http://www.src.wisc.edu/users/scienta_info/Scienta_R4000/Instruction%20Manuals/Varian%20MicroVac%20Ion%20Pump%20Controller.pdf

link for varian MicroVac user manual

ion pump dsub

http://www.idealvac.com/files/brochures/Pfeiffer_PKR_251_Pirani_ColdCathode.pdf

Link for Pfeiffer PKR 251 vacuum gauge

CONN ON BACKPLANE

P8

Header 8

~~VARIAN ION PUMP~~

VACUUM GAUGE

J1A

BANK 1

QMSS-EM-PC4

RS485_H

RS485_L

VAC_IDENT

VAC_ANALOG

+24V_VAC

V_MON_MODION

S_wired_1

TT_Sel_n

GND

CONN ON BACKPLANE

P16

18V_ION

24RTN

ION PUMP

MODION

Header 4

Header 4

P1A

BANK 1

QMSS-EM-PC4

+12V

R22

33.2K

SF CONNECTIONS

780-00051, rev2, Pg2, Sinistro Temp Telemetry Board.SchDoc

V_MON_MODION

VAC_ANALOG

VAC_IDENT

RS485_H

RS485_L

CRYO_ENABLE

FAN_TACH

INLET_TEMP_BIAS

OUTLET_TEMP_BIAS

FAN_SPEED_OUT

FORCE+[1..2]

SENSE+[1..2]

SENSE-[1..2]

FORCE-[1..2]

HTR_DRIVE+[1..2]

-12V_IMON

-5ANA_IMON

+12V_IMON

+5ANA_IMON

+28V_IMON

VCC_IMON

+24V_IMON

connector to CryoCabinet PAC input

CONN ON BACKPLANE

P?

Header 8

Header 8

J1B

BANK 2

QMSS-EM-PC4

INLET_TEMP_BIAS

OUTLET_TEMP_BIAS

FAN_SPEED_OUT

FAN_TACH

24RTN

CRYO_ENABLE

+24V

VAC INDENT VALUES:

11k internal = 3.05V

9k internal = 2.56V

(data sheet spec'd range to stay between 2-3V)

P1B

BANK 2

QMSS-EM-PC4

FORCE+[1..2]

SENSE+[1..2]

SENSE-[1..2]

FORCE-[1..2]

HTR_DRIVE+[1..2]

