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| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| | | | |

EVAL-AD777X-ARDZ SCHEMATIC REV (A)

PAGE 2 - TOP VIEW

PAGE 3 - POWER SUPPLIES

PAGE 4 - ANALOG INPUT FILTER

PAGE 5 - REFERENCE

PAGE 6 - ARDUINO INTERFACE

PAGE 7 - ADC AD777X

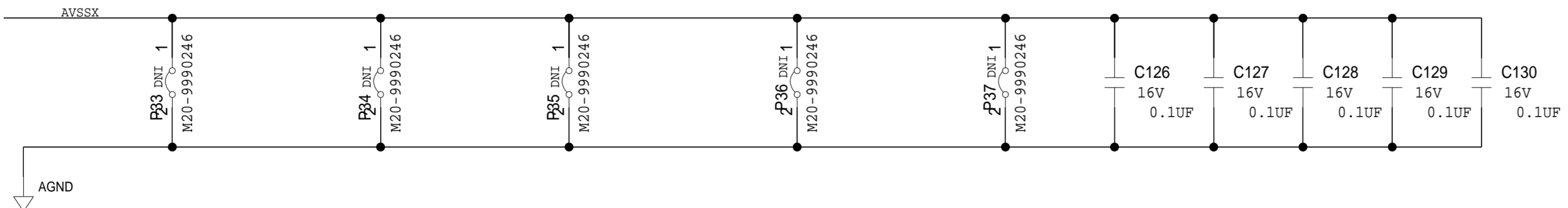
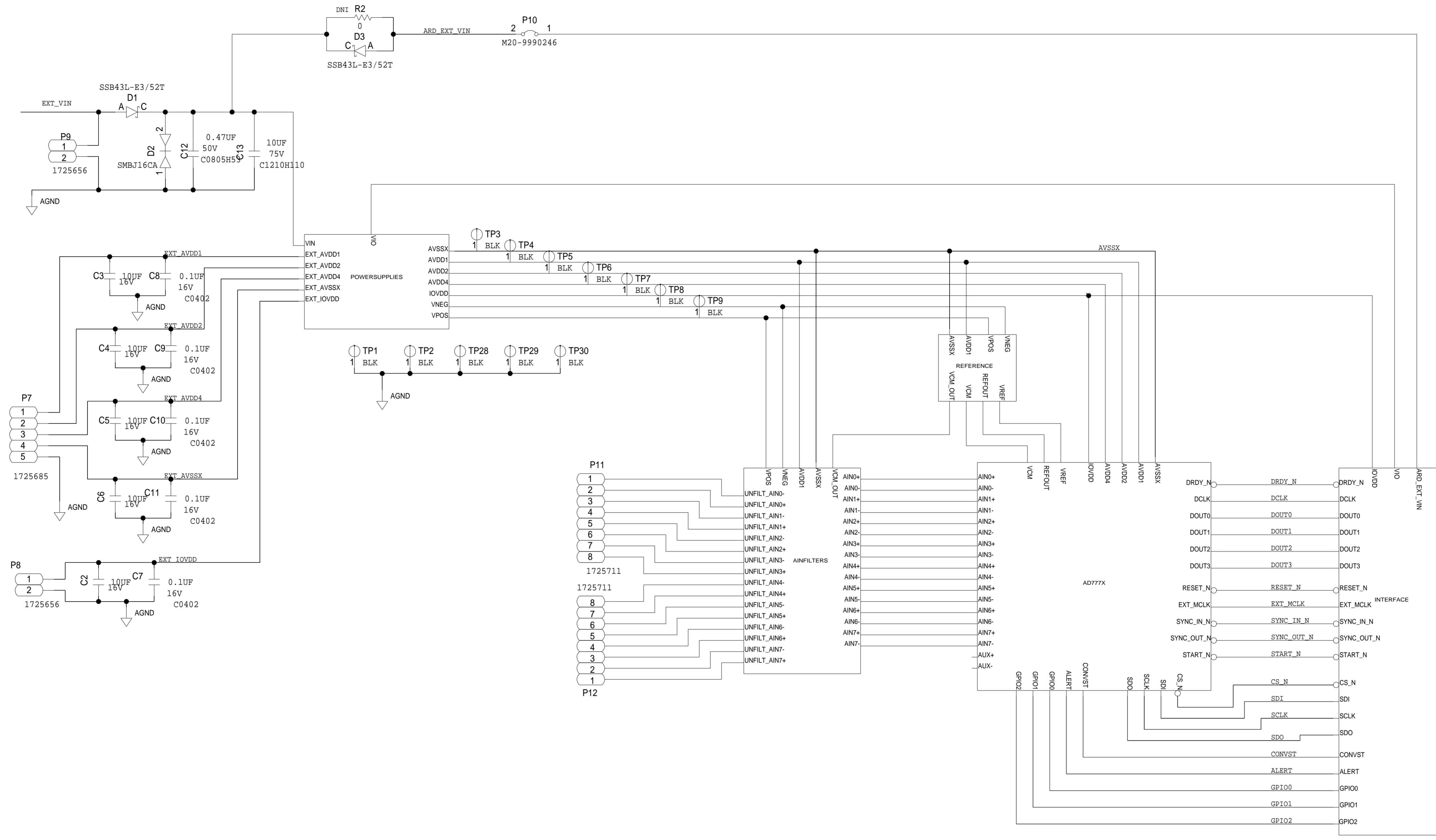
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| P.O SPEC. | BK/BD SPEC. | SOCKET OEM | OEM PART# | HANDLER |

| | | | | |
|-----------------------------|------|---|-----------------------------|--------------------------|
| TEMPLATE ENGINEER - | DATE | SCHEMATIC | | |
| HARDWARE SERVICES - | | | | |
| HARDWARE SYSTEMS - | | HW TYPE : Customer Evaluation | | |
| TEST ENGINEER - | | Product(s): AD7771 | | |
| COMPONENT ENGINEER - | | <PRODUCT_1> | | |
| TEST PROCESS - | | EVAL-AD777x-ARDZ | | |
| HARDWARE RELEASE - | | <User Define> | | |
| DESIGNER Pat Sheahan | | MASTER PROJECT TEMPLATE TBD | TESTER TEMPLATE 064489_c | DRAWING NO. 02-068869 |
| PTD ENGINEER Joan Ortega | | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES | | REV. A |
| CHECKER - | | TOLERANCES | | |
| | | DECIMALS X.XX +0.010 X.XXX +0.005 | FRACTIONS +1/32 | ANGLES +2 |
| | | SIZE D | SCALE 1:1 | CODE ID NO. CodeID |
| | | | | SHEET 1 OF 7 |

| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| | | | |

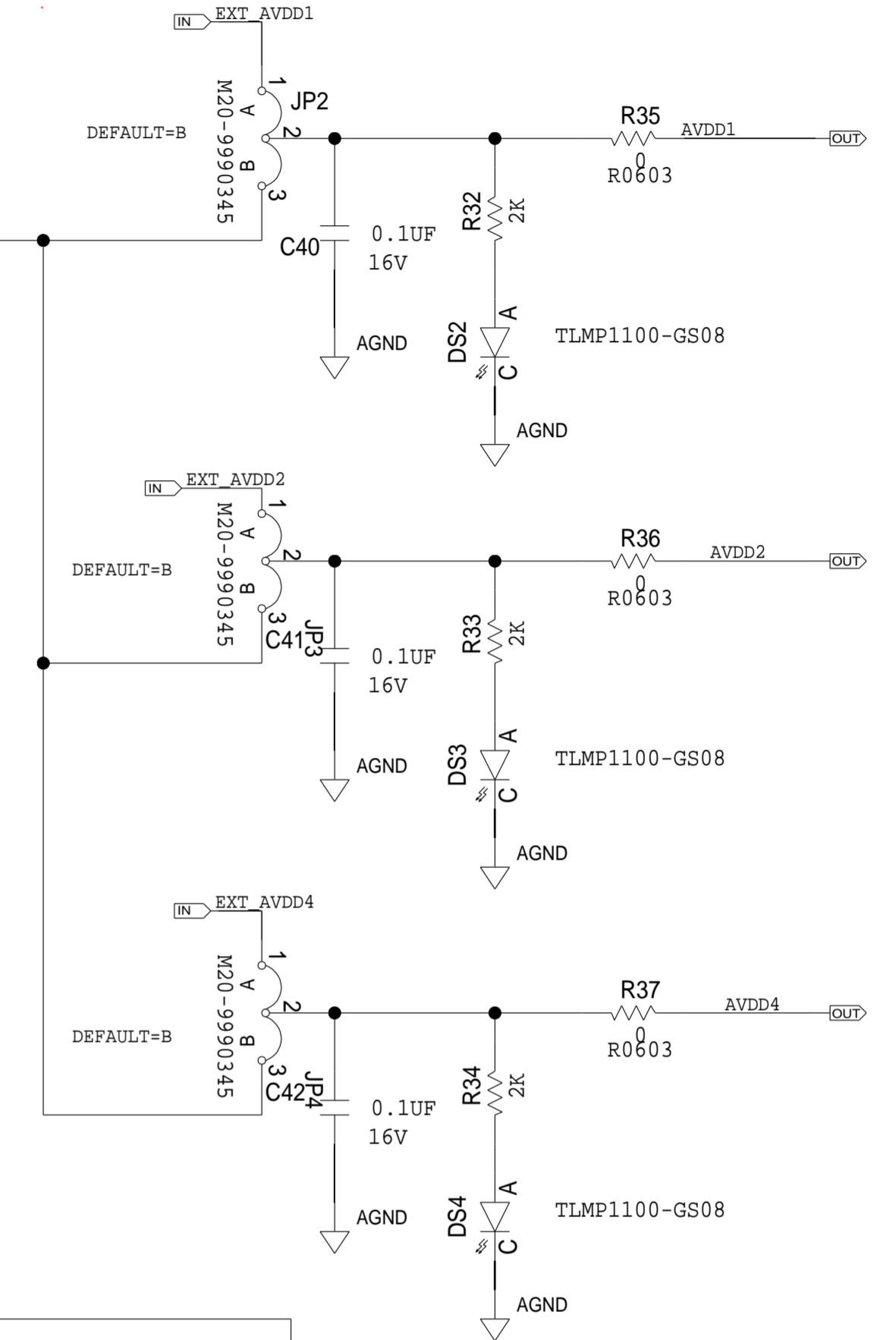
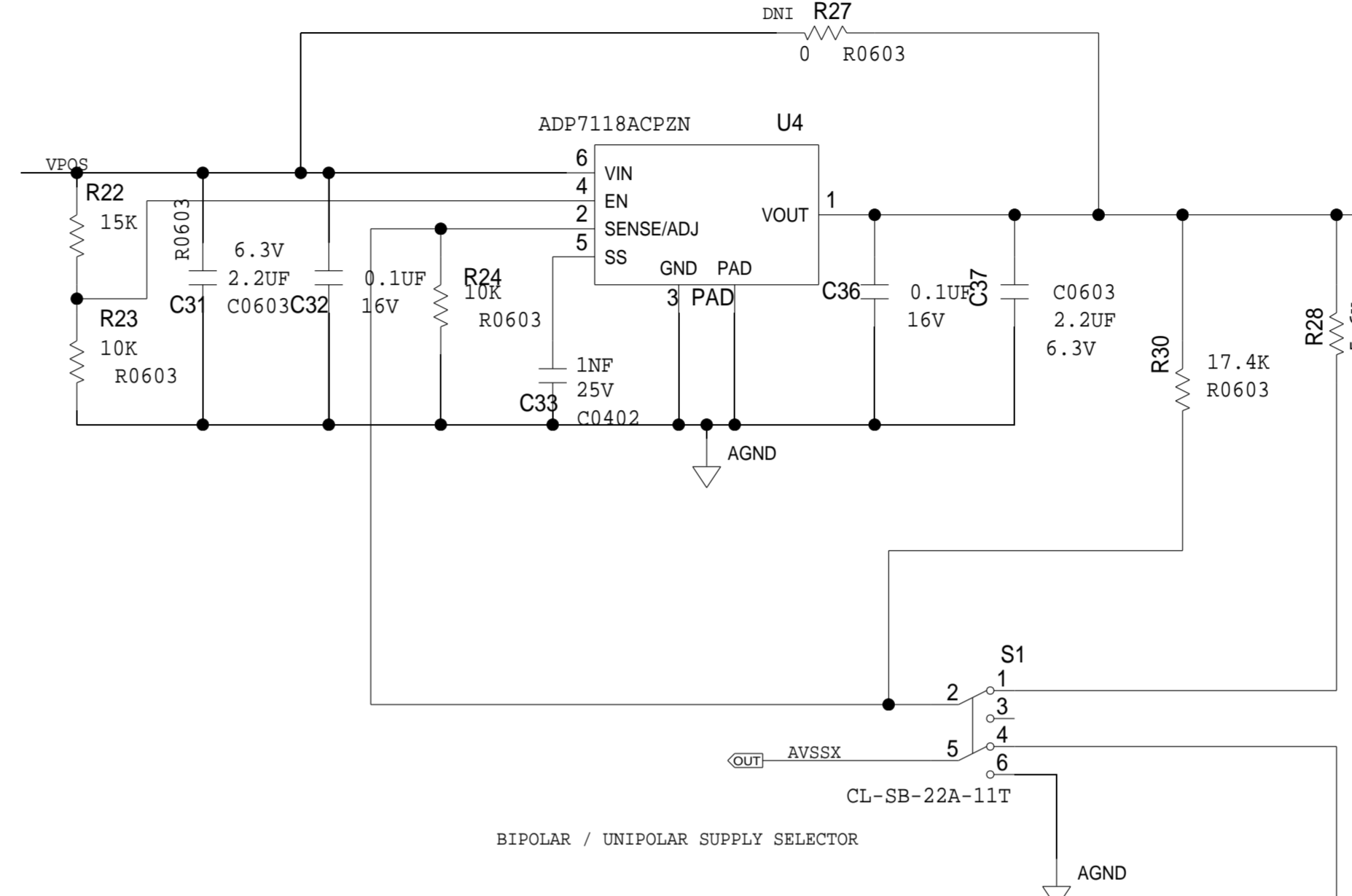
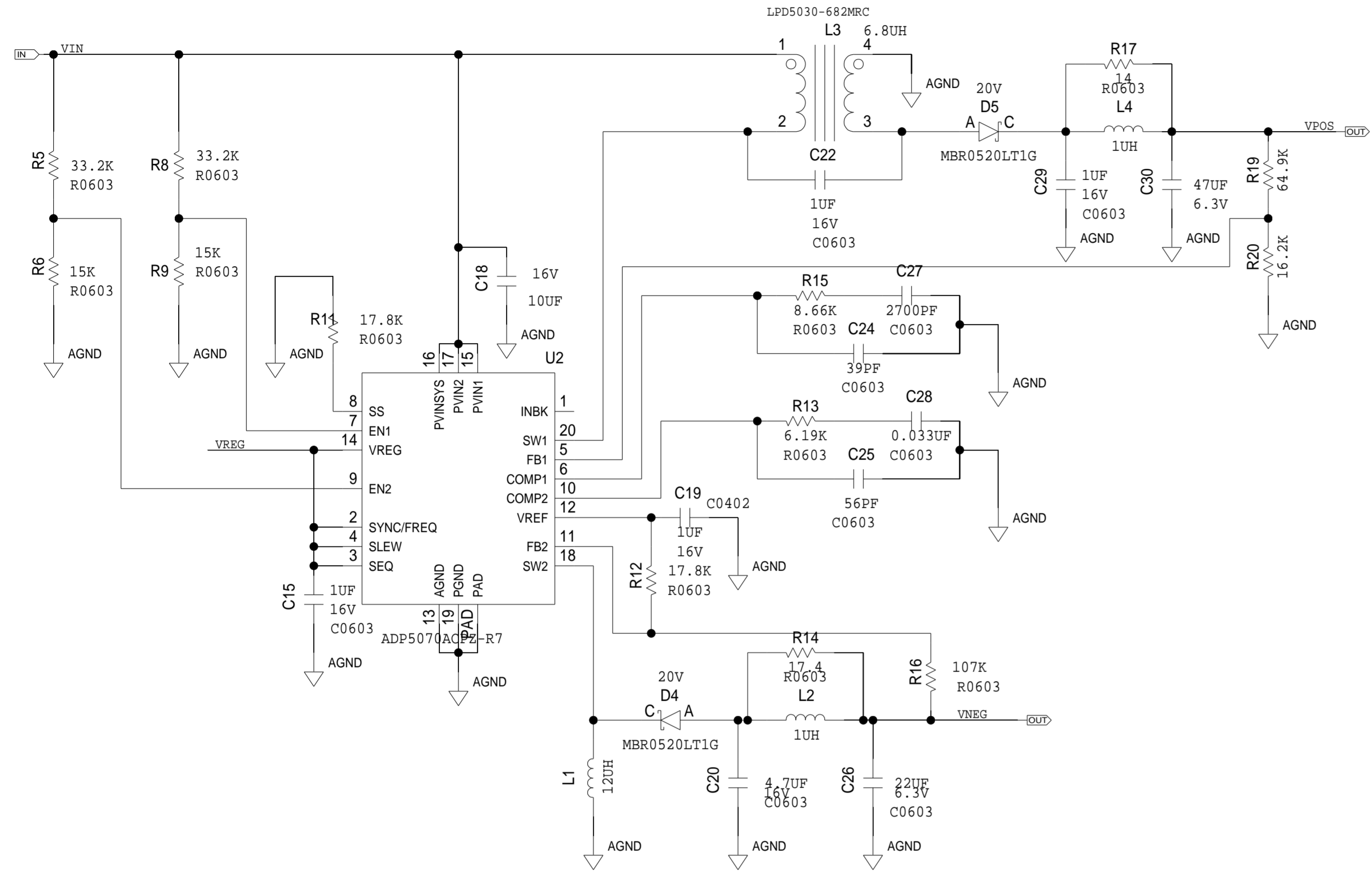


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|--|--|--------------------------|--------------|
| | SCHEMATIC | | |
| | HW TYPE : Customer Evaluation Product(s): AD7771 <PRODUCT_1> | | |
| | DESIGN VIEW <DESIGN_VIEW> | DRAWING NO. 02-068869 | REV A |
| | PTD ENGINEER Joan Ortega | SIZE D | SCALE 1:1 |
| | | SHEET 2 OF 7 | |

| REVISIONS | | | |
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| REV | DESCRIPTION | DATE | APPROVED |
| | | | |

