

# My28Pins

Variant: [No Variations]

6/4/2020  
V1I1

RELEASED 03-JUN-2020

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## DESIGN CONSIDERATIONS

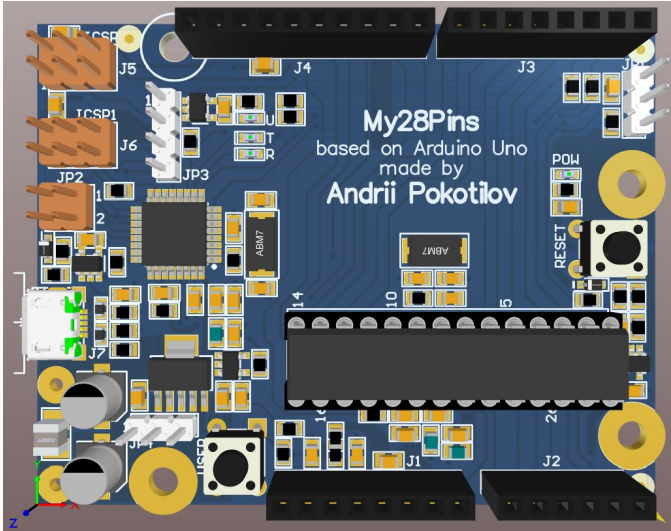
DESIGN NOTE:  
Example text for informational  
design notes.

DESIGN NOTE:  
Example text for cautionary  
design notes.

DESIGN NOTE:  
Example text for debug notes.

DESIGN NOTE:  
Example text for critical  
design notes.

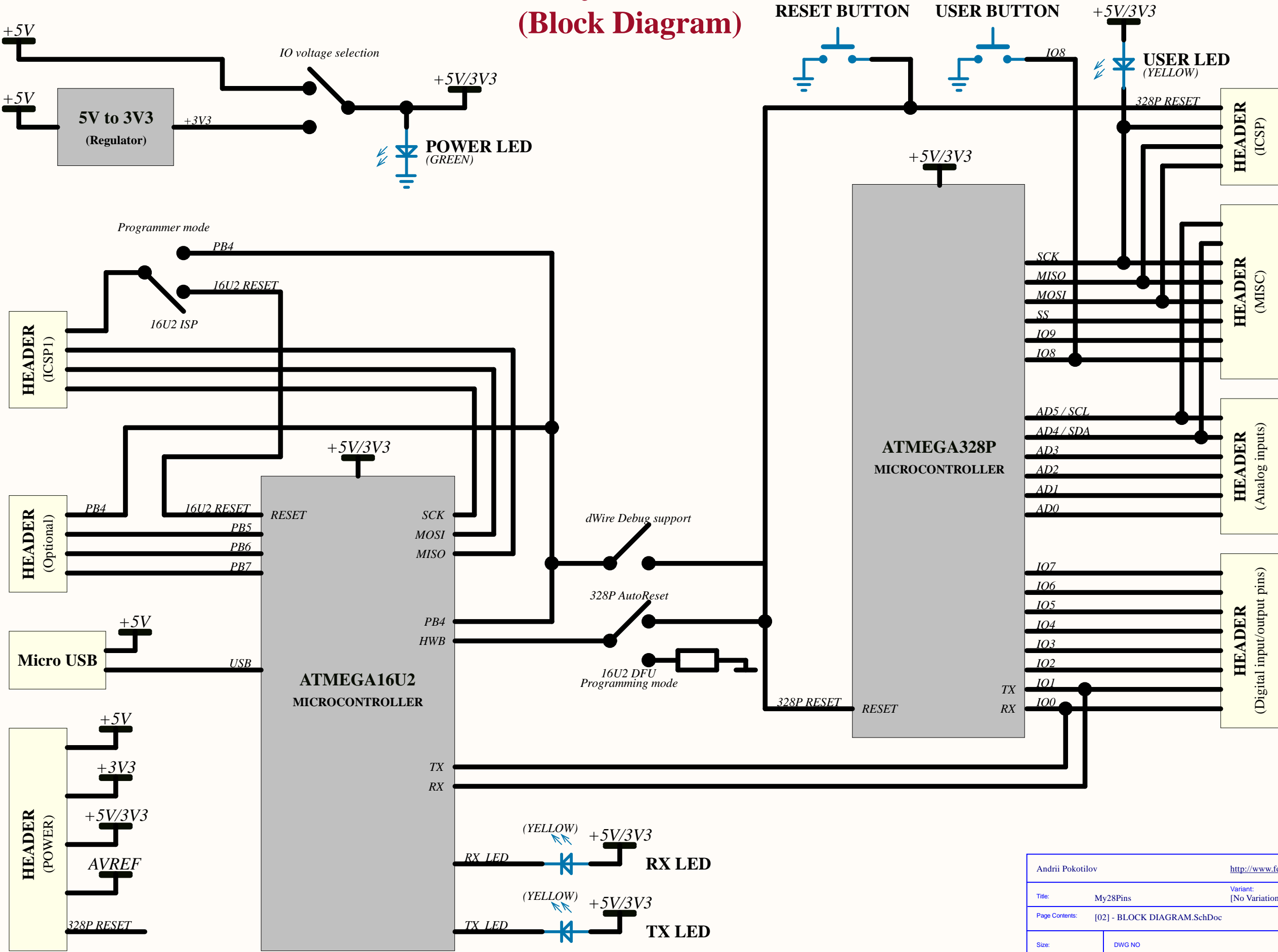
LAYOUT NOTE:  
Example text for critical  
layout guidelines.



