

FMA-HW01008-01 R01

REVISION HISTORY

Version	Date	Engineer	Change Description
R0A	2017/11/20	Dino_Lin	Initial release
R0B	2018/04/23	Dino_Lin	1.To change BCM54616SC0KFBG to Marvell 88E1111-B2-BAB1I000. 2.To change EOL chipset(MAXIM DS26503LN+) to EXAR XRT86VL30IV80-F.
R0C	2018/06/22	Dino_Lin	1.To change 10G_SFP+ port from "24Px10G_SFP+" to "16Px10G_SFP+ & 8Px25G_SFP28".

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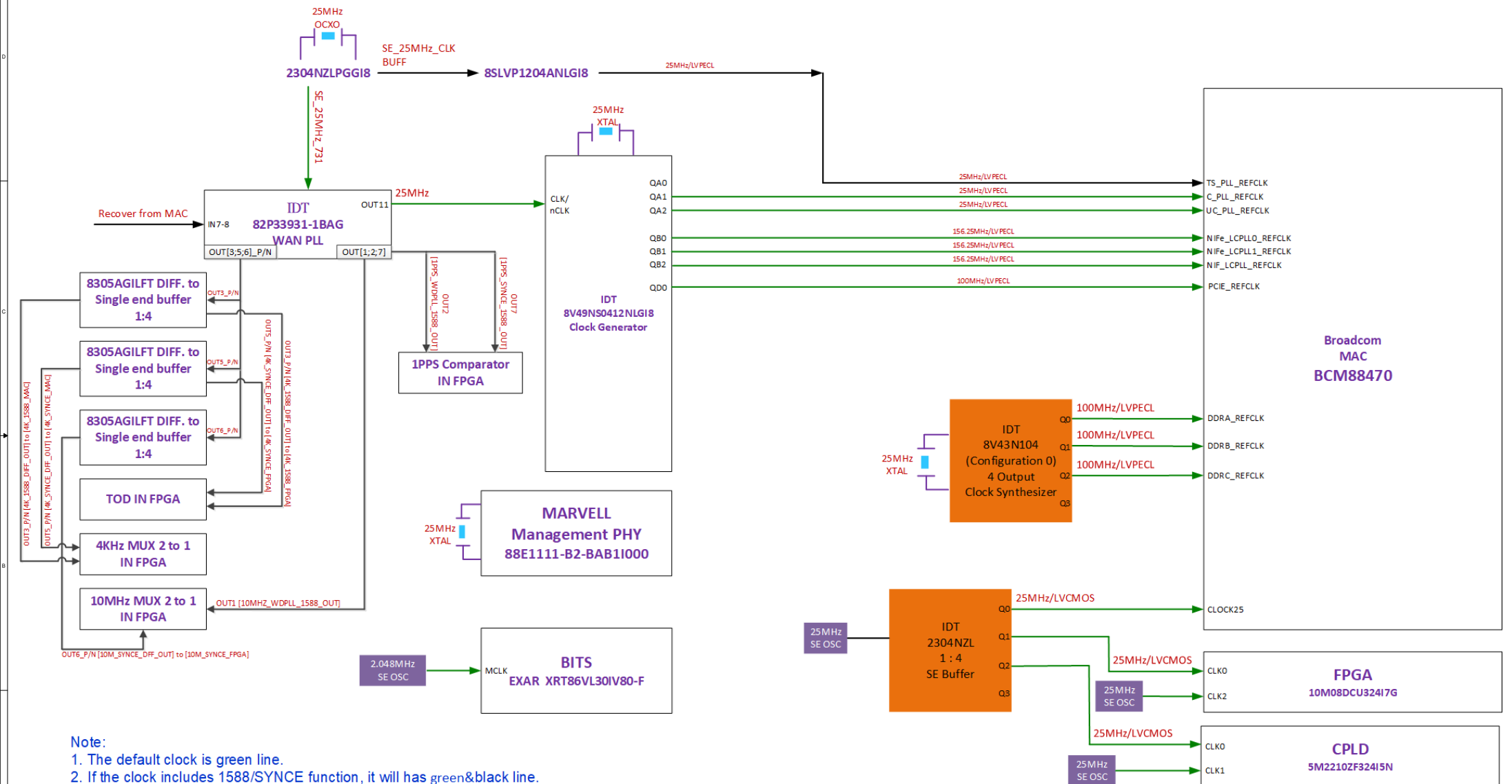


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Switch board



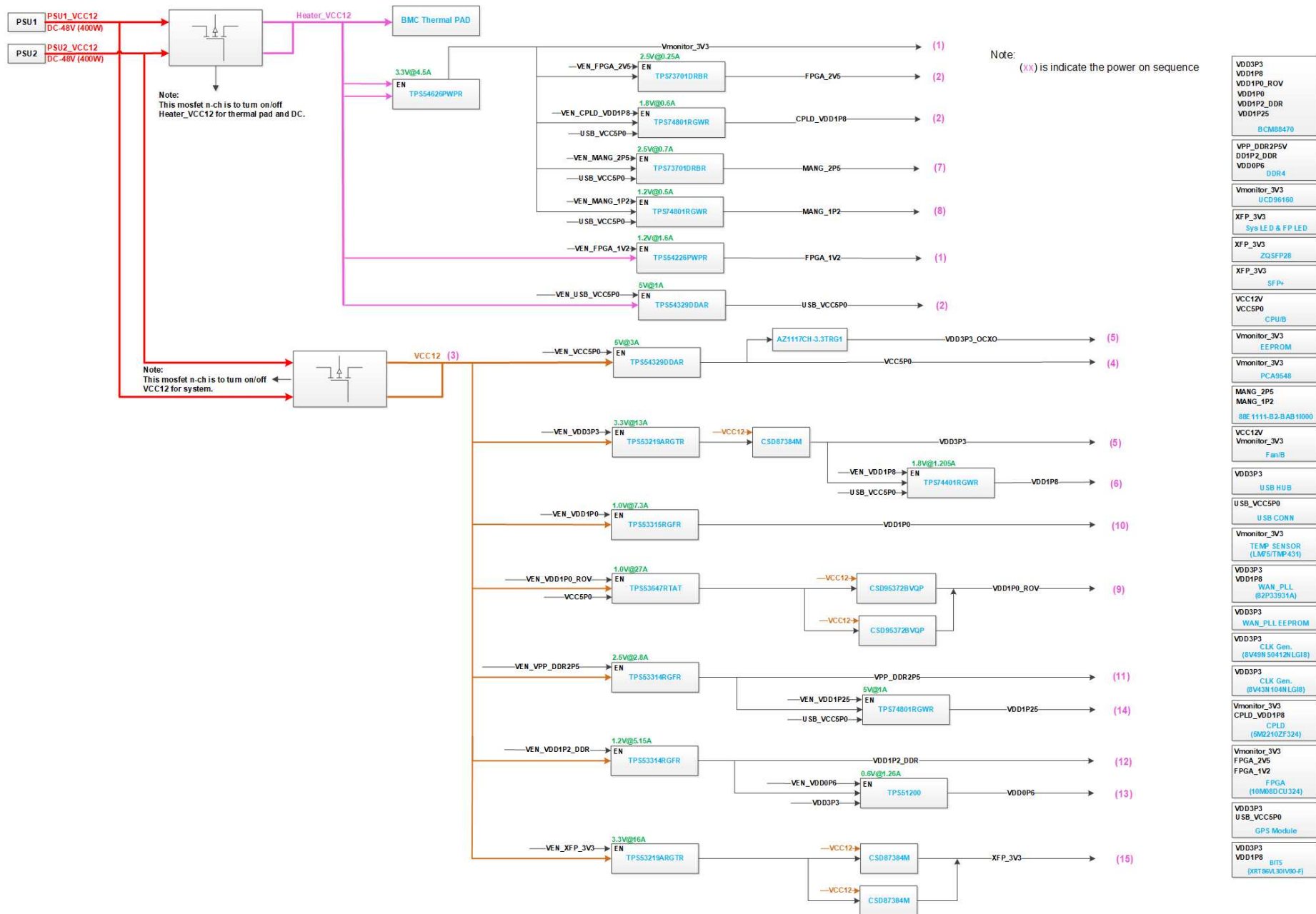
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Model Name		ES5626BQ-1217-111ZZ	Rev	ROC
Size	Page Name	Engineer		
Custom	Clock Tree	Dino_Lin		
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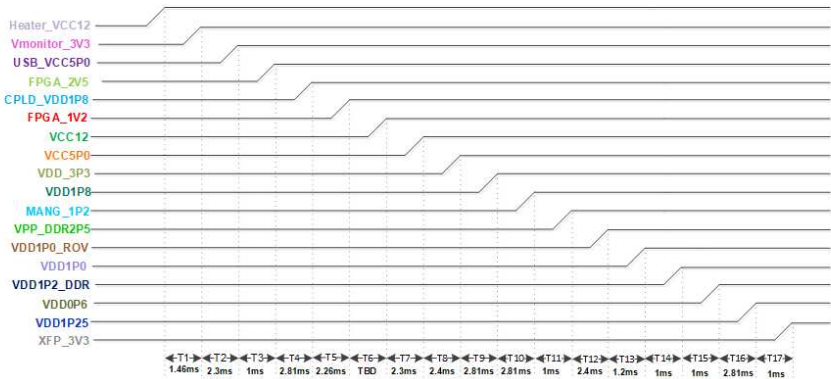
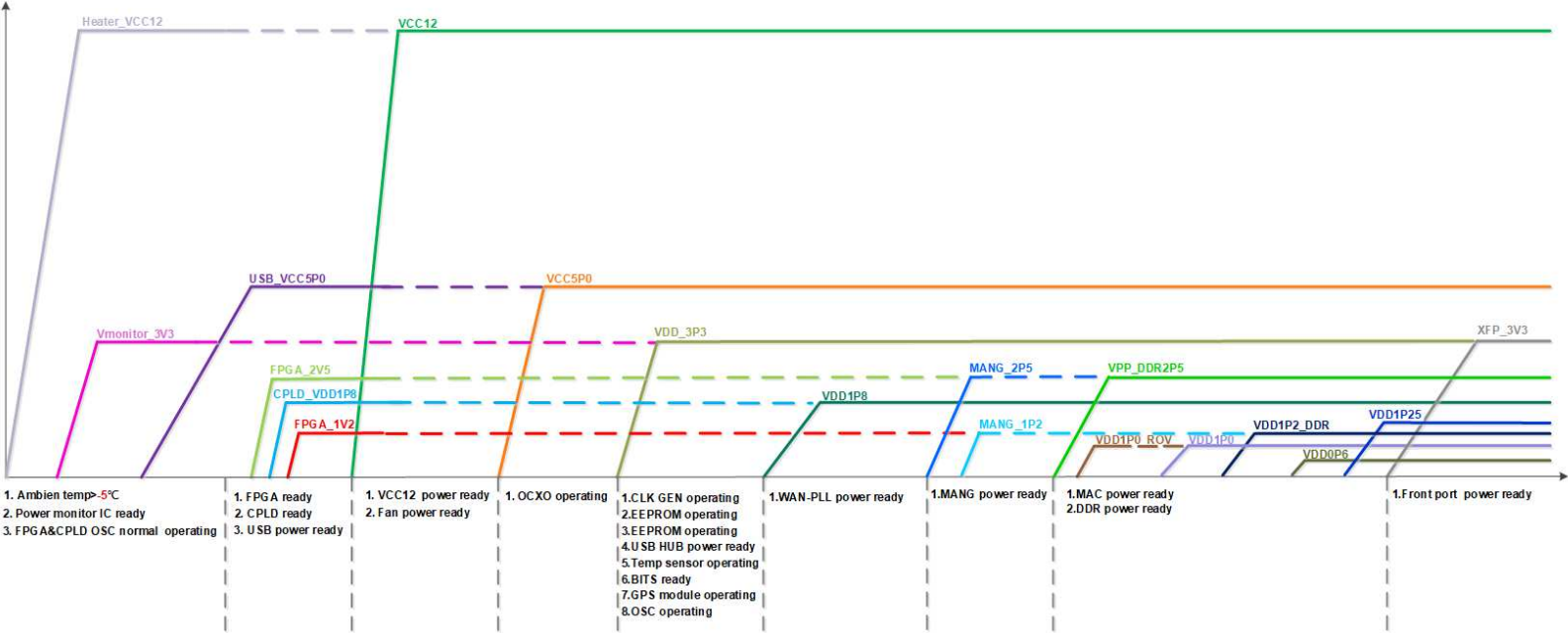


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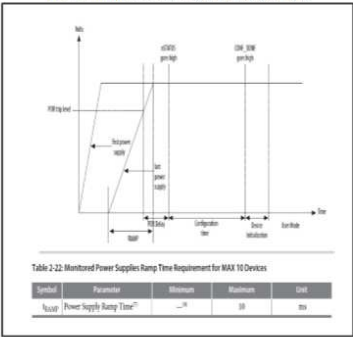


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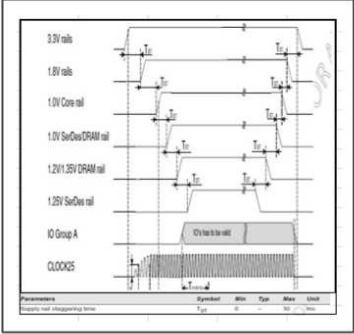
Model Name		ES5626BQ-1217-111ZZ		Rev R0C	
Size	Page Name		Engineer		
Custom	Power Tree		Dino_Lin		
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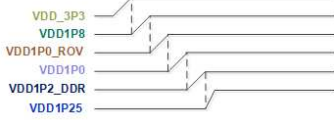
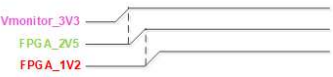
FPGA-MAX10 power on sequence requirement



BCM88470 power on sequence requirement



	System power on delay time(ms)																
	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16	T17
DC/DC Soft-start	0.46	1.3	-	1.81	1.26	-	1.3	1.4	1.81	1.81	-	1.4	0.2	-	-	1.81	-
UCD96160 turn on delay	1	1	1	1	1	TBD	1	1	1	1	1	1	1	1	1	1	1
Total delay	1.46	2.3	1	2.81	2.26	TBD	2.3	2.4	2.81	2.81	1	2.4	1.2	1	1	2.81	1



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Customer Model Name:

Accton Model Name: ES5626BQ-1217-111ZZ

H/W RD:

Date: 2018-07-19

Power Consumption Estimation Table / CURRENT (max) Per Device (A)																		
Voltage(V)																		
Device	12	5	3.3	1.8	2.5	0.75	1.5	1.538	1.35	1.25	1.2	0.6	1.1	1	0.95	Quantity	Unility(%)	Total(W)
CPU Module is below																		
Intel BDVDE CPU D1519				26.00000			0.16000				3.00000					1.00		50.64000
DDR4 Module 8GB ECC SODIMM Transcend TS1GSH72V1H-I											2.55200	0.75000				2.00		7.02480
Intel WGI210IS			0.24200													1.00		0.79860
m-SATA SSD 32GB Transcend TS128EPTDE1500I			0.18200													1.00		0.60060
CPLD			0.50000													1.00		1.65000
SPI Flash			0.05000													4.00		0.66000
NAND Flash			0.05000													0.00		0.00000
BMC Module																		
AST2400			0.19100					0.45200								1.00		1.32548
DDR3 Nanya NT5CC128M16IP-DI 128MX16								0.52500								1.00		0.80745
NAND Flash			0.05000													2.00		0.33000
RTL8211E			0.65000													1.00		2.14500
Main Board is below																		
Broadcom BCM88470CB0IFSGB			0.20000	1.20500						0.76800	1.14300			52.25500		1.00		57.41560
DDR4 Hynix H5AN4G6NAFR-UHI 256MX16					0.33300						0.42500					6.00		8.05500
Marvell 88E1111-B2-BAB1000					0.71800						0.34300					1.00		2.20660
CPLD (Altera 5M2210ZF3245N)			0.50000													1.00		1.65000
FPGA (Altera 10M16DCU3247G)			0.30000		0.15000						1.10000					1.00		2.68500
IDT 82P33931-1BAG (SYNCE+1588)			0.90000	0.09000												1.00		3.13200
IDT CLK Generator (8V49NS0412NLGI8)			0.90000													1.00		2.97000
IDT CLK Generator (8V43N104NLGI8)			0.25000													1.00		0.82500
BITS (Exar XRT86VL30IV80-F)			0.31480													1.00		1.03884
OCXO 25MHz (Rakon STP 3377 LF)			1.10000													1.00		3.63000
USB Connector& USB2.0 Hub Controller		1.00000	0.32000													1.00		6.05600
10G_SFP+ Transceiver			0.61000													24.00		48.31200
100G_QSFP28+ Transceiver			1.50000													2.00		9.90000
GPS Module (Trimble_67974-00)			0.12000													1.00		0.39600
Fan Board																		
FAN Module	1.50000															5.00		90.00000
CPLD (Altera 5M1270ZF25I5N)			0.50000													1.00		1.65000
SFP+ / QSFP LEDs			0.03000													26.00		2.57400
QSFP fan out LED			0.05000													8.00		1.32000
ToD/BITS/MGMT LEDs			0.02500													4.00		0.33000
SYS LEDs			0.02500													5.00		0.41250
Other Specific IC			0.50000													1.00		1.65000
Heater	1.67000															1.00		20.04000
Total Current (A)	9.17000	1.00000	27.01480	27.29500	2.86600	0.00000	0.16000	0.97700	0.00000	0.76800	13.24000	1.50000	0.00000	52.25500	0.00000			332.23047
Voltage Toleration (%)	5%		5%								5%			3%	3%			
Efficiency (80%)																		415.28808
Efficiency (85%)																		390.85937
Efficiency (90%)																		369.14496

