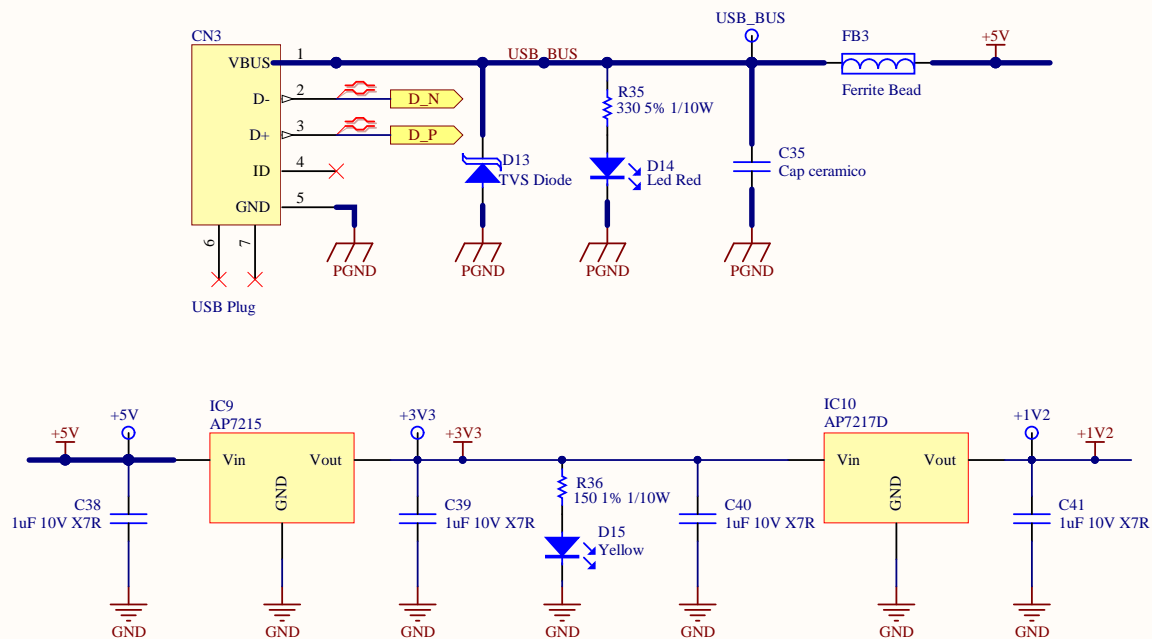


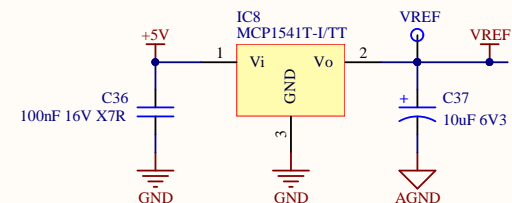
|       |                                      |  |                              |                 |
|-------|--------------------------------------|--|------------------------------|-----------------|
| Title |                                      |  | MercurialSDR - Block Diagram |                 |
| Size  | Number                               |  | Revision                     |                 |
| A4    |                                      |  | Rev2.0                       |                 |
| Date: | 5/21/2020                            |  | Sheet 1 of                   | 6               |
| File: | C:\Users\...\MercurialSDR_BLK.SchDoc |  | Drawn By:                    | Andres Hojnadel |

