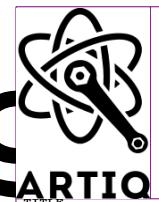
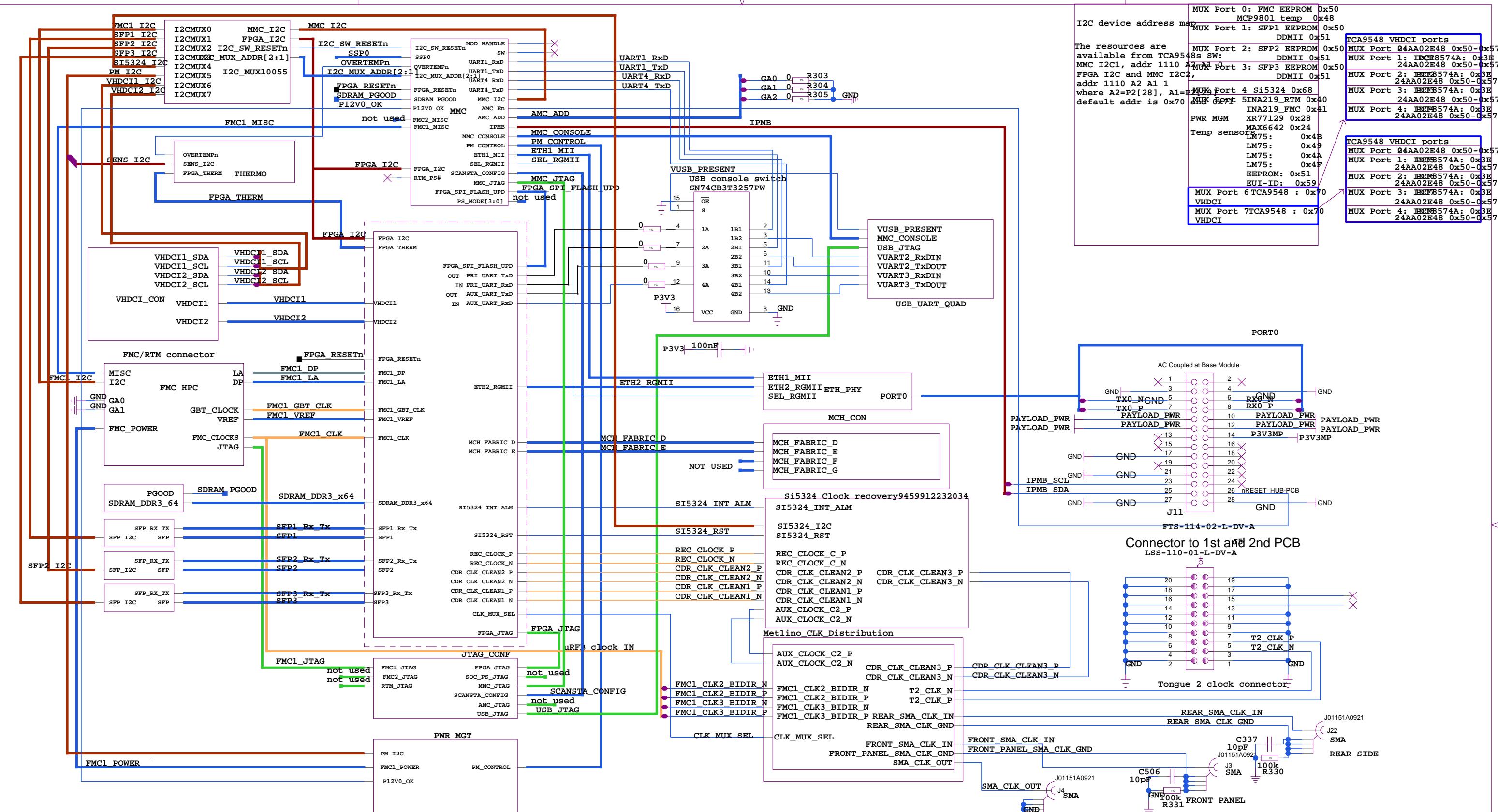


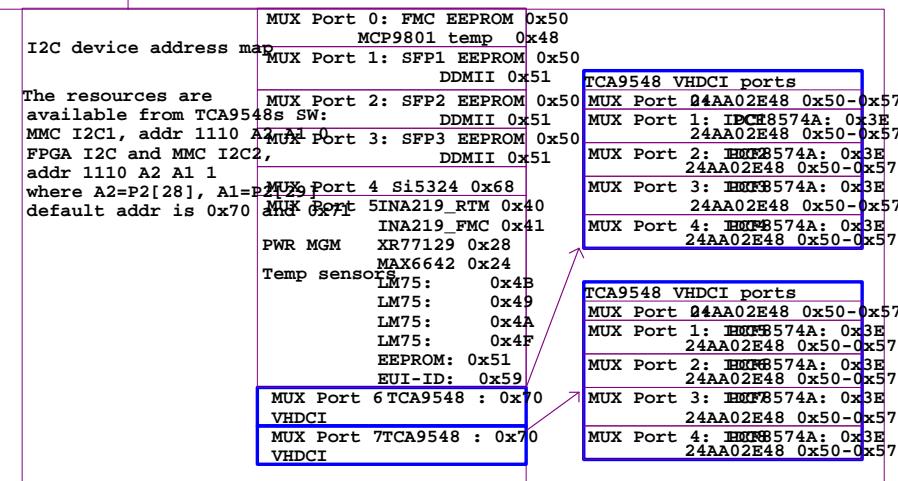
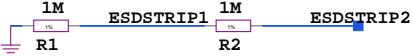
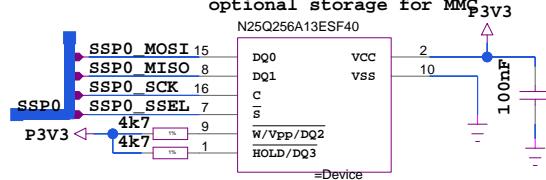
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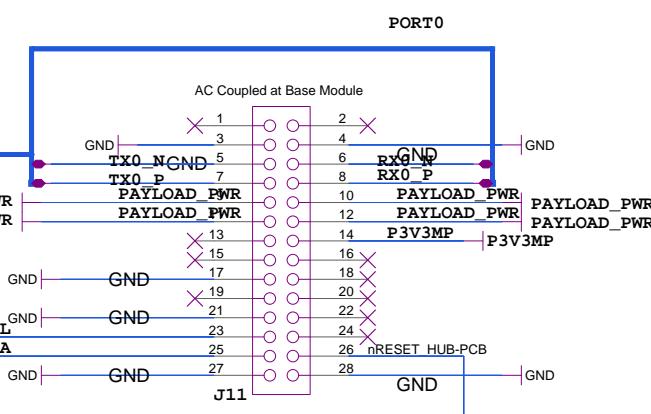
Metlino_MCH



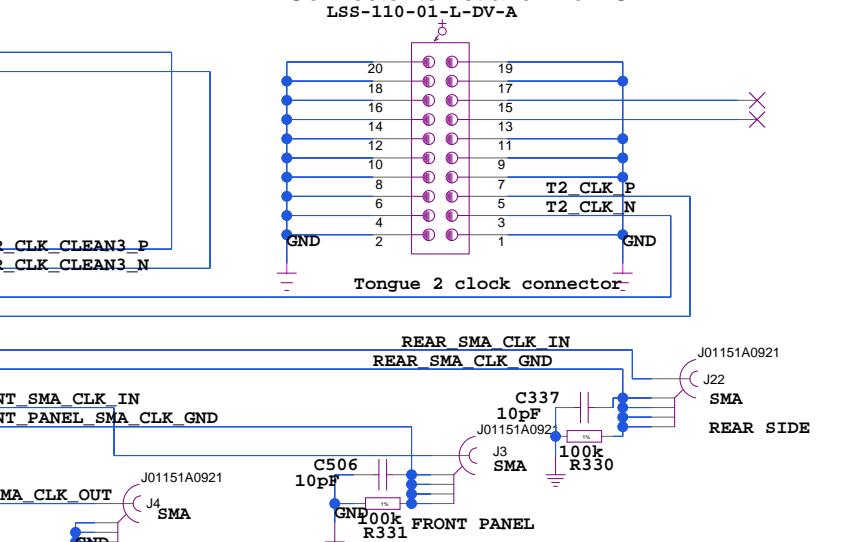
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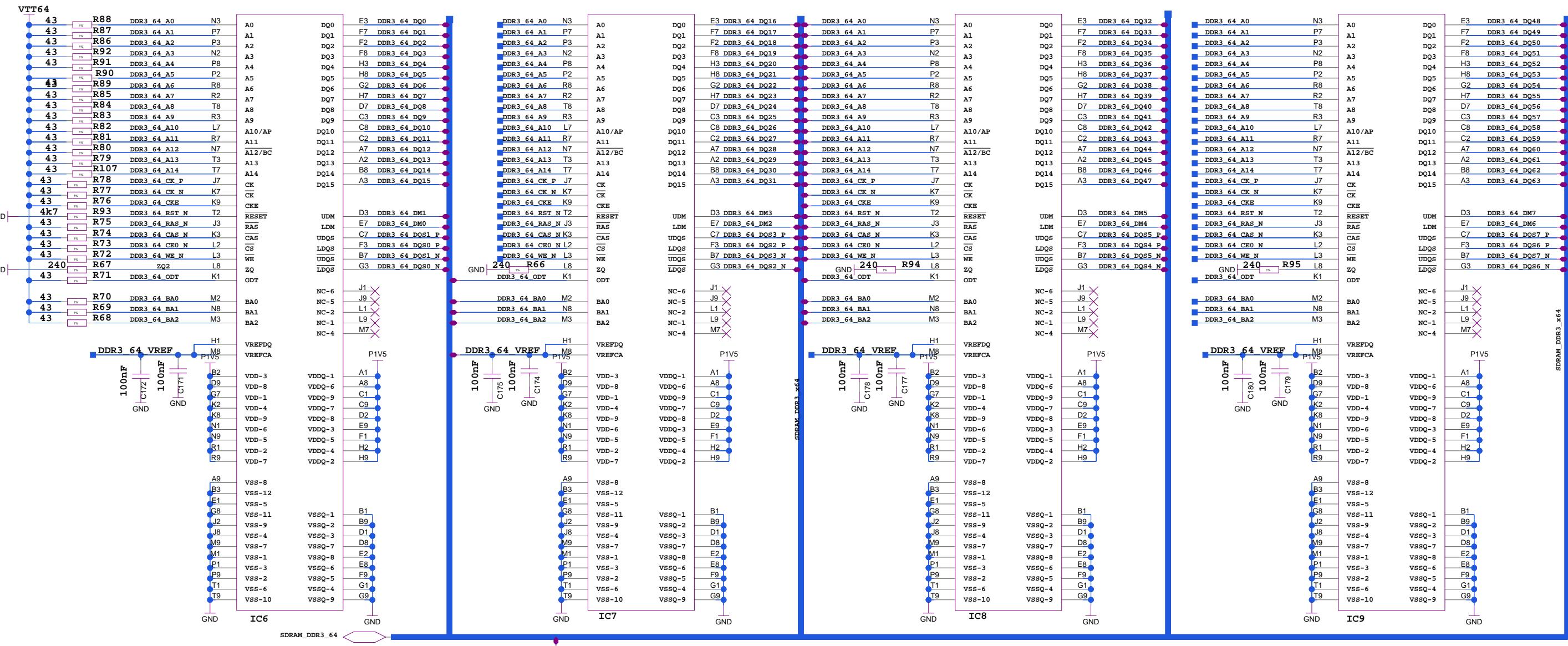
The resources are available from TCA9548s SW:
MMC I2C1, addr 1110 A2 A1 0
MMC I2C2, addr 1110 A2 A1 1
where A2=P2[28], A1=P2[27]
default addr is 0x70



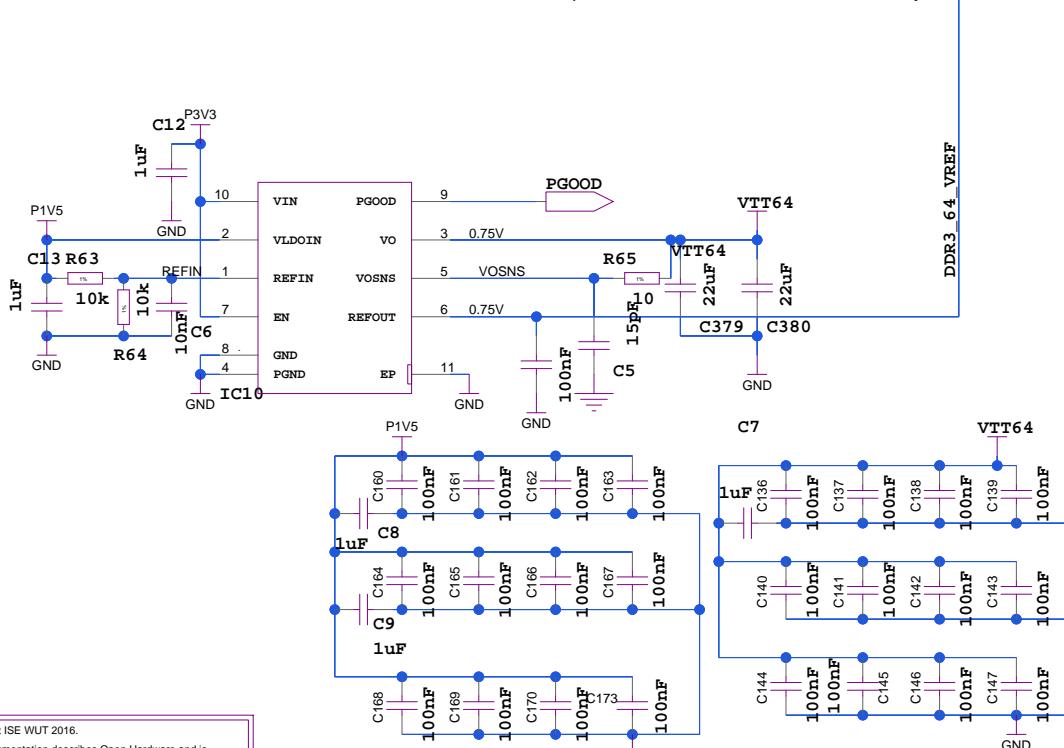
Connector to 1st and 2nd PCB



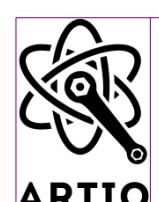
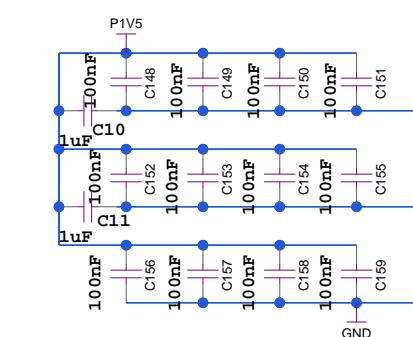
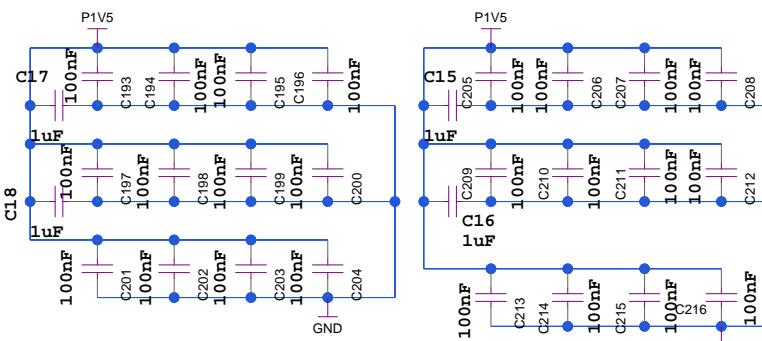
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All capacitors without values are 100nF 0201 by default



