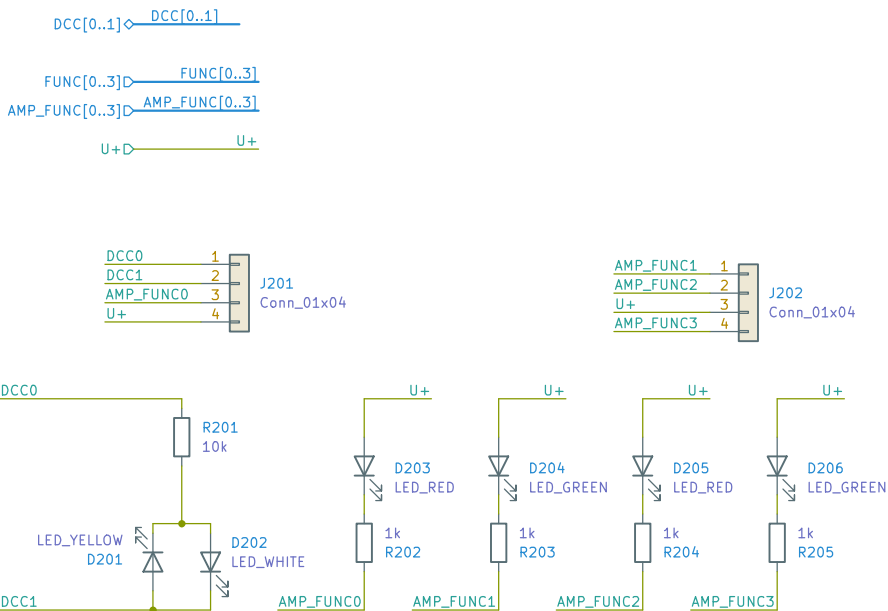


Output Driver – test rig



Sheet: /acc-conn-screw-01x08-test/acc-conn-screw-01x08/  
File: acc-conn-screw-01x08.kicad\_sch

**Title:**

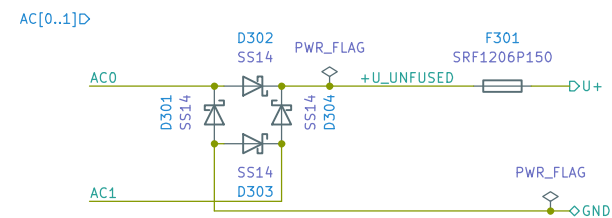
Size: A4  
KiCad E.D.A. 8.0.5

Date:

Rev:

Id: 3/24

Bridge rectifier medium



Chatelain Engineering, Bern – CH

Sheet: /rails\_power\_ac-dc-bridge-medium-x/  
File: rails\_power\_ac-dc-bridge-medium-x.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 4/24

## A



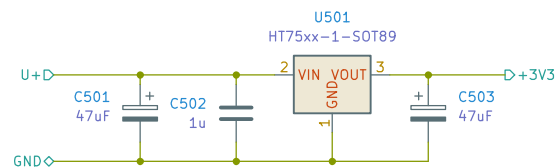
D

D |

C

Id: 5/24

## DC-DC voltage regulator 3.3V



Chatelain Engineering, Bern – CH

Sheet: /rails\_power\_dc-dc-ldo-3v3\_100mA-test/rails\_power\_dc-dc-ldo-3v3\_100mA/  
File: rails\_power\_dc-dc-ldo-3v3\_100mA.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

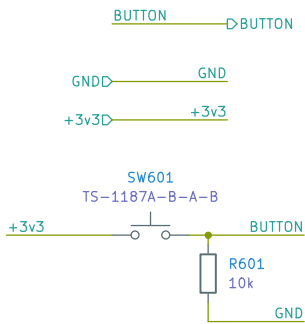
Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 6/24

Output Driver – test rig



Chatelain Engineering, Bern – CH		
Sheet: /acc-conn-screw-01x08-test/button-01x01/		
File: button-01x01.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	Rev: v0.2
KiCad E.D.A. 8.0.5		Id: 7/24

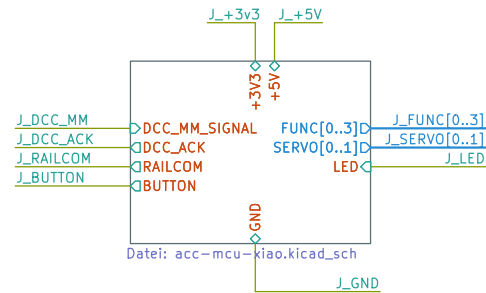
DCC\_MM\_SIGNALD DCC\_MM\_SIGNAL  
DCC\_ACKG DCC\_ACK  
RAILCOMG RAILCOM  
BUTTOND BUTTON

FUNC[0..3] → FUNC[0..3]

## XIAO Header (Decoder Pinout) – test rig

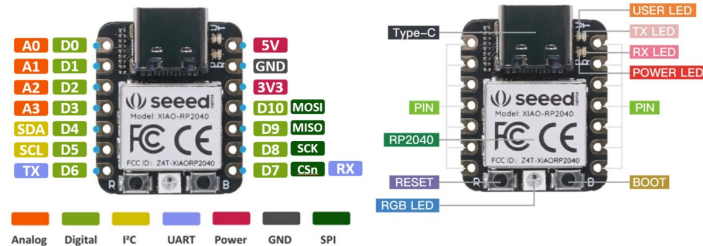
J701  
Conn\_02x07\_Odd\_Even

BUTTON	3	4	J_BUTTON
FUNC0	5	6	J_FUNC0
FUNC1	7	8	J_FUNC1
FUNC2	9	10	J_FUNC2
FUNC3	11	12	J_FUNC3
SERV00	13	14	J_SERV00
SERV01	15	16	J_SERV01



