

Rexx/PFIO

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Rexx/PFIO - Introduction

- Brief overview of PiFace
- What Rexx/PFIO looks like
- Details of application using Rexx/PFIO – garage-pi
- Demo of garage-pi



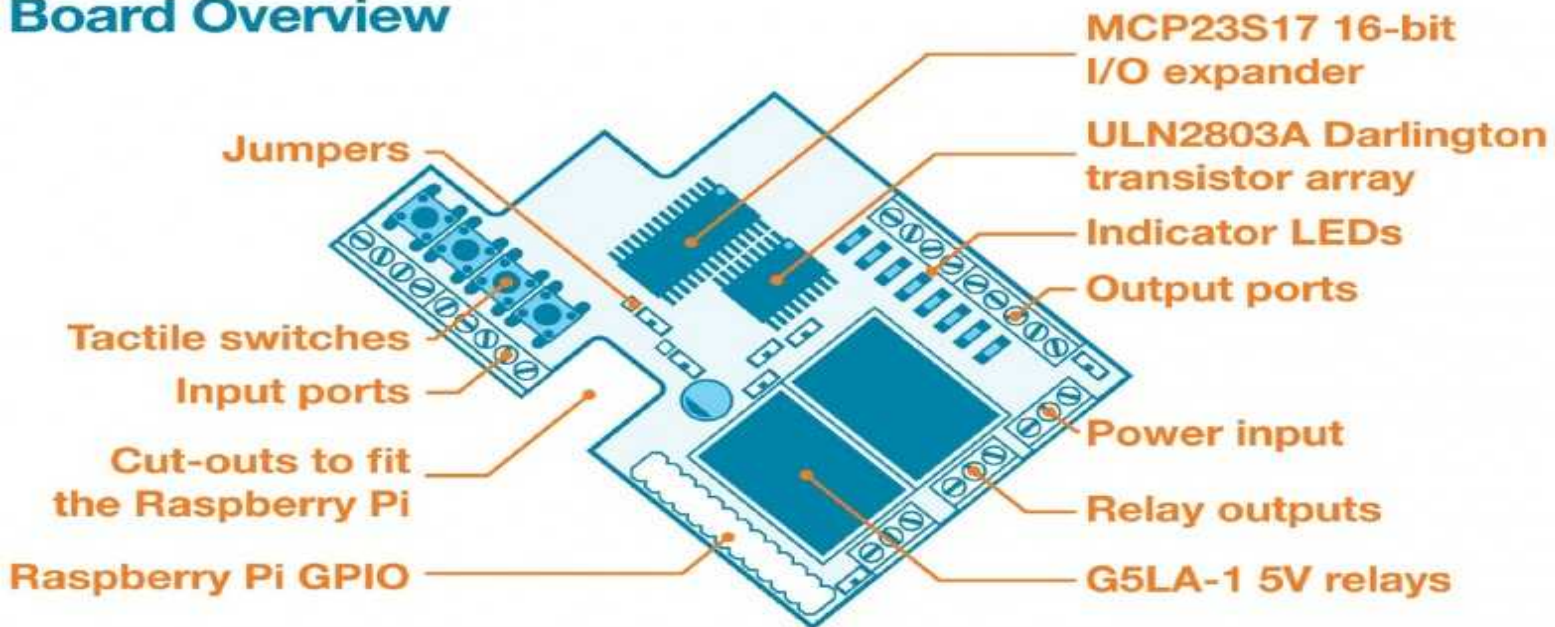
Rexx/PFIO - Overview

- Rexx interface to the PiFace Digital I/O Board for the Raspberry Pi - <http://piface.openlx.org.uk/>
- Enables Rexx to control and monitor connected digital devices, switches, etc
- Available from <http://rexxpfio.sourceforge.net/>
- Source code that comes with PiFace included in Rexx/PFIO



