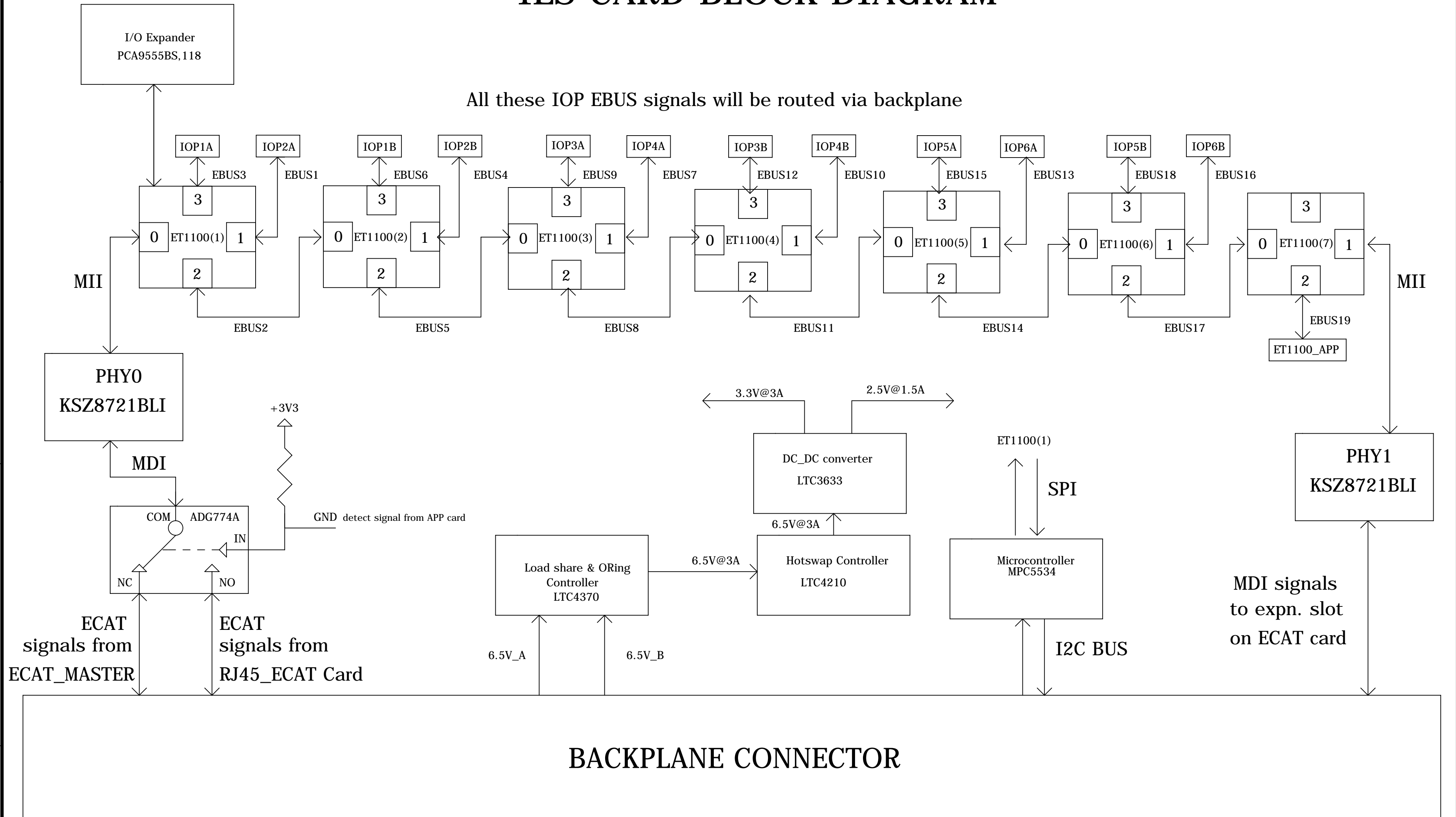


IES CARD BLOCK DIAGRAM



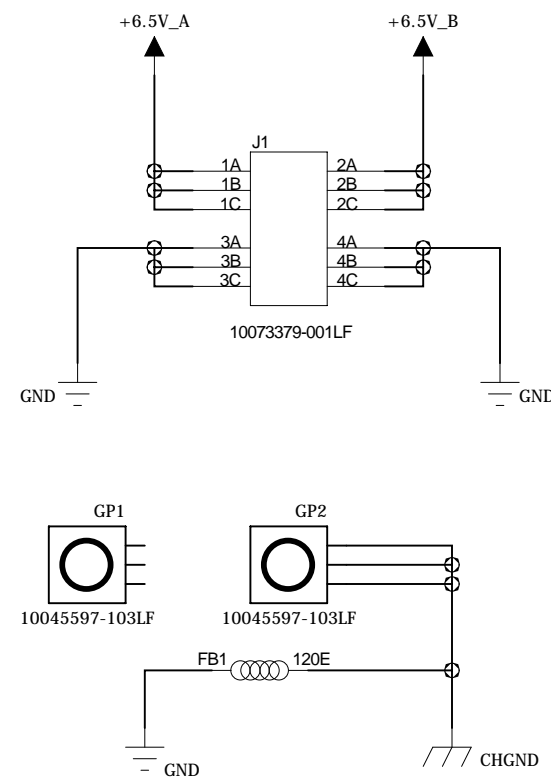
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		09/24/2012	BLOCK_DIAGRAM			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 2 of 16	PROD REV. A
				FILE IES-NGP_Rev-A.sch	SCALE <Scale>	

