

TODO
male pins on top layer

Acquisition



File: Acquisition.kicad_sch

DataProcessing



File: DataProcessing.kicad_sch

DataStorage



File: DataStorage.kicad_sch

UserInterface



File: UserInterface.kicad_sch

WiFiInterface



File: WiFiInterface.kicad_sch

PowerSupply



File: PowerSupply.kicad_sch

Sheet: /
File: Logger.kicad_sch

Title:

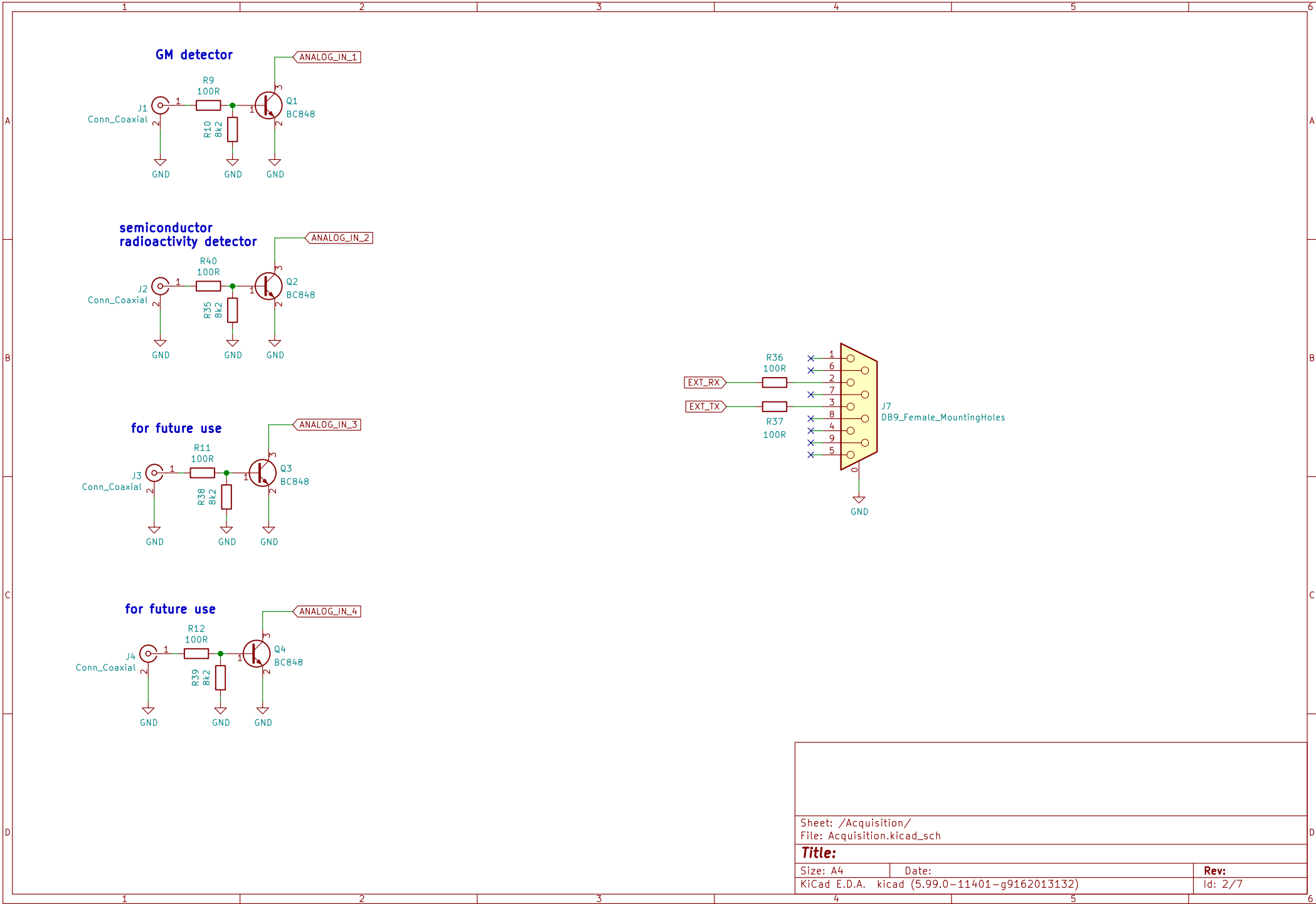
Size: A4

Date:

KiCad E.D.A. kicad (5.99.0-11401-g9162013132)

Rev:

Id: 1/7



Sheet: /Acquisition/
File: Acquisition.kicad_sch

Title:

Size: A4

Date:

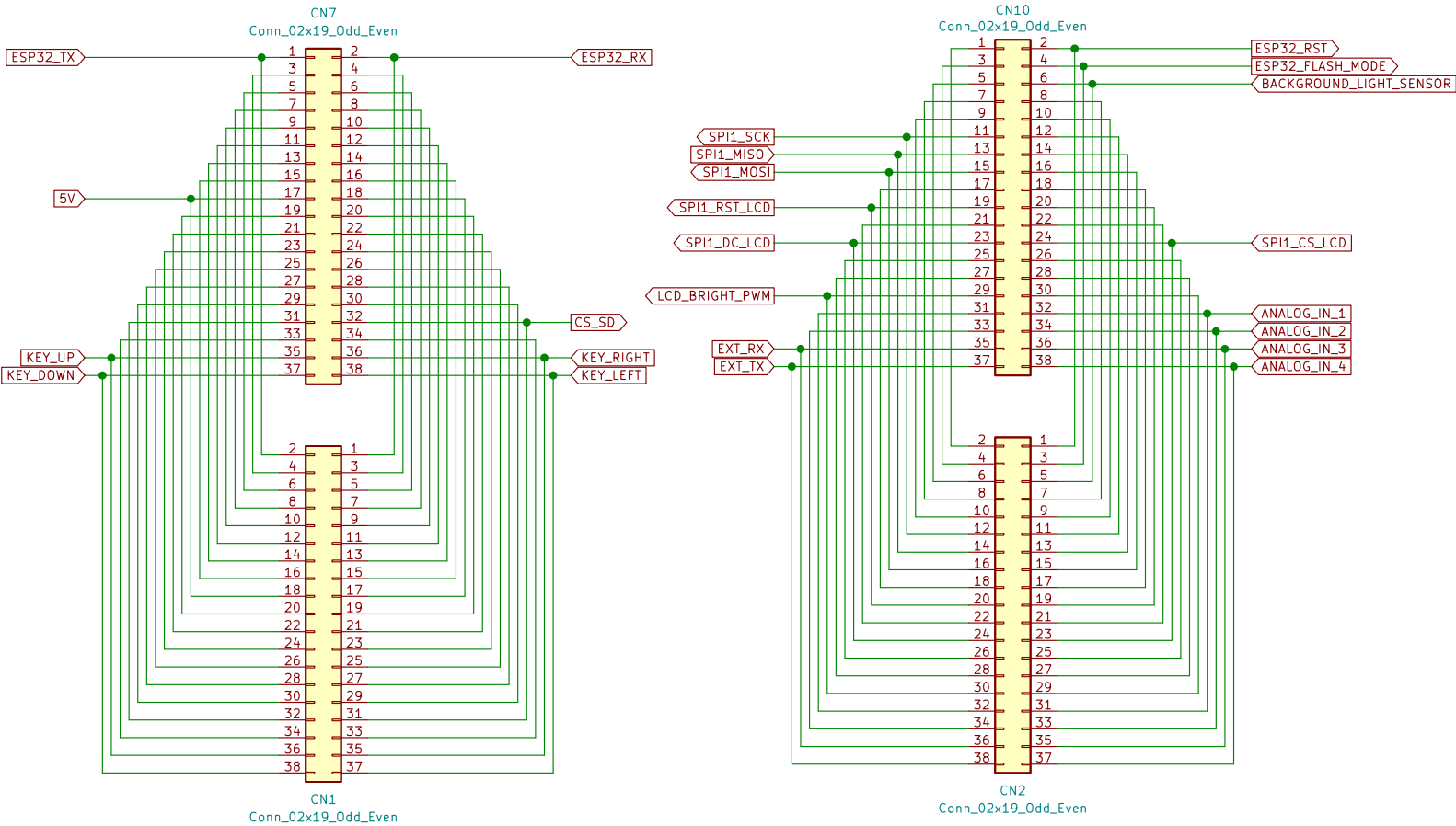
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Note all is done via nucleo32 board connected on the bottom of the PCB.
On the top of the PCB there are connectors to stack new shield.

