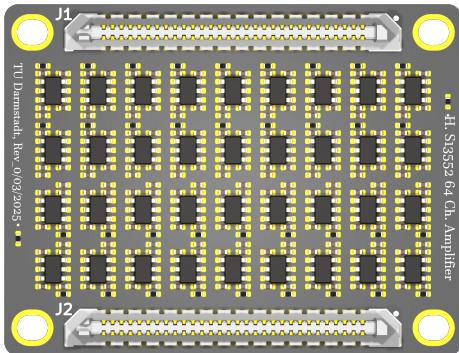


TOP VIEW



BOTTOM VIEW

Top	Signal
Inner_1	Ground
Inner_2	Signal
Inner_3	Ground
Inner_4	Power 3V3
Inner_5	Ground
Inner_6	1V1
Inner_7	Ground
Inner_8	Ground
Bottom	Signal

PCB Stackup

Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt  
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 File: PCB\_Stackup.kicad\_sch

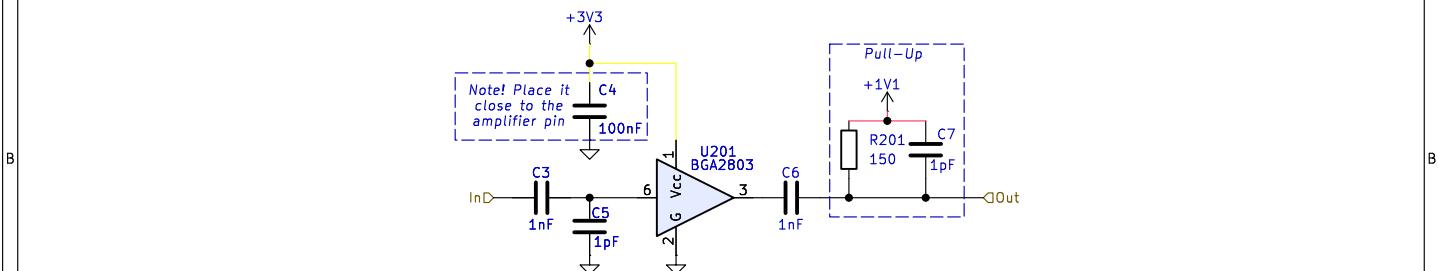
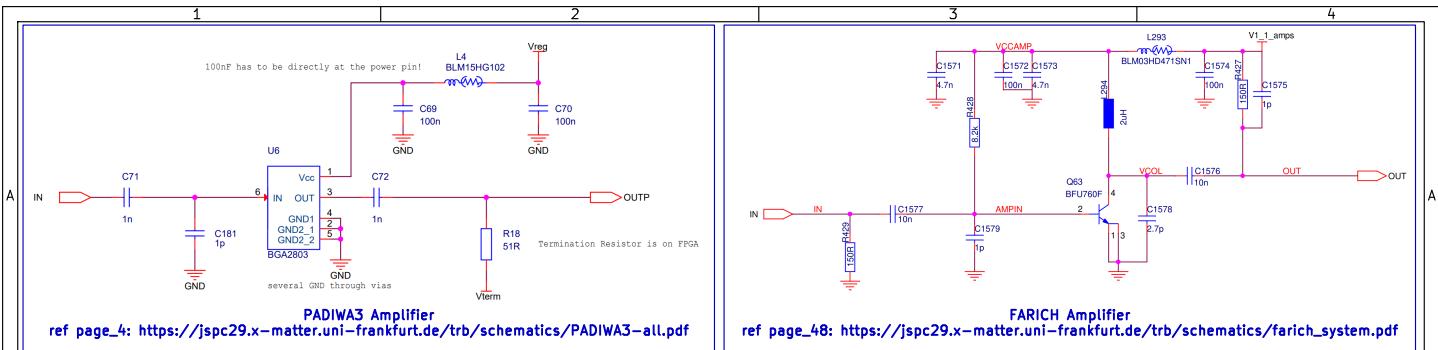


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**Title: Hamamatsu S13552 64 Channels Amplifier**

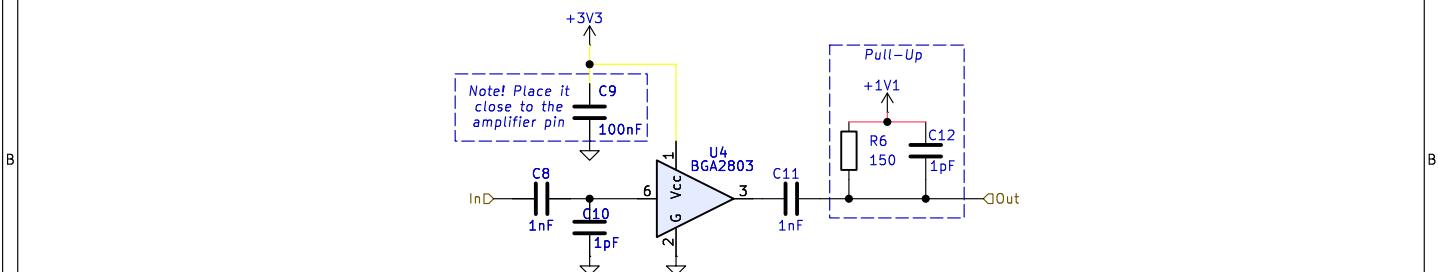
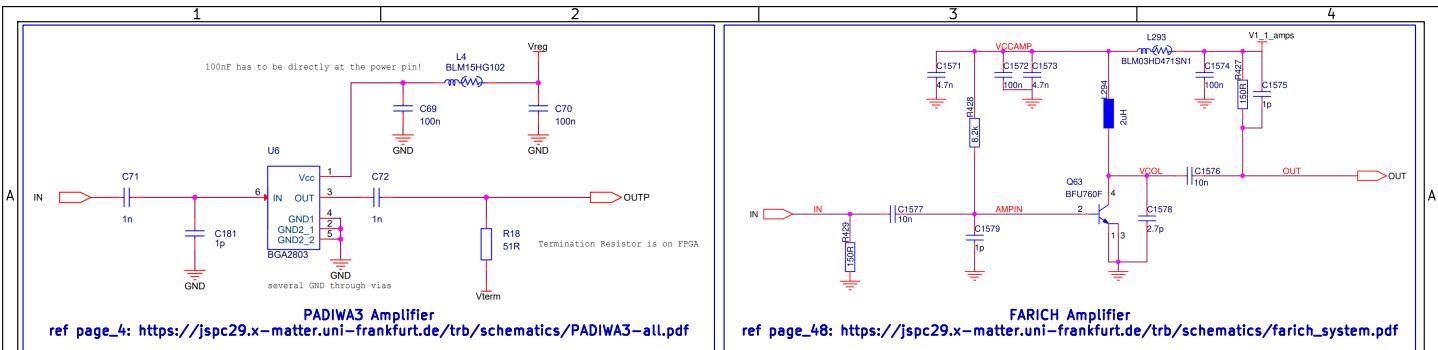
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Rev:  
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Other ref:  
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 DOI 10.1088/1748-0221/19/06/P06011  
 2. Joshua W Cates et al 2018 Phys. Med. Biol. 63 185022  
 DOI 10.1088/1361-6560/aabdc  
 3. F. Simon NIM-A Volume 926, 11 May 2019, Pages 85–100  
 doi.org/10.1016/j.nima.2018.11.042

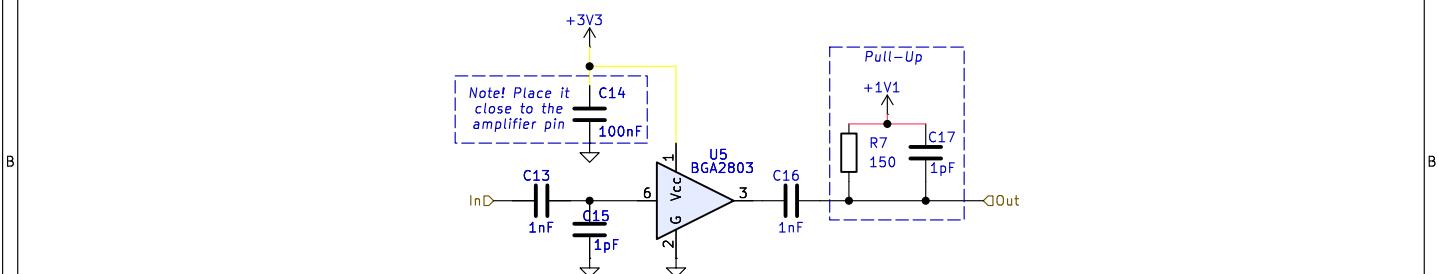
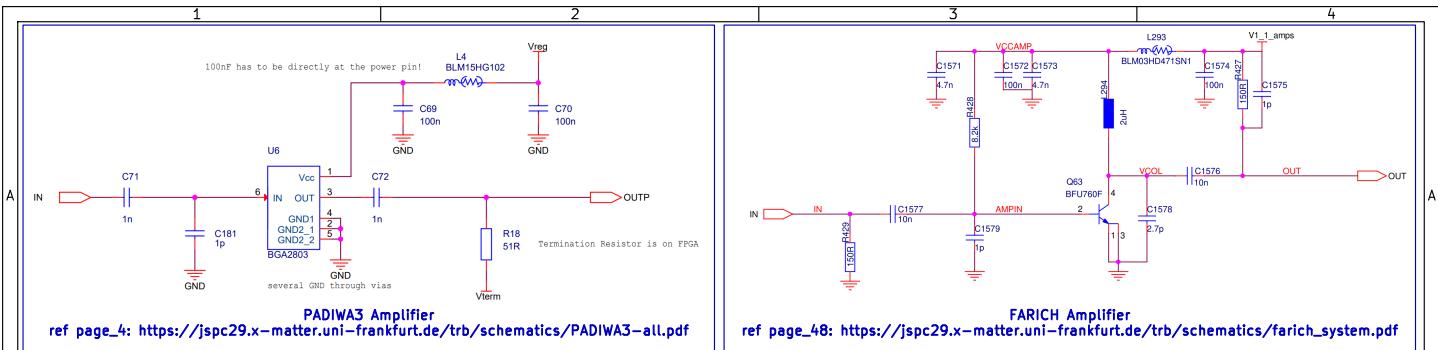
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Other ref:  
 1. W. Zhi et al 2024 JINST 19 P06011  
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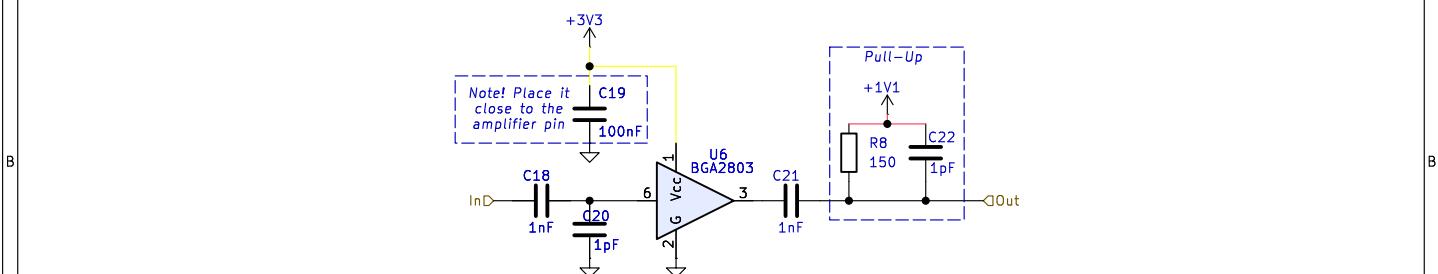
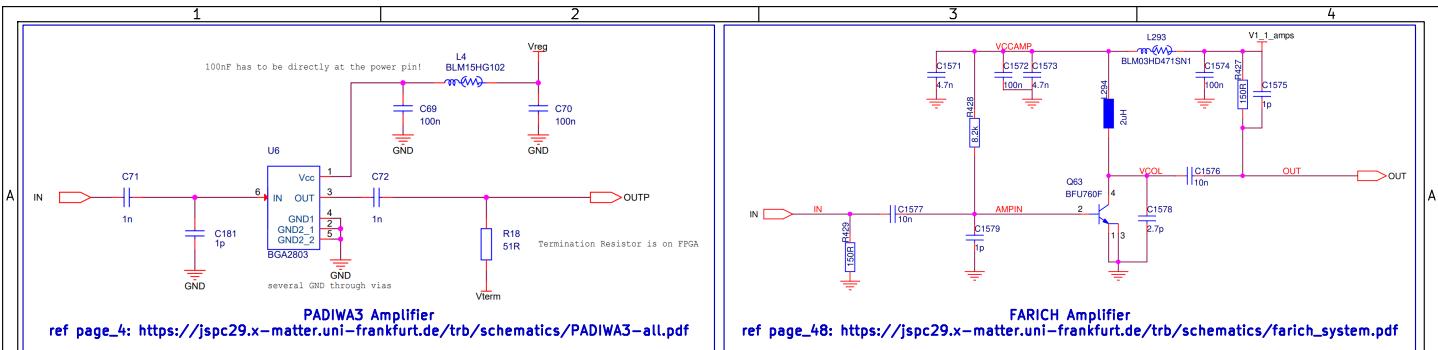
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**Title: Hamamatsu S13552 64 Channels Amplifier**  
 Size: A5 Date: 2025-03-25 Rev: 0  
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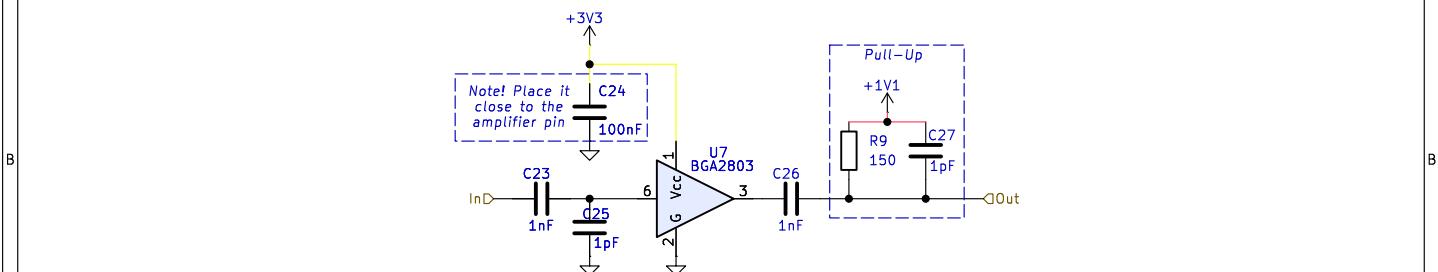
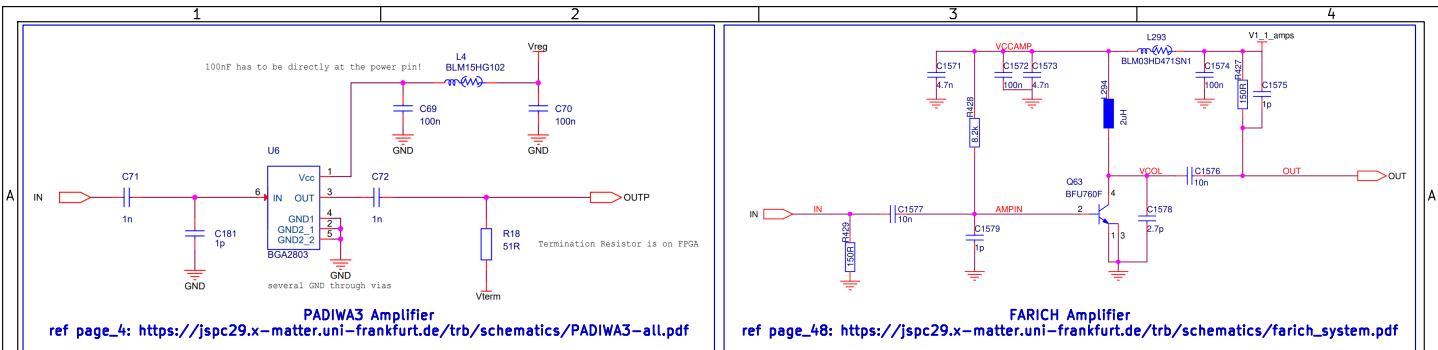
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_3/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

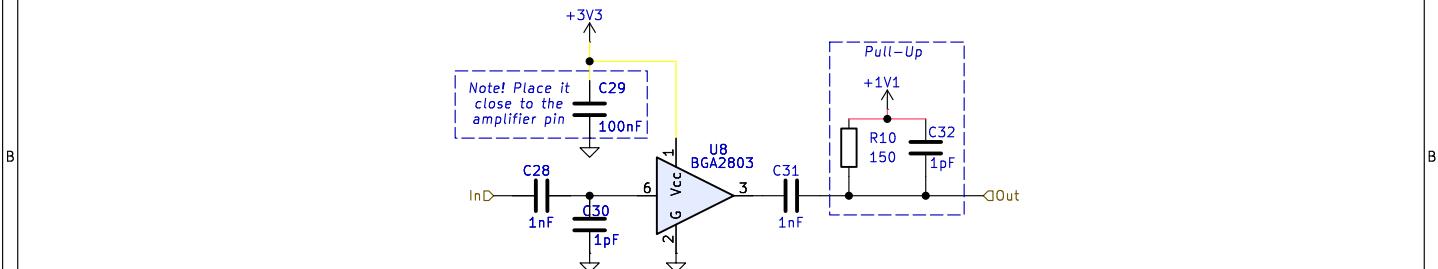
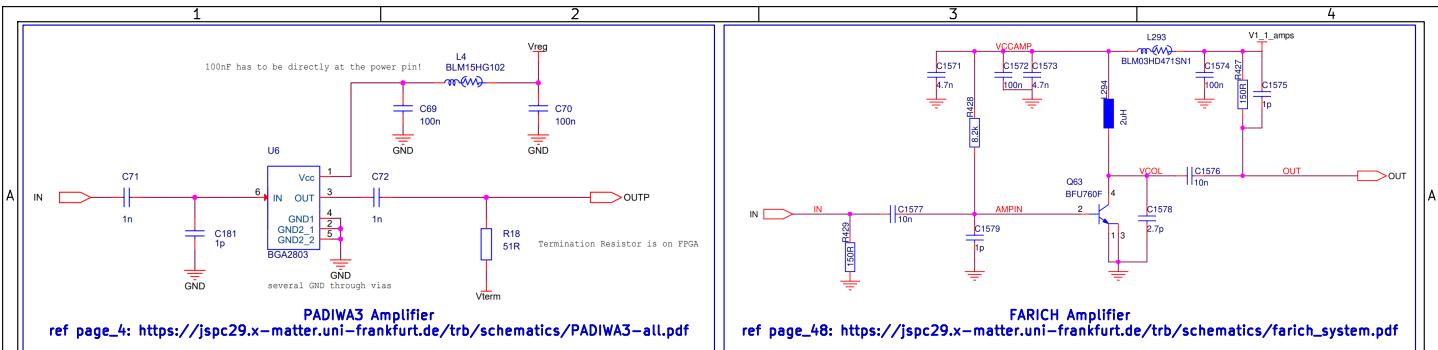


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### Title: Hamamatsu S13552 64 Channels Amplifier

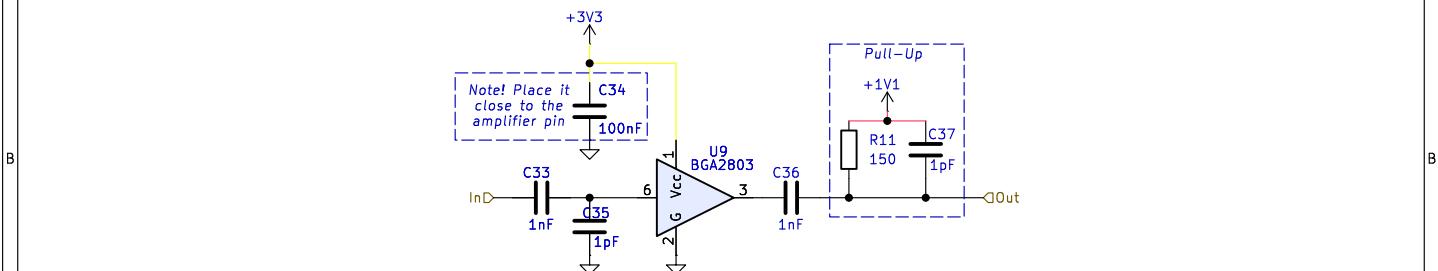
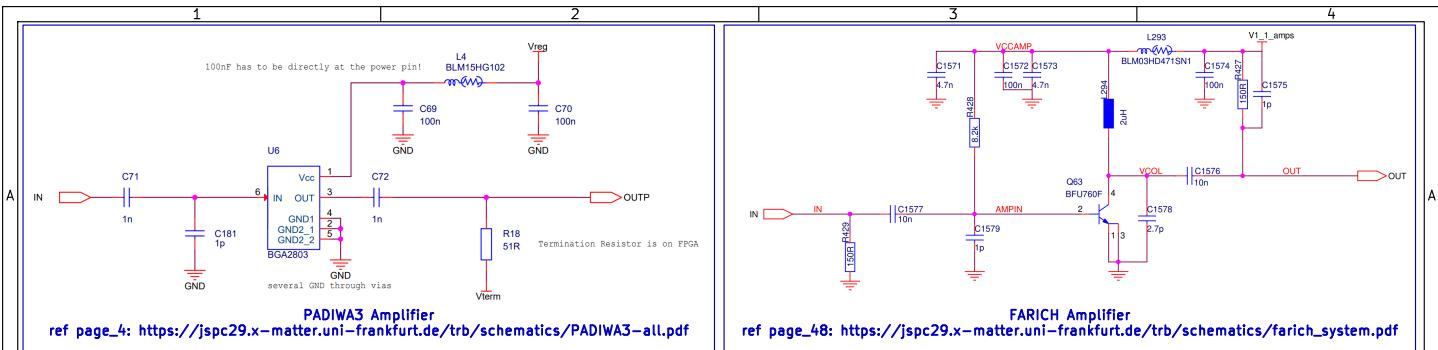
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Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu <b>Institution:</b> Technische Universität Darmstadt		<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>	
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

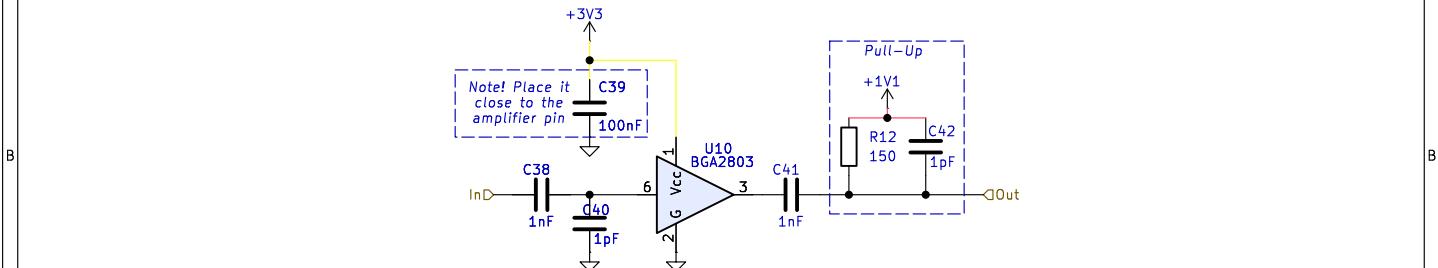
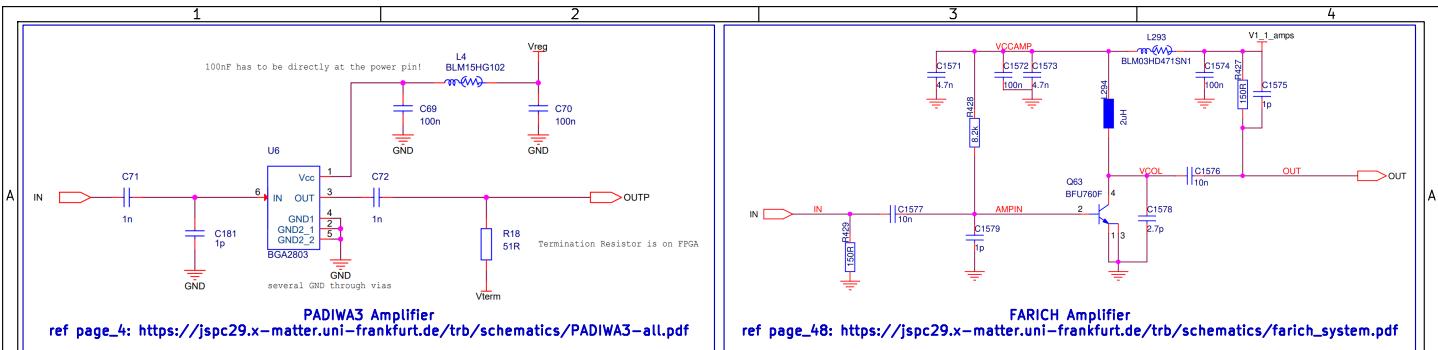


