

**BallyFA**

**Bally MPU based on FPGA**

**Hardware Version 1.01**

**Board Assembly**

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## **Important remark**

By using BallyFA it is possible to damage your pinball machine. As this is a private project with NO commercial interest the author accepts no liability for any damage that may arise by using BallyFA!

# 1. Bill of Material

Most components are preassembled when you order the PCB with JLC 'SMT Assembly'. Only a few other components are needed (see below)

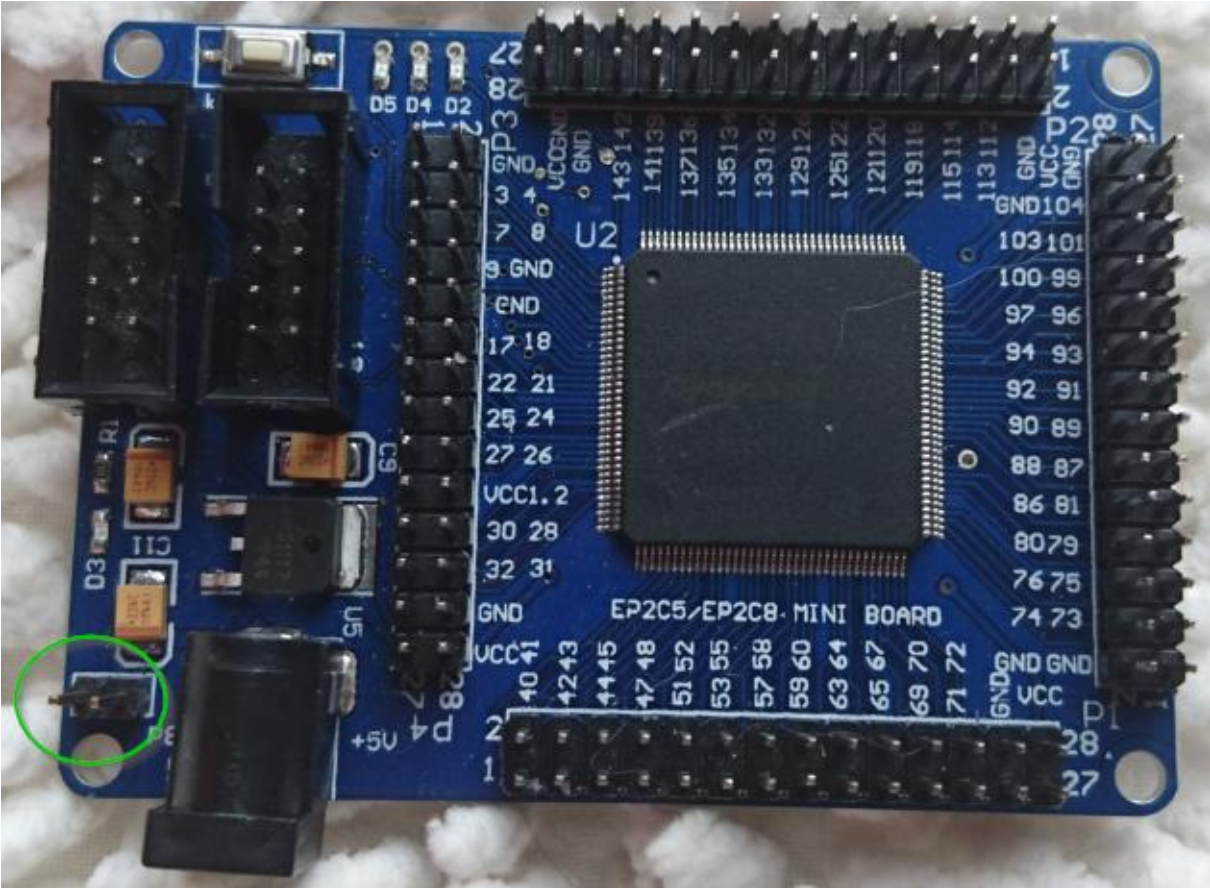
You will find shopping cards for 'Reichelt' and 'Digikey' on [www.lisy.dev](http://www.lisy.dev).

