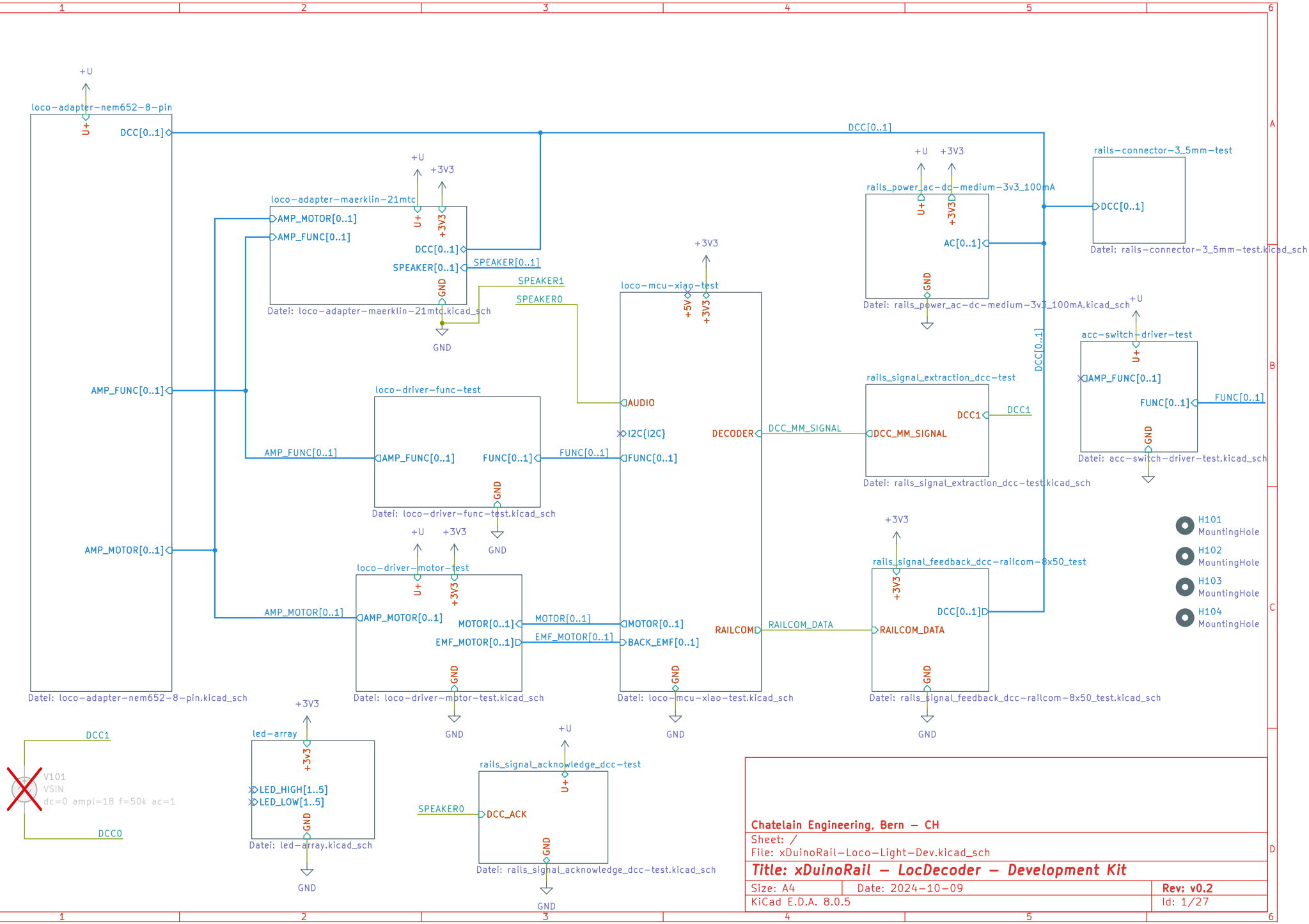

loco-adapter-nem652-8-pin
DCC[0..1]
AMP_FUNC[0..1]
AMP_MOTOR[0..1]
Datei: loco-adapter-nem652-8-pin.kicad_sch
loco-adapter-maerklin-21mtc
AMP_MOTOR[0..1]
AMP_FUNC[0..1]
DCC[0..1]
SPEAKER[0..1]
SPEAKER1
SPEAKER0
Datei: loco-adapter-maerklin-21mtc.kicad_sch
loco-driver-func-test
AMP_FUNC[0..1]
FUNC[0..1]
Datei: loco-driver-func-test.kicad_sch
loco-driver-motor-test
AMP_MOTOR[0..1]
MOTOR[0..1]
EMF_MOTOR[0..1]
Datei: loco-driver-motor-test.kicad_sch
loco-mcu-xiao-test
AUDIO
I2C{I2C}
FUNC[0..1]
MOTOR[0..1]
BACK_EMF[0..1]
DECODER
RAILCOM
Datei: loco-mcu-xiao-test.kicad_sch
rails_power_ac-dc-medium-3v3_100mA
AC[0..1]
Datei: rails_power_ac-dc-medium-3v3_100mA.kicad_sch
rails-connector-3_5mm-test
Datei: rails-connector-3_5mm-test.kicad_sch
rails_signal_extraction_dcc-test
DCC_MM_SIGNAL
DCC1
Datei: rails_signal_extraction_dcc-test.kicad_sch