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SDRAM_DDR3_4x16

A3

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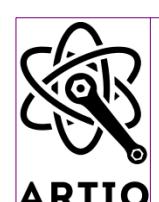
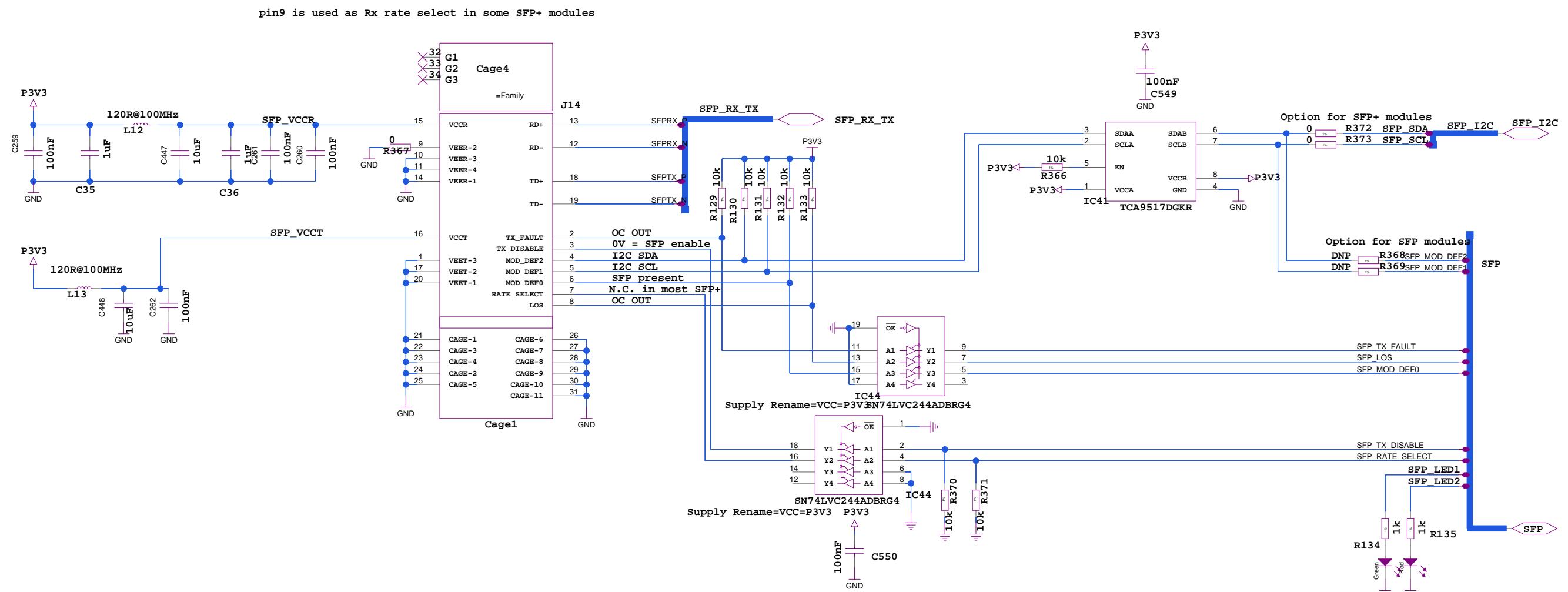
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A3

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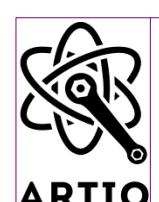
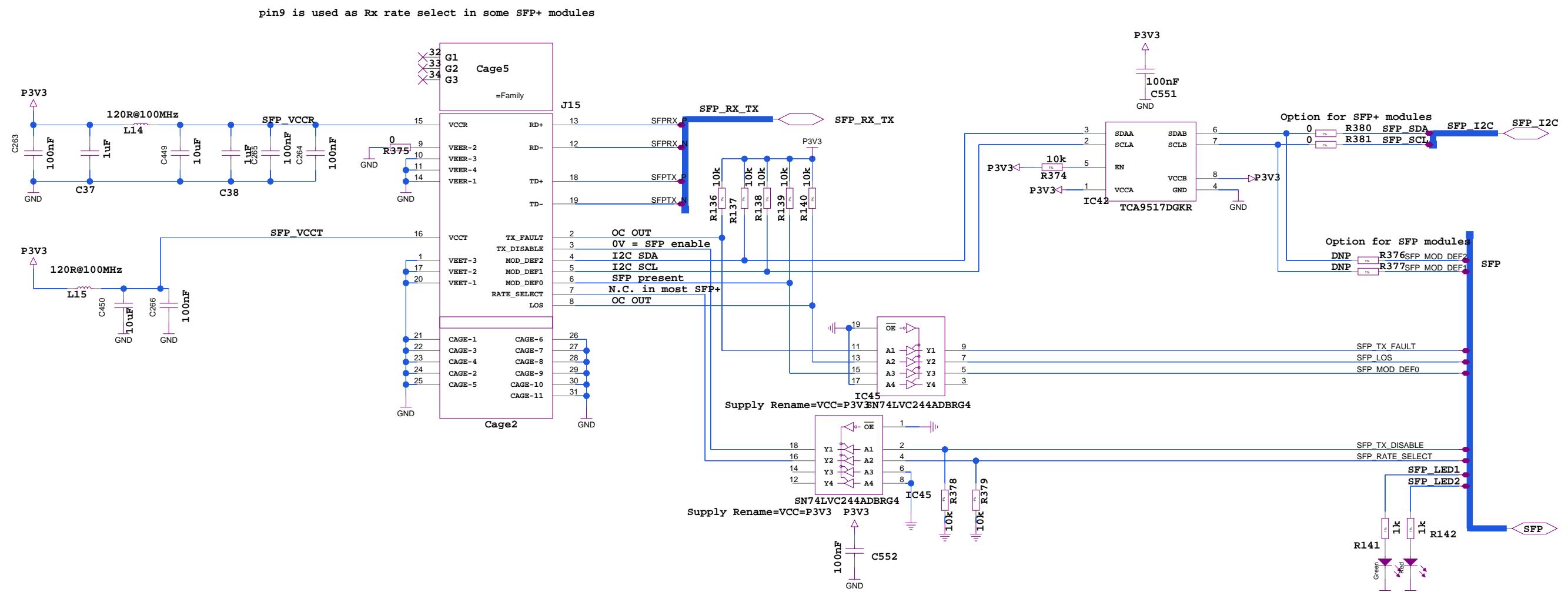
3 29

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A3

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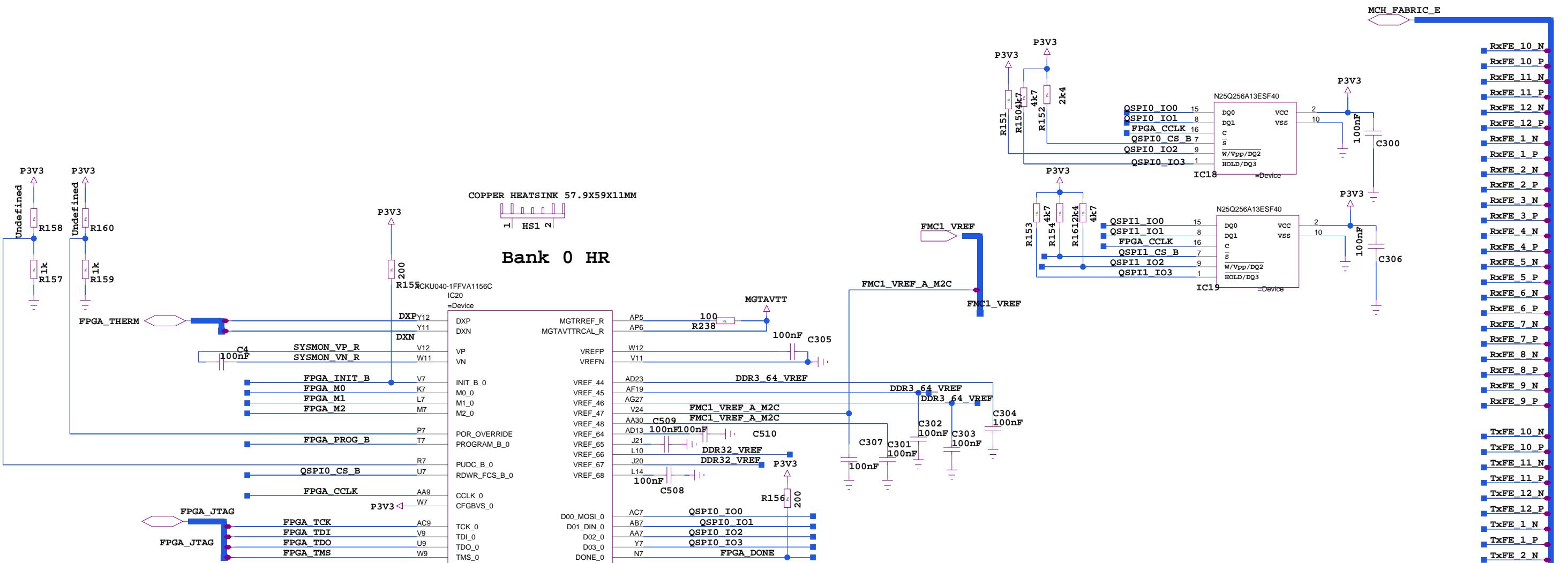
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SHEET 4 of 29

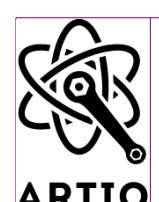
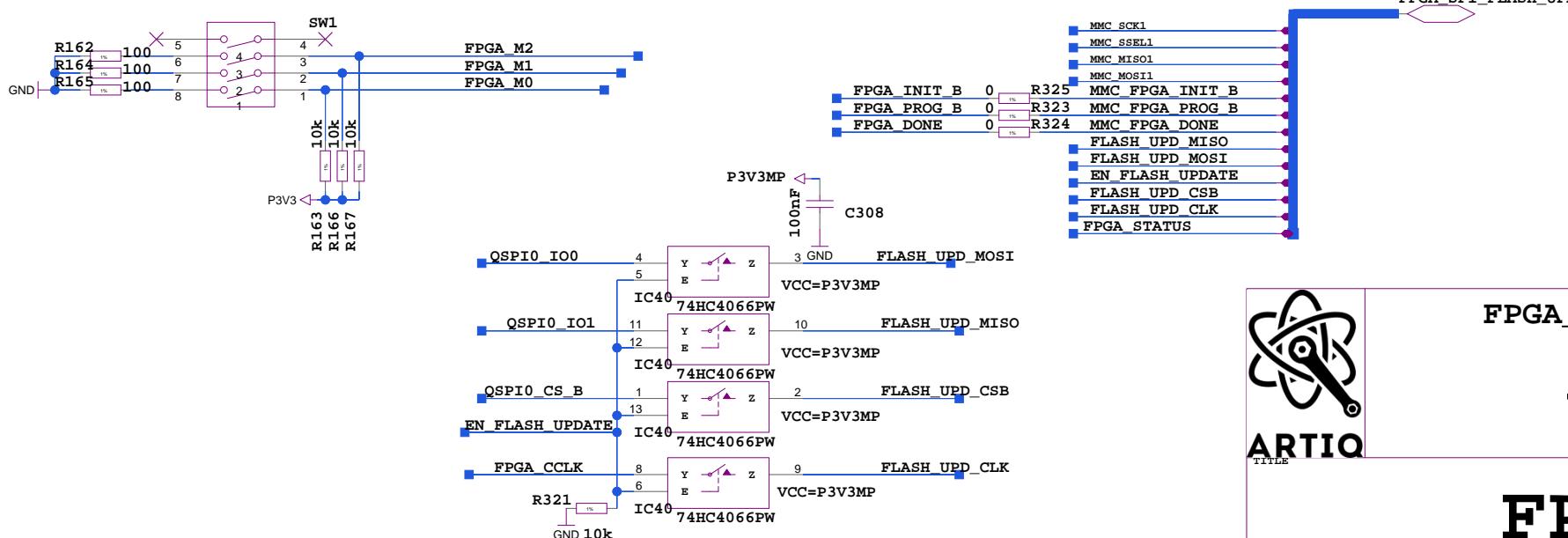
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Layout: Place resistor and capacitor for VREF
Underneath the FPGA via array
right next to the via

