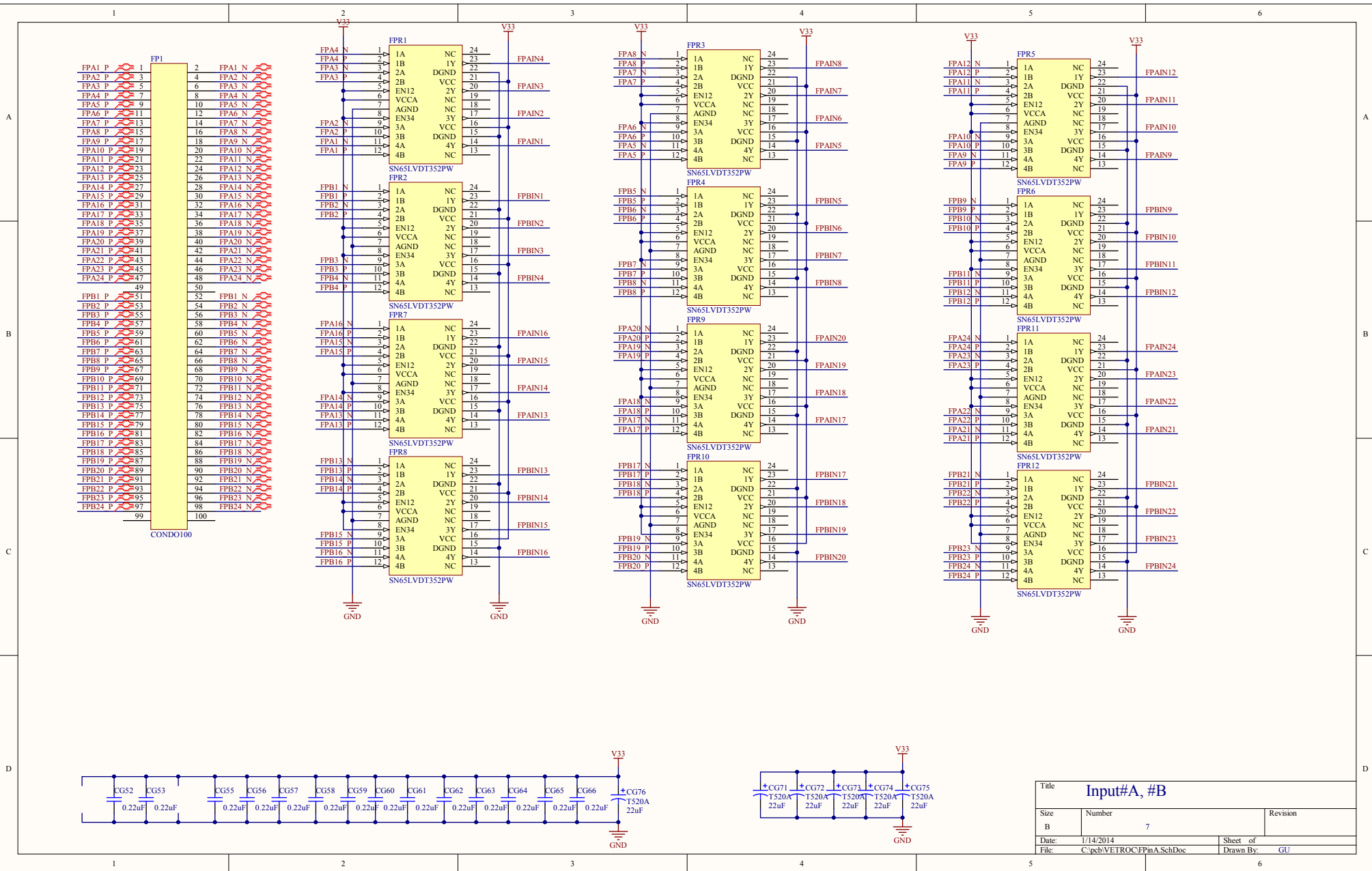
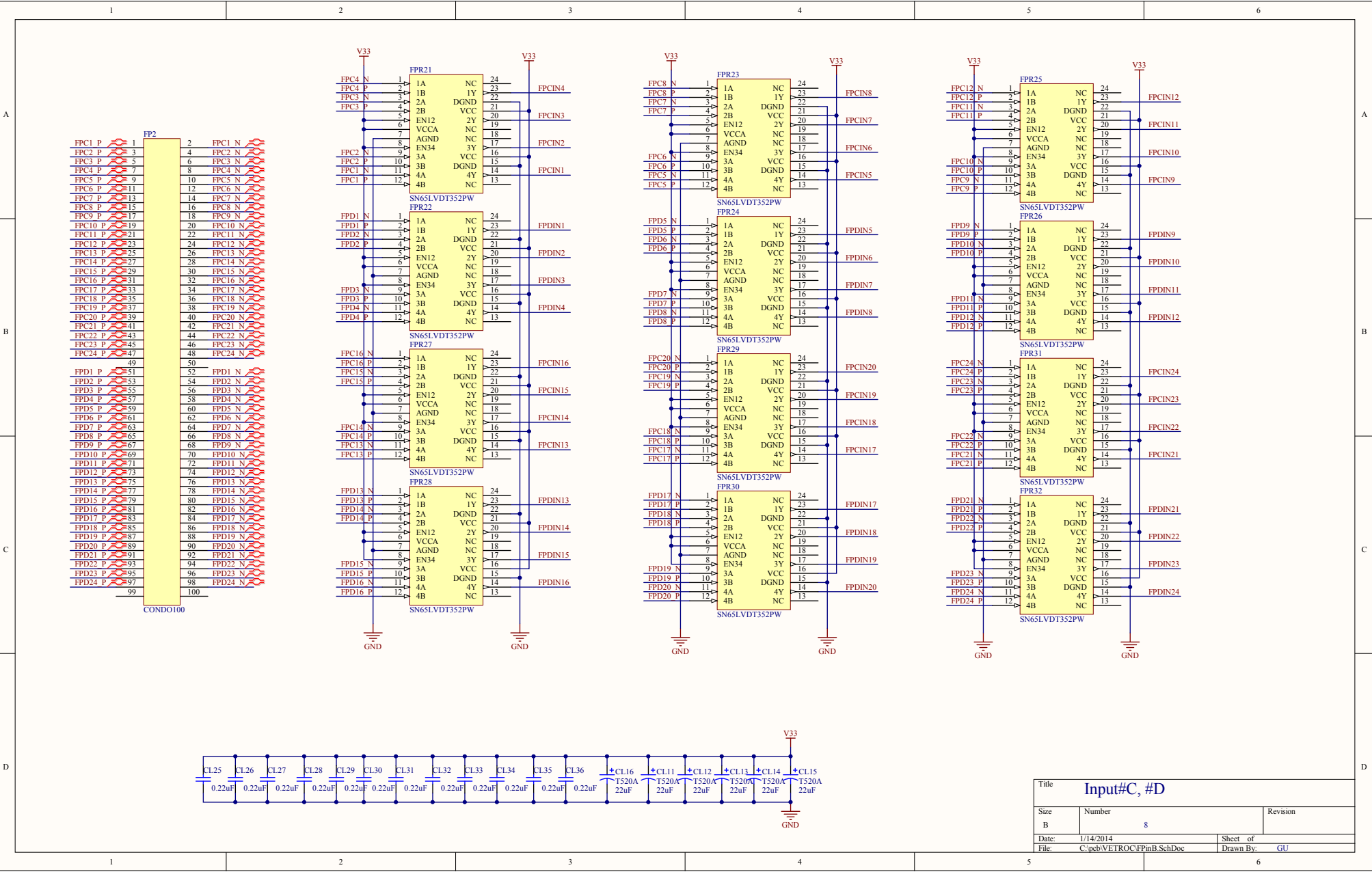
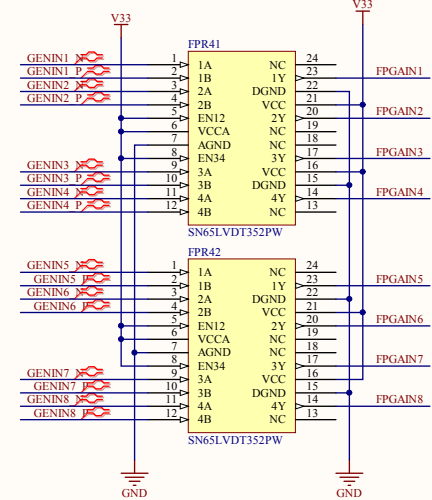
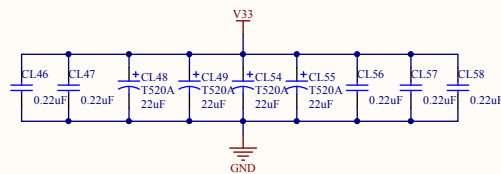
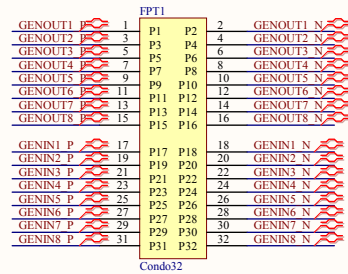
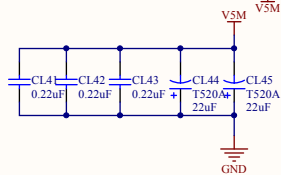
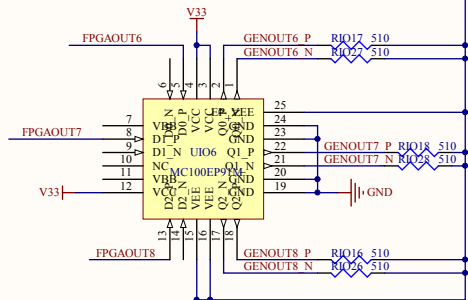
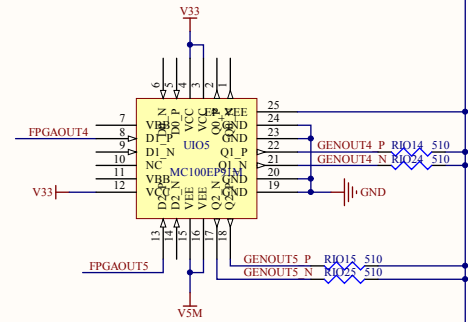
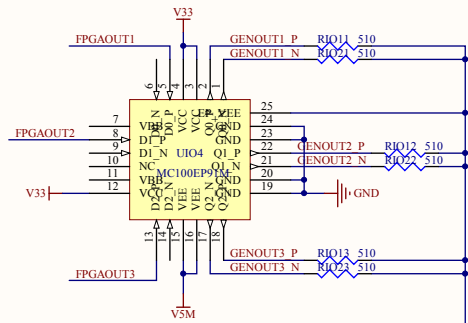


