

	1	2	3	4	5	6	7	8																			
A	<div>Designator [01] - COVER PAGE.SchDoc</div> <div></div>				<div>Designator [02] - BLOCK DIAGRAM.SchDoc</div> <div></div>				<div>Designator [03] - 28PINS SCHEMATIC.SchDoc</div> <div></div>				<div>Designator [04] - REVISION HISTORY.SchDoc</div> <div></div>														
B																											
C																											
D	<div><div>NOTES</div><div>Mark Not Fitted Components as 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> <div><div>Would you like to learn how to design boards like this? We designed this board, so you can learn. Google for FEDEVEL Academy</div><div>FEDEVEL Academy - Learn Schematic & PCB Design ONLINE</div><table><tr><td colspan="3">http://www.fedevel.com/academy</td></tr><tr><td>Title:</td><td colspan="2">Variant: FIXED 5V</td></tr><tr><td>Page Contents:</td><td>28Pins_Project_V111 Project.SchDoc</td><td>Checked by</td></tr><tr><td>Size:</td><td>DWG NO</td><td>Revision:</td></tr><tr><td>Date: 27-12-2024</td><td>Designed by www.fedevel.com</td><td>Sheet 1 of 5</td></tr></table></div>												http://www.fedevel.com/academy			Title:	Variant: FIXED 5V		Page Contents:	28Pins_Project_V111 Project.SchDoc	Checked by	Size:	DWG NO	Revision:	Date: 27-12-2024	Designed by www.fedevel.com	Sheet 1 of 5
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27-12-2024

Variant: FIXED 5V

27 DEC 2024

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DESIGN CONSIDERATIONS

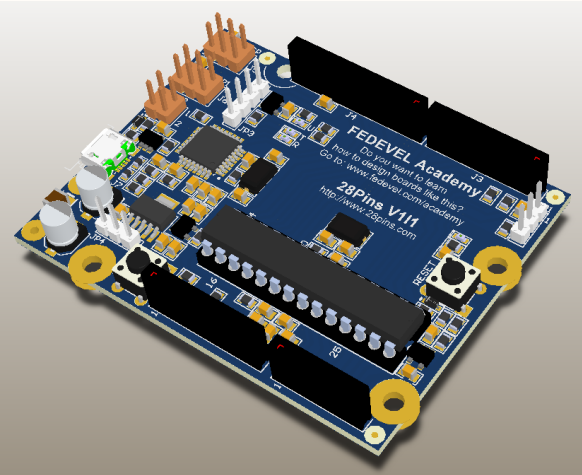
DESIGN NOTE:
Example text for informational
design notes.

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.



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DESIGN NOTE:
This board supports 5V or 3V3 voltage level on the IO pins:

- 1) 5V IO - Fit everything as defined in this schematic. NF means, do not fit this component.
- 2) 3.3V IO - Remove R27, Fit R28, *Replace Y1 (change from 16MHz to 10MHz), *Replace Y2 (change from 16MHz to 8MHz).
- 3) Both 5V and 3V3, selected through JP4 - Remove R27, Remove R28, Fit IP4, *Replace Y1 (change from 16MHz to 10MHz), *Replace Y2 (change from 16MHz to 8MHz).

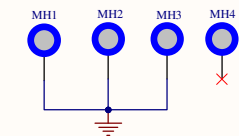
*Note: The 16MHz crystals are not recommended for 3.3V operation. We need to adjust their values, that's why the change.


IMPORTANT: Once you change the crystal value, you may need to re-compile your source code.

DESIGN NOTE:

About JP1:

- 1) Autoreset Enabled - Short 1&2. In this case, 16U2 is used to reset 328P when firmware inside 328P is updated from Arduino IDE.
- 2) 16U2 DFU mode Enabled - Short 2&3. 16U2 HWB pin is sampled by 16U2 during RESET. If pulled low, then after Reset the 16U2 will go into DFU mode.



APPROVALS		DATE		PROJECT			
ENG:				PROJECT REVISION		DOCUMENT REVISION	
DSGN:				Not in version control		Not in version control	
CHKR:				TITLE			
REFERENCE DOCUMENTS				28Pins			
BOM:							
ASSY DWG:				SIZE		CAGE CODE	
FAB DWG:				A2		DWG NO.	
PCB DWG:				SCALE:		FILE NAME	
				[03] - 28PINS SCHEMATIC Sch 001		3 OF	

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.

