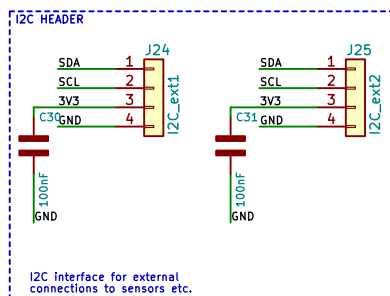
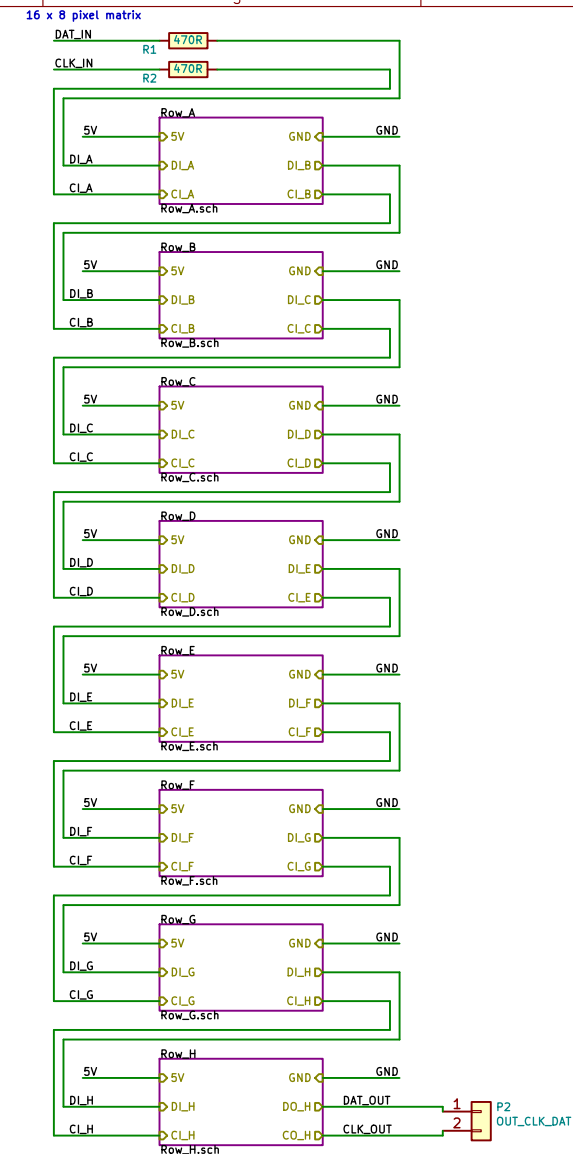
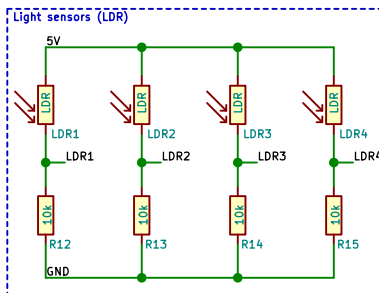
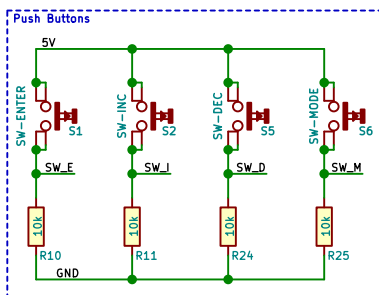
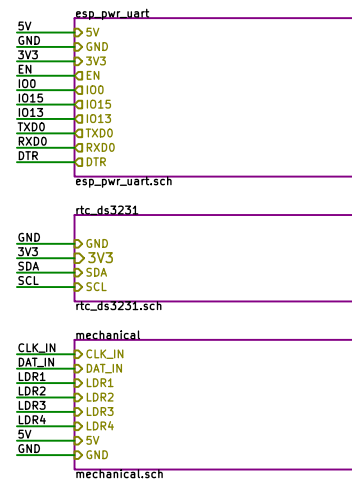