|                                         |                              |                                                                     |                |
|-----------------------------------------|------------------------------|---------------------------------------------------------------------|----------------|
| Andrii Pokotilov                        |                              | <a href="https://github.com/Anpokot">https://github.com/Anpokot</a> |                |
| Title: My28Pins                         |                              | Variant: [No Variations]                                            |                |
| Page Contents: [01] - COVER PAGE.SchDoc |                              | Checked by                                                          |                |
| Size:                                   | DWG NO                       |                                                                     | Revision: V1I1 |
| Date: 6/4/2020                          | Designed by Andrii Pokotilov |                                                                     | Sheet 1 of 5   |

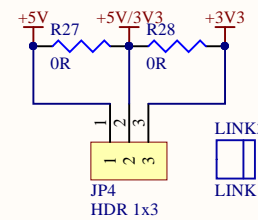
# My28Pins

(Block Diagram)



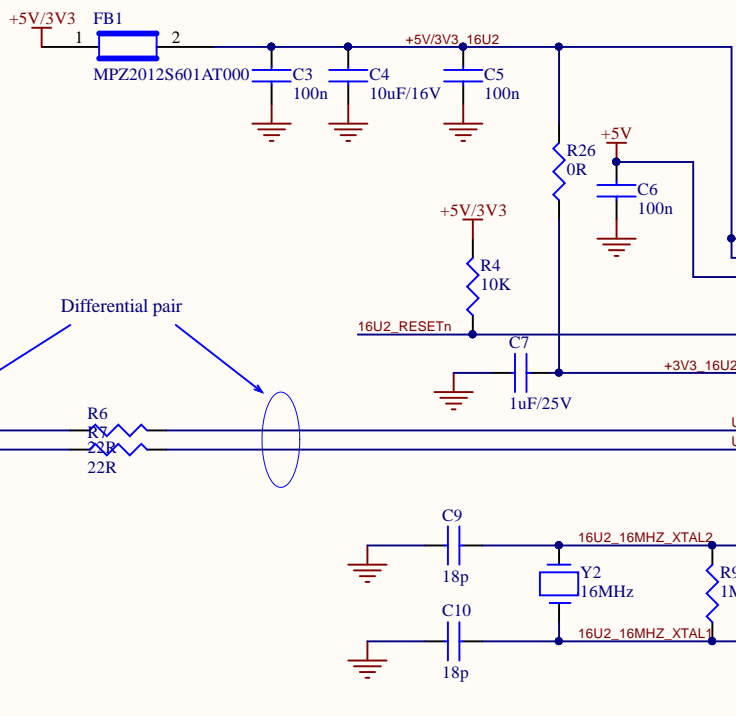
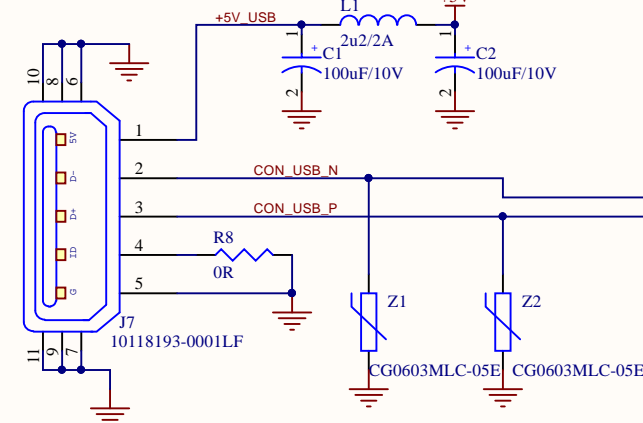
|                  |                             |                                                                               |                  |
|------------------|-----------------------------|-------------------------------------------------------------------------------|------------------|
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| Title:           | My28Pins                    | Variant:                                                                      | [No Variations]  |
| Page Contents:   | [02] - BLOCK DIAGRAM.SchDoc |                                                                               |                  |
| Size:            | DWG NO                      | Revision:                                                                     | VIII             |
| Date:            | 6/4/2020                    | Designed by                                                                   | www.fedevvel.com |
| Sheet            | 2                           | Checked by                                                                    |                  |

