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Revision History

| Rev | Description | Date | Approved/Designer |
|-----|--|------------|-------------------|
| X | Initial Schematic | 07/2021 | Jesús Sánchez |
| X1 | A055 Released | 07/2021 | |
| X1 | A070 Released | 07/2021 | Jesús Sánchez |
| X2 | 0ohm res added, ThruHole TP added on VTRKx nets. | 07/2021 | Jesús Sánchez |
| A | A085 Released | 08/13/2021 | Jesús Sánchez |
| B | D18 added, R602 deleted | 09/2021 | Jesús Sánchez |



XS32K312EVB-Q172

Customer Evaluation Board

CAUTION:

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3 Different test points used in design:

TPVx - Through Hole Pad small



TPHx - Through Hole Pad Large (for standard 0.1" header). Also used on IO Matrix (IOMx)



TPX - Surface Mount Wire Loop



Notes:

- All components and board processes are to be ROHS compliant
- All connectors and headers are denoted Jx/Fx and are 2.54mm pitch unless otherwise stated
- All jumpers are denoted Jx. Jumpers are 2mm pitch
- Jumper default positions are shown in the schematics. For 3 way jumpers, default is always posn 1-2.
- 2 Pin jumpers generally have the "source" on pin 1.
- All switches are denoted SWx
- All test points (SMT wire loop style) are denoted TPx
- Test point Vias (just through hole pads) are denoted TPVx

Signals (ports) have not been routed via busses as this makes it harder to determine where each signal goes.

User notes are given throughout the schematics.

Specific PCB LAYOUT notes are detailed in **ITALICS**

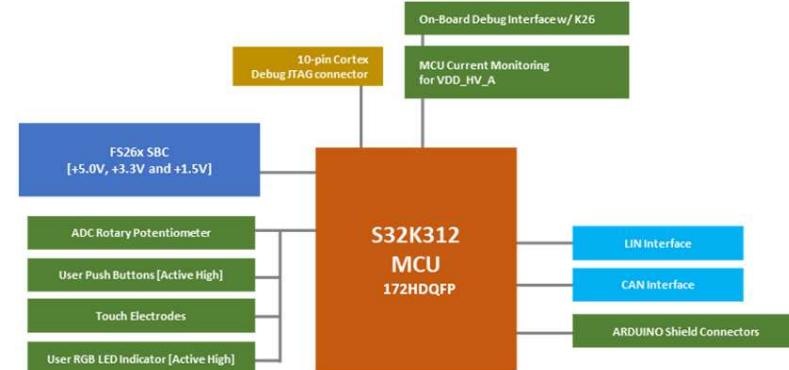
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| Date: Tuesday, September 14, 2021 | | Sheet 1 of 10 | |

1. DNP Table

| REF DES | ASSY OPT | PAGE NAME |
|---|----------|-------------------------------|
| R1940,J14,J10,J413,R1319,J15, J400,R27,R31,R1320,J11,J414, J2 | DNP | 03. FS26 |
| R88,C113,TP88,C88,C127,J7, C3865,R89,J31,C91,R78,J13, TP114,R94,TP80,R79,R85,C115, TP253,U71,R80,R108,J15,C116, R81,R305,Q6,R72,R82,R1090, TP116,J19,R1973,U6,R1985,R86, R73,C109,R1091,R1971,C87, C268,C84,C94,TP84,R615,C111, R1051,TP85,C95,R1981,R333, C128,R107,C266,C3864,C86,R60, R77,R349,R1983,C267,TP87 | DNP | 04. MCU PWR |
| R2082,R1975,R130,R1240,R1108, R2178,R2175,R2081,R1979 | DNP | 05. MCU PORTS1 |
| R200,R1949,R1950,R146 | DNP | 06. JTAG/SWD/CORTEX DEBUG+ETM |
| R260,J3,R1958,R202,R593,R240, J689,R1959,R594,R595,R592, C172,J682,R257,R254,R596 | DNP | 07. OPENDSA K26 |
| R1331,R1205,R1202,C150,R1885, R2037,C3839,C3876,R1333,C149 J411 | DNP | 08. CAN/LIN PHY |
| R2150,R1816,R2084,R2088, R1965,R2168,R1814,R2180, R2012,R1963,R1810,R2148, R2152,R2171,R2156,R2078, R2077,R2021,R2161,R1811, R2172,R2158,R2169,R2174, R2164,R2022,R2151,R2162, R2173,R2166,R1967,R2182, R2079,R2167,R2152 | DNP | 09. USER PERIPHERALS |
| | DNP | 10. ARDUINO HDRS |