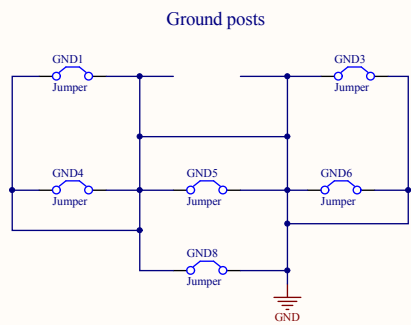
Title			Clock Distribution		
Size	Number	18			Revision
Date:	1/14/2014			Sheet of	
File:	C:\pcb\VETROCClockDistr.SchDoc			Drawn By:	GU







Title		
Size	Number	Revision
B	9	
Date:	1/14/2014	Sheet of
File:	C:\pcb\ETROCFPmout SchDoc	Drawn By: GU

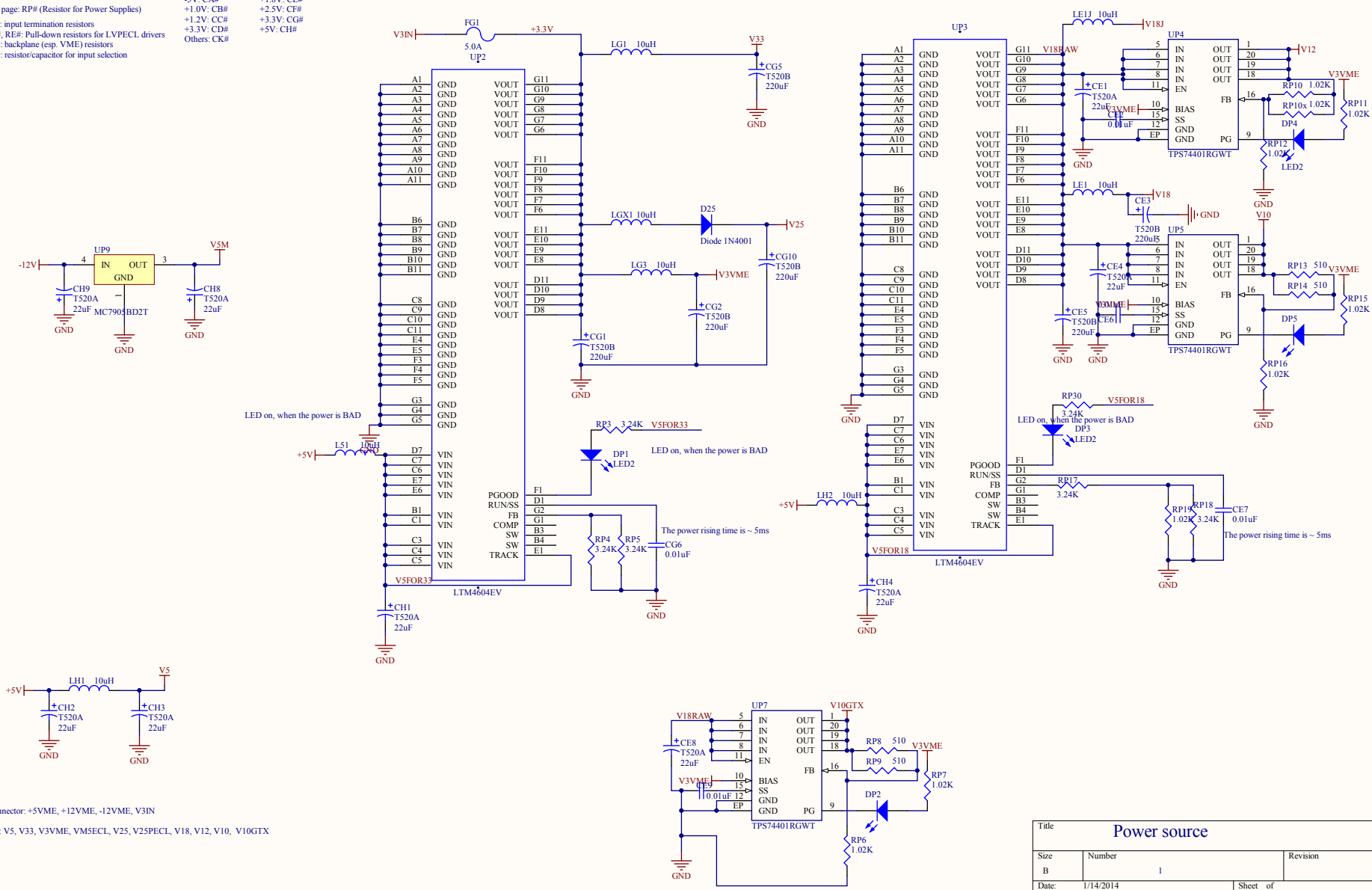


Title		
Alignment points and ground points		
Size	Number	Revision
B	19	
Date:	1/14/2014	Sheet of
File:	C:\pcb\VE.TROC\GndMark.SchDoc	Drawn By: GU