J702  
Conn\_02x07\_Odd\_Even

J_+3V3	3	4	+3V3
J_GND	5	6	GND
J_+5V	7	8	+5V
J_LED	9	10	LED
J_RAILCOM	11	12	RAILCOM
J_DCC_ACK	13	14	DCC_ACK
J_DCC_MM	15	16	DCC_MM_SIGNAL



Chatelain Engineering, Bern – CH

Sheet: /acc-mcu-xiao-test/

File: acc-mcu-xiao-test.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

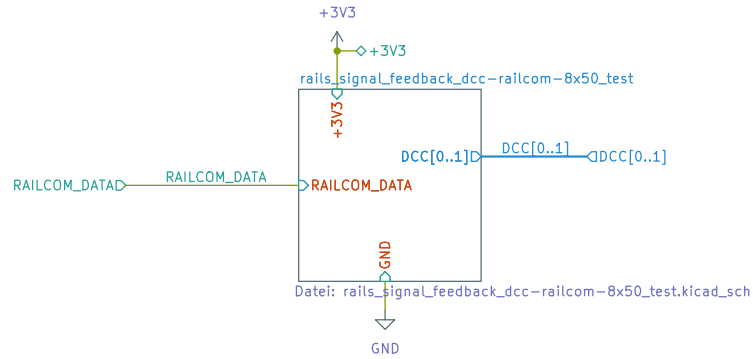
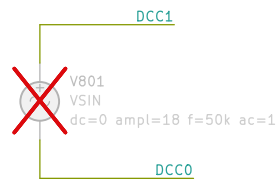
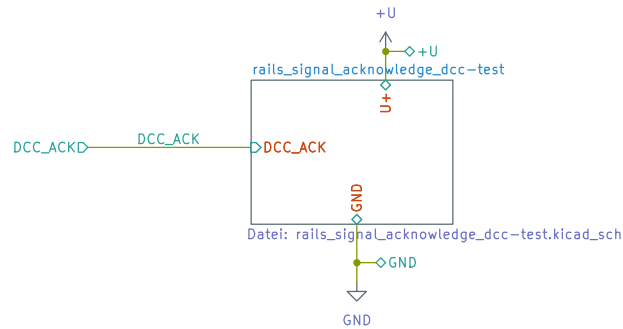
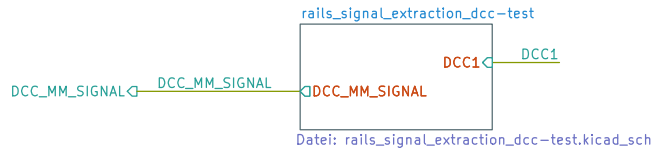
Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 8/24

# DCC/RailCom Up- & Downlinks



Chatelain Engineering, Bern – CH

Sheet: /rails\_signal\_combined-test/  
File: rails\_signal\_combined-test.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

