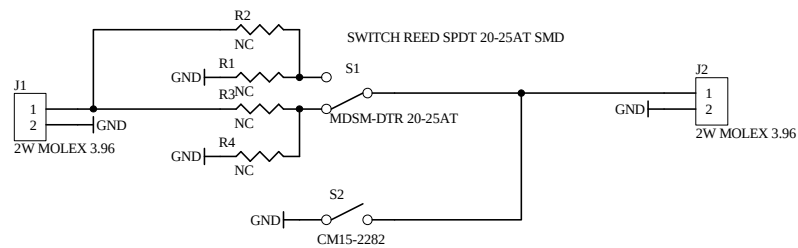


Rhein Tech Laboratories, Inc.
360 Herndon Parkway
Suite 1400
Herndon, VA 20170
<http://www.rheintech.com>

Client: EDH (South Africa) (Pty) Ltd
Model: FlightScope X2
Standards: FCC 15.245/IC RSS-210
FCC/IC ID: QXP-PT238/4612A-PT238
Report #: 2011040

Appendix I: Schematics

Please see the following pages.



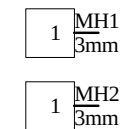
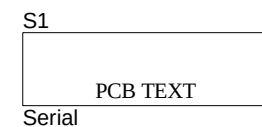
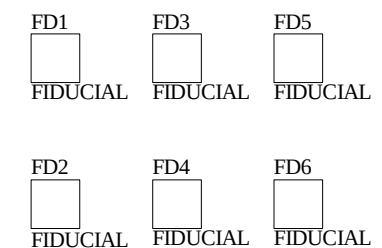
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FD2
FIDUCIAL

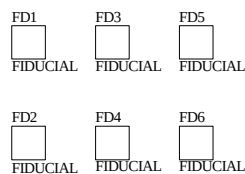
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FIDUCIAL

S 1
PCB TEXT

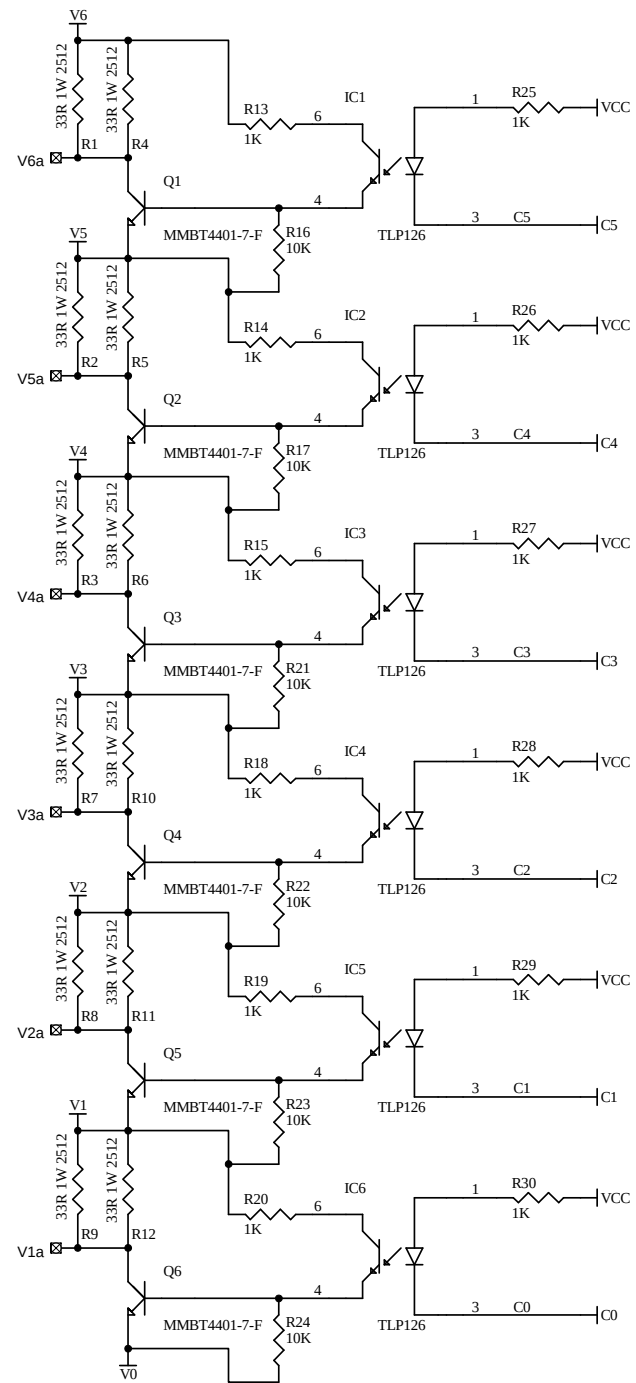
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Design by: L. Erasmus & B. Rust		Technopark			
Number: E30-GP823		Stellenbosch 7600			
Revision:		South Africa			
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		Sheet 1 of 1			

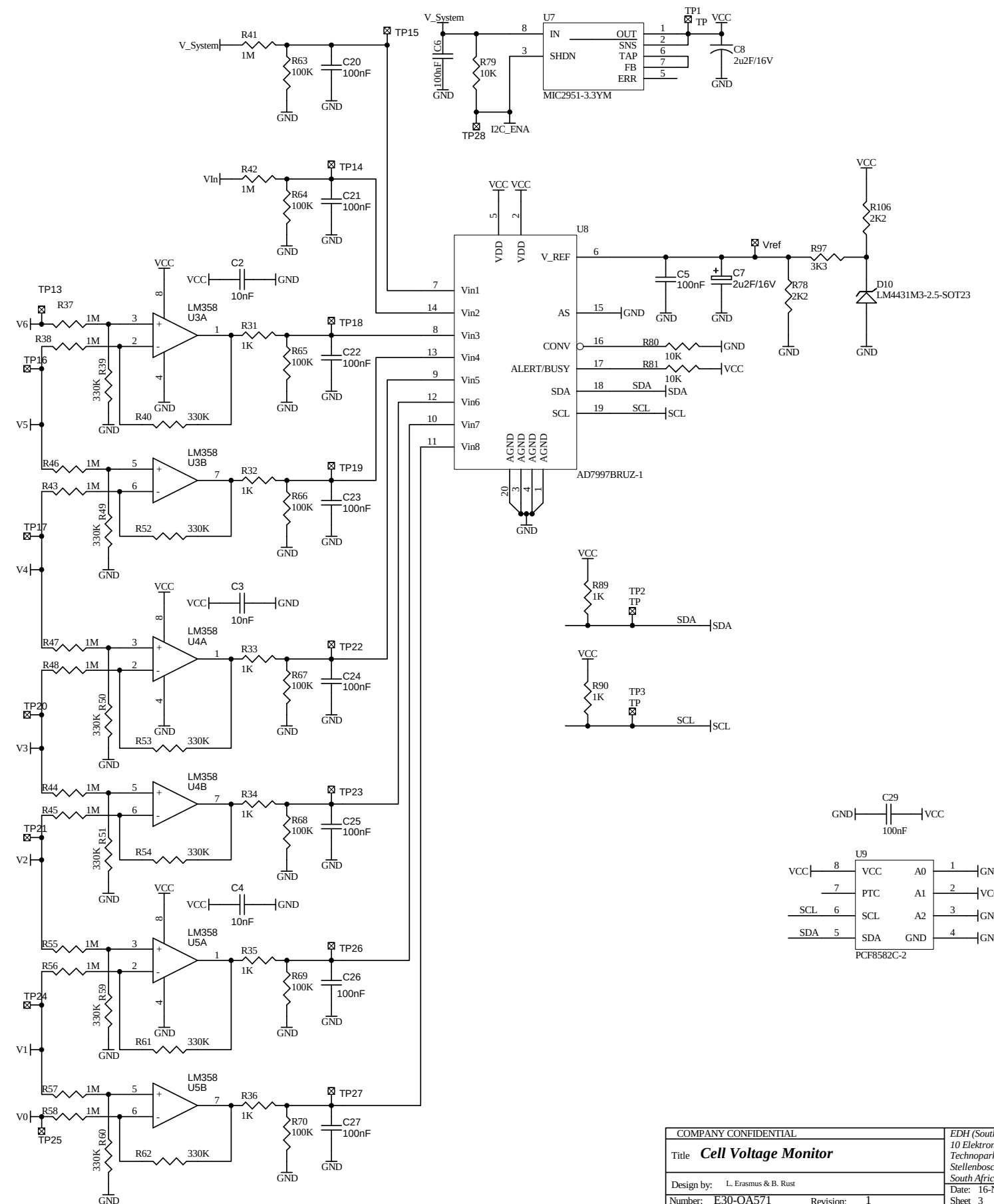


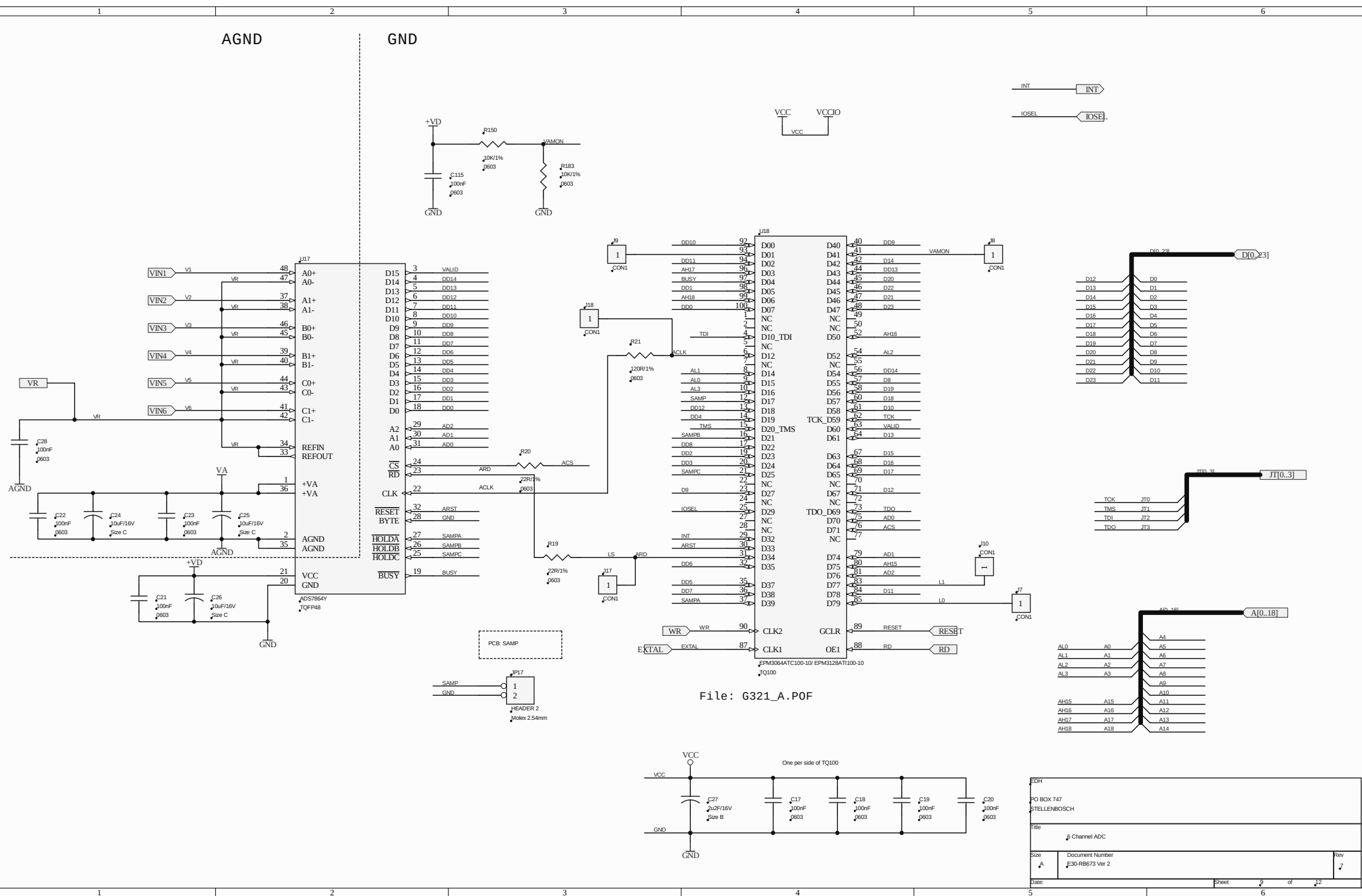
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Design by: L. Erasmus & B. Rust		
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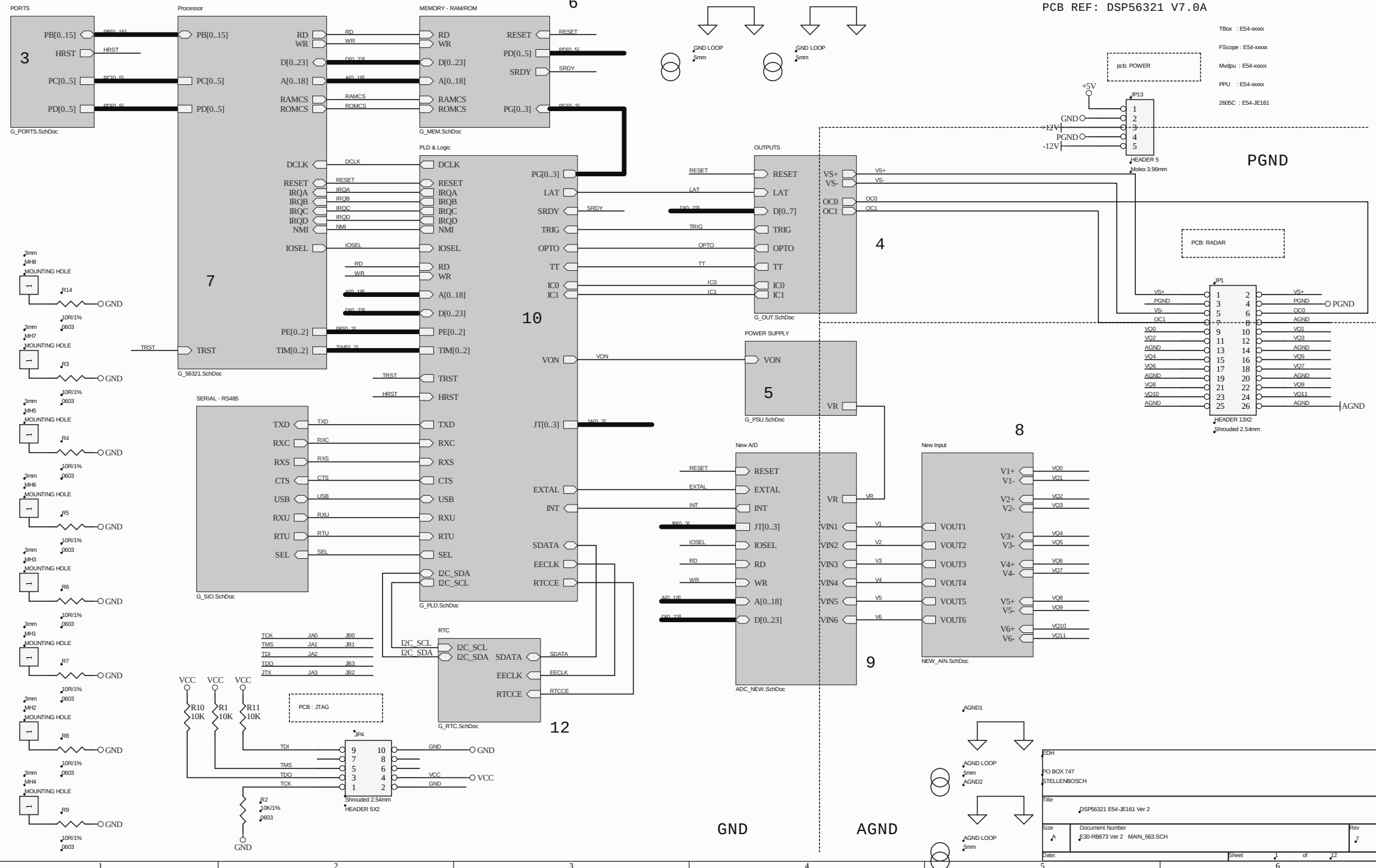


COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd 10 Elektron Avenue Technpark Stellenbosch 7600 South Africa			
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Design by: L. Erasmus & B. Rust		Date: 16-Nov-2010 13:40:47			
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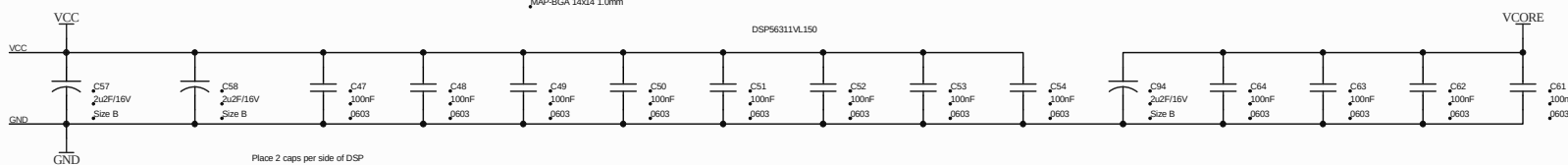
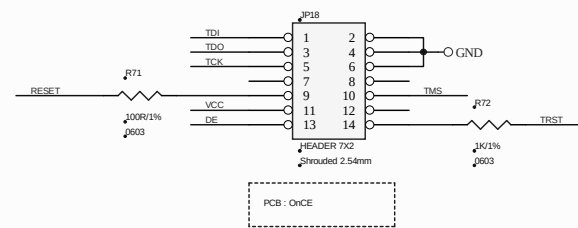
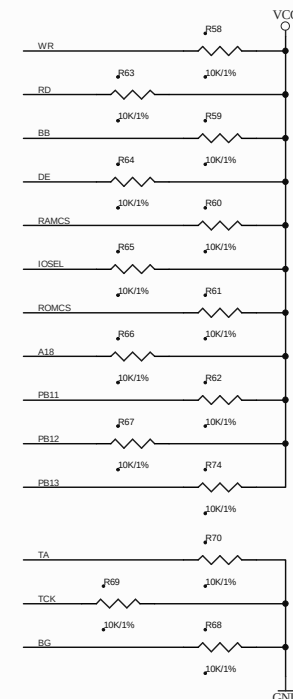
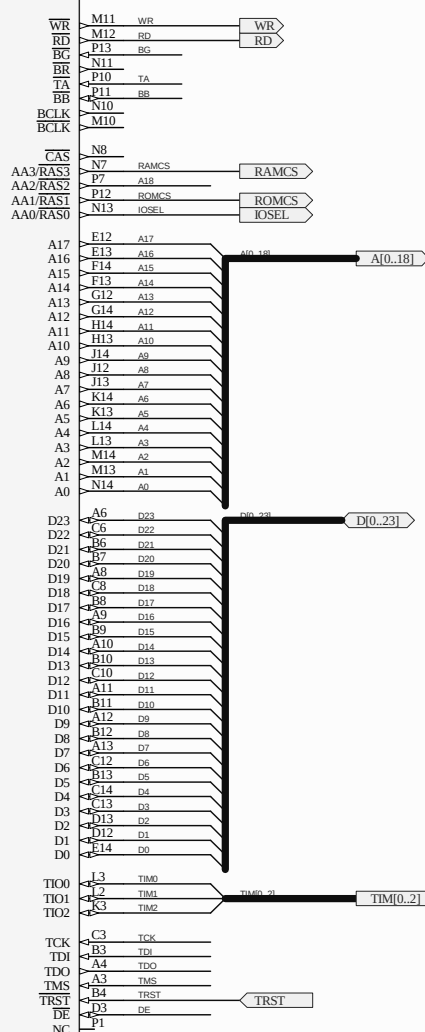
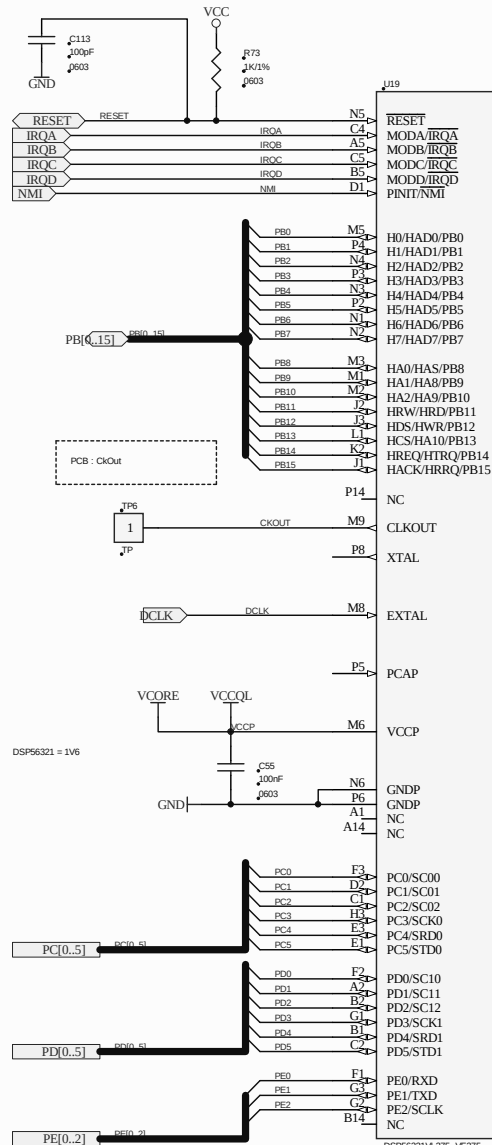