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DWG. NO.
18-600300-001

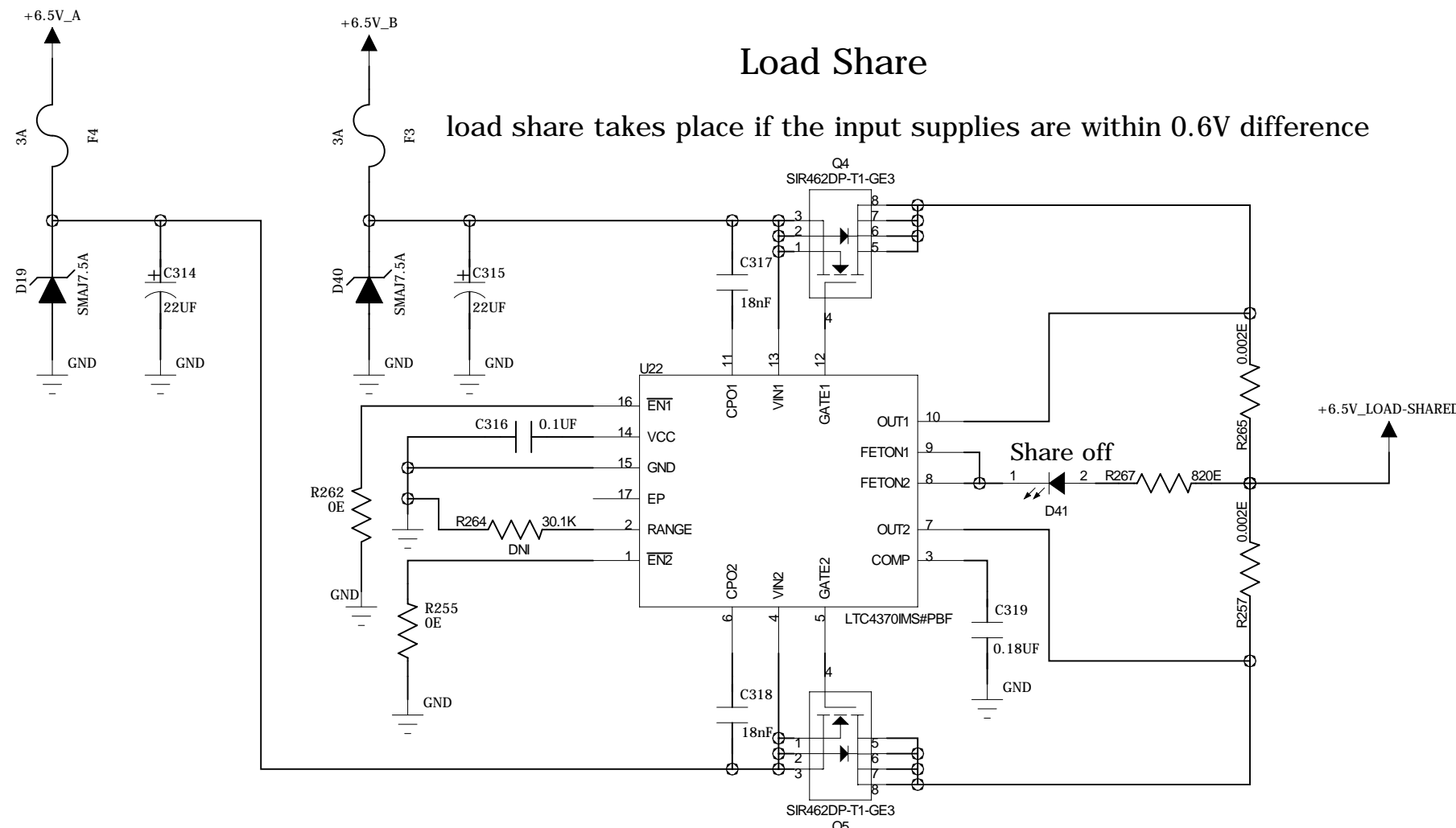
SH
3
REV.
A

Input power connector



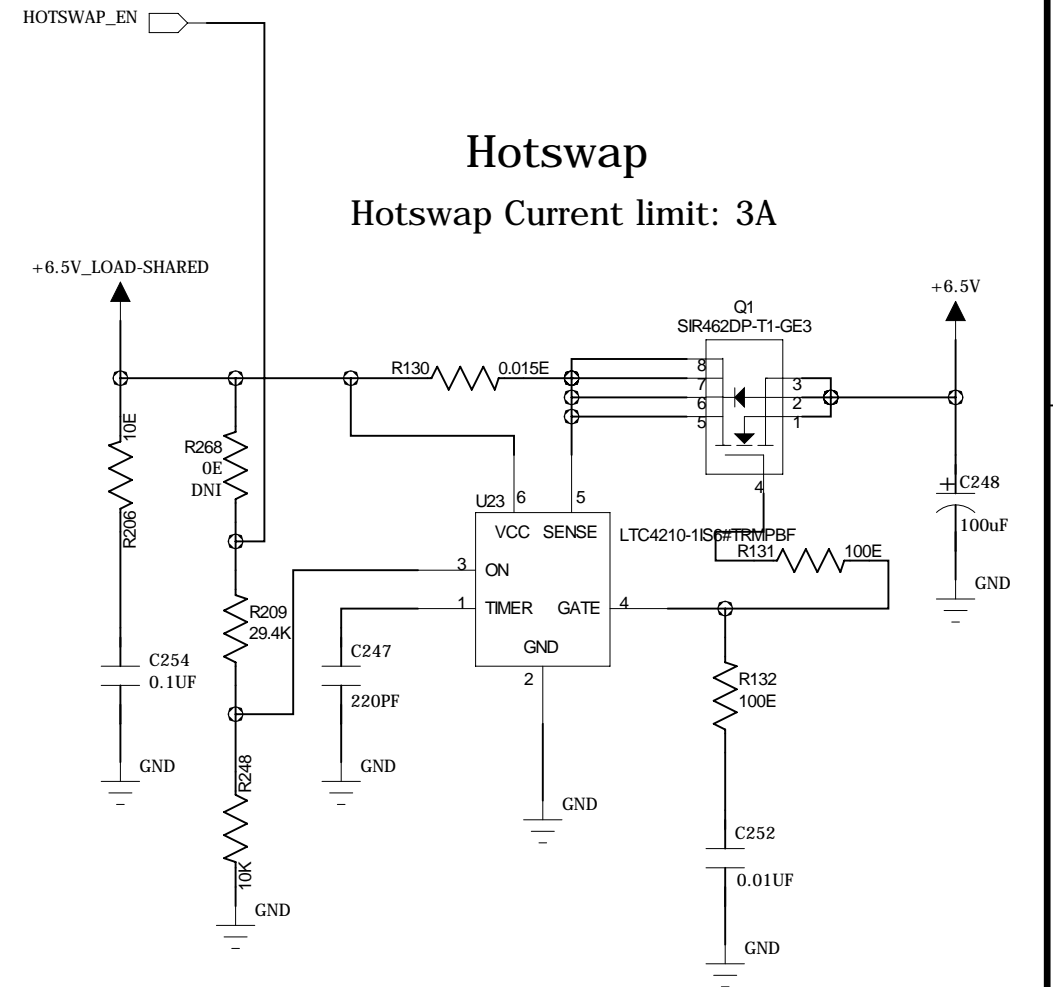
Load Share

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



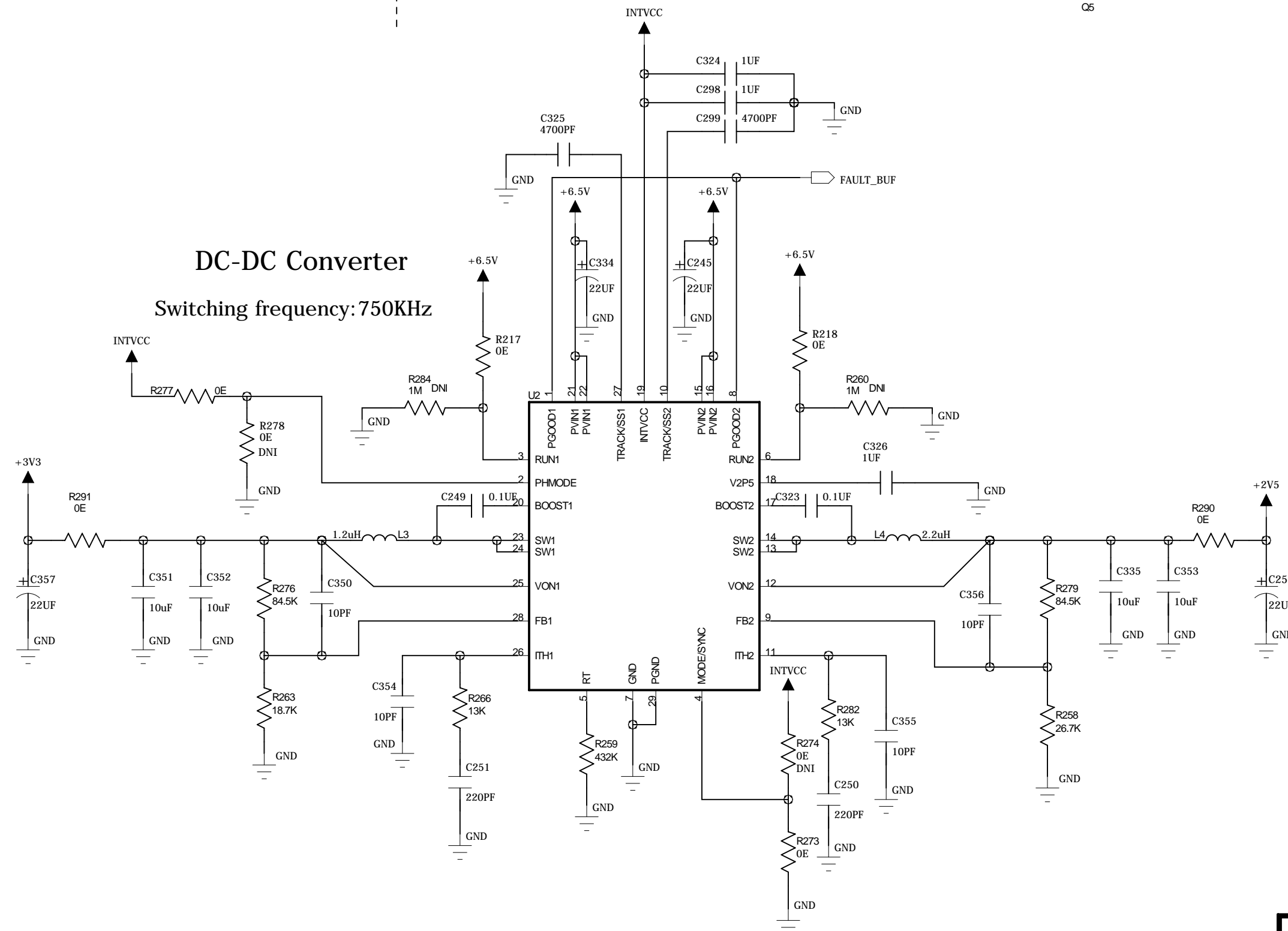
Hotswap

Hotswap Current limit: 3A



DC-DC Converter

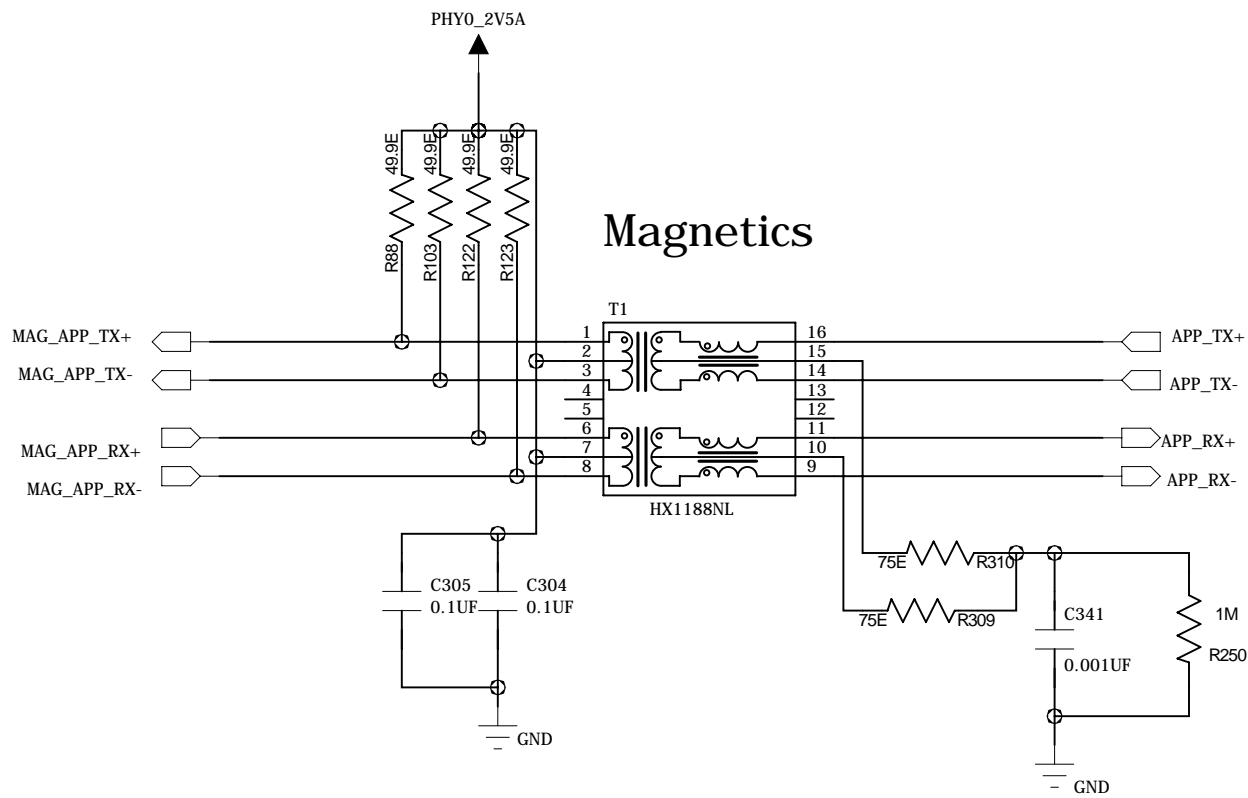
Switching frequency: 750KHz



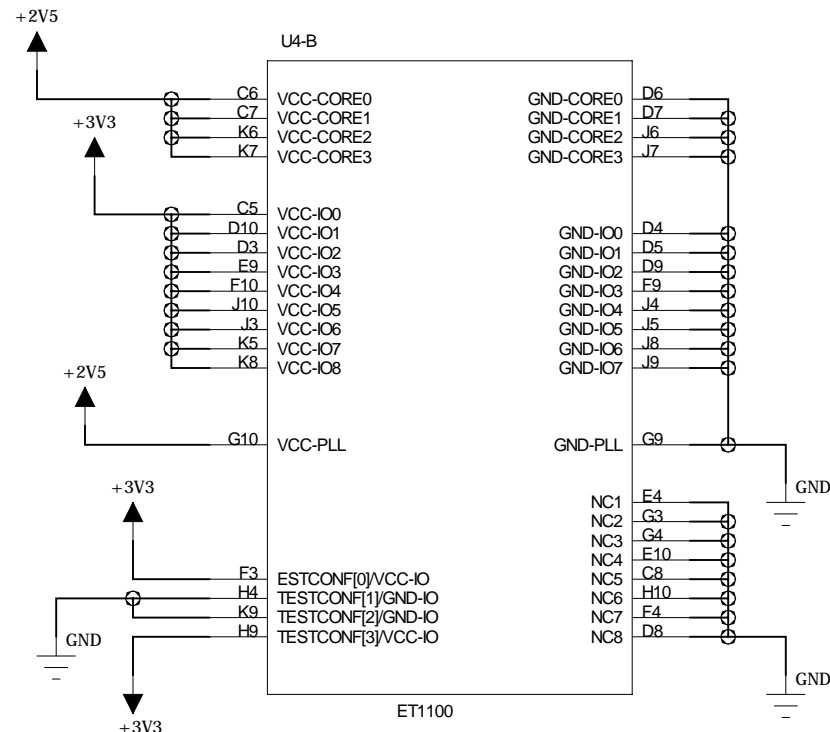
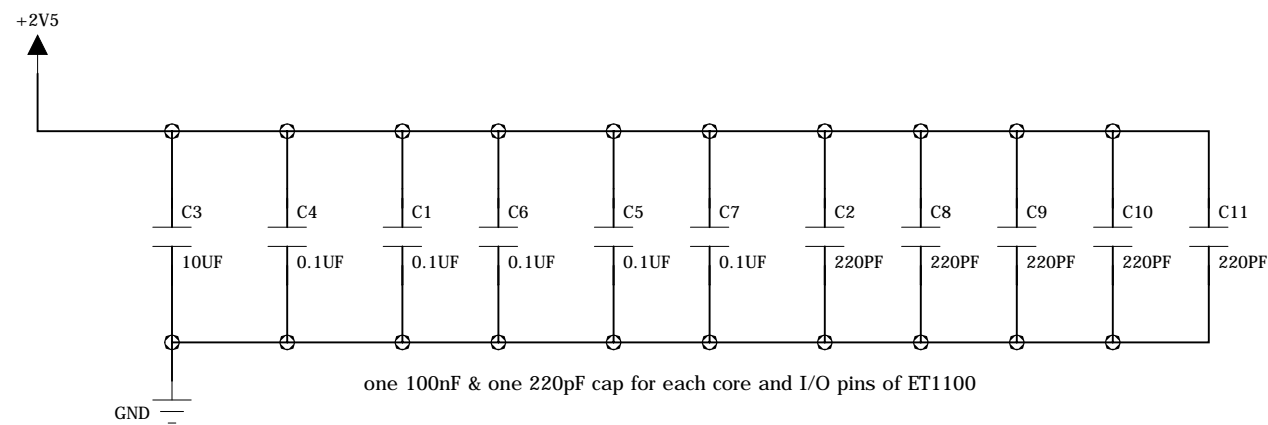
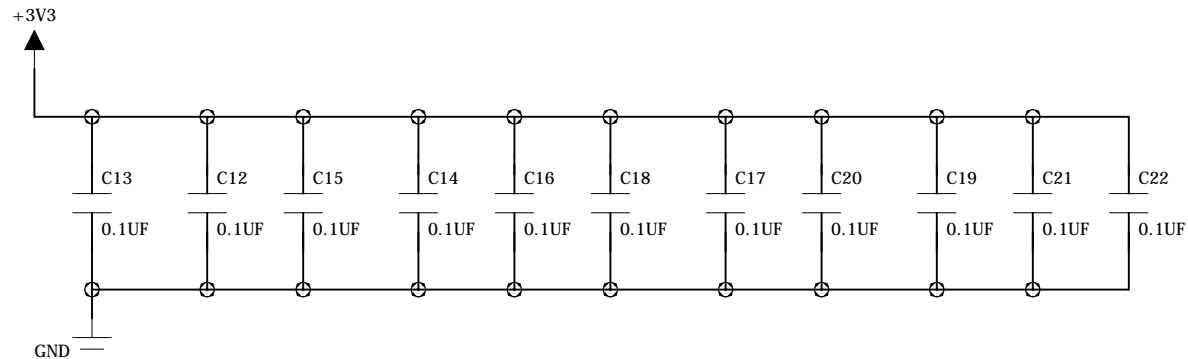
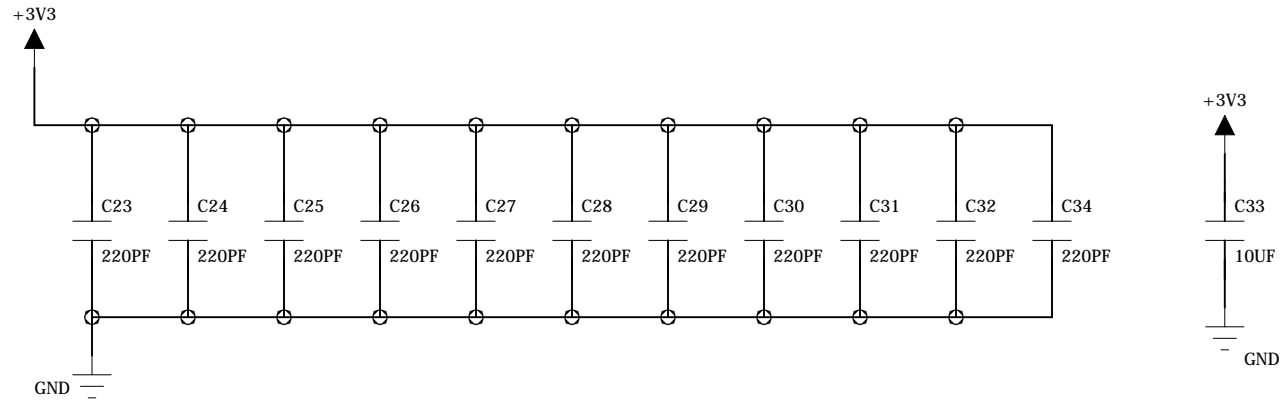
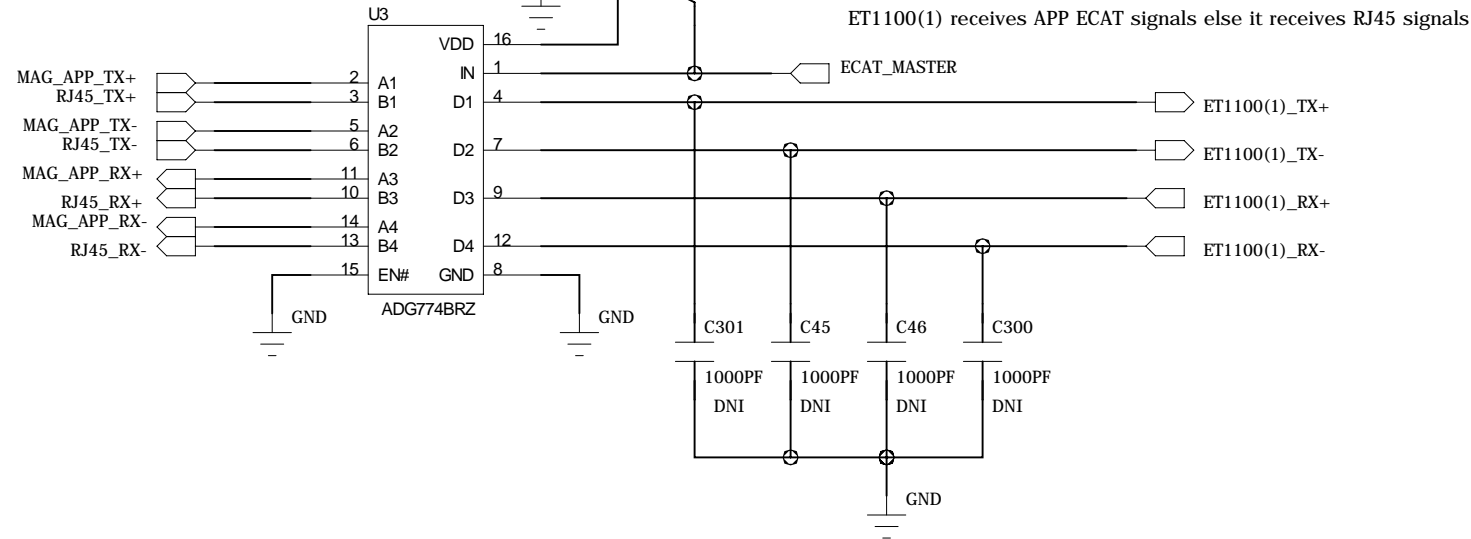
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		09/24/2012	LOAD_SHARE,HOTSWAP,DC-DC			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 3 of 16	PROD REV. A
			FILE IES-NGP_Rev-A.sch	SCALE <Scale>		

