
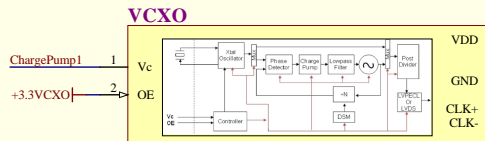


VME Clock Distribution Module - Top Level			TRIUMF LOGO
Revision	Drawing #: 1	TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
3	Sheet #: 1 of 11	Size: B	
	Drawn by: D.Bishop	Date: 4/5/2019	

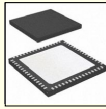
File: C:\git\abhw\meck\clock_distribution_module\Rev3\Allium\VME - Clock Distribution Module - Top Level\SchDoc 1129 05 AM



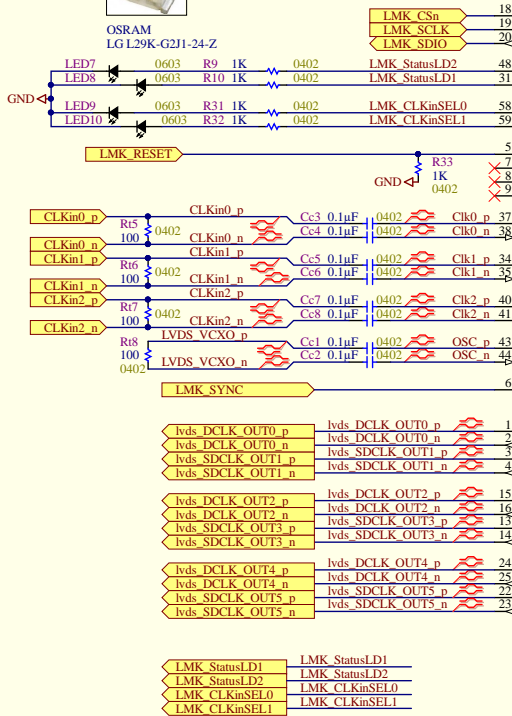
VCXO 100MHz LVDS Oscillator
ASG-D-V-A-100.000MHZ
Abracon Corporation
6-SMD (7x5mm)



Current Draw:
Input Current: 25ma (82.5mW)



CLEANER



Clock distribution fanout - 15 channel
LMK04821NKDIT
Texas Instruments
64-WQFN (9x9)

LMK04821

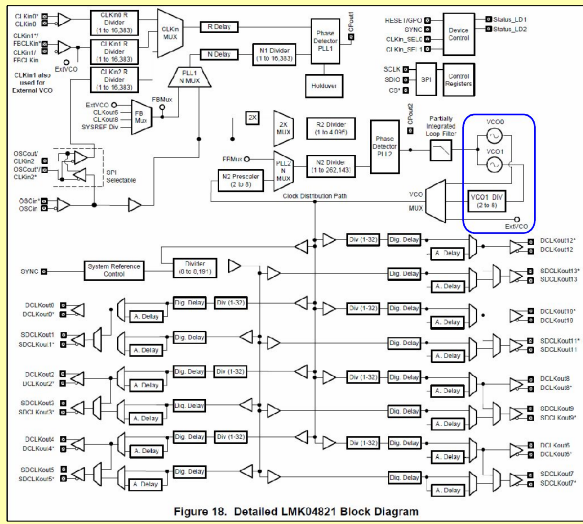
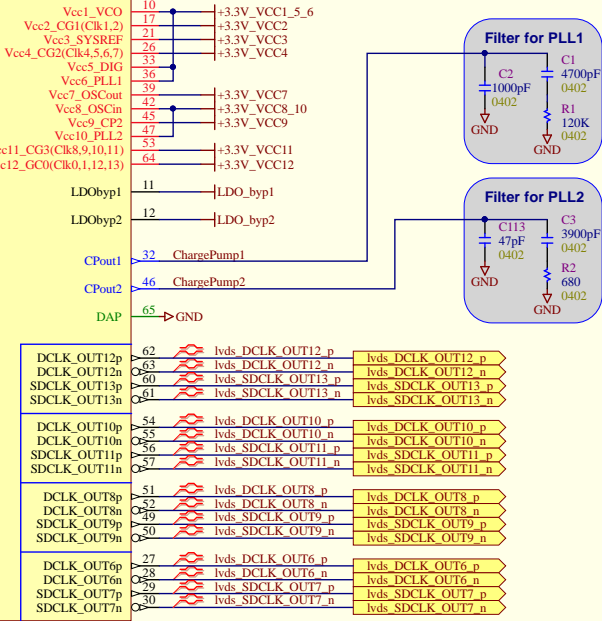