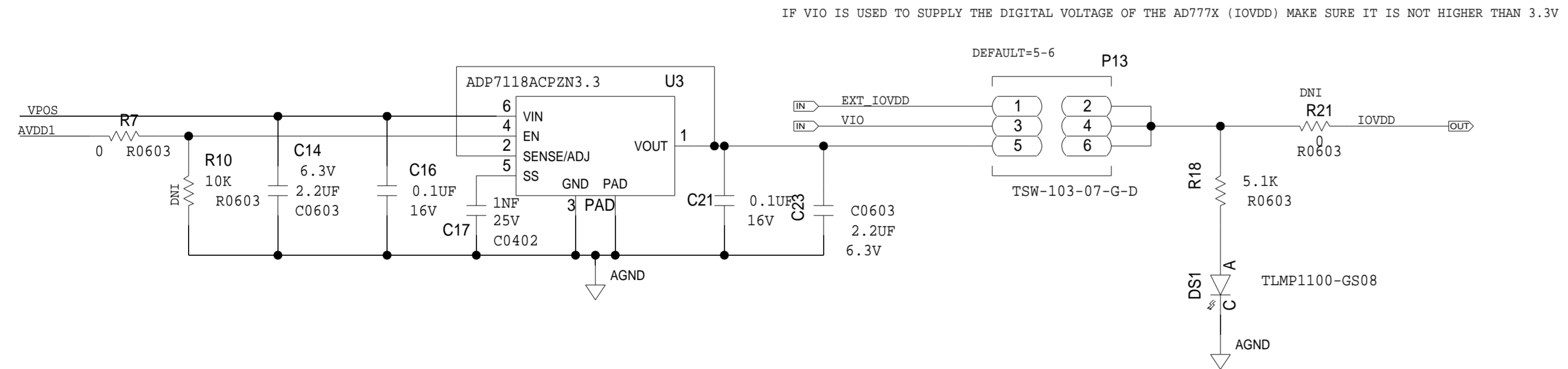
+4V & -4V 600MA VPOS & VNEG

1.65V/3.3V 200MA AVDDX

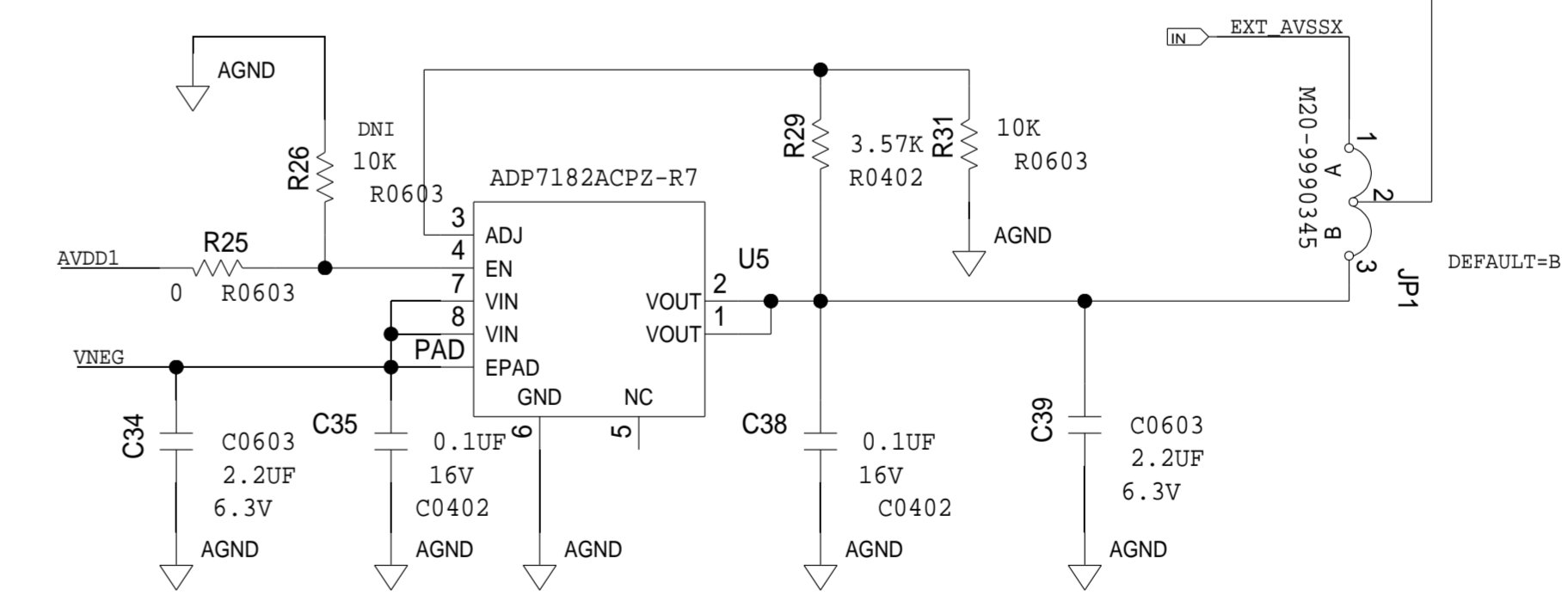


BIPOLAR / UNIPOLAR SUPPLY SELECTOR
 POS 1 AND 4-->BIPOLAR (AVDD = 1.65V AND AVSSX = -1.65V)
 POS 3 AND 6--> UNIPOLAR (AVDD = 3.3V AND AVSSX = 0V)

