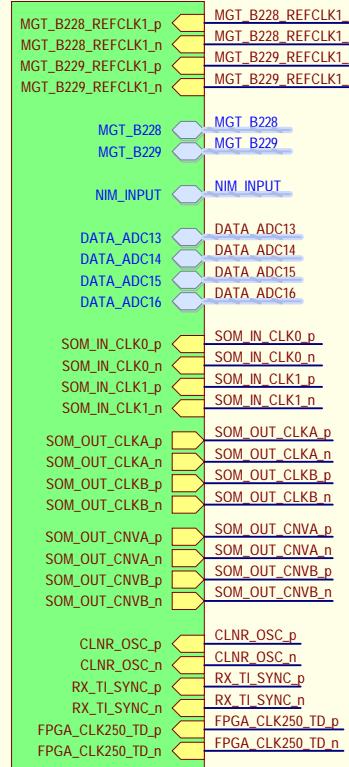
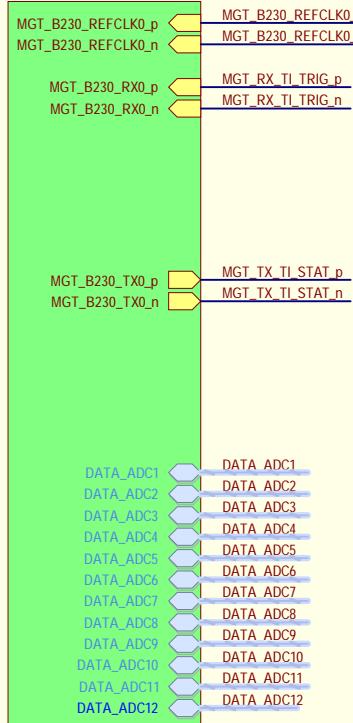


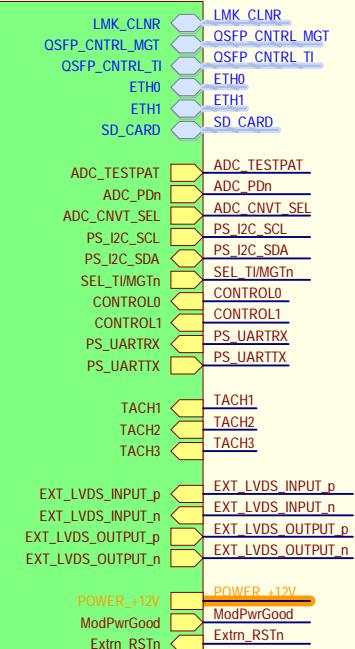
### SOM CONNECTOR C



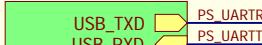
### SOM CONNECTOR B



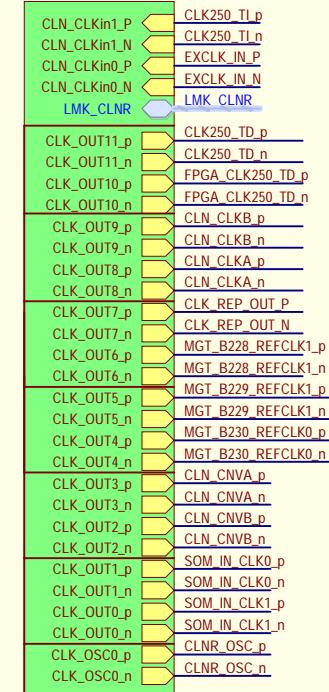
### SOM CONNECTOR A



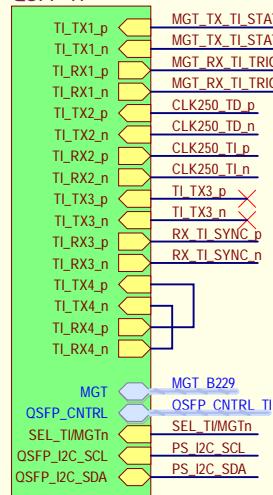
### USB\_UART



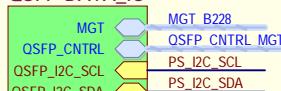
### CLOCK



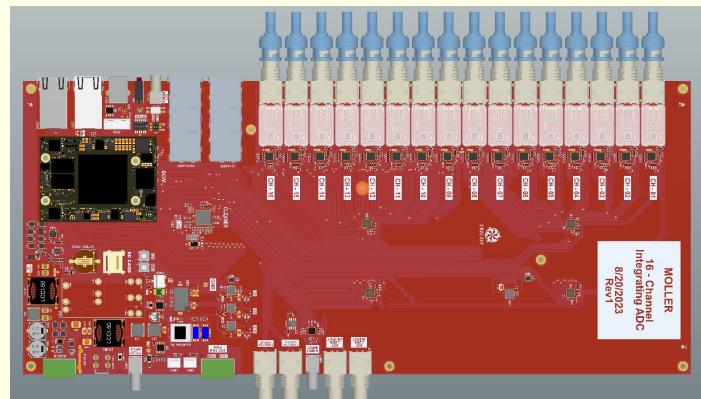
### QSFP-TI



### QSFP-DATA\_IO

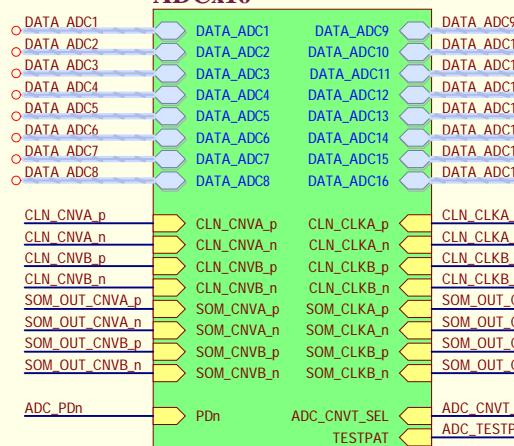


Wrench for front panel knurled BNC nut

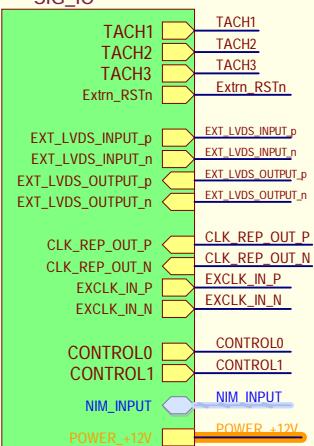


- FID\_T1** ● 1mm FIDUCIAL
- FID\_T2** ● 1mm FIDUCIAL
- FID\_T3** ● 1mm FIDUCIAL
- FID\_B1** ● 1mm FIDUCIAL
- FID\_B2** ● 1mm FIDUCIAL
- FID\_B3** ● 1mm FIDUCIAL