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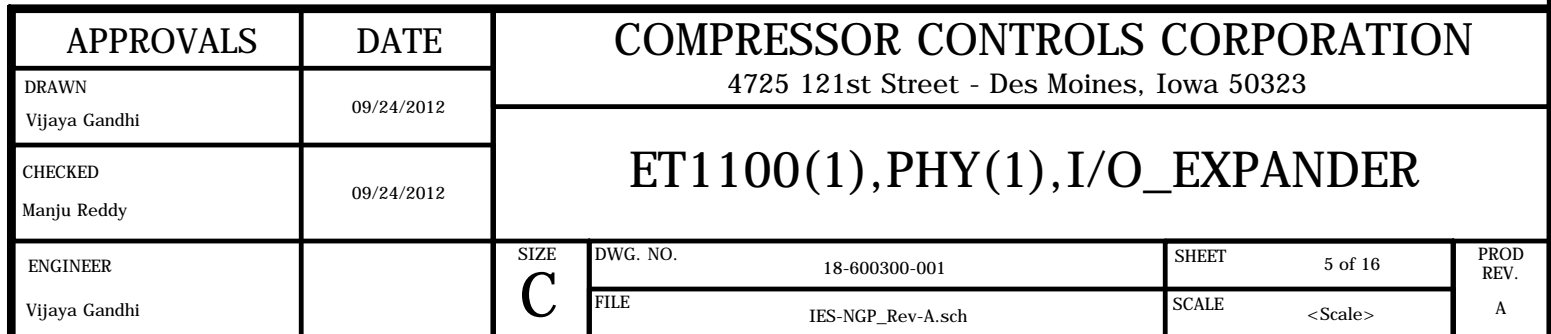
DWG. NO. 18-600300-001 SH 4 REV. A

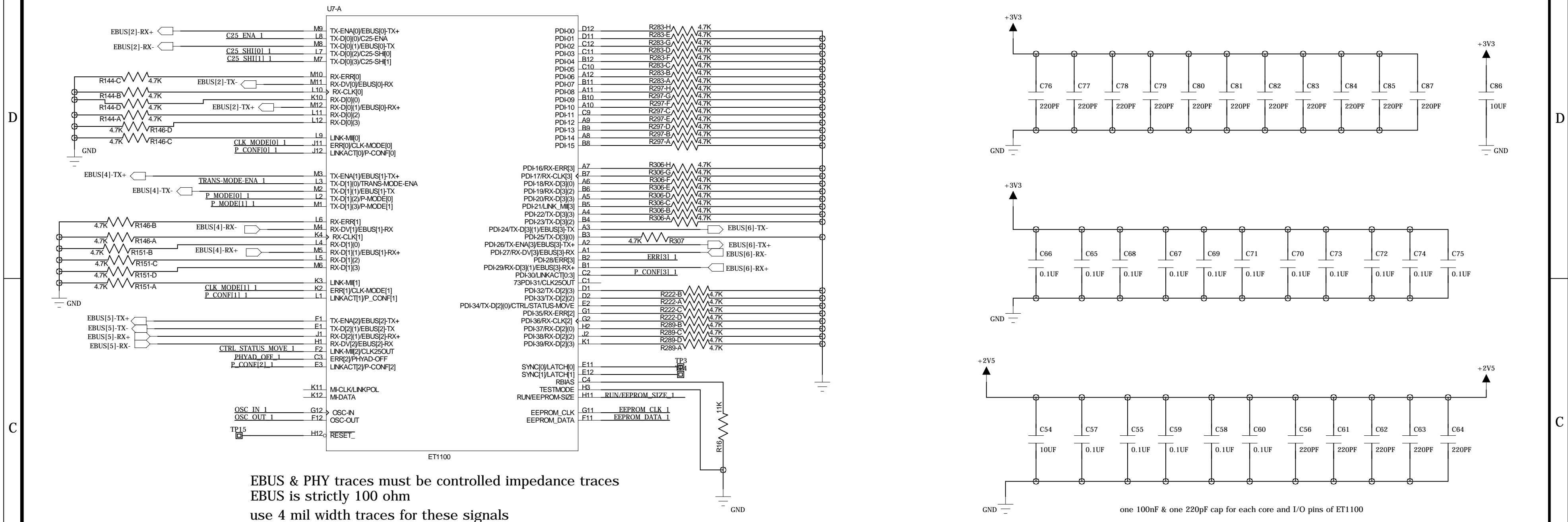


High Speed Diff. MUX

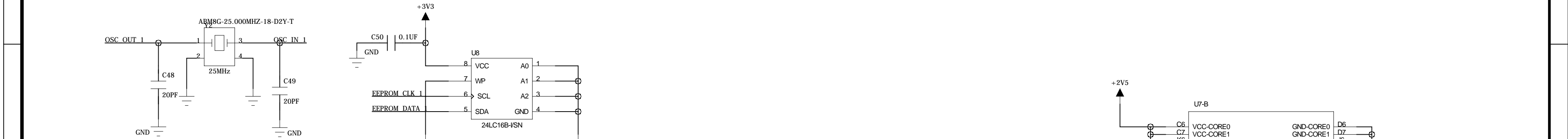


APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		09/24/2012	MUX,MAGNETICS,ET1100(1)			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 4 of 16	PROD REV. A
			FILE IES-NGP_Rev-A.sch	SCALE <Scale>		

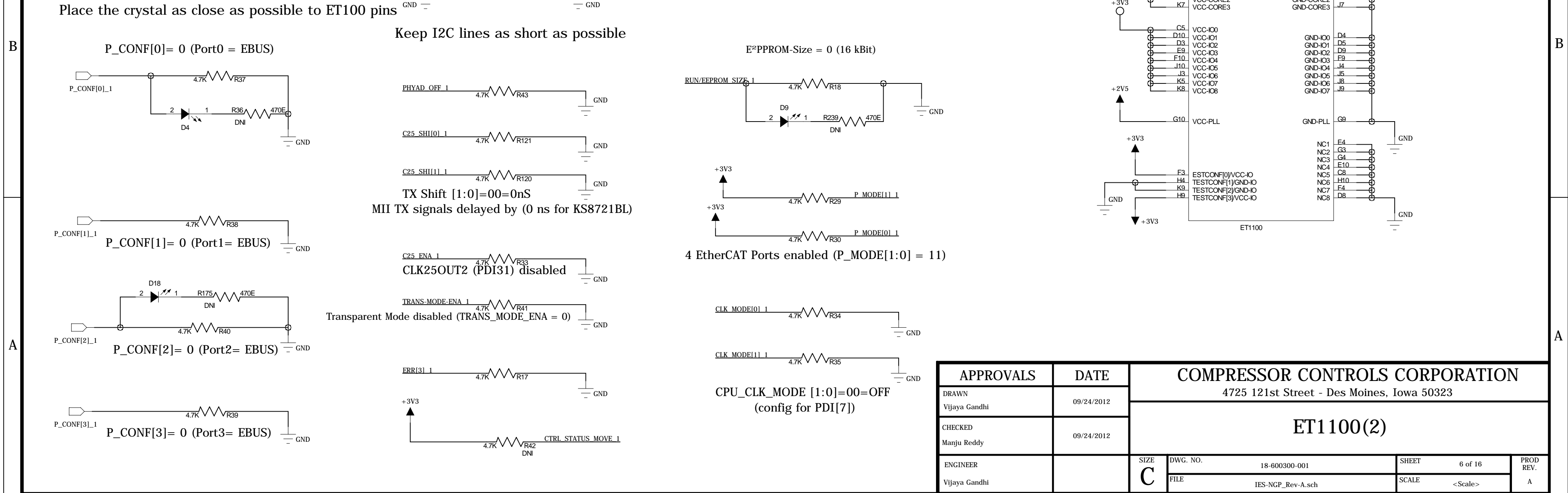




EBUS & PHY traces must be controlled impedance traces
EBUS is strictly 100 ohm
use 4 mil width traces for these signals



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



Place the crystal as close as possible to ET100 pins

Keep I2C lines as short as possible

E²PPROM-Size = 0 (16 kBit)

4 EtherCAT Ports enabled (P_MODE[1:0] = 11)

CPU_CLK_MODE [1:0]=00=OFF
(config for PDI[7])

APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION				
DRAWN Vijaya Gandhi		09/24/2012		4725 121st Street - Des Moines, Iowa 50323				
CHECKED Manju Reddy		09/24/2012		ET1100(2)				
ENGINEER Vijaya Gandhi		C	SIZE	DWG. NO.	18-600300-001	SHEET	6 of 16	PROD REV.
			FILE	IES-NGP_Rev-A.sch	SCALE	<Scale>	A	

