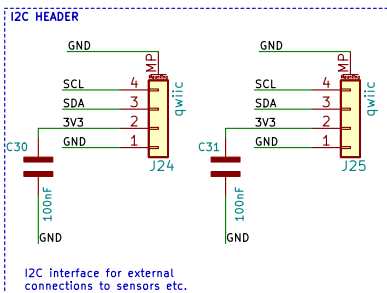
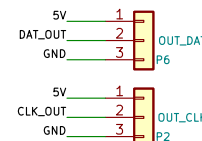
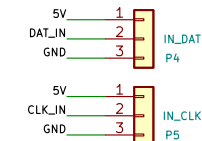
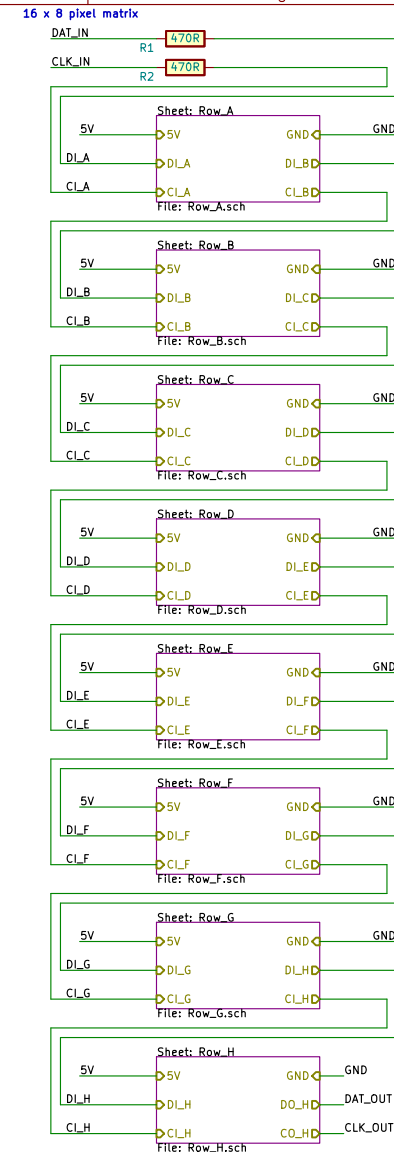
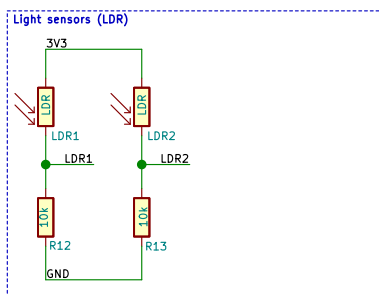
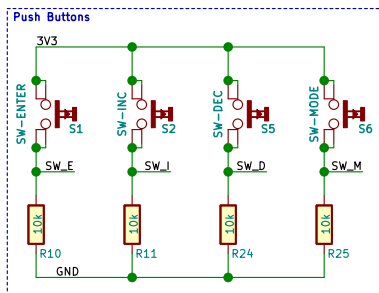
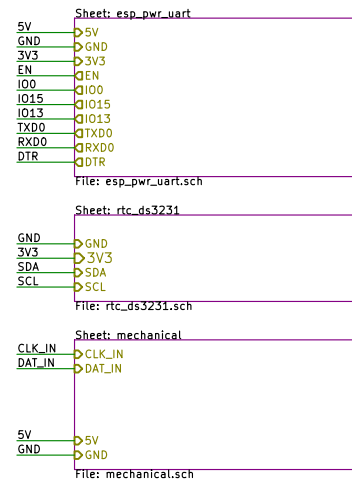


SPI header with breakout pins.  
Connect with wire to appropriate pins on ESP32

Native SPI pins are (clk, mosi, miso, cs):  
SPI1: 6, 8, 7, 11  
HSPI: 14,13,12,15  
VSPI: 18,23,19, 5  
If using native pins max SPI clock can be set to 80 MHZ.  
Only HSPI & VSPI are supported by esp-idf driver.



I2C interface for external connections to sensors etc.