### ADCx16



### SIG\_IO



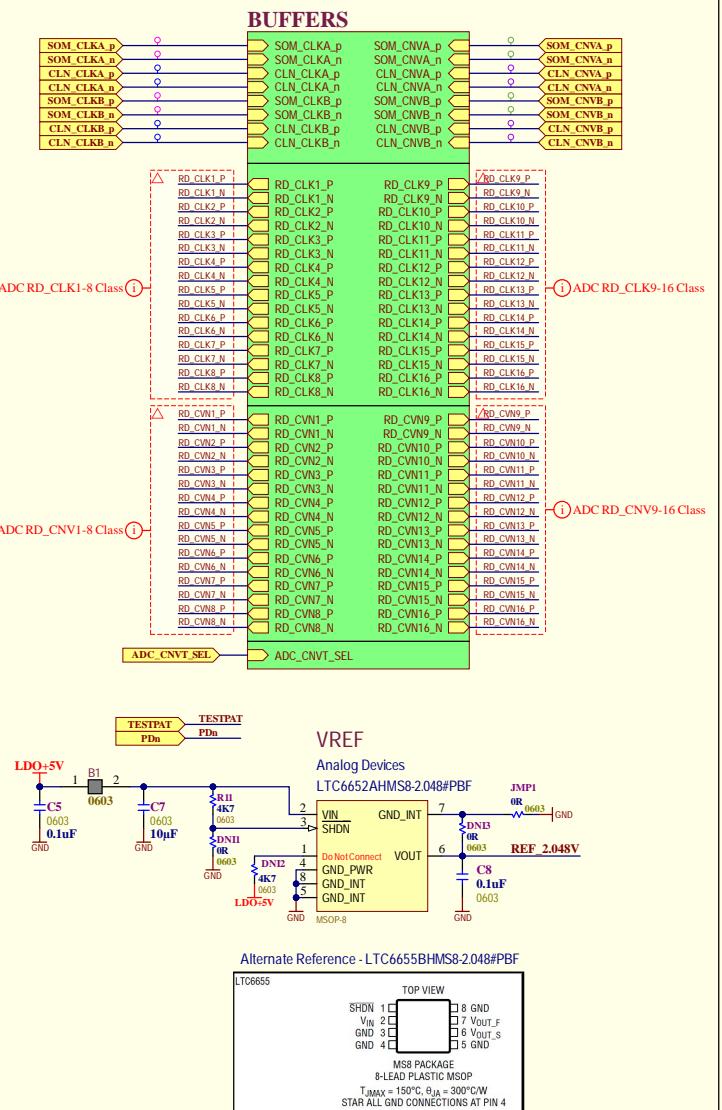
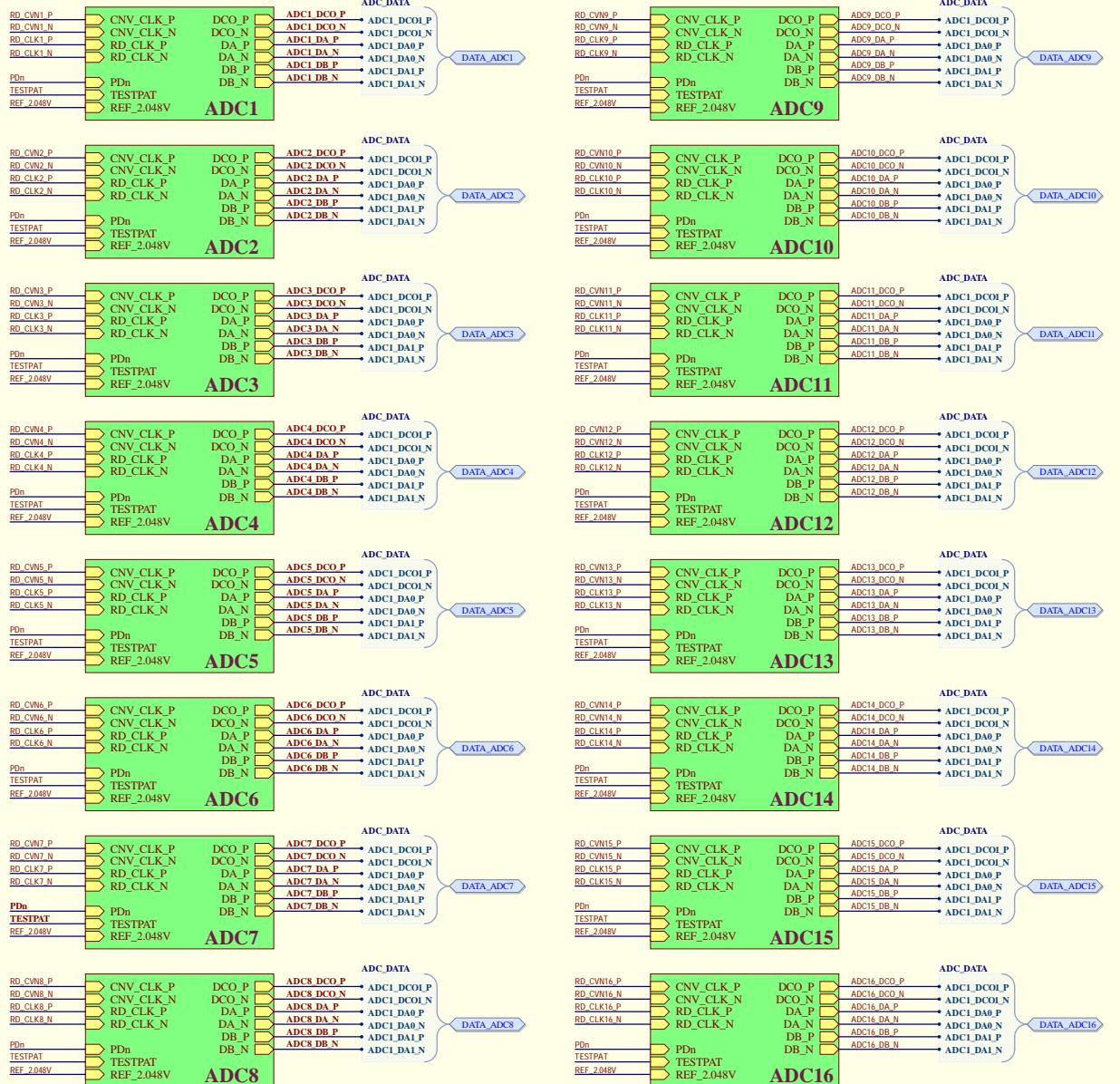
### MOLLER: 16-Channel Integrating ADC

Revision	Drawing #:	1
1	Sheet #:	1 of 16
	Size:	A
	Drawn by:	JP, DB
	Date:	11/15/2023