Figure 18. Detailed LMK04821 Block Diagram

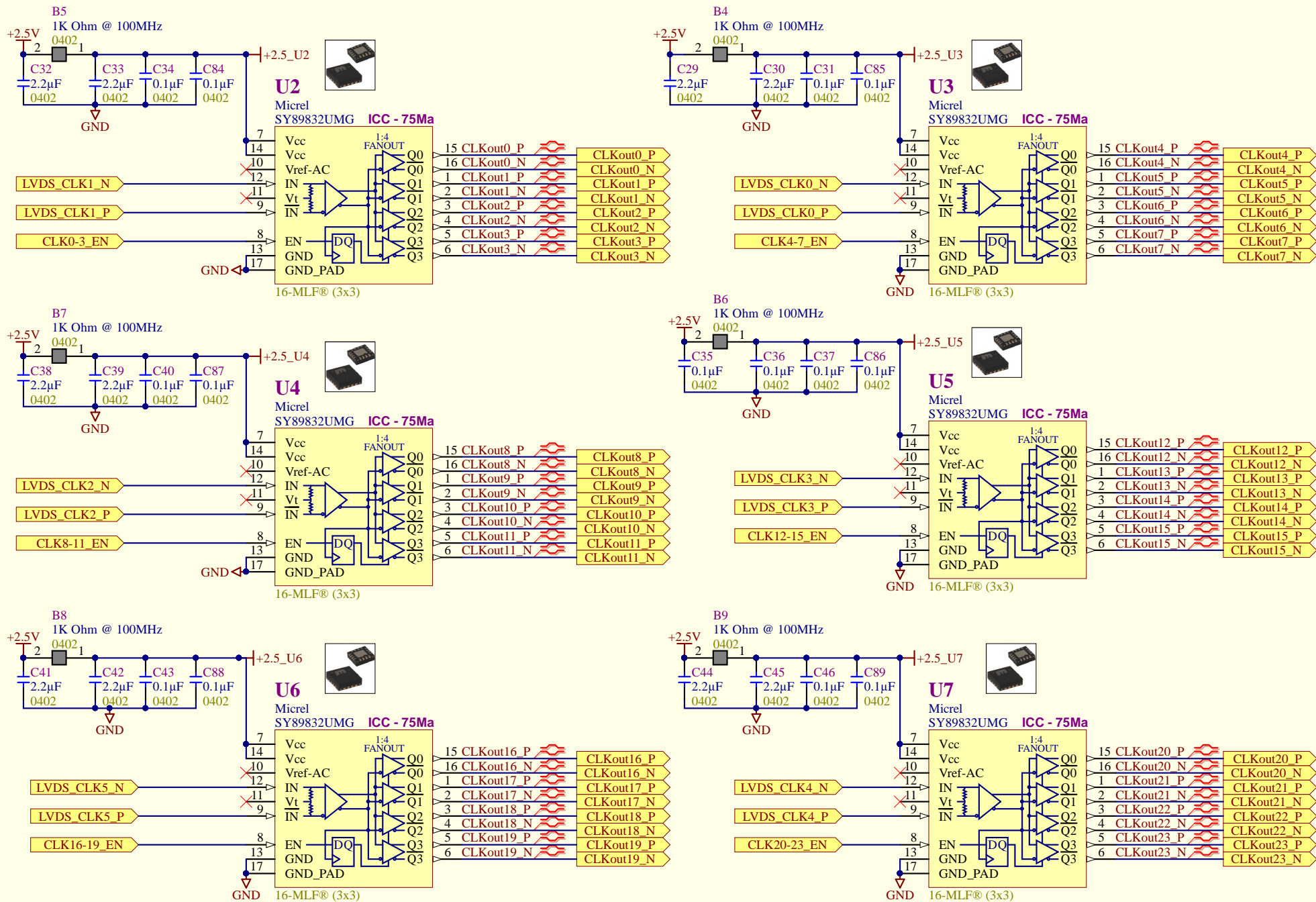
Current Draw:
Core (Locked PLL 1/2): 131.5mA
VCO1 on : 22mA
ClkinX Enabled: 4.9mA
ClkoutX-Y-PD Enabled: 20.1 * 7 = 140.7mA
Analog Delay + divider: 13.6 * 7 = 95.2mA
LVDS 100Ohm Termination: 6 * 7 = 42mA
Total 436.3mA (1.44W)



Clock Distribution Module - Clock Cleaner - LMK04821


Revision	Drawing #:	TRUMF
3	2	4004 Westbrook Mall
	Sheet #: 2 of 11	Vancouver, B.C.
	Size: B	Canada
	Drawn by: D.Bishop	VST 2A3
	Date: 4/5/2019	

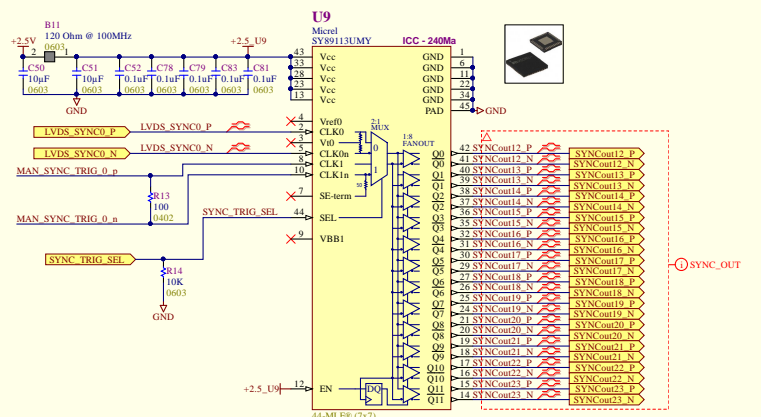
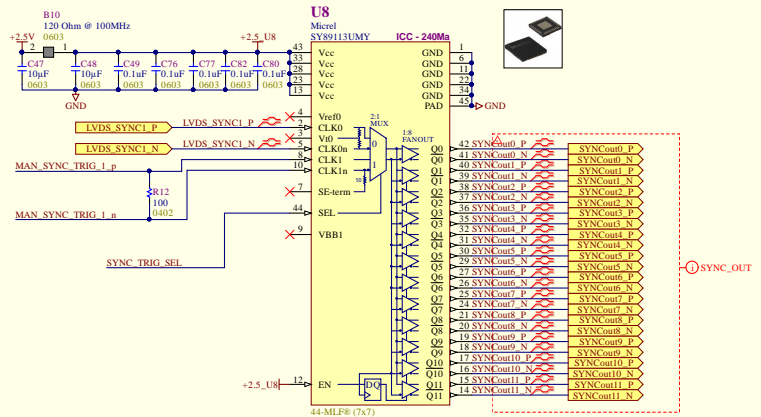
File: C:\git\abhw\mcm\clock_distribution_module\Rev3\Allium\IME - Clock Distribution Module - Clock Cleaner - LMK04821 Schematic.dwg 29/05/18



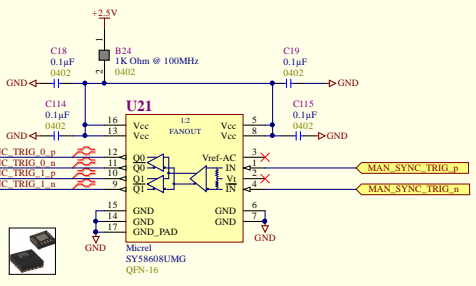
ICC Total - 450Ma @ 2.5V

Clock Distribution Module - 24 Chan LVDS Clock Fanout

Revision	Drawing # : 3	TRIUMF		
3	Sheet # : 3 of 11	Size : A		4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3
	Drawn by : D.Bishop	Date : 4/5/2019		



