

SH	REV.
1	REV. B

## REVISION HISTORY

REV	DATE	AUTHOR	CHANGES
1.0	12 JULY 2011	Vijay	TEST PADS ADDED
1.0	13 JULY 2011	Vijay	Comments implemented & Chasis GND added
2.0	19 Sep 2011	Vijay	Out LED connection is changed, footprint errors corrected EBUS termination resistor placement is optimised
3.0	15 Feb 2012	Vijay	reduced Hot swap current limit from 5A to 3A moved net LINK_MII[0] from U6.26 to U6.27 moved net LINK_MII[2]_6 from U19.26 to U19.27 flipped magnetics(T1) connections replaced mux IC U3(ADG774A,VFQFN) with ADG774BRZ,SOIC-16 changed crystals to industrial temperature grade ones input supply lines are fused
A	24 Sep 2012	Vijay	Loadsharing,supply monitoring circuits added 3.3V,2.5V regulator changed,phy corrected,MPC5534 added
B	12 Mar 2013	Muthuvelu.D	Changed push button part number

APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013		4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013		TITLE			
ENGINEER Vijaya Gandhi		SIZE C	DWG. NO. 18-600300-001	SHEET 1 of 17		PROD. REV.	
			FILE IES_Rev-B.sch	SCALE <Scale>		REV_B	

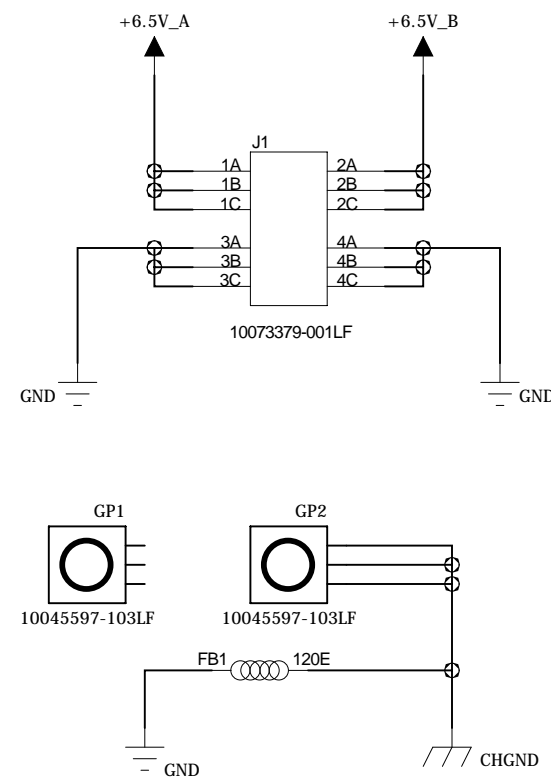
APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION				
DRAWN Vijaya Gandhi		12 March 2013		4725 121st Street - Des Moines, Iowa 50323				
CHECKED Manju Reddy		12 March 2013		BLOCK_DIAGRAM				
ENGINEER  Vijaya Gandhi		SIZE <b>C</b>	DWG. NO.  FILE	18-600300-001  IES_Rev-B.sch		SHEET  SCALE	2 of 17  <Scale>	PROD. REV.