<input type="checkbox"/>	 M17c 037-1-039 Pin headers 2.54 mm, 1X50, straight	<b>0,85 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="2"/>	<input type="text" value="2"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 M17c 034-2-010 Sockets 2.54 mm, 2X05, straight	<b>0,28 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 M17c 034-2-014 Sockets 2.54 mm, 2X07, straight	<b>0,38 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="8"/>	<input type="text" value="8"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 M17c 034-1-034 Female Header 2.54 mm, 1X04, straight	<b>0,16 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 W5L 10C Box connector, 10-pin, straight	<b>0,10 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="2"/>	<input type="text" value="2"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 M1 05 Dip switch, vertical, 6-pin	<b>0,26 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 S10CS216GB MicroSDHC memory card, 16 GB, Canvas Select Plus	<b>3,90 €</b> <small>In stock, delivery time: 1-2 business days MC: 0</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 D1c MICROSD D1 Shield - micro SD	<b>1,22 €</b> <small>In stock, delivery time: 1-2 business days MC: 0</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 M1 05 Dip switch, vertical, 8-pin	<b>0,29 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="5"/>	<input type="text" value="5"/>	Own article number <small>max. 20 characters</small>
<input type="checkbox"/>	 LAS10V 3301 Short-stroke key 6x6 mm, height: 4.3 mm, 12 V, vertical	<b>0,16 €</b> <small>In stock, delivery time: 1-2 business days MC: 1</small>
<input type="text" value="1"/>	<input type="text" value="1"/>	Own article number <small>max. 20 characters</small>