保存期限:五年

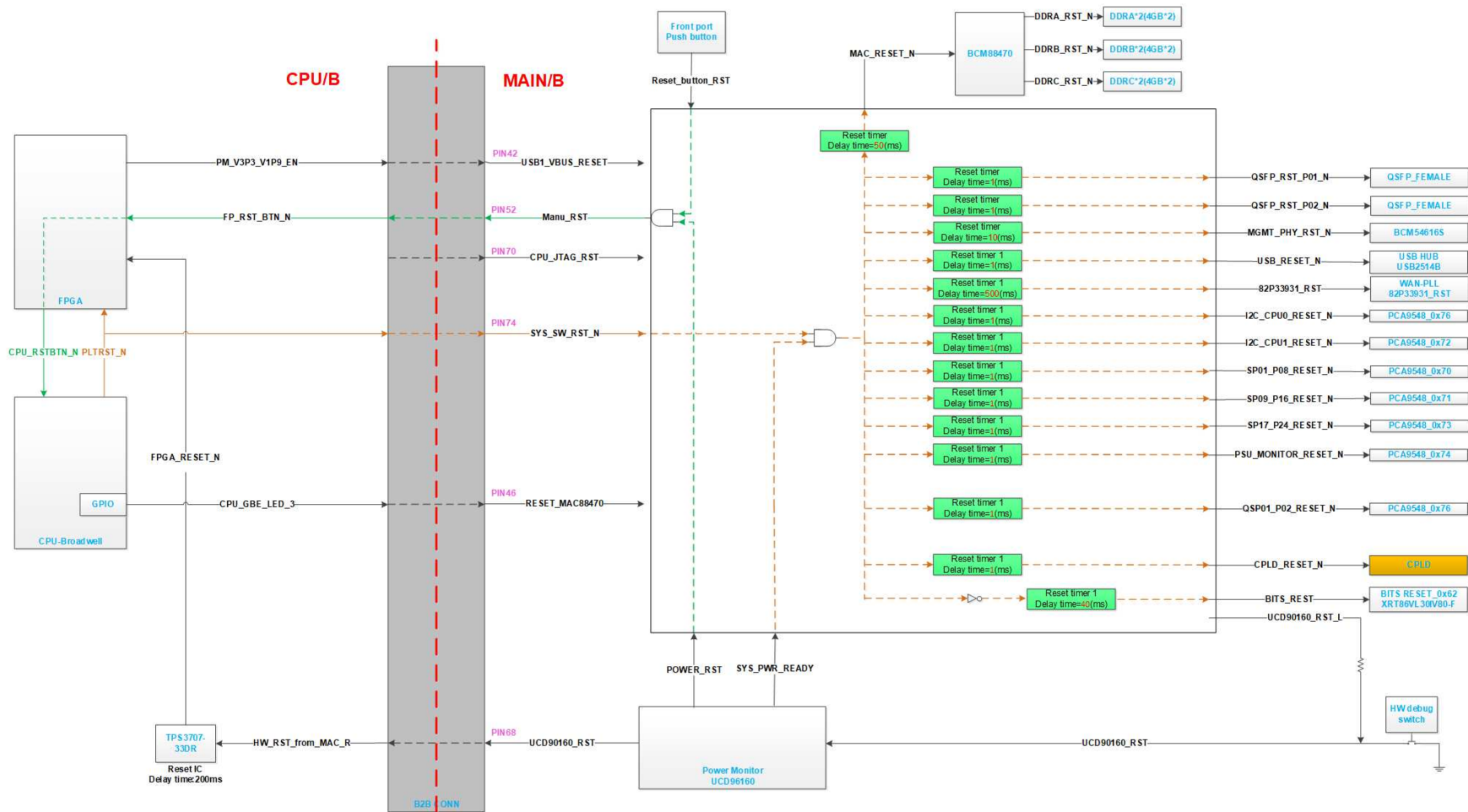
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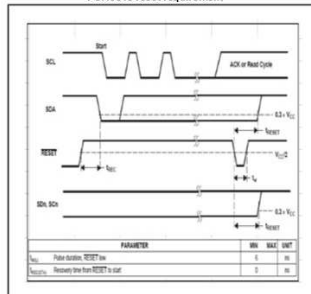


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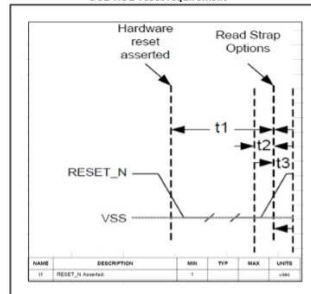
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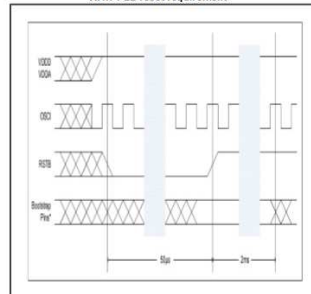
PCA9548 reset requirement



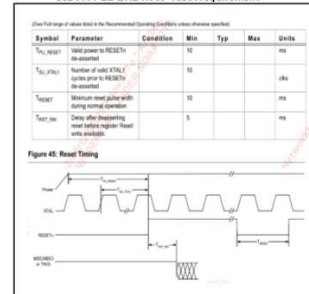
USB HUB reset requirement



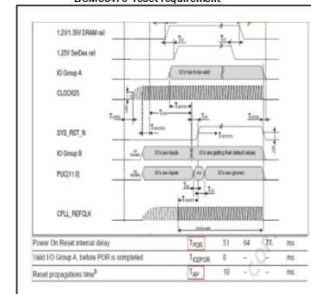
WAN-PLL reset requirement



88E1111-B2-BAB1000 reset requirement



BCM88470 reset requirement

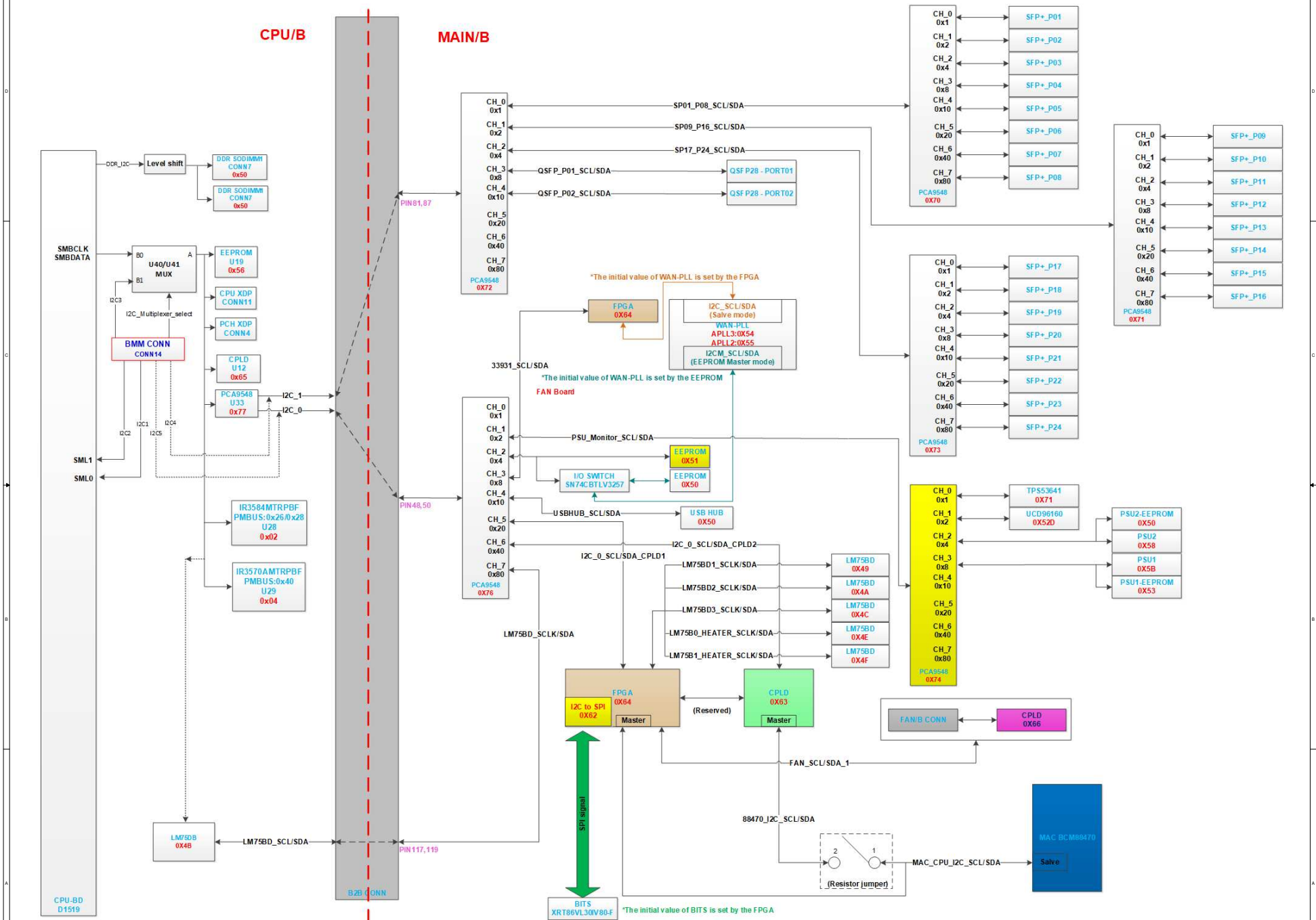


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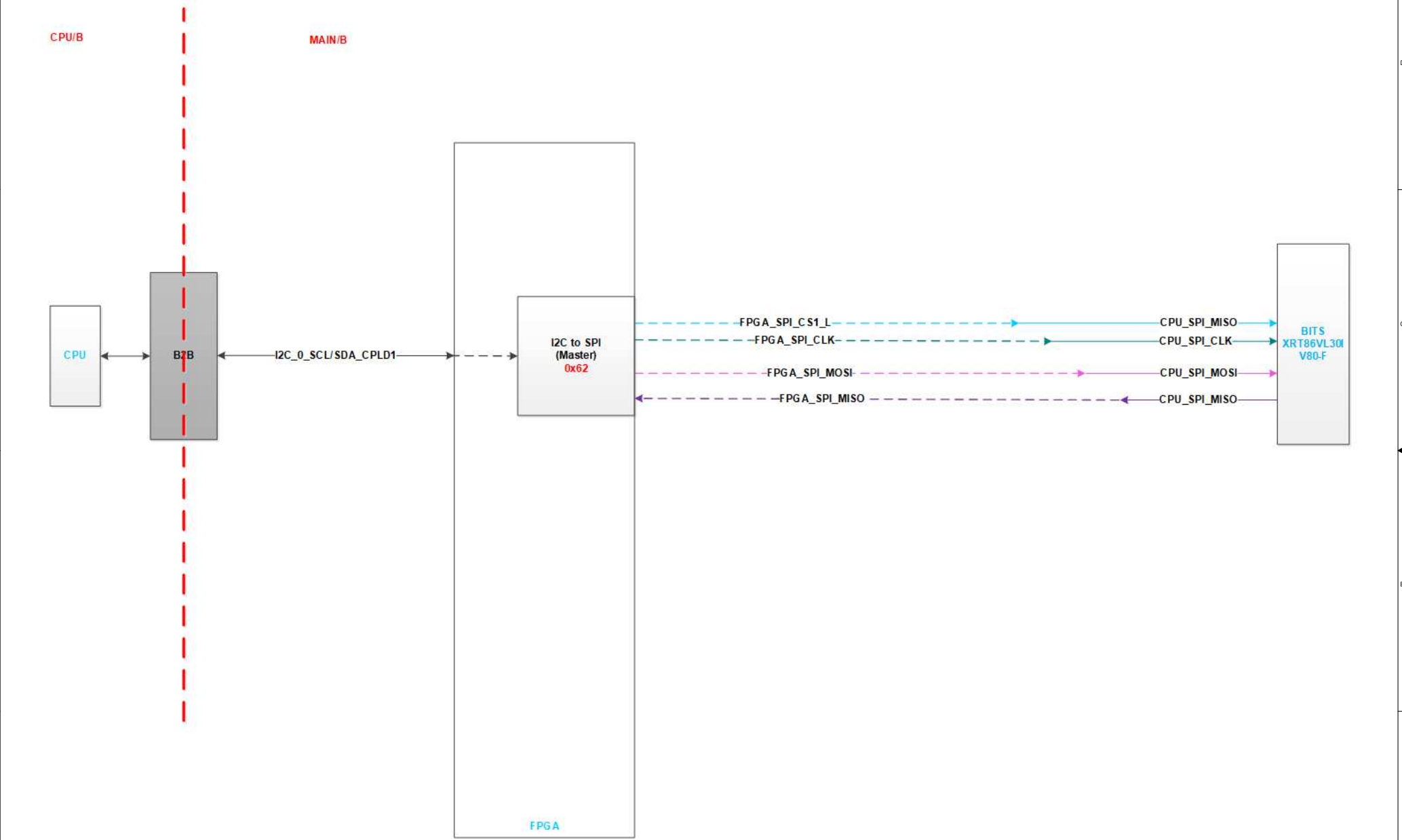


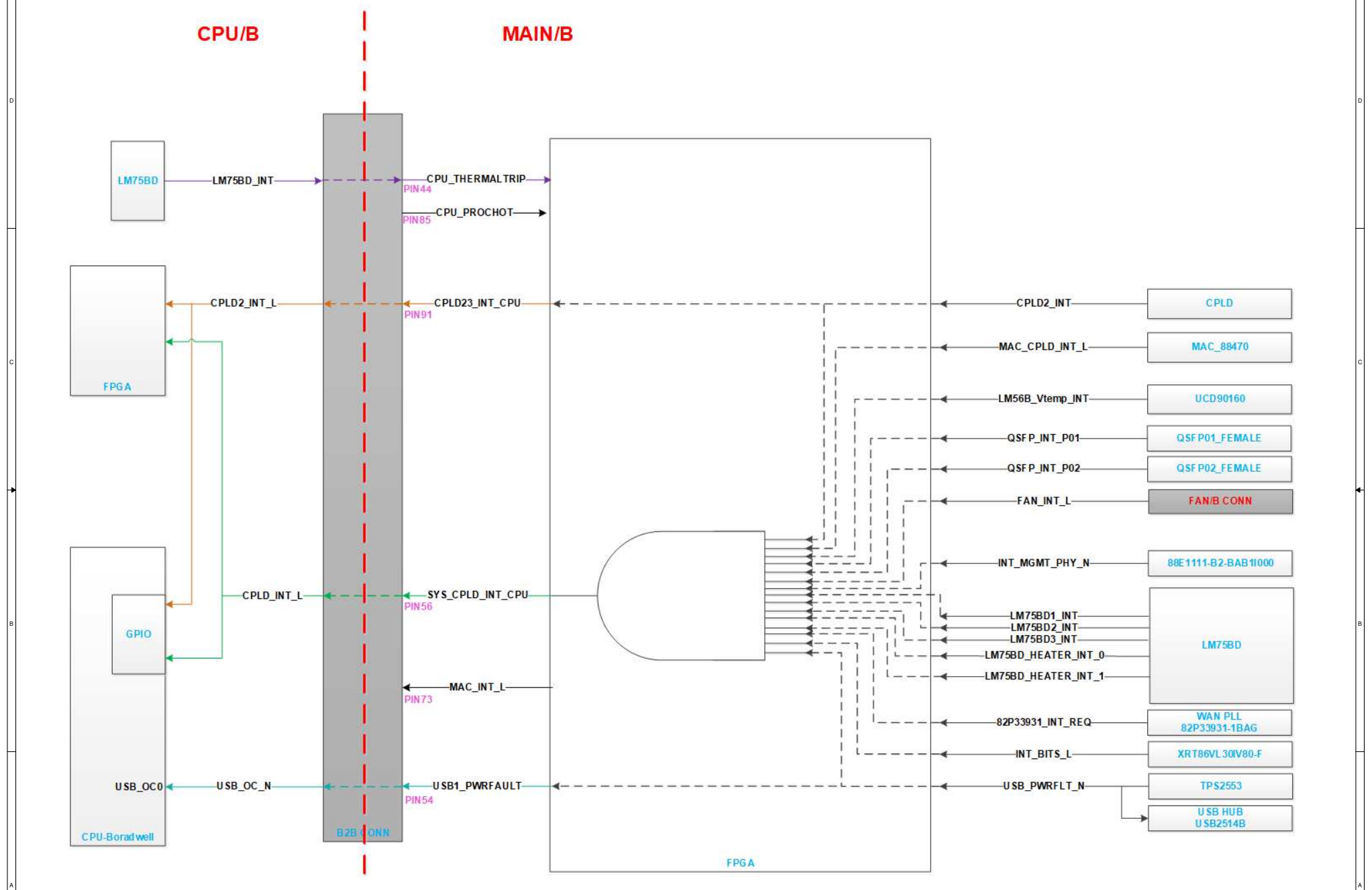
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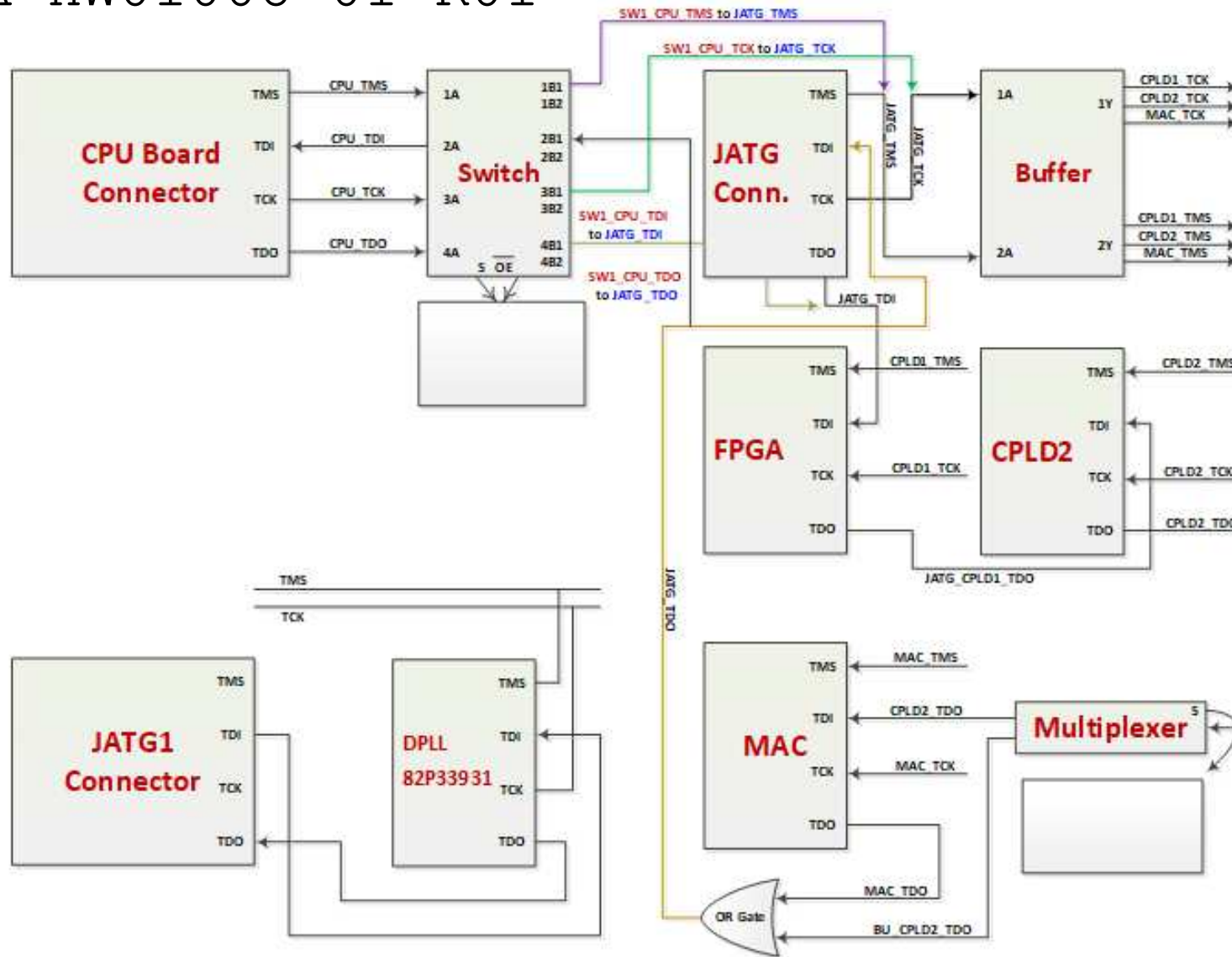
Model Name	ESS626BQ-1217-111Z	Rev	R0C
Size	Page Name	Engineer	Dino_Lin
Custom	Reset Diagram		
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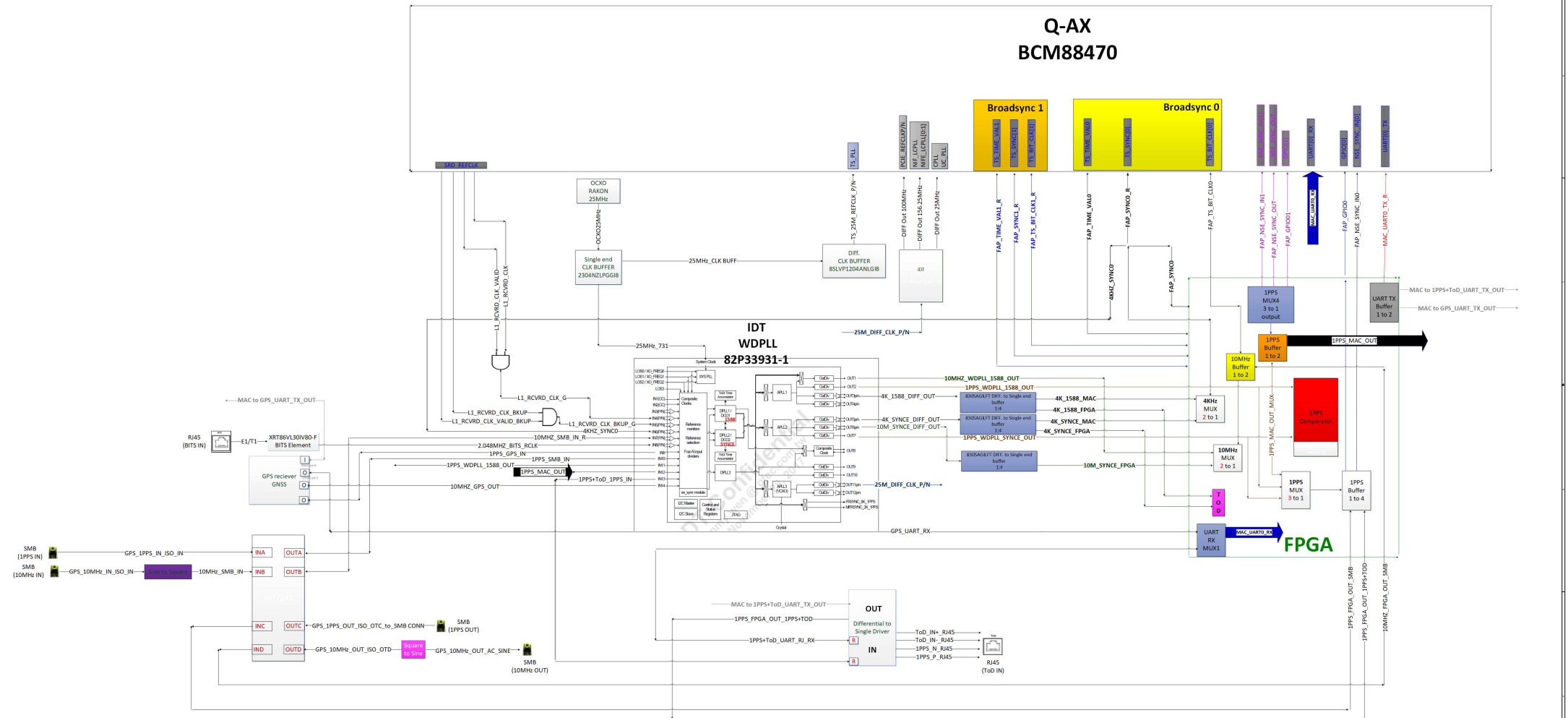