University of Manitoba  
Winnipeg, MB  
Canada  
R3T 2N2



TRIUMF  
LOGO

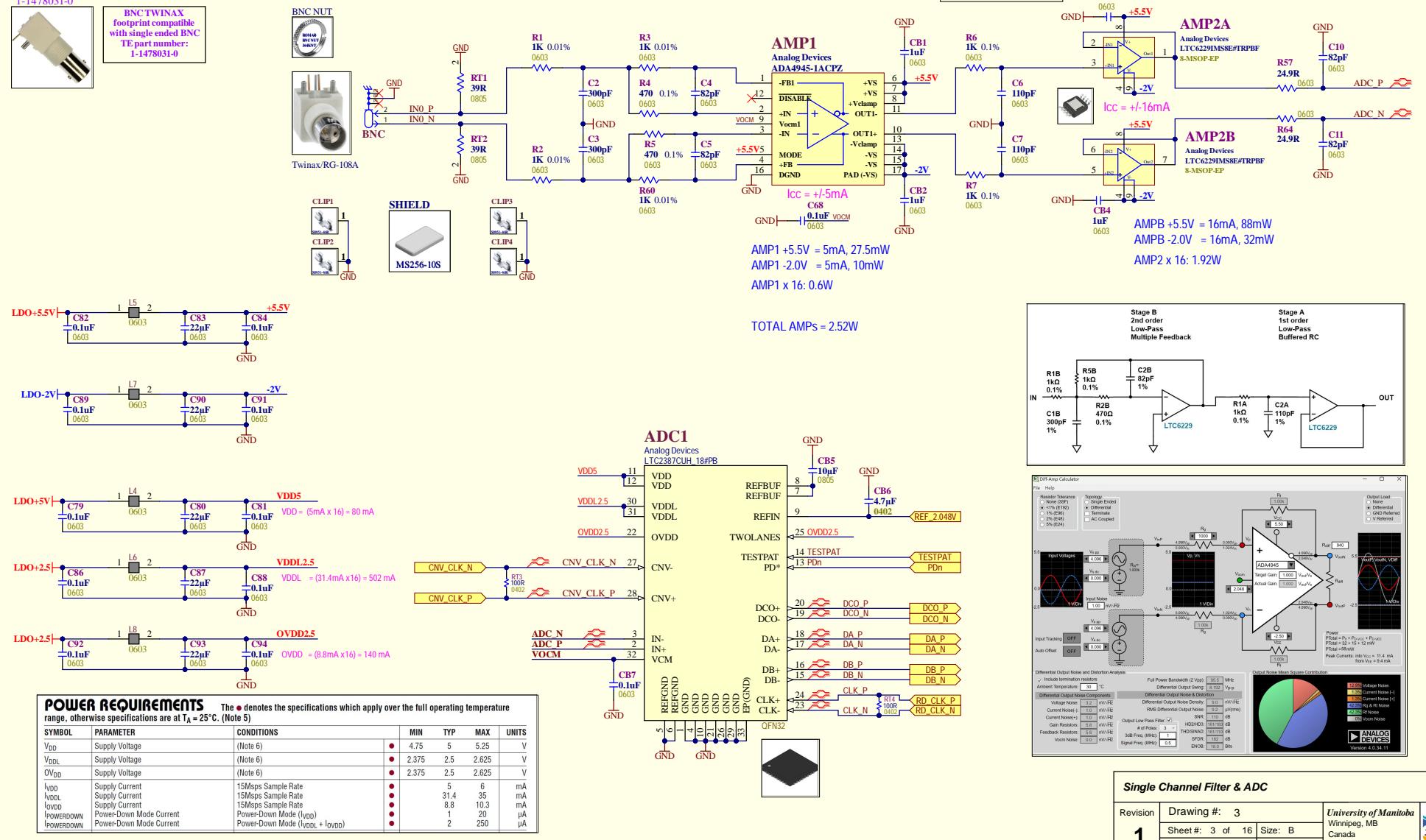


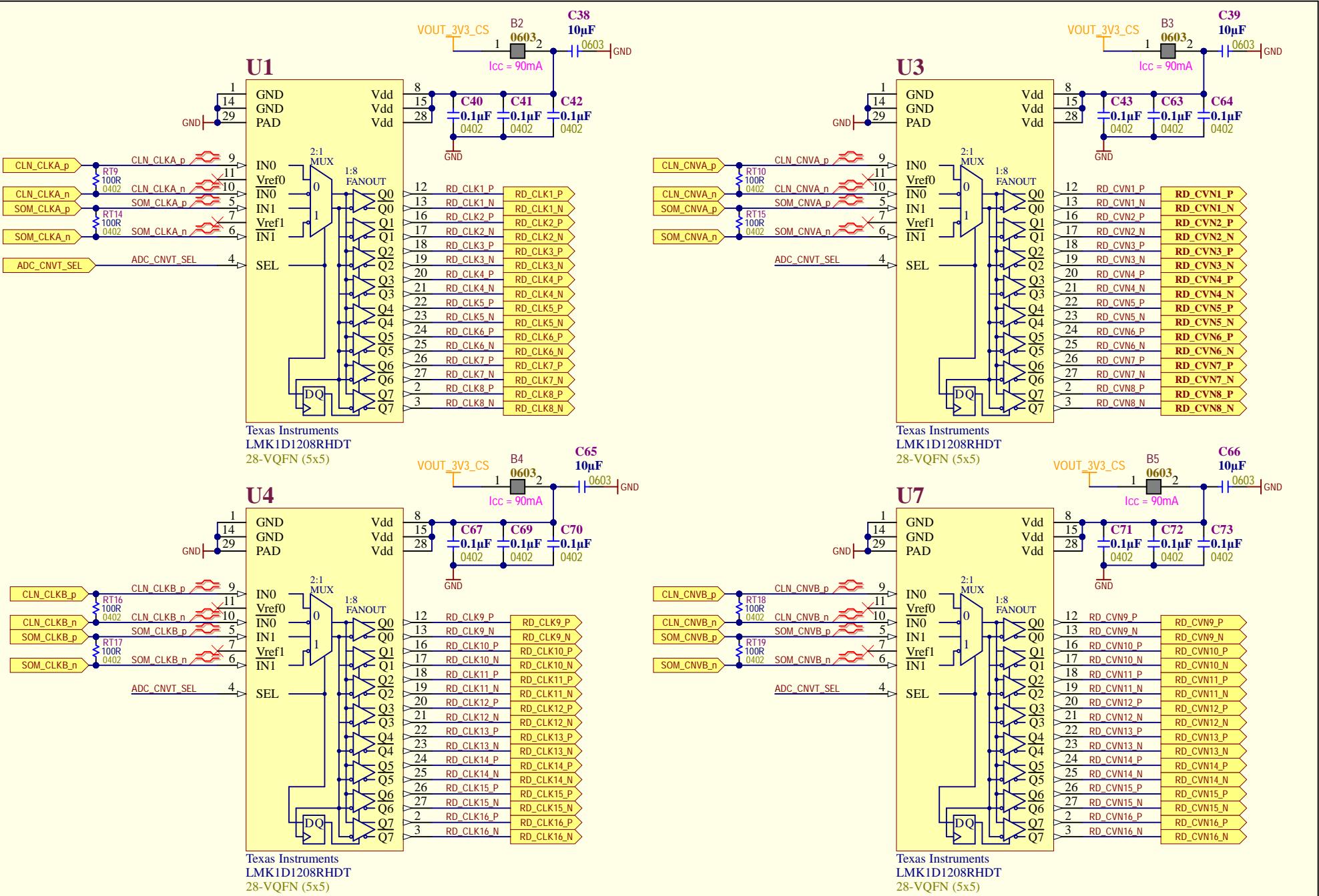
Revision	Drawing #:	2	University of Manitoba Winnipeg, MB Canada	University of Manitoba
1	Sheet #: 2 of 16	Size: B		
	Drawn by: JP, DB	Date: 11/15/2023	R3T 2N2	

File: C:\Users\Public\Documents\Altium\MOLLER-16-Channel ADC Rev1\MOLLER-16-Channel ADC - ADC Group Rev1\ch005554.M4M



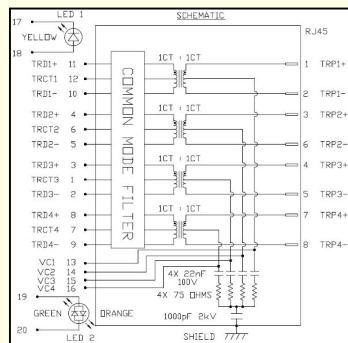
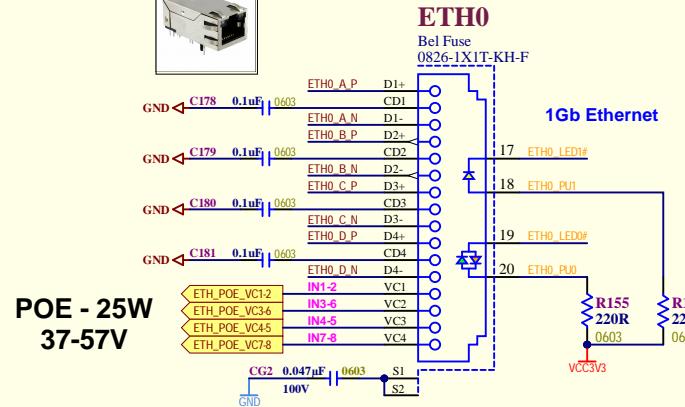
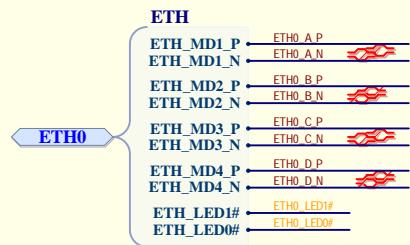
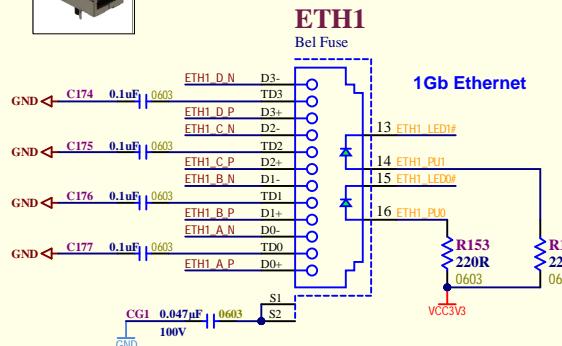
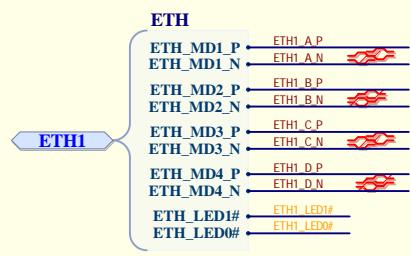
BNC TWINAX  
footprint compatible  
with single ended BNC  
TE part number:  
1-1478031-0





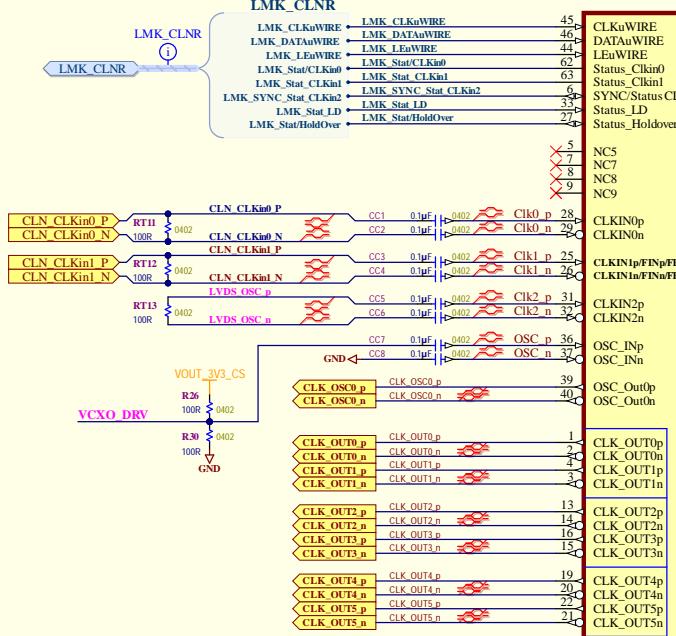
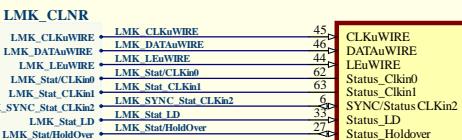
### MOLLER: 16-Channel Integrating ADC - Clock and Convert Buffers