acc-switch-driver-test
Datei: acc-switch-driver-test.kicad_sch
rails_signal_feedback_dcc-railcom-8x50_test
RAILCOM_DATA
Datei: rails_signal_feedback_dcc-railcom-8x50_test.kicad_sch
led-array
LED_HIGH[1..5]
LED_LOW[1..5]
Datei: led-array.kicad_sch
rails_signal_acknowledge_dcc-test
DCC_ACK
Datei: rails_signal_acknowledge_dcc-test.kicad_sch
V101
VSIN
dc=0 ampl=18 f=50k ac=1
H101 MountingHole
H102 MountingHole
H103 MountingHole
H104 MountingHole
Chatelain Engineering, Bern – CH
Sheet: /
File: xDuinoRail-Loco-Light-Dev.kicad_sch
Title: xDuinoRail – LocDecoder – Development Kit
Size: A4
Date: 2024-10-09
Rev: v0.2
KiCad E.D.A. 8.0.5
Id: 1/27

Bridge rectifier medium

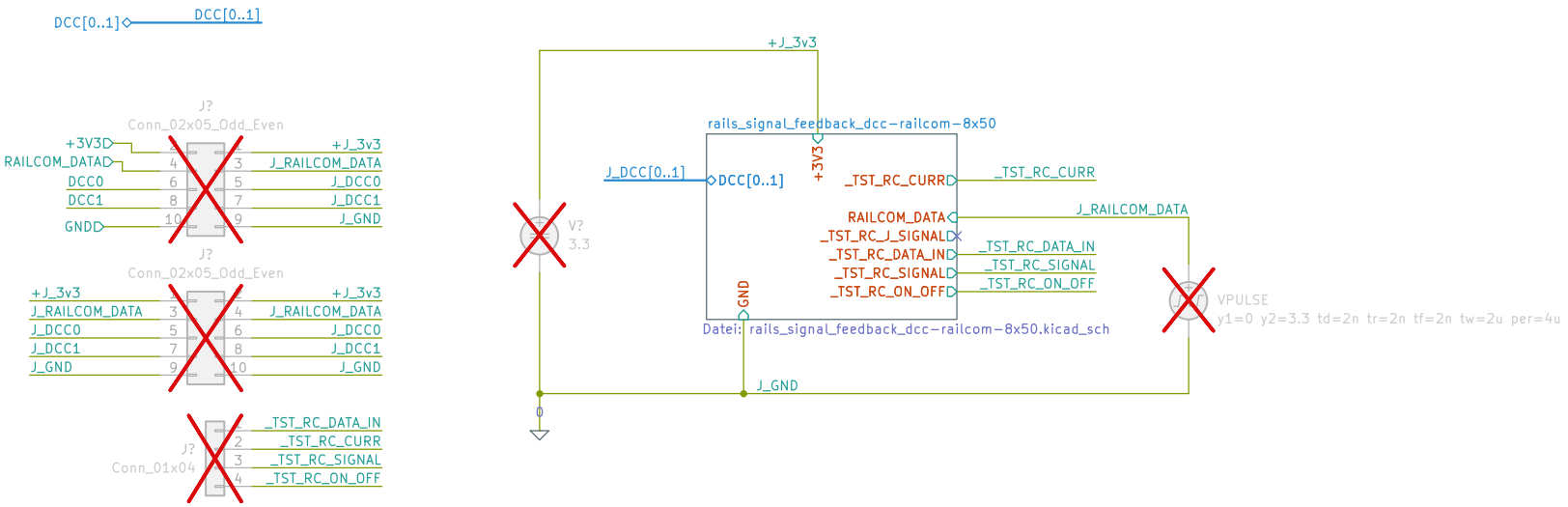
Chatelain Engineering, Bern – CH

Sheet: /rails_power_ac-dc-medium-3v3_100mA/rails_power_ac-dc-bridge-medium-test/
File: rails_power_ac-dc-bridge-medium-test.kicad_sch