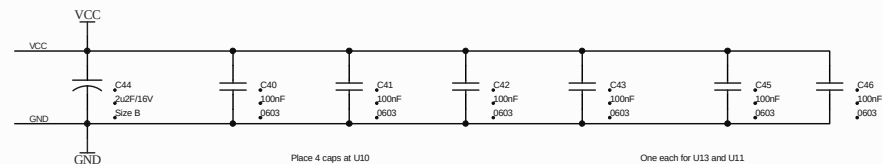
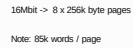


Add C113 - reduces noise on RESET

VCC = 3.3V

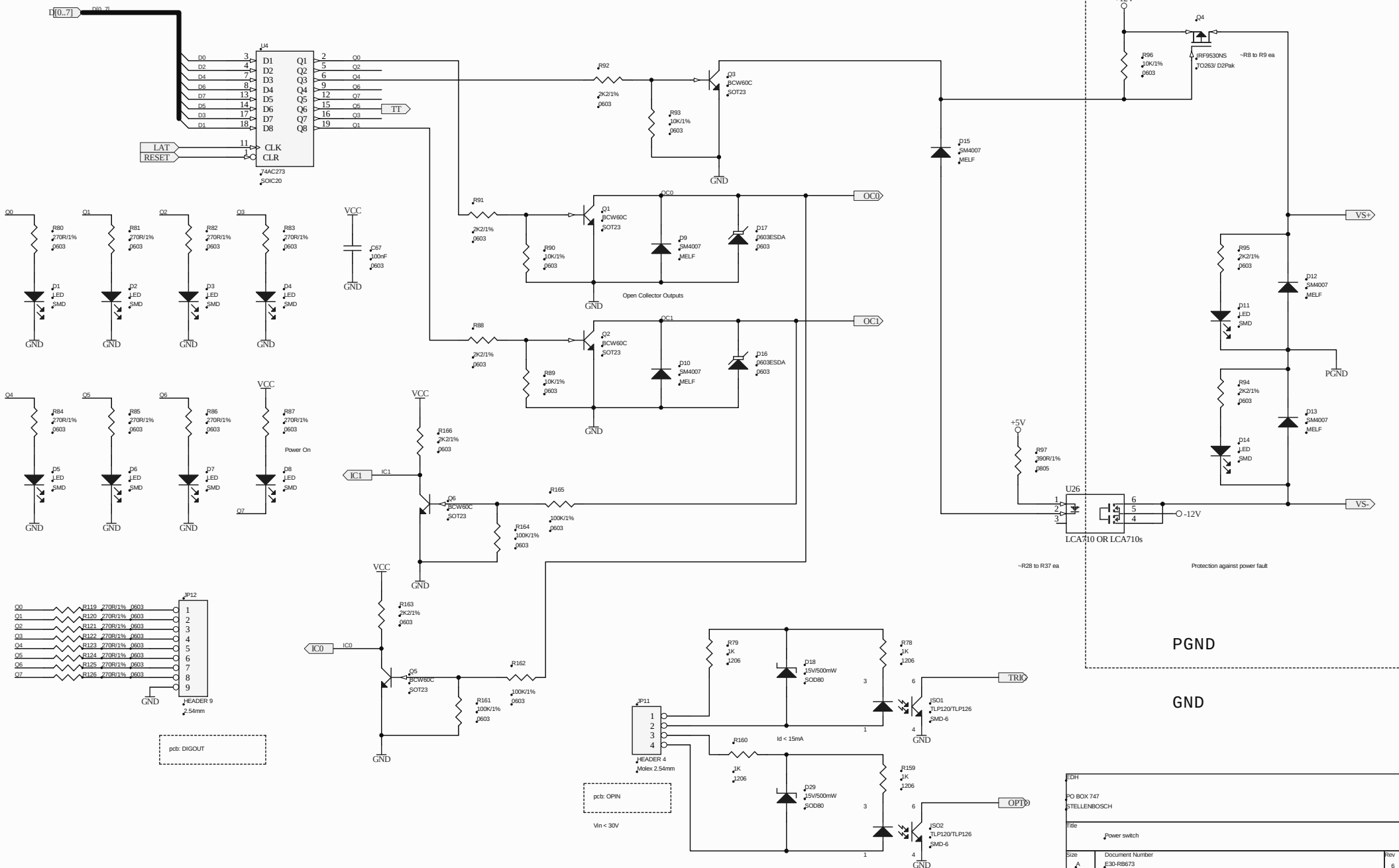


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PO BOX 747	
STELLENBOSCH	
Title	
Processor - DSP56321	
Size	
Document Number	
E30-RB673 Ver 2	
Date	
Sheet	
of	
12	
Rev	
✓	



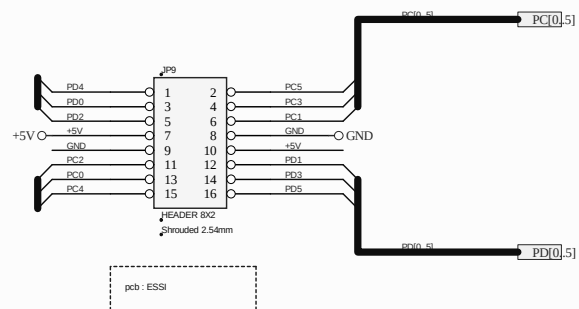
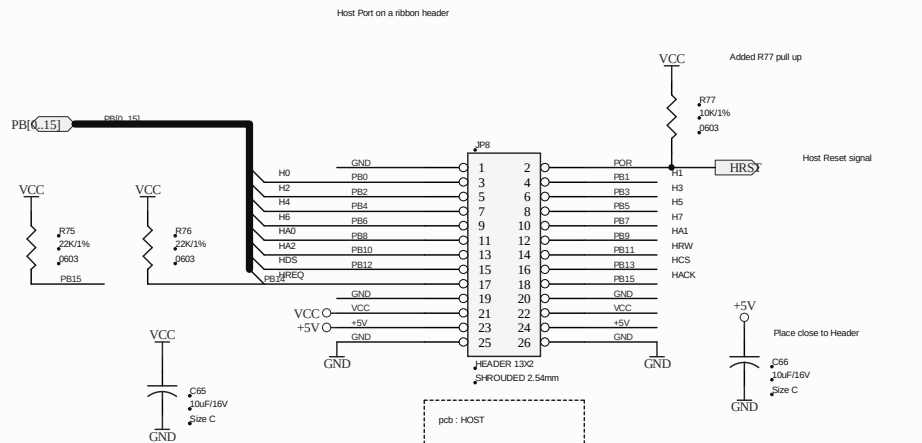
GND Place 4 caps at U10 One each for U13 and U11

EDH			
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Title			
Memory - RAM & Flash			
Size	Document Number		Rev
1	E30-RB673 Ver 2		7
Date	Sheet	5	of 12



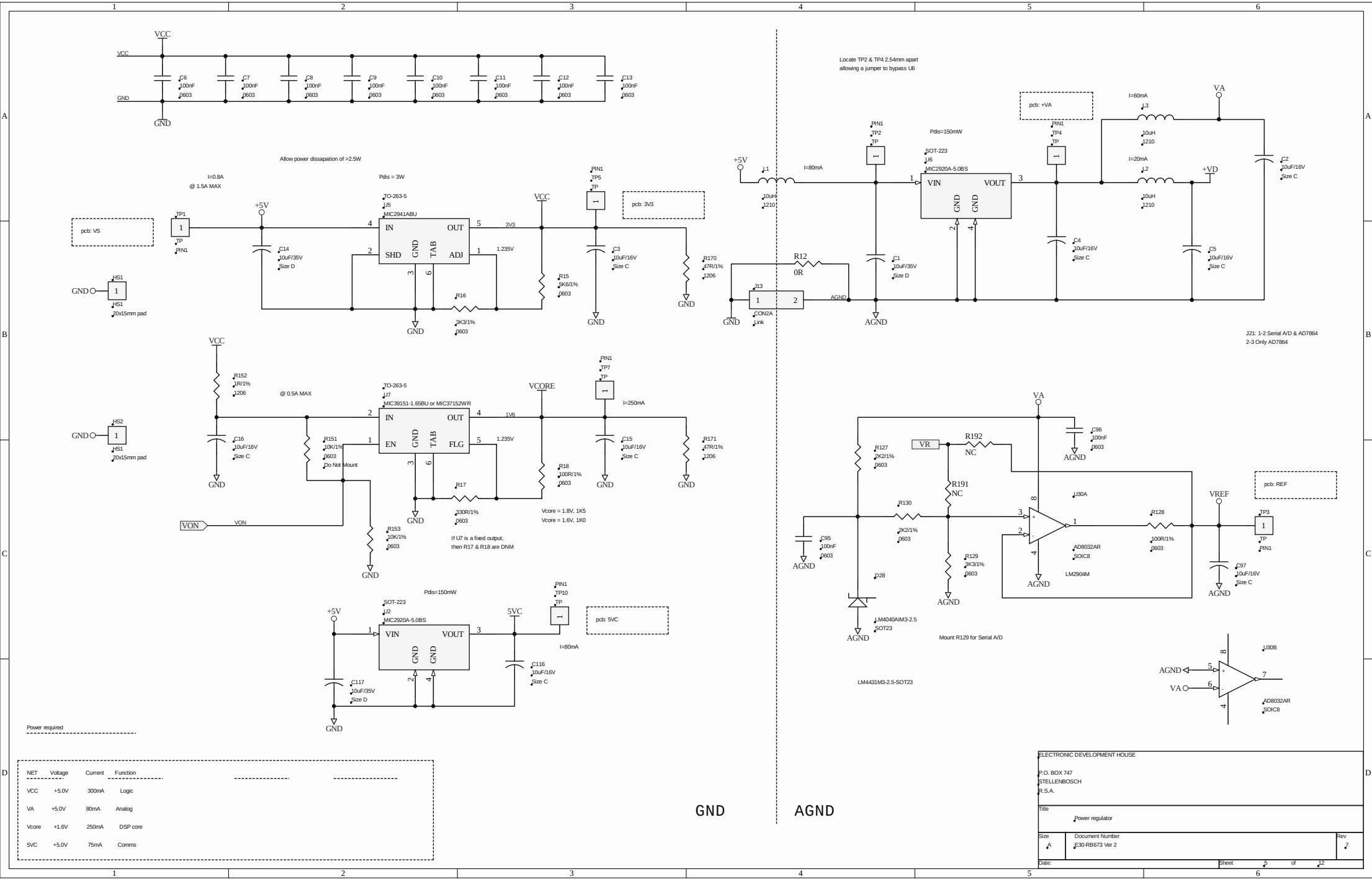
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E30-RB673			
Rev			
Date			
Sheet 4 of 12			

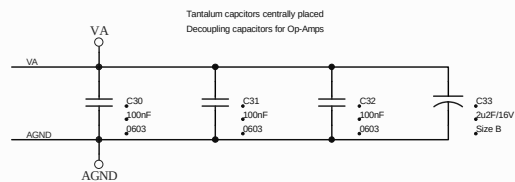
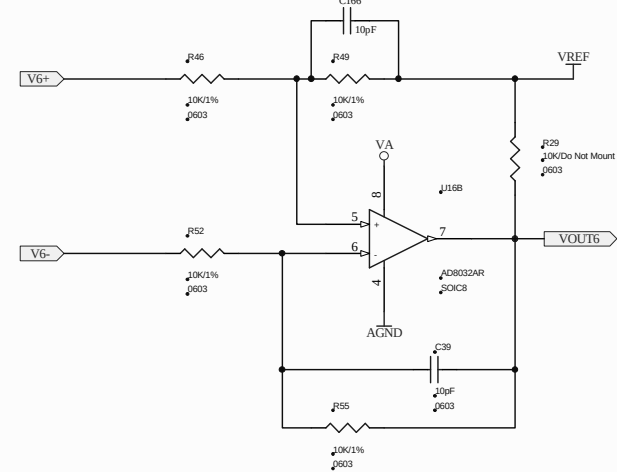
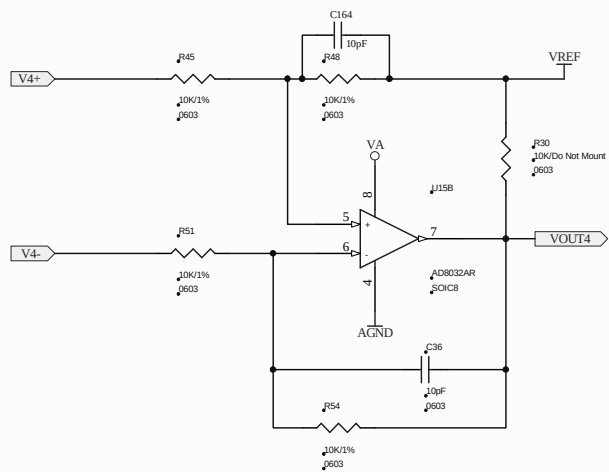
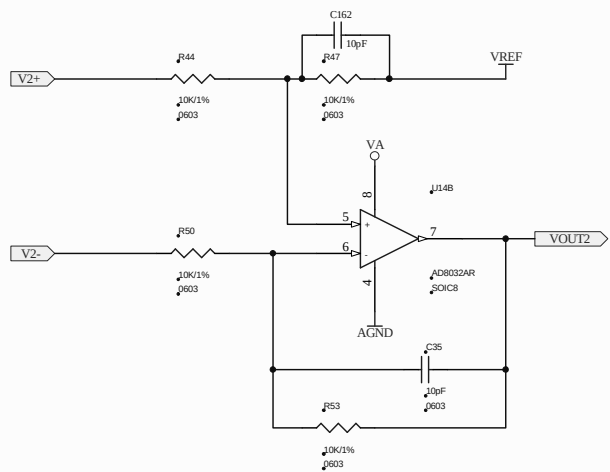
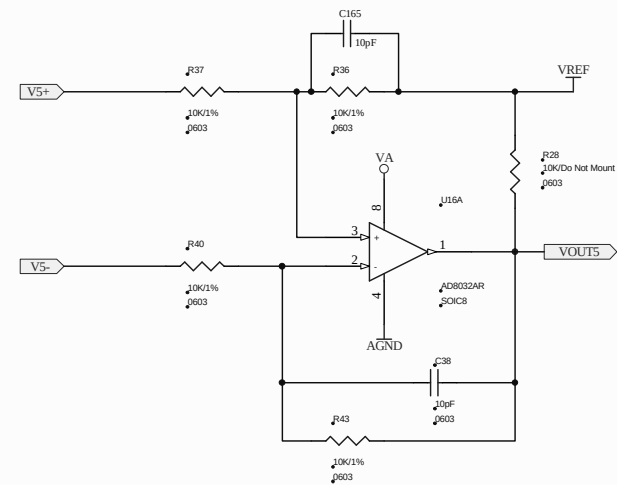
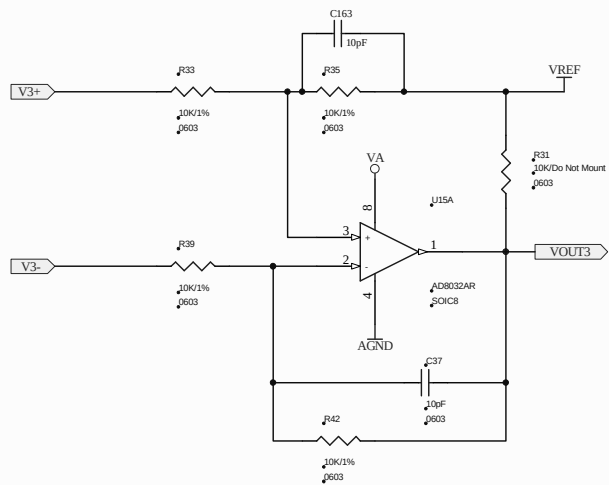
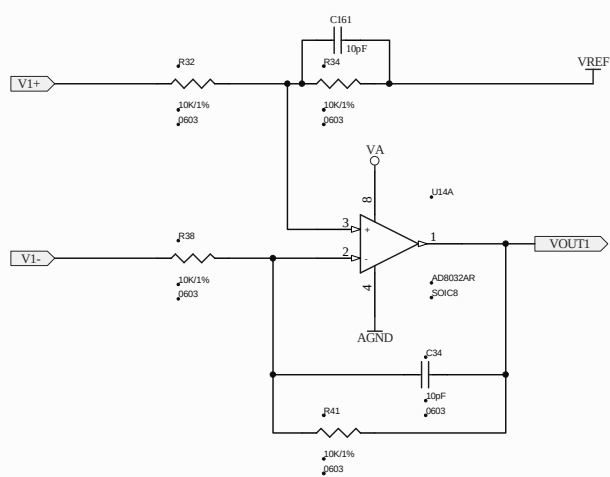




PC0 SC0
PC1 SC1
PC2 SC2
PC3 SC3
PC4 SC4
PC5 SC5

EDH	
PO BOX 747 STELLENBOSCH	
Title Host port	
Size A	Document Number E30-RB673 Ver 2
Date	Rev 1
Sheet 3 of 12	





