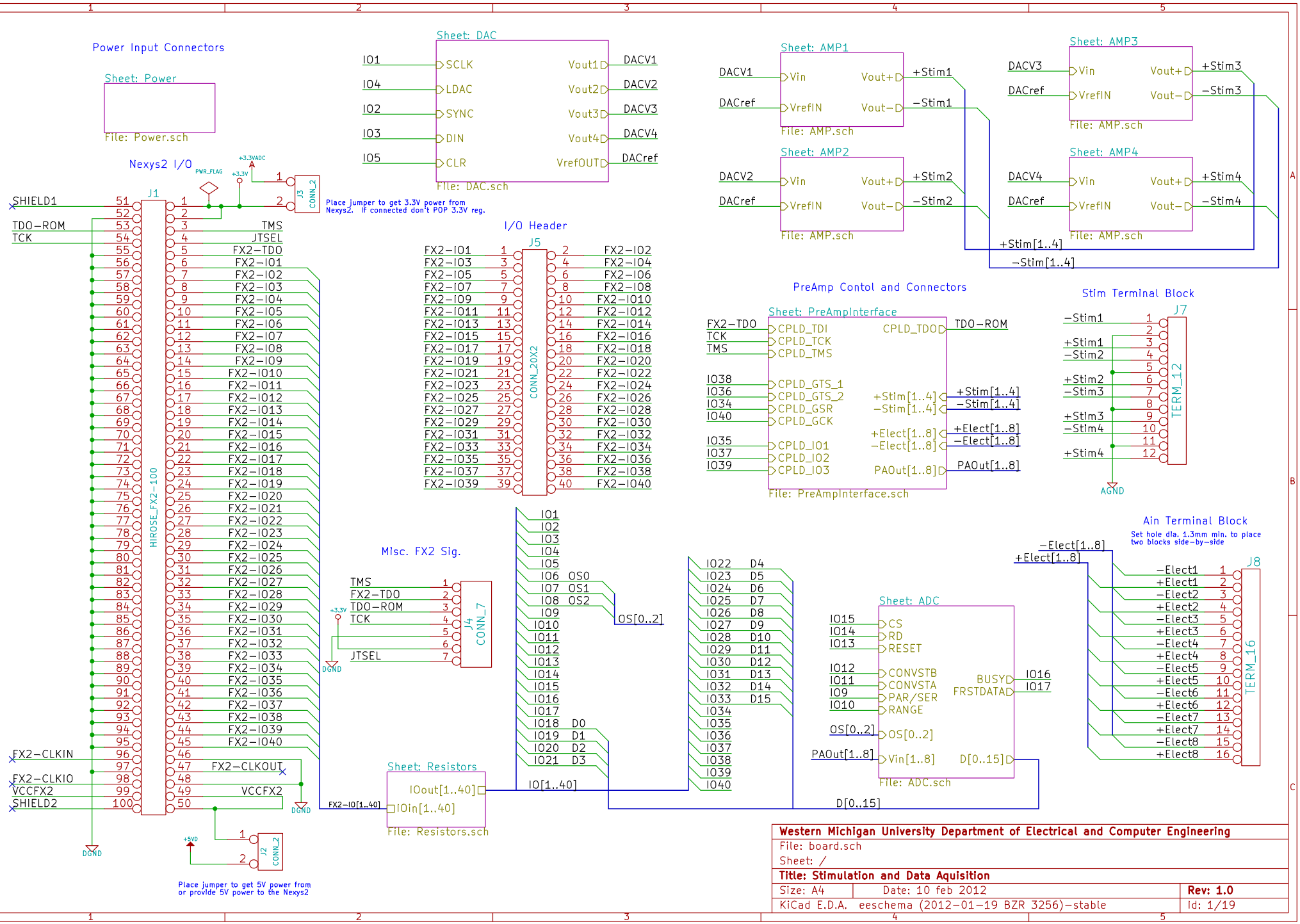
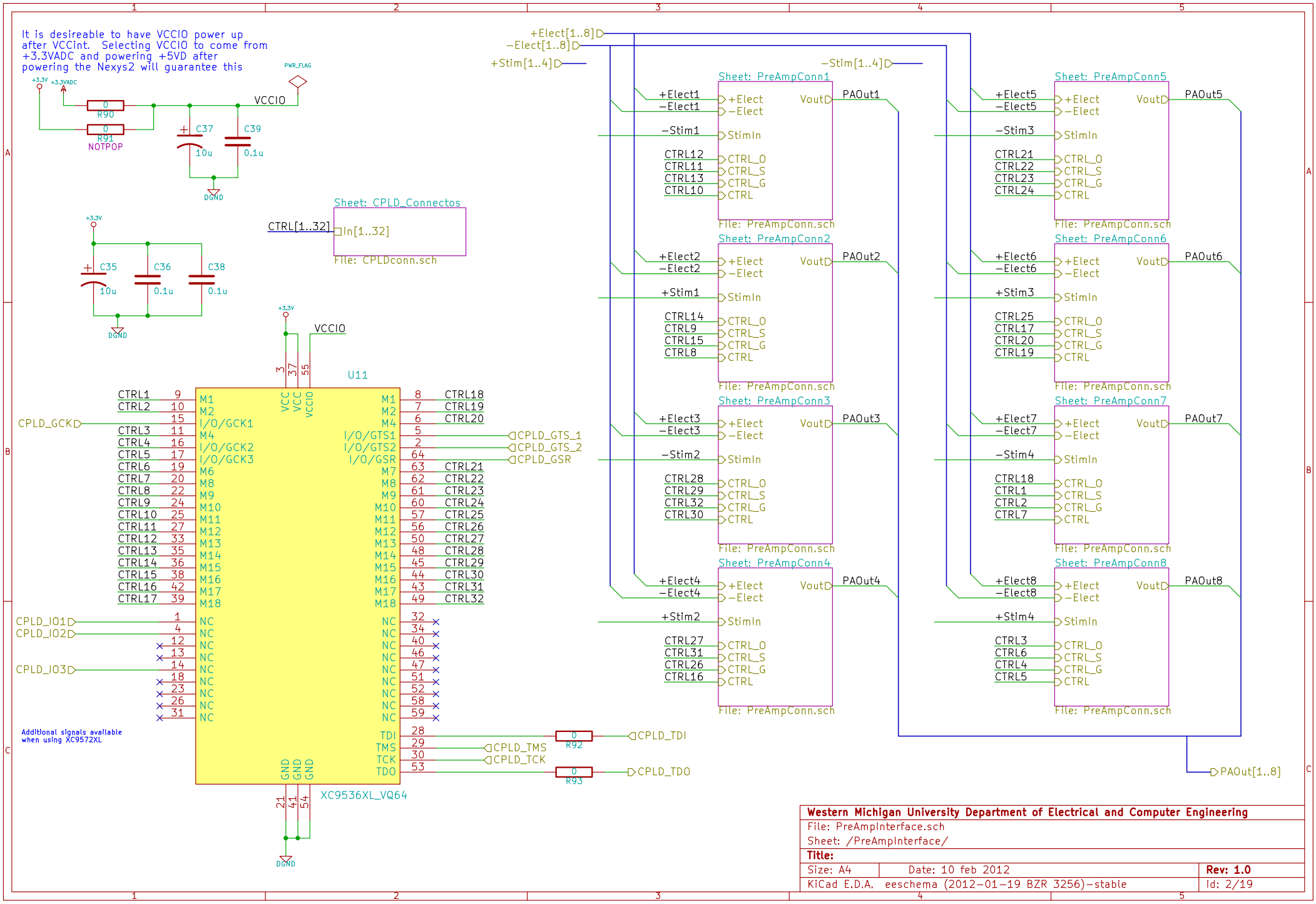
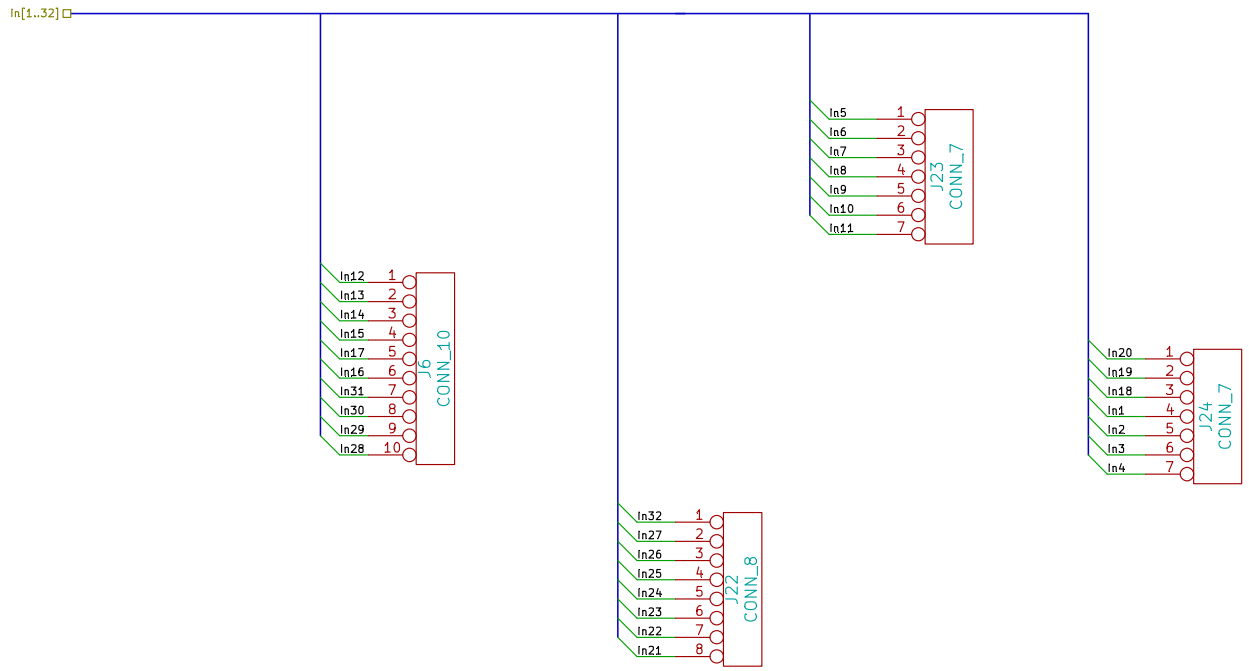
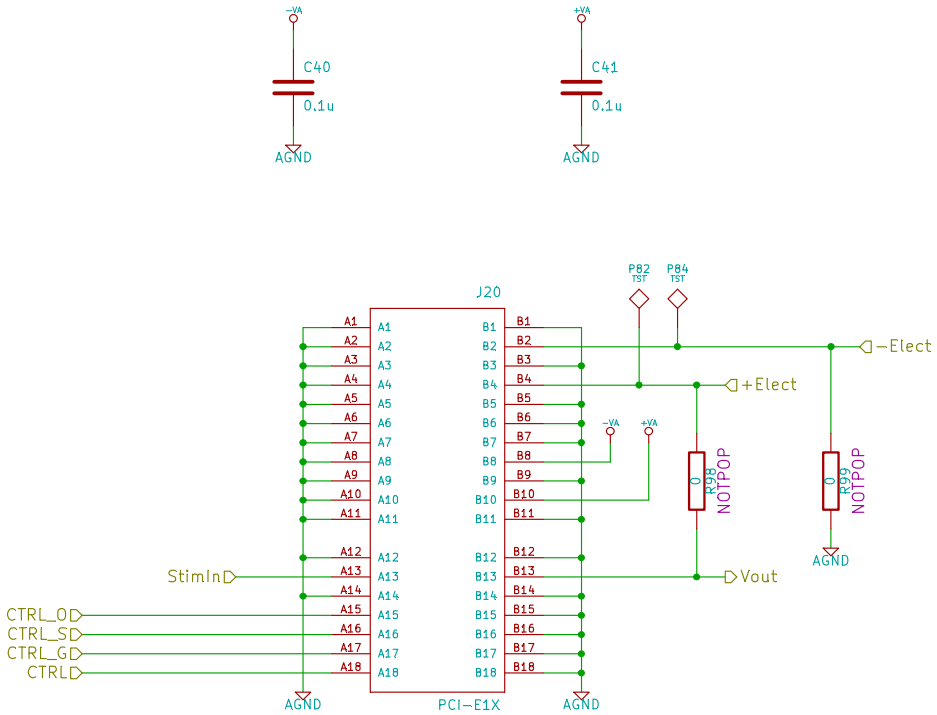