2. Jumper Default configuration

| REF DES | JUMPER(DEFAULT) | PAGE NAME |
|--------------------|-----------------|-----------------|
| J26 | 1-2 Closed | 03. FS26 |
| J22,J1,J5 | 1-2 | 03. FS26 |
| J30 | OPEN | 03. FS26 |
| J18,J10 | 1-2 Closed | 04. MCU PWR |
| J9,J8 | 1-2 | 04. MCU PWR |
| J7,J31,J13,J15,J19 | OPEN | 04. MCU PWR |
| J44 | OPEN | 07. OPENDSA K26 |
| J20,J24 | OPEN | 08. CAN/LIN PHY |



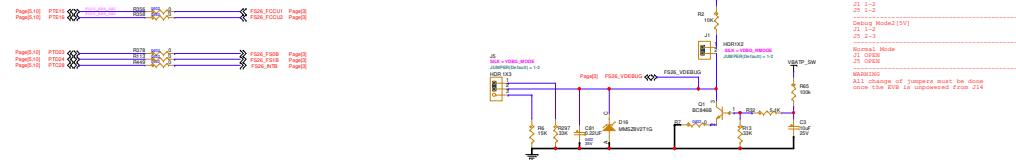
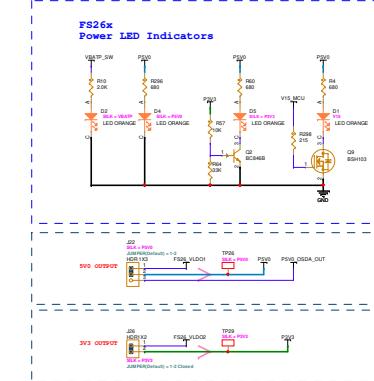
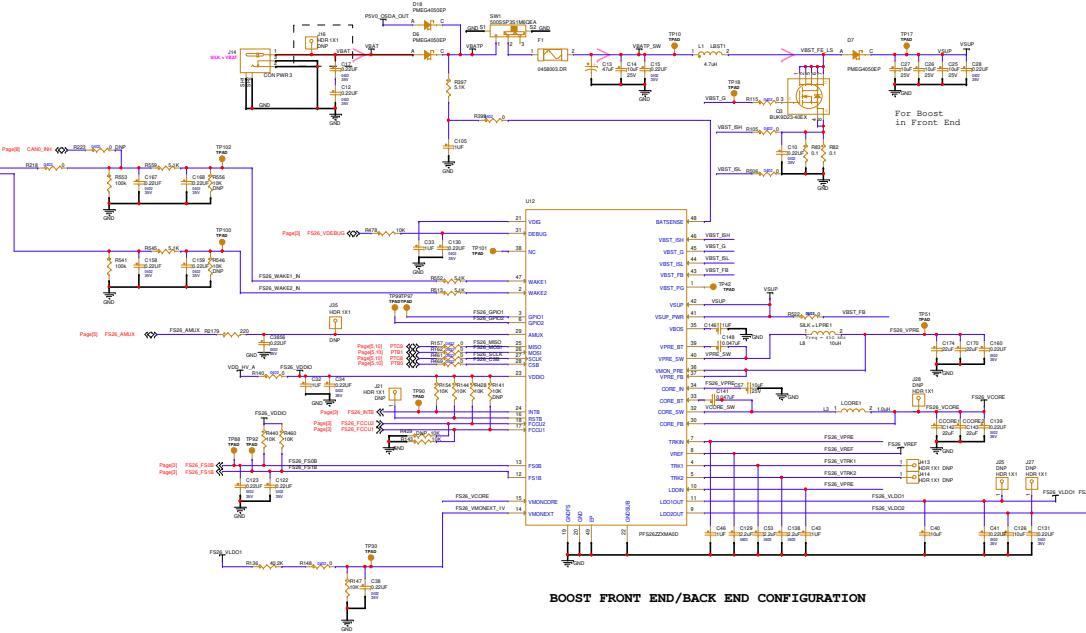
S32K312 172HDQFP [DEFAULT CONFIG]
 POPULATED
 R417, R401, R482, R483,
 R1978, R1980, R2277
 REMOVED
 R1975, R1979, R2178, R467, R483,
 R481, R422,
 C154, C155, C156, C157, C158, C159, C160,
 R551, T945, J31, J8, C19, C156,
 C157, C158, C159, C160, C161, C162,
 J15, J19, R349