FORCE+1

FORCE+2

SENSE+1

SENSE+2

SENSE-1

SENSE-2

FORCE-1

FORCE-2

HTR_DRIVE+1

HTR_DRIVE+2

P2

Header 2

RS485_H

RS485_L

TP7

TP8

TP9

TP10

TP11

TP12

P3

Header 2

J1C

BANK 3

QMSS-EM-PC4

HTR_DRIVE+2

FORCE+2

FORCE-2

FORCE+1

SENSE+1

FORCE-1

SENSE-1

HTR_DRIVE+1

-12V_IMON

-5ANA_IMON

+12V_IMON

+5ANA_IMON

+28V_IMON

VCC_IMON

+24V_IMON

24RTN

P1C

BANK 3

QMSS-EM-PC4

HEAT CH1 = CCD

HEAT CH2 = COLD BLOCK

COLD BLOCK IS A TWO WIRE SYSTEM

TP13

TP14

TP15

TP16

TP17

TP18

J1D

BANK 4

QMSS-EM-PC4

+12V

+5ANA

+24V

A

PC01

PC03

PC05

PC07

PC02

PC04

PC06

PC08

-12V

18V_ION

+3.3V

24RTN

P1D

BANK 4

QMSS-EM-PC4

C21

10uF

C24

10uF

C20

6.8uF

C22

10uF

C23

10uF

J1E

QMSS-EM-PC4

P1E

QMSS-PC4

+3.3V

Q3

FDV304P

TT_Sel_n

S_wired_1

U6

DS2411

I/O

Vcc

GND

Silicon Serial Number

Rev 2. Date 6/18/2013

Rev 1. Date 12/19/2012

Title

SCH, SINISTRO TEMP/TELEMETRY

Size: B

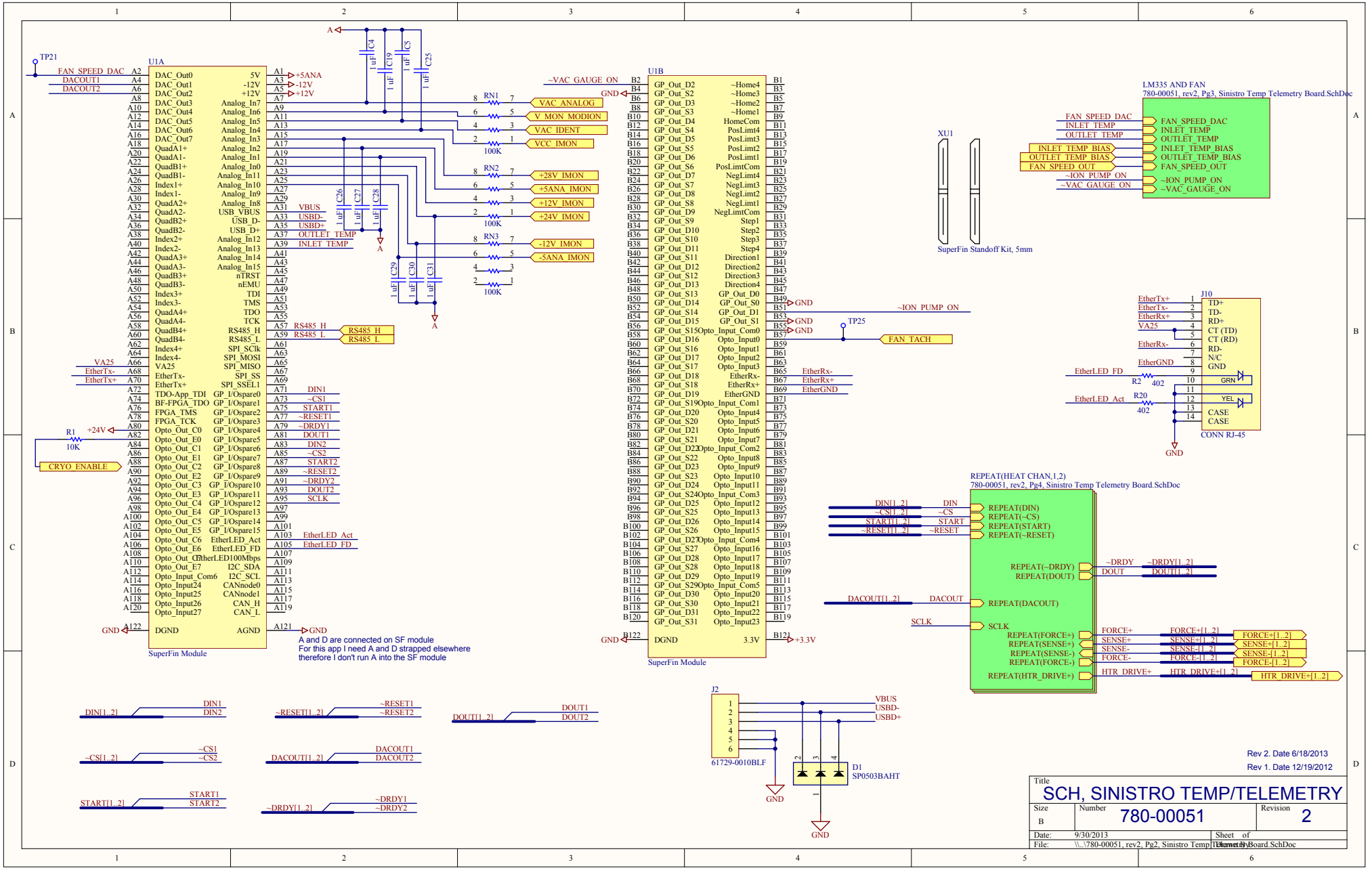
Number: 780-00051

Revision: 2

Date: 9/30/2013

Sheet of

File: \\...\780-00051, rev2, Pg1, Sinistro Temp Telemetry Board.SchDoc


TP21
FAN_SPEED_DAC
DACOUT1
DACOUT2
U1A
DAC_Out0
DAC_Out1
DAC_Out2
DAC_Out3
DAC_Out4
DAC_Out5
DAC_Out6
DAC_Out7
QuadA1+
QuadA1-
QuadB1+
QuadB1-
Index1+
Index1-
QuadA2+
QuadA2-
QuadB2+
QuadB2-
Index2+