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DWG. NO.  
18-600300-001

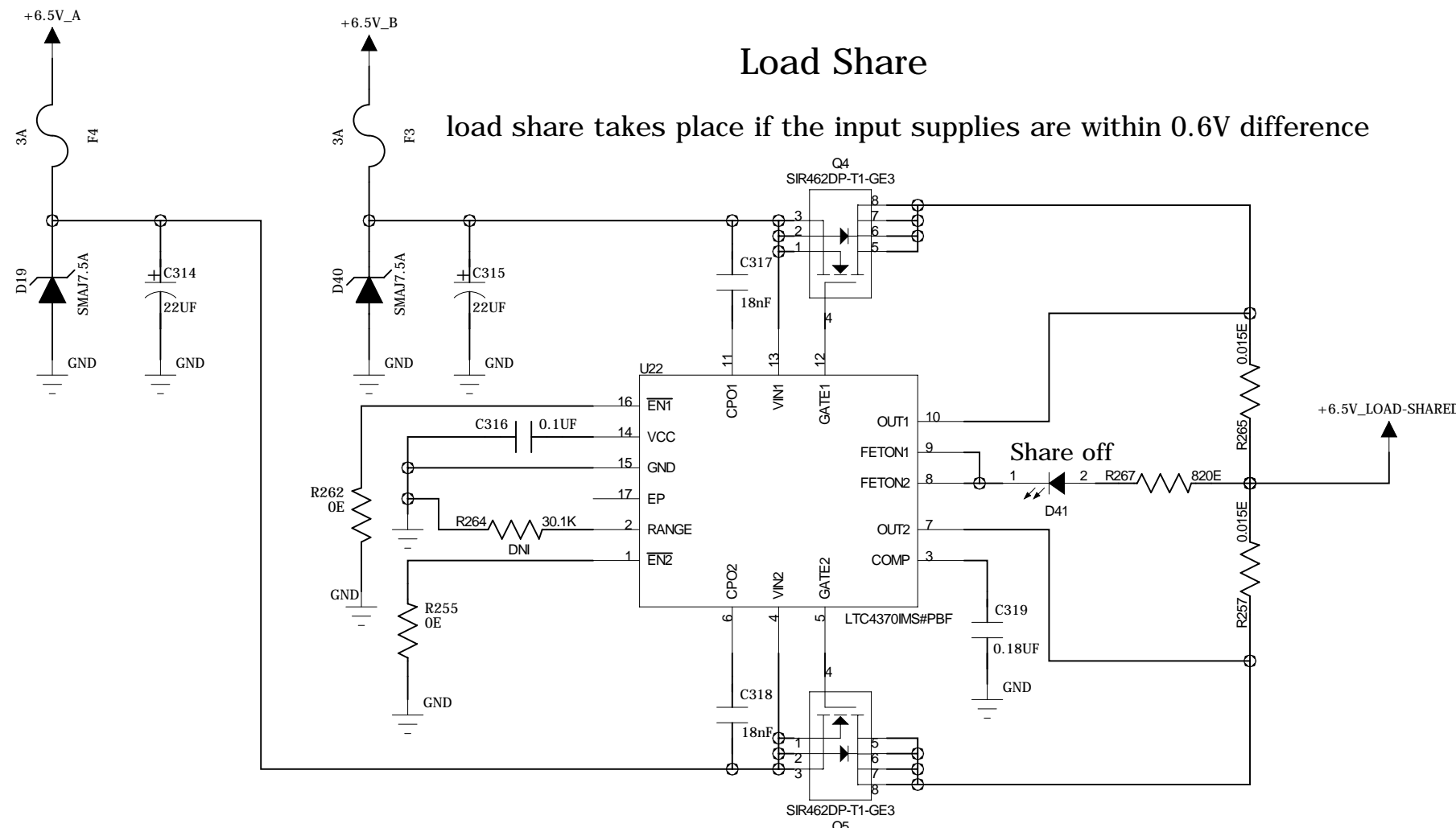
SH  
3  
REV.  
REV\_B

## Input power connector



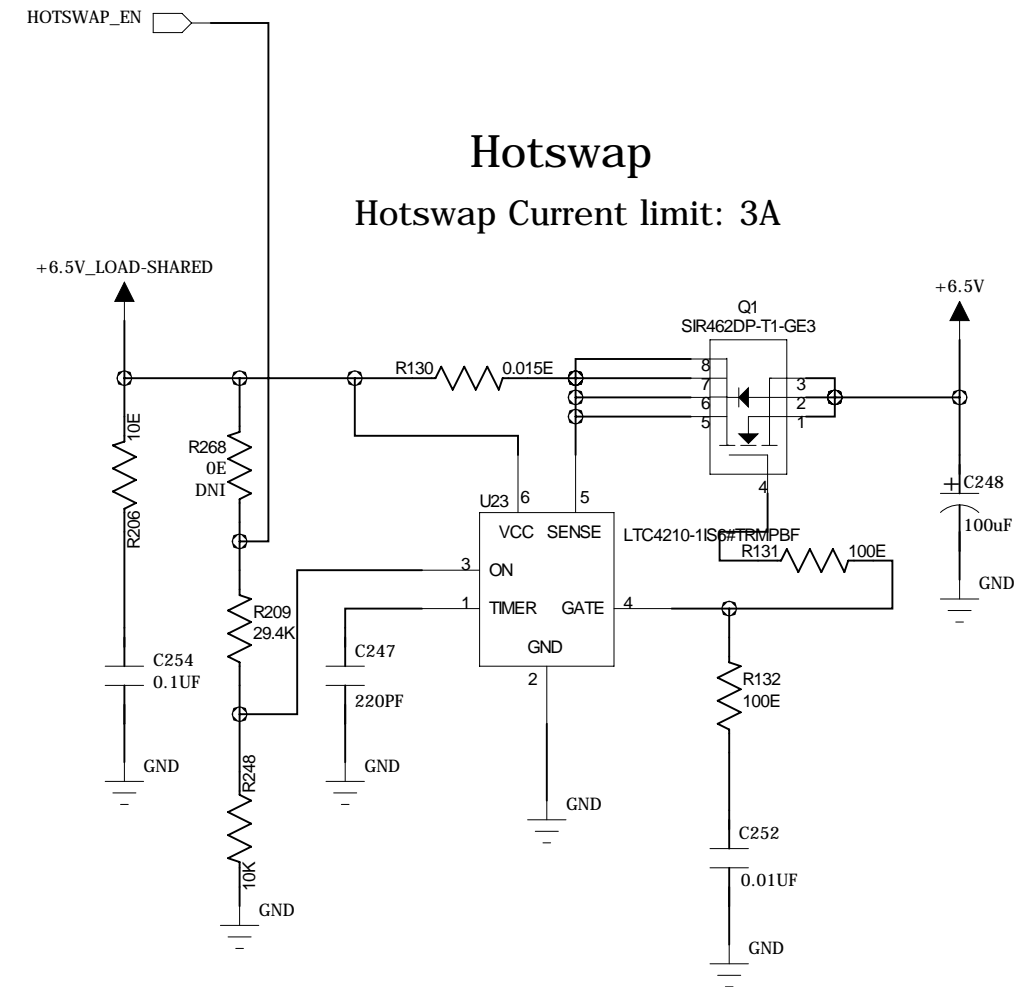
## Load Share

load share takes place if the input supplies are within 0.6V difference



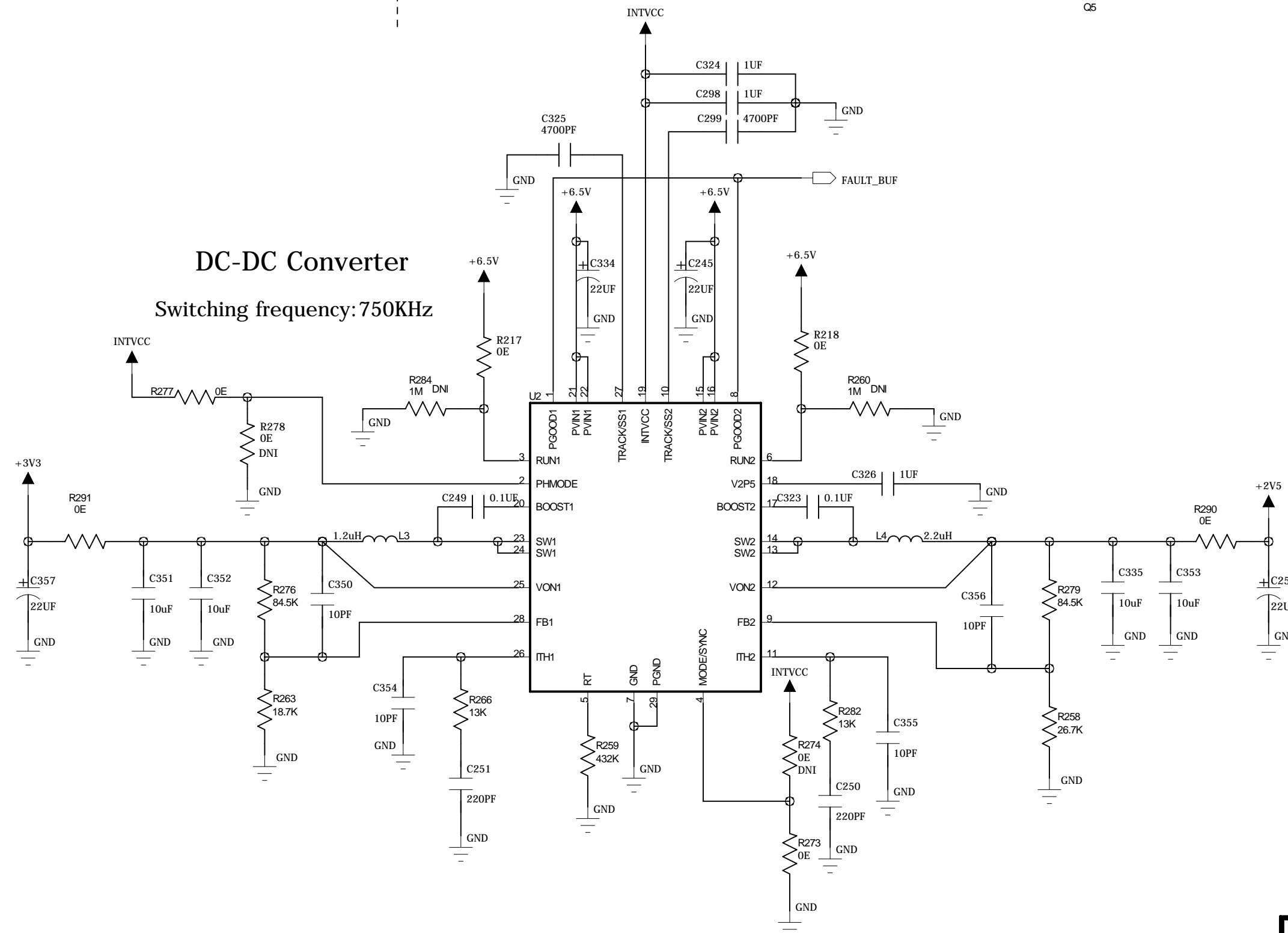
## Hotswap

Hotswap Current limit: 3A



## DC-DC Converter

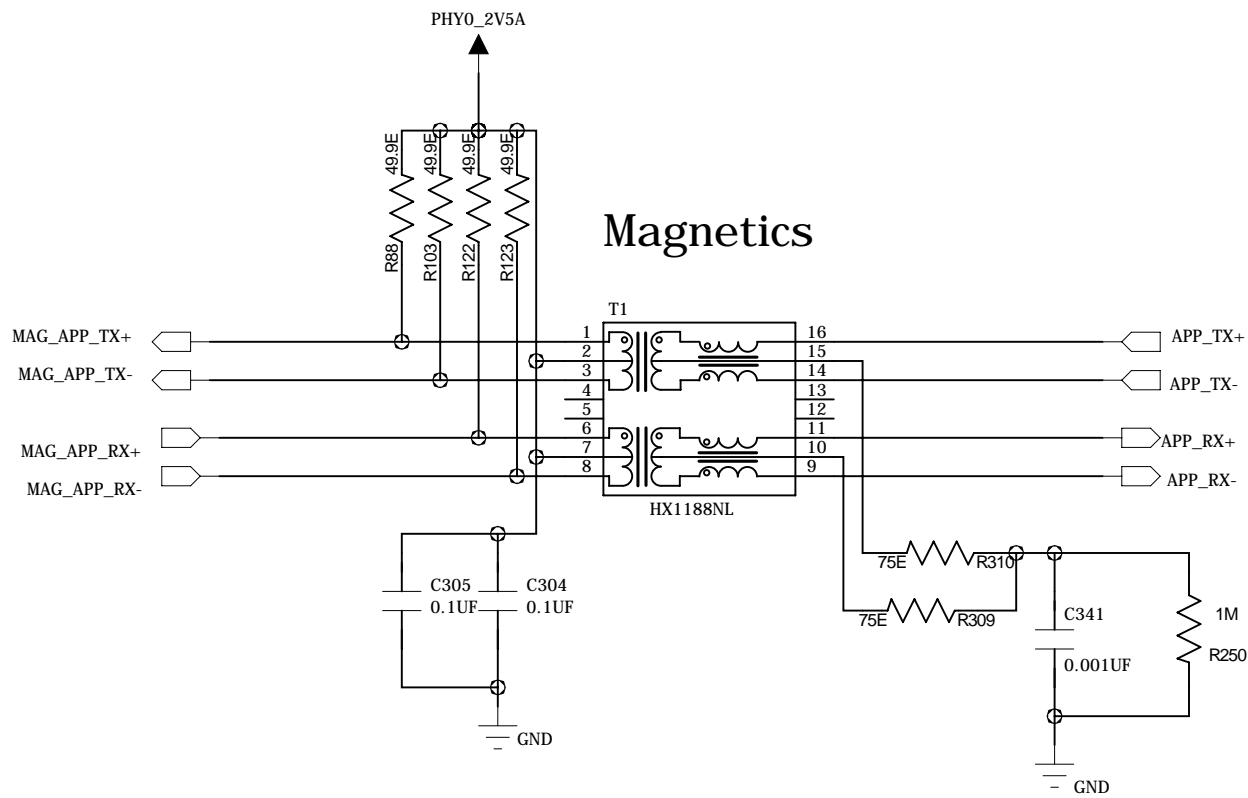
Switching frequency: 750KHz



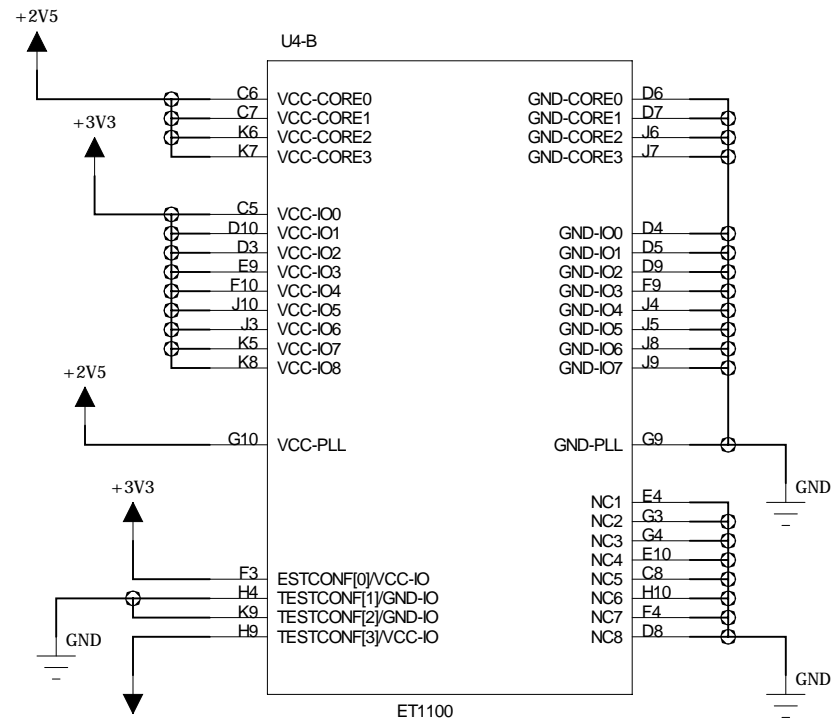
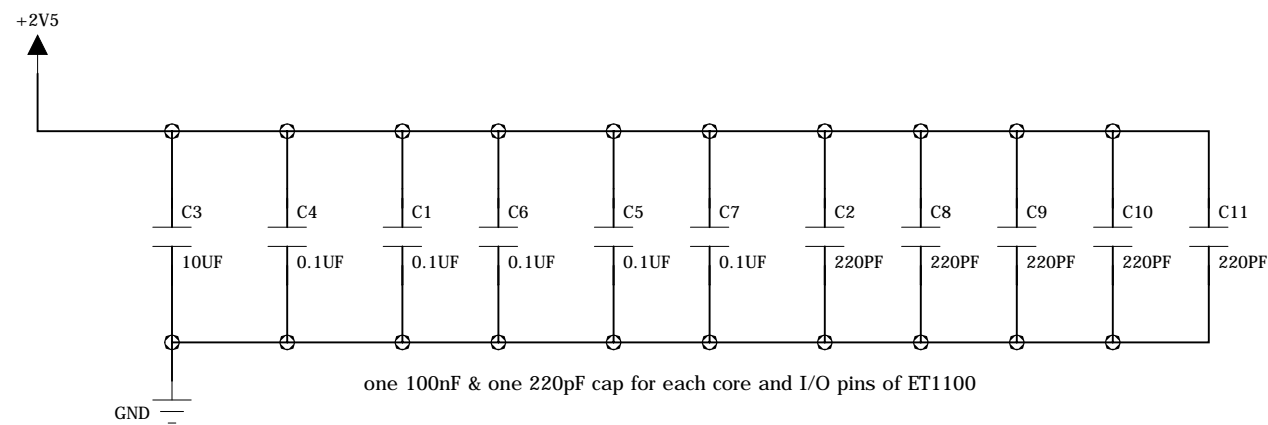
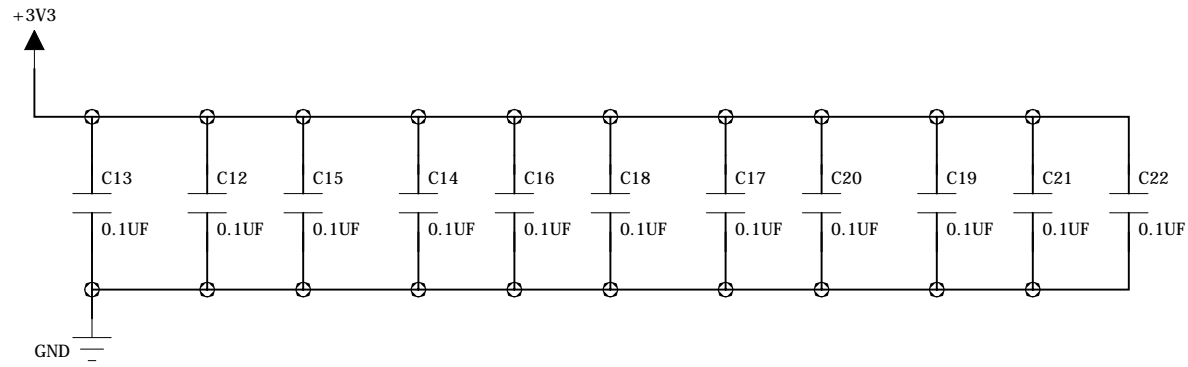
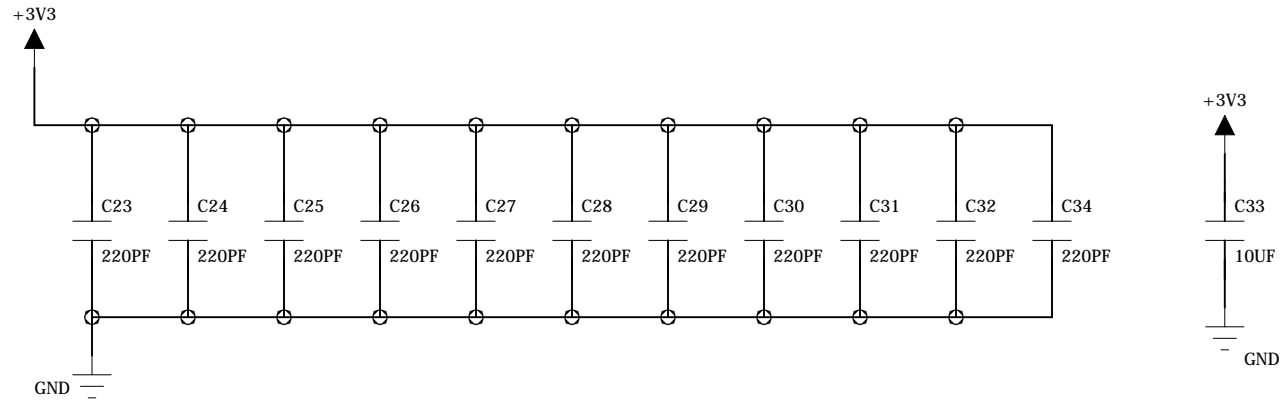
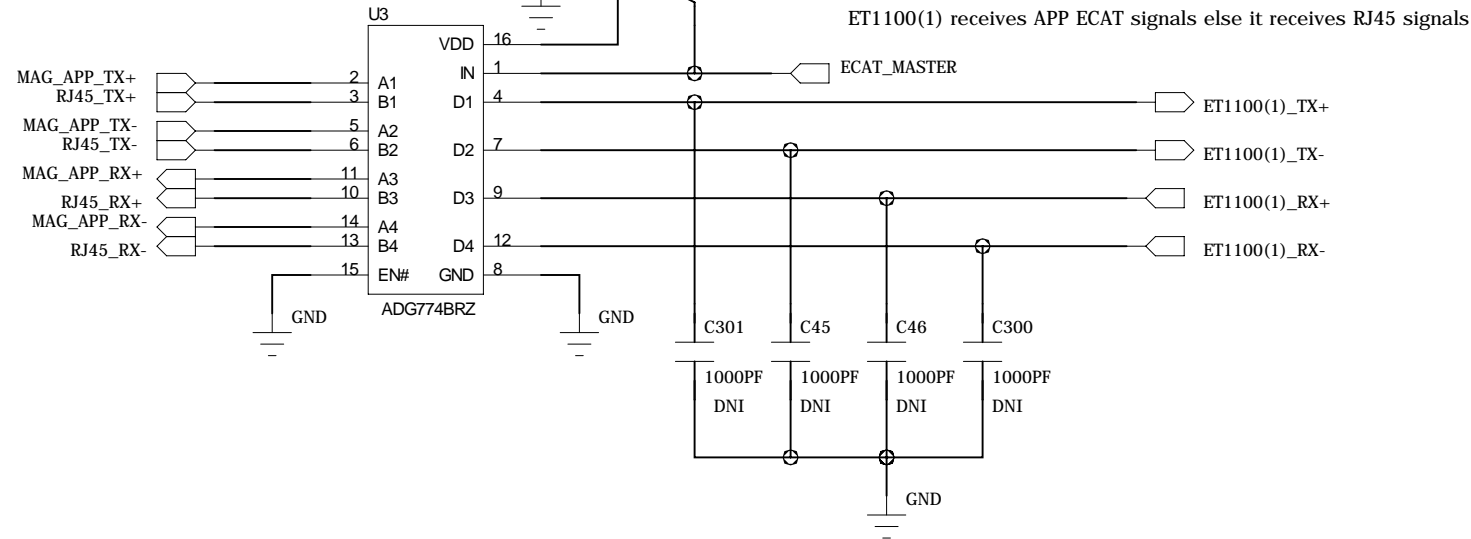
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED		12 March 2013	LOAD_SHARE, HOTSWAP, DC-DC			
ENGINEER			SIZE	DWG. NO.	SHEET	PROD
Vijaya Gandhi			C	18-600300-001	3 of 17	REV.
			FILE	IES_Rev-B.sch	SCALE	REV_B