This page: RP# (Resistor for Power Supplies)  
 RT#: input termination resistors  
 RD#: RE#: Pull-down resistors for LVPECL drivers  
 RB#: backplane (esp. VME) resistors  
 RC#: resistor/capacitor for input selection

-5V: CA#  
 +1.0V: CB#  
 +1.2V: CC#  
 +3.3V: CD#  
 Others: CK#

+1.8V: CE#  
 +2.5V: CF#  
 +3.3V: CG#  
 +5V: CH#

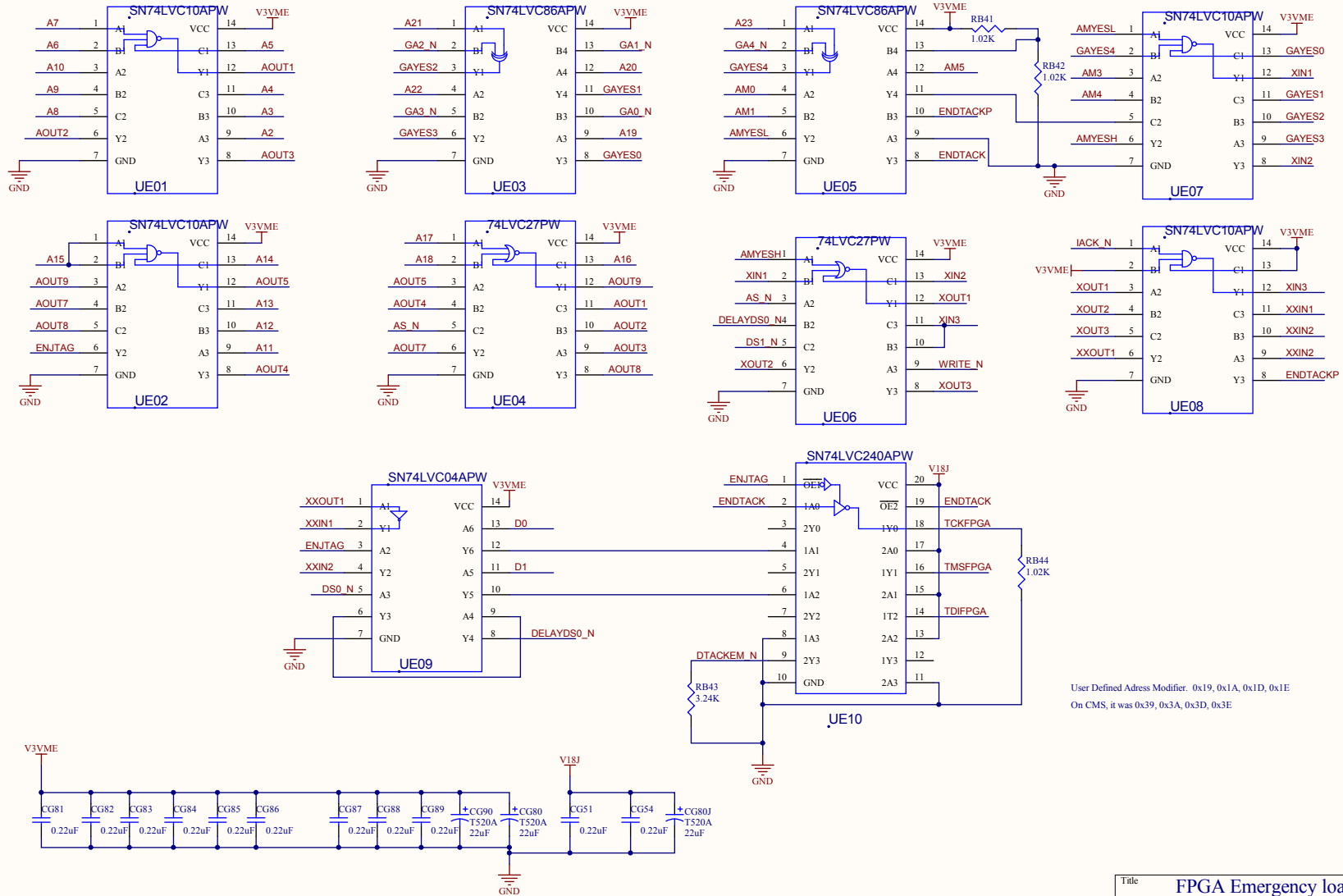


Power on connector: +5VME, +12VME, -12VME, V33IN

Used on board: V5, V33, V3VME, VM5ECL, V25, V25PECL, V18, V12, V10, V10GTX

Title			Revision	
Size	Number	1		
Date:	1/14/2014		Sheet of	
File:	C:\pcb\ETROCPowerSource.SchDoc		Drawn By:	GU

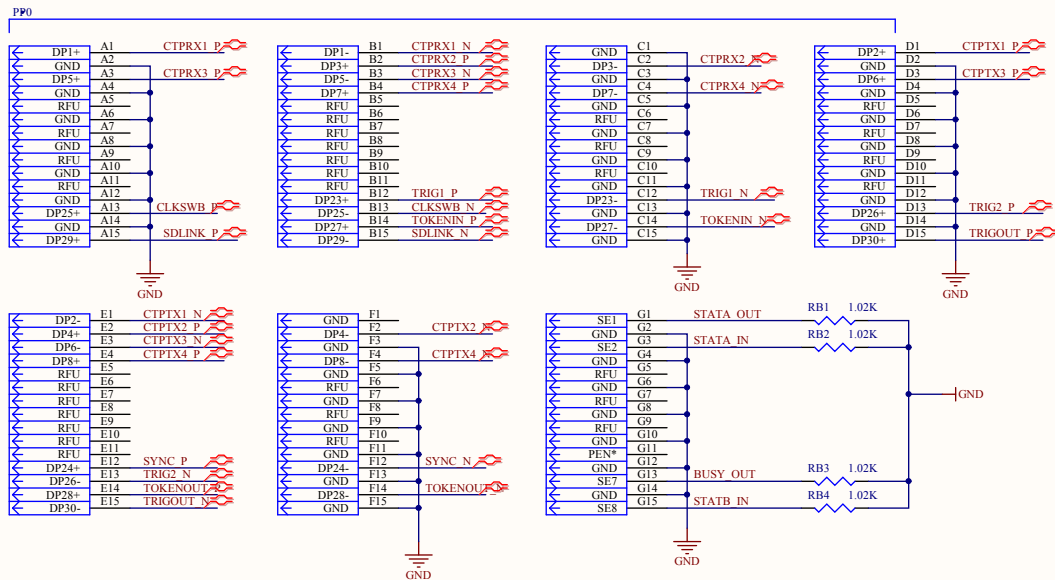
# Discrete logic to load the VPROM in emergency



