

ALFEv2 Test Board

BGA package

Ver 5.6

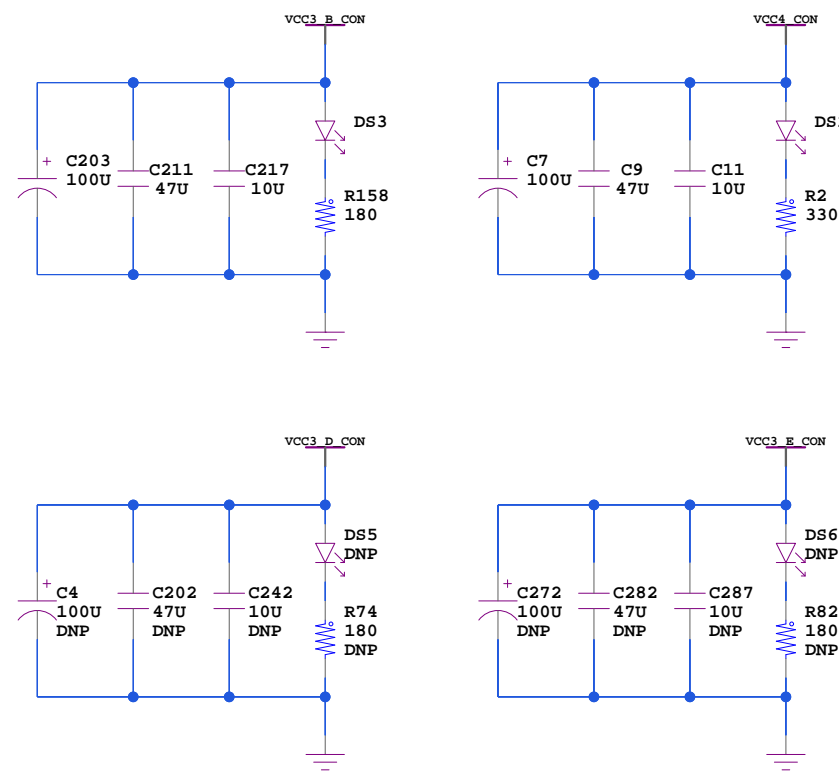
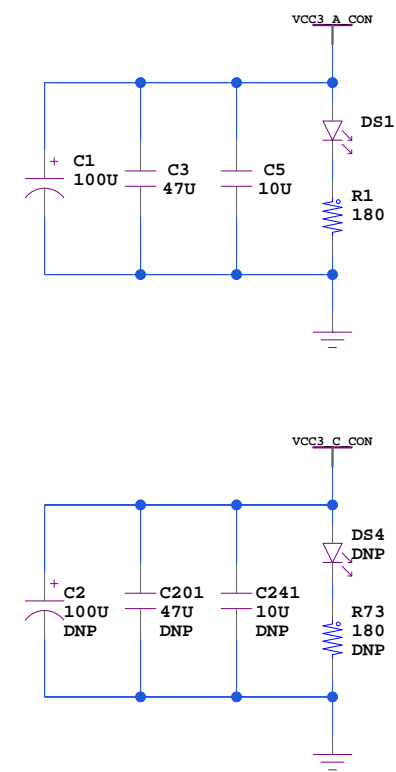
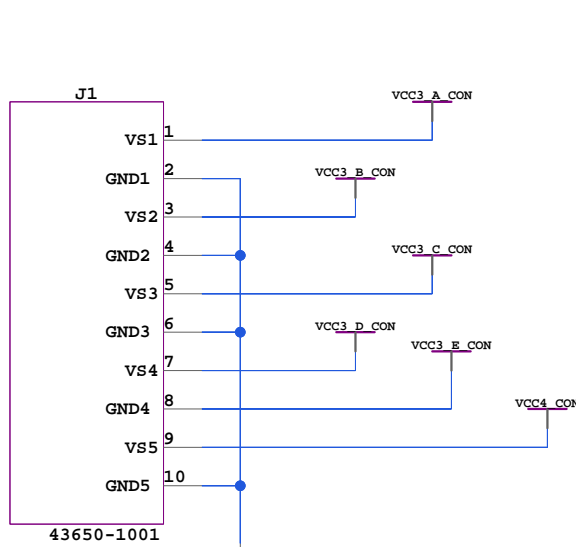
Dimitrios Matakias (dmatakias@bnl.gov)

07-11-2022

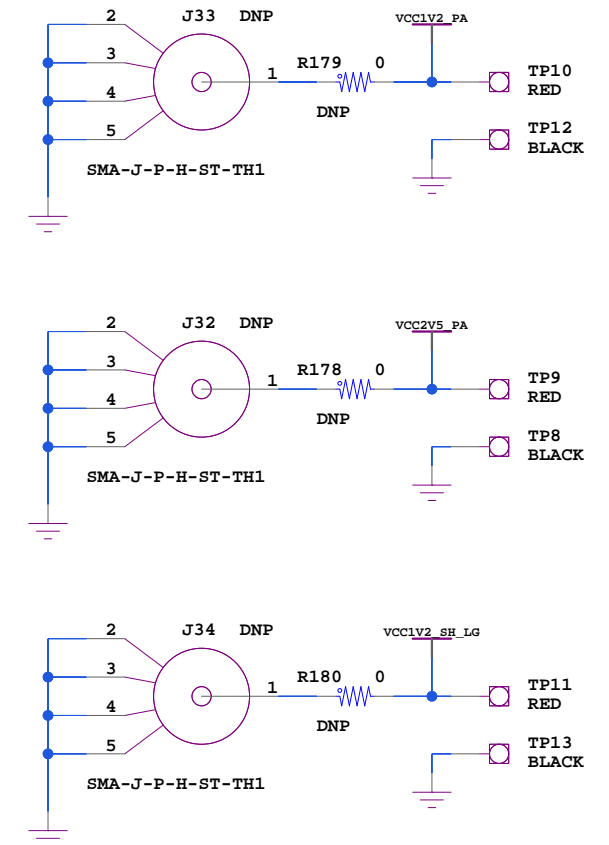
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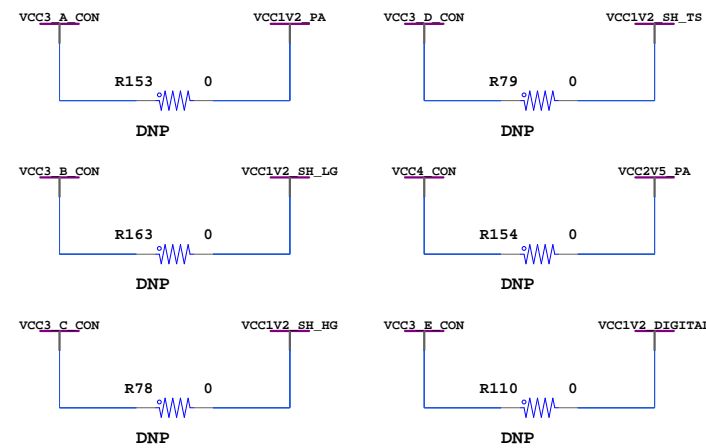
COMPANY			
BROOKHAVEN NATIONAL LABORATORY			
TITLE			
ALFEv2 Test Board V5.6			
SIZE	B	REV	SHEET 1 OF 15
DRAWN	DIMITRIOS MATAKIAS		DATE 11/07/2022:12:53



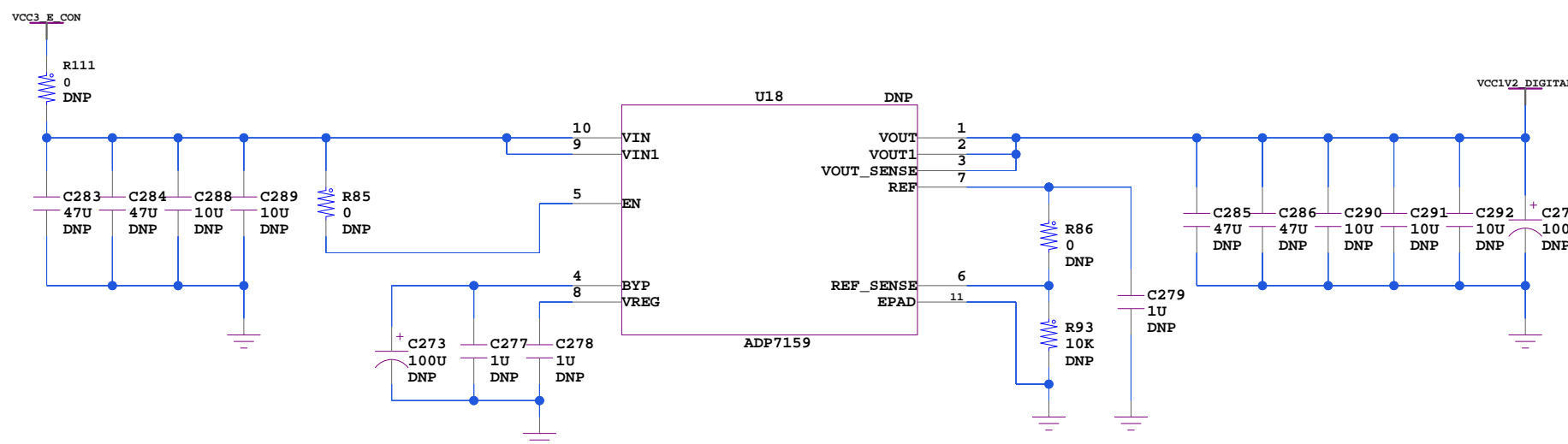
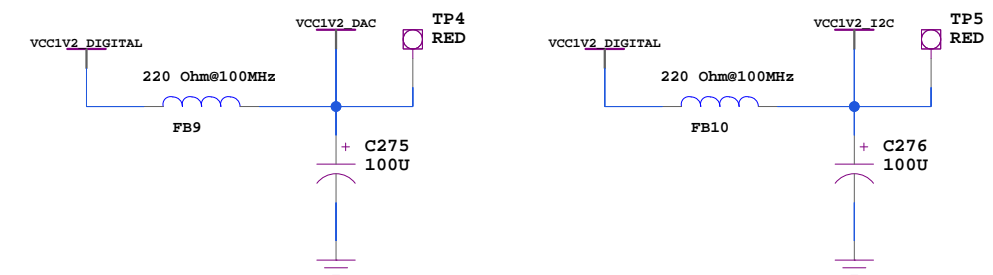
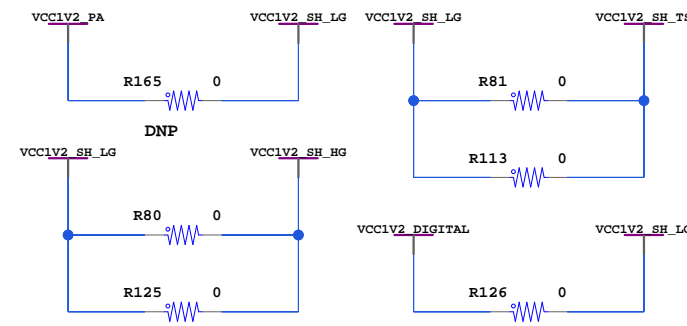
SMA external power connectors (PSRR measurement)