3.3V 200MA IOVDD



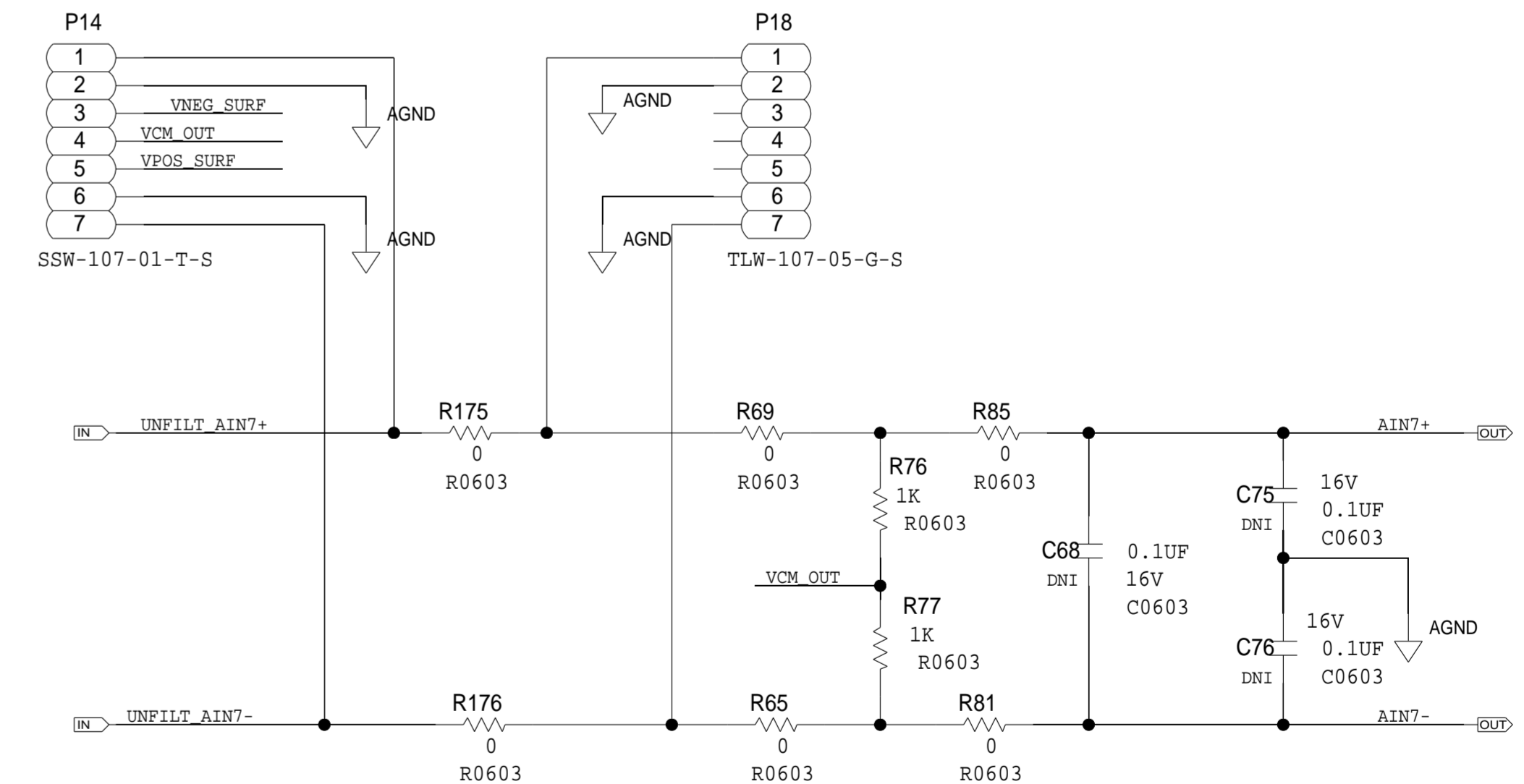
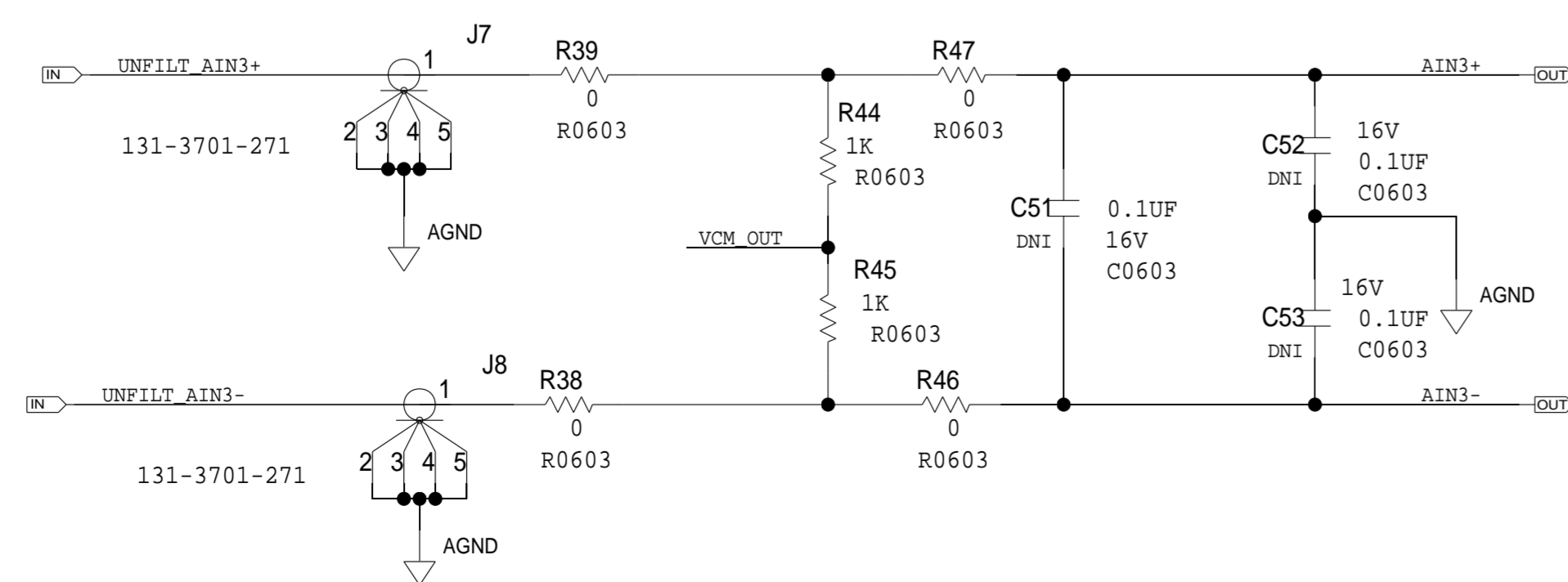
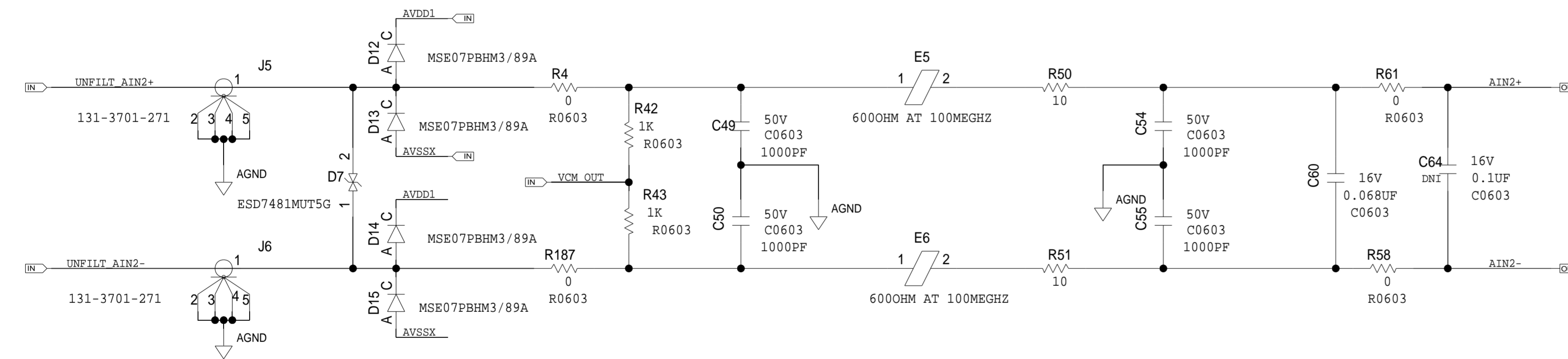
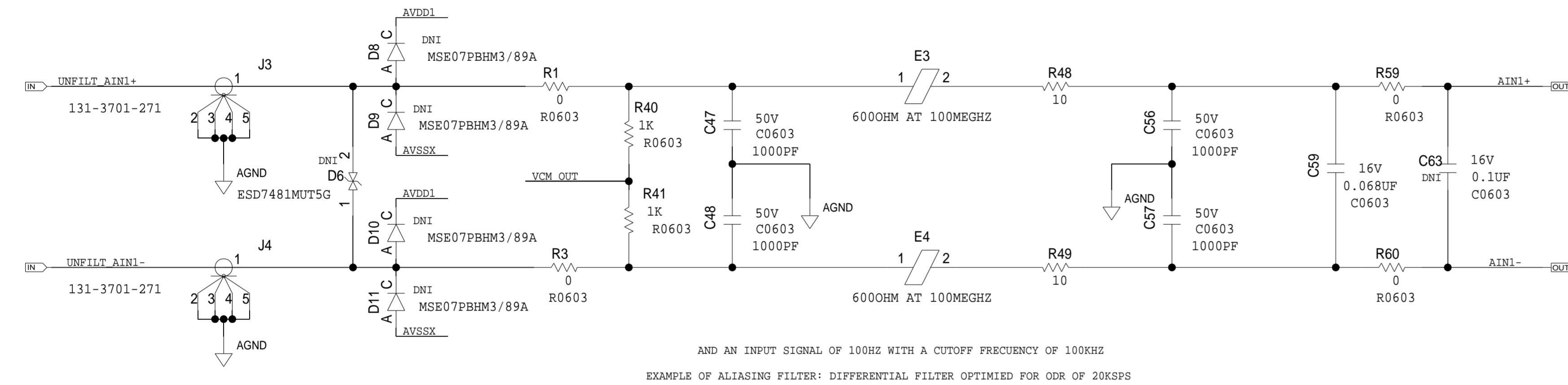
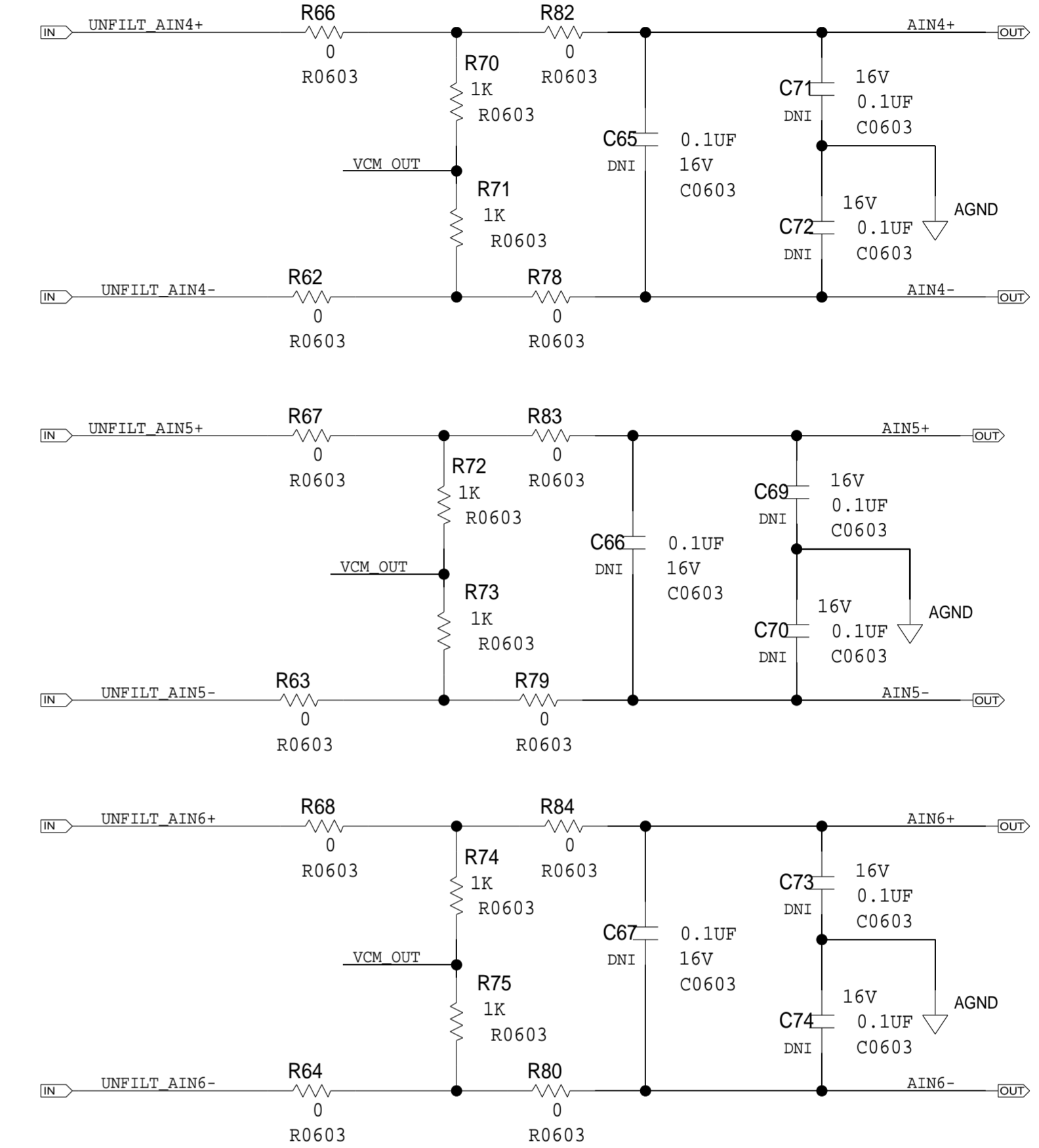
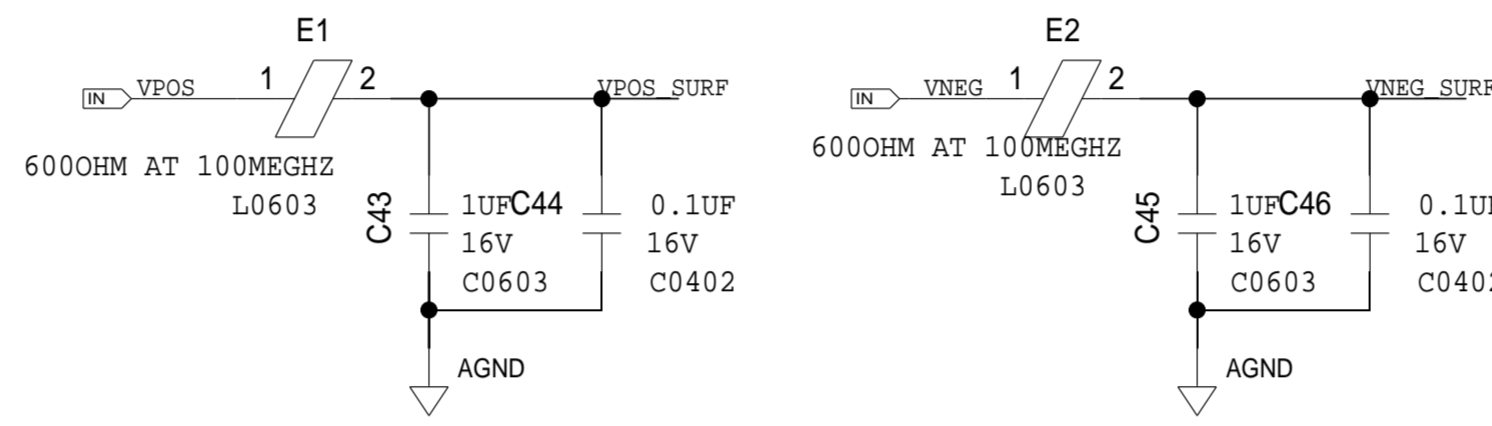
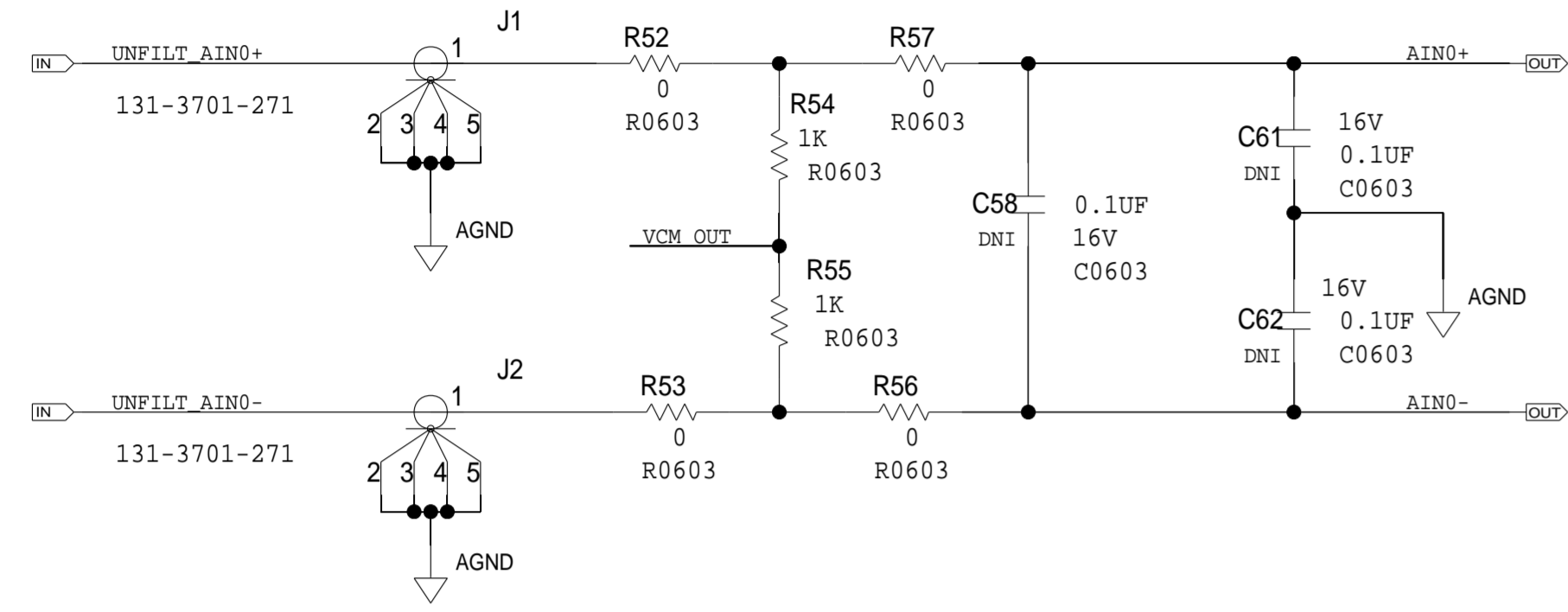
0V/-1.65V 200MA AVSSX