Power Input Connectors
Sheet: Power
File: Power.sch
Nexys2 I/O
J1
HIROSE_FX2-100
SHIELD1
TDO-ROM
TCK
TMS
JTSEL
FX2-TDO
FX2-CLKIN
FX2-CLKOUT
FX2-CLKIO
VCCFX2
SHIELD2
DGND
+3.3VADC
+3.3V
PWR_FLAG
J3
CONN_2
Place jumper to get 3.3V power from Nexys2. If connected don't POP 3.3V reg.
+5VD
J2
Place jumper to get 5V power from or provide 5V power to the Nexys2
Sheet: DAC
SCLK
LDAC
SYNC
DIN
CLR
Vout1
Vout2
Vout3
Vout4
VrefOUT
DACV1
DACV2
DACV3
DACV4
DACref
File: DAC.sch
I/O Header
J5
CONN_20X2
Misc. FX2 Sig.
J4
CONN_7
OS0
OS1
OS2
OS[0..2]
Sheet: Resistors
IOout[1..40]
IOin[1..40]
IO[1..40]
File: Resistors.sch
Sheet: AMP1
Sheet: AMP2
Sheet: AMP3
Sheet: AMP4
Vin
VrefIN
Vout+
Vout-
+Stim1
-Stim1
+Stim2
-Stim2
+Stim3
-Stim3
+Stim4
-Stim4
+Stim[1..4]
-Stim[1..4]
File: AMP.sch
PreAmp Contol and Connectors
Sheet: PreAmpInterface
CPLD_TDI
CPLD_TCK
CPLD_TMS
CPLD_GTS_1
CPLD_GTS_2
CPLD_GSR
CPLD_GCK
CPLD_IO1
CPLD_IO2
CPLD_IO3
CPLD_TDO
+Elect[1..8]
-Elect[1..8]
PAOut[1..8]
File: PreAmpInterface.sch
Stim Terminal Block
J7
TERM_12
AGND
Sheet: ADC
CS
RD
RESET
CONVSTB
CONVSTA
PAR/SER
RANGE
OS[0..2]
Vin[1..8]
BUSY
FRSTDATA
D[0..15]
File: ADC.sch
Ain Terminal Block
Set hole dia. 1.3mm min. to place two blocks side-by-side
J8
TERM_16
Western Michigan University Department of Electrical and Computer Engineering
File: board.sch
Sheet: /
Title: Stimulation and Data Aquisition
Size: A4
Date: 10 feb 2012
Rev: 1.0
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable
Id: 1/19