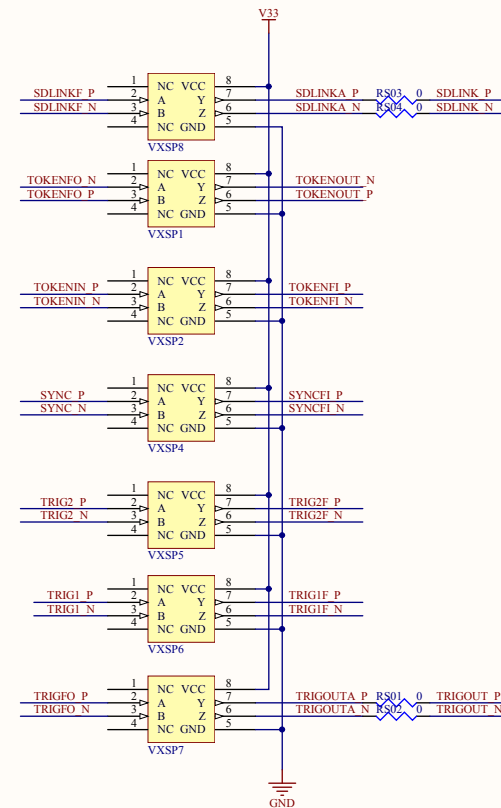
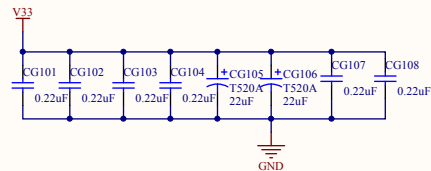
User Defined Address Modifier: 0x19, 0x1A, 0x1D, 0x1E  
On CMS, it was 0x39, 0x3A, 0x3D, 0x3E

Title			FPGA Emergency loading
Size	Number	Revision	
B	6		
Date:	1/14/2014	Sheet of	
File:	C:\pcb\VE_TROC\VM\Emergency_SchDoc	Drawn By:	GU