SPI header with breakout pins.  
Connect with wire to appropriate pins on ESP32

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**

open source hardware

Sheet: /

File: KlokTHREEjr.sch

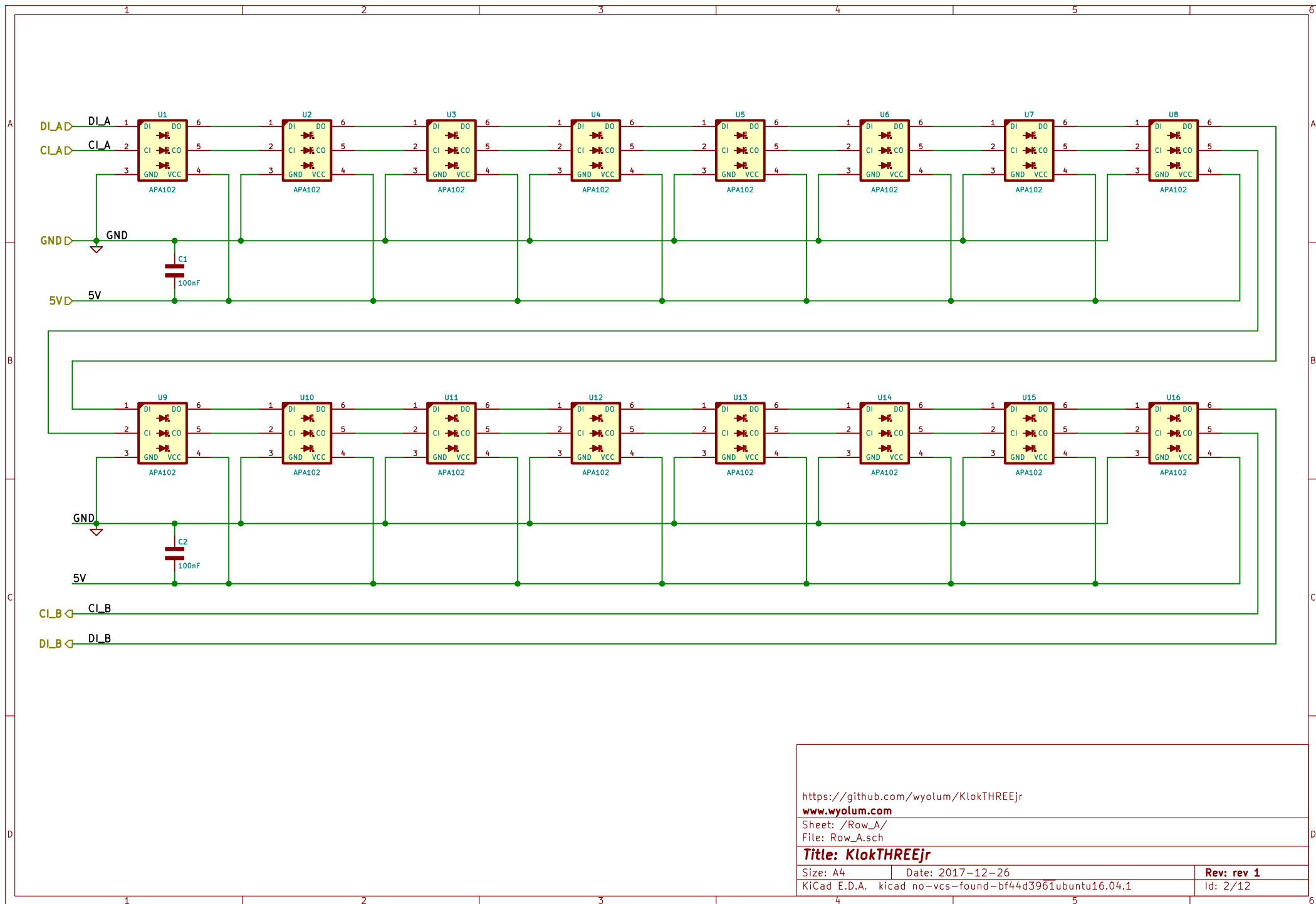
**Title: KlokTHREEjr**

Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 1/12