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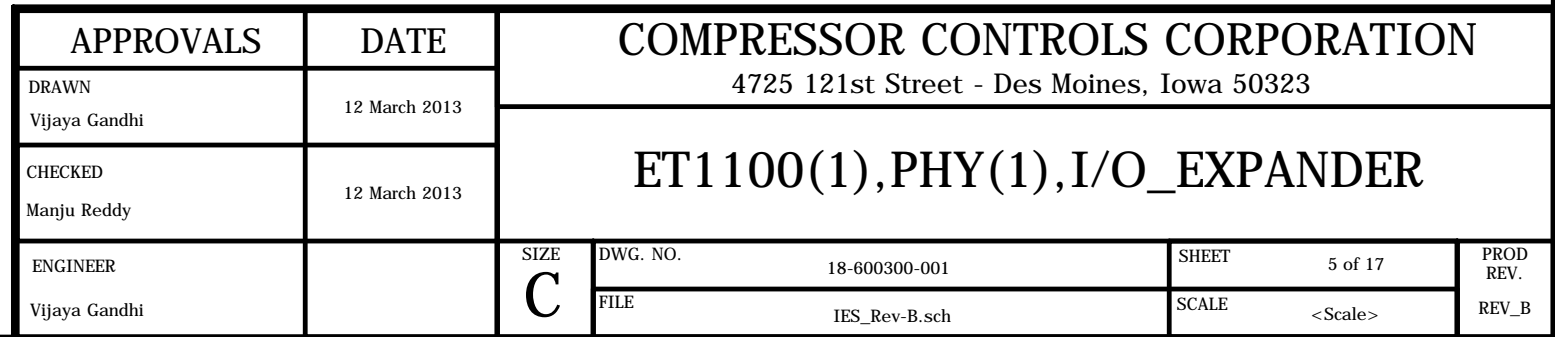
DWG. NO. 18-600300-001 SH 4 REV. REV\_B



### High Speed Diff. MUX

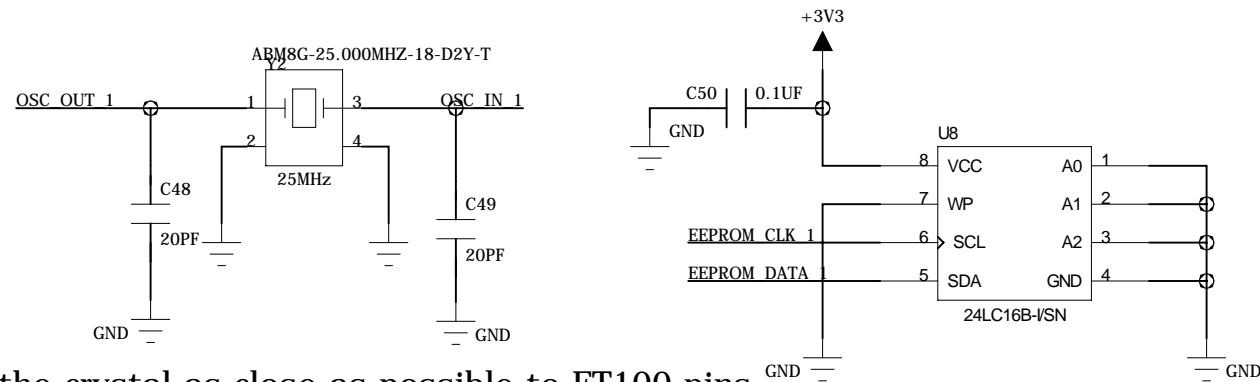
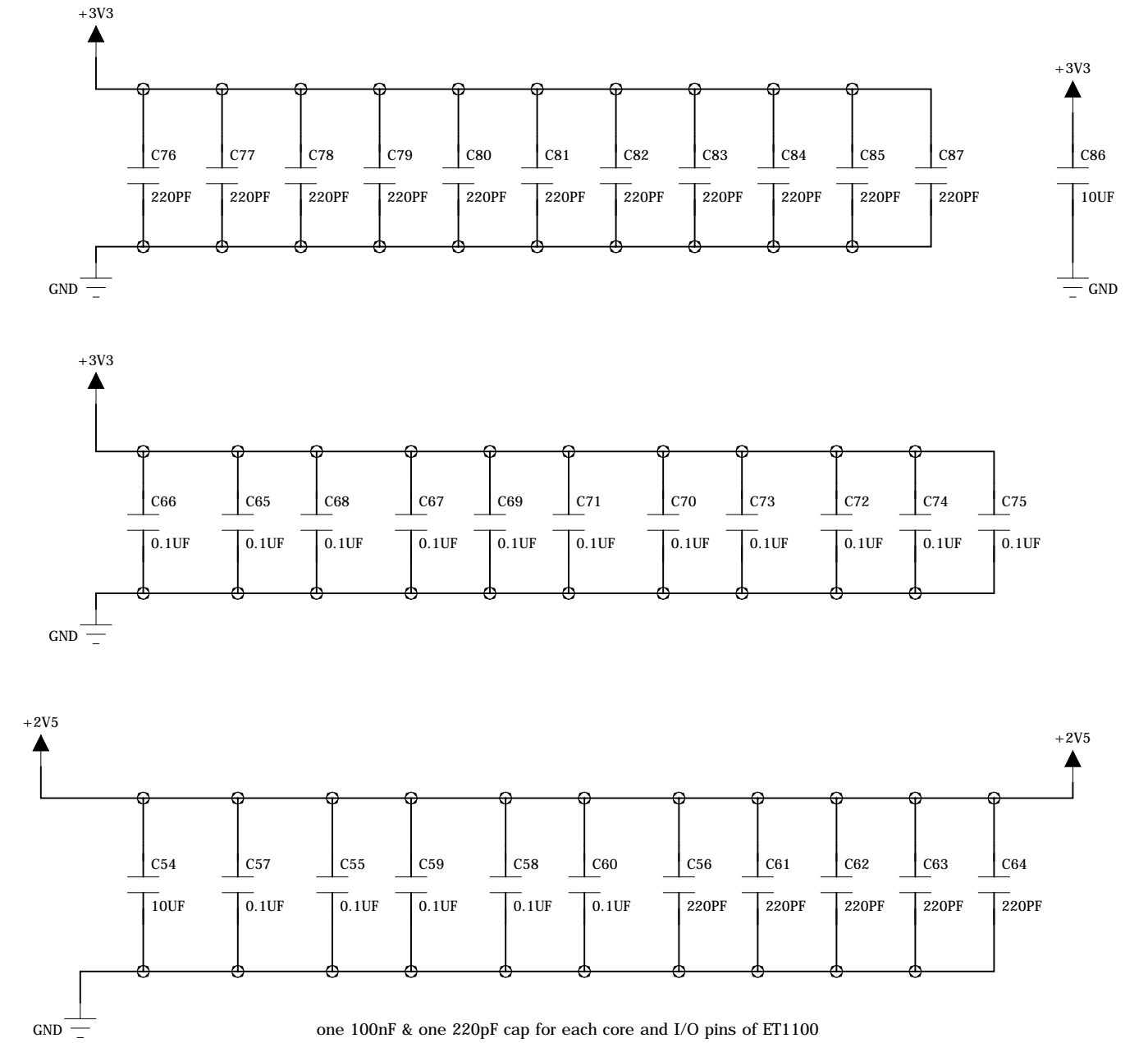
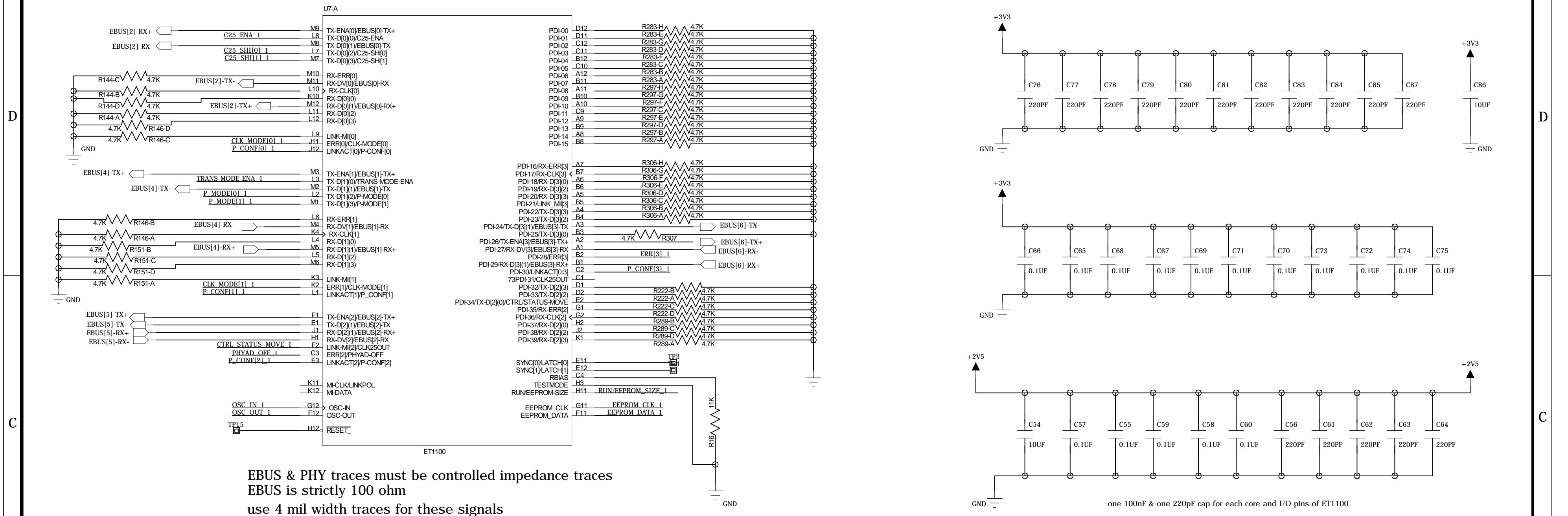


APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013	MUX,MAGNETICS,ET1100(1)			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 4 of 17	PROD REV. REV_B
			FILE IES_Rev-B.sch	SCALE <Scale>		



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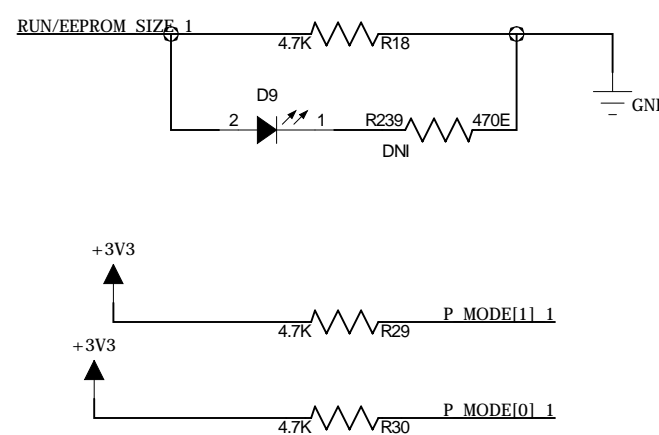
DWG. NO. 18-600300-001  
SH 6 REV. REV\_B