Revision	Drawing #:	8	University of Manitoba
1	Sheet #:	4 of 16	Winnipeg, MB Canada
	Drawn by:	JP, DB	Date: 11/15/2023 R3T 2N2

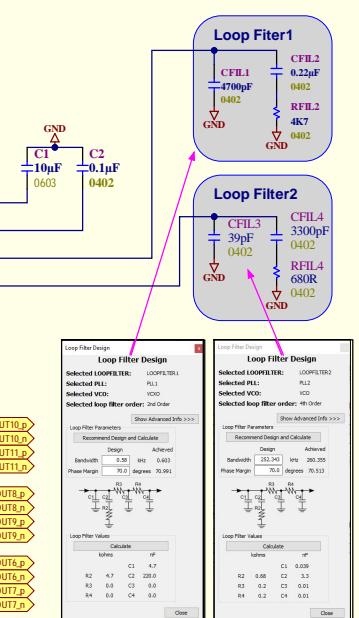
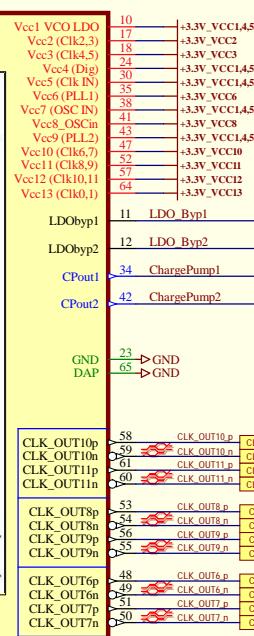
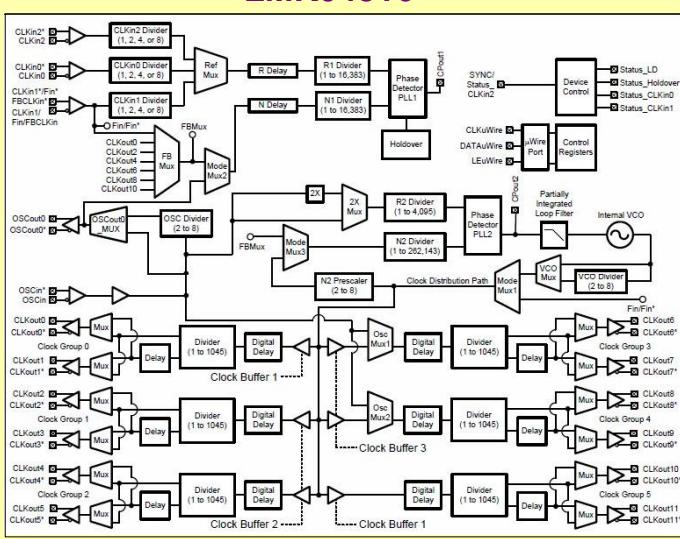


### MOLLER: 16-Channel Integrating ADC - Gigabit Ethernet

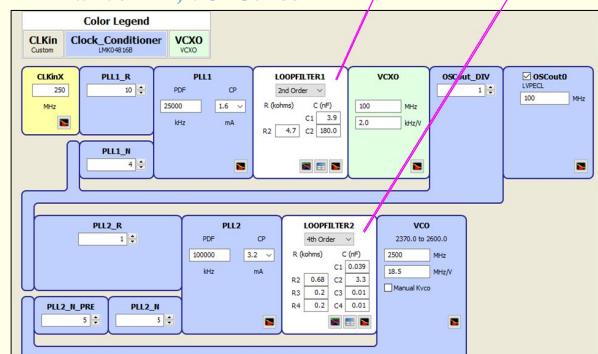
Revision	Drawing #:	Sheet #:	Size:	TRIUMF
1	9	5 of 16	A	4004 Wesbrook Mall
				Vancouver, B.C.
				Canada
				V6T 2A3
				File: C:\Users\Public\Documents\Altium\MOLLER-16-Channel ADC Rev1\16-Channel ADC - ETHERNET Rev1301065 AM



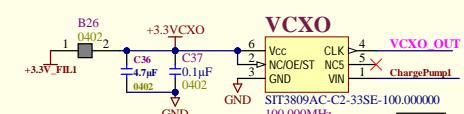
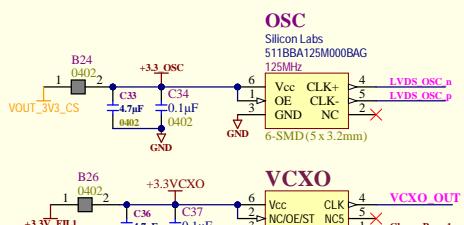
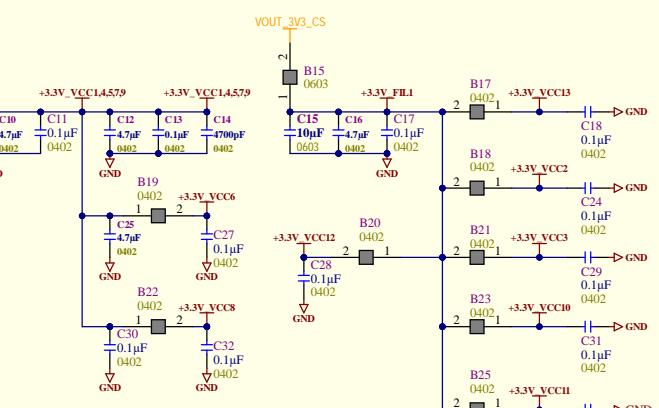
## LMK04816