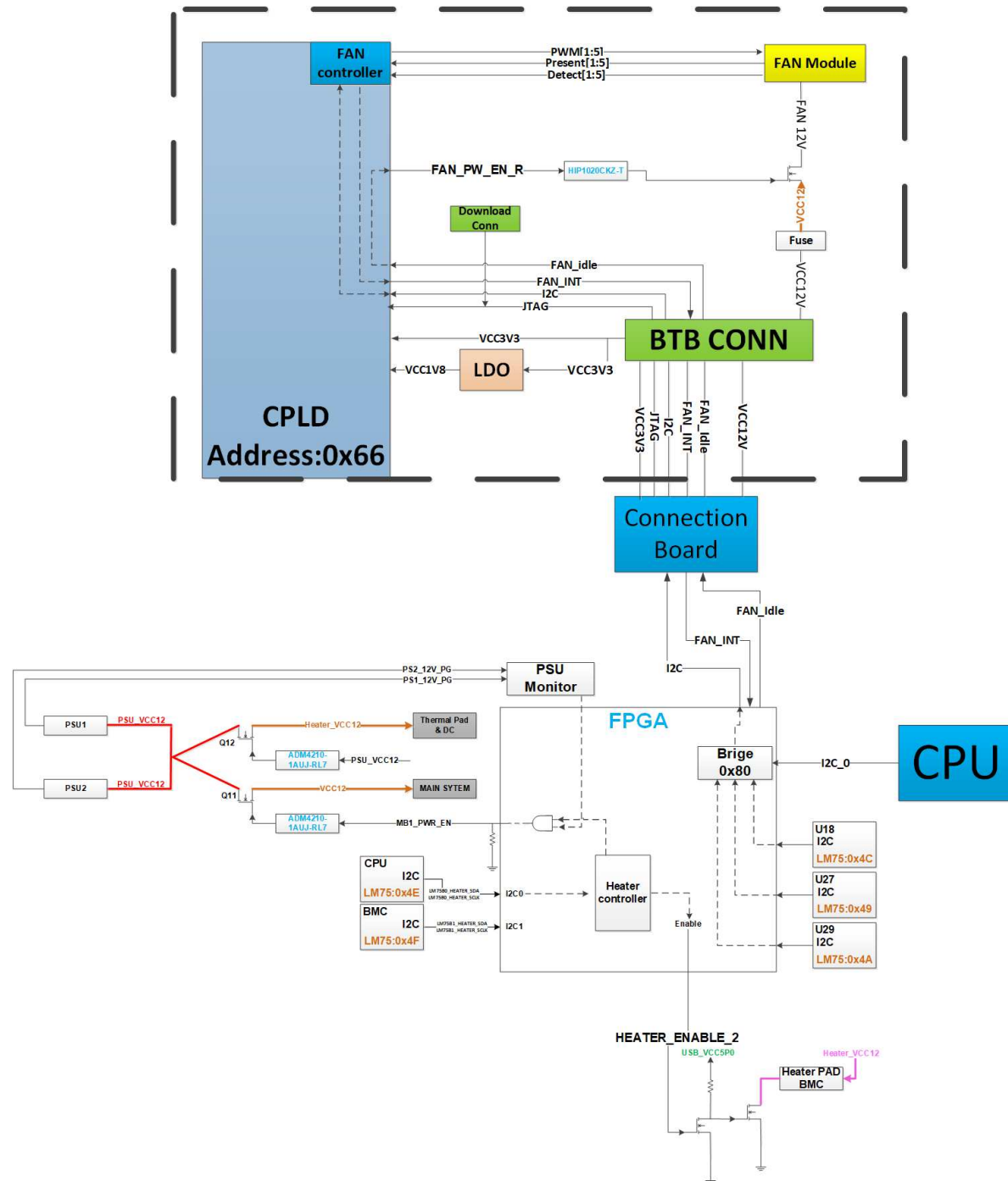
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Model Name ES5626BQ-1217-111ZZ			Rev R0C
Size Custom	Page Name JTAG Diagram		Engineer Dino_Lin
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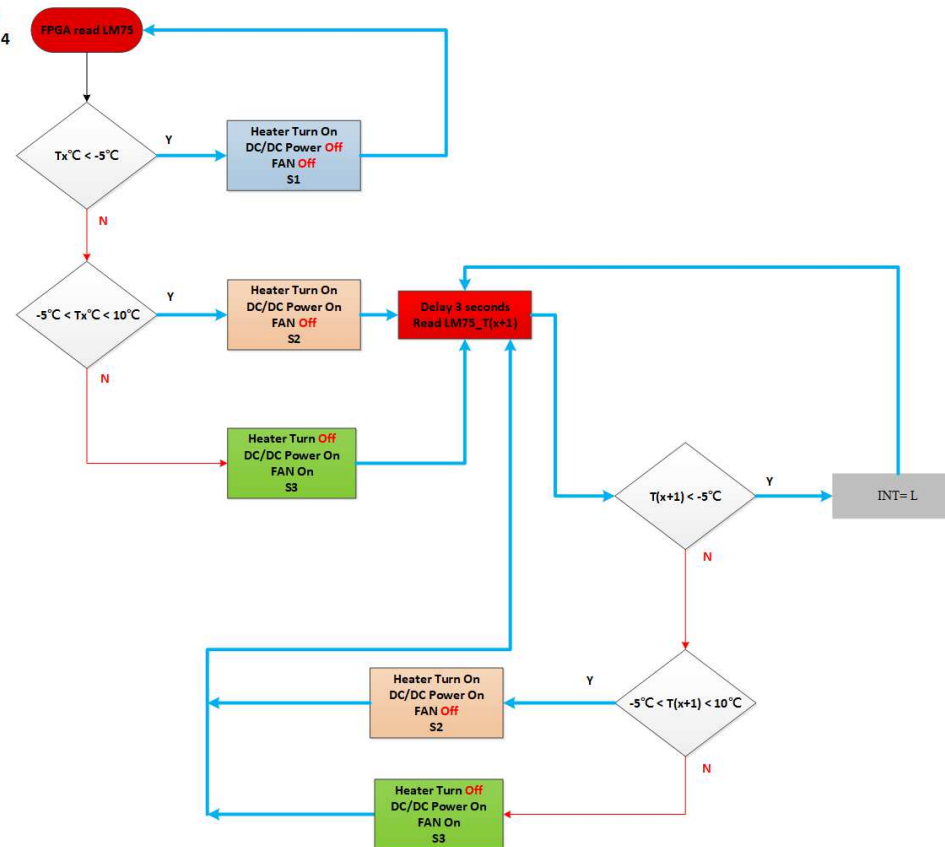
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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Page Name	Heater Function Diagram	Engineer	Dino_Lin
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FAN read U29
Heater read U4



S1(Blue):

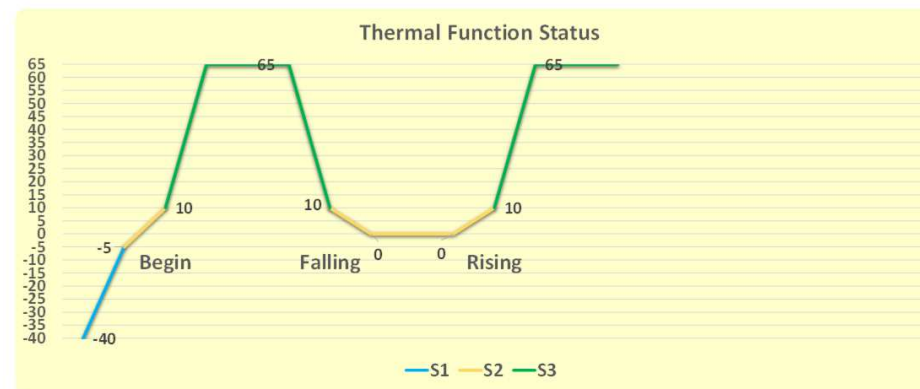
Heater On
DC/DC Power Off
FAN off

S2(Yellow):

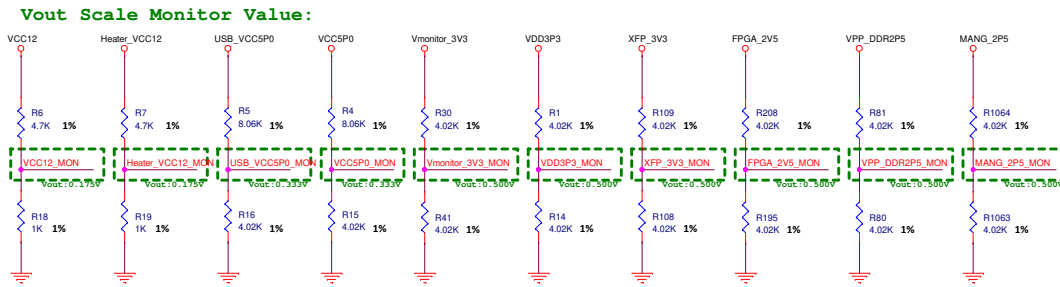
Heater On
DC/DC Power On
FAN off

S3(Green):

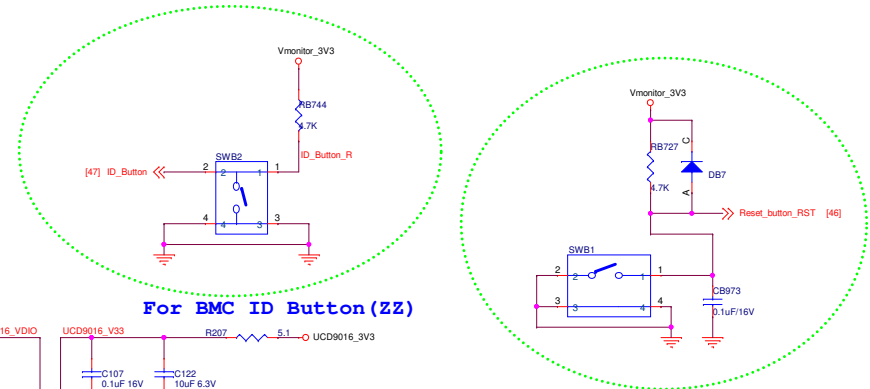
Heater Off
DC/DC Power On
FAN On



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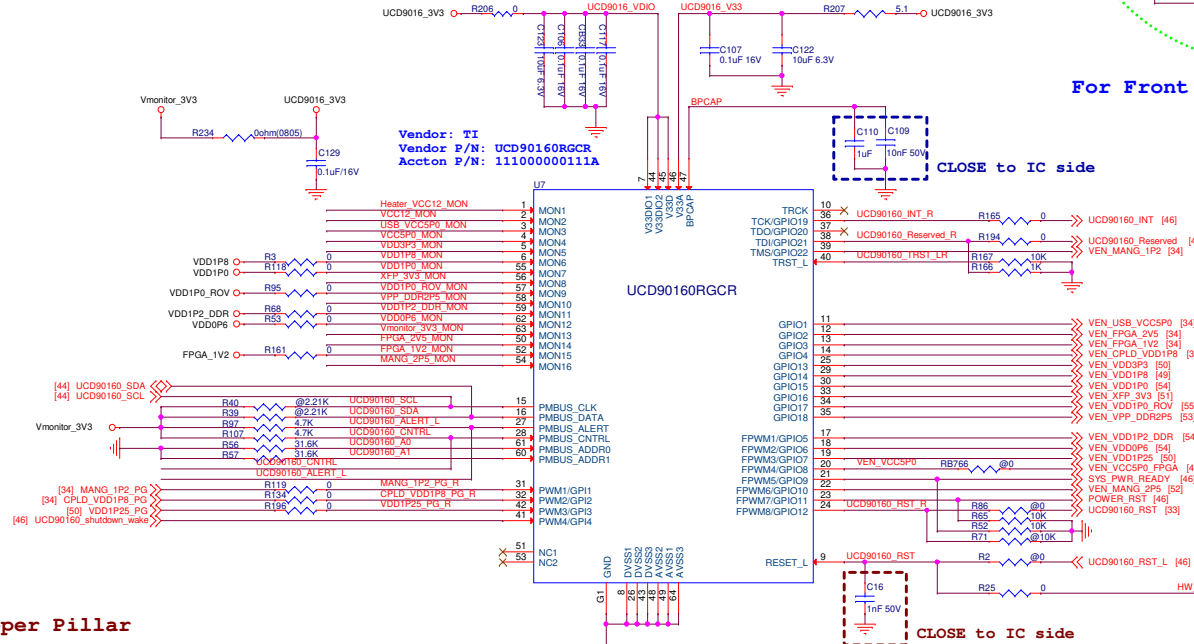
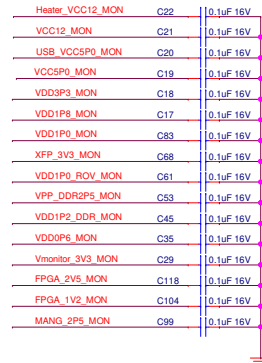
Note:
If the vout is under "2.5V", the
"vout scale monitor value" is
only to set 1V. So these voltage
are not divided across two series
resistors.