Place the crystal as close as possible to ET100 pins

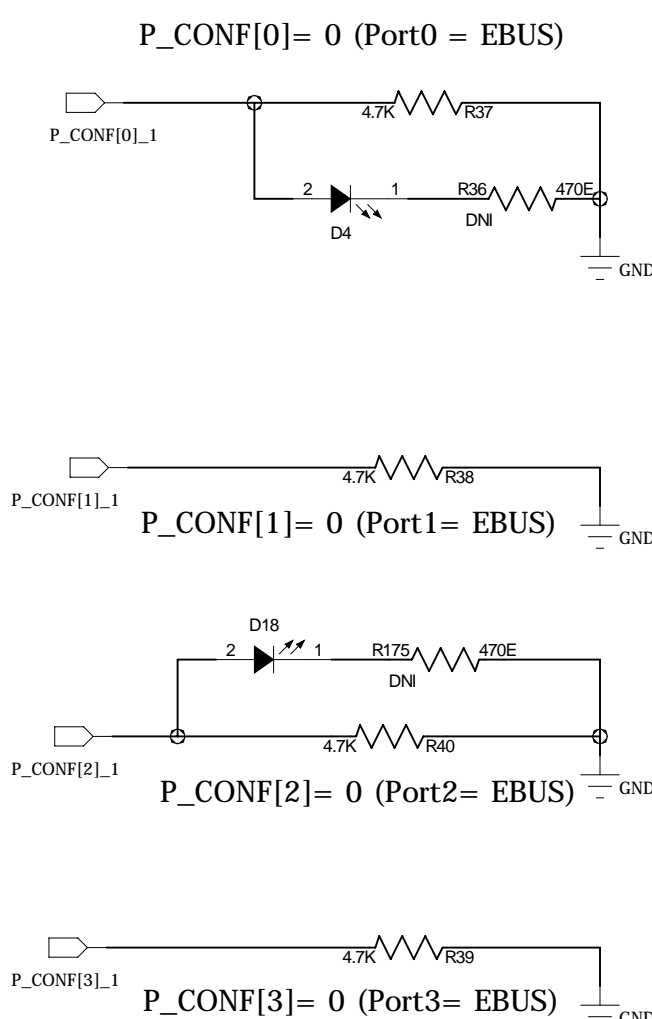
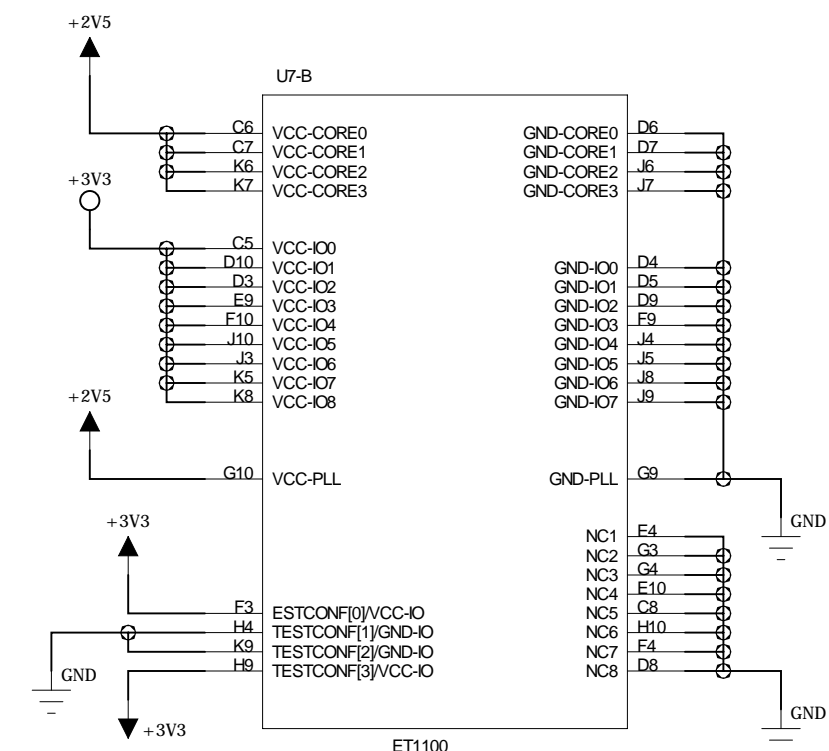
Keep I2C lines as short as possible

E<sup>2</sup>PPROM-Size = 0 (16 kBit)

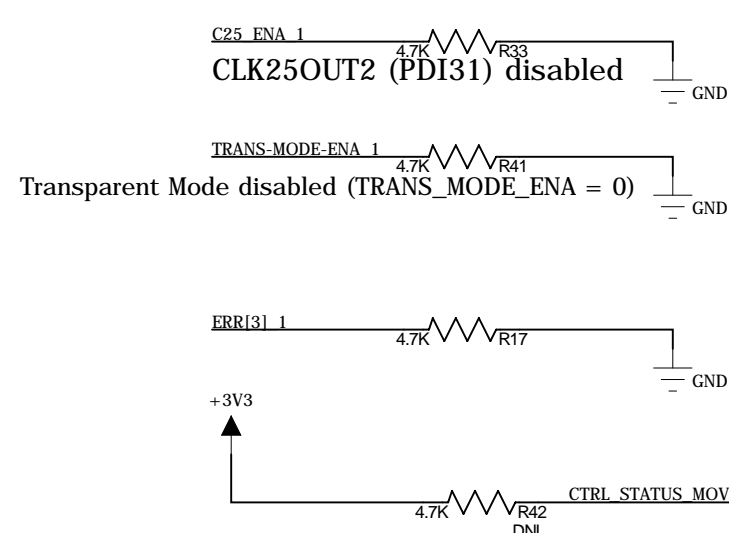


4 EtherCAT Ports enabled (P\_MODE[1:0] = 11)

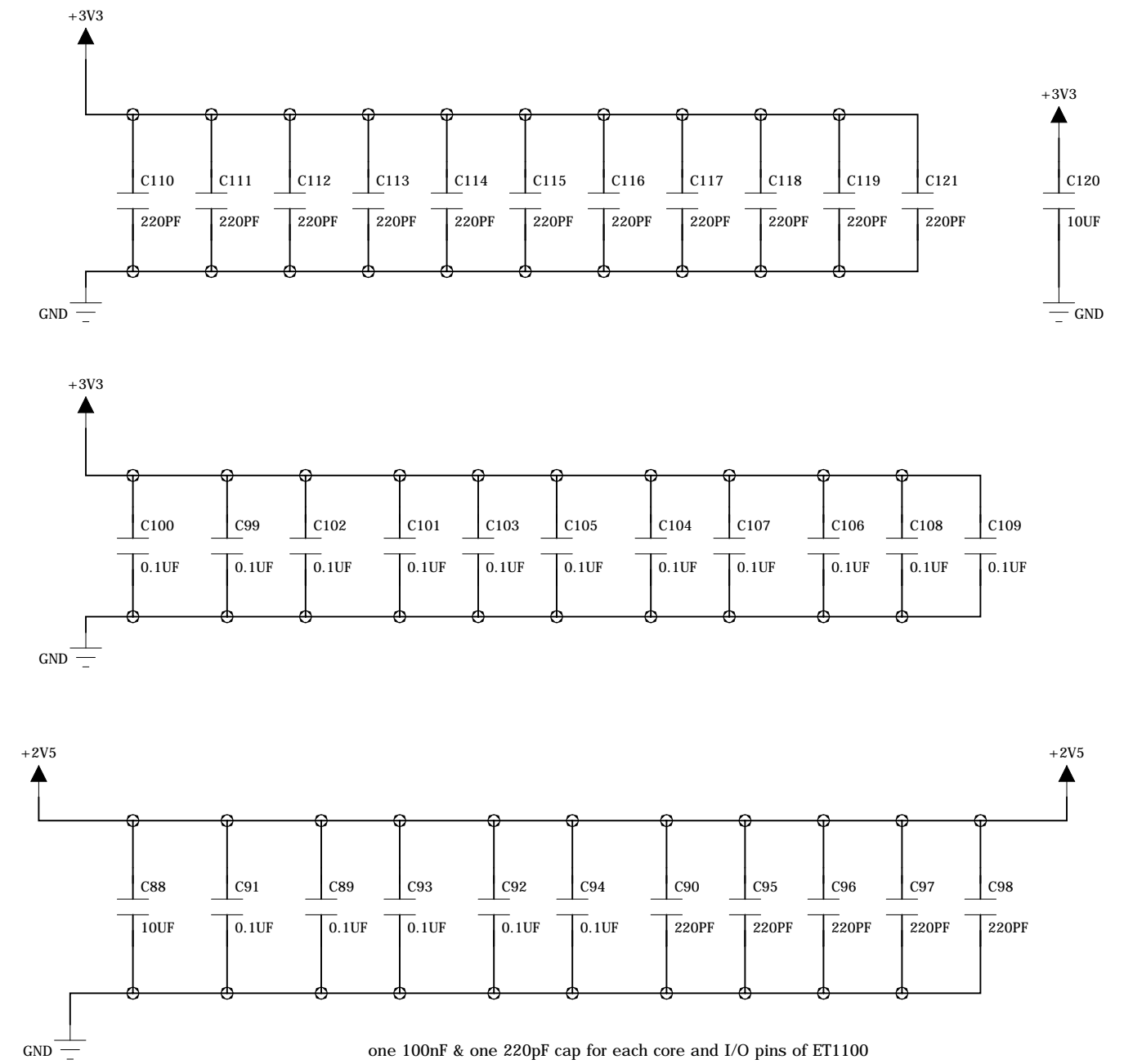
CPU\_CLK\_MODE [1:0]=00=OFF  
(config for PDI[7])



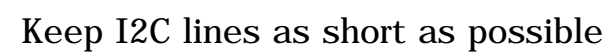
TX Shift [1:0]=00=0nS  
MII TX signals delayed by (0 ns for KS8721BL)



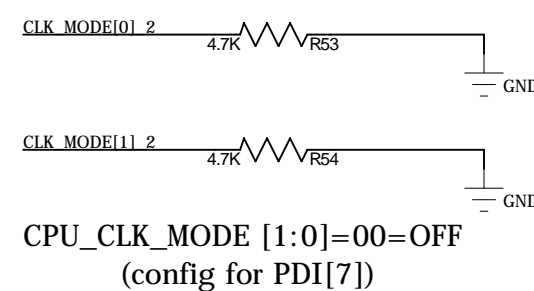
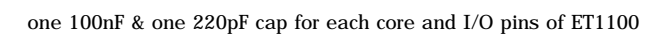
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013	ET1100(2)			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 6 of 17	PROD REV. REV_B
			FILE IES_Rev-B.sch	SCALE <Scale>		



EBUS & PHY traces must be controlled impedance traces  
EBUS is strictly 100 ohm  
use 4 mil width traces for these signals



E<sup>2</sup>PPROM-Size = 0 (16 kBit)



APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013		4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013		ET1100(3)			
ENGINEER Vijaya Gandhi		<div>SIZE</div> <div>C</div>	DWG. NO. 18-600300-001		SHEET 7 of 17		PROD REV.
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D

C

B

A

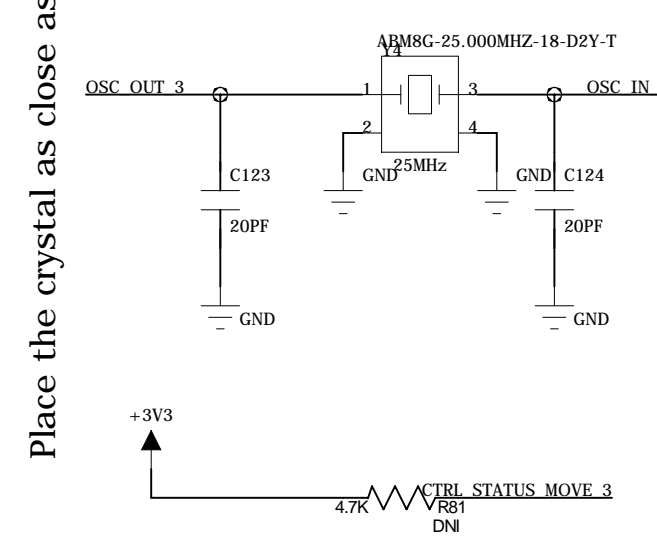
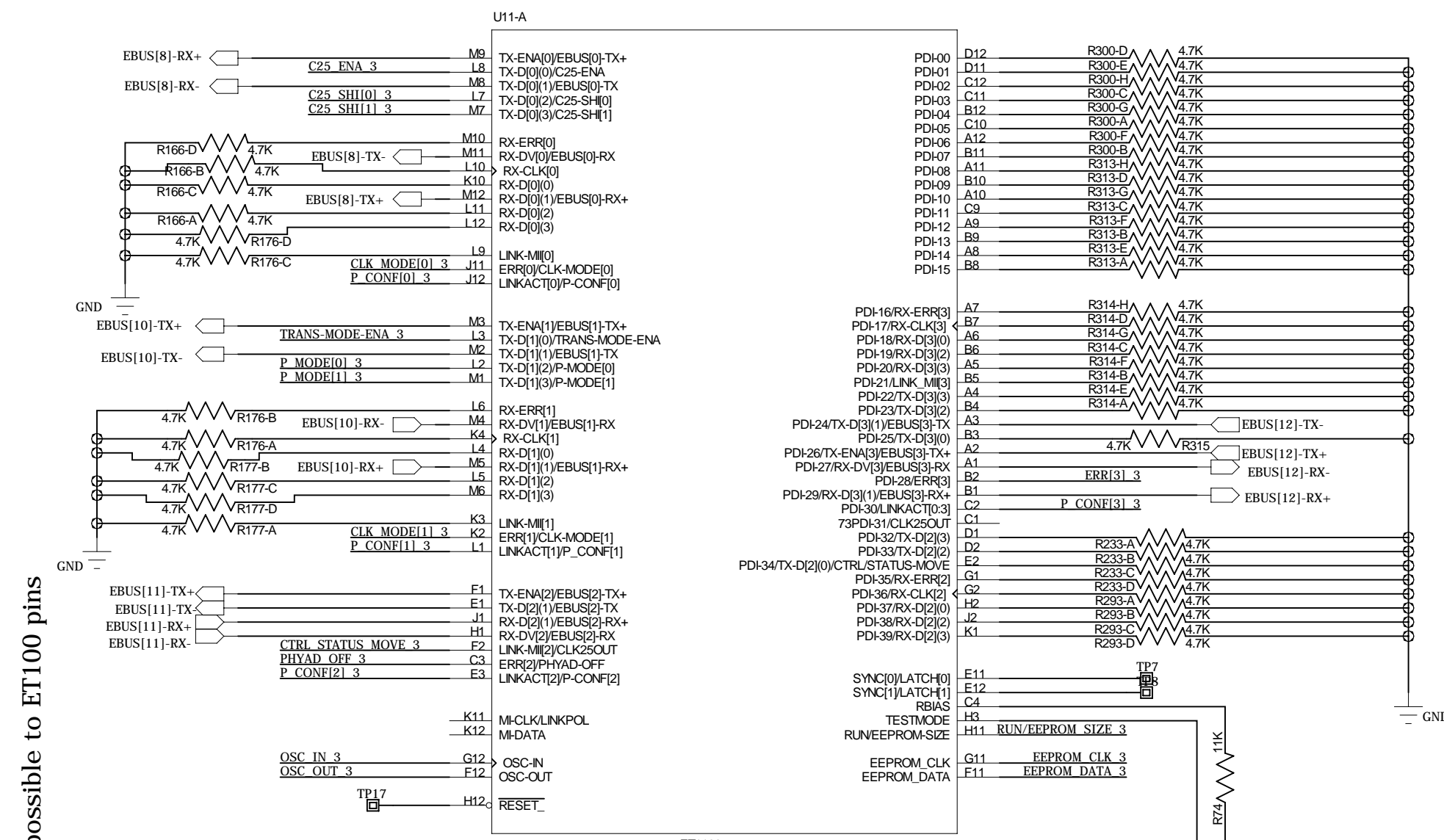
D