S32K3x4 172HDQFP
 POPULATED
 R1975, R1979, R2178, R467, R483,
 R481, R422,
 C154, C155, C156, C157, C158, C159, C160,
 R551, T945, J31, J8, C19, C156,
 C157, C158, C159, C160, C161, C162,
 J15, J19, R349
 REMOVED
 R417, R401, R482, R483,
 R1978, R1980, R2277

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FS26 - Power Supply

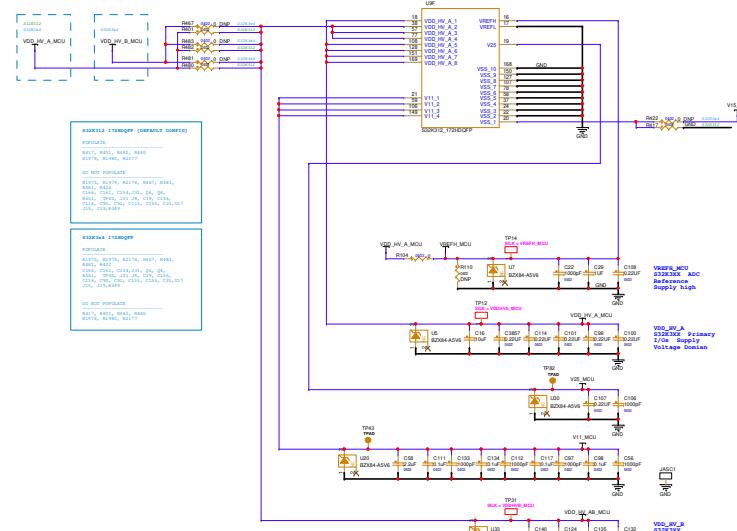
SMPS-based SBC



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S32K312 Microcontroller - 172HDQFP

Power Supply Pins



MCU Current/Voltage Monitoring for VDD_HV_A - S32K3x4 172HDQFP and S32K312 172HDQFP

J28 HDR1X3
J29 HDR1X3
P200 P201
P202 P203
VDD_HV_A
S32K3X4 Primary I/O Supply Voltage Domain

