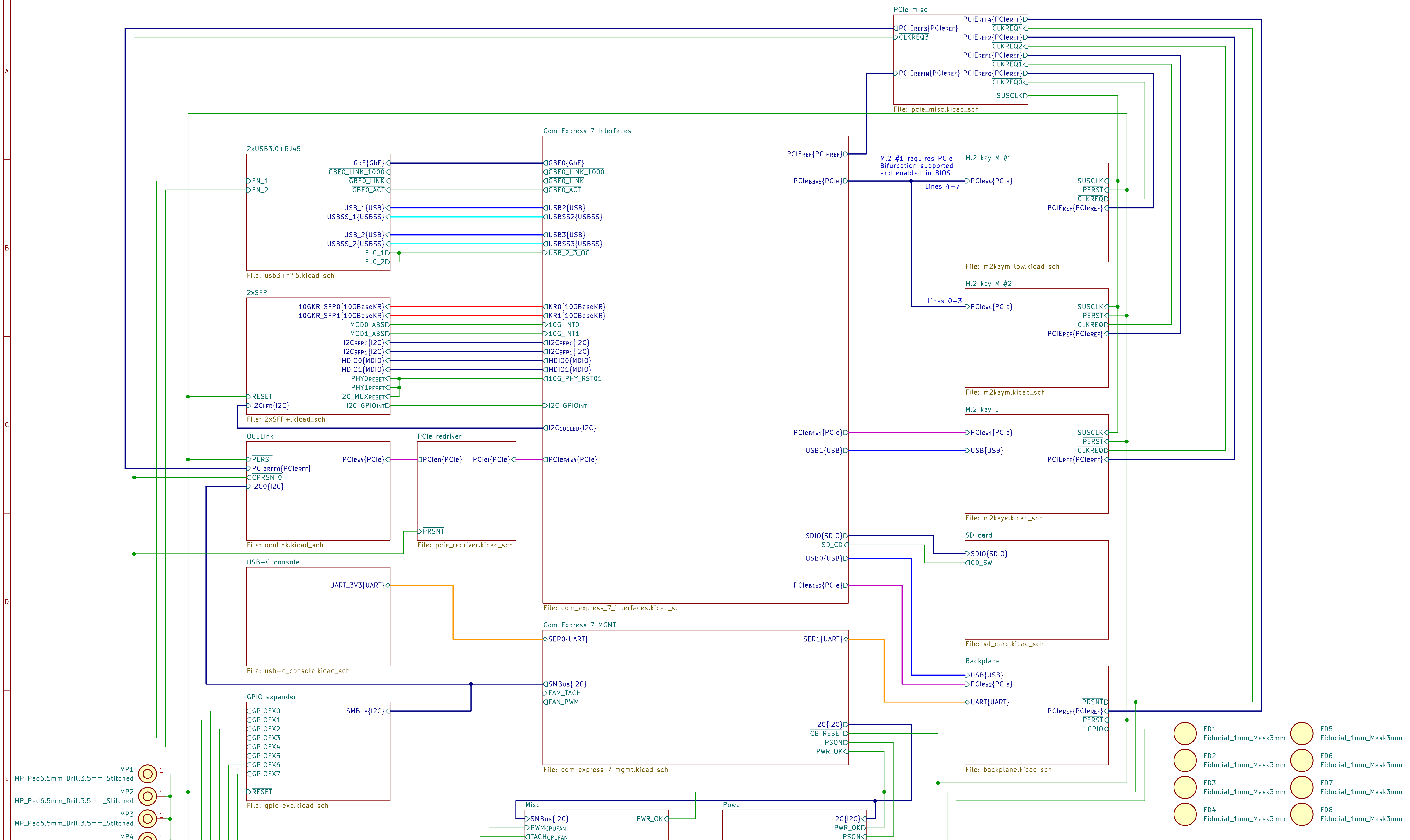
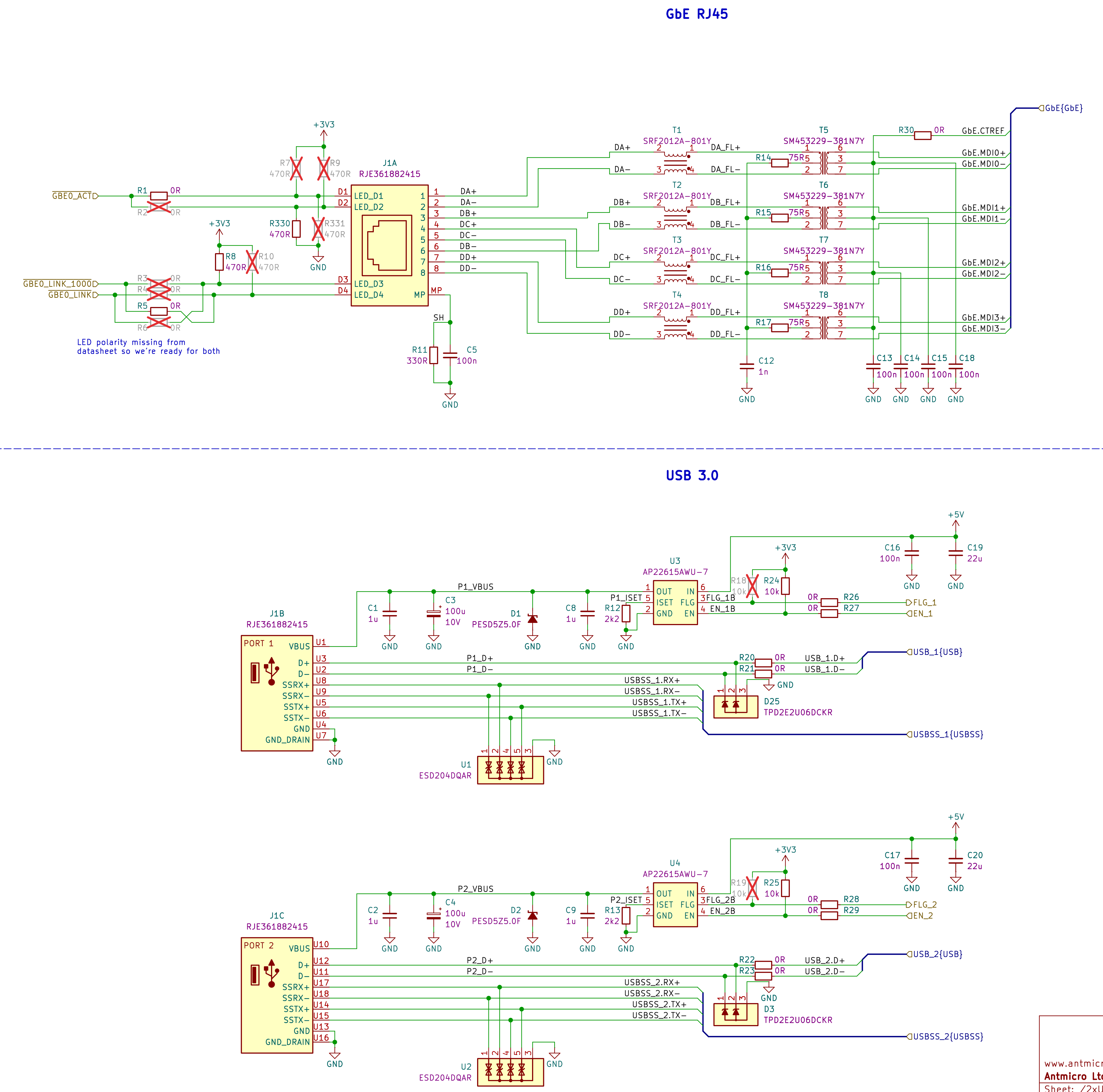


www.antmicro.com
Antmicro Ltd
Sheet: /
File: com-express-7-baseboard.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 1/19