**Configuration: LMK04816B  
REFIN: 250MHz, VCXO: 100MHz**



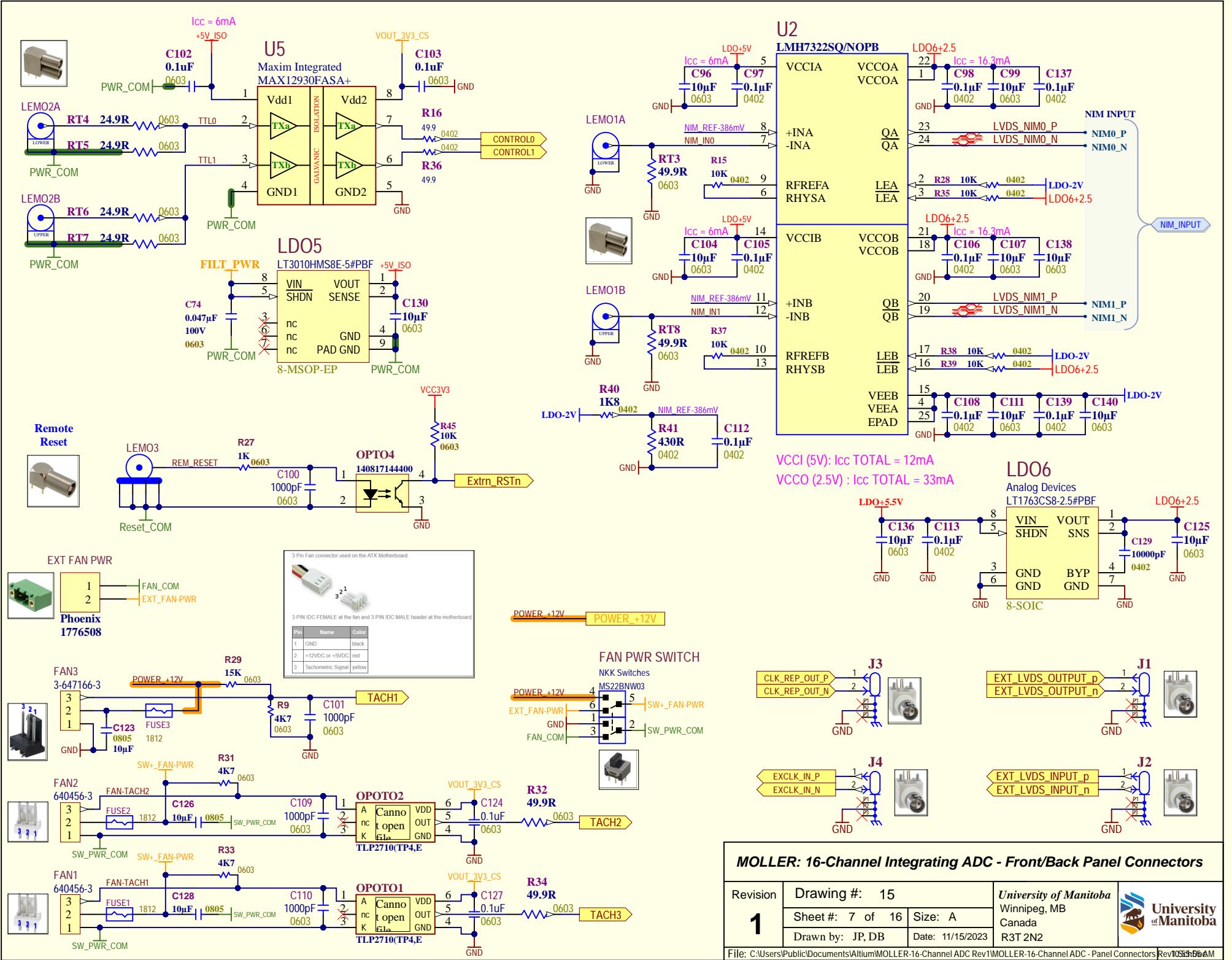
Current approx 550mA

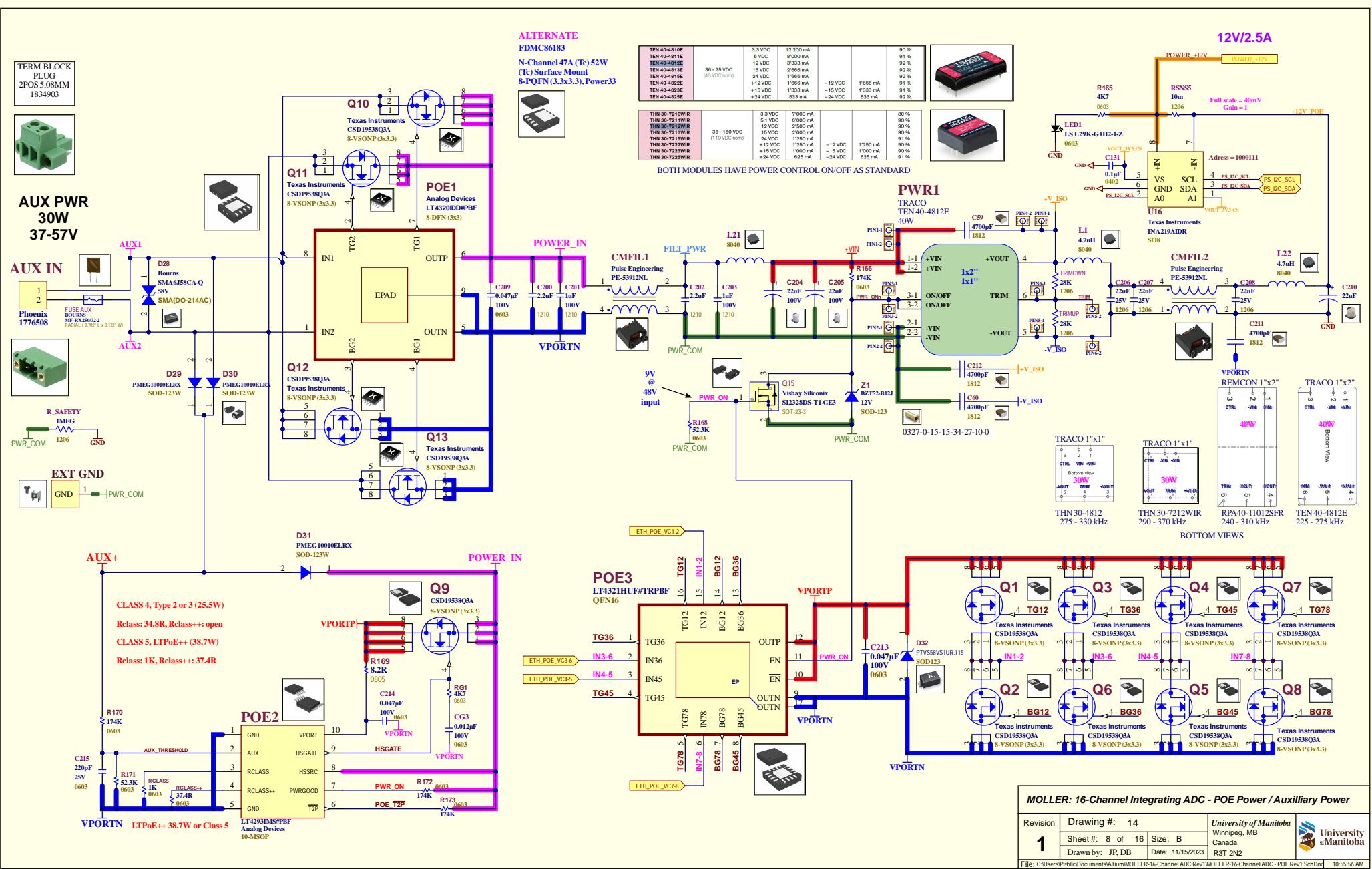


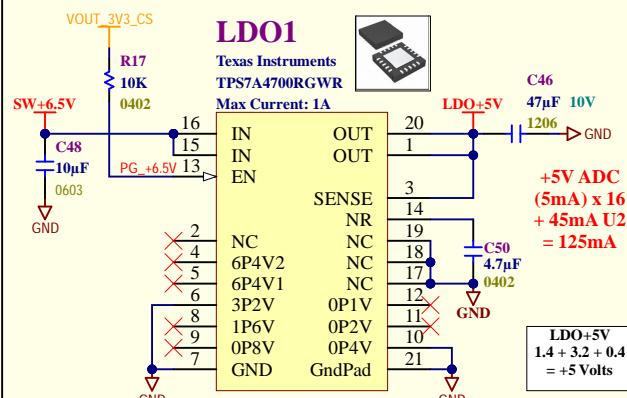
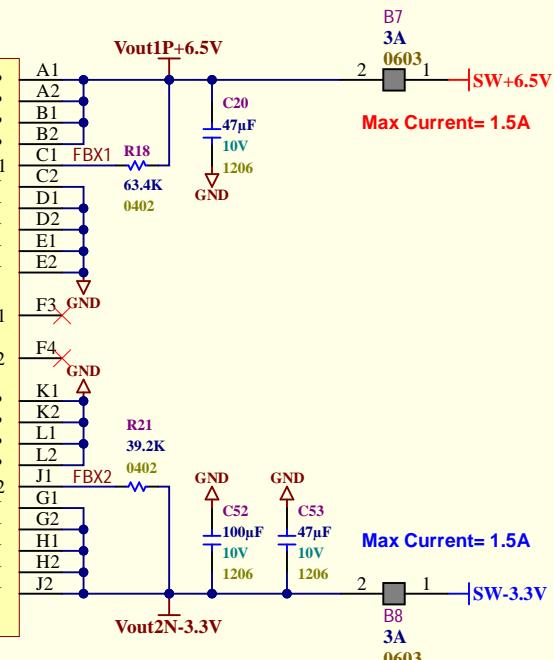
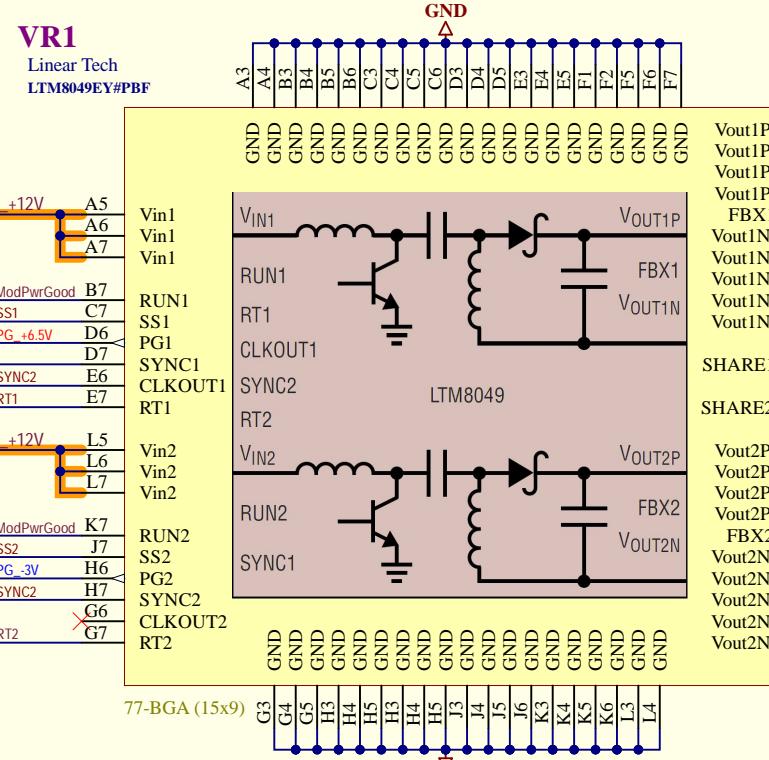
## MOLLER: 16-Channel Integrating ADC - Clock Cleaner