Index2-
QuadA3+
QuadA3-
QuadB3+
QuadB3-
Index3+
Index3-
QuadA4+
QuadA4-
QuadB4+
QuadB4-
Index4+
Index4-
VA25
EtherTx-
EtherTx+
TDO-App_TDI
BF-FPGA_TDO
FPGA_TMS
FPGA_TCK
Opto_Out_C0
Opto_Out_E0
Opto_Out_C1
Opto_Out_E1
Opto_Out_C2
Opto_Out_E2
Opto_Out_C3
Opto_Out_E3
Opto_Out_C4
Opto_Out_E4
Opto_Out_C5
Opto_Out_E5
Opto_Out_C6
Opto_Out_E6
Opto_Out_C7
Opto_Out_E7
Opto_Input_Com6
Opto_Input24
Opto_Input25
Opto_Input26
Opto_Input27
DGND
5V
-12V
+12V
Analog_In7
Analog_In6
Analog_In5
Analog_In4
Analog_In3
Analog_In2
Analog_In1
Analog_In0
Analog_In11
Analog_In10
Analog_In9
Analog_In8
USB_VBUS
USB_D-
USB_D+
Analog_In12
Analog_In13
Analog_In14
Analog_In15
nTRST
nEMU
TDI
TMS
TDO
TCK
RS485_H
RS485_L
SPI_SClk
SPI_MOSI
SPI_MISO
SPI_SS
SPI_SSEL1
GP_I/Ospare0
GP_I/Ospare1
GP_I/Ospare2
GP_I/Ospare3
GP_I/Ospare4
GP_I/Ospare5
GP_I/Ospare6
GP_I/Ospare7
GP_I/Ospare8
GP_I/Ospare9
GP_I/Ospare10
GP_I/Ospare11
GP_I/Ospare12
GP_I/Ospare13
GP_I/Ospare14
GP_I/Ospare15
EtherLED_Act
EtherLED_FD
EtherLED100Mbps
I2C_SDA
I2C_SCL
CANnode0
CANnode1
CAN_H
CAN_L
AGND
+5ANA
-12V
+12V
VBUS
USBD-
USBD+
OUTLET_TEMP
INLET_TEMP
DIN1
~CS1
START1
~RESET1
~DRDY1
DOUT1
DIN2
~CS2
START2
~RESET2
~DRDY2
DOUT2
SuperFin Module
A and D are connected on SF module
For this app I need A and D strapped elsewhere