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| | SCHEMATIC | | |
| | HW TYPE : Customer Evaluation | | |
| | Product(s) : AD7771 | | |
| | <PRODUCT_1> | | |
| DESIGN VIEW | DRAWING NO. 02-068869 | | REV A |
| PTD ENGINEER Joan Ortega | | SIZE D | SCALE 1:1 |
| | | SHEET 3 | OF 7 |

ANALOG INPUT SIGNALS FILTERS & PROTECTIONS

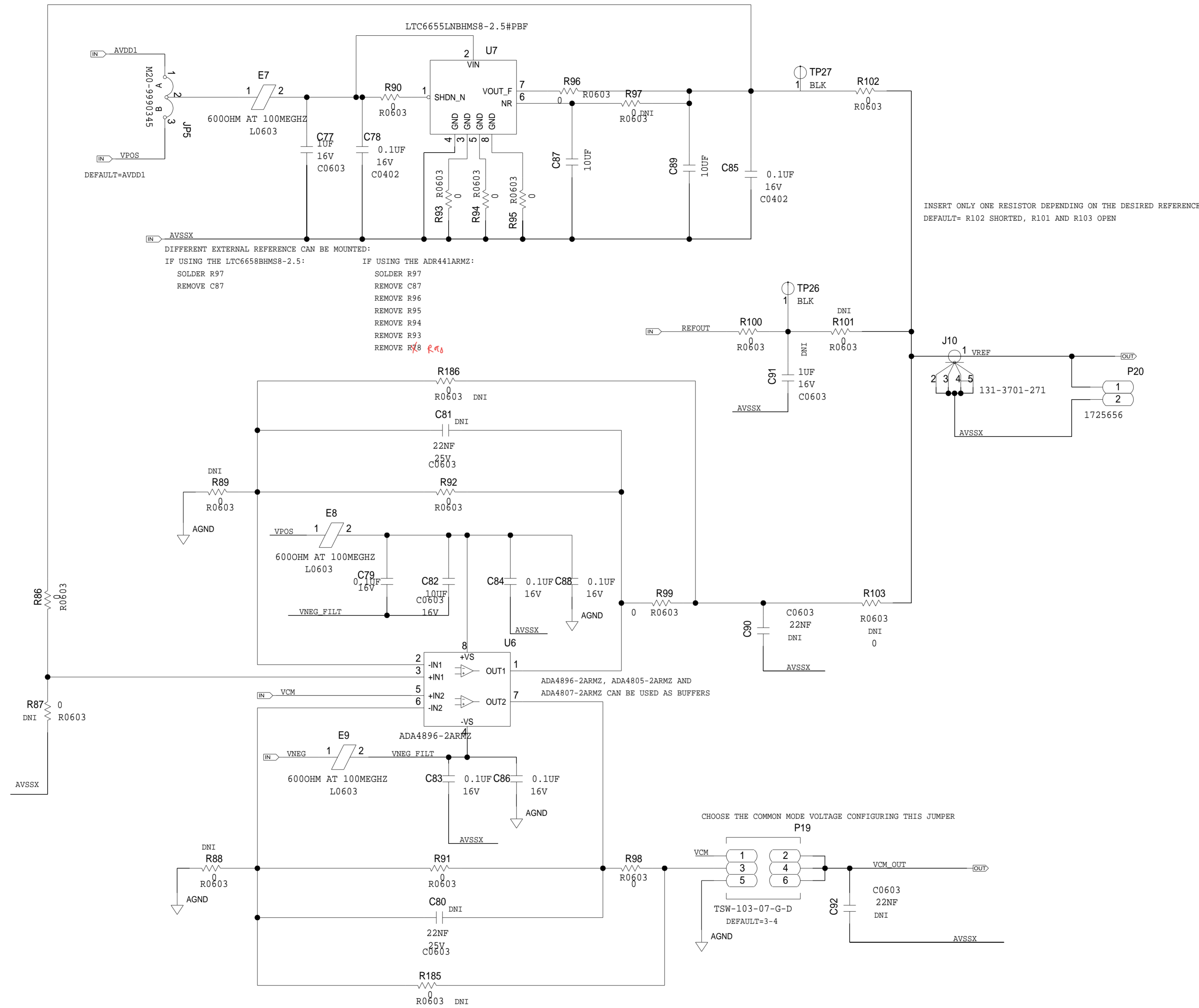
| REVISIONS | | | |
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| REV | DESCRIPTION | DATE | APPROVED |
| | | | |



| ANALOG DEVICES | | SCHEMATIC | | |
|-------------------------------|---------------|---------------------|-----------|--------------|
| HW TYPE : Customer Evaluation | | Product(s) : AD7771 | | |
| <PRODUCT_1> | | <PRODUCT_1> | | |
| DESIGN VIEW | <DESIGN_VIEW> | DRAWING NO. | 02-068869 | REV |
| PTD ENGINEER | Joan Ortega | SIZE | D | SCALE |
| | | 1:1 | | SHEET 4 OF 7 |