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### Title: Hamamatsu S13552 64 Channels Amplifier

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 Institution: Technische Universität Darmstadt

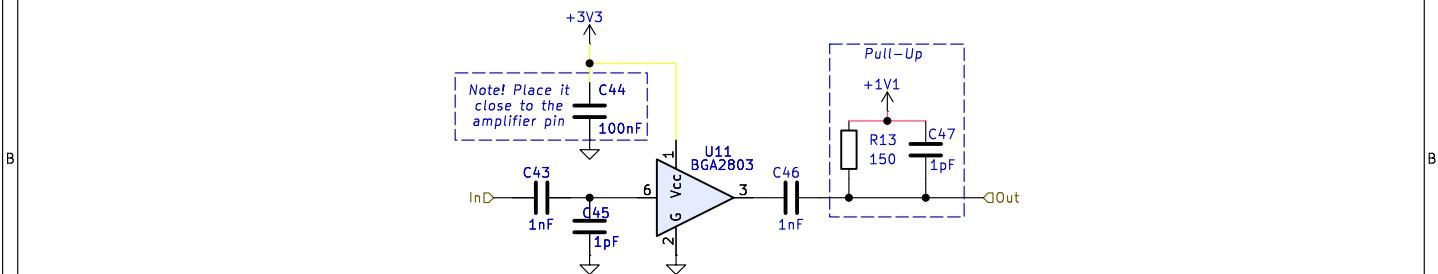
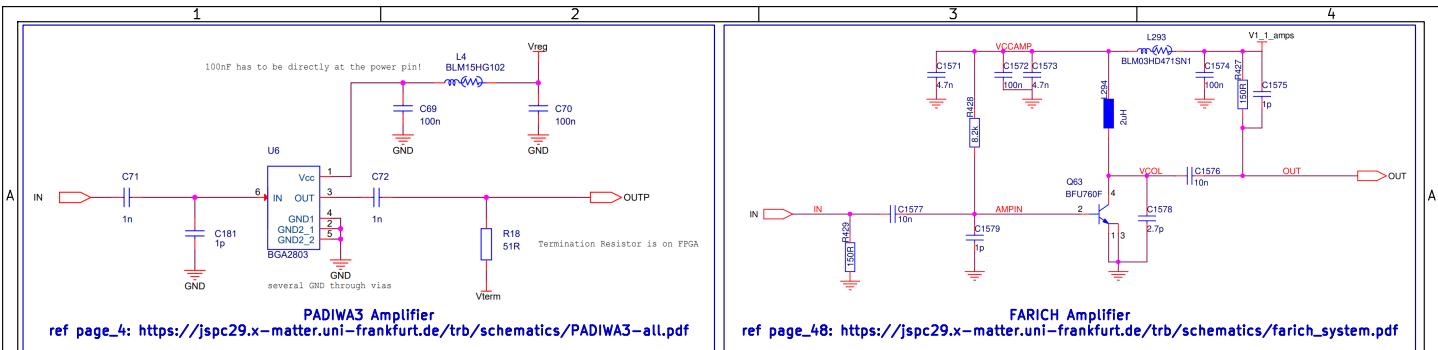


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**Title: Hamamatsu S13552 64 Channels Amplifier**

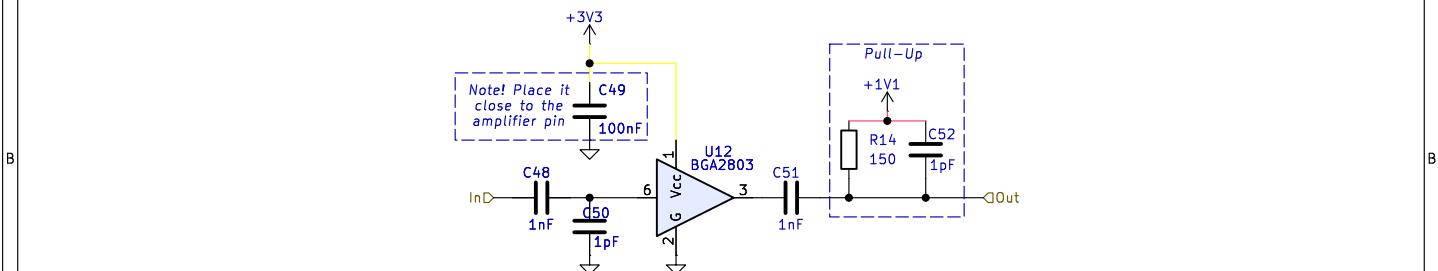
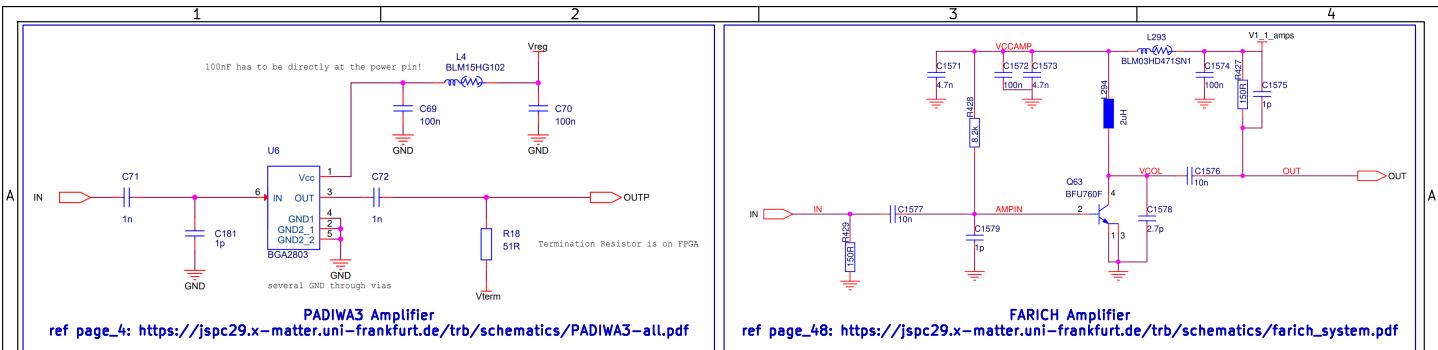
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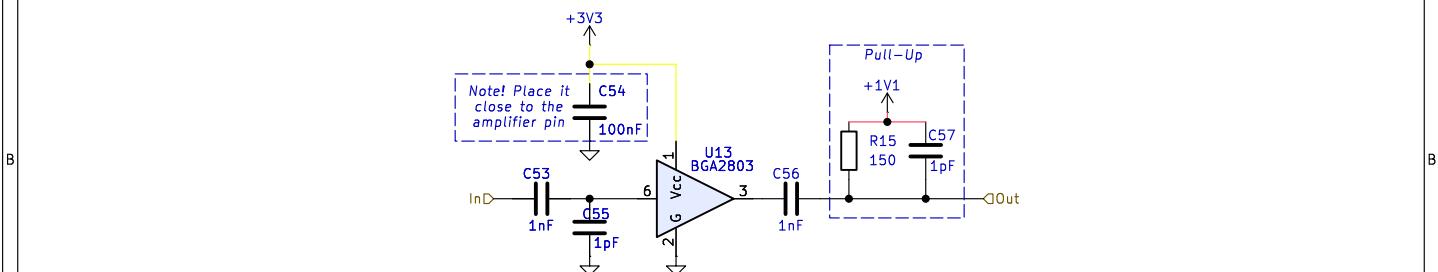
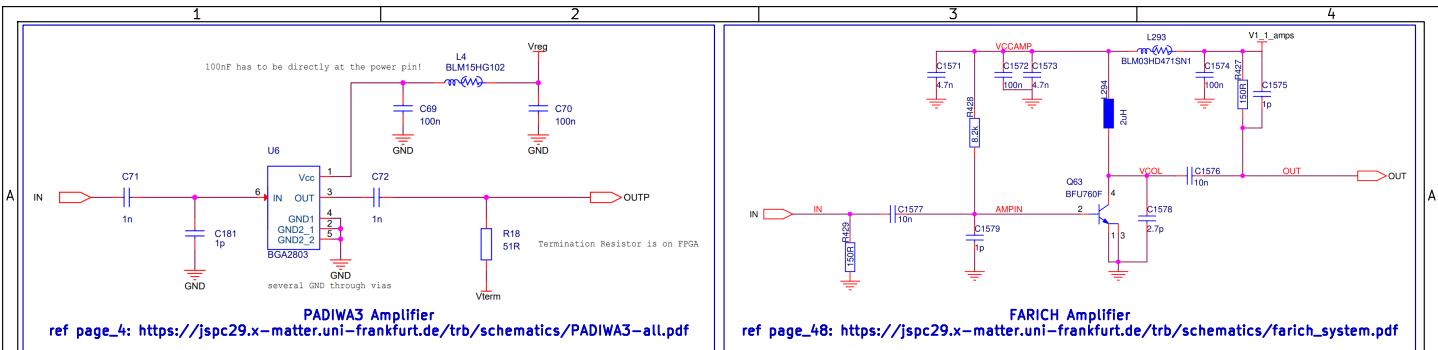
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Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu <b>Institution:</b> Technische Universität Darmstadt			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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 3. F. Simon NIM-A Volume 926, 11 May 2019, Pages 85–100  
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

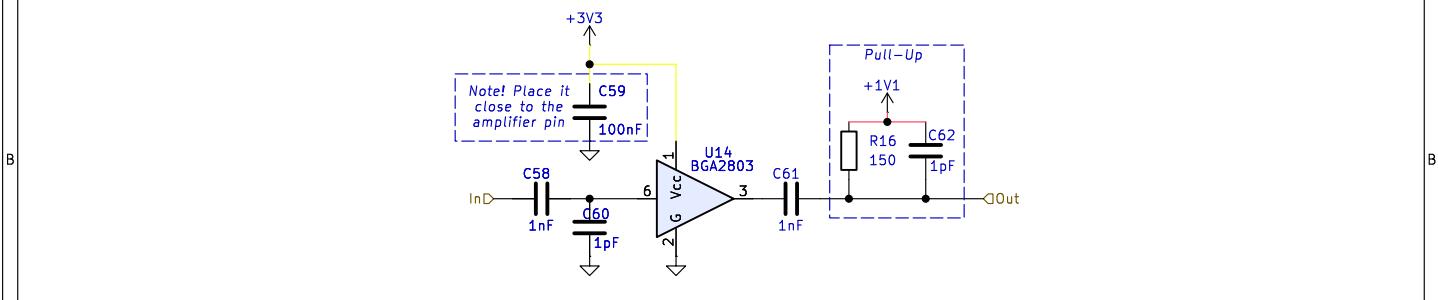
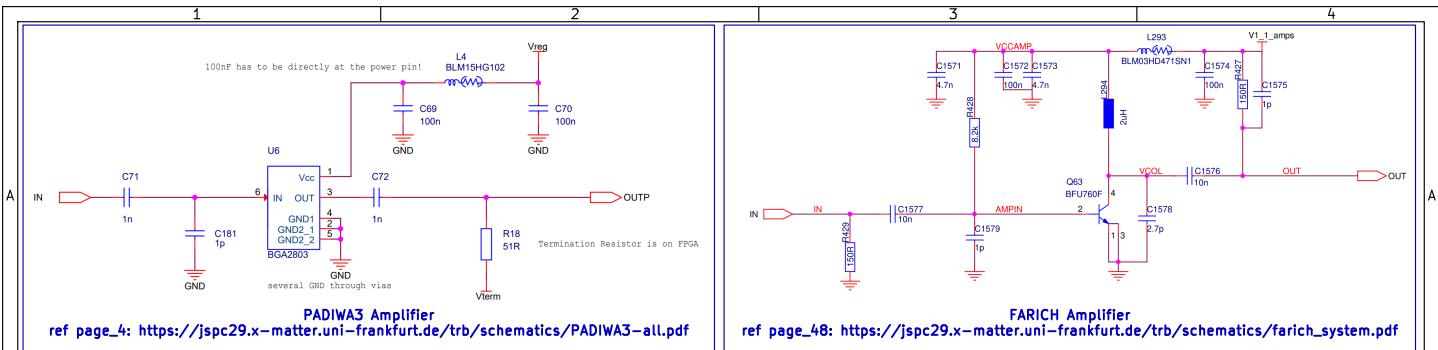
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

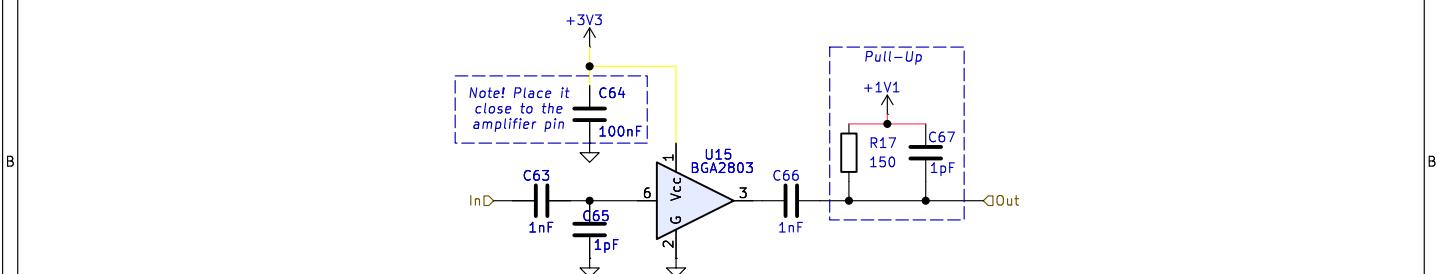
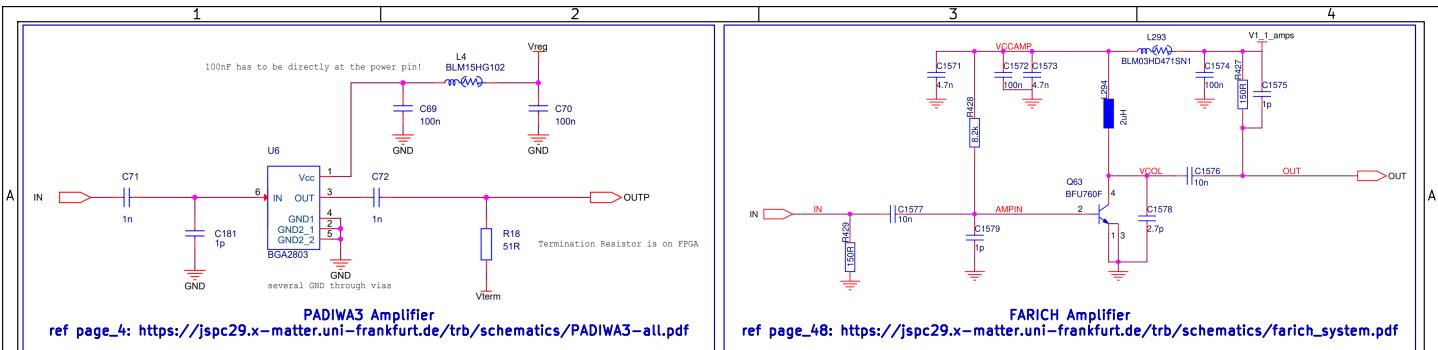


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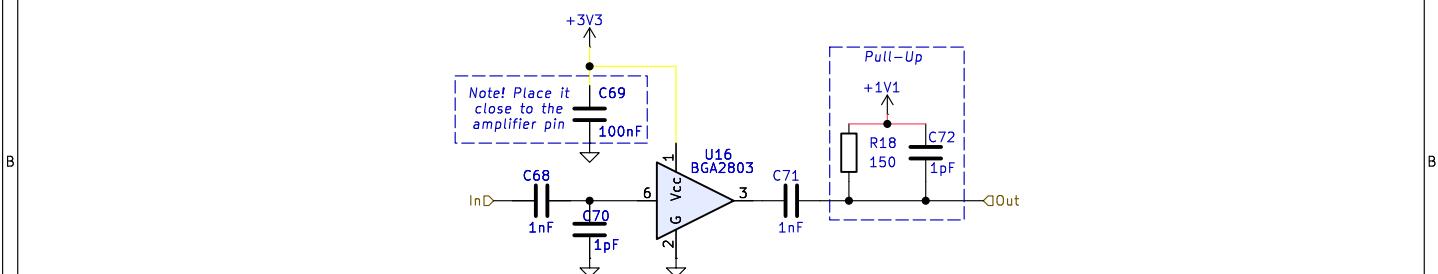
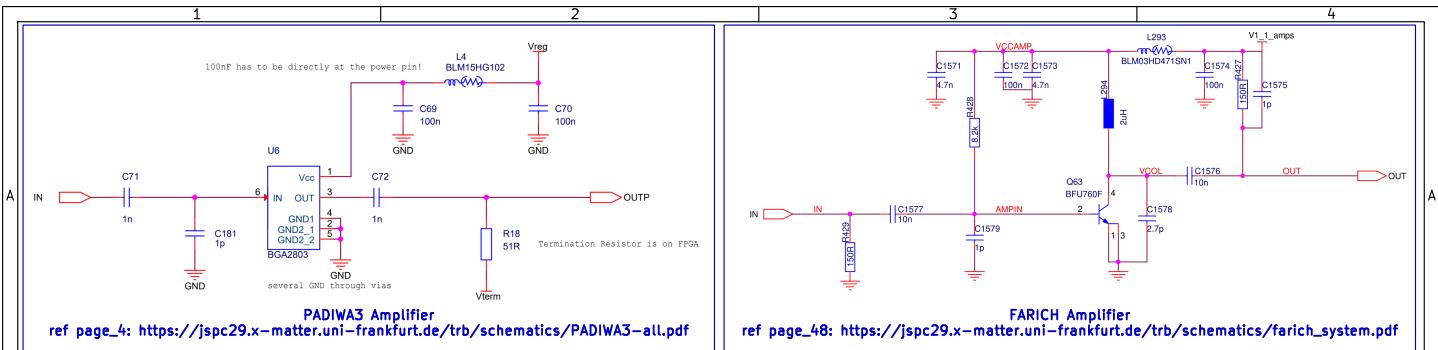
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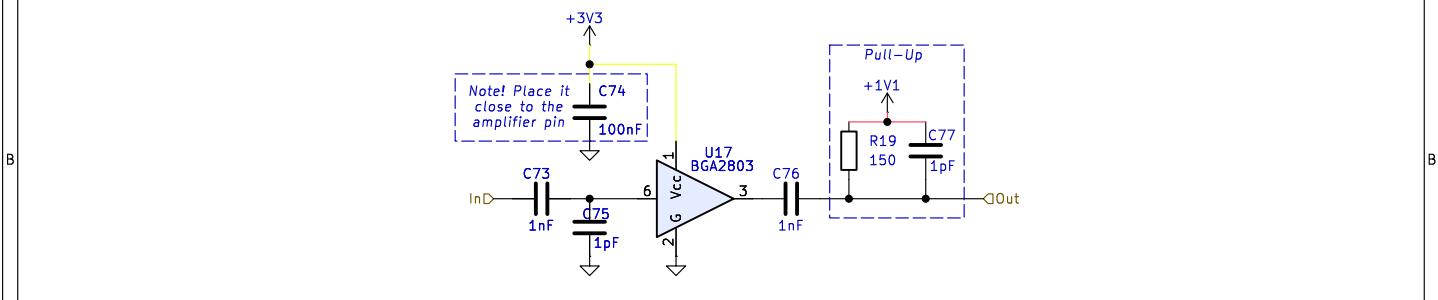
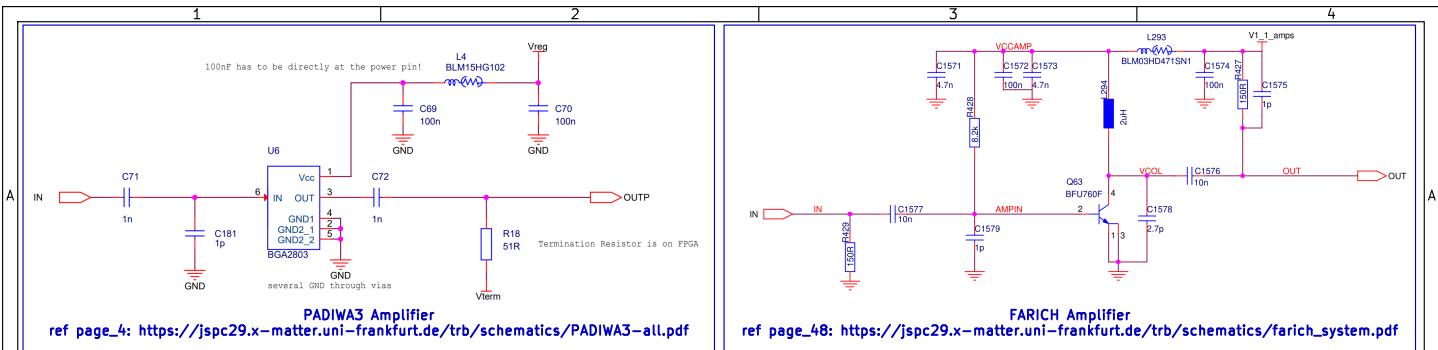
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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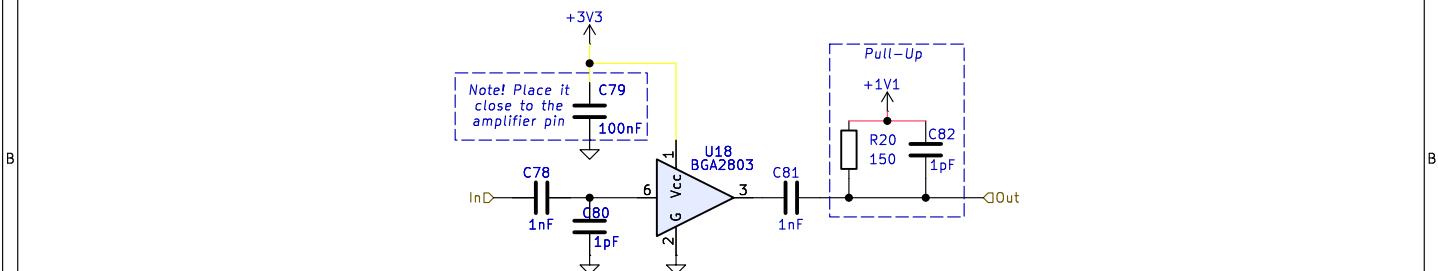
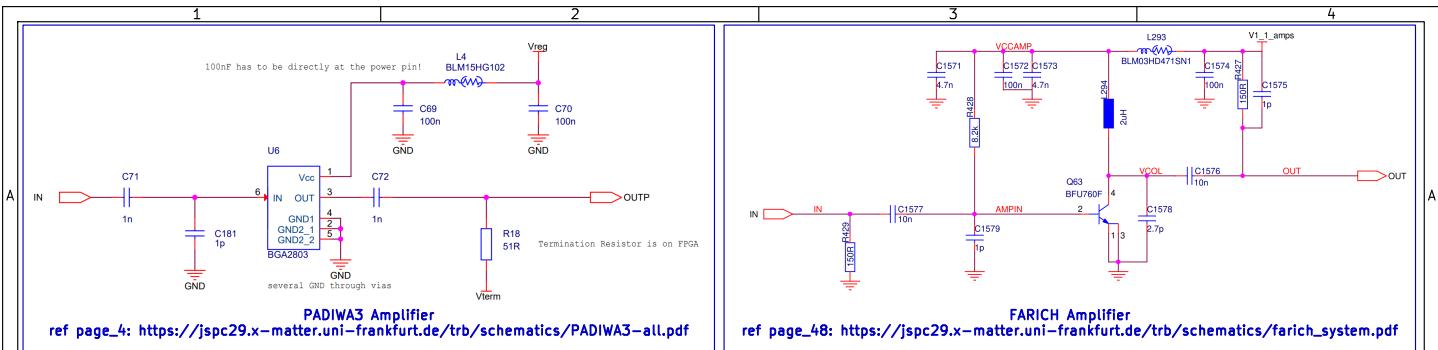