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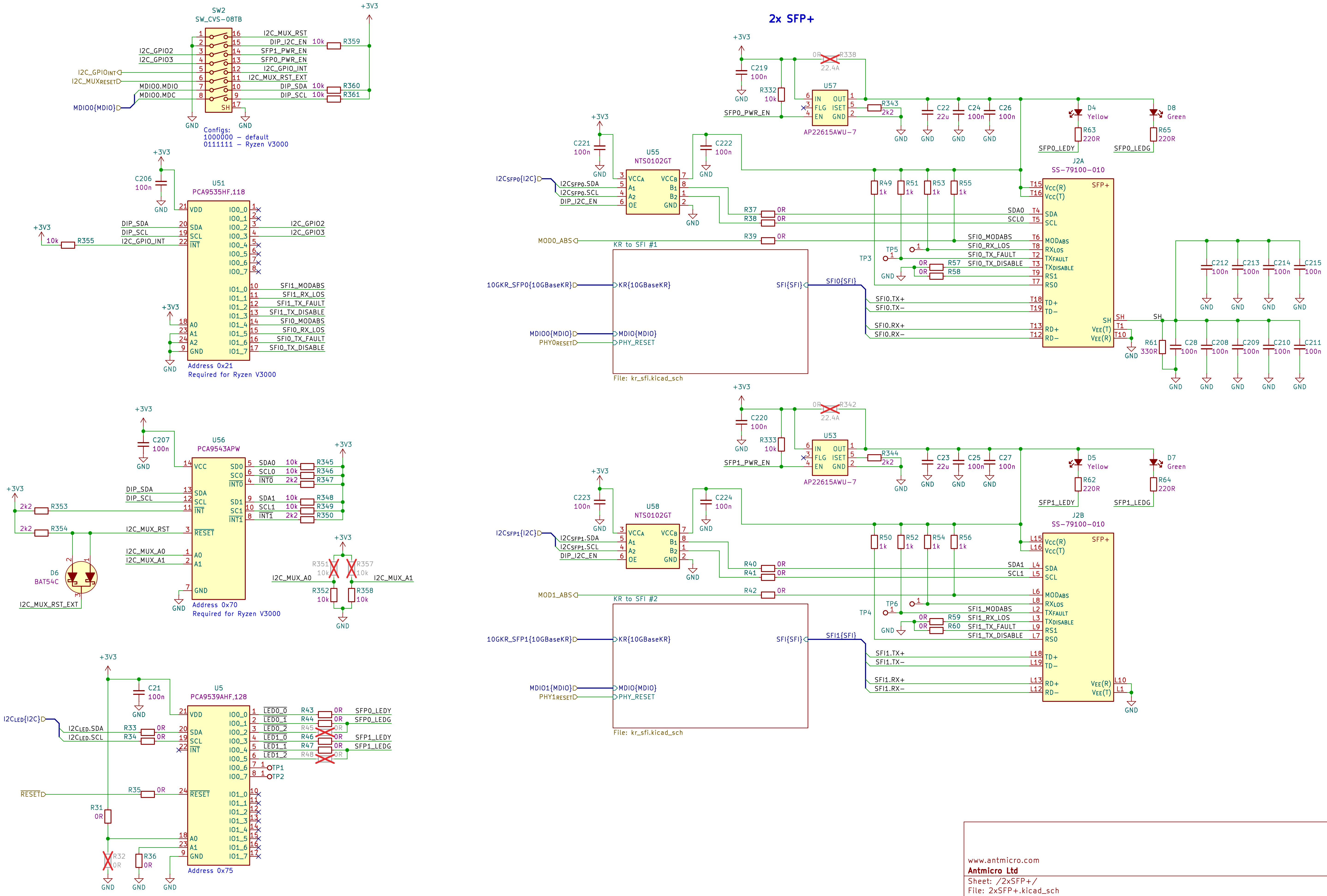
Antmicro Ltd
Sheet: /2xUSB3.0+RJ45/
File: usb3+rj45.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 2/19



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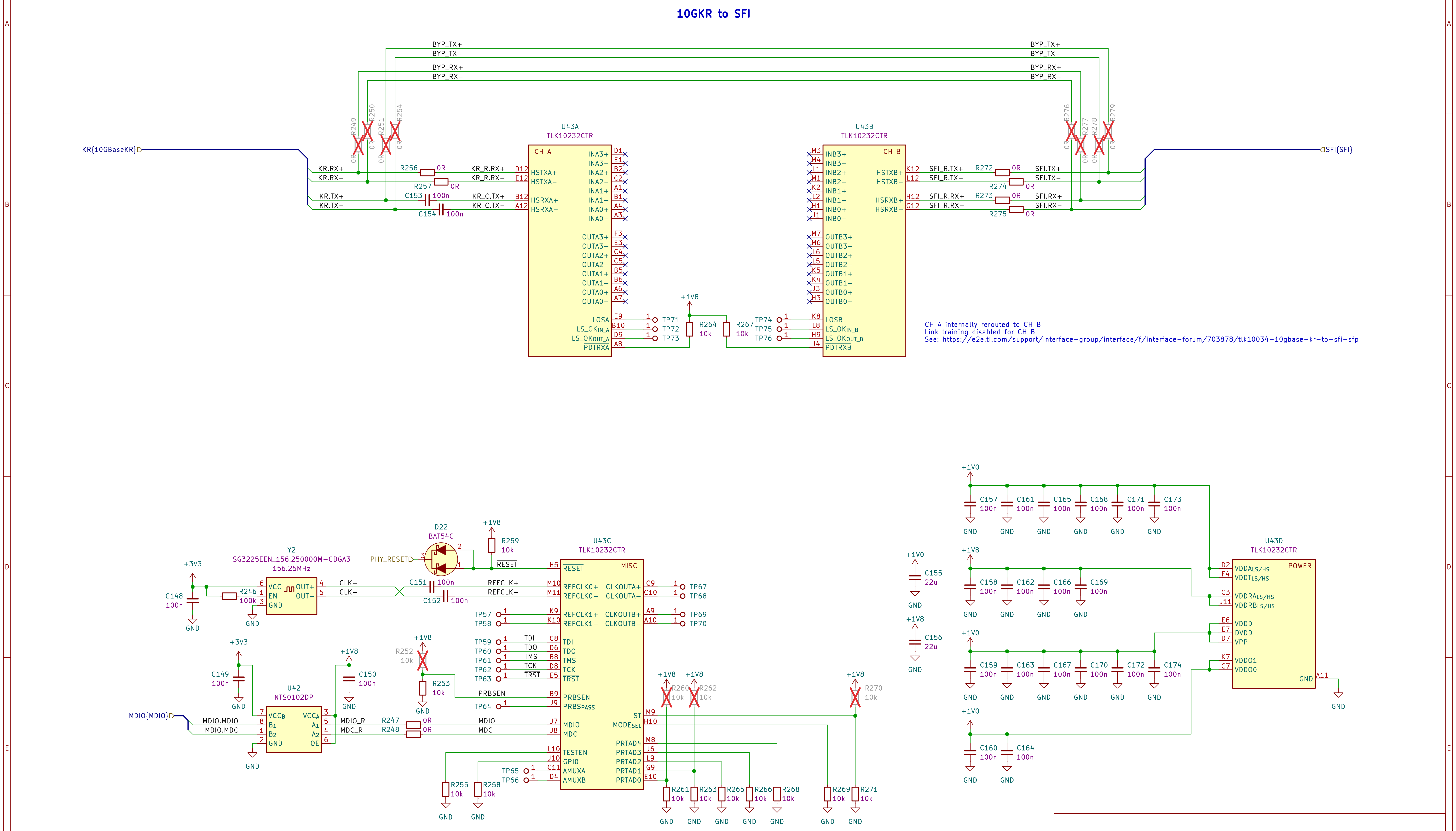
Antmicro Ltd
Sheet: /2xSFP+/
File: 2xSFP+.kicad_sch

Title: COM Express 7 Baseboard

Size: A3 | Date: 2026-01-26 | Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7 | Id: 3/19