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

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Sheet: /Row\_A/

File: Row\_A.sch

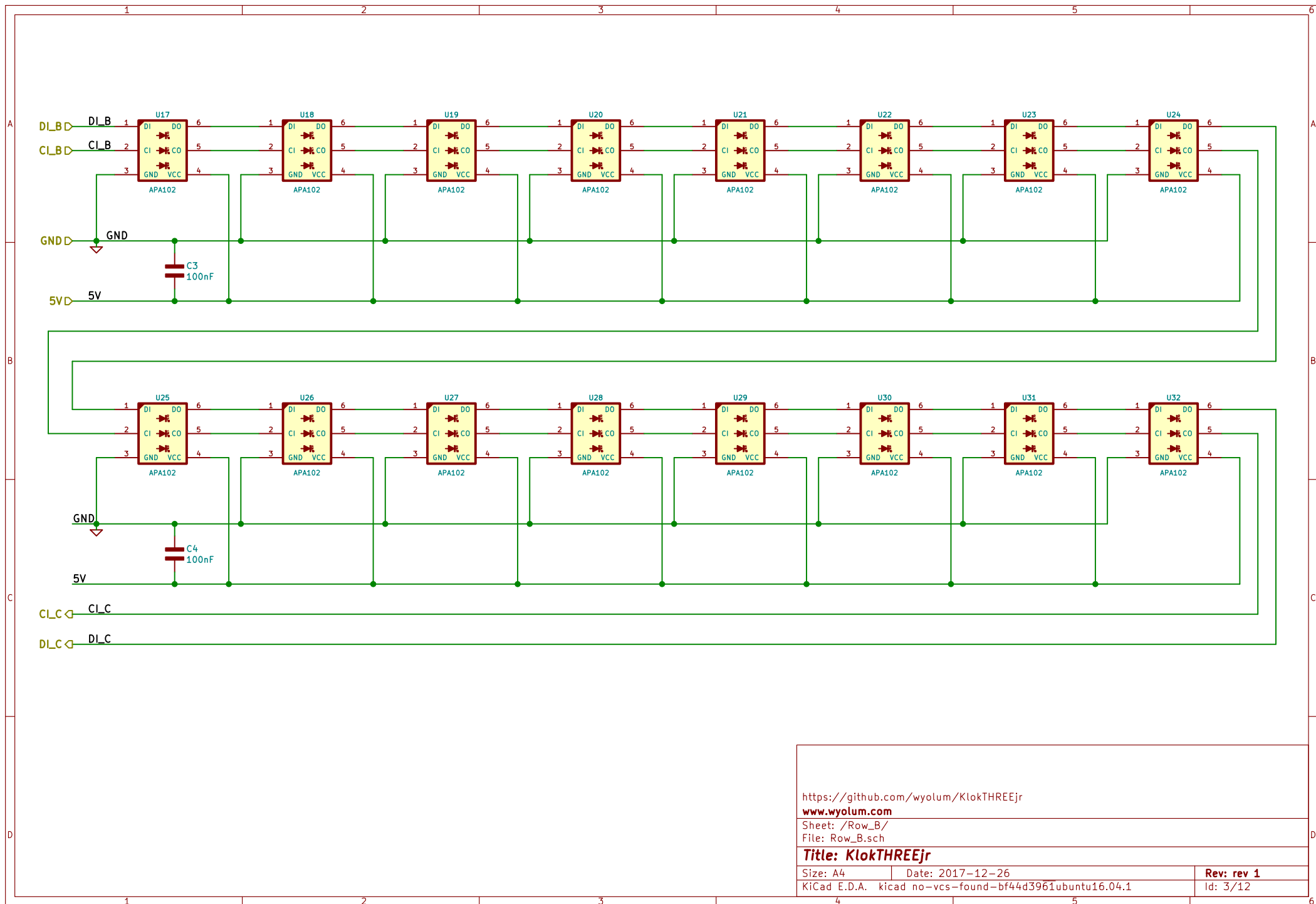
**Title: KlokTHREEjr**

Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

**Rev: rev 1**

Id: 2/12



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Sheet: /Row\_B/