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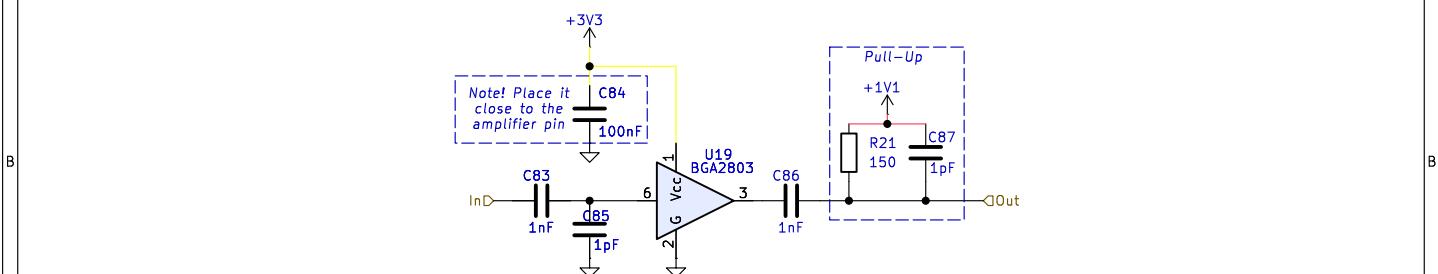
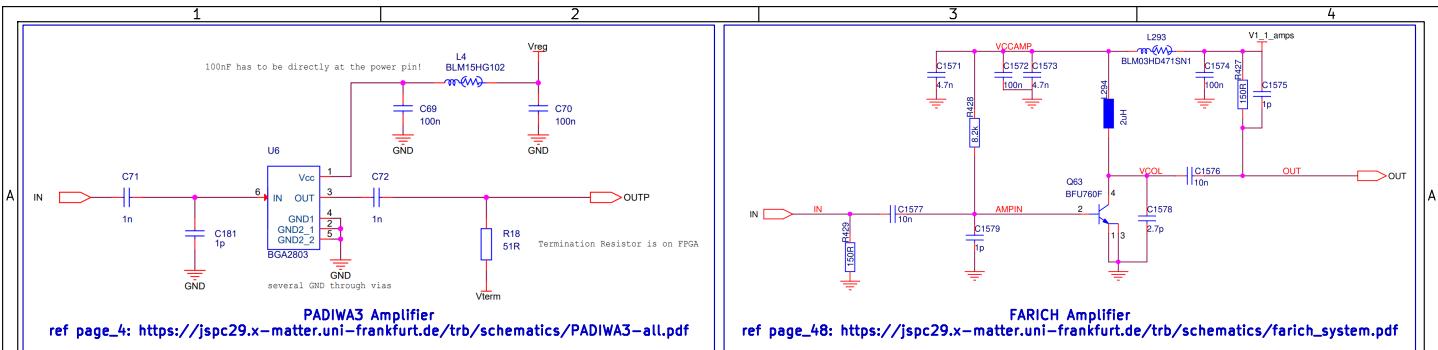


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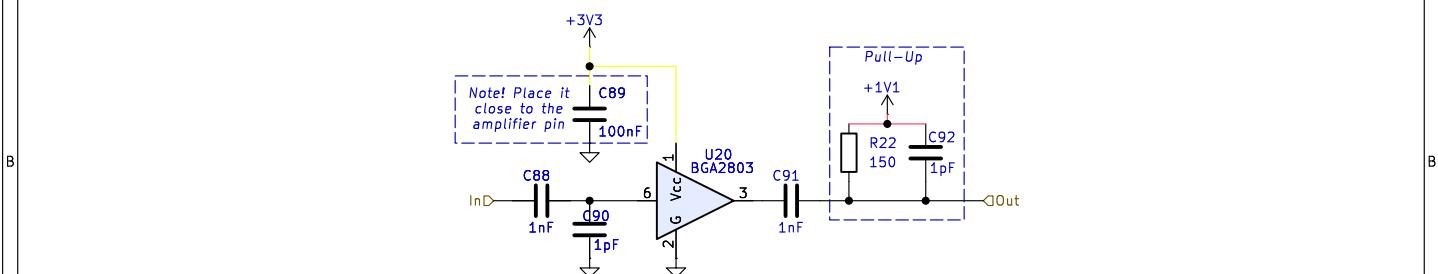
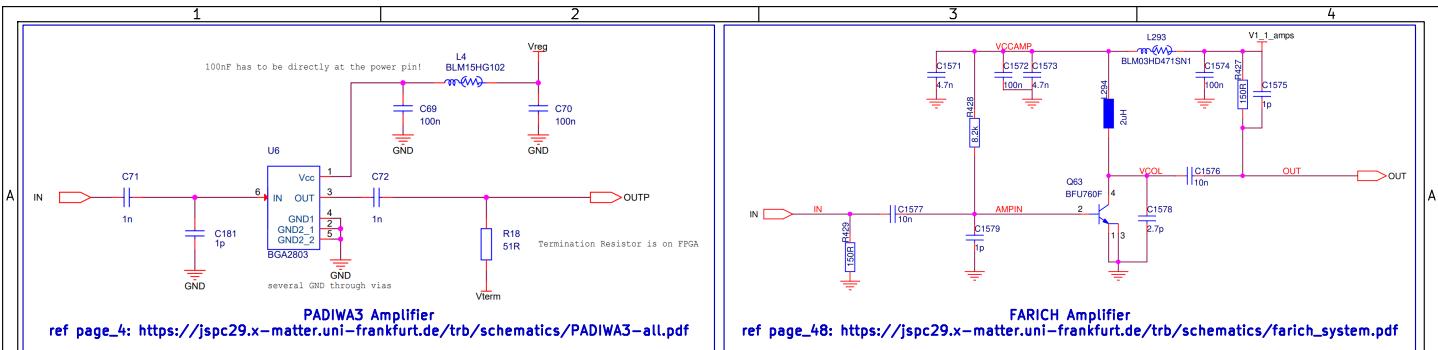
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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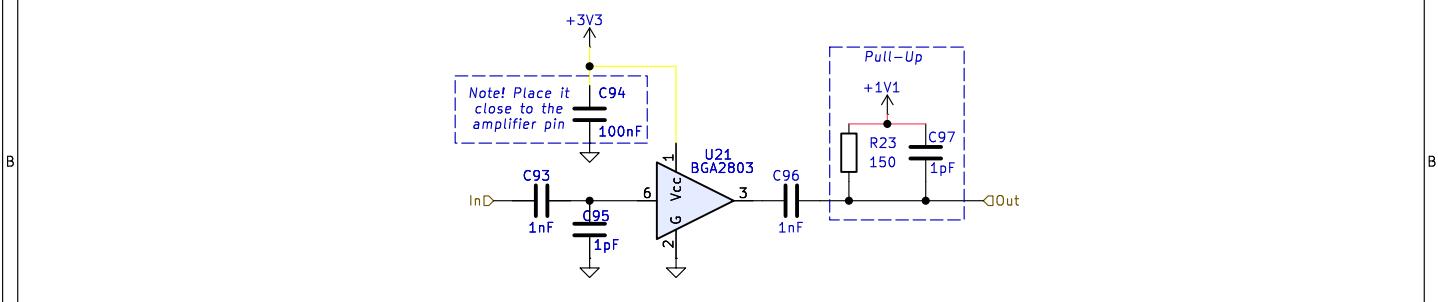
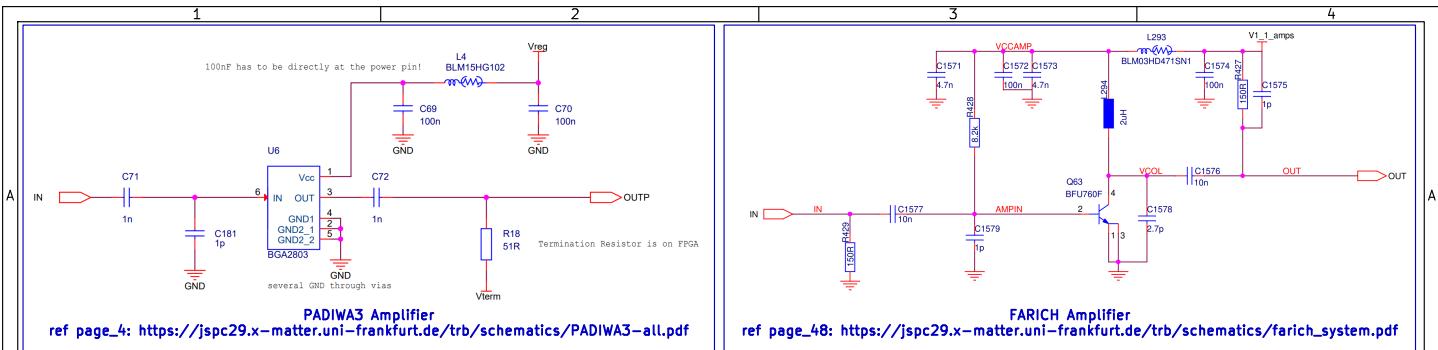
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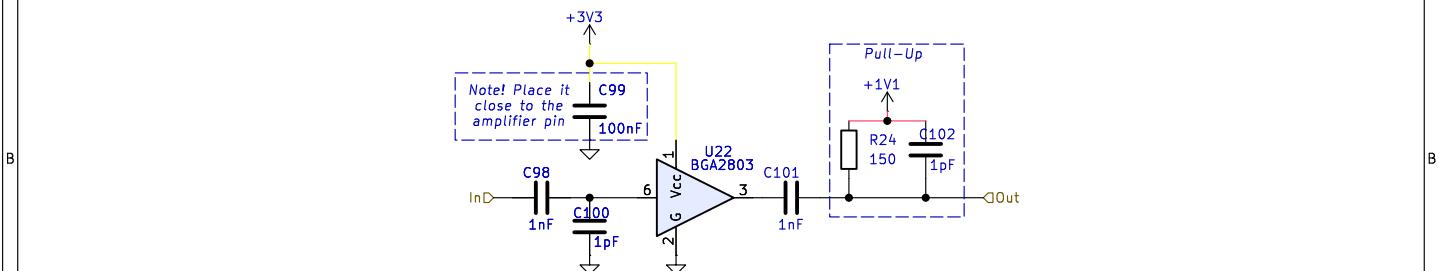
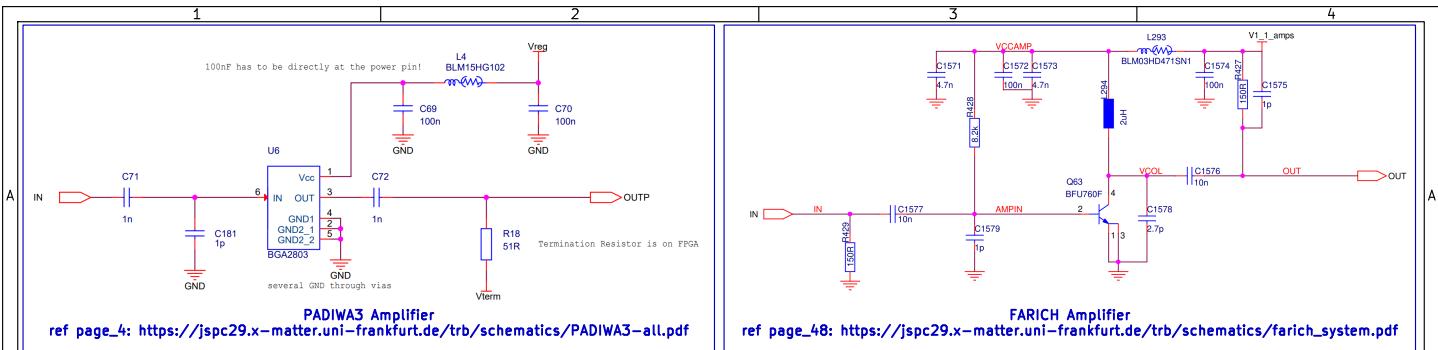
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 2. Joshua W Cates et al 2018 Phys. Med. Biol. 63 185022  
 DOI 10.1088/1361-6560/aabdc  
 3. F. Simon NIM-A Volume 926, 11 May 2019, Pages 85–100  
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_18/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
<p><b>Title: Hamamatsu S13552 64 Channels Amplifier</b>          Size: A5 Date: 2025-03-25          KiCad E.D.A. 9.0.3</p>		<p>Rev: 0          Id: 19/66</p>	



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		Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu Institution: Technische Universität Darmstadt Sheet: /amp_19/ File: BGA2803_amplifier.kicad_sch <b>Title: Hamamatsu S13552 64 Channels Amplifier</b> Size: A5      Date: 2025-03-25 KiCad E.D.A. 9.0.3		Rev: 0
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Other ref:  
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

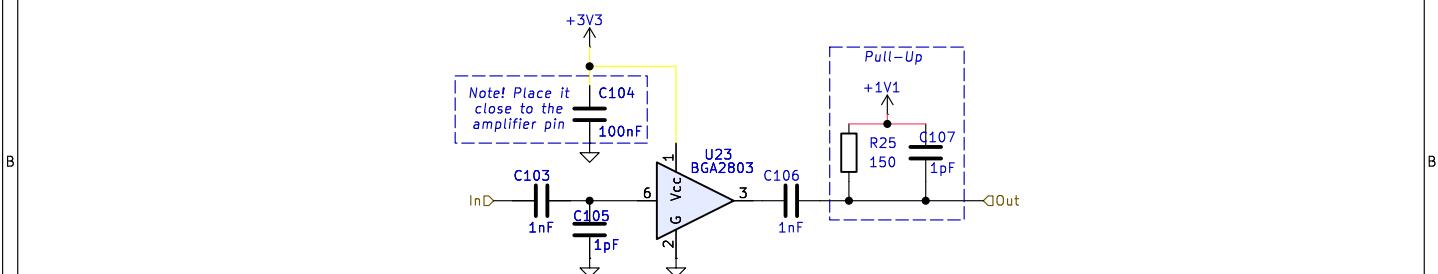
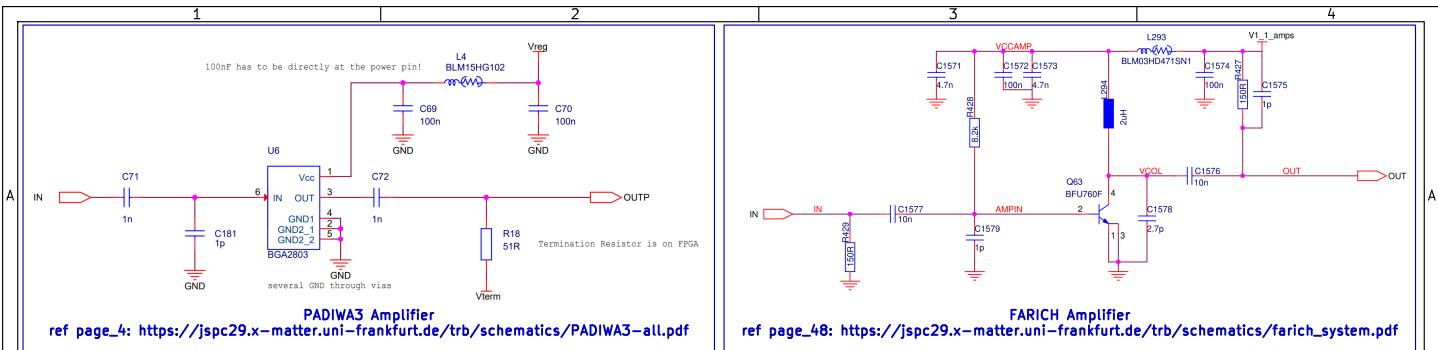


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### Title: Hamamatsu S13552 64 Channels Amplifier

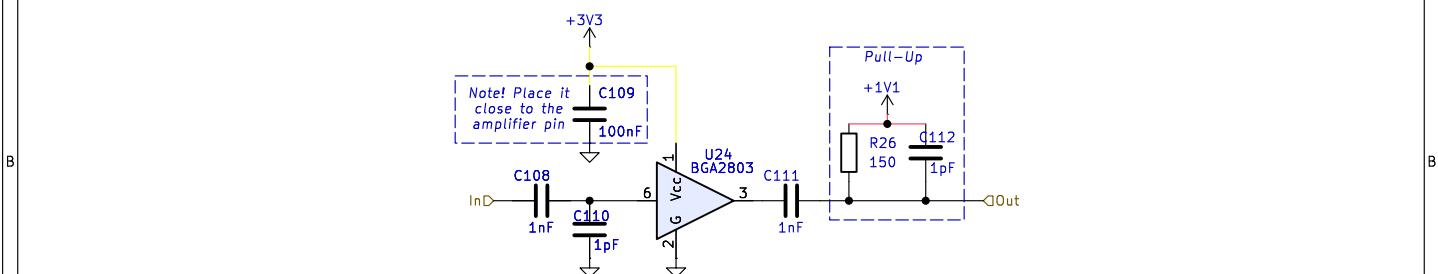
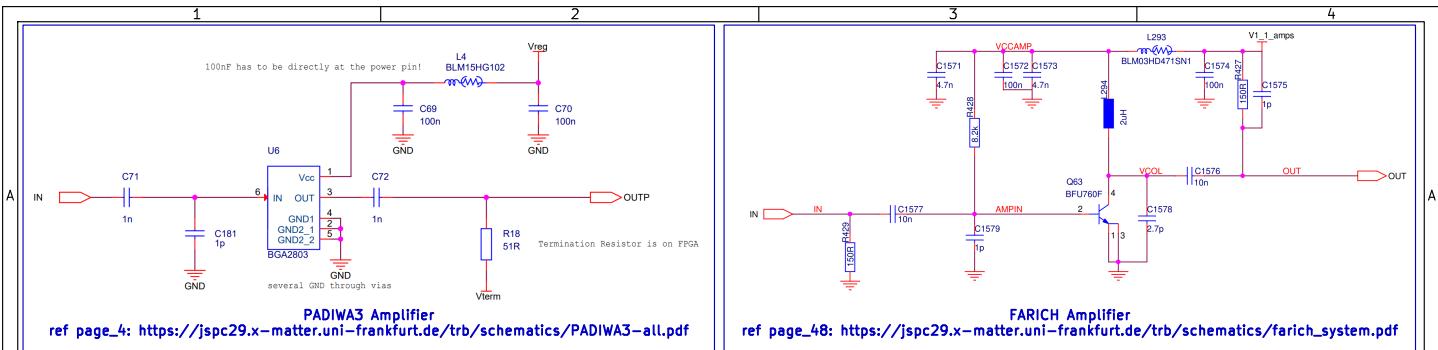
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Rev: 0  
 Id: 21/66