2.5V 10MA REFERENCE

| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| | | | |



VOLTAGE COMMON MODE & REFERENCE BUFFERS

| | | | |
|--|--|--------------------------|--------------|
| | SCHEMATIC | | |
| | HW TYPE : Customer Evaluation Product(s): AD7771 <PRODUCT_1> | | |
| | DESIGN VIEW <DESIGN_VIEW> | DRAWING NO. 02-068869 | REV A |
| | PTD ENGINEER Joan Ortega | SIZE D | SCALE 1:1 |

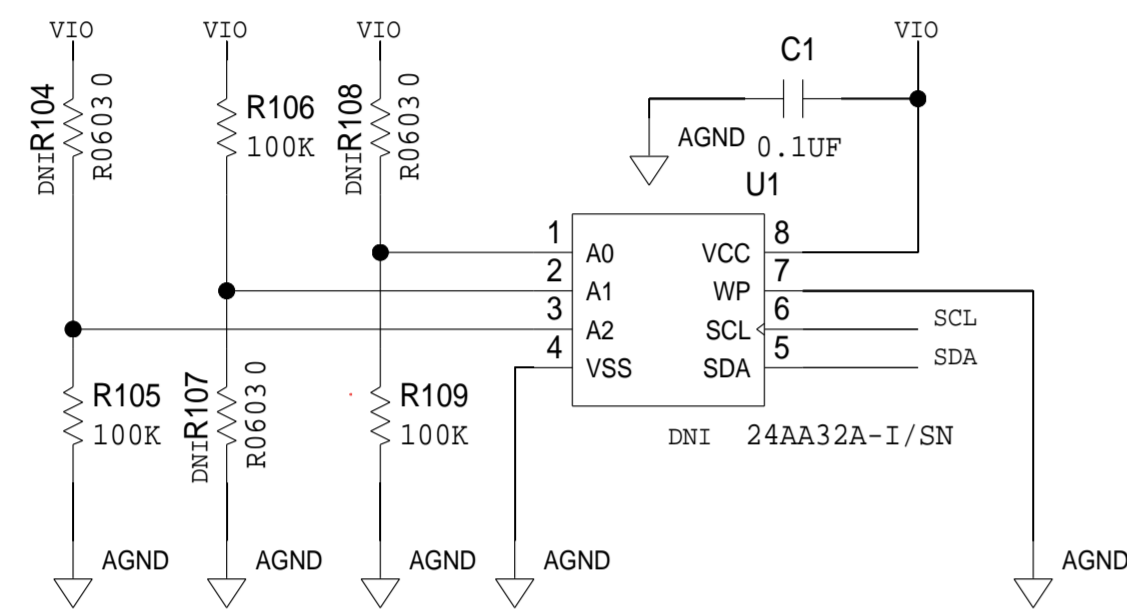
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SHEET 5 OF 7

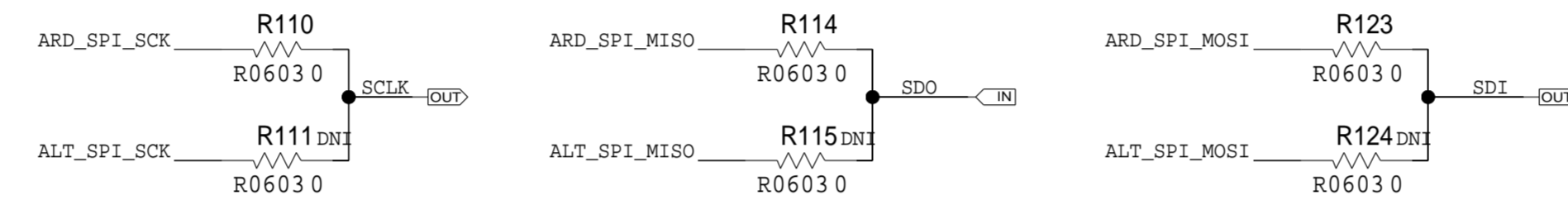
ARDUINO UNO SHIELD TEMPLATE (REV B)

| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| | | | |

EEPROM



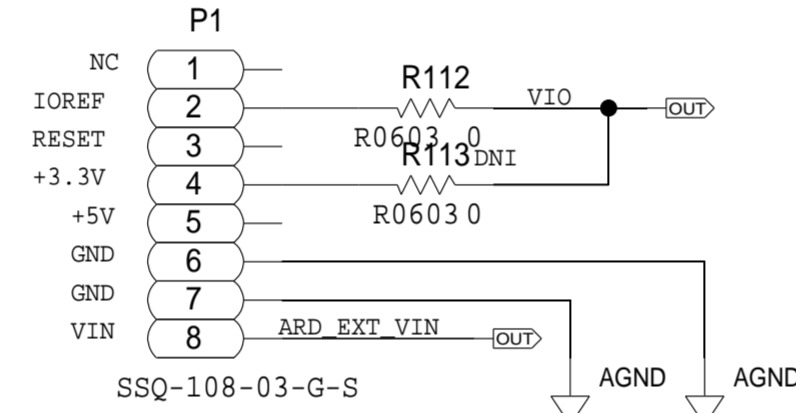
BOTH THE 'ARD_' & 'ALT_' RESISTORS SHOULD NEVER BE POPULATED SIMULTANEOUSLY AS THIS MAY DAMAGE CONTROLLER BOARDS THAT REUSE THE DIGITAL PINS 11, 12 & 13 FOR OTHER PURPOSES.
 RECOMMENDED: PLACE BOTH 'ARD_' & 'ALT_' RESISTOR FOOTPRINTS ON YOUR BOARD, THE 'ARD_' RESISTORS SHOULD BE POPULATED AND THE 'ALT_' RESISTORS ON YOUR BOARD SHOULD BE UNPOPULATED (I.E. DNI)
 ARD = STANDARD ARDUINO CONNECTION
 ALT = ALTERNATE CONNECTION



RECOMMENDED: DO NOT CONNECT I2C PULL UP RESISTORS TO I2C LINES FOR YOUR SHIELD.
 ON AN ARDUINO UNO INTERNAL PULL-UP RESISTORS ARE USED ON THE I2C LINES.
 ON AN SDP-K1 2.2KOHM PULL-UP RESISTORS ARE USED ON THE I2C LINES.

PMOD

POWER



NOTE: IOREF IS THE IO VOLTAGE OF THE CONTROLLER BOARD.
 IOREF FOR ARDUINO UNO IS 5V AT 20MA.
 IOREF FOR SDP-K1 IS 1.8V OR 3.3V.
 IOREF IS USED TO SUPPLY THE DIGITAL VOLTAGE OF THE AD777X (IOVDD) MAKE SURE IT IS NOT HIGHER THAN 3.3V

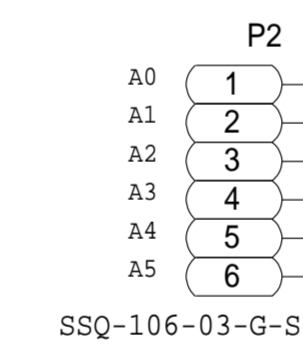
NOTE: THE 3.3V SUPPLY ON AN ARDUINO UNO CAN ONLY SUPPLY UP TO 50MA.
 ARDUINO DO NOT GIVE ANY OFFICAL GUIDELINES ON THE CURRENT CAPABILITIES OF OTHER SUPPLIES SUCH AS THE 5V & VIN SUPPLY.

VIN IS USED IN THIS BOARD AS ALTERNATIVE INPUT POWER SUPPLY.
 THE RECOMMENDED VOLTAGE RANGE FOR THE VIN PIN IS 5V - 12V. MAXIMUM IS 15V.