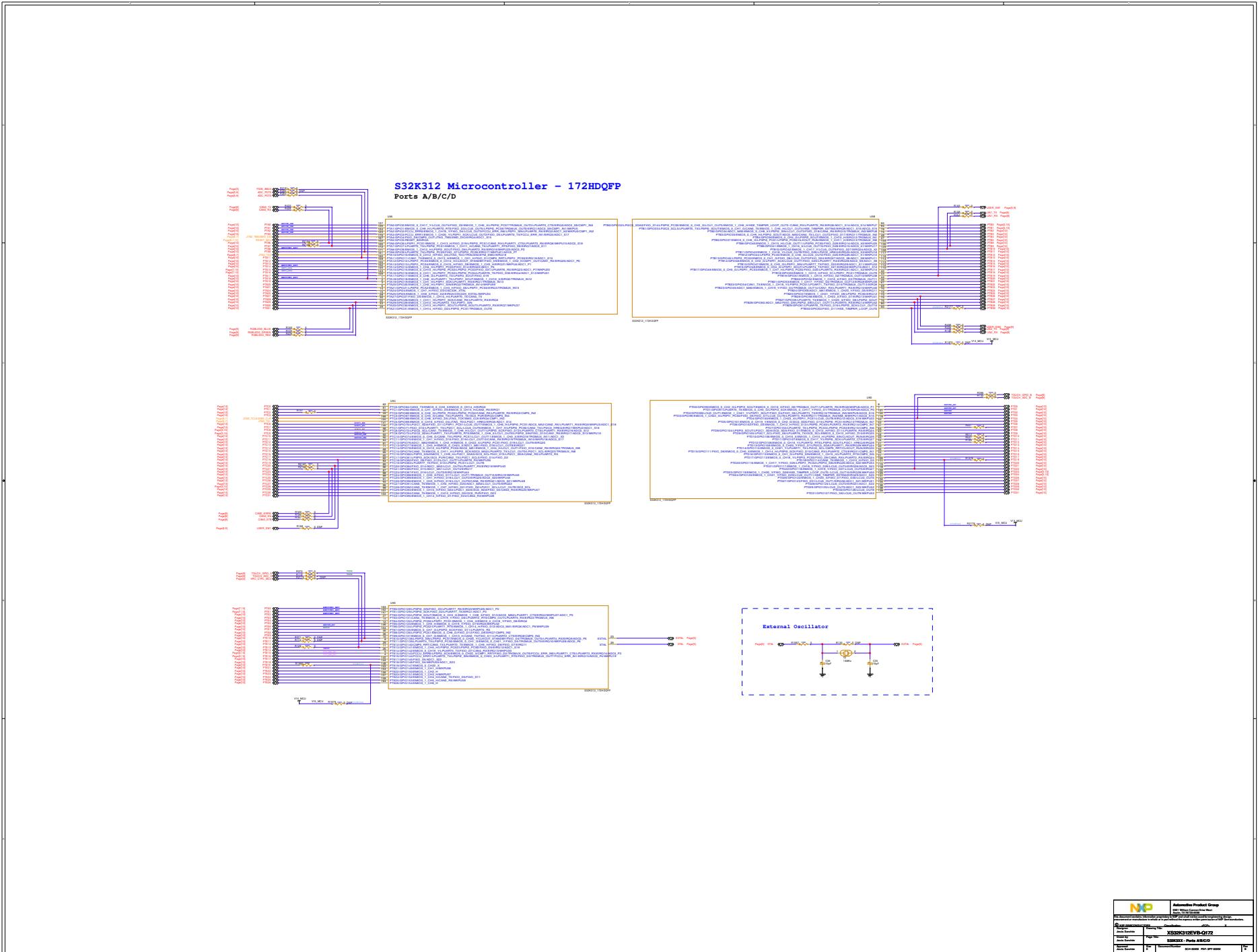
MCU Current/Voltage Monitoring for VDD_HV_B - S32K3x4 172HDQFP [only]