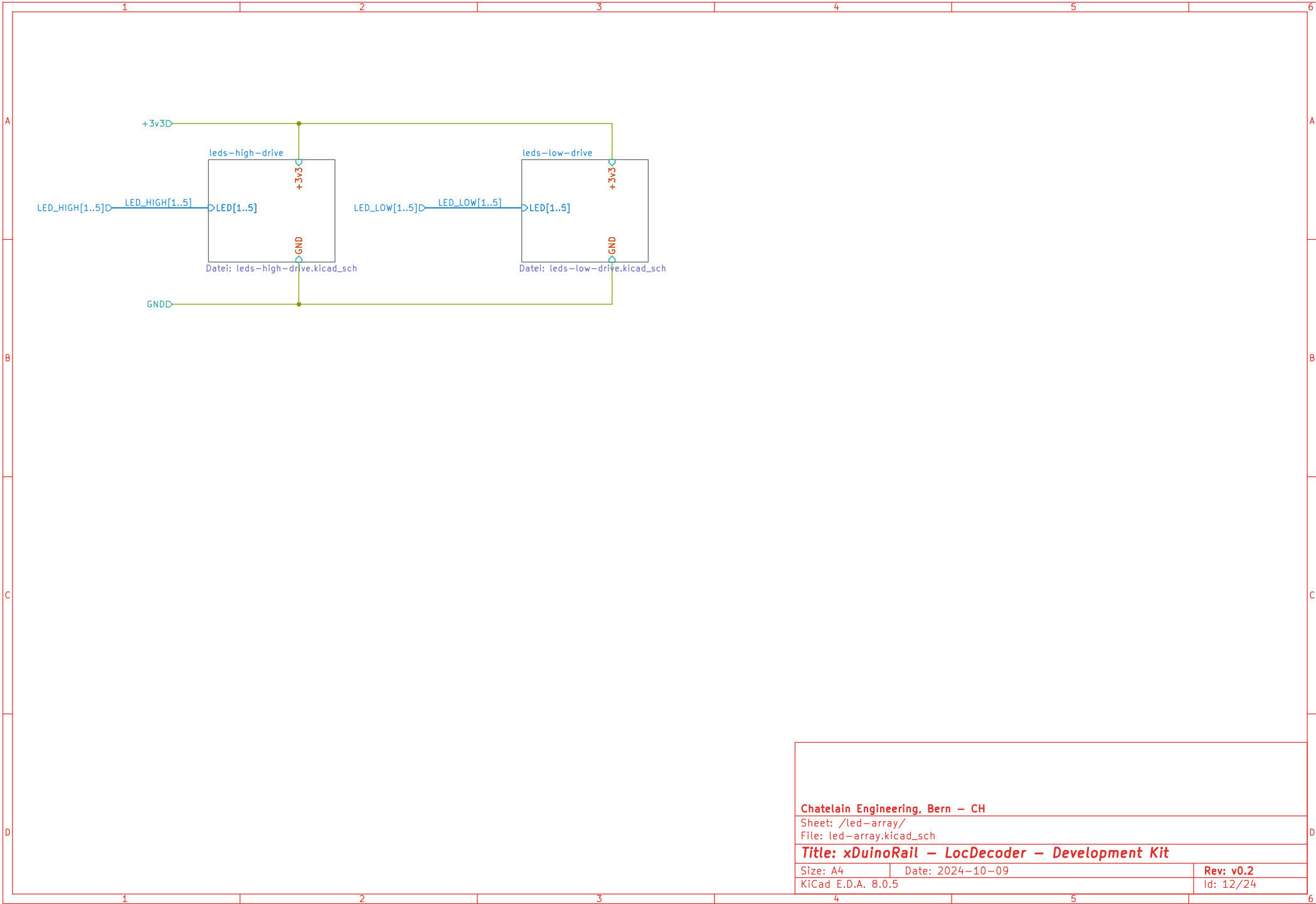
Id: 9/24



Resistor (Use ONLY with on MCU pin protection)



Sheet: /rails_signal_combined-test/rails_signal_extraction_dcc-test/rails-signal-extraction_dcc/ File: rails-signal-extraction_dcc.kicad_sch		
Title:		
Size: A4	Date:	Rev:
KiCad E.D.A. 8.0.5	Id: 9/24	



Chatelain Engineering, Bern – CH

Sheet: /led-array/  
File: led-array.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

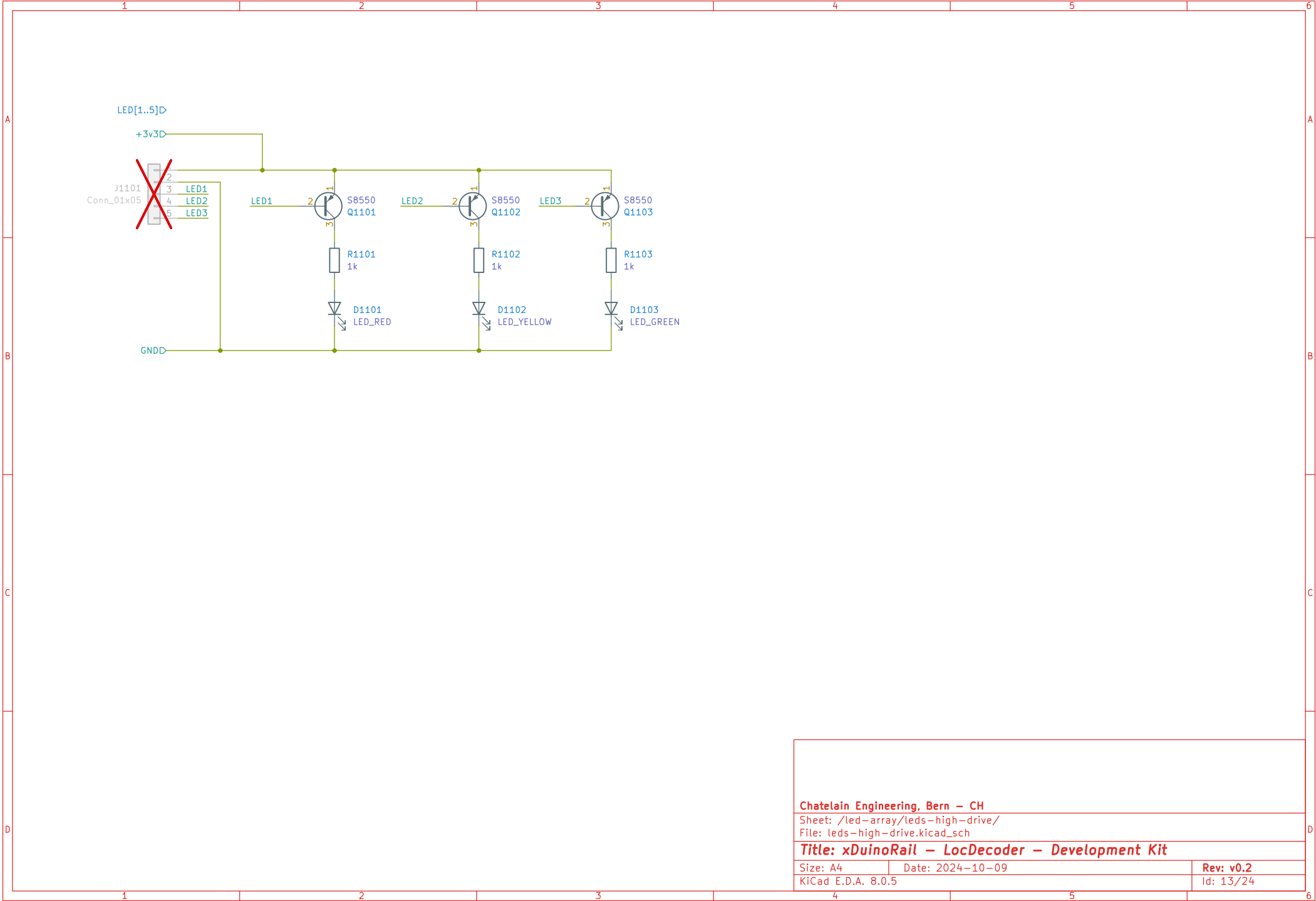
Size: A4

Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 12/24



Chatelain Engineering, Bern – CH

Sheet: /led-array/leds-high-drive/  
File: leds-high-drive.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