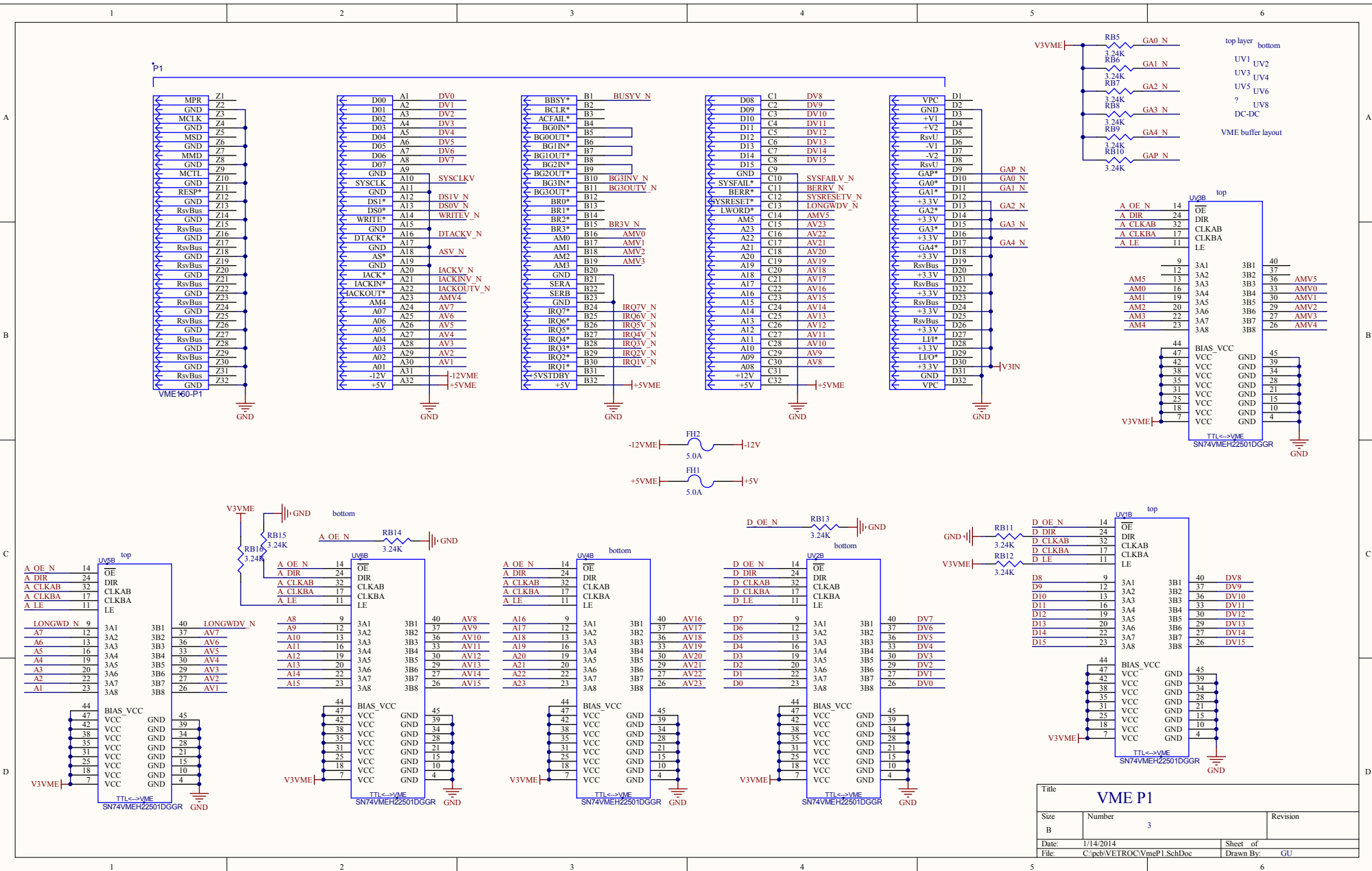
1410447-1

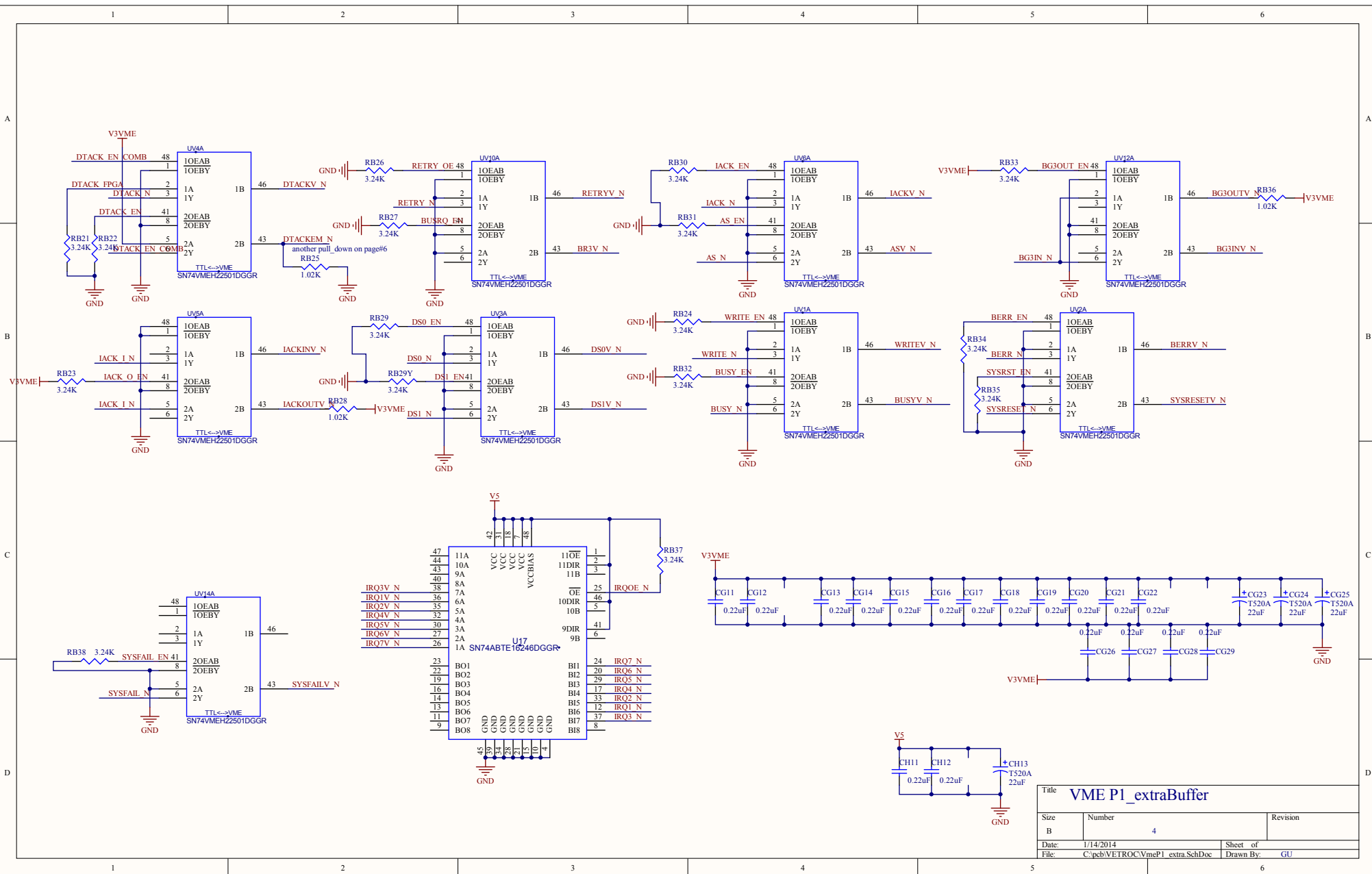


CLKSWB P RB104 100 CLKSWB N

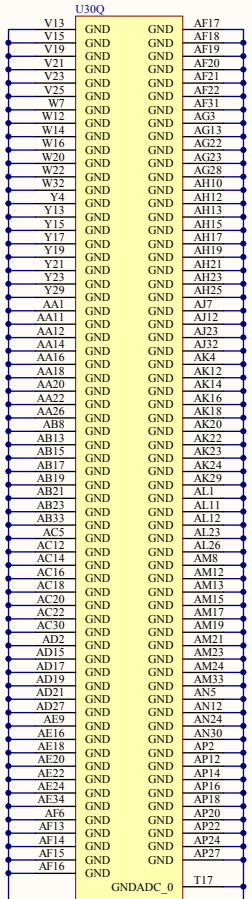




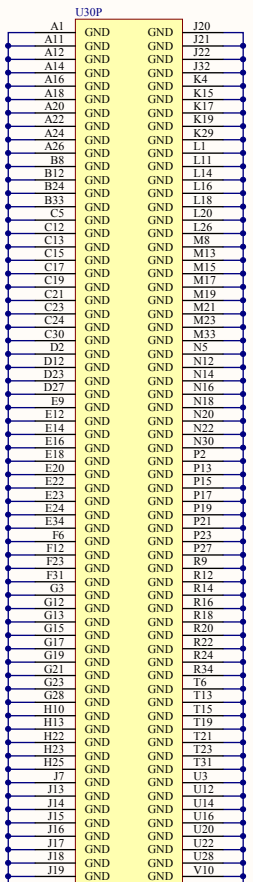




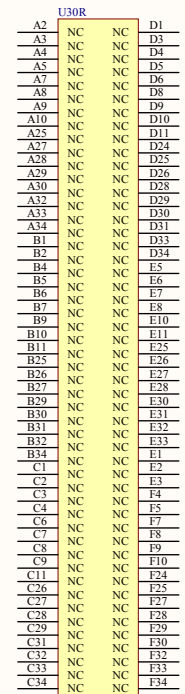




XN LX-XC7A200T-XN LX-FFG1156

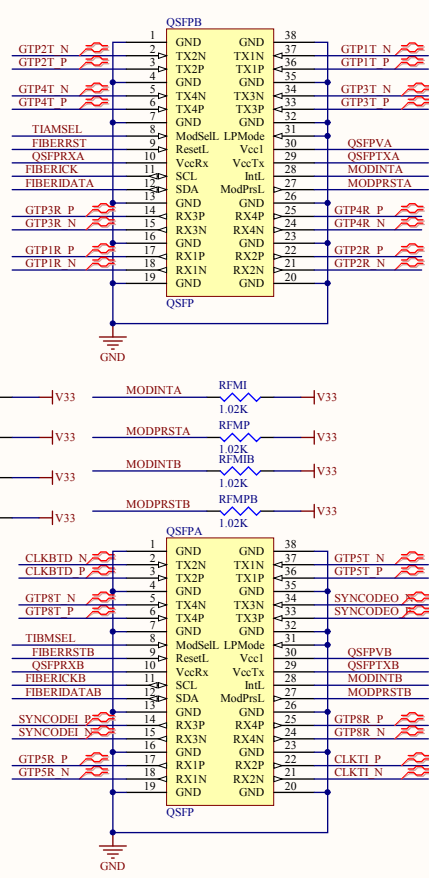


XN LX-XC7A200T-XN LX-FFG1156



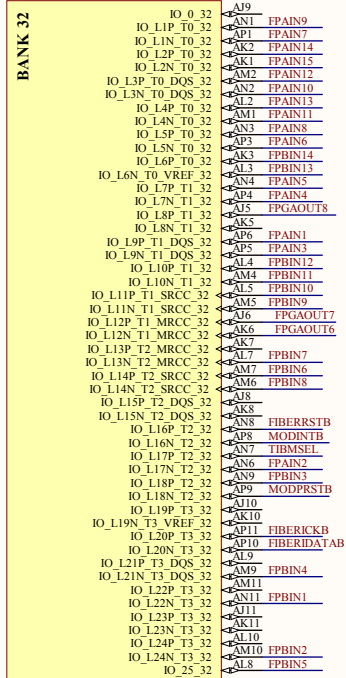
XN LX-XC7A200T-XN LX-FFG1156

Title			FPGA Ground	
Size	Number	Revision		
B	10			
Date:	1/14/2014	Sheet	of	
File:	C:\pcb\JETROCXC7A1156Gnd.SchDoc	Drawn By:	GU	



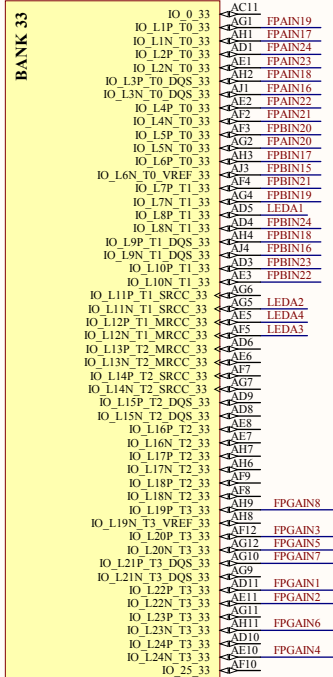
Title				FPGA GTP Interface			
Size B		Number			Revision		
		13					
Date				Sheet of			
1/14/2014							
File:				Drawn By:			
C:\sch\NETROC\XC7A156Gn_SchDoc				GU			

U30F

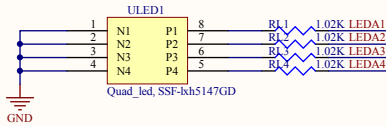


XXLX-XC7A200T-XXLX-FFG1156

U30G



XXLX-XC7A200T-XXLX-FFG1156



Title			FPGA #A #B inputs and generic inputs
Size	Number	Revision	
B	15		
Date:	1/14/2014	Sheet of	
File:	C:\pcb\VETROXC7A1156inAB_SchDoc	Drawn By:	GU