REGULATOR BYPASS JUMPERS

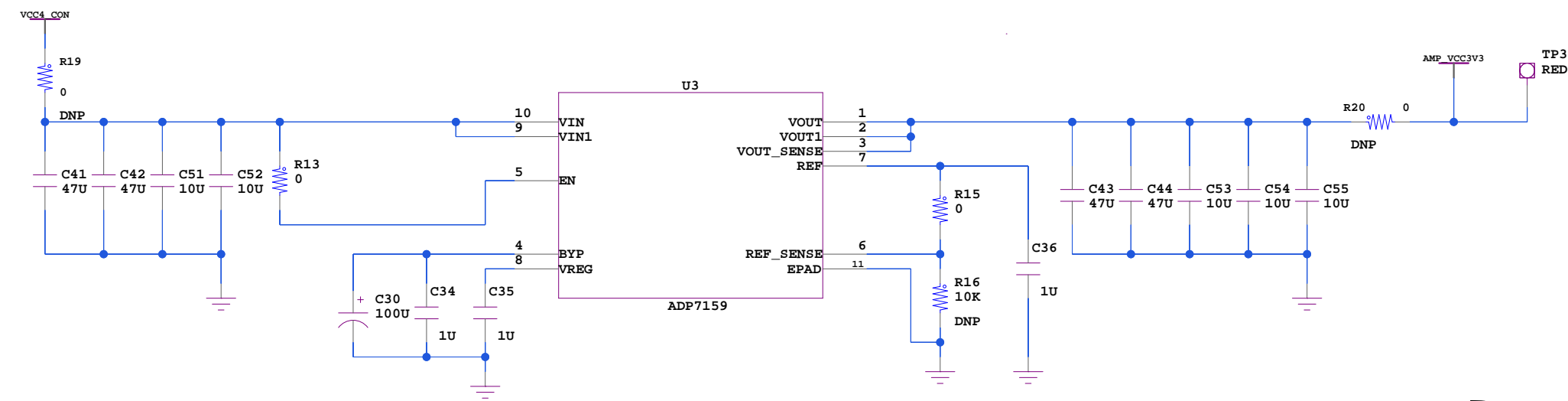
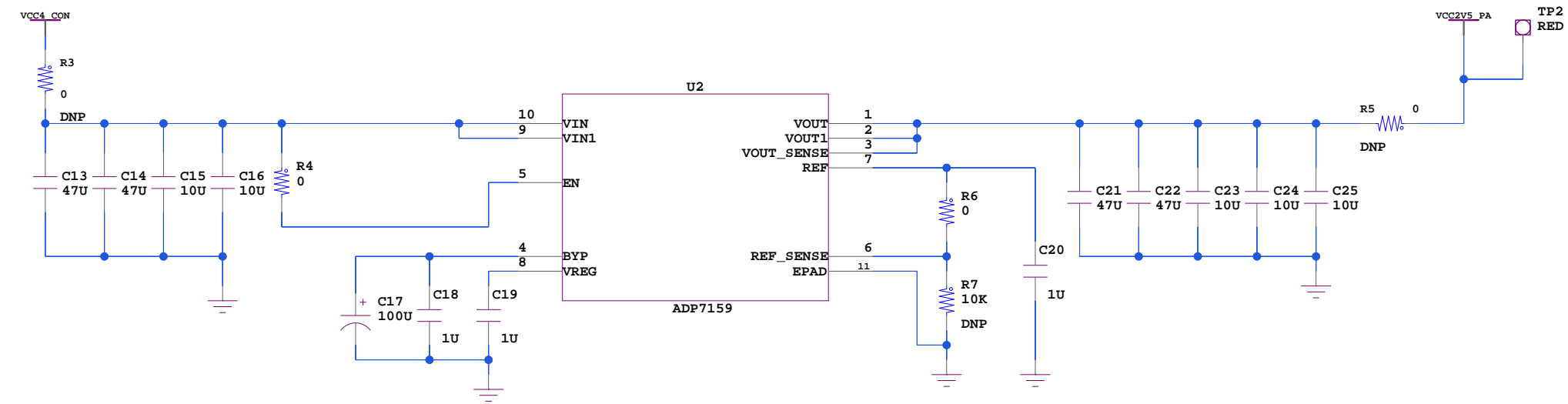
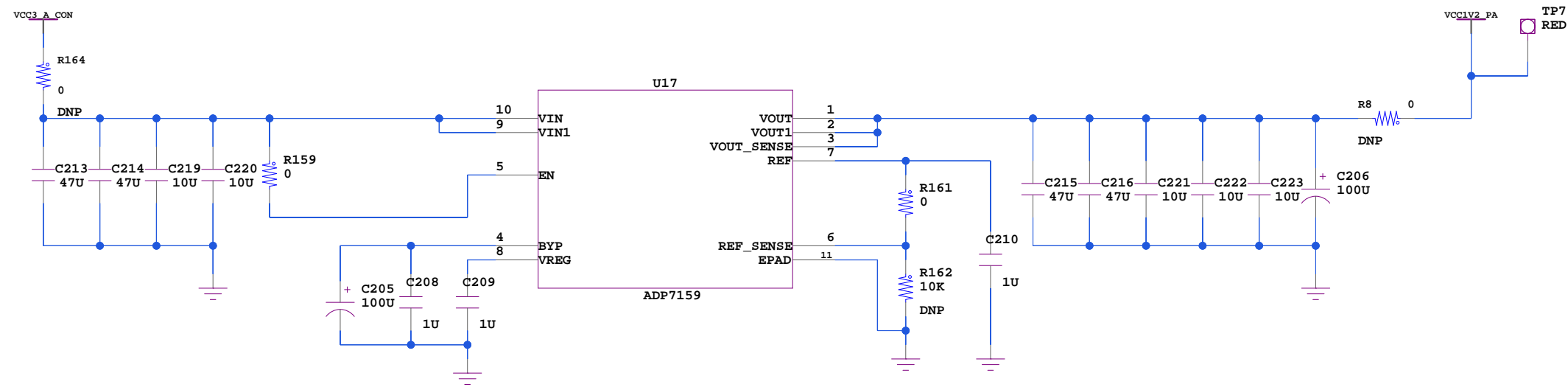