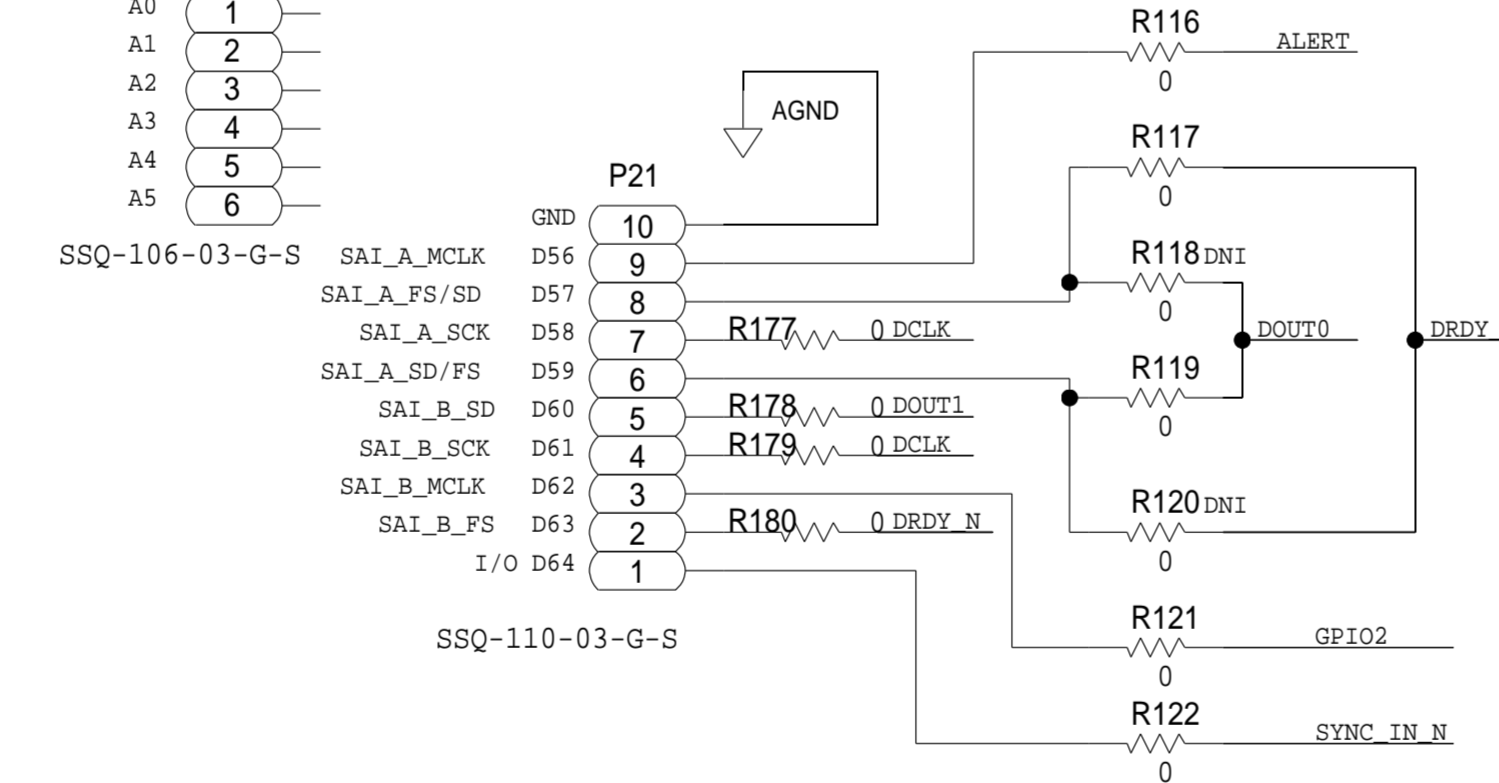
ZIO INTERFACE:

PINK= ARDUINO SUBSET OF ZIO
 BLUE= ZIO EXTENSION

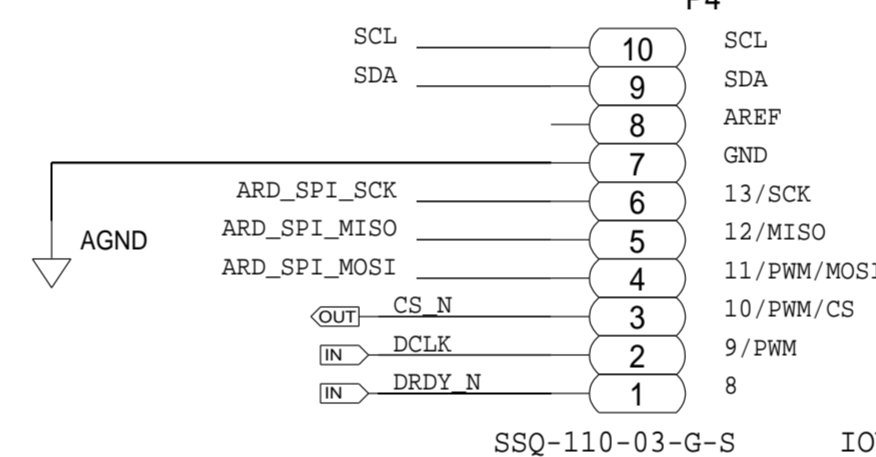
ANALOG IN



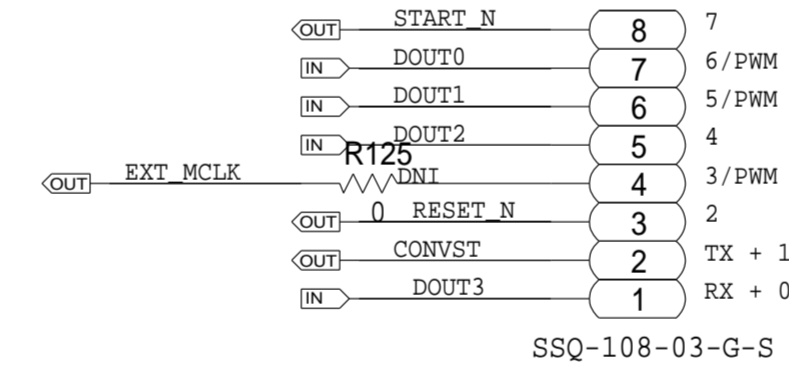
ZIO INTERFACE



DIGI1



DIGI0

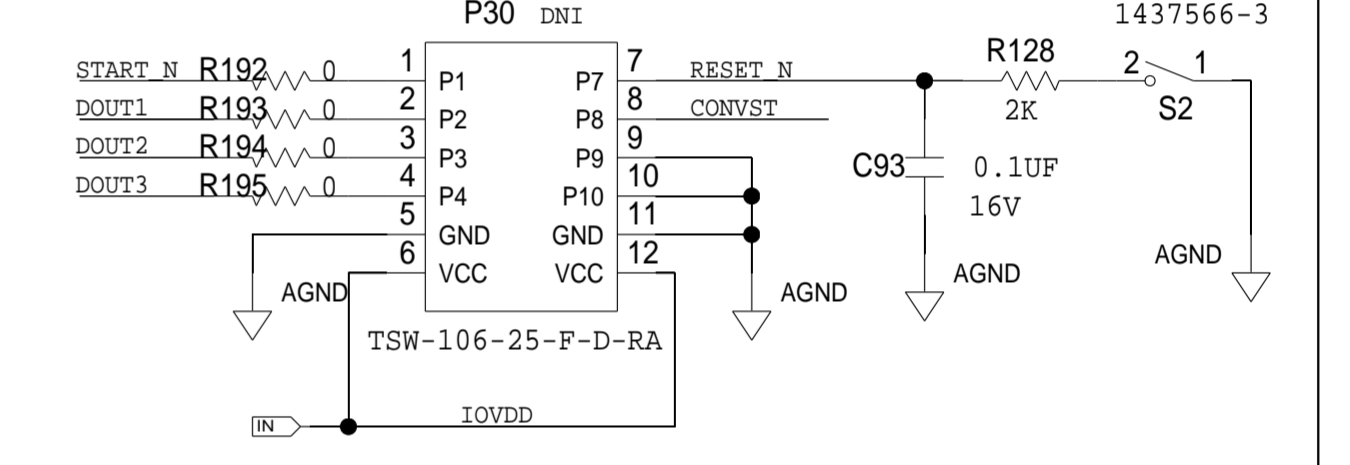
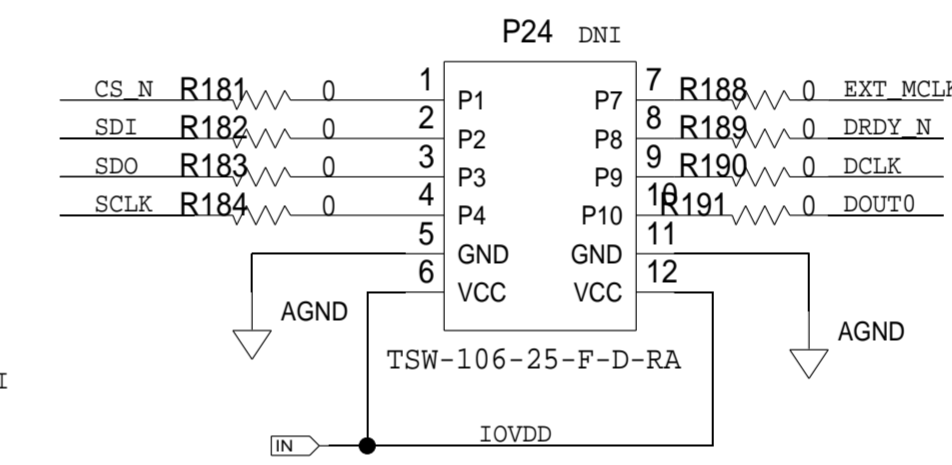