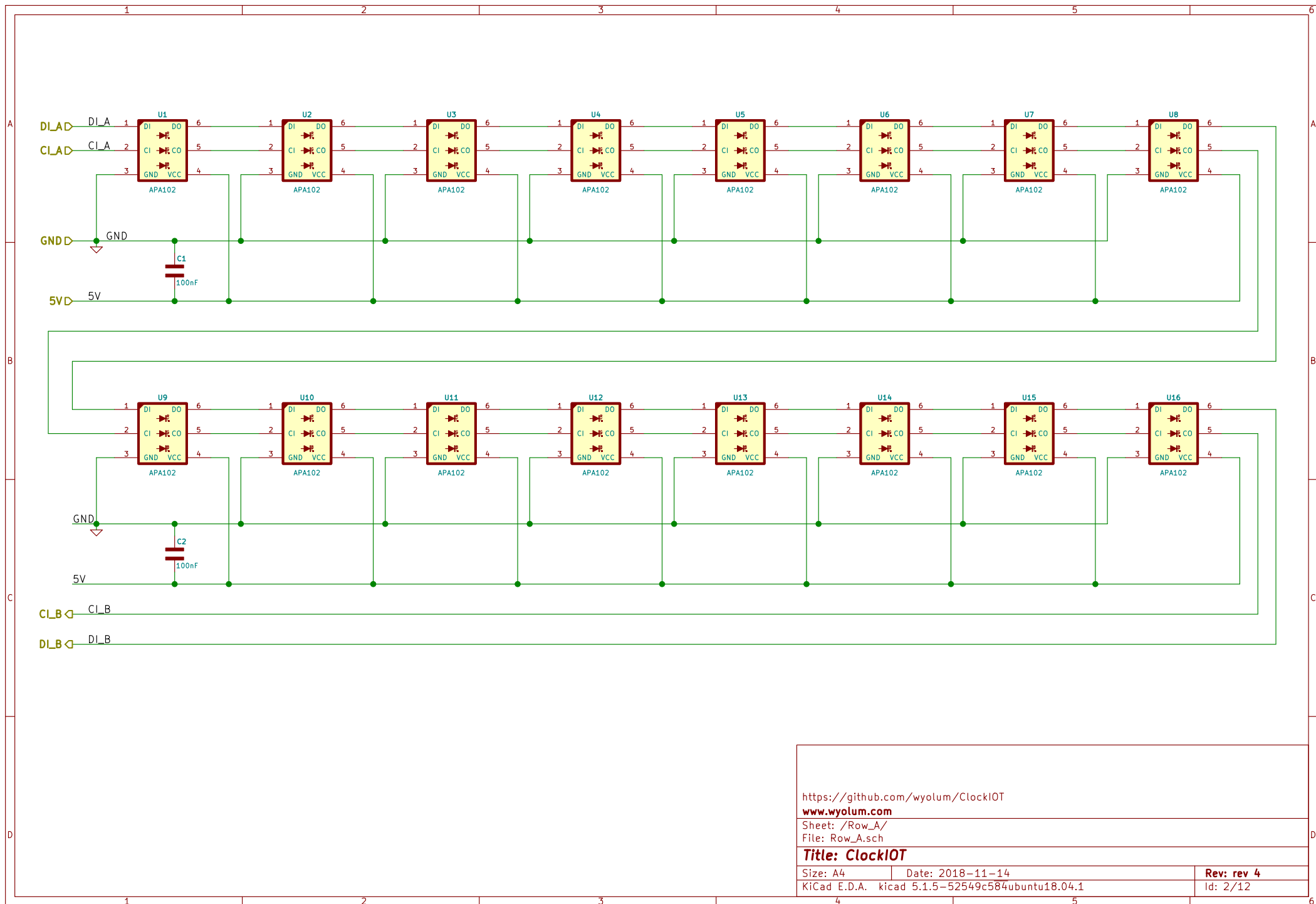


**Wyolum**   
<https://github.com/wyolum/ClockIoT>  
[www.wyolum.com](http://www.wyolum.com)

**KiCad**   
 open source hardware

Sheet: /  
 File: ClockIoT.sch  
**Title: ClockIoT**

Size: A4	Date: 2018-11-14	Rev: rev 4
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<https://github.com/wyolum/ClockIOT>

[www.wyolum.com](http://www.wyolum.com)