ICC Total - 480Ma @ 2.5V



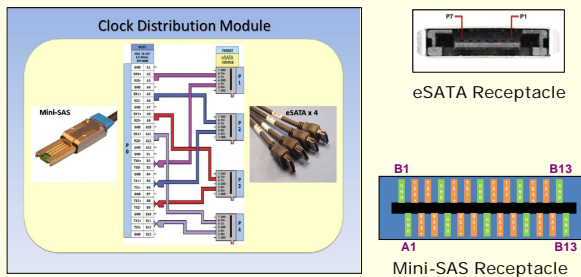
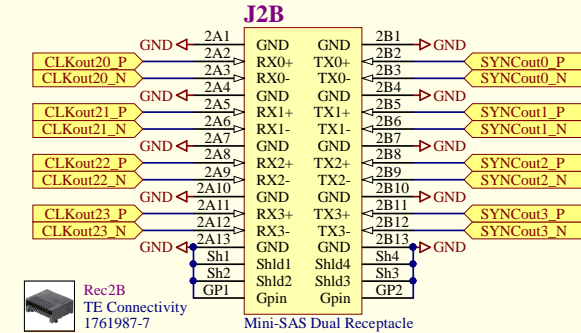
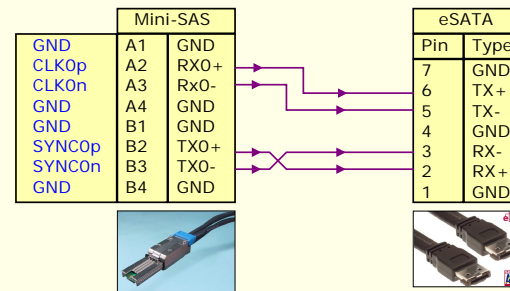
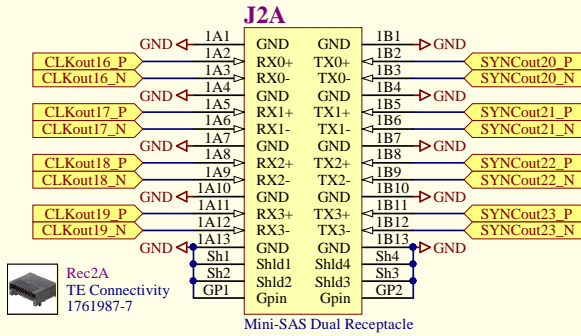
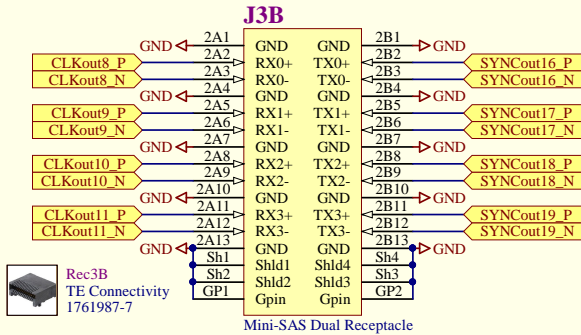
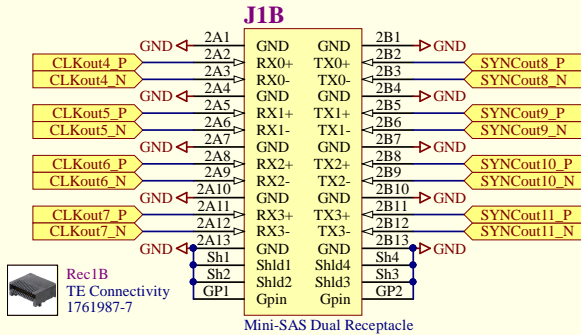
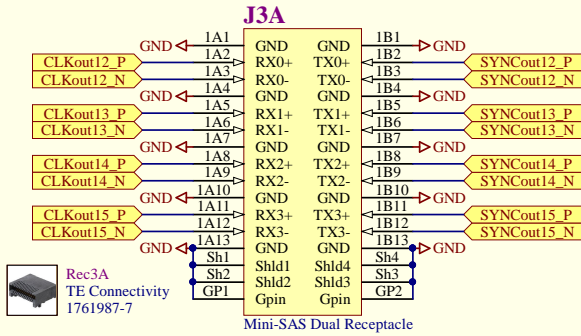
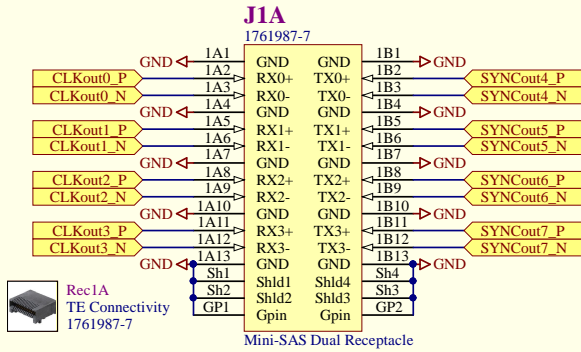
ICC Total - 75mA @ 2.5V

Clock Distribution Module - Sync Pulse LVDS Fanout

Revision	Drawing #: 4	TRUMF
3	Sheet # 4 of 11	4004 Westbrook Mall
	Drawn by: D. Bishop	Vancouver, B.C.
		Canada
		Date: 4/5/2019
		V6T 2A3