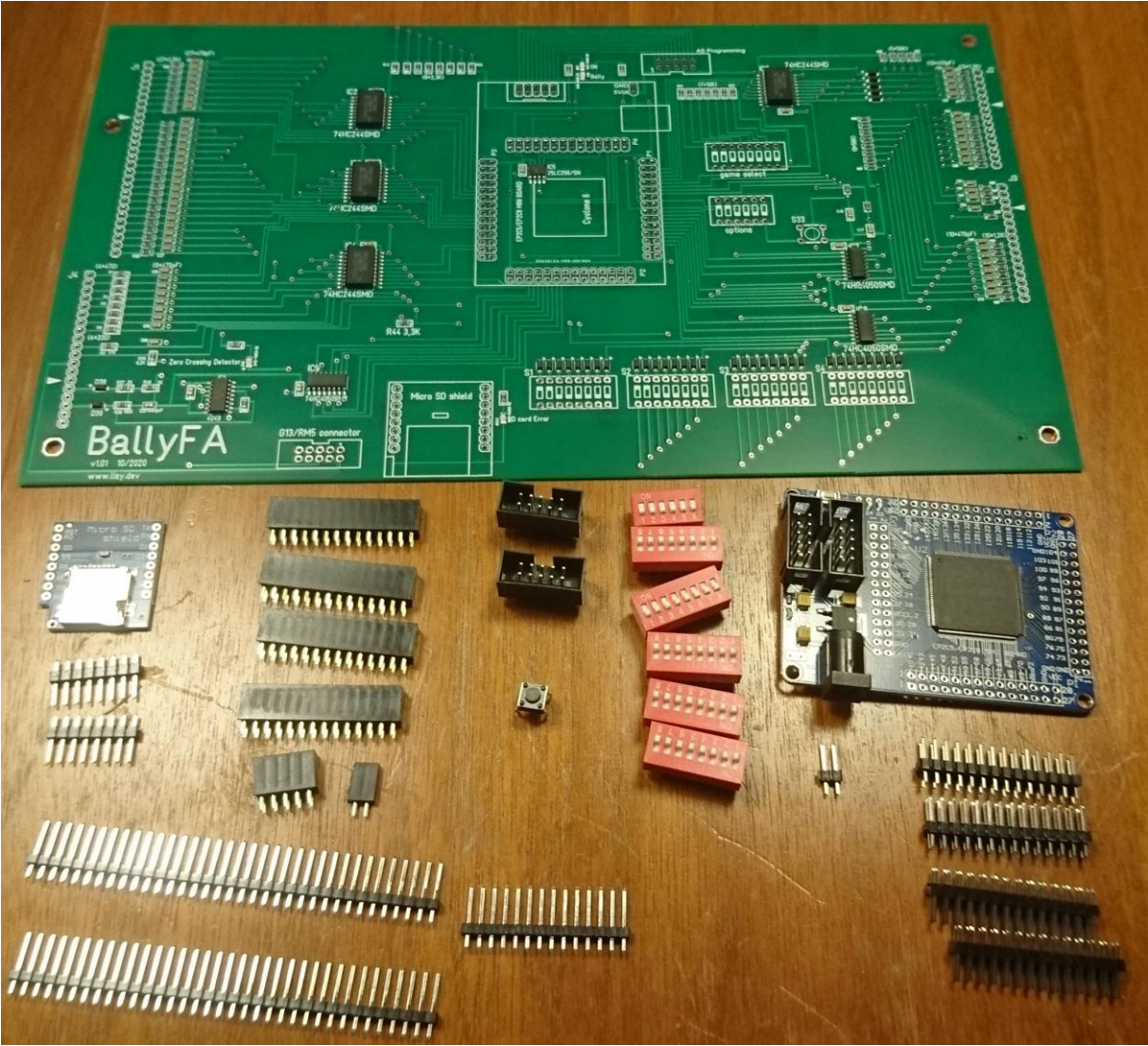
## 2. Step by Step

### 2.1. headers for the FPGA

Solder the four 2\*14 pin headers on the FPGA. In addition you need to solder one 1\*2 header (green circle in the picture).