VCC1V2 PA & SH JUMPERS



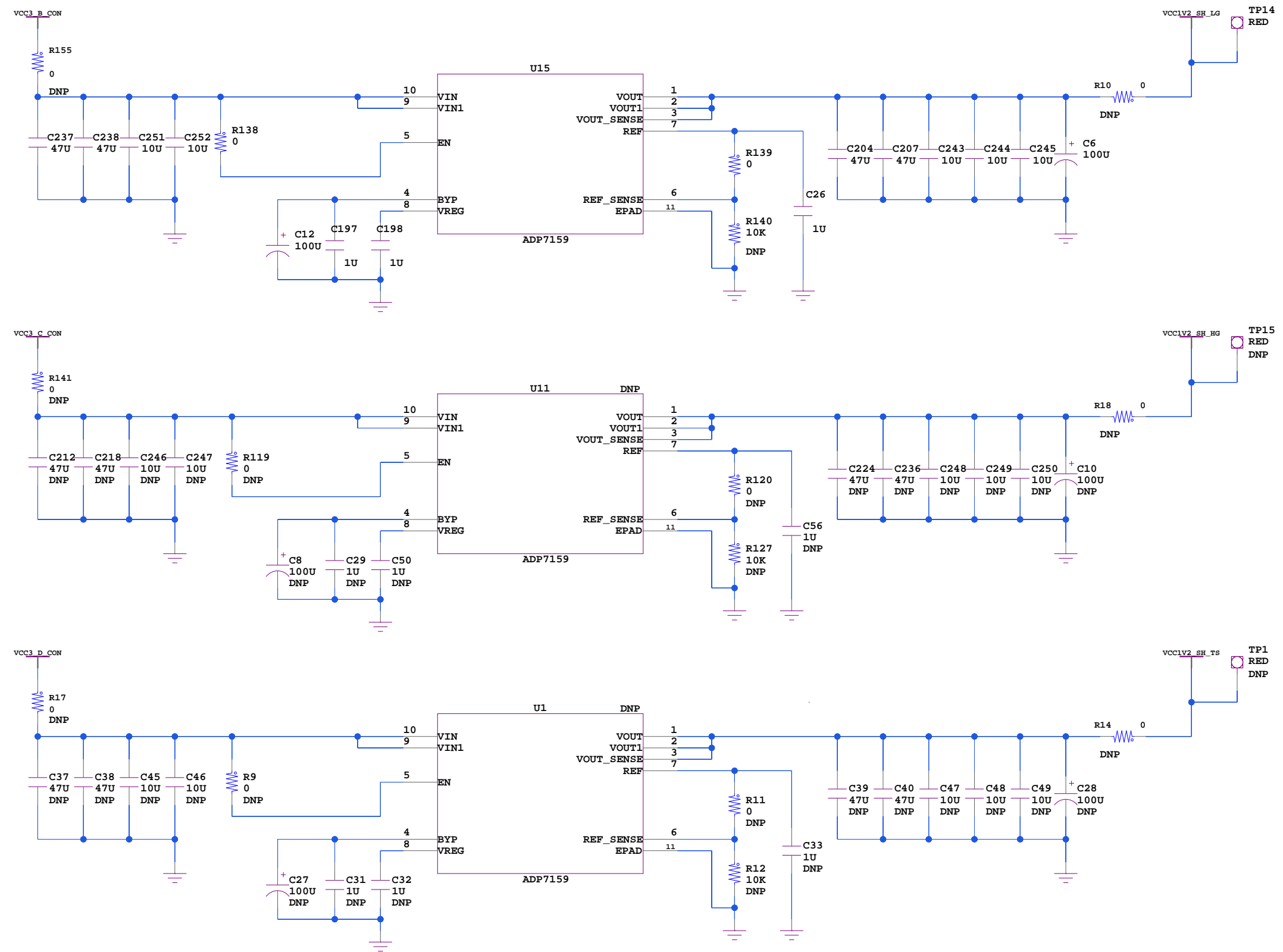
Pwr connector, jumpers

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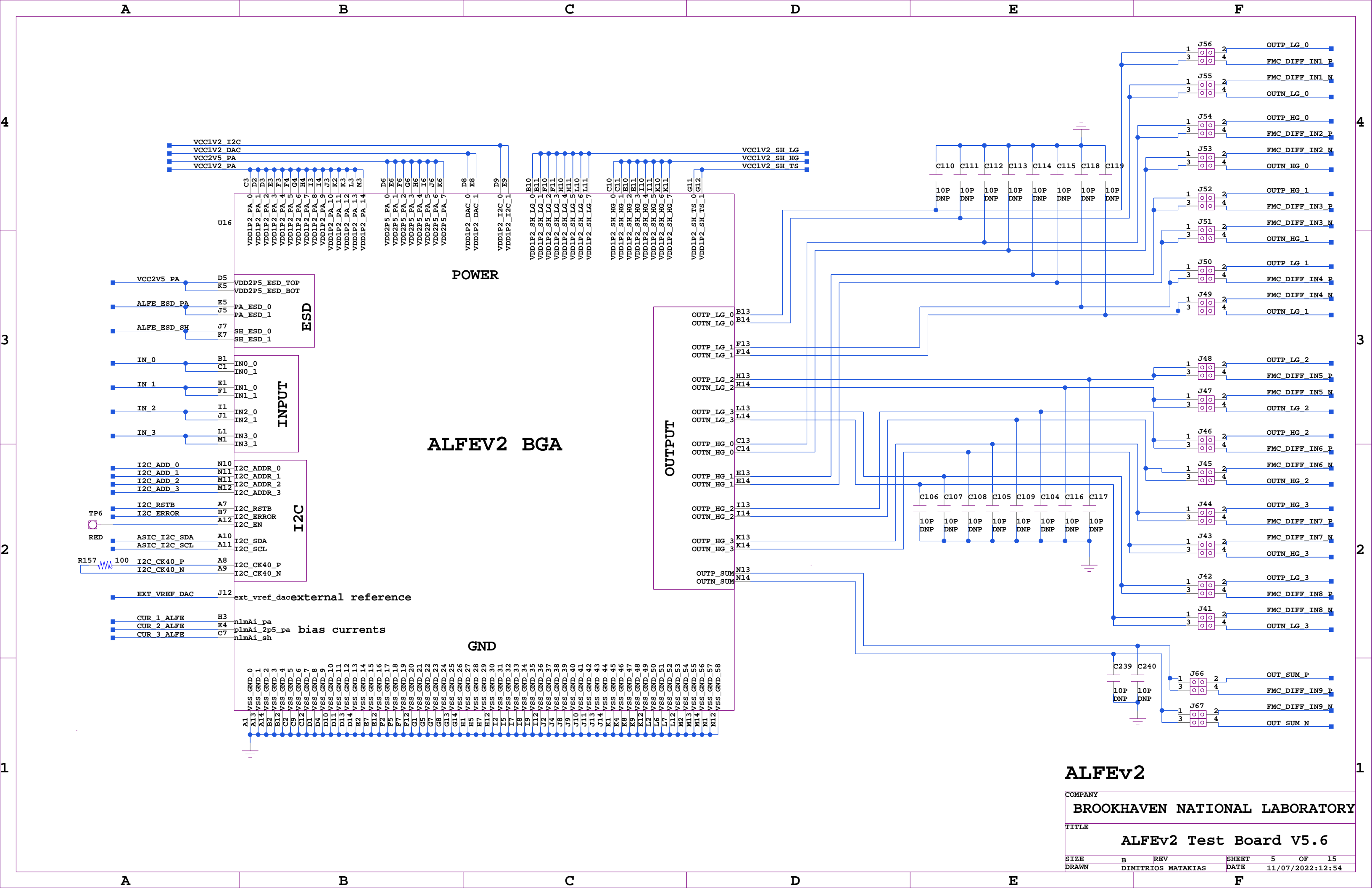
Pwr 2V5PA, 1V2PA, 3V3

