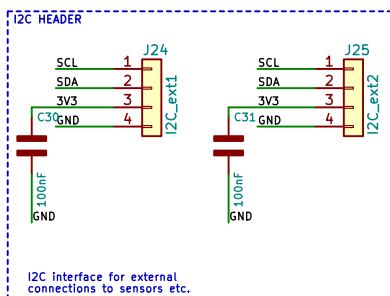
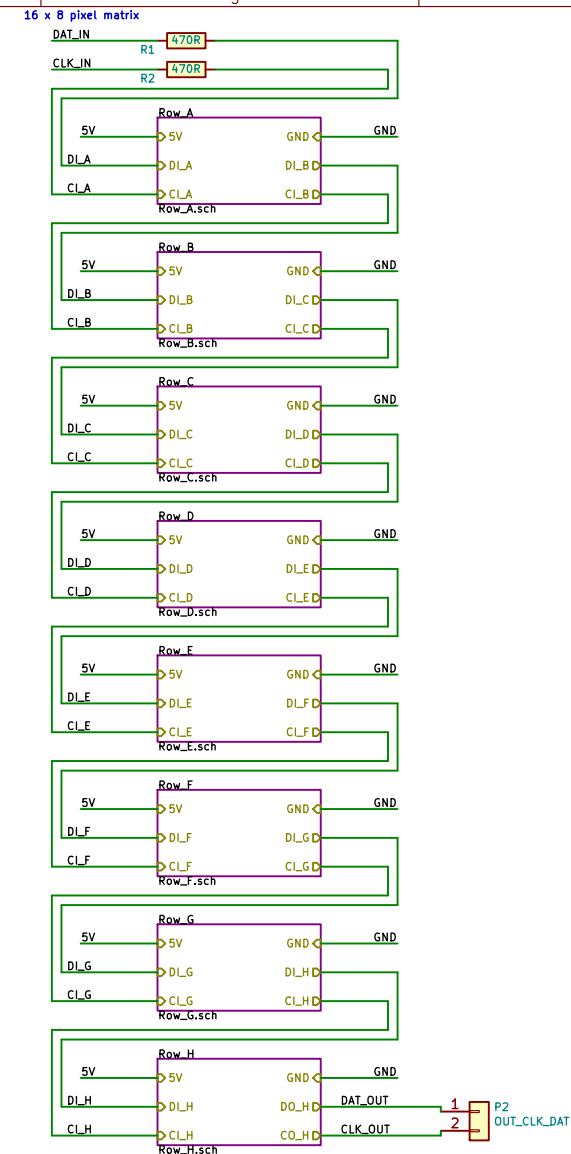
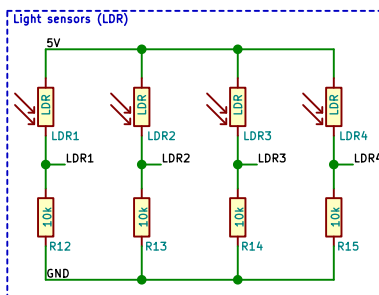
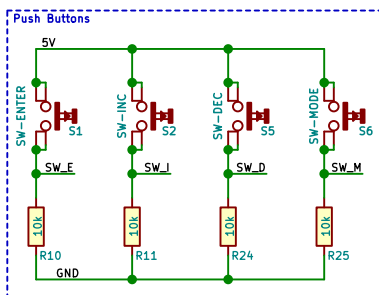
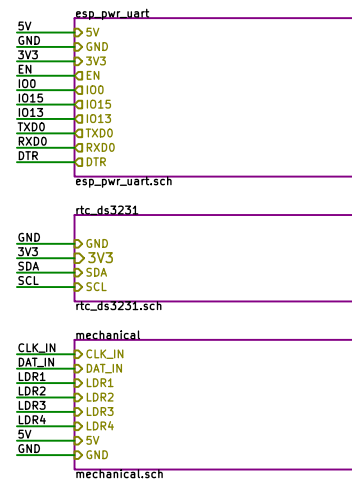


SPI header with breakout pins.  
Connect with wire to appropriate pins on ESP32

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.