Title: xDuinoRail – LocDecoder – Development Kit

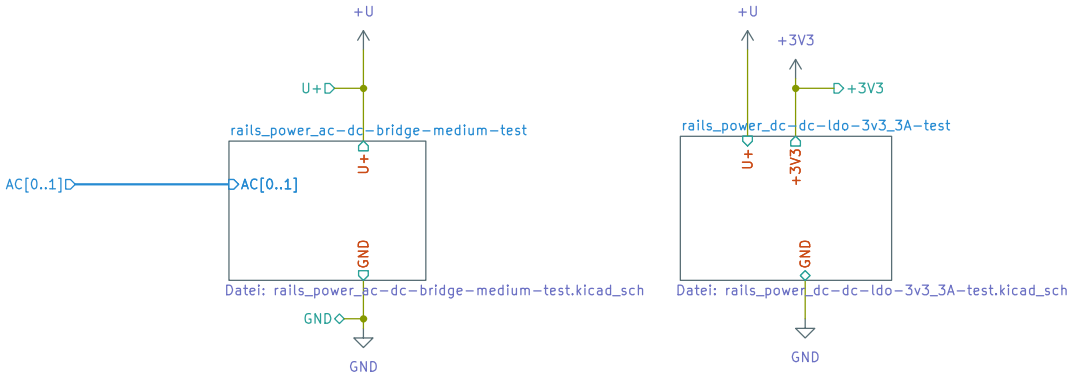
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 2/27

Testlayout – RailCom feedback generator



Chatelain Engineering, Bern – CH		
Sheet: /rails_signal_feedback_dcc-railcom-8x50_test/		
File: rails_signal_feedback_dcc-railcom-8x50_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: 3/27

Bridge rectifier medium with LDO 3v3 / 100mA



Chatelain Engineering, Bern – CH		
Sheet: /rails_power_ac-dc-medium-3v3_100mA/ File: rails_power_ac-dc-medium-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: 4/27

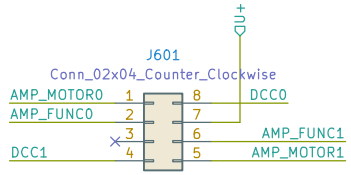
Bus interfaces

DCC[0..1]

AMP_MOTOR[0..1]

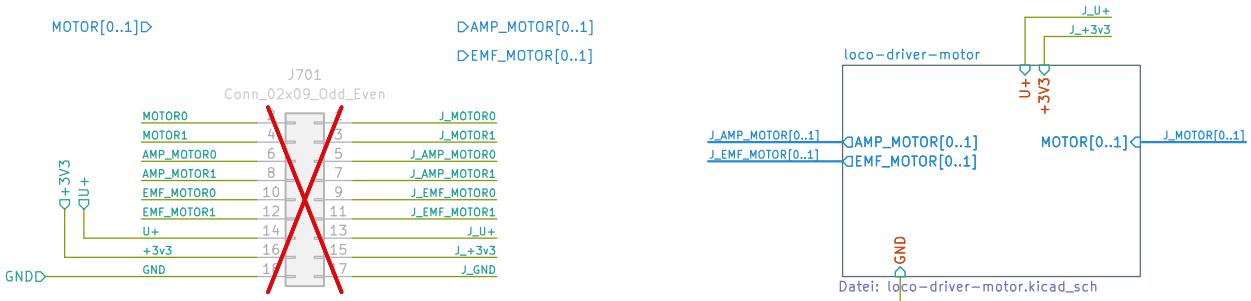
AMP_FUNC[0..1]

8-pin (NEM652)



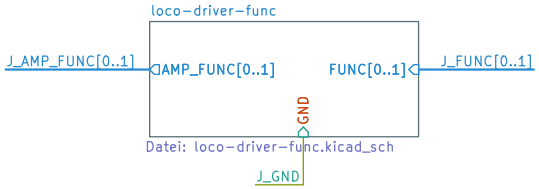
Chatelain Engineering, Bern – CH		
Sheet: /loco-adapter-nem652-8-pin/ File: loco-adapter-nem652-8-pin.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 5/27

Motor Driver – test rig



Chatelain Engineering, Bern – CH		
Sheet: /loco-driver-motor-test/		
File: loco-driver-motor-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: 6/27

Function output driver – test rig



Chatelain Engineering, Bern – CH

Sheet: /loco-driver-func-test/
File: loco-driver-func-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: 7/27

