of the radio waves used to communicate between the RFID system components

RFID READER-USB

RFID Reader - USB

This is a low frequency (125 KHz) RFID Reader With USB Output with range upto 15cms. It's a compact unit with built in antenna and can be directly connected to any USB host.

FEATURES

RFID READER SERIAL
- Low-cost method for reading passive RFID tags.
- Built in Antenna
- On-Board Power LED
- Current Requirement <120mA
- Communication RS232 Serial at 9600 baud.
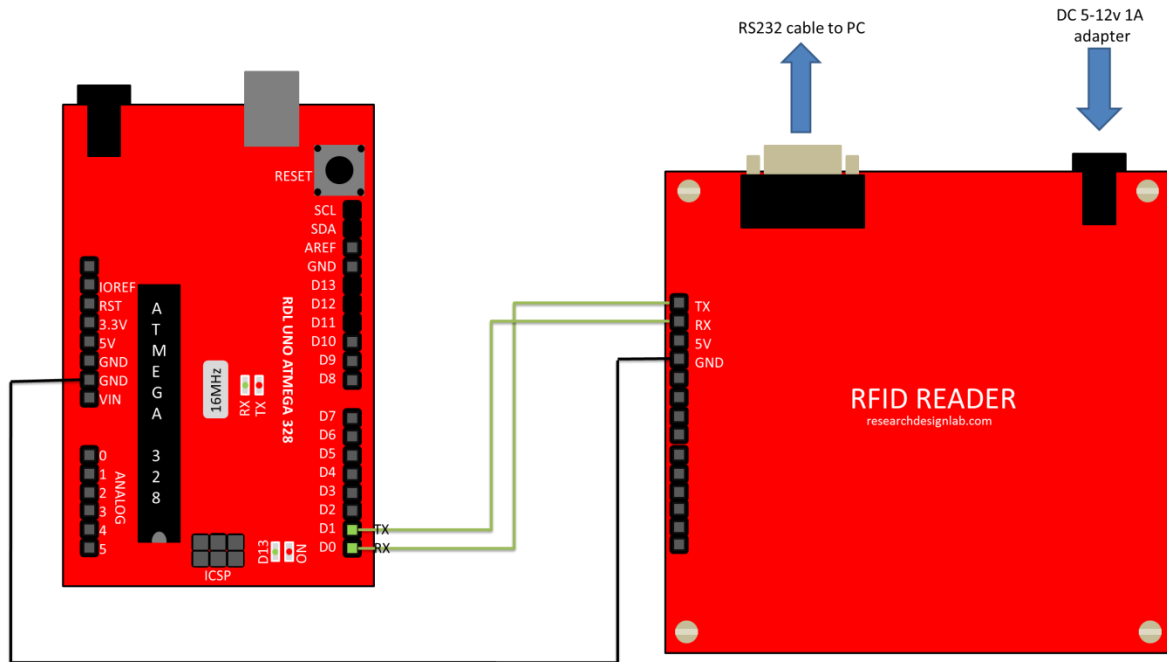- Detecting Range upto 15cms.

RFID READER USB
- Low-cost method for reading passive RFID tags.
- Easy USB connection to PC
- Powered by USB (no external power required).
- Built in Antenna.
- Current Requirement<120mA.
- Range upto 15cms.

BLOCK DIAGRAM

RFID READER-SERIAL INTERFACING WITH UNO BOARD

Use normal serial code for Uno board to receive/transmit tag number.

RFID READER-USB WITH RASPBERRY PI

Once GUi is booted from Raspberry pi(switched ON)

To test RFID

- connect raspberry pi to internet through ethernet cable
- open LXterminal
- $sudo apt-get install minicom
- $sudo minicom -b 9600 -d /dev/ttylUSB0(ttylUSB*)
- now swipe the rfid tag to check the ID read, displayed on Minicom.
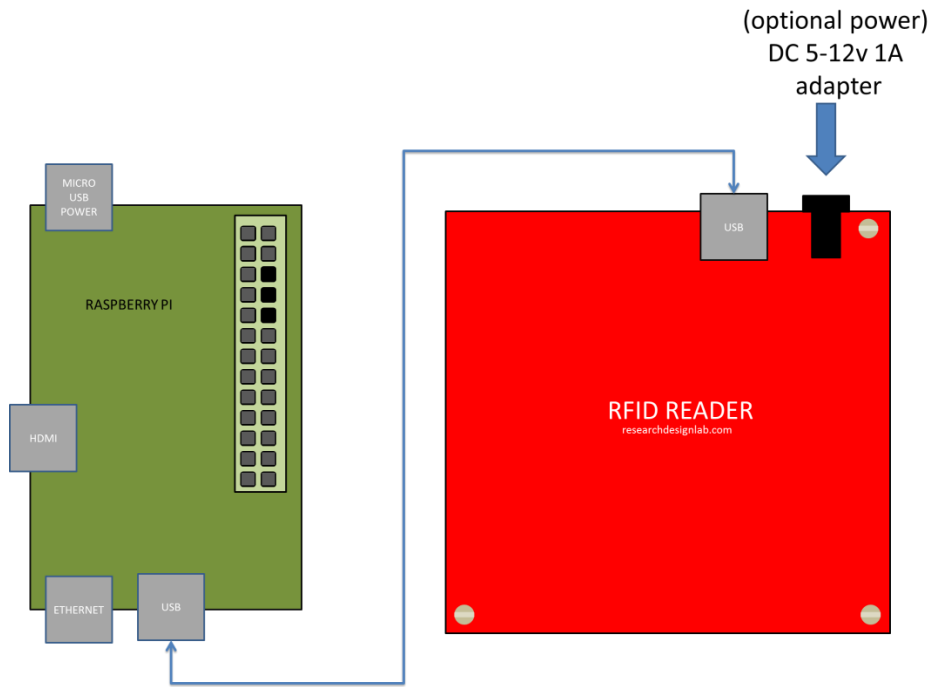
To run Ft232_rfid.c code given below