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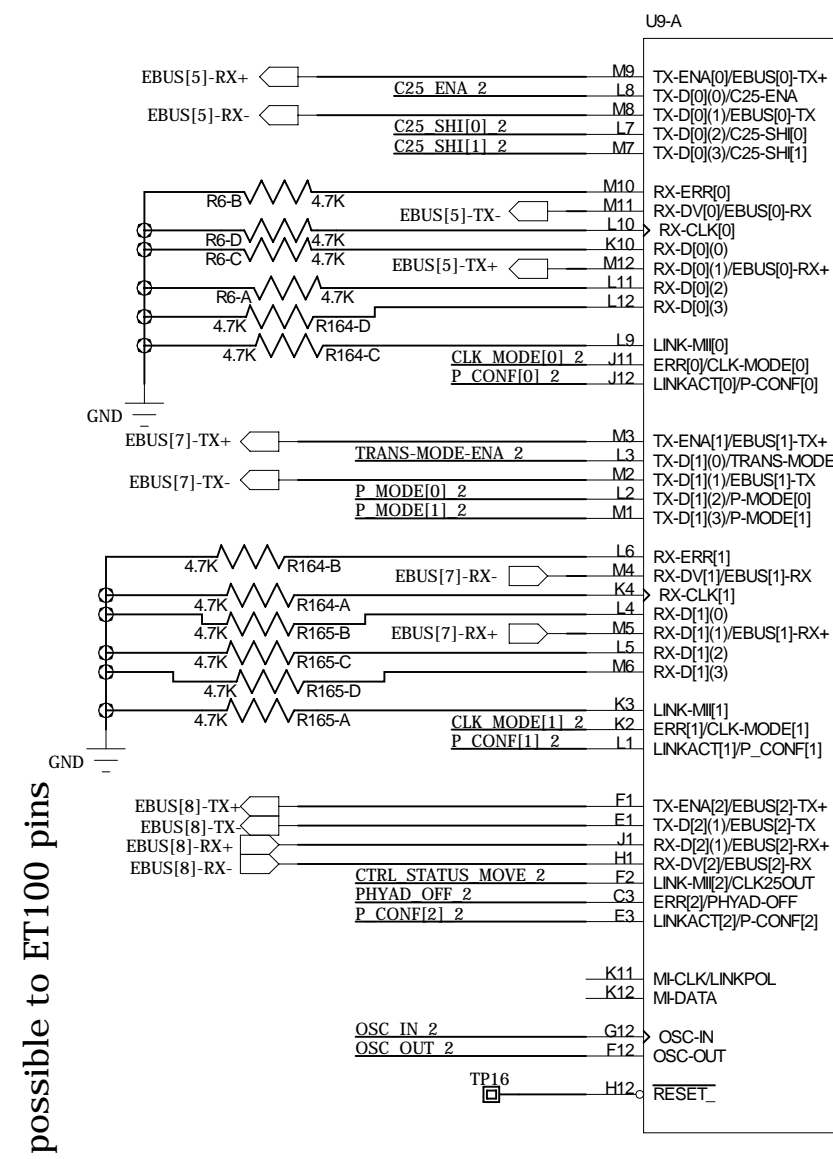
DWG. NO. 18-600300-001
SH 7
REV. A

D

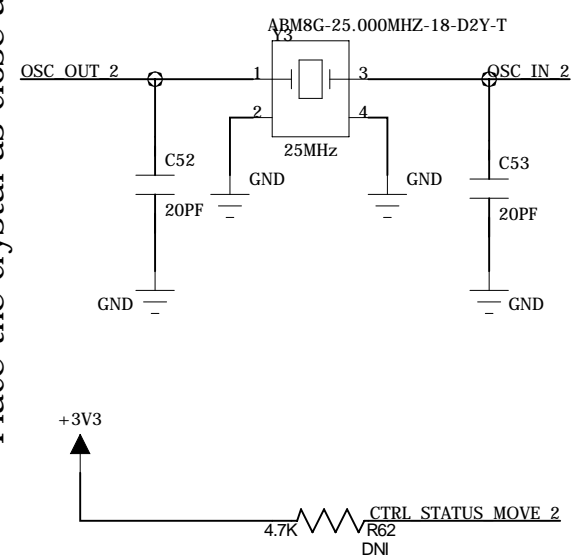
C

B

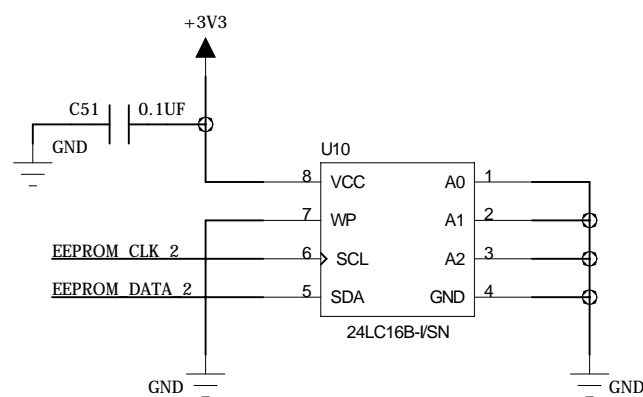
A



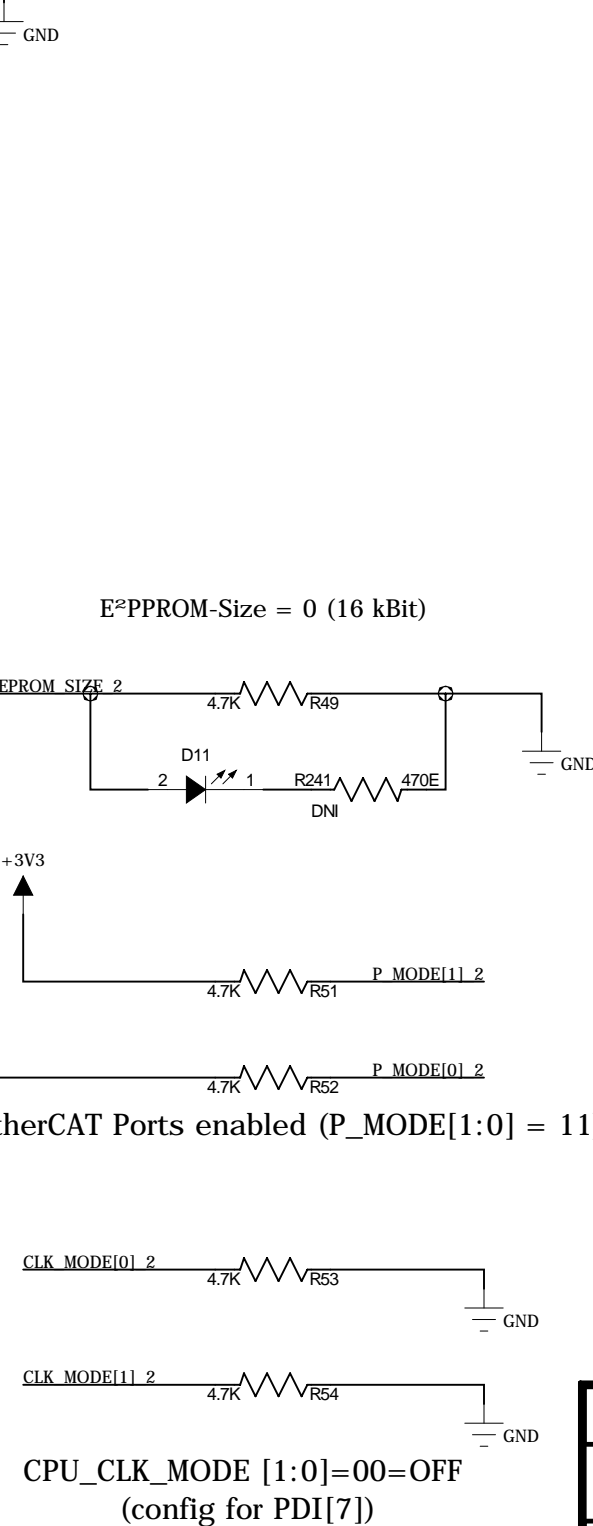
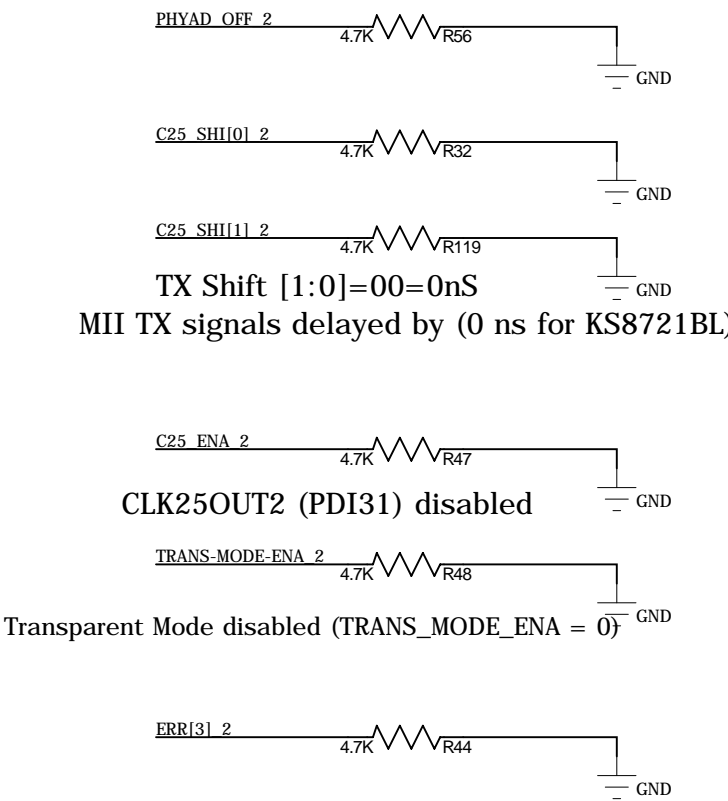
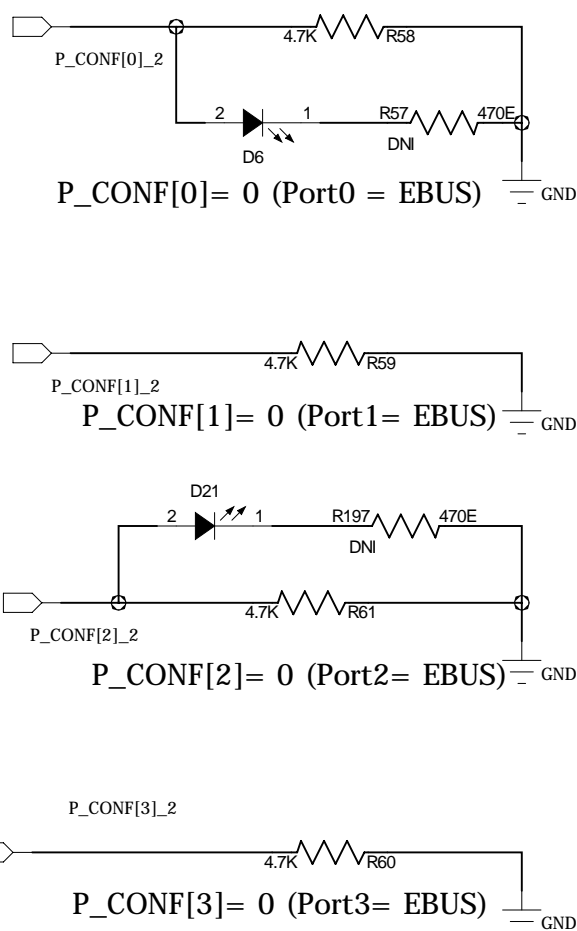
Place the crystal as close as possible to ET100 pins



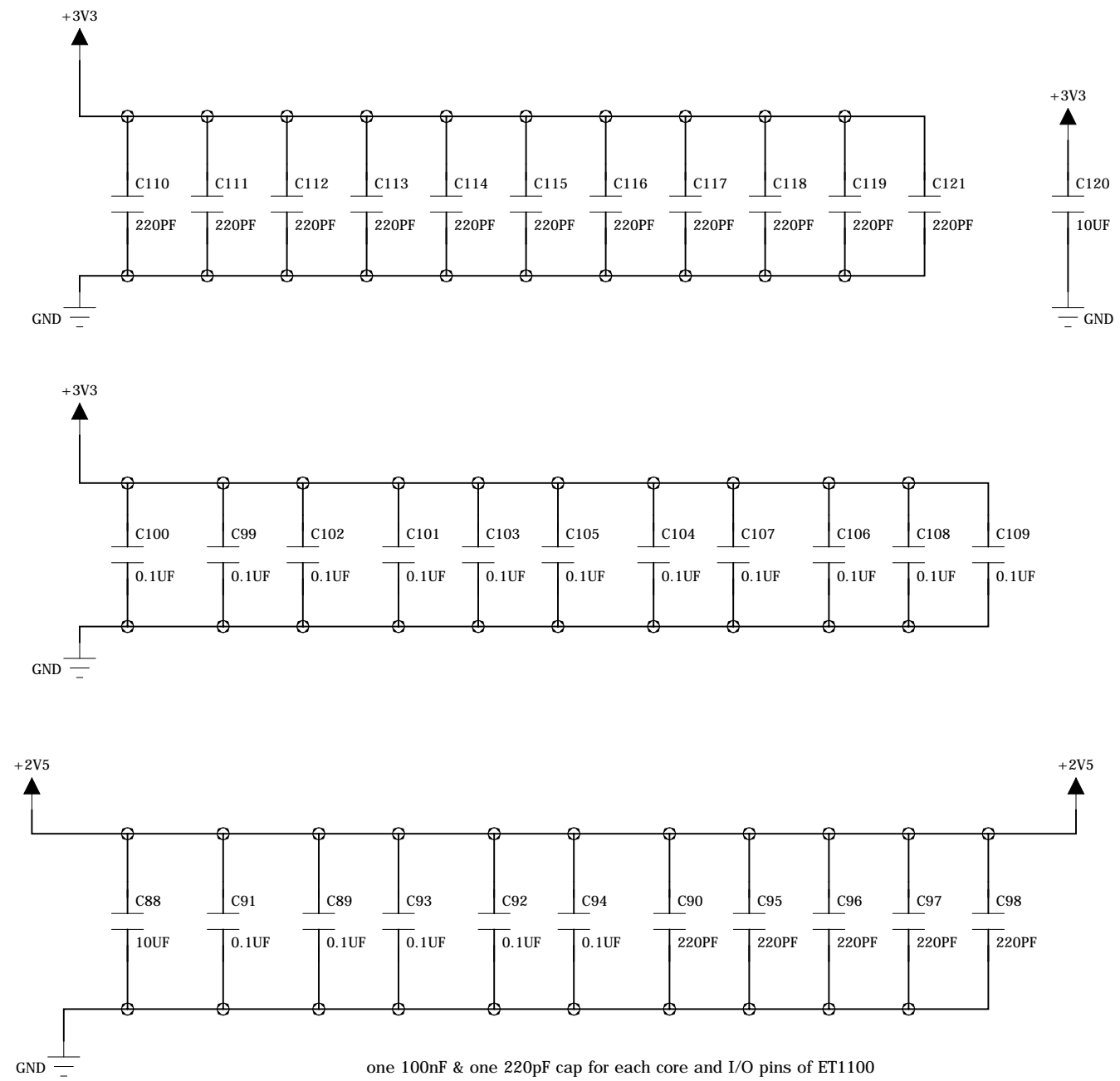
EBUS & PHY traces must be controlled impedance traces
EBUS is strictly 100 ohm
use 4 mil width traces for these signals