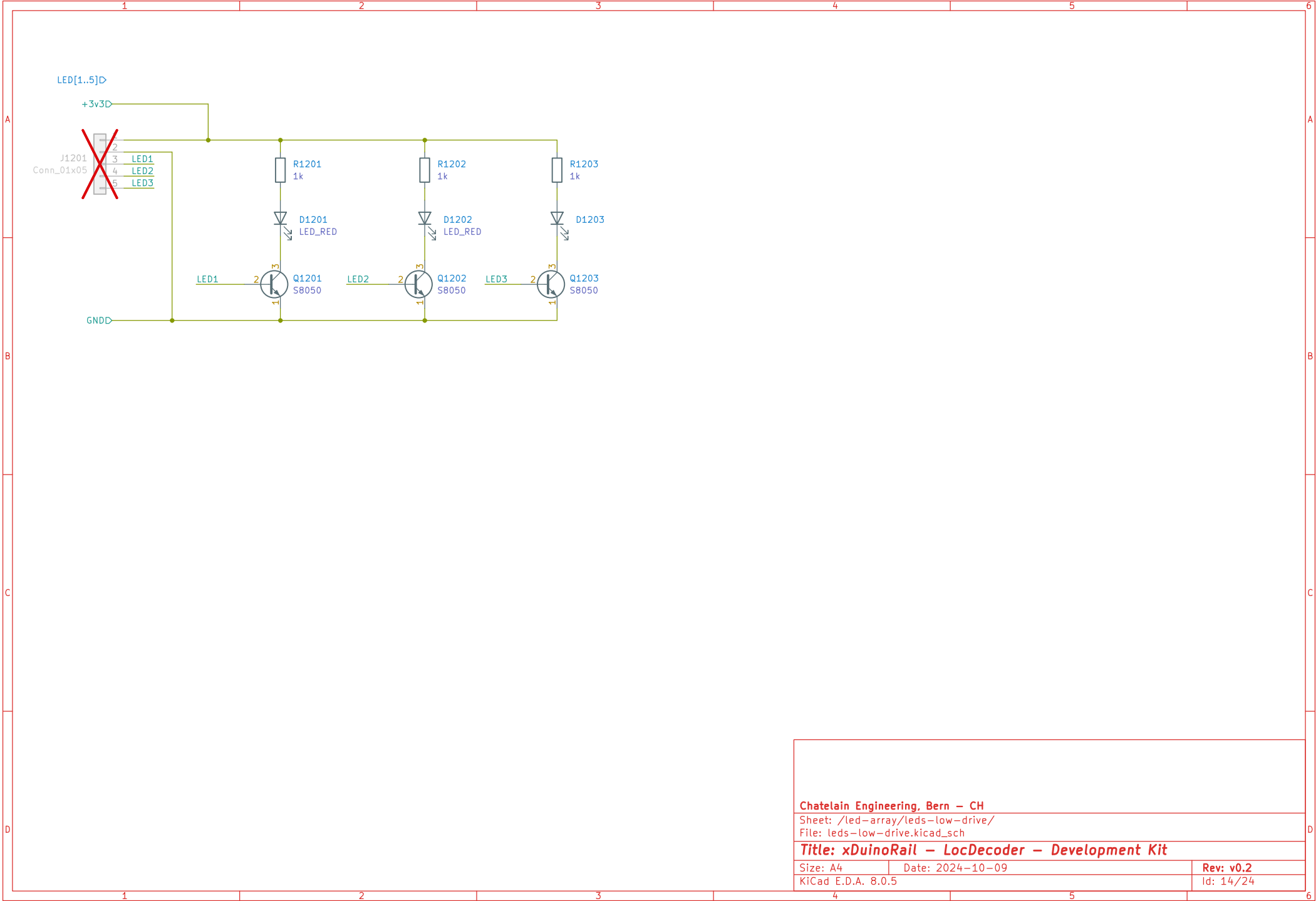
Size: A4

Date: 2024-10-09

Rev: v0.2

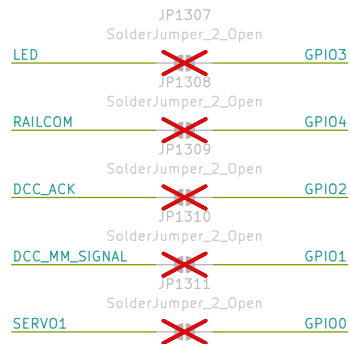
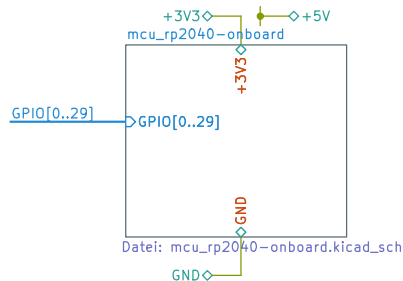
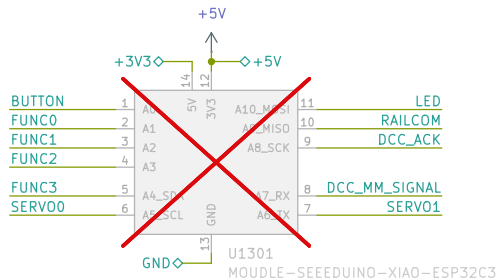
KiCad E.D.A. 8.0.5