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Pwr SH LG, HG, TS

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4

4

3

3

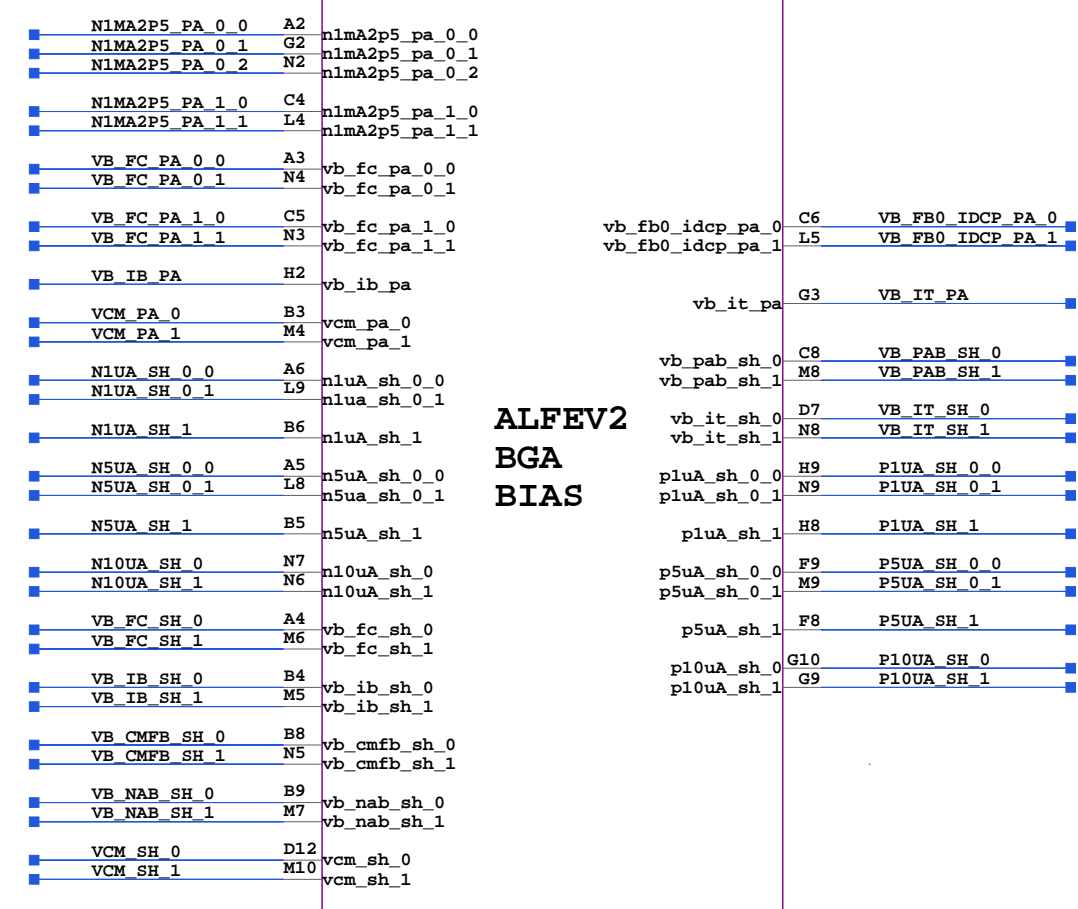
2

2

1

1

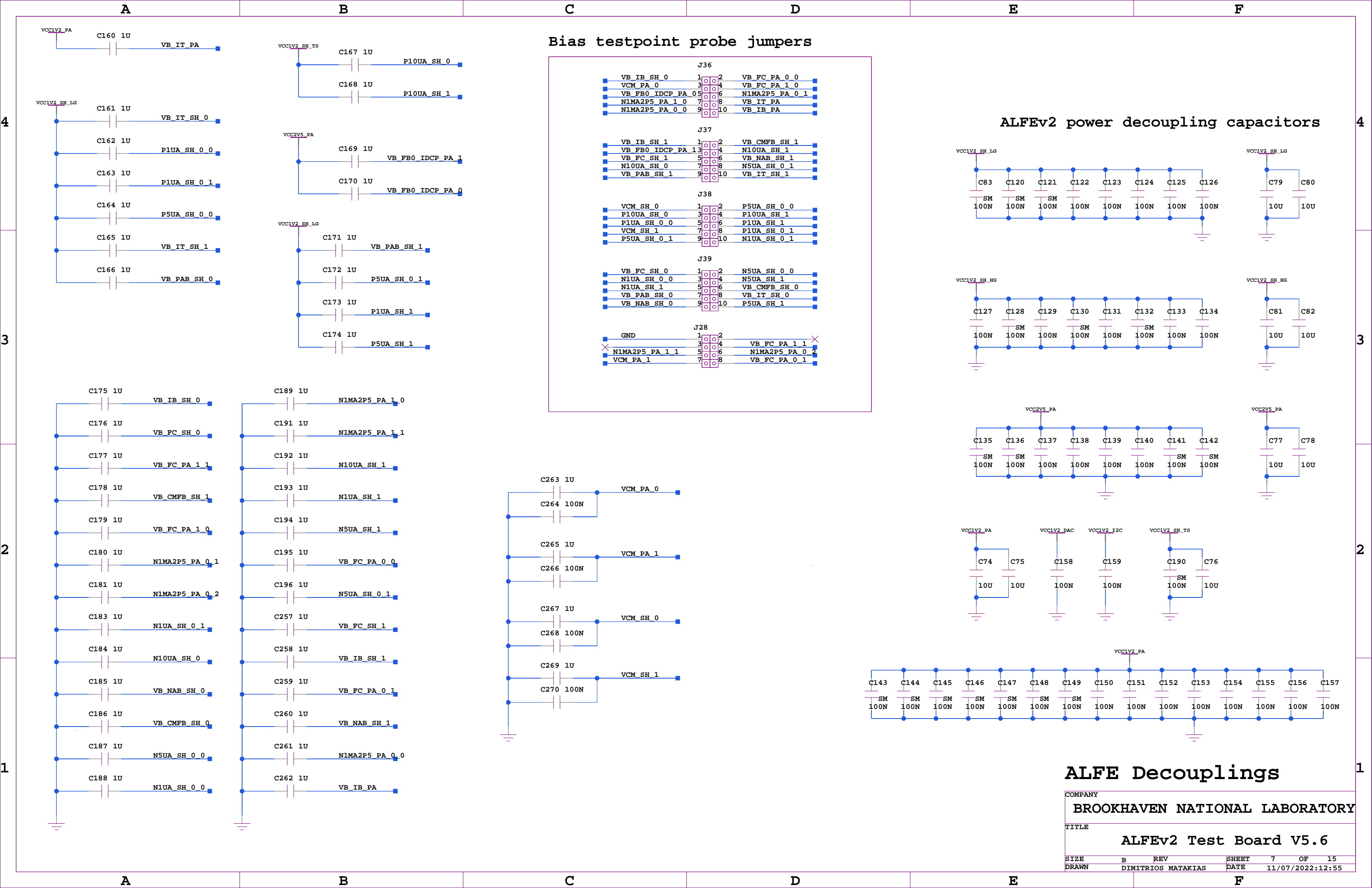
U16



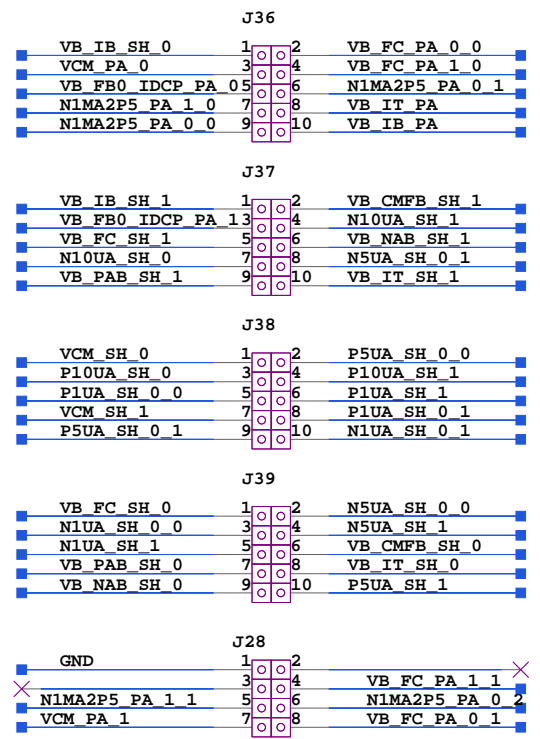
ALFEV2
BGA
BIAS

ALFEv2 bias

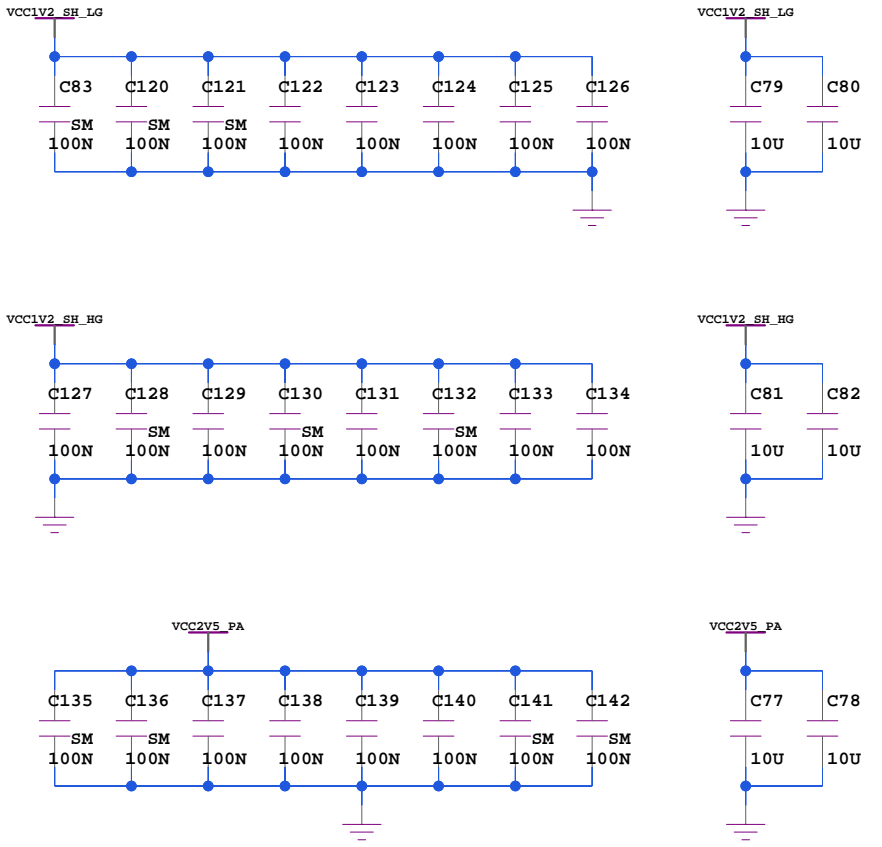
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Bias testpoint probe jumpers