External serial port dvic is connected to UART1
ESP32 is connectd to UART2



Sheet: /DataProcessing/
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Rev:

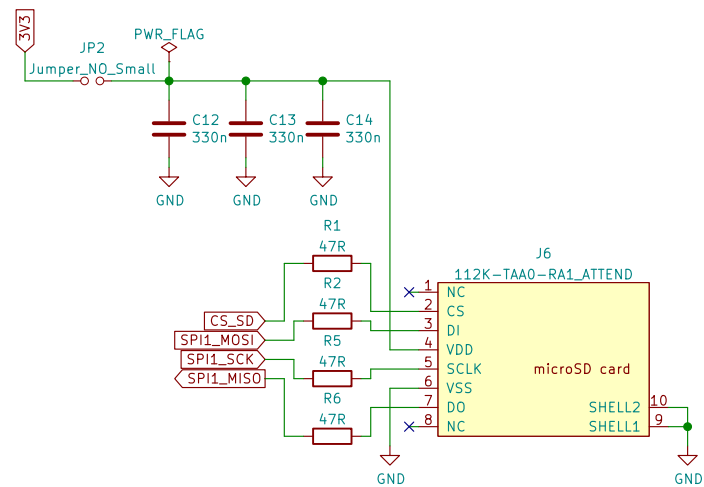
Id: 3/7

SD card pinout (for SPI):

- 1 - CS
- 2 - DI
- 3 - VSS1
- 4 - VDD
- 5 - SCLK
- 6 - VSS2
- 7 - DO
- 8 - NC
- 9 - NC

MicroSD card pinout (for SPI):

- 1 - NC
- 2 - CS
- 3 - DI
- 4 - VDD
- 5 - SCLK
- 6 - VSS
- 7 - DO
- 8 - NC



NOTE:

- 1/ Resistors in series with SPI pins of microSD are used for ESD protection.
- 2/ Jumper on V3V is for measuring of power consumption.

Sheet: /DataStorage/
File: DataStorage.kicad_sch

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Size: A4
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Id: 4/7

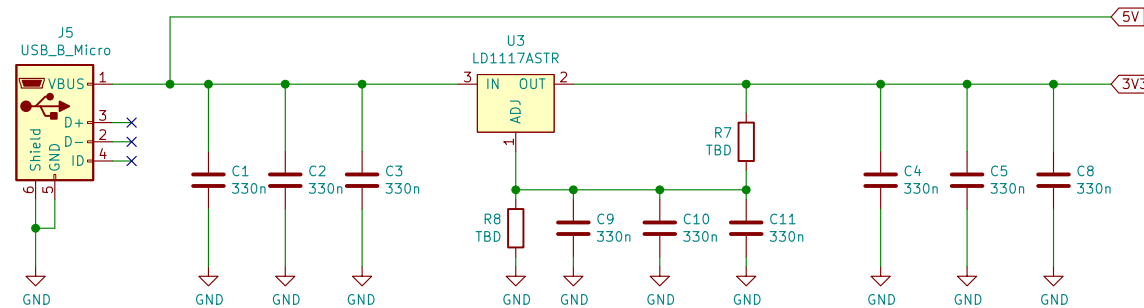
NOTE:

- 1/ ESP acceptable supply voltage: 3V–3V6
- 2/ Nucleo acceptable supply voltage: 5V
- 3/ ST7735S acceptable supply voltage: 3V3

The device will be powered from power USB (no USB communication, just used as power supply).
Nucleo will be alimented directly zith USB 5V.
ESP and ST7735S will be alimented with 3V3

Connecting nucleo to external power supply:

<https://pitinker.wordpress.com/2016/05/22/battery-powered-mbed-st-nucleo-f411re/>



Sheet: /PowerSupply/
File: PowerSupply.kicad_sch

Title:

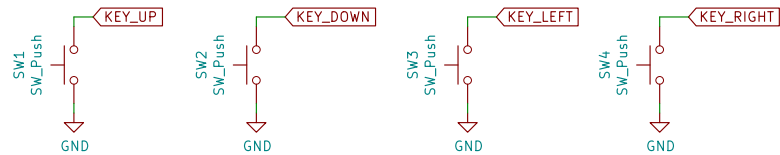
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Date:

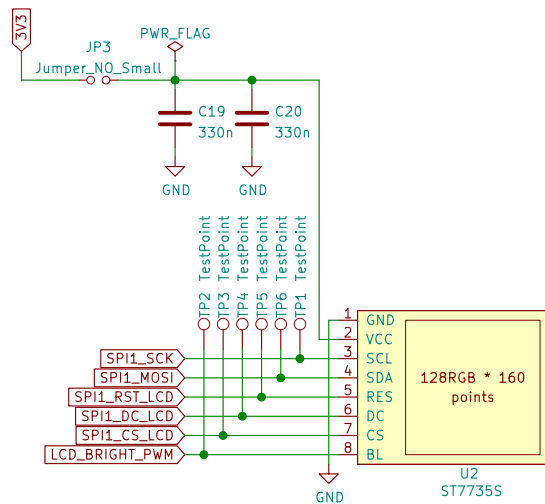
KiCad E.D.A. kicad (5.99.0-11401-g9162013132)

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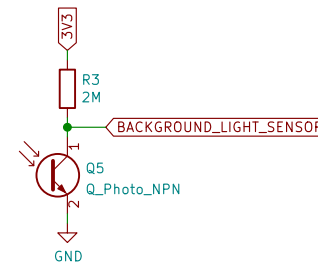


NOTE:
 1/ Key debouncing will be done in firmware.
 2/ GPIO internal pullups are used instead of discrete resistors.