Id: 13/24





XIAO Header (Decoder Pinout)



Chatelain Engineering, Bern – CH

Sheet: /acc-mcu-xiao-test/acc-mcu-xiao/

File: acc-mcu-xiao.kicad\_sch

Title: xDuinoRail – LocDecoder – Development Kit

Size: A4

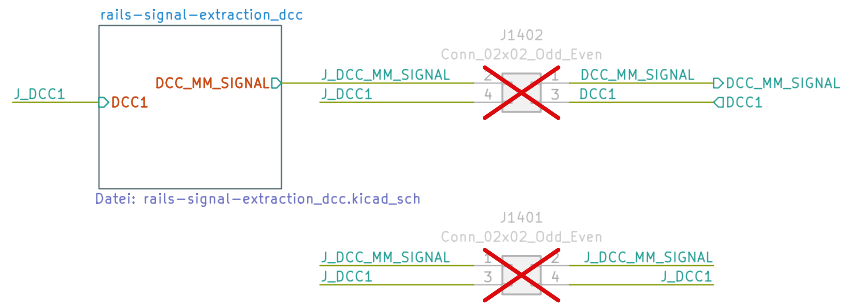
Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 18/24

Resistor (Use ONLY with on MCU pin protection)



Chatelain Engineering, Bern – CH

Sheet: /rails\_signal\_combined-test/rails\_signal\_extraction\_dcc-test/  
File: rails\_signal\_extraction\_dcc-test.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

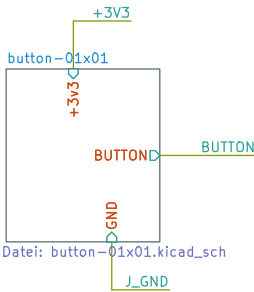
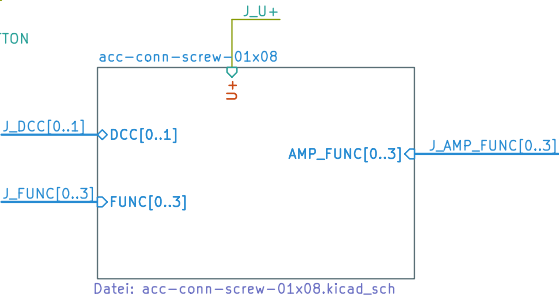
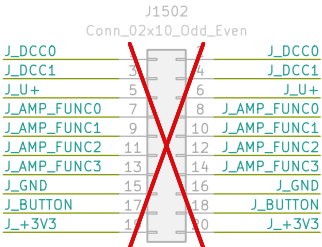
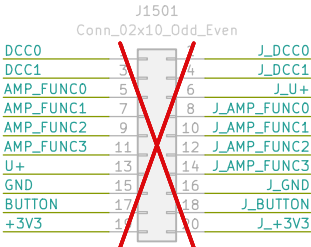
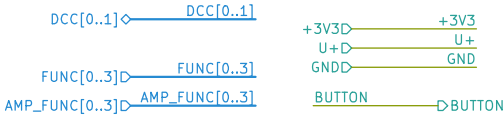
Size: A4 Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 21/24

Output Driver – test rig



Sheet: /acc-conn-screw-01x08-test/  
File: acc-conn-screw-01x08-test.kicad\_sch

Title:

Size: A4  
KiCad E.D.A. 8.0.5

Date:

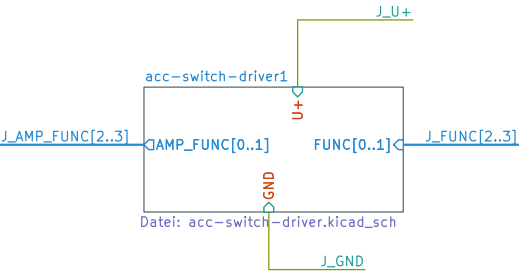
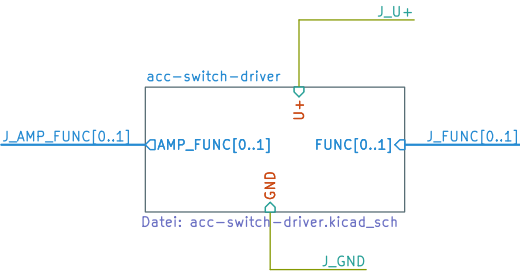
Rev:

Id: 22/24

Output Driver – test rig

FUNC[0..3] → FUNC[0..3]    AMP\_FUNC[0..3] → AMP\_FUNC[0..3]

GNDD → GND  
U+D → U+



J1601  
Conn\_02x10\_Odd\_Even

J_GND	3	4	J_GND
J_U+	5	6	J_U+
J_FUNC0	7	8	J_FUNC0
J_FUNC1	9	10	J_FUNC1
J_FUNC2	11	12	J_FUNC2
J_FUNC3	13	14	J_FUNC3
J_AMP_FUNC0	15	16	J_AMP_FUNC0
J_AMP_FUNC1	17	18	J_AMP_FUNC1
J_AMP_FUNC2	19	20	J_AMP_FUNC2
J_AMP_FUNC3			J_AMP_FUNC3

J1602  
Conn\_02x10\_Odd\_Even

J_GND	3	4	GND
J_U+	5	6	U+
J_FUNC0	7	8	FUNC0
J_FUNC1	9	10	FUNC1
J_FUNC2	11	12	FUNC2
J_FUNC3	13	14	FUNC3
J_AMP_FUNC0	15	16	AMP_FUNC0
J_AMP_FUNC1	17	18	AMP_FUNC1
J_AMP_FUNC2	19	20	AMP_FUNC2
J_AMP_FUNC3			AMP_FUNC3

