

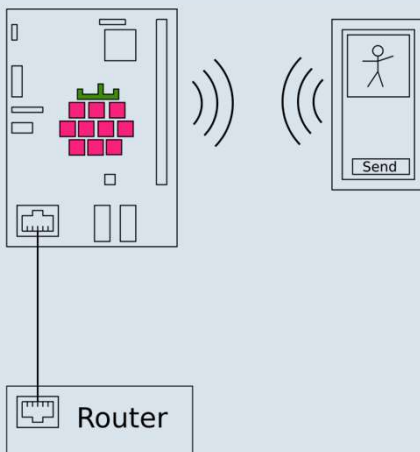
Dot Matrix Notifier

Daniel Hipp, Etienne Gramlich, Thomas Gnädig
Ubiquitous Computing Laboratory
HTWG Konstanz
Konstanz, Germany
{dahipp,etgramli,thgnaedi}@htwg-konstanz.de

Ralf Seepold
Ubiquitous Computing Laboratory
HTWG Konstanz
Konstanz, Germany
ralf.seepold@htwg-konstanz.de

Abstract

The Dot Matrix Notifier can be used to display messages, images or notifications from an Android smartphone to a 16x16 LED-Matrix. A MAX7219 LED Driver is used to handle the 256 individual LEDs. The communication between the Android smartphone and the matrix is established by a Raspberry Pi 3. The Pi will be connected to a router via LAN for internet access and shares this via WiFi. The user's smartphone will be connected to this WiFi interface and can use the internet as usual. Additionally it can send HTTP GET requests, which contains the text or images which should be displayed on the matrix, to the Raspberry Pi. Images will be shown as binary 16x16 images and messages will be shown as scrolling text.



Architecture

- Raspberry Pi connects all components
- Smartphone connects over WiFi to the Pi
- Matrix over I²C to the Raspberry Pi
- HTTP Server on the Pi listening for requests
- User sends text/images from smartphone to the Pi