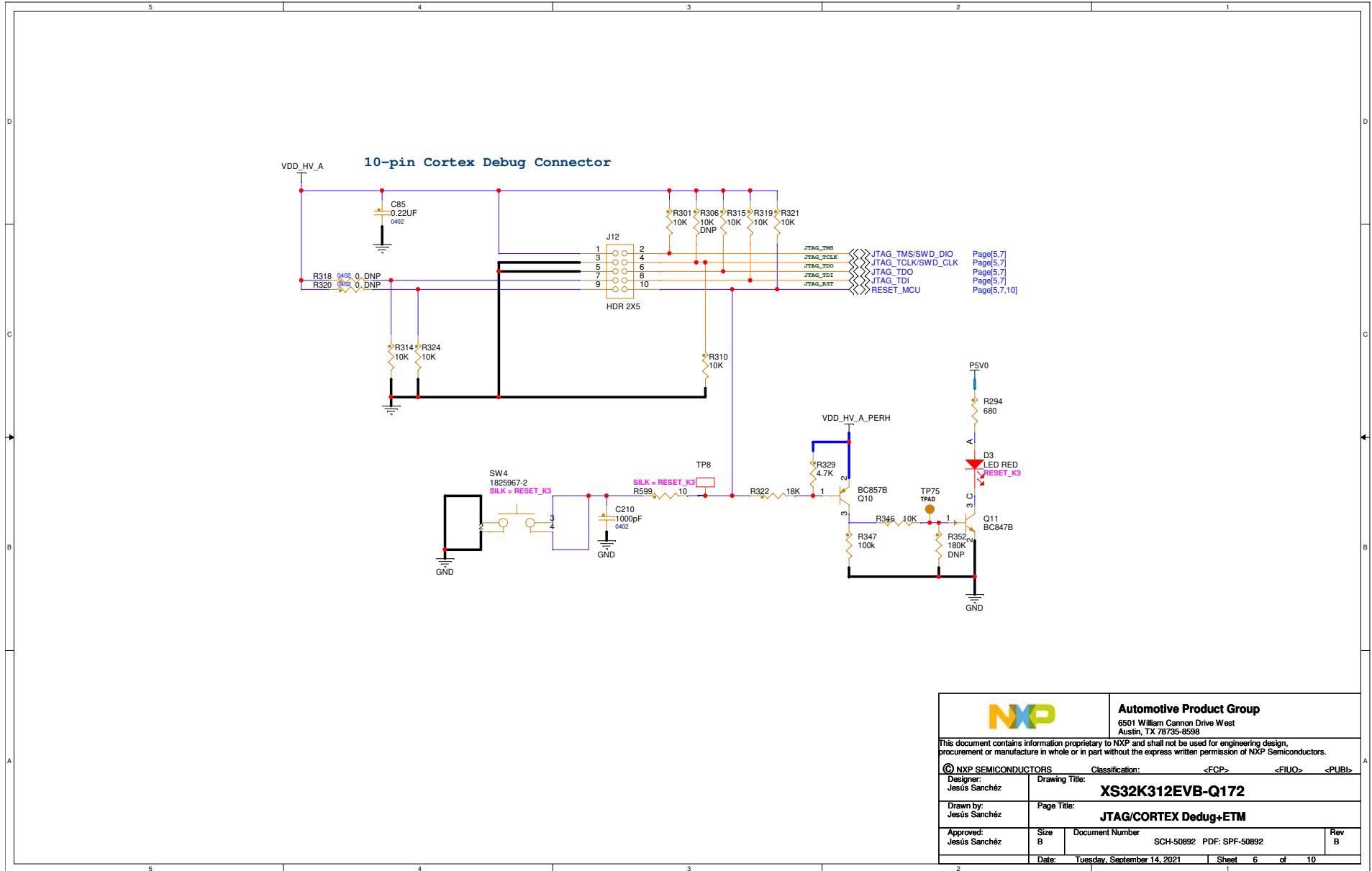
J28 HDR1X3
J29 HDR1X3
P200 P201
P202 P203
VDD_HV_B
S32K3X4 Secondary I/O Supply Voltage Domain

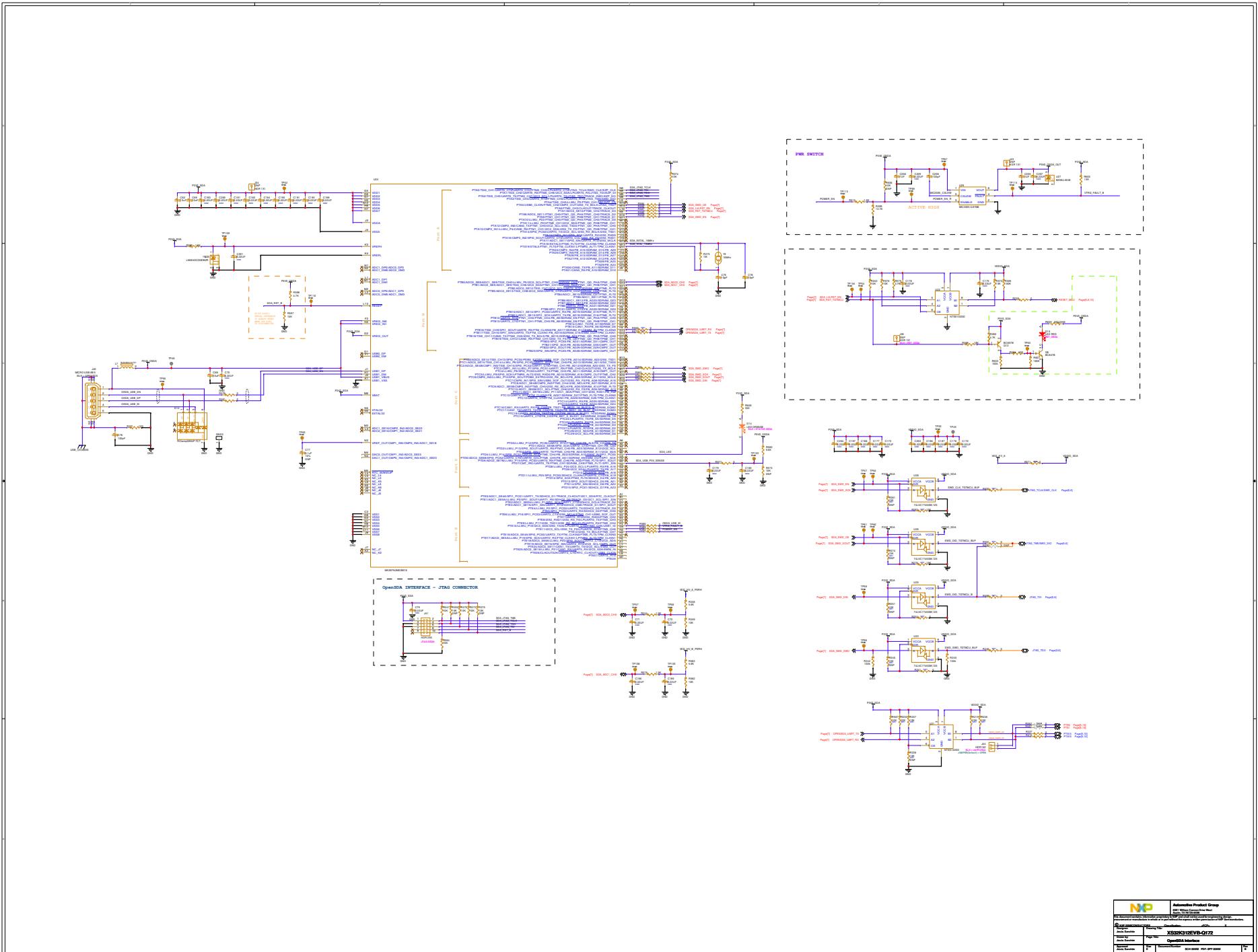
External NPN Ballast transistor for S32K3x4 172HDQFP [only]