Chatelain Engineering, Bern – CH

Sheet: /acc-switch-driver-dual-test/  
File: acc-switch-driver-dual-test.kicad\_sch

Title: xDuinoRail – LocDecoder – Development Kit

Size: A4

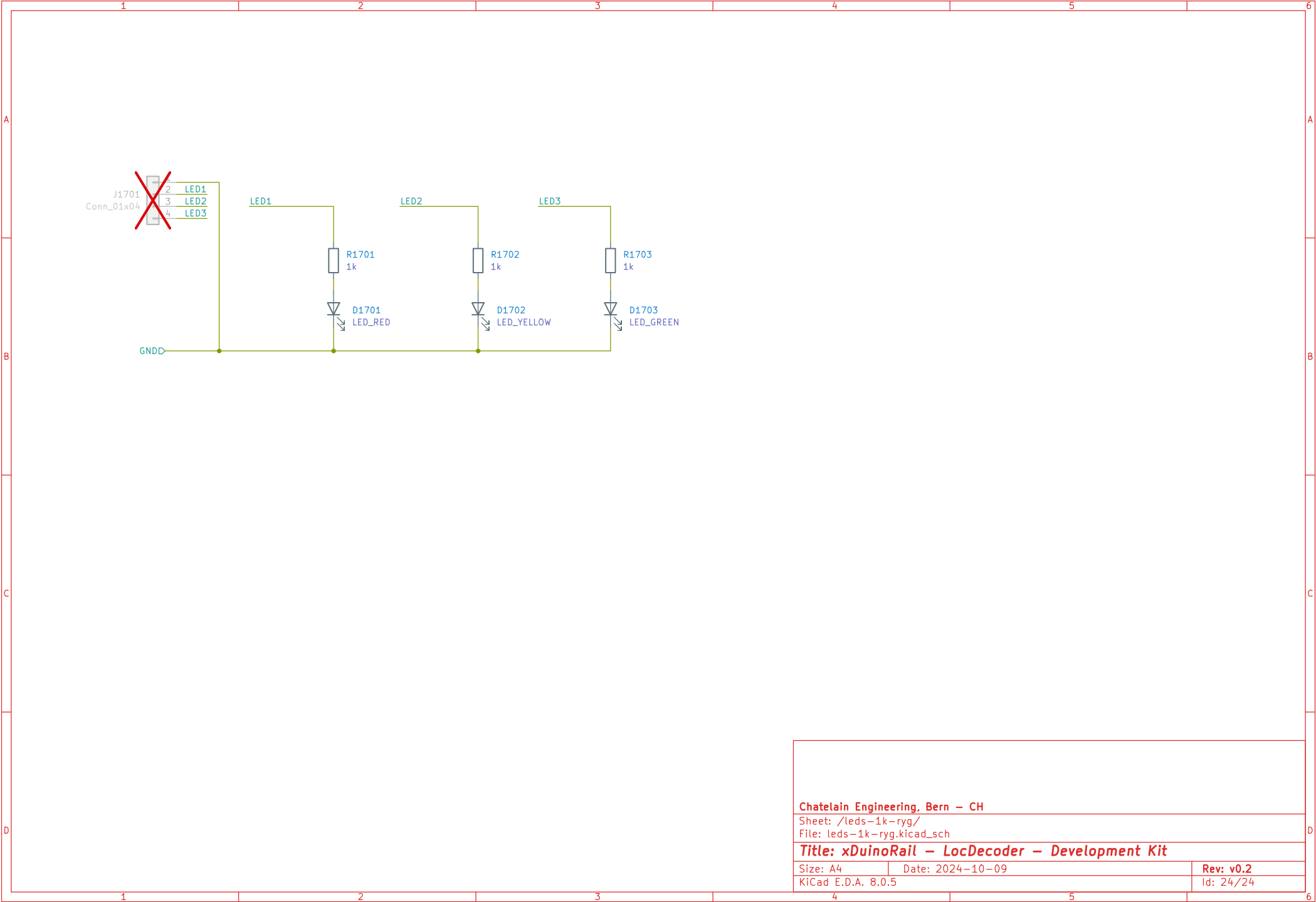
Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 24/24





Chatelain Engineering, Bern – CH

Sheet: /leds-1k-ryg/  
File: leds-1k-ryg.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

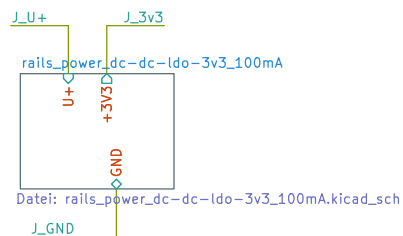
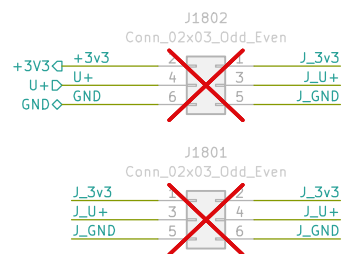
Date: 2024-10-09

Rev: v0.2

KiCad E.D.A. 8.0.5

Id: 24/24

# DC-DC voltage regulator 3.3V – test rig



Chatelain Engineering, Bern – CH

Sheet: /rails\_power\_dc-dc-ldo-3v3\_100mA-test/

File: rails\_power\_dc-dc-ldo-3v3\_100mA-test.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