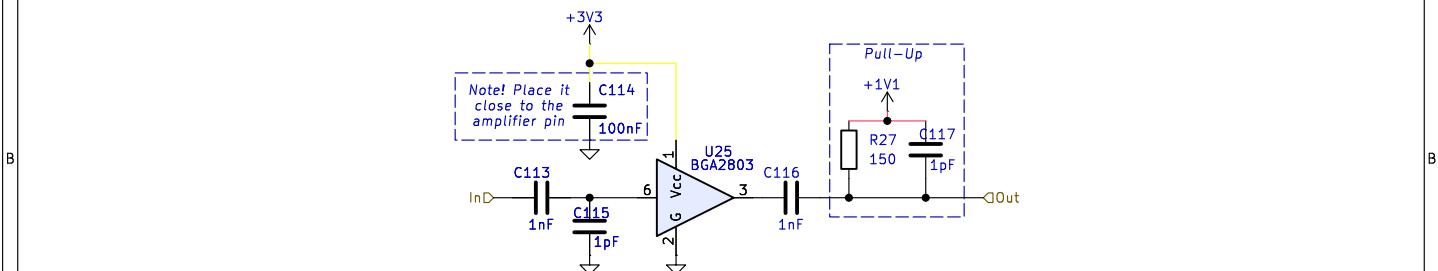
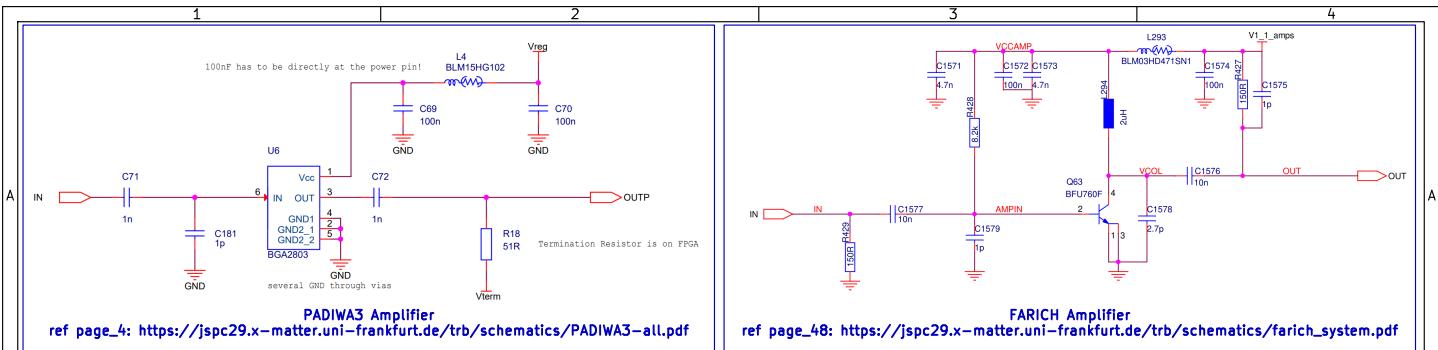
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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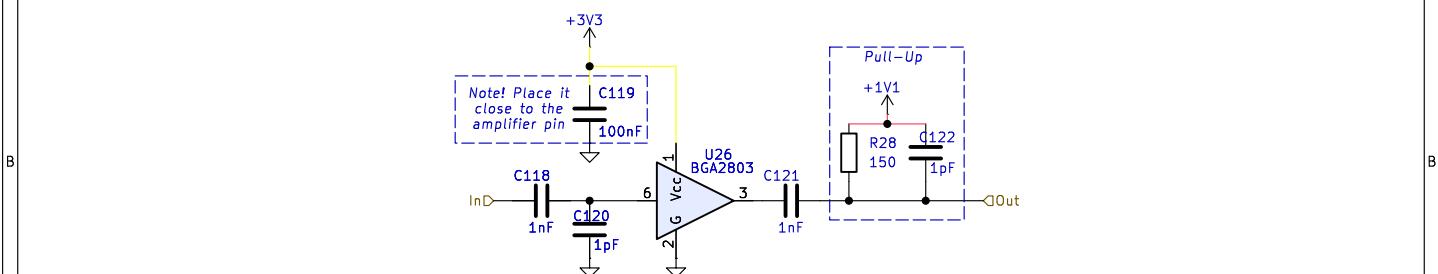
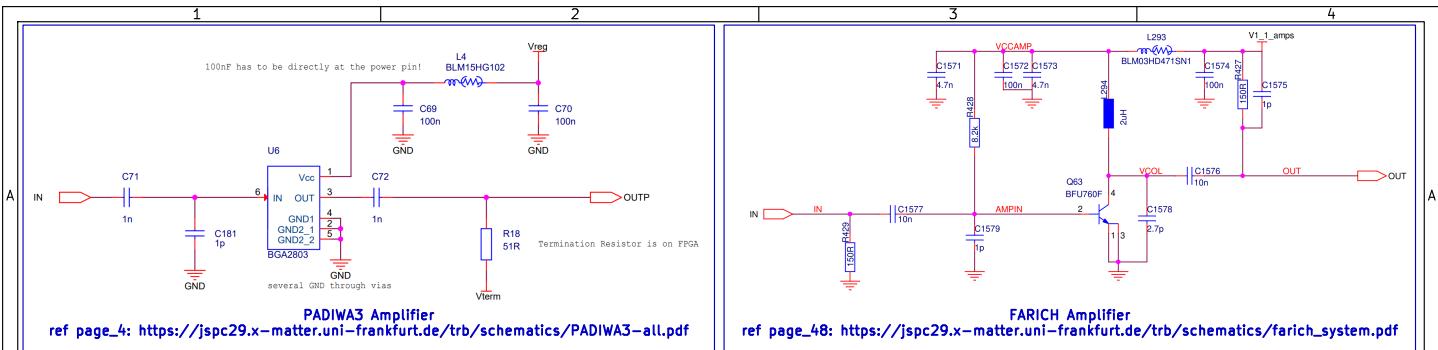
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		Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu Institution: Technische Universität Darmstadt Sheet: /amp_22/ File: BGA2803_amplifier.kicad_sch	
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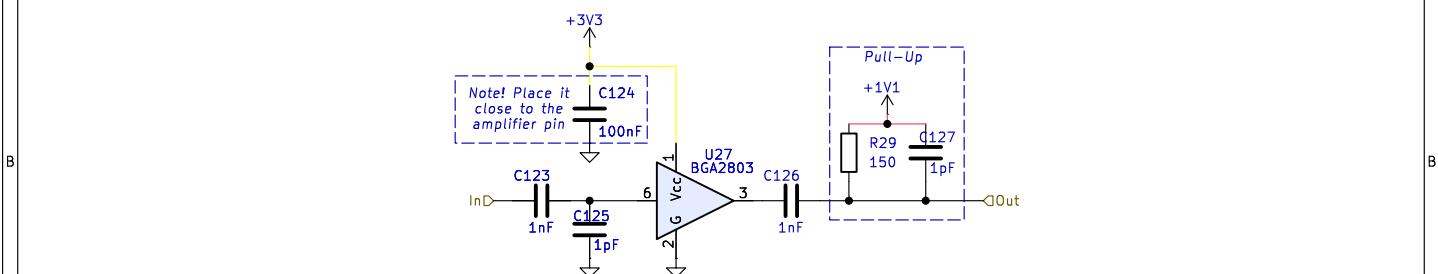
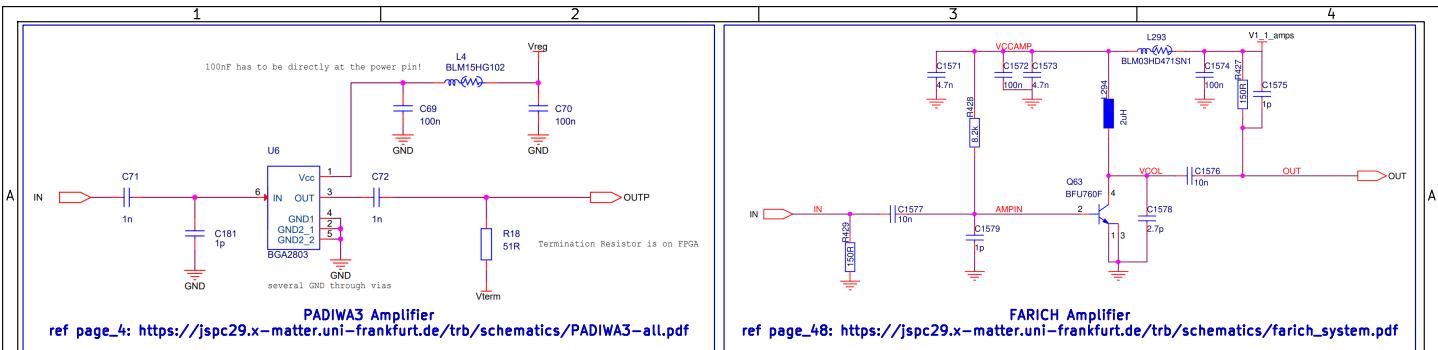
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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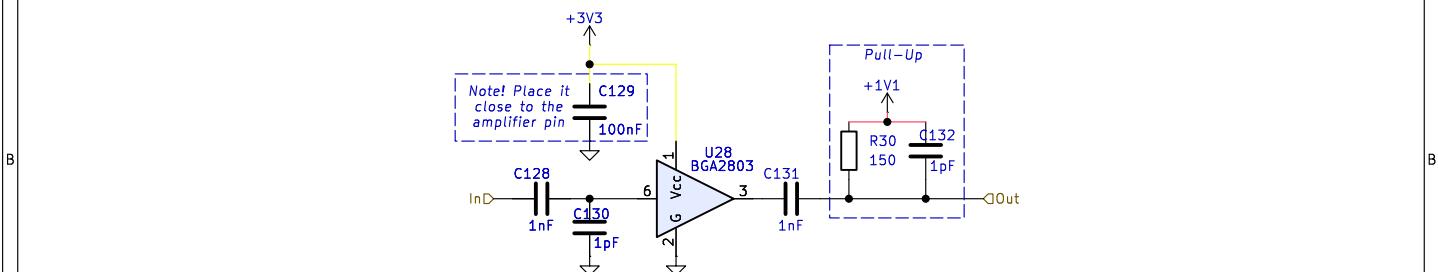
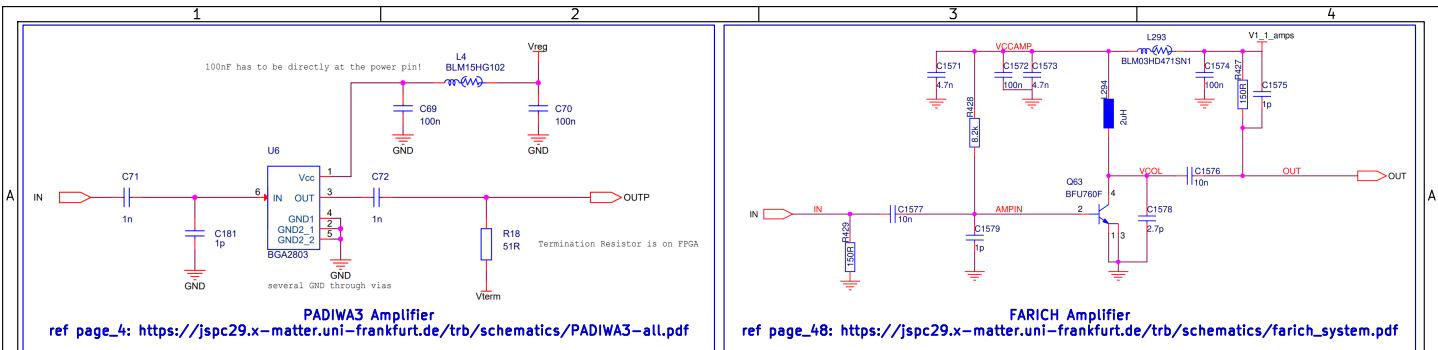
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
Sheet: /amp_24/	Date: 2025-03-25	Rev: 0	Id: 25/66
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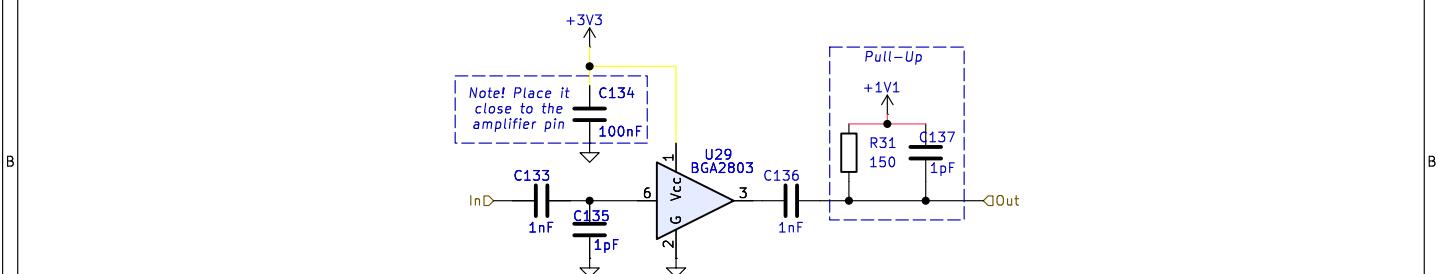
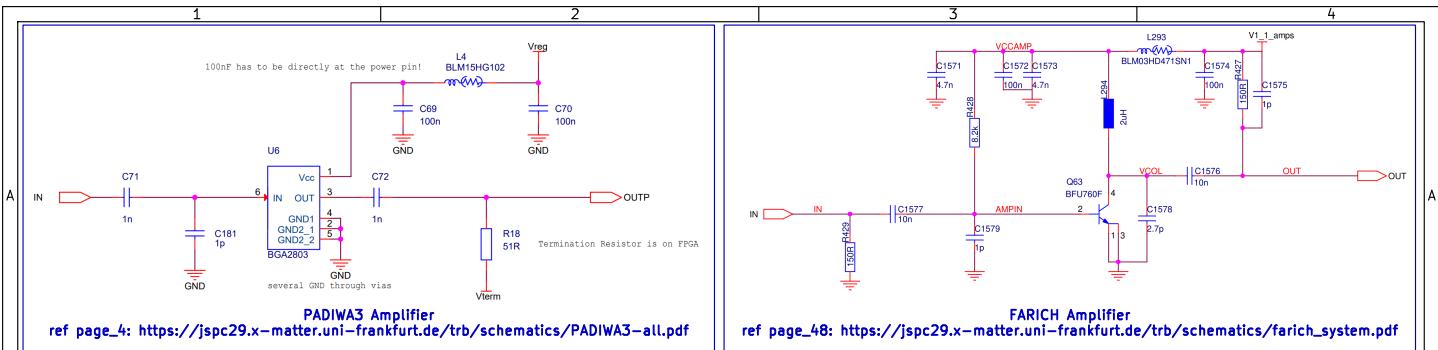
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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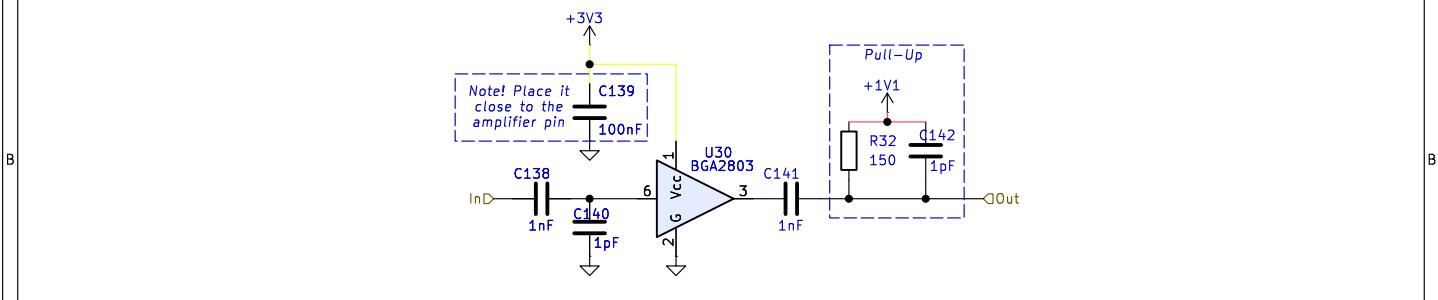
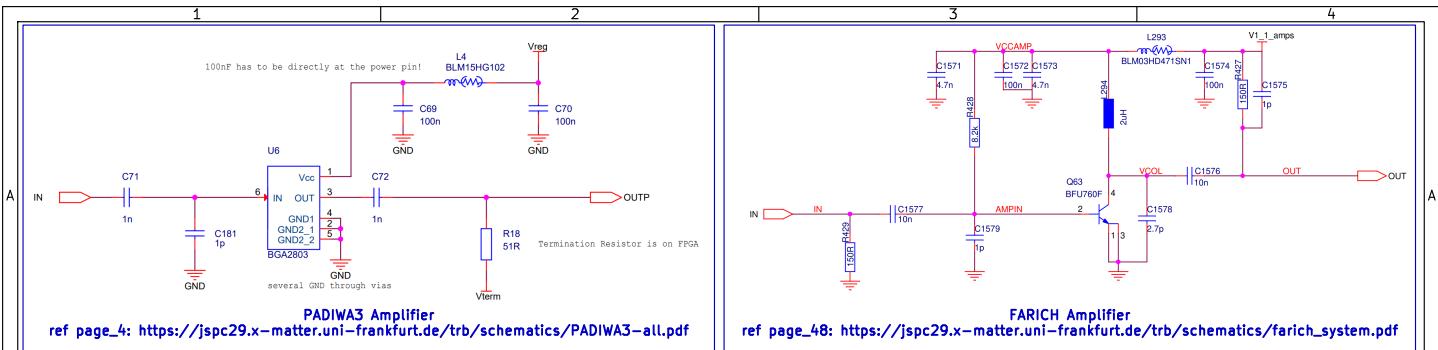
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Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu Institution: Technische Universität Darmstadt Sheet: /amp_26/ File: BGA2803_amplifier.kicad_sch		<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>	
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_27/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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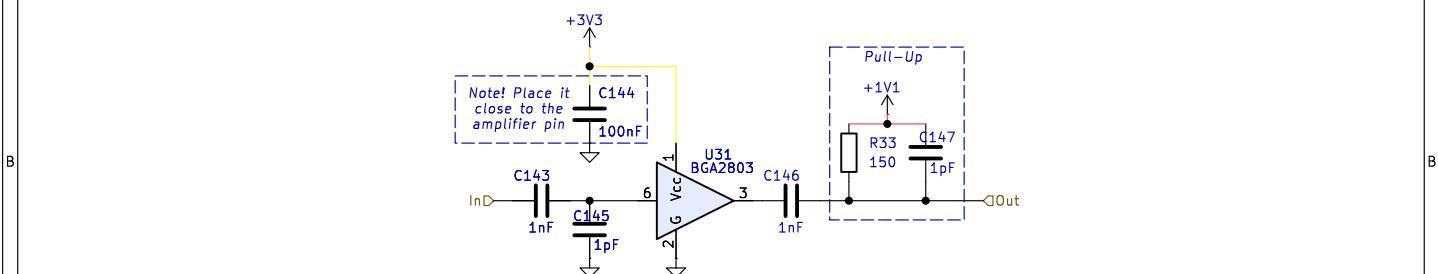
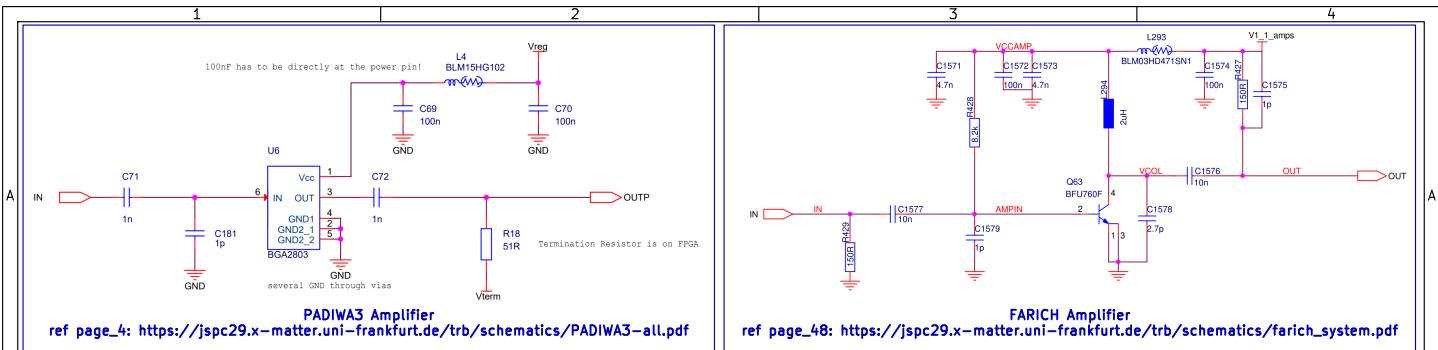
Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt



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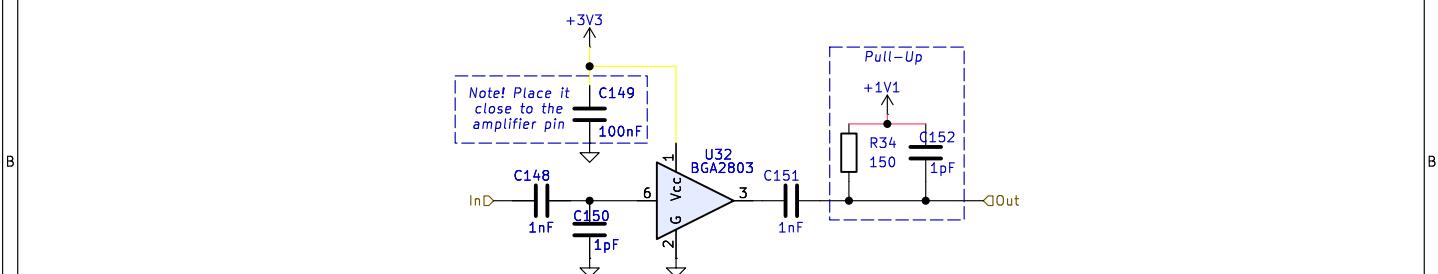
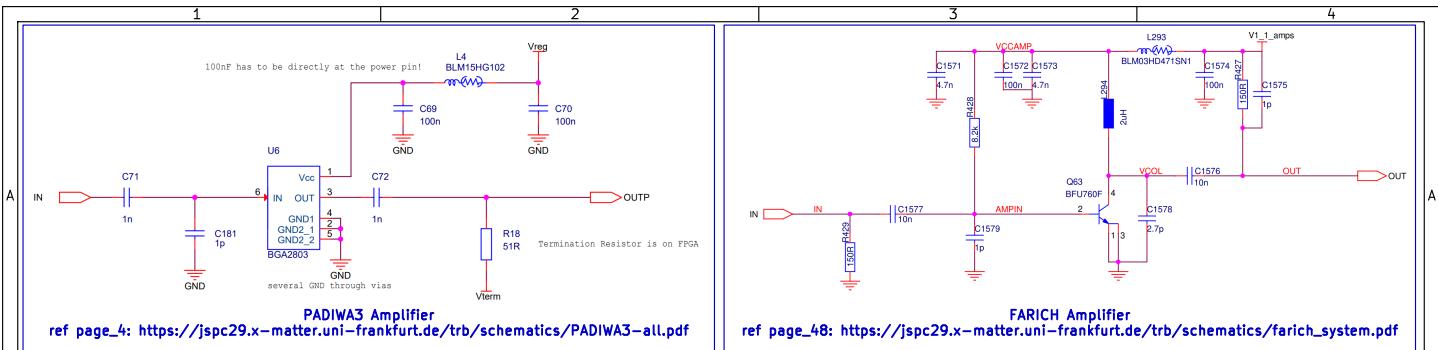
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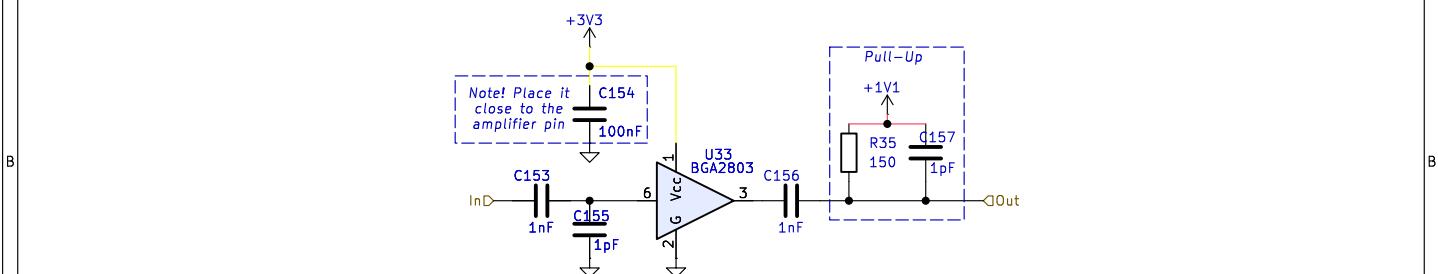
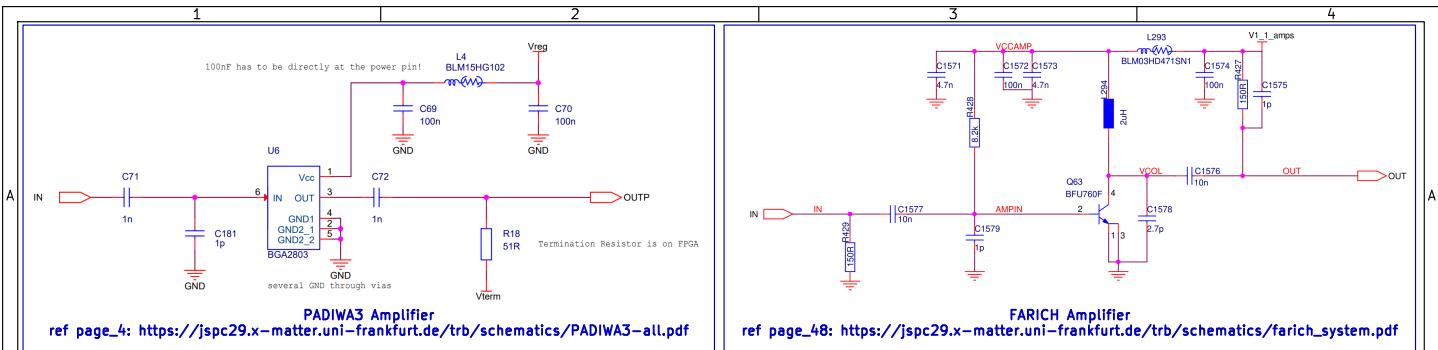
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Project: HYDRA TPC & Fiber Tracker Author: Dr. Alexandru Enciu Institution: Technische Universität Darmstadt Sheet: /amp_29/ File: BGA2803_amplifier.kicad_sch		<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>	
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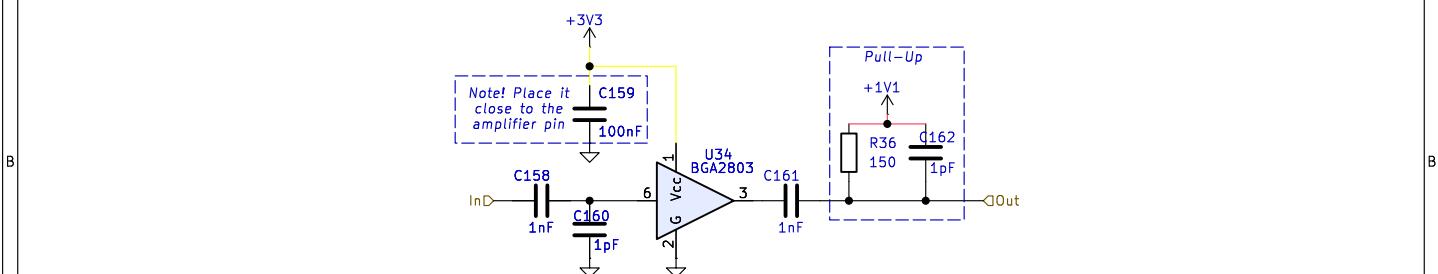
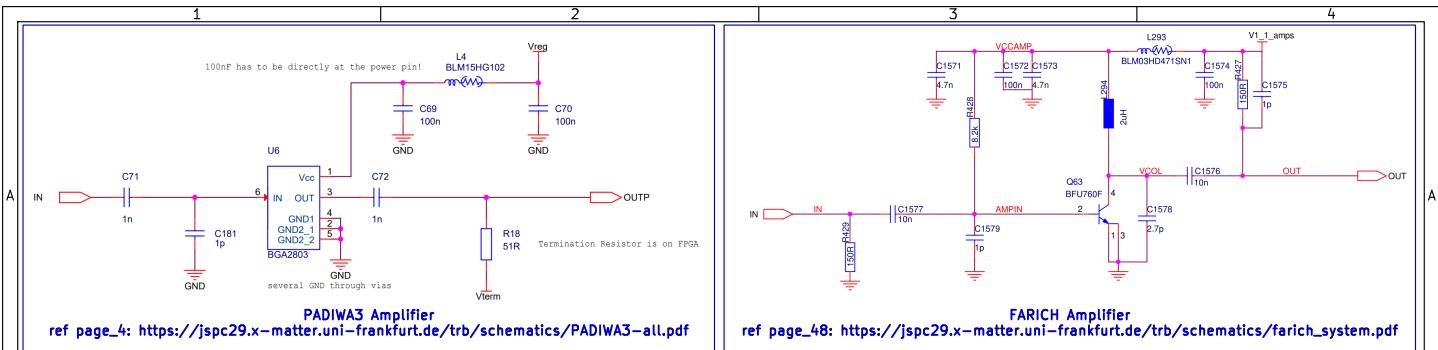
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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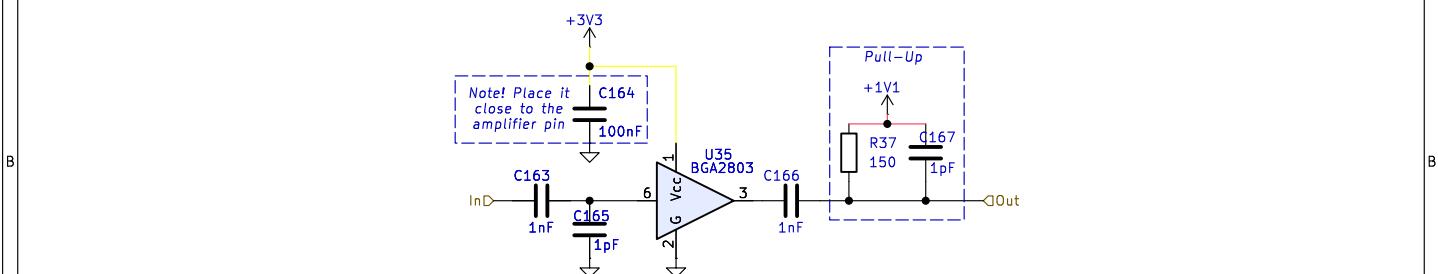
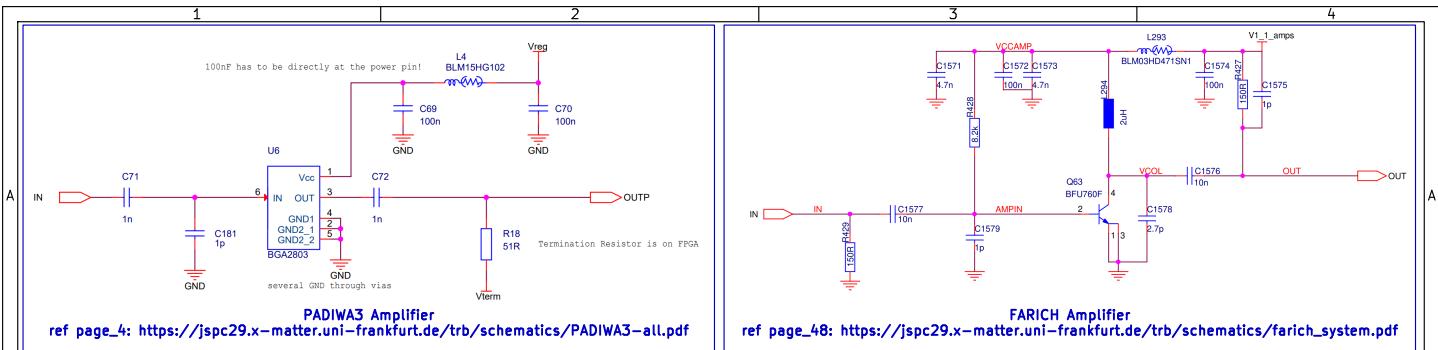
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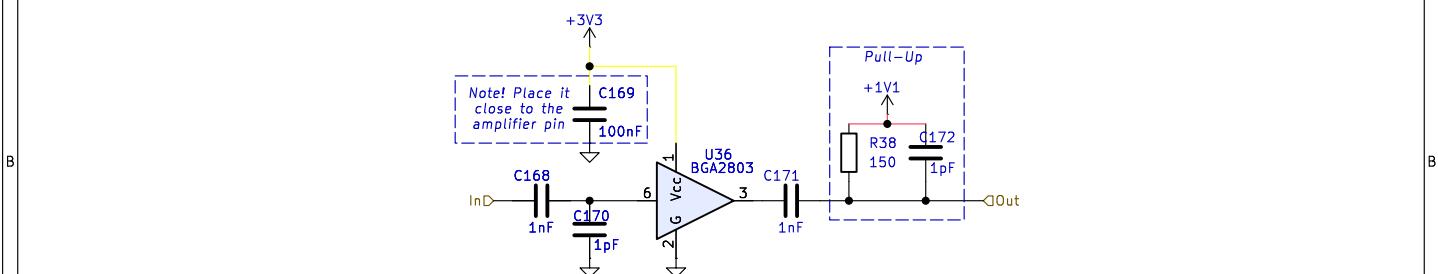
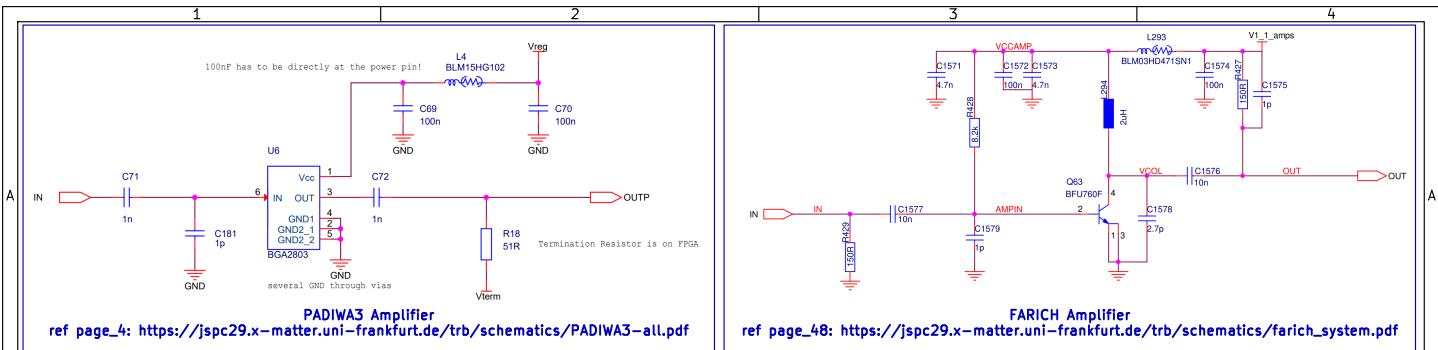
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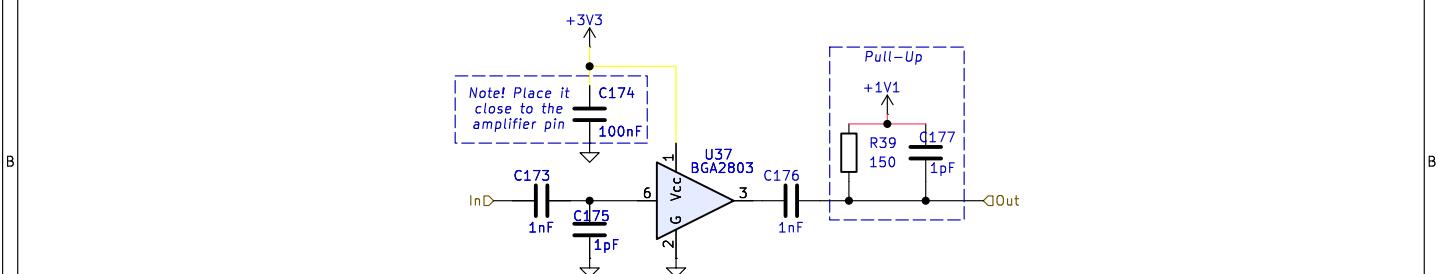
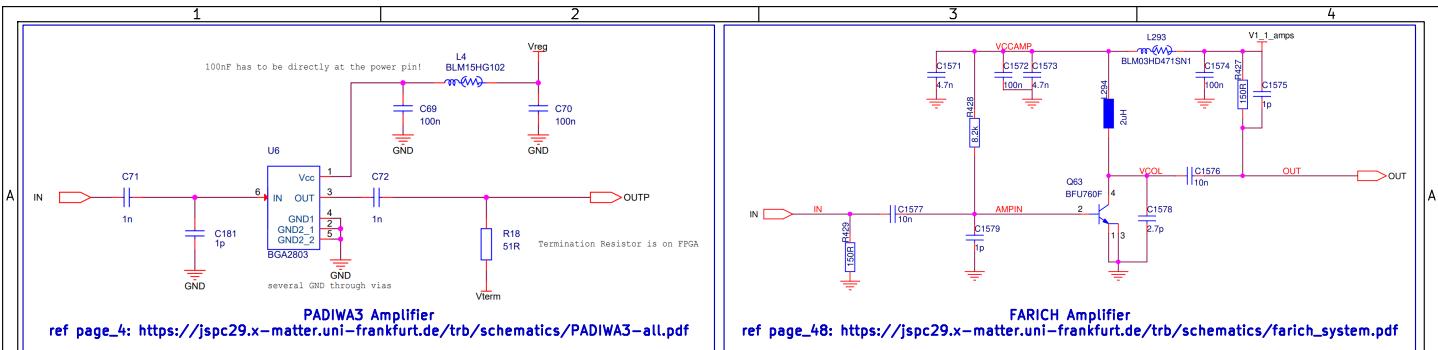
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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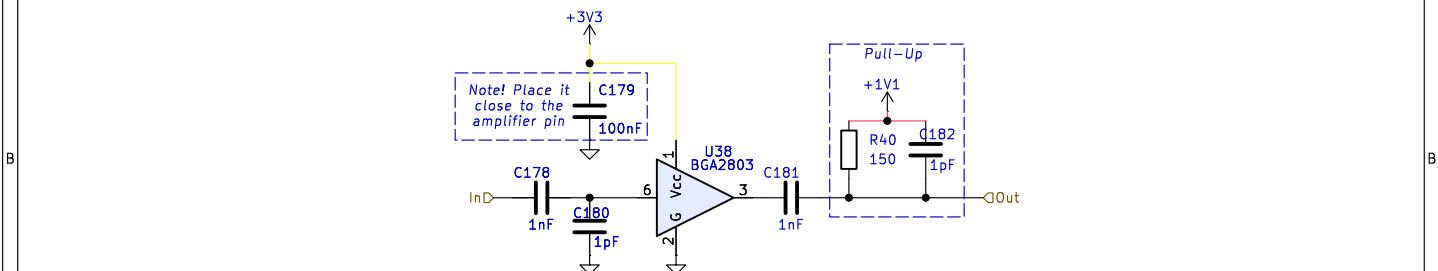
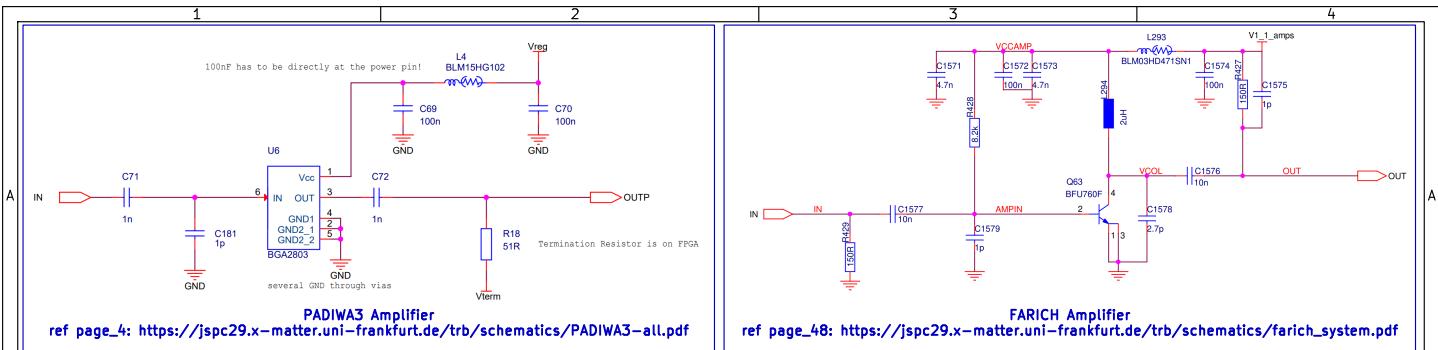
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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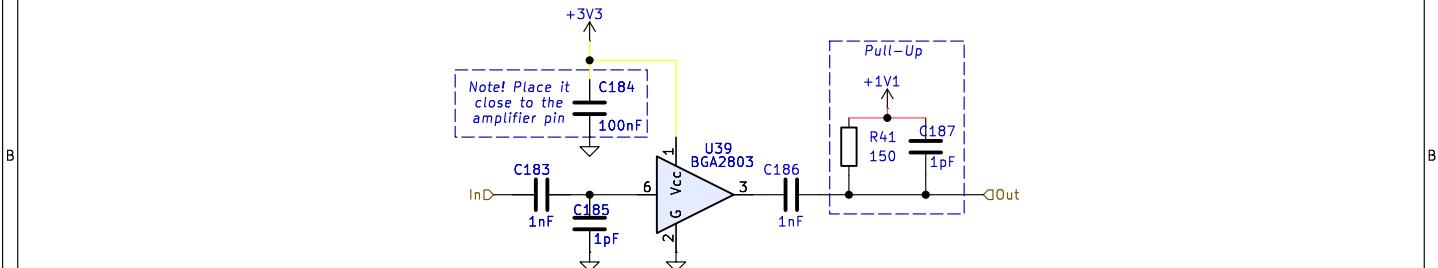
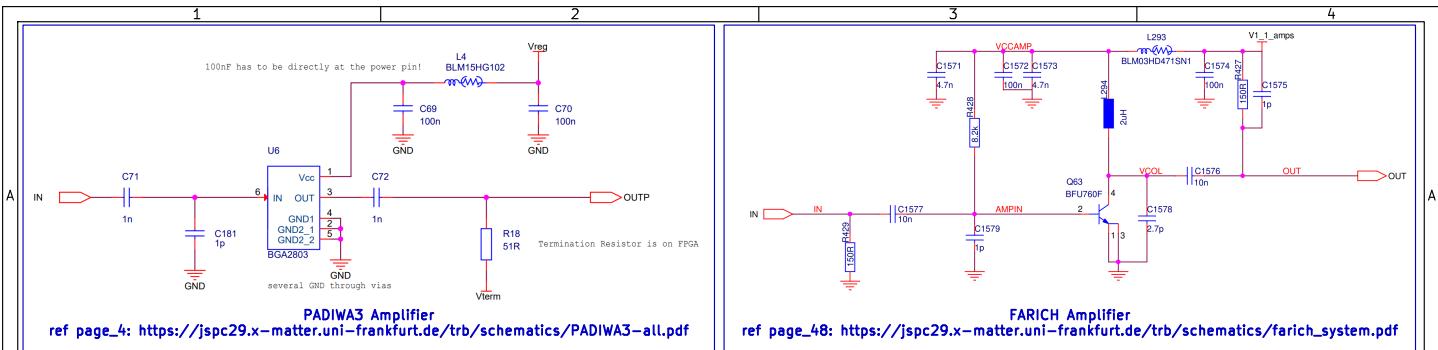
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 3. F. Simon NIM-A Volume 926, 11 May 2019, Pages 85–100  
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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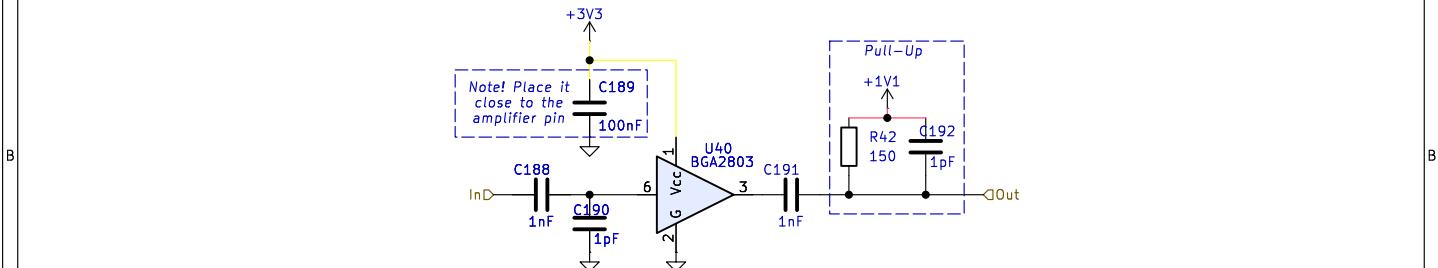
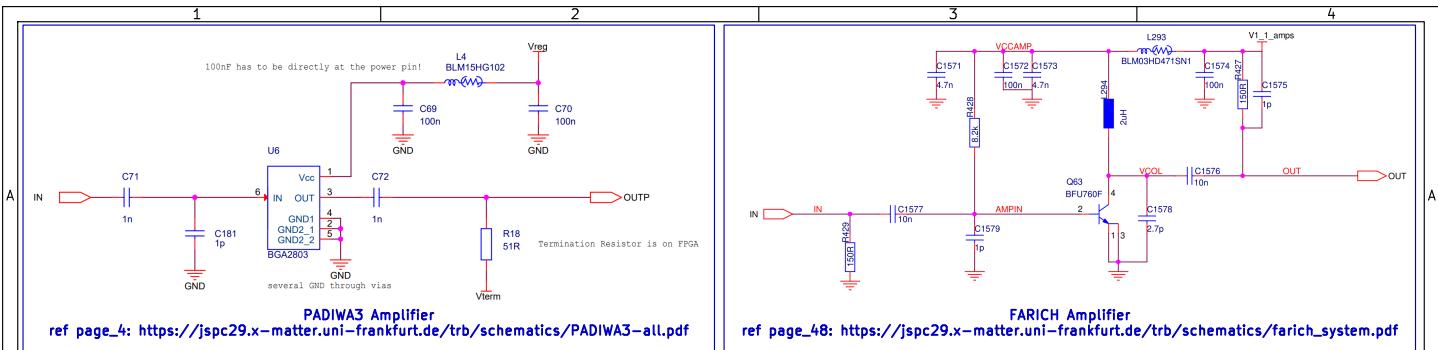
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
<p>Sheet: /amp_36/          File: BGA2803_amplifier.kicad_sch</p>		<b>Title: Hamamatsu S13552 64 Channels Amplifier</b>	
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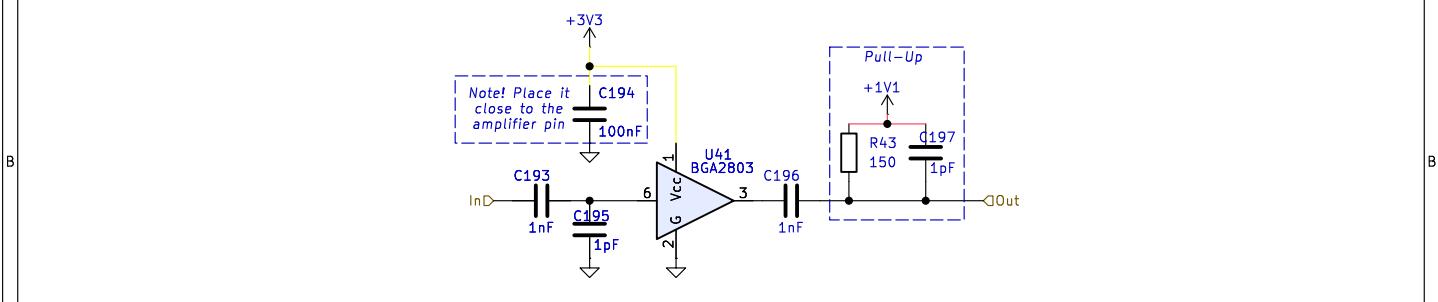
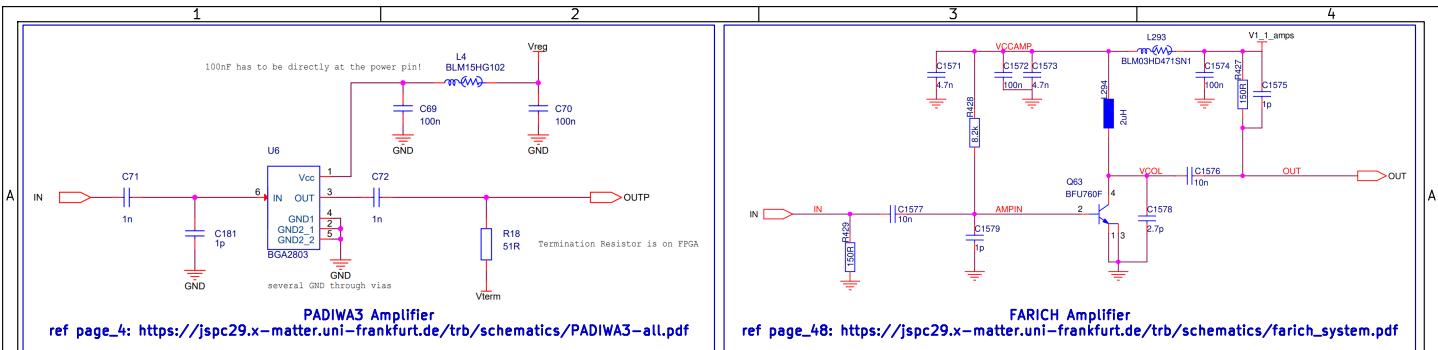
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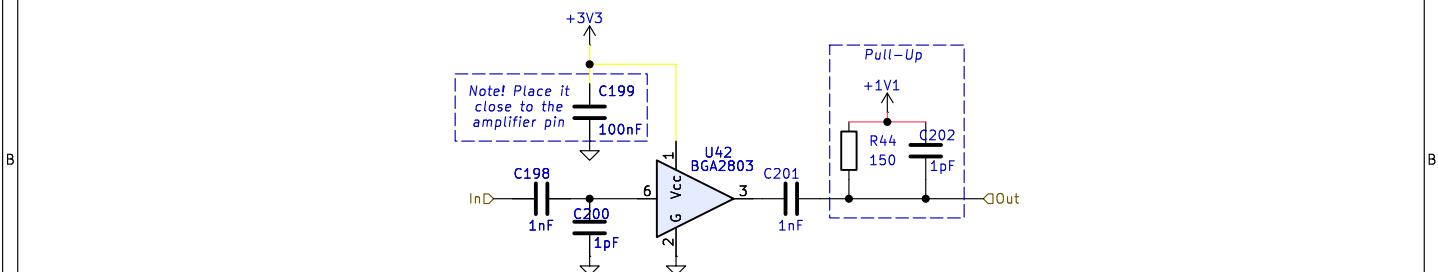
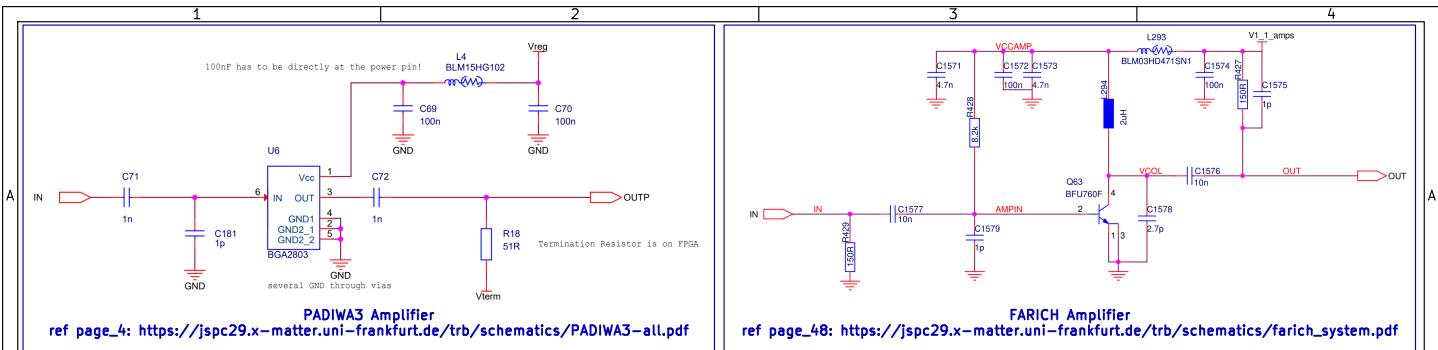
<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_37/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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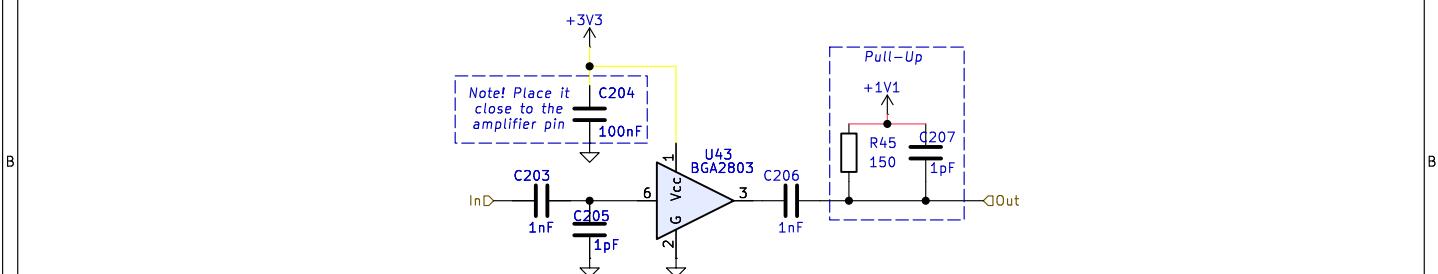
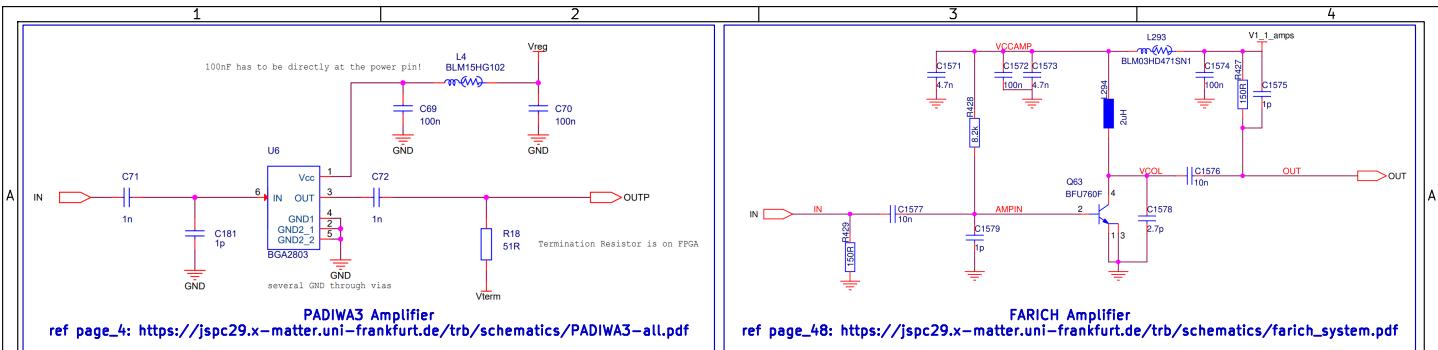
<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
<p>Sheet: /amp_38/          File: BGA2803_amplifier.kicad_sch</p>		<b>Title: Hamamatsu S13552 64 Channels Amplifier</b>	
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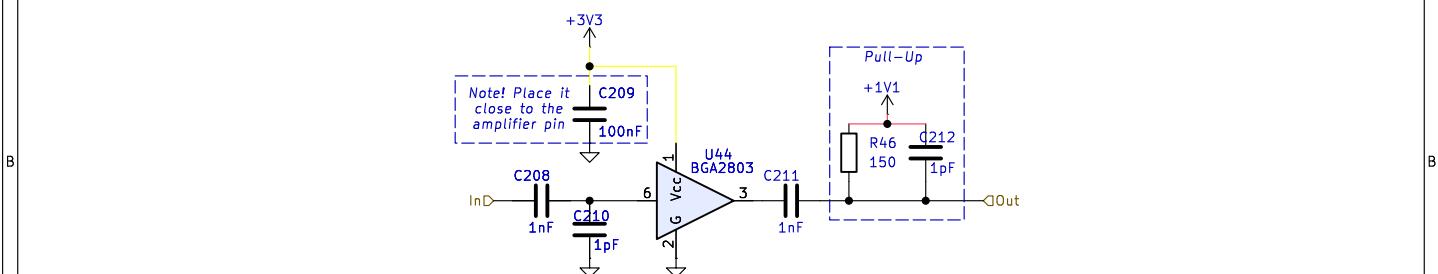
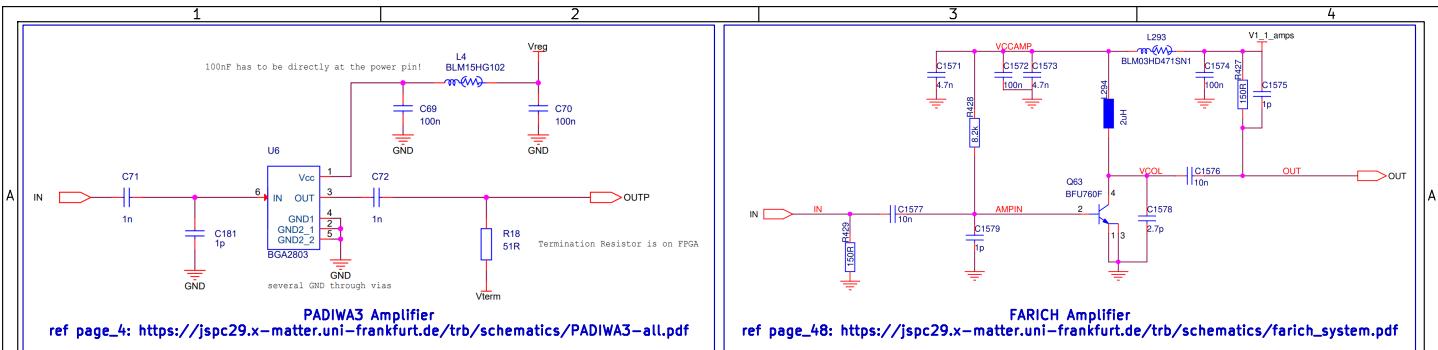
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_40/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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Other ref:  
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_41/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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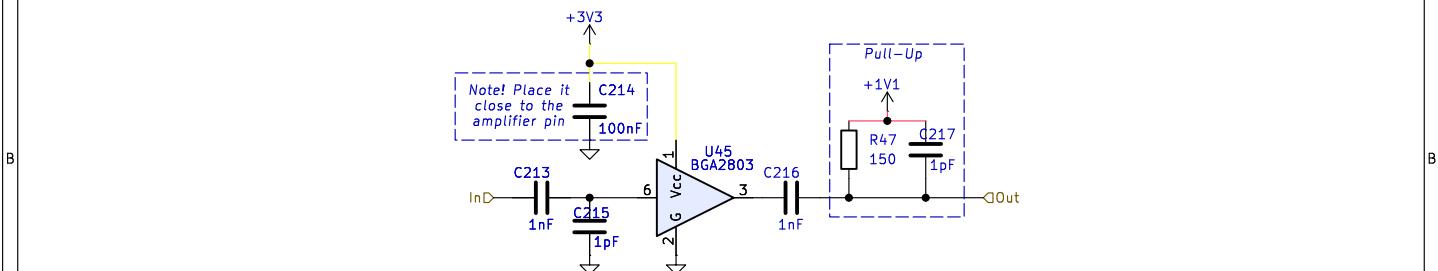
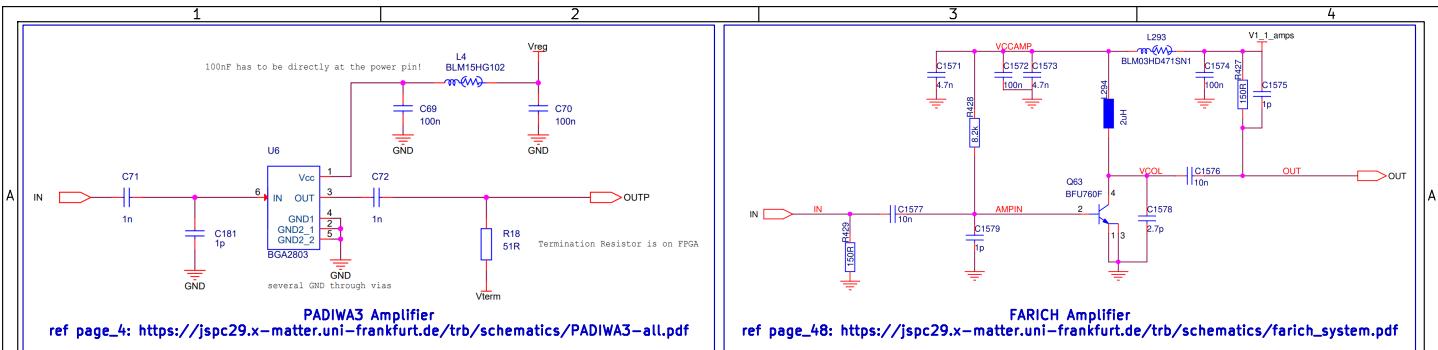
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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