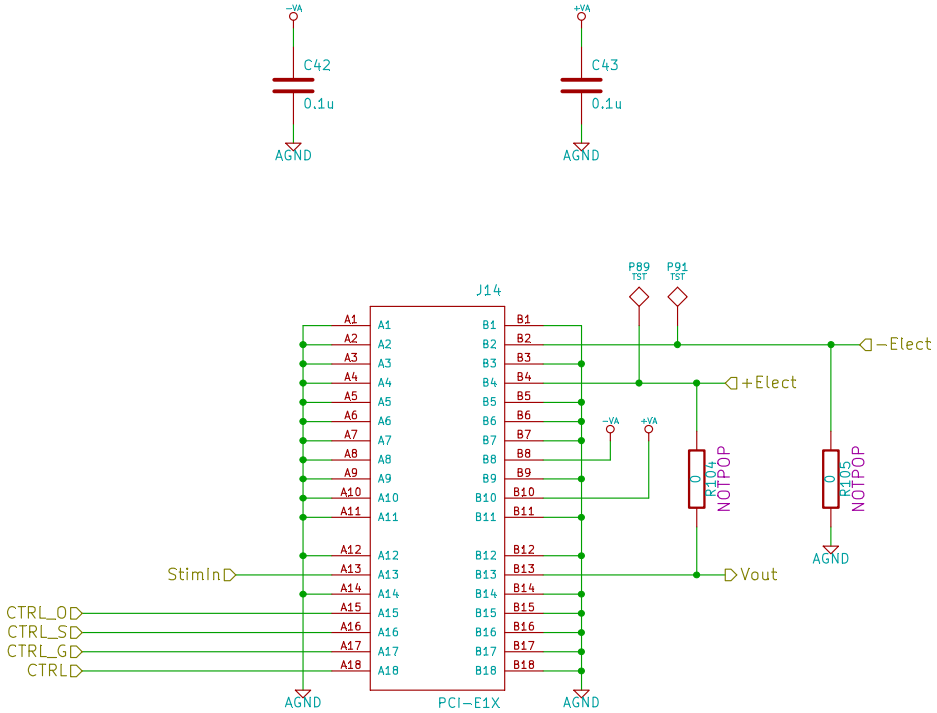

It is desireable to have VCCIO power up after VCCint. Selecting VCCIO to come from +3.3VADC and powering +5VD after powering the Nexys2 will guarantee this
+3.3V
+3.3VADC
PWR_FLAG
VCCIO
R90
R91
NOTPOP
C37
10u
C39
0.1u
DGND
C35
C36
C38
Sheet: CPLD_Connectos
CTRL[1..32]
In[1..32]
File: CPLDconn.sch
U11
XC9536XL_VQ64
CPLD_GCK
CPLD_IO1
CPLD_IO2
CPLD_IO3
CPLD_GTS_1
CPLD_GTS_2
CPLD_GSR
CPLD_TMS
CPLD_TCK
CPLD_TDI
CPLD_TDO
R92
R93
Additional signals available when using XC9572XL
+Elect[1..8]
−Elect[1..8]
+Stim[1..4]
−Stim[1..4]
Sheet: PreAmpConn1
Sheet: PreAmpConn2
Sheet: PreAmpConn3
Sheet: PreAmpConn4
Sheet: PreAmpConn5
Sheet: PreAmpConn6
Sheet: PreAmpConn7
Sheet: PreAmpConn8
File: PreAmpConn.sch
PAOut1
PAOut2
PAOut3
PAOut4
PAOut5
PAOut6
PAOut7
PAOut8
PAOut[1..8]
Western Michigan University Department of Electrical and Computer Engineering
File: PreAmpInterface.sch
Sheet: /PreAmpInterface/
Title:
Size: A4
Date: 10 feb 2012
Rev: 1.0
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable
Id: 2/19