For BMC ID Button(ZZ)

For Front port Reset Button(ZZ)

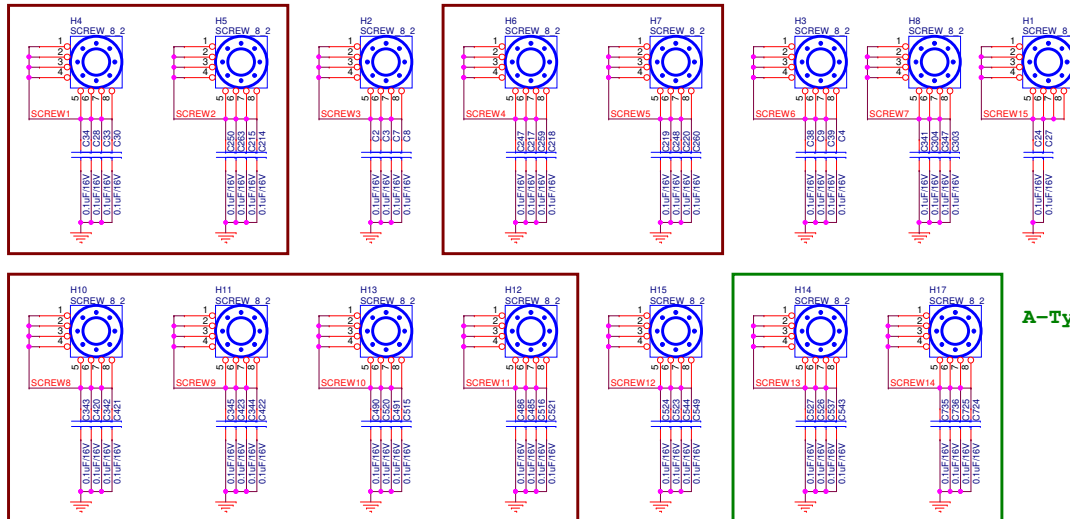
Put close to UCD90160



CONN10
J44

1	1	NC J1_1
2	2	NC J1_2
3	3	NC J1_3
4	4	NC J1_4
5	5	
6	6	AGND UCD90160
7	7	I ₁ PMBUS_CNTRL
8	8	O ₁ PMBUS_ALERT
9	9	O ₂ PMBUS_CLK
10	10	I ₂ PMBUS_DATA

Mounting Hole B-Type Screw with Copper Pillar



A-Type Screw

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**RX had
internal AC
capacitors**

U40A			
[30] NIF_P_RX04	F12	NIF_RX_00_P	NIF_TX_00_P
[30] NIF_N_RX04	G12	NIF_RX_00_N	NIF_TX_00_N
[30] NIF_P_RX05	K11	NIF_RX_01_P	NIF_TX_01_P
[30] NIF_N_RX05	J11	NIF_RX_01_N	NIF_TX_01_N
[30] NIF_P_RX06	G10	NIF_RX_02_P	NIF_TX_02_P
[30] NIF_N_RX06	J9	NIF_RX_02_N	NIF_TX_02_N
[30] NIF_P_RX07	K9	NIF_RX_03_P	NIF_TX_03_P
[30] NIF_N_RX07	F16	NIF_RX_03_N	NIF_TX_03_N
[30] NIF_P_RX08	G16	NIF_RX_04_P	NIF_TX_04_P
[30] NIF_N_RX08	J15	NIF_RX_04_N	NIF_TX_04_N
[30] NIF_P_RX09	K15	NIF_RX_05_P	NIF_TX_05_P
[30] NIF_N_RX09	F14	NIF_RX_05_N	NIF_TX_05_N
[30] NIF_P_RX10	G14	NIF_RX_06_P	NIF_TX_06_P
[30] NIF_N_RX10	J13	NIF_RX_06_N	NIF_TX_06_N
[30] NIF_P_RX11	K13	NIF_RX_07_P	NIF_TX_07_P
[30] NIF_N_RX11	J12	NIF_RX_07_N	NIF_TX_07_N
[27] NIF_RX08_P	F17	NIF_RX_08_P	NIF_TX_08_P
[27] NIF_RX08_N	G18	NIF_RX_08_N	NIF_TX_08_N
[27] NIF_RX09_P	F18	NIF_RX_09_P	NIF_TX_09_P
[27] NIF_RX09_N	G19	NIF_RX_09_N	NIF_TX_09_N
[27] NIF_RX10_P	K19	NIF_RX_10_P	NIF_TX_10_P
[27] NIF_RX10_N	F20	NIF_RX_10_N	NIF_TX_10_N
[27] NIF_RX11_P	G20	NIF_RX_11_P	NIF_TX_11_P
[27] NIF_RX11_N	J21	NIF_RX_11_N	NIF_TX_11_N
[27] NIF_RX12_P	K21	NIF_RX_12_P	NIF_TX_12_P
[27] NIF_RX12_N	F22	NIF_RX_12_N	NIF_TX_12_N
[27] NIF_RX13_P	G22	NIF_RX_13_P	NIF_TX_13_P
[27] NIF_RX13_N	J23	NIF_RX_13_N	NIF_TX_13_N
[27] NIF_RX14_P	K23	NIF_RX_14_P	NIF_TX_14_P
[27] NIF_RX14_N	F24	NIF_RX_14_N	NIF_TX_14_N
[27] NIF_RX15_P	G24	NIF_RX_15_P	NIF_TX_15_P
[27] NIF_RX15_N	J24	NIF_RX_15_N	NIF_TX_15_N

[28] NIFE_RX16_P	F26	NIFE_RX_16_P	NIFE_TX_16_P
[28] NIFE_RX16_N	G26	NIFE_RX_16_N	NIFE_TX_16_N
[28] NIFE_RX17_P	H27	NIFE_RX_17_P	NIFE_TX_17_P
[28] NIFE_RX17_N	F28	NIFE_RX_17_N	NIFE_TX_17_N
[28] NIFE_RX18_P	G28	NIFE_RX_18_P	NIFE_TX_18_P
[28] NIFE_RX18_N	H29	NIFE_RX_18_N	NIFE_TX_18_N
[28] NIFE_RX19_P	J29	NIFE_RX_19_P	NIFE_TX_19_P
[28] NIFE_RX19_N	F30	NIFE_RX_19_N	NIFE_TX_19_N
[28] NIFE_RX20_P	G30	NIFE_RX_20_P	NIFE_TX_20_P
[28] NIFE_RX20_N	H31	NIFE_RX_20_N	NIFE_TX_20_N
[28] NIFE_RX21_P	J31	NIFE_RX_21_P	NIFE_TX_21_P
[28] NIFE_RX21_N	F32	NIFE_RX_21_N	NIFE_TX_21_N
[28] NIFE_RX22_P	G32	NIFE_RX_22_P	NIFE_TX_22_P
[28] NIFE_RX22_N	H33	NIFE_RX_22_N	NIFE_TX_22_N
[28] NIFE_RX23_P	J33	NIFE_RX_23_P	NIFE_TX_23_P
[28] NIFE_RX23_N	F34	NIFE_RX_23_N	NIFE_TX_23_N
[28] NIFE_RX24_P	G34	NIFE_RX_24_P	NIFE_TX_24_P
[28] NIFE_RX24_N	H35	NIFE_RX_24_N	NIFE_TX_24_N
[28] NIFE_RX25_P	J35	NIFE_RX_25_P	NIFE_TX_25_P
[28] NIFE_RX25_N	F36	NIFE_RX_25_N	NIFE_TX_25_N
[28] NIFE_RX26_P	G36	NIFE_RX_26_P	NIFE_TX_26_P
[28] NIFE_RX26_N	H37	NIFE_RX_26_N	NIFE_TX_26_N
[28] NIFE_RX27_P	J37	NIFE_RX_27_P	NIFE_TX_27_P
[28] NIFE_RX27_N	F38	NIFE_RX_27_N	NIFE_TX_27_N
[28] NIFE_RX28_P	G38	NIFE_RX_28_P	NIFE_TX_28_P
[28] NIFE_RX28_N	H39	NIFE_RX_28_N	NIFE_TX_28_N
[28] NIFE_RX29_P	J39	NIFE_RX_29_P	NIFE_TX_29_P
[28] NIFE_RX29_N	F40	NIFE_RX_29_N	NIFE_TX_29_N
[28] NIFE_RX30_P	G40	NIFE_RX_30_P	NIFE_TX_30_P
[28] NIFE_RX30_N	H41	NIFE_RX_30_N	NIFE_TX_30_N
[28] NIFE_RX31_P	J41	NIFE_RX_31_P	NIFE_TX_31_P
[28] NIFE_RX31_N	F42	NIFE_RX_31_N	NIFE_TX_31_N
[28] NIFE_RX32_P	G42	NIFE_RX_32_P	NIFE_TX_32_P
[28] NIFE_RX32_N	H43	NIFE_RX_32_N	NIFE_TX_32_N
[28] NIFE_RX33_P	J43	NIFE_RX_33_P	NIFE_TX_33_P
[28] NIFE_RX33_N	F44	NIFE_RX_33_N	NIFE_TX_33_N
[28] NIFE_RX34_P	G44	NIFE_RX_34_P	NIFE_TX_34_P
[28] NIFE_RX34_N	H45	NIFE_RX_34_N	NIFE_TX_34_N
[28] NIFE_RX35_P	J45	NIFE_RX_35_P	NIFE_TX_35_P
[28] NIFE_RX35_N	F46	NIFE_RX_35_N	NIFE_TX_35_N
[28] NIFE_RX36_P	G46	NIFE_RX_36_P	NIFE_TX_36_P
[28] NIFE_RX36_N	H47	NIFE_RX_36_N	NIFE_TX_36_N
[28] NIFE_RX37_P	J47	NIFE_RX_37_P	NIFE_TX_37_P
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[28] NIFE_RX38_P	G48	NIFE_RX_38_P	NIFE_TX_38_P
[28] NIFE_RX38_N	H49	NIFE_RX_38_N	NIFE_TX_38_N
[28] NIFE_RX39_P	J49	NIFE_RX_39_P	NIFE_TX_39_P
[28] NIFE_RX39_N	F50	NIFE_RX_39_N	NIFE_TX_39_N
[28] NIFE_RX40_P	G50	NIFE_RX_40_P	NIFE_TX_40_P
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[28] NIFE_RX42_P	G52	NIFE_RX_42_P	NIFE_TX_42_P
[28] NIFE_RX42_N	H53	NIFE_RX_42_N	NIFE_TX_42_N
[28] NIFE_RX43_P	J53	NIFE_RX_43_P	NIFE_TX_43_P
[28] NIFE_RX43_N	F54	NIFE_RX_43_N	NIFE_TX_43_N
[28] NIFE_RX44_P	G54	NIFE_RX_44_P	NIFE_TX_44_P
[28] NIFE_RX44_N	H55	NIFE_RX_44_N	NIFE_TX_44_N
[28] NIFE_RX45_P	J55	NIFE_RX_45_P	NIFE_TX_45_P
[28] NIFE_RX45_N	F56	NIFE_RX_45_N	NIFE_TX_45_N
[28] NIFE_RX46_P	G56	NIFE_RX_46_P	NIFE_TX_46_P
[28] NIFE_RX46_N	H57	NIFE_RX_46_N	NIFE_TX_46_N
[28] NIFE_RX47_P	J57	NIFE_RX_47_P	NIFE_TX_47_P
[28] NIFE_RX47_N	F58	NIFE_RX_47_N	NIFE_TX_47_N

[33] 10G_KR_TX1_P	CB566	0.1uF16V	NIFE_RX46_P
[33] 10G_KR_TX1_N	CB567	0.1uF16V	NIFE_RX46_N
[33] 10G_KR_TX0_P	CB528	0.1uF16V	NIFE_RX47_P
[33] 10G_KR_TX0_N	CB511	0.1uF16V	NIFE_RX47_N

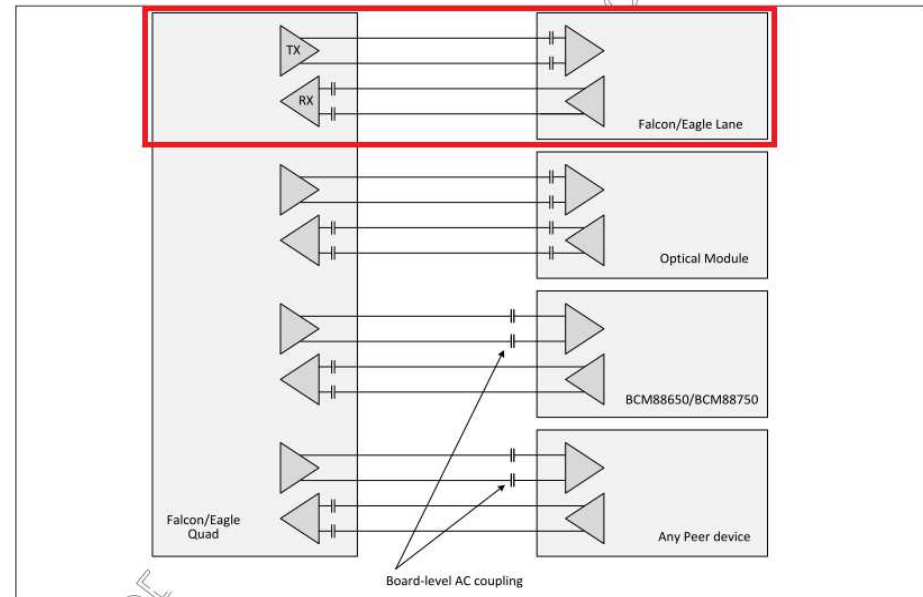
10G_KR to CPU BTB CONN
Place near chip Rx side

BCM8847C0B0IFSBC

Falcon/Eagle AC Coupling

Falcon/Eagle SerDes serial links are internally AC coupled. These AC coupling are on-die; they reside on the Falcon/Eagle SerDes receiver and cannot be bypassed. This AC coupling eliminates the need for external AC capacitors in the case of Fabric link connections, which are typically Falcon-to-Falcon connections and Warplite transmitter (BCM88750/BCM88650)-to-Falcon/Eagle receiver connections. Any peer device that interfaces to the Falcon/Eagle must have AC coupling on its receiver. This peer AC coupling can be embedded inside the peer device, as with the Falcon/Eagle, or can be implemented externally on the board level. External capacitors are also required if the receiver signal $V_{IN-CM} + V_{IN-DIFF}/4$ exceeds 1.5V; in this case, a 100 nF external capacitor should be used and placed on the Falcon/Eagle receiver side. To minimize reflection, use a small footprint capacitor, such as 0201.

Figure 35: AC Coupling of Serial Links



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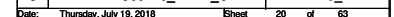
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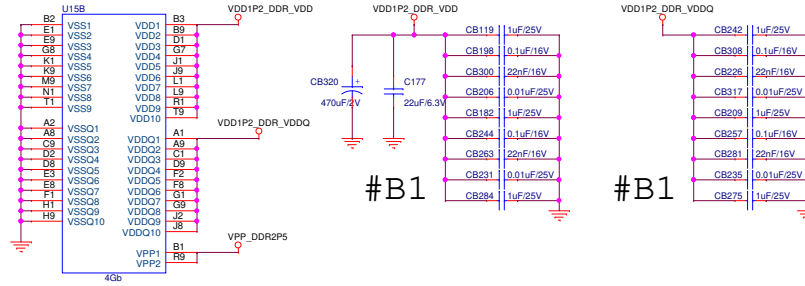
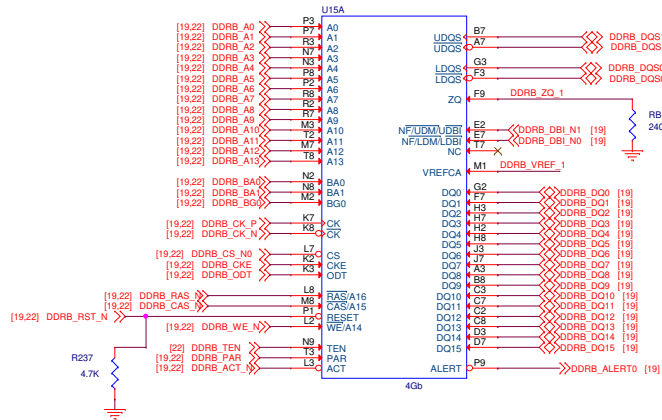