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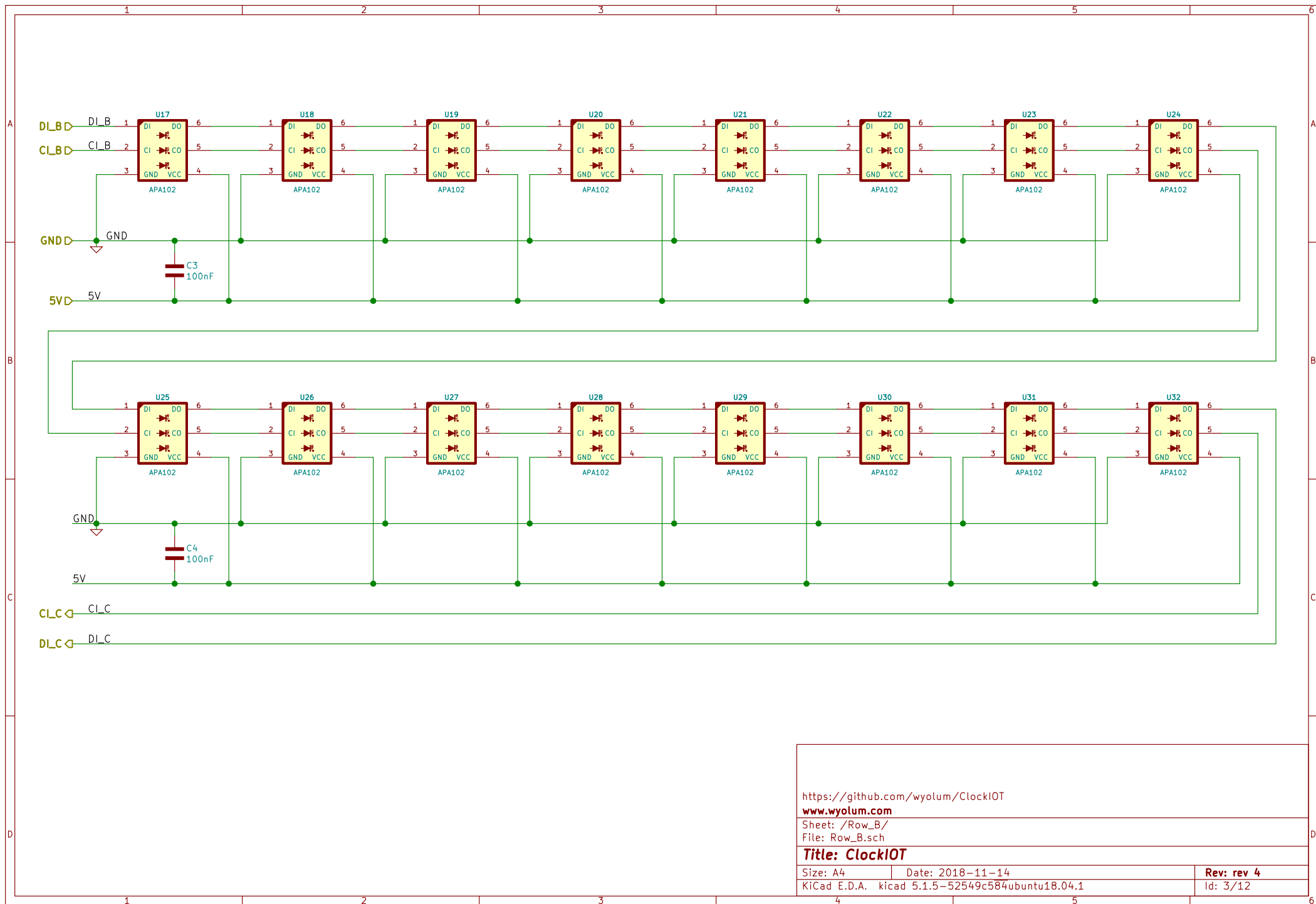
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Rev: rev 4

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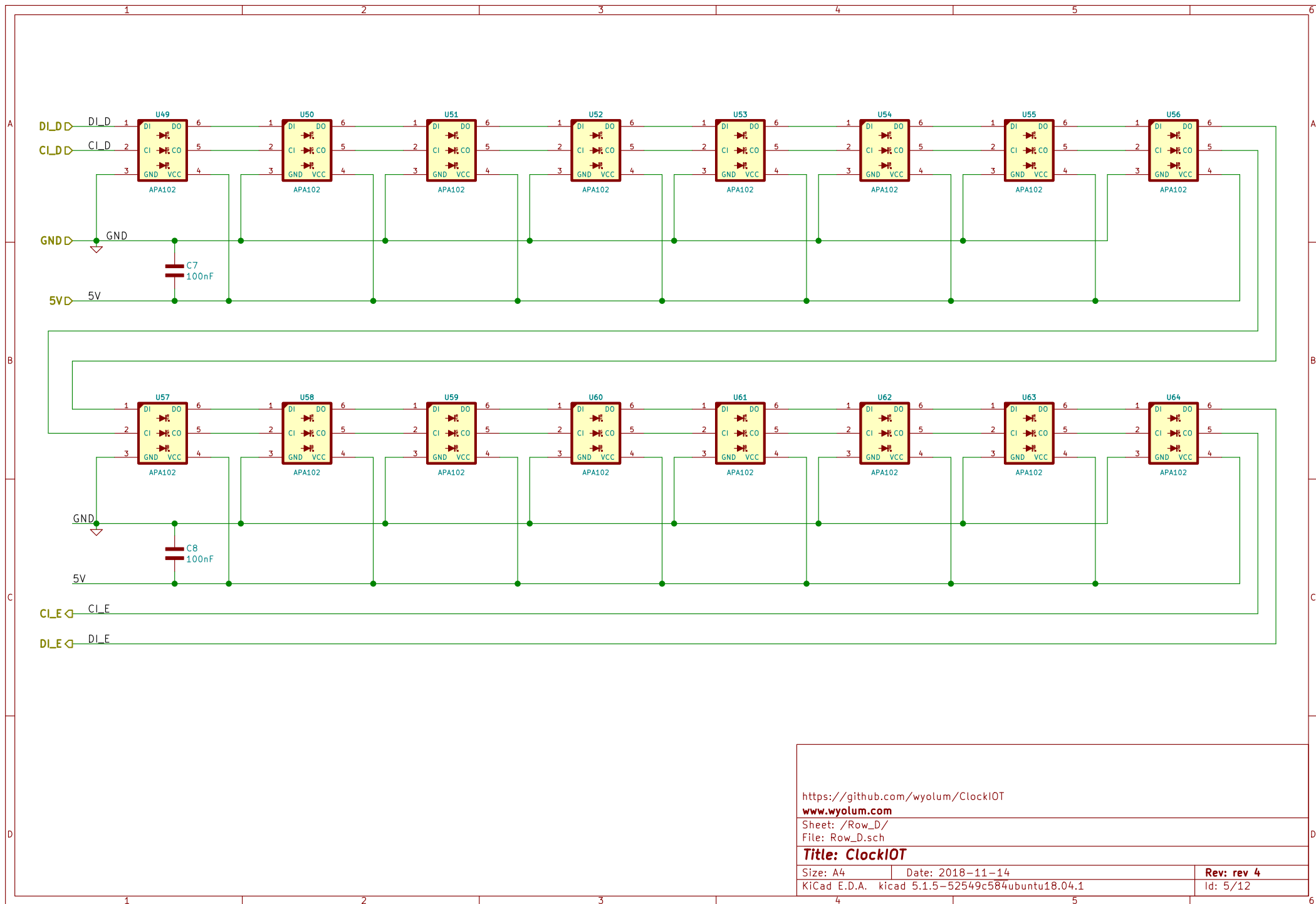
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Rev: rev 4