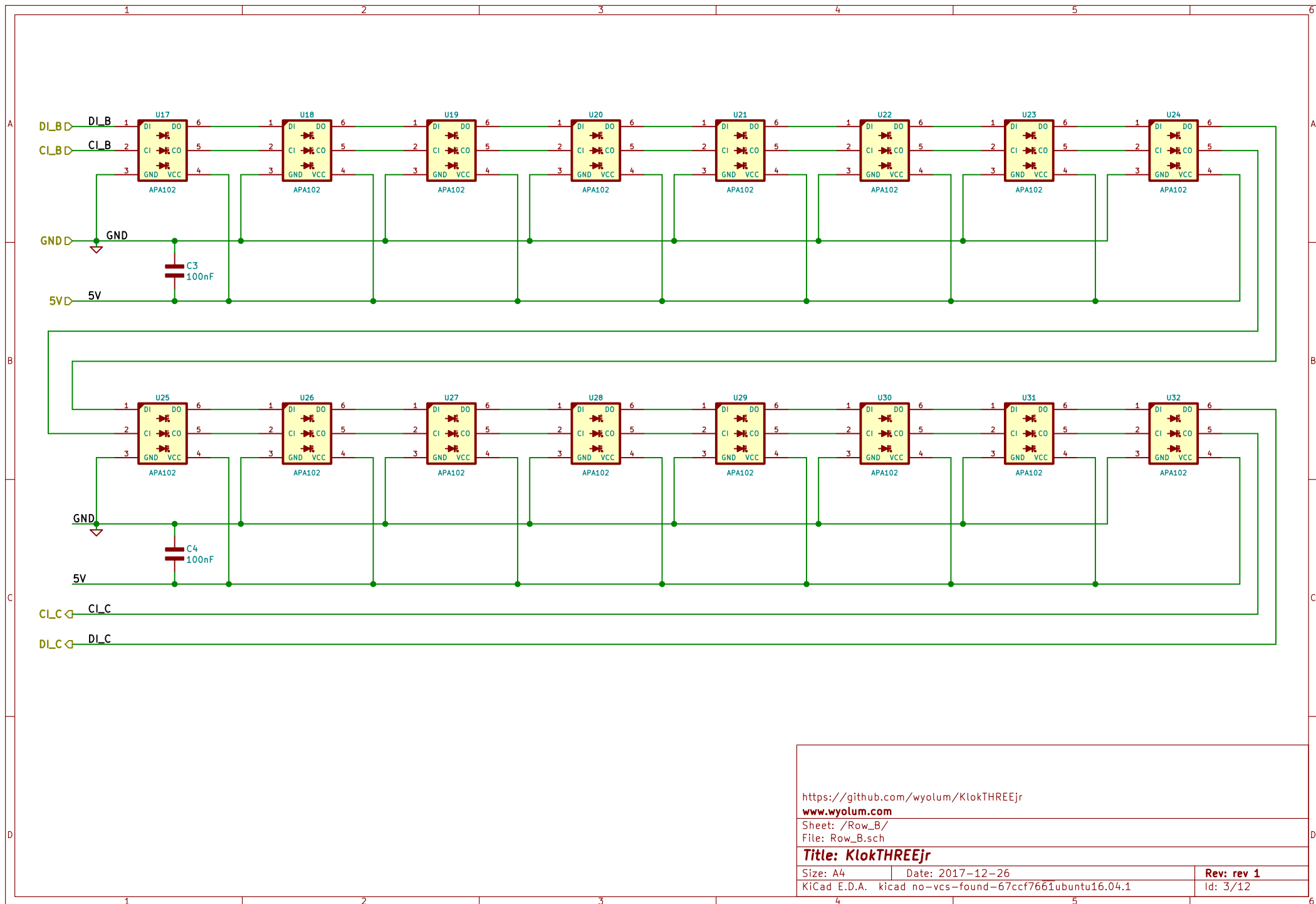


**Wyolum**   
<https://github.com/wyolum/KlokTHREEjr>  
[www.wyolum.com](http://www.wyolum.com)

**KiCad** 

Sheet: /  
 File: KlokTHREEjr.sch  
**Title: KlokTHREEjr**  
 Size: A4 Date: 2017-12-26  
 KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1  
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File: Row\_B.sch

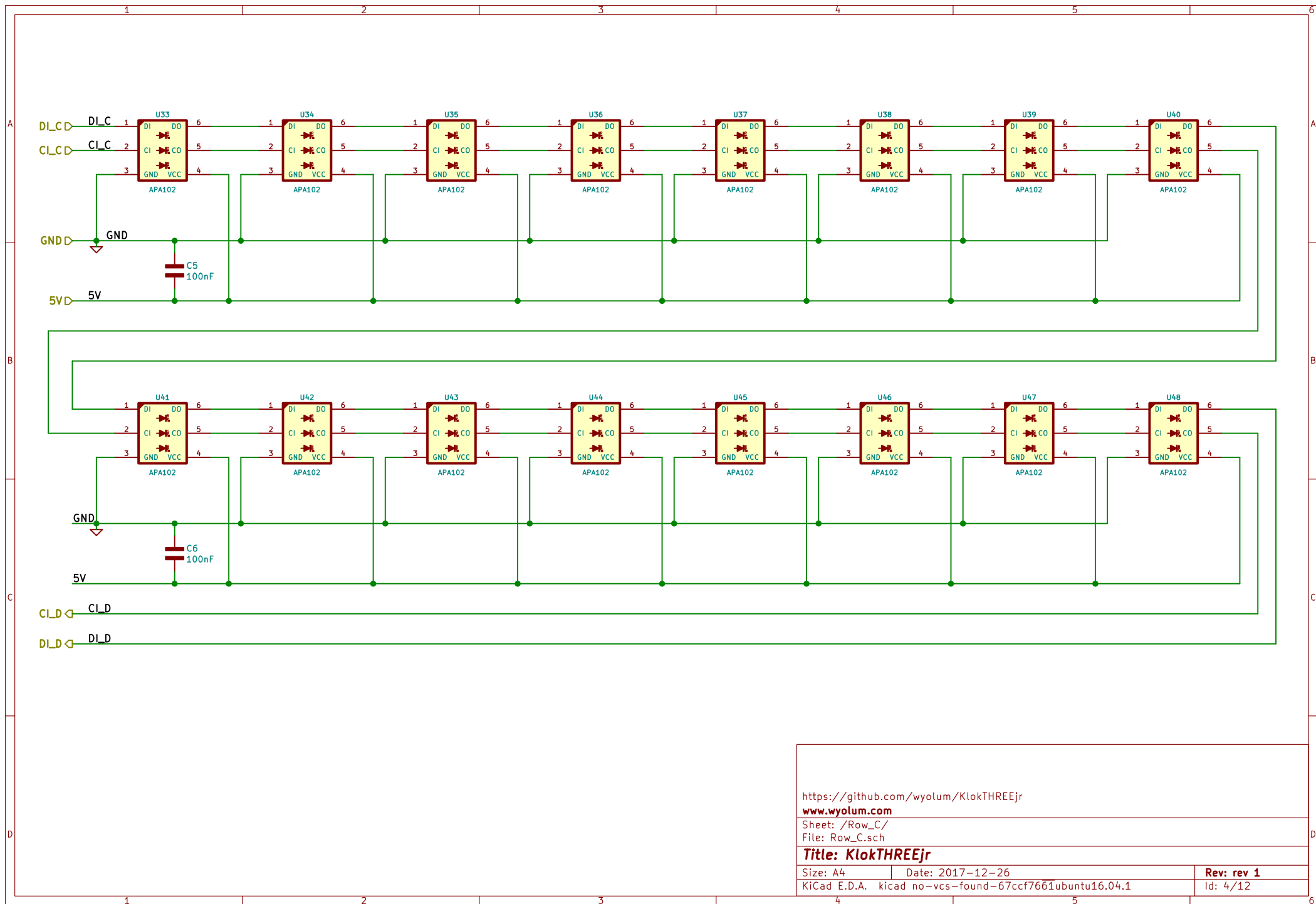
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Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1