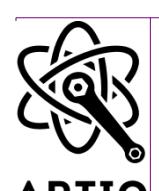
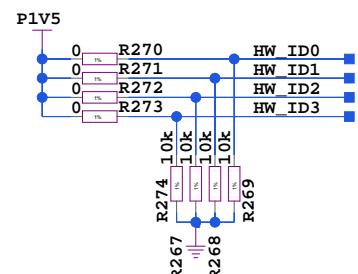
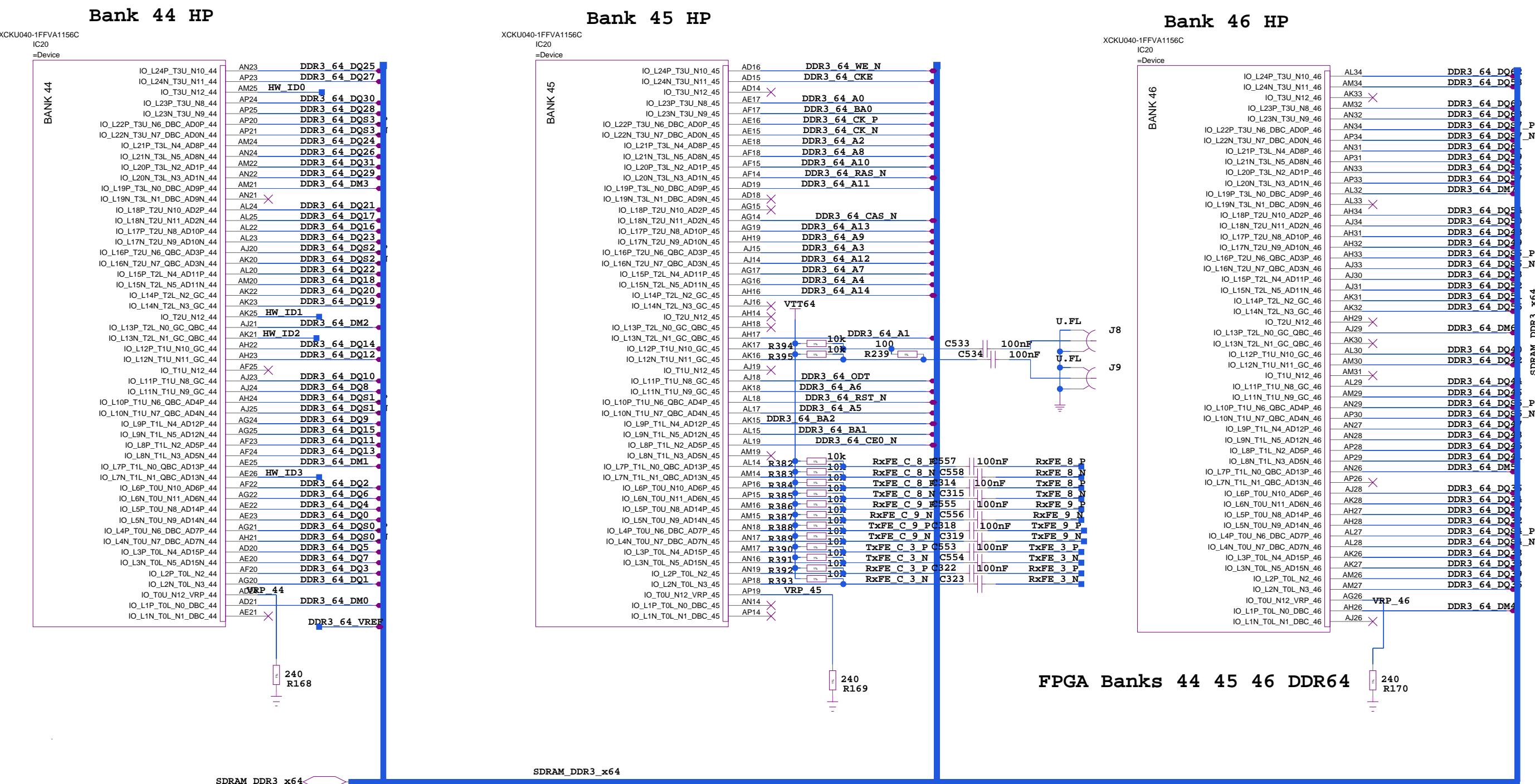


FPGA_XCKU040FFVA1156_MCH

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FPGA Bank 0 CFG

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FPGA Banks 44 45 46 DDR64

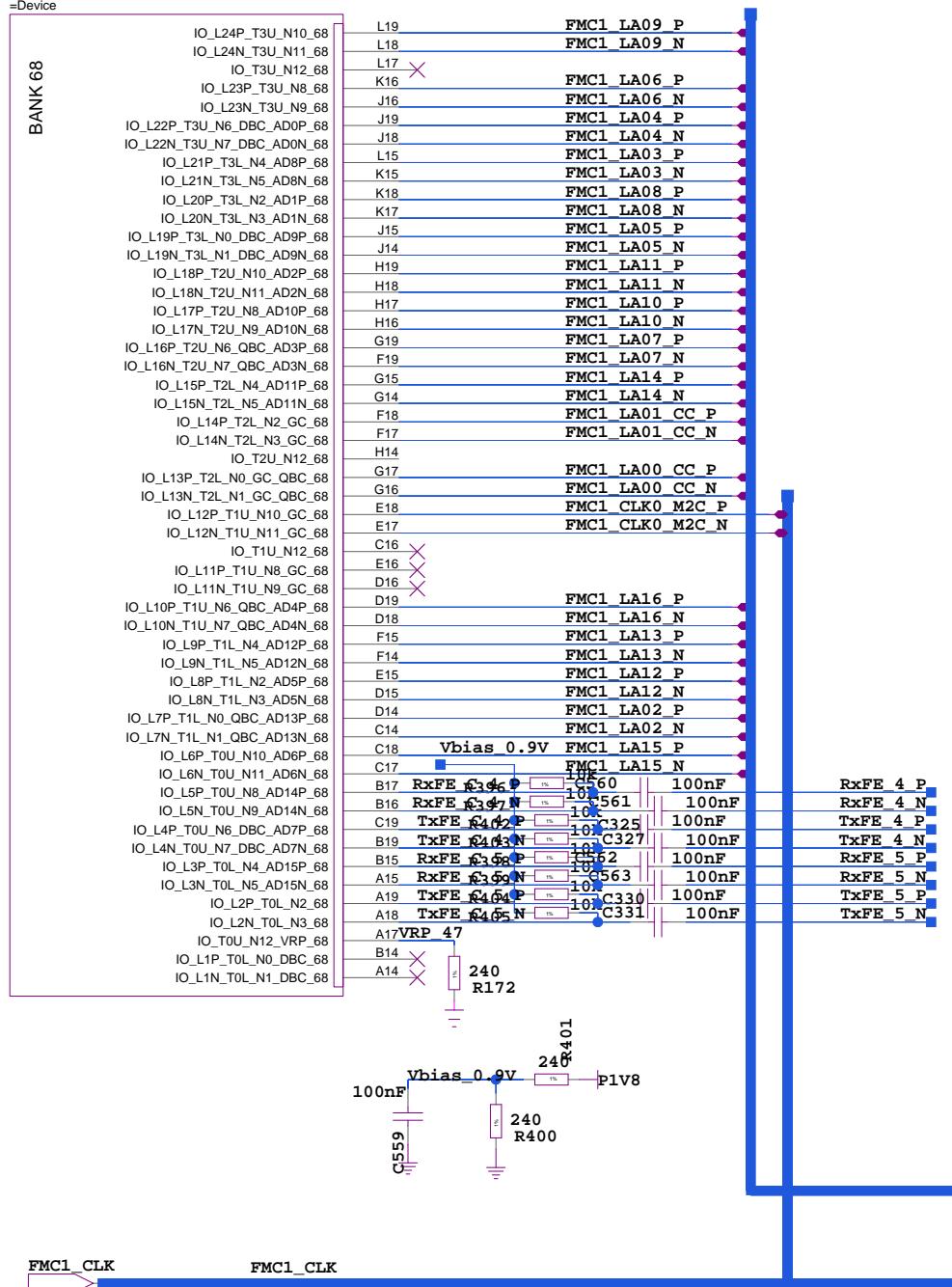
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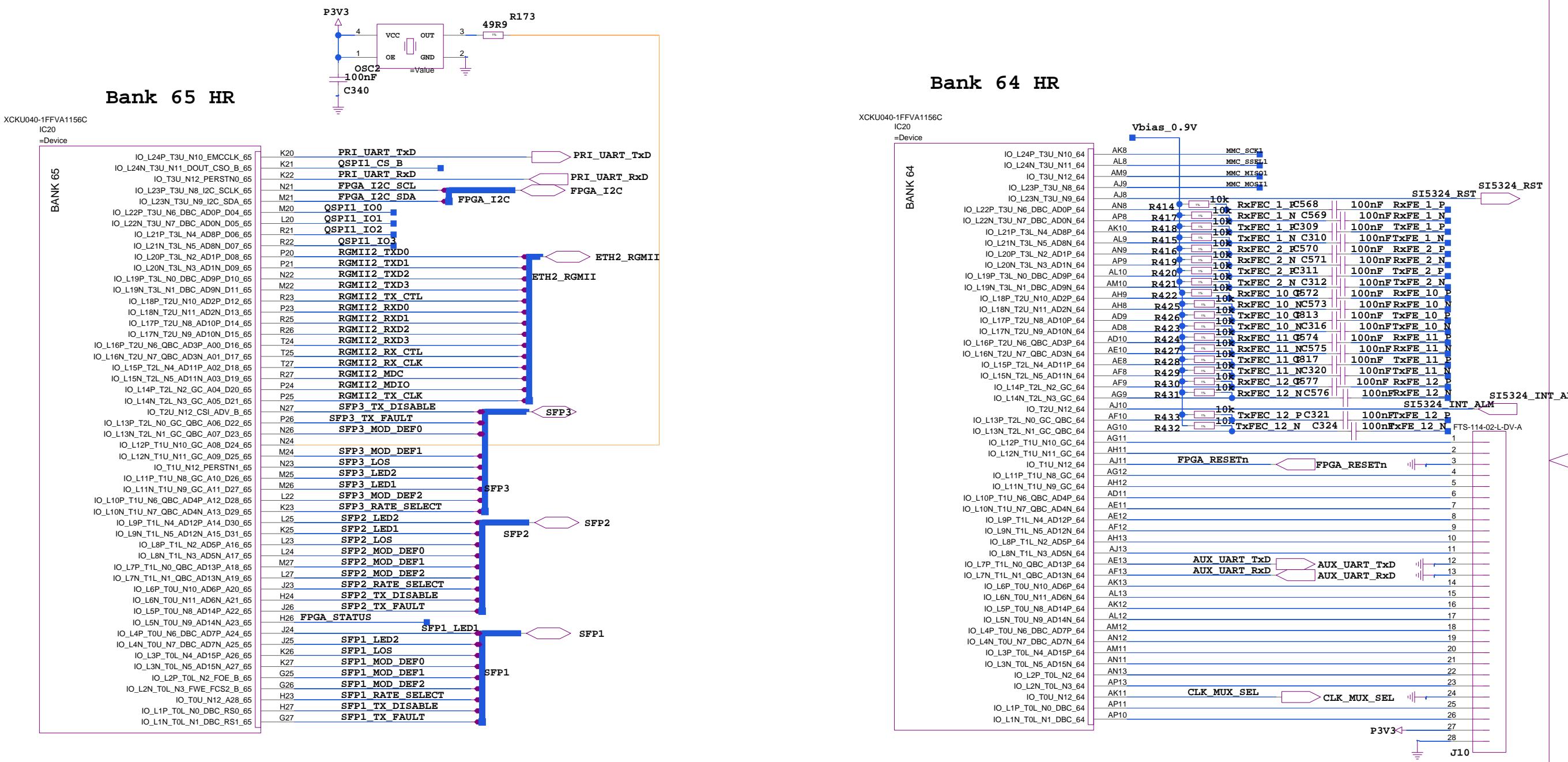
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XCKU040-1FFVA1156C
IC20
=Device

Bank 68 HP





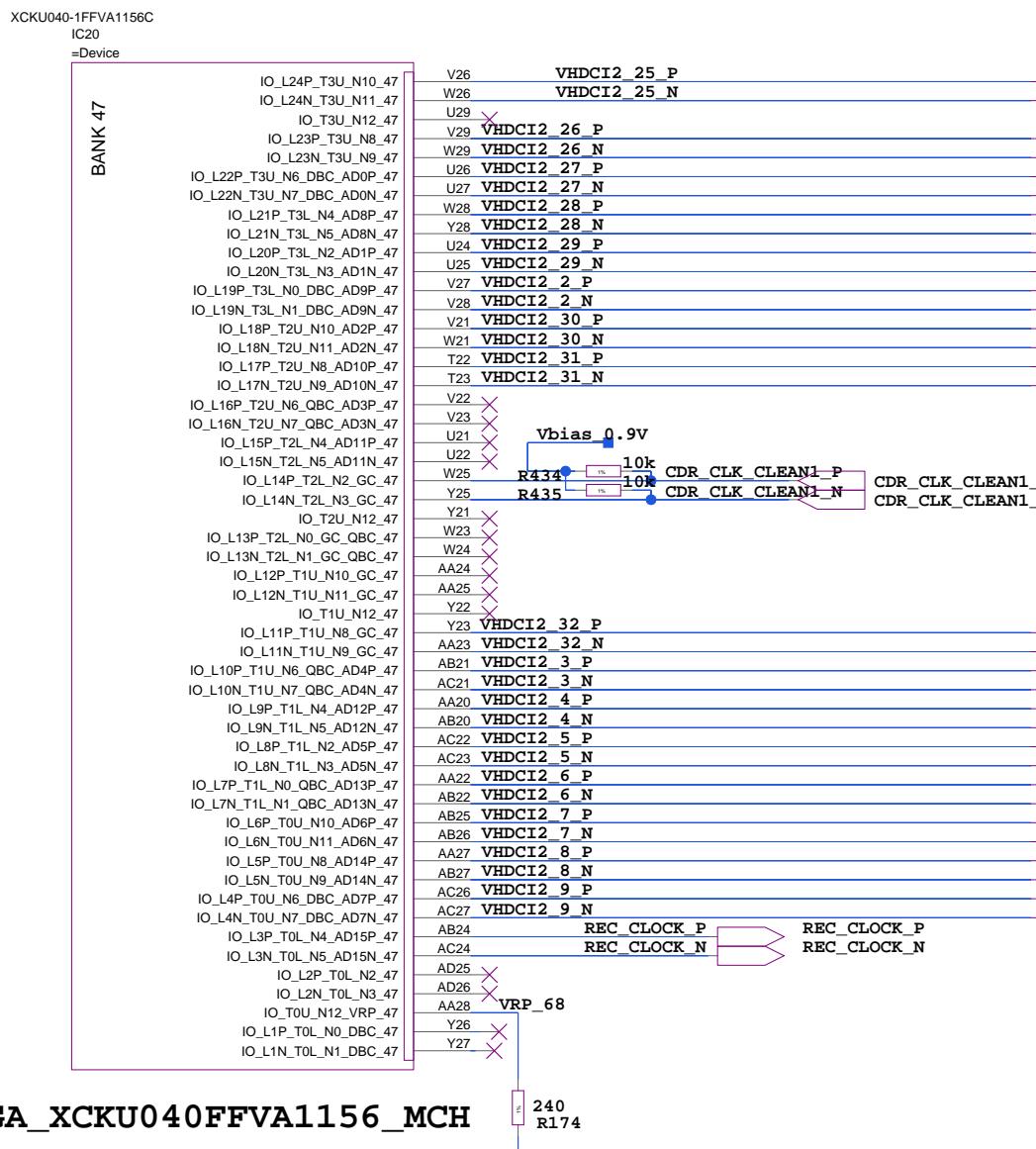
FPGA_XCKU040FFVA1156_MCH

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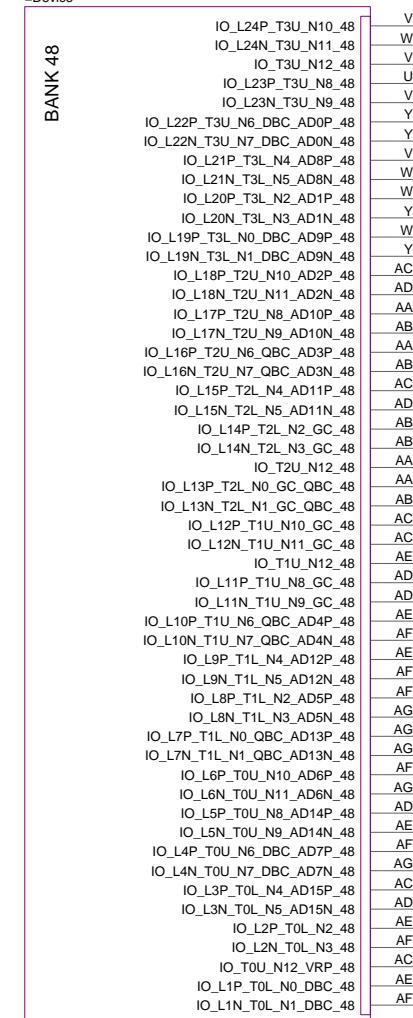
FPGA Banks 64 65 HR