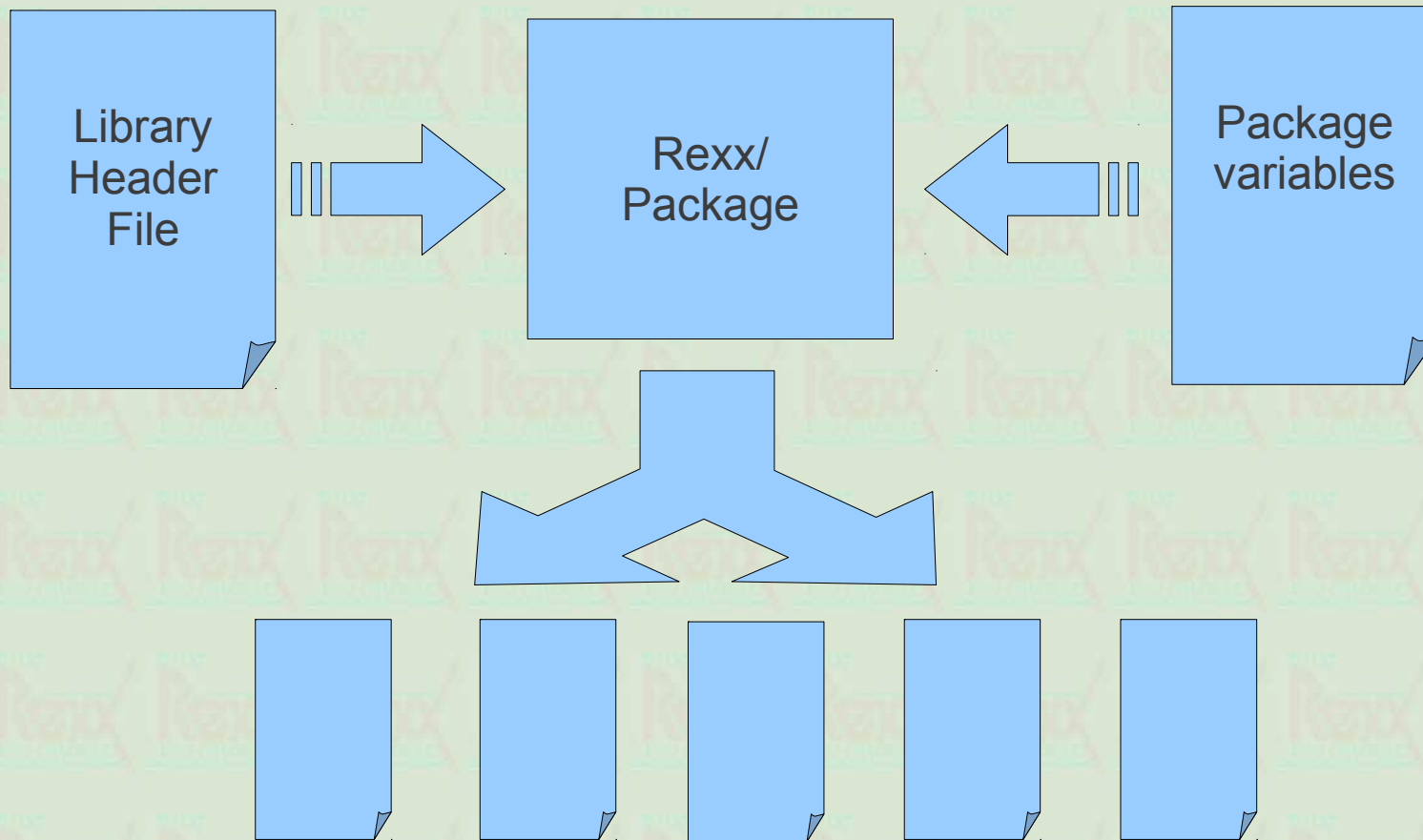
PiFace Digital I/O Board

Board Overview



Rexx/PFIO

- Built with Rexx/Package



Rexx/PFIO - Basics

Call **RxFuncAdd** 'PFIO_LoadFuncs', 'rexppfio', 'PFIO_LoadFuncs'

Call **PFIO_LoadFuncs**

If **PFIO_init()** < **0** Then

 Say 'PiFace cannot be initialised'

 Exit **1**

End

...

Call **PFIO_digital_write** **2**, **1** – write binary 1 to output port 2

...

status = **PFIO_digital_read**(**2**) – read status of input port 2

...

Call **PFIO_deinit**

Return **0**



garage-pi - Overview

- Justification: Existing radio remote controls failing
- Controls remote controlled garage doors which have manual push-button terminals
- User interface a web application accessible from anywhere – *JQuery Mobile*
- Backend server *lighttpd* with *Rexx/PFIO* CGI to interface to PiFace. Also uses *sqlite3* database accessed via *Rexx/SQL*

