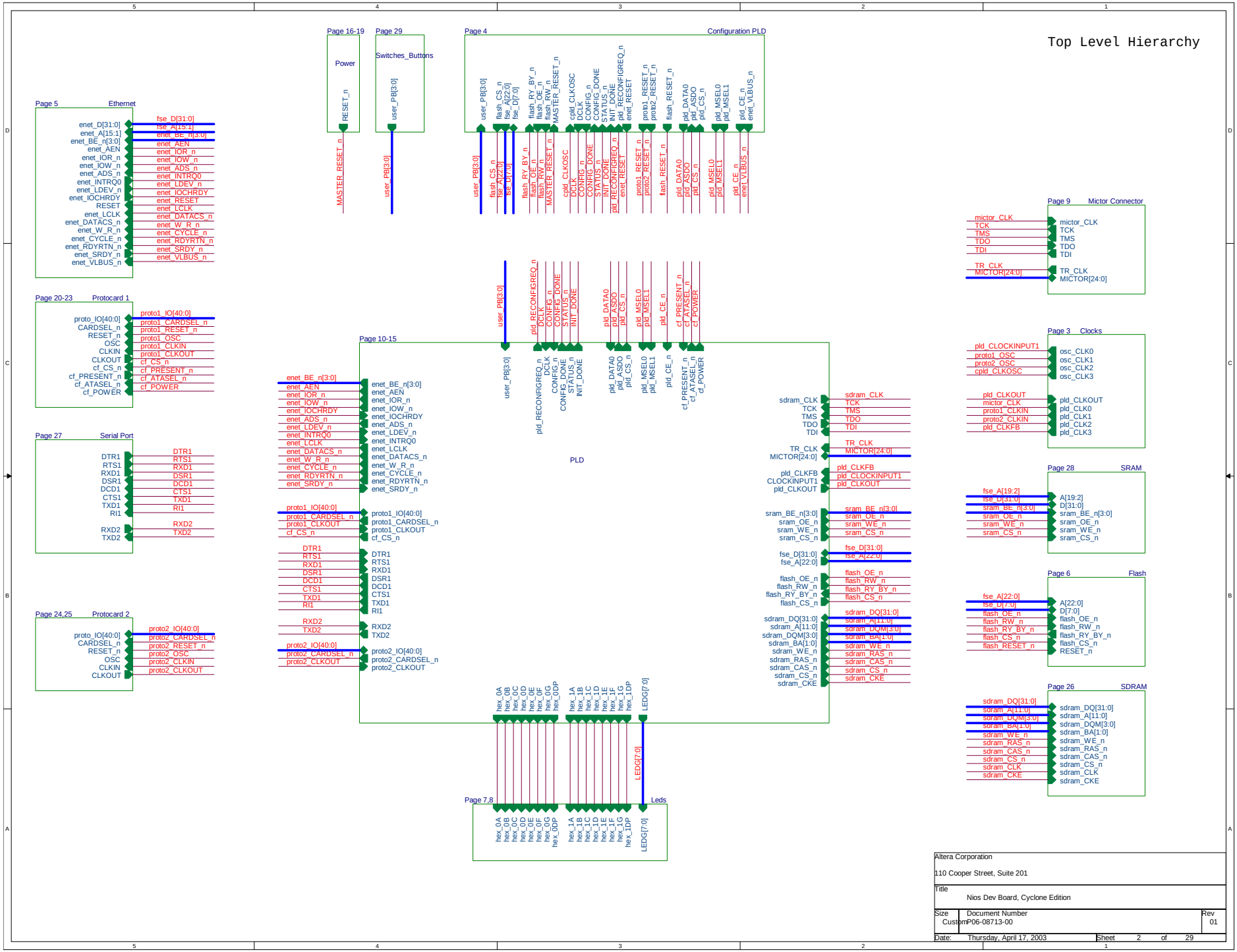
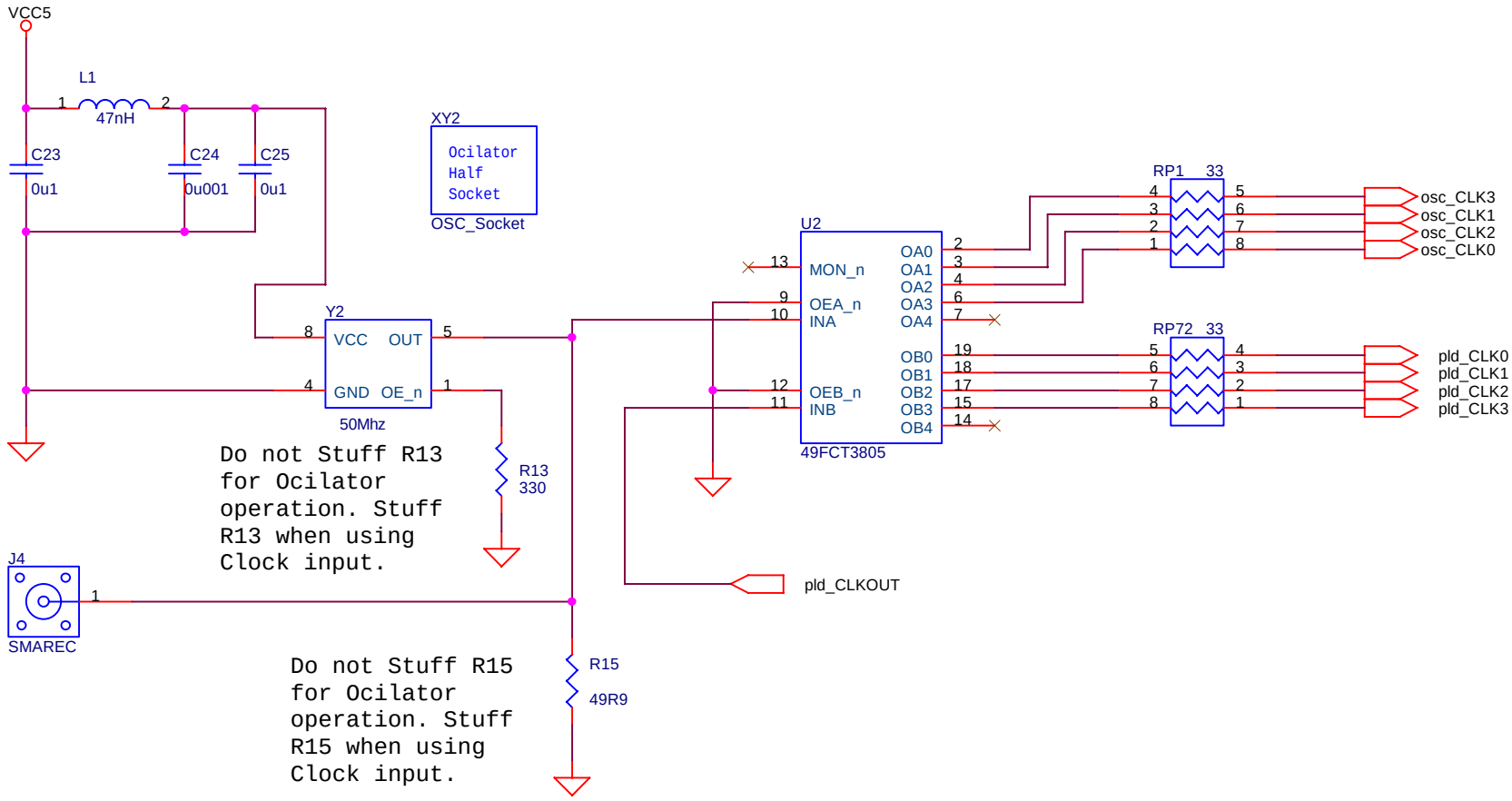
Nios Development Board
Cyclone Edition
Rev 01

Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 1 of 29	

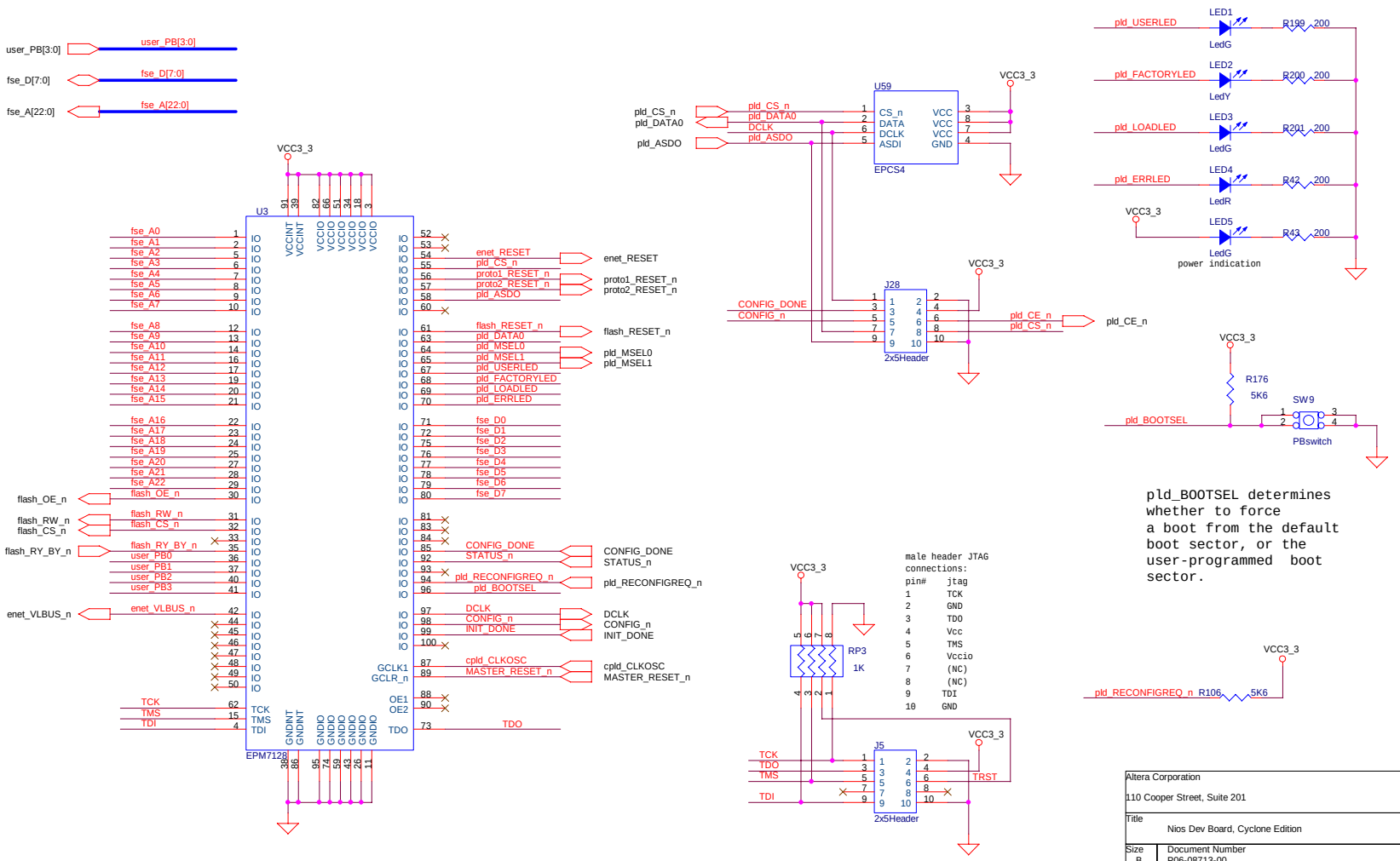

Top Level Hierarchy
Page 16-19
Power
RESET_n
MASTER_RESET_n
Page 29
Switches_Buttons
user_PB[3:0]
Page 4
Configuration PLD
Page 5
Ethernet
Page 20-23
Protocard 1
Page 27
Serial Port
Page 24,25
Protocard 2
Page 10-15
PLD
Page 9
Mictor Connector
Page 3
Clocks
Page 28
SRAM
Page 6
Flash
Page 26
SDRAM
Page 7,8
Leds
Altera Corporation
110 Cooper Street, Suite 201
Title
Nios Dev Board, Cyclone Edition
Size
Custom
Document Number
P06-08713-00
Rev
01
Date:
Thursday, April 17, 2003
Sheet
2
of
29