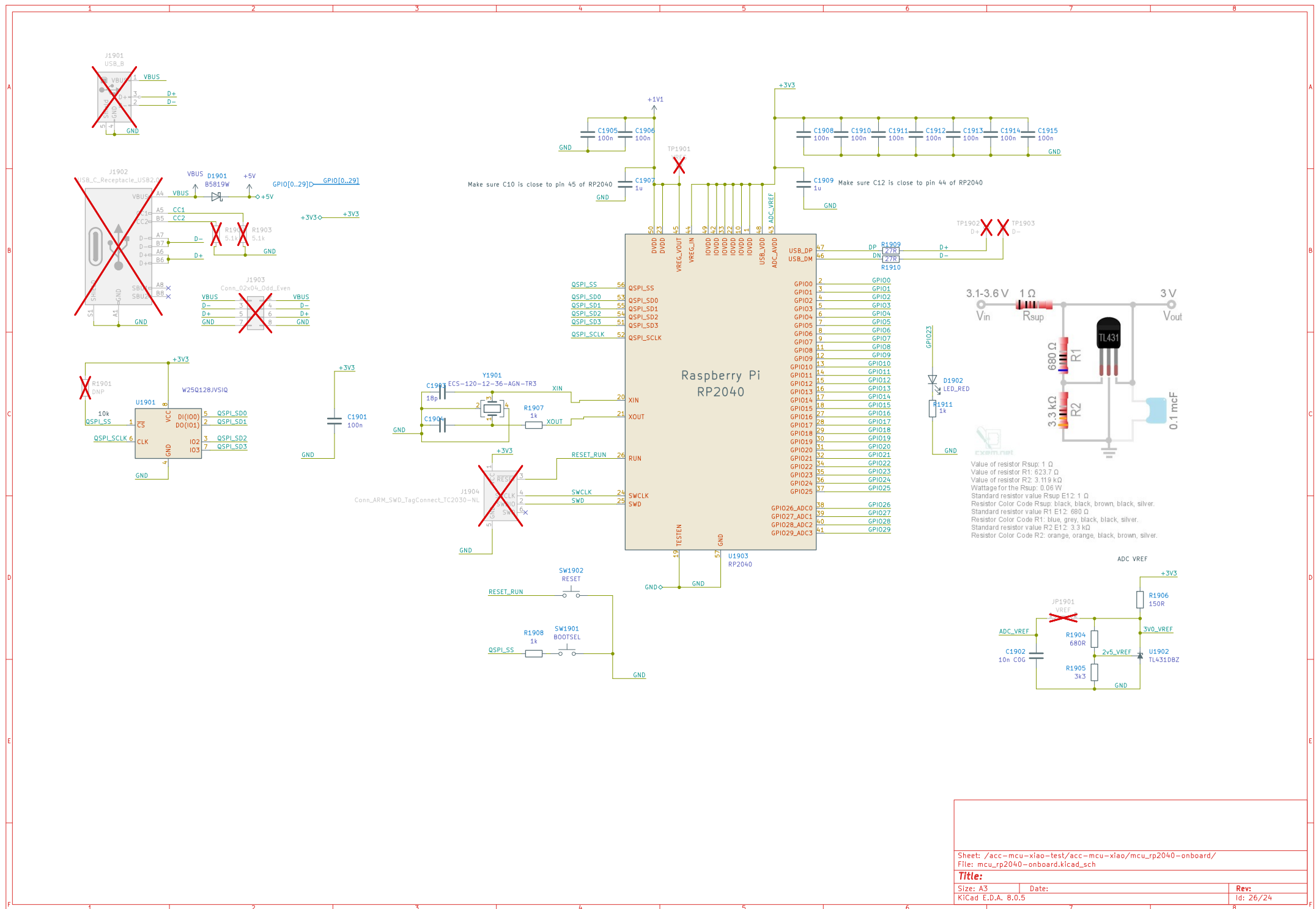
Size: A4

Date: 2024-10-09

Rev: v0.2

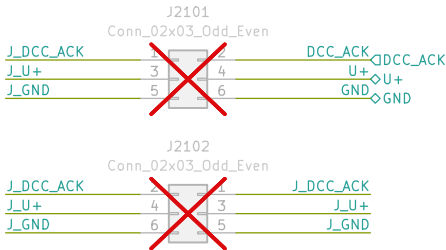
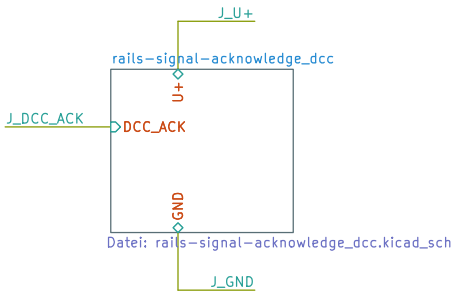
KiCad E.D.A. 8.0.5

Id: 25/24

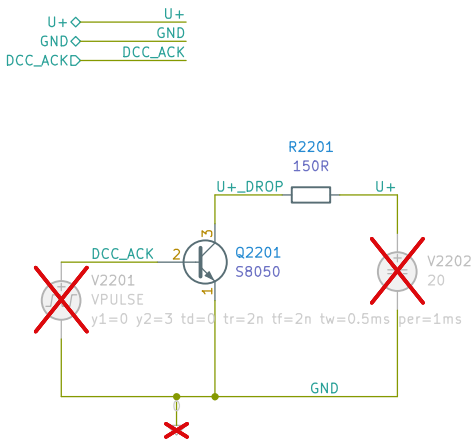




DCC ACK Signal for programming



Resistor (Use ONLY with on MCU pin protection)