# Power Stage

## USB to +3V3 and +1V2

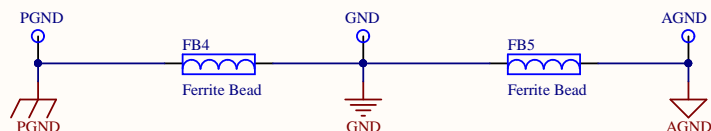


## Reference Voltage



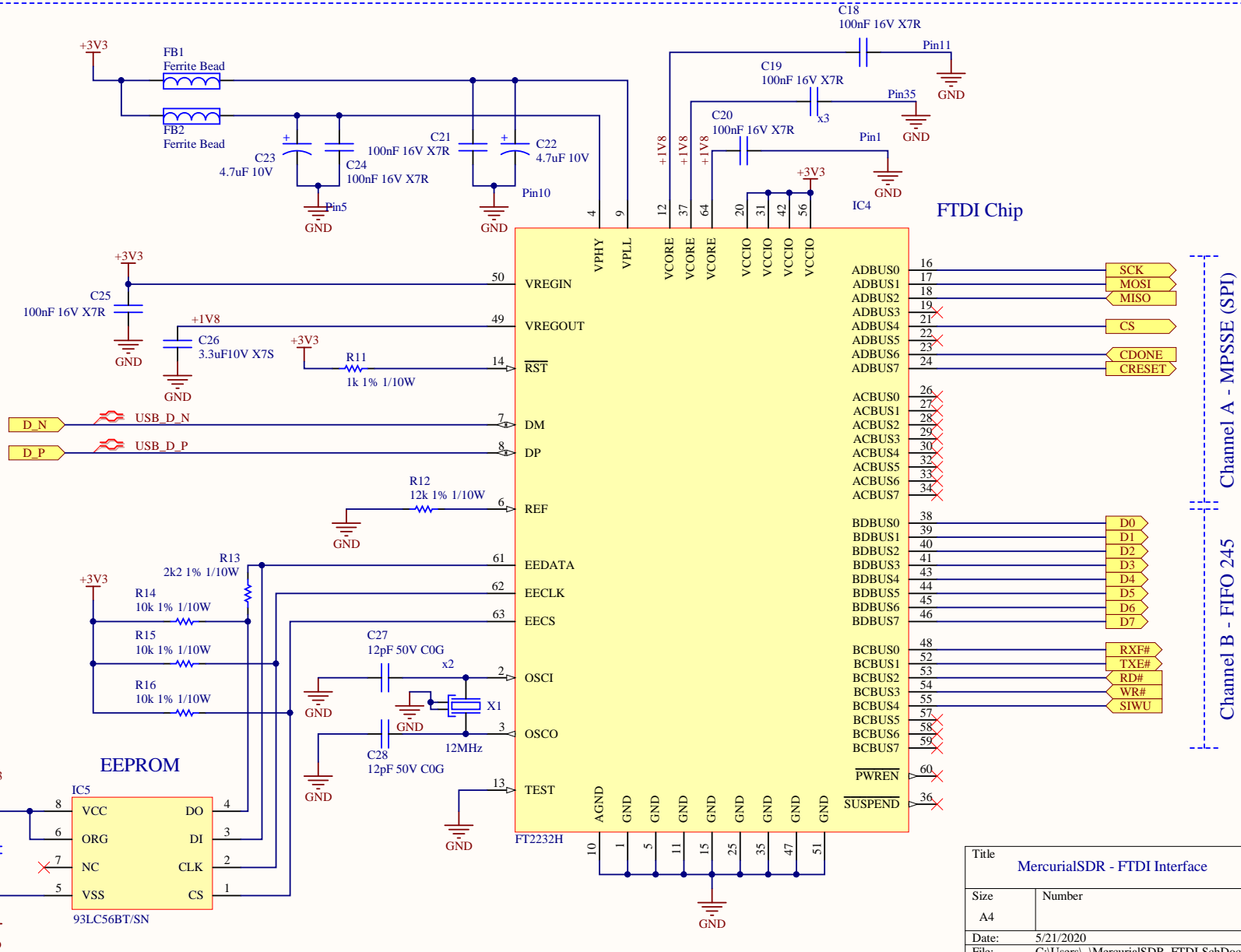
This is a precision voltage reference for DAC (IC1).  
Them must be close.

## Ground Connections



|   |                           |                    |
|---|---------------------------|--------------------|
| Title<br>MercurialSDR - Power Stage           |                           |                    |
| Size<br>A4                                    | Number                    | Revision<br>Rev2.0 |
| Date:<br>5/21/2020                            | Sheet 2 of 6              |                    |
| File:<br>C:\Users\...\MercurialSDR_PWR.SchDoc | Drawn By: Andres Hojnadel |                    |