Clocks

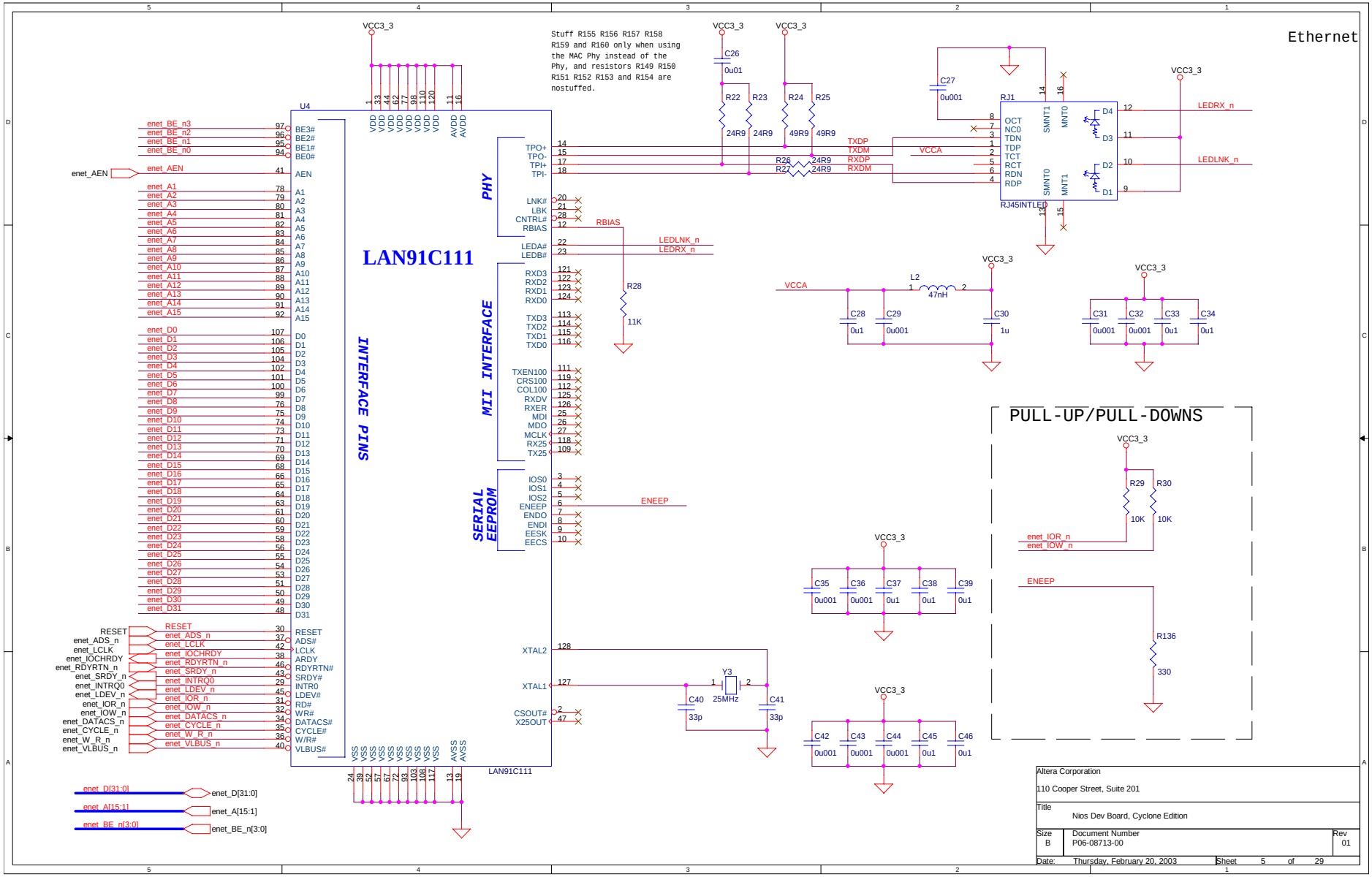


Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 3 of 29	

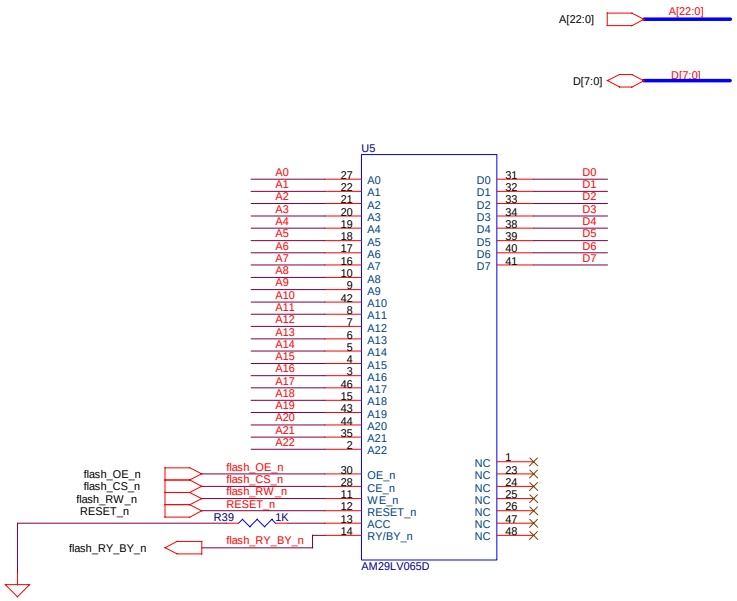
Configuration PLD

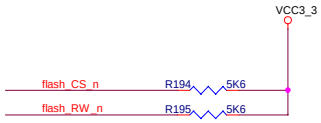


Altera Corporation	
110 Cooper Street, Suite 201	
Title	Nios Dev Board, Cyclone Edition
Size B	Document Number P06-08713-00 Rev 01
Date: Thursday, February 20, 2003	Sheet 4 of 29


Ethernet
Stuff R155 R156 R157 R158 R159 and R160 only when using the MAC Phy instead of the Phy, and resistors R149 R150 R151 R152 R153 and R154 are nostuffed.
LAN91C111
PHY
MII INTERFACE
SERIAL EEPROM
INTERFACE PINS
PULL-UP/PULL-DOWNS
RJ45INTLED
Altera Corporation
110 Cooper Street, Suite 201
Nios Dev Board, Cyclone Edition
Document Number P06-08713-00
Rev 01
Thursday, February 20, 2003
Sheet 5 of 29

Flash

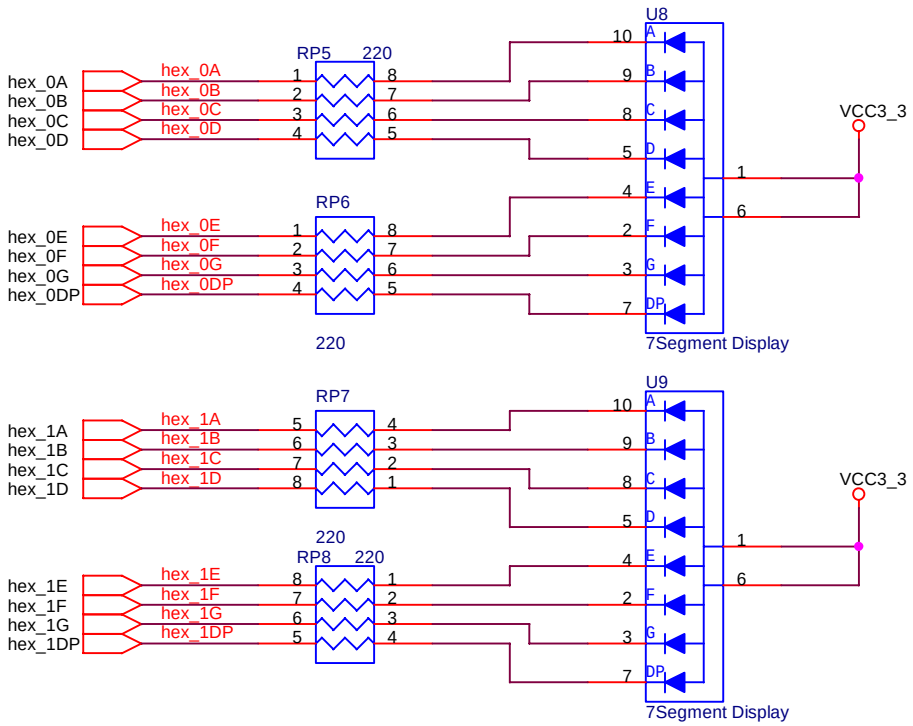




Flash chip is 8M x 8 for
8Mbytes of flash

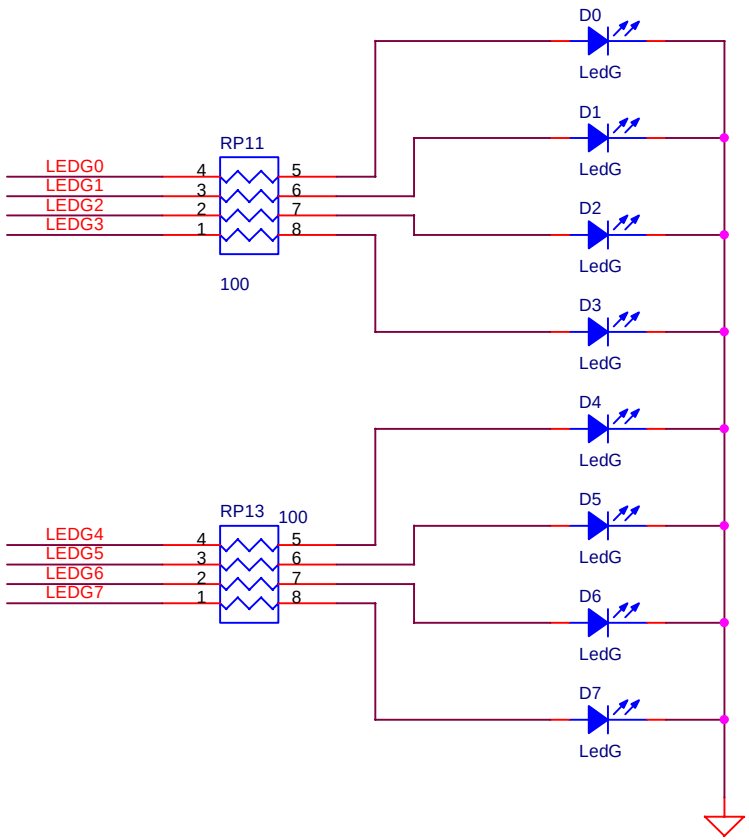
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: Custom	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 6 of 29	