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Bank 47 HP



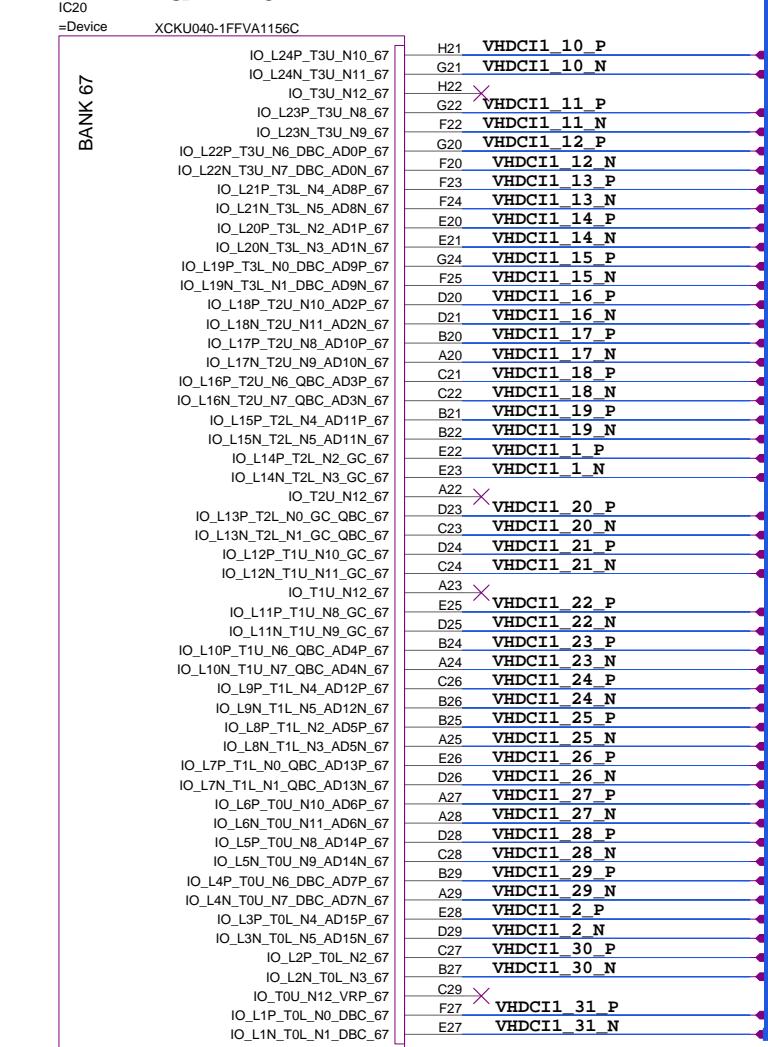
Bank 48 HP



FPGA_XCKU040FFVA1156_MCH

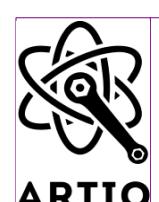
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Bank 67 HP



FPGA Bank 60 67 68 HP VHDCI

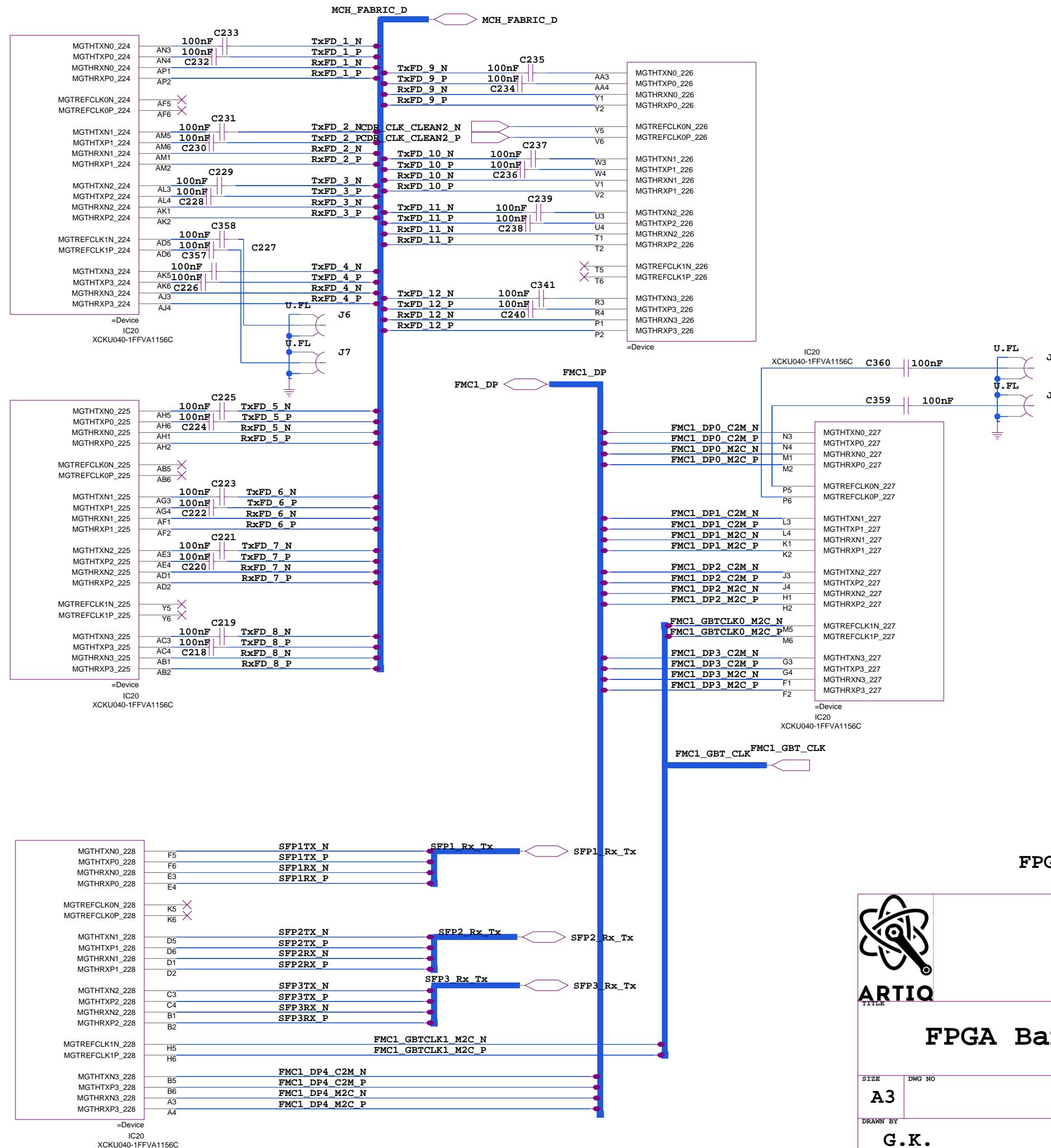
VHDCI1



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FPGA Bank 66 67 68

SIZE DWG NO
A3
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SHEET 9 of 29
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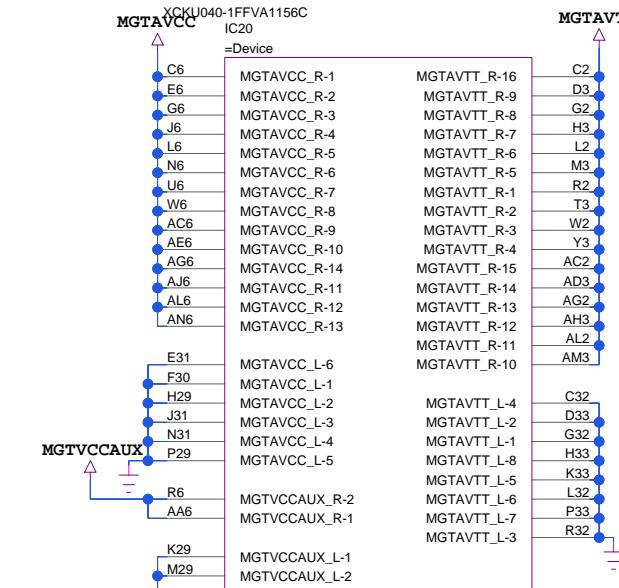
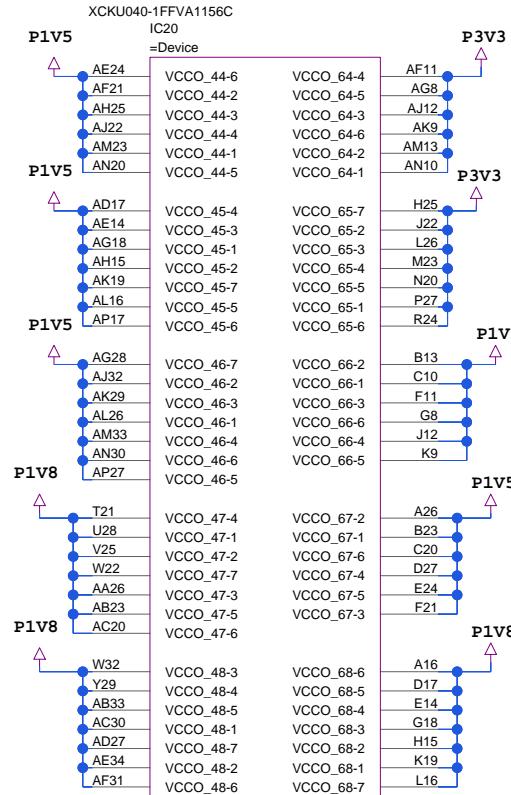
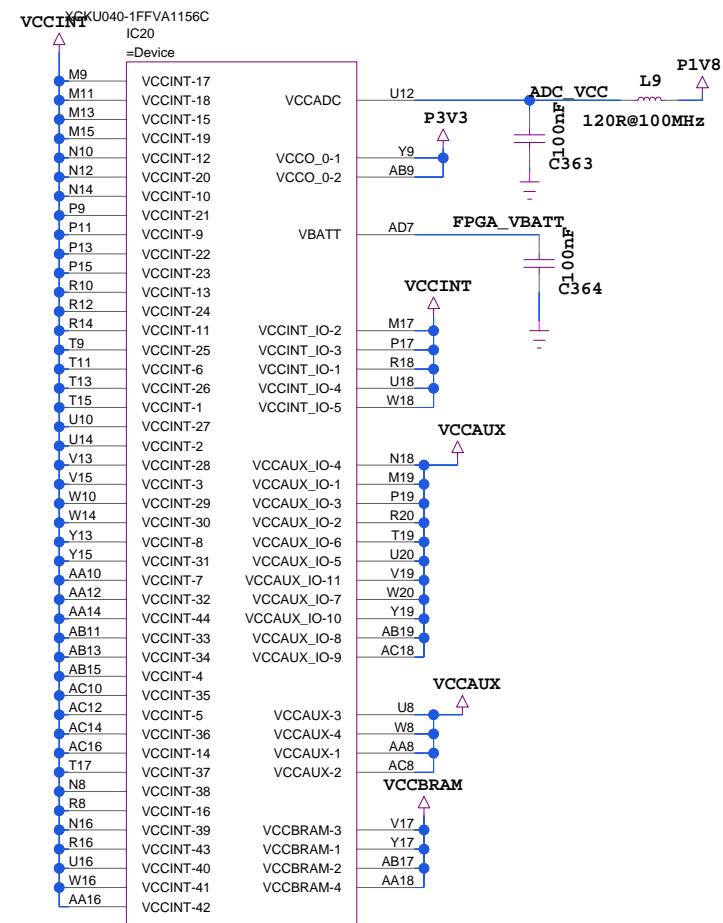
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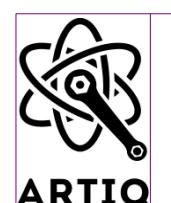
FPGA Banks 224 225 226 227 228