Sheet: /amp\_42/  
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### Title: Hamamatsu S13552 64 Channels Amplifier

Size: A5	Date: 2025-03-25	Rev: 0
KiCad E.D.A. 9.0.3		Id: 43/66



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Project: HYDRA TPC & Fiber Tracker  
 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

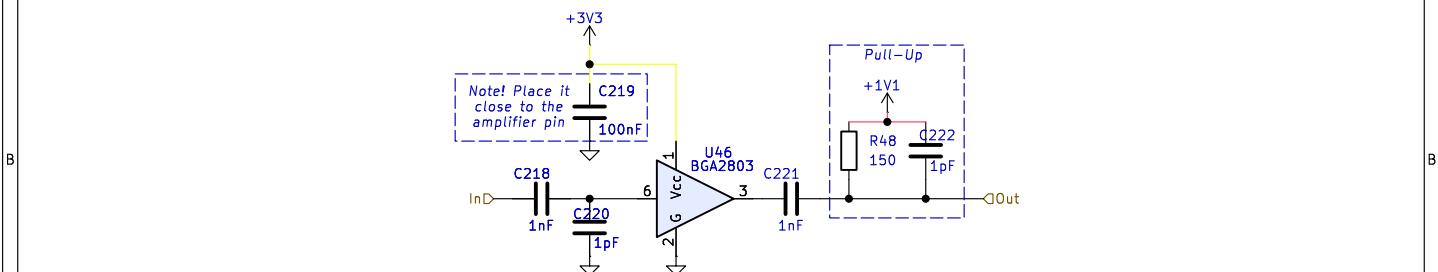
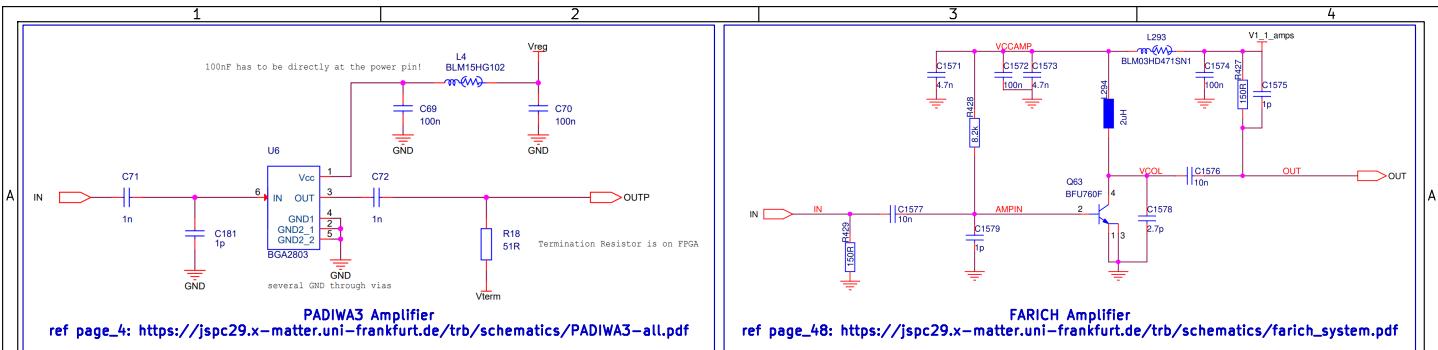


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**Title: Hamamatsu S13552 64 Channels Amplifier**