Hex Display



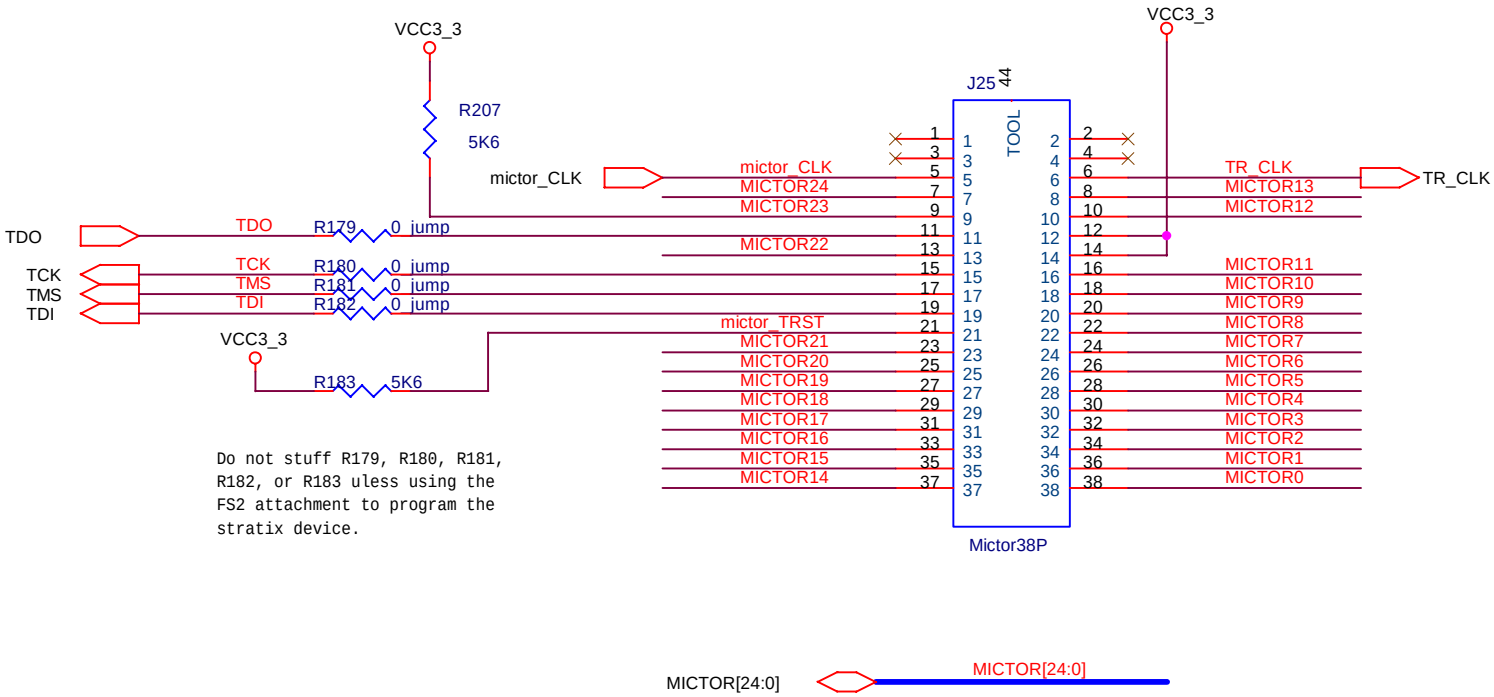
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 7 of 29	

Leds



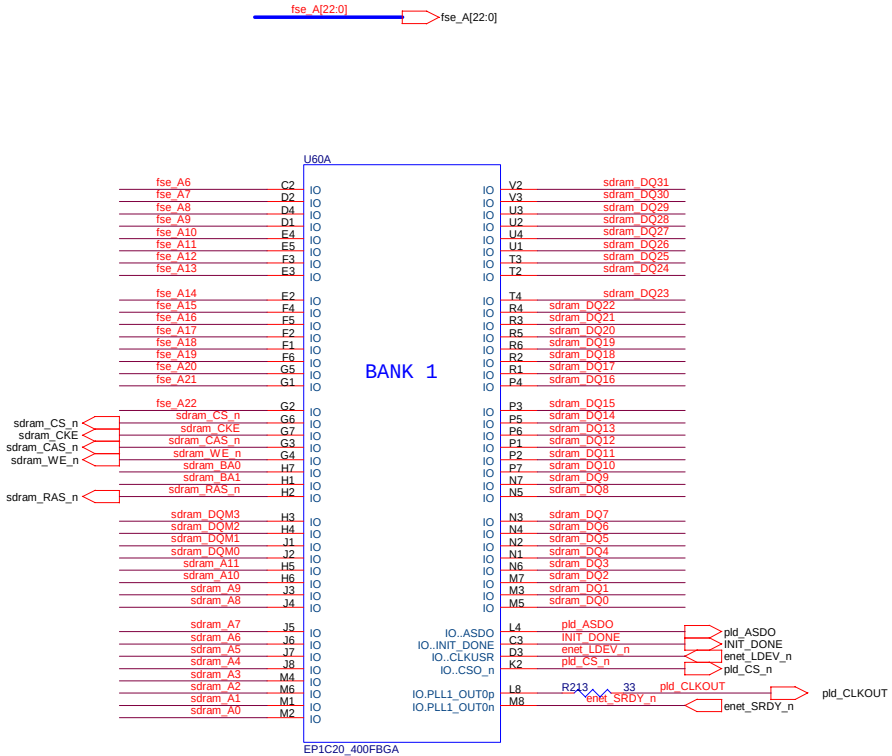
LEDG[7:0] LEDG[7:0]

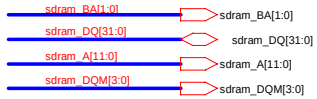
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 8 of 29	



Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 9 of 29	

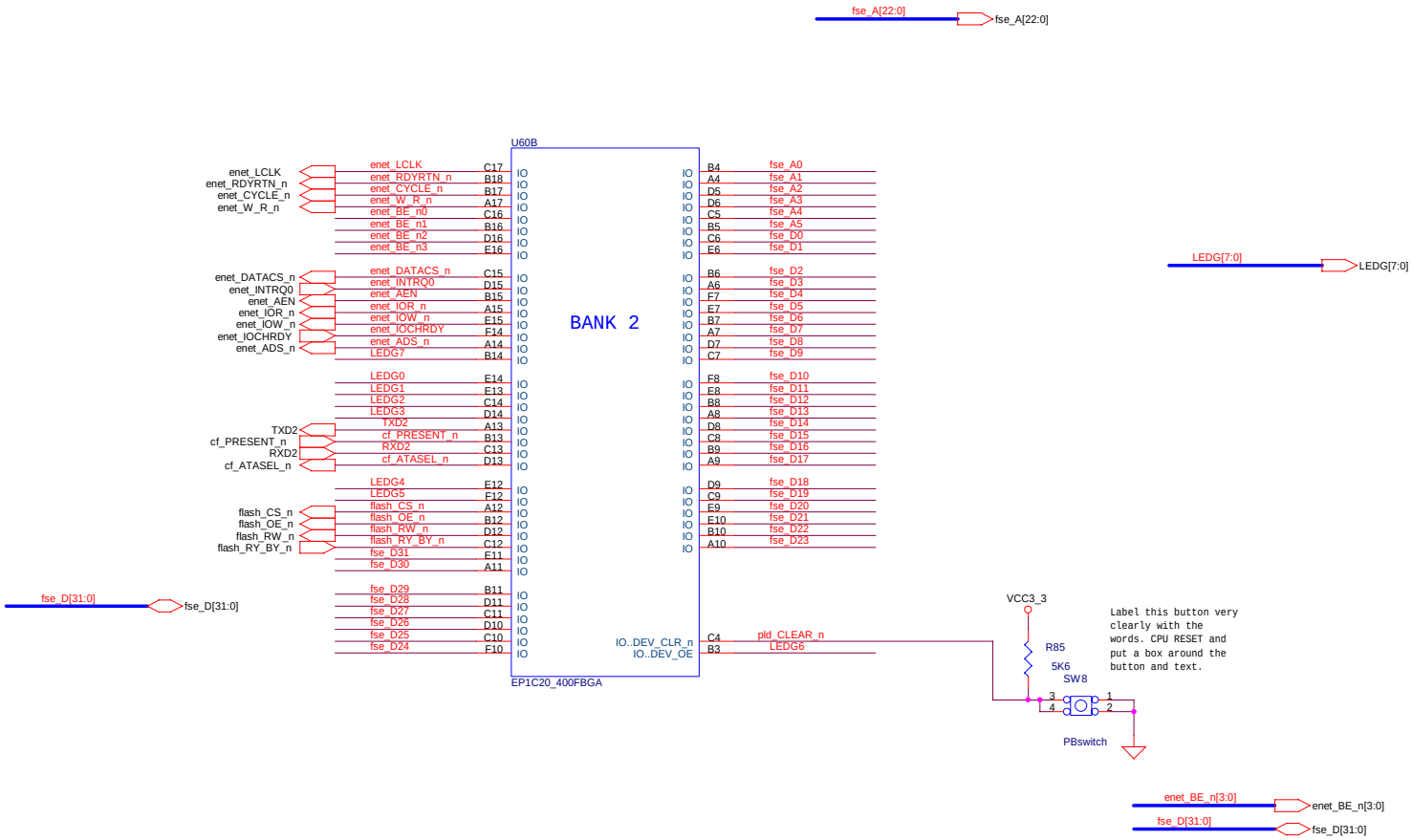
PLD Bank 1





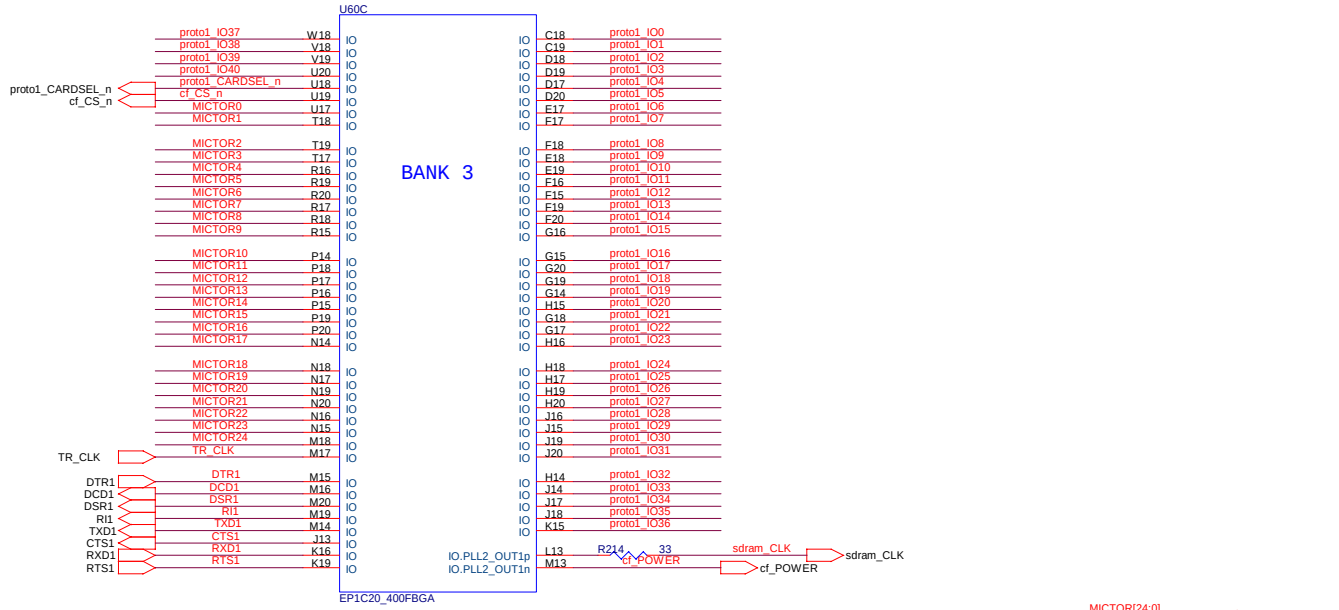
Altera Corporation 110 Cooper Street, Suite 201		
Title Nios Dev Board, Cyclone Edition		
Size B	Document Number P06-08713-00	Rev 01
Date: Thursday, February 20, 2003	Sheet 10 of 29	

PLD Bank 2



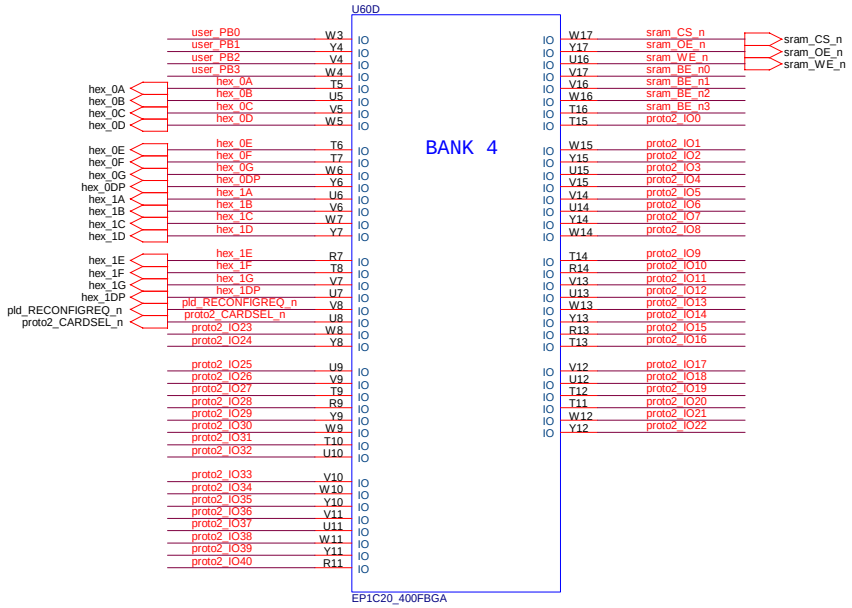
Altera Corporation		
110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 11 of 29	

PLD Bank 3



Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 12 of 29	

PLD Bank 4



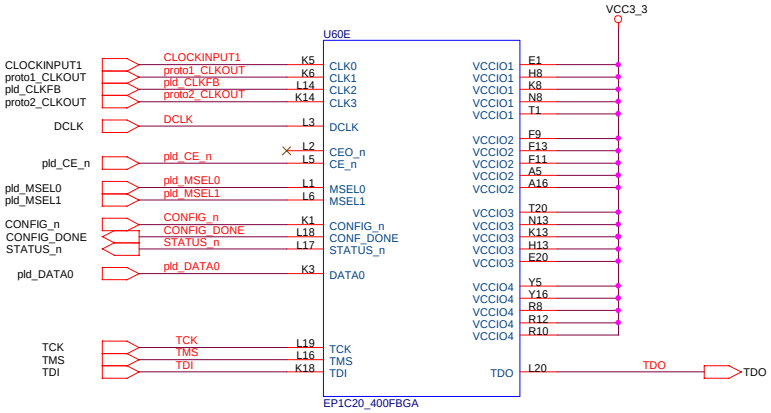
user_PB[3:0] → user_PB[3:0]

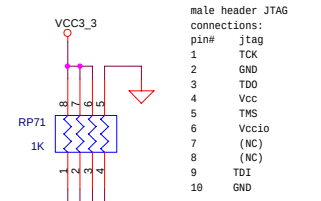
sram_BE_n[3:0] → sram_BE_n[3:0]

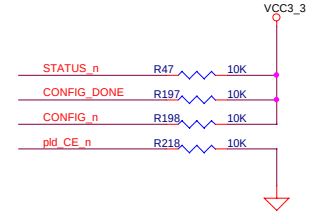
proto2_IO[40:0] → proto2_IO[40:0]

Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 13 of 29	

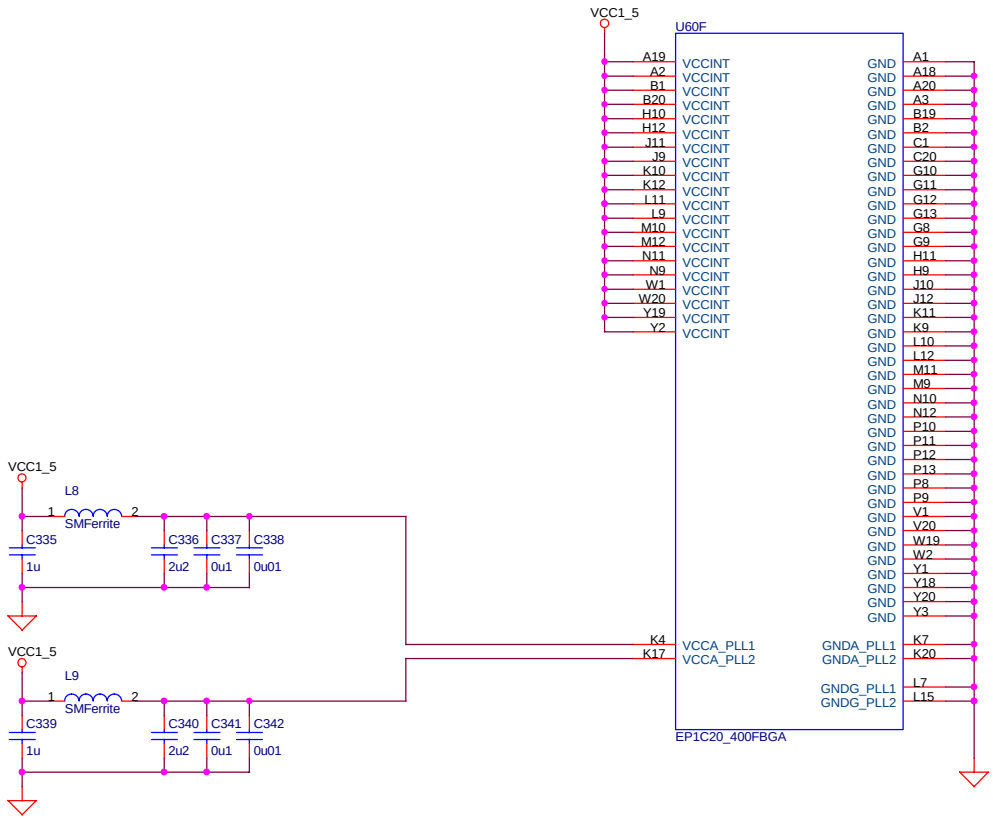
PLD Control Signals





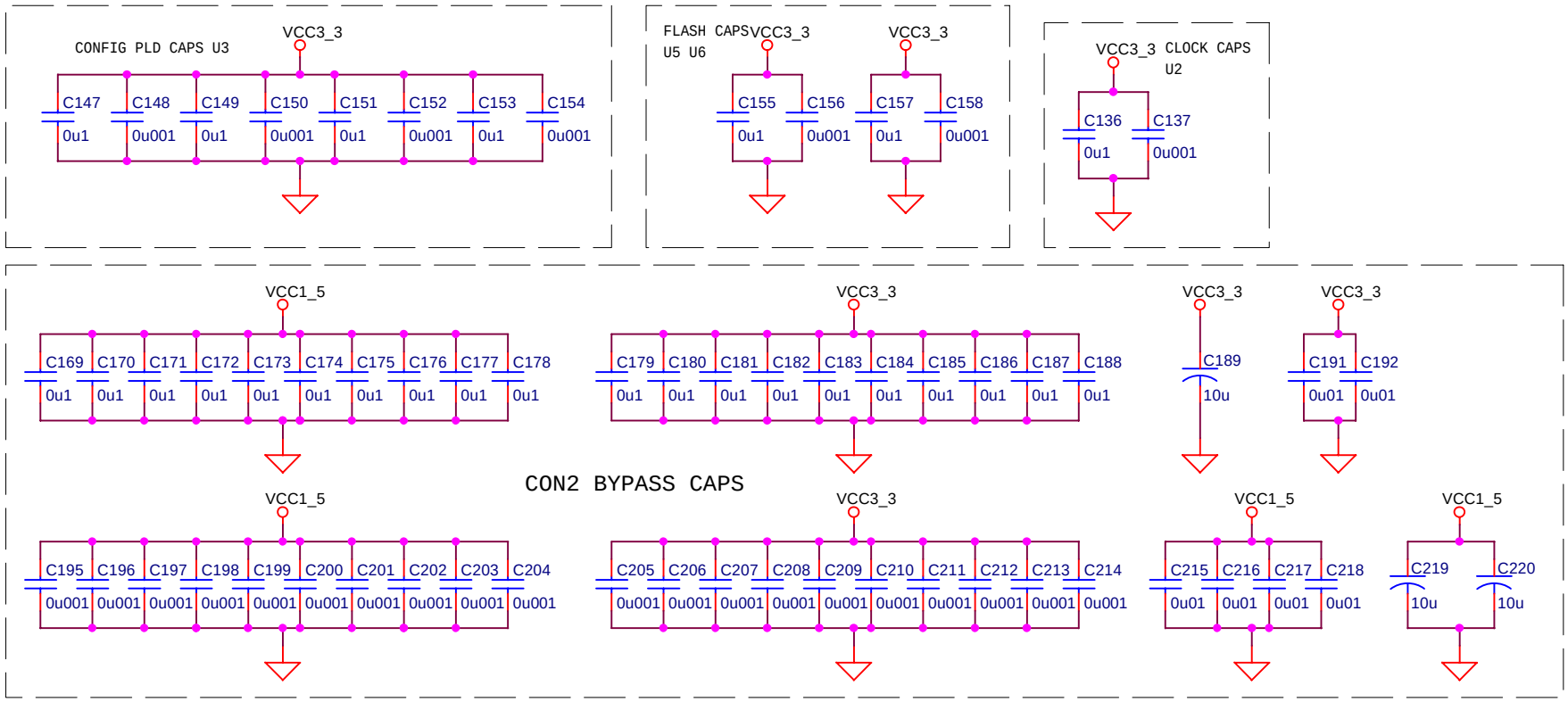


Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 14 of 29	

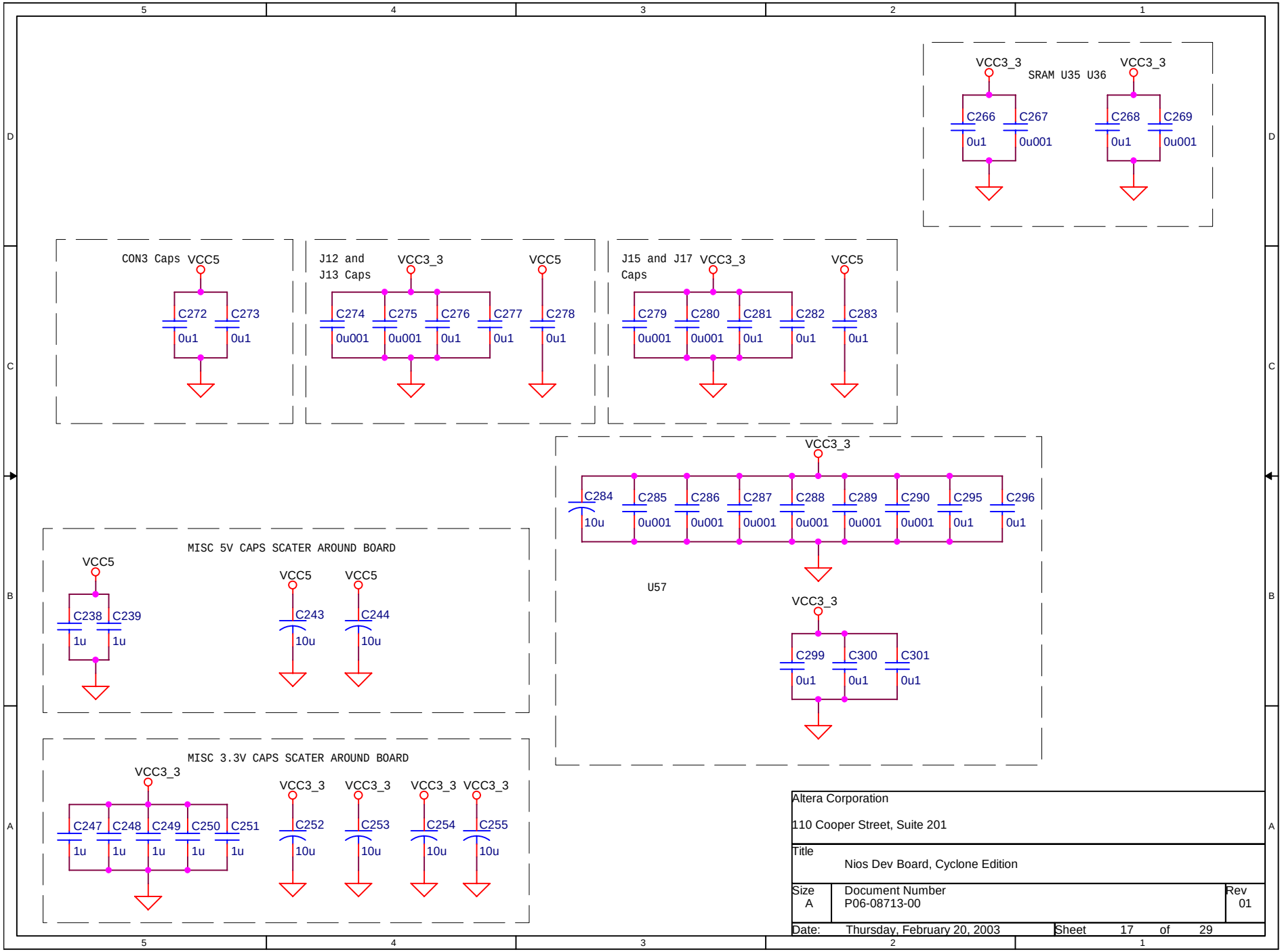


Altera Corporation		
110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: Custom	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 15 of 29	

Bypass CAPS

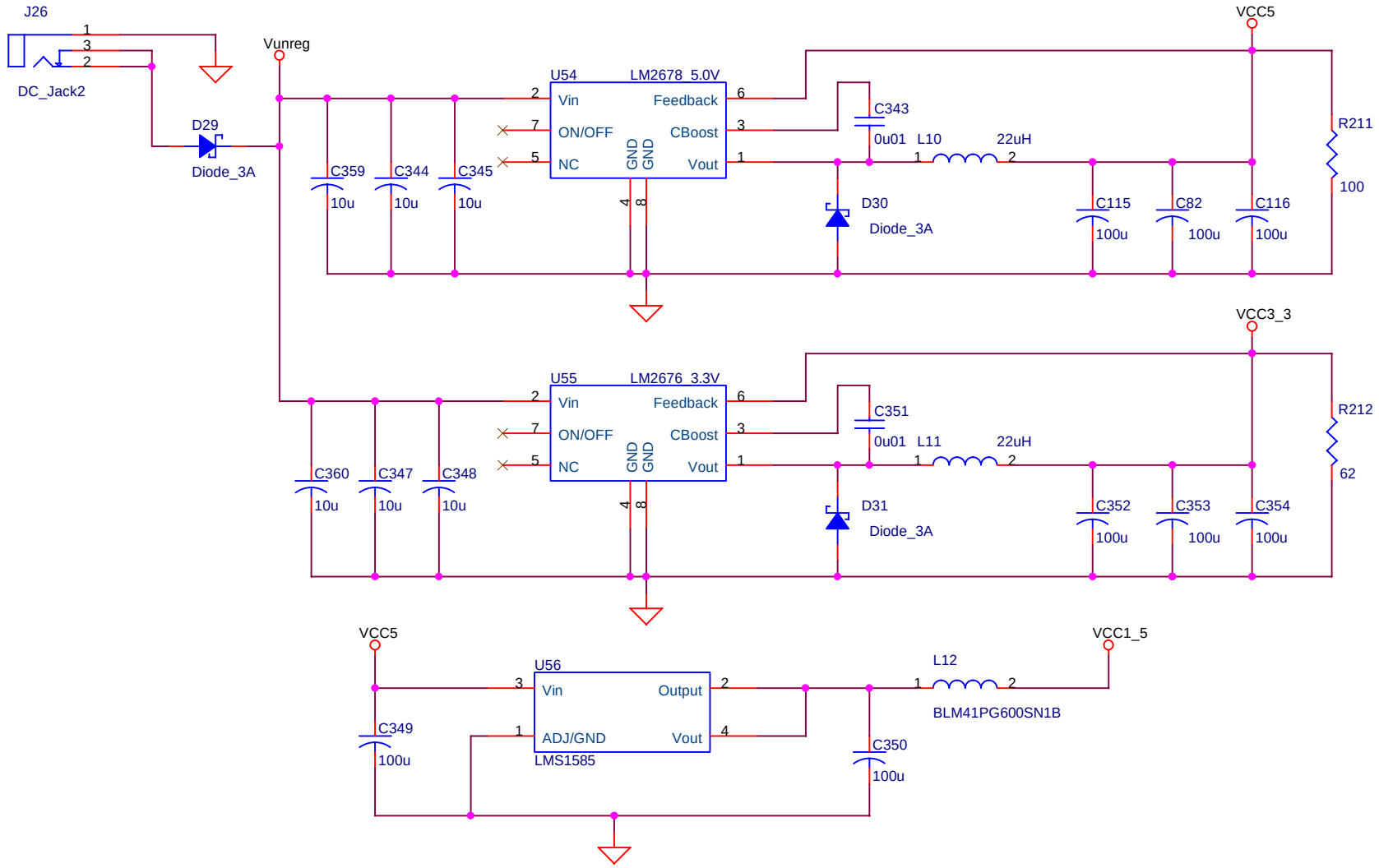


Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 16 of 29	



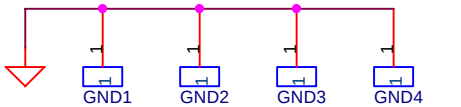
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 17 of 29	

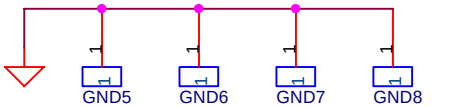
Power Connector

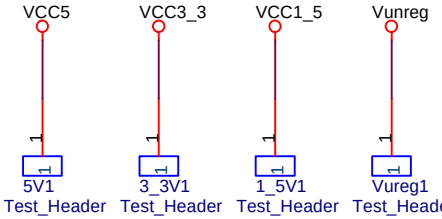


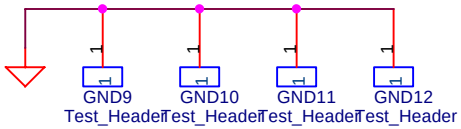
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 18 of 29	