SIZE	DWG NO	REV
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FPGA Power

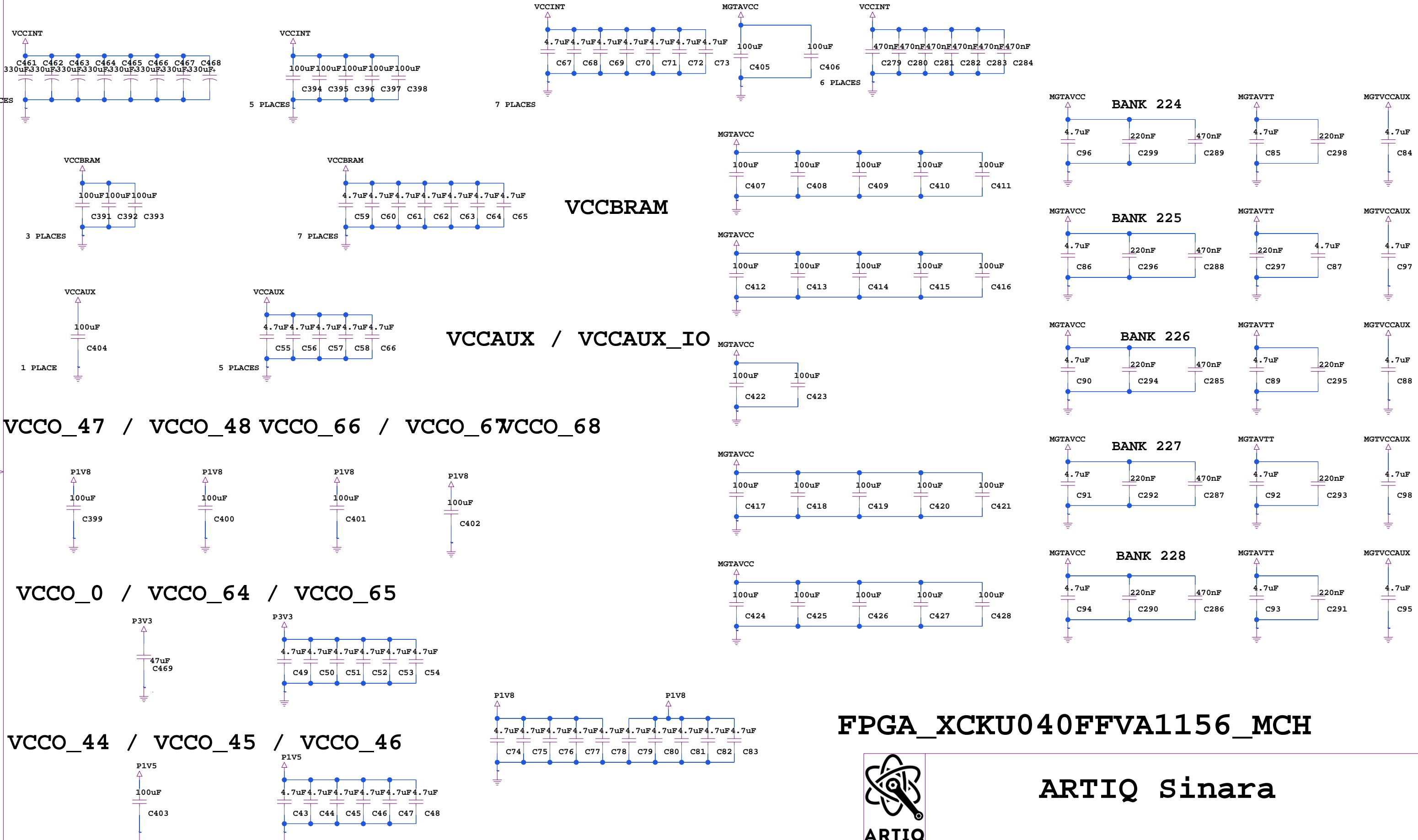
FPGA_XCKU040FFVA1156_MCH



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FPGA Power

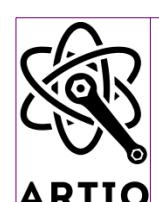
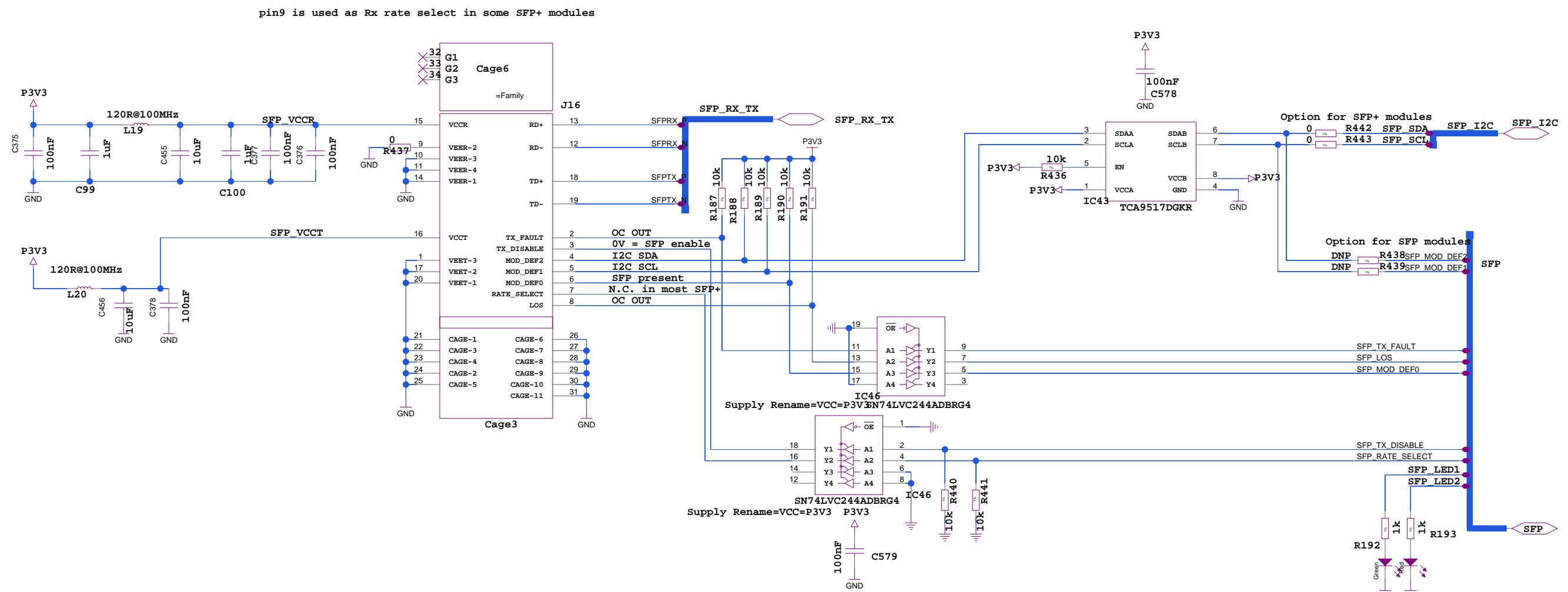
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FPGA Decoupling

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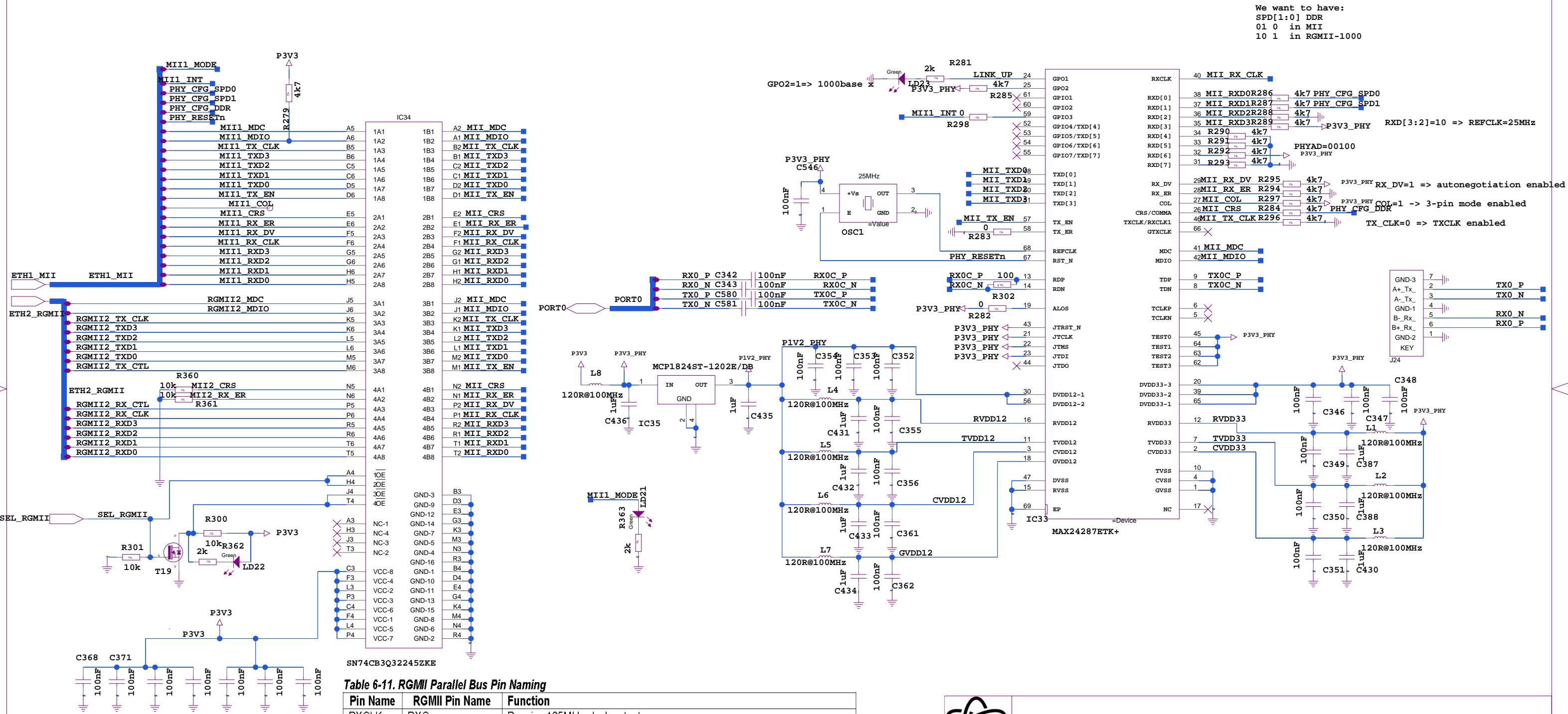
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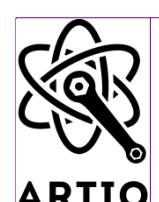
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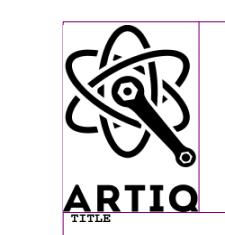
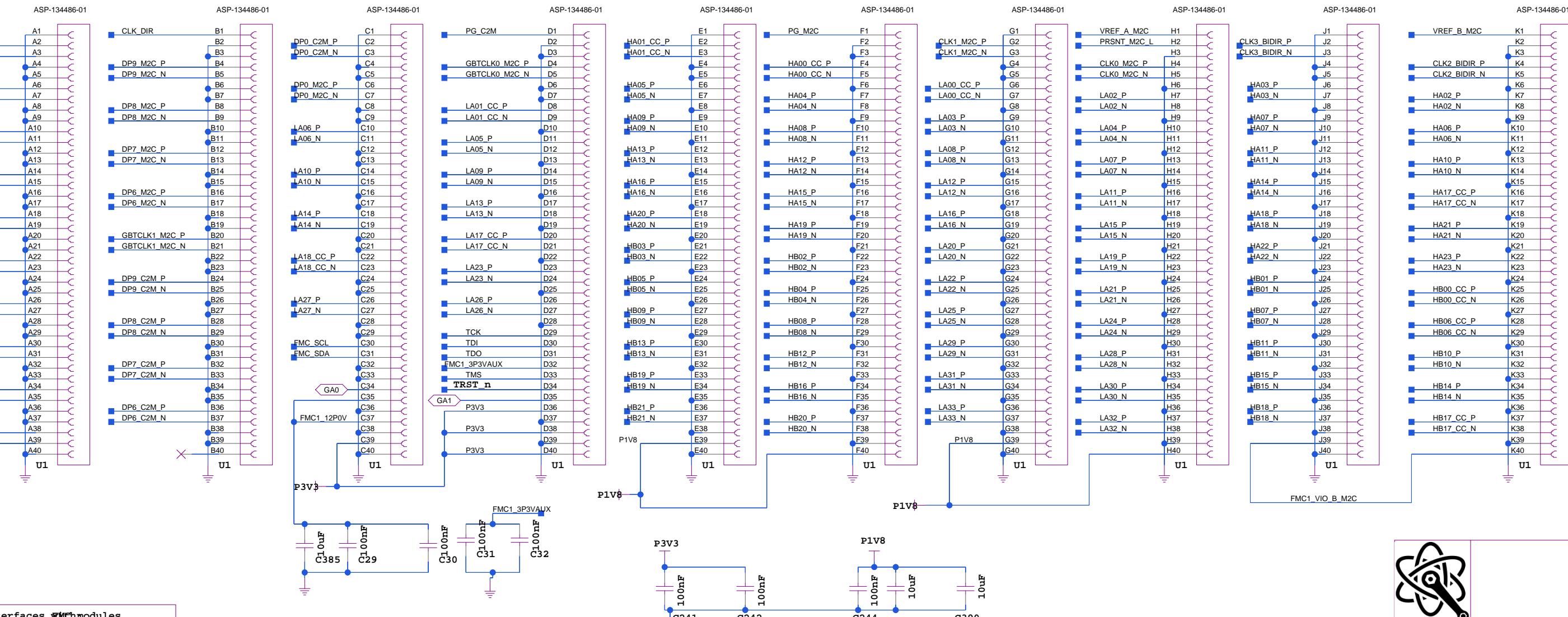


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ETH_PHY_RMII_MII

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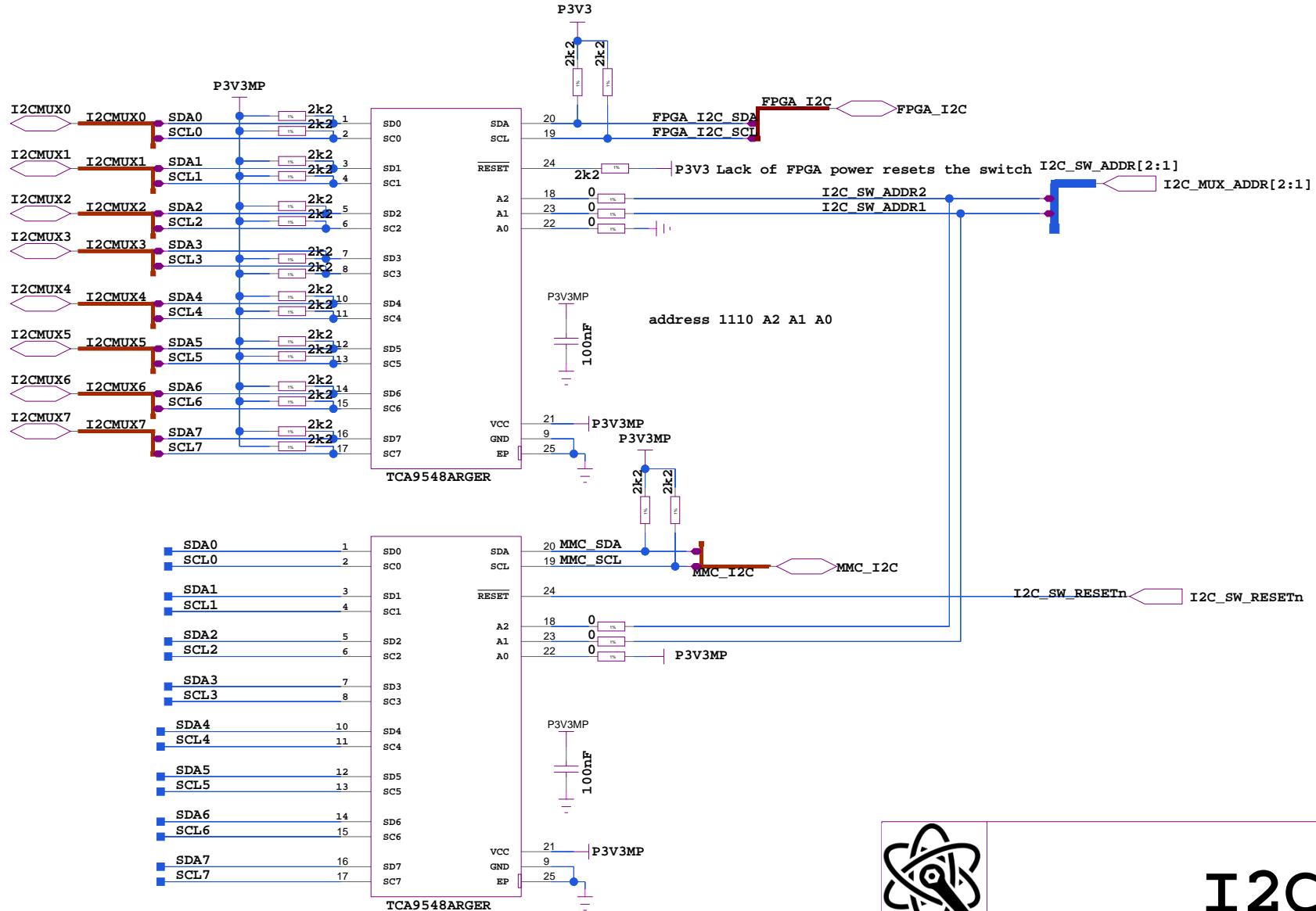
Interfaces with modules
Impedance: 100Ω diff
diff lines: LVDS 2.5V
control signals: 3.3V LVC MOS