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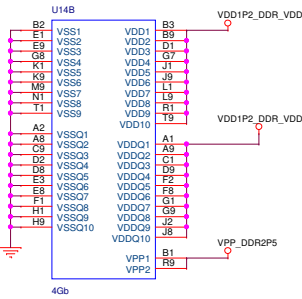
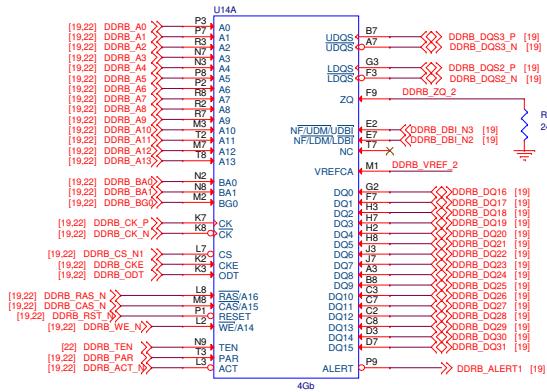
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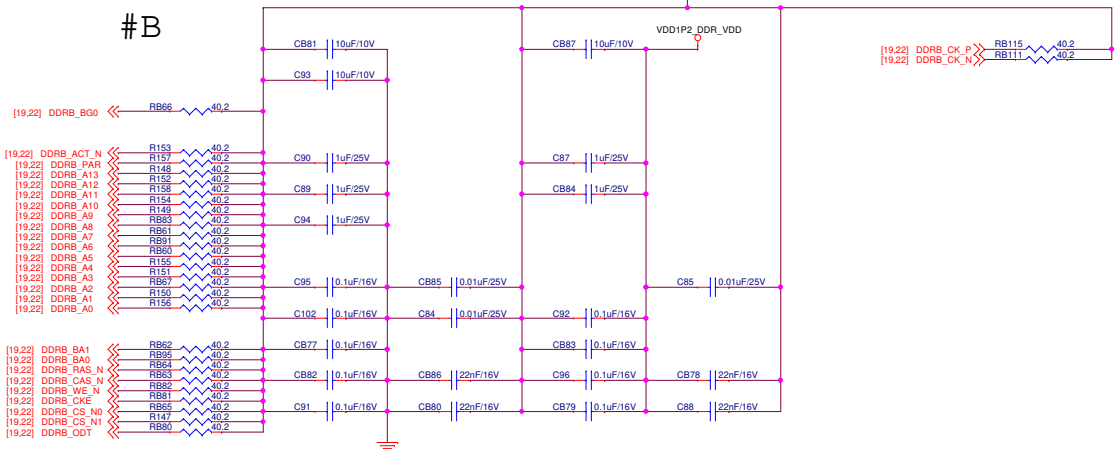
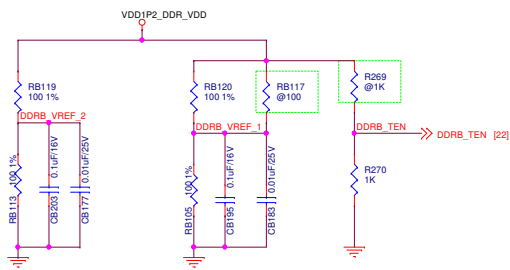
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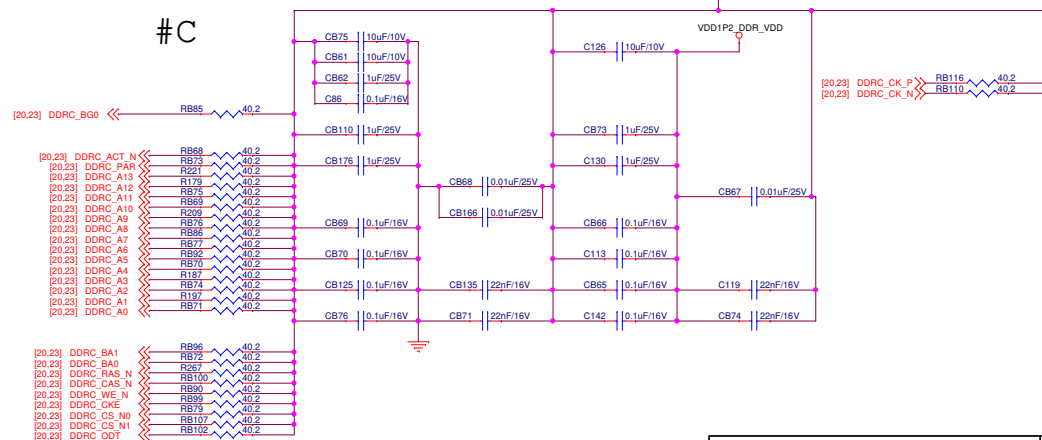
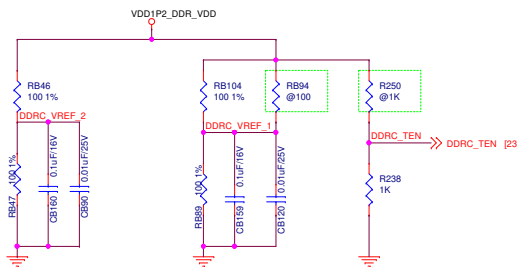
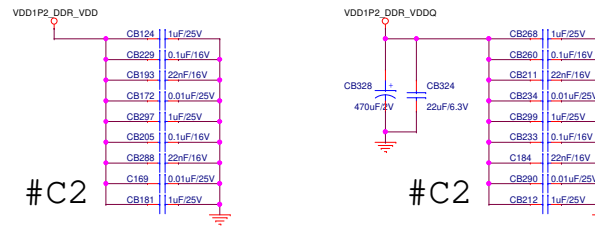
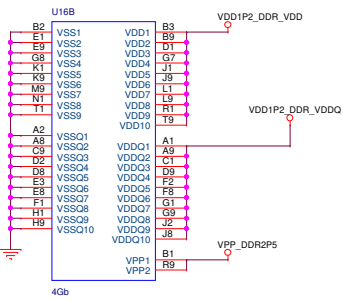
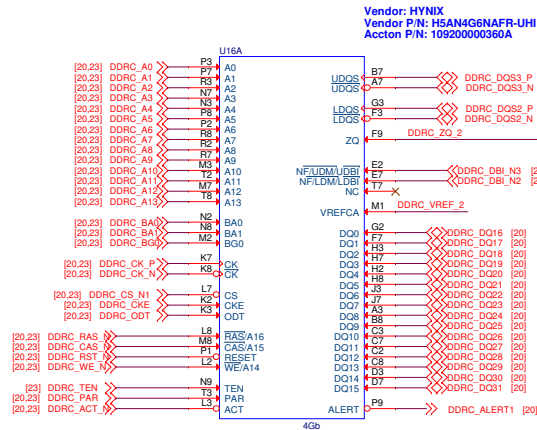
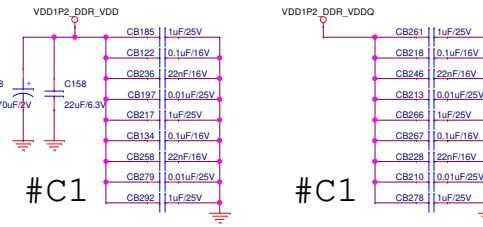
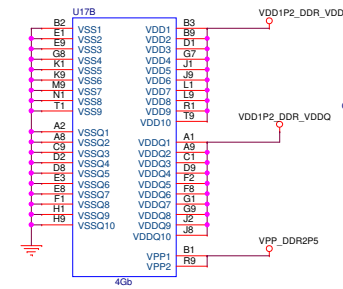


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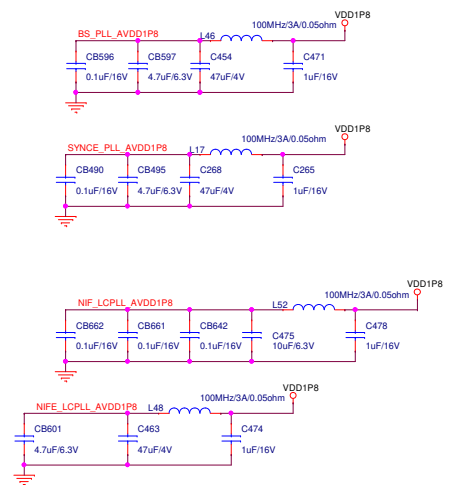


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U40I				E34			
A17	SRD_AGND#1	SRD_AGND#69	E34	SRD_AGND#137	SRD_AGND#204	N18	
A21	SRD_AGND#2	SRD_AGND#70	E35	SRD_AGND#138	SRD_AGND#205	N19	
A25	SRD_AGND#3	SRD_AGND#71	E36	SRD_AGND#139	SRD_AGND#206	N20	
A29	SRD_AGND#4	SRD_AGND#72	E37	SRD_AGND#140	SRD_AGND#207	N21	
A33	SRD_AGND#5	SRD_AGND#73	E38	SRD_AGND#141	SRD_AGND#208	N22	
A37	SRD_AGND#6	SRD_AGND#74	E39	SRD_AGND#142	SRD_AGND#209	N23	
A41	SRD_AGND#7	SRD_AGND#75	E40	SRD_AGND#143	SRD_AGND#210	N24	
A45	SRD_AGND#8	SRD_AGND#76	E41	SRD_AGND#144	SRD_AGND#211	N25	
A49	SRD_AGND#9	SRD_AGND#77	E42	SRD_AGND#145	SRD_AGND#212	N26	
A53	SRD_AGND#10	SRD_AGND#78	E43	SRD_AGND#146	SRD_AGND#213	N27	
A57	SRD_AGND#11	SRD_AGND#79	E44	SRD_AGND#147	SRD_AGND#214	N28	
B1	SRD_AGND#12	SRD_AGND#80	F17	SRD_AGND#148	SRD_AGND#215	R1	
B5	SRD_AGND#13	SRD_AGND#81	F18	SRD_AGND#149	SRD_AGND#216	R2	
B9	SRD_AGND#14	SRD_AGND#82	F19	SRD_AGND#150	SRD_AGND#217	R3	
B13	SRD_AGND#15	SRD_AGND#83	F20	SRD_AGND#151	SRD_AGND#218	R4	
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B29	SRD_AGND#19	SRD_AGND#87	F24	SRD_AGND#155	SRD_AGND#222	R8	
B33	SRD_AGND#20	SRD_AGND#88	F25	SRD_AGND#156	SRD_AGND#223	R9	
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B57	SRD_AGND#26	SRD_AGND#94	G4	SRD_AGND#162	SRD_AGND#229	R15	
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C5	SRD_AGND#38	SRD_AGND#106	H7	SRD_AGND#174	SRD_AGND#241	R27	
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C77	SRD_AGND#56	SRD_AGND#124	H25	SRD_AGND#192	SRD_AGND#259	R45	
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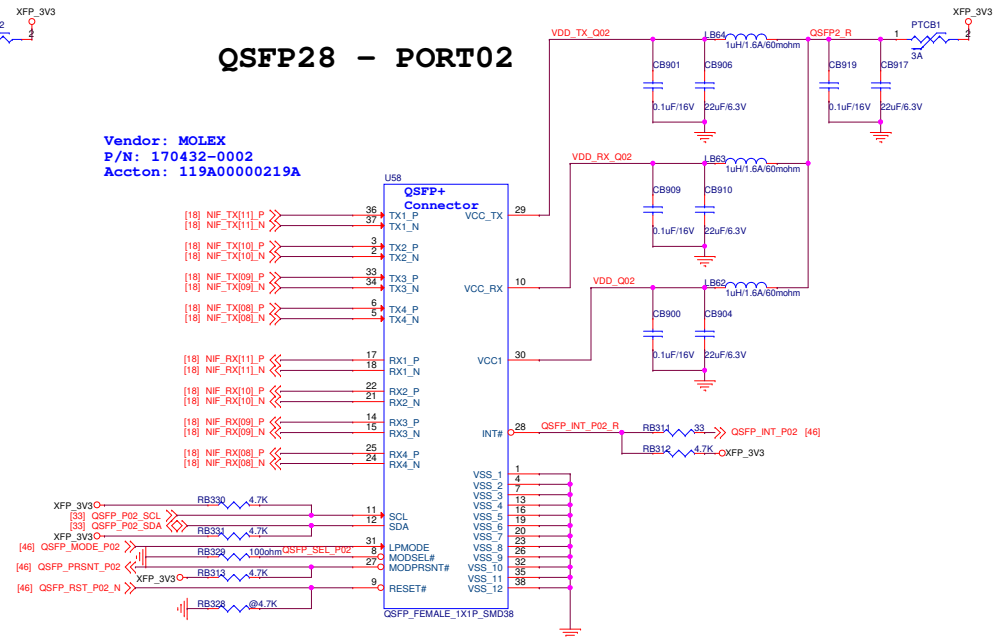
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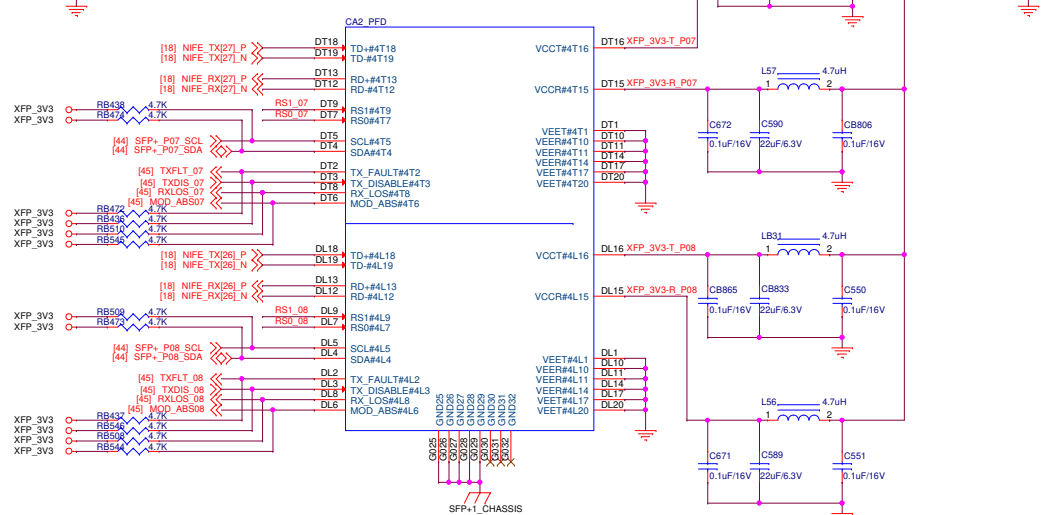
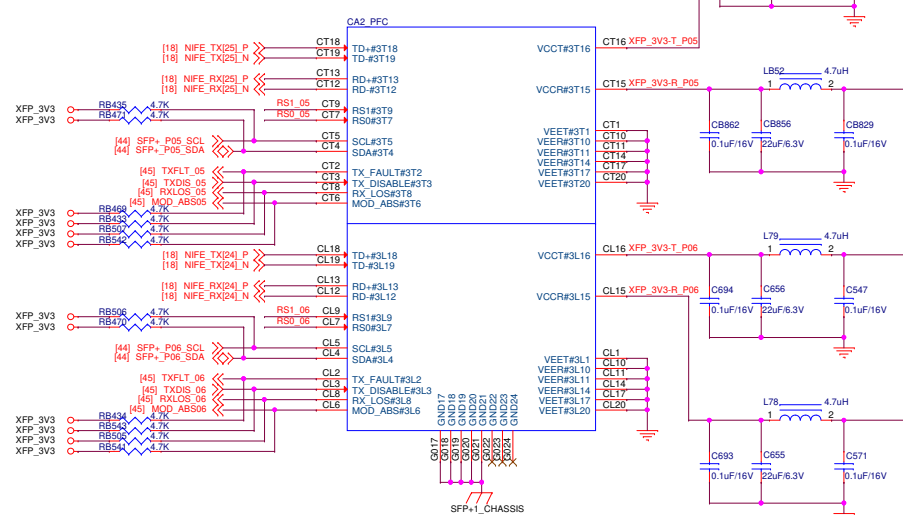
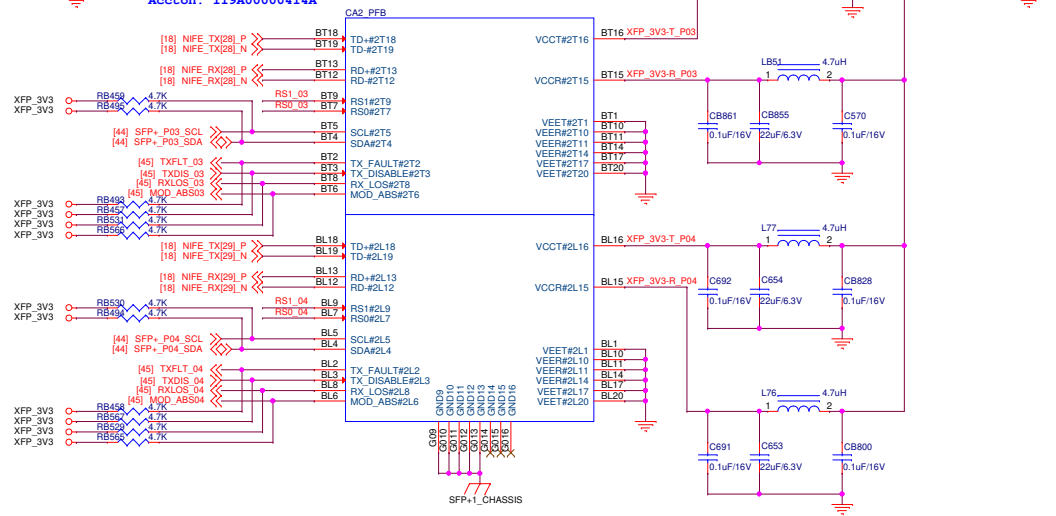
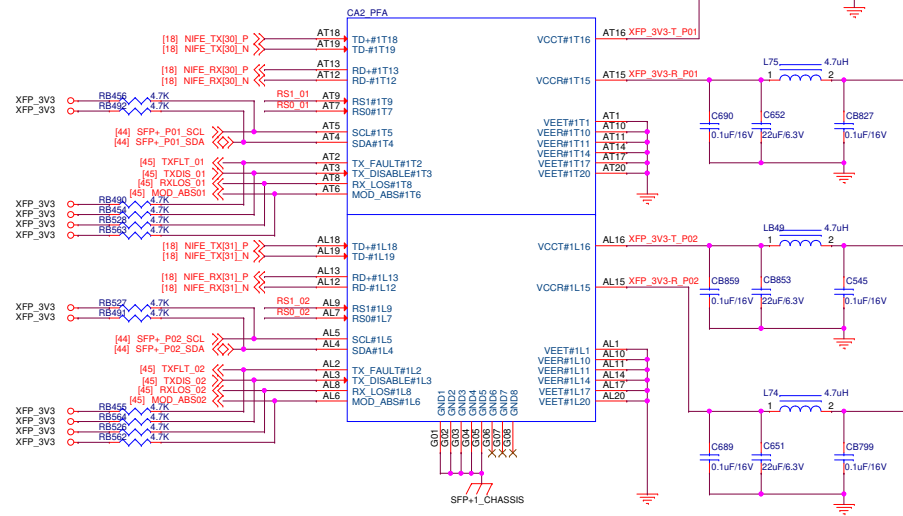
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K58	SRD_AGND#168	SRD_AGND#235	R21	SRD_AGND#235	SRD_AGND#236	R22	
K59	SRD_AGND#169	SRD_AGND#236	R22	SRD_AGND#236	SRD_AGND#237	R23	
K60	SRD_AGND#170	SRD_AGND#237	R23	SRD_AGND#237	SRD_AGND#238	R24	
K61	SRD_AGND#171	SRD_AGND#238	R24	SRD_AGND#238	SRD_AGND#239	R25	
K62	SRD_AGND#172	SRD_AGND#239	R25	SRD_AGND#239	SRD_AGND#240	R26	
K63	SRD_AGND#173	SRD_AGND#240	R26	SRD_AGND#240	SRD_AGND#241	R27	
K64	SRD_AGND#174	SRD_AGND#241	R27	SRD_AGND#241	SRD_AGND#242	R28	
K65	SRD_AGND#175	SRD_AGND#242	R28	SRD_AGND#242	SRD_AGND#243	R29	
K66	SRD_AGND#176	SRD_AGND#243	R29	SRD_AGND#243	SRD_AGND#244	R30	
K67	SRD_AGND#177	SRD_AGND#244	R30	SRD_AGND#244	SRD_AGND#245	R31	
K68	SRD_AGND#178	SRD_AGND#245	R31	SRD_AGND#245	SRD_AGND#246	R32	
K69	SRD_AGND#179	SRD_AGND#246	R32	SRD_AGND#246	SRD_AGND#247	R33	
K70	SRD_AGND#180	SRD_AGND#247	R33	SRD_AGND#247	SRD_AGND#248	R34	
K71	SRD_AGND#181	SRD_AGND#248	R34	SRD_AGND#248	SRD_AGND#249	R35	
K72	SRD_AGND#182	SRD_AGND#249	R35	SRD_AGND#249	SRD_AGND#250	R36	
K73	SRD_AGND#183	SRD_AGND#250	R36	SRD_AGND#250	SRD_AGND#251	R37	
K74	SRD_AGND#184	SRD_AGND#251	R37	SRD_AGND#251	SRD_AGND#252	R38	
K75	SRD_AGND#185	SRD_AGND#252	R38	SRD_AGND#252	SRD_AGND#253	R39	
K76	SRD_AGND#186	SRD_AGND#253	R39	SRD_AGND#253	SRD_AGND#254	R40	
K77	SRD_AGND#187	SRD_AGND#254	R40	SRD_AGND#254	SRD_AGND#255	R41	
K78	SRD_AGND#188	SRD_AGND#255	R41	SRD_AGND#255	SRD_AGND#256	R42	
K79	SRD_AGND#189	SRD_AGND#256	R42	SRD_AGND#256	SRD_AGND#257	R43	
K80	SRD_AGND#190	SRD_AGND#257	R43	SRD_AGND#257	SRD_AGND#258	R44	
K81	SRD_AGND#191	SRD_AGND#258	R44	SRD_AGND#258	SRD_AGND#259	R45	
K82	SRD_AGND#192	SRD_AGND#259	R45	SRD_AGND#259	SRD_AGND#260	R46	
K83	SRD_AGND#193	SRD_AGND#260	R46	SRD_AGND#260	SRD_AGND#261	R47	
K84	SRD_AGND#194	SRD_AGND#261	R47	SRD_AGND#261	SRD_AGND#262	R48	
K85	SRD_AGND#195	SRD_AGND#262	R48	SRD_AGND#262	SRD_AGND#263	R49	
K86	SRD_AGND#196	SRD_AGND#263	R49	SRD_AGND#263	SRD_AGND#264	R50	
K87	SRD_AGND#197	SRD_AGND#264	R50	SRD_AGND#264	SRD_AGND#265	R51	
K88	SRD_AGND#198	SRD_AGND#265	R51	SRD_AGND#265	SRD_AGND#266	R52	
K89	SRD_AGND#199	SRD_AGND#266	R52	SRD_AGND#266	SRD_AGND#267	R53	
K90	SRD_AGND#200	SRD_AGND#267	R53	SRD_AGND#267	SRD_AGND#268	R54	
K91	SRD_AGND#201	SRD_AGND#268	R54	SRD_AGND#268	SRD_AGND#269	R55	
K92	SRD_AGND#202	SRD_AGND#269	R55	SRD_AGND#269	SRD_AGND#270	R56	
K93	SRD_AGND#203	SRD_AGND#270	R56	SRD_AGND#270	SRD_AGND#271	R57	