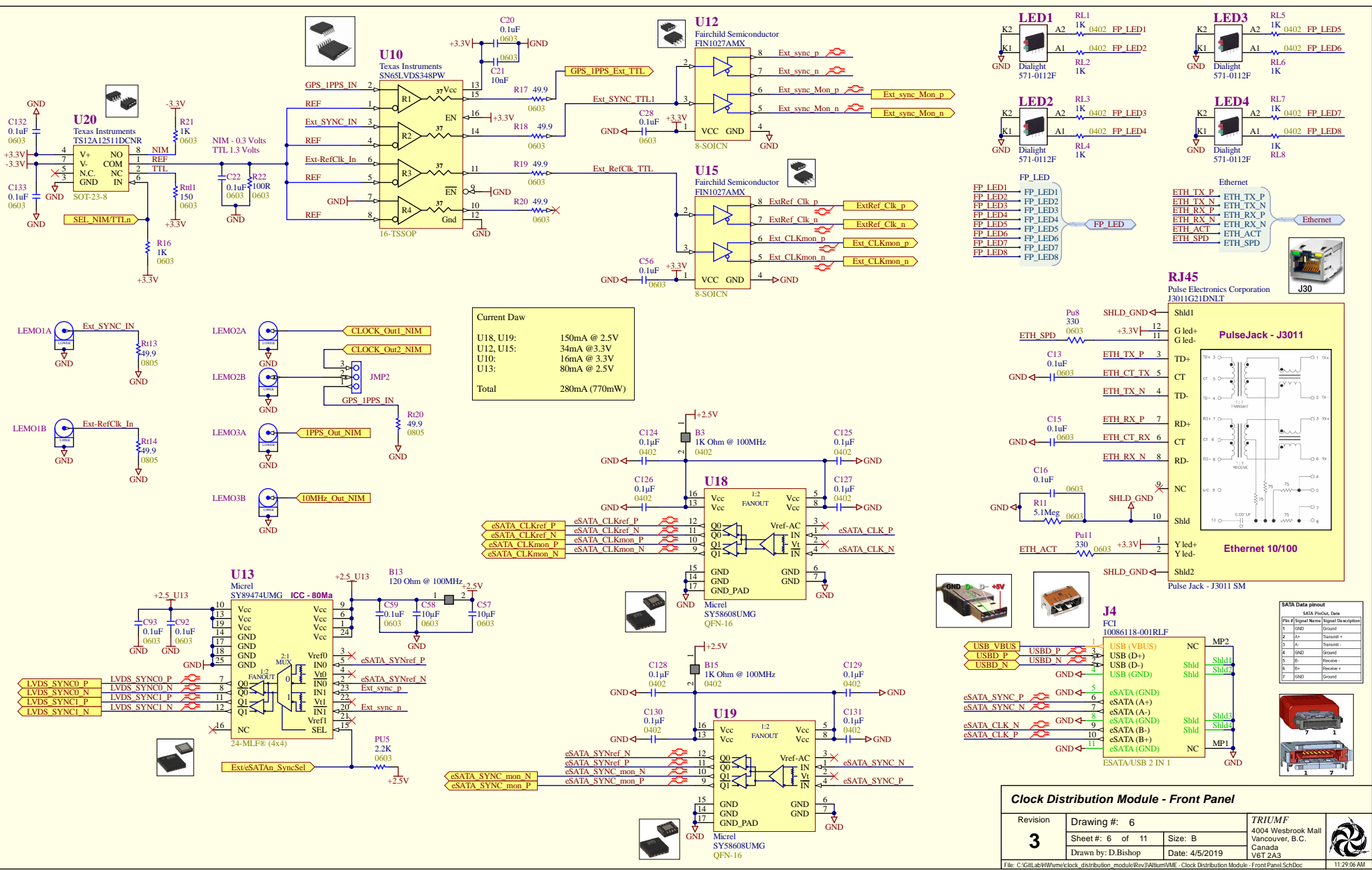
FILE: C:\git\proj\clock_dist\ba\module\21\U21.MSC - Clock Distribution Module - Sync Fanout Schematic

11/29/16 AM



Clock Distribution Module - Mini-SAS Connectors

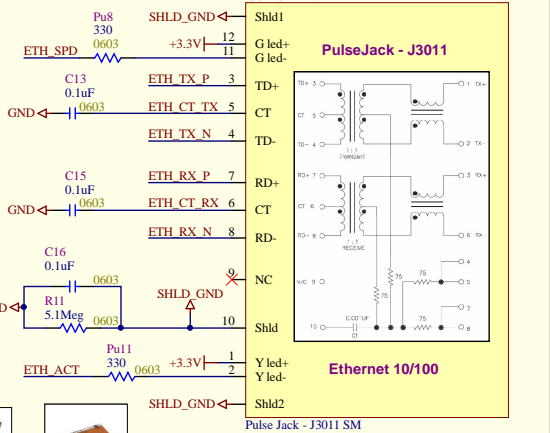
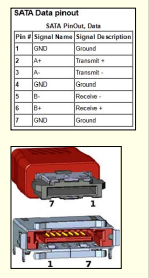
Revision	Drawing #: 5		 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3
3	Sheet #: 5 of 11	Size: A	
	Drawn by: D.Bishop	Date: 4/5/2019	



Clock Distribution Module - Front Panel

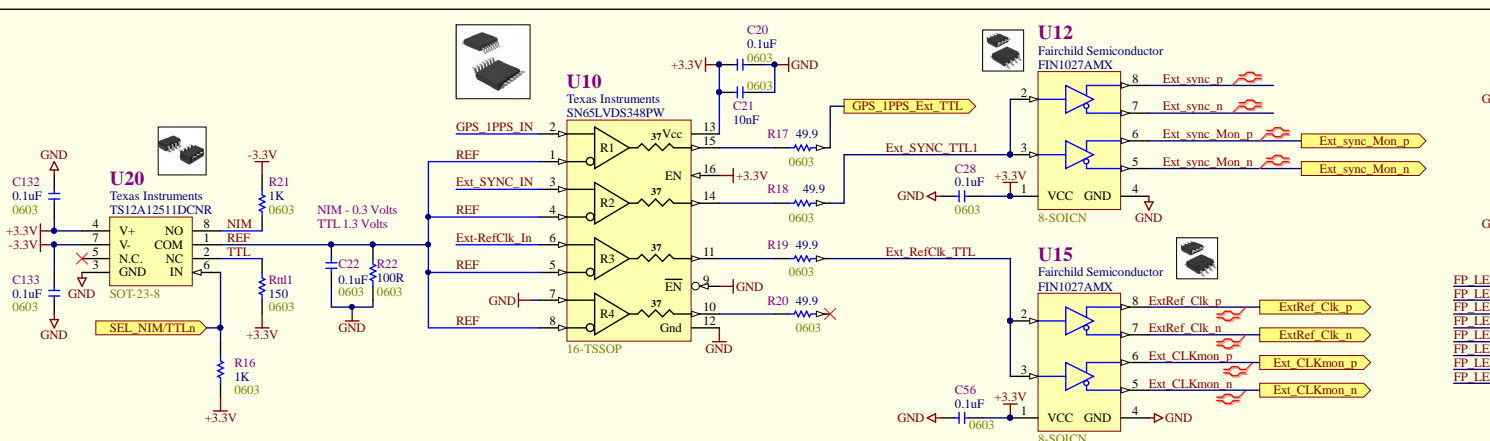
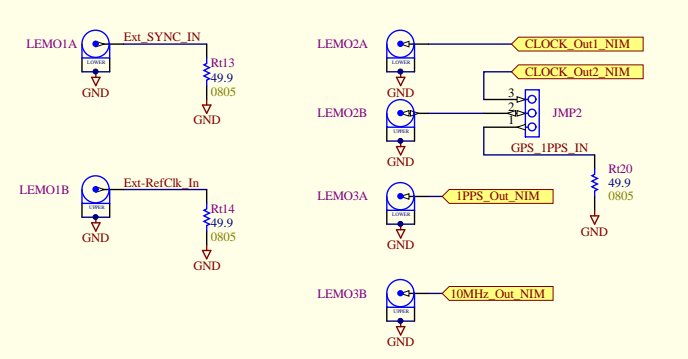
Revision	Drawing #: 6	TRUMPF
3	Sheet #: 6 of 11	4004 Westbrook Mall
	Size: B	Vancouver, B.C.
	Drawn by: D.Bishop	Canada
	Date: 4/5/2019	V8T 2A3