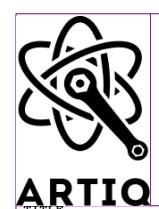
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FMC_connector

I2C switch footprint is compatible with MAX7358 which has interesting anti-lock capabilities



I2C_MUX



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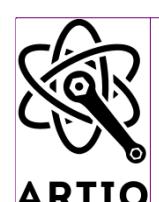
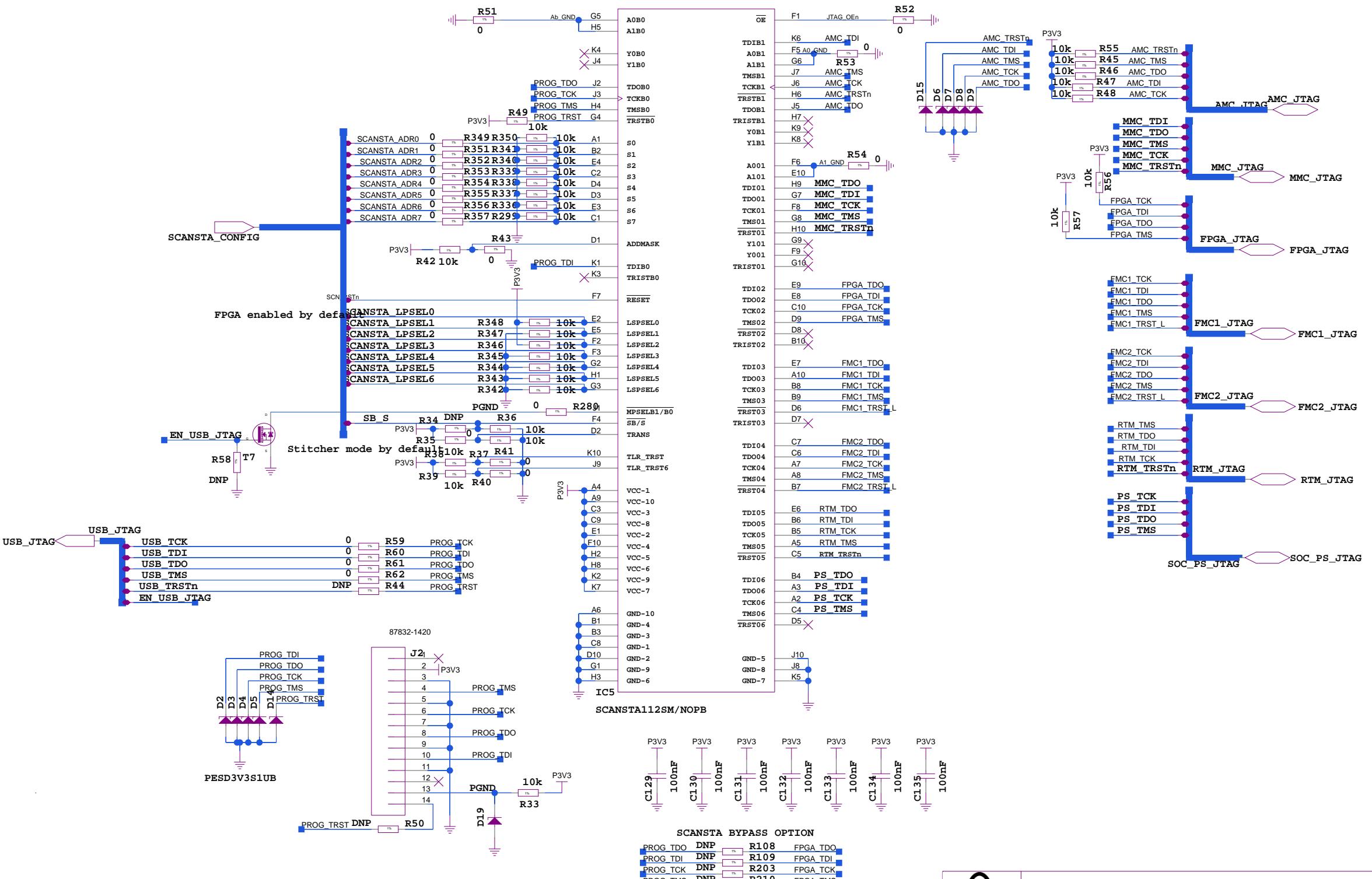
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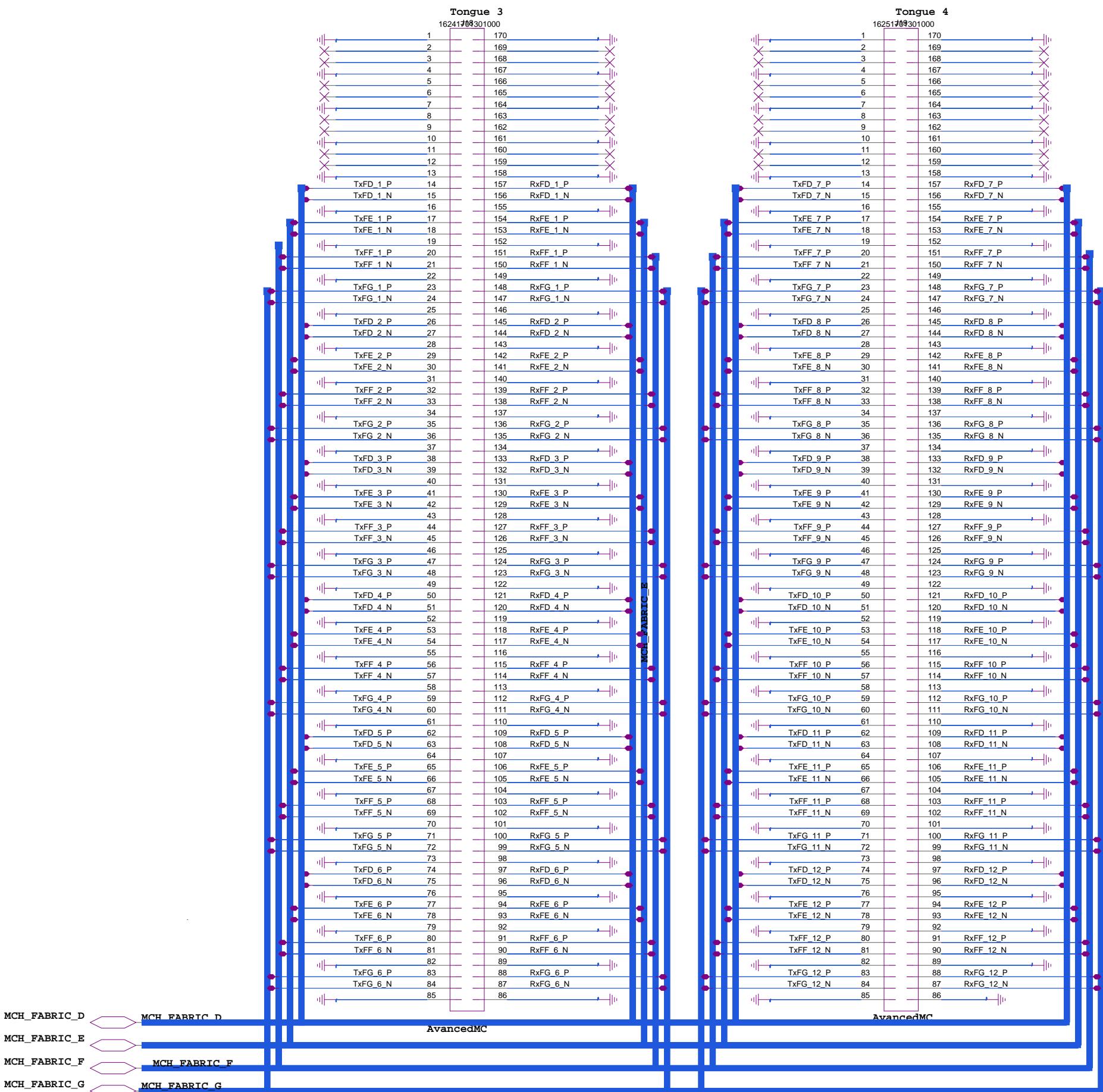
SHEET 29
of 17



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JTAG_Configuration

SIZE	DWG NO	REV
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G.K.	18	29



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MCH_CON

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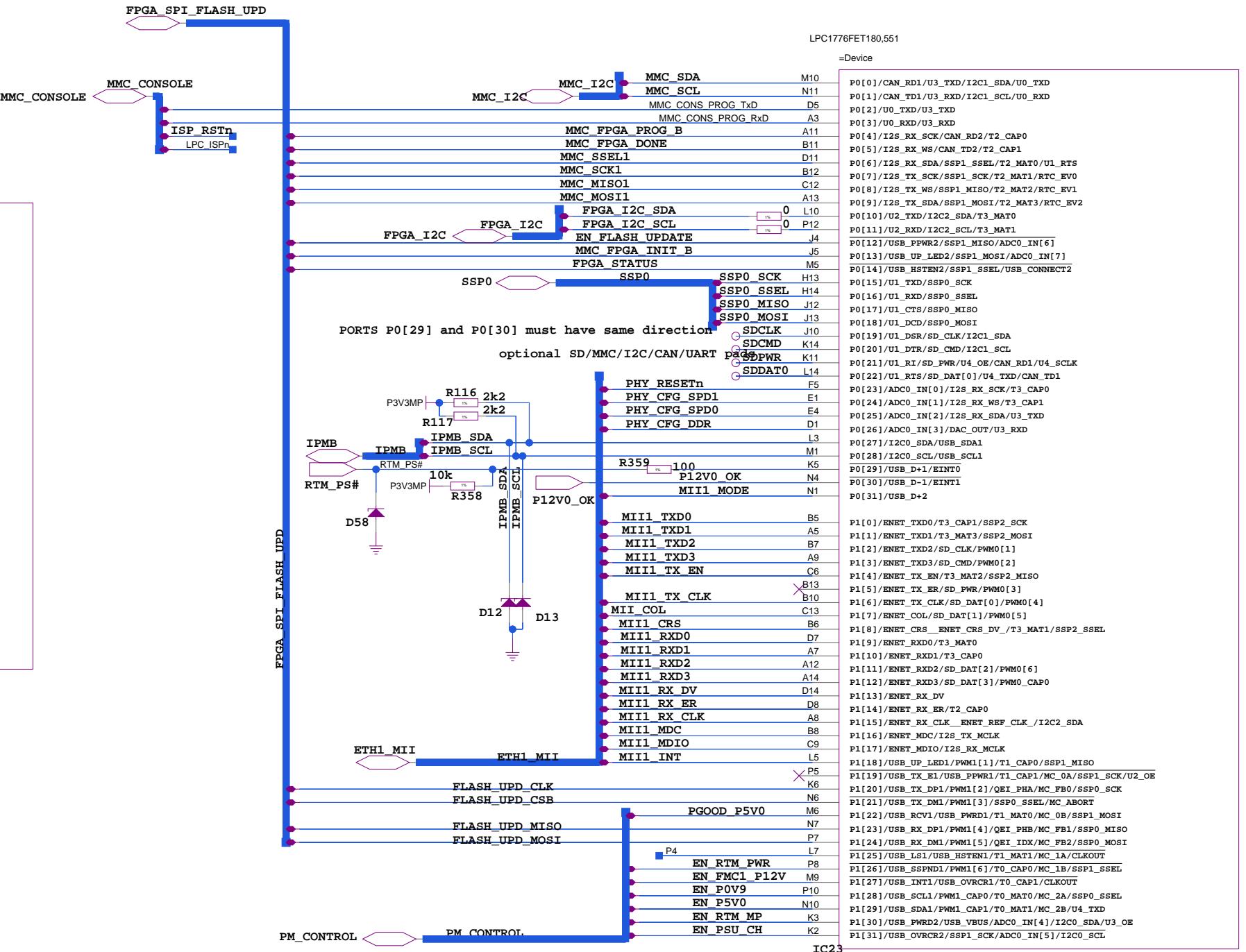
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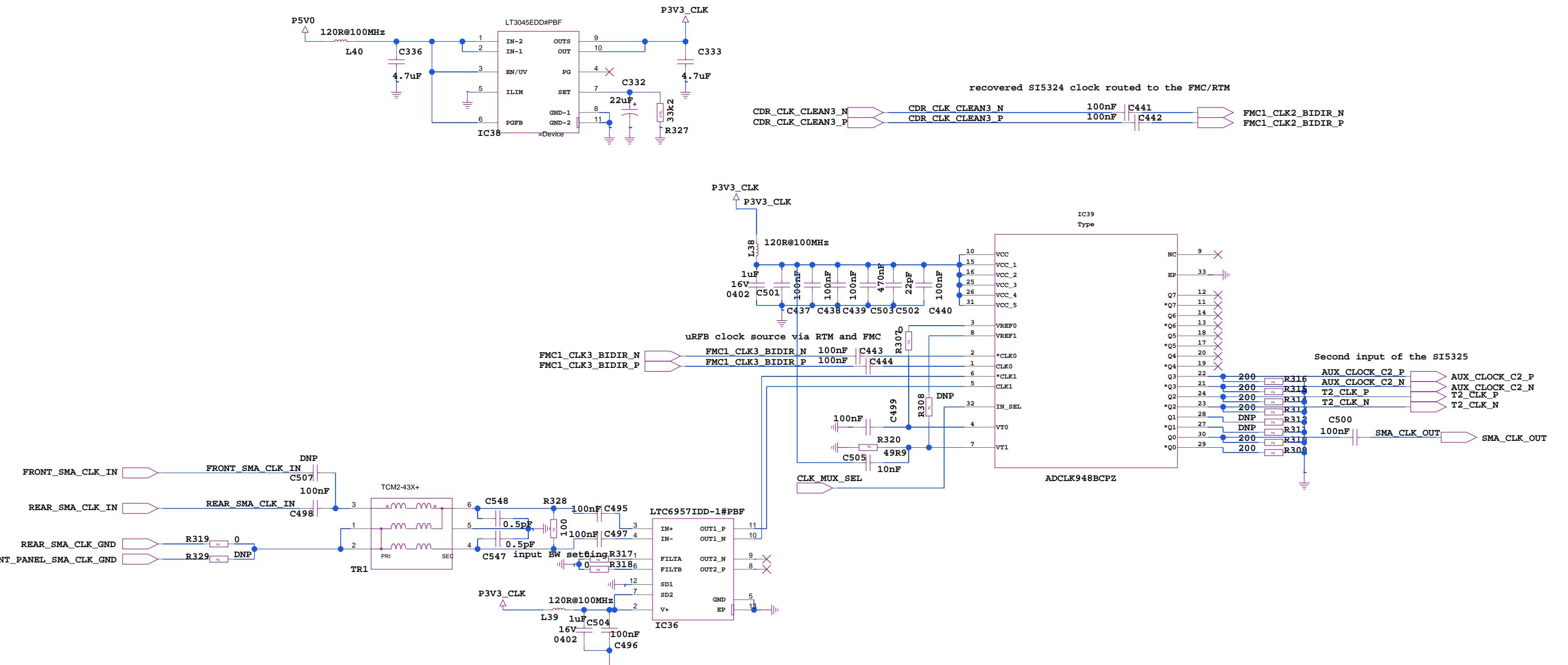
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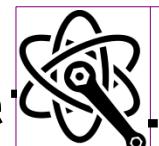
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ARTIQ