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Id: 3/12





<https://github.com/wyolum/ClockIOT>

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**Title: ClockIOT**

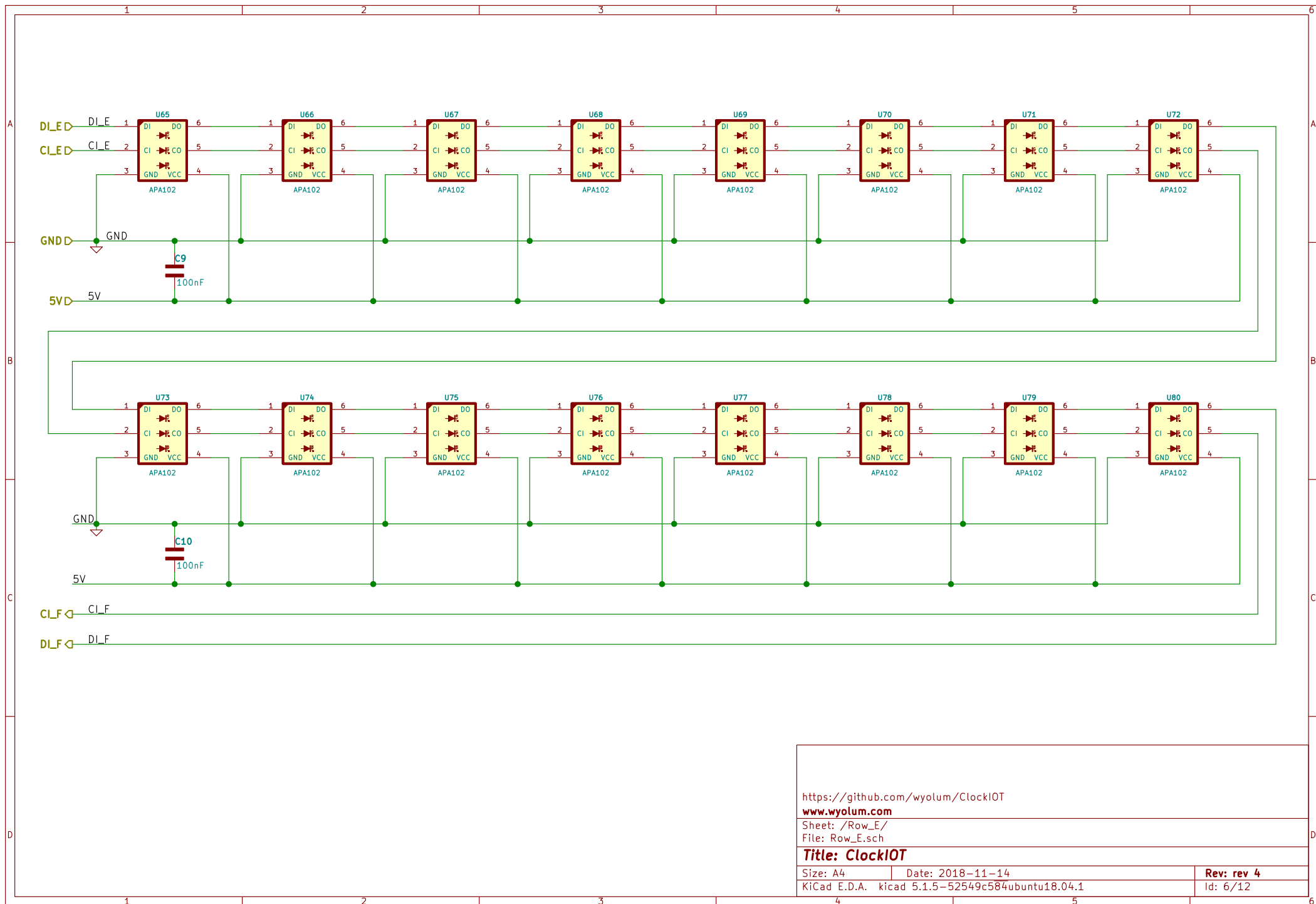
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Rev: rev 4