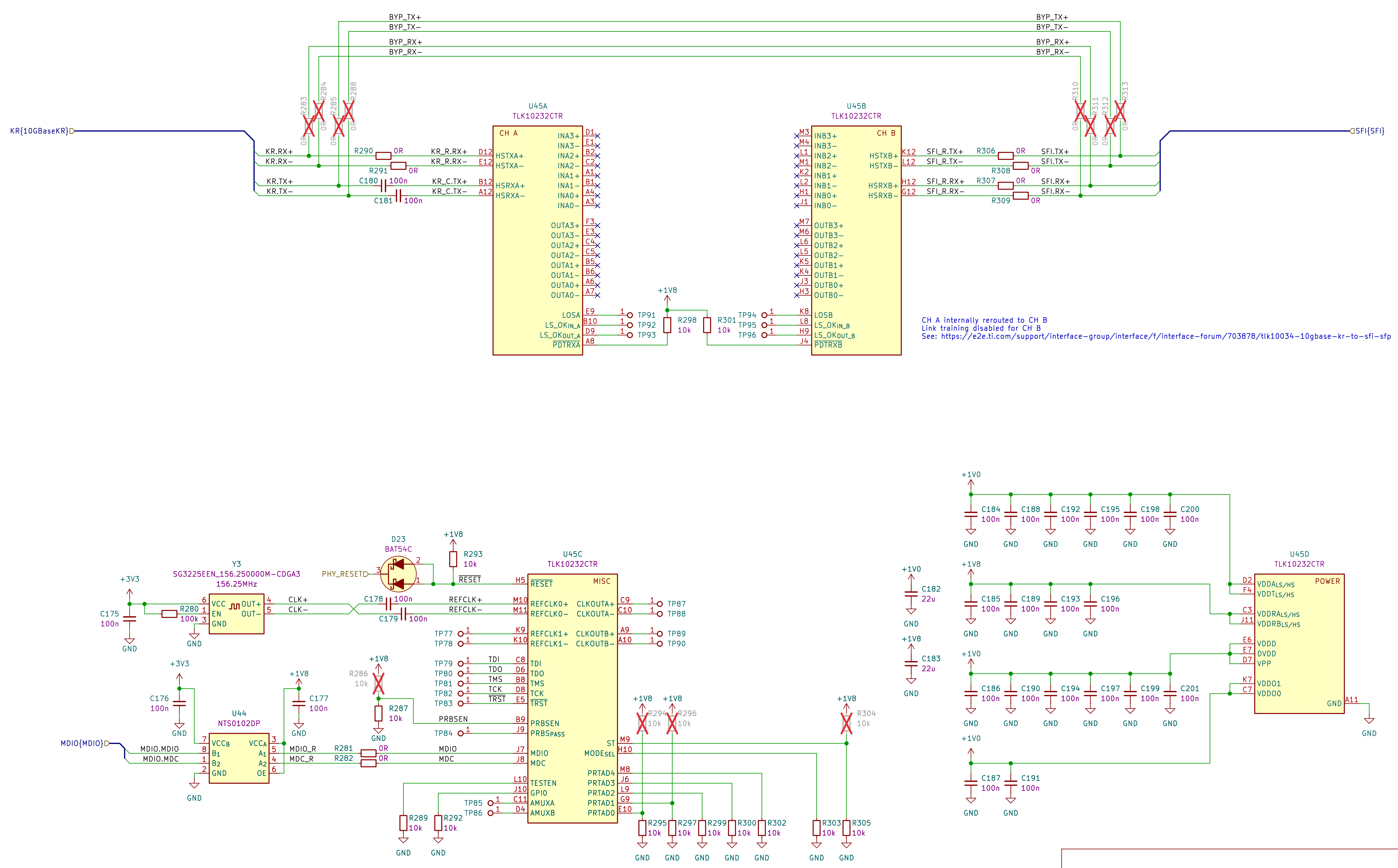


www.antmicro.com
Antmicro Ltd
Sheet: /2xSFP+/KR to SFI #1/
File: kr_sfi.kicad_sch

Title: COM Express 7 Baseboard

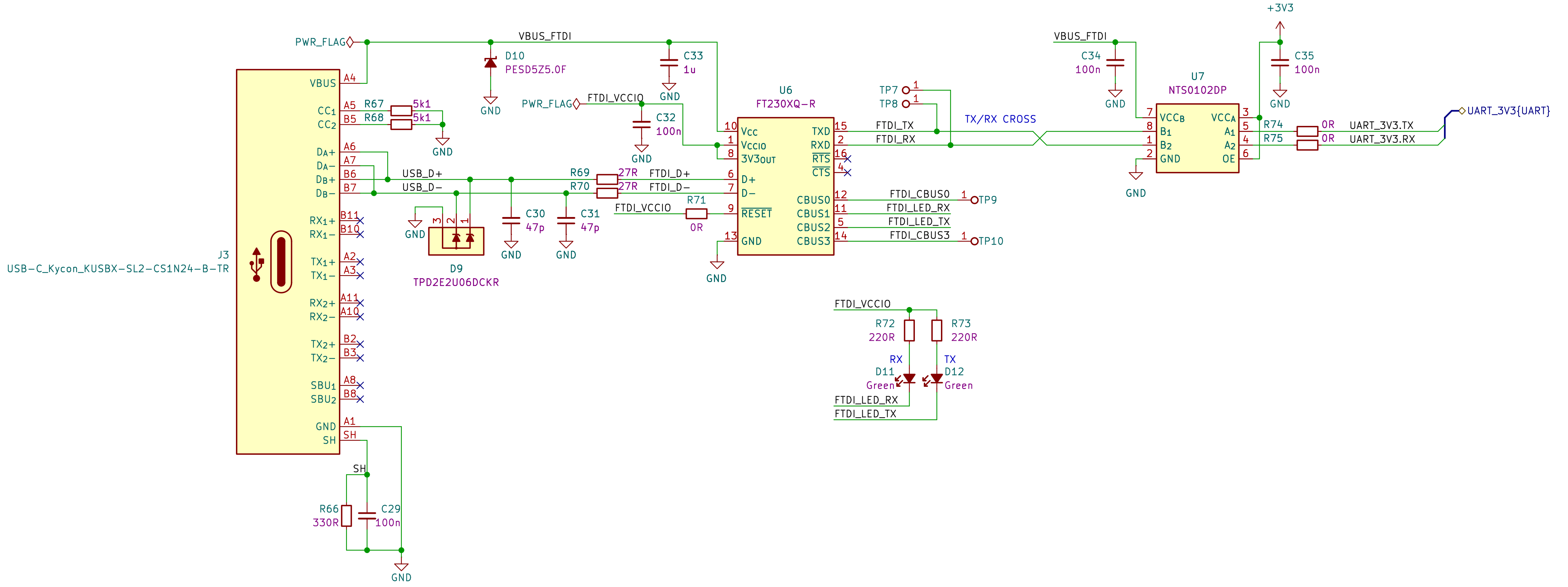
Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 17/19

10GKR to SFI



www.antmicro.com
Antmicro Ltd
Sheet: /2xSFP+/KR to SFI #2/
File: kr_sfi.kicad_sch
Title: COM Express 7 Baseboard
Size: A3
Date: 2026-01-26
Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7
Id: 18/19

USB-C console



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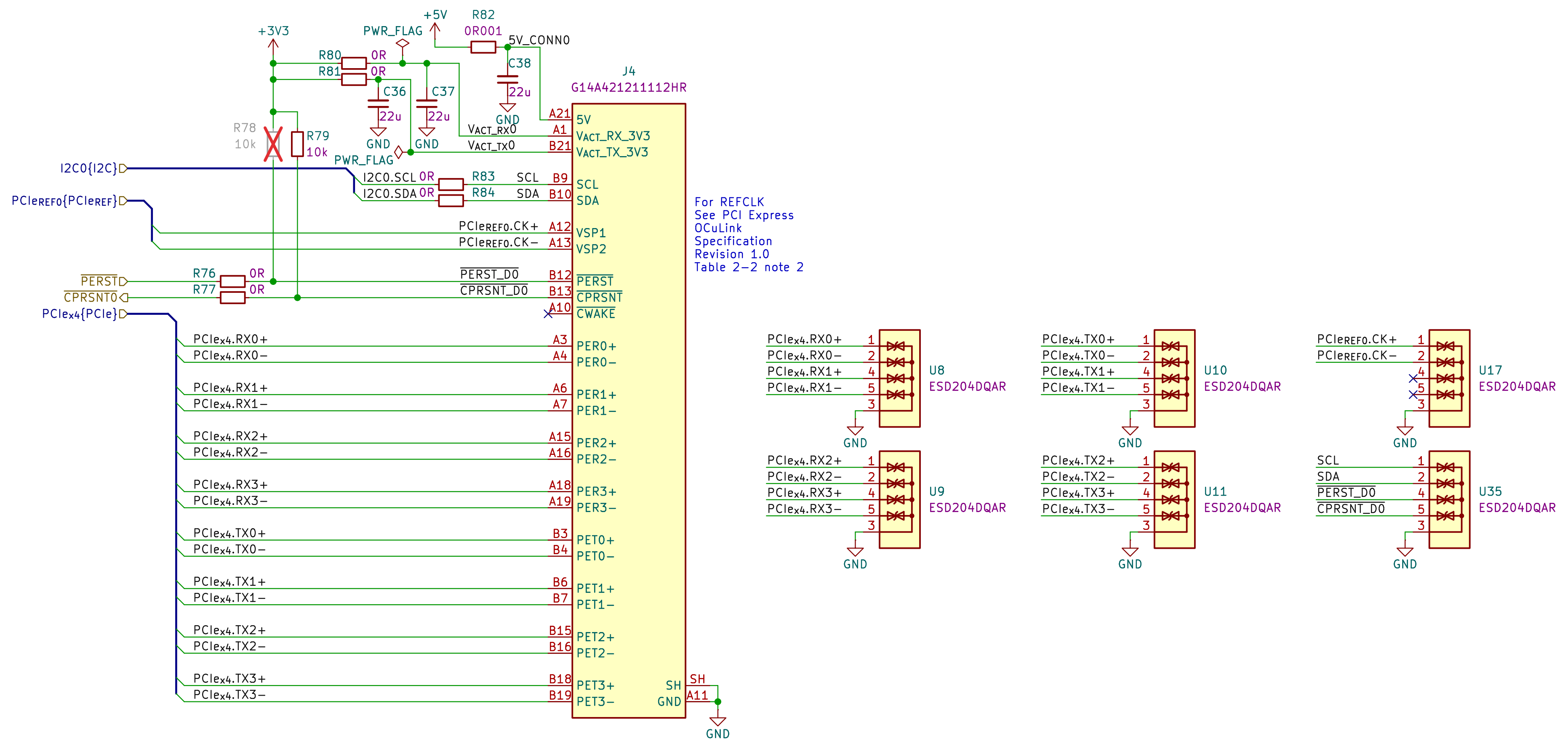
Antmicro Ltd
Sheet: /USB-C console/
File: usb-c_console.kicad_sch