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SIZE DWG NO

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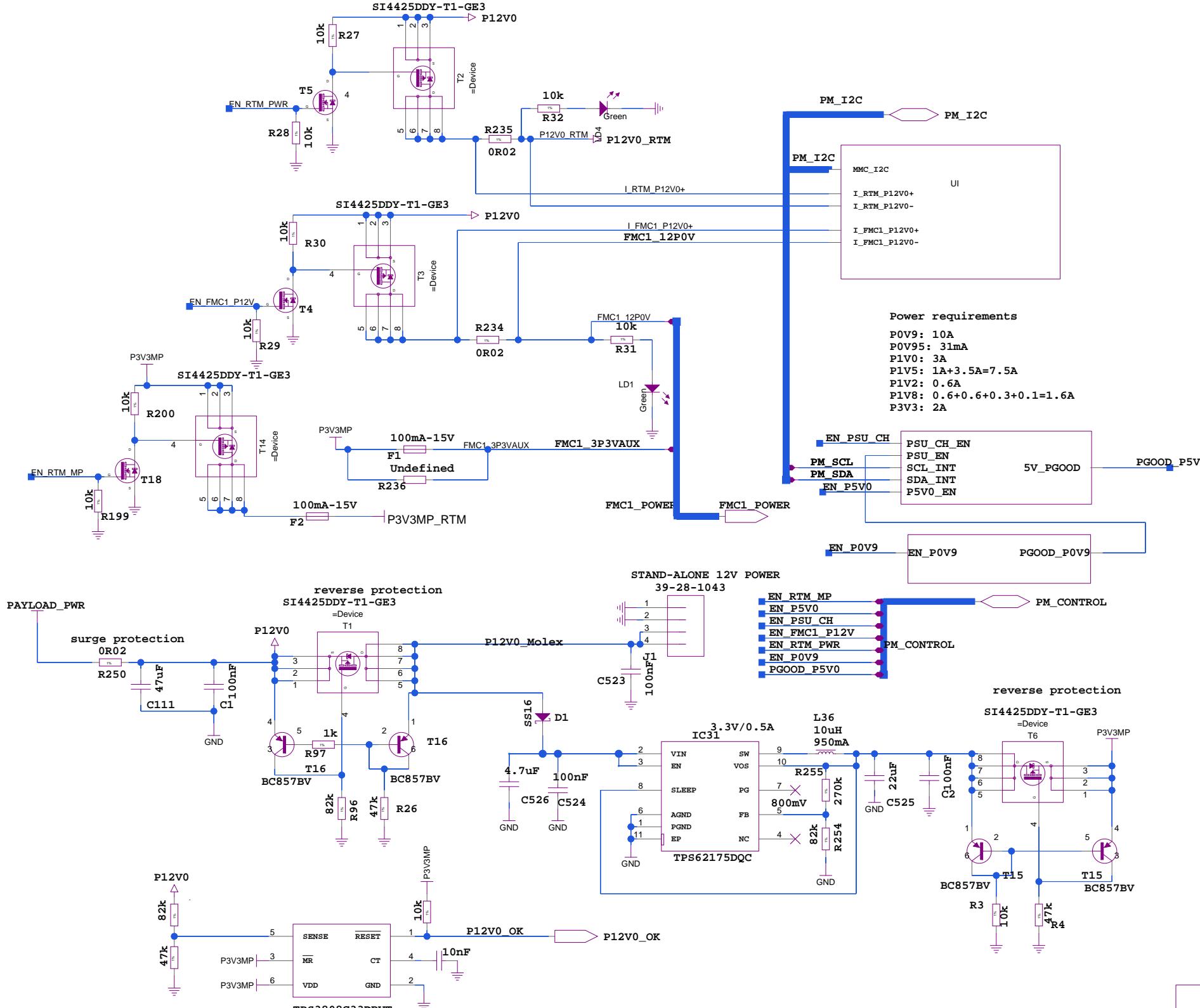
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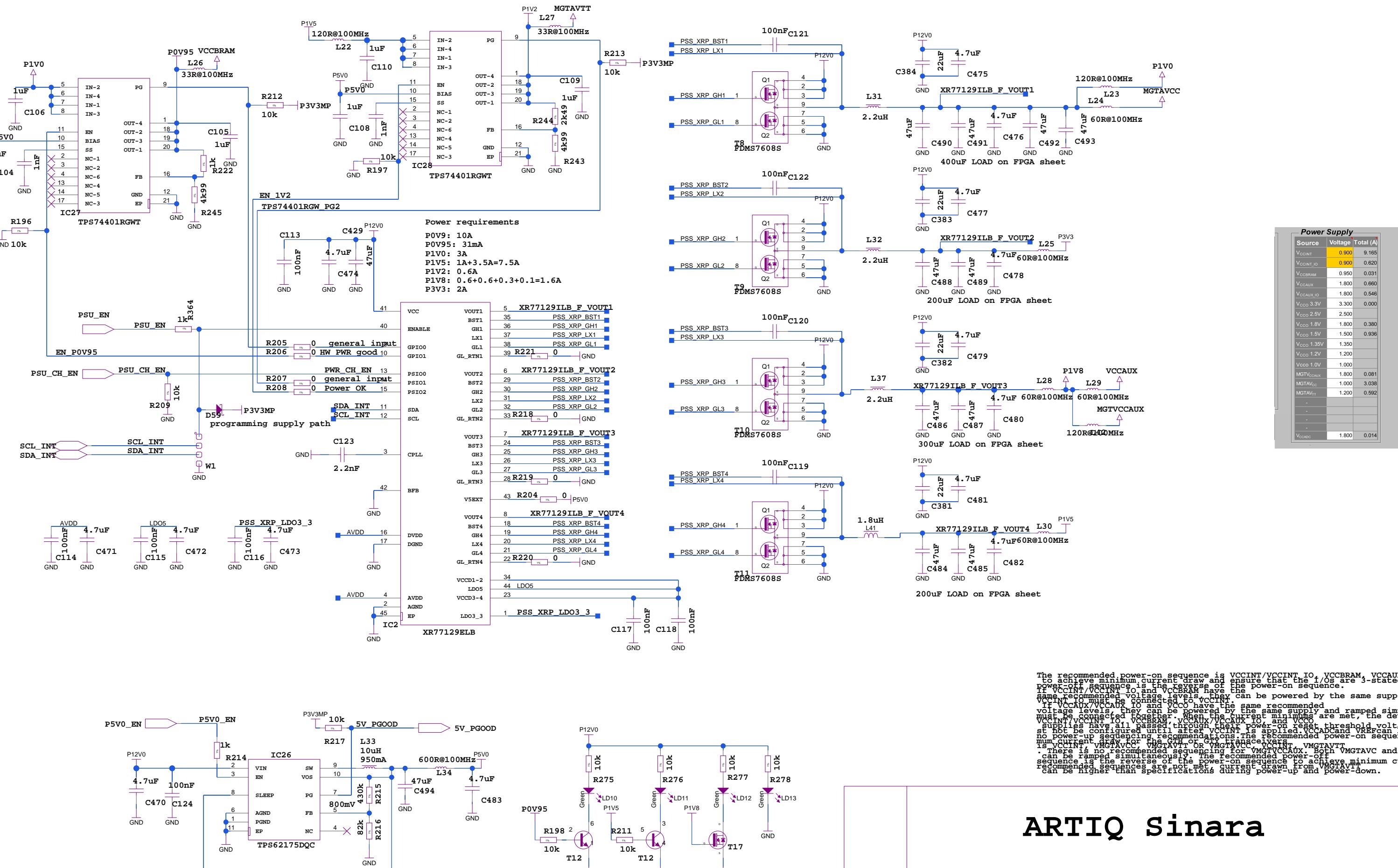


Power Supply		
Source	Voltage	Total (A)
V _{CCINT}	0.900	9.165
V _{CCINT_IO}	0.900	0.620
V _{CCBRAM}	0.950	0.031
V _{CCAUX}	1.800	0.660
V _{CCAUX_IO}	1.800	0.546
V _{CCO 3.3V}	3.300	0.000
V _{CCO 2.5V}	2.500	
V _{CCO 1.8V}	1.800	0.380
V _{CCO 1.5V}	1.500	0.936
V _{CCO 1.35V}	1.350	
V _{CCO 1.2V}	1.200	
V _{CCO 1.0V}	1.000	
MGT _{VCCAUX}	1.800	0.081
MGT _{AV_{CC}}	1.000	3.038
MGT _{AV_{TT}}	1.200	0.592
-	-	
-	-	
V _{CCADC}	1.800	0.014

The recommended power-on sequence is VCCINT/VCCINT_IO, VCCBRAM, VCCAUX/VCCAUX_IO, and VCCO to achieve minimum current draw and ensure that the 1/0s are 3-stated at power-on. The recommended power-off sequence is the reverse of the power-on sequence. If VCCINT/VCCINT_IO and VCCBRAM have the same recommended voltage levels, they can be powered by the same supply and ramped simultaneously. If VCCAUX/VCCAUX_IO and VCCO have the same recommended voltage levels, they can be powered by the same supply and ramped simultaneously. VCCAUX and VCCO must be connected together. When the current minimums are met, the device powers on after the VCCINT/VCCINT_IO, VCCBRAM, VCCAUX/VCCAUX_IO, and VCCO supplies have all passed through their power-on reset threshold voltages. The device must not be configured until after VCCINT is applied. VCCADC and VREF can be powered at any time and have no power-up sequencing recommendations. The recommended power-on sequence to achieve minimum current draw for the GTH or GT_T transceivers is VCCINT, VMGTA_{VCC}, VMGTA_{VTT} OR VMGTA_{VCC}, VCCINT, VMGTA_{VTT}. There is no recommended sequencing for VMGTA_{VCC}. Both VMGTA_{VCC} and VCCINT can be ramped simultaneously. The recommended power-off sequence is the reverse of the power-on sequence to achieve minimum current draw. If these recommended sequences are not met, current drawn from VMGTA_{VTT} can be higher than specifications during power-up and power-down.

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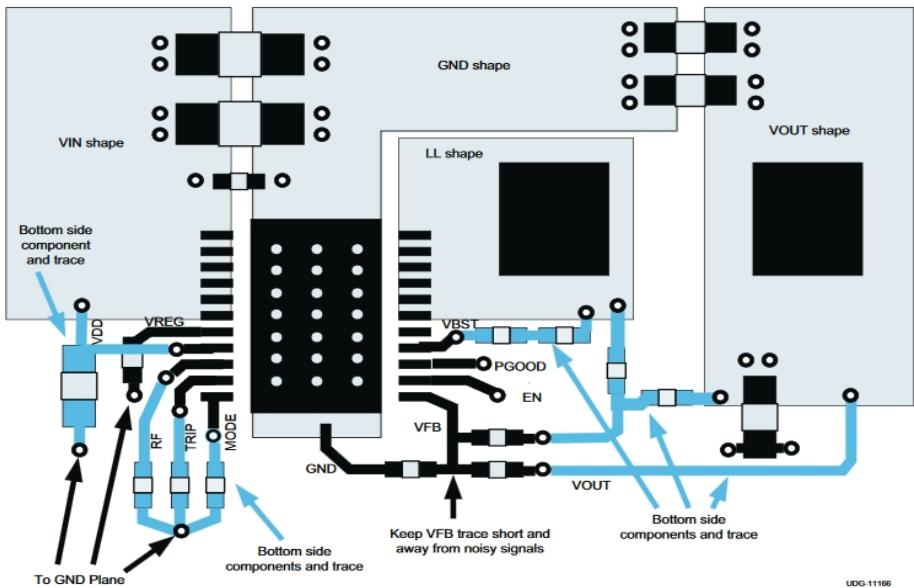
POWER_Management



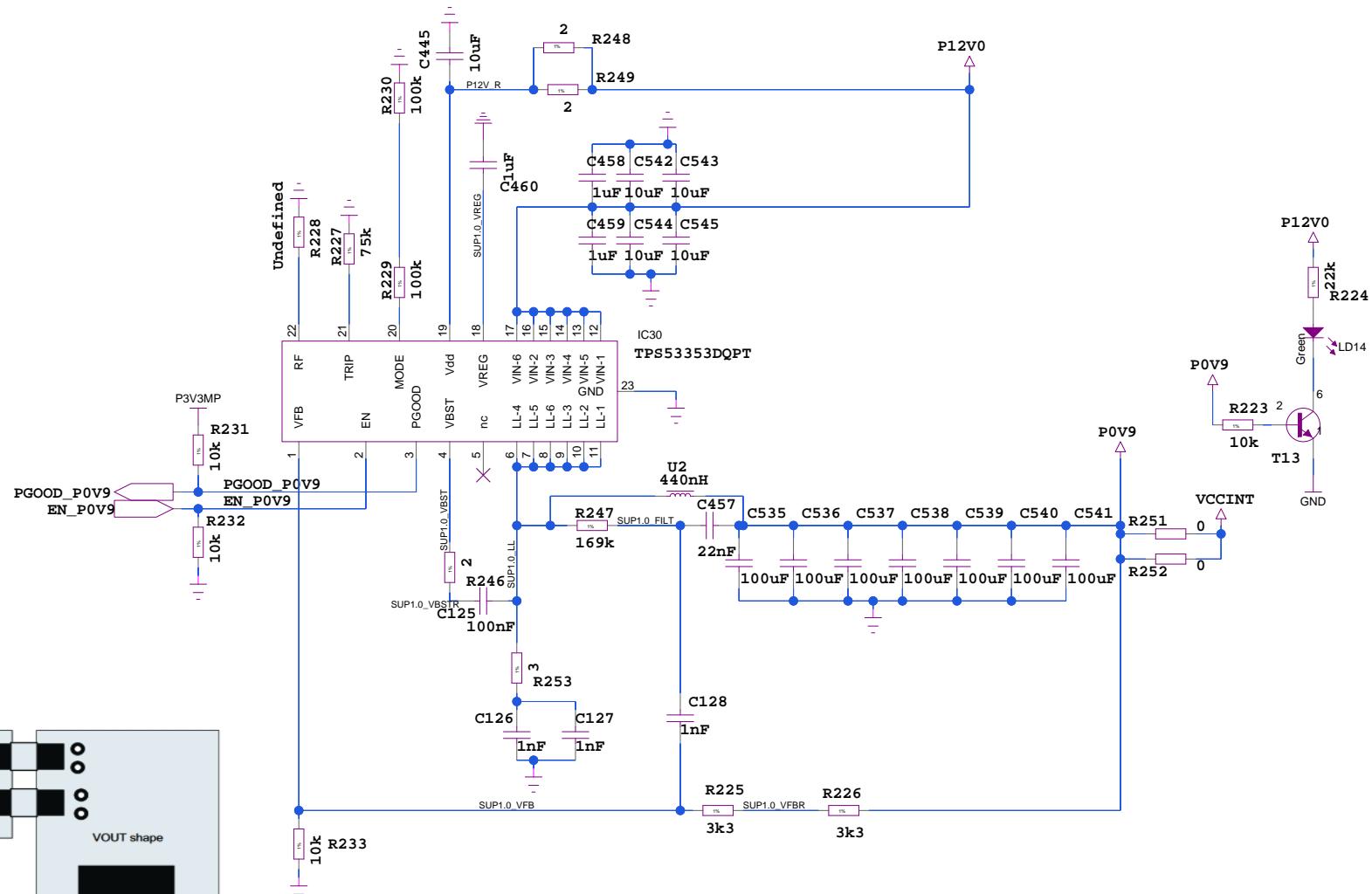
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PWR DC DC EXAR