Keep I2C lines as short as possible



4 EtherCAT Ports enabled (P_MODE[1:0] = 11)

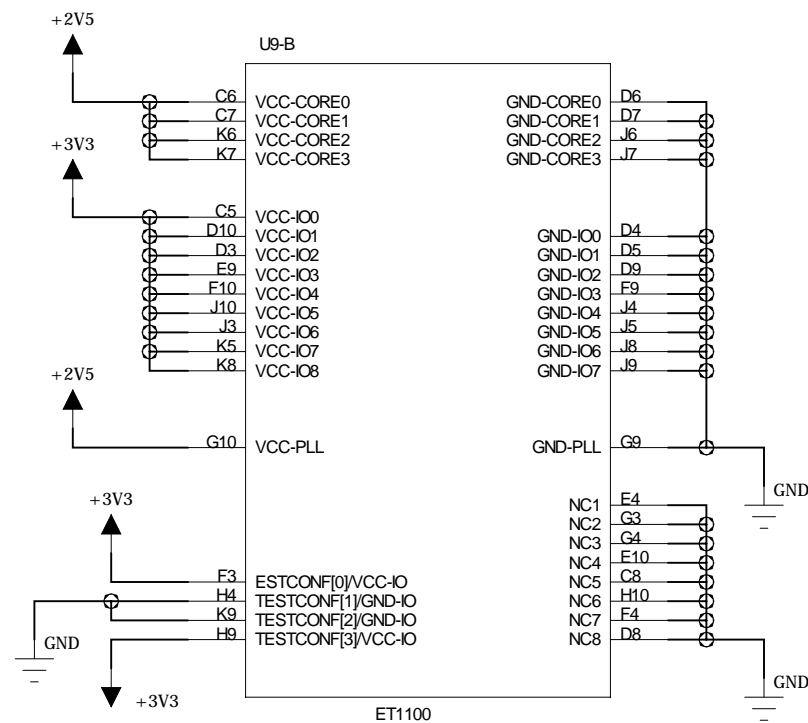


D

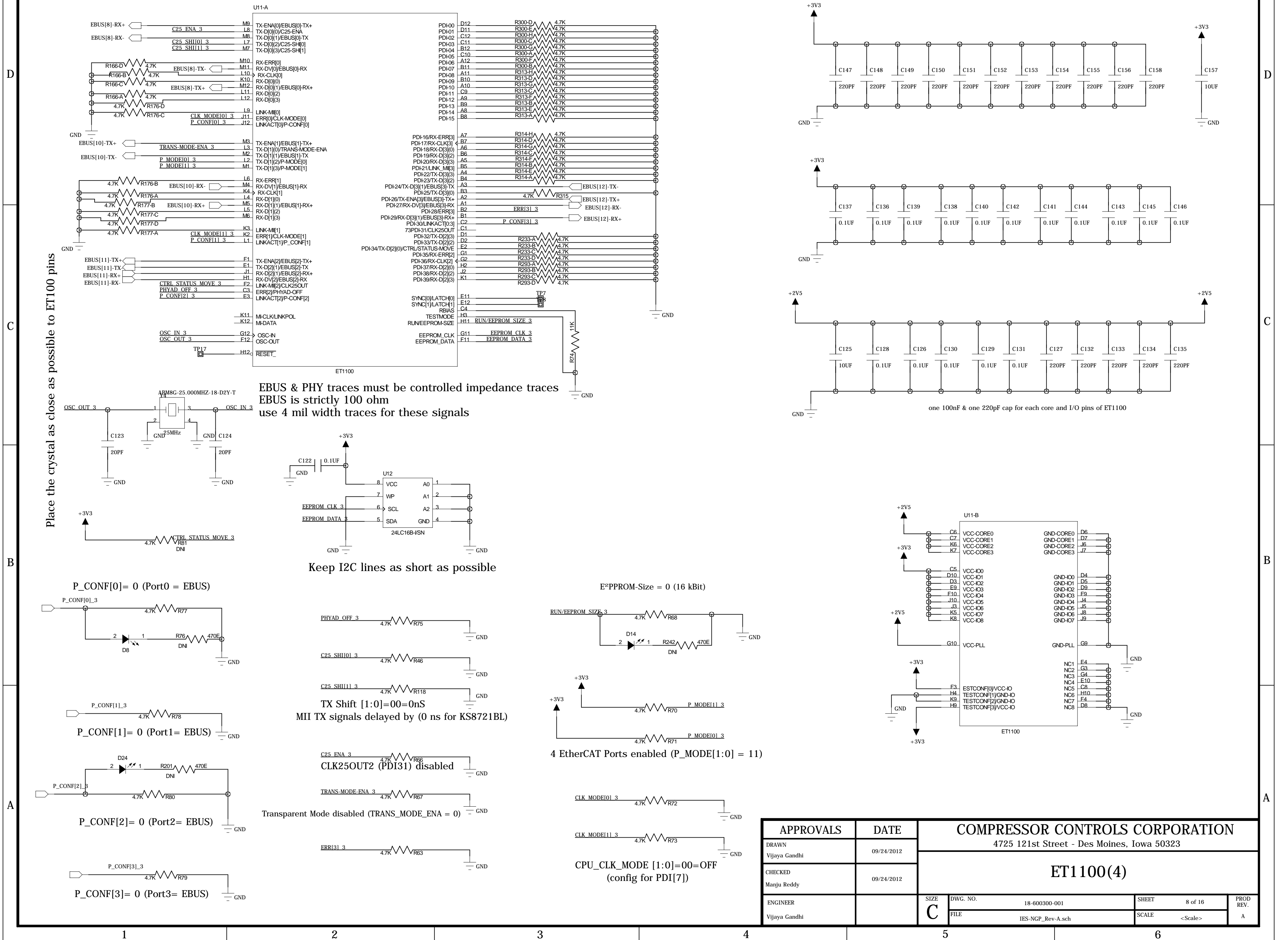
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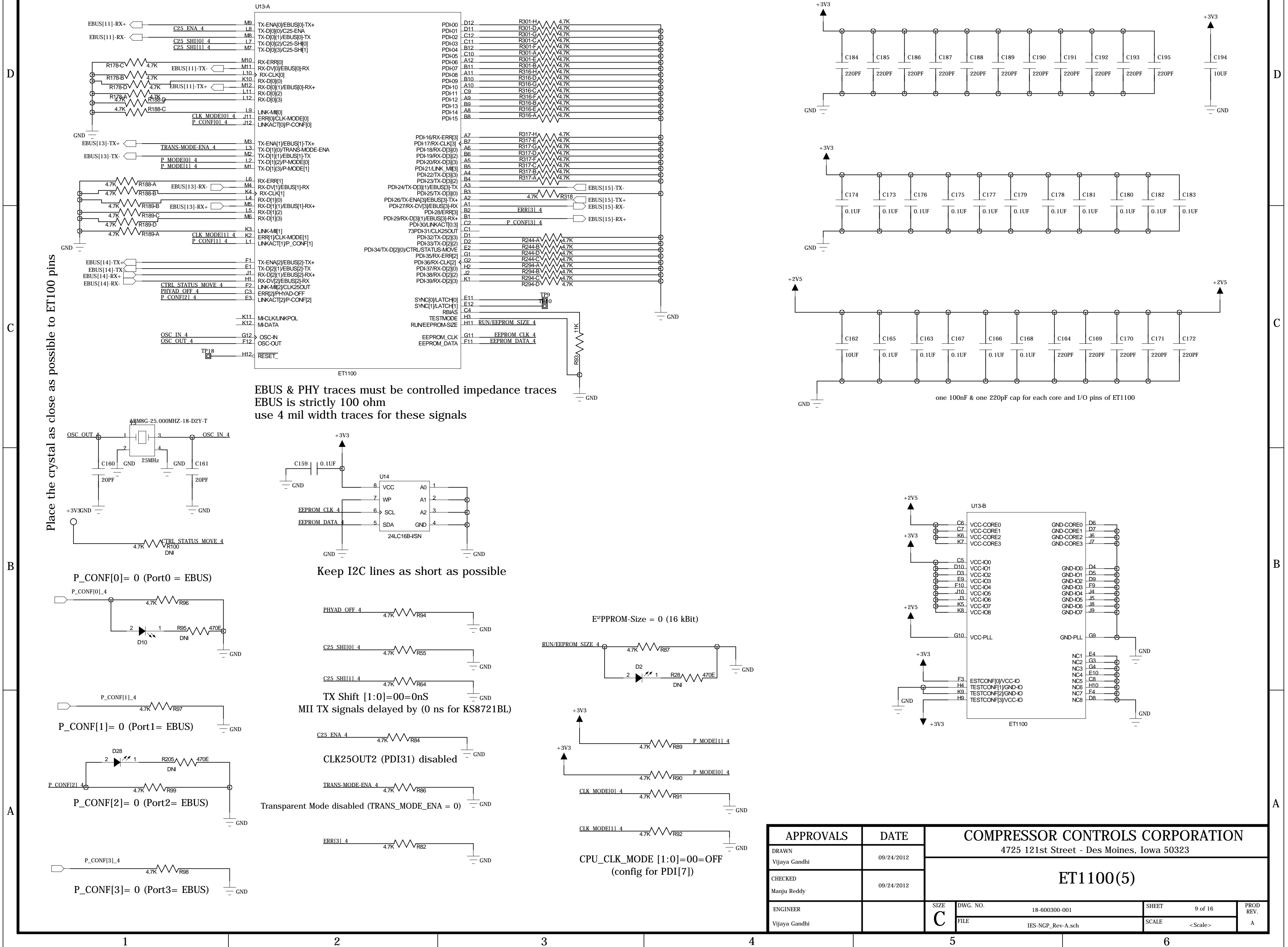
B

A



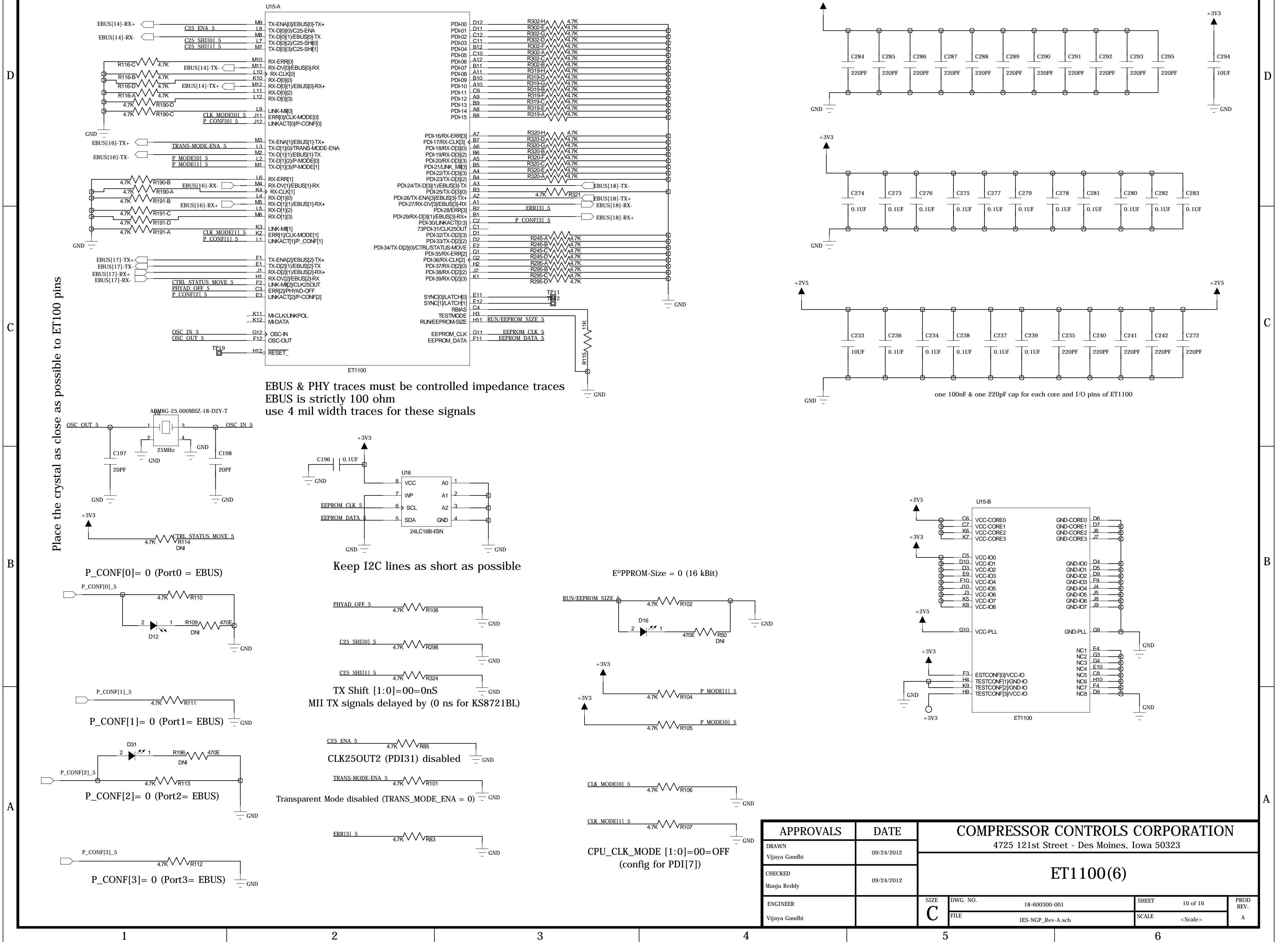
APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN	Vijaya Gandhi	09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
CHECKED	Manju Reddy	09/24/2012	ET1100(3)			
ENGINEER	Vijaya Gandhi		SIZE	DWG. NO.	SHEET	PROD REV.
			C	18-600300-001	7 of 16	A
				FILE	SCALE	
				IES-NGP_Rev-A.sch	<Scale>	