File: Row\_B.sch

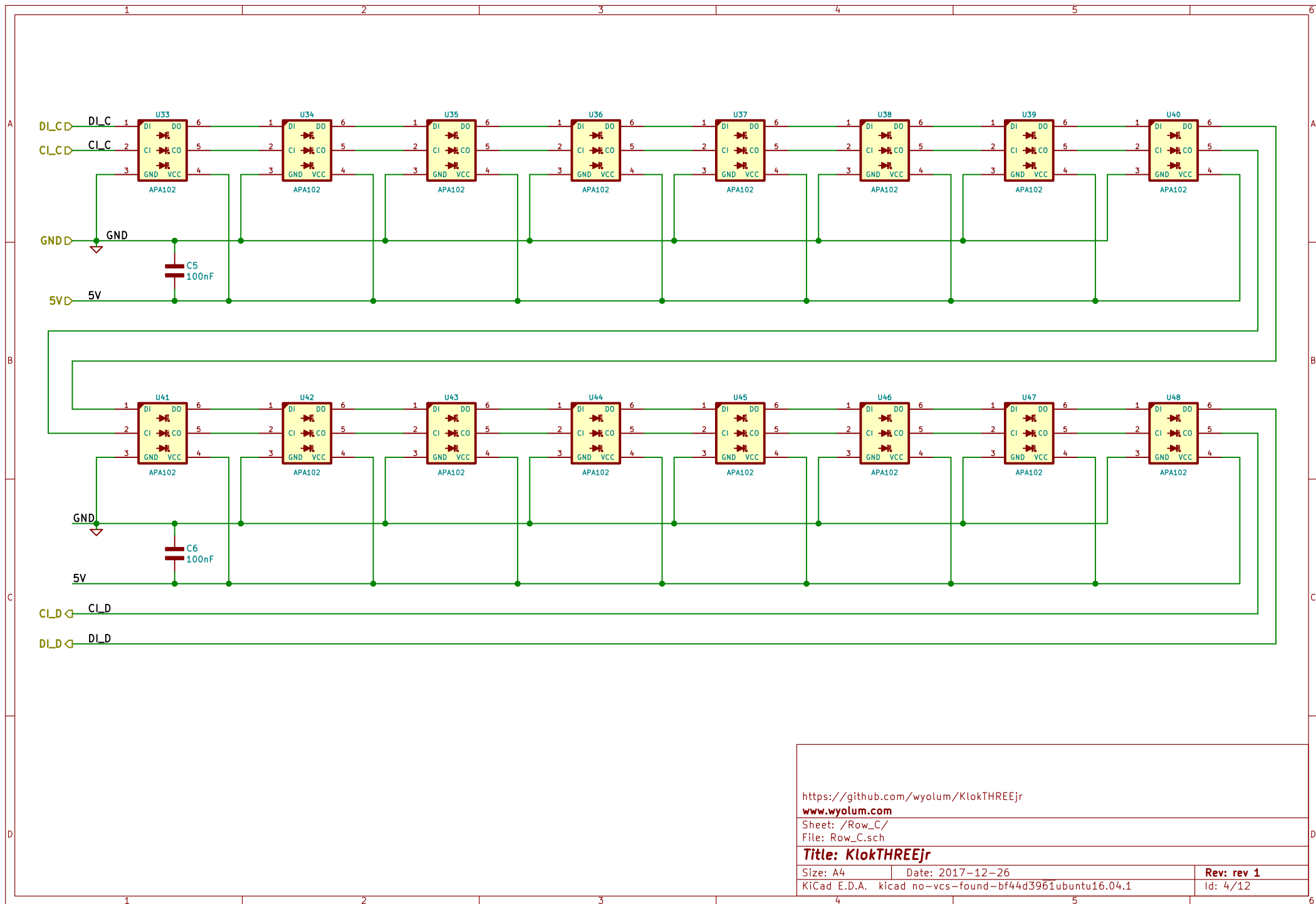
**Title: KlokTHREEjr**

Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 3/12



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

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Sheet: /Row\_C/

File: Row\_C.sch