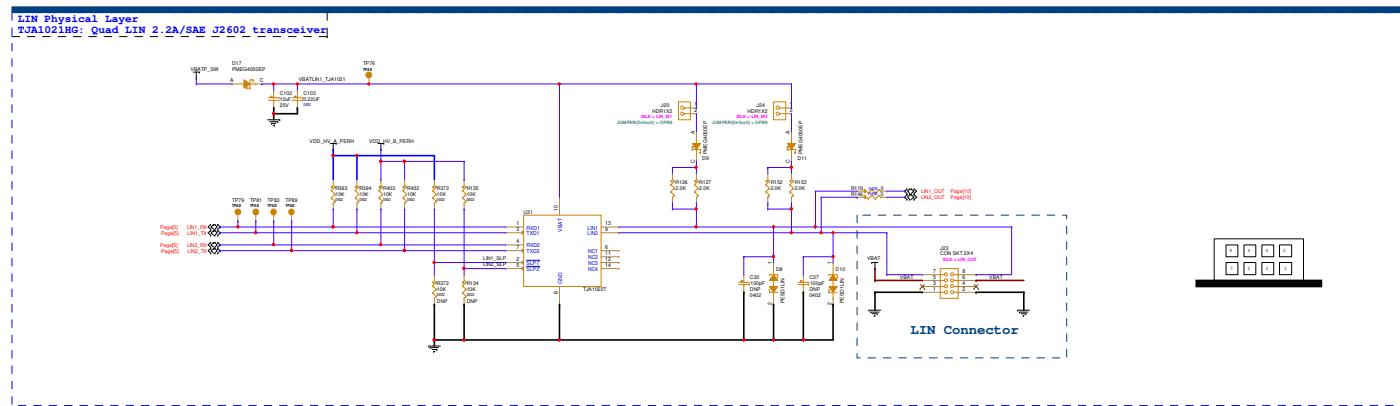
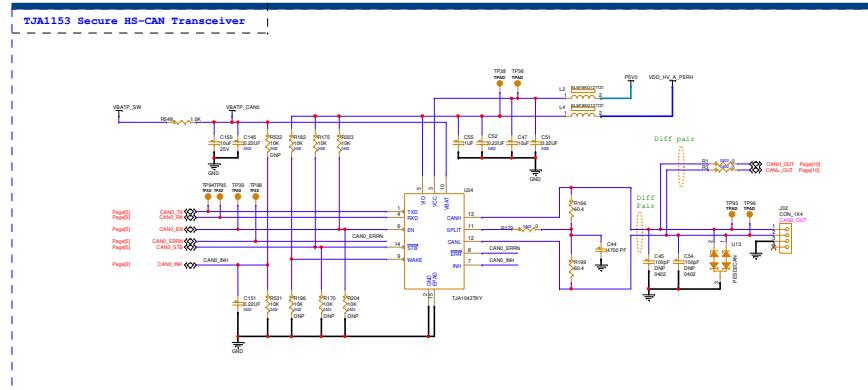
P202 VIL_CTRL_MCU
VDD_HV_A_MCU
VDD_HV_R_MCU
VDD_MCU
VIL_MCU
External S32K3X4 Internal Core Logic Voltage Supply