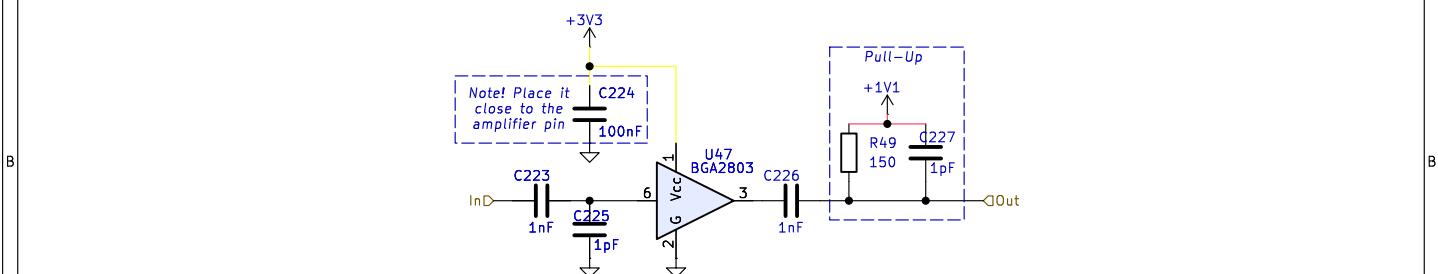
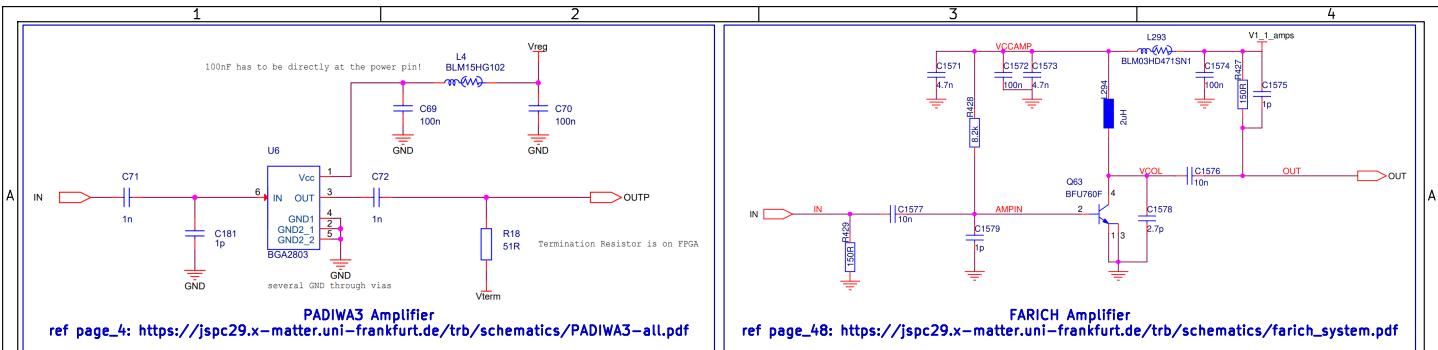
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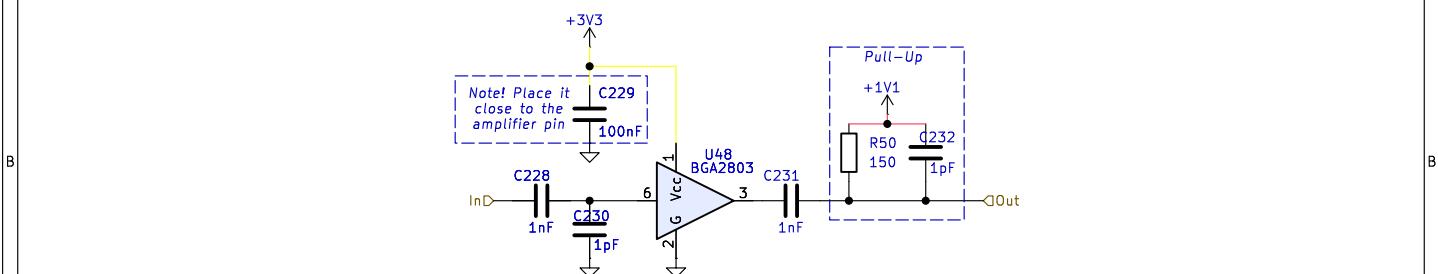
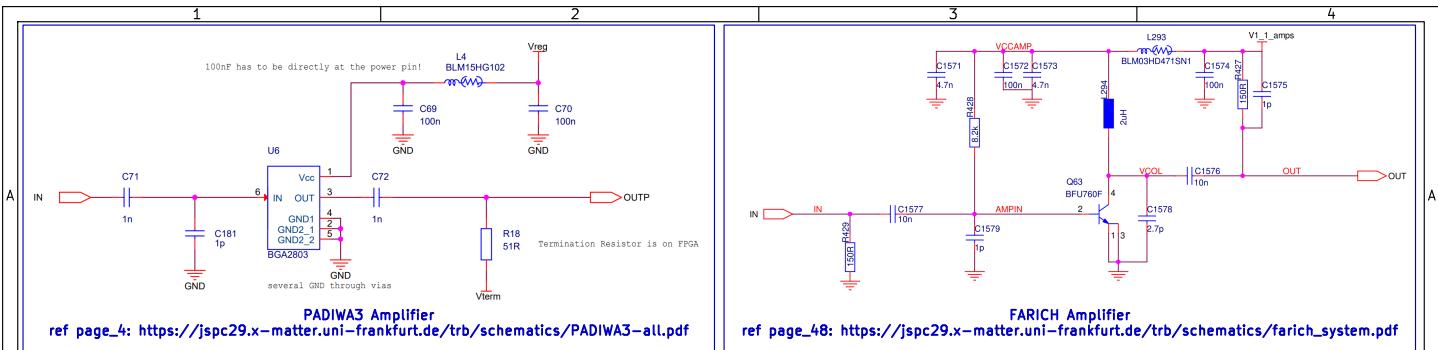
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
<p>Sheet: /amp_44/          File: BGA2803_amplifier.kicad_sch</p>		<b>Title: Hamamatsu S13552 64 Channels Amplifier</b>	
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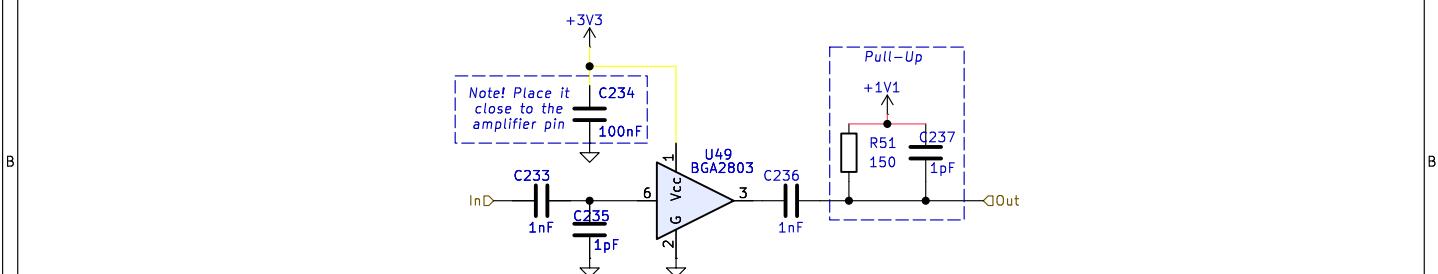
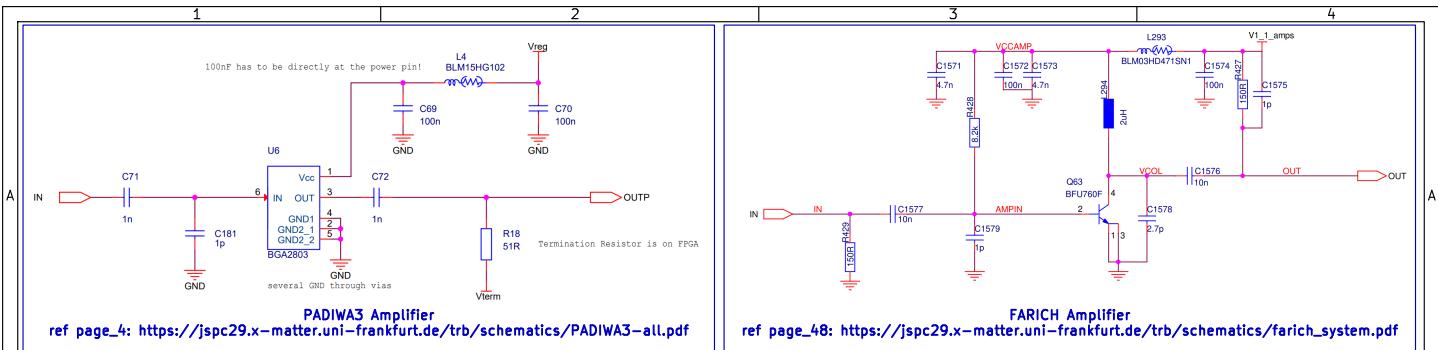
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_45/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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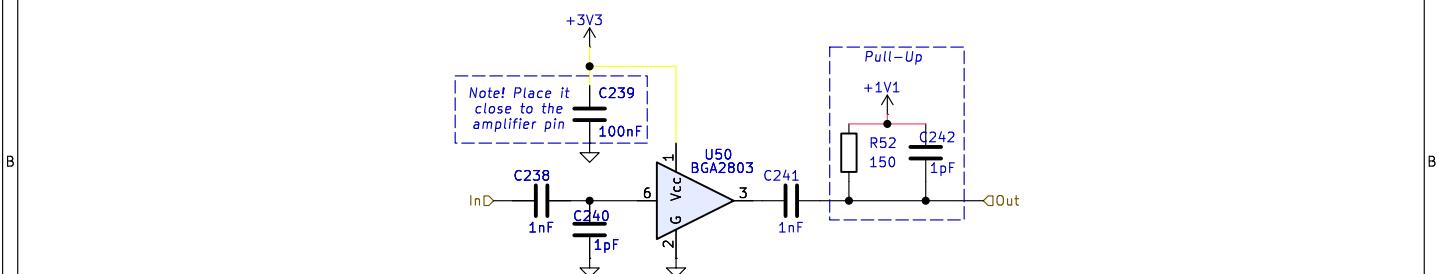
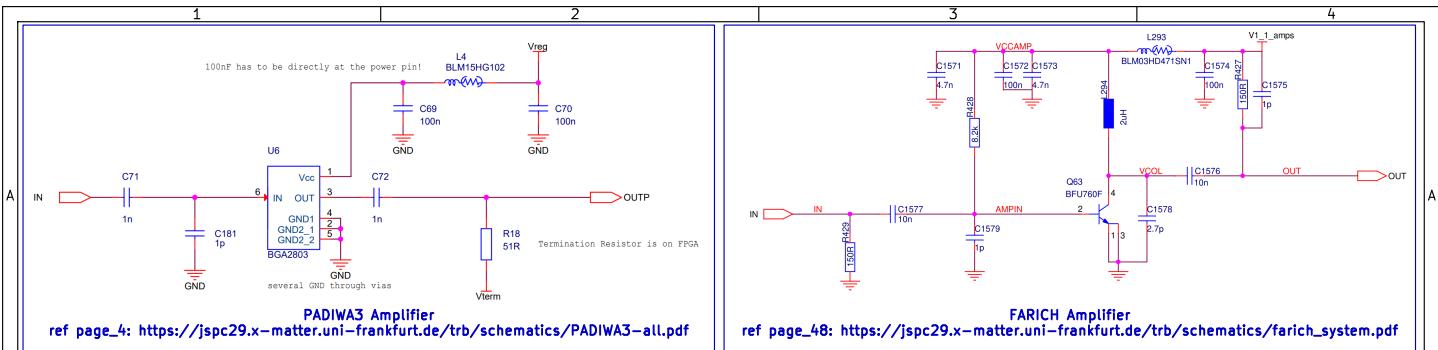
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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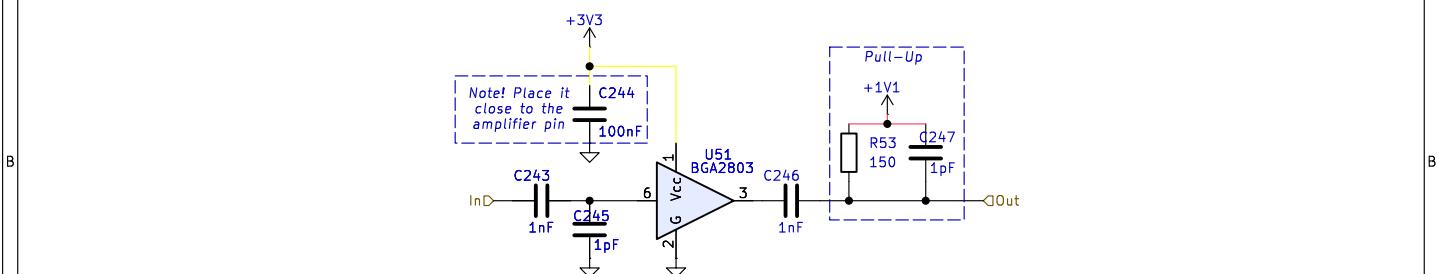
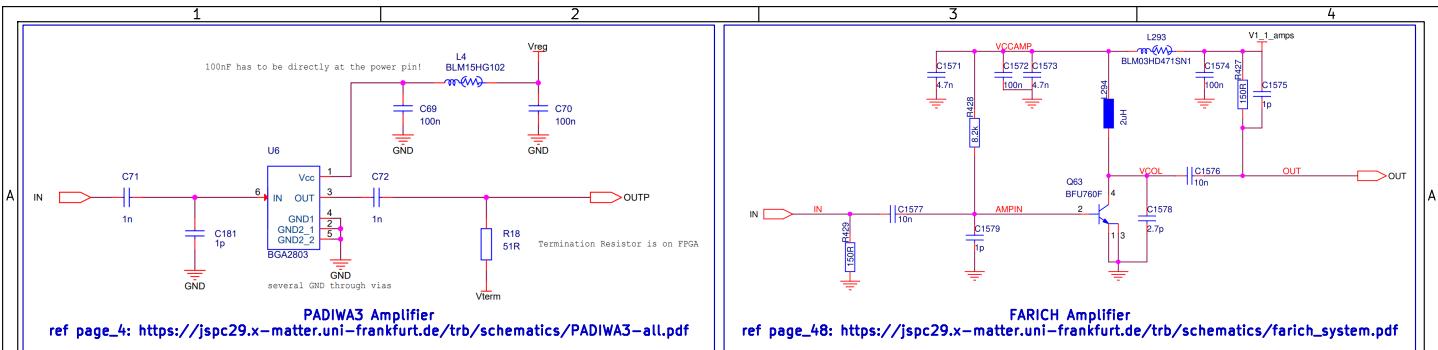
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_47/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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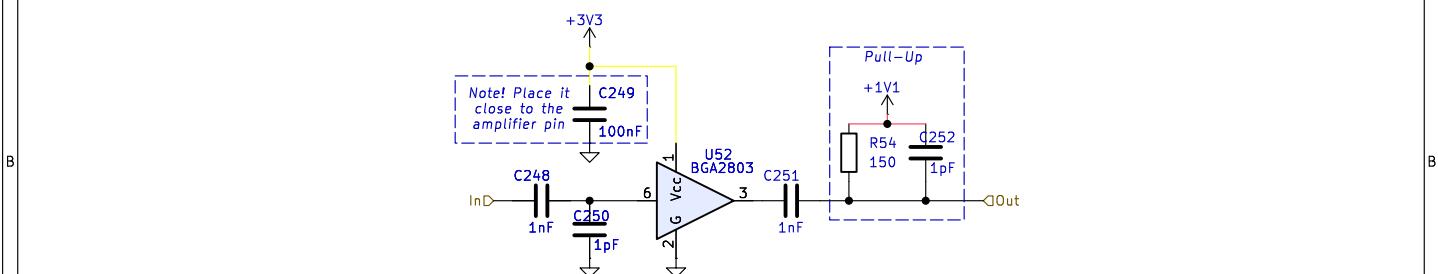
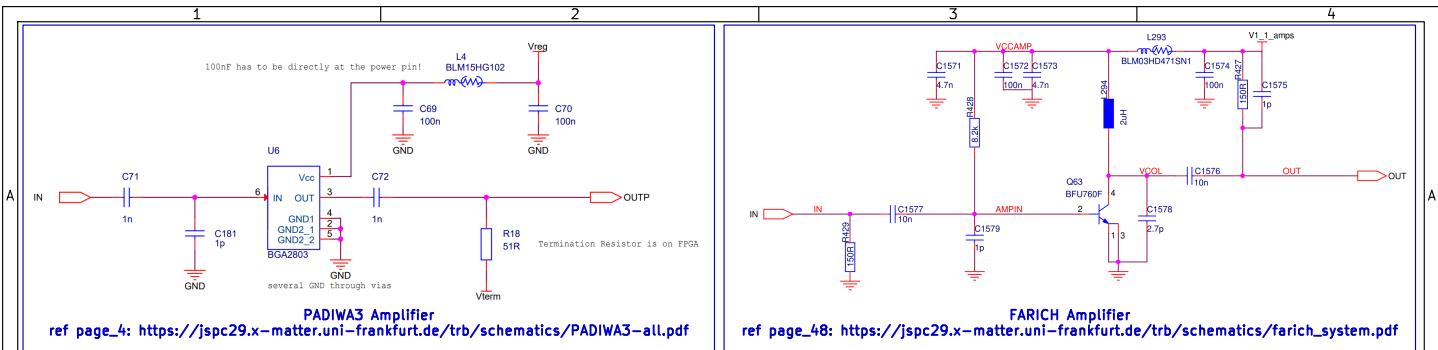
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_48/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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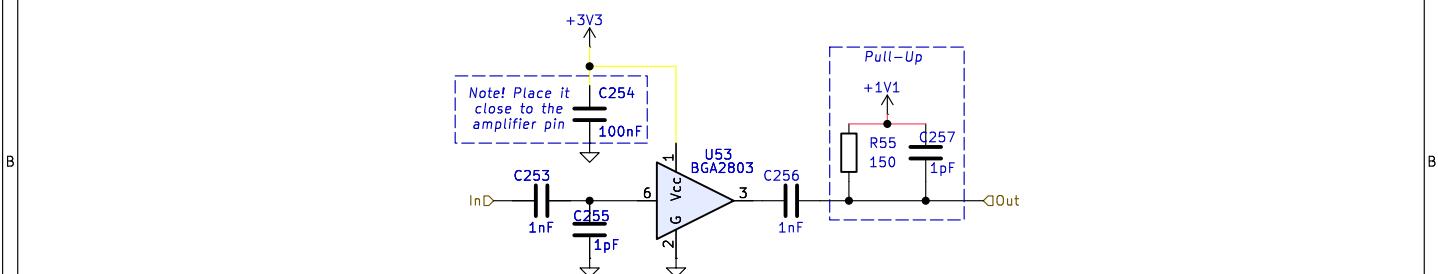
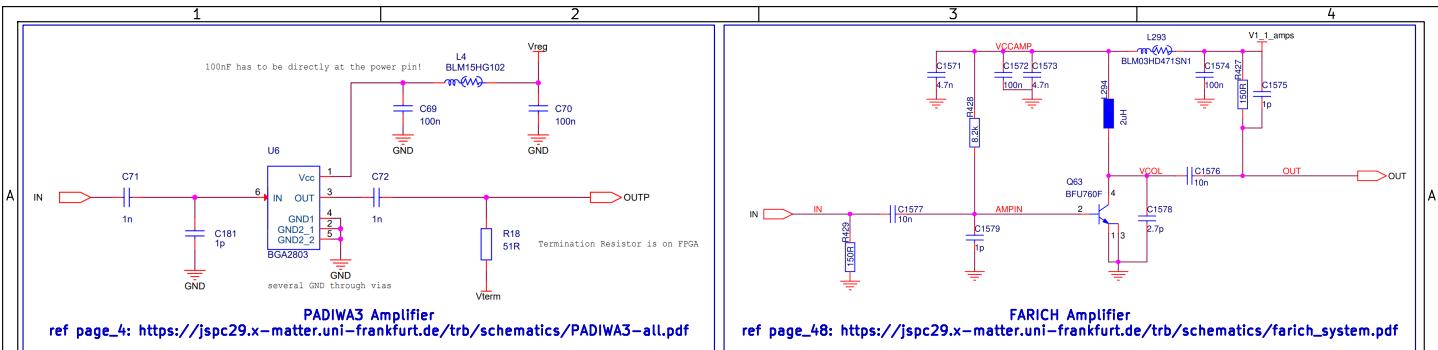
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_49/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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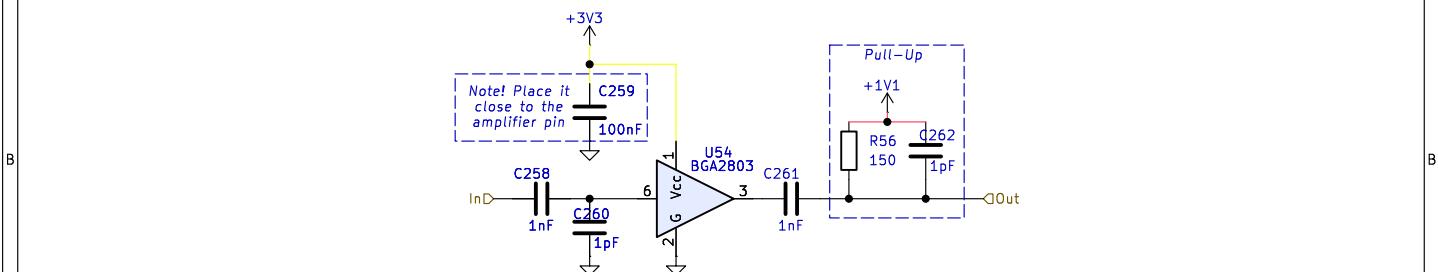
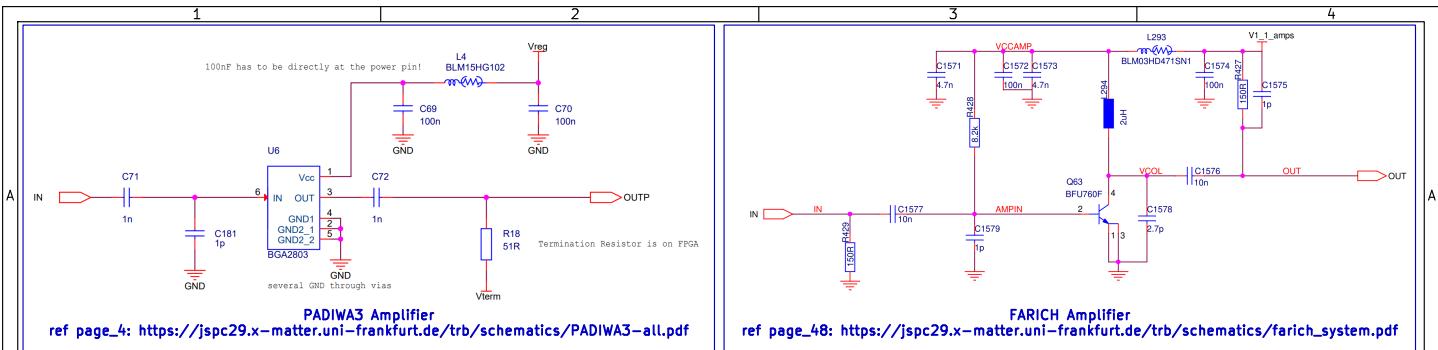
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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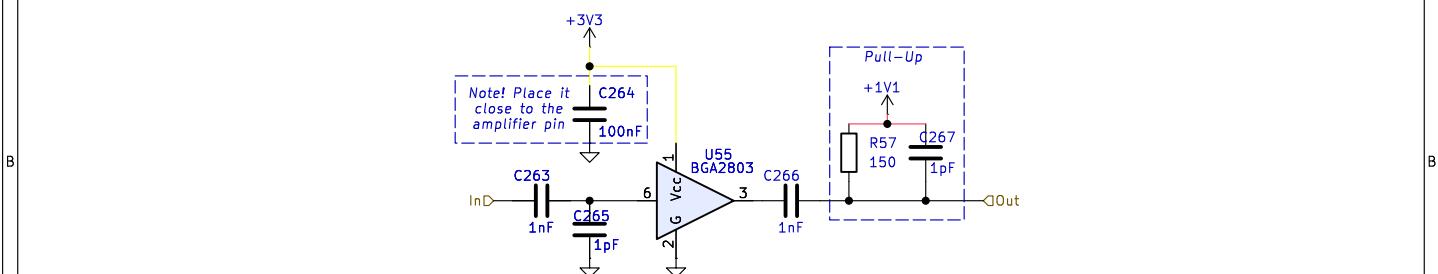
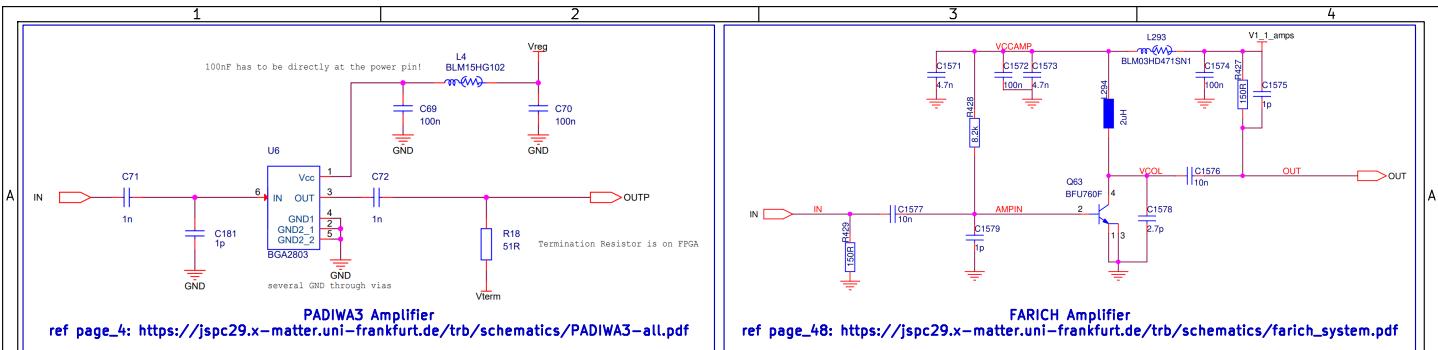
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
<p>Sheet: /amp_51/          File: BGA2803_amplifier.kicad_sch</p>		<b>Title: Hamamatsu S13552 64 Channels Amplifier</b>	
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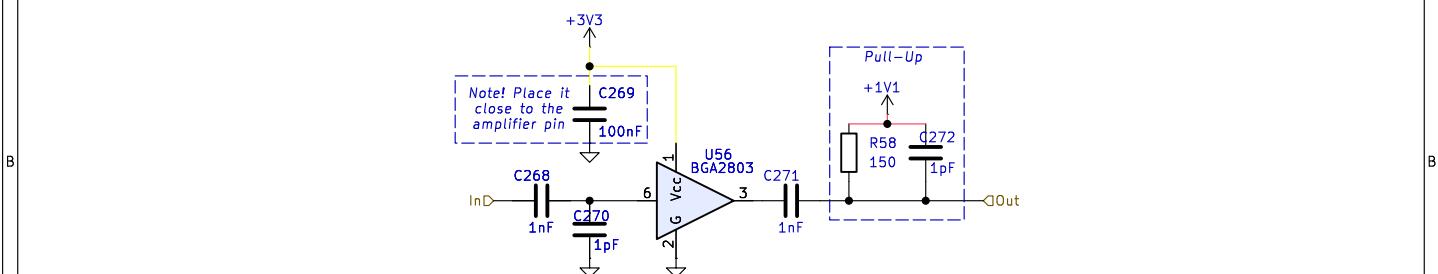
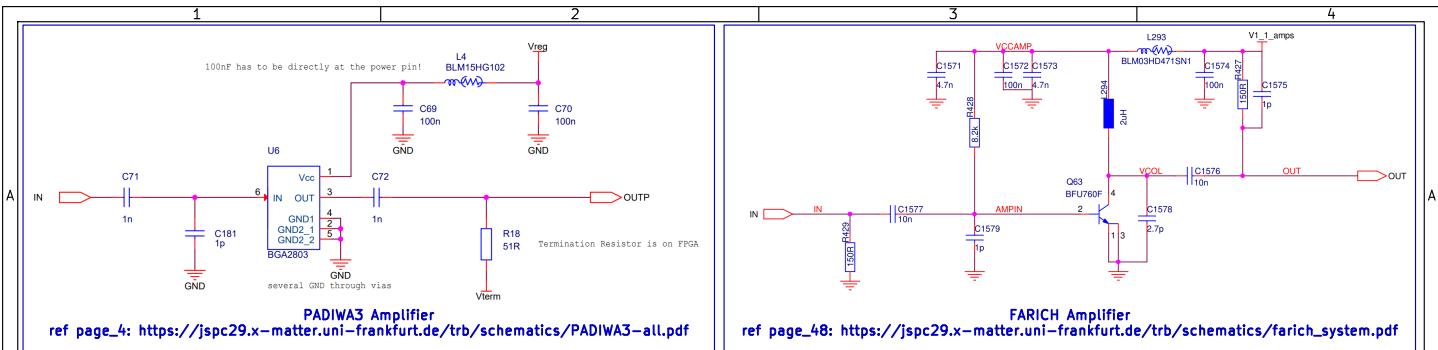
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_52/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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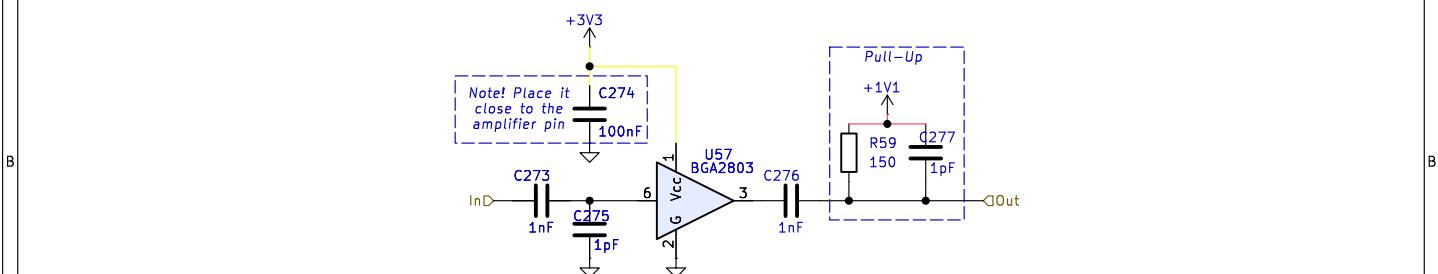
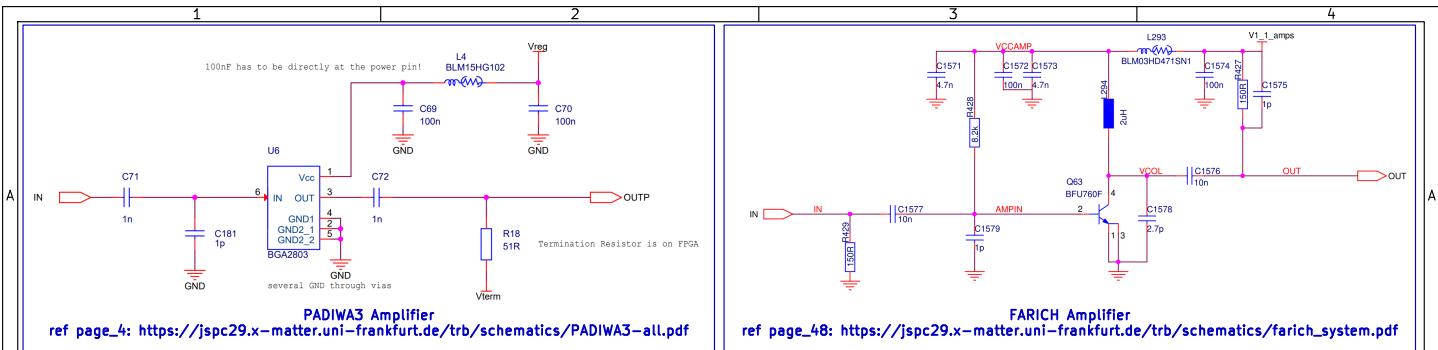
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt</p>			<b>TECHNISCHE UNIVERSITÄT DARMSTADT</b>
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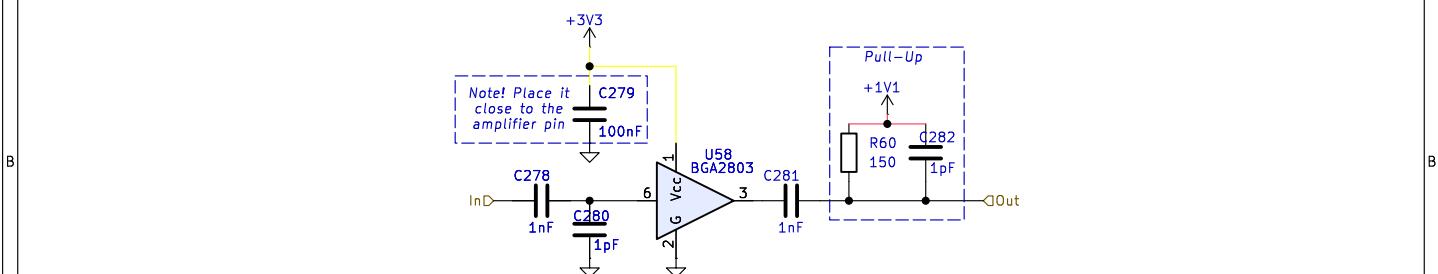
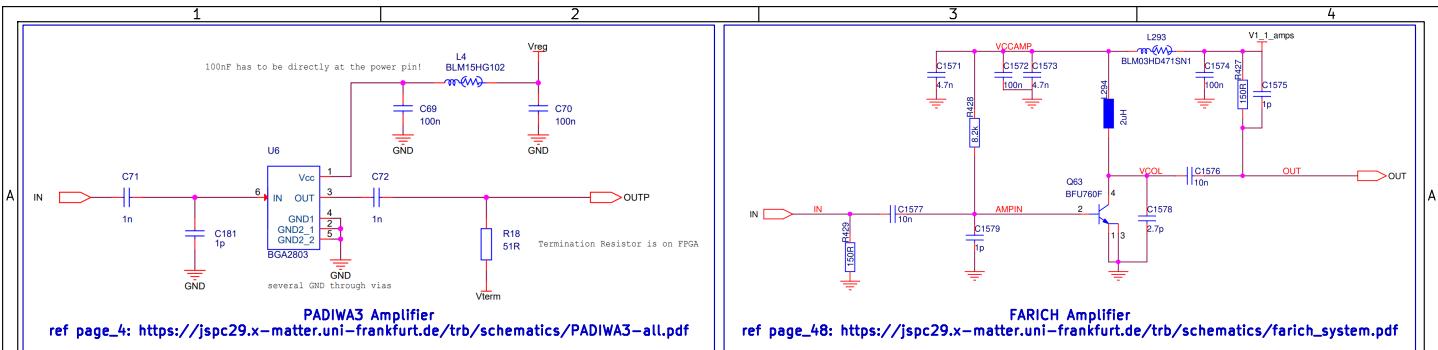
Other ref:  
 1. W. Zhi et al 2024 JINST 19 P06011  
 DOI 10.1088/1748-0221/19/06/P06011  
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Size: A5	Date: 2025-03-25	Rev: 0	
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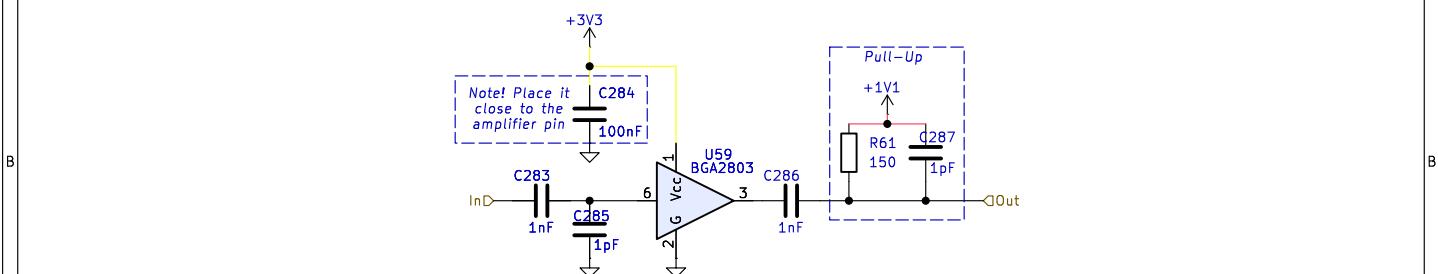
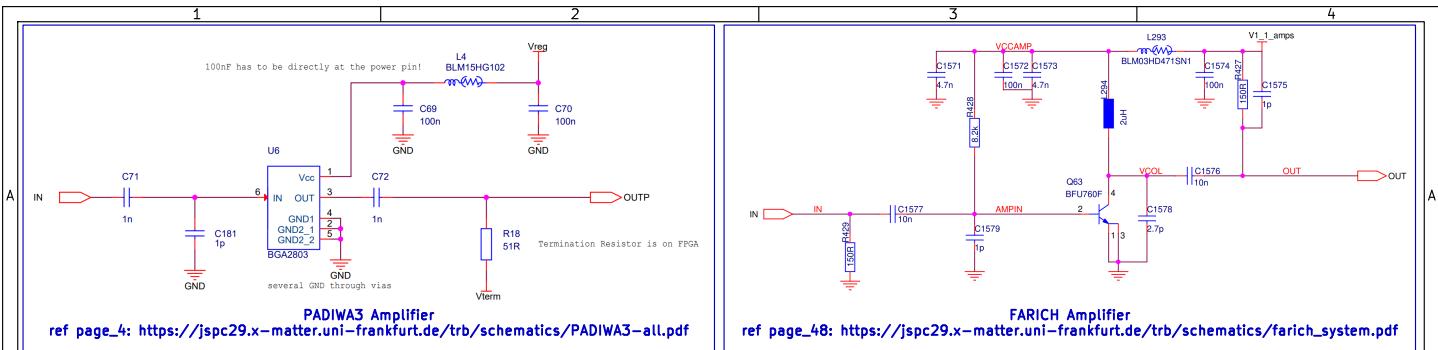
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_55/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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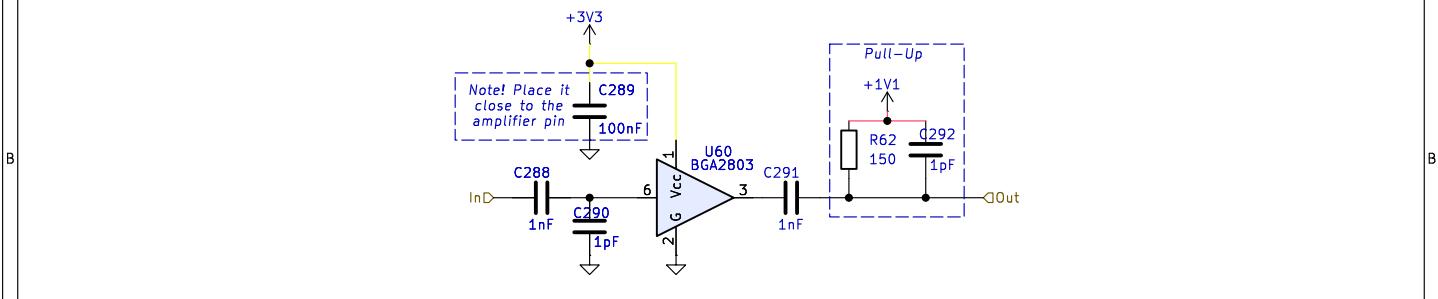
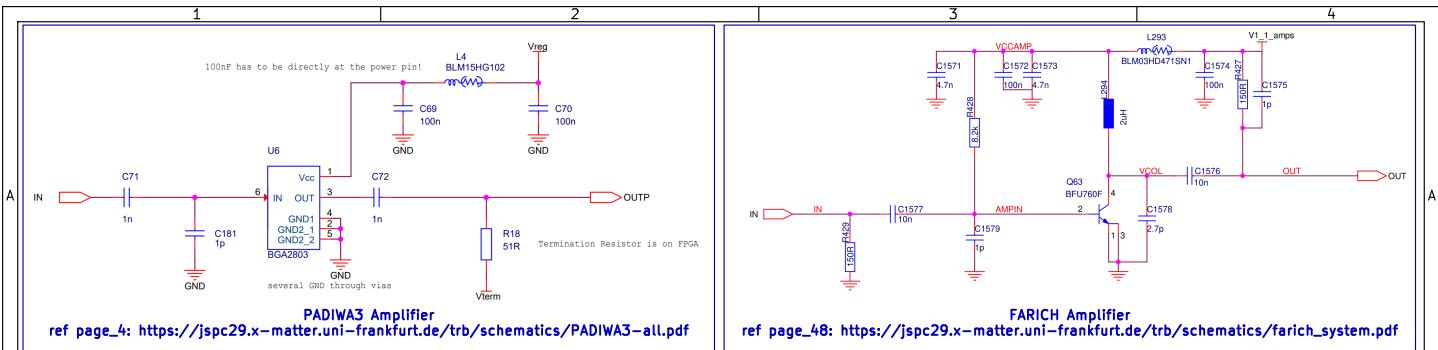
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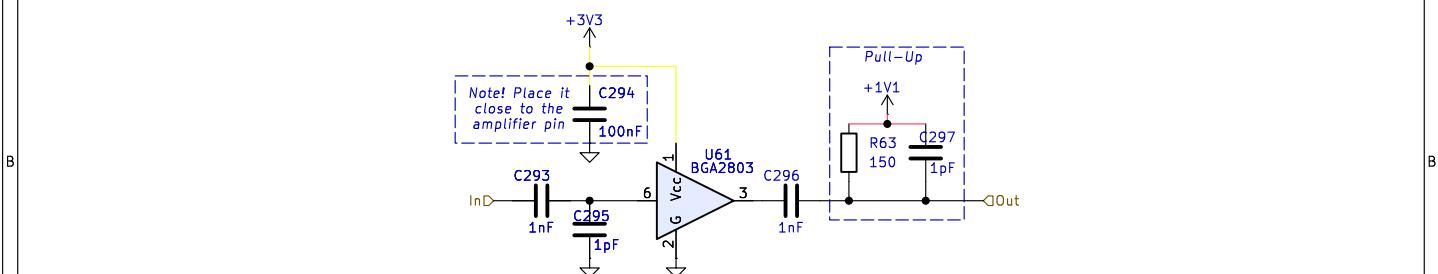
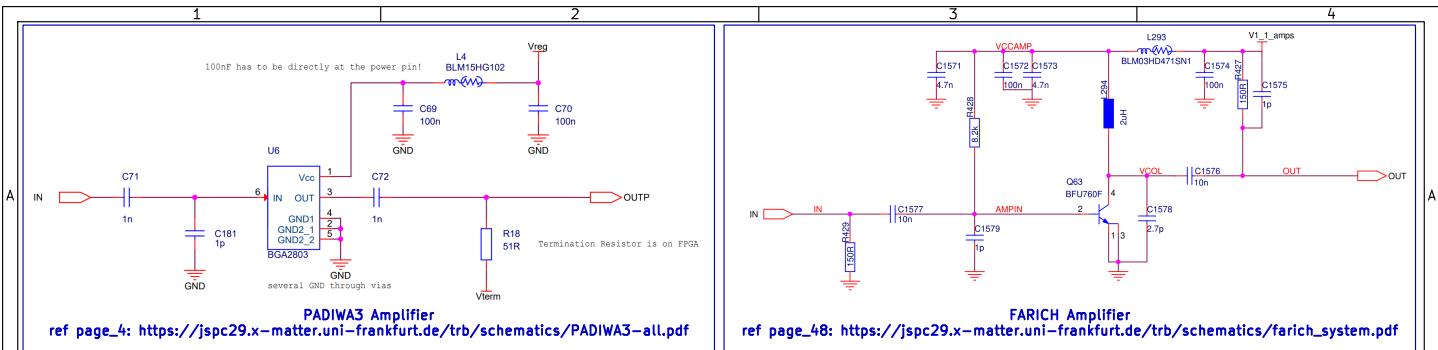
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 Author: Dr. Alexandru Enciu  
 Institution: Technische Universität Darmstadt