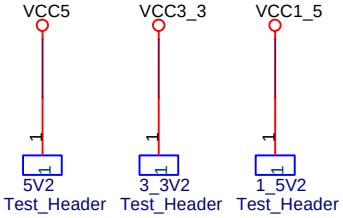
Reset and Test headers

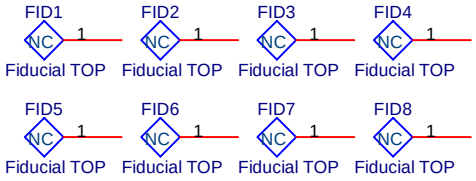


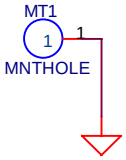


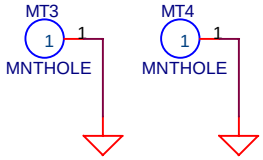


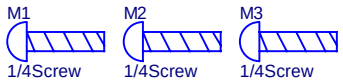


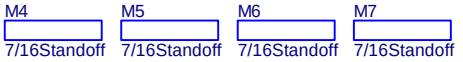


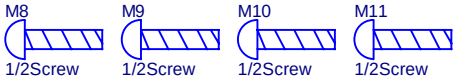


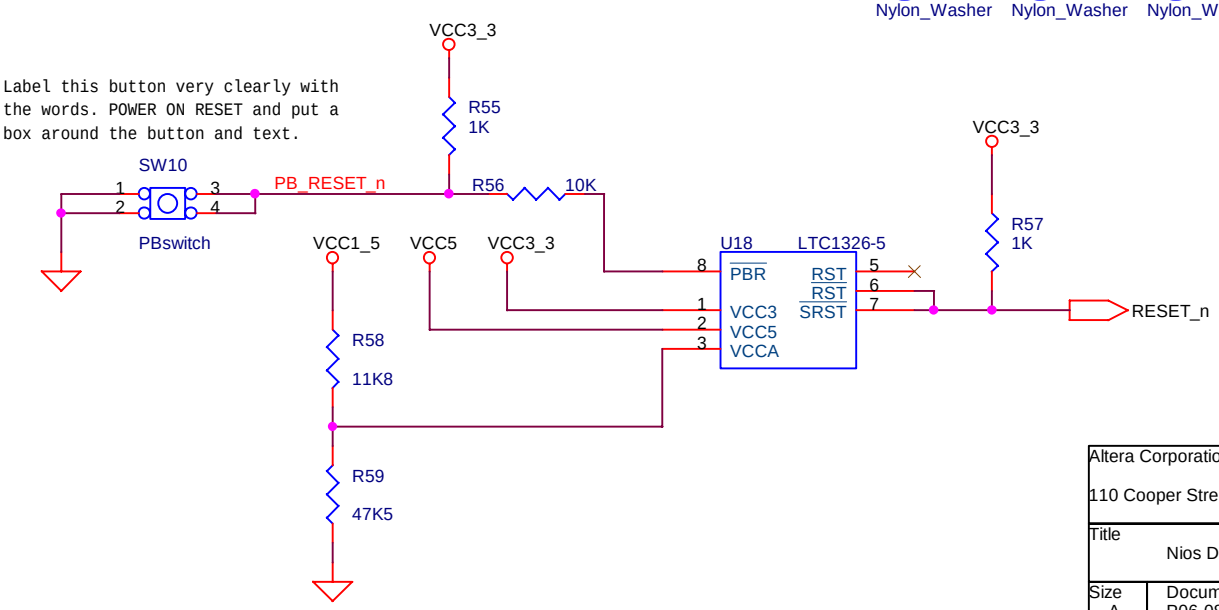


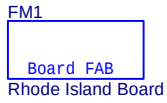




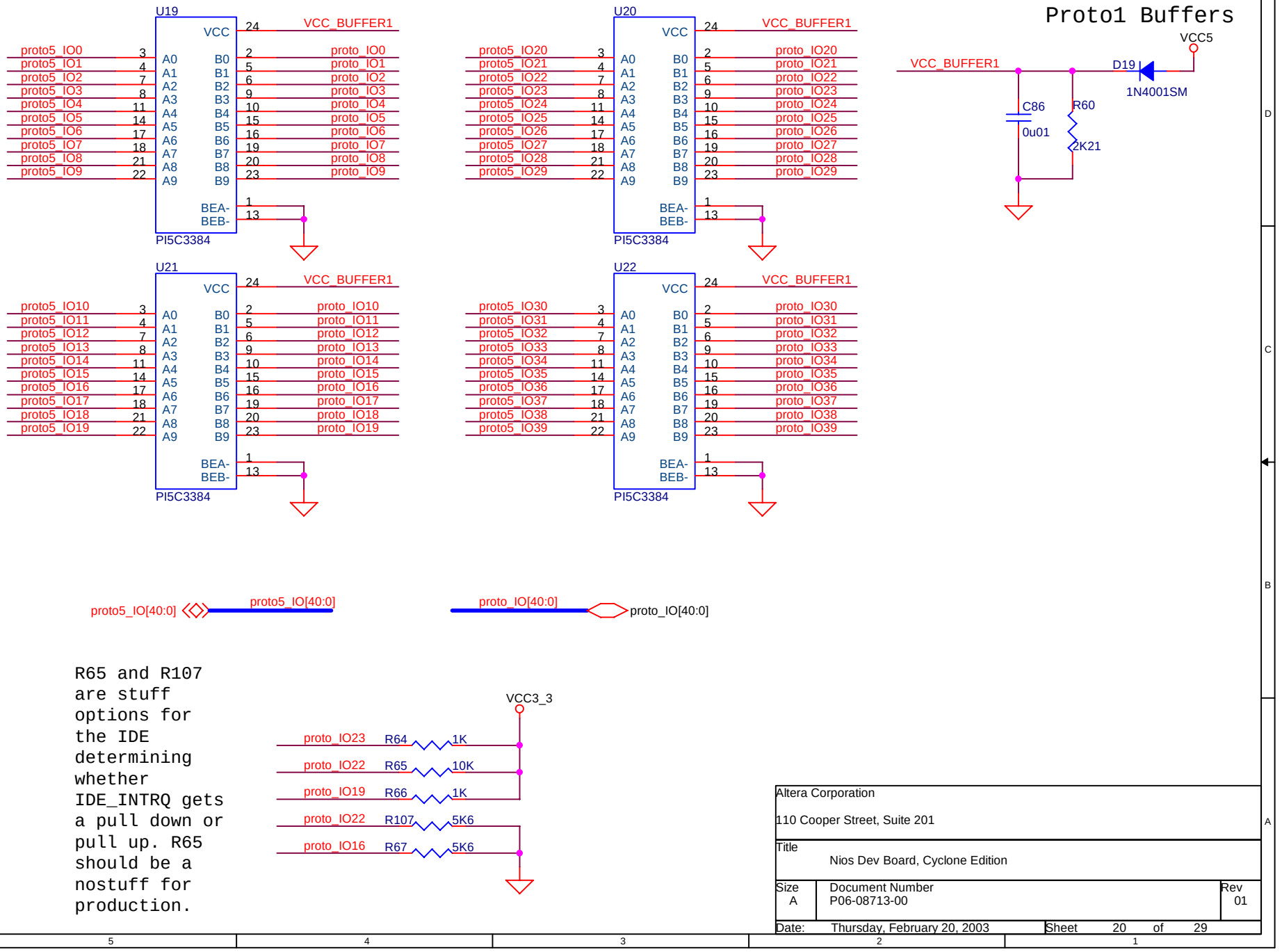




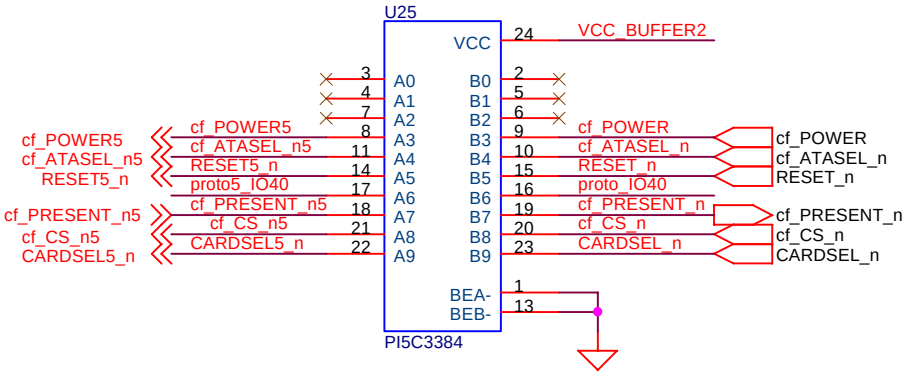


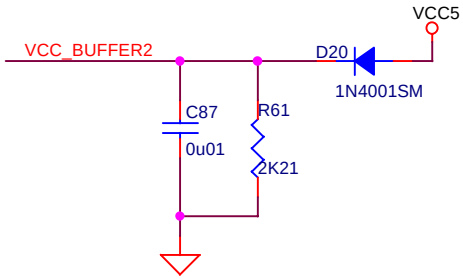


Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 19 of 29	


Proto1 Buffers
U19
U20
U21
U22
PI5C3384
VCC
VCC_BUFFER1
A0 A1 A2 A3 A4 A5 A6 A7 A8 A9
B0 B1 B2 B3 B4 B5 B6 B7 B8 B9
BEA-
BEB-
proto5_IO0 proto5_IO1 proto5_IO2 proto5_IO3 proto5_IO4 proto5_IO5 proto5_IO6 proto5_IO7 proto5_IO8 proto5_IO9
proto_IO0 proto_IO1 proto_IO2 proto_IO3 proto_IO4 proto_IO5 proto_IO6 proto_IO7 proto_IO8 proto_IO9
proto5_IO10 proto5_IO11 proto5_IO12 proto5_IO13 proto5_IO14 proto5_IO15 proto5_IO16 proto5_IO17 proto5_IO18 proto5_IO19
proto_IO10 proto_IO11 proto_IO12 proto_IO13 proto_IO14 proto_IO15 proto_IO16 proto_IO17 proto_IO18 proto_IO19
proto5_IO20 proto5_IO21 proto5_IO22 proto5_IO23 proto5_IO24 proto5_IO25 proto5_IO26 proto5_IO27 proto5_IO28 proto5_IO29
proto_IO20 proto_IO21 proto_IO22 proto_IO23 proto_IO24 proto_IO25 proto_IO26 proto_IO27 proto_IO28 proto_IO29
proto5_IO30 proto5_IO31 proto5_IO32 proto5_IO33 proto5_IO34 proto5_IO35 proto5_IO36 proto5_IO37 proto5_IO38 proto5_IO39
proto_IO30 proto_IO31 proto_IO32 proto_IO33 proto_IO34 proto_IO35 proto_IO36 proto_IO37 proto_IO38 proto_IO39
VCC5
D19
1N4001SM
C86
0u01
R60
2K21
proto5_IO[40:0]
proto_IO[40:0]
R65 and R107 are stuff options for the IDE determining whether IDE_INTRQ gets a pull down or pull up. R65 should be a nostuff for production.
VCC3_3
proto_IO23 R64 1K
proto_IO22 R65 10K
proto_IO19 R66 1K
proto_IO22 R107 5K6
proto_IO16 R67 5K6
Altera Corporation
110 Cooper Street, Suite 201
Title
Nios Dev Board, Cyclone Edition
Size A
Document Number P06-08713-00
Rev 01
Date: Thursday, February 20, 2003
Sheet 20 of 29