Rev: rev 1

Id: 3/12



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File: Row\_C.sch

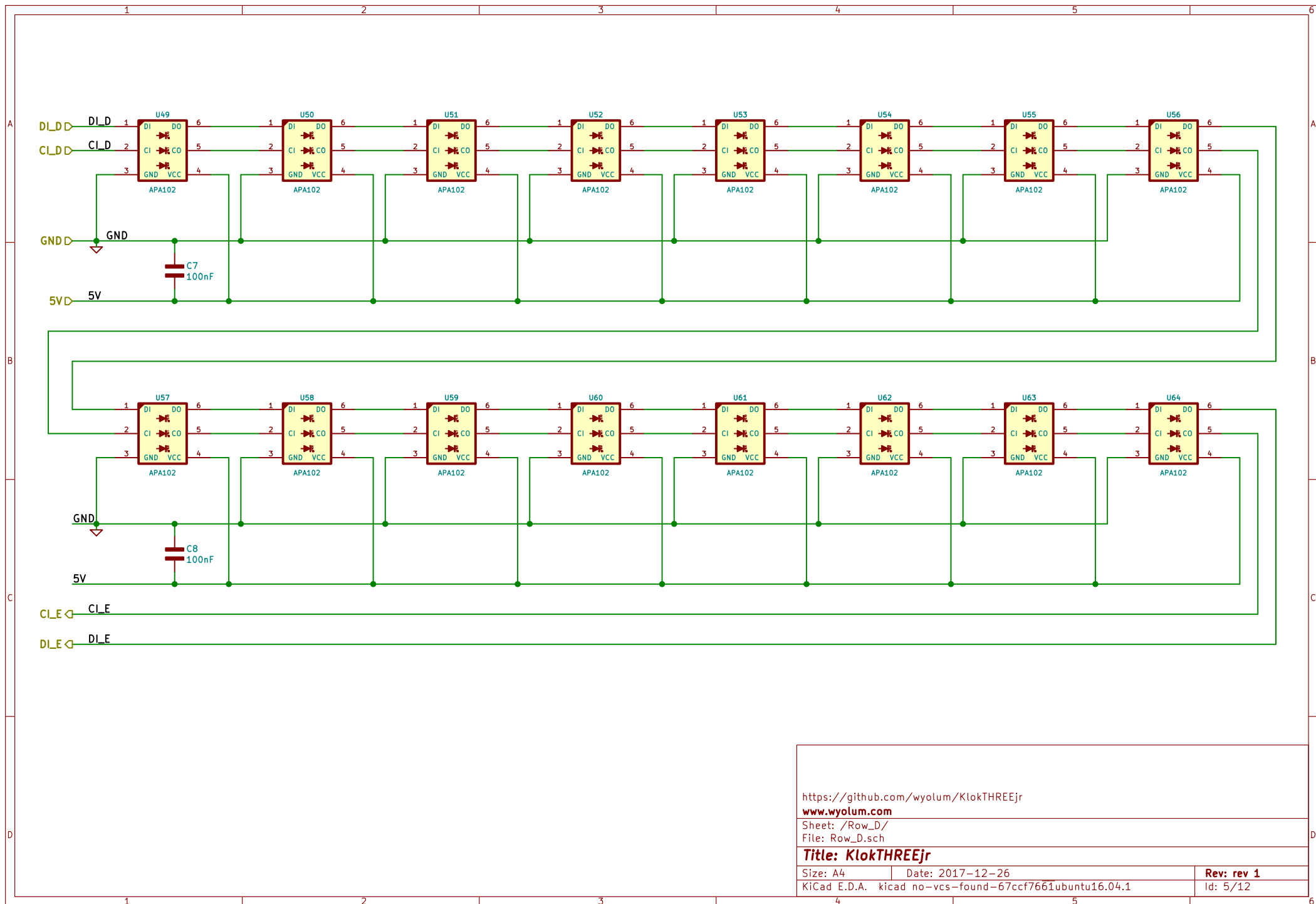
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Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1