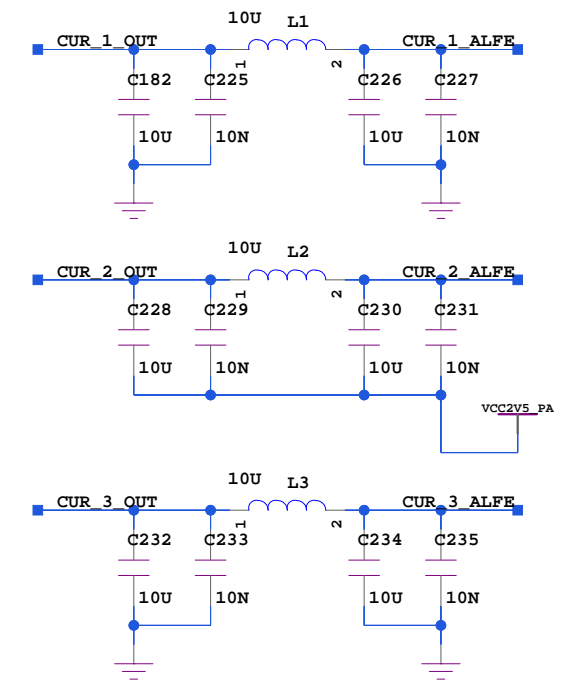
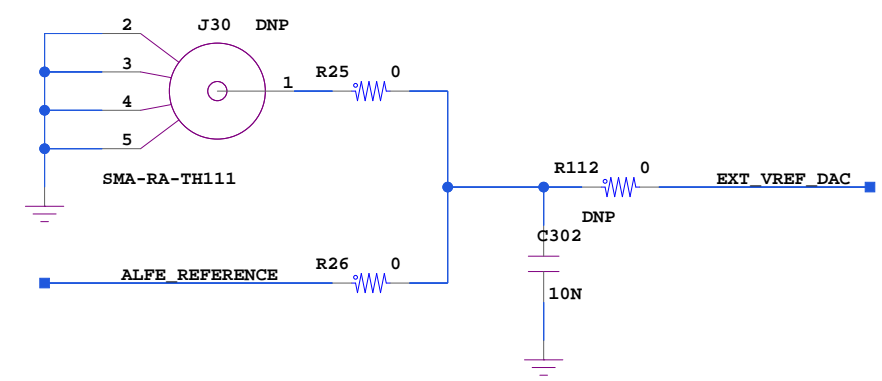
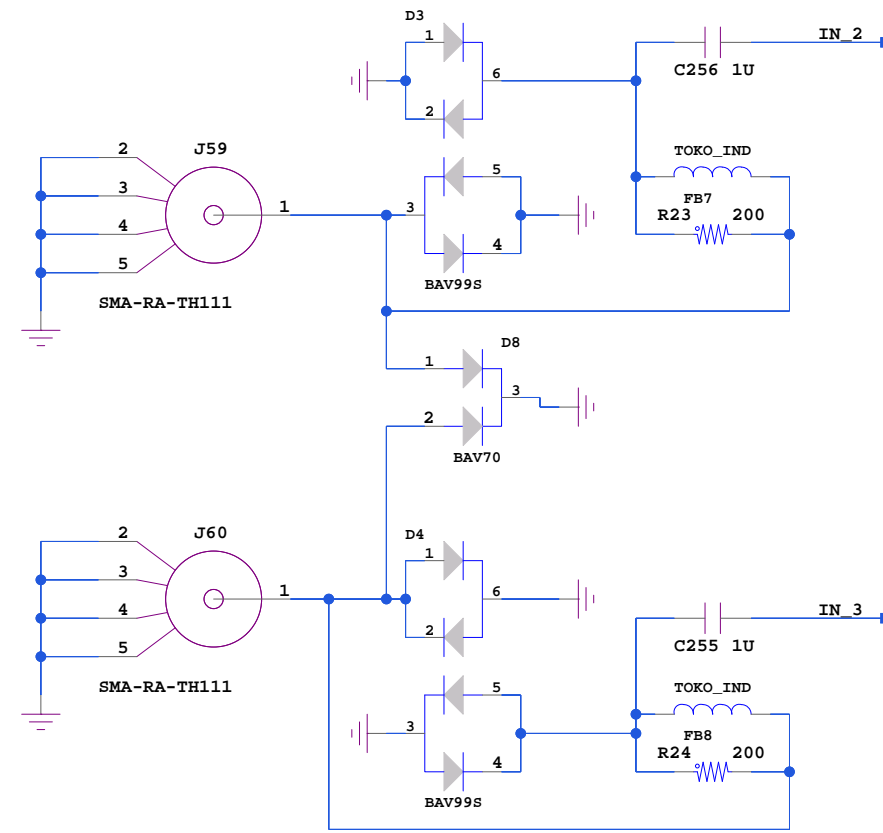
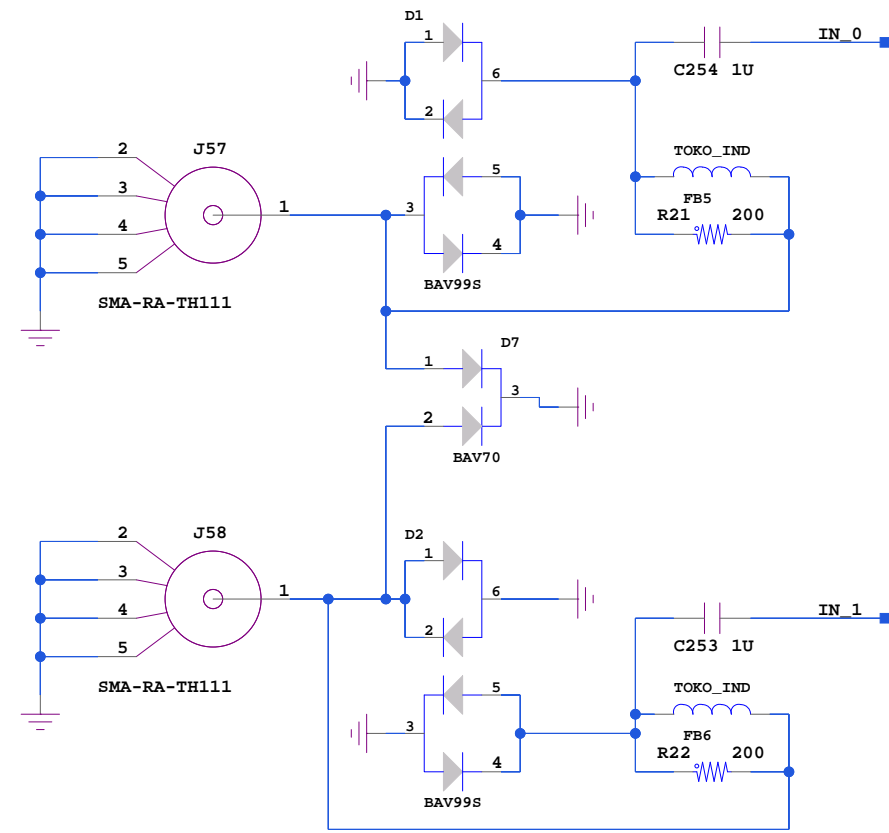


ALFEv2 power decoupling capacitors



ALFE Decouplings

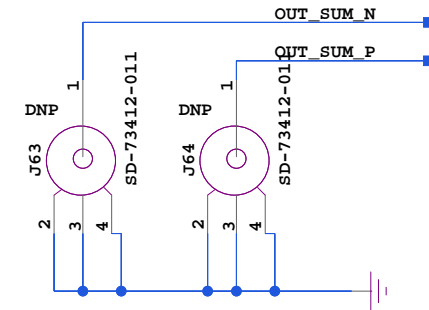
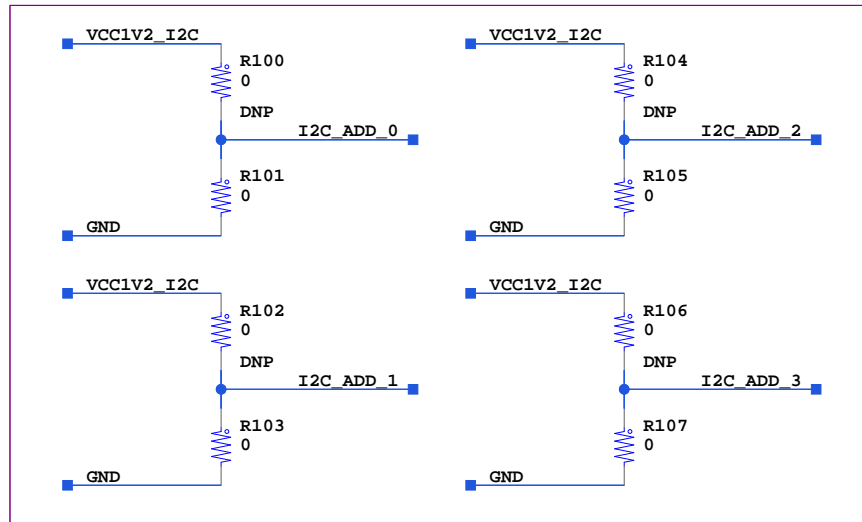
COMPANY		BROOKHAVEN NATIONAL LABORATORY	
TITLE		ALFEv2 Test Board V5.6	
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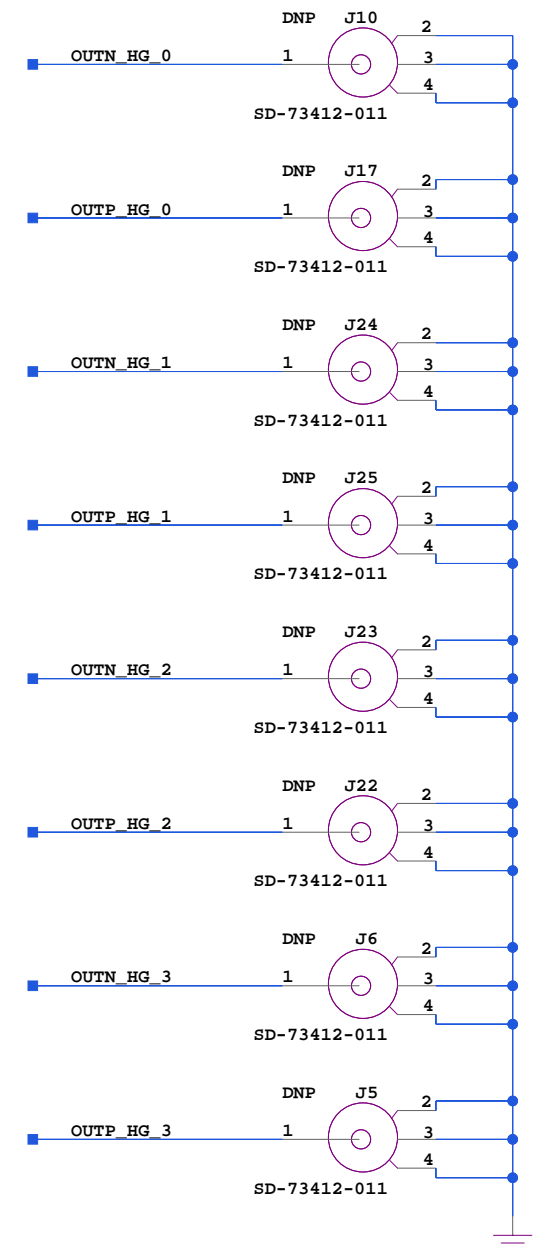
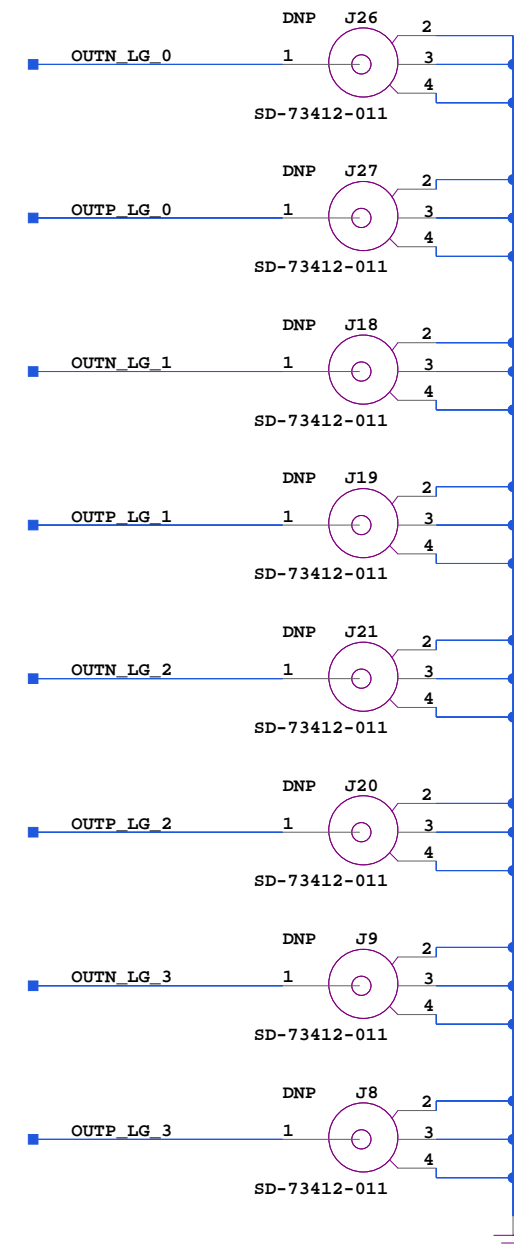
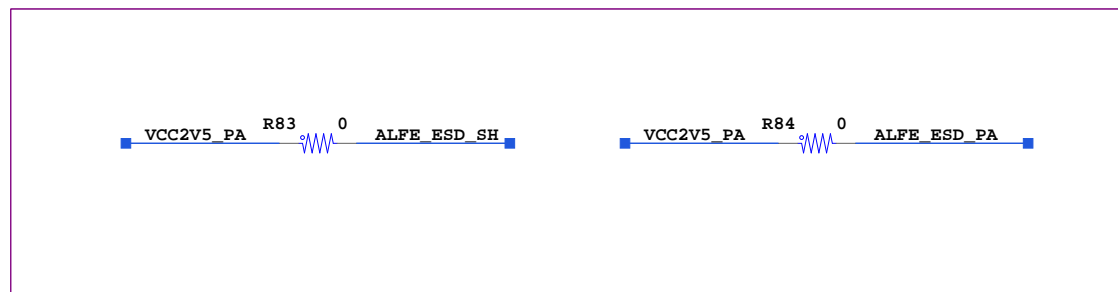
Input protection & bias current filters