Title: COM Express 7 Baseboard

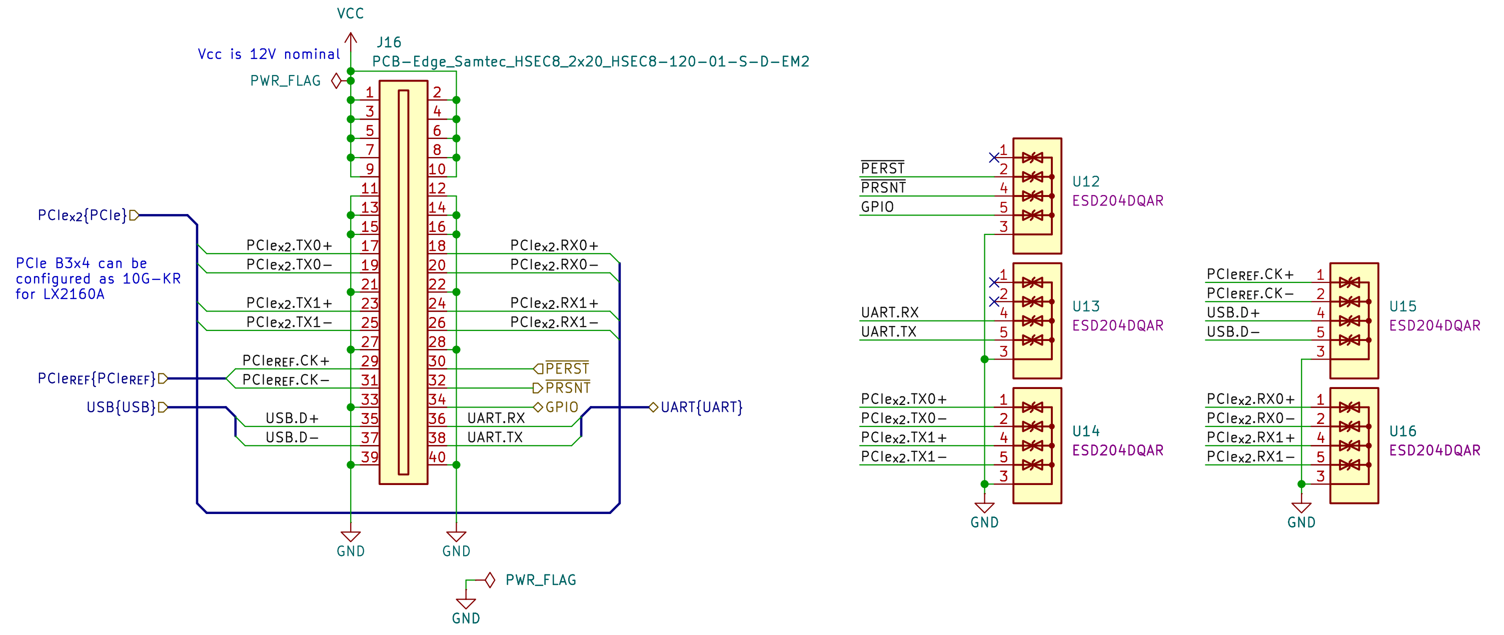
Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 4/19

OCuLink



www.antmicro.com
Antmicro Ltd
Sheet: /OCuLink/
File: oculink.kicad_sch
Title: COM Express 7 Baseboard
Size: A3 Date: 2026-01-26 **Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7 Id: 5/19

Backplane connector



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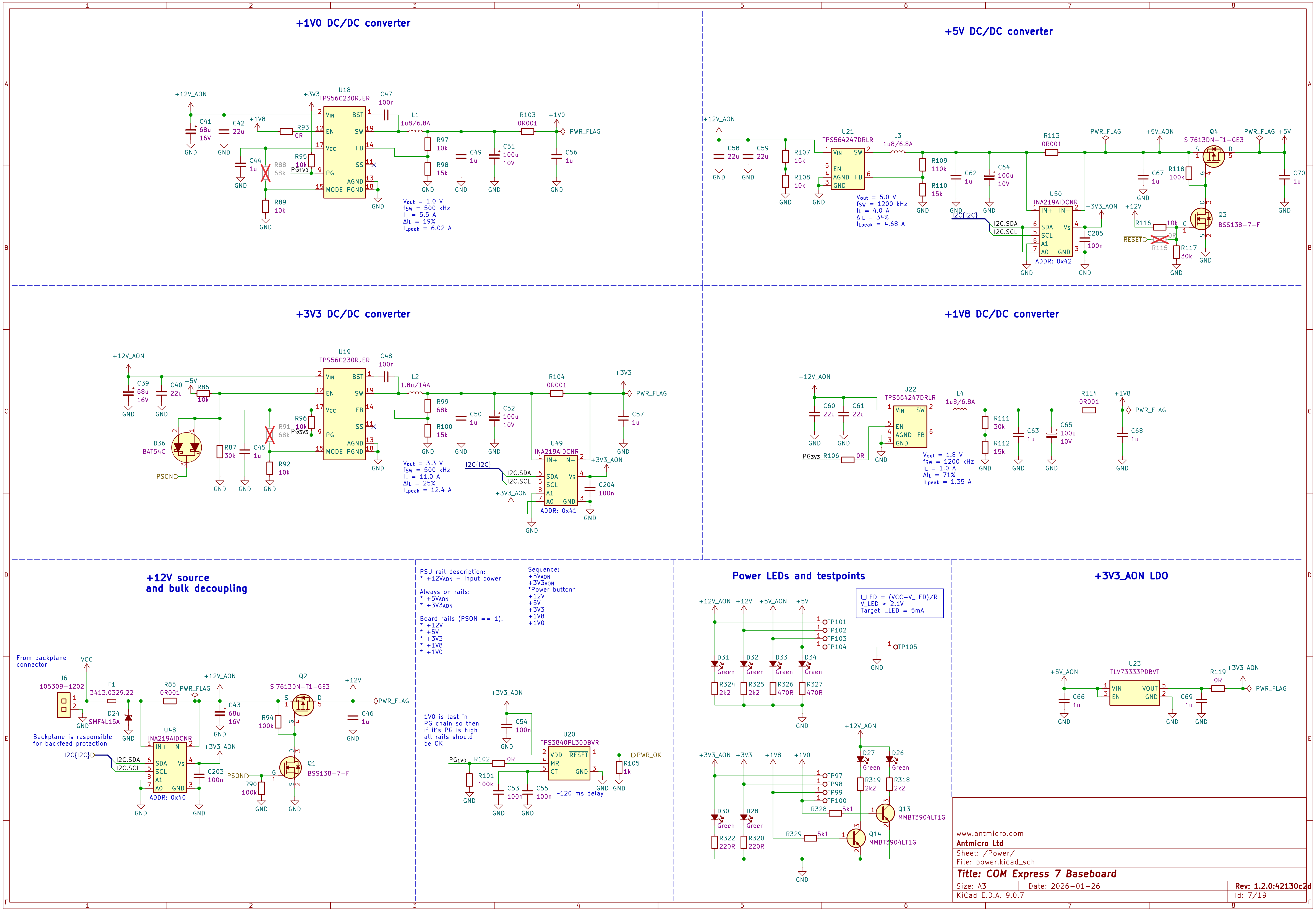
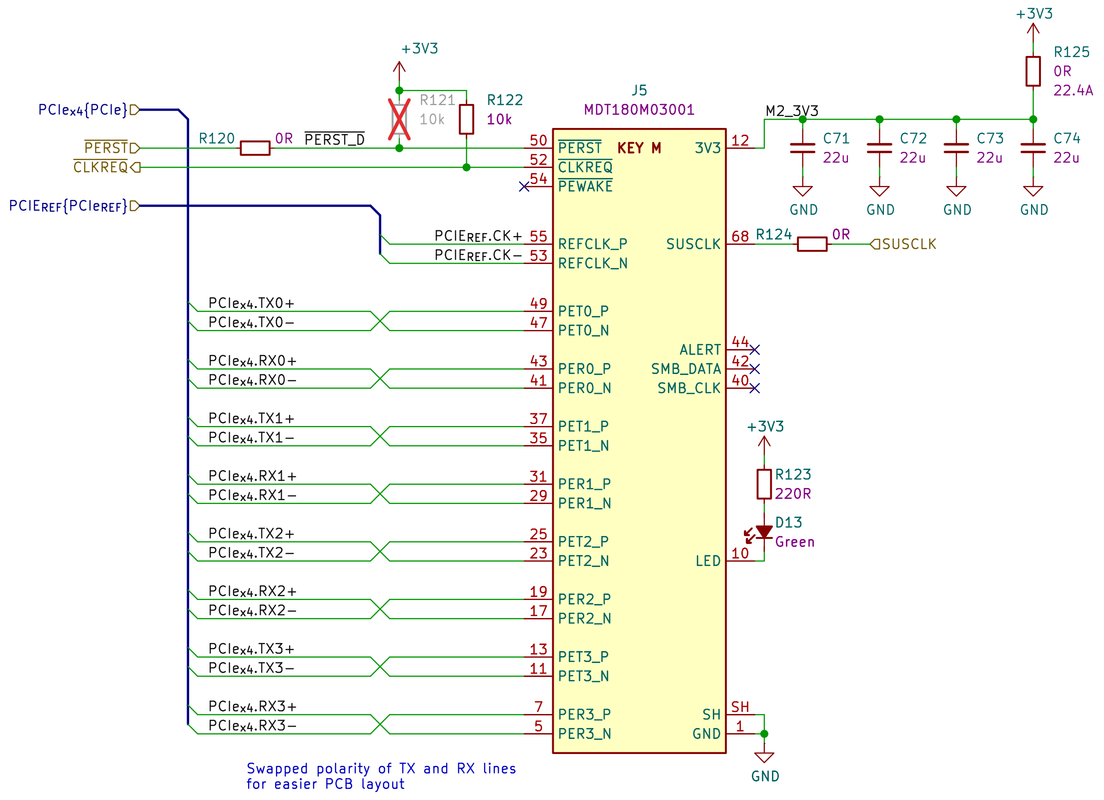
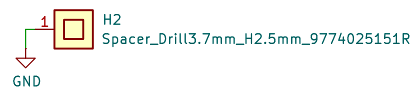
Antmicro Ltd
Sheet: /Backplane/
File: backplane.kicad_sch
Title: COM Express 7 Baseboard
Size: A3 Date: 2026-01-26 **Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7 Id: 6/19