Rev: rev 1

Id: 4/12



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File: Row\_D.sch

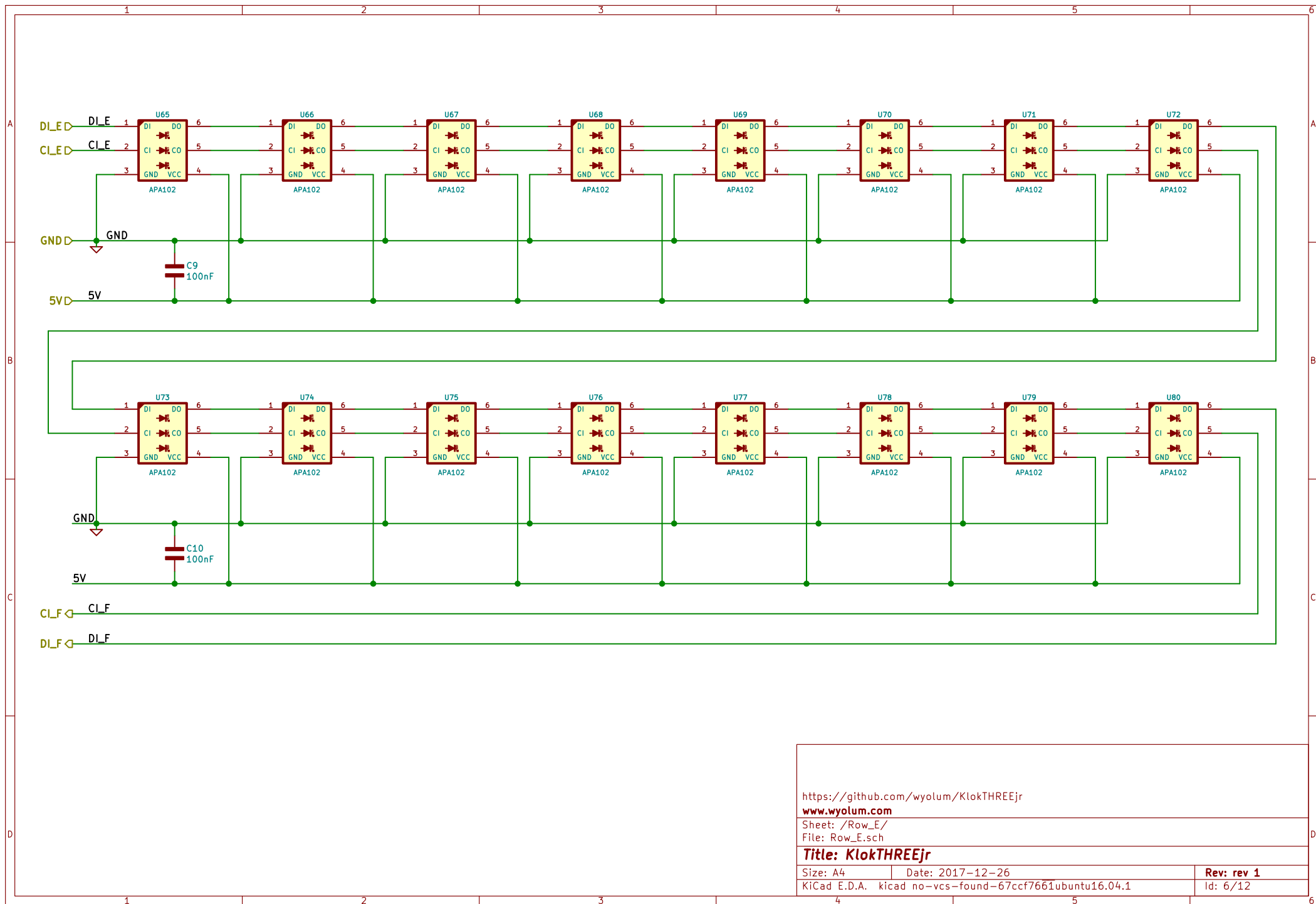
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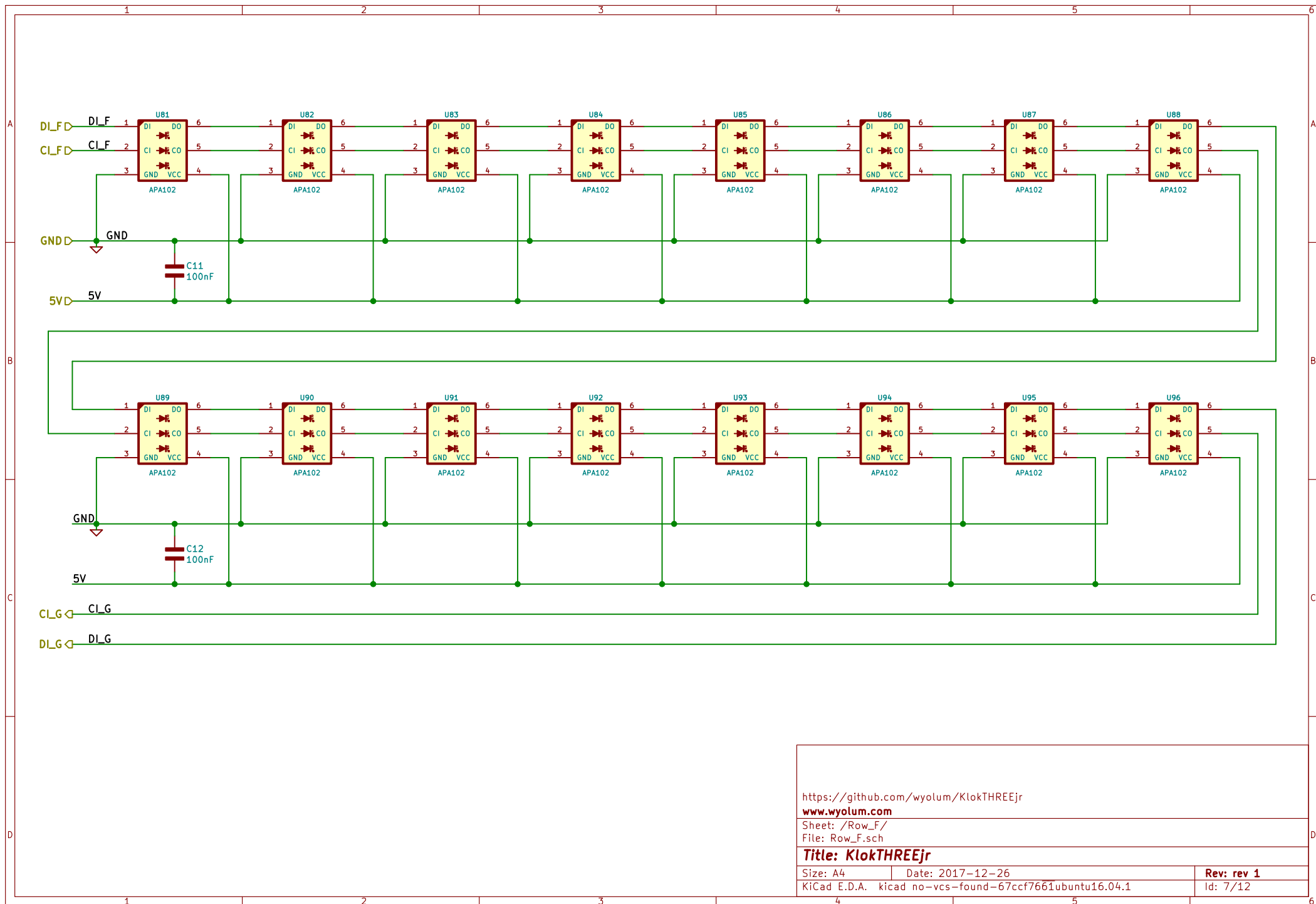
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Rev: rev 1