## Power Selection

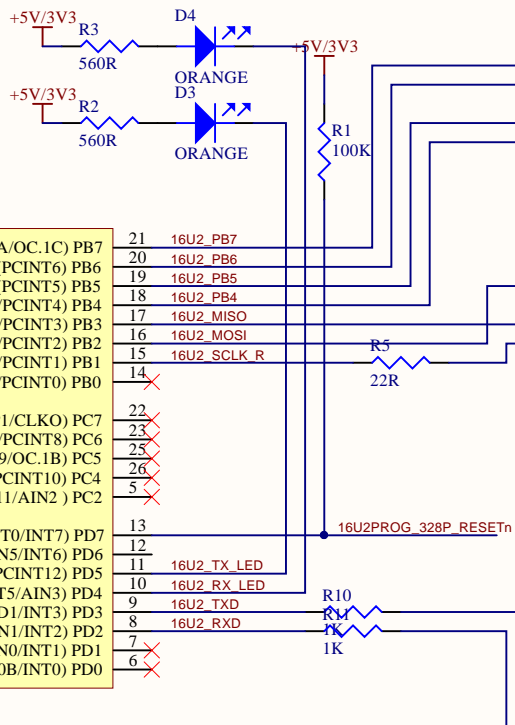


**DESIGN NOTE:**  
This board can be powered from micro USB connector (J7) or a single +3.3V power rail (through J1 pin 4). If +3.3V is used, fit R26 and R28. In this case, JP4 & R27 must NOT be fitted, otherwise the board may be damaged.