COMPANY			
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I2C address selection jumpers

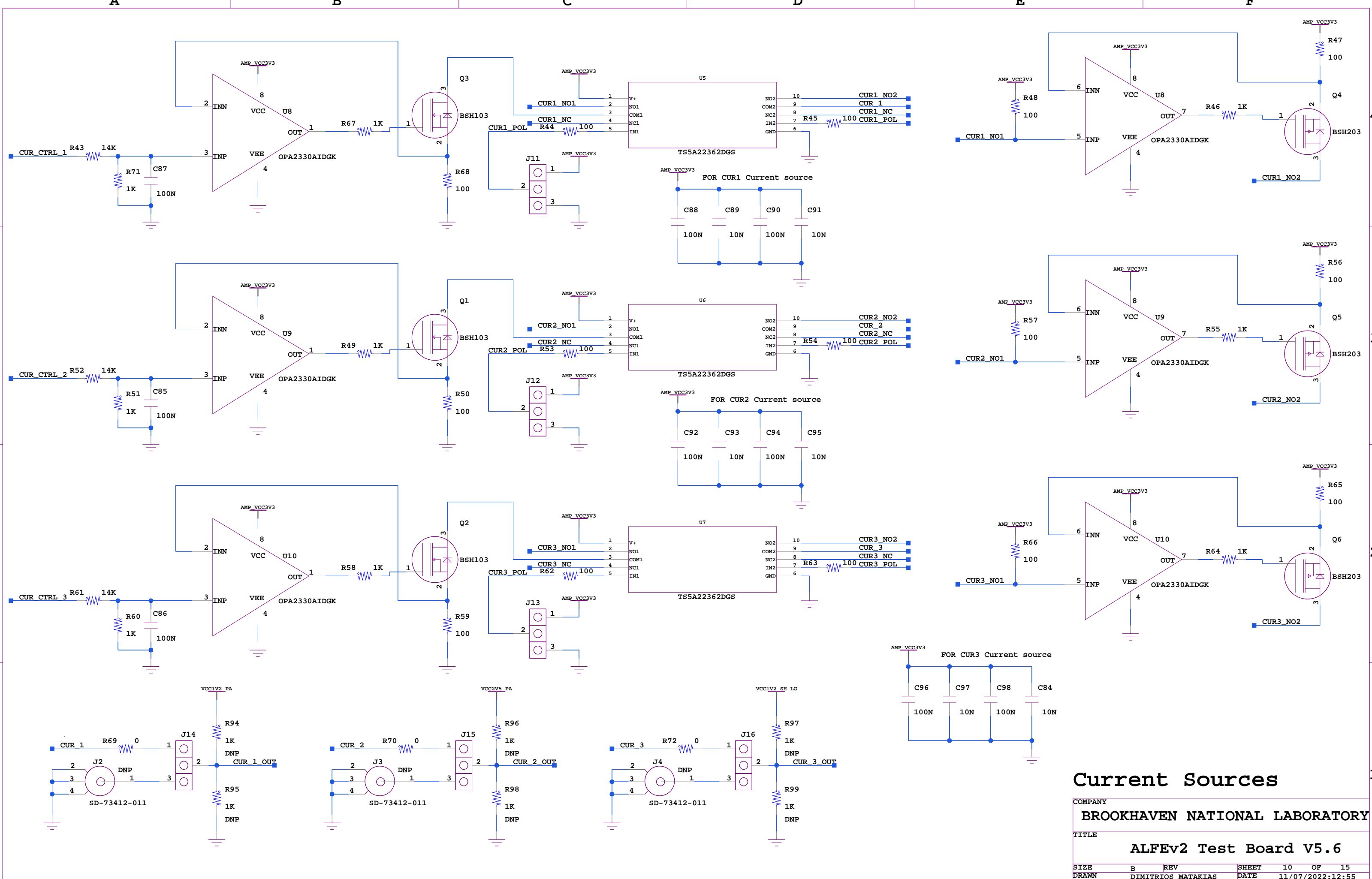


ALFEv2 ESD jumpers



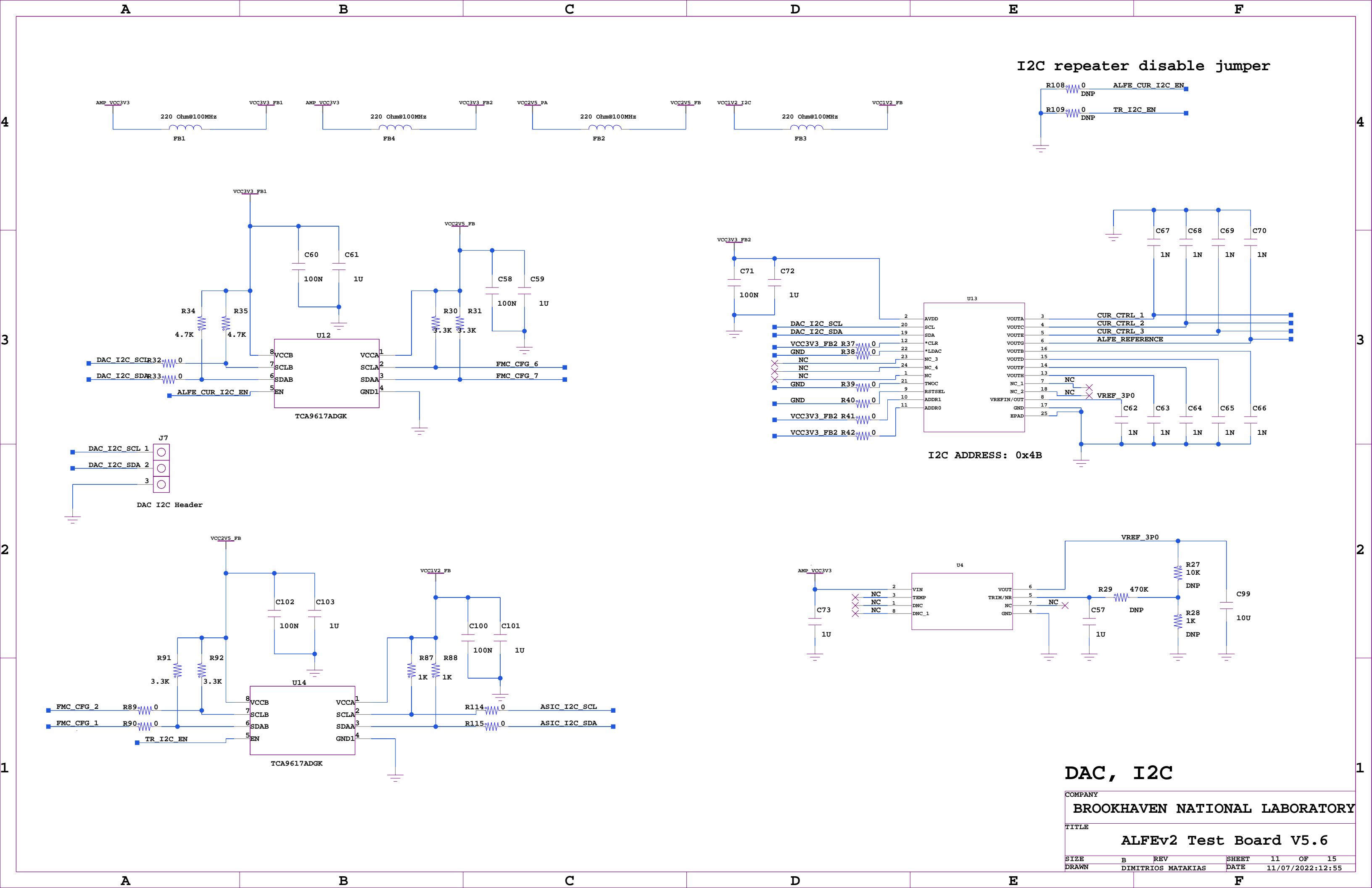
ALFE UMC and jumpers

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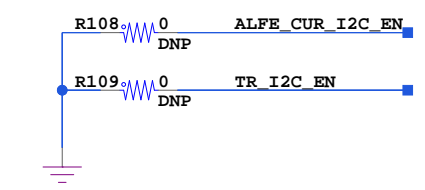