therefore I don't run A into the SF module
C4
C19
C5
C25
1 uF
RN1
RN2
RN3
100K
VAC_ANALOG
V_MON_MODION
VAC_IDENT
VCC_IMON
+28V_IMON
+5ANA_IMON
+12V_IMON
+24V_IMON
-12V_IMON
-5ANA_IMON
C26
C27
C28
C29
C30
C31
R1
10K
+24V
CRYO_ENABLE
RS485_H
RS485_L
U1B
~VAC_GAUGE_ON
GP_Out_D2
GP_Out_S2
GP_Out_D3
GP_Out_S3
GP_Out_D4
GP_Out_S4
GP_Out_D5
GP_Out_S5
GP_Out_D6
GP_Out_S6
GP_Out_D7
GP_Out_S7
GP_Out_D8
GP_Out_S8
GP_Out_D9
GP_Out_S9
GP_Out_D10
GP_Out_S10
GP_Out_D11
GP_Out_S11
GP_Out_D12
GP_Out_S12
GP_Out_D13
GP_Out_S13
GP_Out_D14
GP_Out_S14
GP_Out_D15
GP_Out_S15
GP_Out_D16
GP_Out_S16
GP_Out_D17
GP_Out_S17
GP_Out_D18
GP_Out_S18
GP_Out_D19
GP_Out_S19
GP_Out_D20
GP_Out_S20
GP_Out_D21
GP_Out_S21
GP_Out_D22
GP_Out_S22
GP_Out_D23
GP_Out_S23
GP_Out_D24
GP_Out_S24
GP_Out_D25
GP_Out_S25
GP_Out_D26
GP_Out_S26
GP_Out_D27
GP_Out_S27
GP_Out_D28
GP_Out_S28
GP_Out_D29
GP_Out_S29
GP_Out_D30
GP_Out_S30
GP_Out_D31
GP_Out_S31
~Home4
~Home3
~Home2
~Home1
HomeCom
PosLimt4
PosLimt3
PosLimt2
PosLimt1
PosLimtCom
NegLimt4
NegLimt3
NegLimt2
NegLimt1
NegLimtCom
Step1
Step2
Step3
Step4
Direction1
Direction2
Direction3
Direction4
GP_Out_D0
GP_Out_S0
GP_Out_D1
GP_Out_S1
Opto_Input_Com0
Opto_Input0
Opto_Input1
Opto_Input2
Opto_Input3
EtherRx-
EtherRx+
EtherGND
Opto_Input_Com1
Opto_Input4
Opto_Input5
Opto_Input6
Opto_Input7
Opto_Input_Com2