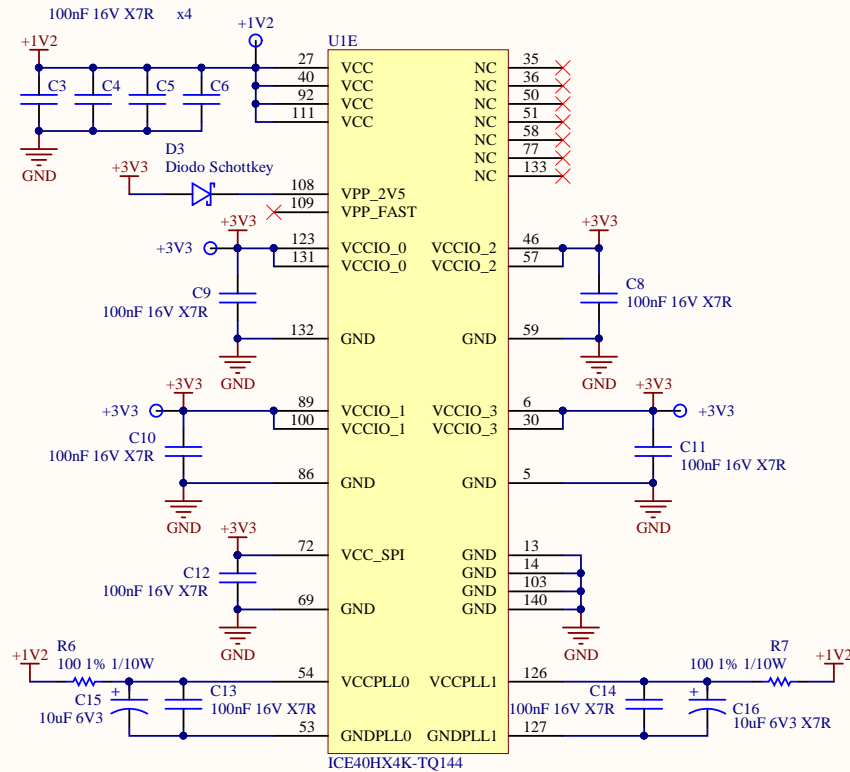
# FTDI Interface



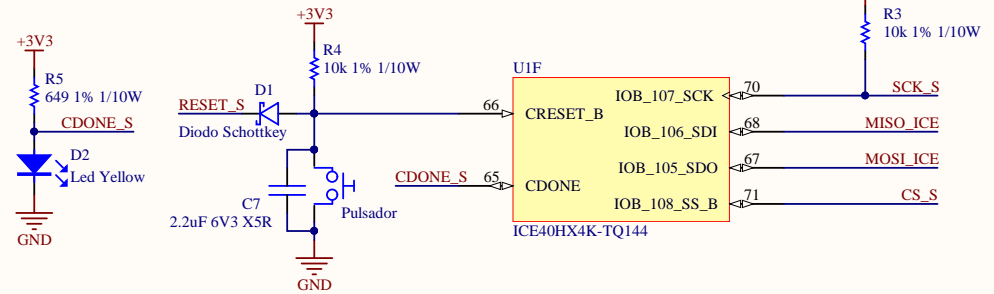
|                               |                                       |                           |
|-------------------------------|---------------------------------------|---------------------------|
| Title                         |                                       |                           |
| MercurialSDR - FTDI Interface |                                       |                           |
| Size                          | Number                                | Revision                  |
| A4                            |                                       | Rev2.0                    |
| Date:                         | 5/21/2020                             | Sheet 3 of 6              |
| File:                         | C:\Users\...\MercurialSDR_FTDI.SchDoc | Drawn By: Andres Hojnadel |