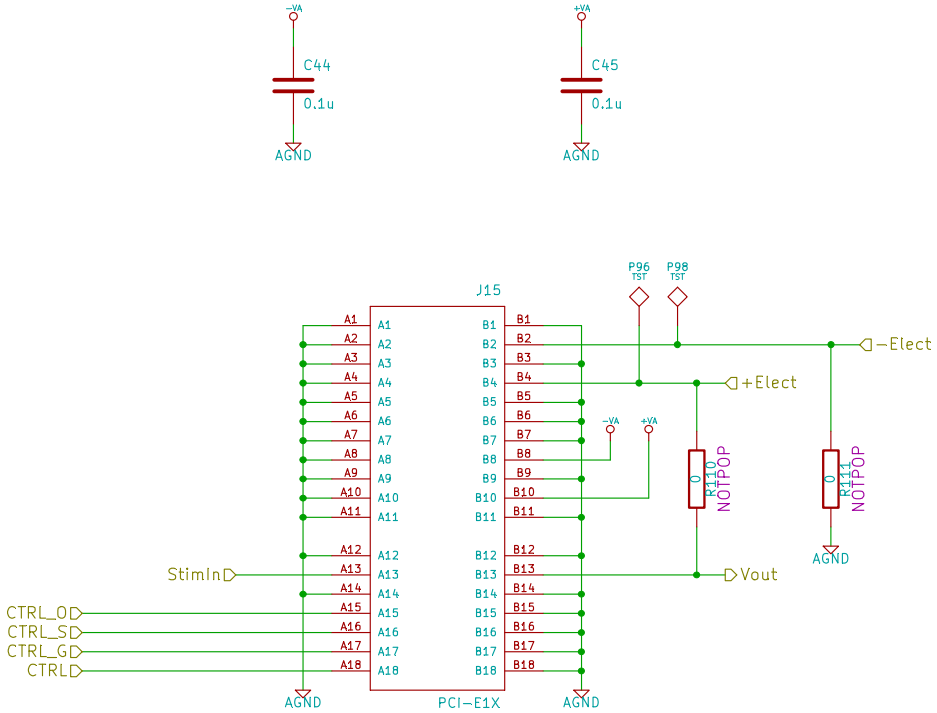
File: CPLDconn.sch		
Sheet: /PreAmpInterface/CPLD_Connectos/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 3/19



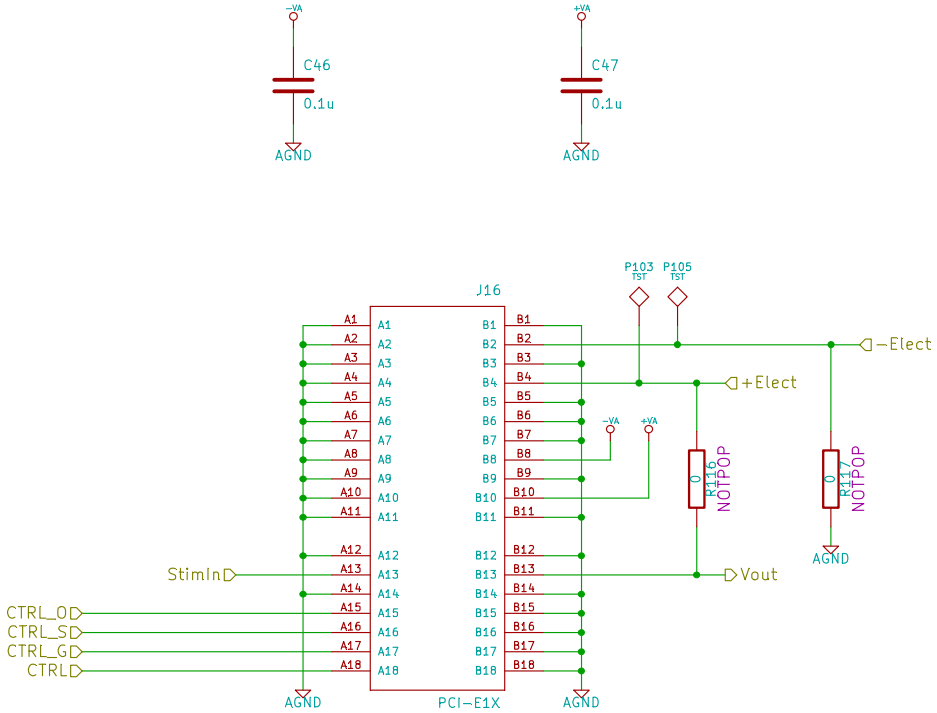
Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn3/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 4/19



Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn8/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 5/19



Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn7/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 6/19