Opto_Input8
Opto_Input9
Opto_Input10
Opto_Input11
Opto_Input_Com3
Opto_Input12
Opto_Input13
Opto_Input14
Opto_Input15
Opto_Input_Com4
Opto_Input16
Opto_Input17
Opto_Input18
Opto_Input19
Opto_Input_Com5
Opto_Input20
Opto_Input21
Opto_Input22
Opto_Input23
3.3V
GND
~ION_PUMP_ON
TP25
FAN_TACH
XU1
SuperFin Standoff Kit, 5mm
LM335 AND FAN
780-00051, rev2, Pg3, Sinistro Temp Telemetry Board.SchDoc
FAN_SPEED_DAC
INLET_TEMP
OUTLET_TEMP
INLET_TEMP_BIAS
OUTLET_TEMP_BIAS
FAN_SPEED_OUT
~ION_PUMP_ON
~VAC_GAUGE_ON
J10
EtherTx+
EtherTx-
EtherRx+
VA25
EtherRx-
EtherGND
EtherLED_FD
EtherLED_Act
R2
402
R20
402
GRN
YEL
TD+
TD-
RD+
CT (TD)
CT (RD)
RD-
N/C
GND
CASE
CONN RJ-45
REPEAT(HEAT CHAN,1,2)
780-00051, rev2, Pg4, Sinistro Temp Telemetry Board.SchDoc
DIN[1..2]
~CS[1..2]
START[1..2]
~RESET[1..2]
DACOUT[1..2]
SCLK
REPEAT(DIN)
REPEAT(~CS)
REPEAT(START)
REPEAT(~RESET)
REPEAT(~DRDY)
REPEAT(DOUT)
REPEAT(DACOUT)
REPEAT(FORCE+)
REPEAT(SENSE+)
REPEAT(SENSE-)
REPEAT(FORCE-)
REPEAT(HTR_DRIVE+)
~DRDY
DOUT
FORCE+
SENSE+
SENSE-
FORCE-
HTR_DRIVE+
J2
61729-0010BLF
D1
SP0503BAHT
Rev 2. Date 6/18/2013
Rev 1. Date 12/19/2012
Title
SCH, SINISTRO TEMP/TELEMETRY
Size
B
Number
780-00051
Revision
2
Date: 9/30/2013
Sheet of
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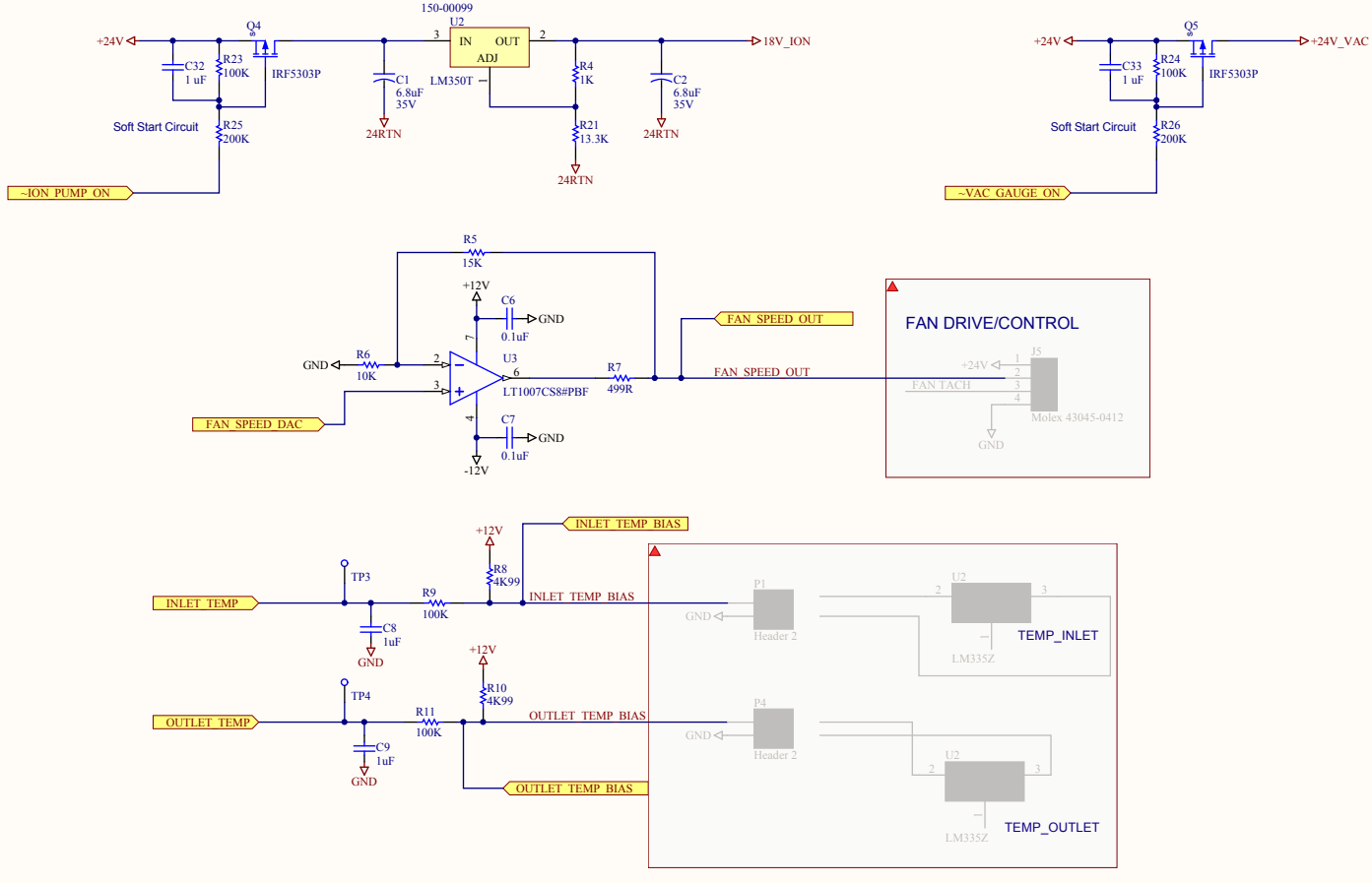