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Id: 5/12



<https://github.com/wyolum/ClockIOT>

[www.wyolum.com](http://www.wyolum.com)

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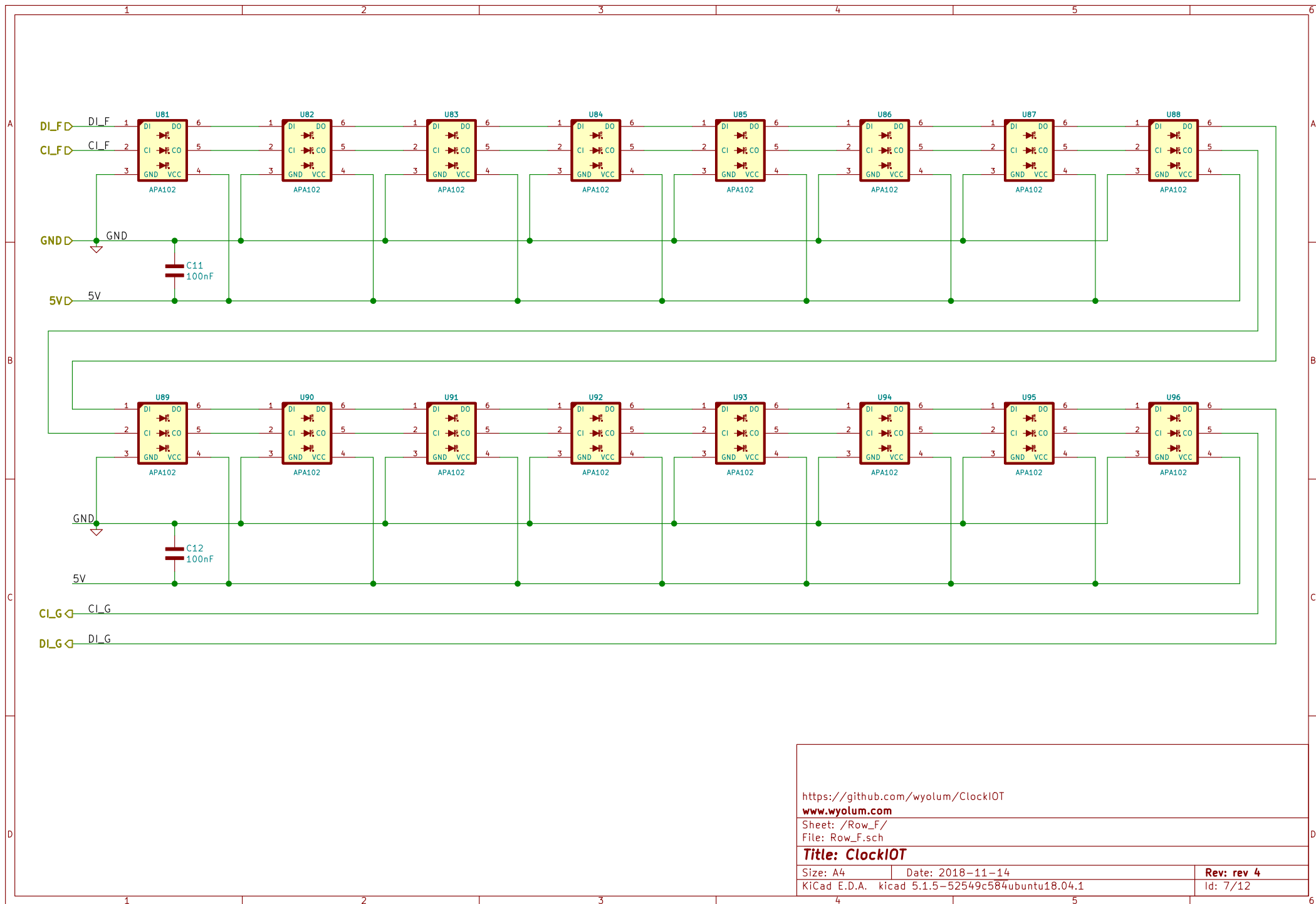
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Rev: rev 4