OpAmp: Rail to rail, +5V operation

Gain = 1.0 or 0.5

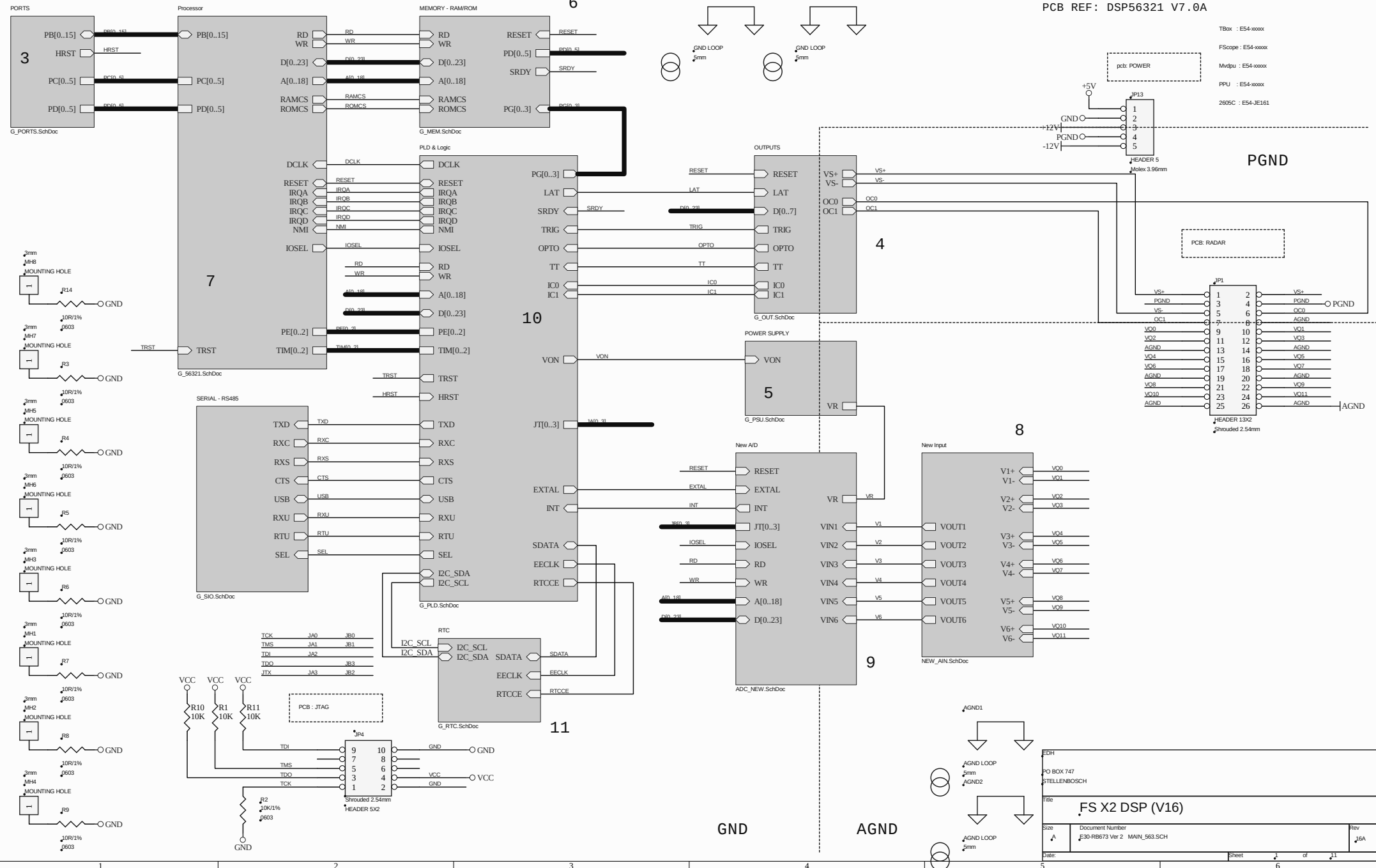
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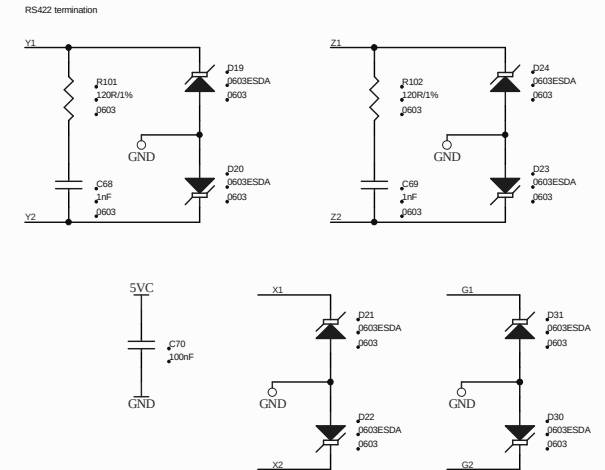
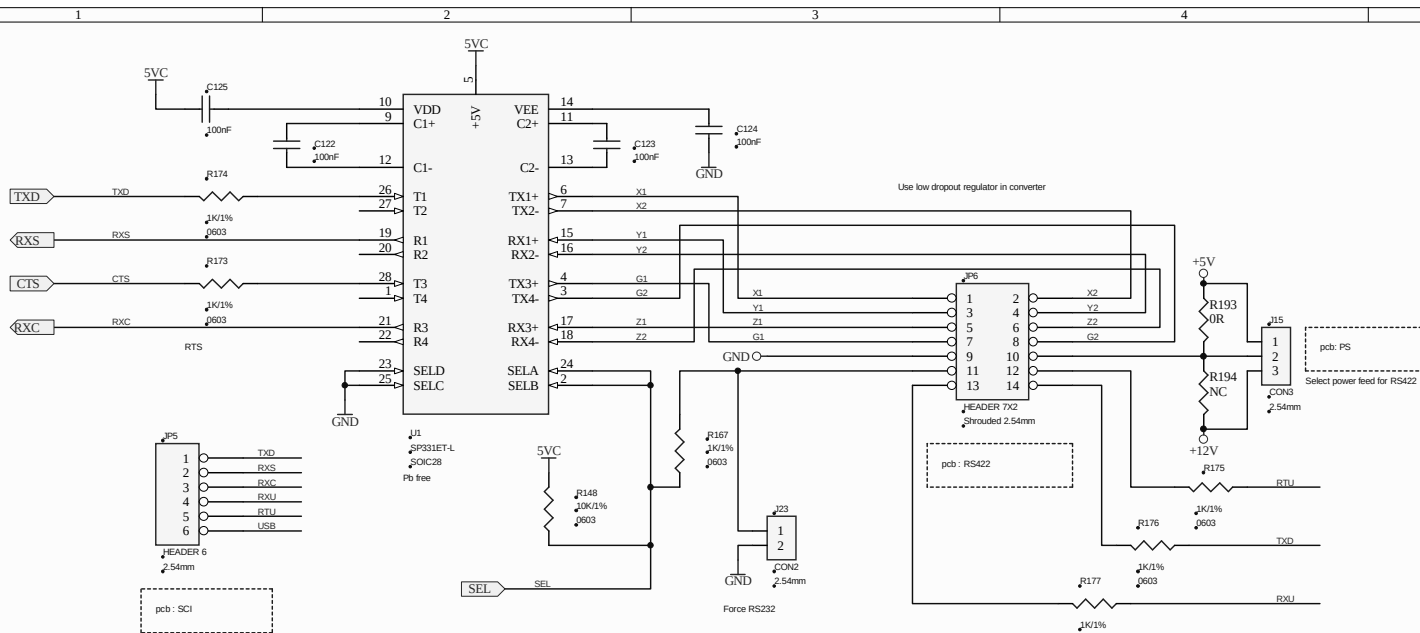
Input impedance = 100R or 20K

Vin = 5Vpp/ 10Vpp

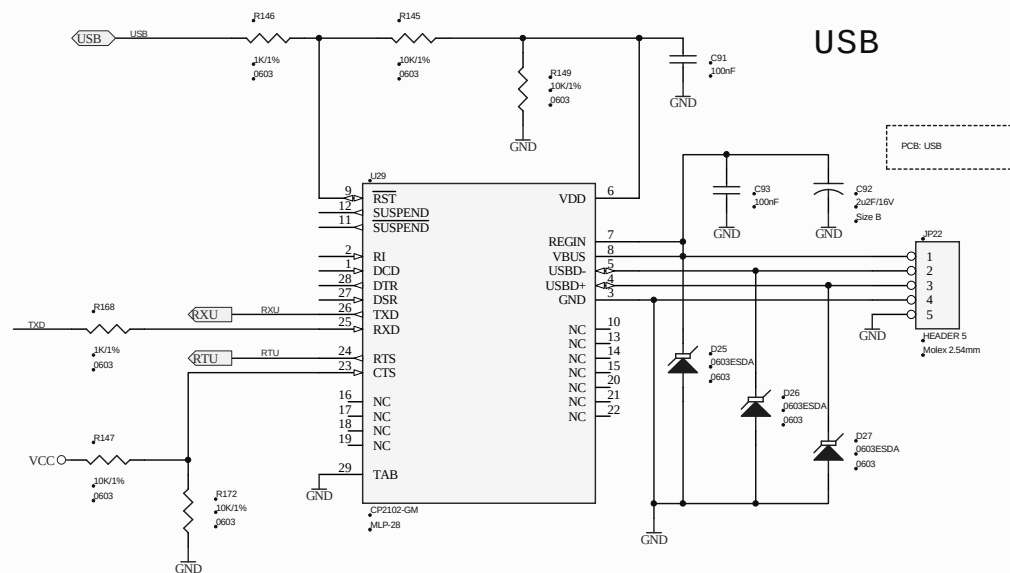
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PO BOX 747 STELLENBOSCH	
Title	
6 channel analog buffer	
Size	Document Number
E30-RB673 Ver 2	
Date	Rev
Sheet 6 of 12	



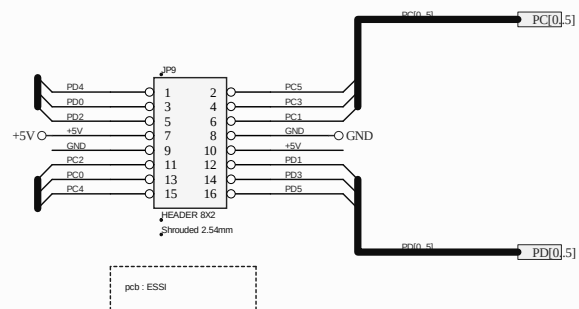
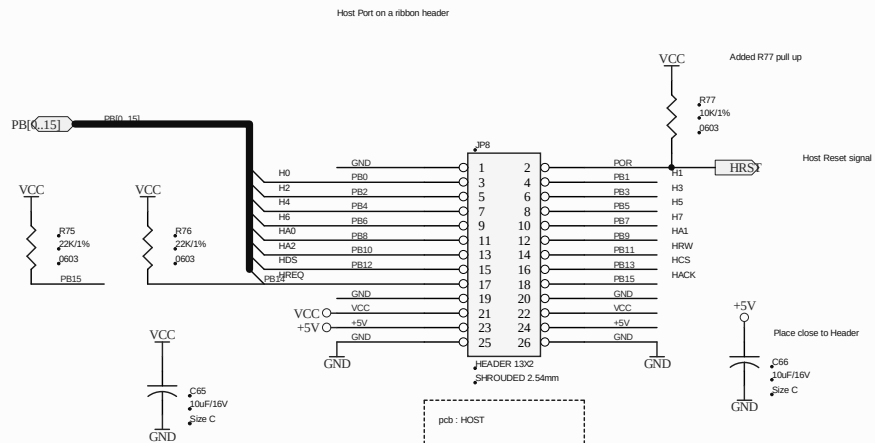


RS422 / RS232



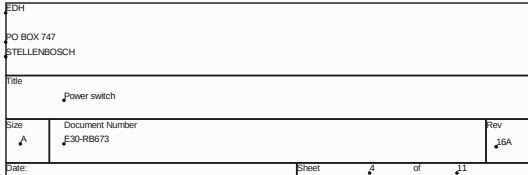
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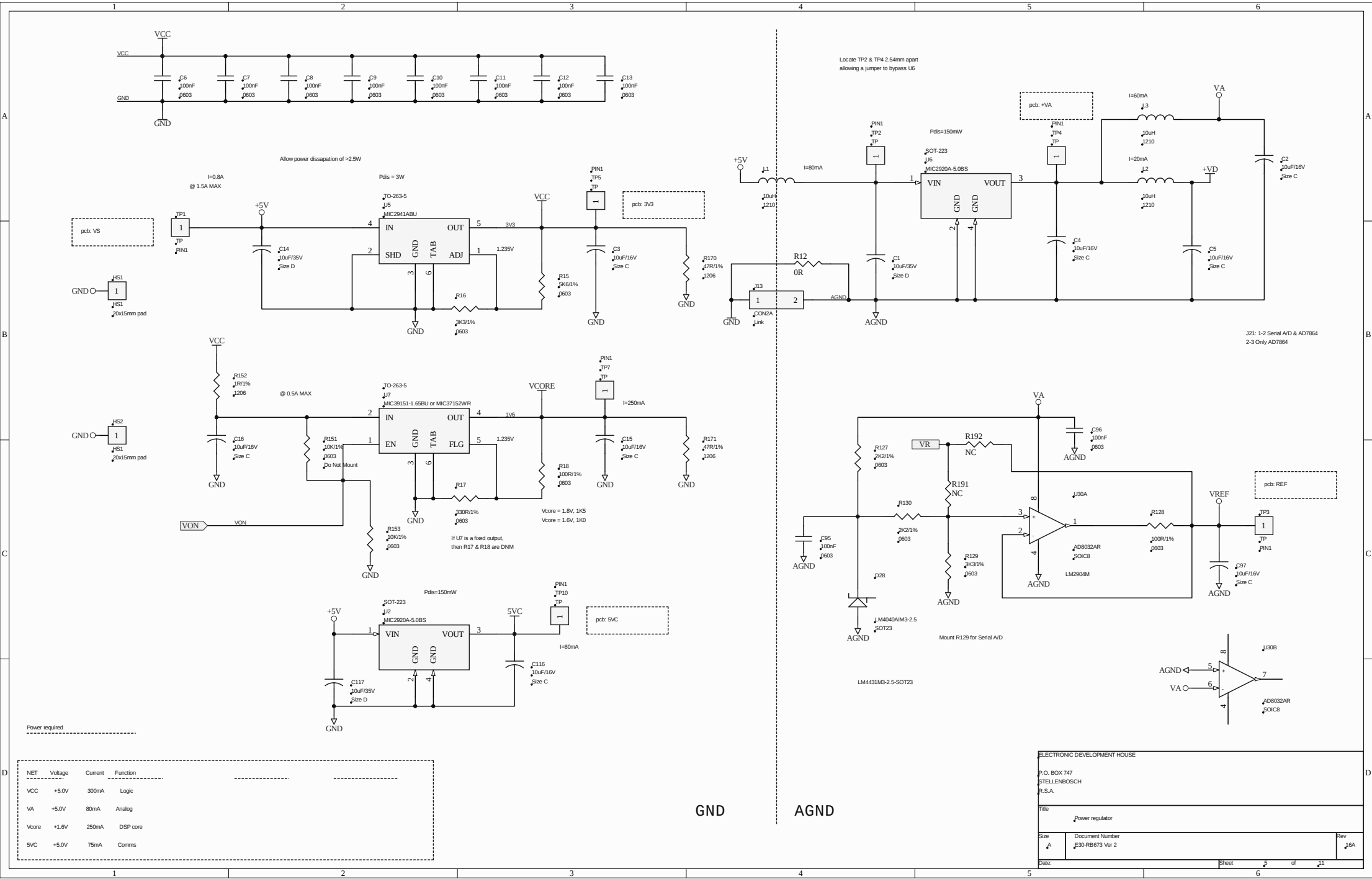
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Size	Document Number		Rev
A	E30-E5234 Ver 2		6A
Date	Sheet	2	of 11



PC0	SC0
PC1	SC1
PC2	SC2
PC3	SC3
PC4	SC4
PC5	SC5

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PO BOX 747 STELLENBOSCH	
Title Host port	
Size A	Document Number E30-RB673 Ver 2
Date	Rev 1.0

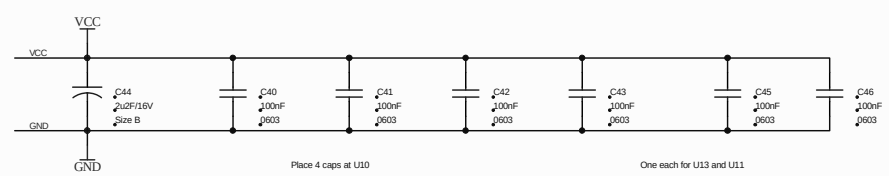
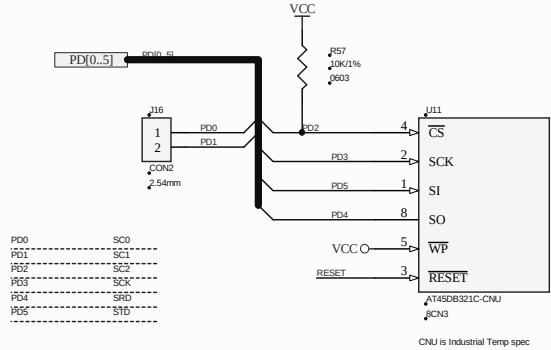
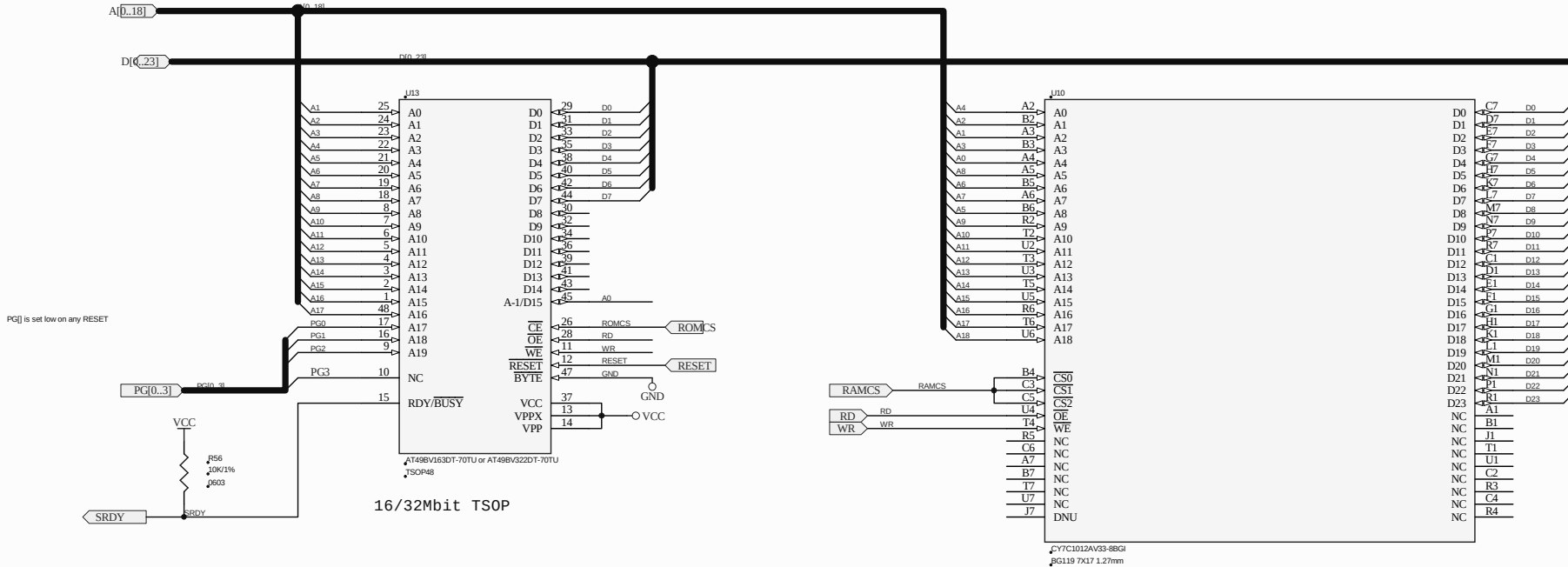




16Mbit -> 8 x 256k byte pages

Note: 85k words / page

CY7C1012AV33-8BGC = \$27.15 each

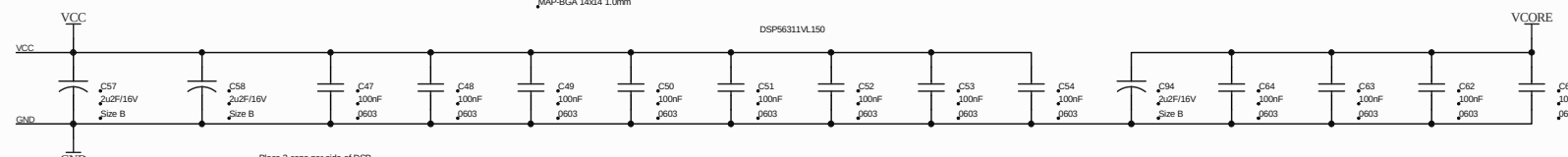
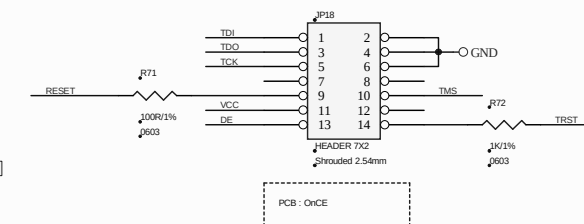
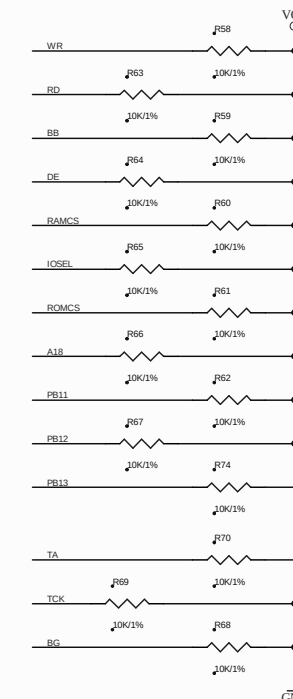
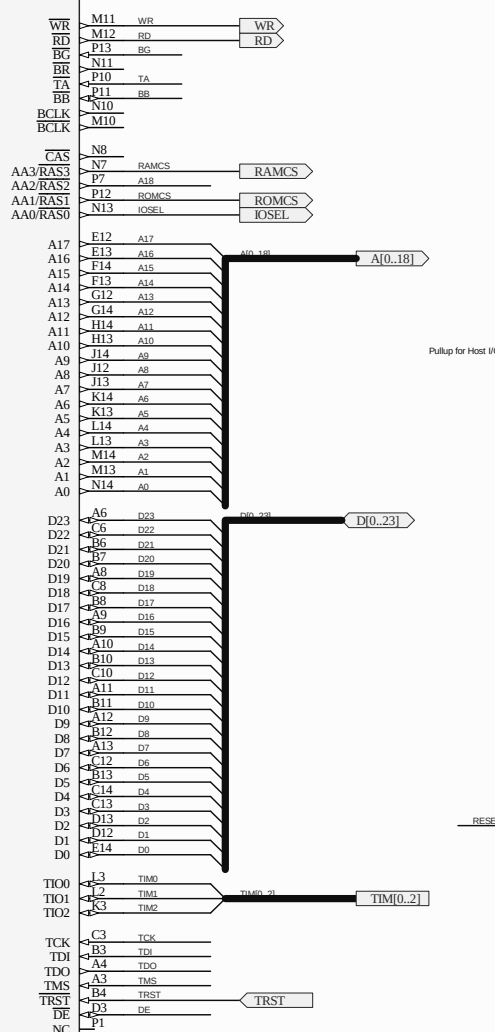
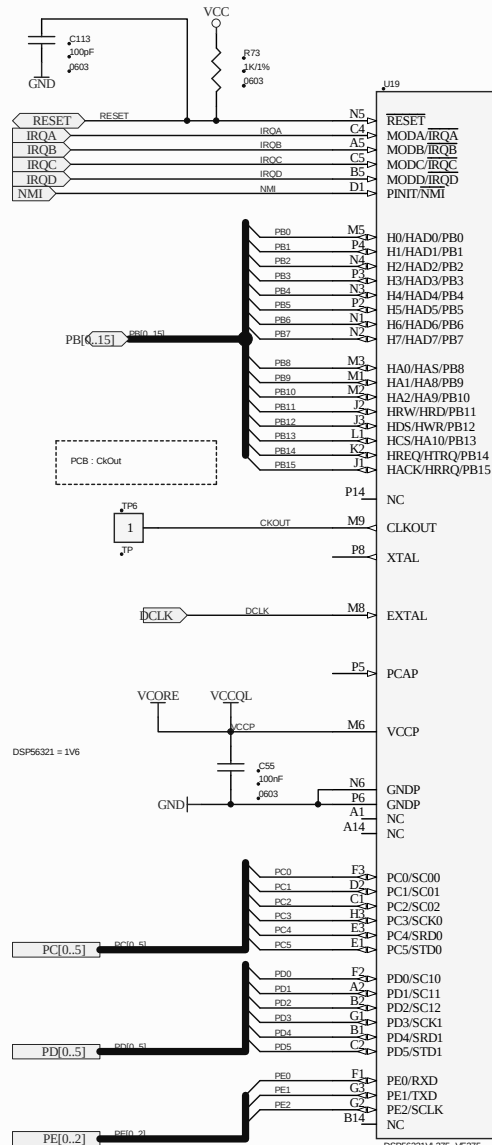