# ICE Programming & Power

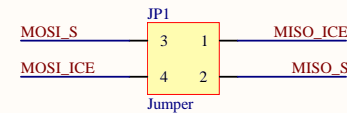
## iCE Power



## ICE SPI Programming Pins

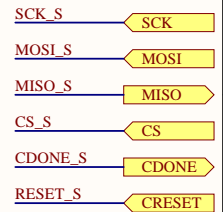


## ICE/Flash programming selection

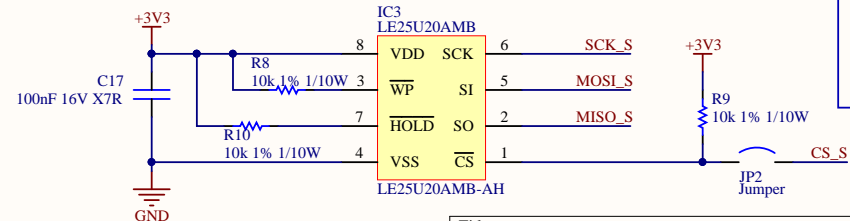


For programming ICE: shunt 1-3 & 2-4  
For programming Flash: shunt 1-2 & 3-4

## FTDI Ports



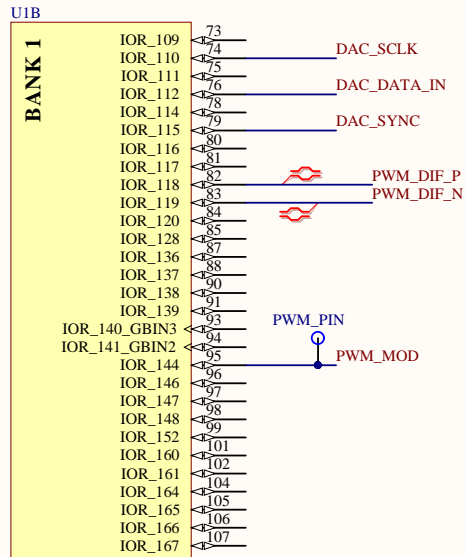
## Flash Memory



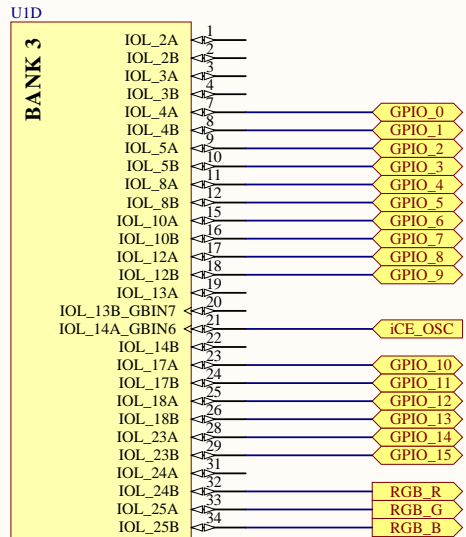
Remove JP2 only for programming ICE  
Shunt JP2 for Flash programming or normal operation

|                                     |  |                           |
|-------------------------------------|--|---------------------------|
| Title                               |  |                           |
| MercurialSDR - iCE Power & Program. |  |                           |
| Size                                | Number                                 | Revision                  |
| A4                                  |  | Rev2.0                    |
| Date:                               | 5/21/2020                              | Sheet 4 of 6              |
| File:                               | C:\Users\...\MercurialSDR_FPGA_P&P.Sch | Drawn By: Andres Hojnadel |

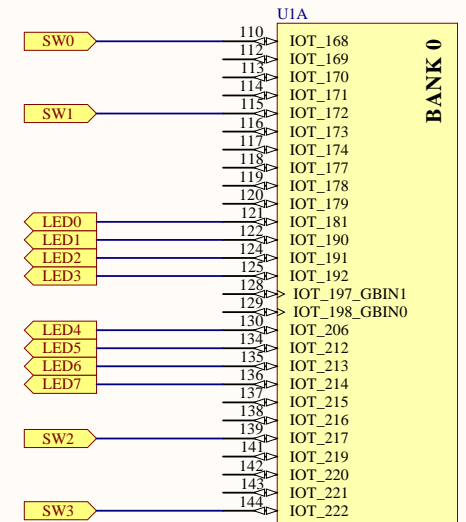
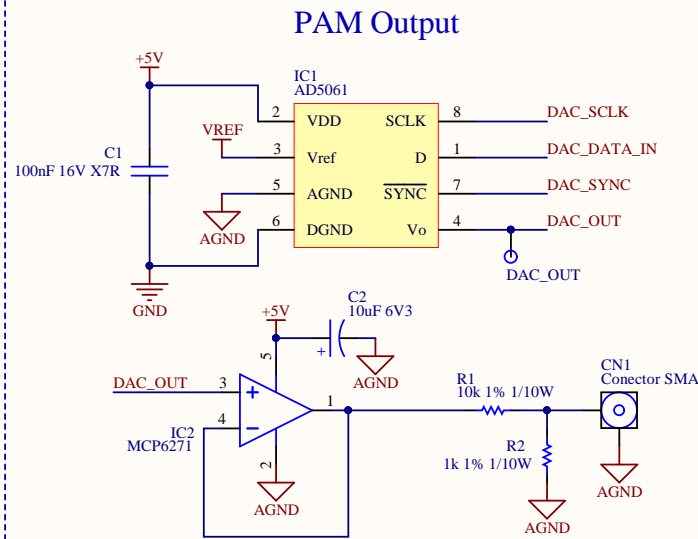
# FPGA Banks