+1V0 DC/DC converter
U18 TPS56C230RJER
Vout = 1.0 V
fsw = 500 kHz
IL = 5.5 A
ΔIL = 19%
ILpeak = 6.02 A
+5V DC/DC converter
U21 TPS564247DRLR
Vout = 5.0 V
fsw = 1200 kHz
IL = 4.0 A
ΔIL = 34%
ILpeak = 4.68 A
U50 INA219AIDCNR
ADDR: 0x42
Q4 SI7613DN-T1-GE3
Q3 BSS138-7-F
+3V3 DC/DC converter
U19 TPS56C230RJER
Vout = 3.3 V
fsw = 500 kHz
IL = 11.0 A
ΔIL = 25%
ILpeak = 12.4 A
U49 INA219AIDCNR
ADDR: 0x41
D36 BAT54C
+1V8 DC/DC converter
U22 TPS564247DRLR
Vout = 1.8 V
fsw = 1200 kHz
IL = 1.0 A
ΔIL = 71%
ILpeak = 1.35 A
+12V source
and bulk decoupling
From backplane
connector
J6 105309-1202
F1 3413.0329.22
D24 SMF4L15A
Backplane is responsible
for backfeed protection
U48 INA219AIDCNR
ADDR: 0x40
Q2 SI7613DN-T1-GE3
Q1 BSS138-7-F
PSU rail description:
* +12VAON - Input power
Always on rails:
* +5VAON
* +3V3AON
Board rails (PSON == 1):
* +12V
* +5V
* +3V3
* +1V8
* +1V0
Sequence:
+5VAON
+3V3AON
Power button
+12V
+5V
+3V3
+1V8
+1V0
1V0 is last in
PG chain so then
if it's PG is high
all rails should
be OK
U20 TPS3840PL30DBVR
~120 ms delay
Power LEDs and testpoints
I_LED = (VCC-V_LED)/R
V_LED ≈ 2.1V
Target I_LED = 5mA
Q13 MMBT3904LT1G
Q14 MMBT3904LT1G
+3V3_AON LDO
U23 TLV73333PDBVT
www.antmicro.com
Antmicro Ltd
Sheet: /Power/
File: power.kicad_sch
Title: COM Express 7 Baseboard
Size: A3
Date: 2026-01-26
Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7
Id: 7/19

M.2 key M





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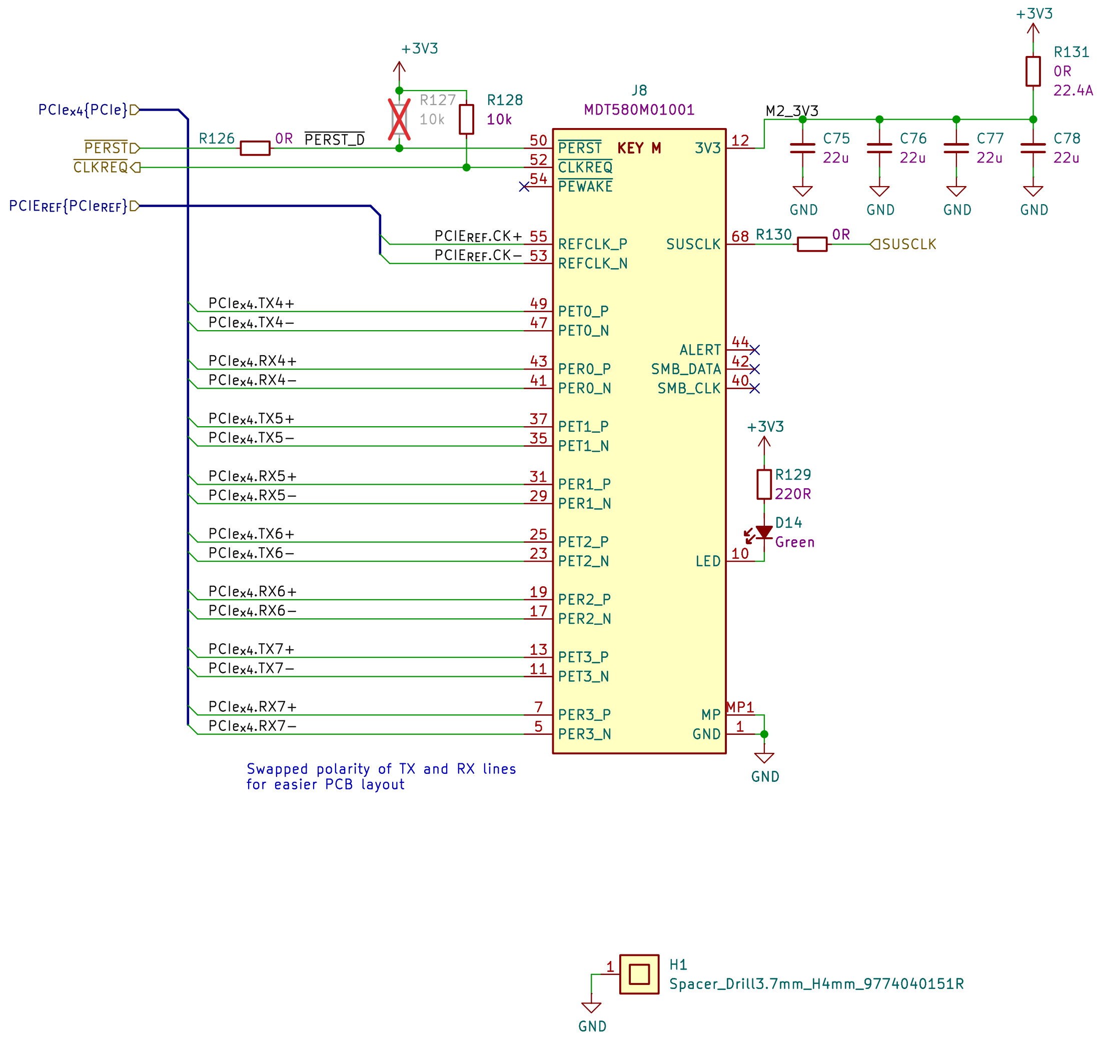
Antmicro Ltd
Sheet: /M.2 key M #1/
File: m2keym_low.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 8/19