- copy Ft232_rfid.c onto desktop
- open LXterminal
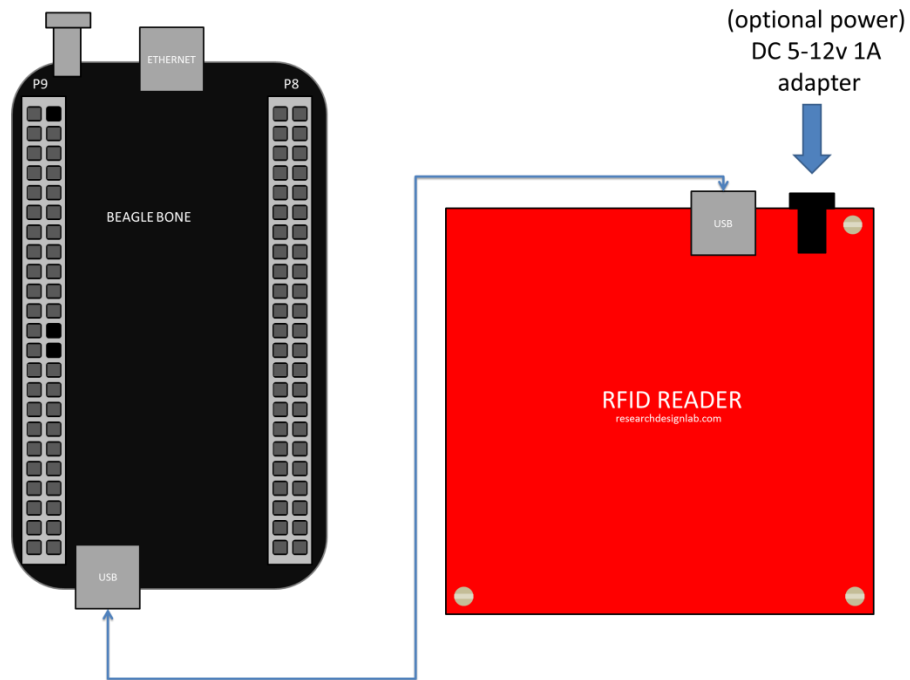- $cd Desktop
- $g++ Ft232_rfid.c
- $./a.out

Ft232_rfid.c

https://drive.google.com/file/d/0BzrGD4zr88GnbkQxRndtTkVyYjQ/view?usp=sharing

Video links

- RFID minicom setup
  - https://drive.google.com/file/d/0BzrGD4zr88GnRWRrT3A1QW5WN1k/view
- RFID through C
  - https://drive.google.com/file/d/0BzrGD4zr88GnMTFjT19DS1F0RDQ/view