BCM88470CBOIFS6G

U40K			
AA1	VSS#1	VSS#95	AL29
AA10	VSS#10	VSS#104	AL32
AA11	VSS#11	VSS#105	AL33
AA12	VSS#12	VSS#97	AL34
AA17	VSS#14	VSS#98	AL35
AA18	VSS#15	VSS#99	AL36
AA19	VSS#16	VSS#100	AL37
AA23	VSS#17	VSS#101	AL38
AA24	VSS#18	VSS#102	AL39
AA25	VSS#19	VSS#103	AL40
AA26	VSS#20	VSS#104	AL41
AA27	VSS#21	VSS#105	AL42
AA28	VSS#22	VSS#106	AL43
AA31	VSS#23	VSS#107	AL44
AA32	VSS#24	VSS#108	AL45
AA33	VSS#25	VSS#109	AL46
AA34	VSS#26	VSS#110	AL47
AA35	VSS#27	VSS#111	AL48
AA36	VSS#28	VSS#112	AL49
AA37	VSS#29	VSS#113	AL50
AA38	VSS#30	VSS#114	AL51
AA39	VSS#31	VSS#115	AL52
AA40	VSS#32	VSS#116	AL53
AA41	VSS#33	VSS#117	AL54
AA42	VSS#34	VSS#118	AL55
AA43	VSS#35	VSS#119	AL56
AA44	VSS#36	VSS#120	AL57
AA45	VSS#37	VSS#121	AL58
AA46	VSS#38	VSS#122	AL59
AA47	VSS#39	VSS#123	AL60
AA48	VSS#40	VSS#124	AL61
AA49	VSS#41	VSS#125	AL62
AA50	VSS#42	VSS#126	AL63
AA51	VSS#43	VSS#127	AL64
AA52	VSS#44	VSS#128	AL65
AA53	VSS#45	VSS#129	AL66
AA54	VSS#46	VSS#130	AL67
AA55	VSS#47	VSS#131	AL68
AA56	VSS#48	VSS#132	AL69
AA57	VSS#49	VSS#133	AL70
AA58	VSS#50	VSS#134	AL71
AA59	VSS#51	VSS#135	AL72
AA60	VSS#52	VSS#136	AL73
AA61	VSS#53	VSS#137	AL74
AA62	VSS#54	VSS#138	AL75
AA63	VSS#55	VSS#139	AL76
AA64	VSS#56	VSS#140	AL77
AA65	VSS#57	VSS#141	AL78
AA66	VSS#58	VSS#142	AL79
AA67	VSS#59	VSS#143	AL80
AA68	VSS#60	VSS#144	AL81
AA69	VSS#61	VSS#145	AL82
AA70	VSS#62	VSS#146	AL83
AA71	VSS#63	VSS#147	AL84
AA72	VSS#64	VSS#148	AL85
AA73	VSS#65	VSS#149	AL86
AA74	VSS#66	VSS#150	AL87
AA75	VSS#67	VSS#151	AL88
AA76	VSS#68	VSS#152	AL89
AA77	VSS#69	VSS#153	AL90
AA78	VSS#70	VSS#154	AL91
AA79	VSS#71	VSS#155	AL92
AA80	VSS#72	VSS#156	AL93
AA81	VSS#73	VSS#157	AL94
AA82	VSS#74	VSS#158	AL95
AA83	VSS#75	VSS#159	AL96
AA84	VSS#76	VSS#160	AL97
AA85	VSS#77	VSS#161	AL98
AA86	VSS#78	VSS#162	AL99
AA87	VSS#79	VSS#163	AL100
AA88	VSS#80	VSS#164	AL101
AA89	VSS#81	VSS#165	AL102
AA90	VSS#82	VSS#166	AL103
AA91	VSS#83	VSS#167	AL104
AA92	VSS#84	VSS#168	AL105
AA93	VSS#85	VSS#169	AL106
AA94	VSS#86	VSS#170	AL107
AA95	VSS#87	VSS#171	AL108
AA96	VSS#88	VSS#172	AL109
AA97	VSS#89	VSS#173	AL110
AA98	VSS#90	VSS#174	AL111
AA99	VSS#91	VSS#175	AL112
AA100	VSS#92	VSS#176	AL113
AA101	VSS#93	VSS#177	AL114
AA102	VSS#94	VSS#178	AL115
AA103	VSS#95	VSS#179	AL116
AA104	VSS#96	VSS#180	AL117
AA105	VSS#97	VSS#181	AL118
AA106	VSS#98	VSS#182	AL119
AA107	VSS#99	VSS#183	AL120
AA108	VSS#100	VSS#184	AL121
AA109	VSS#101	VSS#185	AL122
AA110	VSS#102	VSS#186	AL123
AA111	VSS#103	VSS#187	AL124
AA112	VSS#104	VSS#188	AL125

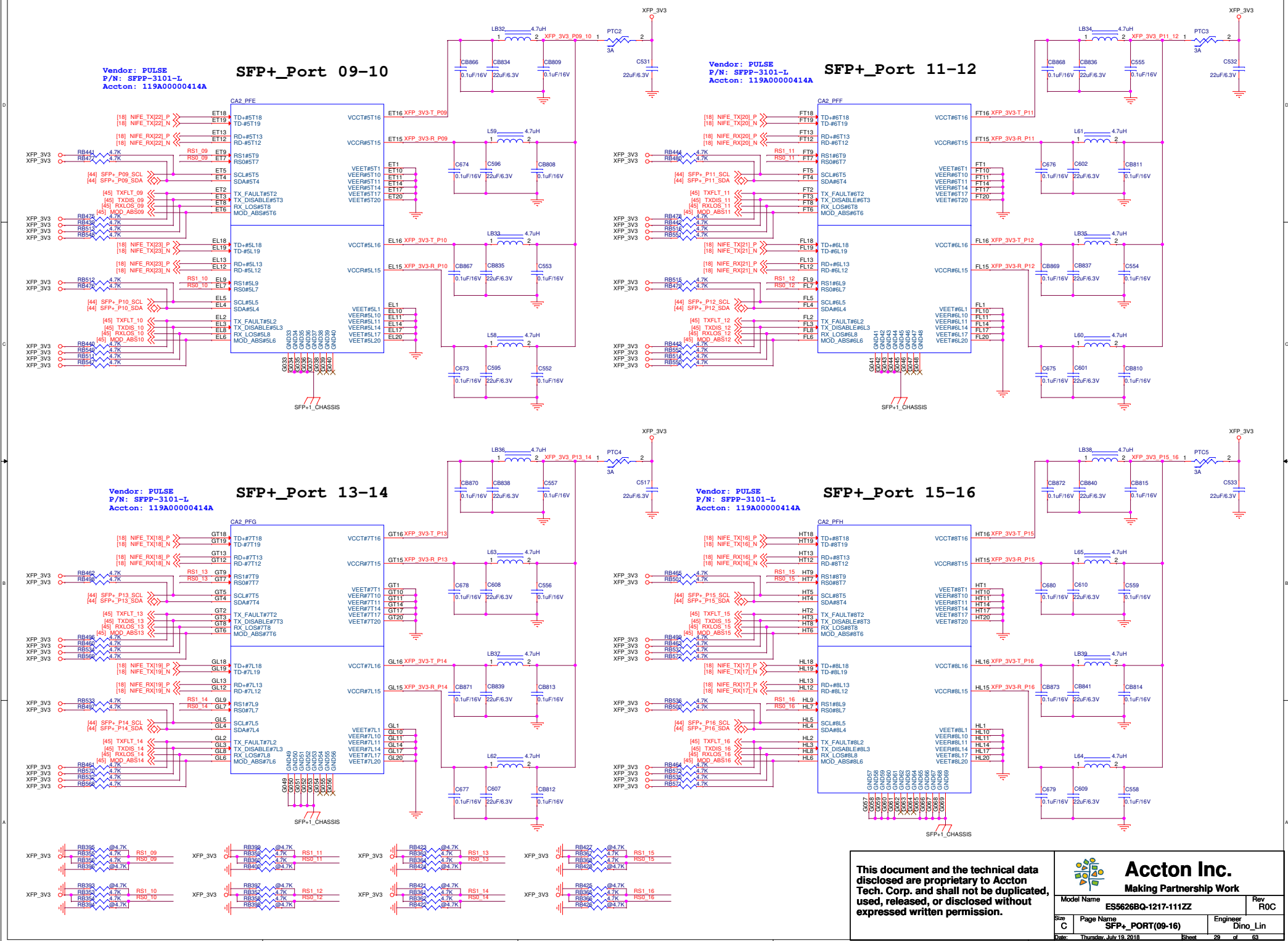
QSFP28 - 1x2 (Cage)

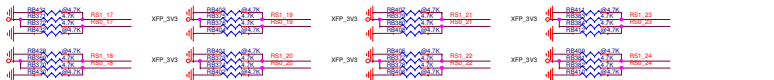




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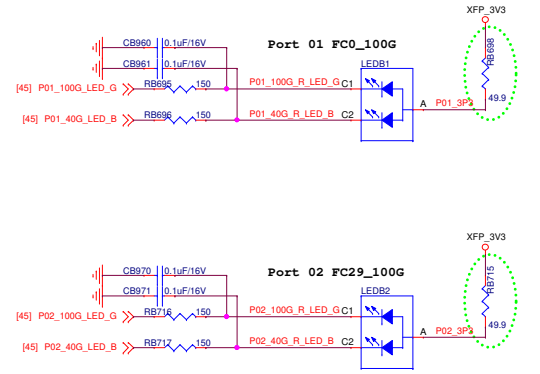
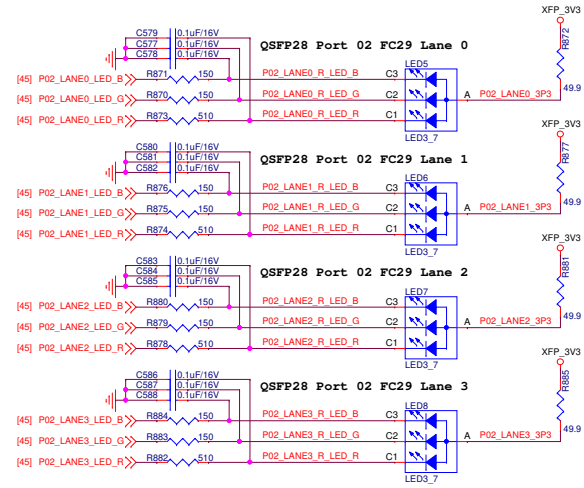
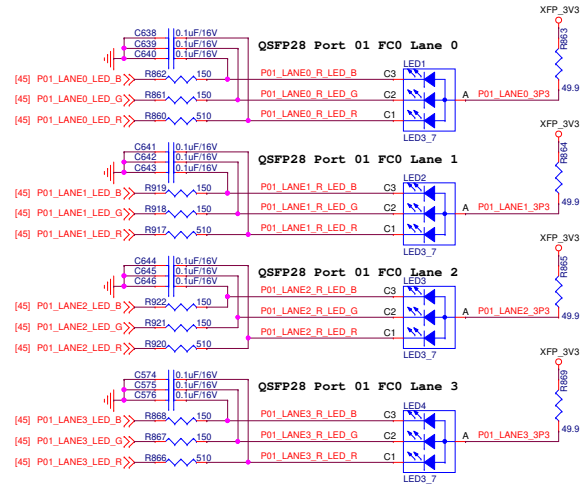
Model Name		ES5626BQ-1217-111ZZ		Rev		R0C	
Size	Page Name		Engineer				
C	SFP+_PORT(01-08)		Dino_Lin				
Date:	Thursday, July 19, 2018		Sheet	28	of	63	

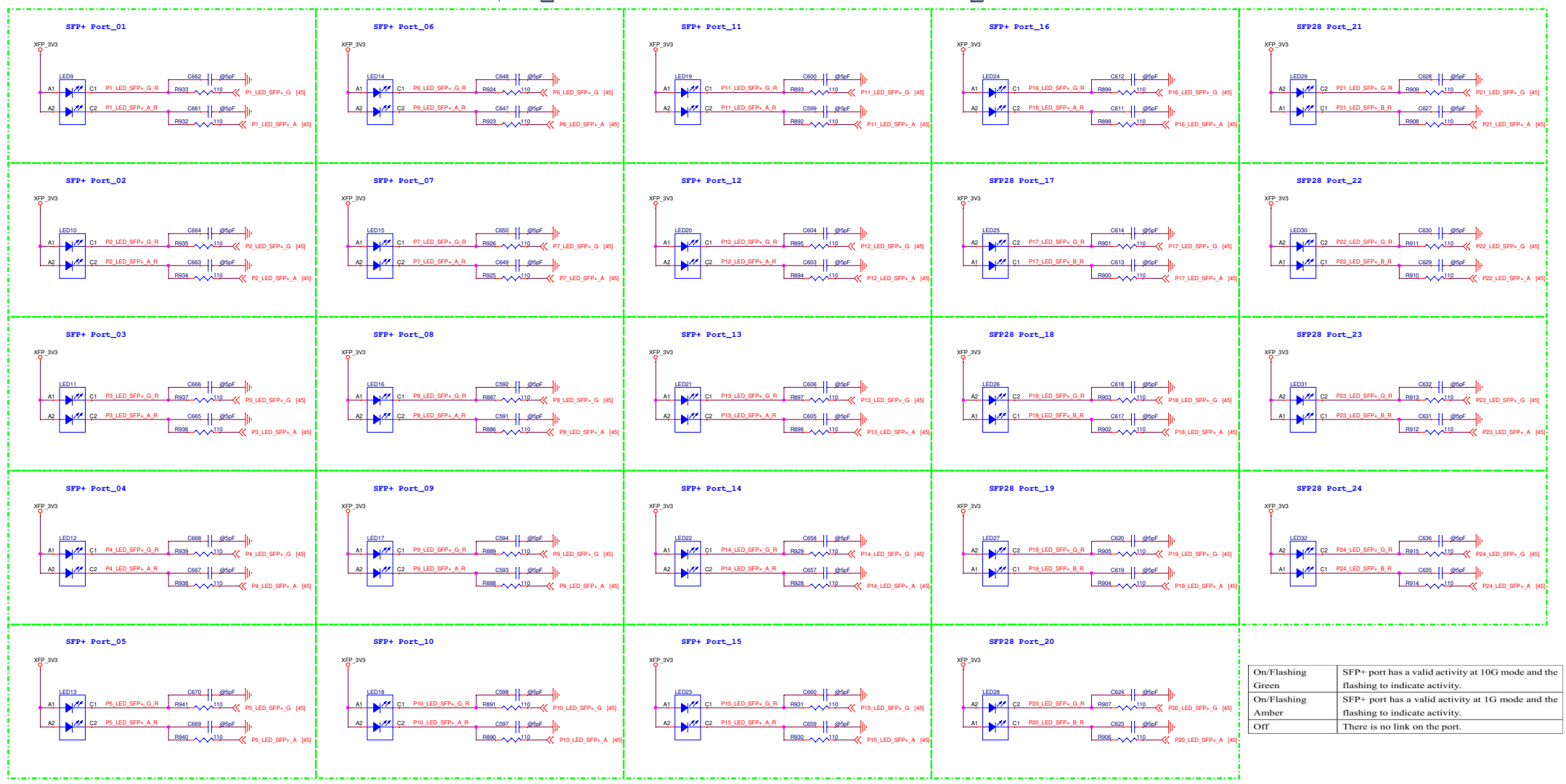
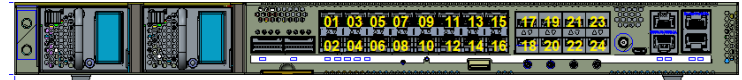




10C	

For Breakout Cable Definition :
Amber (Green + Red) : 25G
Purple (Blue + Red) : 10G

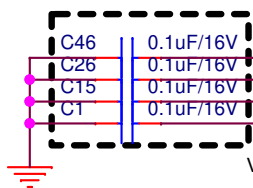




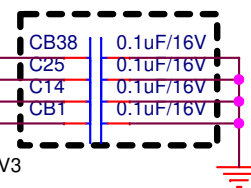
On/Flashing Green	SFP+ port has a valid activity at 10G mode and the flashing to indicate activity.
On/Flashing Amber	SFP+ port has a valid activity at 1G mode and the flashing to indicate activity.
Off	There is no link on the port.