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Id: 6/12



<https://github.com/wyolum/ClockIOT>

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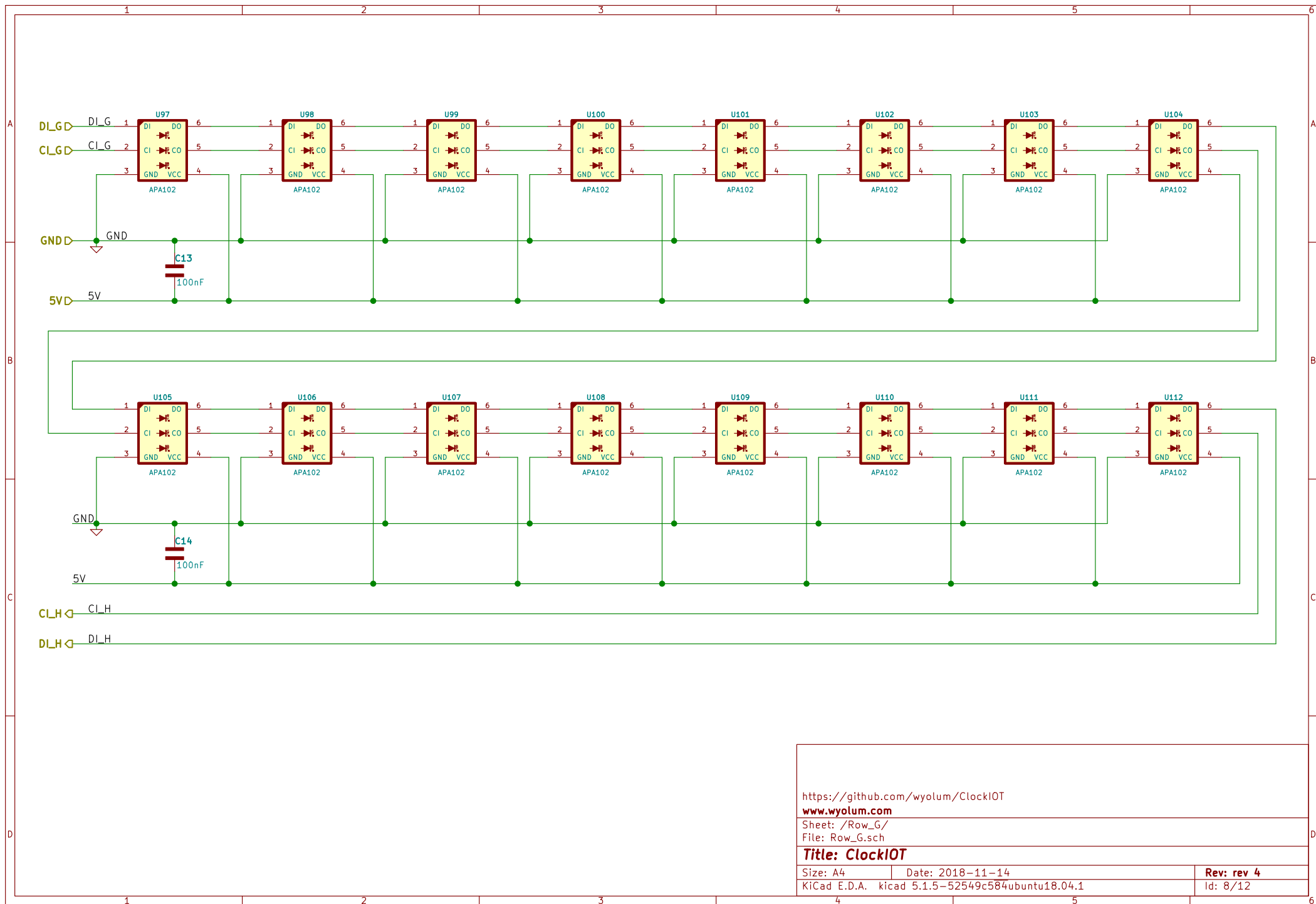
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Rev: rev 4