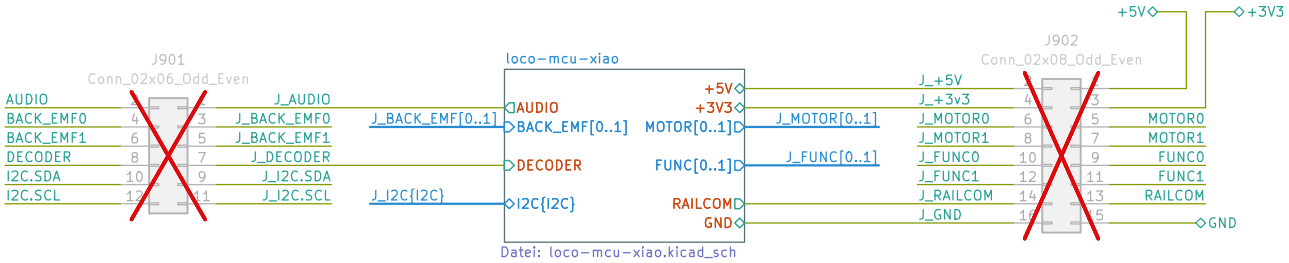
BACK_EMF[0..1]
DECODER
I2C{I2C}

DECODER
I2C{I2C}

MOTOR[0..1]
FUNC[0..1]
AUDIO
RAILCOM

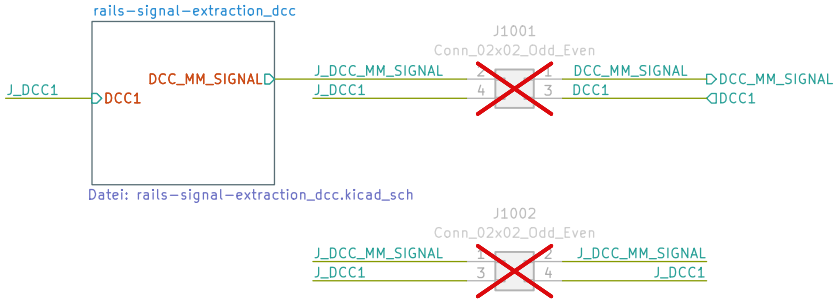
MOTOR[0..1]
FUNC[0..1]
AUDIO
RAILCOM

XIAO Header (Decoder Pinout) – test rig



Chatelain Engineering, Bern – CH		
Sheet: /loco–mcu–xiao–test/		
File: loco–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: 8/27

Resistor (Use ONLY with on MCU pin protection)



Chatelain Engineering, Bern – CH

Sheet: /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: 9/27

Bus interfaces

DCC[0..1]

AMP_MOTOR[0..1]

SPEAKER[0..1]

AUX[4..8]

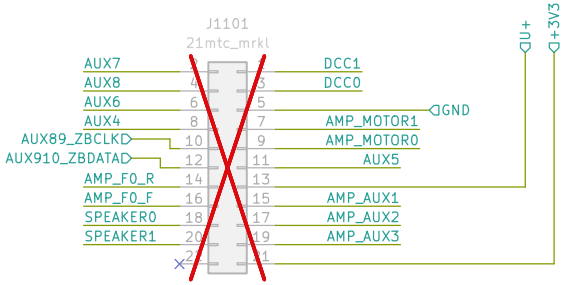
AMP_AUX[1..3]

AMP_FUNC[0..1]

AMP_FUNC0 — AMP_F0_F

AMP_FUNC1 — AMP_F0_R

21mtc header (Märklin)