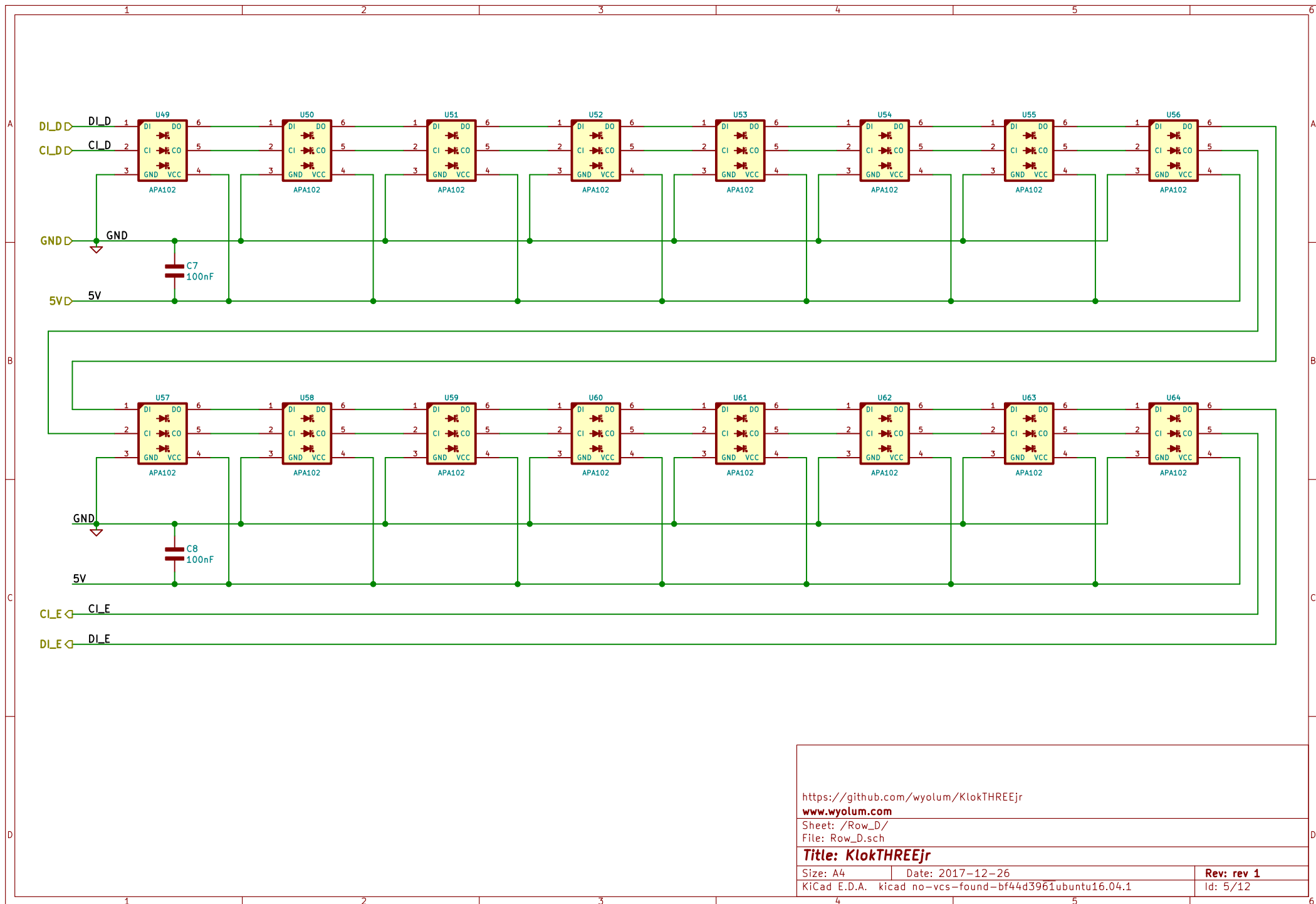
**Title: KlokTHREEjr**

Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 4/12



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

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Sheet: /Row\_D/

File: Row\_D.sch

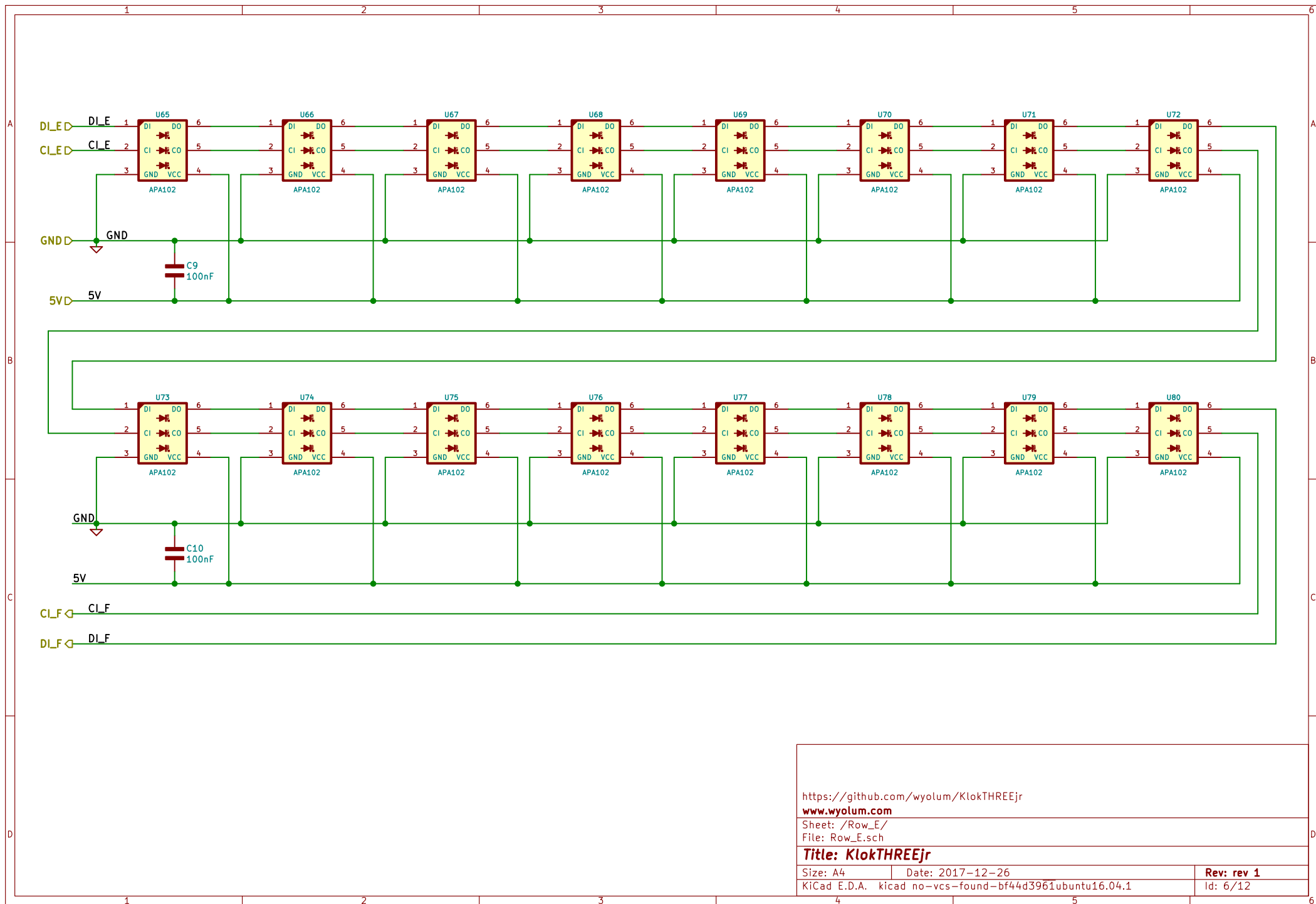