KiCad E.D.A. kicad 5.1.5-52549c584ubuntu18.04.1

Id: 7/12



<https://github.com/wyolum/ClockIOT>

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**Title: ClockIOT**

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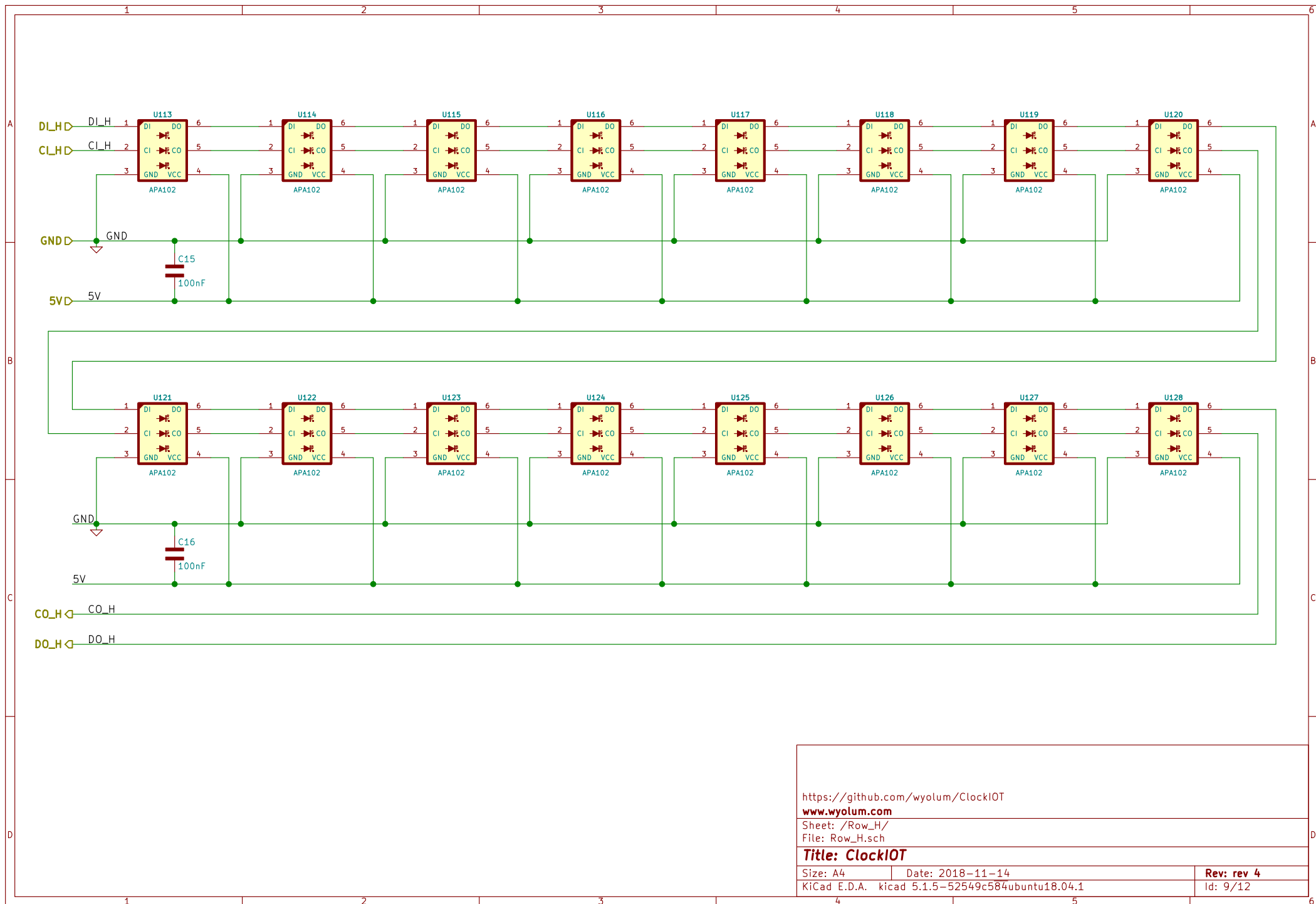
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Rev: rev 4

KiCad E.D.A. kicad 5.1.5-52549c584ubuntu18.04.1

Id: 8/12





<https://github.com/wyolum/ClockIOT>

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**Title: ClockIOT**

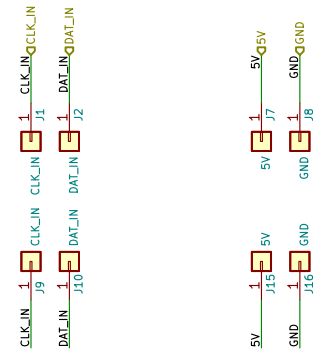
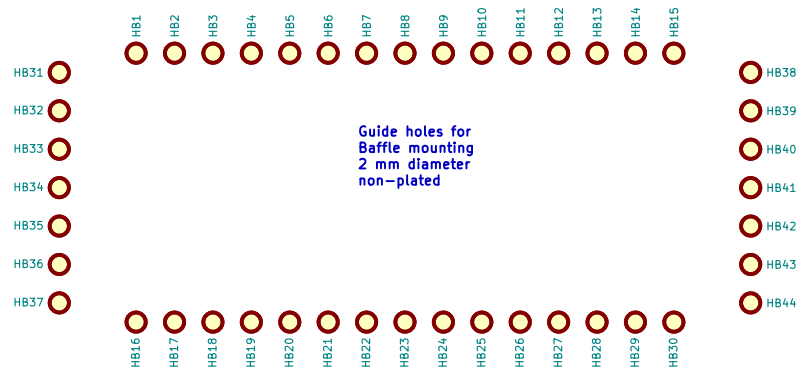
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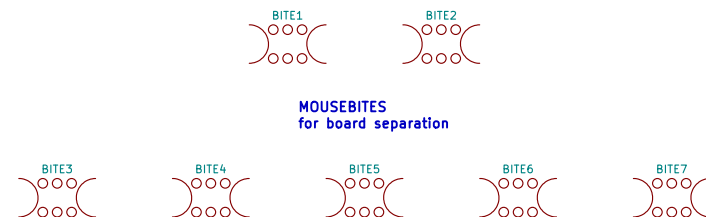
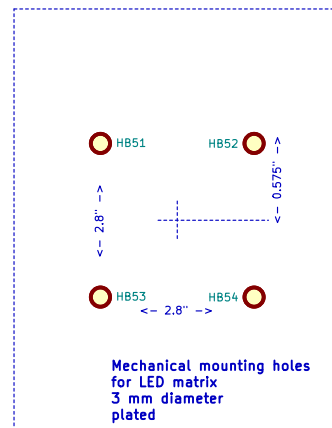
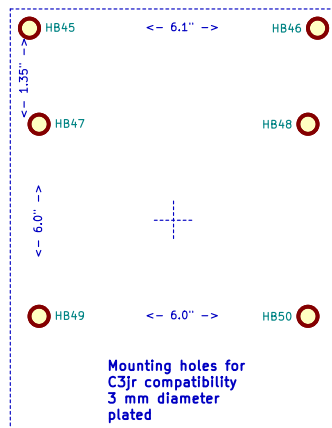
Rev: rev 4