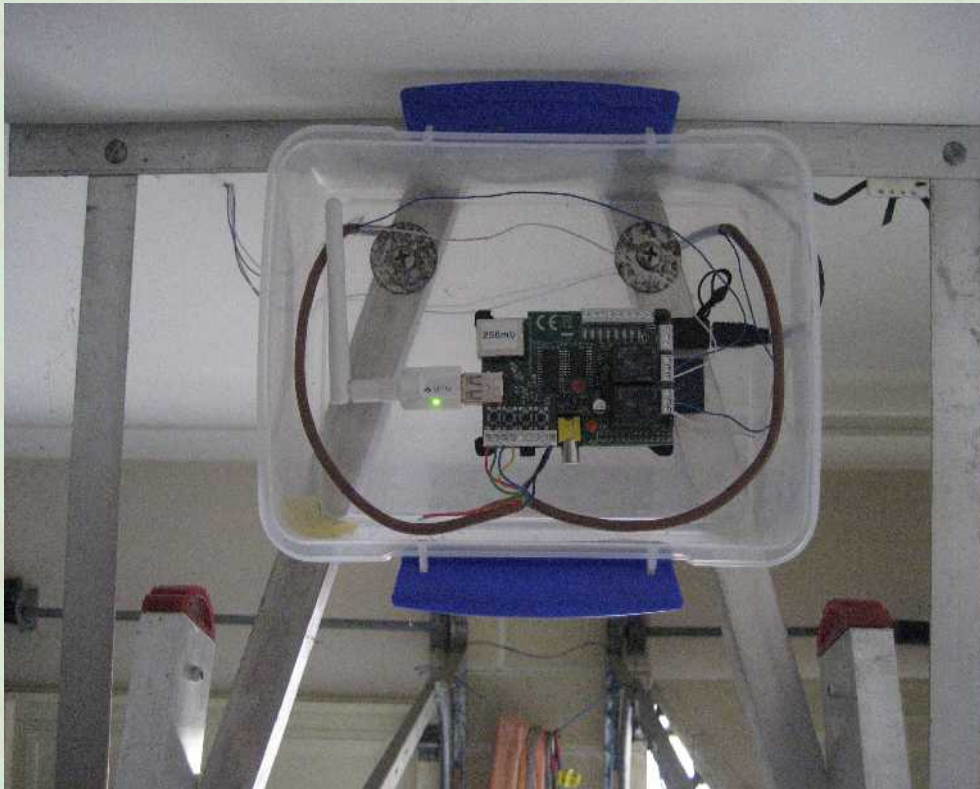


Environment



Hardware Solution

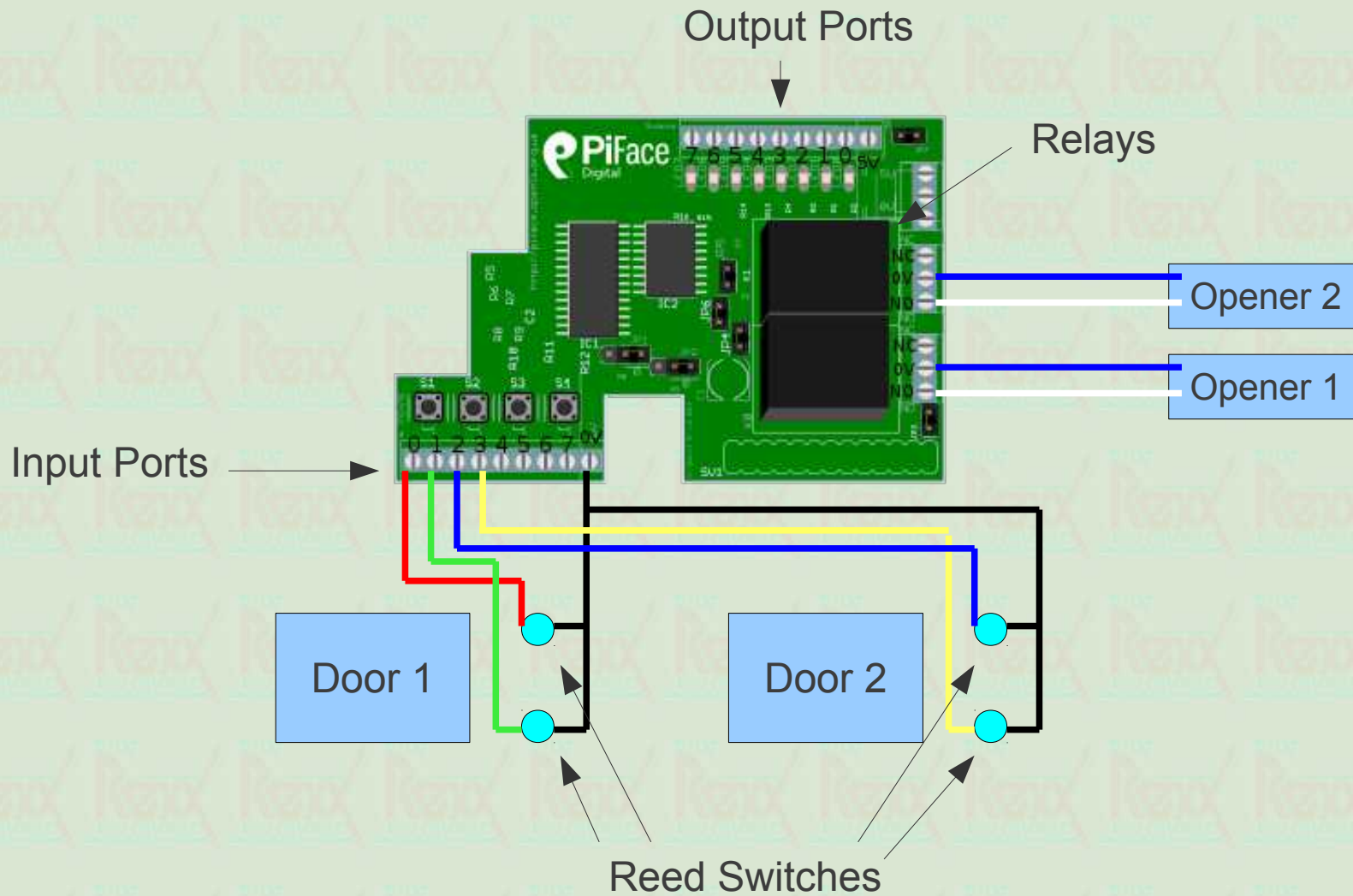
Raspberry Pi and PiFace
USB Wireless



Reed Switch
Rare-Earth Magnet actuator on door

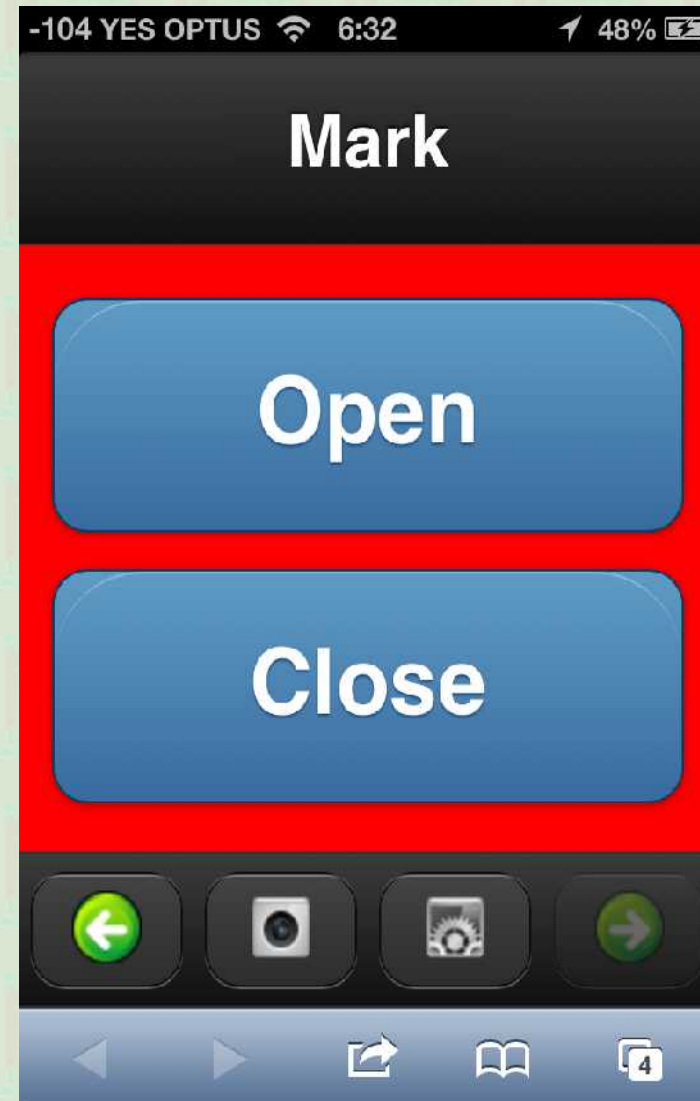


Garage-pi – Wiring Diagram



garage-pi – User Interface

- JQuery Mobile
 - HTML 5
 - Javascript
 - CSS



garage-pi – Rexx Server

- Walkthrough of Rexx Server Code



garage-pi - Enhancements

- Actual camera image once Raspberry Pi Camera Module released
- Web-based configuration tool; *jQuery Mobile* frontend, *Regina* CGI backend
- Automatic opening/closing using Google driving directions
- Automatic notifications during configured times



garage-pi - Demo

- Connect to server and open a door