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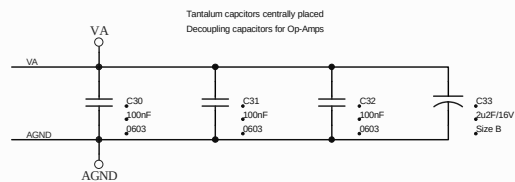
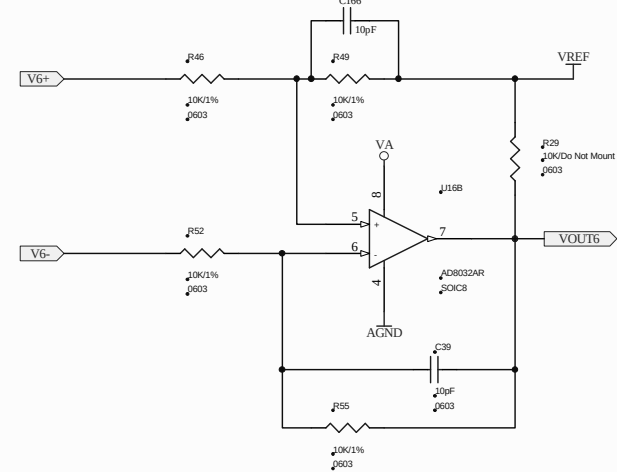
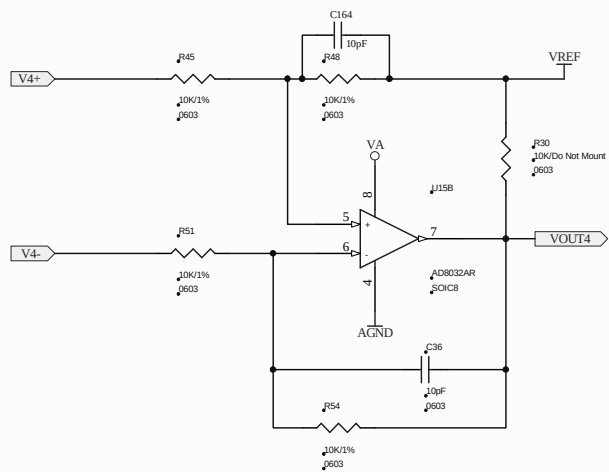
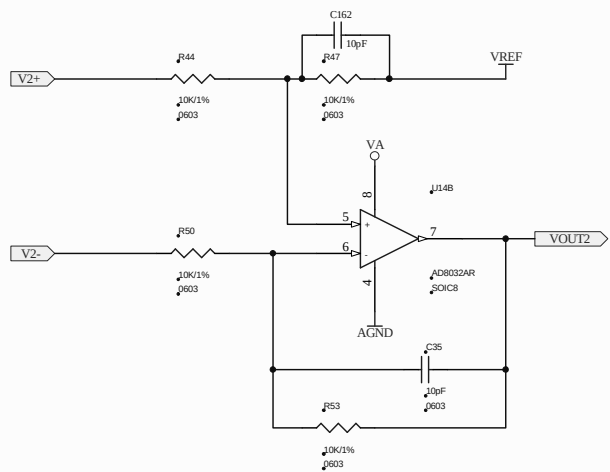
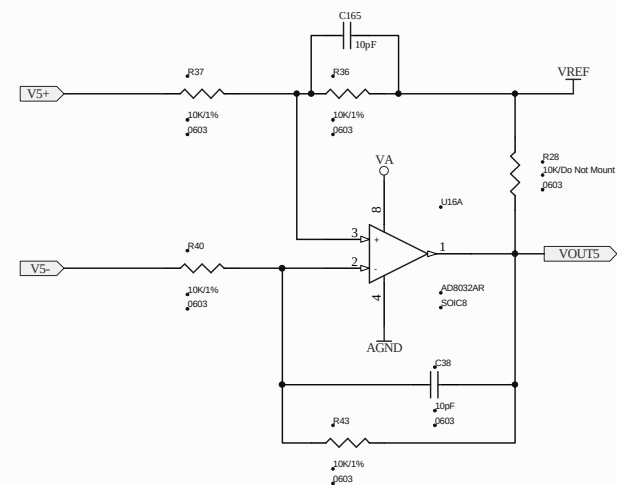
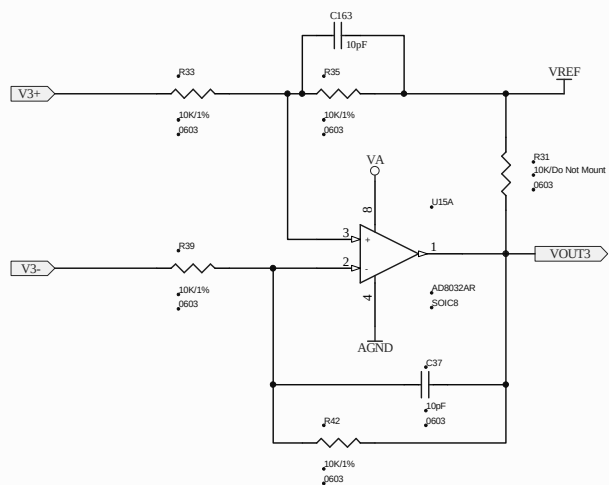
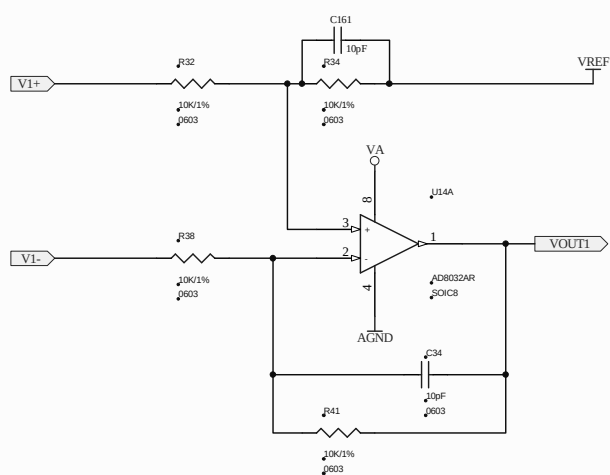
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Title	
Memory - RAM & Flash	
Size	Document Number
Date	Rev
E30-R8673 Ver 2	
Sheet 6 of 11	

Add C113 - reduces noise on RESET

VCC = 3.3V



FDH	
PO BOX 747	
STELLENBOSCH	
Title	
Processor - DSP56321	
Size	
Document Number	
E30-RB673 Ver 2	
Date	
Sheet	
of	
11	
Rev	
JGA	



OpAmp: Rail to rail, +5V operation

Gain = 1.0 or 0.5

Balanced to Single ended.

Input impedance = 100R or 20K

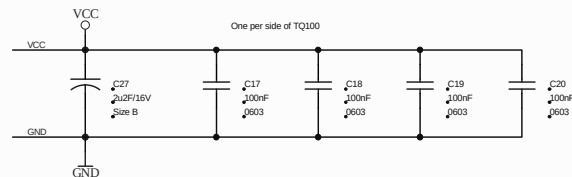
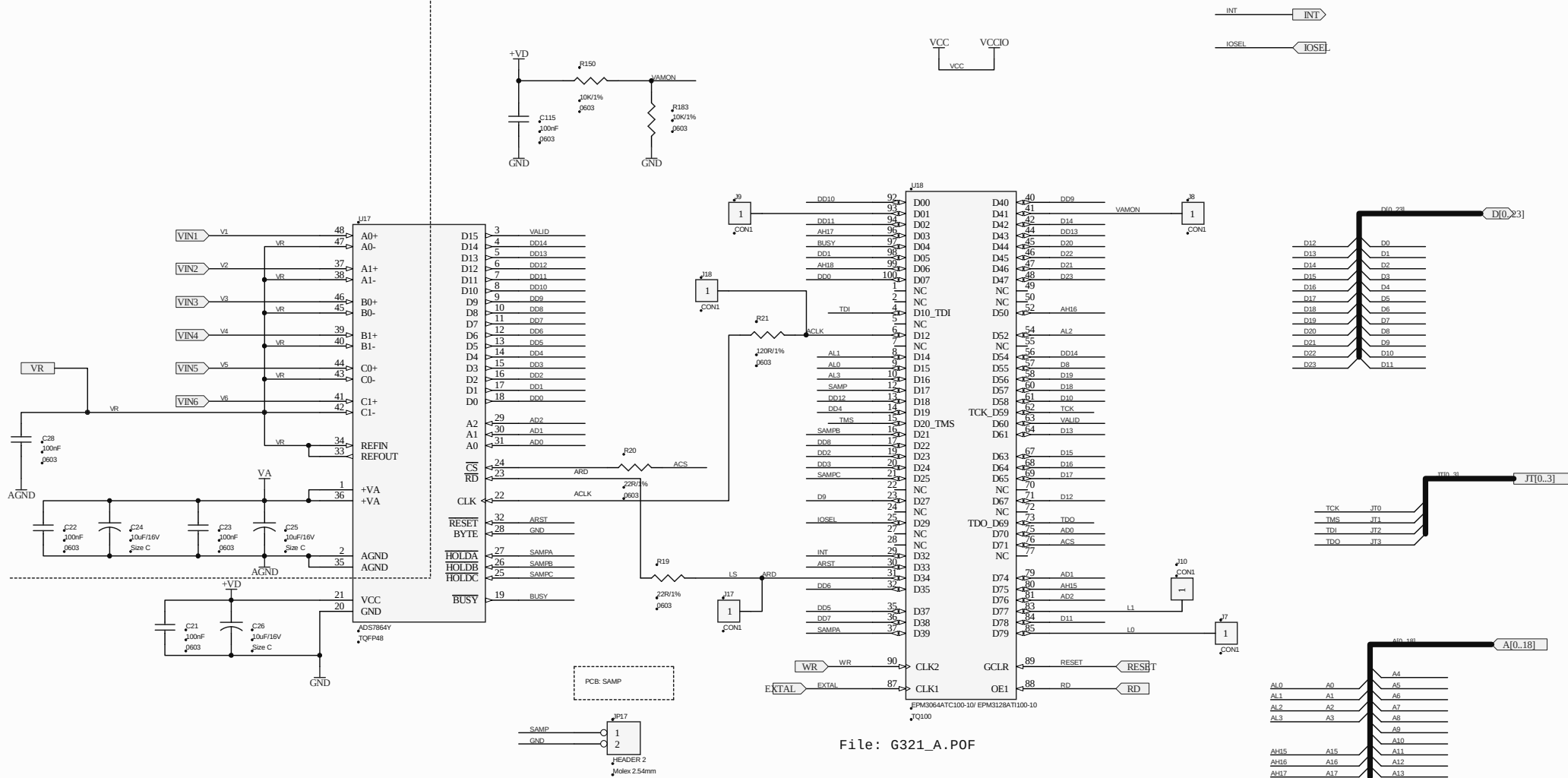
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Vout = 5Vpp

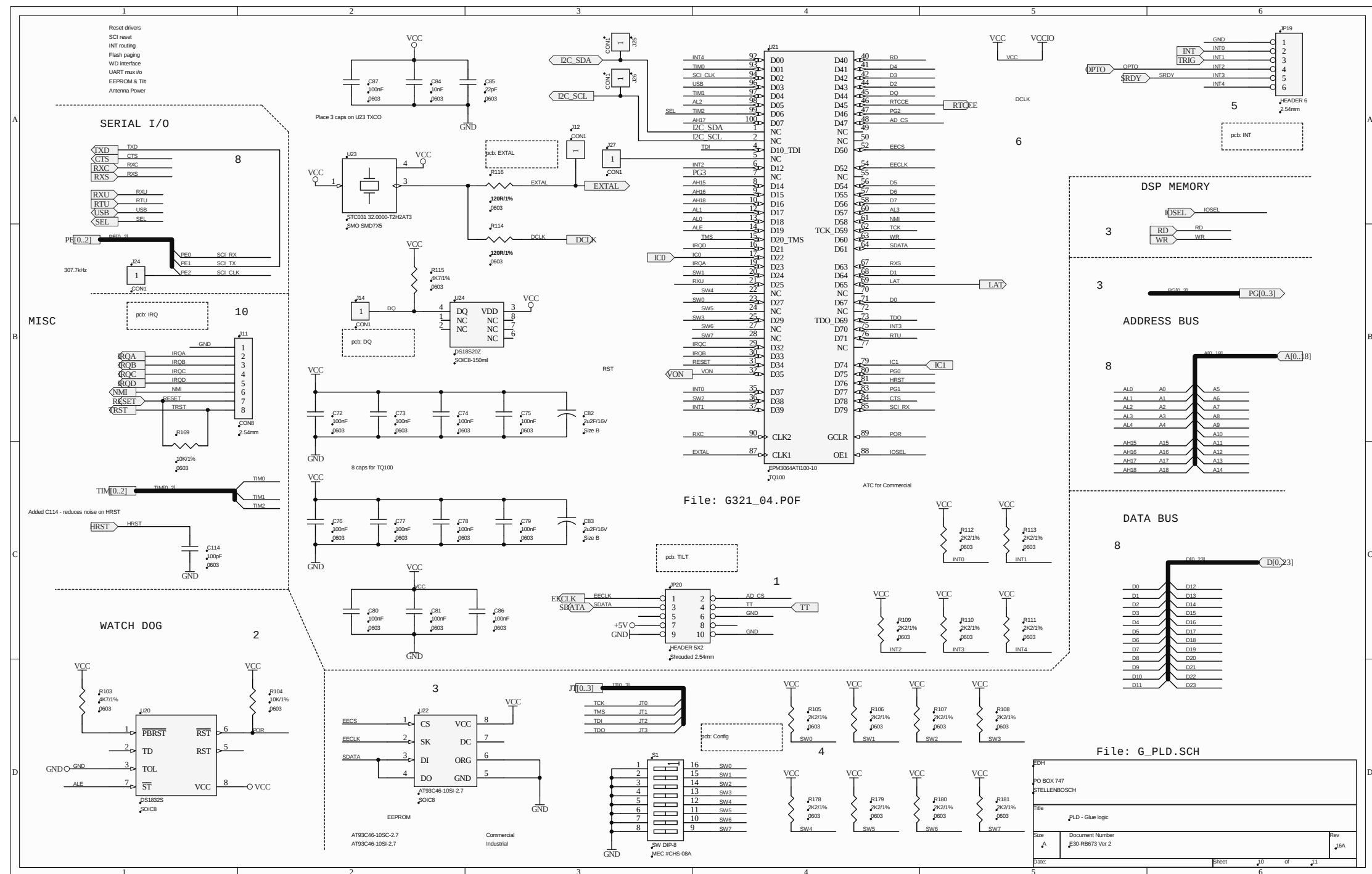
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Size	Document Number
Rev	16A
Date	Sheet 8 of 11

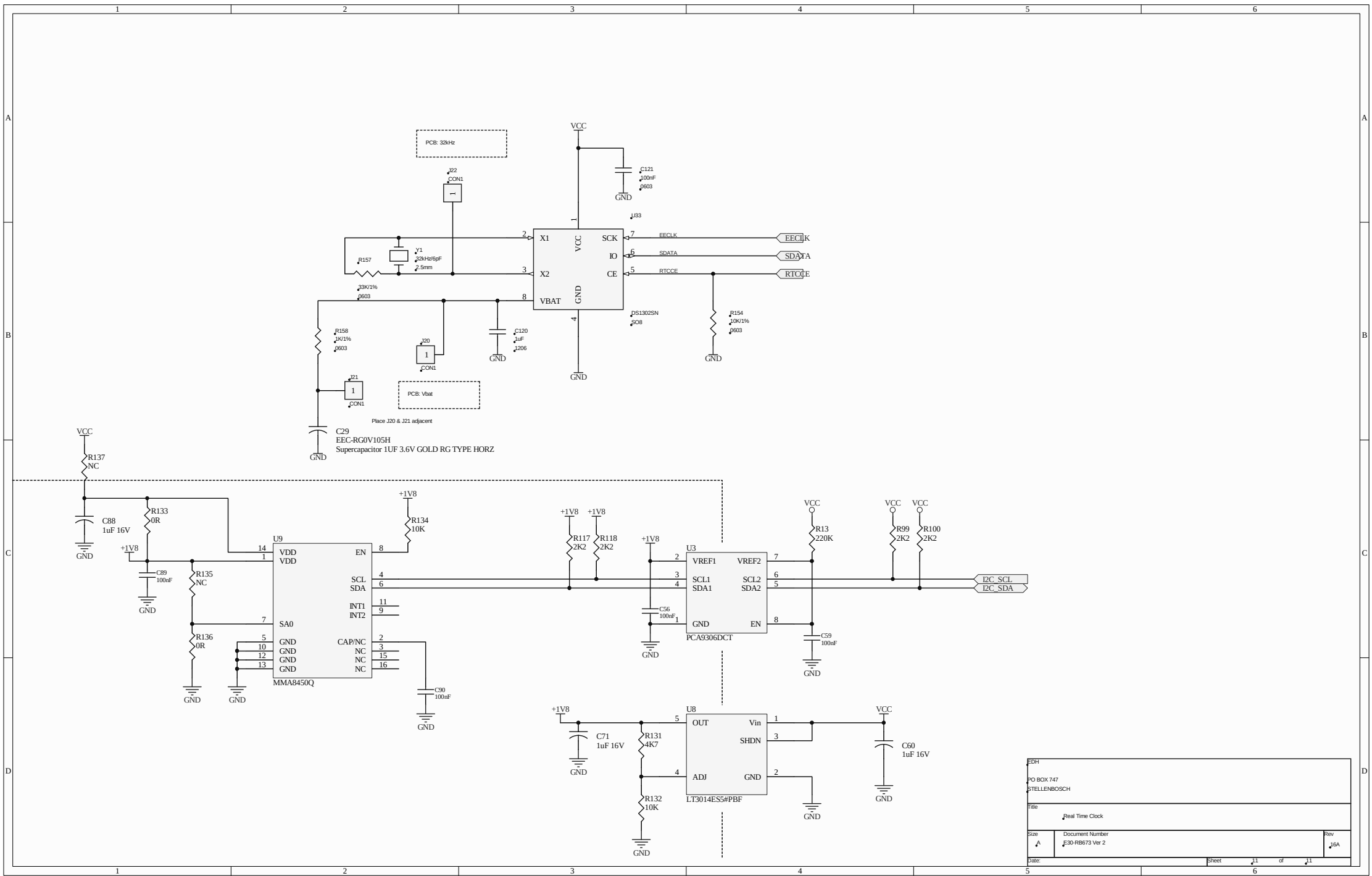
AGND

GND

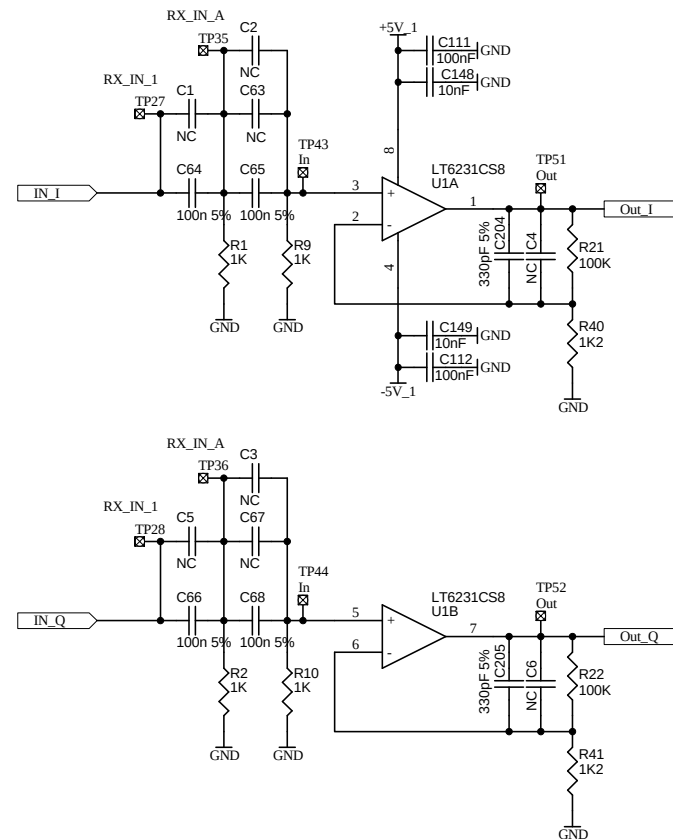


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Rev			
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Sheet 9 of 11			