**Title: KlokTHREEjr**

Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 5/12



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

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

Sheet: /Row\_E/

File: Row\_E.sch

**Title: KlokTHREEjr**

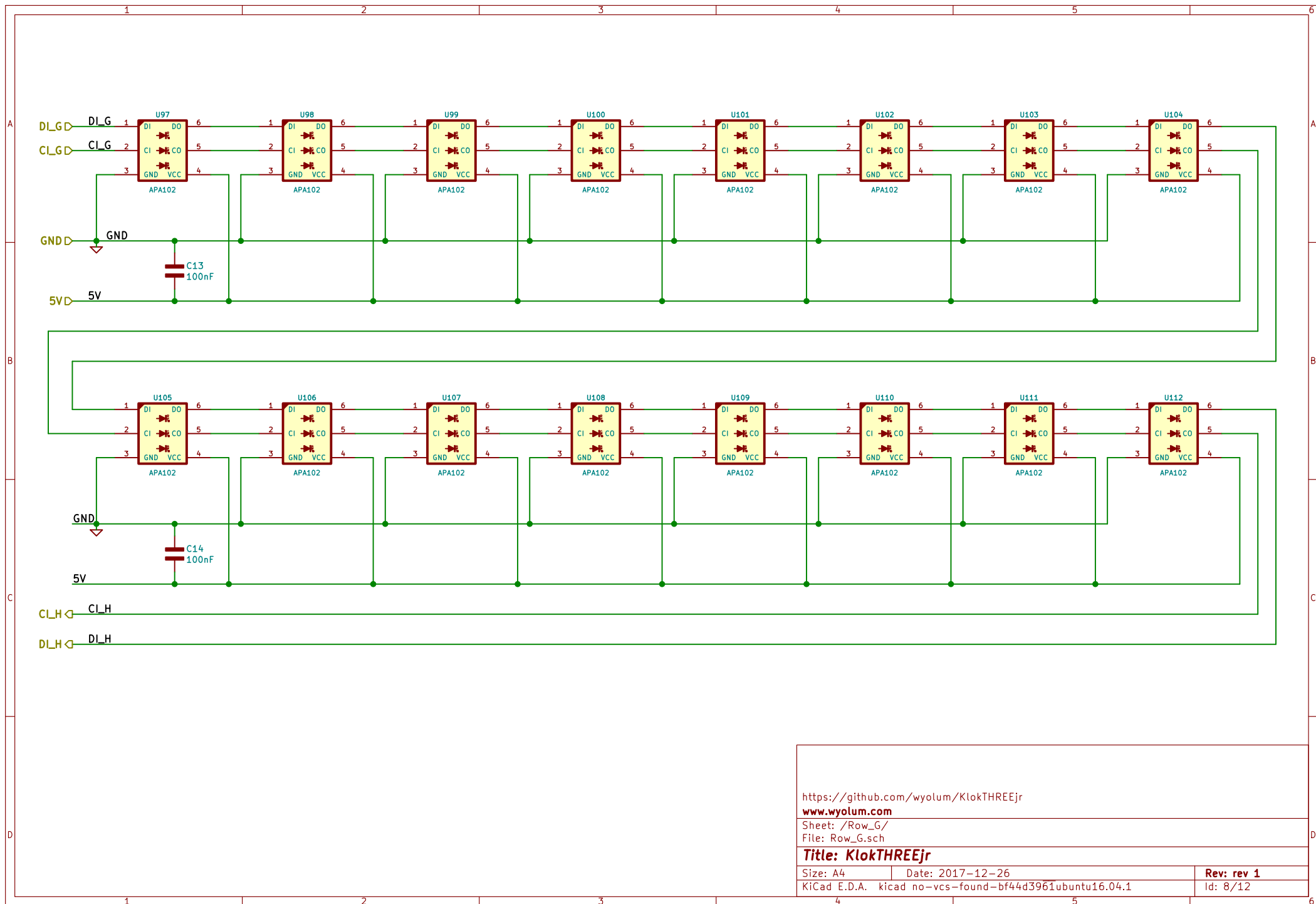
Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 6/12