Western Michigan University Department of Electrical and Computer Engineering		
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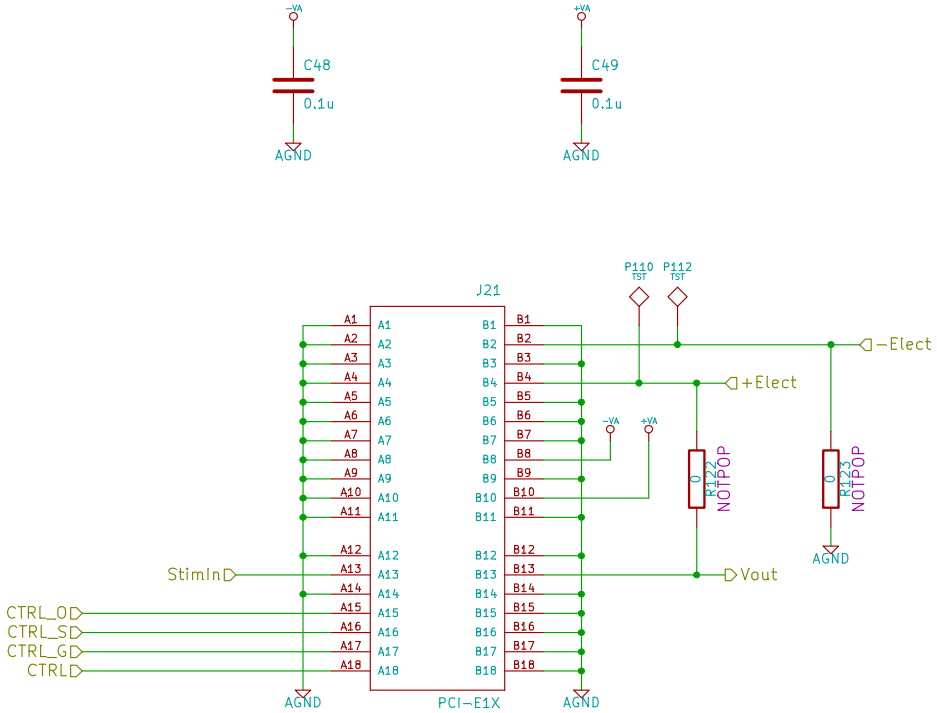
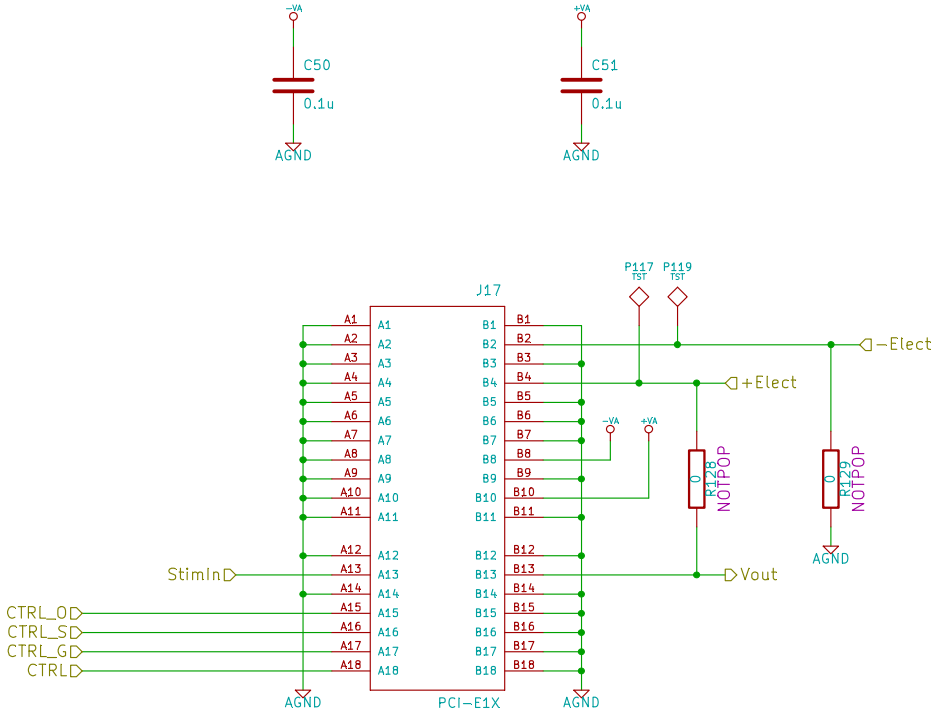
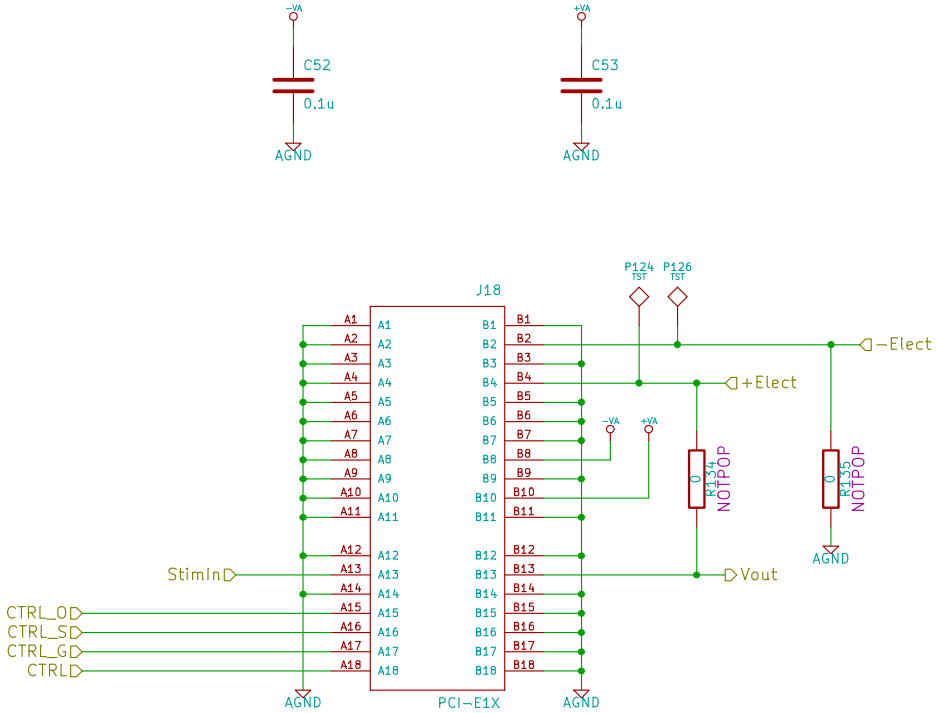
Sheet: /PreAmpInterface/PreAmpConn6/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 7/19



Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn5/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 8/19



Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn4/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 9/19



Western Michigan University Department of Electrical and Computer Engineering		
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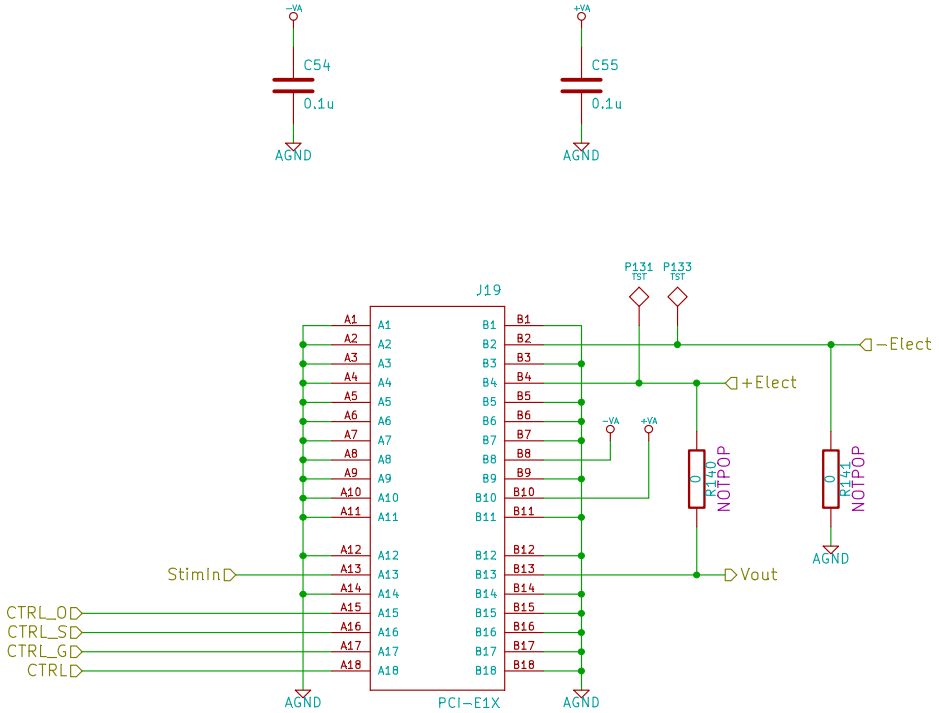
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 10/19