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DWG. NO. 18-600300-001
SH 10
REV. A



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DWG. NO. 18-600300-001
SH 11
REV. A

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

E²PPROM-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		09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
			ET1100(7),PHY(2)			
CHECKED Manju Reddy		09/24/2012	SIZE C	DWG. NO. 18-600300-001	SHEET 11 of 16	PROD REV.
				FILE IES-NGP_Rev-A.sch	SCALE <Scale>	A

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DWG. NO.
18-600300-001

SH
12

REV.
A

D

C

B

A

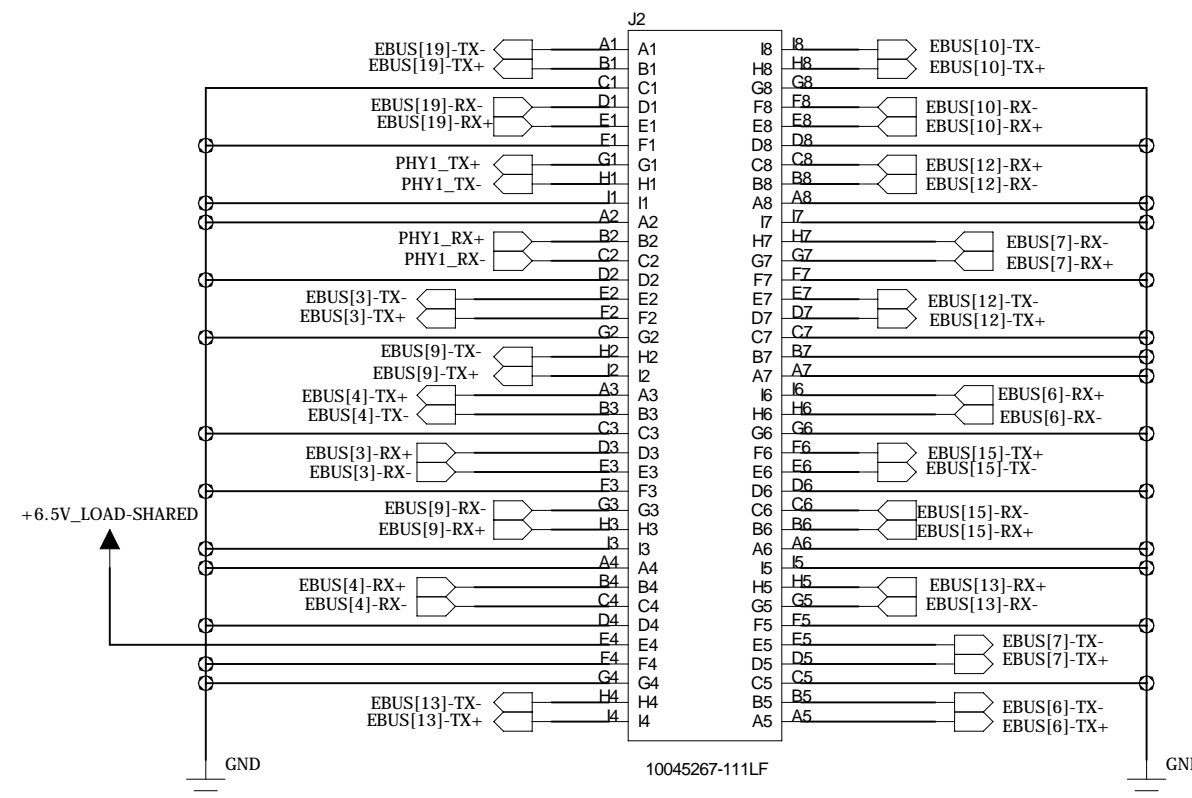
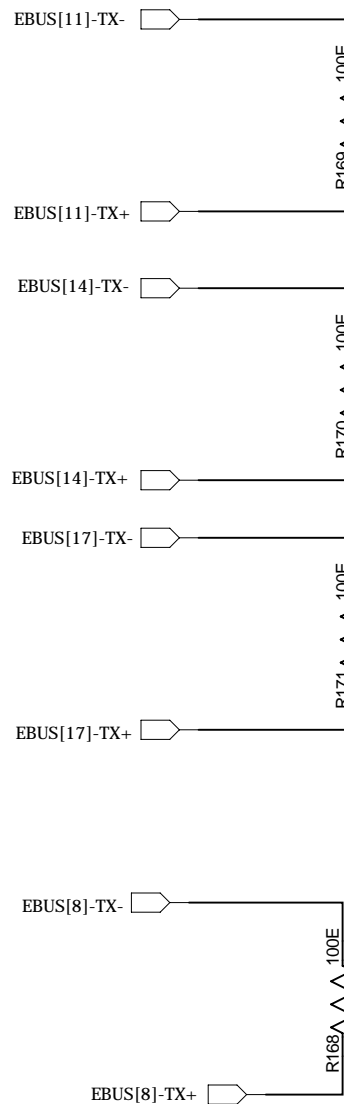
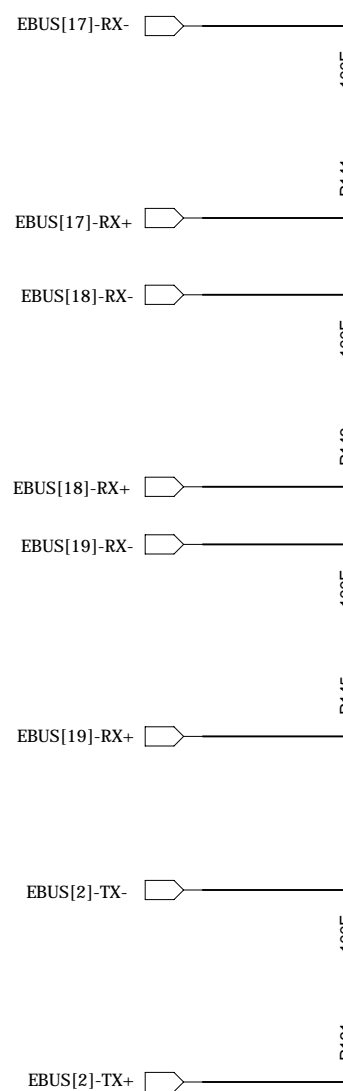
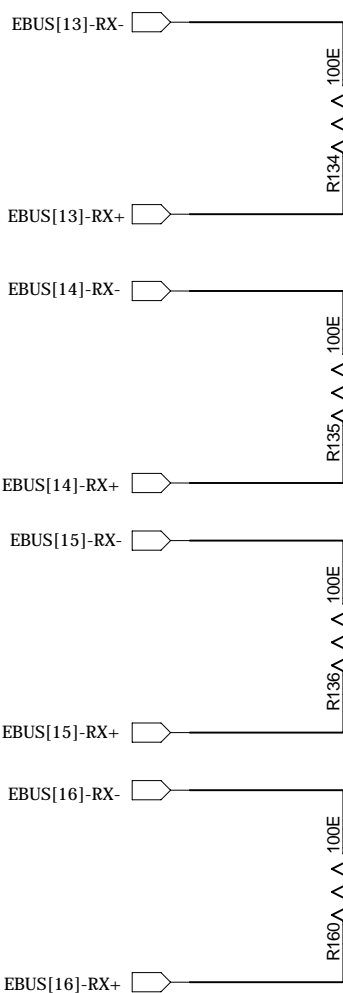
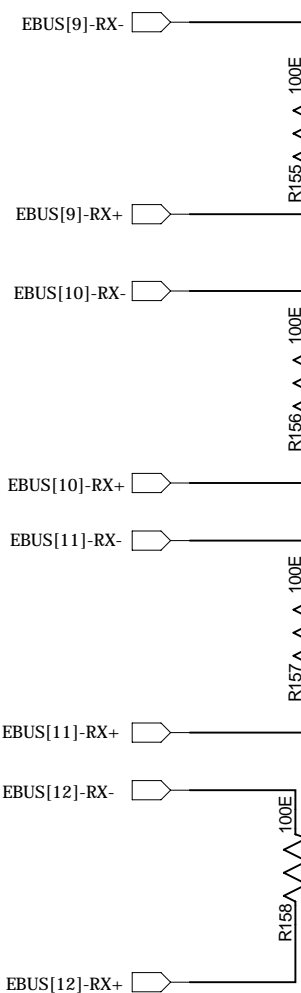
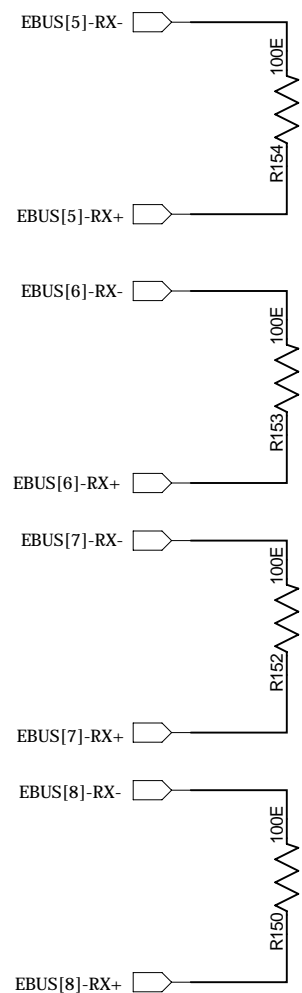
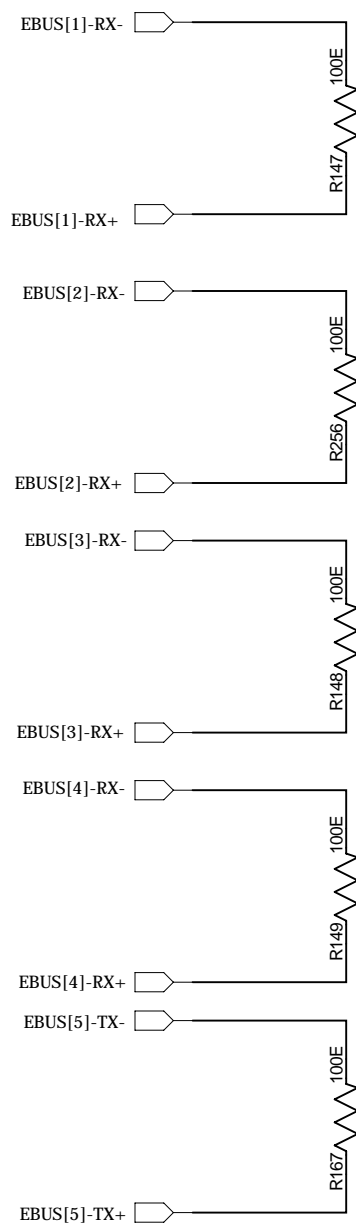
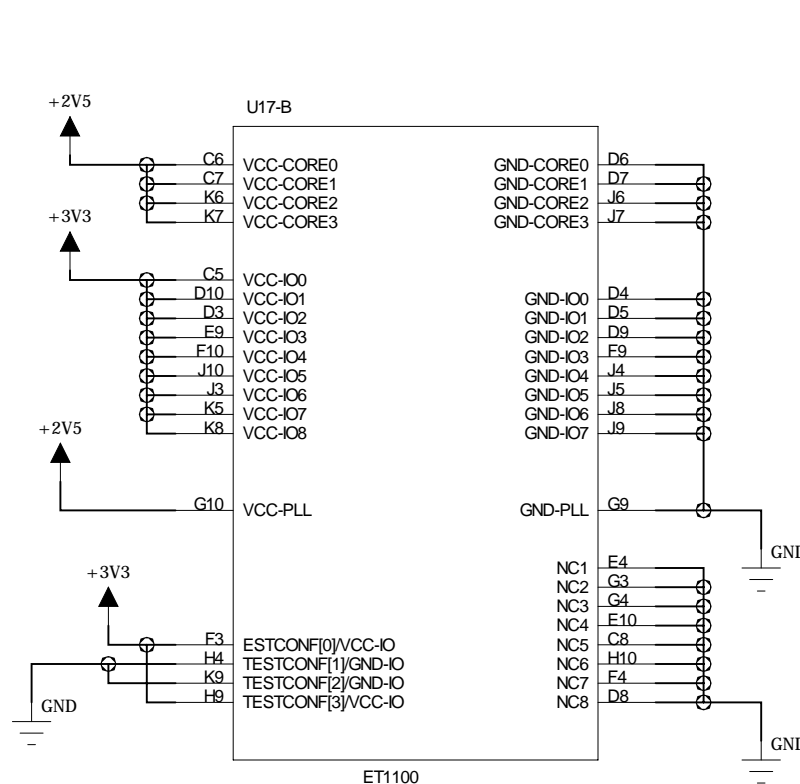
D