M.2 key M



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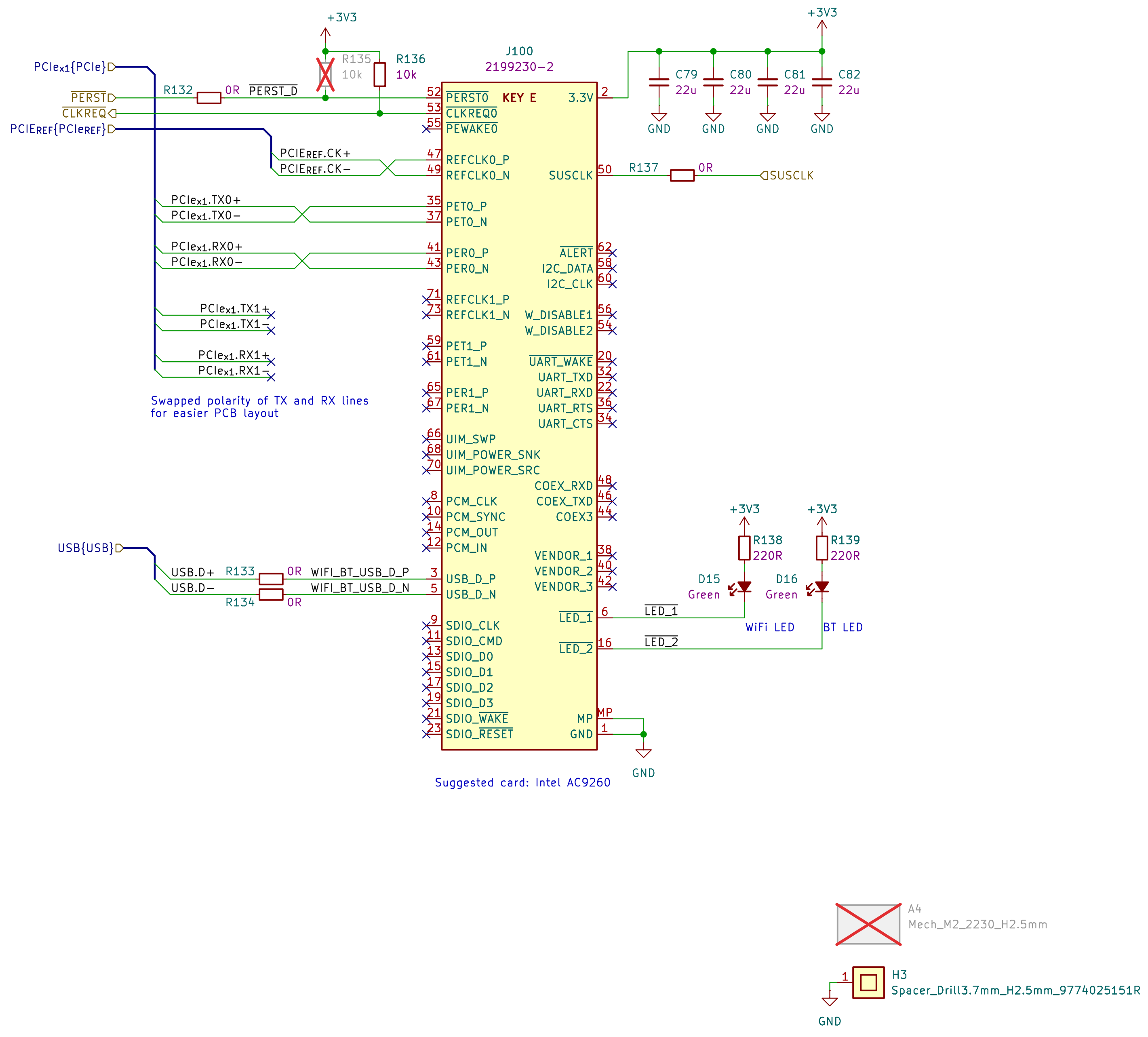
Antmicro Ltd
Sheet: /M.2 key M #2/
File: m2keym.kicad_sch

Title: COM Express 7 Baseboard

Size: A3 | Date: 2026-01-26 | **Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7 | Id: 9/19

M.2 key E



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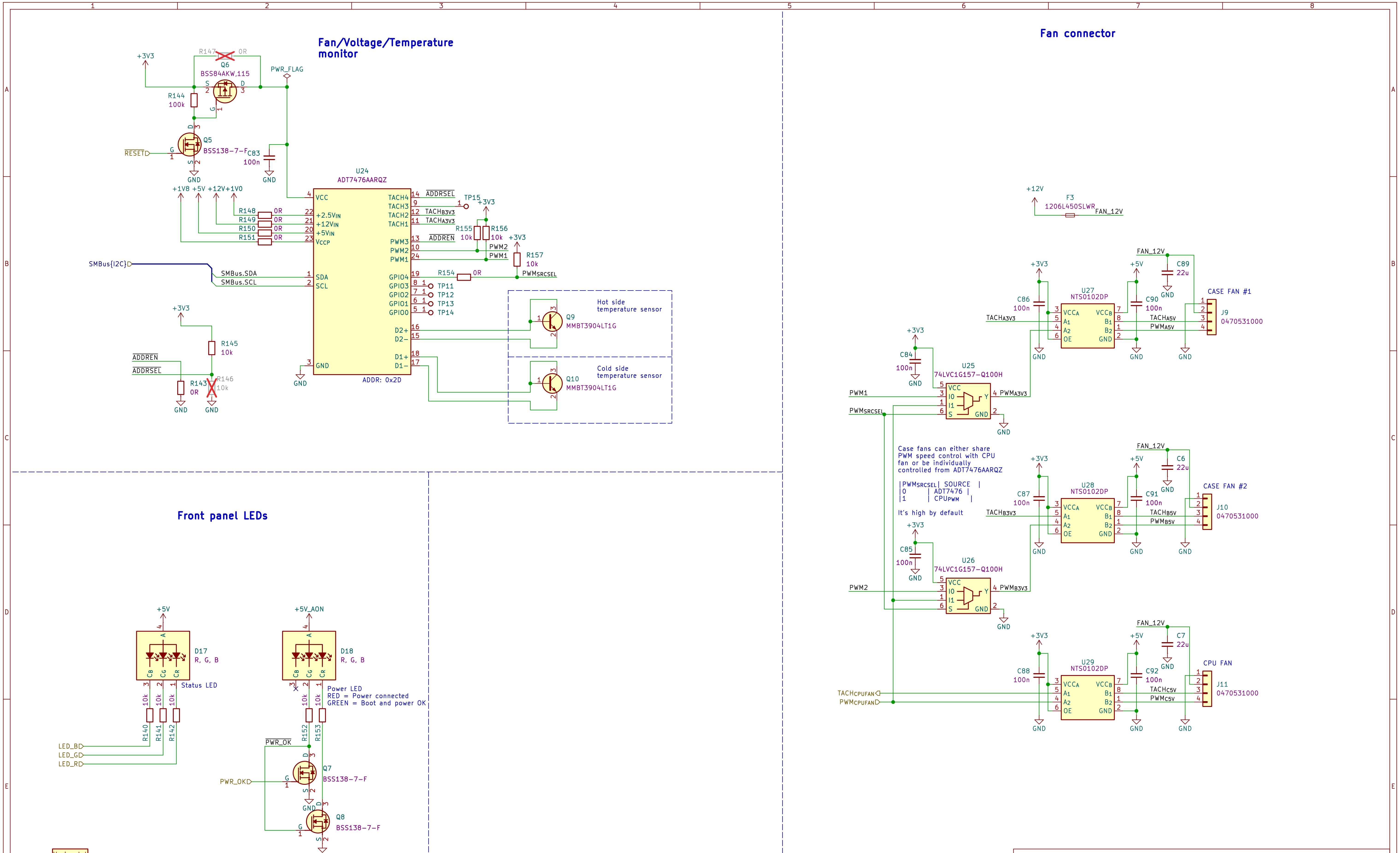
Antmicro Ltd
Sheet: /M.2 key E/
File: m2keye.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 10/19