Current Sources

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ALFEV2 Test Board V5.6				
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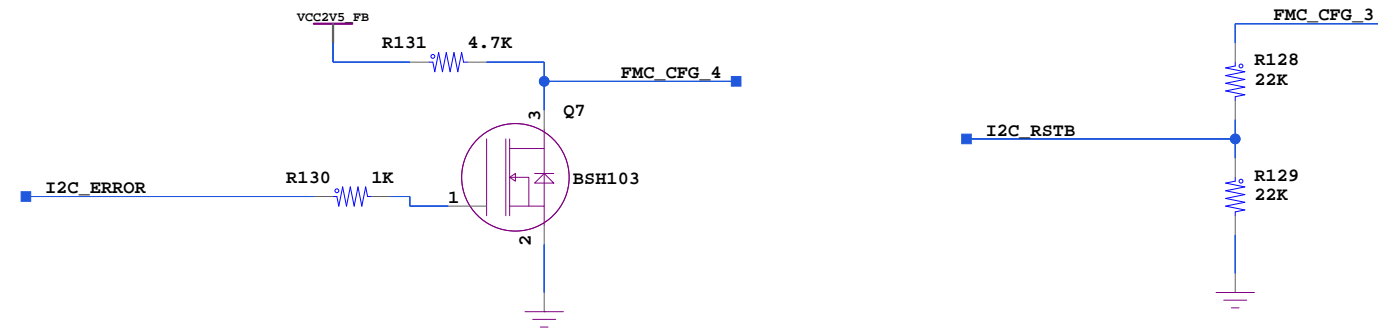
I2C repeater disable jumper



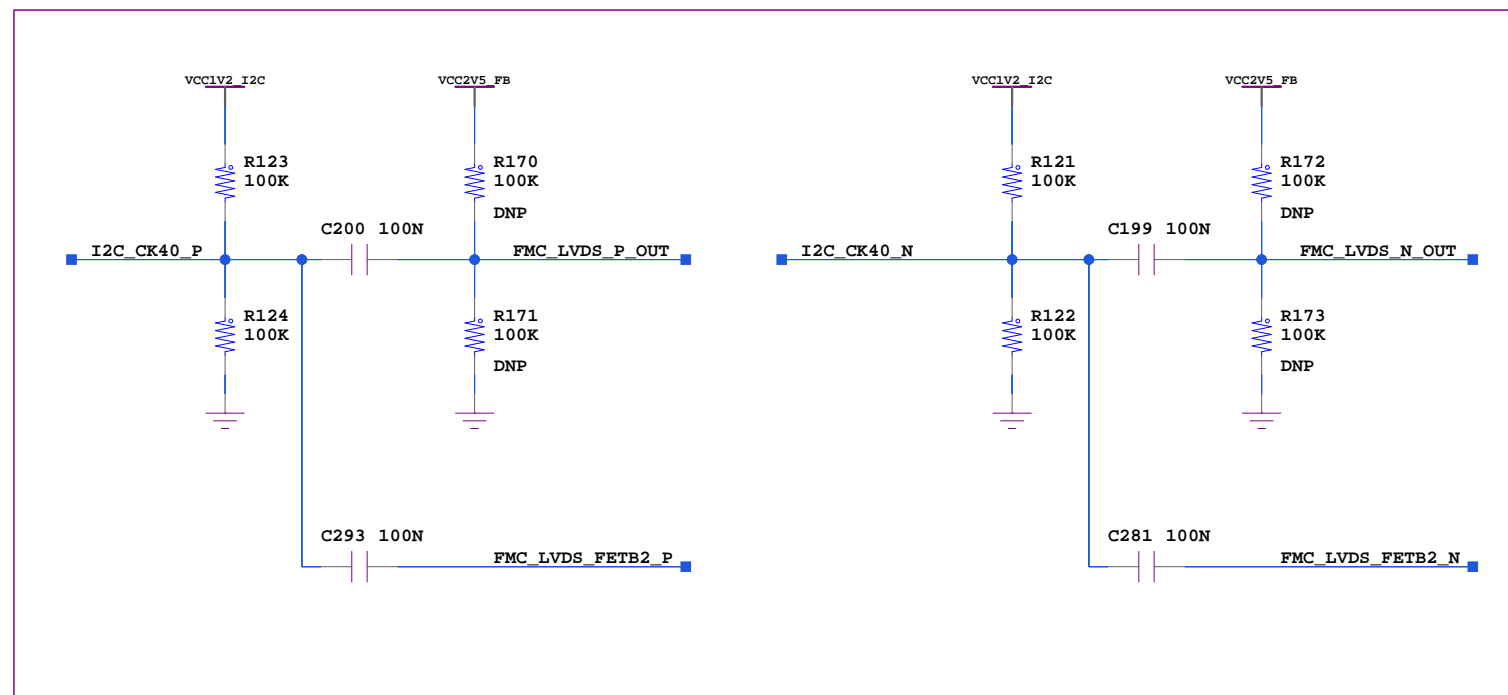
I2C ADDRESS: 0x4B

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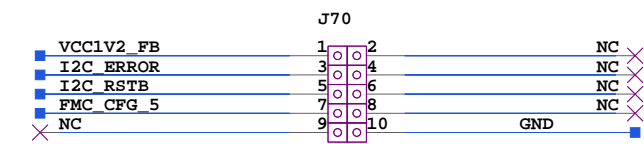
IO voltage translators



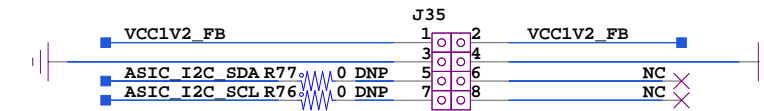
CLOCK CONNECTION



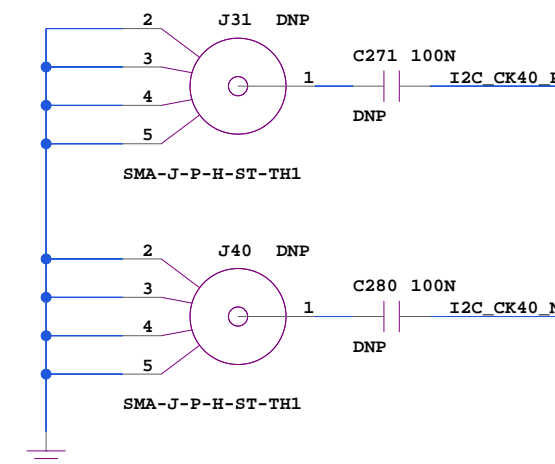
Configuration signal header



ALFE2 I2C dongle hdr



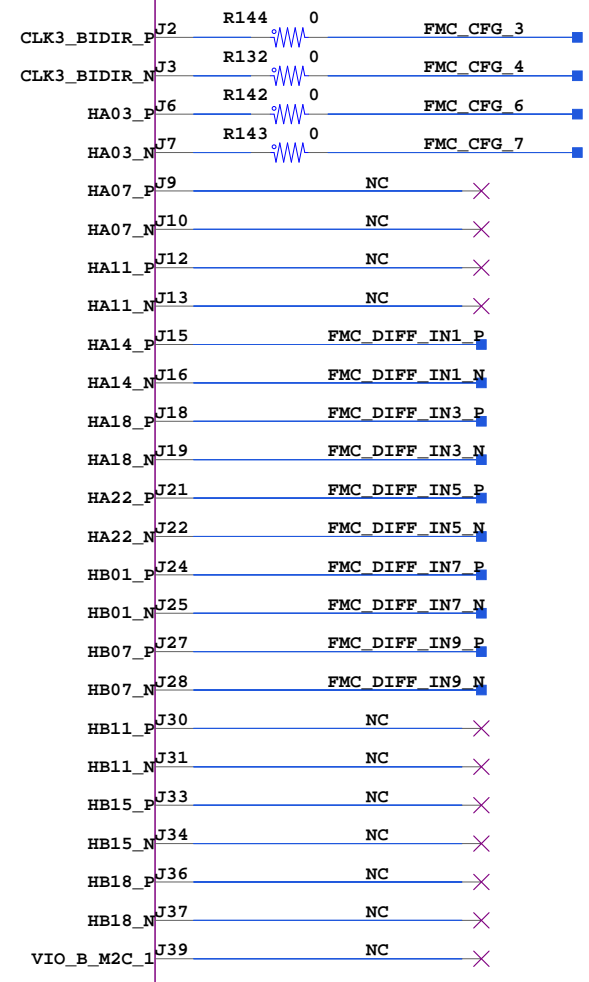
SMA for I2C clock



DIGITAL IO

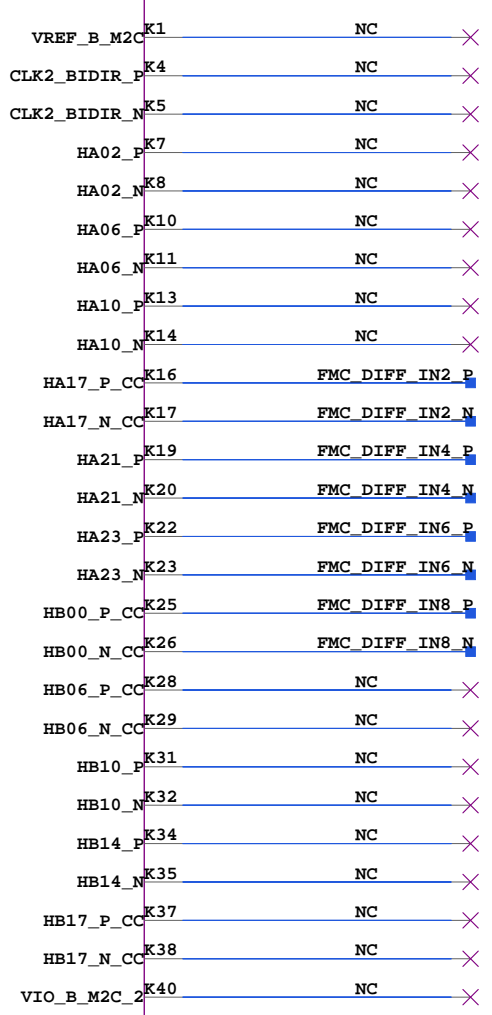
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ASP-134602-01