C

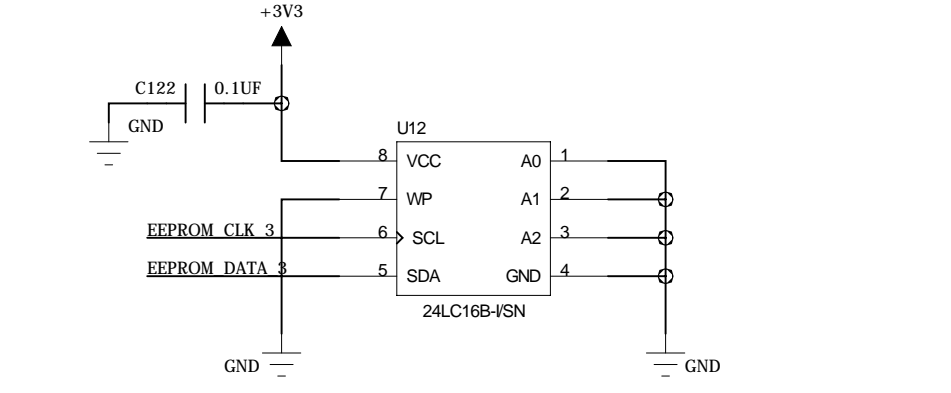
B

A

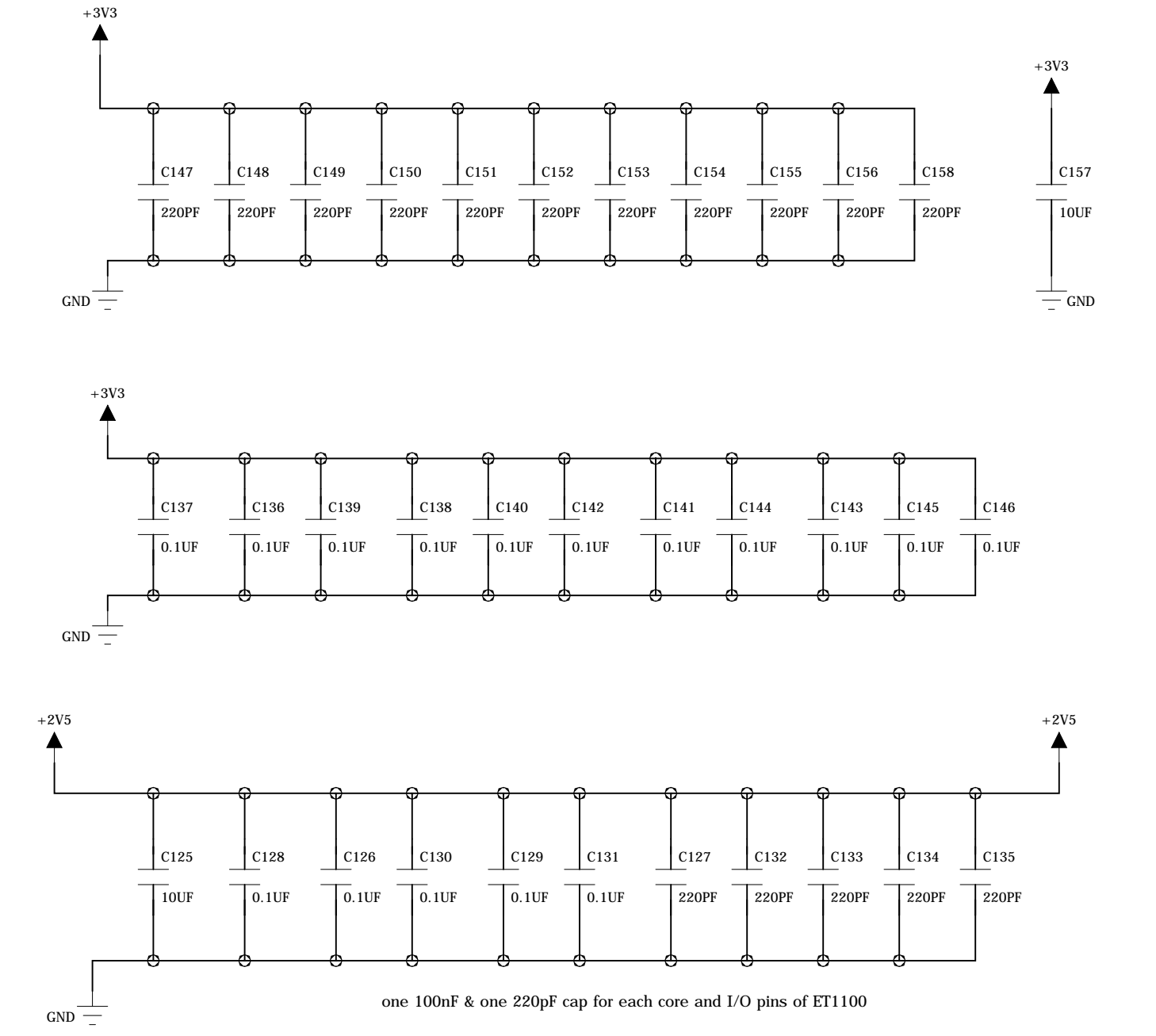
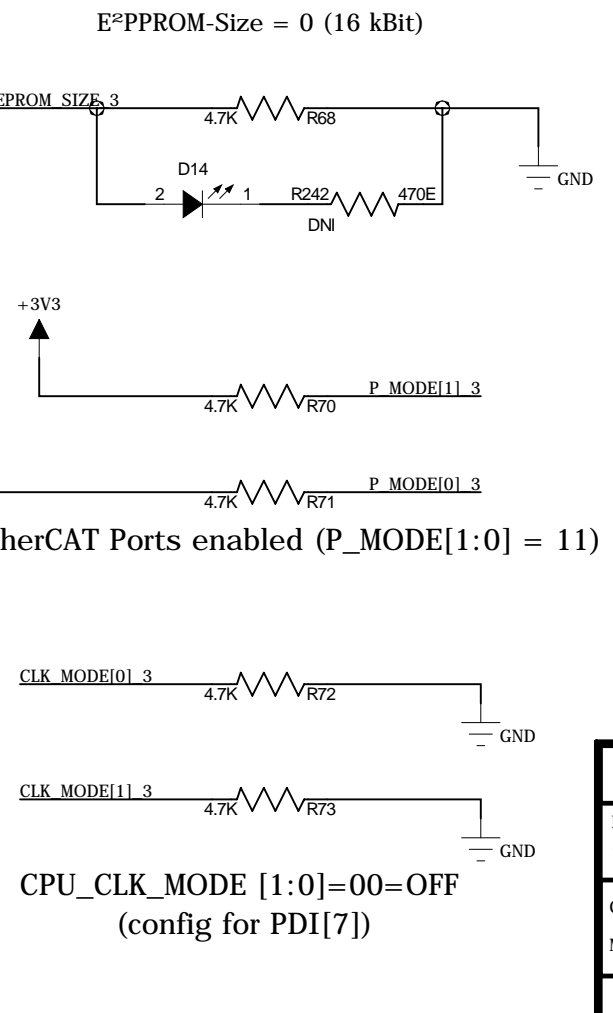
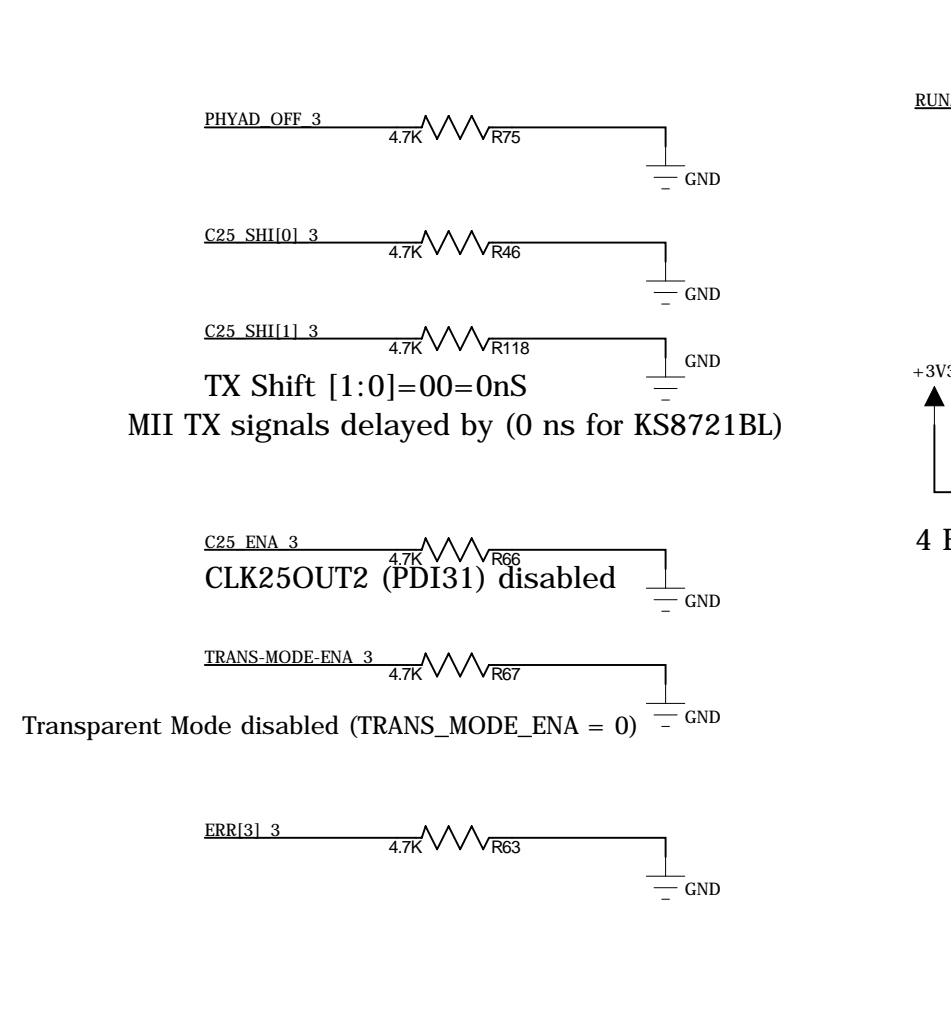
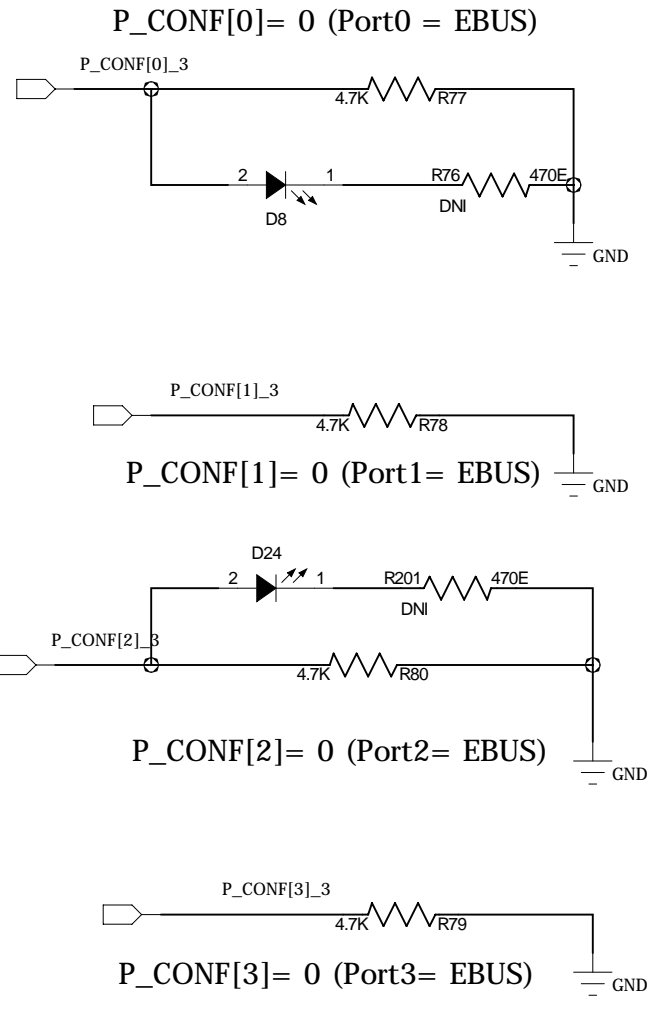
Place the crystal as close as possible to ET100 pins