Connection Board to Connection Board CONN

Close to connector side



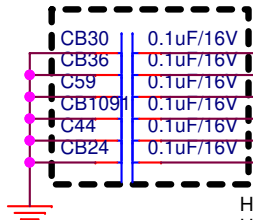
Close to connector side



Note: For CONN57&CONN58
Vendor: LCN
P/N: LCM25-K3024S01C-11
Accton: 118200000980A

[16] VEN_USB_VCC5P0
[16] VEN_FPGA_1V2
[16] VEN_MANG_1P2
[16] MANG_1P2_PG

[46] Fan_idle
[46] FAN_INT_L
[33] SW1_FAN_TMS
[33] SW1_FAN_TDI



Close to connector side

Heater_VCC12
Heater_VCC12
Heater_VCC12
VCC12
VCC12
VCC12

[46] MB1_PWR_EN
[46] PS1_ON
[46] PS1_12V_PG
[46] PS1_PRESENT
[46] PS1_AC_ALERT
[44] PSU1_SCL
[44] PSU1_SDA

CONN6

LCM25-K3024S01C-11

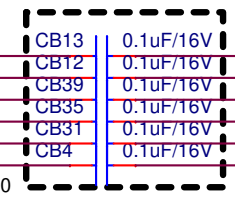
CONN5

LCM25-K3024S01C-11

CPLD_VDD1P8_PG [16]
VEN_CPLD_VDD1P8 [16]
VEN_FPGA_2V5 [16]

SW1_FAN_TCK [33]
SW1_FAN_TDO [33]

FAN_SDA_1
FAN_SCL_1
FAN_SDA_FPGA [46]
FAN_SCL_FPGA [46]



Close to connector side

USB_VCC5P0
VCC12
VCC12
VCC12
VCC12
VCC12

MB2_PWR_EN [46]
PS2_ON [46]
PS2_12V_PG [46]
PS2_PRESENT [46]
PS2_AC_ALERT [46]
PSU2_SCL [44]
PSU2_SDA [44]

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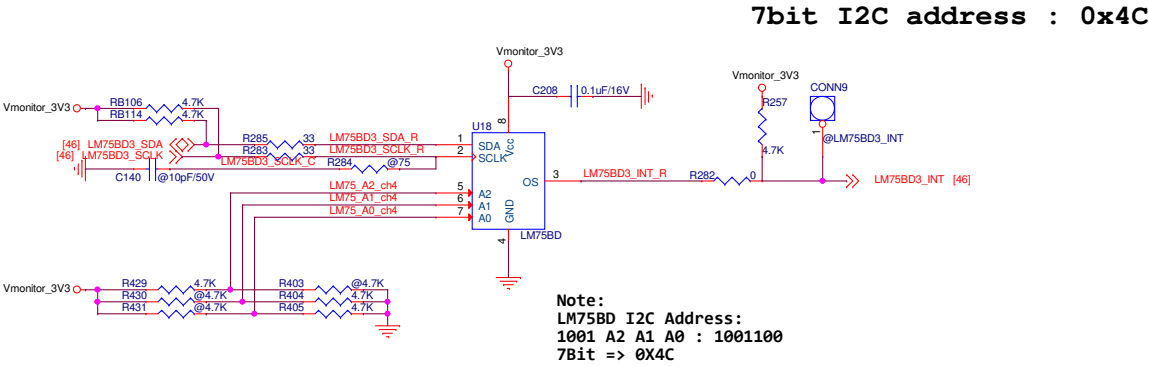
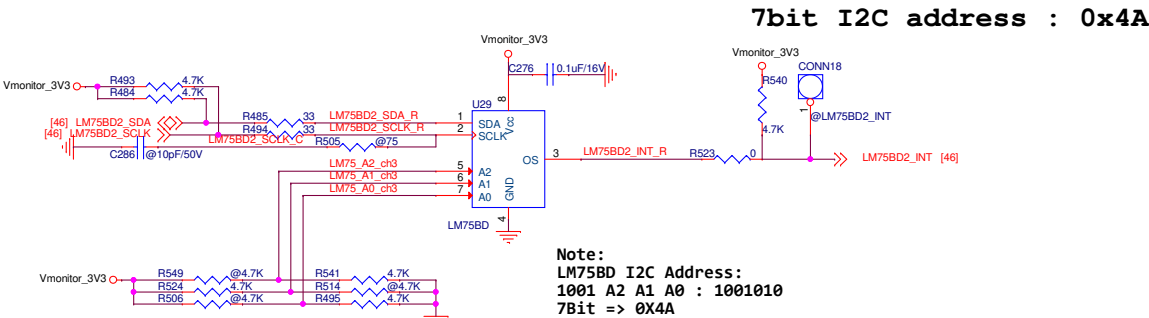
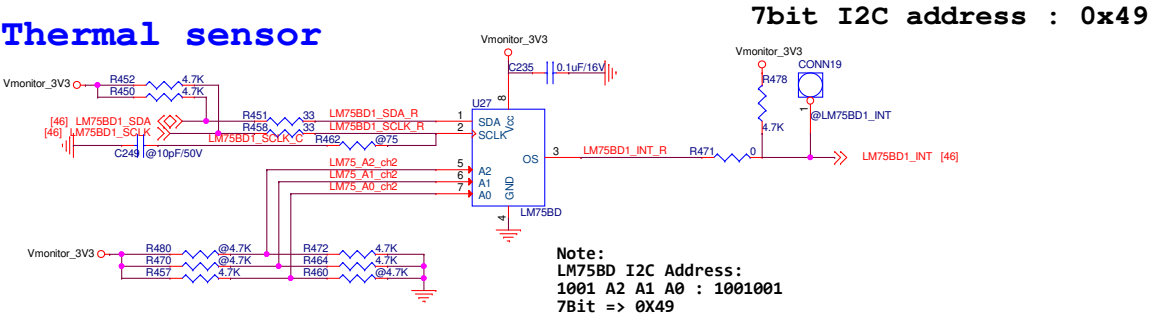
Making Partnership Work

Model Name		ES5626BQ-1217-111ZZ		Rev	R0C
Size	Page Name	Engineer			
A	CONN to Connection Board	Dino_Lin			
Date:	Thursday, July 19, 2018	Sheet	34	of	63

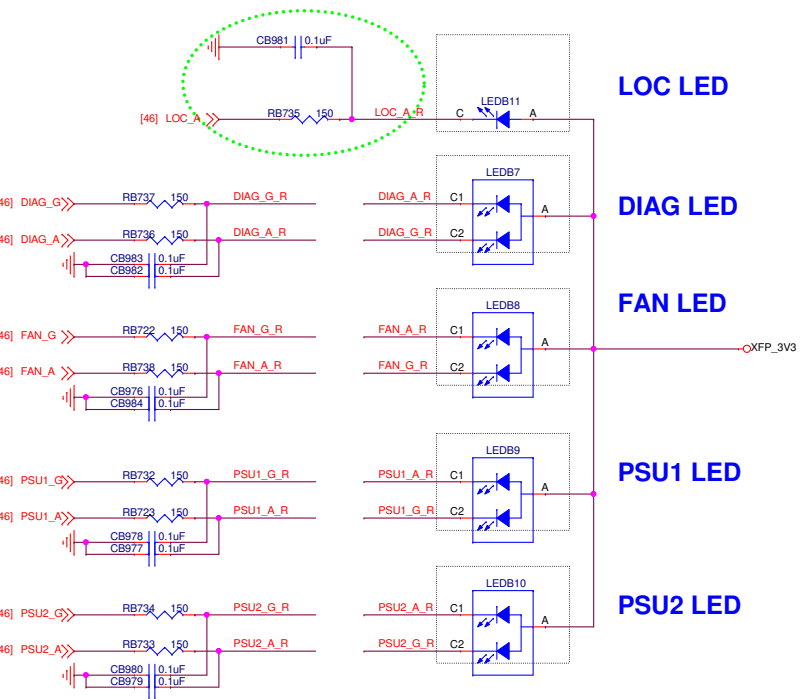


Date: Thursday, July 19, 2018 Sheet 36 of 63

Thermal sensor



System LED



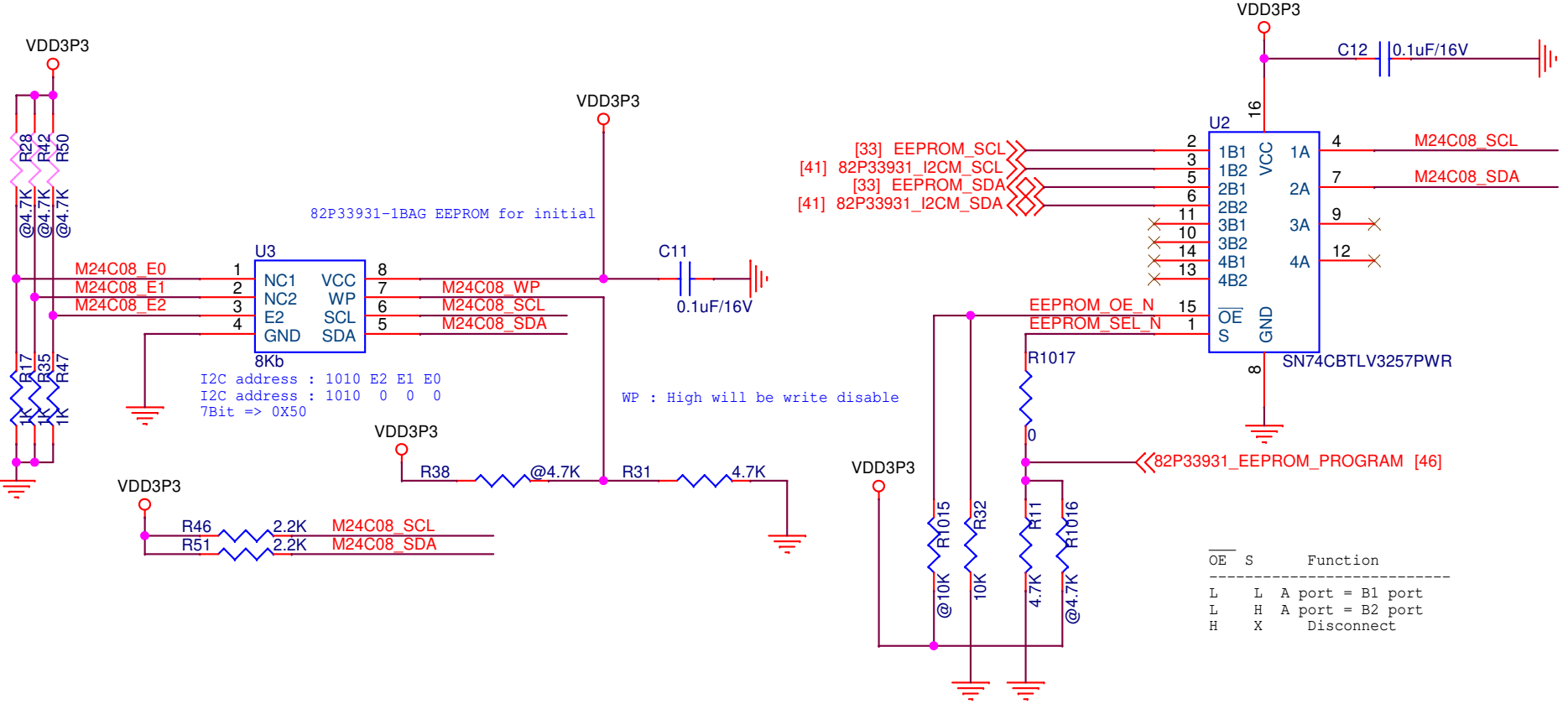
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Making Partnership Work

Model Name		ES5626BQ-1217-111ZZ		Rev	R0C
Size	Page Name	Custom Thermal Sensor/SYS LED		Engineer	Dino_Lin
Date:	Thursday, July 19, 2018	Sheet	39	of	63



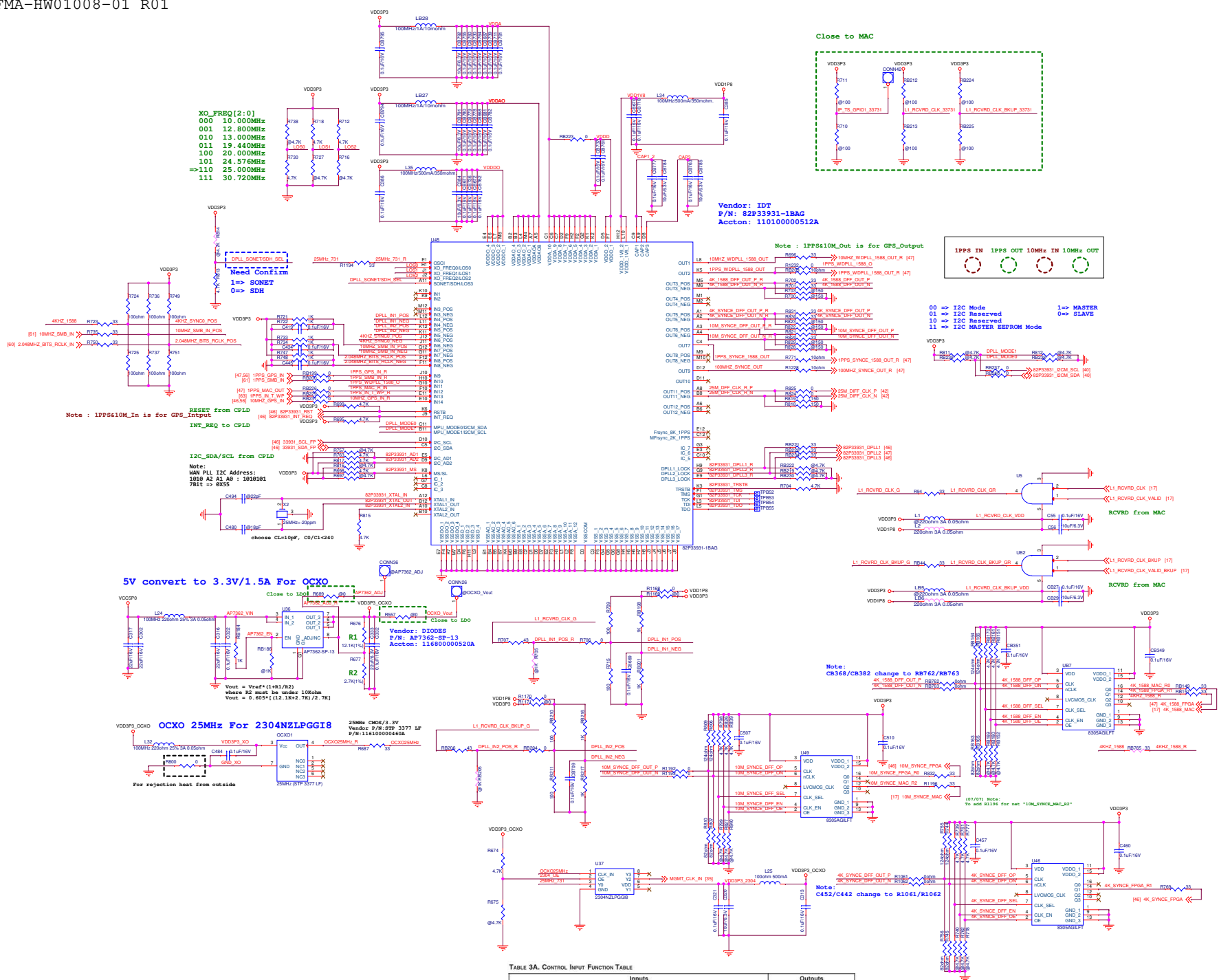
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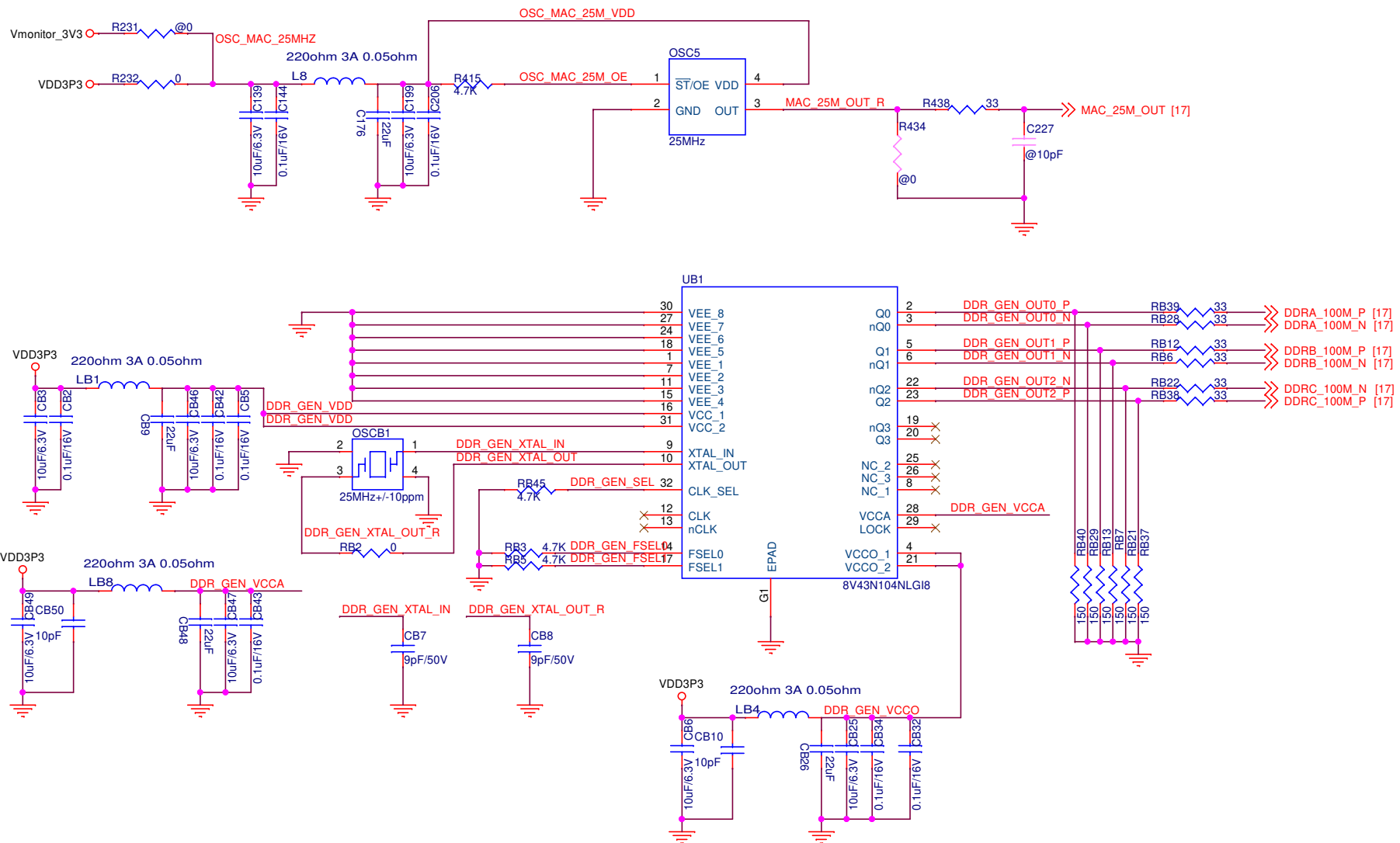
Making Partnership Work