Western Michigan University Department of Electrical and Computer Engineering		
File: PreAmpConn.sch		
Sheet: /PreAmpInterface/PreAmpConn1/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 11/19

8-Channel ADC

When using serial data transfer, unused data pins should be connected to ground

Place all caps close to pins on device side

Pull-up Res.
pin 6: select serial data transfer
pin 7: keep ADC in operational mode
pin 8: select +/-10V range (pull down for +/-5V)

Select internal reference

Place close to AD7606

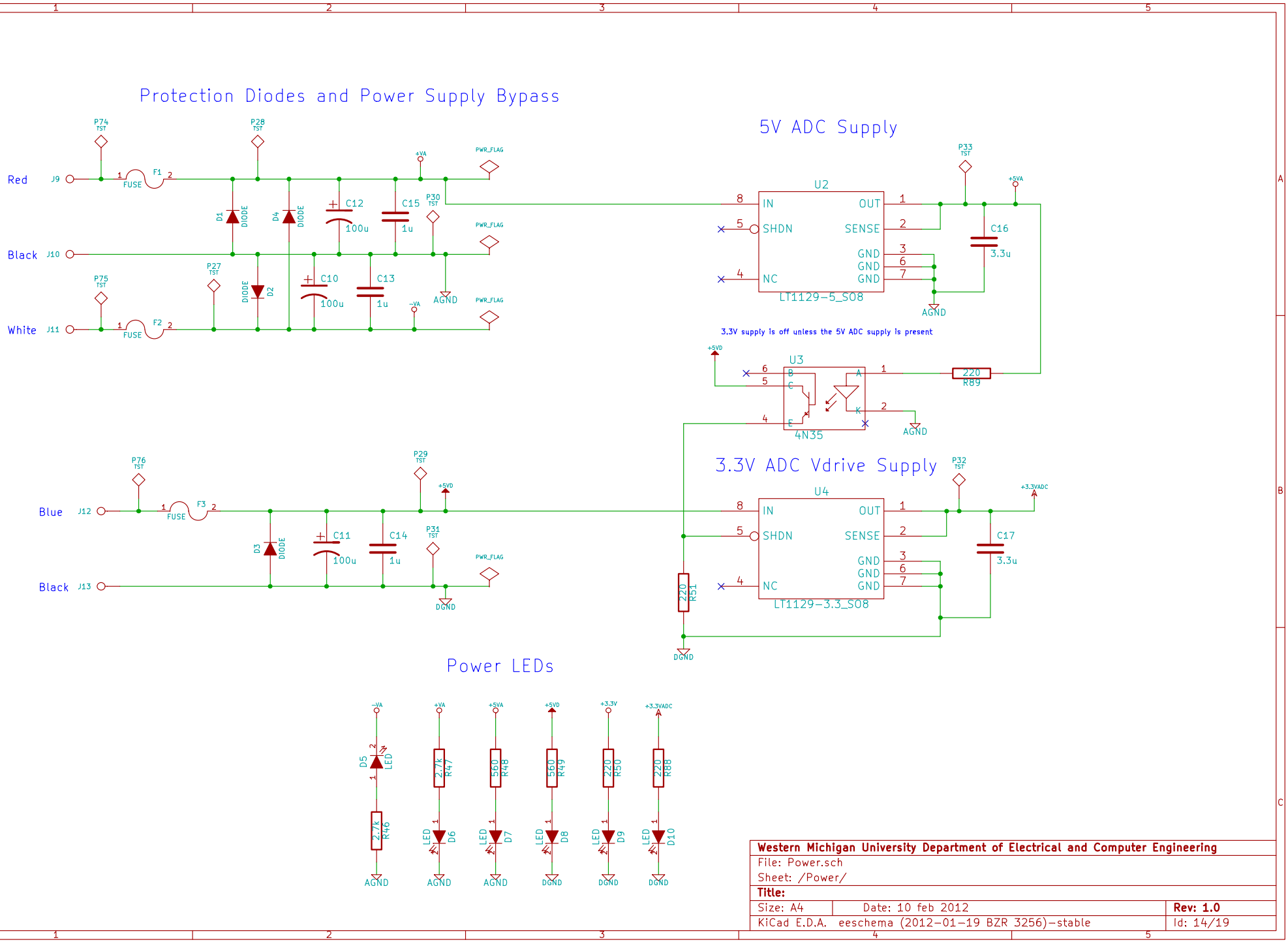
AD7606

Western Michigan University Department of Electrical and Computer Engineering		
File: ADC.sch		
Sheet: /ADC/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A.	eeschema (2012-01-19 BZR 3256)-stable	Id: 12/19

0-Ohm Resistors

When using signals on I/O Header or
when not using signal for chip interface,
do not populate resistor(s)

Western Michigan University Department of Electrical and Computer Engineering		
File: Resistors.sch		
Sheet: /Resistors/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 13/19



Western Michigan University Department of Electrical and Computer Engineering		
File: Power.sch		
Sheet: /Power/		
Title:		
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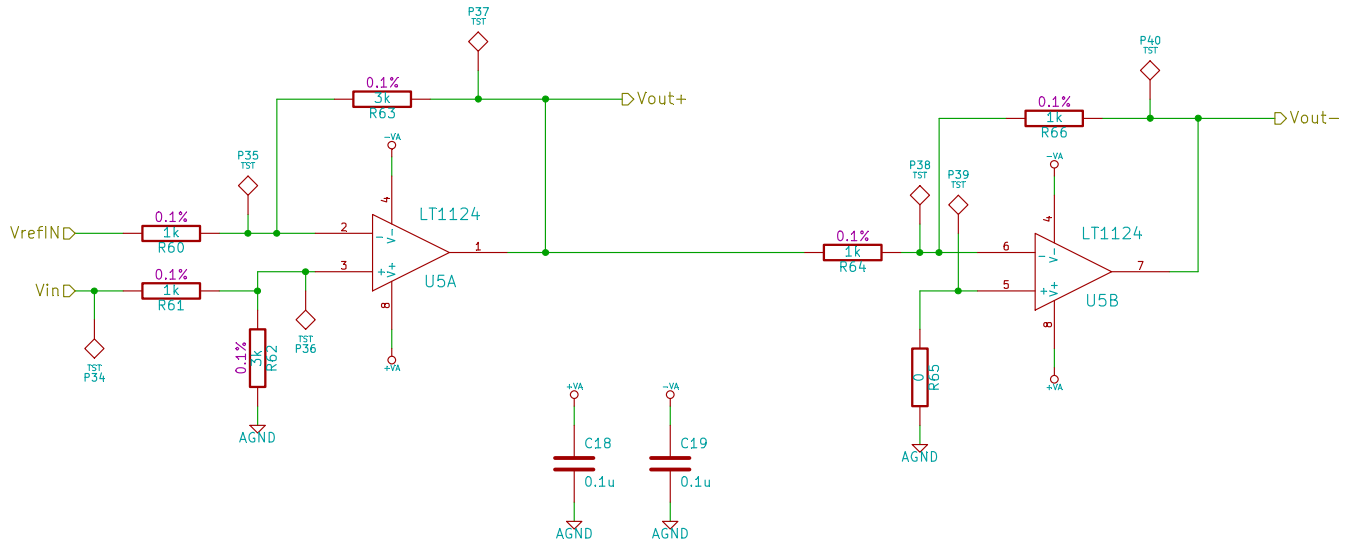
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 14/19