U30A

**BANK 12**

IO\_0\_12 AJ24  
IO\_11P\_T0\_12 AL34 FPCIN12  
IO\_11N\_T0\_12 AM34 FPCIN13  
IO\_12P\_T0\_12 AJ33 FPCIN10  
IO\_12N\_T0\_12 AJ34 FPCIN9  
IO\_13P\_T0\_DQS\_12 AN34 FPCIN14  
IO\_13N\_T0\_DQS\_12 AP34 FPCIN15  
IO\_14P\_T0\_12 AK33 FPCIN11  
IO\_14N\_T0\_12 AL33  
IO\_15P\_T0\_12 AN33 FPCIN16  
IO\_15N\_T0\_12 AP33 FPCIN17  
IO\_16P\_T0\_12 AL32 FPDIN13  
IO\_16N\_T0\_VREF\_12 AM32 FPDIN14  
IO\_17P\_T1\_12 AJ31 FPDIN10  
IO\_17N\_T1\_12 AK32 FPDIN11  
IO\_18P\_T1\_12 AM31 FPDIN15  
IO\_18N\_T1\_12 AN32 FPCIN18  
IO\_19P\_T1\_DQS\_12 AJ30  
IO\_19N\_T1\_DQS\_12 AK31 FPDIN12  
IO\_110P\_T1\_12 AN31 FPCIN19  
IO\_110N\_T1\_12 AP31 FPCIN20  
IO\_111P\_T1\_SRCC\_12 AJ29  
IO\_111N\_T1\_SRCC\_12 AK30  
IO\_112P\_T1\_MRCC\_12 AL30 FPDIN16  
IO\_112N\_T1\_MRCC\_12 AM30 FPDIN17  
IO\_113P\_T2\_MRCC\_12 AL28 FPDIN20  
IO\_113N\_T2\_MRCC\_12 AJ29 FPDIN18  
IO\_114P\_T2\_SRCC\_12 AJ28  
IO\_114N\_T2\_SRCC\_12 AK28  
IO\_115P\_T2\_DQS\_12 AP29 FPCIN23  
IO\_115N\_T2\_DQS\_12 AP30 FPCIN21  
IO\_116P\_T2\_12 AM29 FPDIN19  
IO\_116N\_T2\_12 AN29 FPCIN22  
IO\_117P\_T2\_12 AN28 FPCIN24  
IO\_117N\_T2\_12 AP28 FPGAU11  
IO\_118P\_T2\_12 AK27  
IO\_118N\_T2\_12 AL27 FPDIN21  
IO\_119P\_T3\_12 AJ25  
IO\_119N\_T3\_VREF\_12 AK25  
IO\_120P\_T3\_12 AJ26  
IO\_120N\_T3\_12 AK26  
IO\_121P\_T3\_DQS\_12 AM26 FPDIN23  
IO\_121N\_T3\_DQS\_12 AN26 FPGAU13  
IO\_122P\_T3\_12 AM27 FPDIN22  
IO\_122N\_T3\_12 AN27 FPGAU12  
IO\_123P\_T3\_12 AL25  
IO\_123N\_T3\_12 AM25 FPDIN24  
IO\_124P\_T3\_12 AP25 FPGAU15  
IO\_124N\_T3\_12 AP26 FPGAU14  
IO\_25\_12 AL24