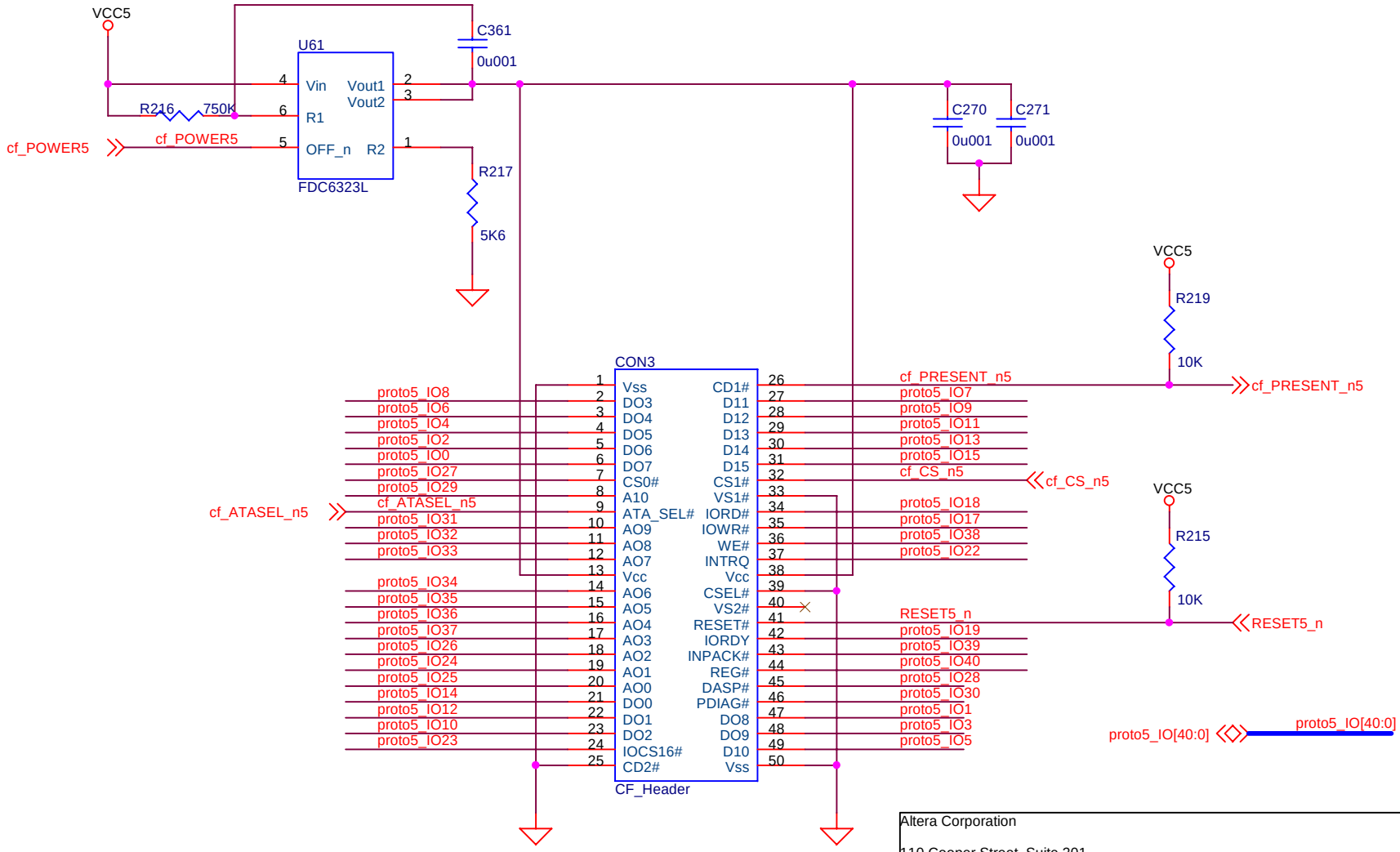
Proto1 Buffers





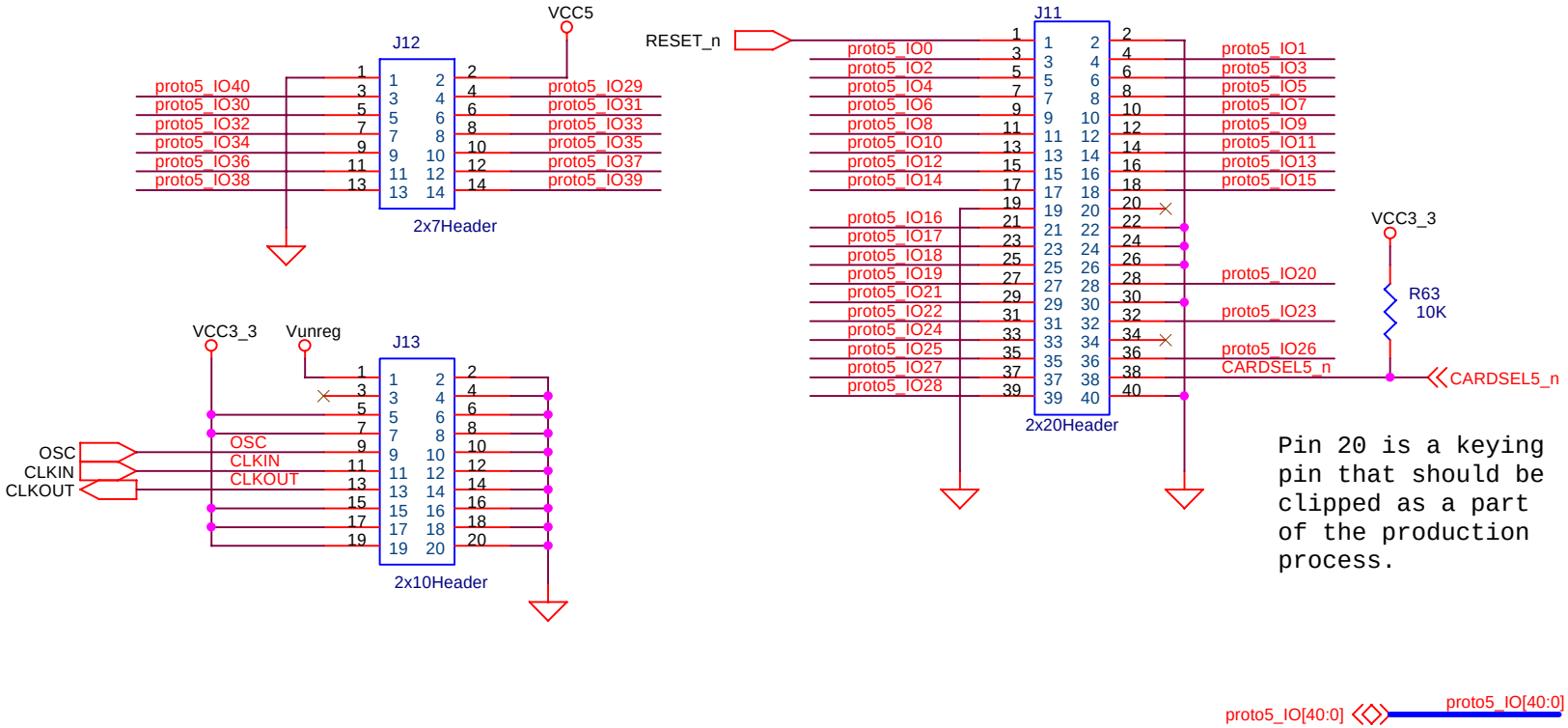
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 21 of 29	

Compaq Flash Socket



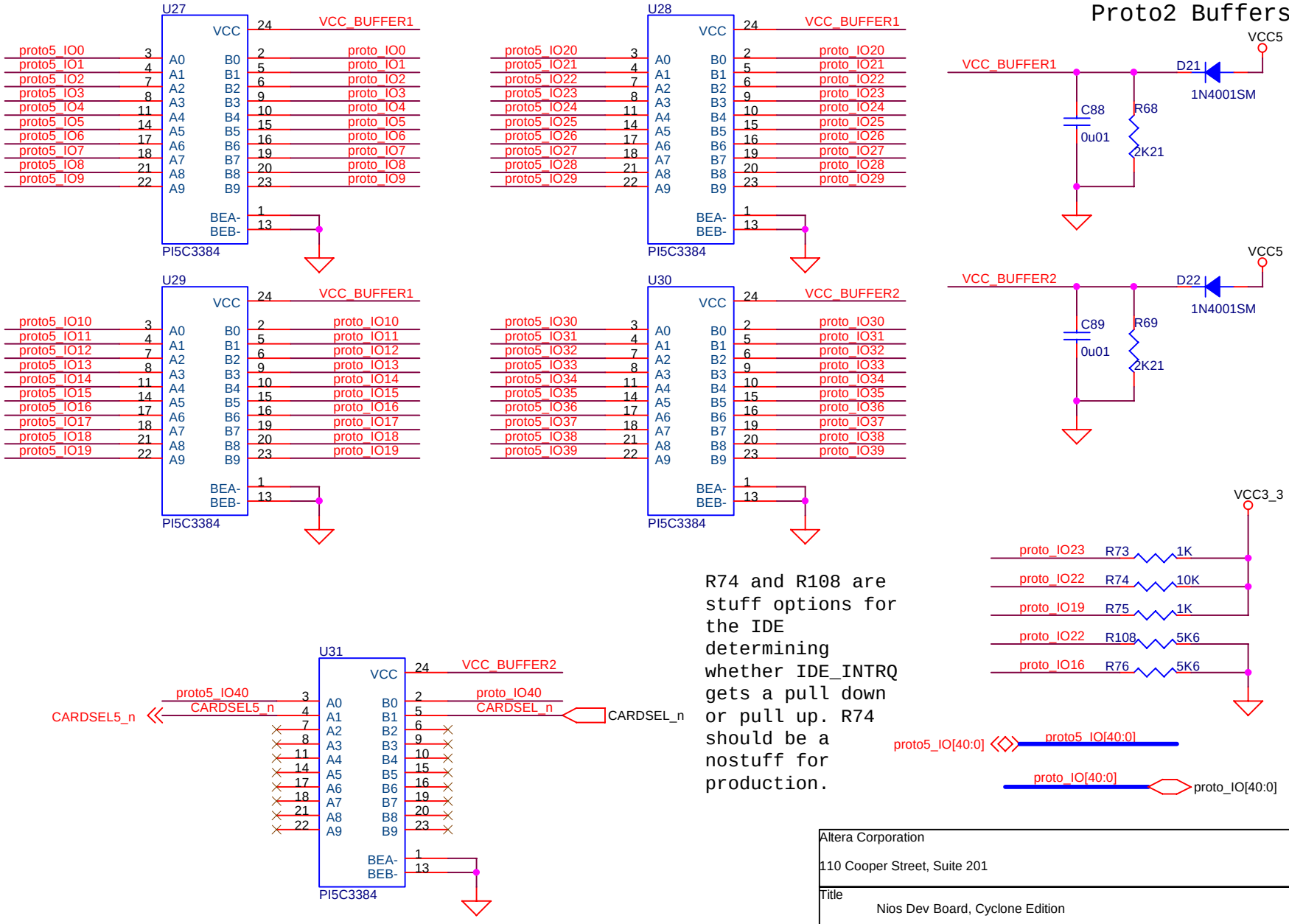
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 22 of 29	

Protocard 1



Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 23 of 29	

Proto2 Buffers



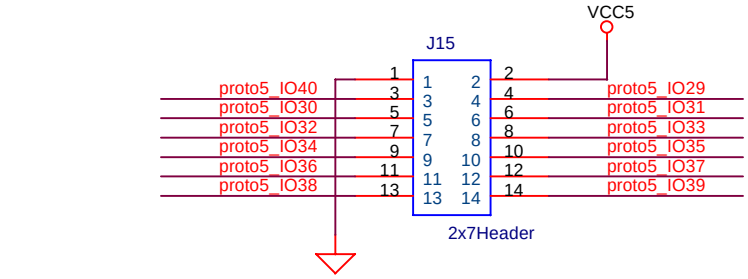
R74 and R108 are stuff options for the IDE determining whether IDE_INTRQ gets a pull down or pull up. R74 should be a nostuff for production.