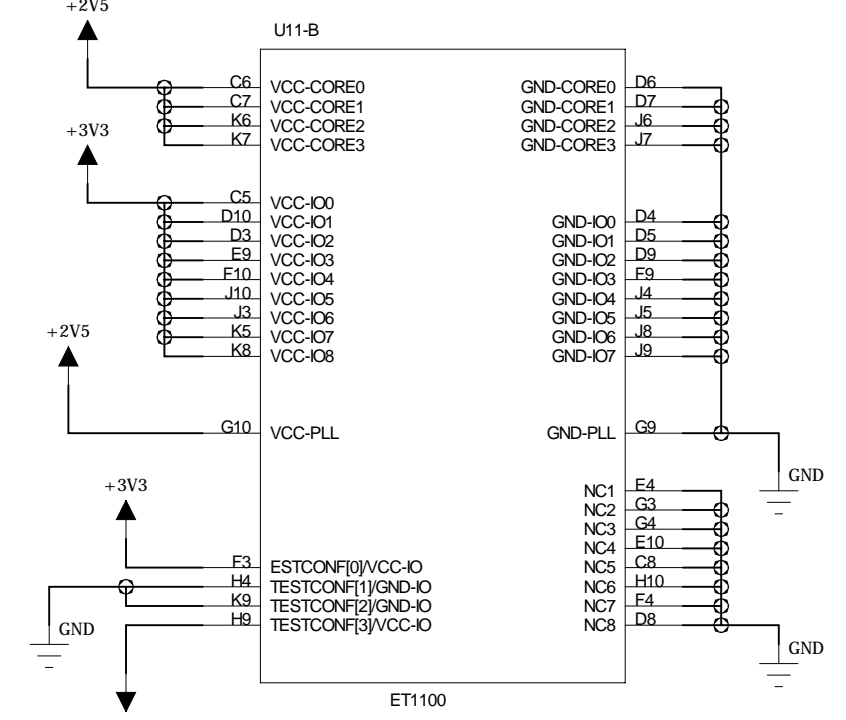
EBUS & PHY traces must be controlled impedance traces  
EBUS is strictly 100 ohm  
use 4 mil width traces for these signals



Keep I2C lines as short as possible

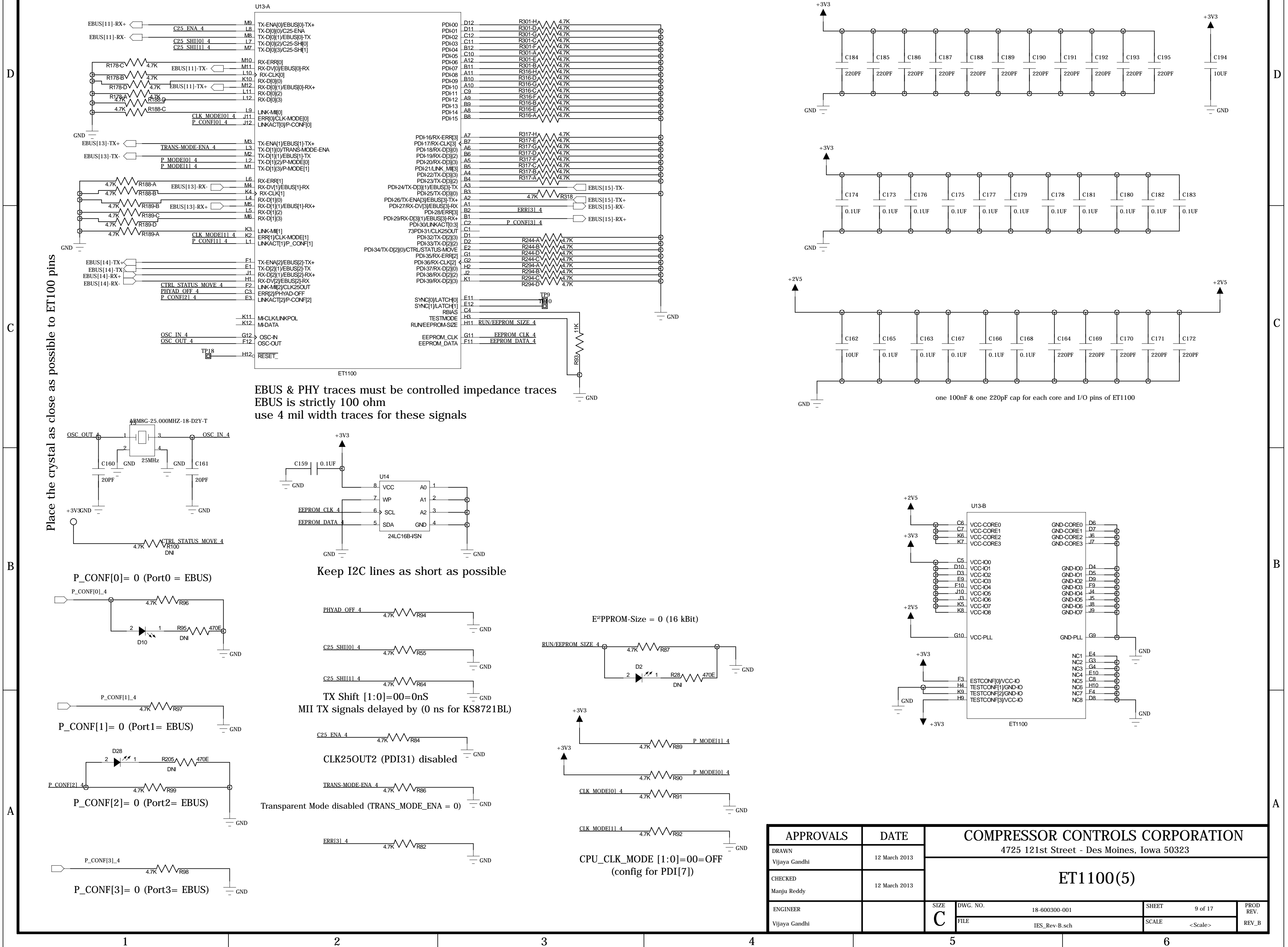


one 100nF & one 220pF cap for each core and I/O pins of ET1100



APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN	Vijaya Gandhi	12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
			ET1100(4)			
CHECKED	Manju Reddy	12 March 2013	SIZE	DWG. NO.	SHEET	PROD
			C	18-600300-001	8 of 17	REV.
ENGINEER	Vijaya Gandhi		FILE	IES_Rev-B.sch	SCALE	REV.
					<Scale>	B

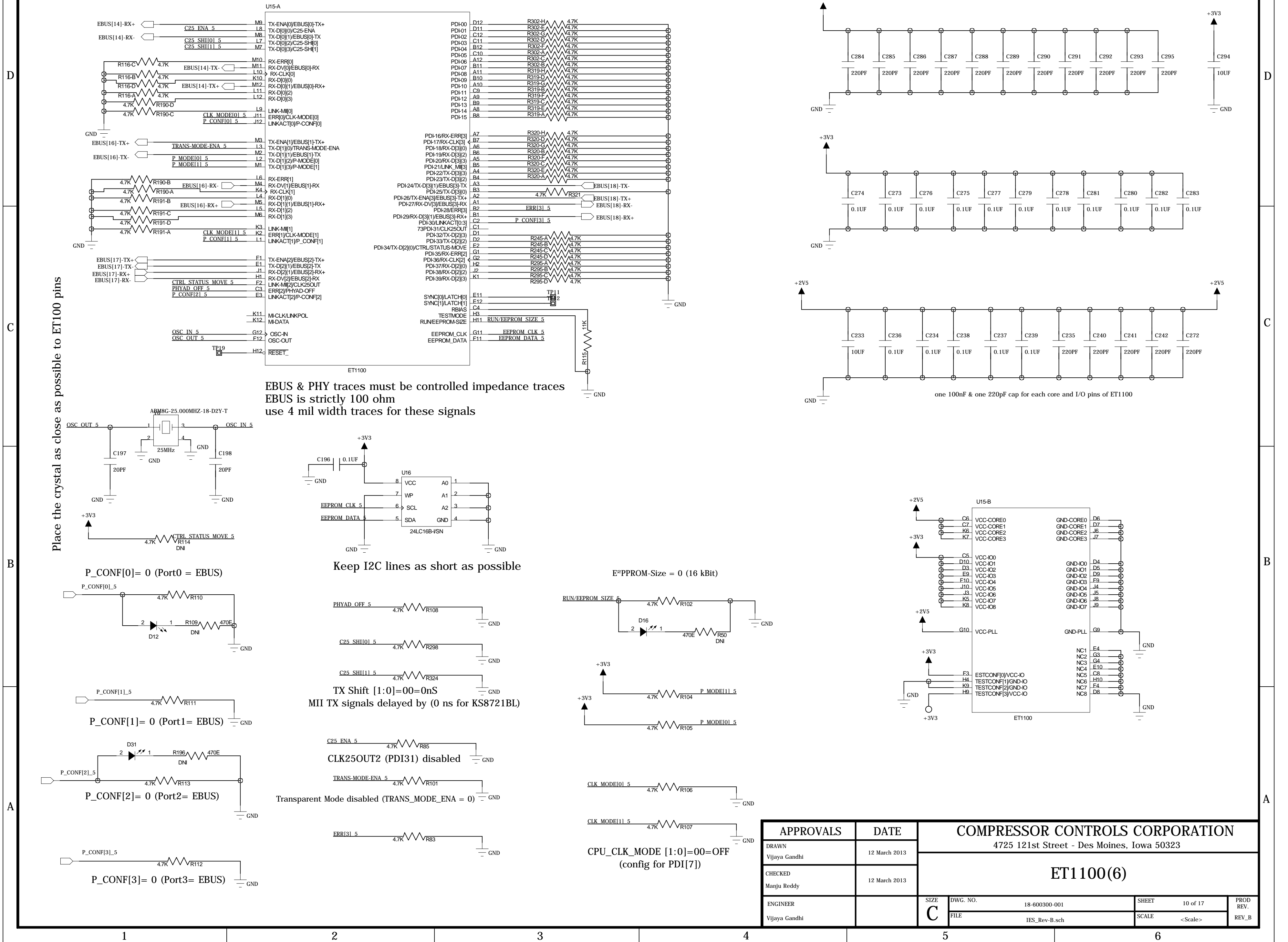




APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN	Vijaya Gandhi	12 March 2013	7275 121st Street - Des Moines, Iowa 50323			
			ET1100(5)			
CHECKED	Manju Reddy	12 March 2013	SIZE	DWG. NO.	SHEET	PROD
			C	18-600300-001	9 of 17	REV.
ENGINEER	Vijaya Gandhi		FILE	IES_Rev-B.sch	SCALE	REV_B
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DWG. NO. 18-600300-001  
SH 10  
REV. REV\_B



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DWG. NO. 18-600300-001  
SH 11  
REV. REV\_B

D

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A

D

C

B

A

Place the crystal as close as possible to ET100 pins

EBUS & PHY traces must be controlled impedance traces  
EBUS is strictly 100 ohm  
use 4 mil width traces for these signals

Keep I2C lines as short as possible

E<sup>2</sup>PPROM-Size = 0 (16 kBit)

3 EtherCAT Ports enabled (P\_MODE[1:0] = 01)

CPU\_CLK\_MODE [1:0]=00=OFF  
(config for PDI[7])

PHYADDRESS = 00001

RMII back-to-back disabled  
RMII disabled  
ISOLATE Mode disabled  
PCS\_LPBK disabled

Link Polarity = 0

PHY Address Offset = 0

APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013	ET1100(7),PHY(2)			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 11 of 17	PROD REV.
			FILE IES_Rev-B.sch		SCALE <Scale>	REV_B