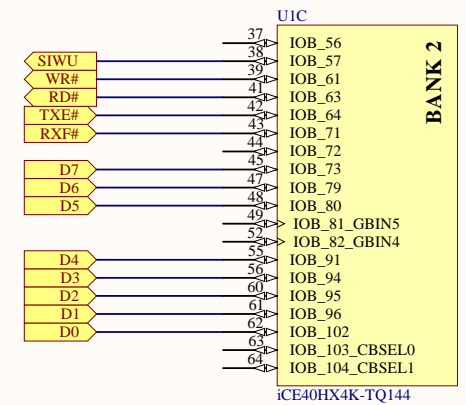
ICE40HX4K-TQ144



ICE40HX4K-TQ144



FIFO 245

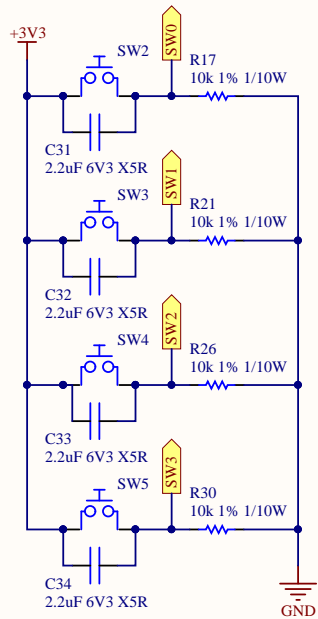


|                          |  |                           |
|--------------------------|--|---------------------------|
| Title                    |  |                           |
| MercurialSDR - iCE Banks |  |                           |
| Size                     | Number                                 | Revision                  |
| A4                       |  | Rev2.0                    |
| Date:                    | 5/21/2020                              | Sheet 5 of 6              |
| File:                    | C:\Users\...\MercurialSDR_FPGA_BNK_Sch | Drawn By: Andres Hojnadel |