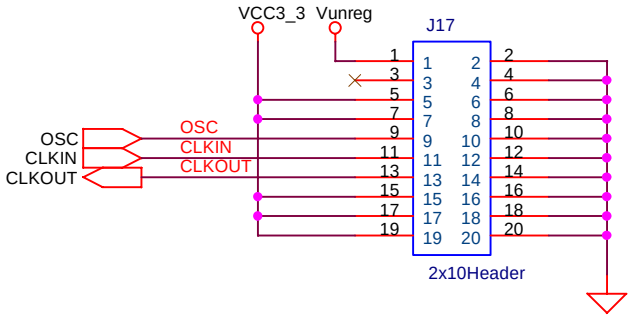
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 24 of 29	

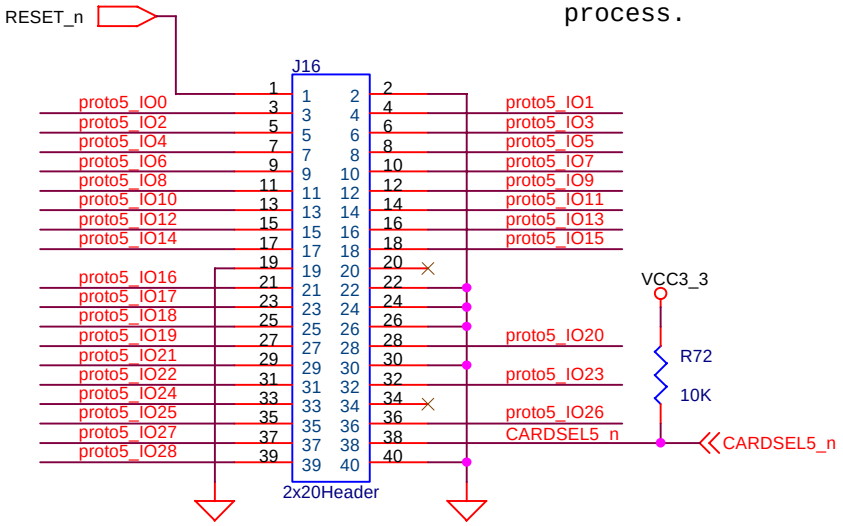
Proto2 Headers

proto5_IO[40:0] proto5_IO[40:0]

Pin 20 is a keying pin that should be clipped as a part of the production process.

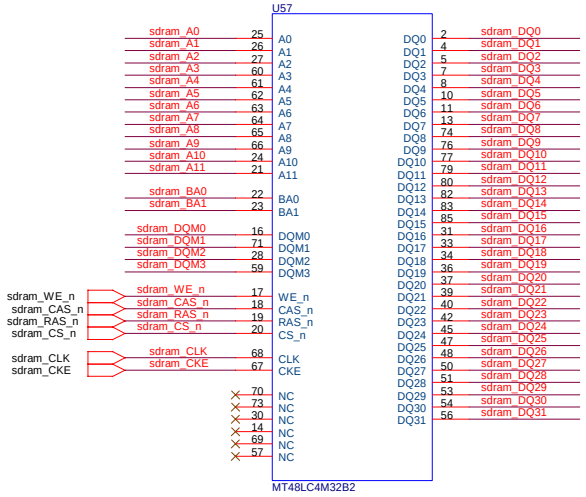


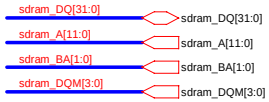


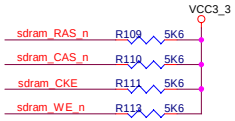


Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 25 of 29	

SDRAM

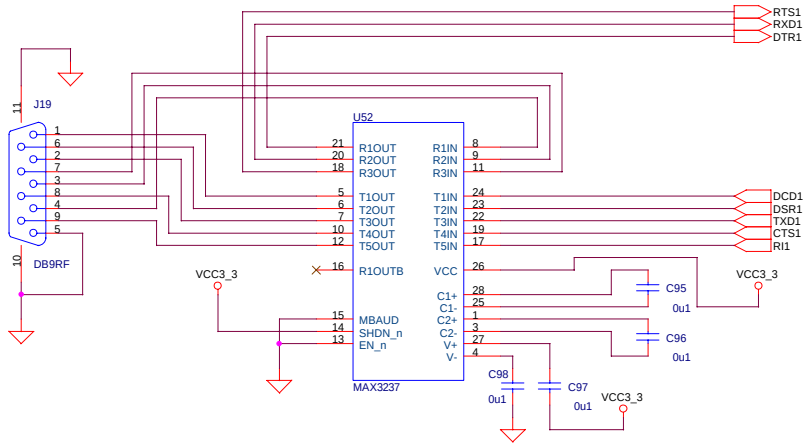


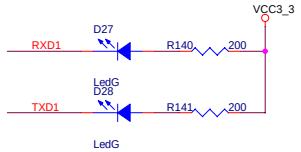


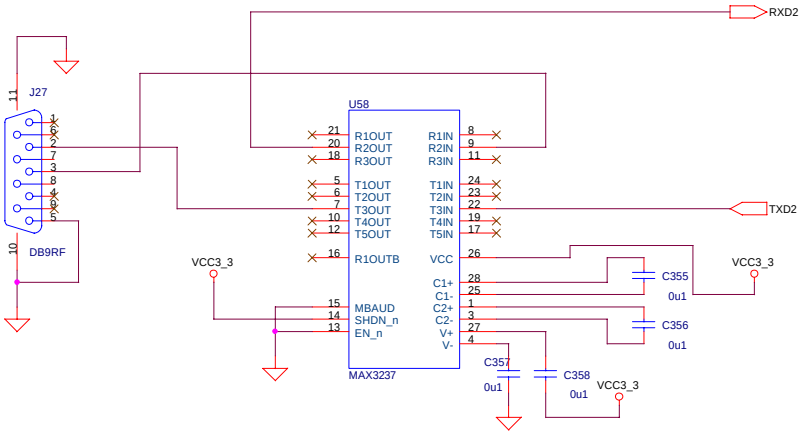


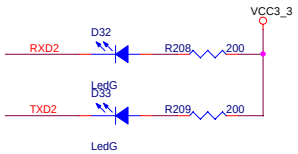
Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 26 of 29	

Serial Ports



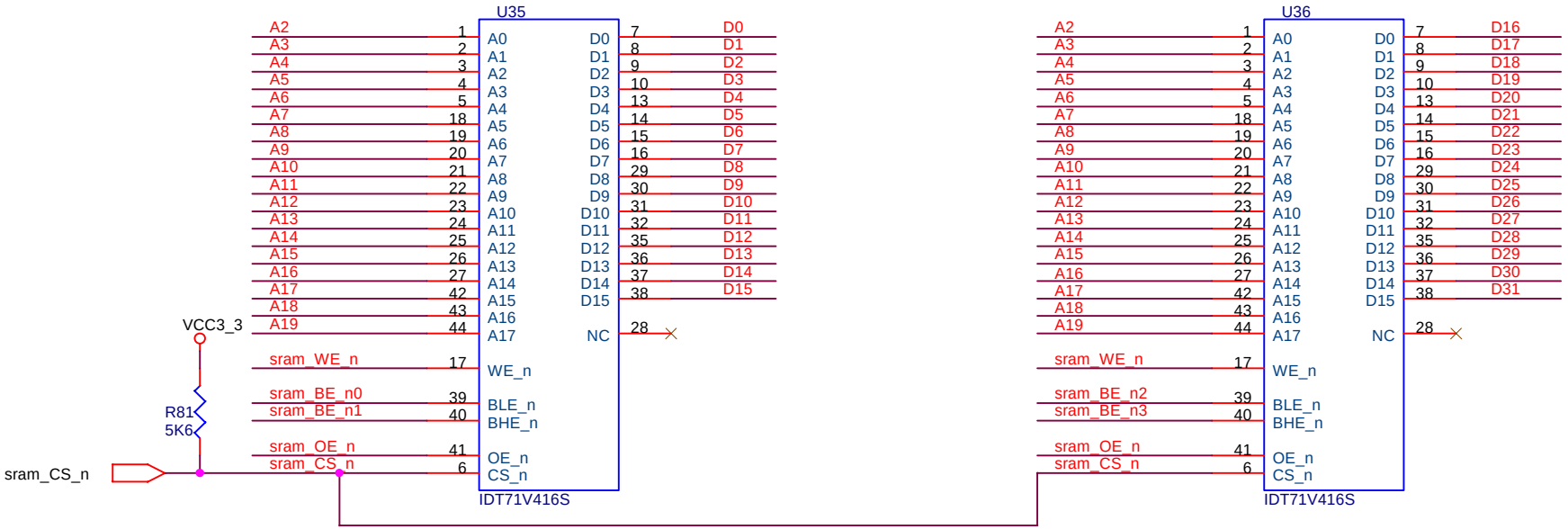


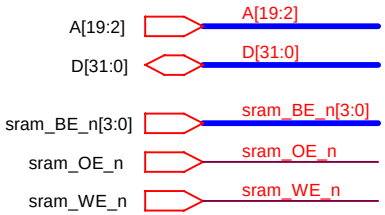




Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: B	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 27 of 29	

SRAM

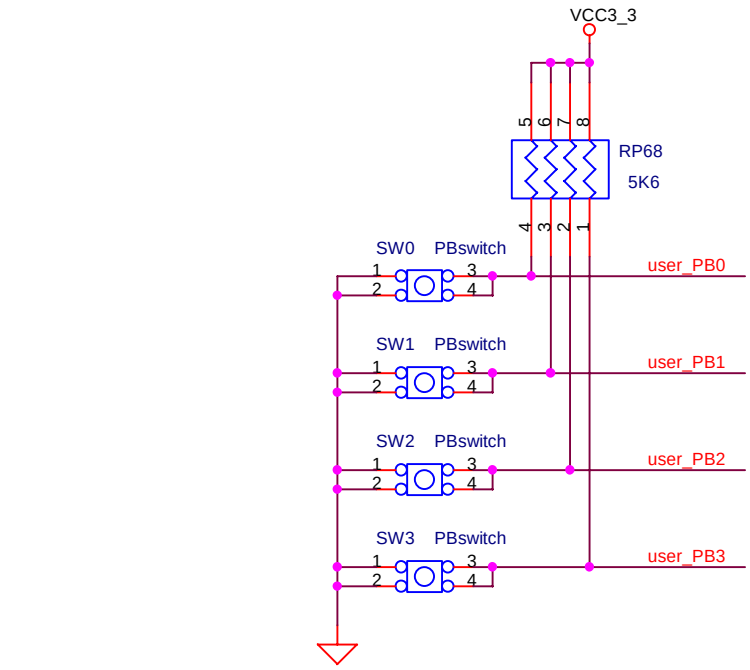




One bank of 256K x 32 SRAM (two 256K x 16 parts in parallel) = 1Mbyte of SRAM

Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 28 of 29	

Switches Buttons



Altera Corporation 110 Cooper Street, Suite 201		
Title: Nios Dev Board, Cyclone Edition		
Size: A	Document Number: P06-08713-00	Rev: 01
Date: Thursday, February 20, 2003	Sheet 29 of 29	