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DWG. NO.  
18-600300-001

SH  
12

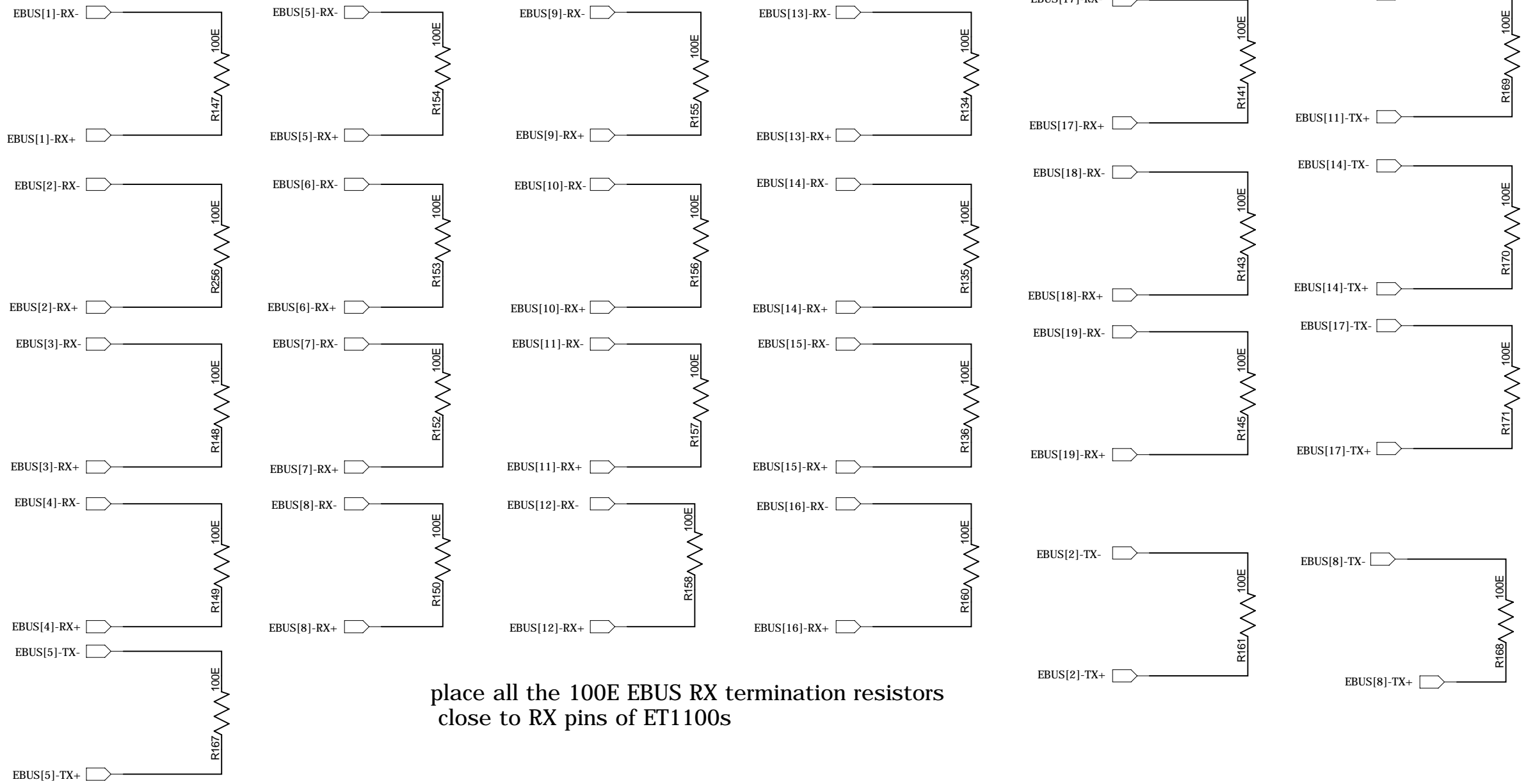
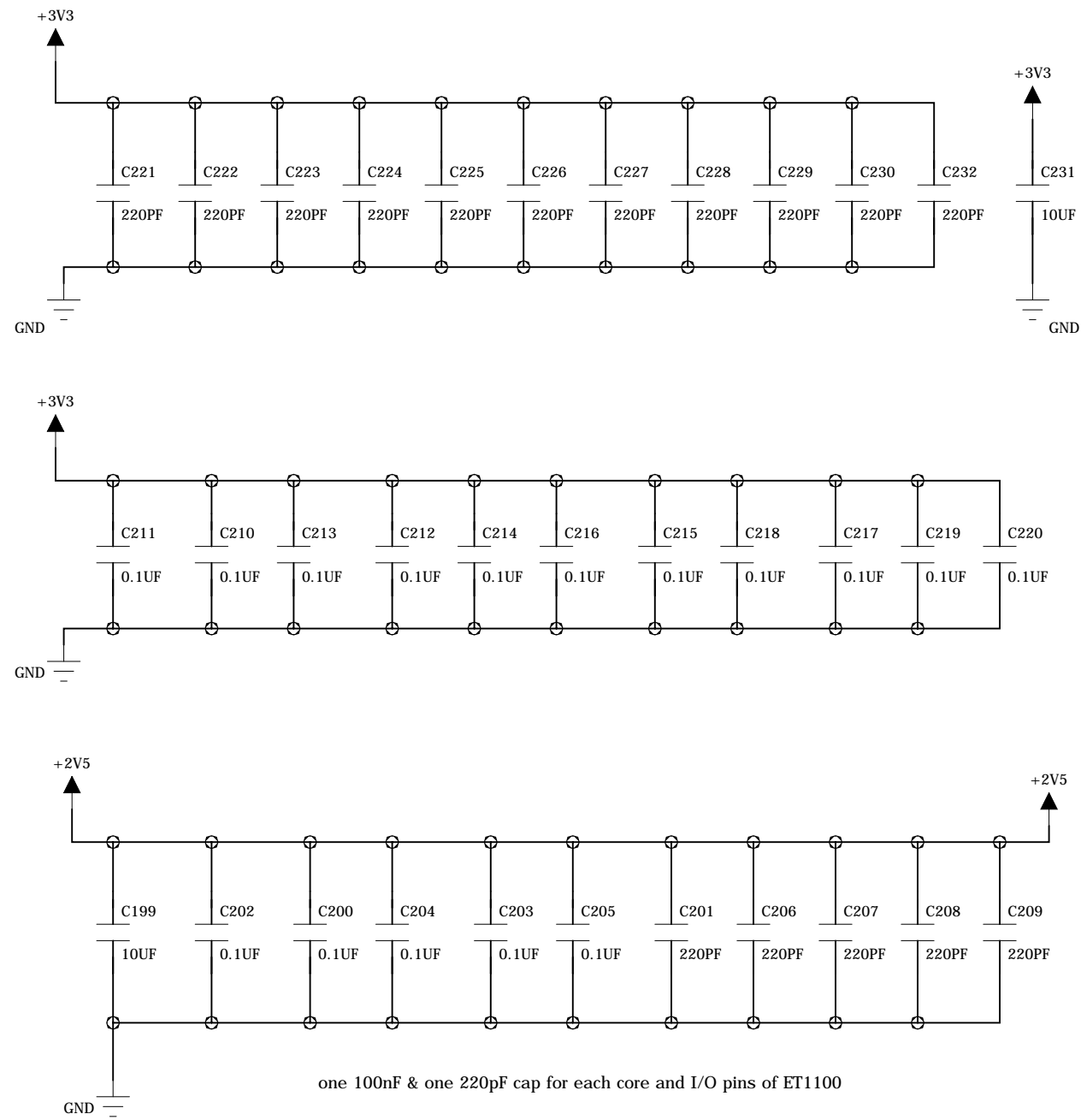
REV.  
REV\_B

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18-600300-001

SH  
13

REV.  
REV\_B

## BUFFER for Front panel LEDS

### CCC LOGO LED

### WHITE LED

## I2C BUS REPEATER

## SPI BOARD EEPROM

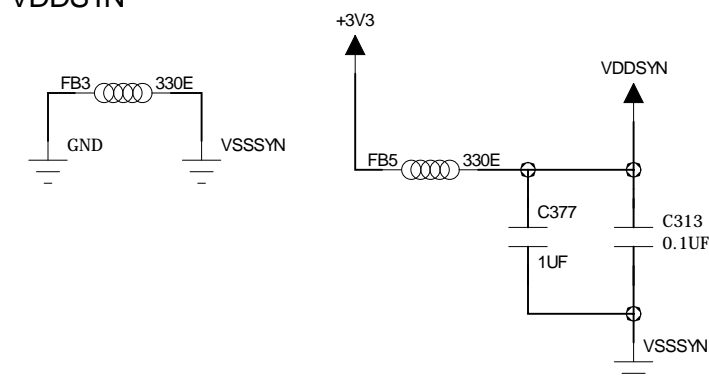
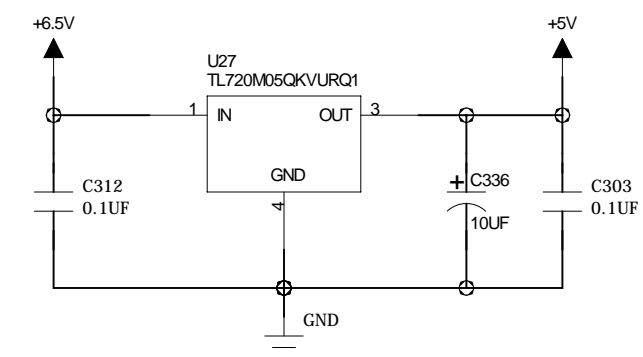
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED		12 March 2013	LED_BUFFER, LOGO_LEDS			
ENGINEER			SIZE C	DWG. NO. 18-600300-001	SHEET 13 of 17	PROD REV.
Vijaya Gandhi			FILE IES_Rev-B.sch	SCALE <Scale>		REV_B

APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013		4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013		MPC5534			
ENGINEER Vijaya Gandhi		<div>SIZE</div> <div>C</div>	DWG. NO. 18-600300-001		SHEET 14 of 17		PROD. REV.
			FILE IES_Rev-B.sch		SCALE <Scale>		REV_B