File: C:\git\abhw\mck\clock_distribution_module\Rev3\Allium\ME - Clock Distribution Module - Front Panel.SchDoc 11/29/06 AM



Current Draw

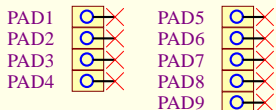
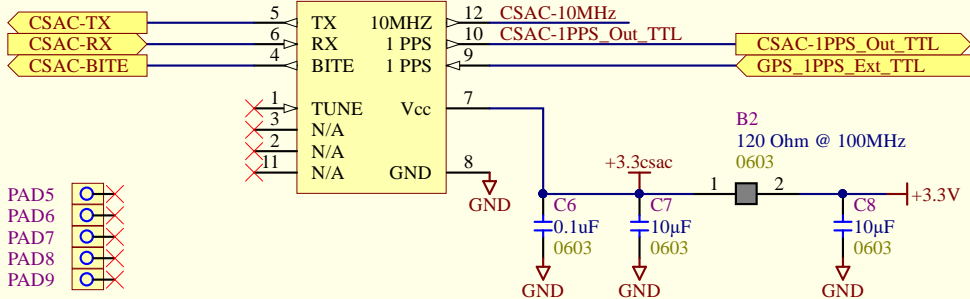
U18, U19:	150mA @ 2.5V
U12, U15:	34mA @ 3.3V
U10:	16mA @ 3.3V
U13:	80mA @ 2.5V
Total	280mA (770mW)



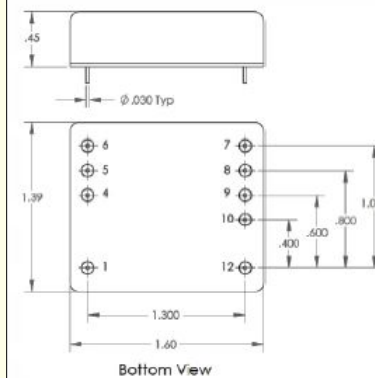


RS232 BAUDRATE - 57600

CSAC
Atomic Clock
Symmetricom
CSAC - SA.45s



Mechanical Interface

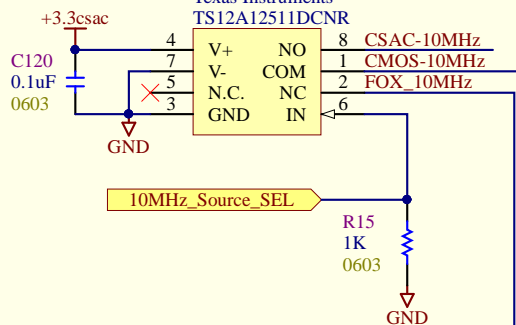


PIN NO.	FUNCTION
1	Tune
2	N/A
3	N/A
4	BITE
5	Tx
6	Rx
7	Vcc
8	GND
9	1 PPS IN
10	1 PPS OUT
11	N/A
12	10 MHz OUT

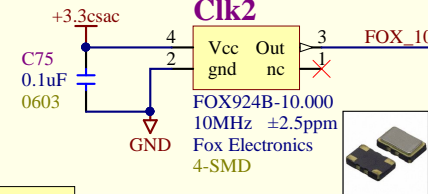
Mill-Max Manufacturing Corp.
Manufacturer Part Number
6021-0-15-80-16-27-10-0



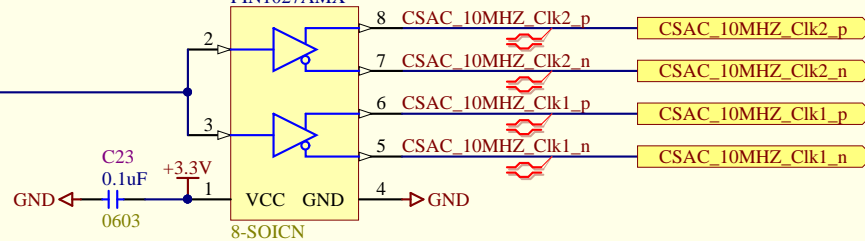
U1
Texas Instruments
TS12A12511DCNR



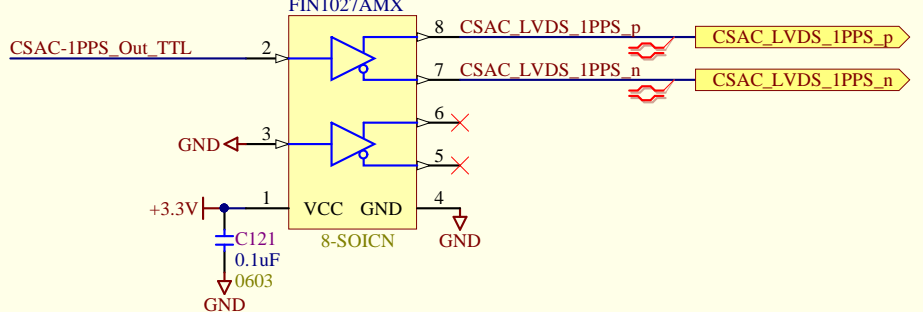
Clk2
FOX924B-10.000
10MHz ±2.5ppm
Fox Electronics
4-SMD