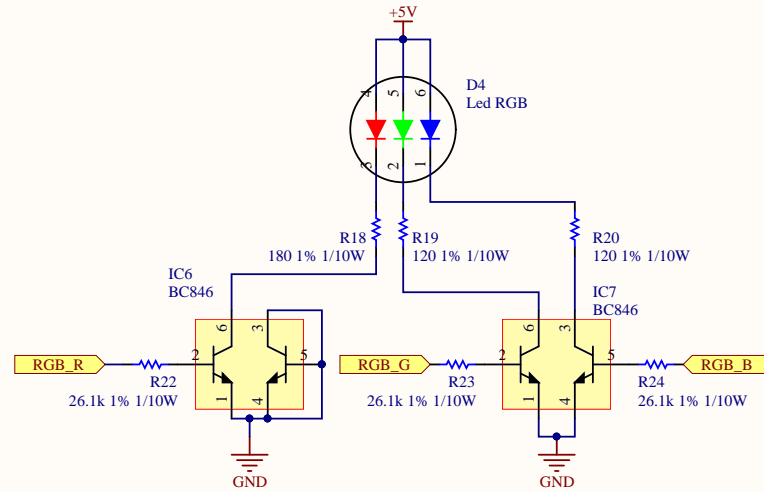
GND

# Miscellaneous

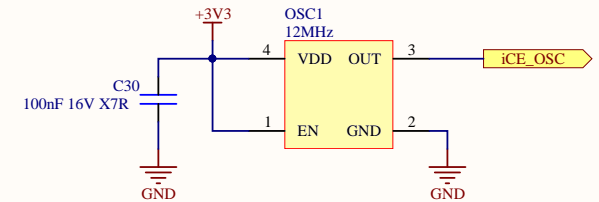
## Buttons



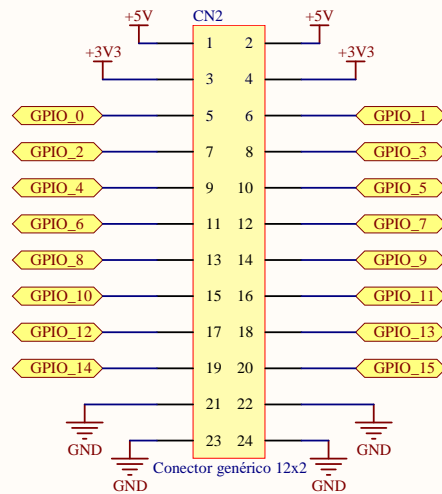
## RGB Led



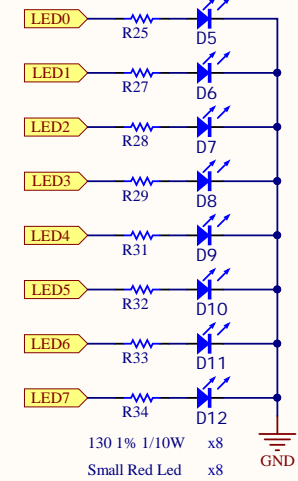
## iCE Oscillator



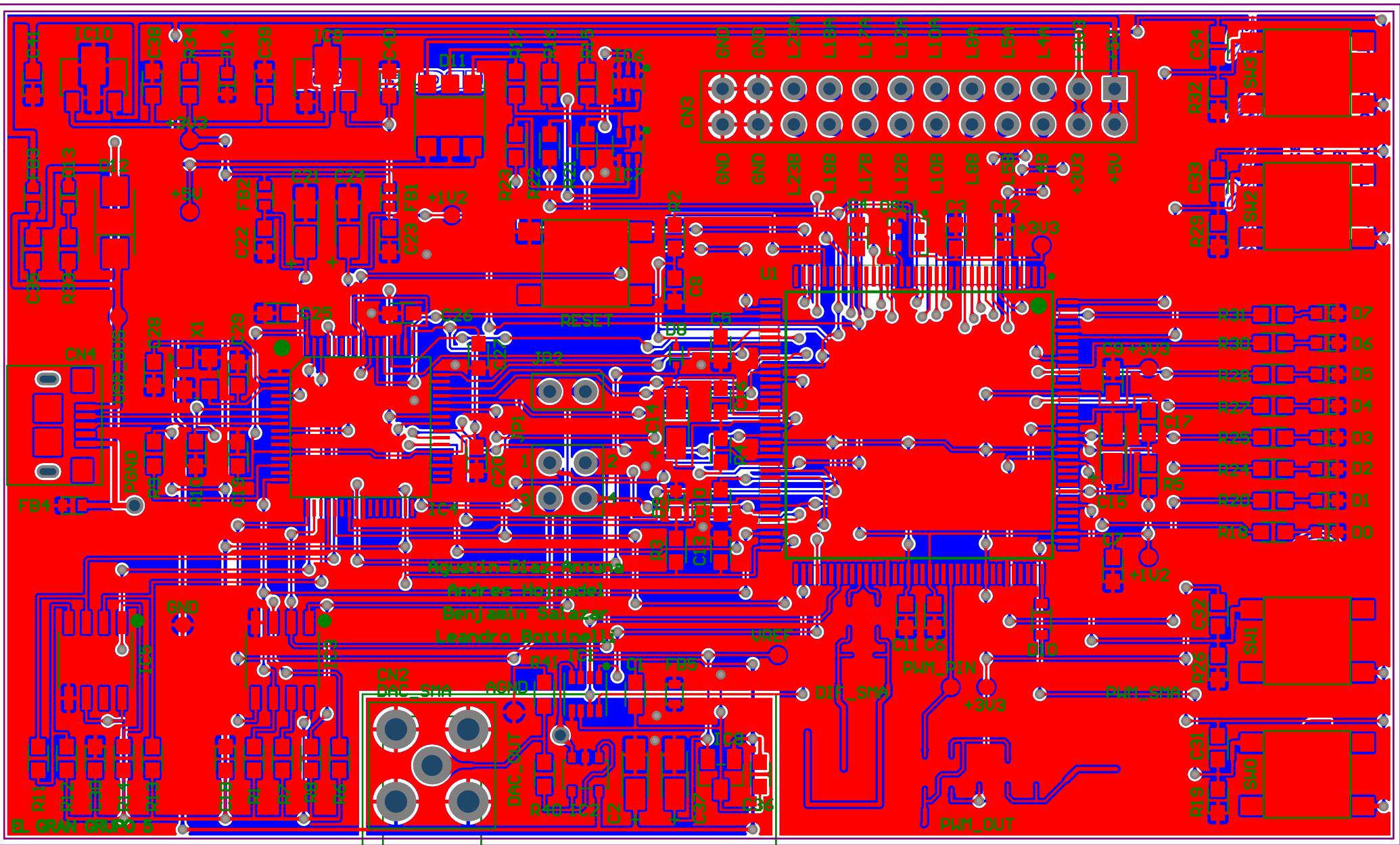
## GPIO Ports



## 8-Led Array



|   |             |                           |
|---|-------------|---------------------------|
| Title<br>MercurialSDR - Miscellaneous       |             |                           |
| Size<br>A4                                  | Number      | Revision<br>Rev2.0        |
| Date:<br>5/21/2020                          | Sheet6 of 6 | Drawn By: Andres Hojnadel |
| File: C:\Users\...\MercurialSDR_MISC.SchDoc |             |                           |



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EL GRAN GRUPO 3