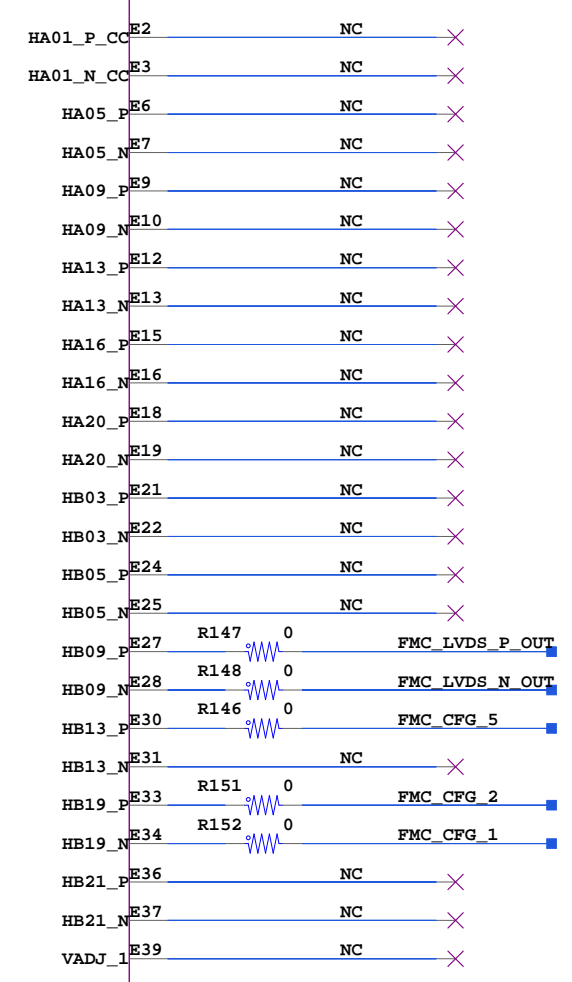
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FMC CONNECTIONS

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ASP-134602-01

DP1_M2C_P	A2	NC	×
DP1_M2C_N	A3	NC	×
DP2_M2C_P	A6	NC	×
DP2_M2C_N	A7	NC	×
DP3_M2C_P	A10	NC	×
DP3_M2C_N	A11	NC	×
DP4_M2C_P	A14	NC	×
DP4_M2C_N	A15	NC	×
DP5_M2C_P	A18	NC	×
DP5_M2C_N	A19	NC	×
DP1_C2M_P	A22	NC	×
DP1_C2M_N	A23	NC	×
DP2_C2M_P	A26	NC	×
DP2_C2M_N	A27	NC	×
DP3_C2M_P	A30	NC	×
DP3_C2M_N	A31	NC	×
DP4_C2M_P	A34	NC	×
DP4_C2M_N	A35	NC	×
DP5_C2M_P	A38	NC	×
DP5_C2M_N	A39	NC	×

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CLK_DIR	B1	NC	×
DP9_M2C_P	B4	NC	×
DP9_M2C_N	B5	NC	×
DP8_M2C_P	B8	NC	×
DP8_M2C_N	B9	NC	×
DP7_M2C_P	B12	NC	×
DP7_M2C_N	B13	NC	×
DP6_M2C_P	B16	NC	×
DP6_M2C_N	B17	NC	×
GBTCLK1_M2C_P	B20	NC	×
GBTCLK1_M2C_N	B21	NC	×
DP9_C2M_P	B24	NC	×
DP9_C2M_N	B25	NC	×
DP8_C2M_P	B28	NC	×
DP8_C2M_N	B29	NC	×
DP7_C2M_P	B32	NC	×
DP7_C2M_N	B33	NC	×
DP6_C2M_P	B36	NC	×
DP6_C2M_N	B37	NC	×
RES0	B40	NC	×

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PG_C2M_D1	NC	×
GBTCLK0_M2C_P	NC	×
GBTCLK0_M2C_N	NC	×
LA01_P_CC	NC	×
LA01_N_CC	NC	×
LA05_P	NC	×
LA05_N	NC	×
LA09_P	NC	×
LA09_N	NC	×
LA13_P	NC	×
LA13_N	NC	×
LA17_P_CC	NC	×
LA17_N_CC	NC	×
LA23_P	NC	×
LA23_N	NC	×
LA26_P	NC	×
LA26_N	NC	×
TCK	NC	×
TDI	NC	×
TDO	NC	×
3P3VAUX	NC	×
TMS	NC	×
TRST_I	NC	×
GAL	NC	×
3P3V_2	NC	×
3P3V_3	NC	×
3P3V_4	NC	×

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DP0_C2M_P	C2	NC	×
DP0_C2M_N	C3	NC	×
DP0_M2C_P	C6	NC	×
DP0_M2C_N	C7	NC	×
LA06_P	C10	FMC LVDS FETB2 P	
LA06_N	C11	FMC LVDS FETB2 N	
LA10_P	C14	NC	×
LA10_N	C15	NC	×
LA14_P	C18	NC	×
LA14_N	C19	NC	×
LA18_P_CC	C22	NC	×
LA18_N_CC	C23	NC	×
LA27_P	C26	NC	×
LA27_N	C27	NC	×
SCL	C30	R116 0 ASIC I2C SCL	
SDA	C31	R117 0 ASIC I2C SDA	
GA0	C34	NC	×
12P0V_1	C35	NC	×
12P0V_2	C37	NC	×
3P3V_1	C39	R118 0	

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PG_M2C_F1	NC	×
HA00_P_CC	NC	×
HA00_N_CC	NC	×
HA04_P	NC	×
HA04_N	NC	×
HA08_P	NC	×
HA08_N	NC	×
HA12_P	NC	×
HA12_N	NC	×
HA15_P	NC	×
HA15_N	NC	×
HA19_P	NC	×
HA19_N	NC	×
HB02_P	NC	×
HB02_N	NC	×
HB04_P	NC	×
HB04_N	NC	×
HB08_P	NC	×
HB08_N	NC	×
HB12_P	NC	×
HB12_N	NC	×
HB16_P	NC	×
HB16_N	NC	×
HB20_P	NC	×
HB20_N	NC	×
VADJ_2	NC	×

ASP-134602-01

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CLK1_M2C_P	G2	NC	×
CLK1_M2C_N	G3	NC	×
LA00_P_CC	G6	NC	×
LA00_N_CC	G7	NC	×
LA03_P	G9	NC	×
LA03_N	G10	NC	×
LA08_P	G12	NC	×
LA08_N	G13	NC	×
LA12_P	G15	NC	×
LA12_N	G16	NC	×
LA16_P	G18	NC	×
LA16_N	G19	NC	×
LA20_P	G21	NC	×
LA20_N	G22	NC	×
LA22_P	G24	NC	×
LA22_N	G25	NC	×
LA25_P	G27	NC	×
LA25_N	G28	NC	×
LA29_P	G30	NC	×
LA29_N	G31	NC	×
LA31_P	G33	NC	×
LA31_N	G34	NC	×
LA33_P	G36	NC	×
LA33_N	G37	NC	×
VADJ_3	G39	NC	×

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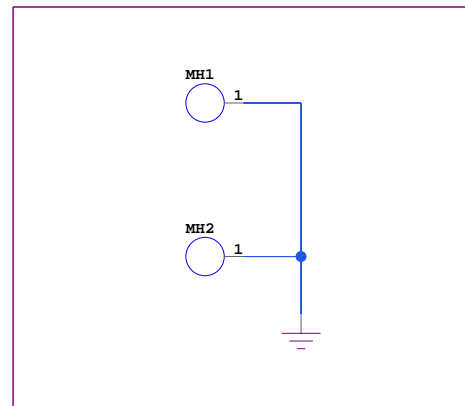
VREF_A_M2C	H1	NC	×
PRSENT_M2C_L	H2	NC	×
CLK0_M2C_P	H4	NC	×
CLK0_M2C_N	H5	NC	×
LA02_P	H7	NC	×
LA02_N	H8	NC	×
LA04_P	H10	NC	×
LA04_N	H11	NC	×
LA07_P	H13	NC	×
LA07_N	H14	NC	×
LA11_P	H16	NC	×
LA11_N	H17	NC	×
LA15_P	H19	NC	×
LA15_N	H20	NC	×
LA19_P	H22	NC	×
LA19_N	H23	NC	×
LA21_P	H25	NC	×
LA21_N	H26	NC	×
LA24_P	H28	NC	×
LA24_N	H29	NC	×
LA28_P	H31	NC	×
LA28_N	H32	NC	×
LA30_P	H34	NC	×
LA30_N	H35	NC	×
LA32_P	H37	NC	×
LA32_N	H38	NC	×
VADJ_4	H40	NC	×

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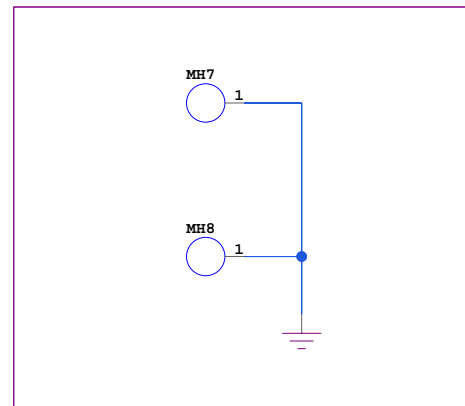
Unused FMC Banks

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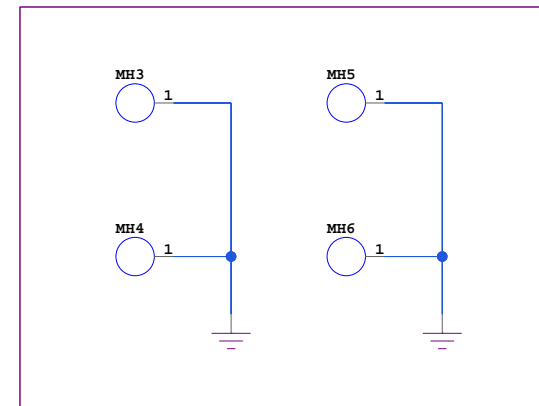
FMC Mechanical Holes



FMC Cable support



Mounting Holes



Ground FMC Banks

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ALFEv2 Test Board V5.6			
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