U11
Fairchild Semiconductor
FIN1027AMX



U17
Fairchild Semiconductor
FIN1027AMX

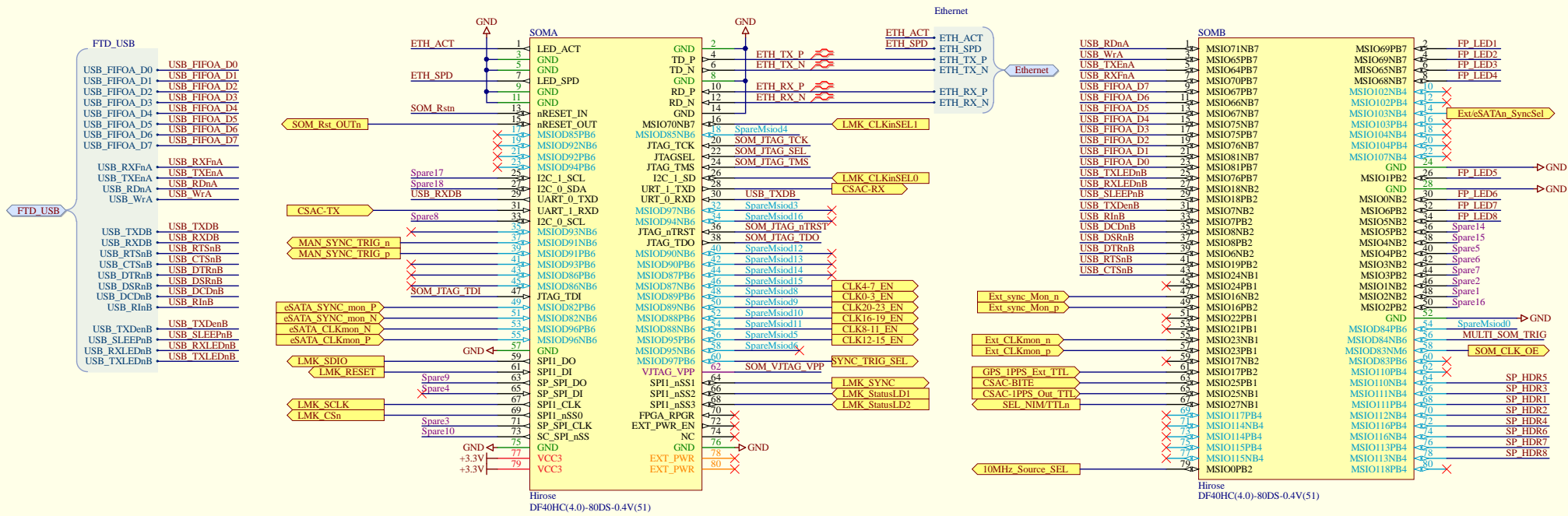


Current	
U11, U17:	34mA @ 3.3V
CLK2:	6mA @ 3.3V
Total	40mA (132mW)

CSAC	37mA @ 3.3V
Total	77mA (254.1mW)

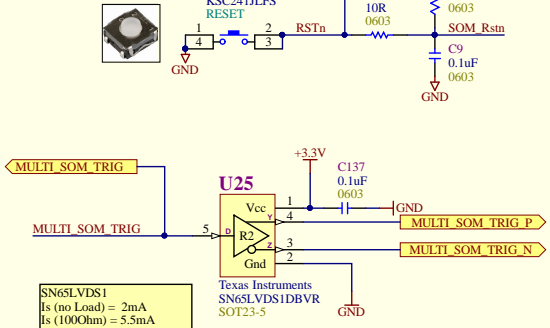
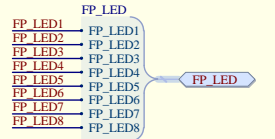
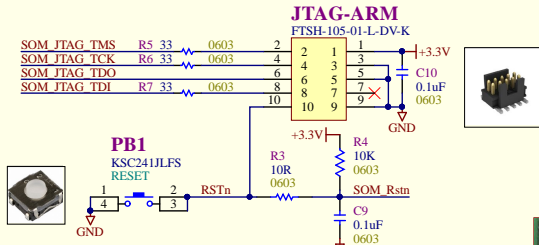
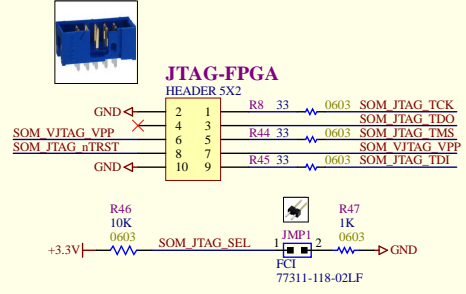
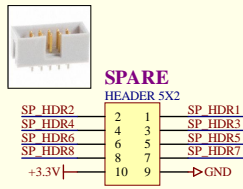
Clock Distribution Module - Atomic Clock

Revision	Drawing #: 7	TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
3	Sheet #: 7 of 11 Size: A Drawn by: D.Bishop		
		Date: 4/5/2019	



Hirose DF40HC(4.0)-80DS-0.4V(51)

Hirose DF40HC(4.0)-80DS-0.4V(51)