Revision	Drawing #:	11	TRIUMF
1			4004 Webbrook Mall
			Vancouver, B.C.
			Canada
			V6T 2A3









**LDO2**

Texas Instruments  
TPS7A4700RGWR

Max Current: 1A

IN	OUT
IN	OUT
EN	OUT
NC	NR
6P4V2	NC
6P4V1	NC
3P2V	OP1V
1P6V	OP2V
0P8V	OP4V
GND	GndPad

**C19**  
10µF  
0603

**PG\_+6.5V**

**LDO+5.5V**  
47µF 10V  
1206

**C9**  
47µF 10V  
1206

**OUT**

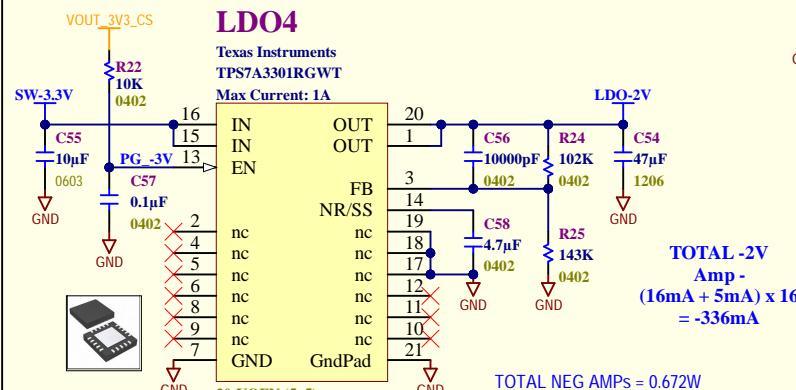
**SENSE**

**1206 C49**  
4.7µF 0402

**1206 C49**  
4.7µF 0402

**TOTAL +5.5V + AMP**  
**(16mA + 5mA) x 336mA**  
**= +336mA**

**LDO+5.5V**  
1.4 + 3.2 + 0.8 + 0.  
= +5.5 Volts

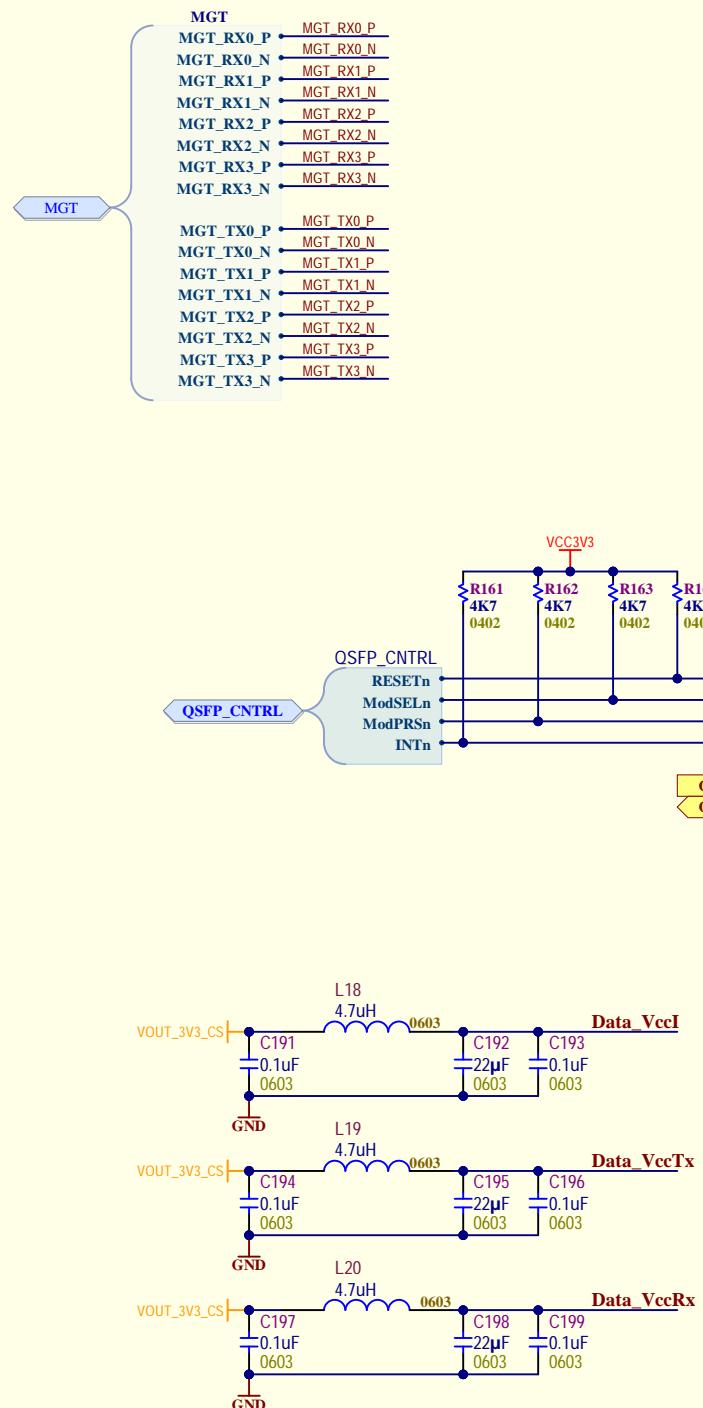


**TOTAL -2V**  
**Amp -**  
**(mA + 5mA) x 16**  
**= -336mA**

The diagram shows the circuit for LED3. It consists of an LDO-2V regulator connected to ground. A resistor labeled R7 is connected between the output of the LDO and the anode of a 0603 SMD LED. The cathode of the LED is connected to ground through a 100R resistor.

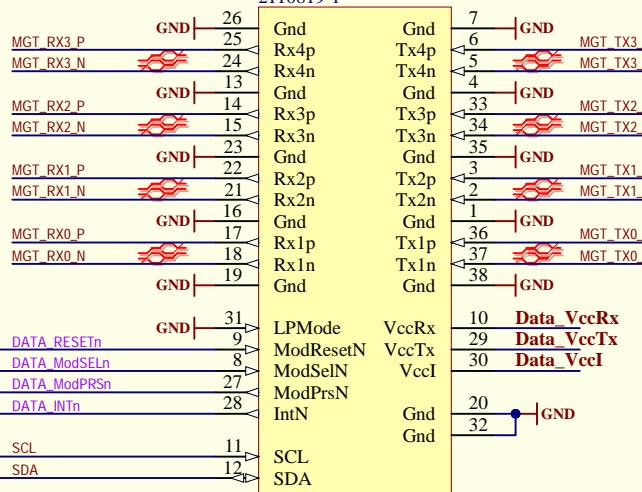
MOLLER: 16-Channel Integrating ADC - Power Regulators

Revision <b>1</b>	Drawing #: 10		<i>University of Manitoba</i> Winnipeg, MB Canada R3T 2N2	 University of Manitoba
	Sheet #:	9 of 16		
	Drawn by:	JP, DB		