TDM INTERFACE

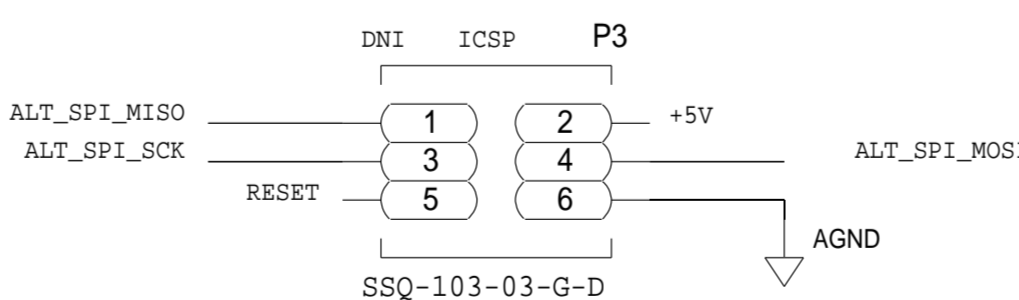
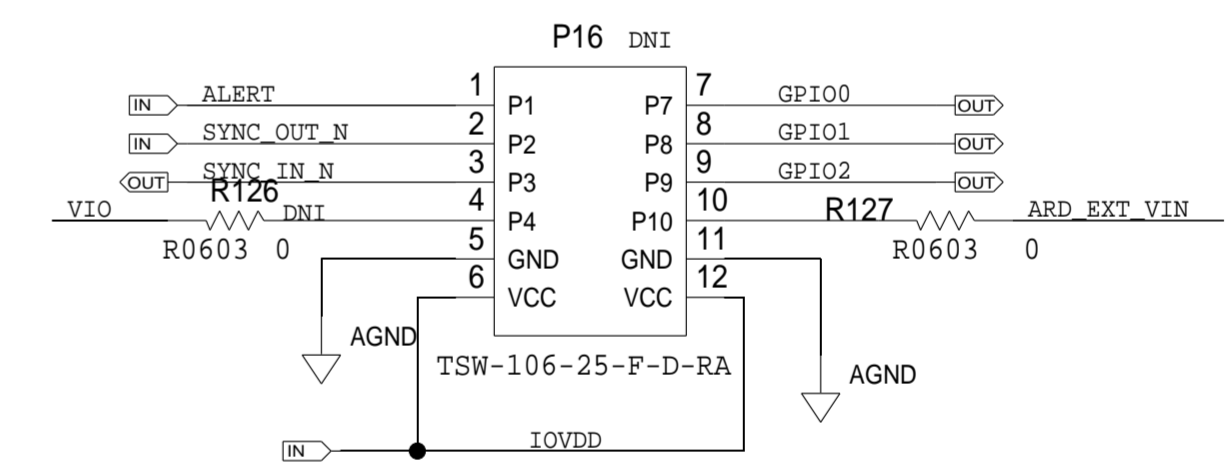
DEPENDING ON THE BOARD THE FS (FRAME SYNCHRONIZATION) AND SD (DATA) THE RIGHT RESISTORS NEED TO BE CONNECTED

NUCLEO-144:
 D56 NOT USED
 D57 SAI_A_FS
 D58 SAI_A_SCK
 D59 SAI_A_SD

NUCLEO-F413ZH:
 D56 NOT USED
 D57 SAI_A_SD
 D58 SAI_A_SCK
 D59 SAI_A_FS



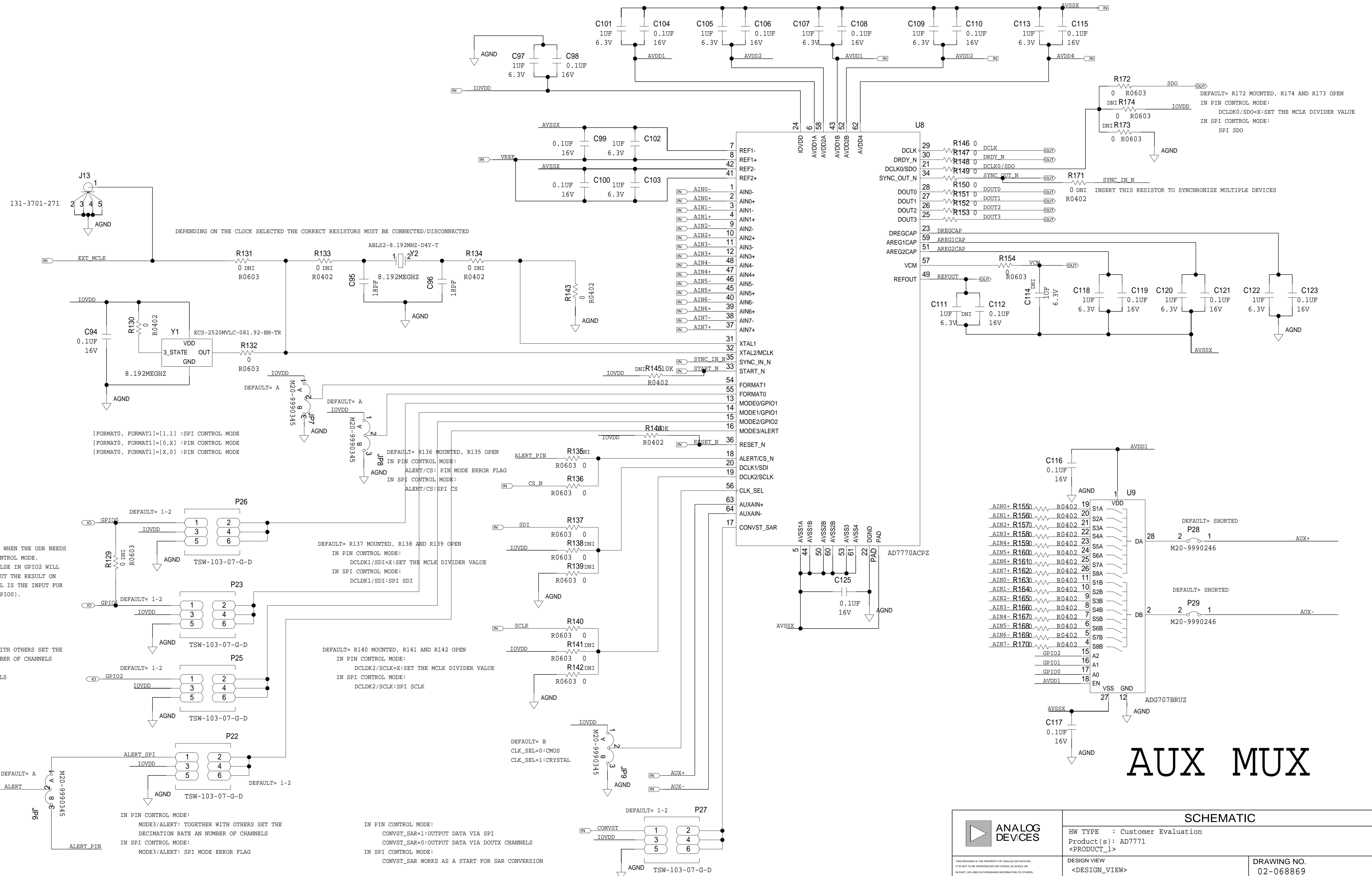
IOVDD MUST BE CONFIGURED TO BE 3.3V FOR PMOD INTERFACE USE (IOVDD CONFIGURED BY P12 JUMPER)



| SCHEMATIC | | | |
|------------------------------|--|--|--------------|
| ANALOG DEVICES | | HW TYPE : Customer Evaluation Product(s): AD7771 <PRODUCT_1> | |
| DESIGN VIEW <DESIGN_VIEW> | | DRAWING NO. 02-068869 | REV A |
| PTD ENGINEER Joan Ortega | | SIZE D | SCALE 1:1 |
| | | SHEET 6 | OF 7 |

AD777X ADC

| REVISIONS | | | |
|-----------|-------------|------|----------|
| REV | DESCRIPTION | DATE | APPROVED |
| | | | |



THIS RESISTOR MUST BE MOUNTED WHEN THE ODR NEEDS TO BE CHANGED VIA HW IN SPI CONTROL MODE. IF THIS MODE IS SELECTED, A PULSE IN GPIO2 WILL SYNCHRONIZE WITH MCLK AND OUTPUT THE RESULT ON GPIO1. THIS SYNCHRONIZED SIGNAL IS THE INPUT FOR THE START OF THE ODR UPDATE (GPIO1).

IN PIN CONTROL MODE:
MODEX/GPIO: TOGETHER WITH OTHERS SET THE DECIMATION RATE AN NUMBER OF CHANNELS

IN SPI CONTROL MODE:
MODEX/GPIO: GPIO SIGNALS

[FORMAT0, FORMAT1]=[1,1] :SPI CONTROL MODE
[FORMAT0, FORMAT1]=[0,X] :PIN CONTROL MODE
[FORMAT0, FORMAT1]=[X,0] :PIN CONTROL MODE

DEFAULT= R136 MOUNTED, R135 OPEN
IN PIN CONTROL MODE:
ALERT/CS: PIN MODE ERROR FLAG
IN SPI CONTROL MODE:
ALERT/CS:SPI CS

DEFAULT= R137 MOUNTED, R138 AND R139 OPEN
IN PIN CONTROL MODE:
DCLK1/SDI=X:SET THE MCLK DIVIDER VALUE
IN SPI CONTROL MODE:
DCLK1/SDI:SPI SDI

DEFAULT= R140 MOUNTED, R141 AND R142 OPEN
IN PIN CONTROL MODE:
DCLK2/SCLK=X:SET THE MCLK DIVIDER VALUE
IN SPI CONTROL MODE:
DCLK2/SCLK:SPI SCLK

DEFAULT= B
CLK_SEL=0:CMOS
CLK_SEL=1:CRYSTAL

IN PIN CONTROL MODE:
CONVST_SAR=1:OUTPUT DATA VIA SPI
CONVST_SAR=0:OUTPUT DATA VIA DOUTX CHANNELS

IN SPI CONTROL MODE:
CONVST_SAR WORKS AS A START FOR SAR CONVERSION

AUX MUX

| SCHEMATIC | | | |
|--------------------|---------------|-------------------------------|-----|
| ANALOG DEVICES | | HW TYPE : Customer Evaluation | |
| Product(s): AD7771 | | <PRODUCT_1> | |
| DESIGN VIEW | <DESIGN_VIEW> | | |
| PTD ENGINEER | Joan Ortega | | |
| DRAWING NO. | 02-068869 | REV | A |
| SIZE | D | SCALE | 1:1 |
| SHEET 7 | | OF 7 | |