M2S-FG484 System-on-Module

Microsemi SmartFusion2 SoC

from **\$71**



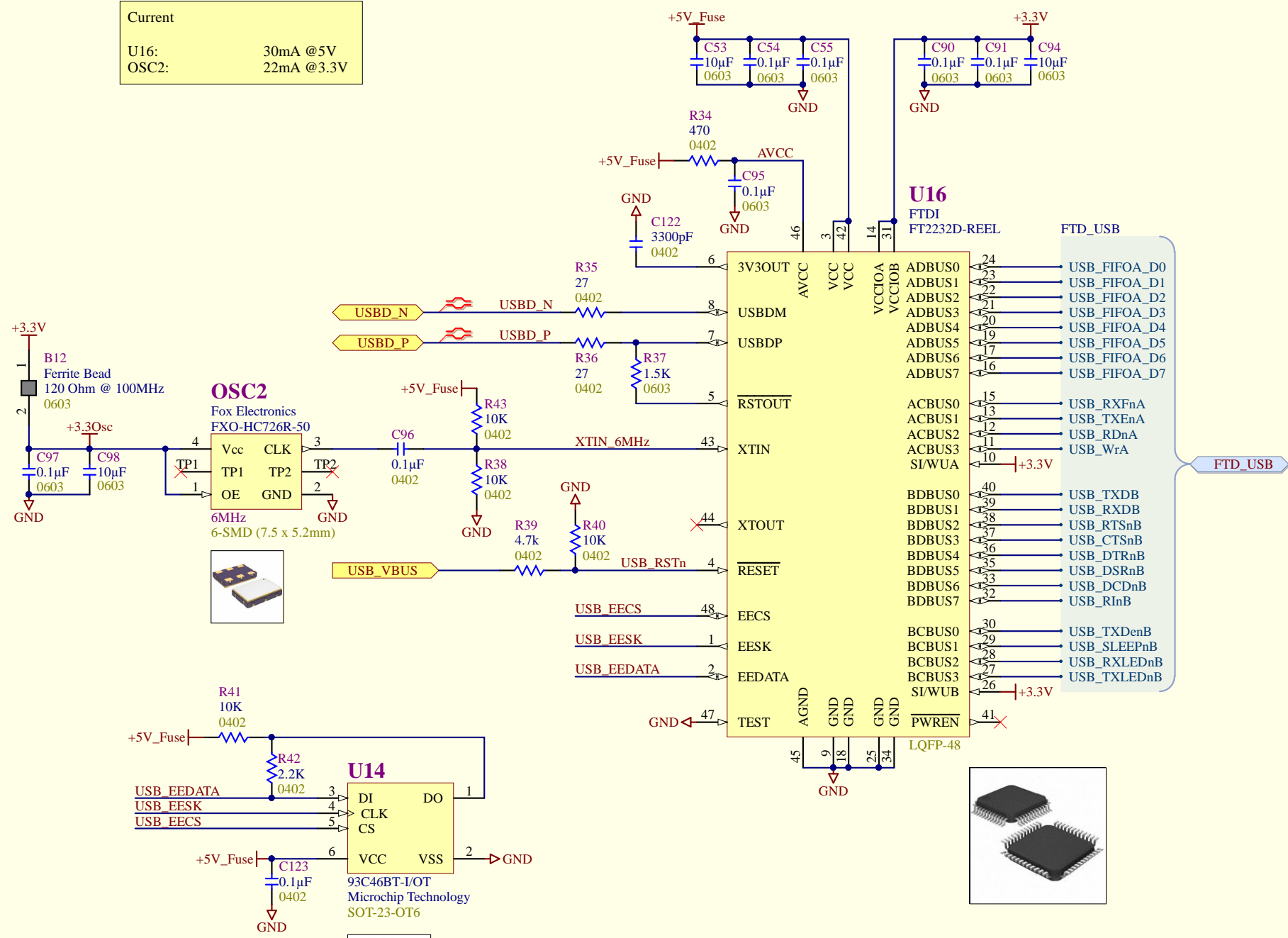
Clock Distribution Module - ARM CPU

Revision	Drawing #: 8	TRUMF
3	Sheet #: 8 of 11	4004 Wesbrook Mall
	Size: B	Vancouver, B.C.
	Drawn by: D.Bishop	Canada
	Date: 4/5/2019	VST 2A3


File: C:\git\abhw\m2s\clock_distribution_module\Rev3\Allium\ME - Clock Distribution Module - ARM CPU SchDoc

11/29/06 AM

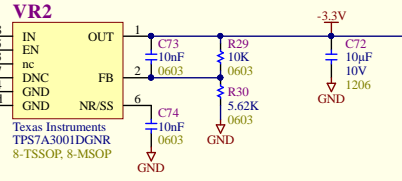
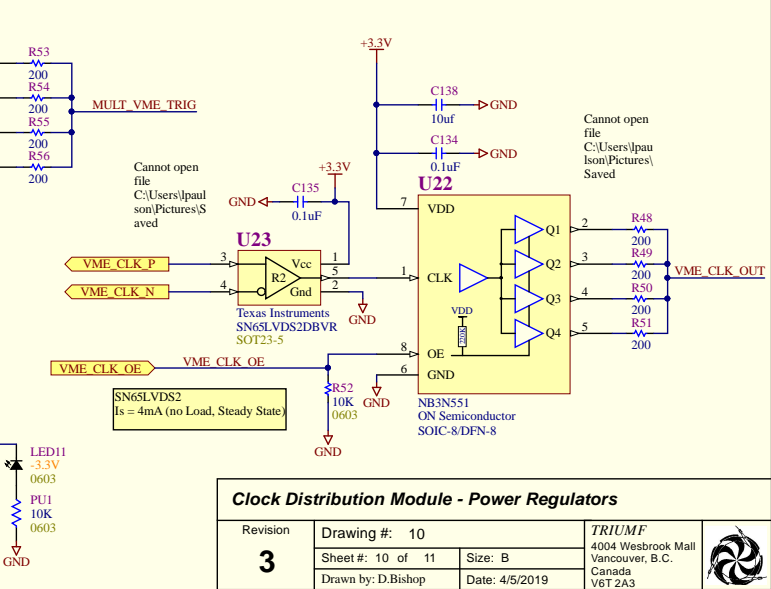
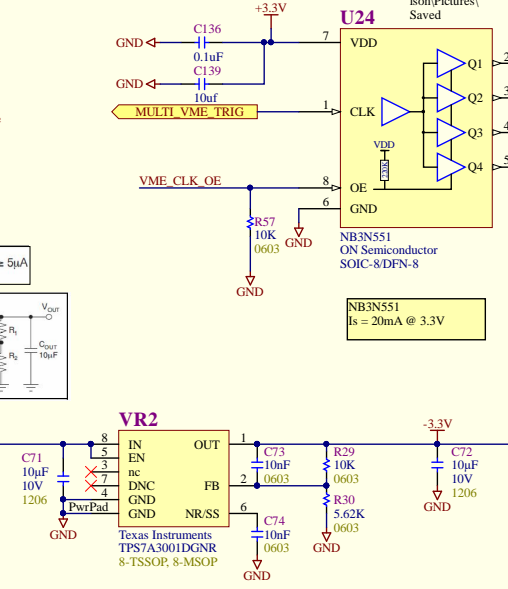
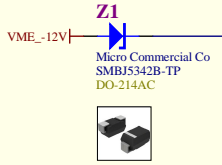
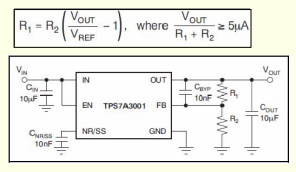
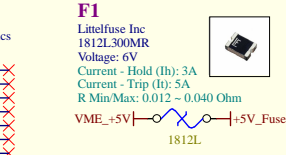
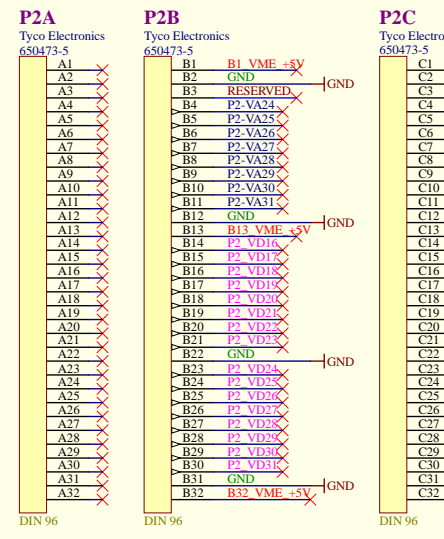
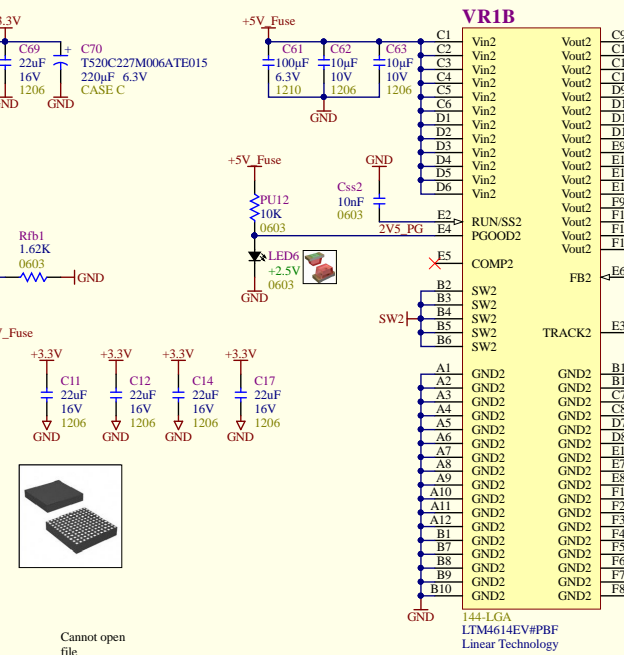
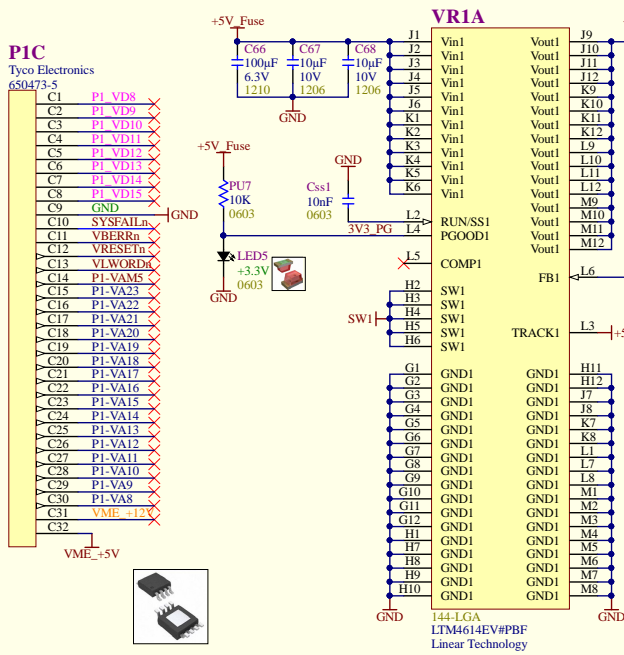
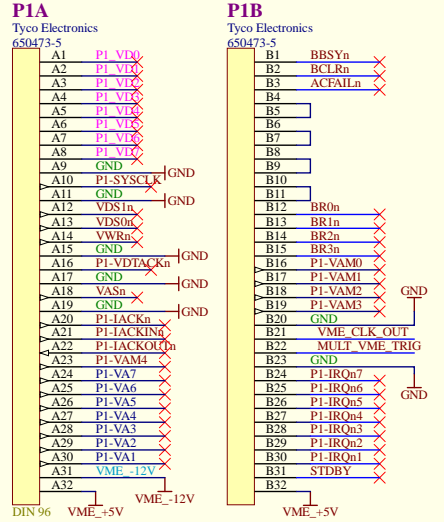
Current	
U16:	30mA @5V
OSC2:	22mA @3.3V