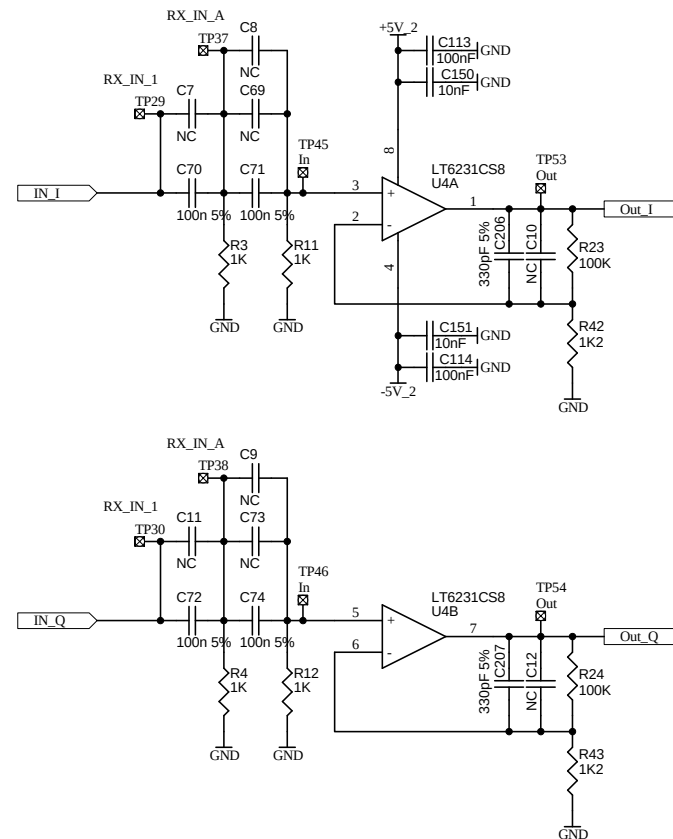




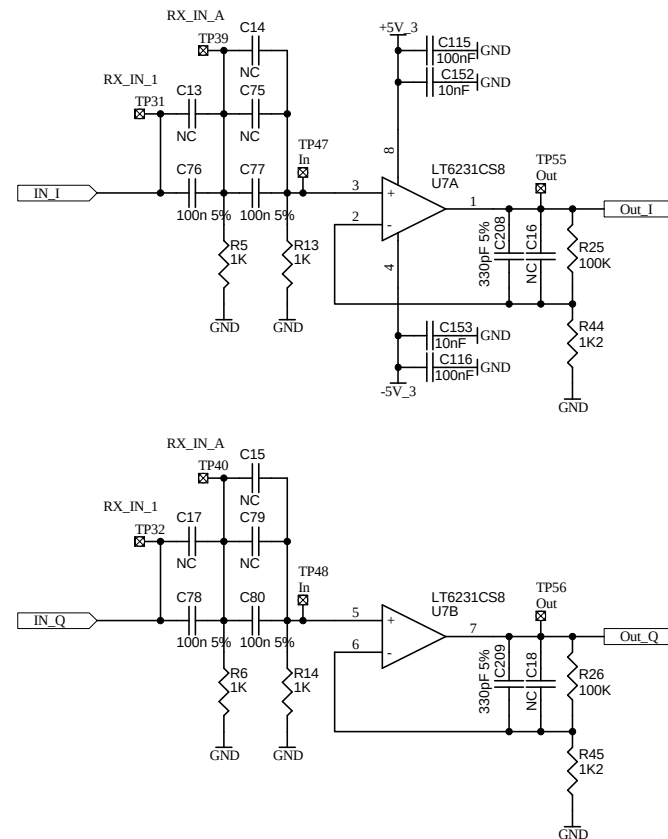
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Date	Sheet 11 of 11	



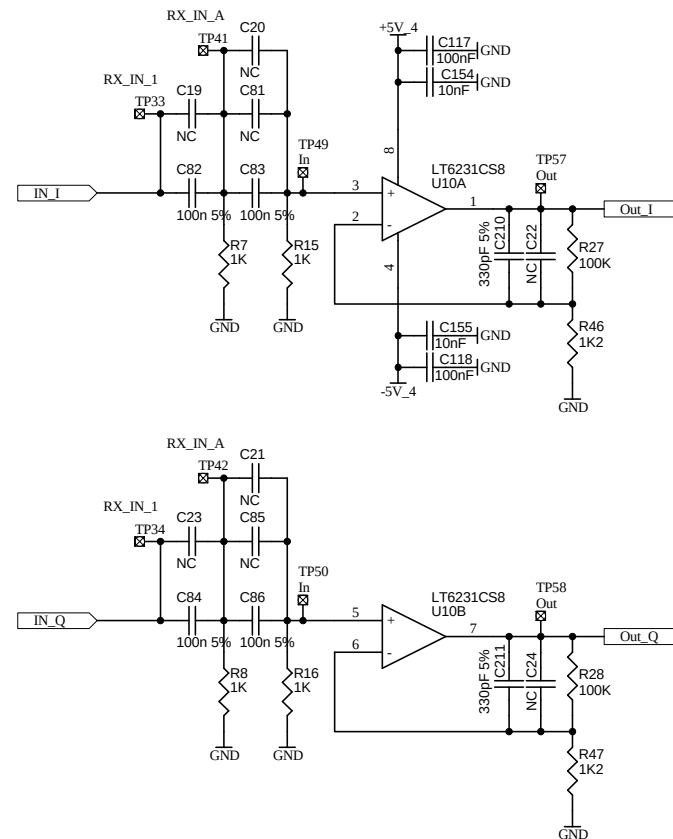
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Number: E30-Y1708 Revision: 1		Sheet 2 of 16	
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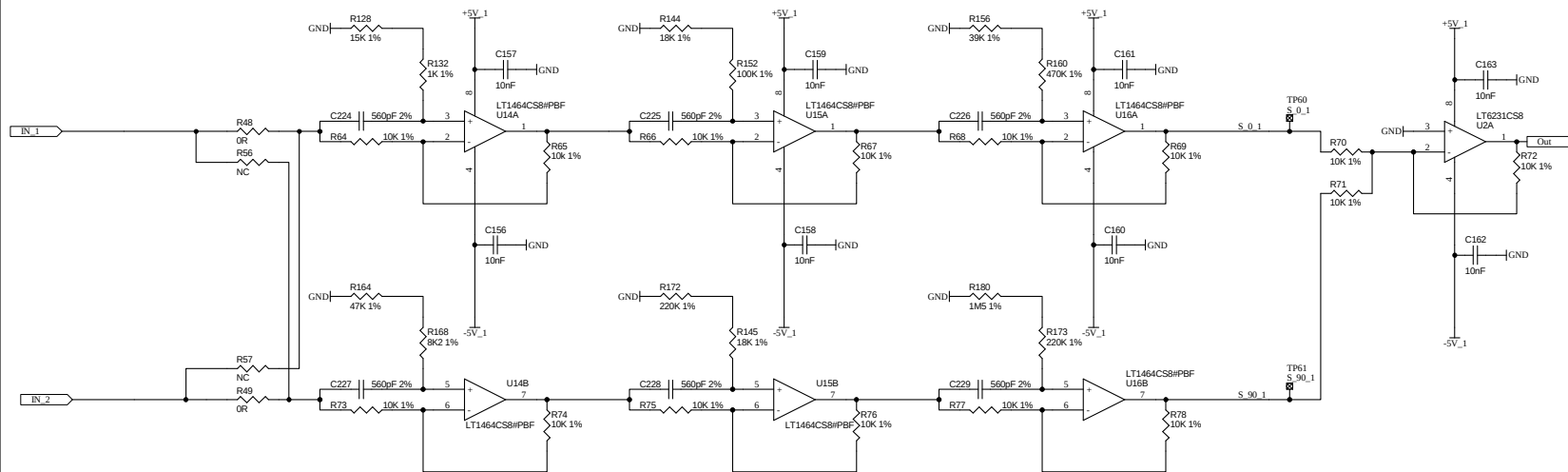
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Number: E30-Y1708	Revision: 1	Sheet 3 of 16	
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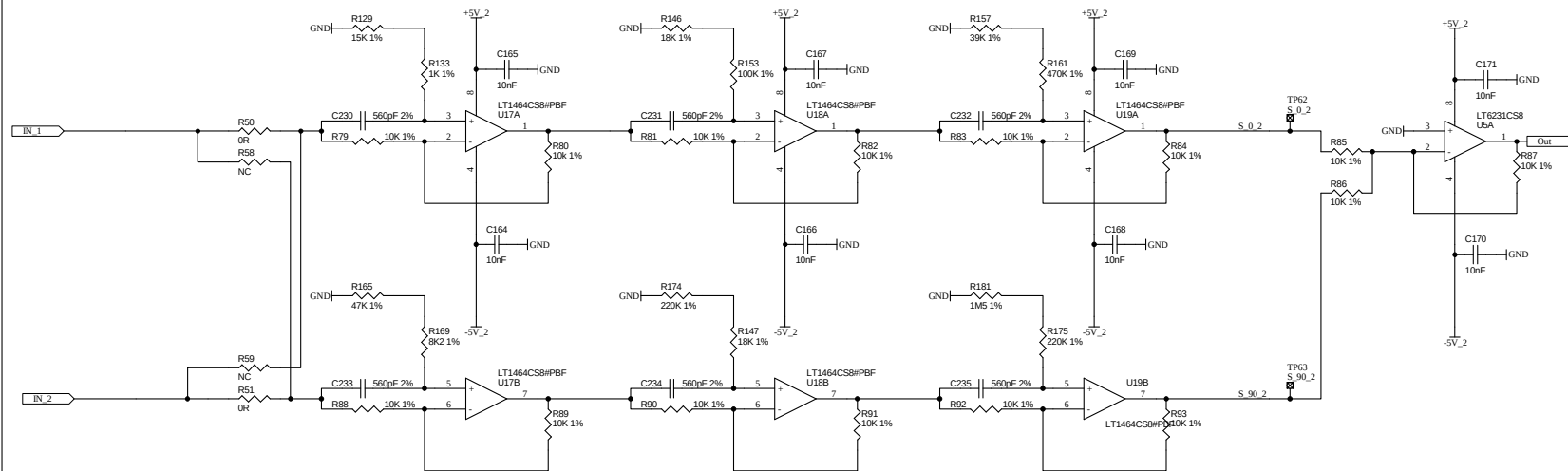


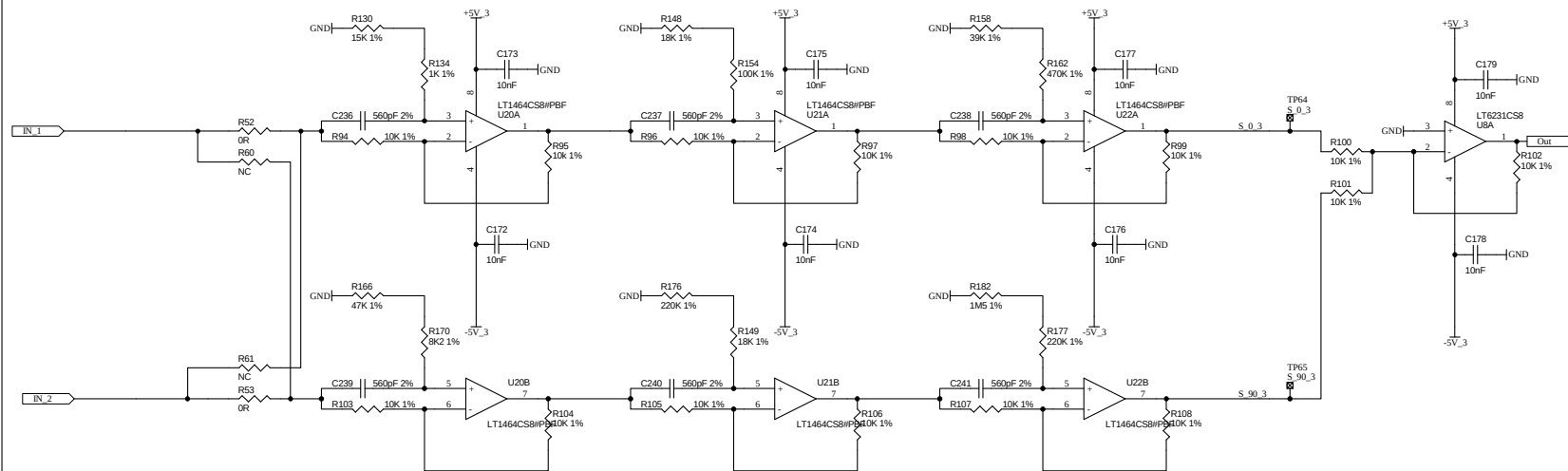
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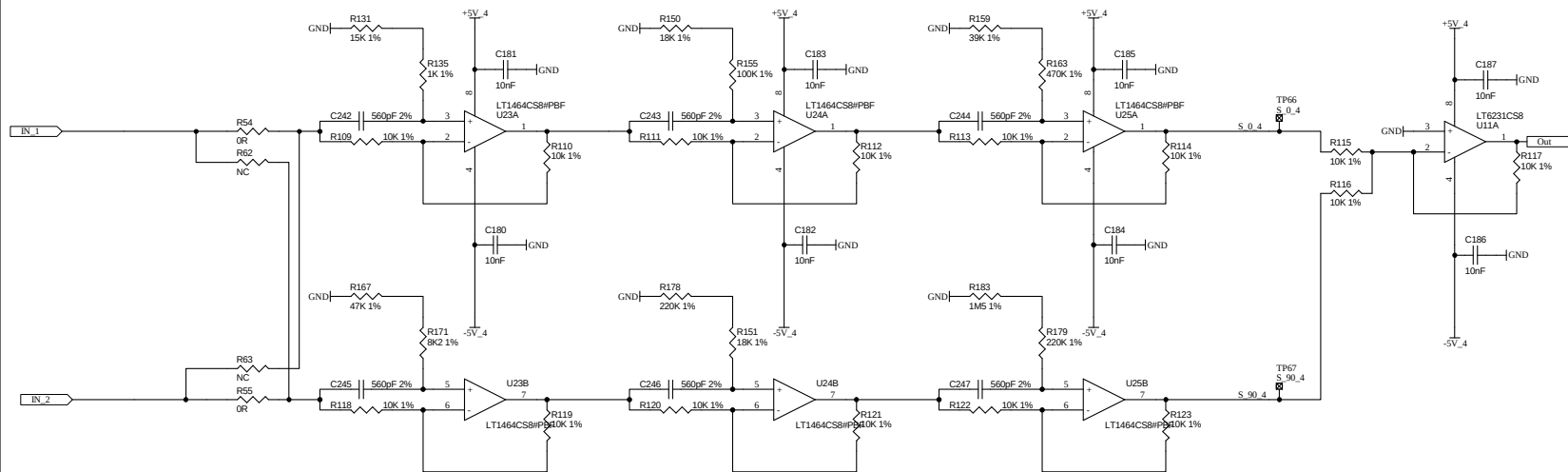


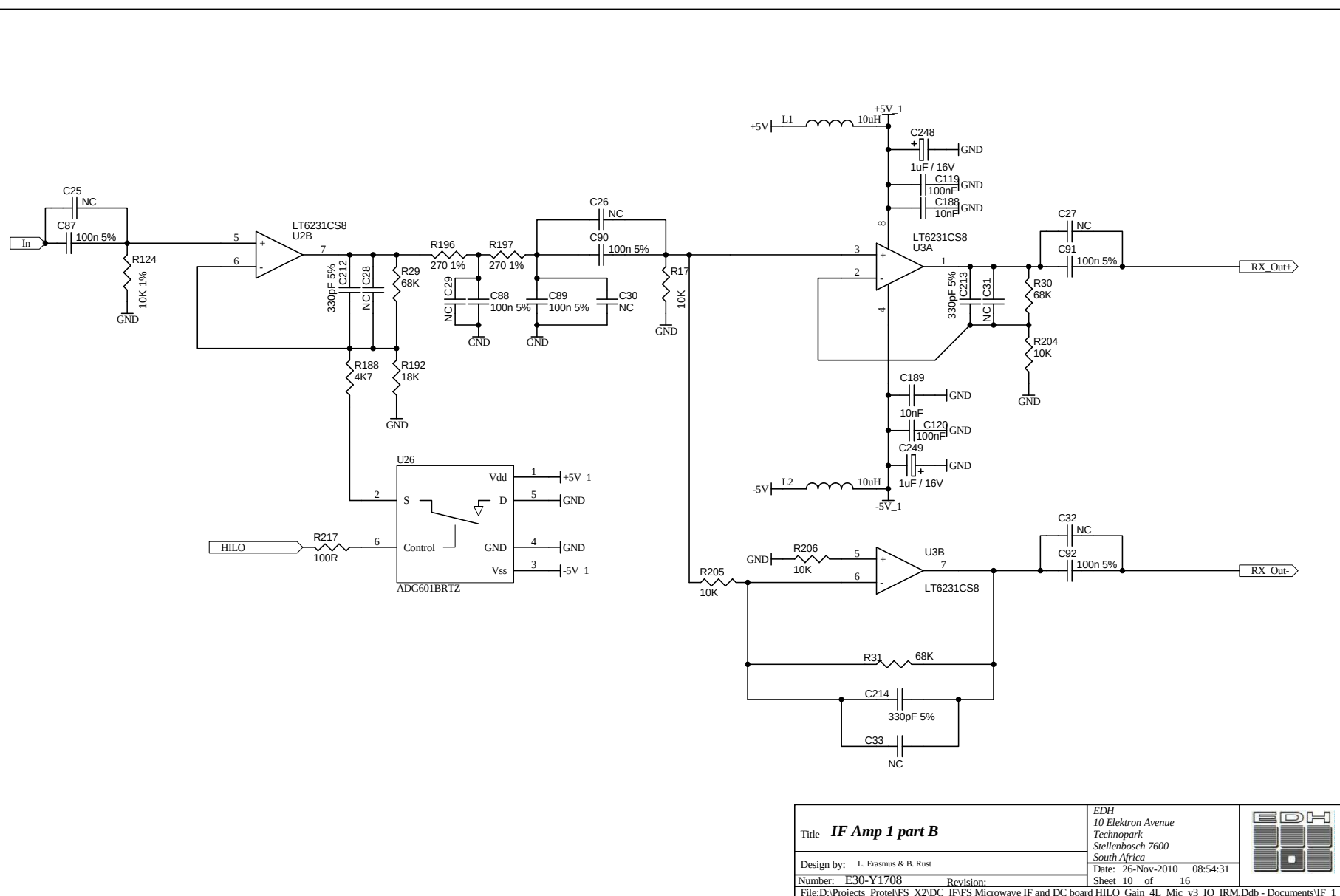
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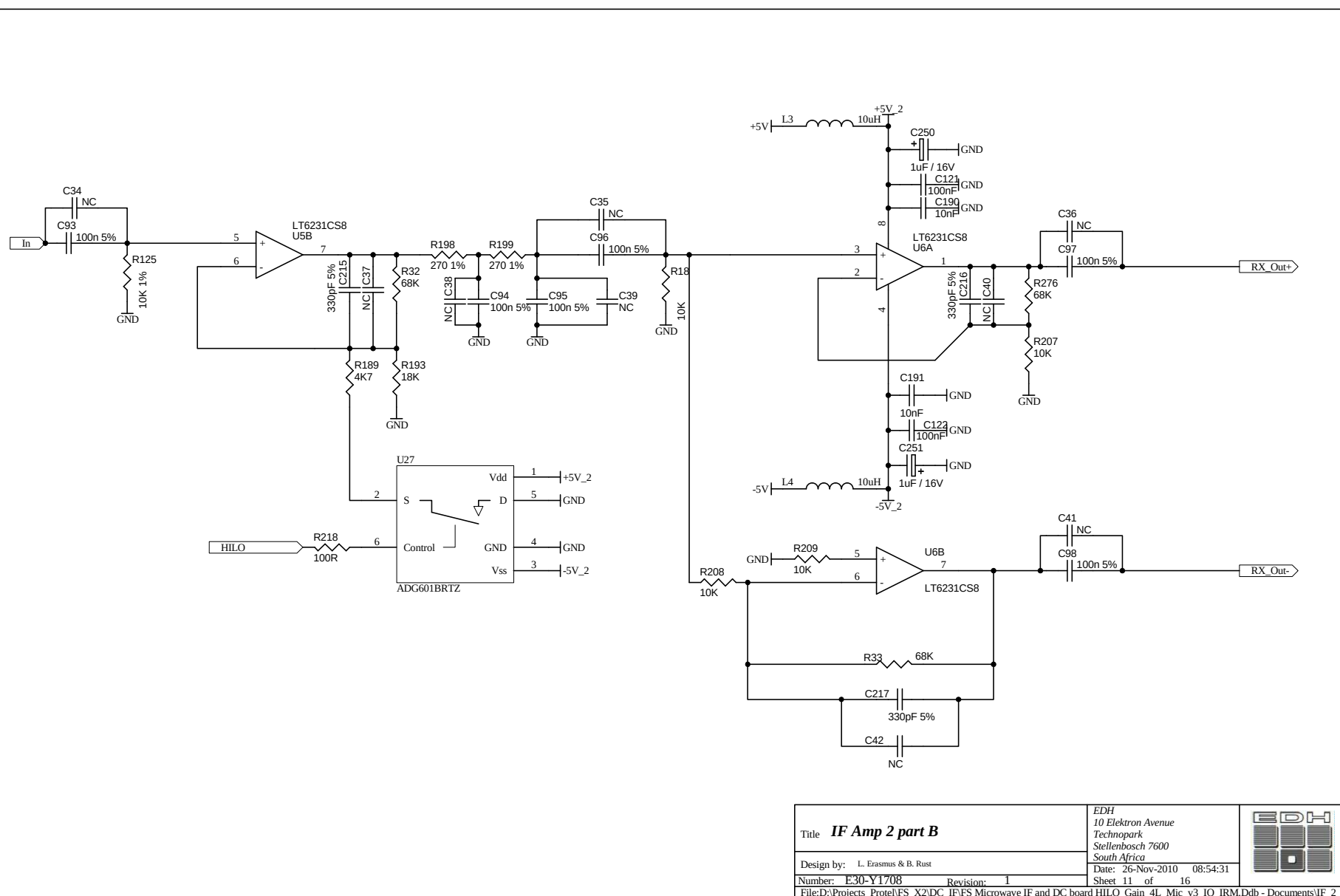