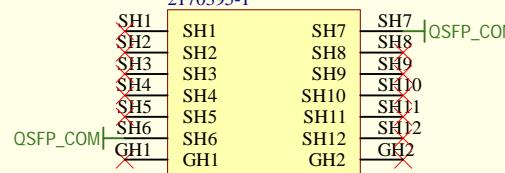
### QSFP-DATA

TE Connectivity AMP  
2110819-1



### QSFP DATA SHLD

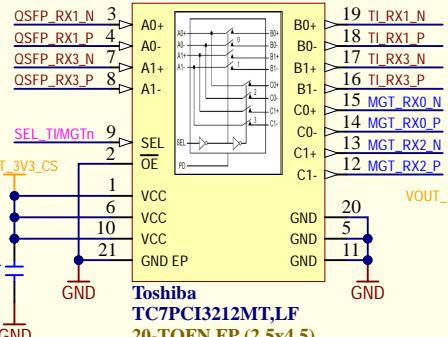
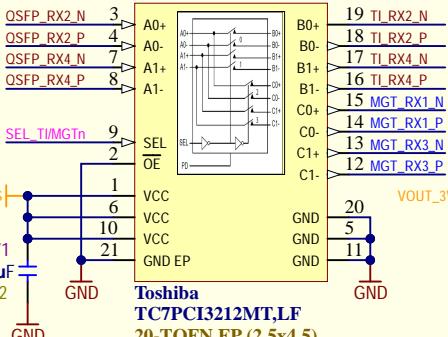
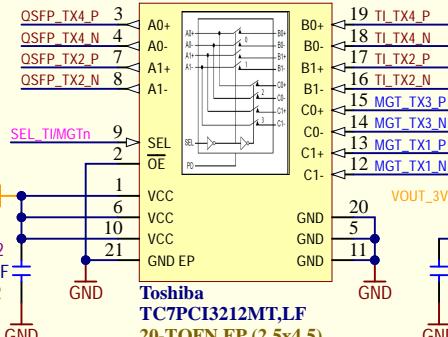
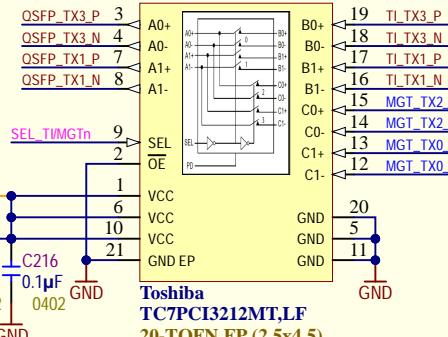
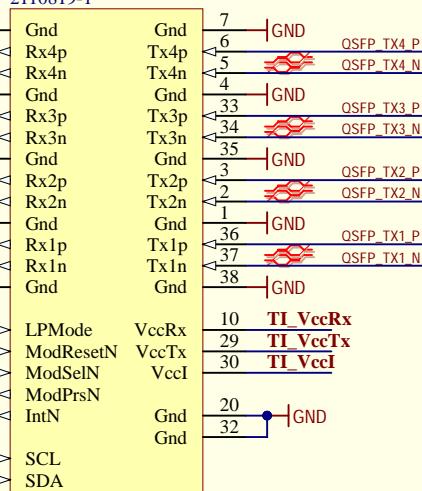
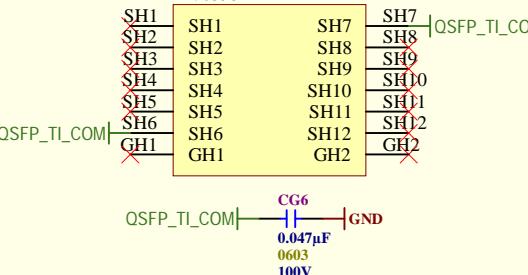
TE Connectivity  
2170395-1



### MOLLER: 16-Channel Integrating ADC - QSFP Data Interface

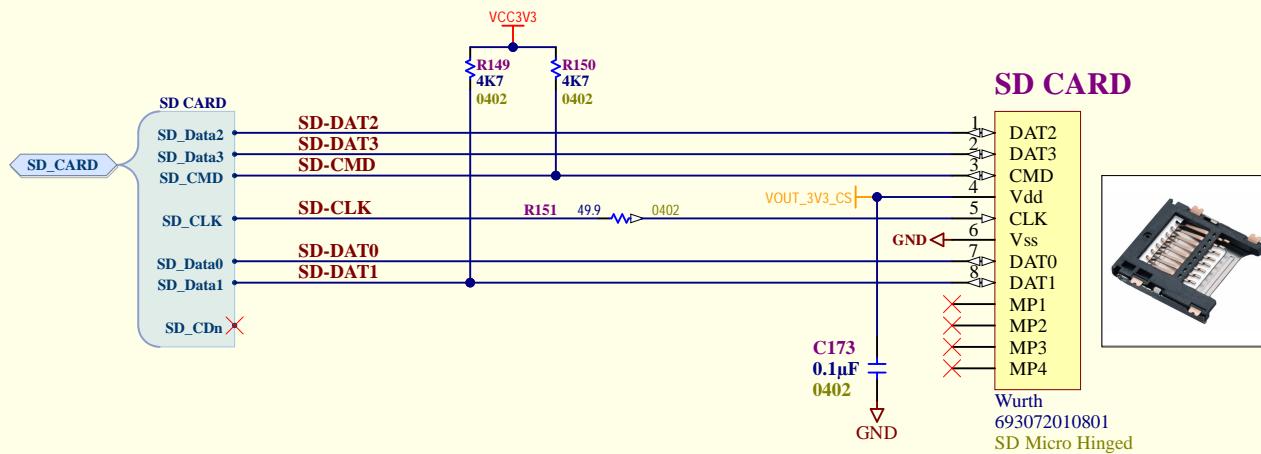
Revision	Drawing #:	12	University of Manitoba
1	Sheet #:	10 of 16	Winnipeg, MB Canada
	Size:	A	
	Drawn by:	JP, DB	Date: 11/15/2023
	File:	C:\Users\Public\Documents\Altium\MOLLER-16-Channel ADC Rev1\	MOLLER-16-Channel ADC - QSFP Data Rev1.SchDtl



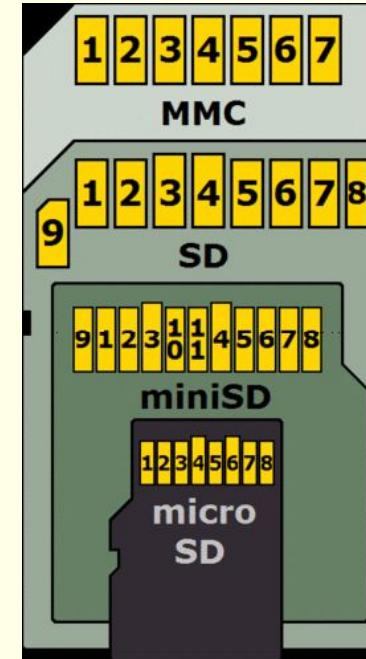
**U9**Toshiba  
TC7PCI3212MT,LF  
20-TQFN EP (2.5x4.5)**U10**Toshiba  
TC7PCI3212MT,LF  
20-TQFN EP (2.5x4.5)**U11**Toshiba  
TC7PCI3212MT,LF  
20-TQFN EP (2.5x4.5)**U12**Toshiba  
TC7PCI3212MT,LF  
20-TQFN EP (2.5x4.5)**QSFP-TI**TE Connectivity AMP  
2110819-1**QSFP TI SHLD**TE Connectivity  
2170395-1**MOLLER: 16-Channel Integrating ADC - QSFP TI Interface**

Revision	Drawing #:	13	University of Manitoba
1	Sheet #:	11 of 16	Winnipeg, MB
	Size:	A	Canada
	Drawn by:	JP, DB	R3T 2N2
Date: 11/15/2023			
File: C:\Users\Public\Documents\Altium\MOLLER-16-Channel ADC Rev1\MOLLER-16-Channel ADC - QSFP TI interface Rev1.65507.ADM			