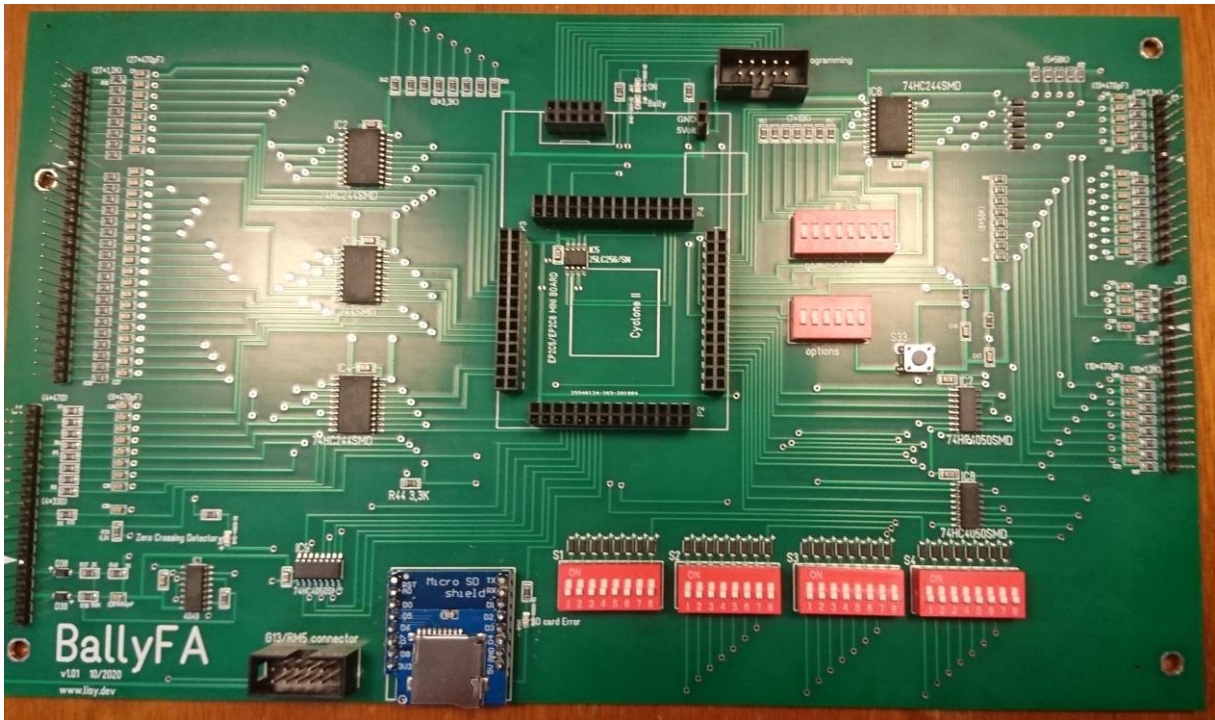


## 2.2. PCB

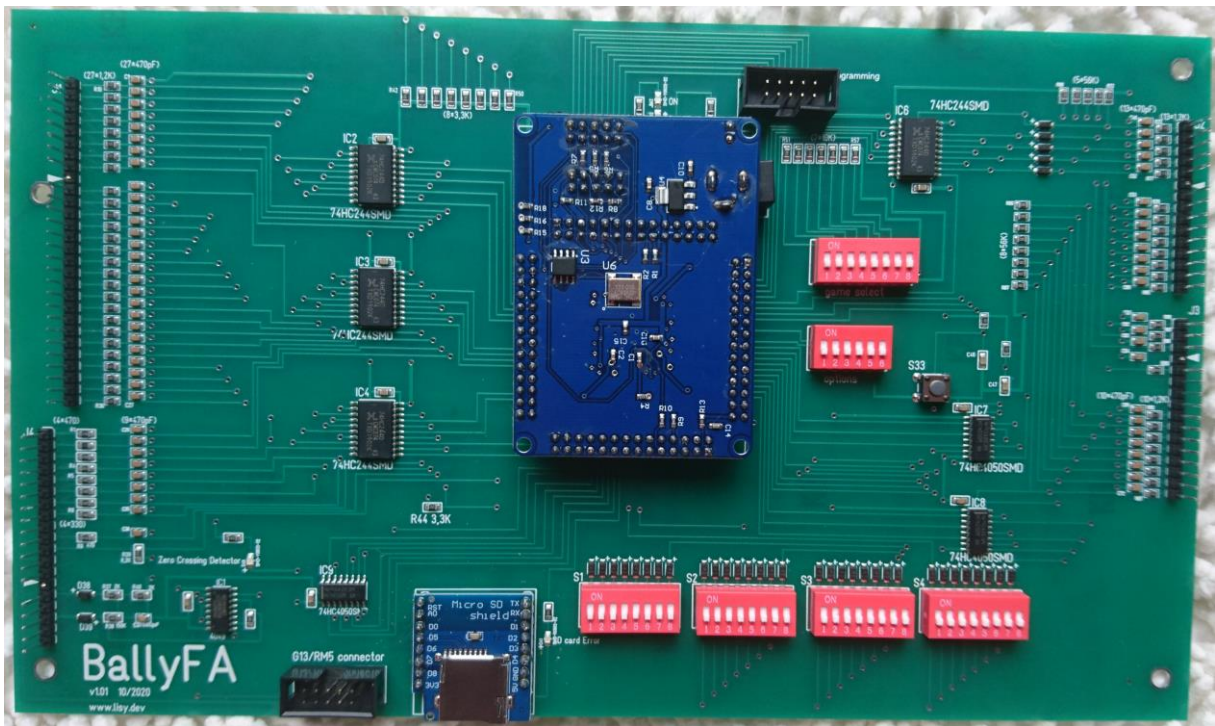


PCB with all needed components.





soldered



Ready