XNLX-XC7A200T-XNLX-FPG1156

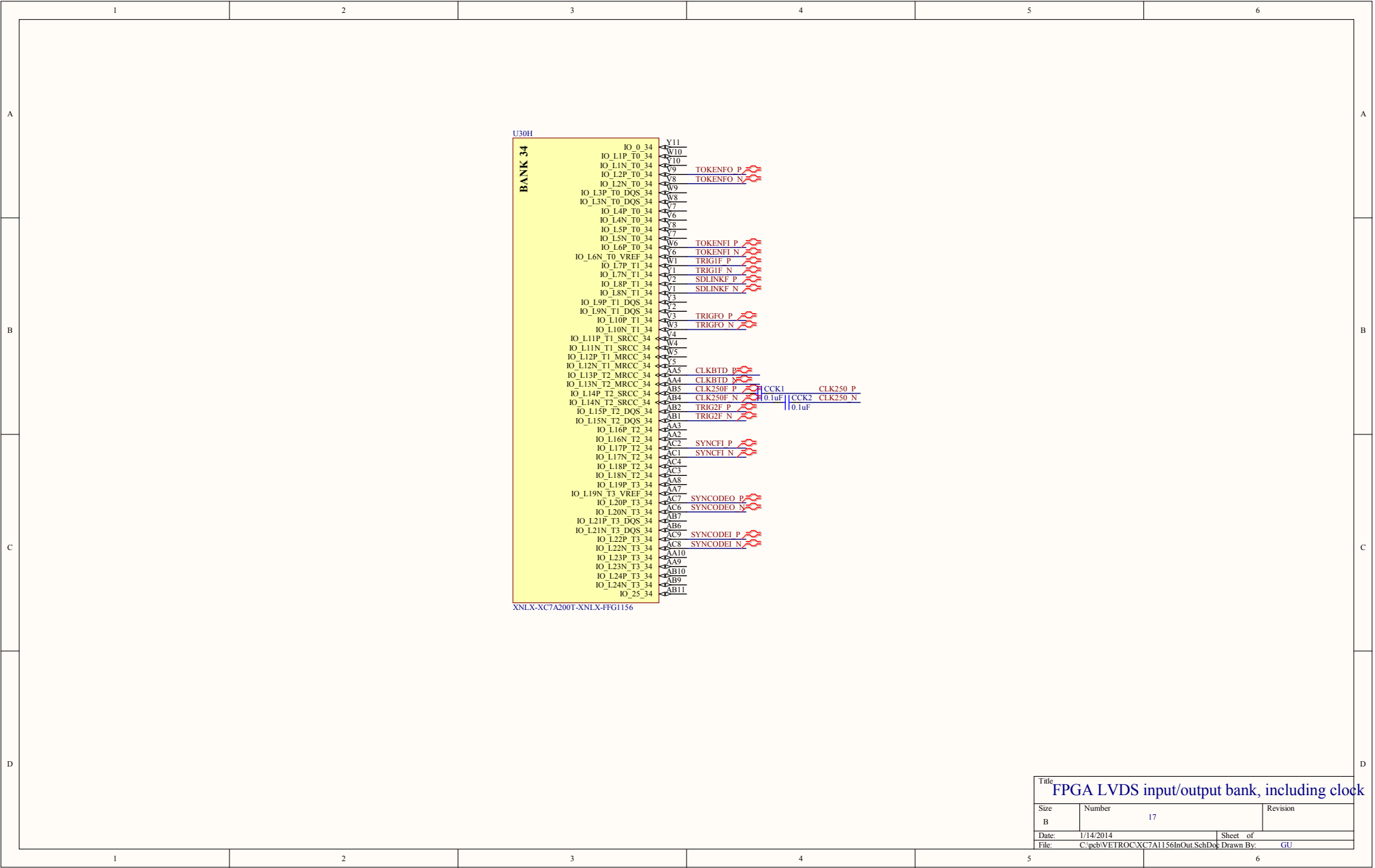
U30B

**BANK 13**

IO\_0\_13 AD23  
IO\_11P\_T0\_13 AF34 FPCIN4  
IO\_11N\_T0\_13 AG34 FPCIN6  
IO\_12P\_T0\_13 AD33 FPCIN2  
IO\_12N\_T0\_13 AD34 FPCIN1  
IO\_13P\_T0\_DQS\_13 AH33 FPCIN8  
IO\_13N\_T0\_DQS\_13 AH34 FPCIN7  
IO\_14P\_T0\_13 AE33 FPCIN3  
IO\_14N\_T0\_13 AF33 FPCIN5  
IO\_15P\_T0\_13 AG32 FPDIN6  
IO\_15N\_T0\_13 AH32 FPDIN8  
IO\_16P\_T0\_13 AE32 FPDIN3  
IO\_16N\_T0\_VREF\_13 AF32 FPDIN5  
IO\_17P\_T1\_13 AD31 FPDIN1  
IO\_17N\_T1\_13 AE31 FPDIN4  
IO\_18P\_T1\_13 AD30 FPDIN2  
IO\_18N\_T1\_13 AE30  
IO\_19P\_T1\_DQS\_13 AD28  
IO\_19N\_T1\_DQS\_13 AD29  
IO\_110P\_T1\_13 AG31 FPDIN7  
IO\_110N\_T1\_13 AH31 FPDIN9  
IO\_111P\_T1\_SRCC\_13 AJ29  
IO\_111N\_T1\_SRCC\_13 AF30  
IO\_112P\_T1\_MRCC\_13 AG29  
IO\_112N\_T1\_MRCC\_13 AG30  
IO\_113P\_T2\_MRCC\_13 AH28 FIBERRCK  
IO\_113N\_T2\_MRCC\_13 AH29 FIBERIDATA  
IO\_114P\_T2\_SRCC\_13 AE28  
IO\_114N\_T2\_SRCC\_13 AF28  
IO\_115P\_T2\_DQS\_13 AD26  
IO\_115N\_T2\_DQS\_13 AE26  
IO\_116P\_T2\_13 AC26  
IO\_116N\_T2\_13 AC27  
IO\_117P\_T2\_13 AH27 MODPRSTA  
IO\_117N\_T2\_13 AE27  
IO\_118P\_T2\_13 AF27  
IO\_118N\_T2\_13 AE26 MODINTA  
IO\_119P\_T3\_13 AH26  
IO\_119N\_T3\_VREF\_13 AE23  
IO\_120P\_T3\_13 AF23  
IO\_120N\_T3\_13 AG24  
IO\_121P\_T3\_DQS\_13 AH24 TIAMSEL  
IO\_121N\_T3\_DQS\_13 AC24  
IO\_122P\_T3\_13 AD24  
IO\_122N\_T3\_13 AF25 FIBERRST  
IO\_123P\_T3\_13 AG25  
IO\_123N\_T3\_13 AD25  
IO\_124P\_T3\_13 AE25  
IO\_124N\_T3\_13 AF24  
IO\_25\_13

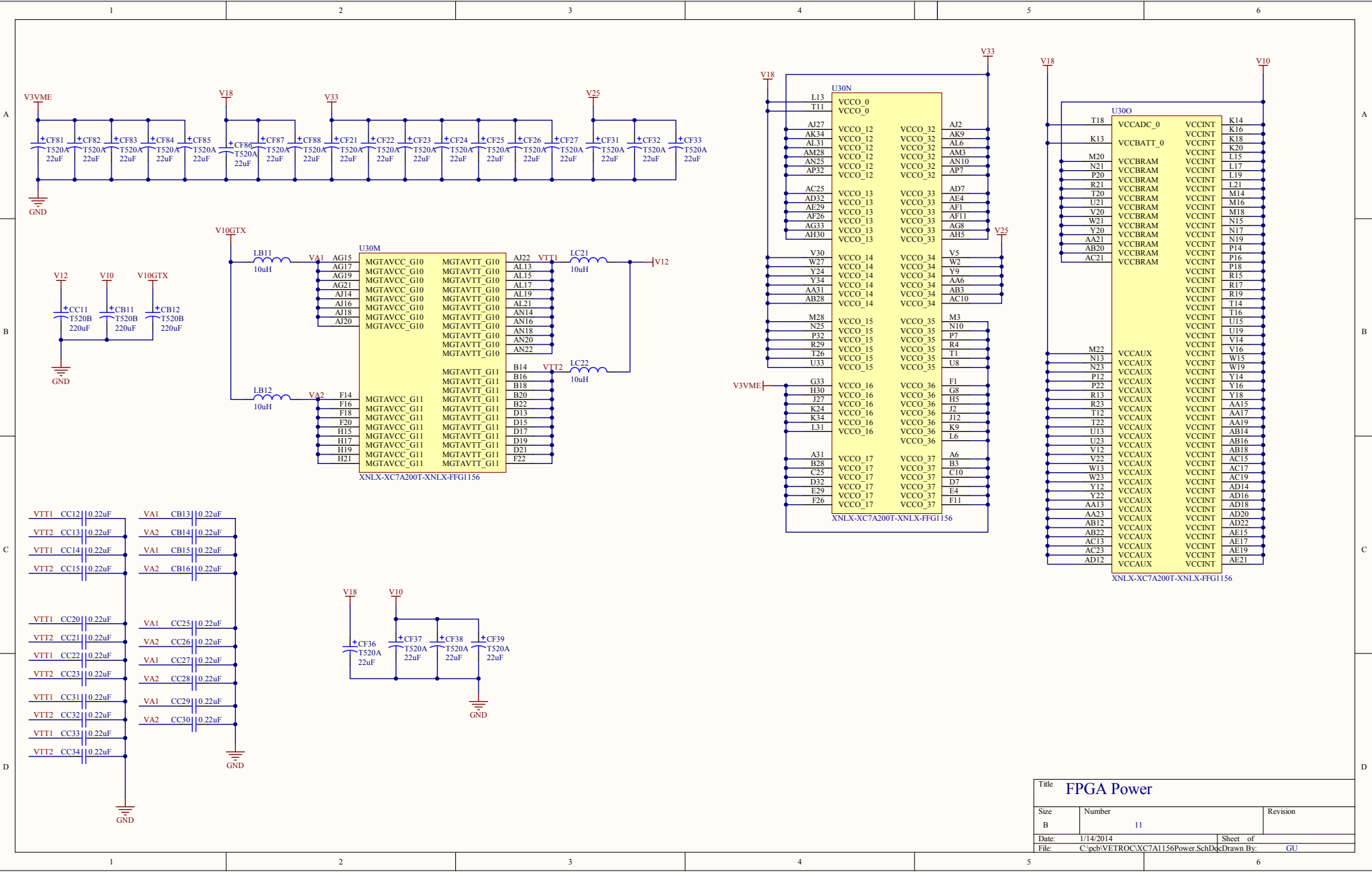
XNLX-XC7A200T-XNLX-FPG1156

Title			FPGA #C #D inputs, and generic outputs		
Size	Number			Revision	
B	16				
Date:	1/14/2014		Sheet of		
File:	C:\pcb\VETROCX7A1156InCD.SchDoc		Drawn By:	GU	



Title		
FPGA LVDS input/output bank, including clock		
Size	Number	Revision
B	17	
Date:	1/14/2014	Sheet of
File:	C:\pcb\JETROXC7A1156InOut SchDoc	Drawn By: GU





Title			
FPGA Power			
Size	Number	Revision	
B	11		
Date:	1/14/2014	Sheet of	
File:	C:\pcb\VIETROXC7A1156Power SchDoc	Drawn By:	GU





.GRC00

FD16



Bill of Materials For Project [VETROC.PrjPCB] (No PCB Document Selected)

