

# Configure Raspbian for Raspberry Pi 3 to use Digital Logic shield with uFReader RS232

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# Preface

## Digital Logic shield with uFReader RS232

Shield is piece of hardware for simplified interconnection between uFReader RS232 devices, like nFR RS232 and Card size RS232, and all versions of Raspberry Pi. DL shield uses pins 8 (GPIO14) and 10 (GPIO15) of the GPIO header for UART communication and pin 16 (GPIO23) for reset uFReader. GPIO serial port (mini-uart) is disabled by default. You must enable them for the correct operation of the device. uFCoder library version 4.2.7 and later support DL shields on Raspbian.

## Caution

The Pi's serial port (and all other GPIO's) work at 3.3V only. Connecting them to a 5V source will destroy your Pi.

## Enable GPIO serial port

```
$sudo rspi-config
```

- Change password
- Enable SSH (Interfacing Option > SSH)
- **Enable Serial port (Interfacing Option > Serial)**
- **Disable Serial Console (Interfacing Option > Serial)**
- **Reboot**

## Test

Test Linux configuration

```
$ ls -l /dev/serial*
```

```
lrwxrwxrwx 1 root root 5 Nov 21 07:54 /dev/serial0 -> ttyS0
```

```
lrwxrwxrwx 1 root root 7 Nov 21 07:54 /dev/serial1 -> ttyAMA0
```

```
$ ls -l /dev/ttyS0
```

```
crw-rw---- 1 root dialout 4, 64 Nov 21 07:54 /dev/ttyS0
```

```
$groups
```

```
pi adm dialout cdrom sudo audio video plugdev games users input netdev gpio i2c spi
```

```
$sudo grep uart /boot/cmdline.txt
```

```
enable_uart=1
```

```
$ sudo cat /boot/cmdline.txt
```

```
dwc_otg.lpm_enable=0 console=tty1 root=PARTUUID
```

```
(no more exists console=ttyS0,115200)
```

## Test uFR reader open

There is a simple example code for reader open on the DL-GIT

Clone from GIT

```
$ git clone --recursive  
https://www.d-logic.net/code/nfc-rfid-reader-sdk/ufr-examples-reader_open-c
```

Make executable

```
$make armhf
```

Run

```
$ ./ufr-reader-open
```

## References:

<https://spellfoundry.com/2016/05/29/configuring-gpio-serial-port-raspbian-jessie-including-pi-3/>

<https://www.raspberrypi.org/forums/viewtopic.php?t=151454>

<https://www.raspberrypi.org/forums/viewtopic.php?f=29&t=144858&p=955297#p955236>

<https://raspberrypi.stackexchange.com/a/54766>

Raspbian OS - download

<https://www.raspberrypi.org/downloads/raspbian/>

Test source code:

[https://www.d-logic.net/code/nfc-rfid-reader-sdk/ufr-examples-reader\\_open-c](https://www.d-logic.net/code/nfc-rfid-reader-sdk/ufr-examples-reader_open-c)

# Revision history

| Date       | Version | Comment       |
|------------|---------|---------------|
| 2019-04-11 | 1.0     | Base document |