Sheet: /rails\_signal\_combined-test/rails\_signal\_acknowledge\_dcc-test/rails-signal-acknowledge\_dcc/  
File: rails-signal-acknowledge\_dcc.kicad\_sch

**Title:**

Size: A4

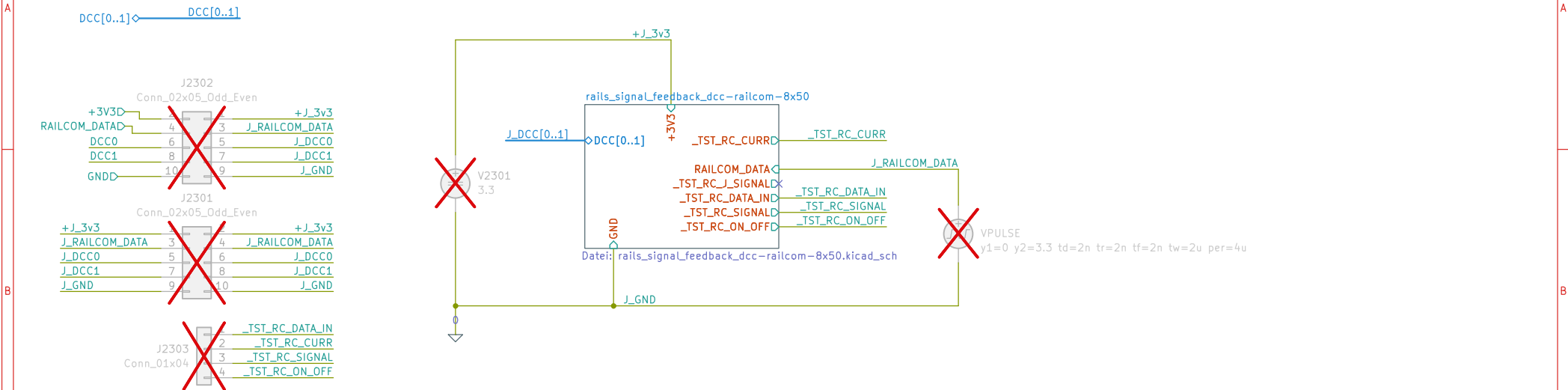
Date:

**Rev:**

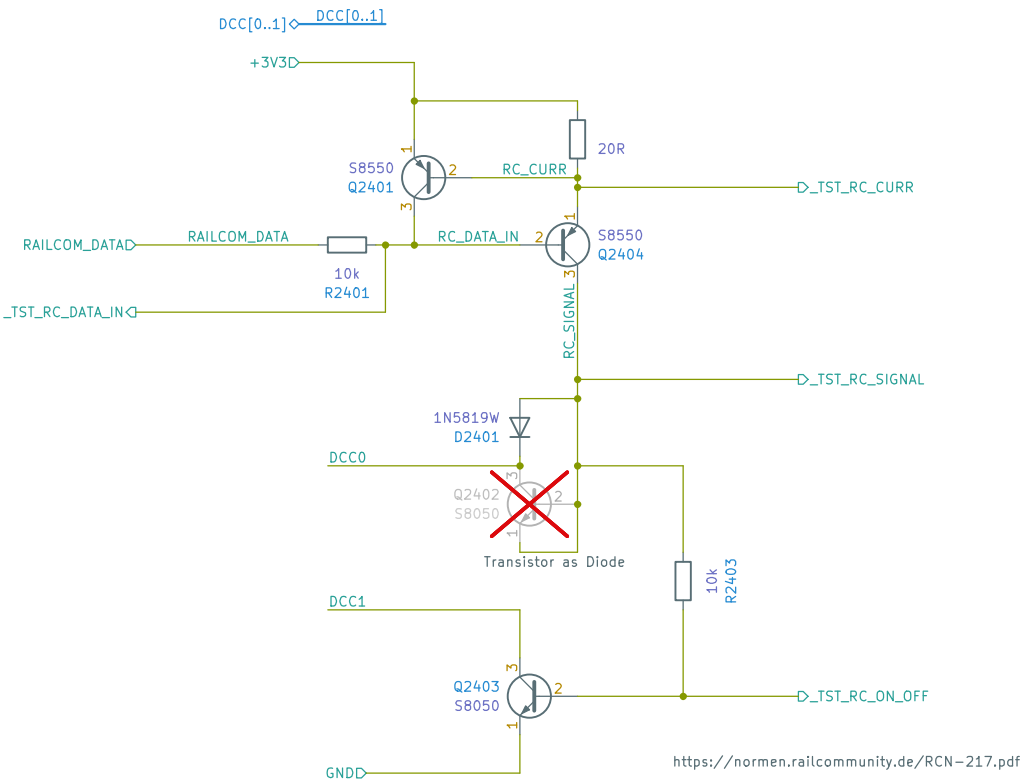
KiCad E.D.A. 8.0.5

Id: #/24

Testlayout – RailCom feedback generator



# RailCom feedback generator



Chatelain Engineering, Bern – CH

Sheet: /rails\_signal\_combined-test/rails\_signal\_feedback\_dcc-railcom-8x50\_test/rails\_signal\_feedback\_dcc-railcom-8x50.kicad\_sch

**Title: xDuinoRail – LocDecoder – Development Kit**

Size: A4

Date: 2024-10-09

Rev: v0.2

Size: A4	
KiCad E.D.A. 8.0.5	

Id: #/24