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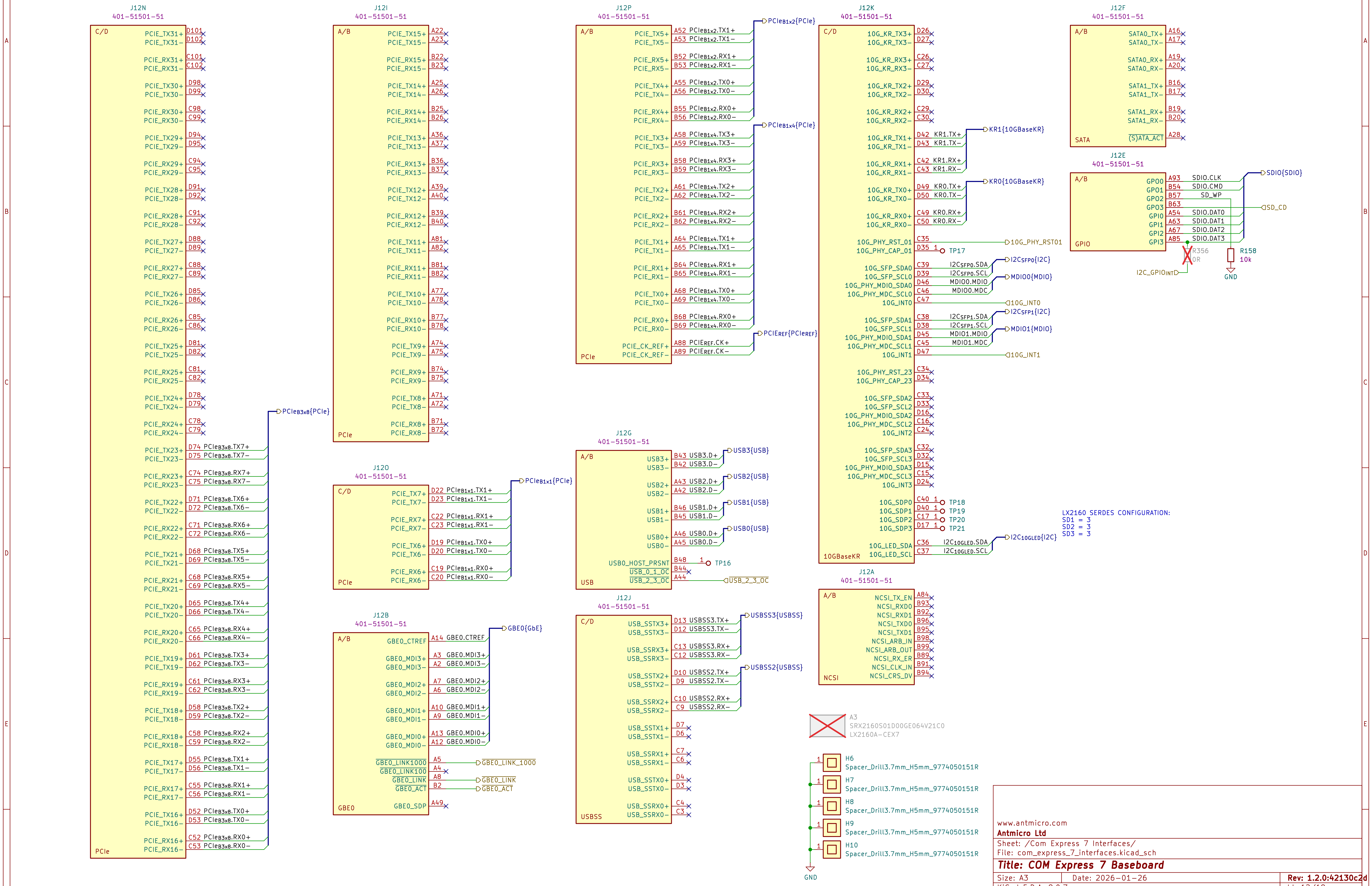
Antmicro Ltd
Sheet: /Misc/
File: misc.kicad_sch

Title: COM Express 7 Baseboard

Size: A3 Date: 2026-01-26 Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7 Id: 11/19

COM Express 7 interfaces



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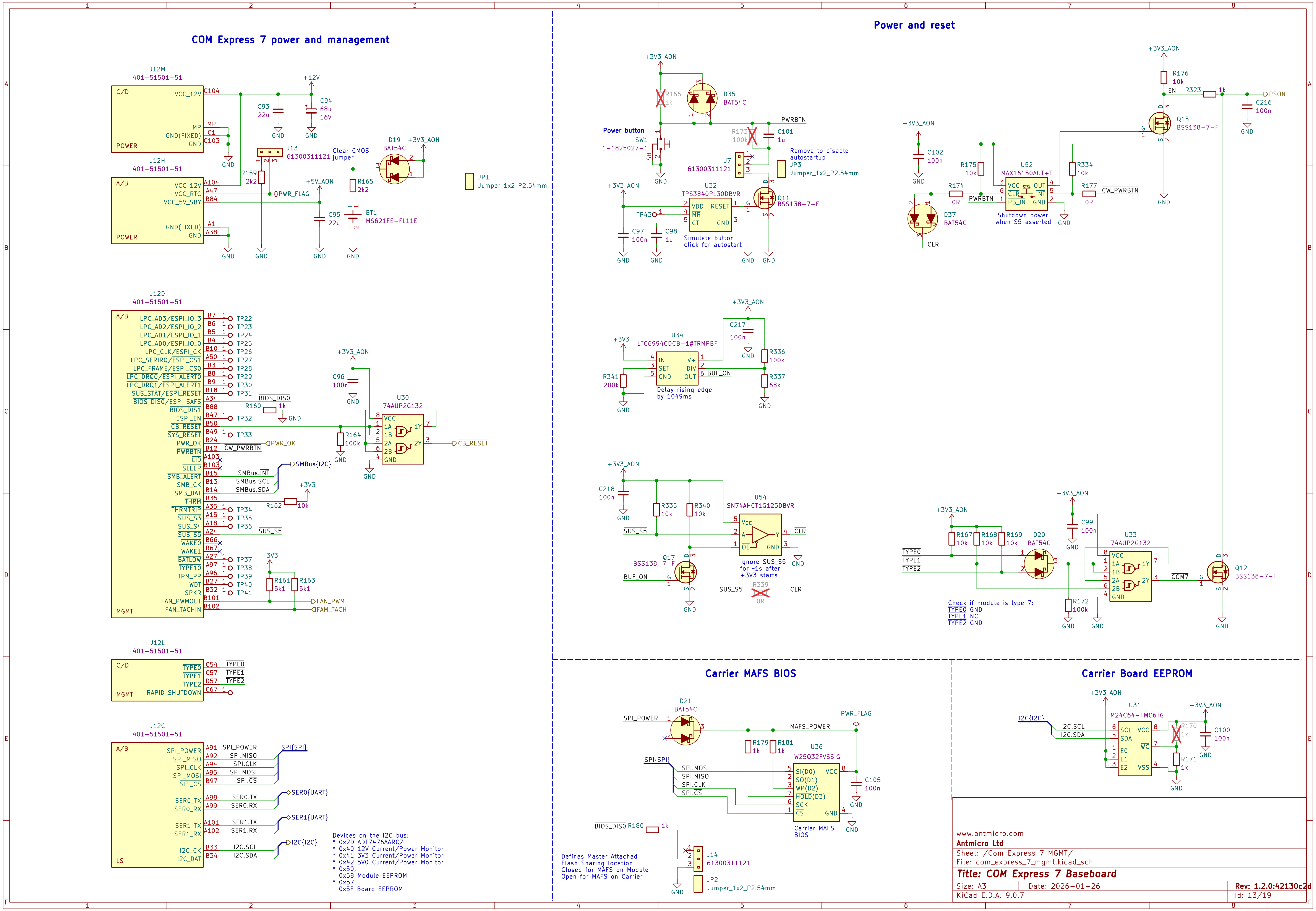
Antmicro Ltd
Sheet: /Com Express 7 Interfaces/
File: com_express_7_interfaces.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7		Id: 12/19



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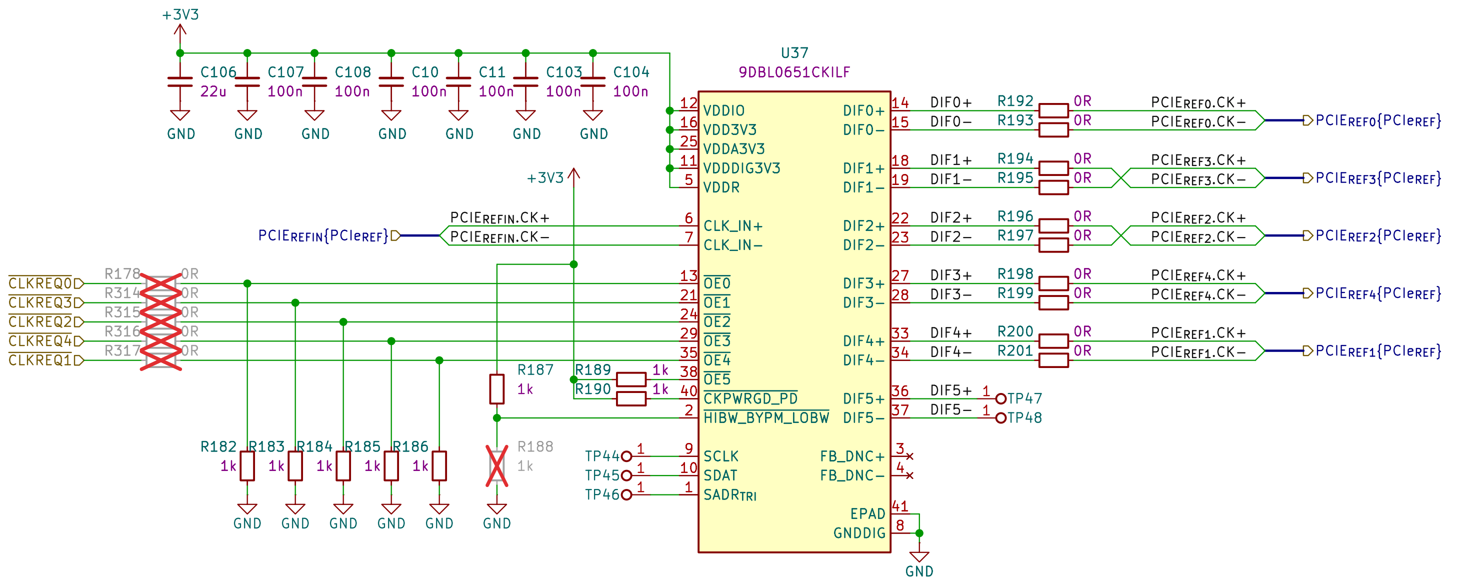
Antmicro Ltd
Sheet: /Com Express 7 MGMT/
File: com_express_7_mgmt.kicad_sch