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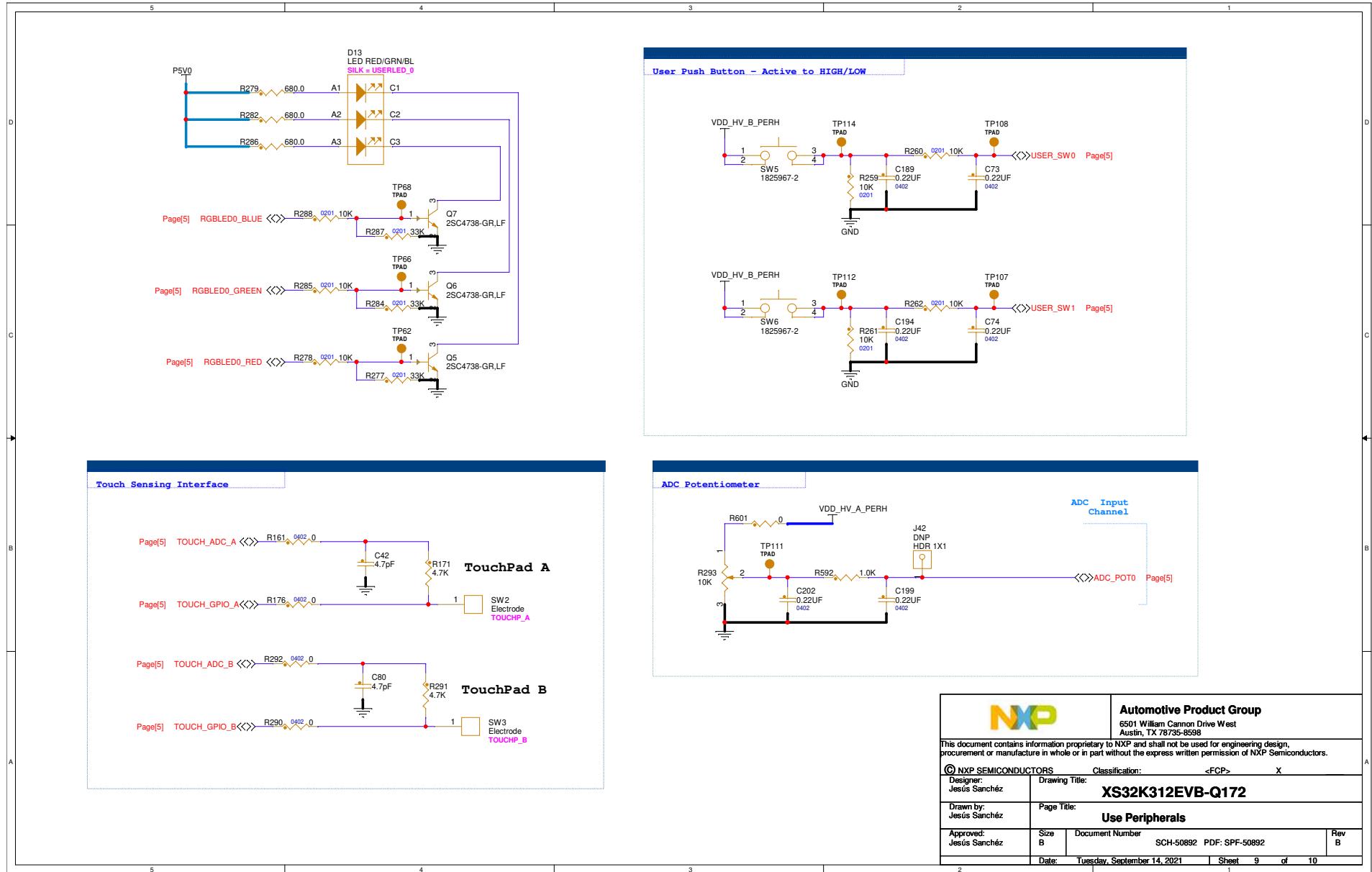