https://normen.railcommunity.de/RCN-121.pdf

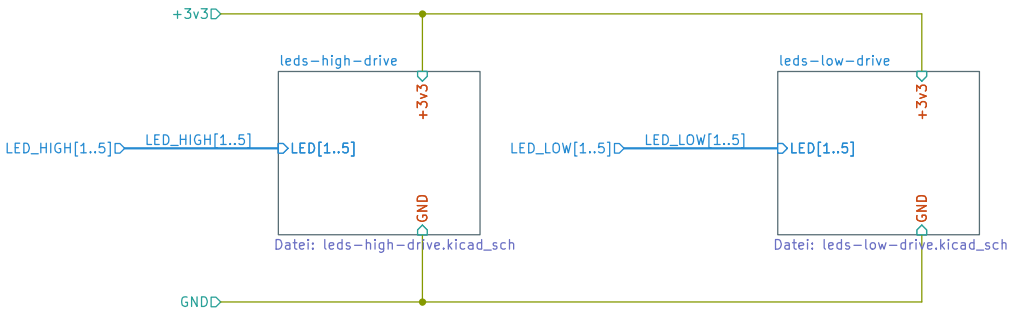
Chatelain Engineering, Bern – CH

Sheet: /loco-adapter-maerklin-21mtc/

File: loco-adapter-maerklin-21mtc.kicad_sch

Title: xDuinoRail – LocDecoder – Development Kit

Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 11/27

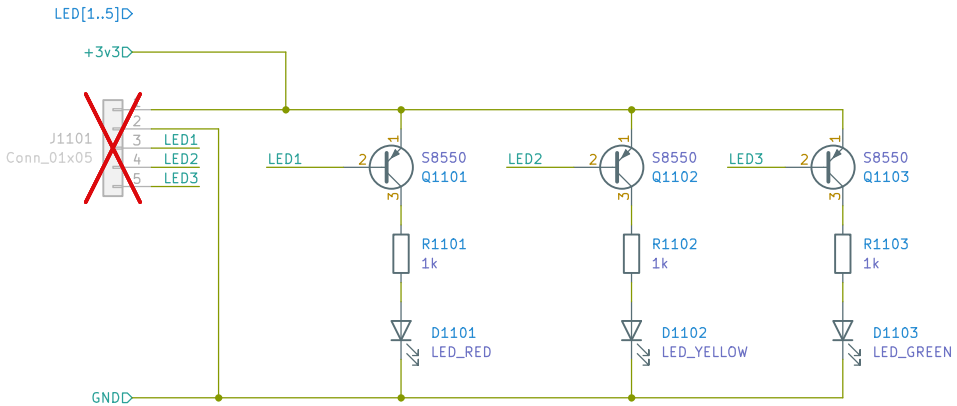


Chatelain Engineering, Bern – CH

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: 12/27



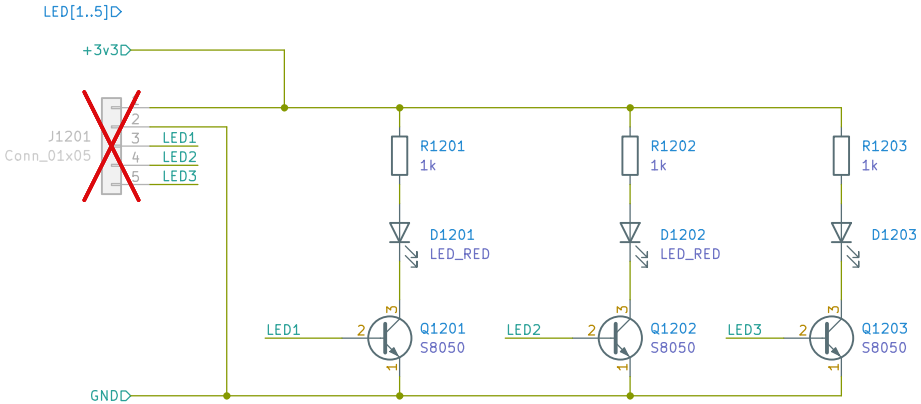
Chatelain Engineering, Bern – CH

Sheet: /led-array/leds-high-drive/

File: leds-high-drive.kicad_sch

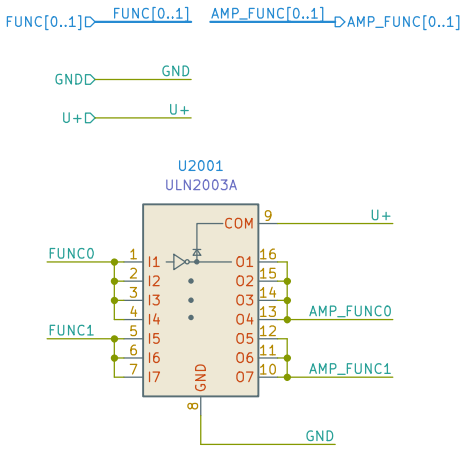
Title: xDuinoRail – LocDecoder – Development Kit

Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 13/27



Chatelain Engineering, Bern – CH		
Sheet: /led-array/leds-low-drive/ File: leds-low-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: 14/27

Output Driver



Chatelain Engineering, Bern – CH

Sheet: /acc-switch-driver-test/acc-switch-driver/
File: acc-switch-driver.kicad_sch

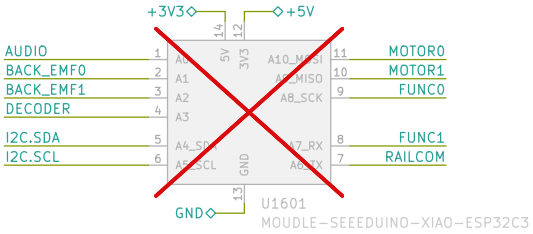
Title: xDuinoRail – LocDecoder – Development Kit

Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 15/27

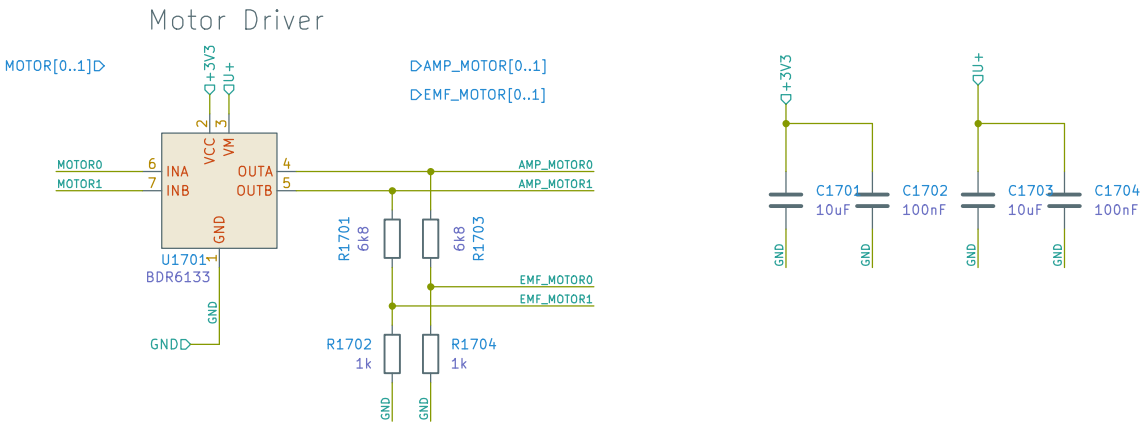
BACK_EMF[0..1]
DECODER
I2C{I2C}

MOTOR[0..1]
FUNC[0..1]
AUDIO
RAILCOM

XIAO Header (Decoder Pinout)



Chatelain Engineering, Bern – CH		
Sheet: /loco-mcu-xiao-test/loco-mcu-xiao/		
File: loco-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: 18/27



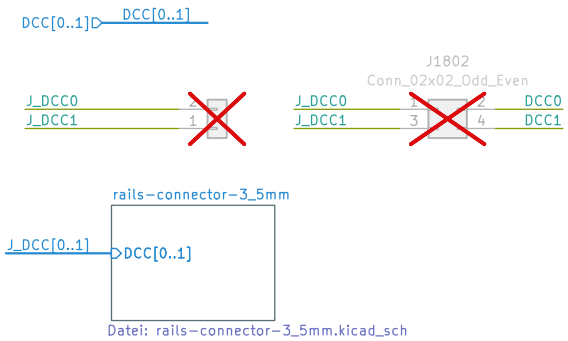
Chatelain Engineering, Bern – CH

Sheet: /loco-driver-motor-test/loco-driver-motor/

File: loco-driver-motor.kicad_sch

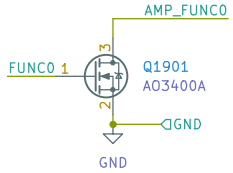
Title: xDuinoRail – LocDecoder – Development Kit

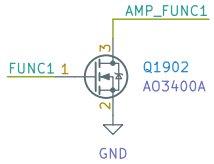
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 19/27



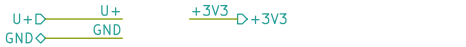
Chatelain Engineering, Bern – CH	
Sheet: /rails-connector-3_5mm-test/	
File: rails-connector-3_5mm-test.kicad_sch	
Title: xDuinoRail – LocDecoder – Development Kit	
Size: A4	Date: 2024-10-09
KiCad E.D.A. 8.0.5	Id: 20/27
	Rev: v0.2

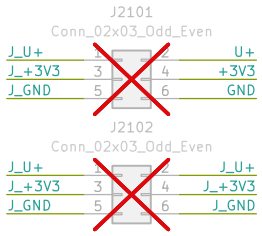
Output Driver





Chatelain Engineering, Bern – CH		
Sheet: /loco-driver-func-test/loco-driver-func/		
File: loco-driver-func.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 21/27



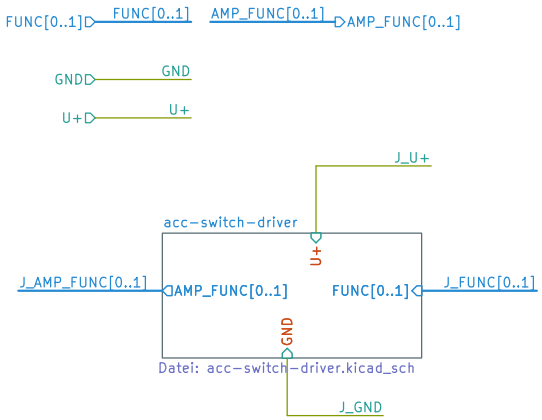


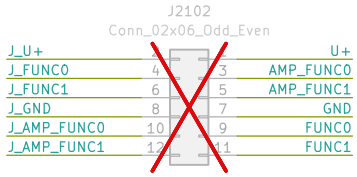
Sheet: /rails_power_ac-dc-medium-3v3_100mA/rails_power_dc-dc-ldo-3v3_3A-test/
File: rails_power_dc-dc-ldo-3v3_3A-test.kicad_sch