C

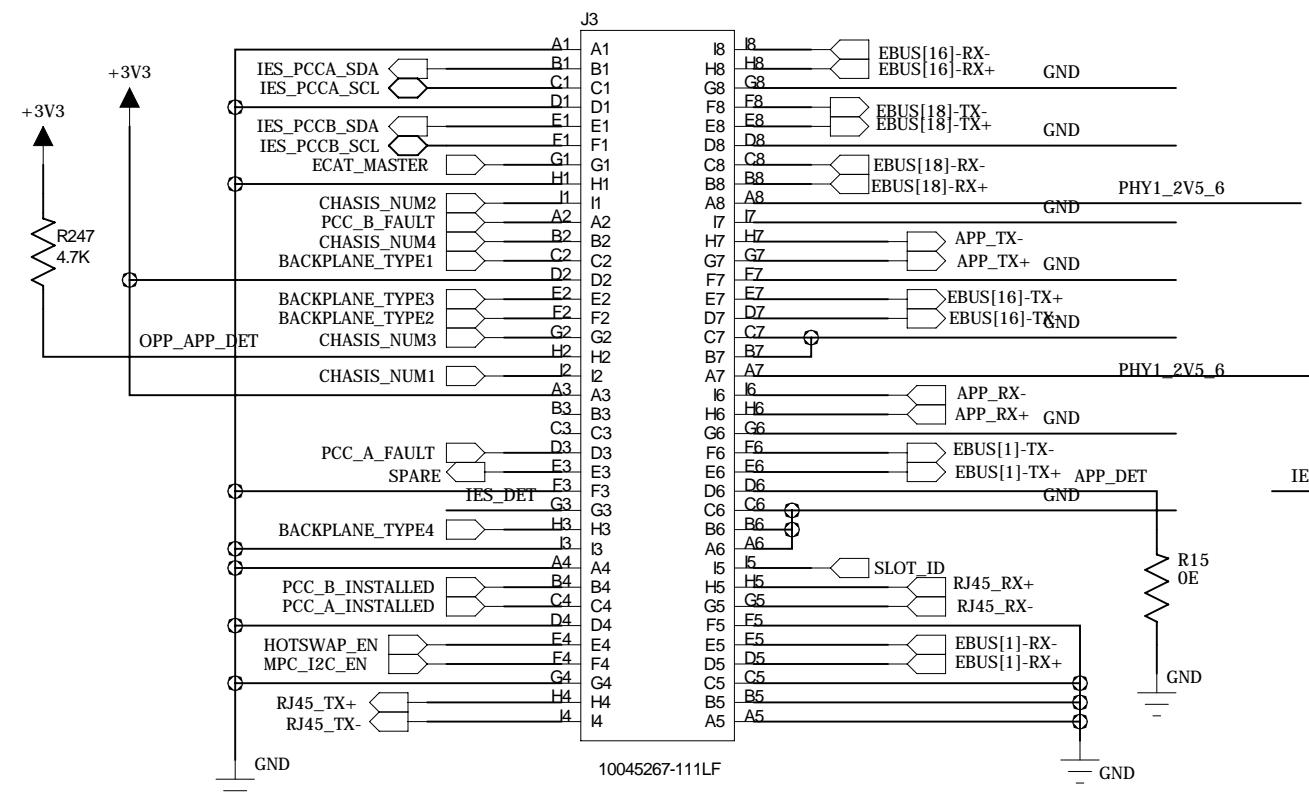
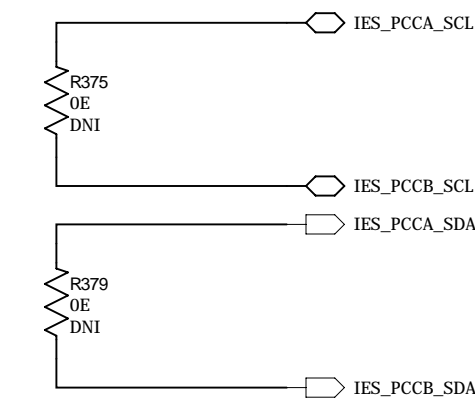
B

A

place all the 100E EBUS RX termination resistors
close to RX pins of ET1100s



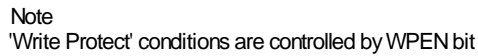
Ground is provided between each EBUS port signals



ECAT_MASTER signal on APP card should be GND

APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION 4725 121st Street - Des Moines, Iowa 50323			
DRAWN	Vijaya Gandhi	09/24/2012	ET1100(7), SIGNAL_CONNECTORS			
CHECKED	Manju Reddy	09/24/2012				
ENGINEER	Vijaya Gandhi		SIZE	DWG. NO.	SHEET	PROD. REV.
			C	18-600300-001	12 of 16	A
			FILE	IES-NGP_Rev-A.sch	SCALE	<Scale>

WHITE LED



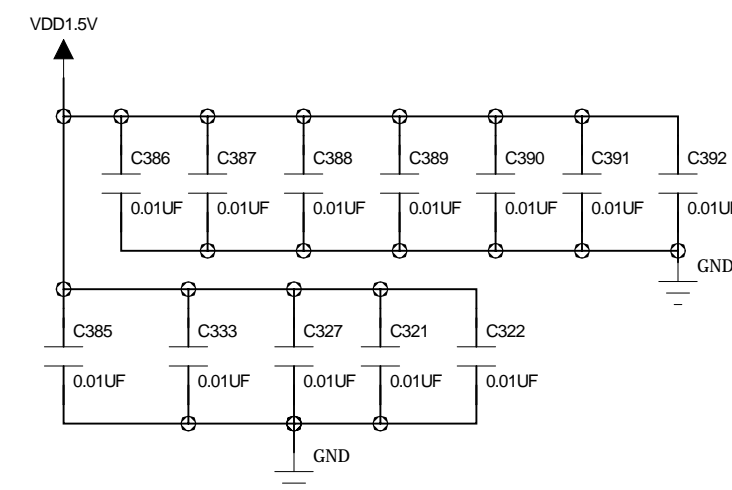
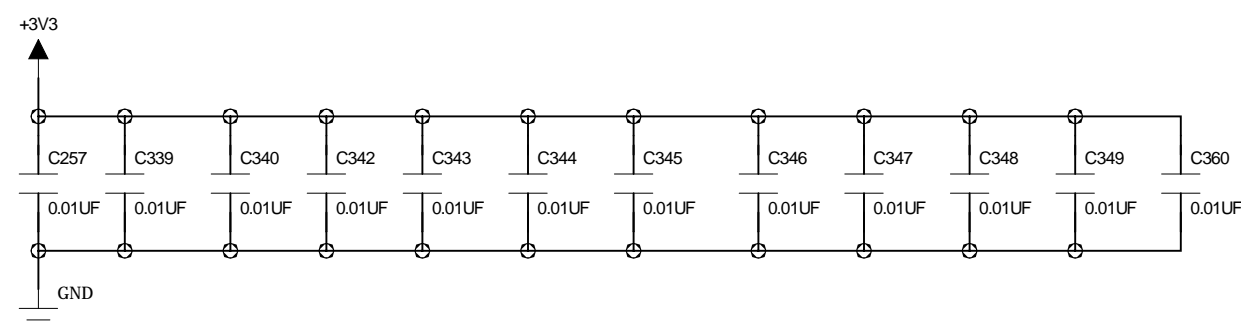
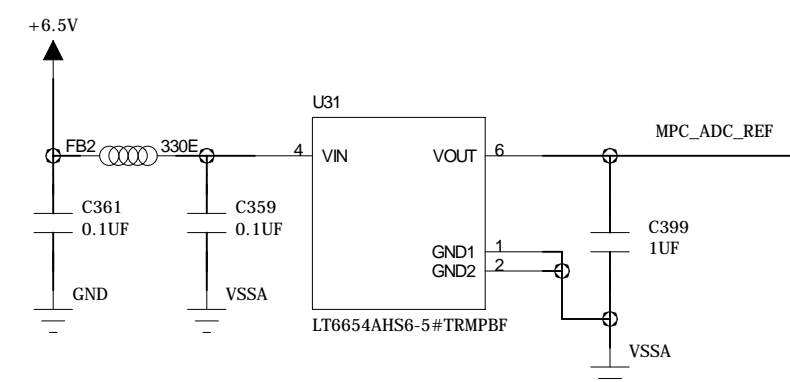
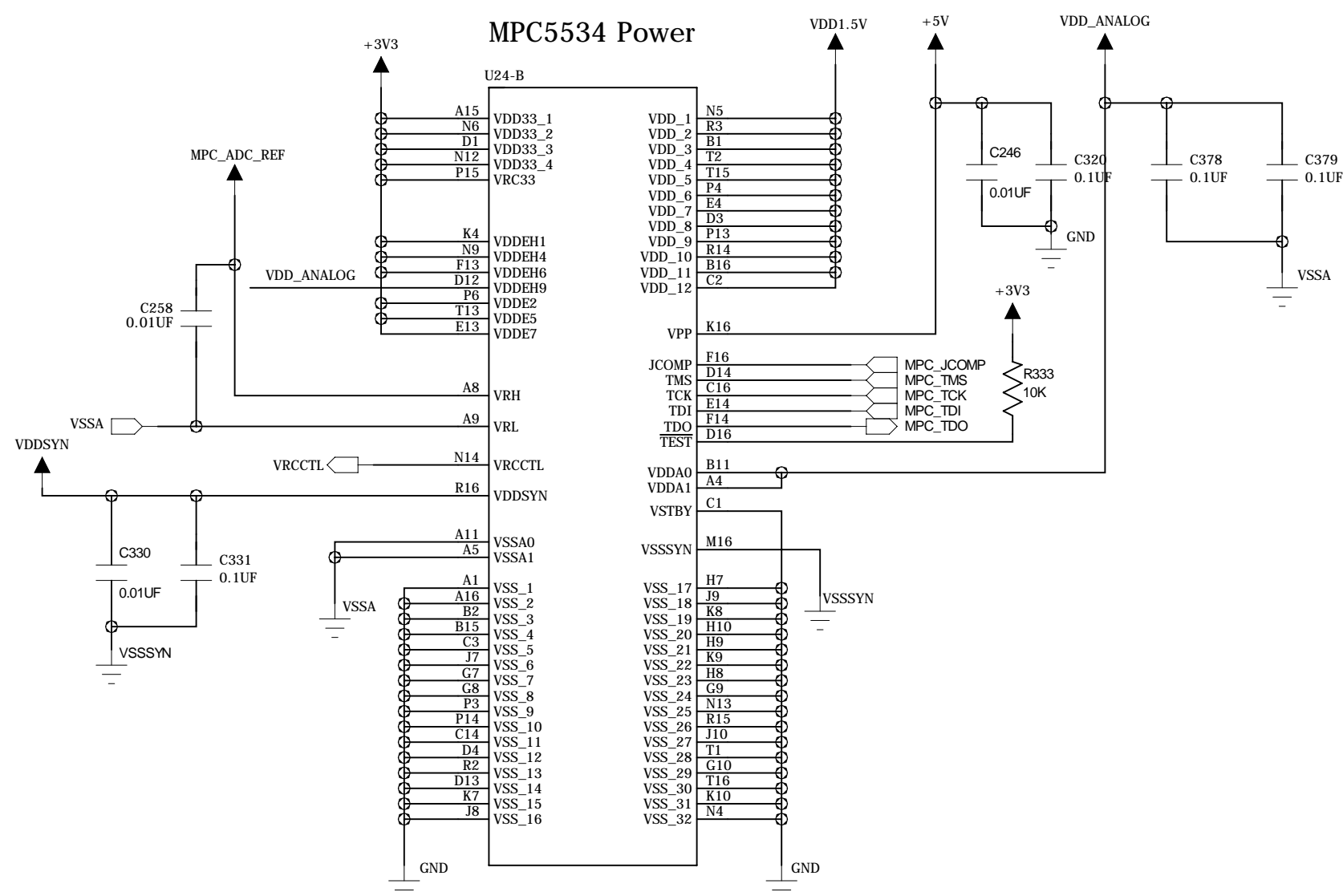
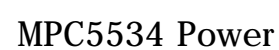
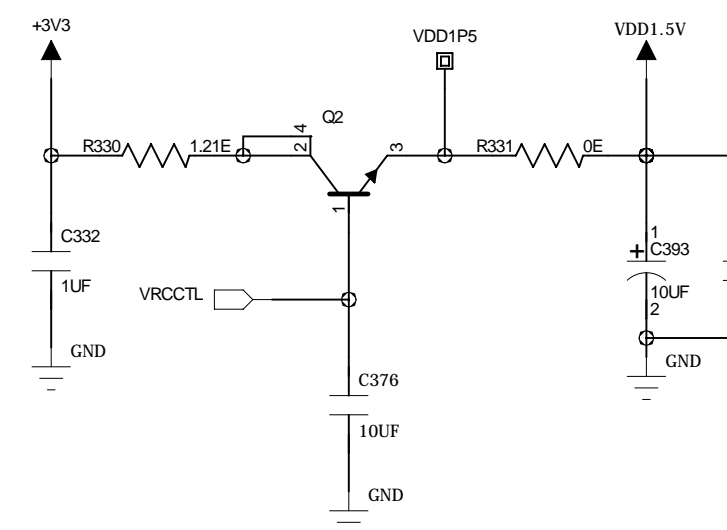
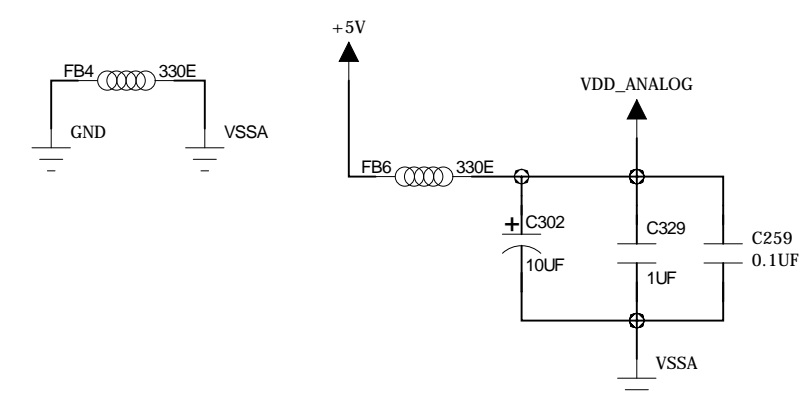
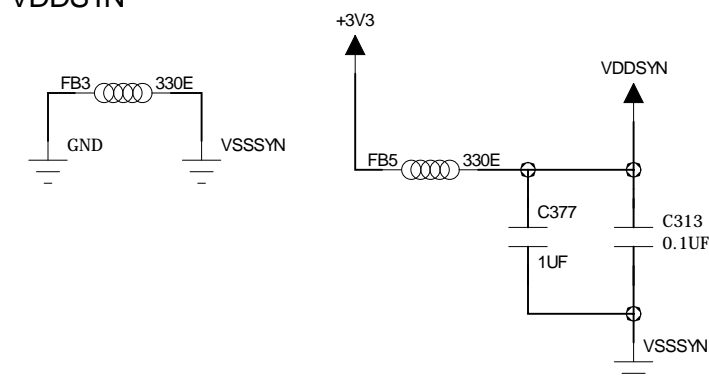
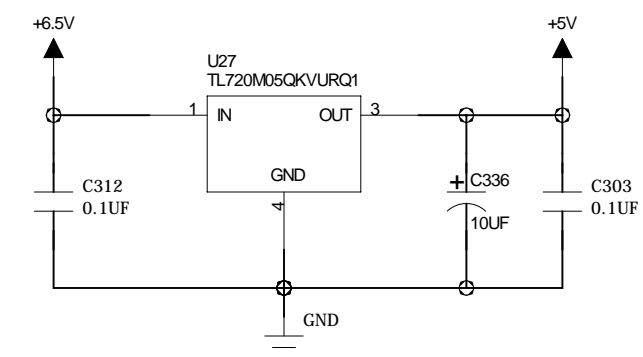
APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION 4725 121st Street - Des Moines, Iowa 50323			
DRAWN Vijaya Gandhi		09/24/2012		LED_BUFFER, LOGO_LEDS			
CHECKED Manju Reddy		09/24/2012					
ENGINEER Vijaya Gandhi				SIZE C	DWG. NO. 18-600300-001	SHEET 13 of 16	PROD REV.
					FILE IES-NGP_Rev-A.sch	SCALE <Scale>	A

APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		09/24/2012		4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		09/24/2012		MPC5534			
ENGINEER Vijaya Gandhi		<div>SIZE</div> <div>C</div>	DWG. NO. 18-600300-001	SHEET 14 of 16		PROD REV.	
			FILE IES-NGP_Rev-A.sch	SCALE <Scale>		A	

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DWG. NO.	18-600300-001
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SH	REV.
15	A



APPROVALS		DATE		COMPRESSOR CONTROLS CORPORATION						
DRAWN Vijaya Gandhi		09/24/2012		4725 121st Street - Des Moines, Iowa 50323						
CHECKED Manju Reddy		09/24/2012		MPC5534_POWER						
ENGINEER Vijaya Gandhi				SIZE C	DWG. NO. 18-600300-001		SHEET 15 of 16		PROD REV. A	
				FILE	IES-NGP_Rev-A.sch		SCALE <Scale>			

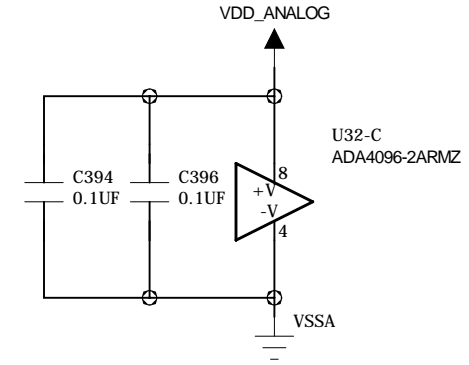
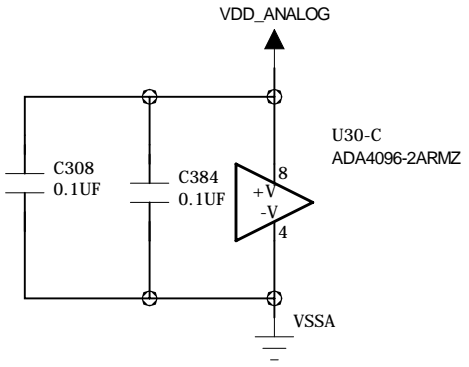
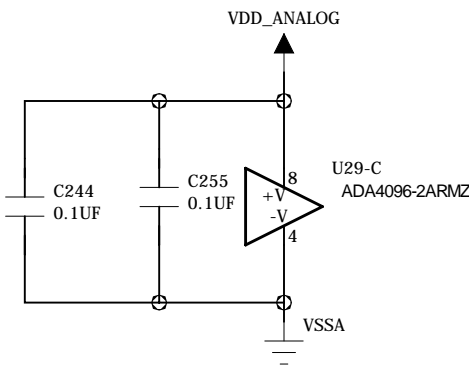
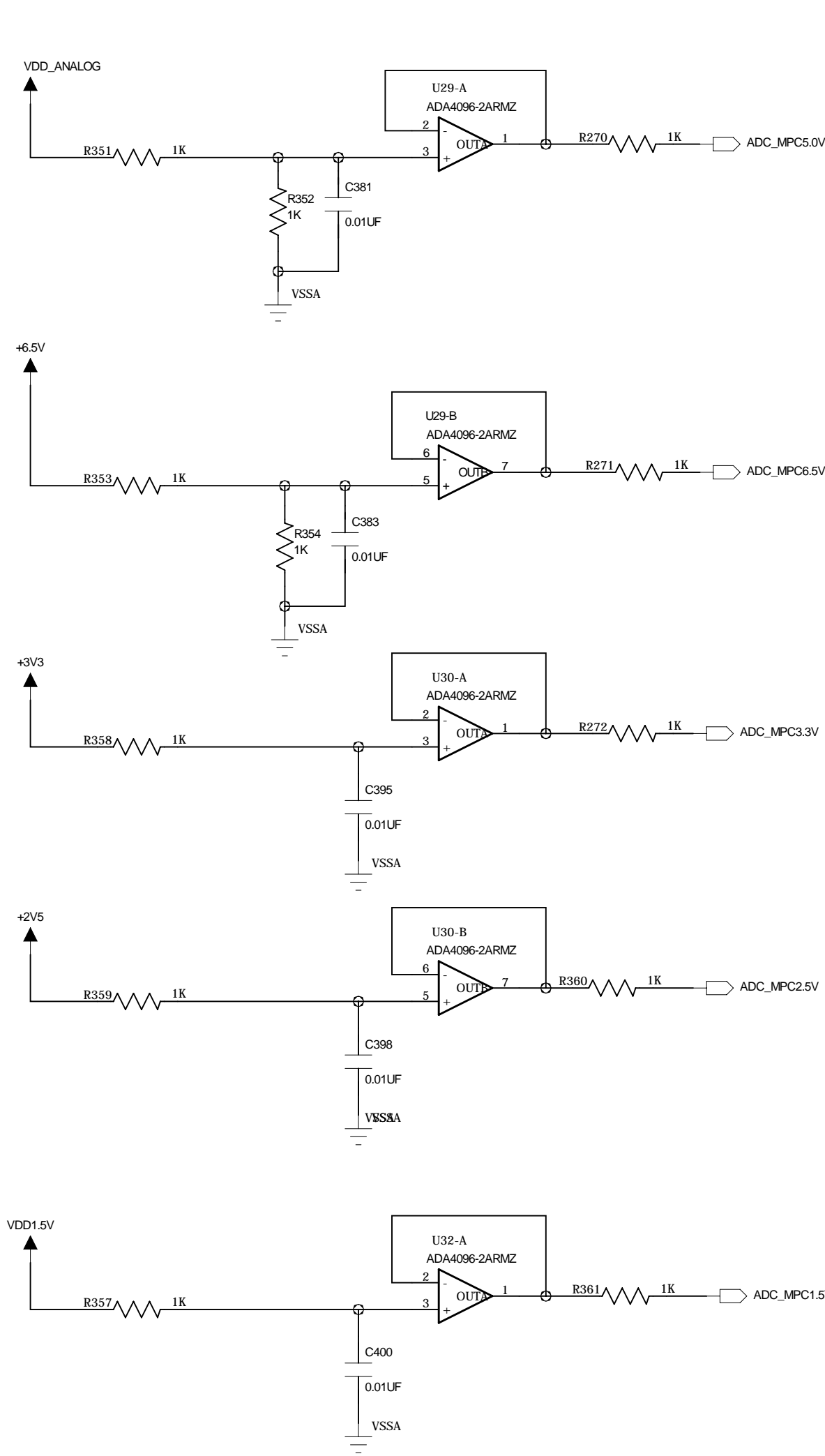
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DWG. NO.
18-600300-001

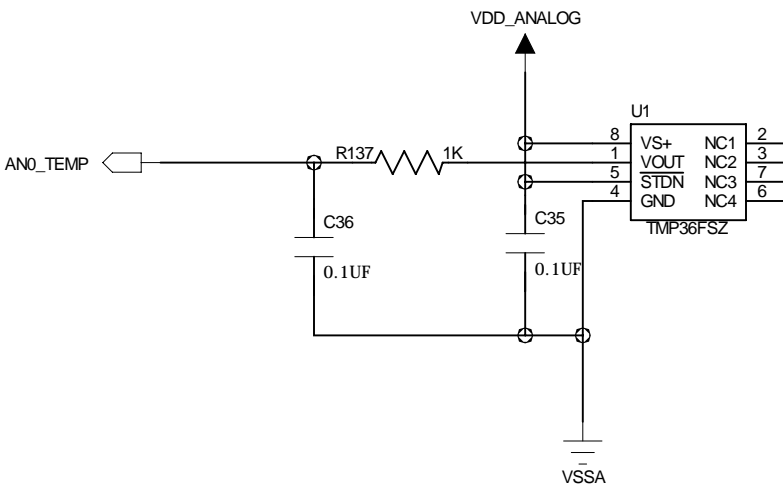
SH
16

REV.
A

Unit gain OPAMP for Voltage monitor



Temperature Sensor



APPROVALS		DATE	COMPRESSOR CONTROLS CORPORATION			
DRAWN Vijaya Gandhi		09/24/2012	4725 121st Street - Des Moines, Iowa 50323			
CHECKED Manju Reddy		09/24/2012	VOLTAGE_MONITOR			
ENGINEER Vijaya Gandhi			SIZE C	DWG. NO. 18-600300-001	SHEET 16 of 16	PROD REV. A
			FILE IES-NGP_Rev-A.sch	SCALE <Scale>		