Id: 5/12





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File: Row\_F.sch

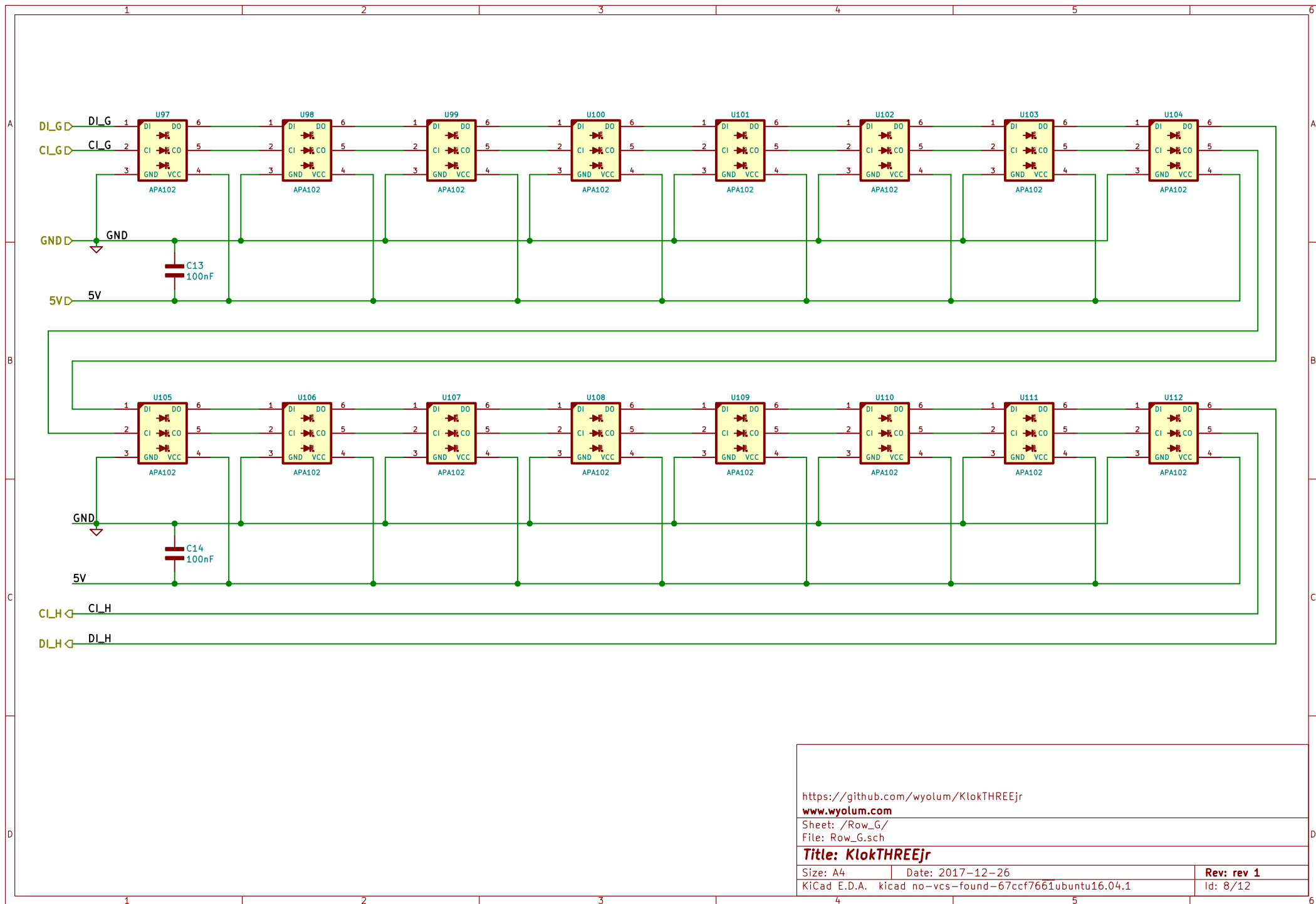
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Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1