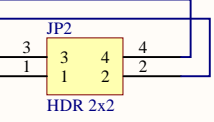
## Micro USB



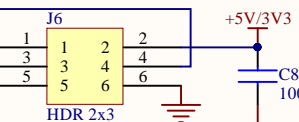
## 16U2



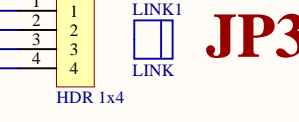
## JP2



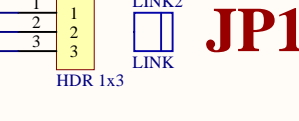
## ICSP1



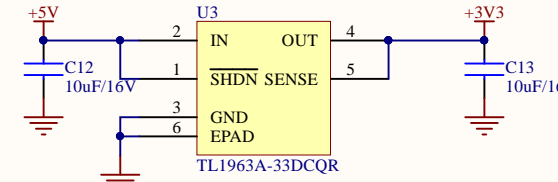
## JP3



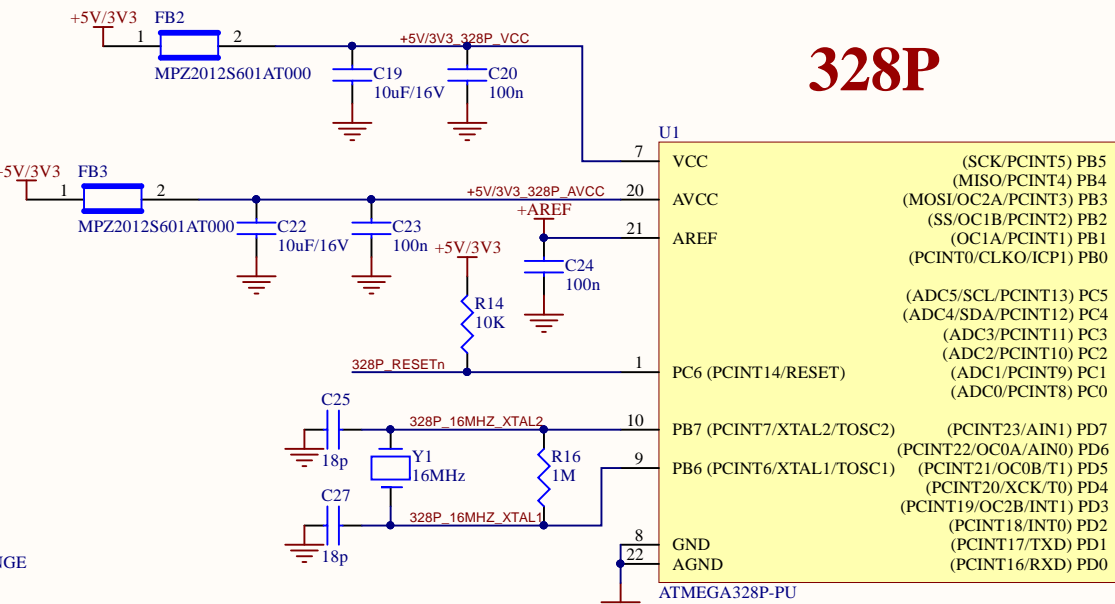
## JP1



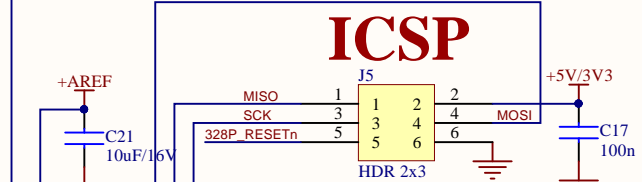
## 3V3 LDO



## 328P



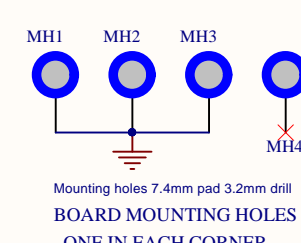
## ICSP



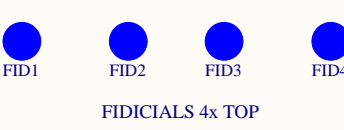
## DIP SOCKET



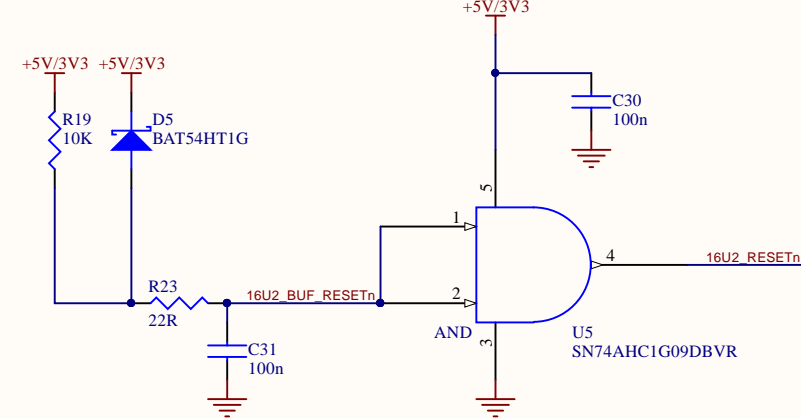
## MOUNTING HOLES



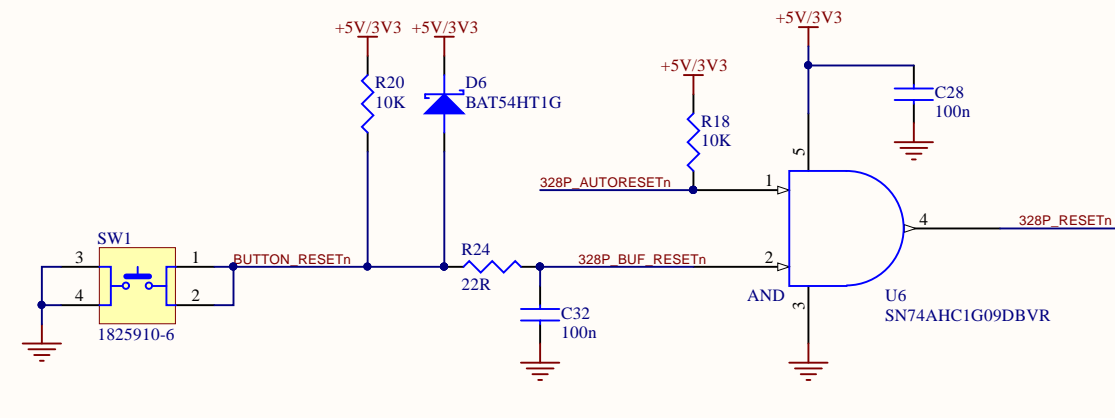
## FIDUCIALS



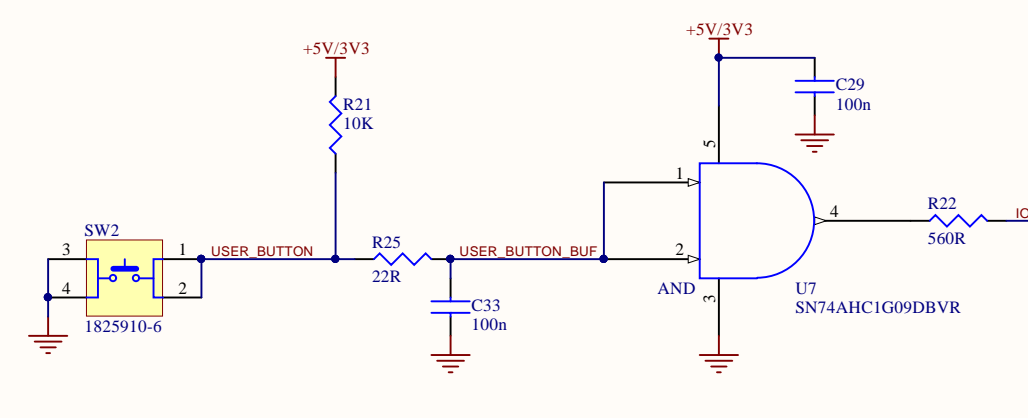
## RESET (16U2)



## RESET (328P)



## USER BUTTON



**LAYOUT NOTE:**  
1) Route all the POWER tracks with minimum track width 0.4mm.  
2) Route all the other tracks by 0.4mm and change them by the end of the design to 0.2mm. To change all of them at once, use this filter "(not InNet(\*))" and not InNet("GND") and IsTrack and (OnLayer("L1") or OnLayer("L2"))" and then set 0.2mm width in PCB Inspector panel.

|                  |  |                                                                             |  |
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| Title:           |  | Variant: [No Variations]                                                    |  |
| Page Contents:   |  | [03] - 28PINS SCHEMATIC.SchDoc                                              |  |
| Size:            |  | DWG NO                                                                      |  |
| Date:            |  | Revision: V111                                                              |  |
| 6/4/2020         |  | Designed by www.fedevel.com                                                 |  |
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|                  |                                |   |   |                                                                     |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
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| 1                | 2                              | 3 | 4 | 5                                                                   | 6     | 7                 | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| A                | REVISION HISTORY               |   |   |                                                                     |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | A                |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| B                |                                |   |   |                                                                     |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | B                |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| C                |                                |   |   |                                                                     |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | C                |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| D                |                                |   |   |                                                                     |       |                   | <table><tr><td colspan="4">Andrii Pokotilov</td><td colspan="4"><a href="https://github.com/Anpokot">https://github.com/Anpokot</a></td></tr><tr><td>Title:</td><td colspan="3">My28Pins</td><td colspan="4">Variant:<br/>[No Variations]</td></tr><tr><td>Page Contents:</td><td colspan="5">[04] - REVISION HISTORY.SchDoc</td><td colspan="2">Checked by</td></tr><tr><td>Size:</td><td colspan="5">DWG NO</td><td colspan="2">Revision:<br/>VIII</td></tr><tr><td>Date:</td><td colspan="4">6/4/2020</td><td>Sheet</td><td>4</td><td>of 5</td></tr></table> | Andrii Pokotilov |  |  |  | <a href="https://github.com/Anpokot">https://github.com/Anpokot</a> |  |  |  | Title: | My28Pins |  |  | Variant:<br>[No Variations] |  |  |  | Page Contents: | [04] - REVISION HISTORY.SchDoc |  |  |  |  | Checked by |  | Size: | DWG NO |  |  |  |  | Revision:<br>VIII |  | Date: | 6/4/2020 |  |  |  | Sheet | 4 | of 5 | D |
| Andrii Pokotilov |                                |   |   | <a href="https://github.com/Anpokot">https://github.com/Anpokot</a> |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| Title:           | My28Pins                       |   |   | Variant:<br>[No Variations]                                         |       |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| Page Contents:   | [04] - REVISION HISTORY.SchDoc |   |   |                                                                     |       | Checked by        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| Size:            | DWG NO                         |   |   |                                                                     |       | Revision:<br>VIII |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| Date:            | 6/4/2020                       |   |   |                                                                     | Sheet | 4                 | of 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |
| 1                | 2                              | 3 | 4 | 5                                                                   | 6     | 7                 | 8                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |  |  |  |                                                                     |  |  |  |        |          |  |  |                             |  |  |  |                |                                |  |  |  |  |            |  |       |        |  |  |  |  |                   |  |       |          |  |  |  |       |   |      |   |