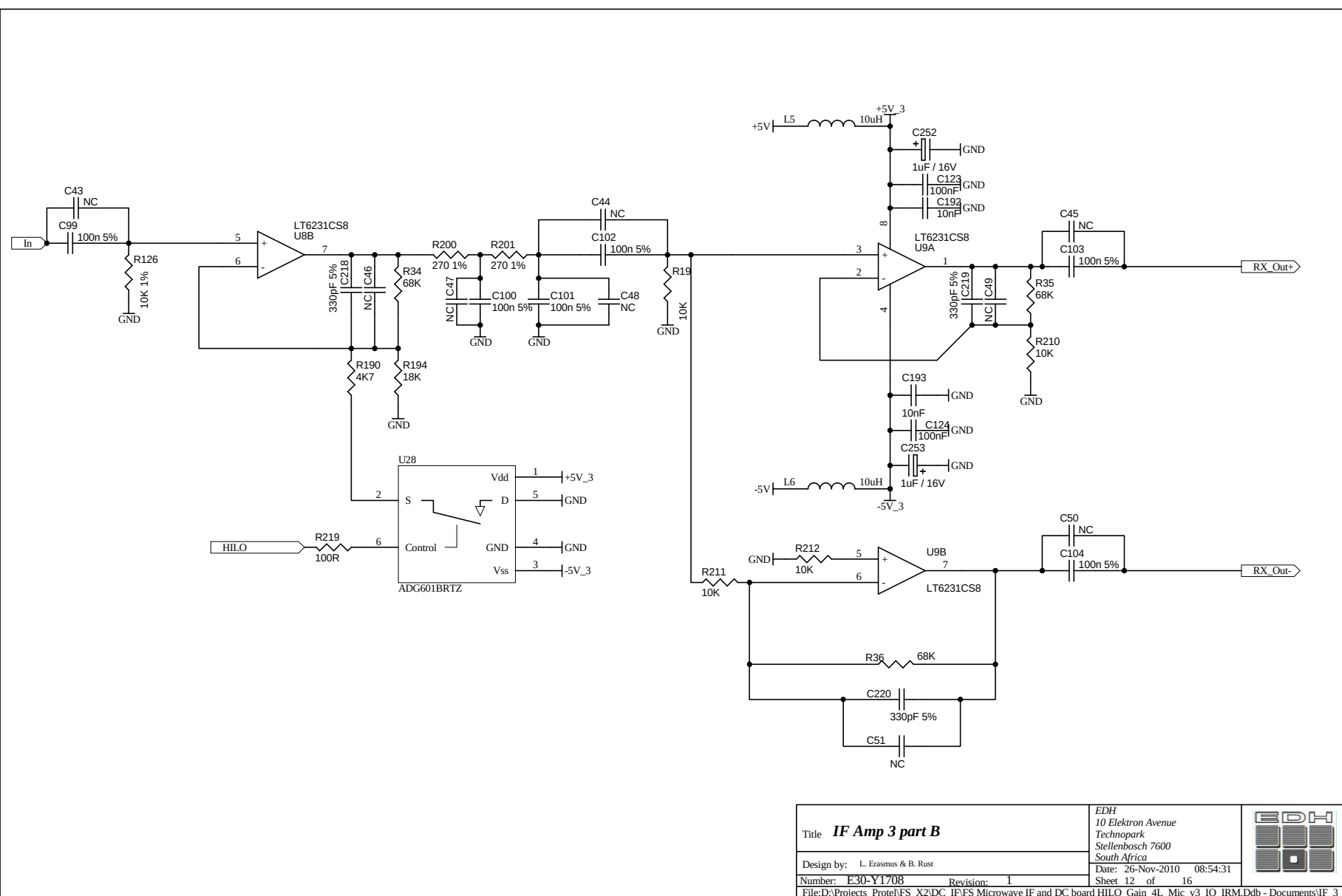


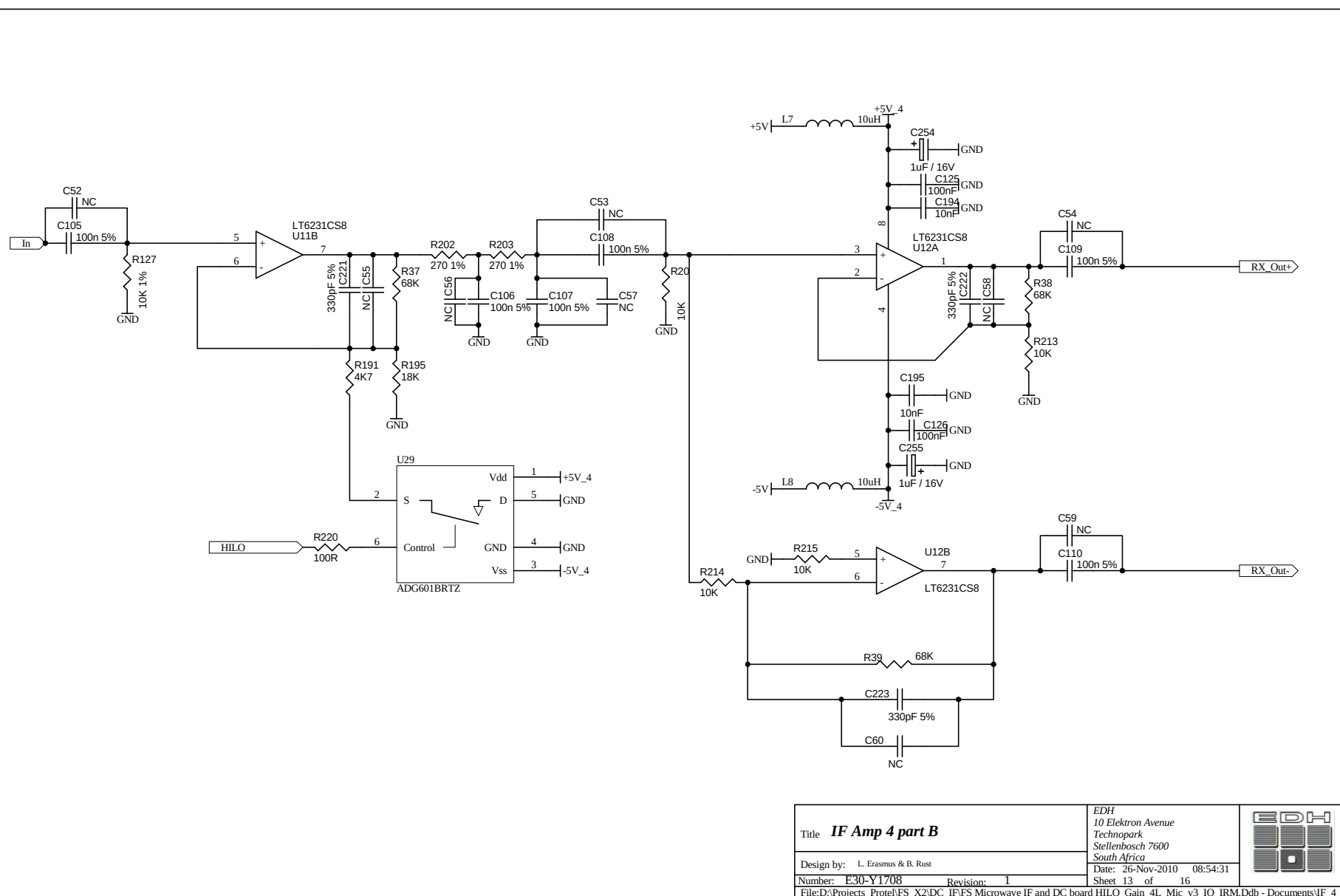


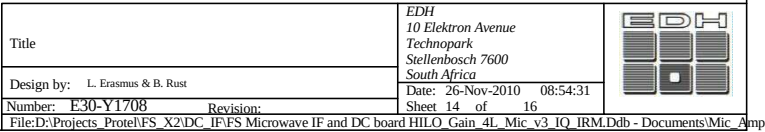


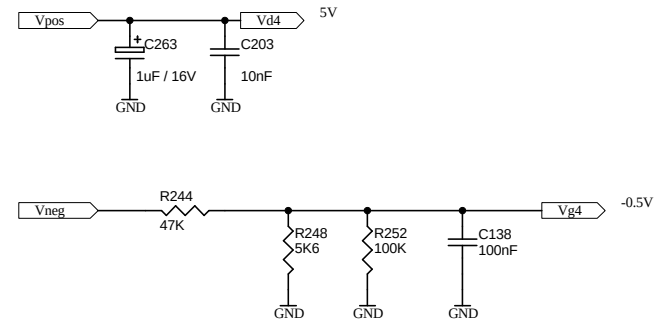
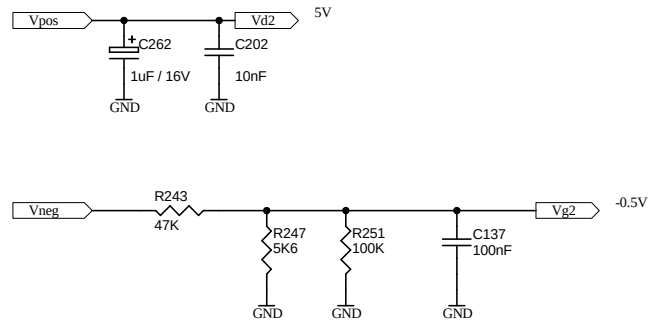
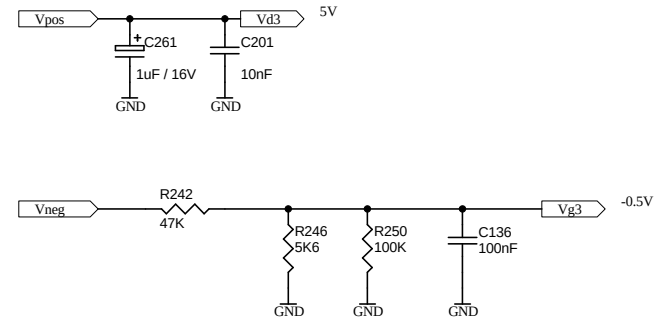
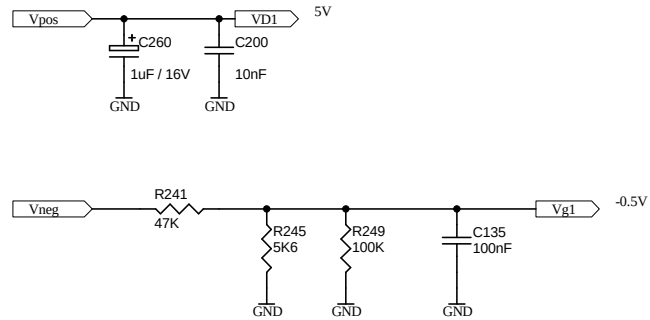