Rev: rev 1

Id: 7/12



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

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File: Row\_G.sch

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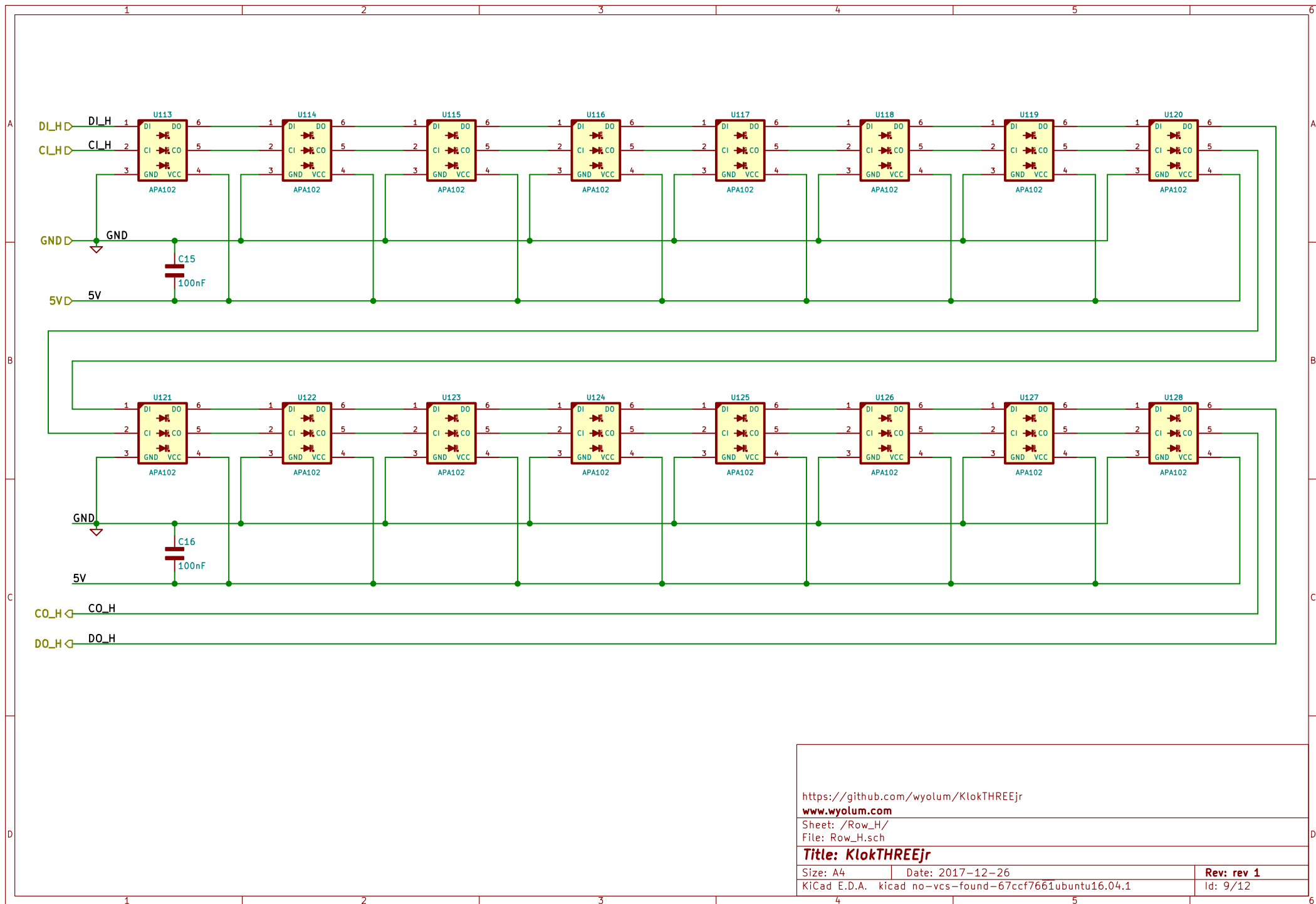
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KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1