(Block Diagram)

A

B

C

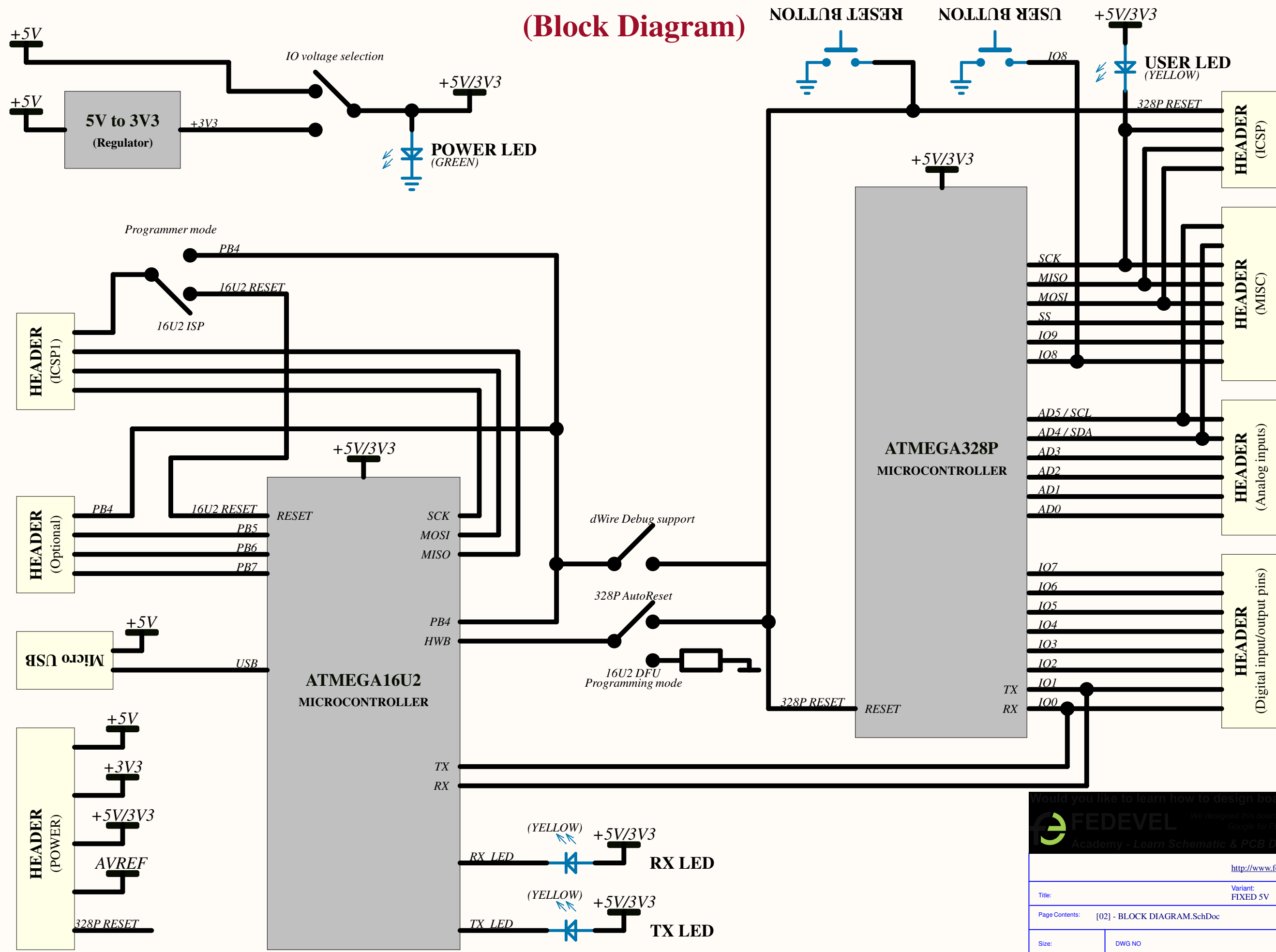
D

A

B

C

D



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Page Contents: [02] - BLOCK DIAGRAM.SchDoc			
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A

B

C

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A

B

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