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

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Sheet: /Row\_G/

File: Row\_G.sch

**Title: KlokTHREEjr**

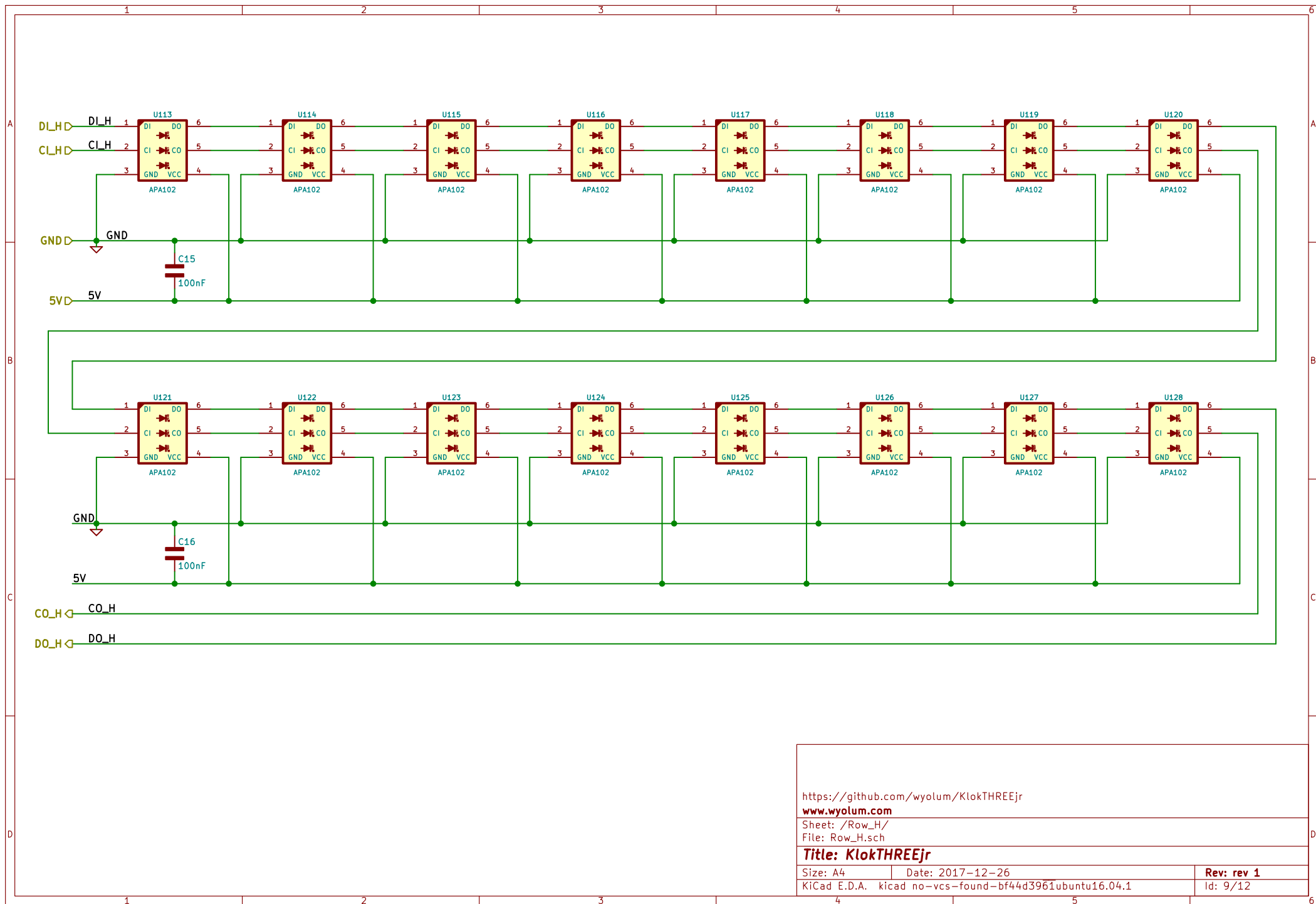
Size: A4 Date: 2017-12-26

KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

Id: 8/12





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

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Sheet: /Row\_H/

File: Row\_H.sch

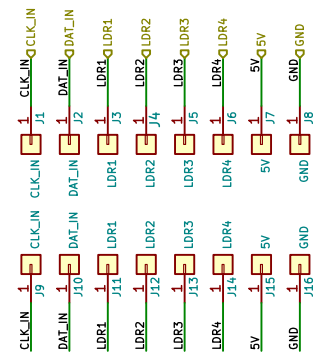
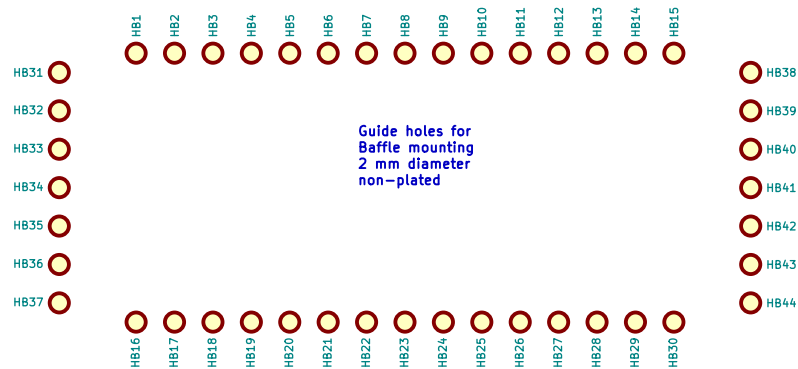
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Size: A4 Date: 2017-12-26

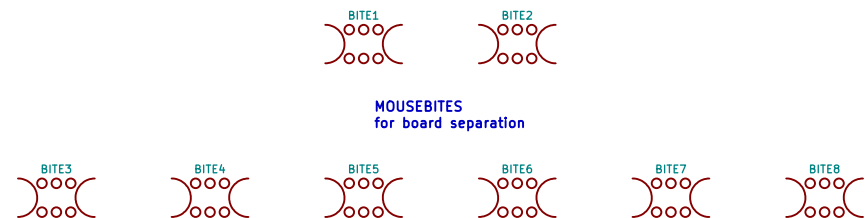
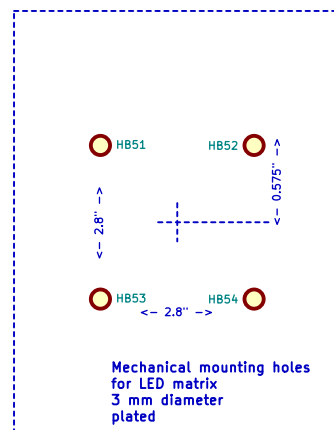
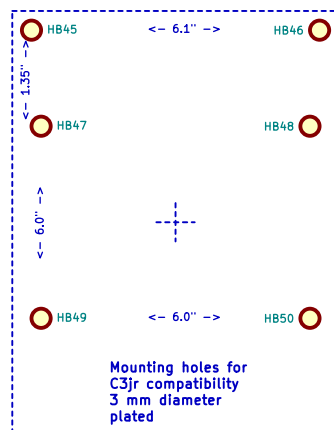
KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1