Rev: rev 1

Id: 8/12





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

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Sheet: /Row\_H/

File: Row\_H.sch

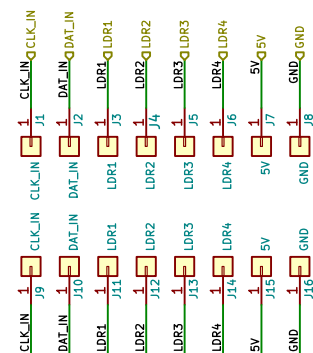
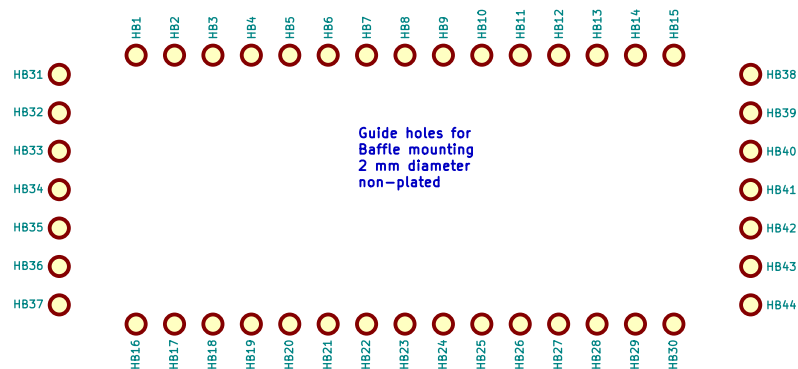
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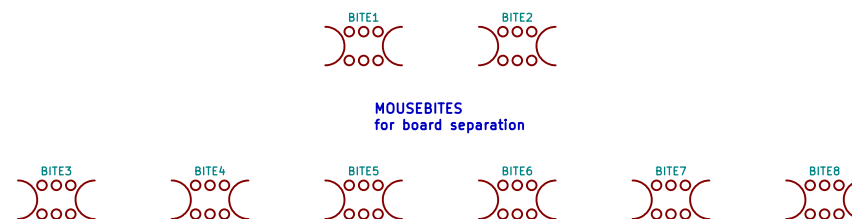
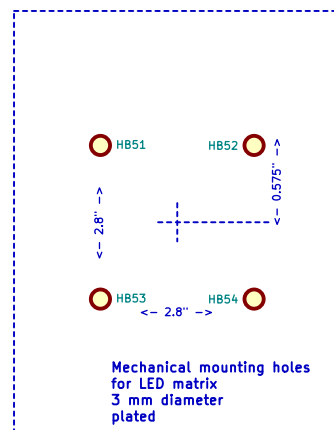
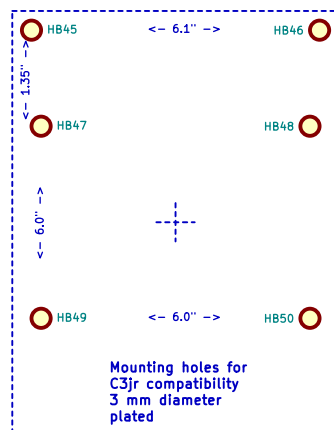
KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1



Rev: rev 1

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



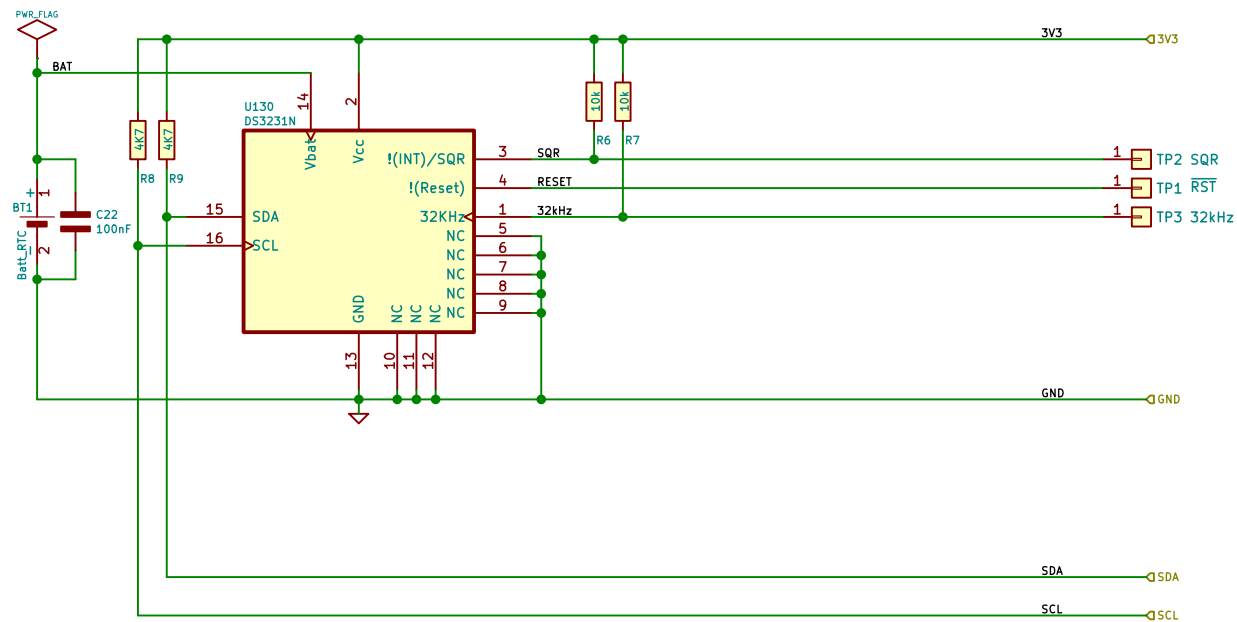
<https://github.com/wyolum/KlokTHREEjr>  
[www.wyolum.com](http://www.wyolum.com)