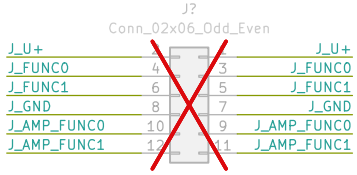
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.5		Id: 24/27

Output Driver – test rig







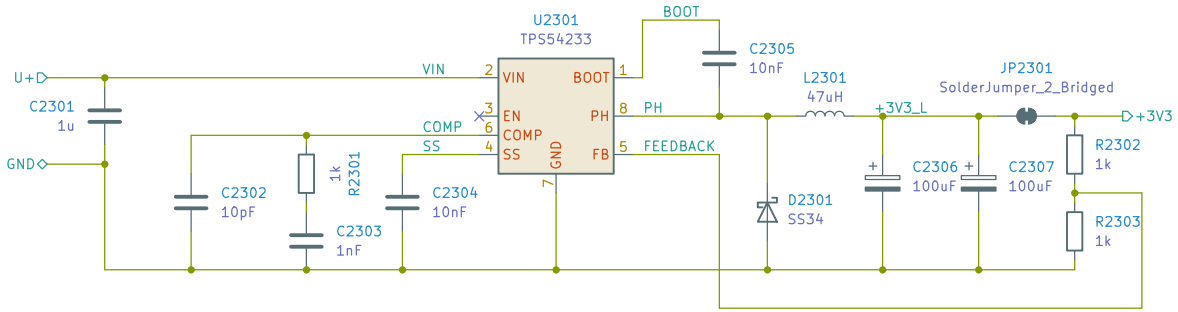
Chatelain Engineering, Bern – CH

Sheet: /acc-switch-driver-test/
File: acc-switch-driver-test.kicad_sch

Title: xDuinoRail – LocDecoder – Development Kit

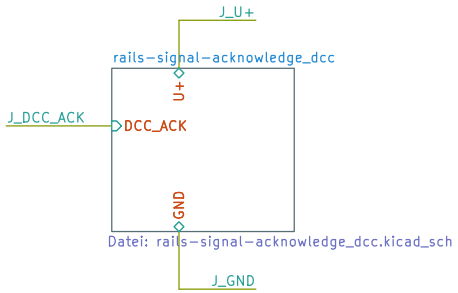
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 24/27

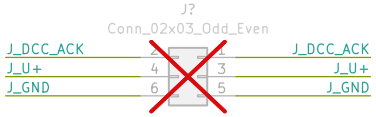
DC-DC buck convertor 3.3V



Chatelain Engineering, Bern – CH		
Sheet: /rails_power_ac-dc-medium-3v3_100mA/rails_power_dc-dc-ldo-3v3_3A-test/rails_power_dc-		
File: rails_power_dc-dc-ldo-3v3_3A.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 25/27

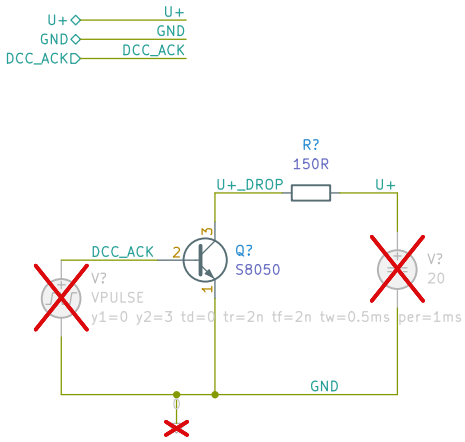
DCC ACK Signal for programming





Chatelain Engineering, Bern – CH		
Sheet: /rails_signal_acknowledge_dcc-test/ File: rails_signal_acknowledge_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: 26/27

Resistor (Use ONLY with on MCU pin protection)

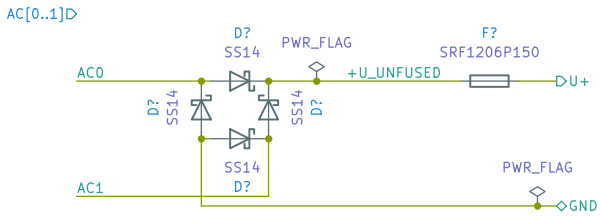


Sheet: /rails_signal_acknowledge_dcc-test/rails-signal-acknowledge_dcc/
File: rails-signal-acknowledge_dcc.kicad_sch

Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.5		Id: 23/27

Bridge rectifier medium



Chatelain Engineering, Bern – CH		
Sheet: /rails_power_ac-dc-medium-3v3_100mA/rails_power_ac-dc-bridge-medium-test/rails_power_		
File: rails_power_ac-dc-bridge-medium.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 24/27

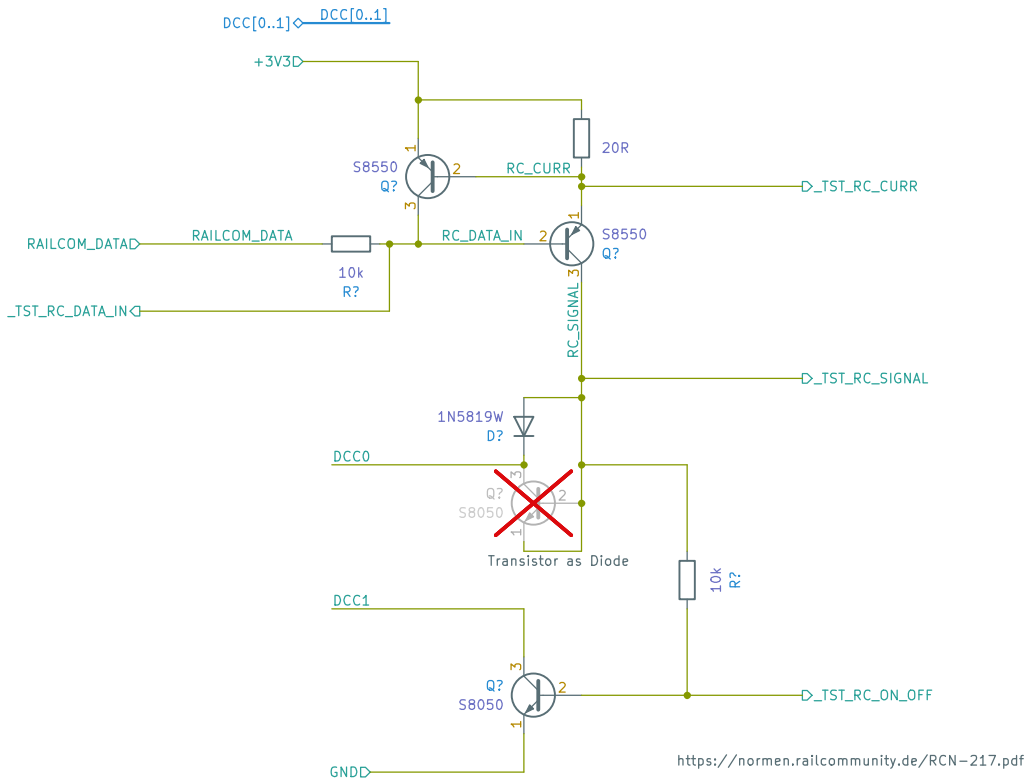
Resistor (Use ONLY with on MCU pin protection)

Sheet: /rails_signal_extraction_dcc-test/rails-signal-extraction_dcc/
File: rails-signal-extraction_dcc.kicad_sch

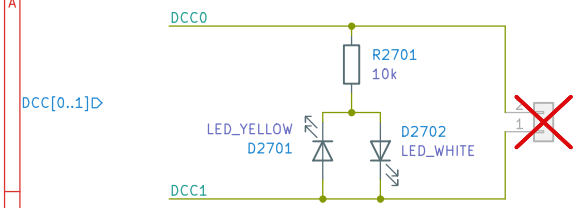
Title:

Size: A4	Date:	**Rev:**
KiCad E.D.A. 8.0.5		Id: 25/27

RailCom feedback generator



Chatelain Engineering, Bern – CH		
Sheet: /rails_signal_feedback_dcc-railcom-8x50_test/rails_signal_feedback_dcc-railcom-8x50/		
File: rails_signal_feedback_dcc-railcom-8x50.kicad_sch		
Title: xDuinoRail – LocDecoder – Development Kit		
Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 26/27



Chatelain Engineering, Bern – CH

Sheet: /rails-connector-3_5mm-test/rails-connector-3_5mm/
File: rails-connector-3_5mm.kicad_sch

Title: xDuinoRail – LocDecoder – Development Kit

Size: A4	Date: 2024-10-09	**Rev: v0.2**
KiCad E.D.A. 8.0.5		Id: 27/27