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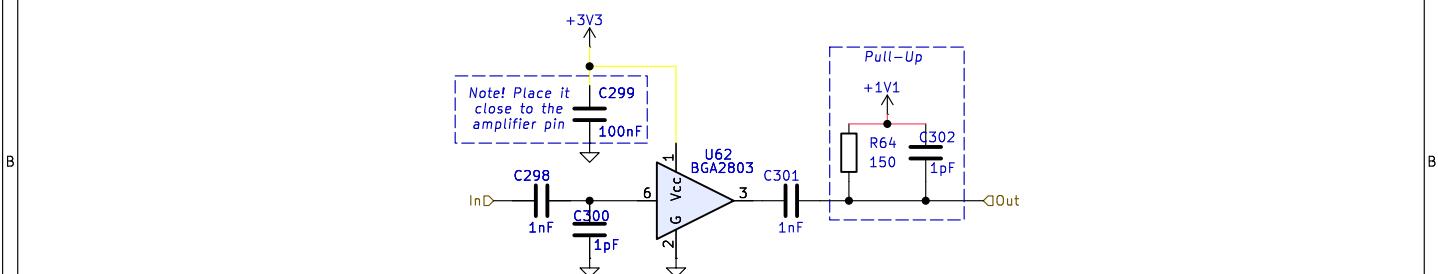
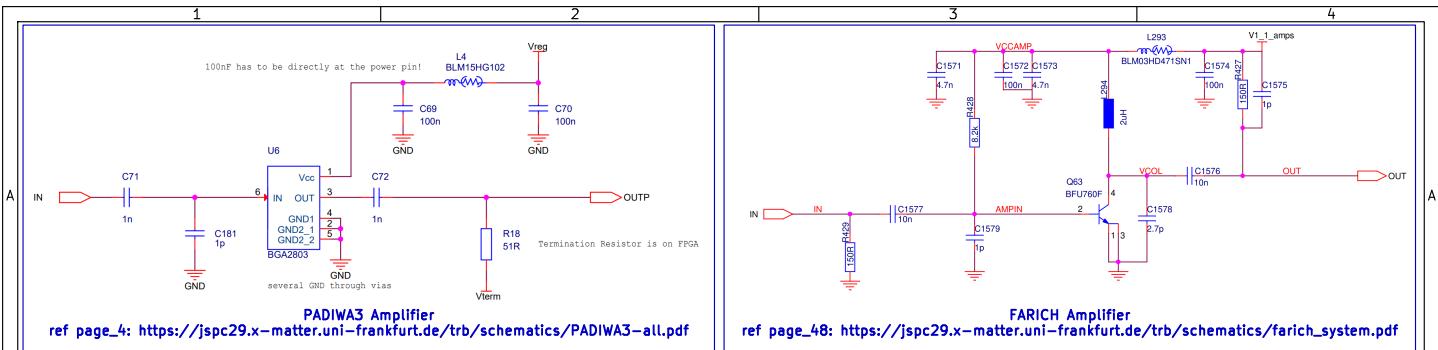
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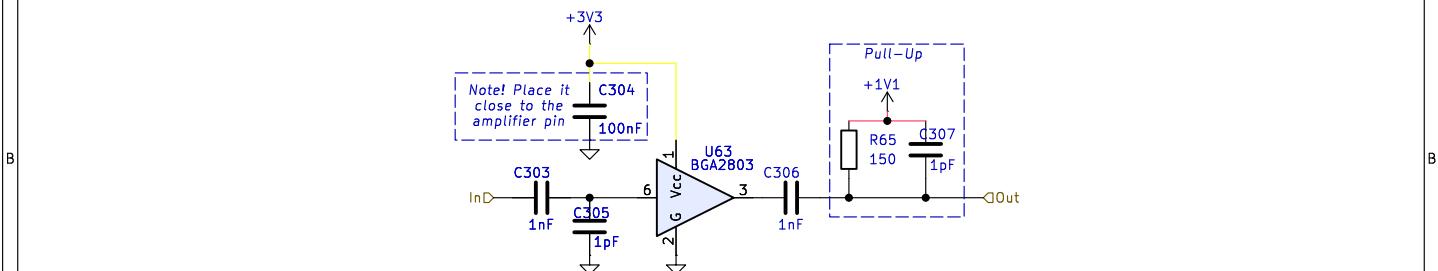
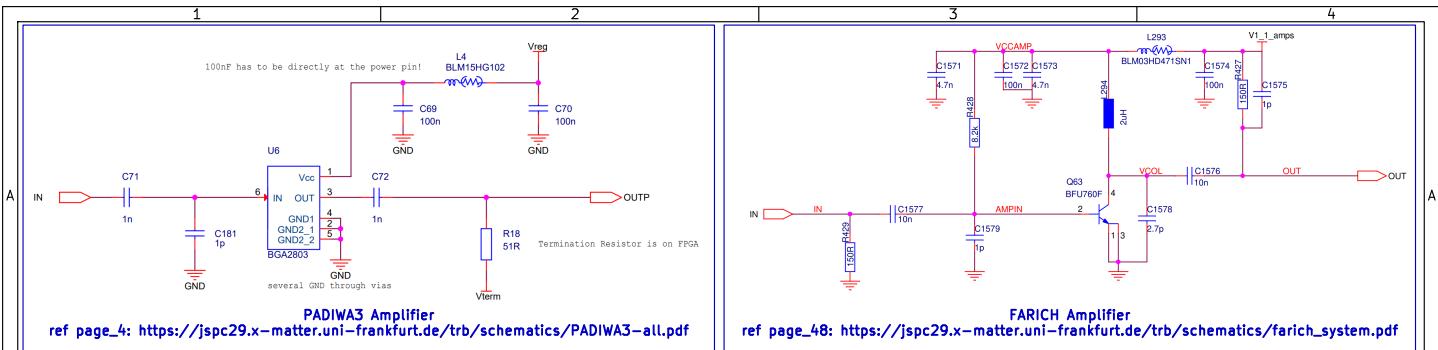
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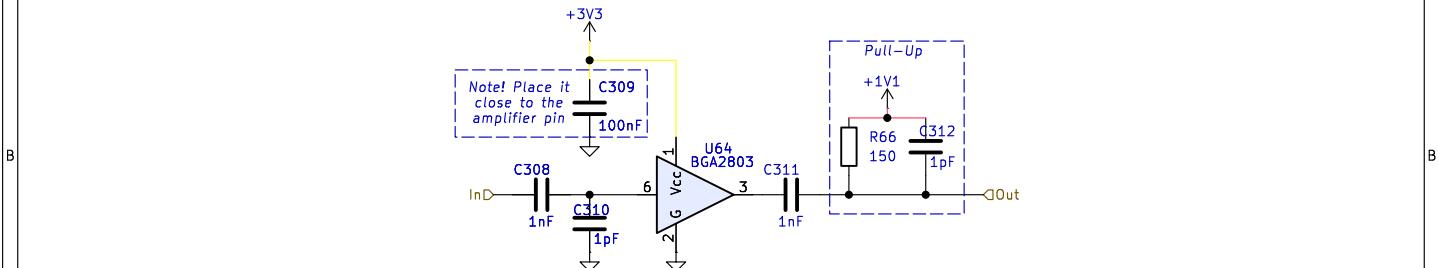
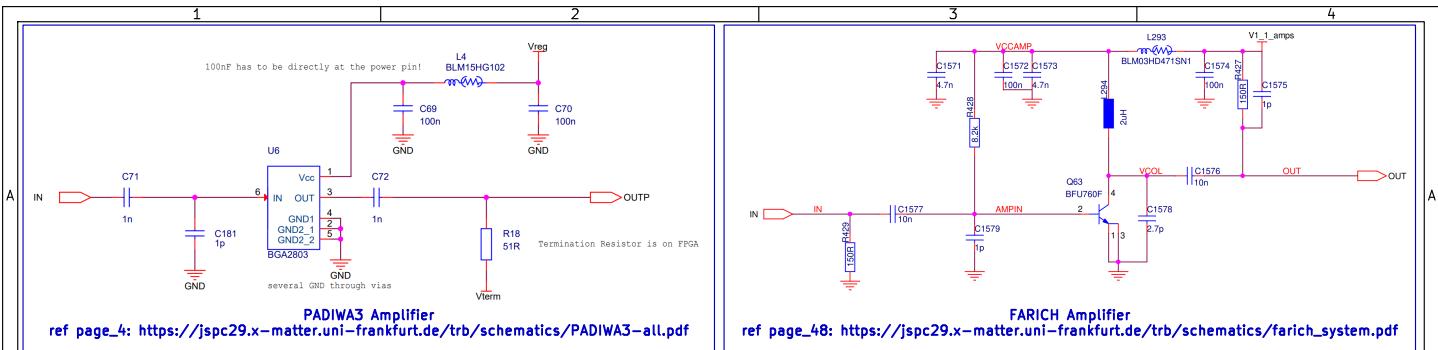
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<p>Project: HYDRA TPC &amp; Fiber Tracker          Author: Dr. Alexandru Enciu          Institution: Technische Universität Darmstadt          Sheet: /amp_60/          File: BGA2803_amplifier.kicad_sch</p>		<p>TECHNISCHE UNIVERSITÄT DARMSTADT</p>	
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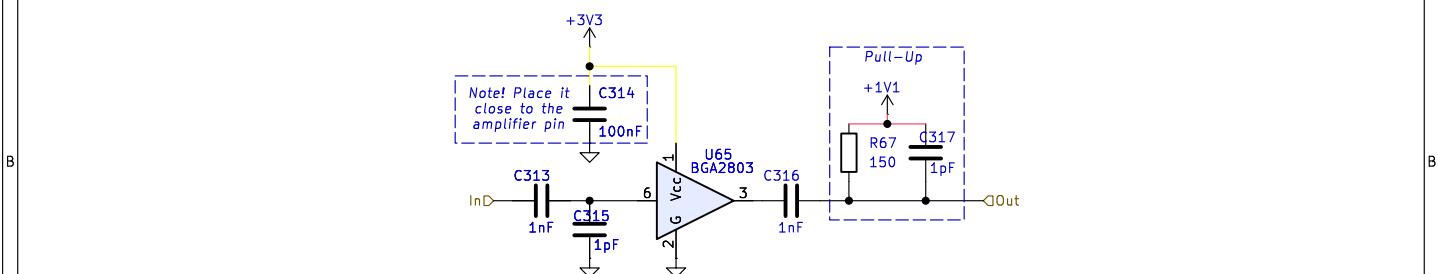
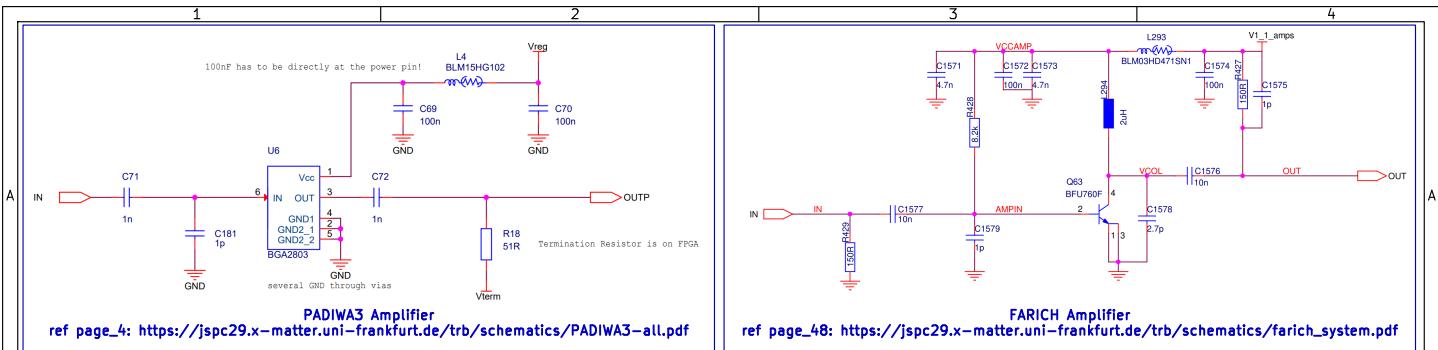


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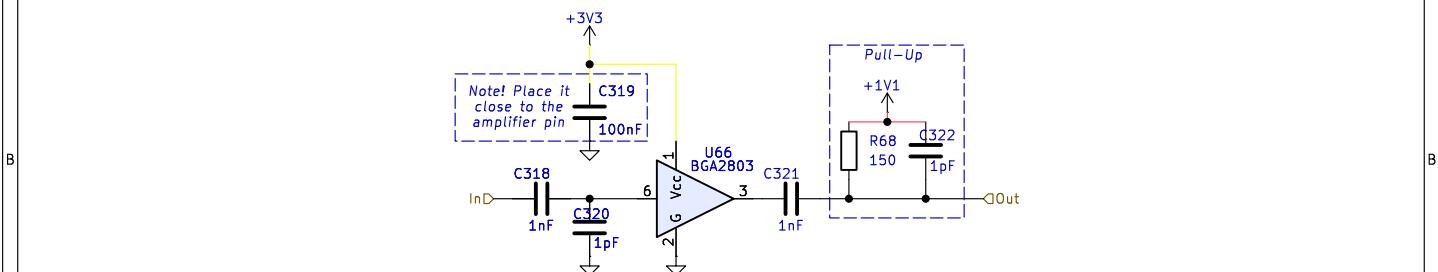
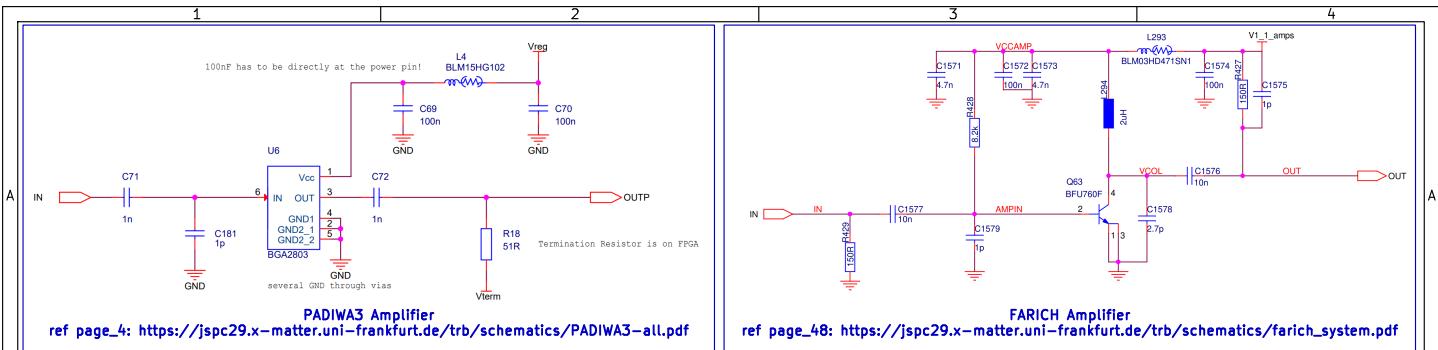
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