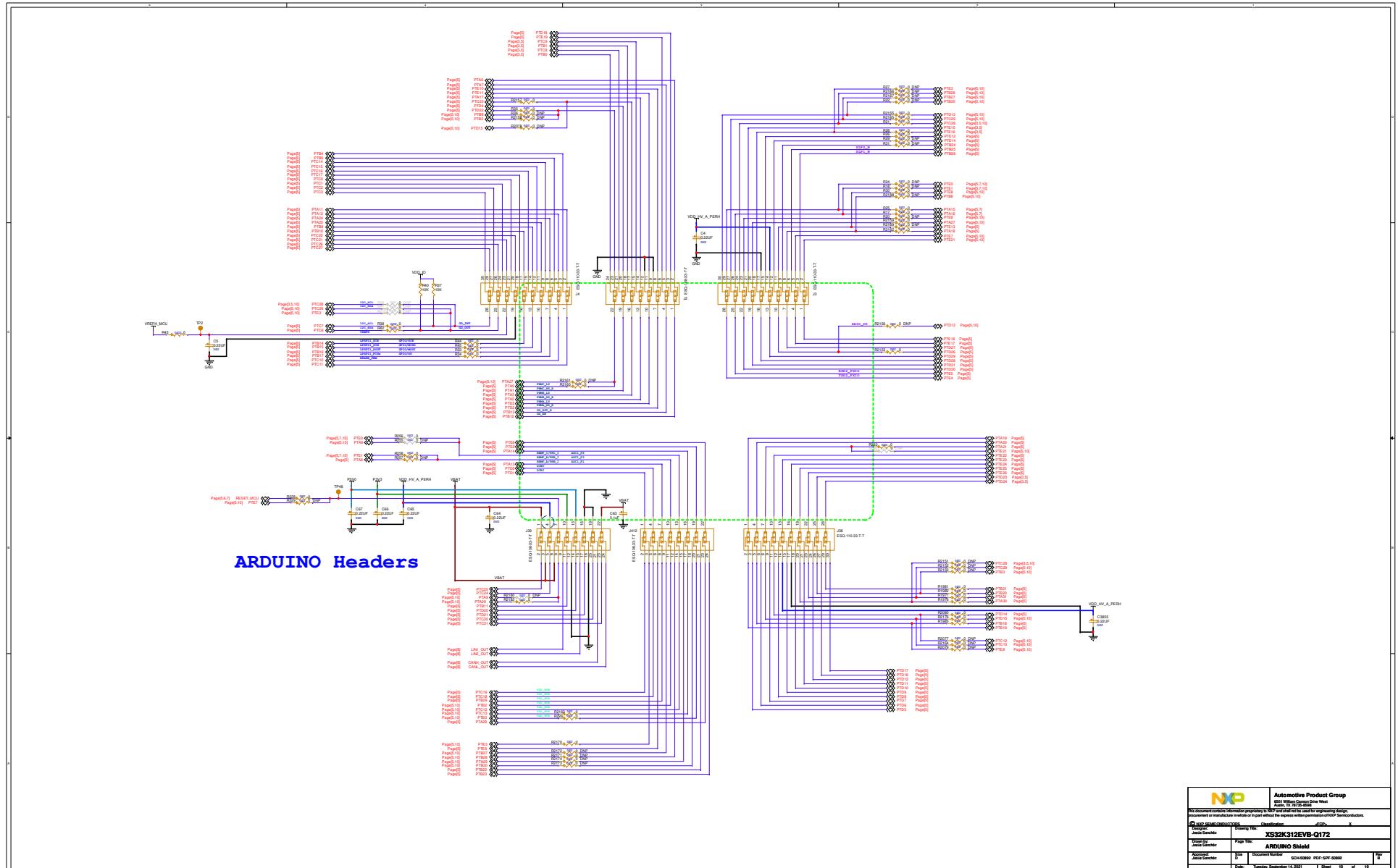




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