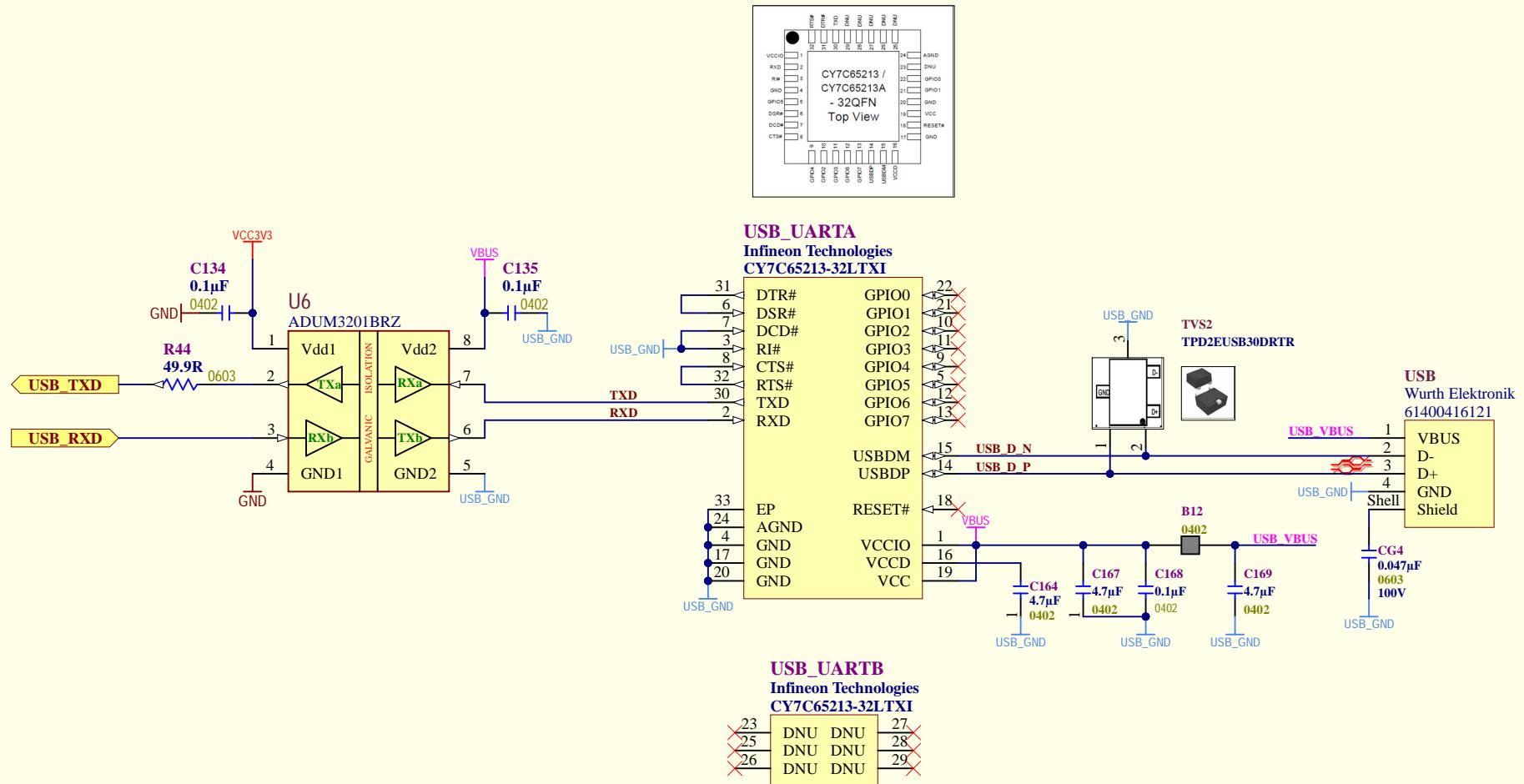


Four-Bit SD Bus Mode							
MMC Pin	SD Pin	miniSD Pin	microSD Pin	Name	I/O	Logic	Description
.	1	1	2	DAT3	I/O	PP	SD Serial Data 3
.	2	2	3	CMD	I/O	PP, OD	Command, Response
.	3	3		VSS	S	S	Ground
.	4	4	4	VDD	S	S	Power
.	5	5	5	CLK	I	PP	Serial Clock
.	6	6	6	VSS	S	S	Ground
.	7	7	7	DAT0	I/O	PP	SD Serial Data 0
.	8	8	8	DAT1	I/O	PP	SD Serial Data 1 (memory cards)
				nIRQ	O	OD	Interrupt Period (SDIO cards share pin via protocol)
.	9	9	1	DAT2	I/O	PP	SD Serial Data 2
.	10			NC	.	.	Reserved
.	11			NC	.	.	Reserved



#### MOLLER: 16-Channel Integrating ADC - Micro SD Card

Revision	Drawing #: 16			<i>University of Manitoba</i> Winnipeg, MB Canada
	Sheet #:	12 of 16	Size: A	
1	Drawn by: JP, DB	Date: 11/15/2023		R3T 2N2

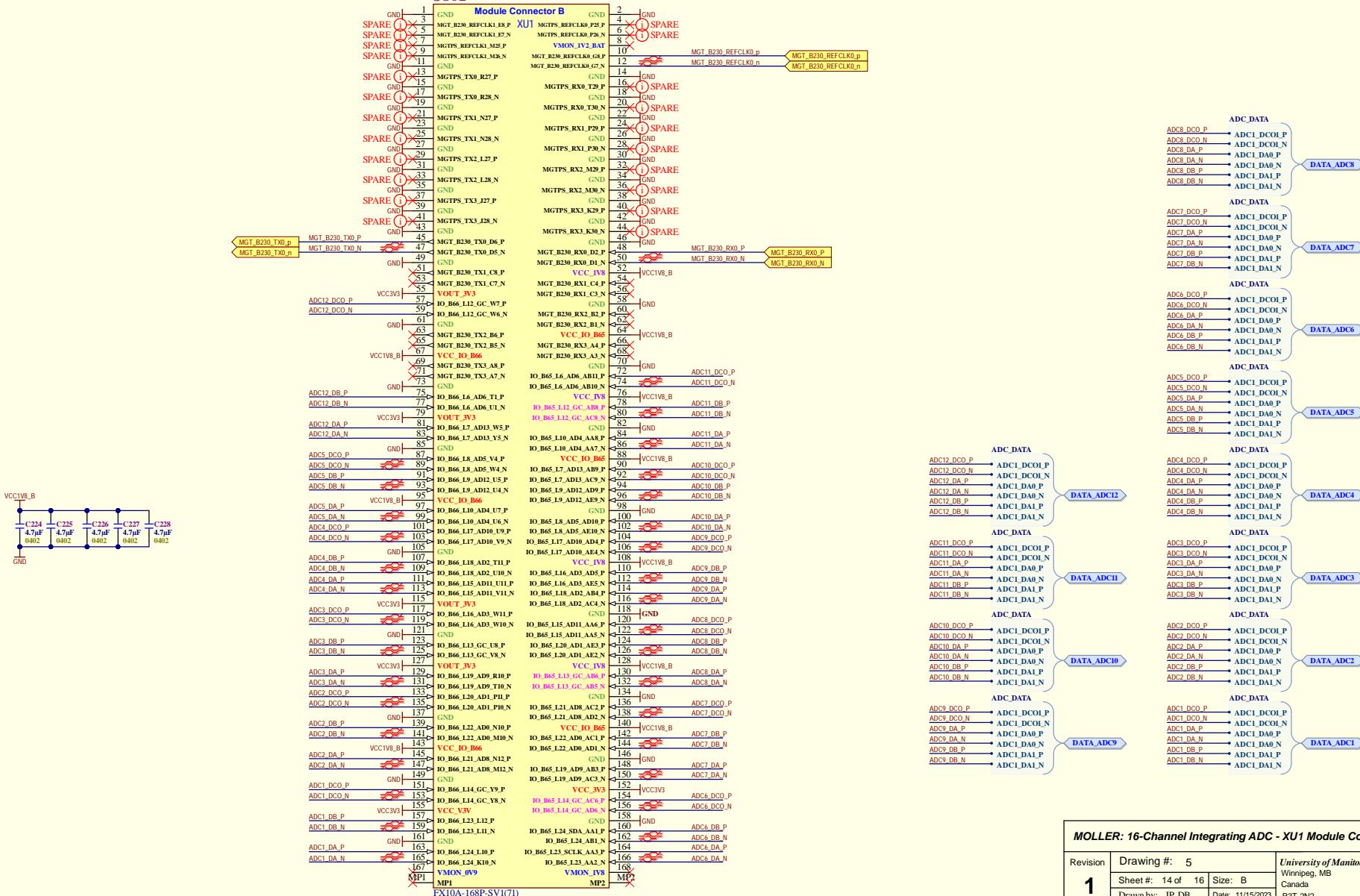


**MOLLER: 16-Channel Integrating ADC - USB UART**

Revision <b>1</b>	Drawing #: 7		<i>University of Manitoba</i> Winnipeg, MB Canada R3T 2N2	 University of Manitoba
	Sheet #:	13 of 16		
	Drawn by: JP, DB		Date: 11/15/2023	
File: C:\Users\Public\Documents\Altium\MOLLER-16-Channel ADC Rev1\MOLLER-16-Channel ADC - USB Rev1.SchDoc 10:55:57 AM				

## Mercury Module Connector B

J801



MOLLER: 16-Channel Integrating ADC - XU1 Module Connector B

Revision <b>1</b>	Drawing #: 5	<i>University of Manitoba</i> Winnipeg, MB Canada R3T 2N2	 University of Manitoba
Sheet #:	14 of 16	Size: B	
Drawn by:	JP, DB	Date: 11/15/2023	

F:\Engineering\Design\Structural\Design\Structural\Structural\101\101-101\101-101.dwg C:\Windows\Temp\1\101-101.dwg C:\Windows\Temp\1\101-101.dwg

# Mercury Module Connector C