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Id: 9/12



Mounting holes for piggy back attachment of "snap-off" control board. Use M3 HEX posts to connect LED board to control board



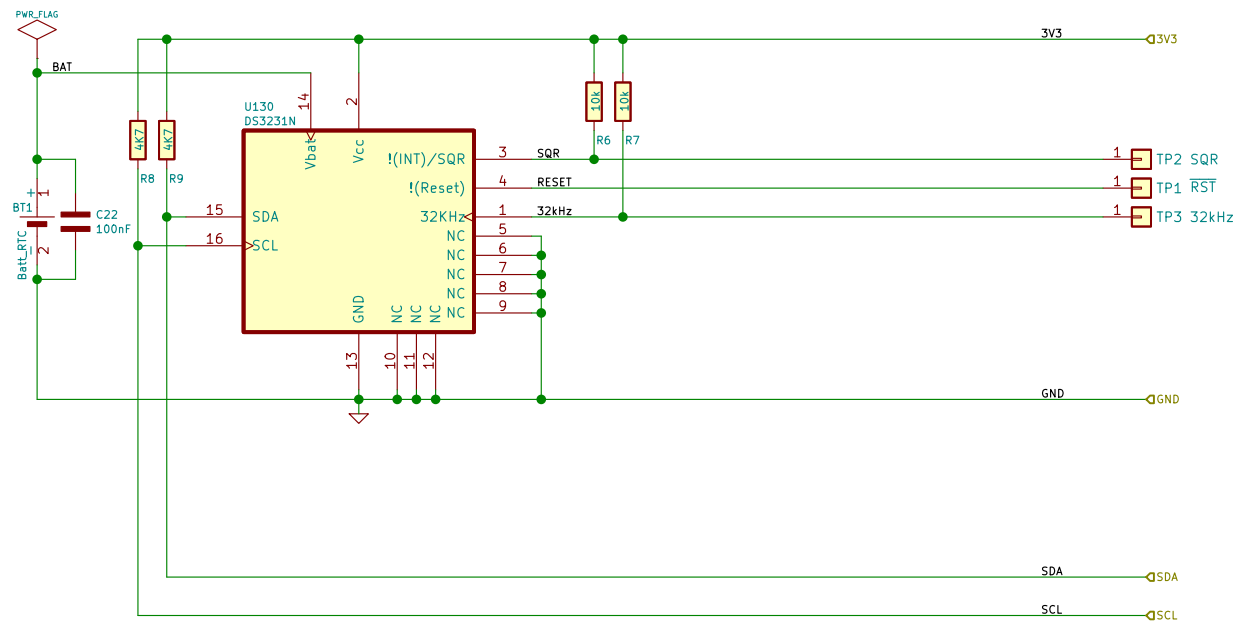
<https://github.com/wyolum/ClockIOT>  
[www.wyolum.com](http://www.wyolum.com)

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Rev: rev 4  
Id: 10/12



<https://github.com/wyolum/ClockIOT>

[www.wyolum.com](http://www.wyolum.com)

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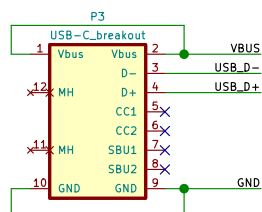
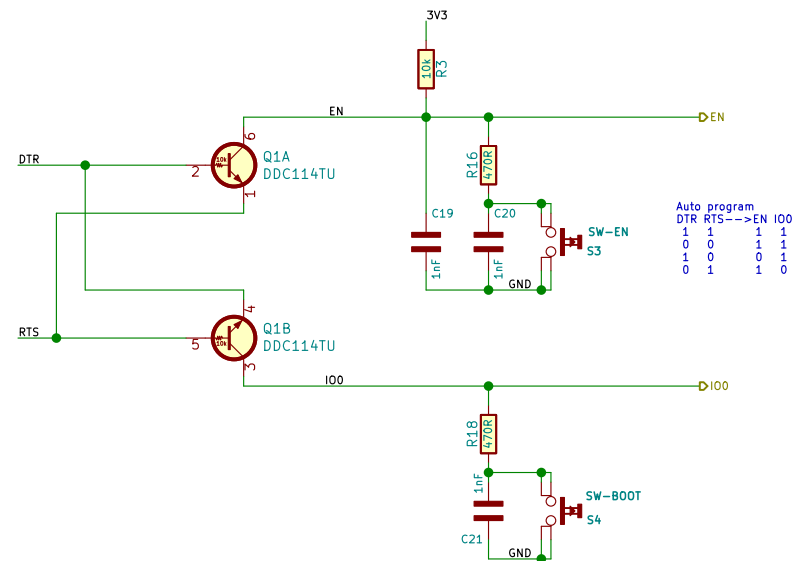
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Id: 11/12



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