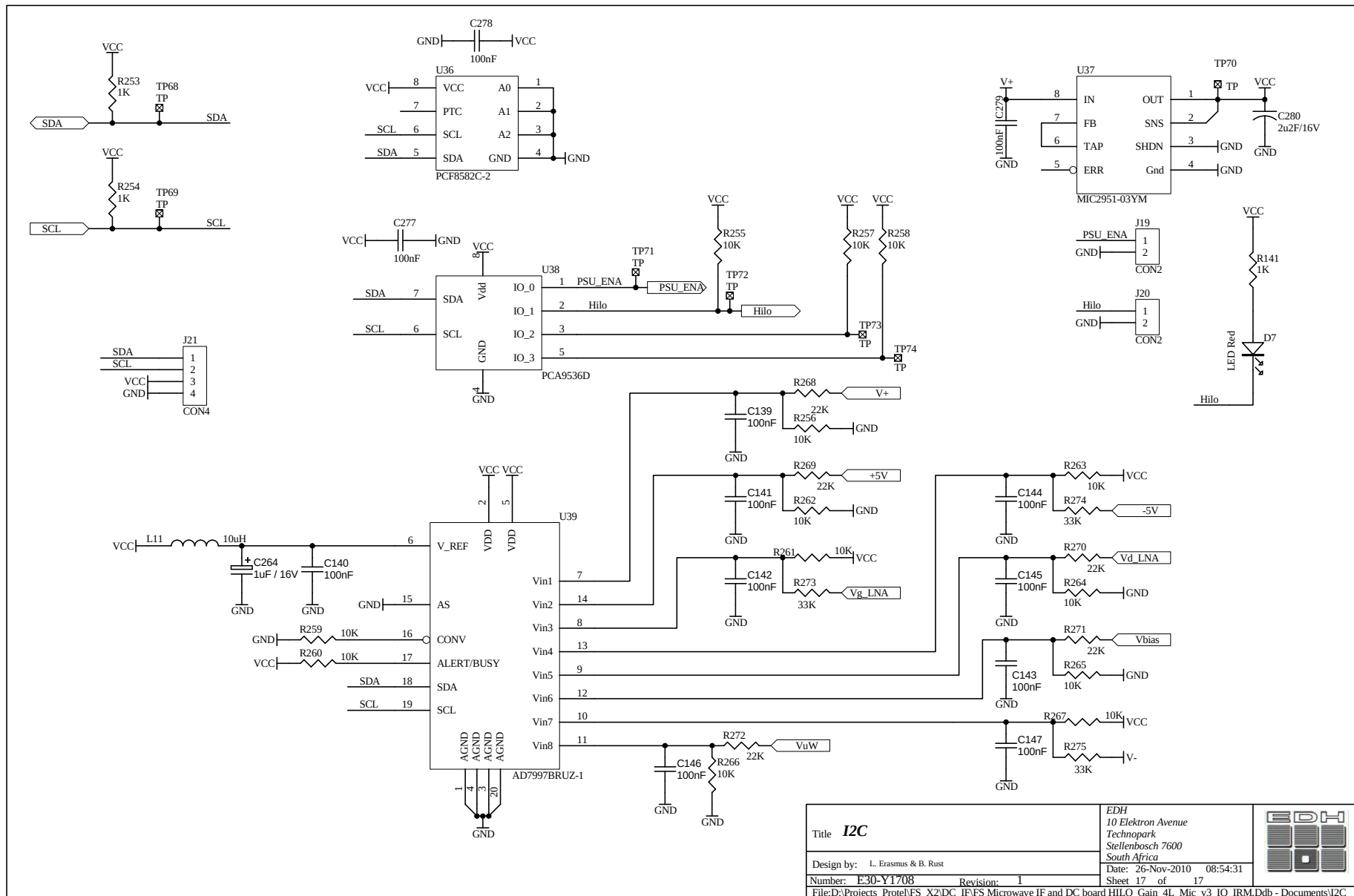




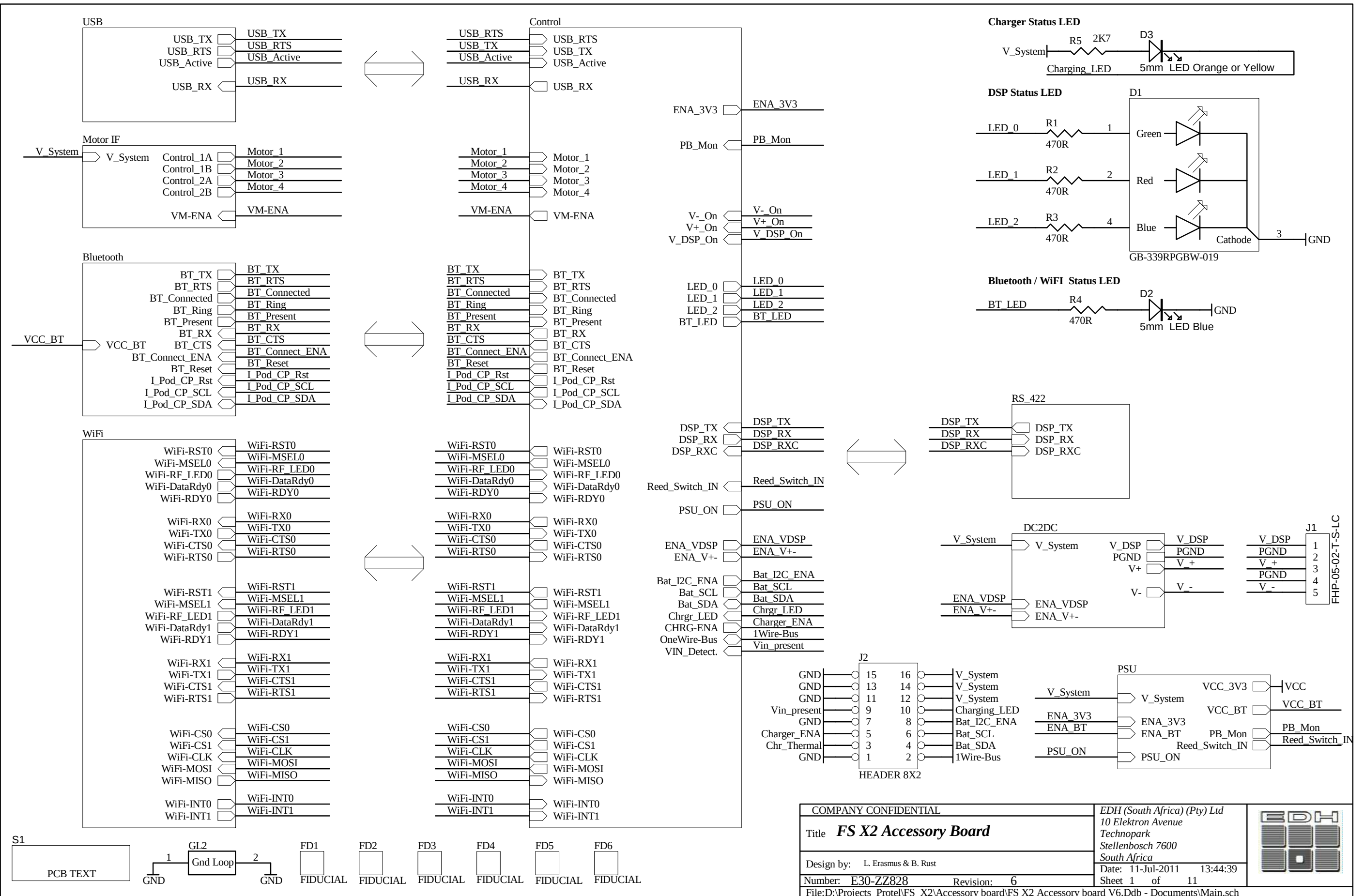


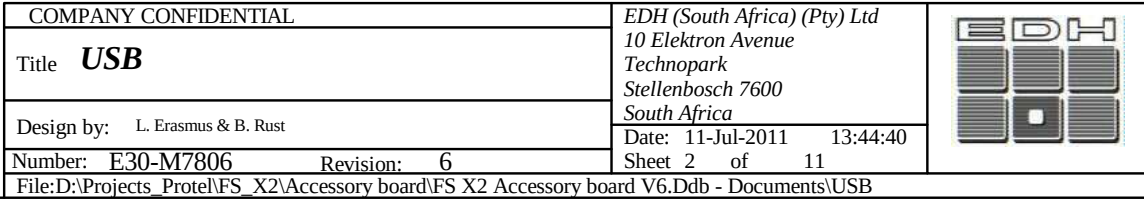


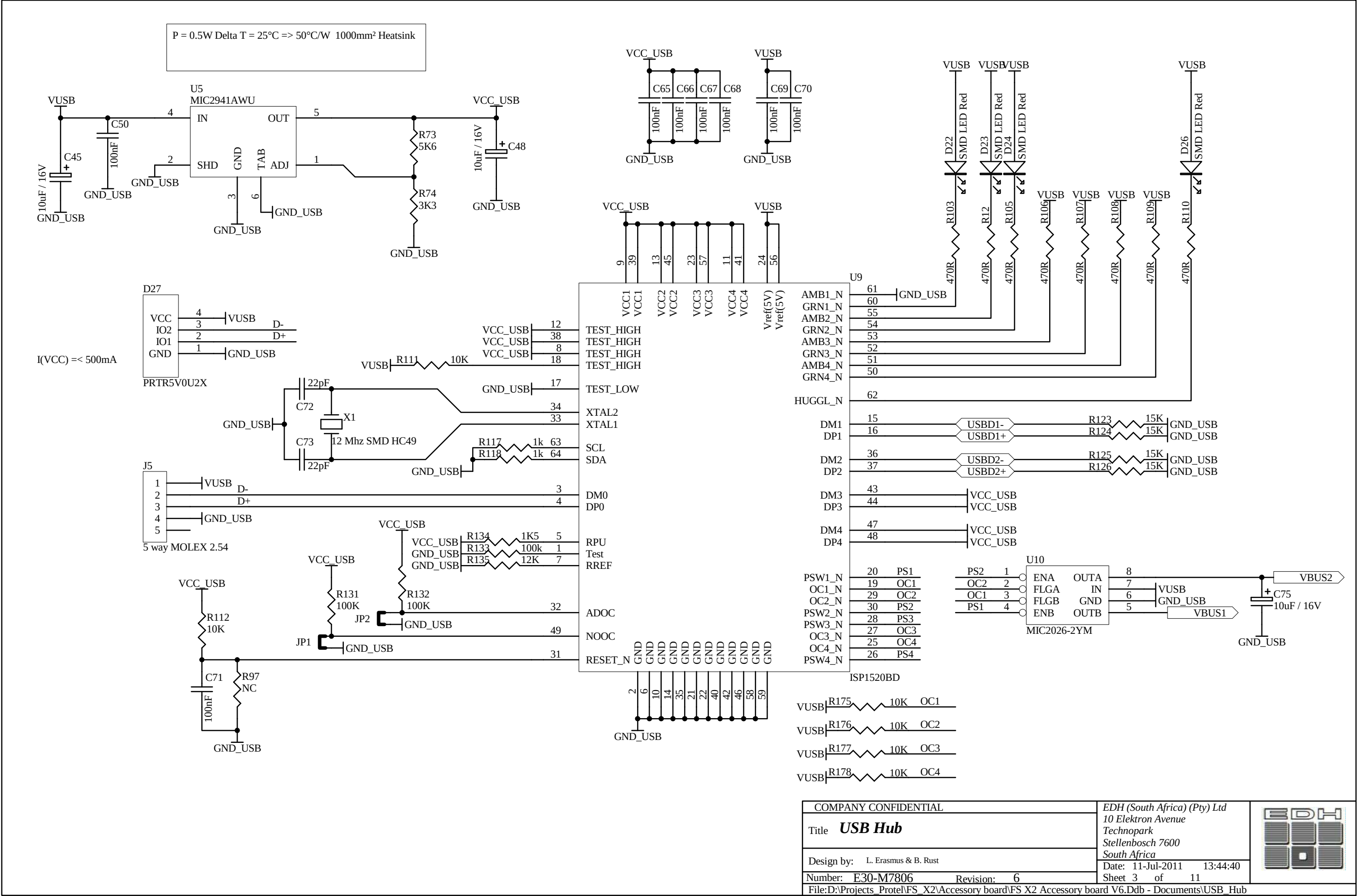
Title Microwave FET Bias		EDH 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa	
Design by: L. Erasmus & B. Rust		Date: 26-Nov-2010 08:54:31	
Number: E30-Y1708	Revision: 1	Sheet 16 of 17	
File:D:\Projects_Prote\IFS_X2\DC_IF\FS Microwave IF and DC board HILO_Gain_4L_Mic_v3_IQ_IRM.Ddb - Documents\MosfetBias			



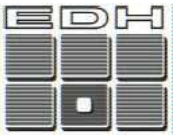
Title I2C		EDH 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa	
Design by: L. Erasmus & B. Rust		Date: 26-Nov-2010 08:54:31	
Number: E30-Y1708	Revision: 1	Sheet 17 of 17	
File:D:\Projects_Prote\IFS_X2\DC_IFS\FS Microwave IF and DC board HILO_Gain_4L_Mic_v3_IQ_IRM.Ddb - Documents\I2C			

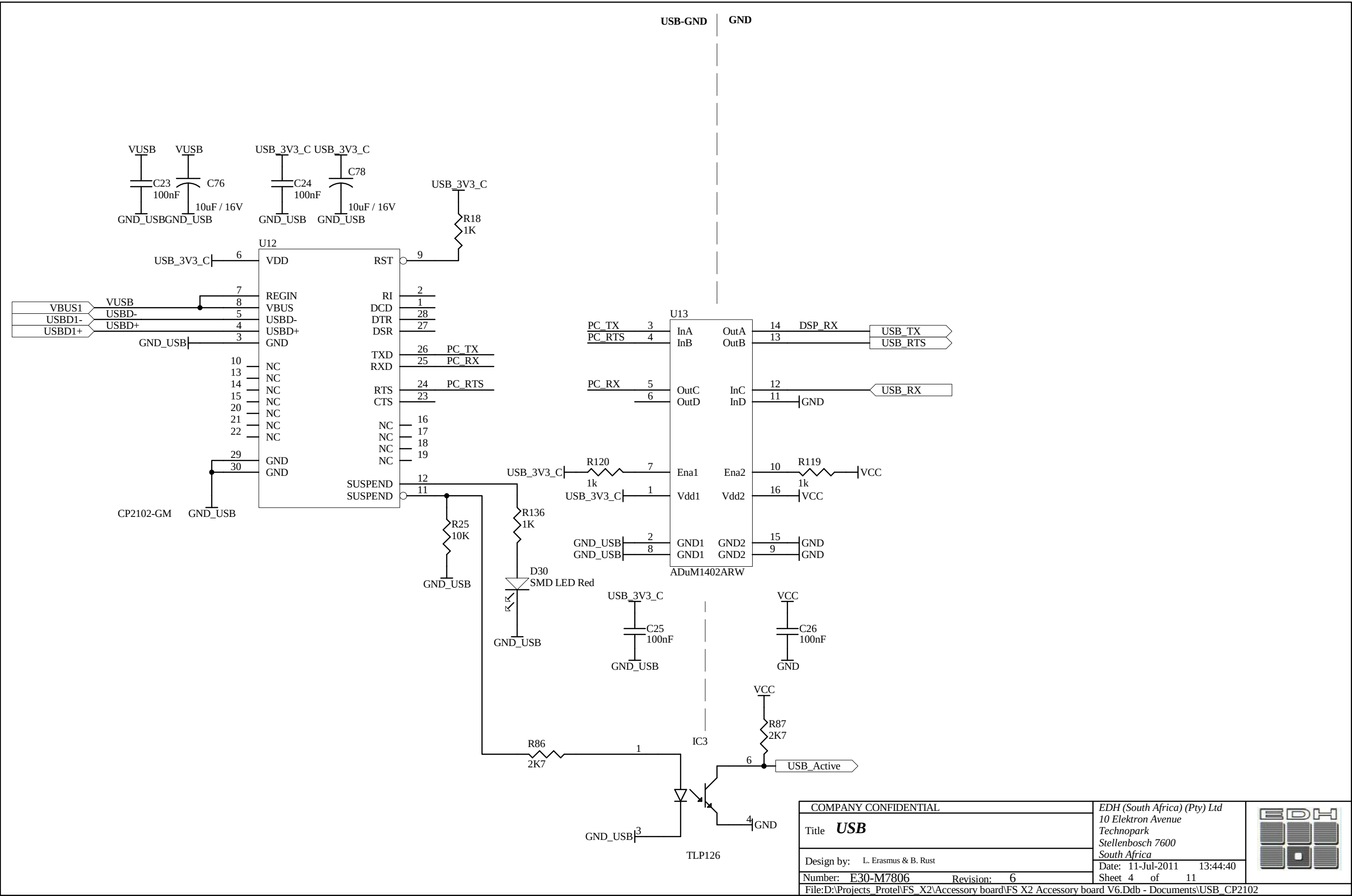




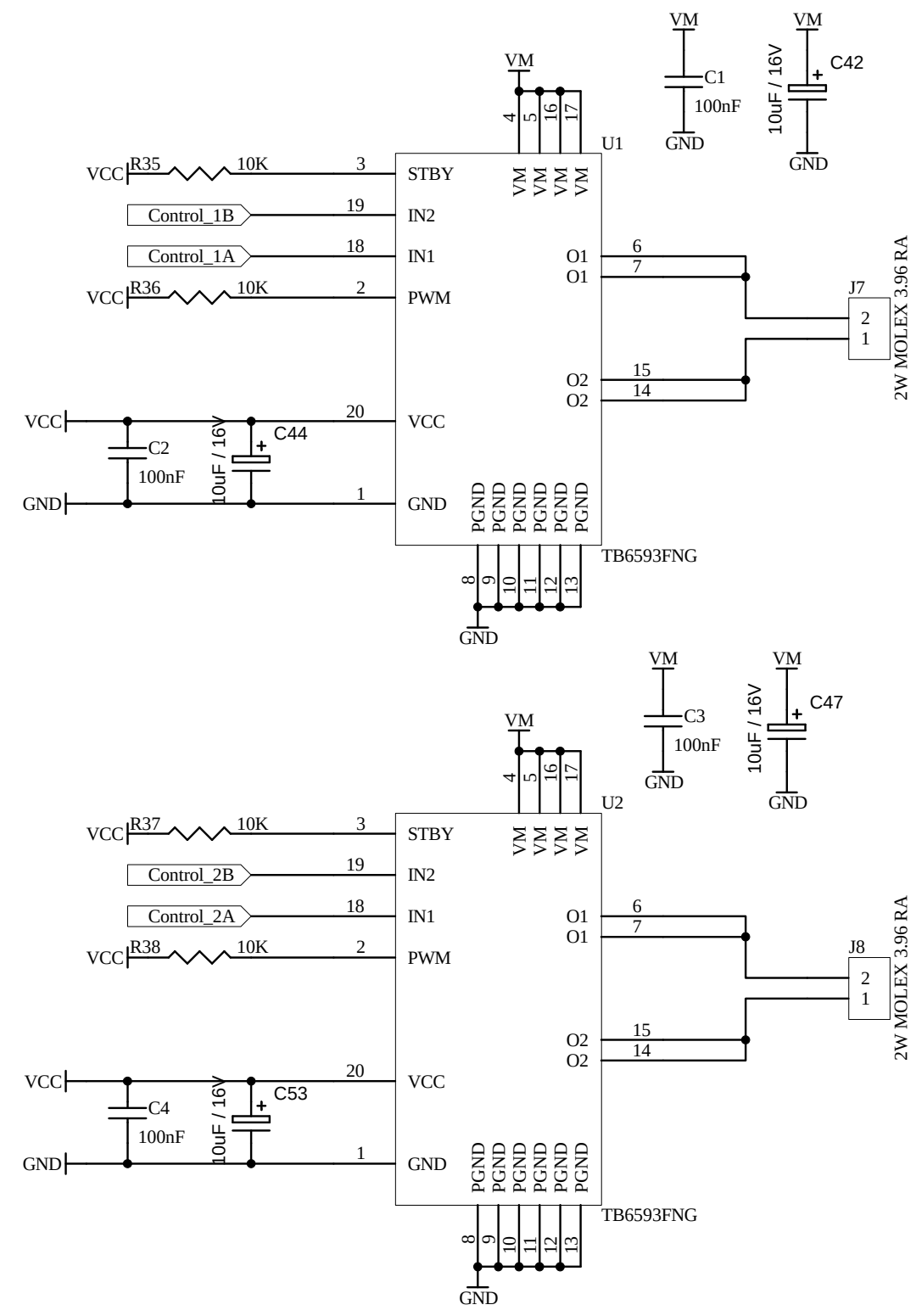
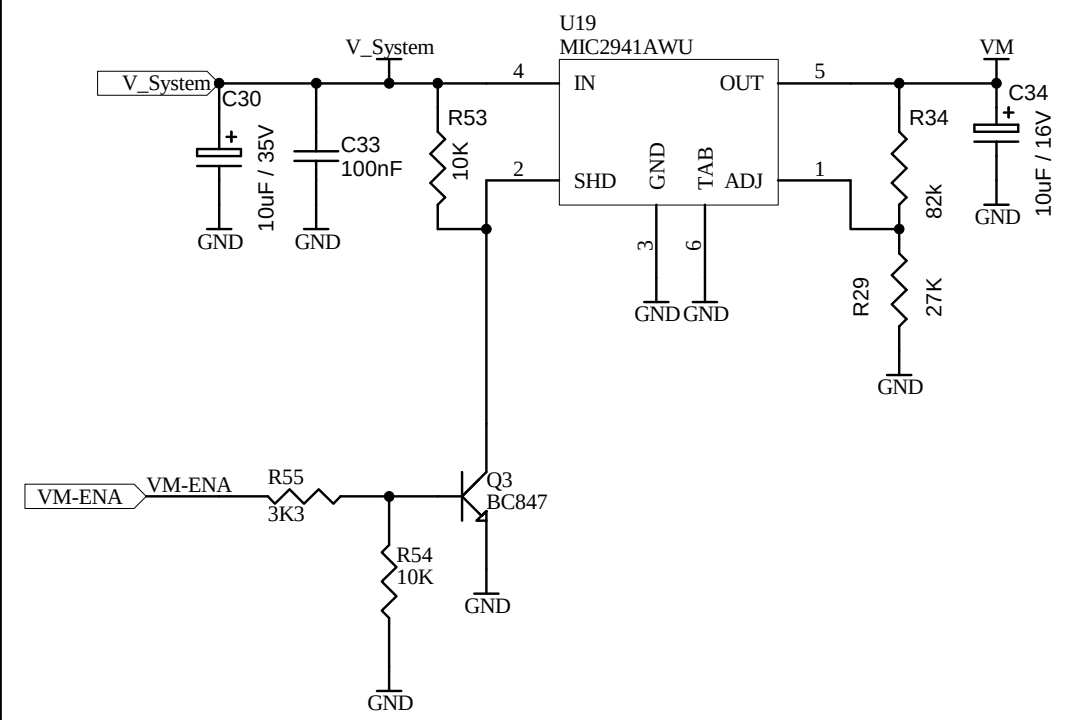


COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd	
Title USB Hub		10 Elektron Avenue Technopark Stellenbosch 7600 South Africa	
Design by: L. Erasmus & B. Rust		Date: 11-Jul-2011 13:44:40	
Number: E30-M7806		Revision: 6	
File:D:\Projects_Prote\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\USB_Hub		Sheet 3 of 11	

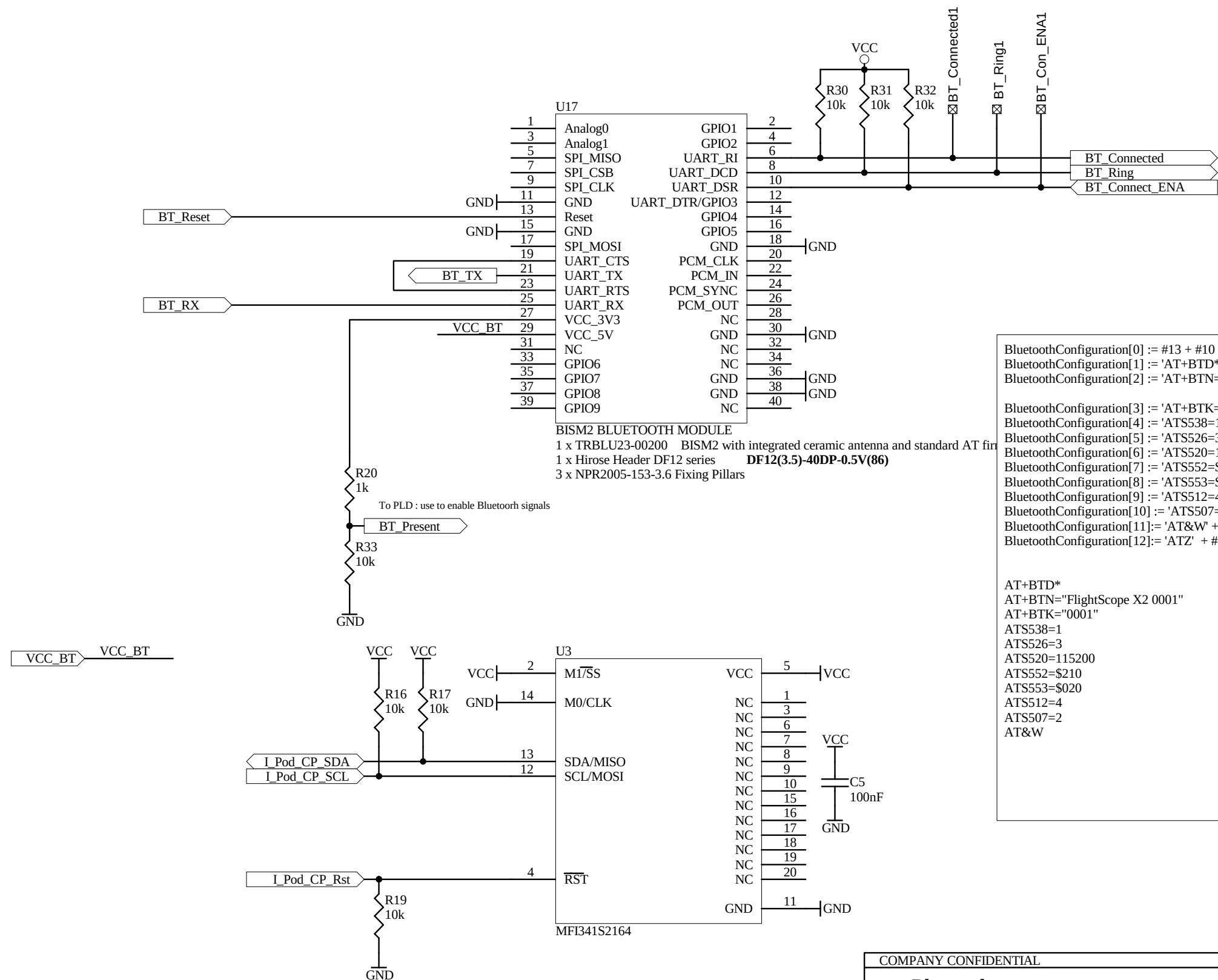




COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd		
Title USB		10 Elektron Avenue		
Design by: L. Erasmus & B. Rust		Technopark		
Number: E30-M7806		Revision: 6		
File:D:\Projects_Prote\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\USB_CP2102		Date: 11-Jul-2011 13:44:40		
		Sheet 4 of 11		



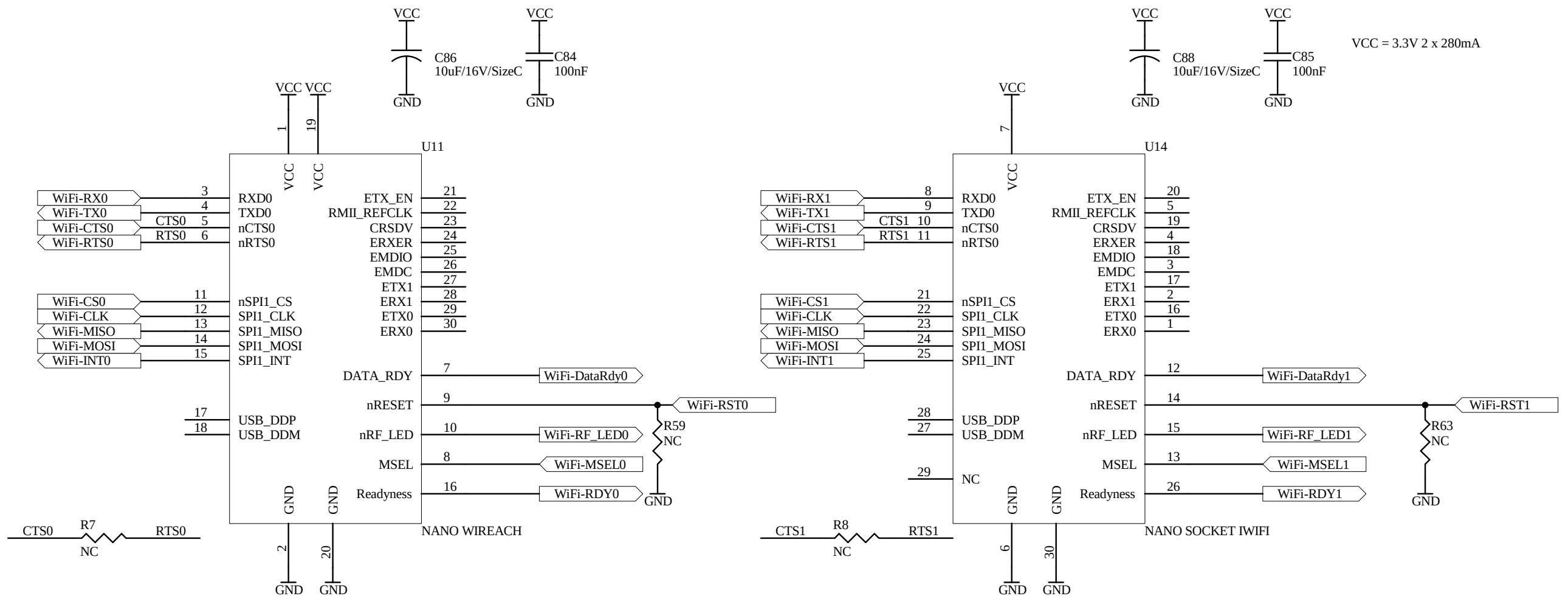
COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa Date: 11-Jul-2011 13:44:40 Sheet 5 of 11 
Title Motor Interface		
Design by: L. Erasmus & B. Rust		
Number: Revision: 6		
File:D:\Projects_Protel\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\Motor IF		



```
BluetoothConfiguration[0] := #13 + #10 + 'ATi4' + #13 + #10;  
BluetoothConfiguration[1] := 'AT+BTd*' + #13 + #10; //clear all trusted devices  
BluetoothConfiguration[2] := 'AT+BTn="" + Edit2.Text + "" + #13 + #10; //Name  
  
BluetoothConfiguration[3] := 'AT+BTK="EDH2009"' + #13 + #10; //Passkey  
BluetoothConfiguration[4] := 'ATS538=1' + #13 + #10; //remember pairing info  
BluetoothConfiguration[5] := 'ATS526=3' + #13 + #10;  
BluetoothConfiguration[6] := 'ATS520=115200' + #13 + #10;  
BluetoothConfiguration[7] := 'ATS552=$210' + #13 + #10;  
BluetoothConfiguration[8] := 'ATS553=$020' + #13 + #10;  
BluetoothConfiguration[9] := 'ATS512=4' + #13 + #10;  
BluetoothConfiguration[10] := 'ATS507=2' + #13 + #10;  
BluetoothConfiguration[11] := 'AT&W' + #13 + #10;  
BluetoothConfiguration[12] := 'ATZ' + #13 + #10;
```