(optional power)
DC 5-12v 1A
adapter

MICRO
USB
POWER

RASPBERRY PI

HDMI

ETHERNET

USB

USB

RFID READER
researchdesignlab.com

RFID READER-USB WITH BEAGLE BOARD

(optional power)
DC 5-12v 1A
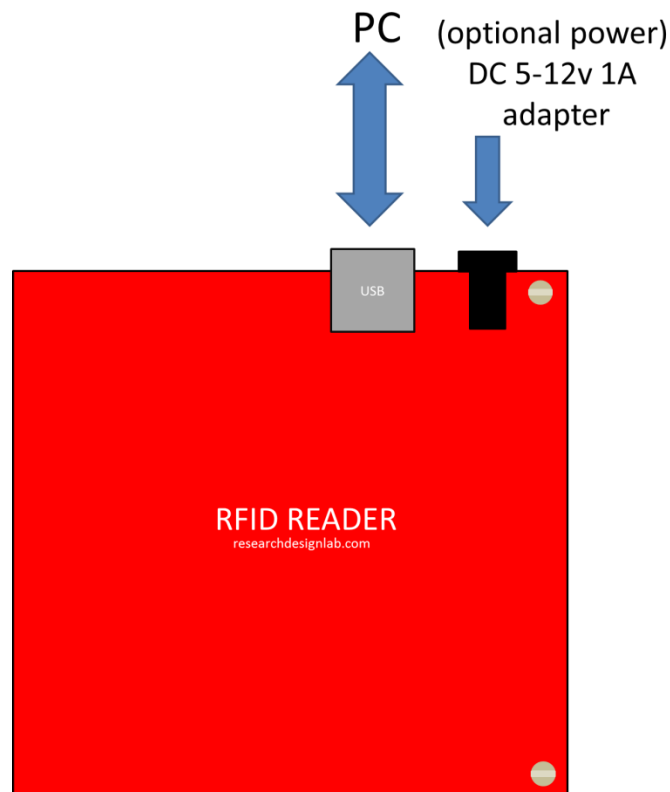adapter

ETHERNET

P9

P8

BEAGLE BONE

USB

USB

RFID READER
researchdesignlab.com

RFID READER USB

For PC use RFID utility software for testing.

RFID UTILITY SOFTWARE
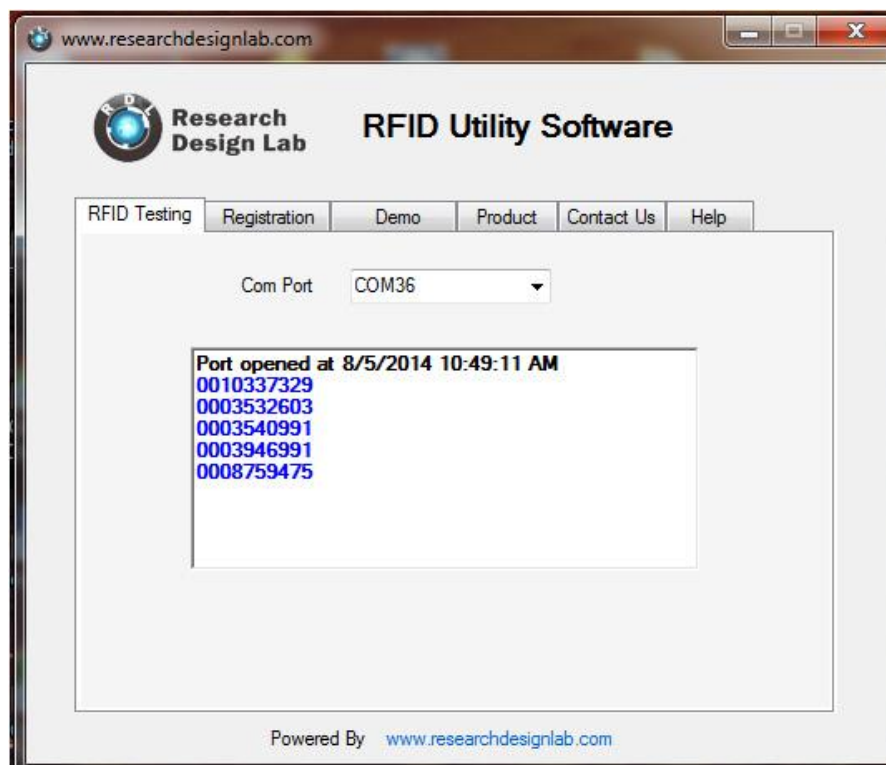
To download RFID utility software, go to one of the link given below:

- http://www.4shared.com/file/-x0ukknyba/RFID_UTILITY.html
- https://docs.google.com/file/d/0BzrGD4zr88GnY2JEMmZmT1ZNekk/edit

note : Place the Registration.mdb file in D drive.

RFID TESTING

Select the appropriate com port and swipe the tag over the reader, RFID TAG number will be displayed.

REGISTRATION AND DEMO

- Enter the RFID tag number and other following details and register.
- Once done, once you swipe the registered tag, all the details registered will be displayed in demo tab.
- Also Reset button is provided under demo tab to unregister the RFID tag

CODES

1. ATMEL CODE

http://researchdesignlab.com/rfid-atmel-code.html

2. PIC CODE

http://researchdesignlab.com/rfid-pic-code.html

3. RFID SAMPLE CODES

- o   RFID BASED VENDING MACHINE
- o   RFID BASED VEHICLE PARKING

https://drive.google.com/file/d/0BzrGD4zr88GnRXJ4Y012Q2VrVUE/view

4. JAVA CODE

https://drive.google.com/file/d/0BzrGD4zr88GnSEozWnllbEVRbkE/view?usp=sharing