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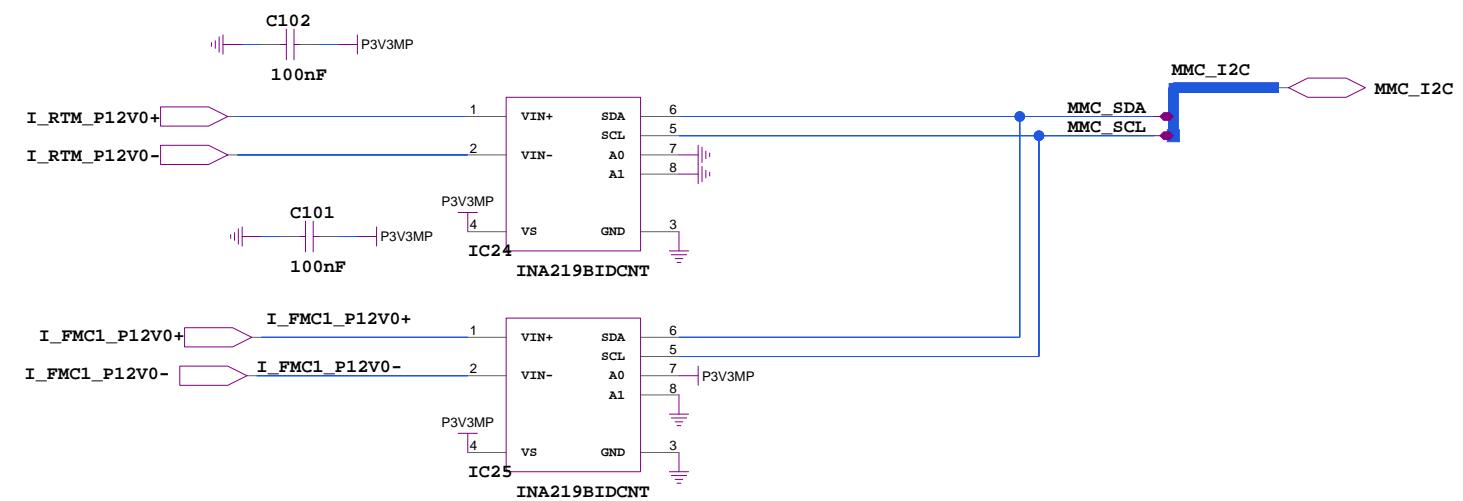


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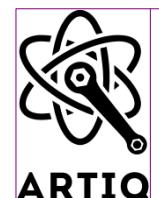
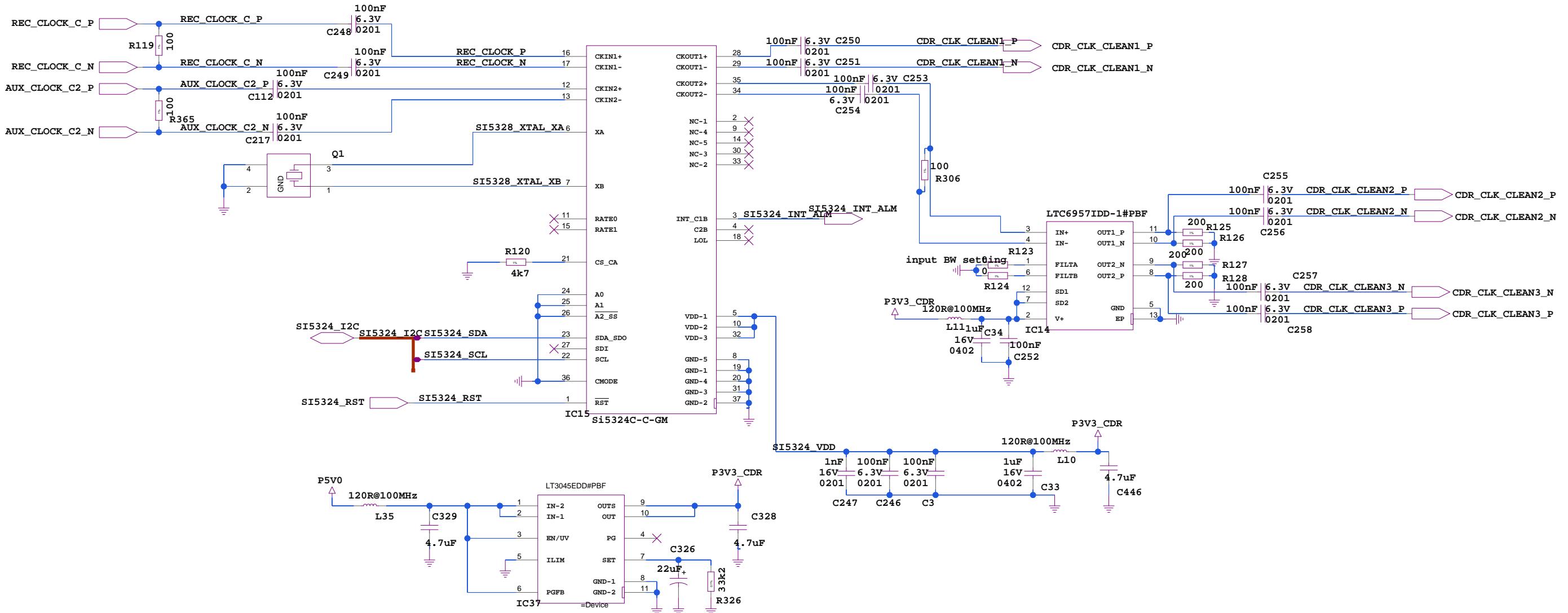
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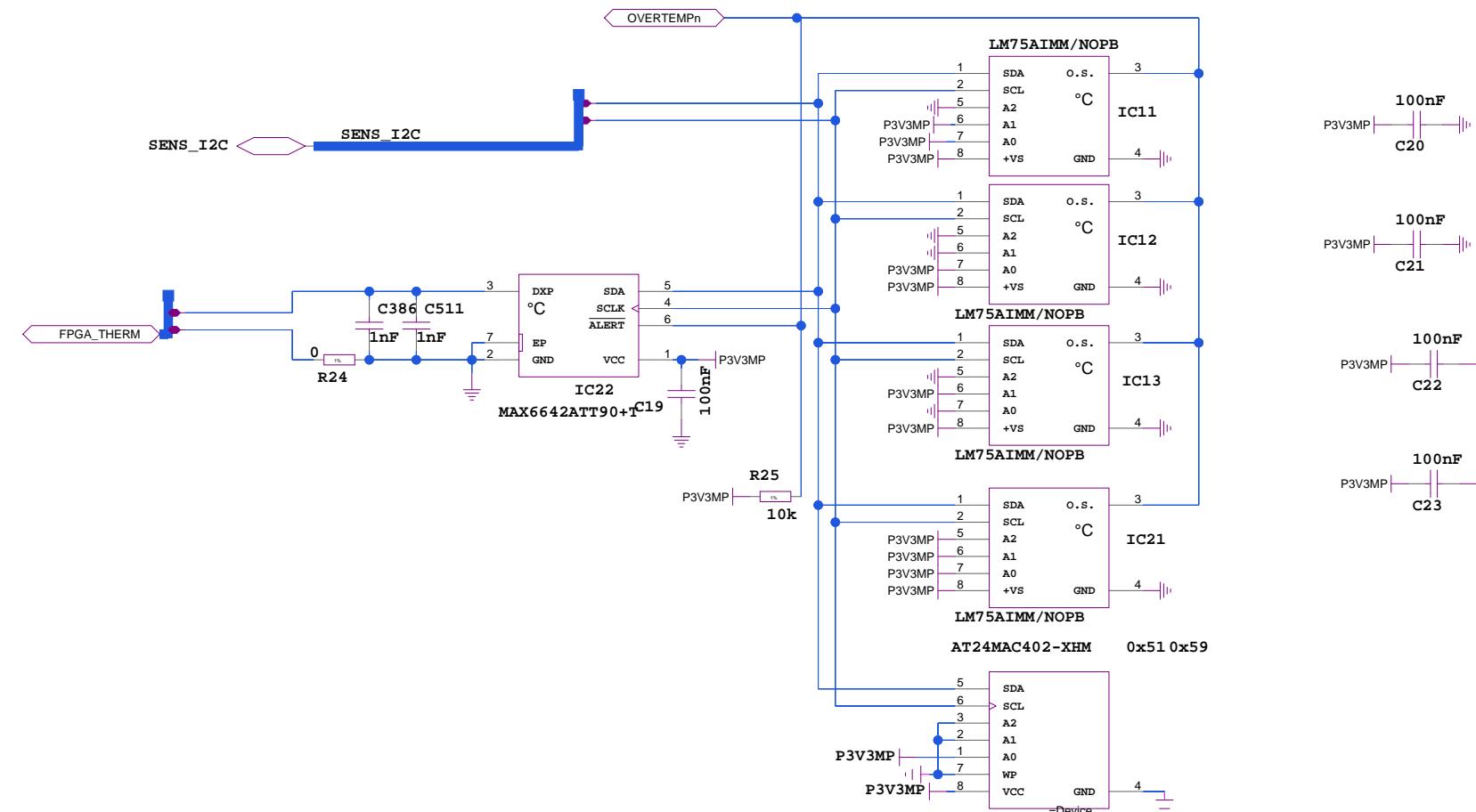


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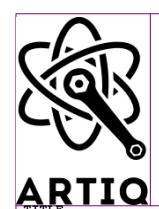
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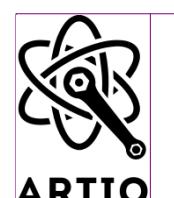
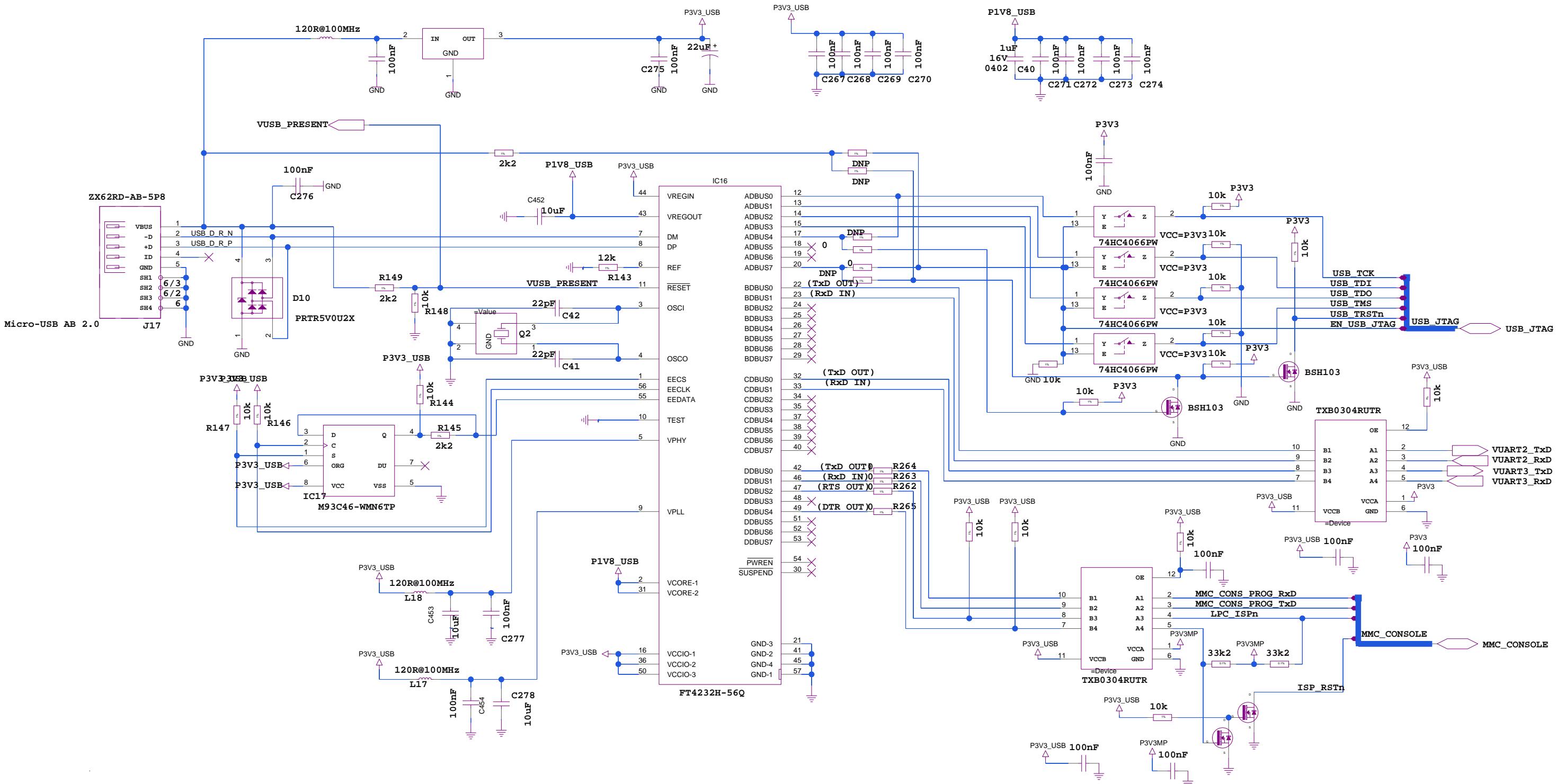
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Thermometers

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