VETROC.PrjPCB

VETROC.PrjPCB

None

10:42:20 AM

10:42:34 AM



Description		Footprint	Quantity	Designator	Column Name Error:Manufacturer1	Column Name Error:Unit	Column Name Error:Manufacturer2	Column Name Error:Manufacturer2	Column Name Error:Unit	Total Price (\$)
Solid Tantalum Chip Capacitor, Standard T491 Series - Industrial Grade,	B	9	CB11, CB12, CC11, CE3, CE5, CG1, CG2, CG5, CG10							0
Solid Tantalum Chip Capacitor, Standard T520 Series - Industrial Grade	0603	108	CB13, CB14, CB15, CB16, CC12, CC13, CC14, CC15, CC20, CC21, CC22, CC23, CC25, CC26, CC27, CC28, CC29, CC30, CC31, CC32, CC33, CC34, CD1, CD3, CD5, CD8, CD10, CD12, CD17, CD18, CE12, CE13, CE14, CG11, CG12, CG13, CG14, CG15, CG16, CG17, CG18, CG19, CG20, CG21, CG22, CG28, CG27, CG28, CG29, CG41, CG42, CG43, CG44, CG45, CG48, CG51, CG52, CG53, CG54, CG55, CG56, CG57, CG58, CG59, CG60, CG61, CG62, CG63, CG64, CG65, CG66, CG81, CG82, CG83, CG84, CG85, CG86, CG87, CG88, CG89, CG101, CG102, CG103, CG104, CG107, CG108, CH11, CH12, CL25, CL26, CL27, CL28, CL29, CL30, CL31, CL32, CL33, CL34, CL35, CL36, CL41, CL42, CL43, CL46, CL47, CL56, CL57, CL58							0
Capacitor	0402	24	CDK1, CDK2, CF13, CG11, CG12, CG14, CG15, CG16, CG17, CG18, CG19, CG110, CG111, CG112, CG113, CG114, CG115, CG116, CG117, CG118, CG119, CG120, CG131, CG132							0
Solid Tantalum Chip Capacitor, Standard T491 Series - Industrial Grade	A	71	CD2, CD4, CD6, CD7, CD9, CD11, CD13, CD14, CD15, CD16, CE1, CE4, CE8, CE11, CF21, CF22, CF23, CF24, CF25, CF26, CF27, CF31, CF32, CF33, CF36, CF37, CF38, CF39, CF81, CF82, CF83, CF84, CF85, CF86, CF87, CF88, CG23, CG24, CG25, CG46, CG47, CG71, CG72, CG73, CG74, CG75, CG76, CG80, CG80J, CG90, CG105, CG106, CH1, CH2, CH3, CH4, CH8, CH9, CH13, CL11, CL12, CL13, CL14, CL15, CL16, CL44, CL45, CL48, CL49, CL54, CL55							0
Capacitor (Semiconductor SMD Model)	0402	7	CE2, CE5, CE7, CE9, CG6, CK11x							0
1 Amp General Purpose Rectifier	DO-201AD	1	CG5							0
Typical RED, GREEN, YELLOW, AMBER GaAs LED	3.2X1.6X1.1	6	DDONE, DP1, DP2, DP3, DP4, DP5							0
FUSE 5A SLO BLO NANO 2 SMD	NANO_FUSE	3	FG1, FH1, FH2							0
	Inductal	40	FD1, FD2, FD3, FD4, FD5, FD6, FD7, FD8, FD9, FD10, FD11, FD12, FD13, FD14, FD15, FD16, FD17, FD18, FD19, FD20, FD21, FD22, FD23, FD24, FD25, FD26, FD27, FD28, FD29, FD30, FD31, FD32, FD33, FD34, FD35, FD36, FD37, FD38, FD40, FD42							0
Header, 6-Pin	CONDO100	2	FP1, FP2							0
	HER1X6	1	FRGA_1TAG							0
	PW024_N	26	FRF1, FRF2, FRF3, FRF4, FRF5, FRF6, FRF7, FRF8, FRF9, FRF10, FRF11, FRF12, FRF21, FRF22, FRF23, FRF24, FRF25, FRF26, FRF27, FRF28, FRF29, FRF30, FRF31, FRF32, FRF41, FRF42							0
	Condo32	1	FPT1							0
Jumper Wire	RAD-0.2	6	GND1, GND3, GND4, GND5, GND6, GND8							0
Inductor	1210	8	L51, LE1, LE1J, LG1, LG3, LGX1, LH1, LH2							0
Inductor	0603	4	LB11, LB12, LC21, LC22							0
INDUCTOR 1.0UH 300MA 20% 0805	0805	6	LG11, LG12, LG13, LG14, LG15, LG16							0
VME160-P1	VME160	1	PI							0
VME160-P2	VME160	1	P2							0
TSSOP50P2000-56N	TSSOP50P2000-56N	1	PLMEM							0
PD-FL-VXS	PD-105_PD-FL-VXS	1	PP0							0
	QSPF38cage	2	QSPFA, QSPFB							0
Resistor	0603	52	RAV, RB5, RB6, RB7, RB8, RB9, RB10, RB11, RB12, RB13, RB14, RB15, RB16, RB21, RB22, RB23, RB24, RB26, RB27, RB29, RB29Y, RB30, RB31, RB32, RB33, RB34, RB35, RB37, RB38, RB43, RM2, RM4, RM7, RM8, RM51, RM52, RM53, RM54, RM55, RM56, RM53, RM53K, RM58, RCE, RF3, RF4, RFS, RP17, RP18, RP30, RWE, RWP							0
Resistor	0603	35	RB1, RB2, RB3, RB4, RB25, RB28, RB36, RB41, RB42, RB44, RFCK, RFCKB, RFDA, RFDA8, RFM, RFMB, RFMP, RFMPB, RL1, RL2, RL3, RL4, RM67, RM68, RM61, RM61x, RPS, RP7, RP10, RP10x, RP11, RP12, RP15, RP16, RP19							0
RES 0 OHM 1/16W 1% 0402 SMD, RES 100 OHM 1/16W 1% 0402 SMD	0402	9	RB104, RC03, RC0Z, RM11, RM12, RM13, RM14, RM15, RM16							0
RES 0 OHM 1/16W 1% 0402 SMD	0402	14	RBJ1, RBJ2, RBJ3, RBJ4, RD48, RD49, RD50, RM16, RM40, RM50, RM55, RM56, RM57, RV10							0
RES 0 OHM 1/16W 1% 0402 SMD	0402	25	RC1, RC2, RCN1, RC11, RC12, RC13, RC14, RC15, RC16, RC17, RC18, RC121, RC122, RC123, RC124, RC125, RC126, RC127, RC128, RP8, RP9, RP13, RP14, RPJ, RSX1, RSX2							0
RES 0 OHM 1/16W 1% 0402 SMD	0402	7	RFP, RS01, RS02, RS03, RS04, RS07, RS08							0
DIP Switch, 8 Position, SPST	SW16_L	1	SZ							0
IC 11-BIT I-VS BUS TXRX 48-TSSOP	TSSOP50P810-48AL	1	UI7							0
4:1 Differential Multiplexer	MS6C02_N	1	UE0							0
	PG5T156	1	UE0							0
CCPD-034	SOE-5X7	1	UE01							0
	TSSOP14	4	UE01, UE02, UE07, UE08							0
	TSSOP14	2	UE03, UE05							0
	TSSOP14	2	UE04, UE06							0
	TSSOP14	1	UE09							0
	TSSOP20_N	1	UE10							0
On Semiconductor, Any level positive to ECL translator	QFN50FN00X400-24W4M	3	UI04, UI05, UI06							0
LUMEX, Quad pack LEDs	LED14	1	ULED1							0
LT1M604EV	LGA-66_LT1M604EV(Primary)	2	UP2, UP3							0
IC LDO REG 3.0A WISS 20-VOPN	QFN-20	3	UP4, UP5, UP7							0
Three-Terminal Negative Voltage Regulator	SO8-03	1	UR3							0
Miniature Oscillator	CFRX-5	1	UPG1							0
IC UNIV BUS TXRX TR-ST 48-TSSOP	TSSOP50P810-48AL	9	UV1, UV2, UV3, UV4, UV5, UV6, UV10, UV12, UV14							0
Translator	MSOP-MS8_N	7	VXSP1, VXSP2, VXSP4, VXSP6, VXSP6, VXSP7, VXSP8							0
TOTAL PRICE										0.000