Clock Distribution Module - USB FTDI

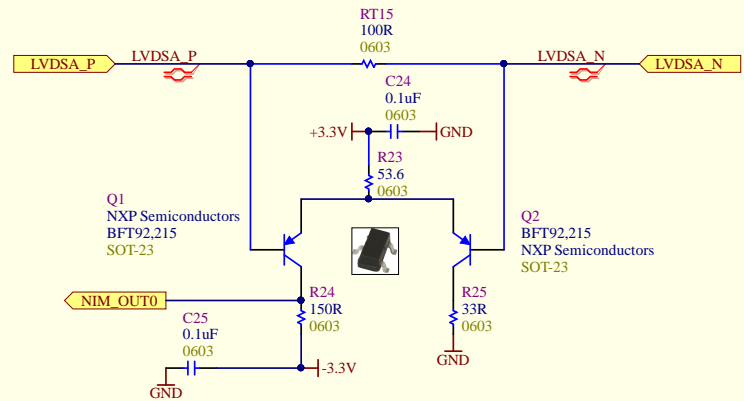
Revision	Drawing #: 9	TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3		
3	Sheet #: 9 of 11			Size: A
	Drawn by: D.Bishop			Date: 4/5/2019

File: C:\GitLab\H\wme\clock_distribution_module\Rev3\Altium\VME - Clock Distribution Module - USB FTDI\232_SchDoc 11:29:07 AM



Clock Distribution Module - Power Regulators

Revision	Drawing #: 10	TRUMF
3	Sheet #: 10 of 11	4004 Westbrook Mall
	Size: B	Vancouver, B.C.
	Drawn by: D.Bishop	Canada
	Date: 4/5/2019	VST 2A3



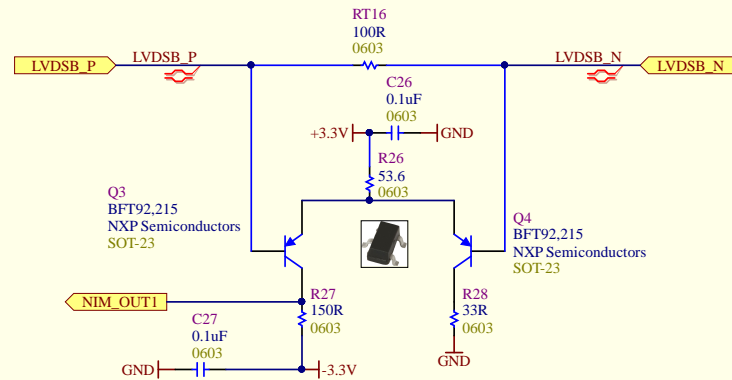
Cyclone - LVDS

Output Offset Voltage


Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv
 Vod Max: 600mv



Clock Distribution Module - LVDS to NIM/TTL Converter

Revision 3	Drawing #: 11		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 11 of 11	Size: A		
	Drawn by: D.Bishop	Date: 4/5/2019		