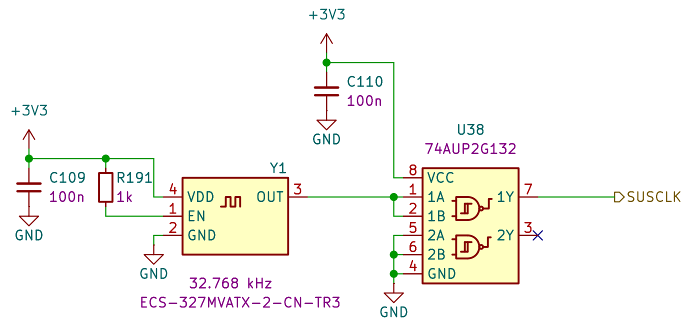
Title: COM Express 7 Baseboard

Size: A3 Date: 2026-01-26 Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7 Id: 13/19

PCIe clock fanout buffer



SUSCLK generator



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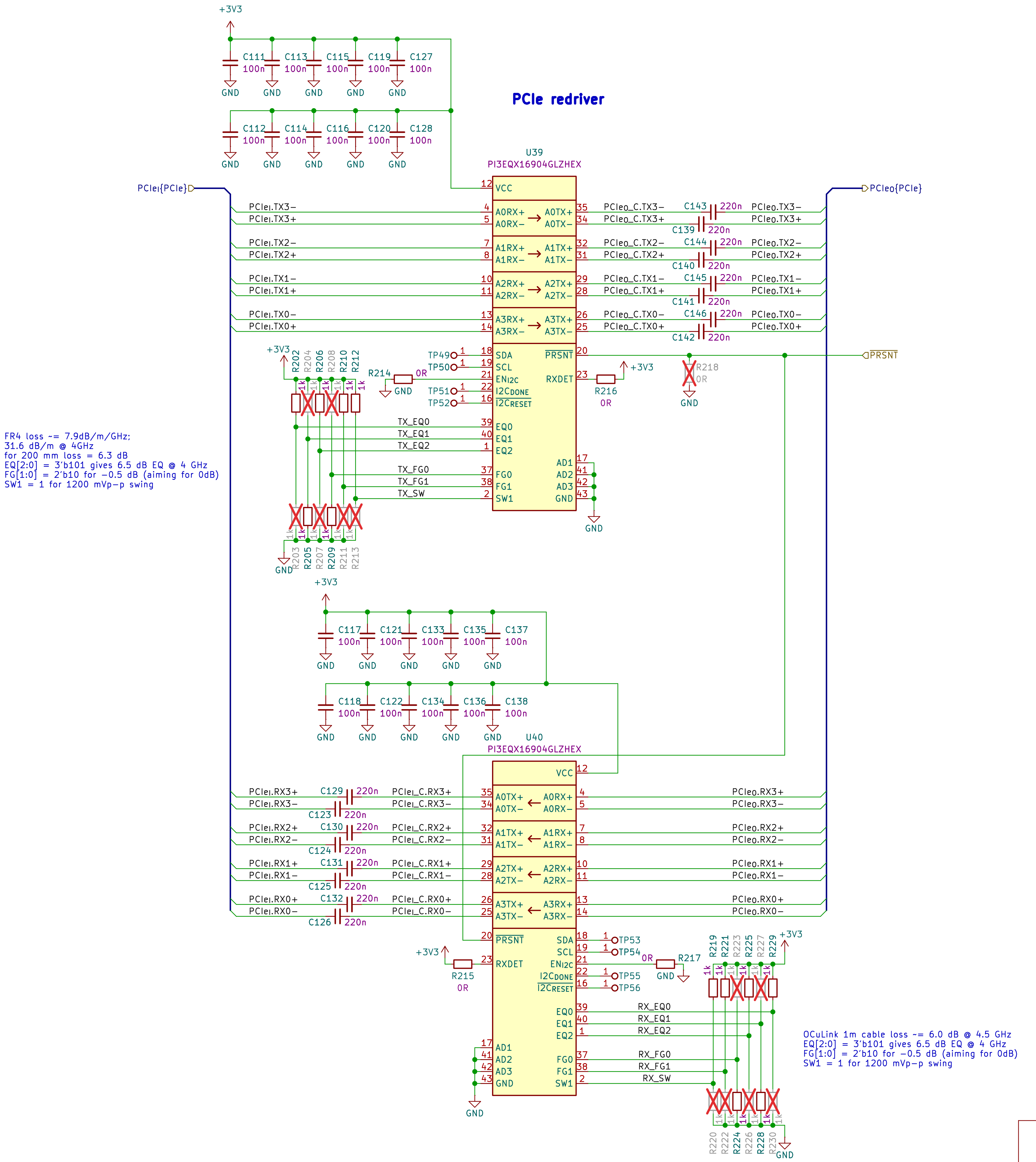
Antmicro Ltd
Sheet: /PCIe misc/
File: pcie_misc.kicad_sch
Title: COM Express 7 Baseboard
Size: A3 Date: 2026-01-26 Rev: 1.2.0:42130c2d
KiCad E.D.A. 9.0.7 Id: 14/19

PCIe redriver



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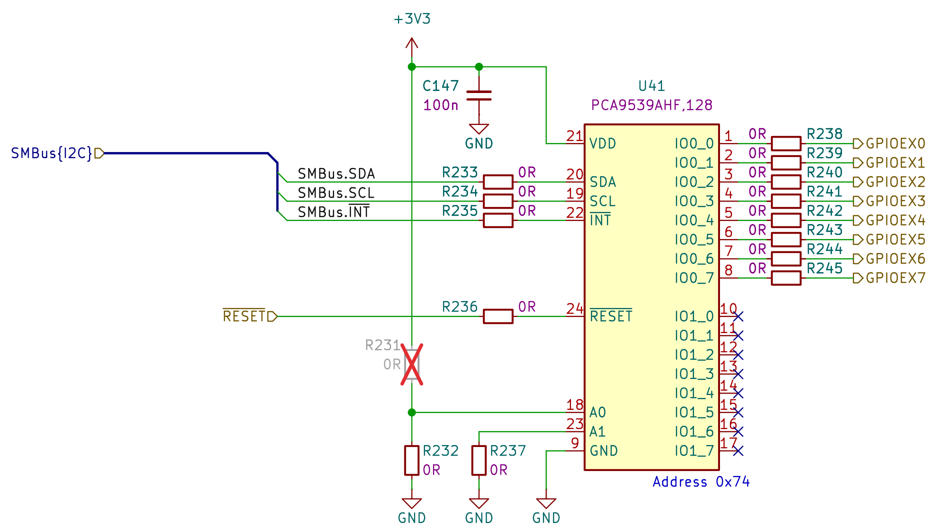
Antmicro Ltd
Sheet: /PCIe redriver/
File: pcie_redriver.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	**Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7		Id: 15/19

GPIO expander

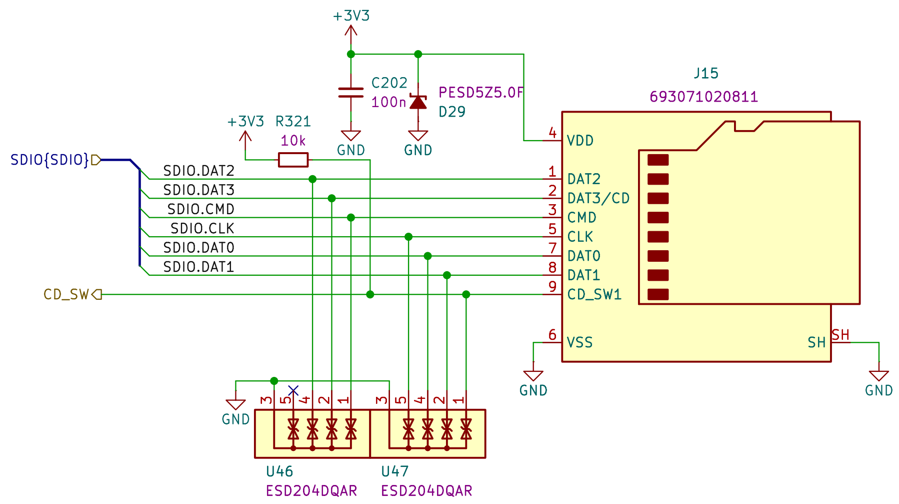


www.antmicro.com
Antmicro Ltd
Sheet: /GPIO expander/
File: gpio_exp.kicad_sch

Title: COM Express 7 Baseboard

Size: A3	Date: 2026-01-26	**Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7		Id: 16/19

SD card connector



www.antmicro.com
Antmicro Ltd
Sheet: /SD card/
File: sd_card.kicad_sch

Title: COM Express 7 Baseboard

Size: A3 | Date: 2026-01-26 | **Rev: 1.2.0:42130c2d**
KiCad E.D.A. 9.0.7 | Id: 19/19