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Size: A4	Date: 2017-12-26	Rev: rev 1
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open source hardware



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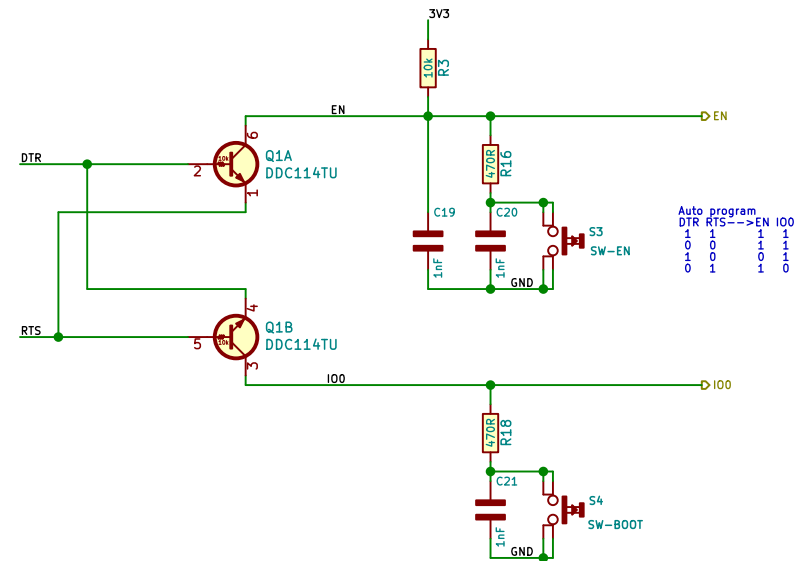
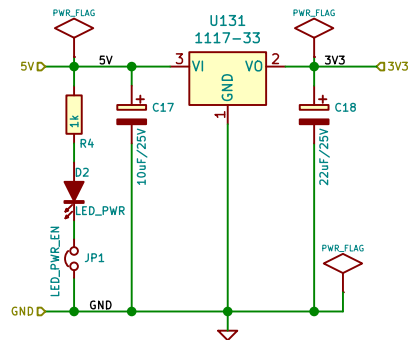
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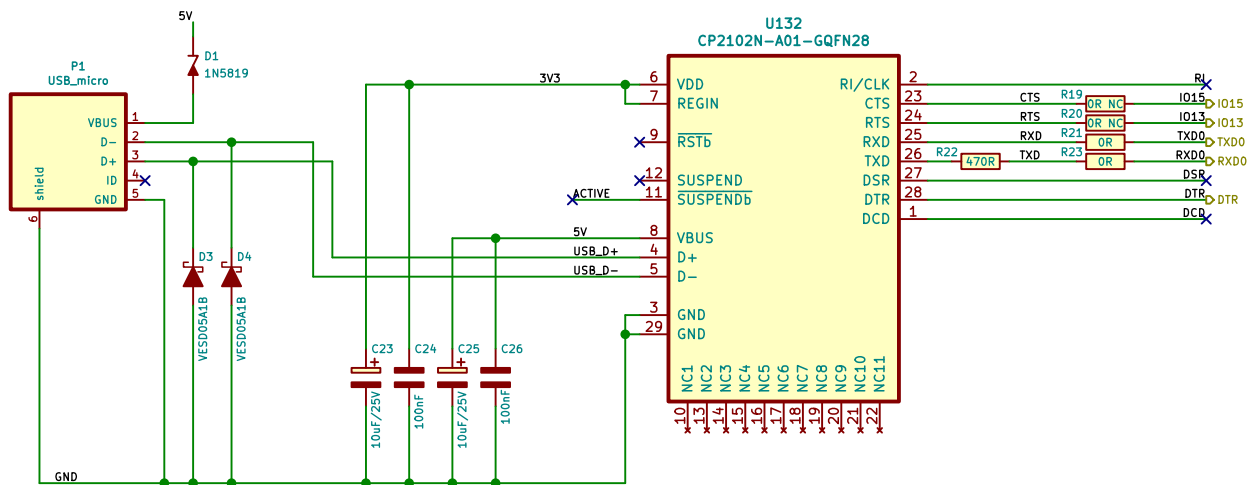
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Auto program  
DTR RTS-->EN IO0  
1 0 1 0 1 1 1 1  
0 1 0 0 1 0 1 1  
0 1 0 1 1 1 1 1





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[www.wyolum.com](http://www.wyolum.com)  
 Sheet: /esp\_pwr\_uart/  
 File: esp\_pwr\_uart.sch  
**Title: KlokTHREEjr**  
 Size: A4 Date: 2017-12-26  
 KiCad E.D.A. kicad no-vcs-found-67ccf7661ubuntu16.04.1  
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 Rev: rev 1  
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