wiFred documentation – Documentation for WiFi throttle with withrottle interface and wireless clock driver

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Contents

1 Introduction

This document describes the usage and configuration of the wiFred – a very simple wireless throttle to connect to withrottle servers like JMRI – and the wireless clock driver used to drive a simple wallclock to the timing of JMRIs FastClock system. It also contains schematics and BOMs for both devices as well as programming instructions and assembly tips, and also an overview of options for the server side of things.

The most recent version of this document can be found at:

https://github.com/newHeiko/wiFred/blob/master/documentation/docu.pdf and

https://github.com/newHeiko/wiFred/blob/master/documentation/docu.tex.

Skip the following section about the background for the wiFred development if you are not interested in the why and more into the how.

2 Background for wiFred development

As of the writing of this document, JMRI [1] has a long track record of offering a server for using smartphones as wireless model railroad throttles, along with apps like withrottle [3][1] and EngineDriver [4]. This server will enable WiFi throttles to control locos any model railroading layout to which JMRI can build a connection [2]. In addition, Digitrax [9] and MRC [8] offer specific hardware solutions to enable the connection of the abovementioned smartphone apps to their DCC systems through a WiFi network.

The Fremo [5] is a European modular model railroading club whose unique requirements on it's DCC throttles led to the creation of the throttles FRED and FREDI [6] – a series of LocoNet®-throttles which started their life as hobbyist projects with large numbers in circulation but were also commercially available from Uhlenbrock [7].

2.1 Wishlist

In modular railroading events, particularly of the Fremo-americaN-group [5], some people have evaluated the smartphone throttle solutions and found them lacking a nice, haptical feedback. So a wishlist was compiled to

3 Wireless throttle

4 Clock driver

5 Server setup with JMRI

References

[1] JMRI: A Java Model Railroad Interface, *http://www.jmri.org*

[2] JMRI: Hardware Support, *http://www.jmri.org/help/en/html/hardware/index.shtml*

[3] WiThrottle, *http://www.withrottle.com/html/home.html*

[4] Home | EngineDriver, textithttps://enginedriver.mstevetodd.com/

[5] Home - FREMO - Freundeskreis Europäischer Modelleisenbahner e.V., *https://www.fremo-net.eu/en/home/*

[6] Throttle, *http://fremodcc.sourceforge.net/throttle/throttle.en.html*

[1] withrottle is also the name JMRI uses for the protocol and the server.

[7] Uhlenbrock | FRED, der Handregler fr die Intellibox, *https://uhlenbrock.de/de_DE/produkte/prodarch/I62AD172-001.htm!ArcEntryInfo=0004.41.I62AD172*

[8] Prodigy WiFi, *http://www.modelrectifier.com/Prodigy-WiFi-s/332.htm*

[9] LocoNet WiFi interface, *http://www.digitrax.com/products/wireless/lnwi/*

Revision History

Revision	**Date**	**Author(s)**	**Description**
0.1	2018-05-19	Heiko Rosemann	Setup first document structure.