|                  |                                                                                                                                                                                                                                                                                                                                                                |                                                                             |                                                                      |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
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|                  | 1                                                                                                                                                                                                                                                                                                                                                              | 2                                                                           | 3                                                                    | 4                                                                    | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6 | 7 | 8 |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| A                | <div>Designator<br/>[01] - COVER PAGE.SchDoc</div> <div></div>                                                                                                                                                                                                                                                                                                 | <div>Designator<br/>[02] - BLOCK DIAGRAM.SchDoc</div> <div></div>           | <div>Designator<br/>[03] - 28PINS SCHEMATIC.SchDoc</div> <div></div> | <div>Designator<br/>[04] - REVISION HISTORY.SchDoc</div> <div></div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| B                |                                                                                                                                                                                                                                                                                                                                                                |                                                                             |                                                                      |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| C                |                                                                                                                                                                                                                                                                                                                                                                |                                                                             |                                                                      |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| D                | <div>NOTES</div> <div>Mark Not Fitted Components as<br/>NF</div> <div>DRAFT - Very early stage of schematic, ignore details.</div> <div>PRELIMINARY - Close to final schematic.</div> <div>CHECKED - There should not be any mistakes. Tell the engineer if you find one.</div> <div>RELEASED - A board with this schematic has been sent to production.</div> |                                                                             |                                                                      |                                                                      | <div>Cannot open file Fedevel Academy Schematic Banner.png</div> <table><tr><td colspan="2">Andrii Pokotilov</td><td colspan="2"><a href="http://www.fedevel.com/academy">http://www.fedevel.com/academy</a></td></tr><tr><td>Title:</td><td>My28Pins</td><td>Variant:</td><td>[No Variations]</td></tr><tr><td>Page Contents:</td><td colspan="2">28Pins_Project_VIII Project.SchDoc</td><td>Checked by</td></tr><tr><td>Size:</td><td colspan="2">DWG NO</td><td>Revision:<br/>VIII</td></tr><tr><td>Date:</td><td>6/4/2020</td><td>Designed by <a href="http://www.fedevel.com">www.fedevel.com</a></td><td>Sheet 5 of 5</td></tr></table> |   |   |   | Andrii Pokotilov |  | <a href="http://www.fedevel.com/academy">http://www.fedevel.com/academy</a> |  | Title: | My28Pins | Variant: | [No Variations] | Page Contents: | 28Pins_Project_VIII Project.SchDoc |  | Checked by | Size: | DWG NO |  | Revision:<br>VIII | Date: | 6/4/2020 | Designed by <a href="http://www.fedevel.com">www.fedevel.com</a> | Sheet 5 of 5 |
| Andrii Pokotilov |                                                                                                                                                                                                                                                                                                                                                                | <a href="http://www.fedevel.com/academy">http://www.fedevel.com/academy</a> |                                                                      |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| Title:           | My28Pins                                                                                                                                                                                                                                                                                                                                                       | Variant:                                                                    | [No Variations]                                                      |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| Page Contents:   | 28Pins_Project_VIII Project.SchDoc                                                                                                                                                                                                                                                                                                                             |                                                                             | Checked by                                                           |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| Size:            | DWG NO                                                                                                                                                                                                                                                                                                                                                         |                                                                             | Revision:<br>VIII                                                    |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
| Date:            | 6/4/2020                                                                                                                                                                                                                                                                                                                                                       | Designed by <a href="http://www.fedevel.com">www.fedevel.com</a>            | Sheet 5 of 5                                                         |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |
|                  | 1                                                                                                                                                                                                                                                                                                                                                              | 2                                                                           | 3                                                                    | 4                                                                    | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 6 | 7 | 8 |                  |  |                                                                             |  |        |          |          |                 |                |                                    |  |            |       |        |  |                   |       |          |                                                                  |              |