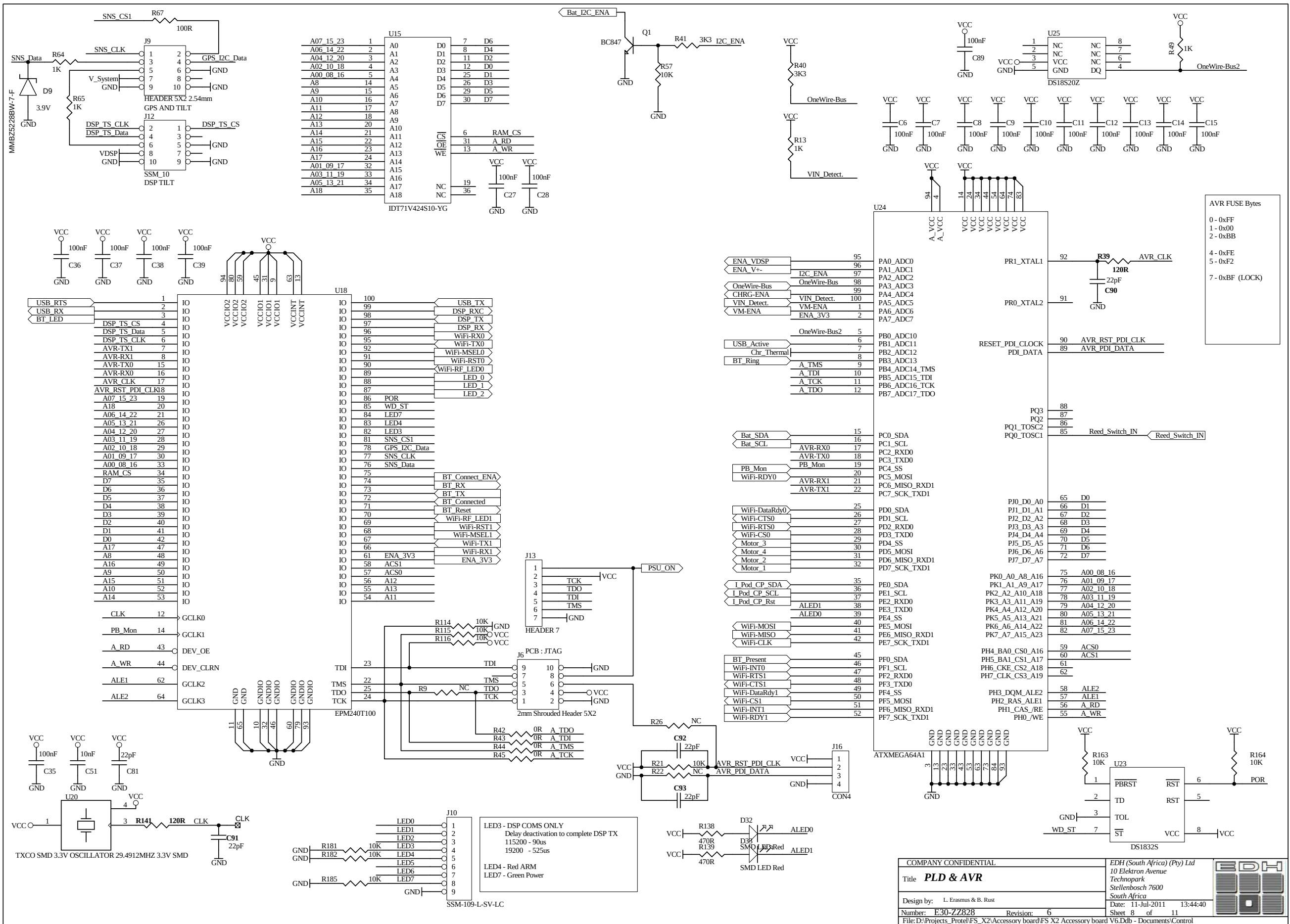
```
AT+BTd*  
AT+BTn="FlightScope X2 0001"  
AT+BTK="0001"  
ATS538=1  
ATS526=3  
ATS520=115200  
ATS552=$210  
ATS553=$020  
ATS512=4  
ATS507=2  
AT&W
```

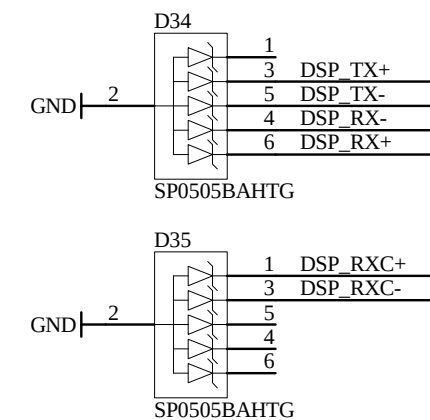
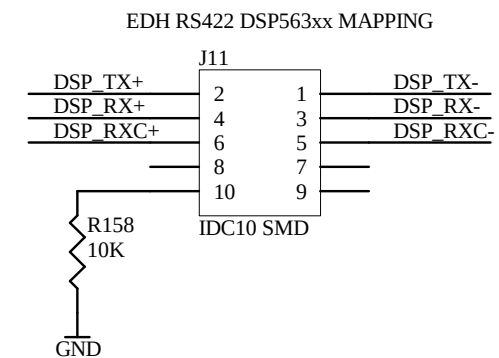
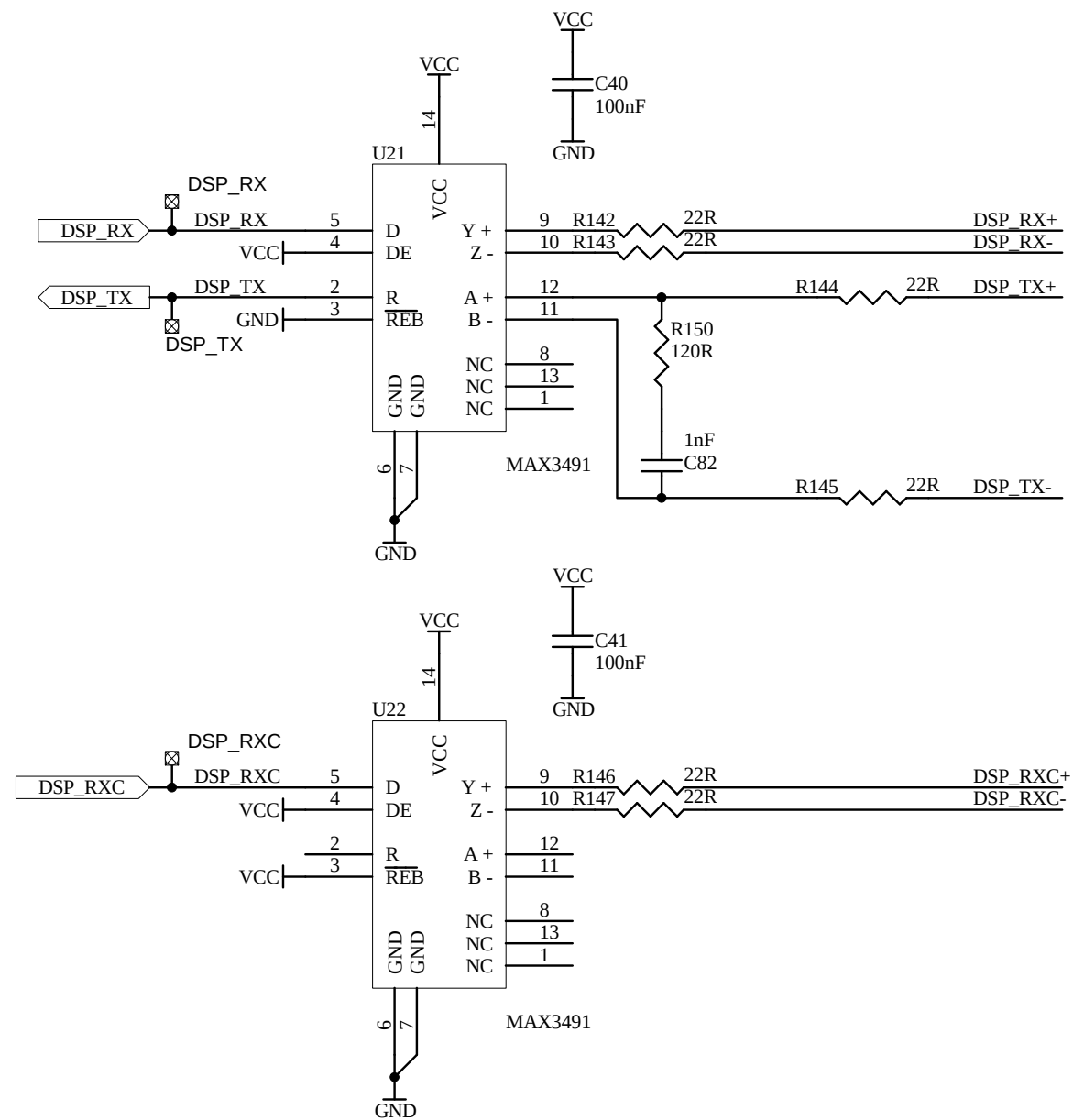
COMPANY CONFIDENTIAL		EDH EDH (South Africa) (Pty) Ltd 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa Date: 11-Jul-2011 13:44:40 Sheet 6 of 11
Title Bluetooth		
Design by: L. Erasmus & B. Rust		
Number: E30-M7806 Revision: 6		
File:D:\Projects_Prote\F_S_X2\Accessory board\F_S X2 Accessory board V6.Ddb - Documents\Bluetooth		



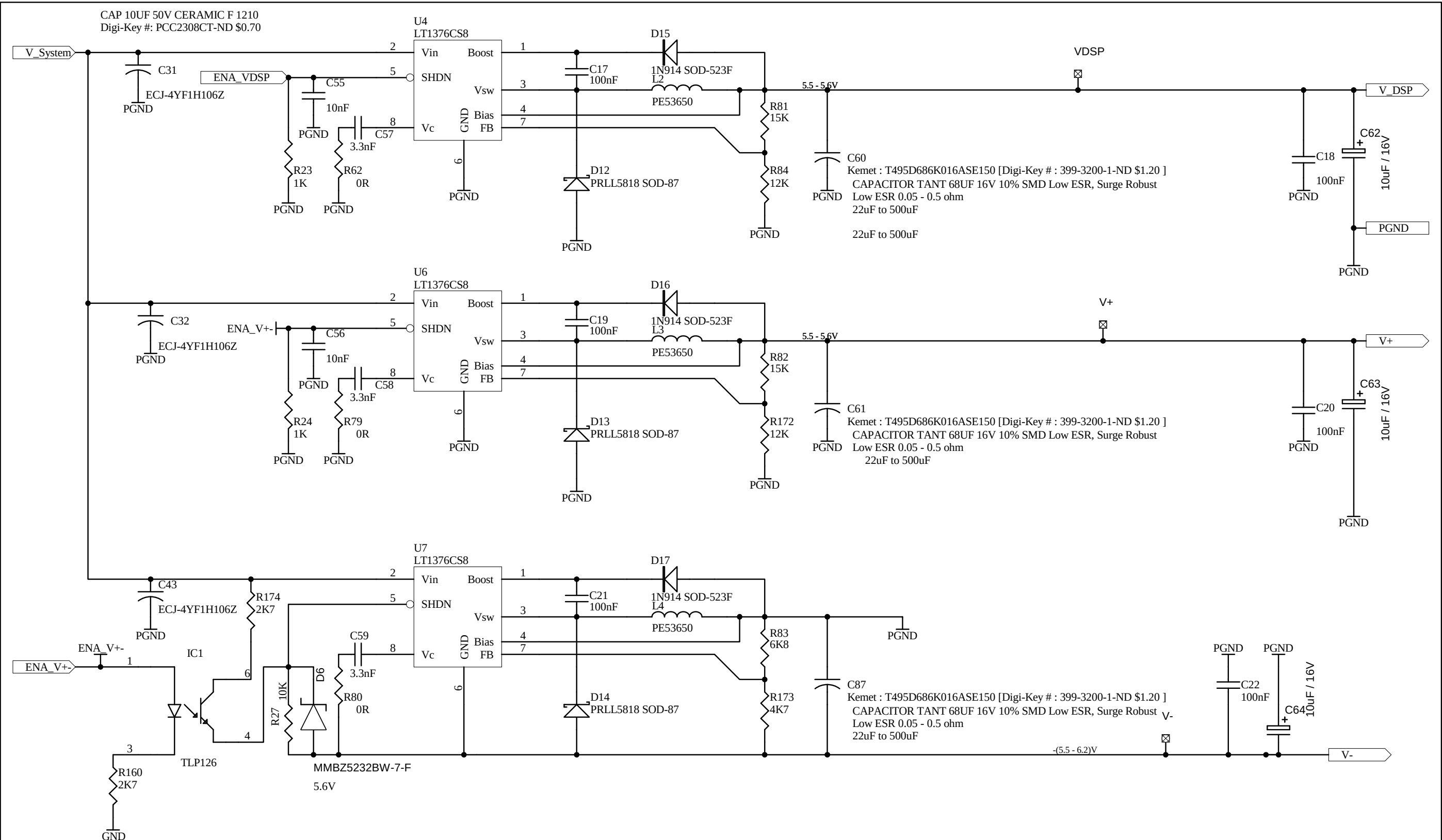
AT+iFD	(restore to factory defaults, start fresh)
AT+iHIF=1	(set the serial interface to RS232)
AT+iBDRF=9	(fix baud rate to 115200 after power cycle)
AT+iWLCH=3	(choose the desired WiFi channel)
AT+iWST0=0	(no encryption; note that WEP can be used)
AT+iWLSI=!FS X2 0001b	(sets SSID - '!' Denotes ad-hoc)
AT+iDIP=192.168.2.1	(set a fixed IP for the module)
AT+iDPSZ=5	(set DHCP pool size)
AT+iDSLTL=0	(set DHCP lease time)
AT+iDOWN	(reboot to apply settings Enable DHCP Server)
AT+iLPRT=5100	(listen port number)
AT+iFCHR=\xF1	(send with end char)
AT+iSNSI=9	(Baud rate will fix to 115200)
AT+iSNMD	
AT+iWST0=1	
AT+iWLWM=1	
AT+iWLK1=0000000006	

COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa	
Title WiFi			
Design by: L. Erasmus & B. Rust		Date: 11-Jul-2011 13:44:40	
Number: E30-ZZ828	Revision: 6	Sheet 7 of 11	
File:D:\Projects_Prote\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\WiFi			

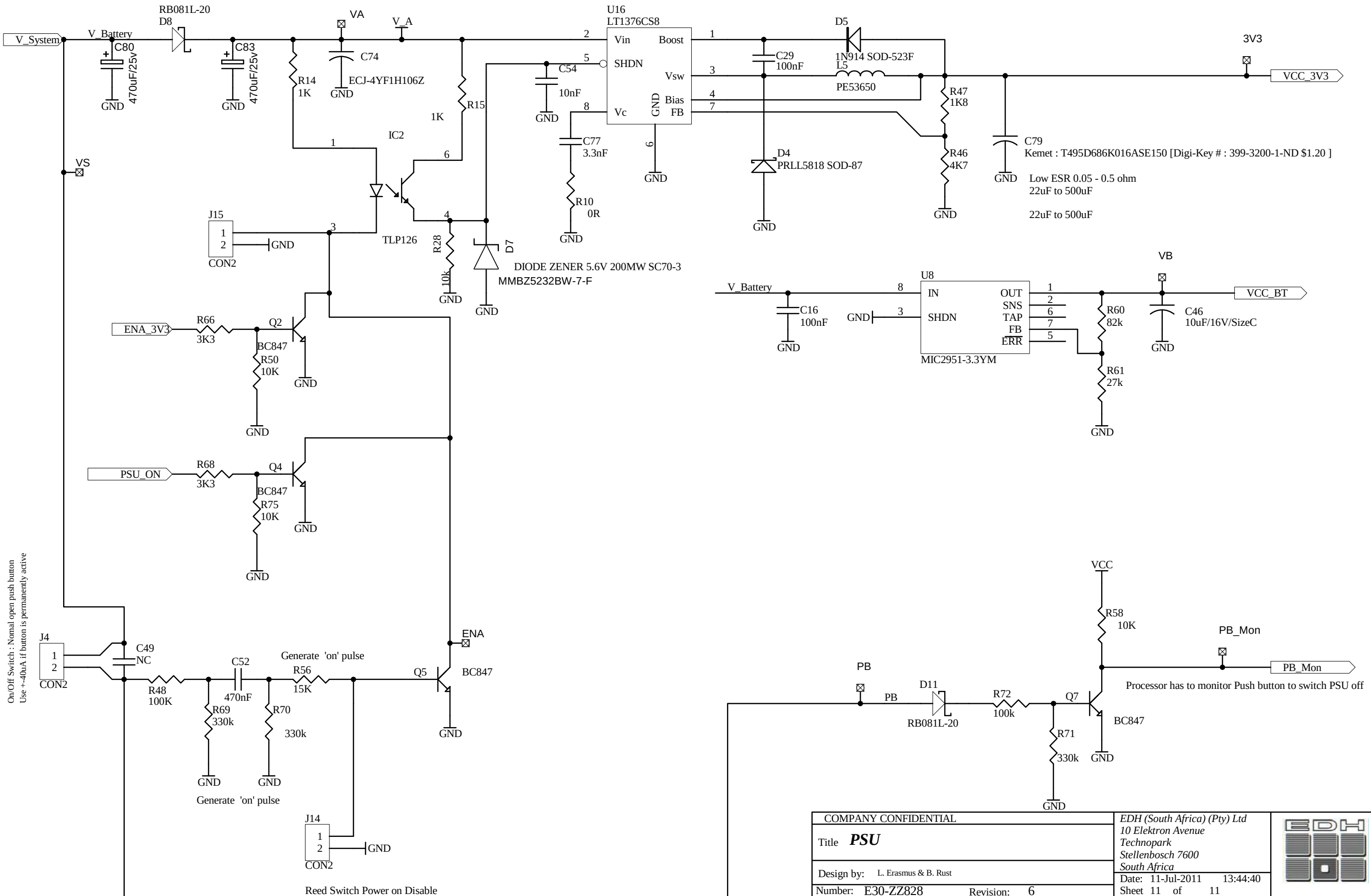




COMPANY CONFIDENTIAL		EDH 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa Date: 11-Jul-2011 13:44:40 Sheet 9 of 11 
Title RS 422		
Design by: L. Erasmus & B. Rust		
Number: E30-M7806	Revision: 6	
File:D:\Projects_Protel\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\RS_422		



COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd		
Title DC to DC converters		10 Elektron Avenue		
Design by: L. Erasmus & B. Rust		Technopark		
Number: E30-ZZ828		Stellenbosch 7600		
Revision: 6		South Africa		
		Date: 11-Jul-2011 13:44:40		
		Sheet 10 of 11		
File:D:\Projects_Prote\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\DC2DC				



COMPANY CONFIDENTIAL		EDH (South Africa) (Pty) Ltd 10 Elektron Avenue Technopark Stellenbosch 7600 South Africa		
Title PSU		Date: 11-Jul-2011 13:44:40		
Design by: L. Erasmus & B. Rust		Sheet 11 of 11		
Number: E30-ZZ828 Revision: 6				
File:D:\Projects_Prote\FS_X2\Accessory board\FS X2 Accessory board V6.Ddb - Documents\PSU				