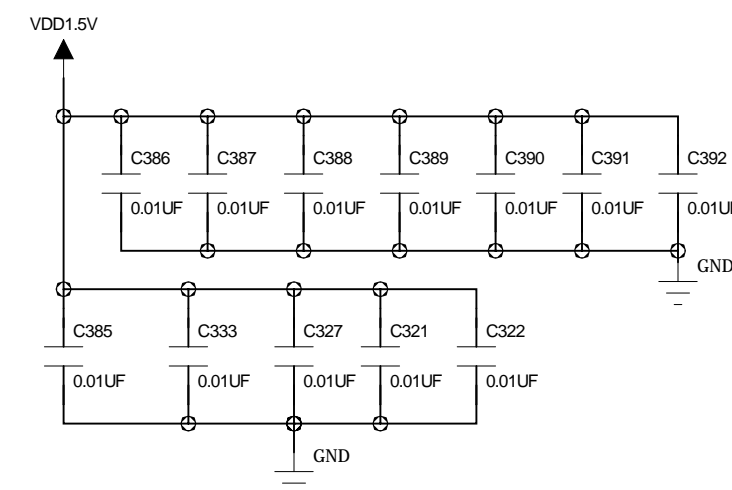
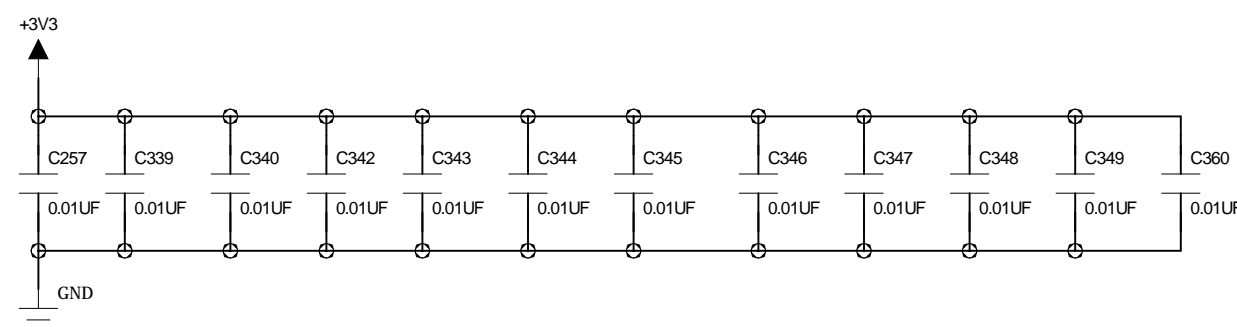
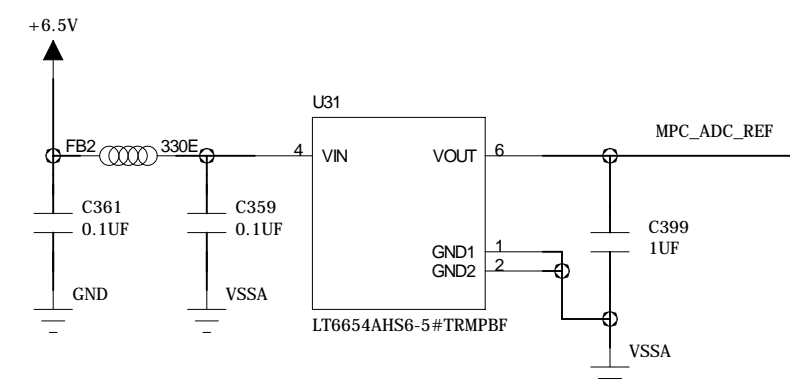
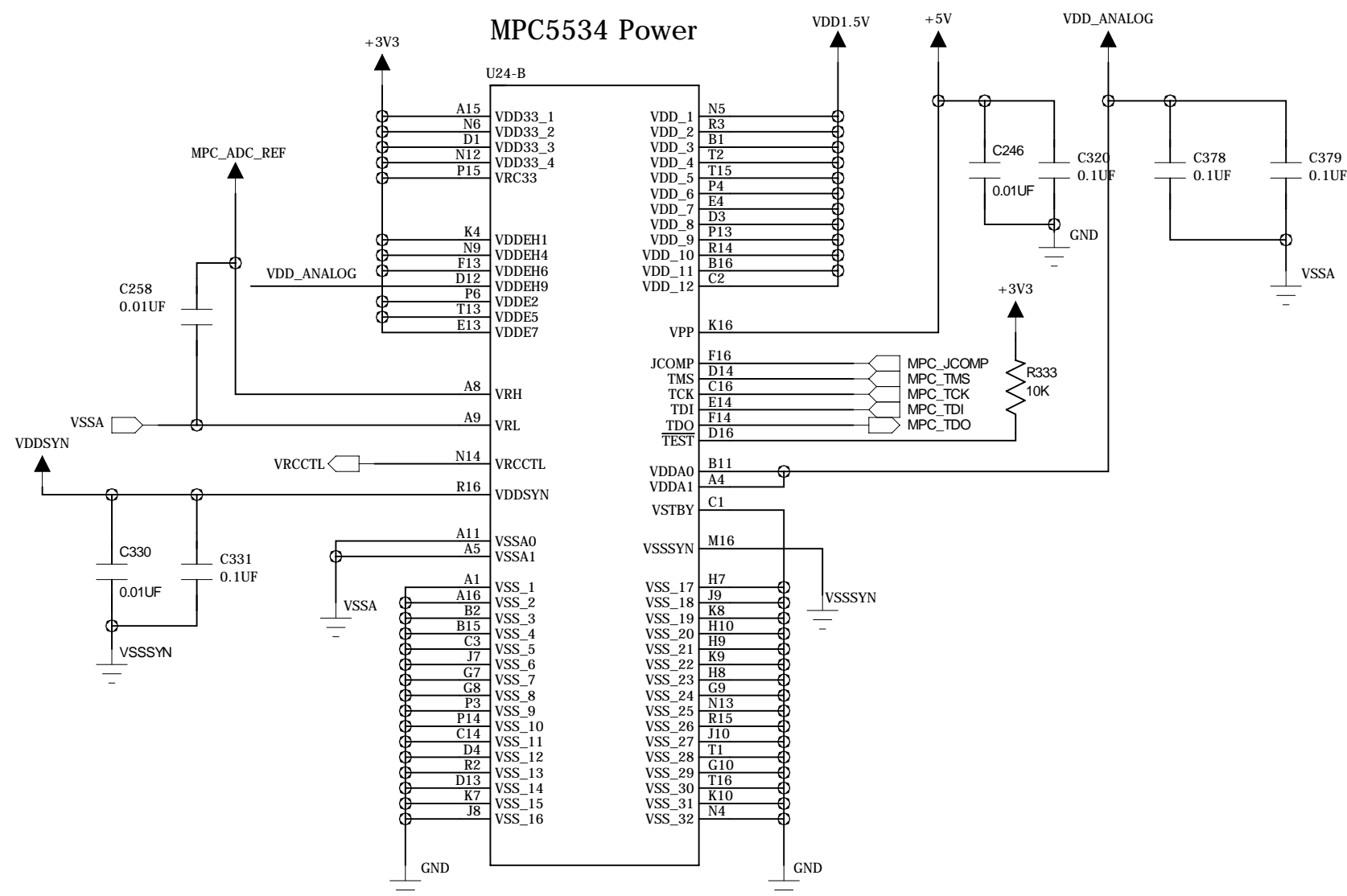
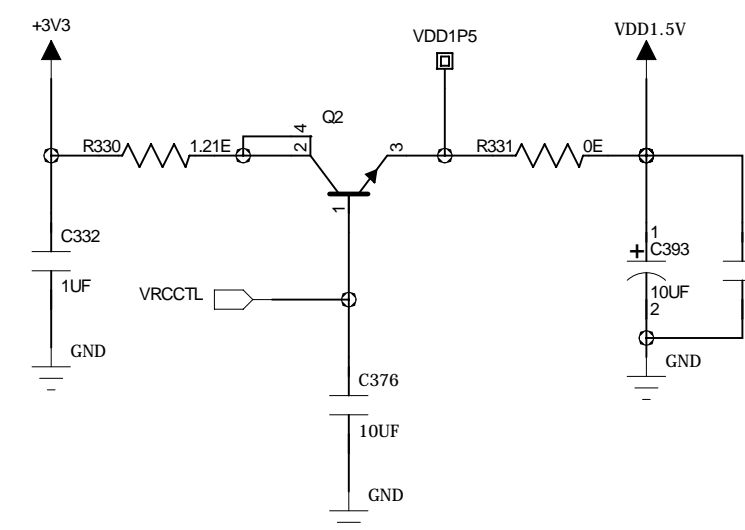
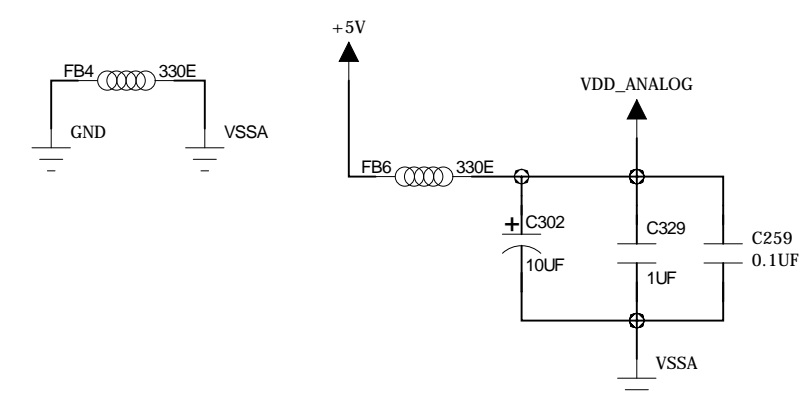
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! Analog Supply Voltage

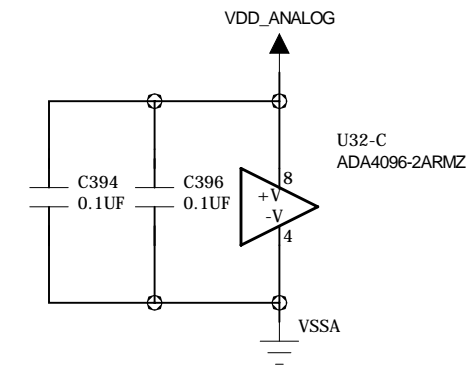
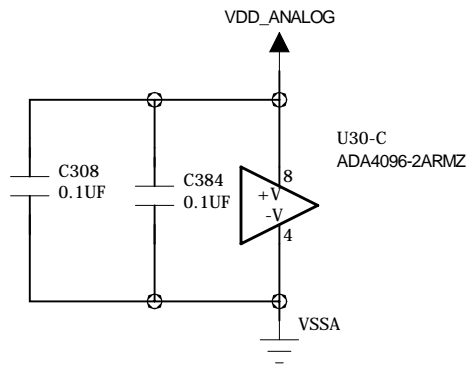
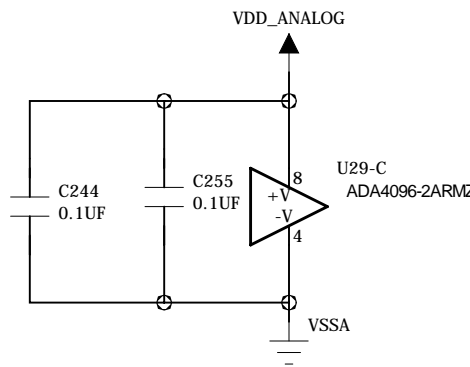
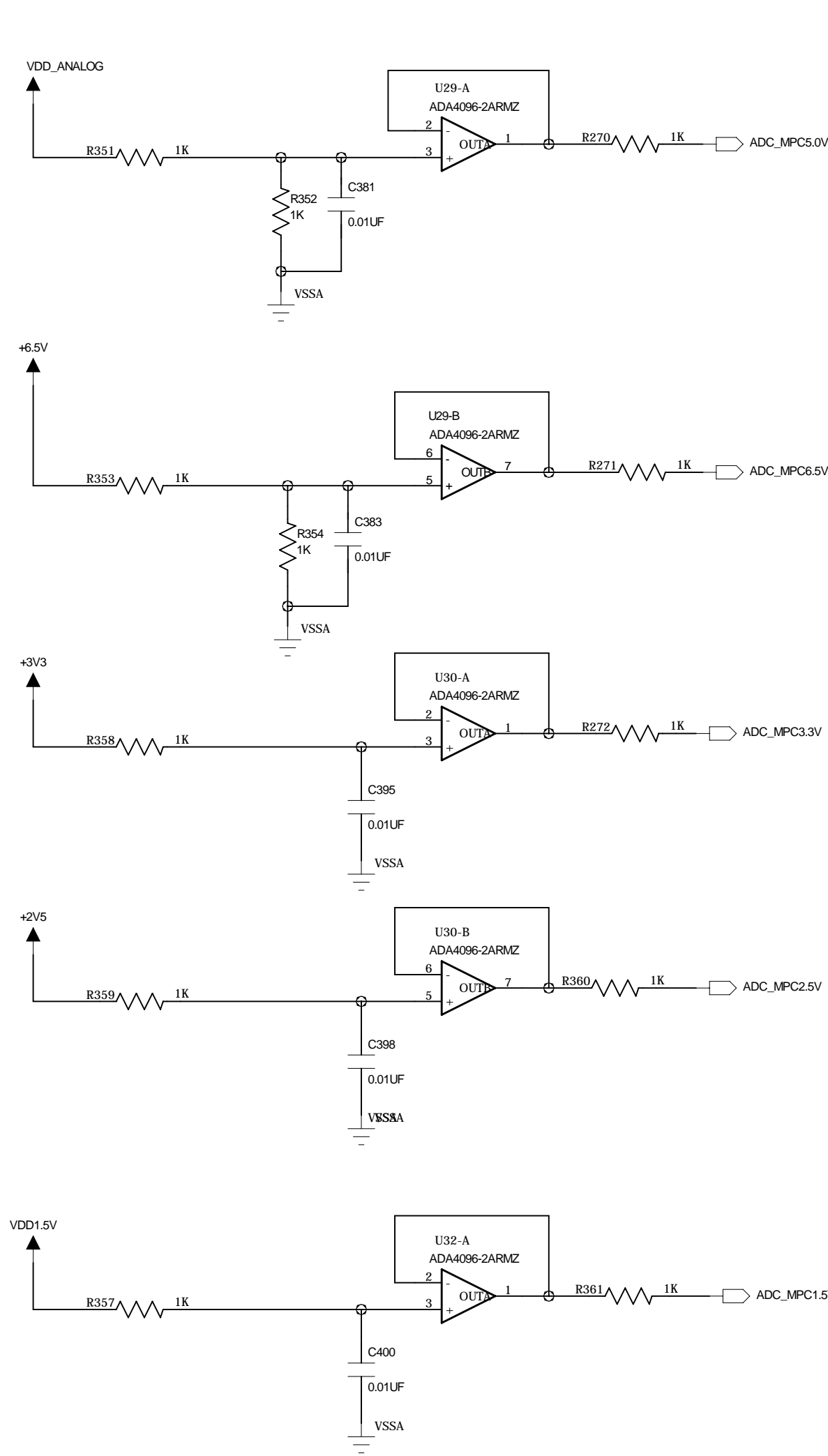


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DRAWN Vijaya Gandhi		12 March 2013		4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013		MPC5534_POWER			
ENGINEER Vijaya Gandhi		SIZE C	DWG. NO. FILE	18-600300-001 IES_Rev-B.sch	SHEET SCALE	15 of 17 <Scale>	PROD REV. B

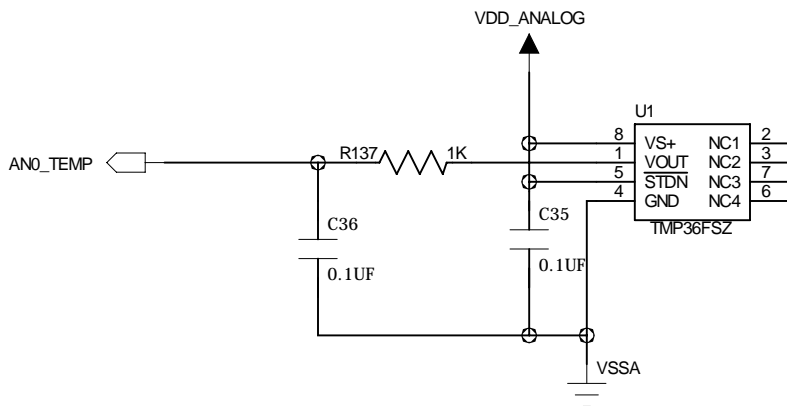
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DWG. NO. 18-600300-001  
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Unit gain OPAMP for Voltage monitor



Temperature Sensor



APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		12 March 2013	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		12 March 2013	VOLTAGE_MONITOR			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 16 of 17	PROD REV. REV_B
			FILE IES_Rev-B.sch	SCALE <Scale>		