Western Michigan University Department of Electrical and Computer Engineering		
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Title:		
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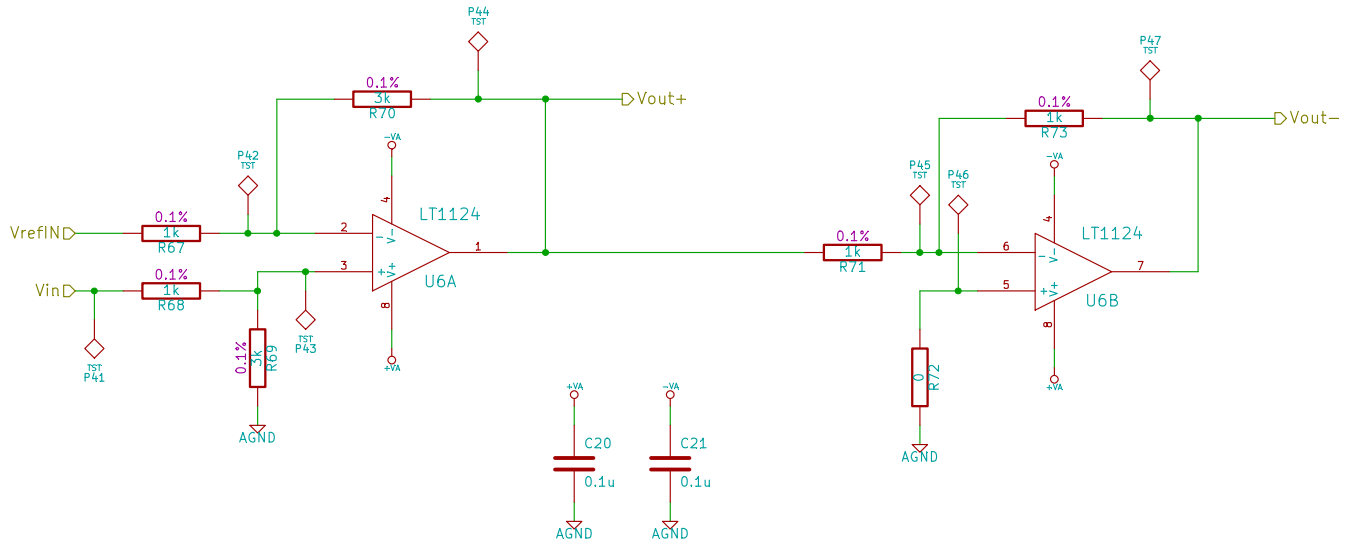
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 15/19