NOTE:
 1/ Displays from different manufacturers have different points.
 2/ backlight level will be adjusted via PWM from the microcontroller.
 3/ Jumper on V3V is for measuring of power consumption.

TODO: create correct footprint and recheck pinout.



NOTE: phototransistor is used to adjust brightness of the LCD via microcontroller.

Sheet: /UserInterface/
 File: UserInterface.kicad_sch

Title:

Size: A4

Date:

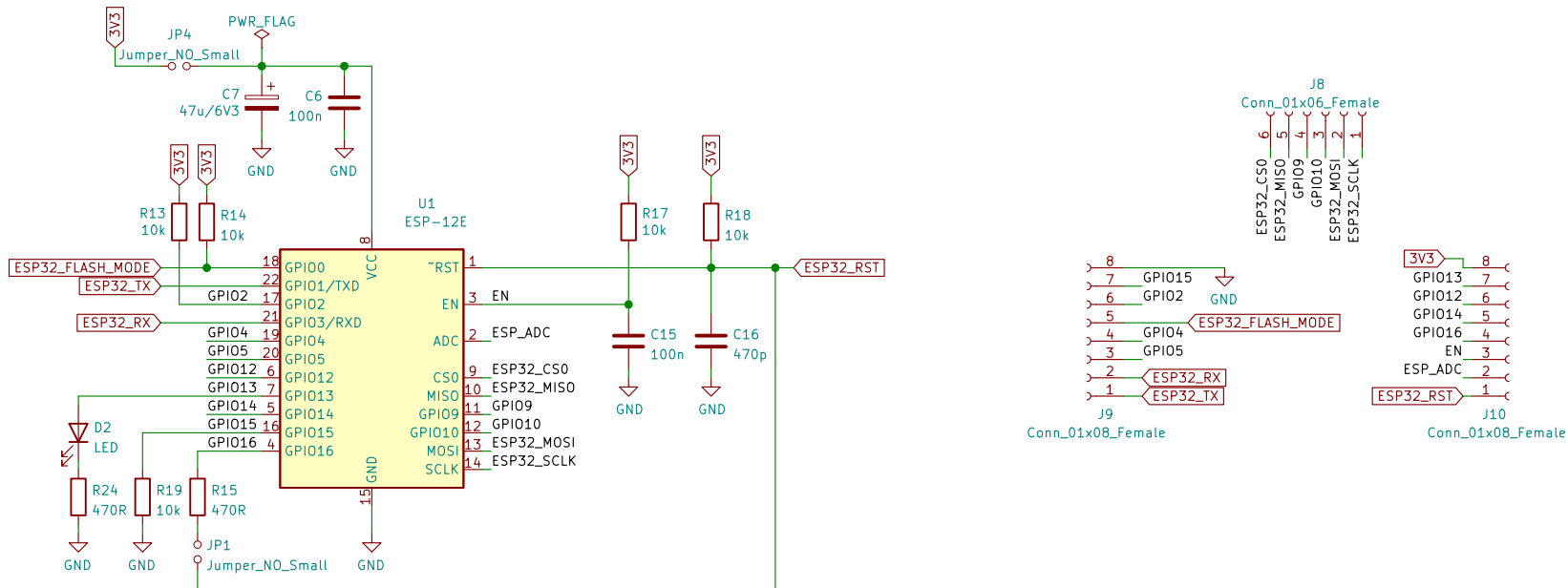
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NOTE:

- 1/ LED connected to ESP is only for debugging of ESP during development.
When board will be used, LCD will act as a medium for communication with user.
- 2/ ESP can be programmed via nucleo or externally via J8-J10 connectors.
- 3/ Jumper on V3V is for measuring of power consumption.



Sheet: /WiFilInterface/
File: WiFilInterface.kicad_sch

Title:

Size: A4 Date: KiCad E.D.A. kicad (5.99.0-11401-g9162013132)

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