Rev 2. Date 6/18/2013
Rev 1. Date 12/19/2012

Title: SCH, SINISTRO TEMP/TELEMETRY		
Size: B	Number: 780-00051	Revision: 1
Date: 9/30/2013	Sheet of	
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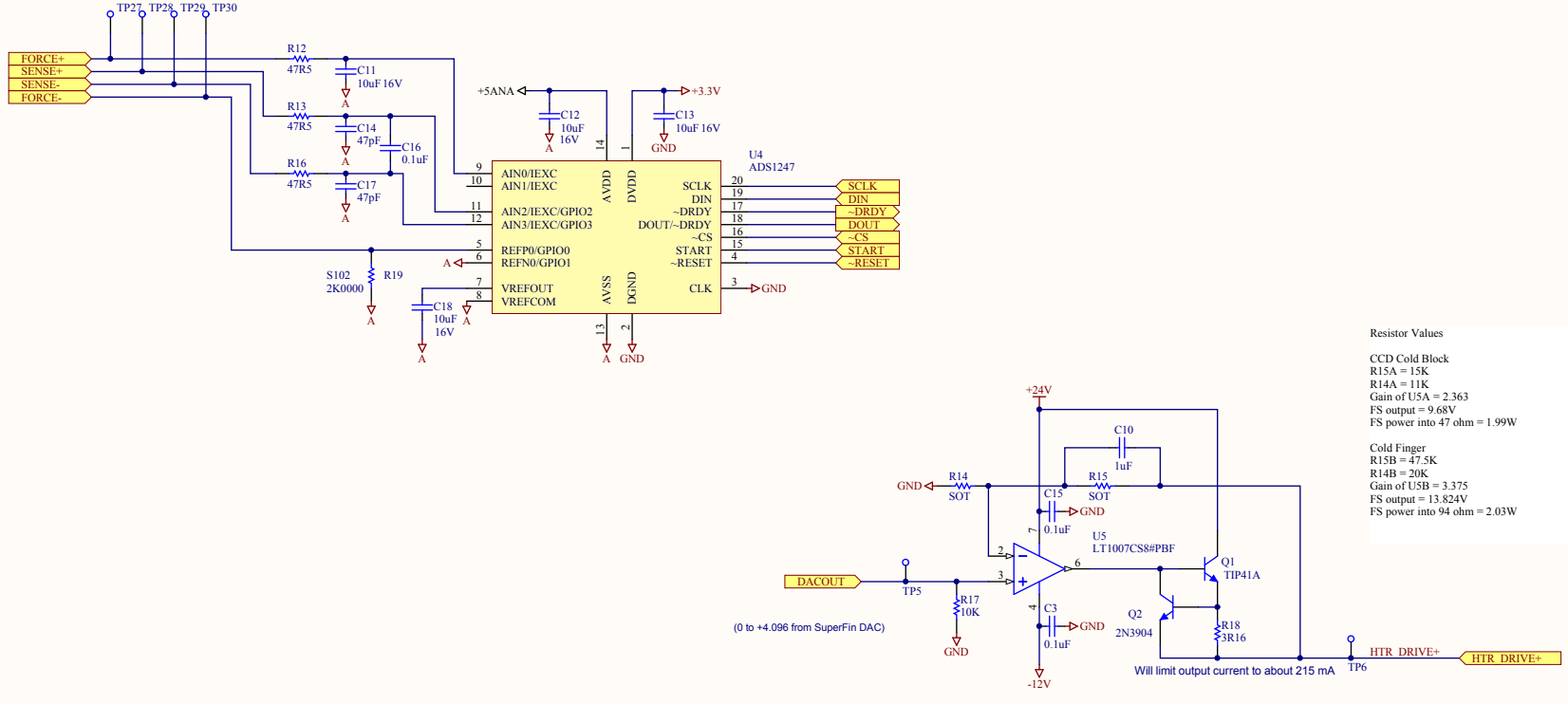

Rev 2. Date 6/18/2013
Rev 1. Date 12/19/2012

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Size: B	Number: 780-00051	Revision: 2
Date: 9/30/2013	Sheet of	
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