Western Michigan University Department of Electrical and Computer Engineering		
File: AMP.sch		
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Title:		
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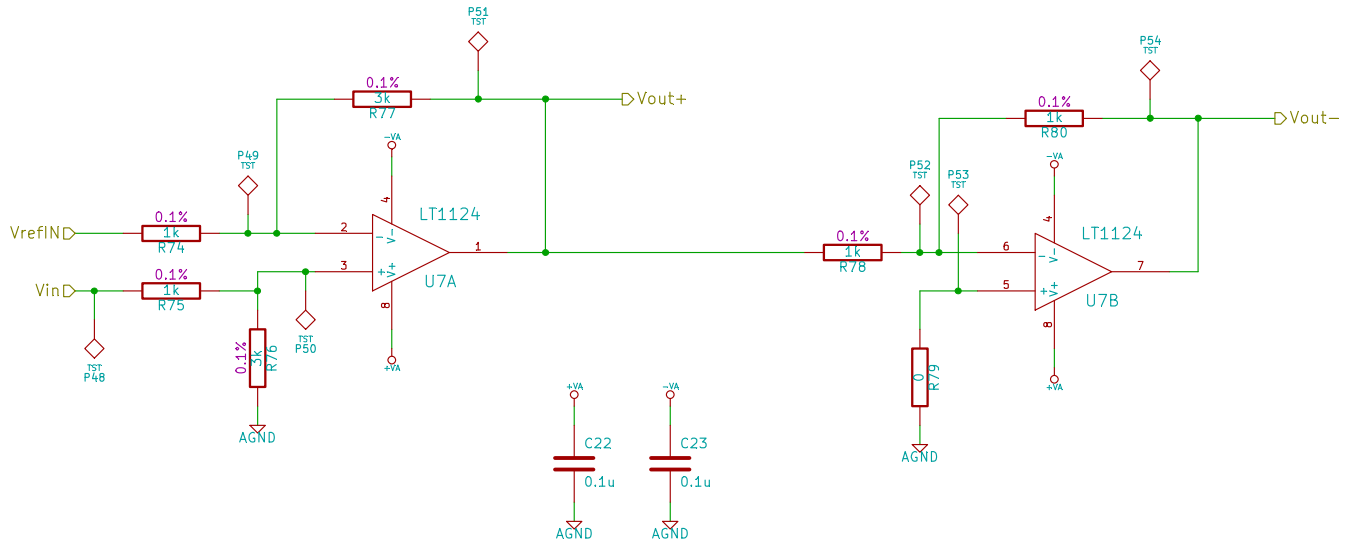
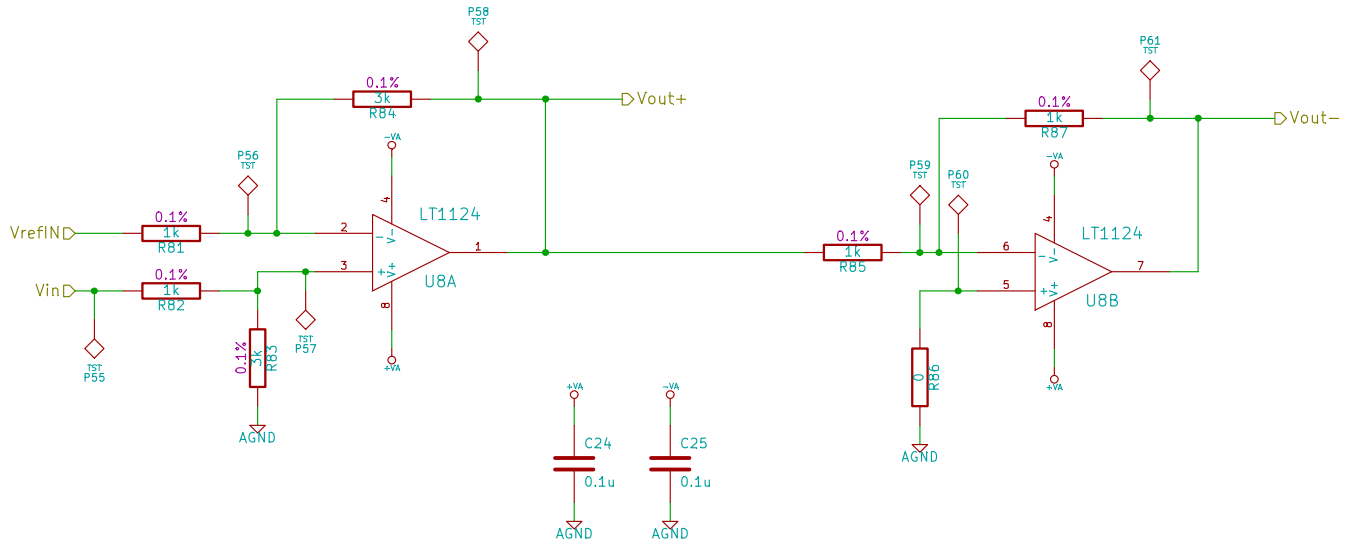
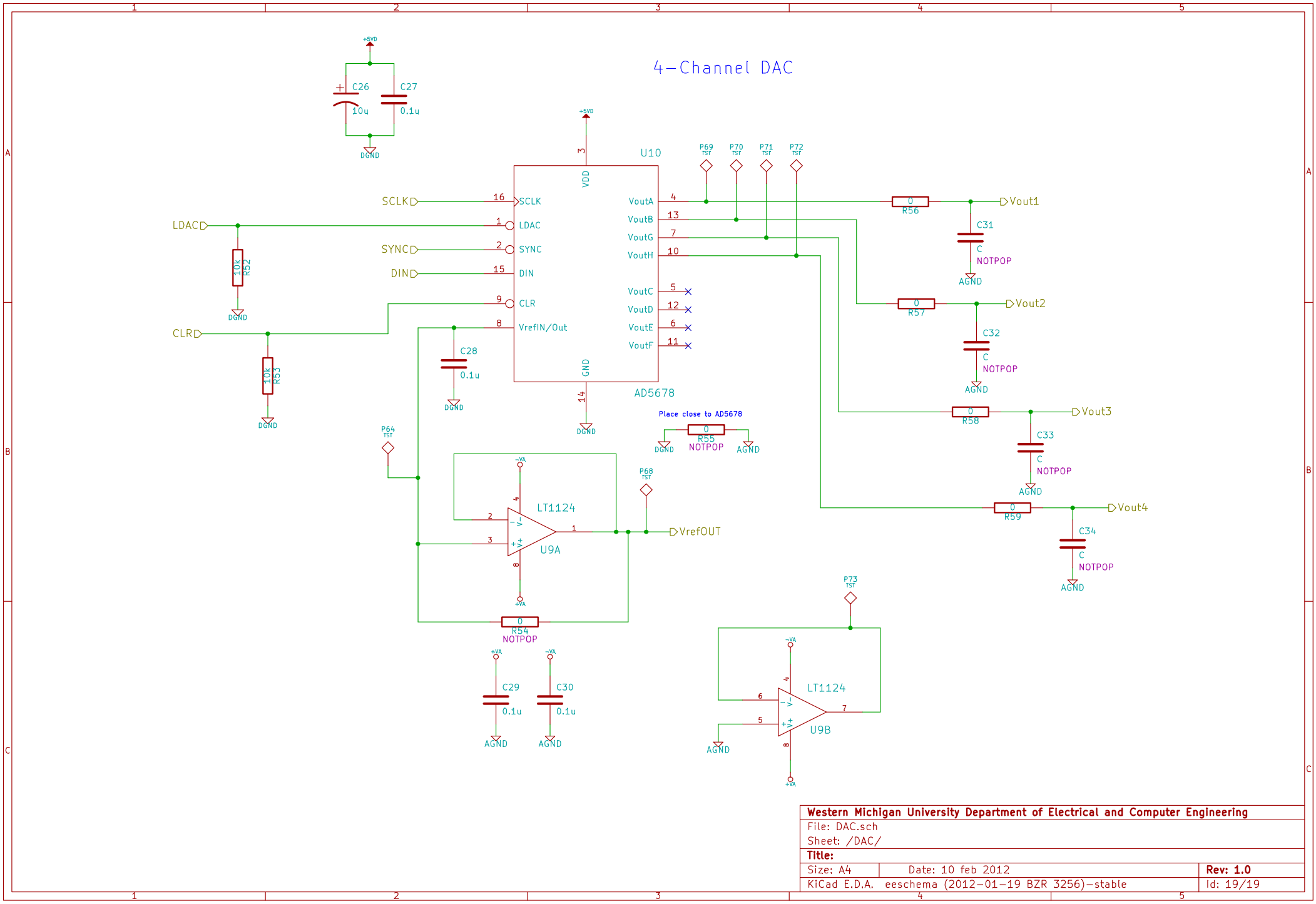
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 16/19



Western Michigan University Department of Electrical and Computer Engineering		
File: AMP.sch		
Sheet: /AMP2/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 17/19



Western Michigan University Department of Electrical and Computer Engineering		
File: AMP.sch		
Sheet: /AMP1/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 18/19



Western Michigan University Department of Electrical and Computer Engineering		
File: DAC.sch		
Sheet: /DAC/		
Title:		
Size: A4	Date: 10 feb 2012	**Rev: 1.0**
KiCad E.D.A. eeschema (2012-01-19 BZR 3256)-stable		Id: 19/19