Rev: rev 1

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

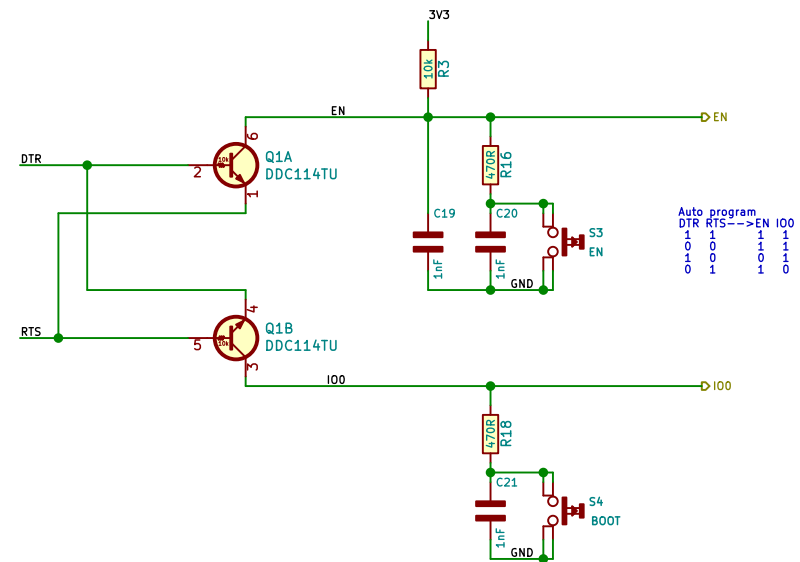
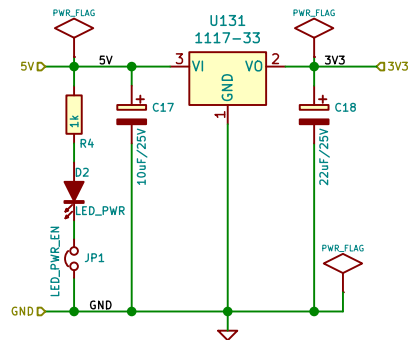
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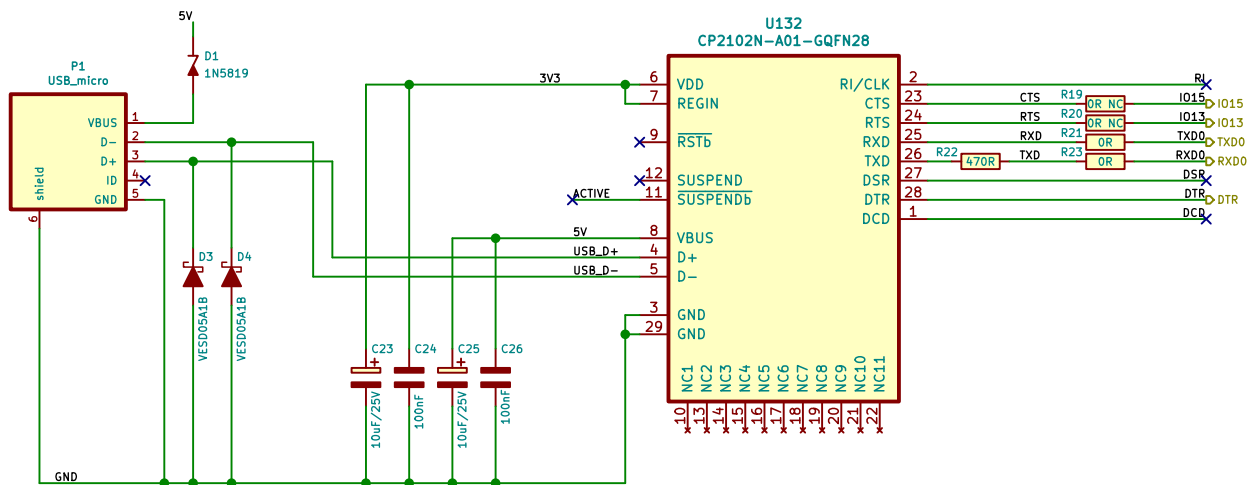
Size: A4	Date: 2017-12-26	Rev: rev 1
KiCad E.D.A. kicad no-vcs-found-bf44d3961ubuntu16.04.1		Id: 10/12

open source hardware





Auto\_program  
DTR RTS-->EN IO0  
1 1 0 1 1  
0 0 0 1 0  
0 1 0 1 1



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

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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-bf44d3961ubuntu16.04.1

**Rev: rev 1**

Id: 12/12