Model Name				Rev	
ES5626BQ-1217-11ZZ				R0C	
Size	Page Name			Engineer	
A	WEN PLL_EEPROM			Dino_Lin	
Date:	Thursday, July 19, 2018		Sheet	40	of 63



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		Accton Inc.	
		Making Partnership Work	
Model Name ES5626BQ-1217-111Z			Rev R0C
Size Custom	Page Name Clock GEN/Buffer_1	Engineer Dino_Lin	
Date Thursday, July 19, 2018	Sheet 42	of 83	



1



1



1



1



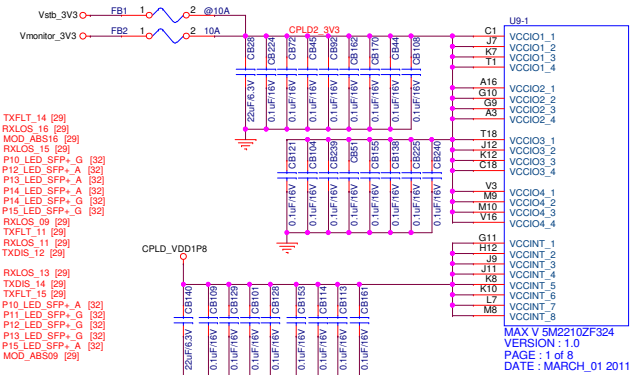
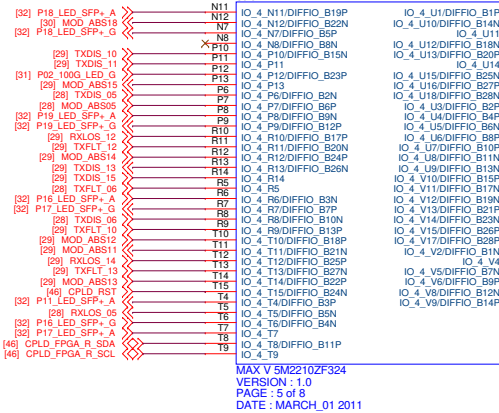
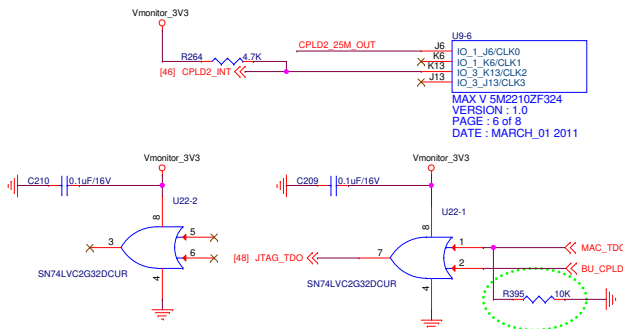
1

1

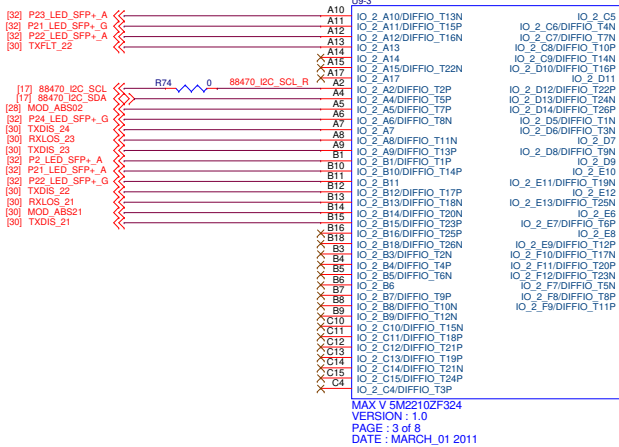
Note:
CPLD I2C Address:
1100 A2 A1 A0 : 1100011
7Bit => 0X63

Vendor: ALTERA
Vendor P/N: 5M2210ZF32415N
Accton P/N: 106200000091A

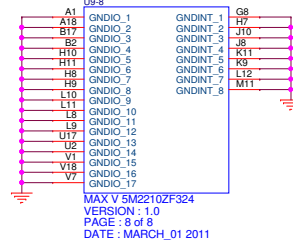
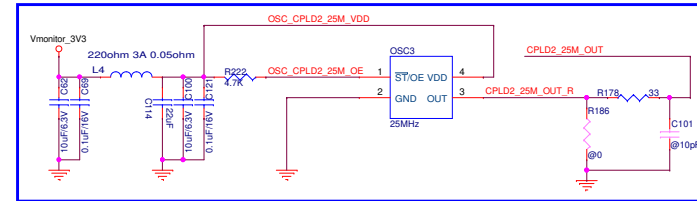
MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 6 of 8
DATE: MARCH_01 2011



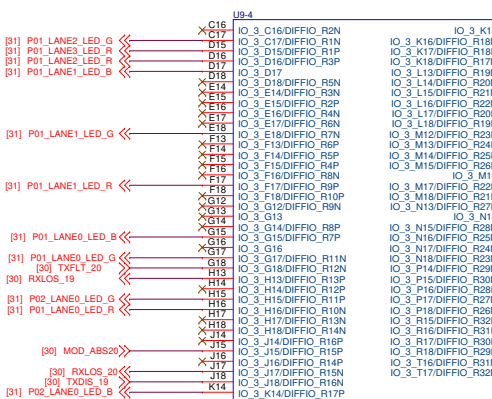
MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 1 of 8
DATE: MARCH_01 2011



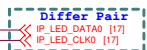
MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 3 of 8
DATE: MARCH_01 2011



MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 9 of 8
DATE: MARCH_01 2011



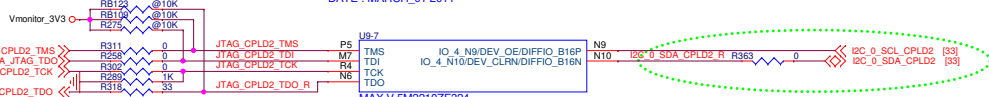
MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 4 of 8
DATE: MARCH_01 2011



Note:
These are for reserved I/O.
We can use these to set version.
Board ID[2:0]
011 : ZZ Product



Note:
These are for reserved I/O.
We can use these to set version.
Board ID[2:0]
011 : ZZ Product



MAX V 5M2210ZF324
VERSION: 1.0
PAGE: 7 of 8
DATE: MARCH_01 2011

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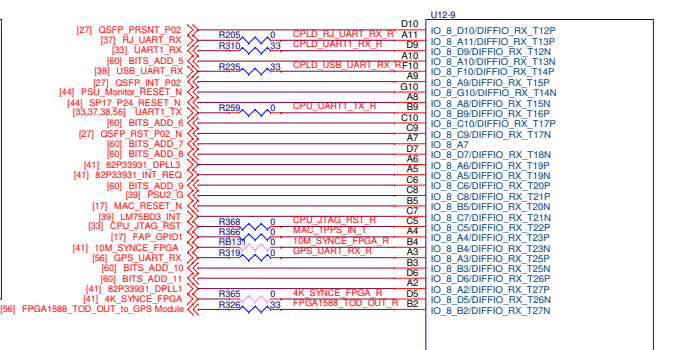
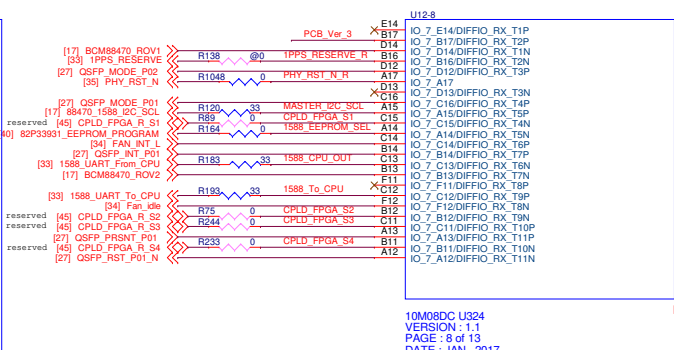
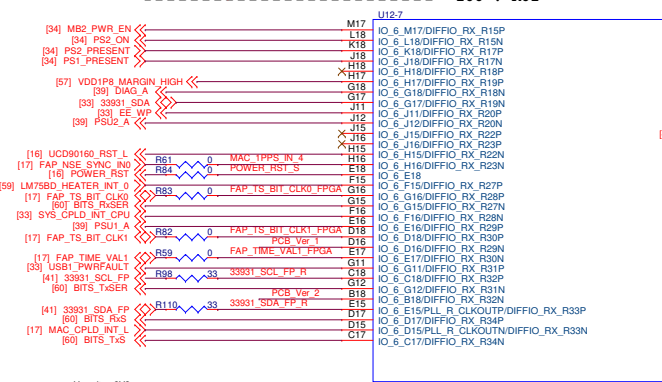
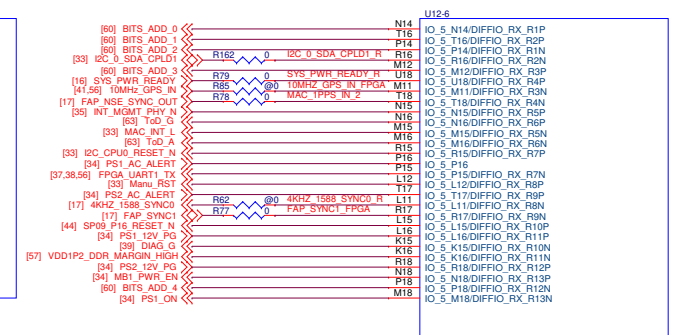
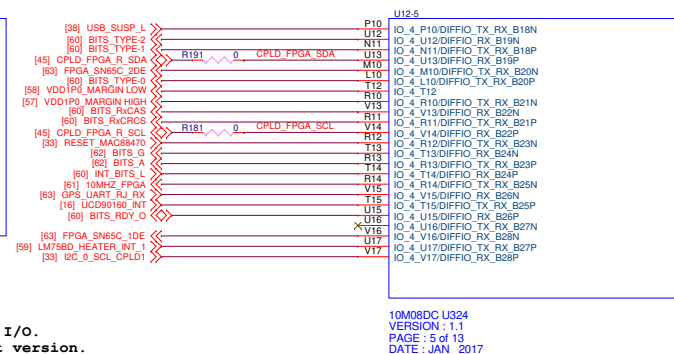
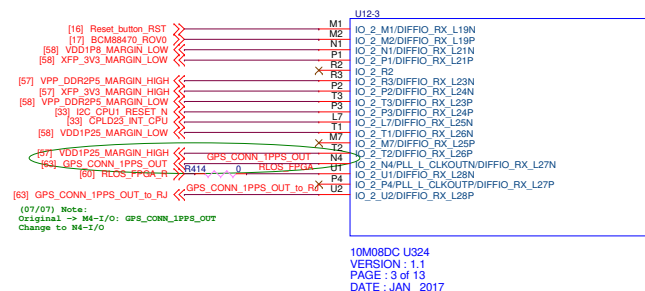
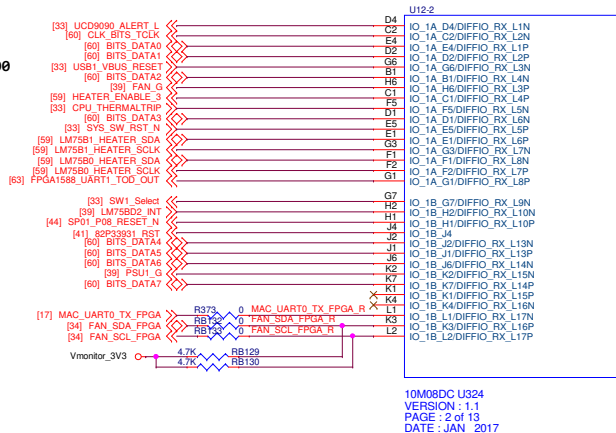


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Model Name	ES562BQ-1217-111ZZ	Rev	R0C
Size	Page Name	Engineer	Dino_Lin
CPLD2			
Date: Thursday, July 19, 2018	Sheet	45	of 63

Vendor: ALTERA
Vendor P/N: 10M16DCU32417G
Accton P/N: 10630000068A

Note:
FPGA I2C Address:
1100 A2 A1 A0 : 1100100
7Bit => 0X64



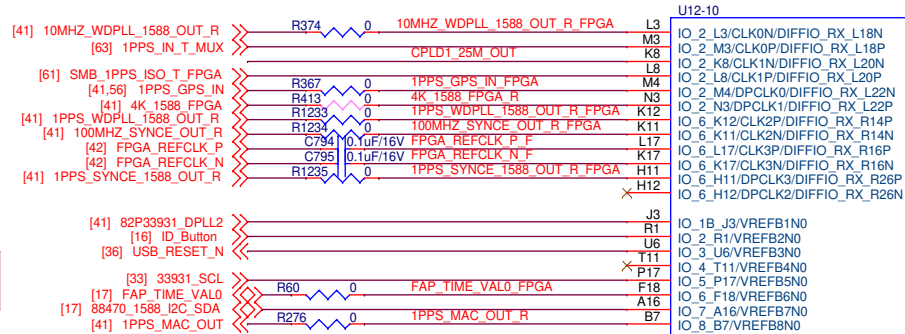
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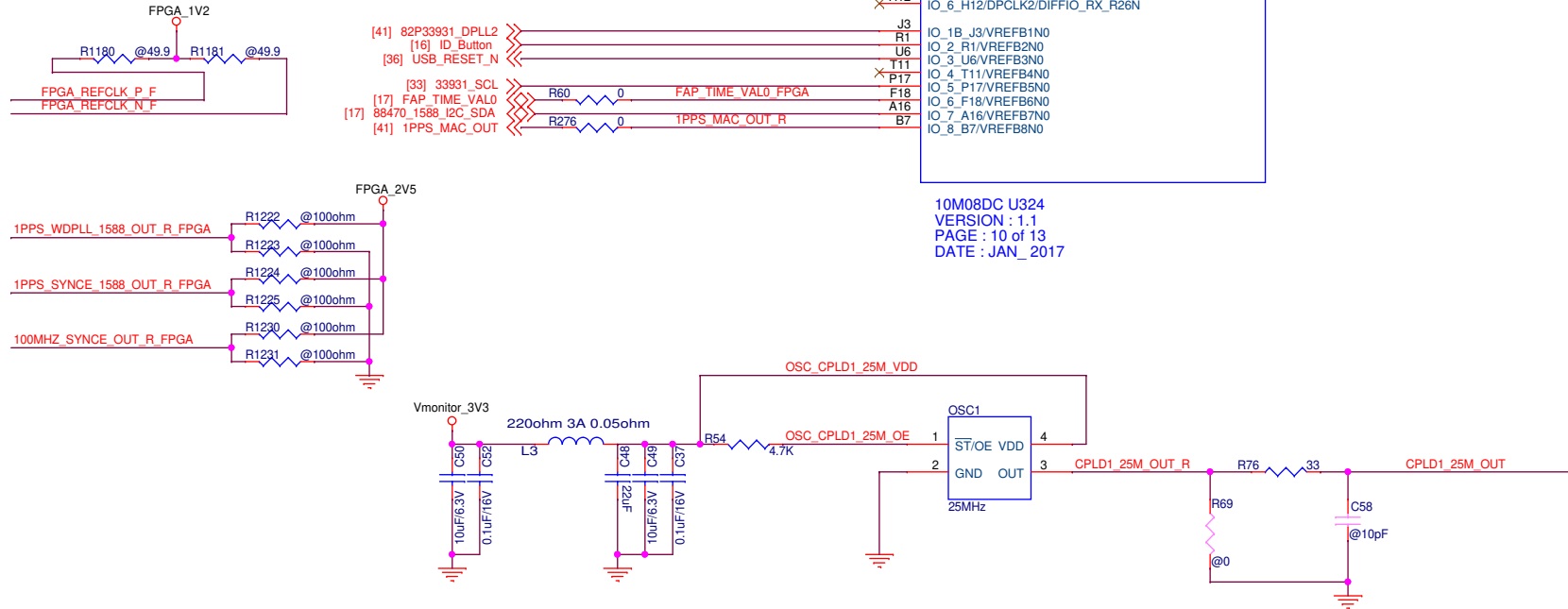
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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Size	Page Name	Engineer	Dino_Lin
C	FPGA_IO		
Date: Thursday, July 19, 2018	Sheet	46	of 63

(07/07) Note:
Original -> K8-I/O: 1PPS_SYNCE_1588_OUT_R
Change to K12-I/O
Original -> K12-I/O: CPLD1_25M_OUT
Change to K8-I/O
Original -> K11-I/O: 1PPS_GPS_IN
Change to M4-I/O
Original -> K11-I/O: 1PPS_GPS_IN
Change to NC PIN-I/O



10M08DC U324
VERSION : 1.1
PAGE : 10 of 13
DATE : JAN_2017

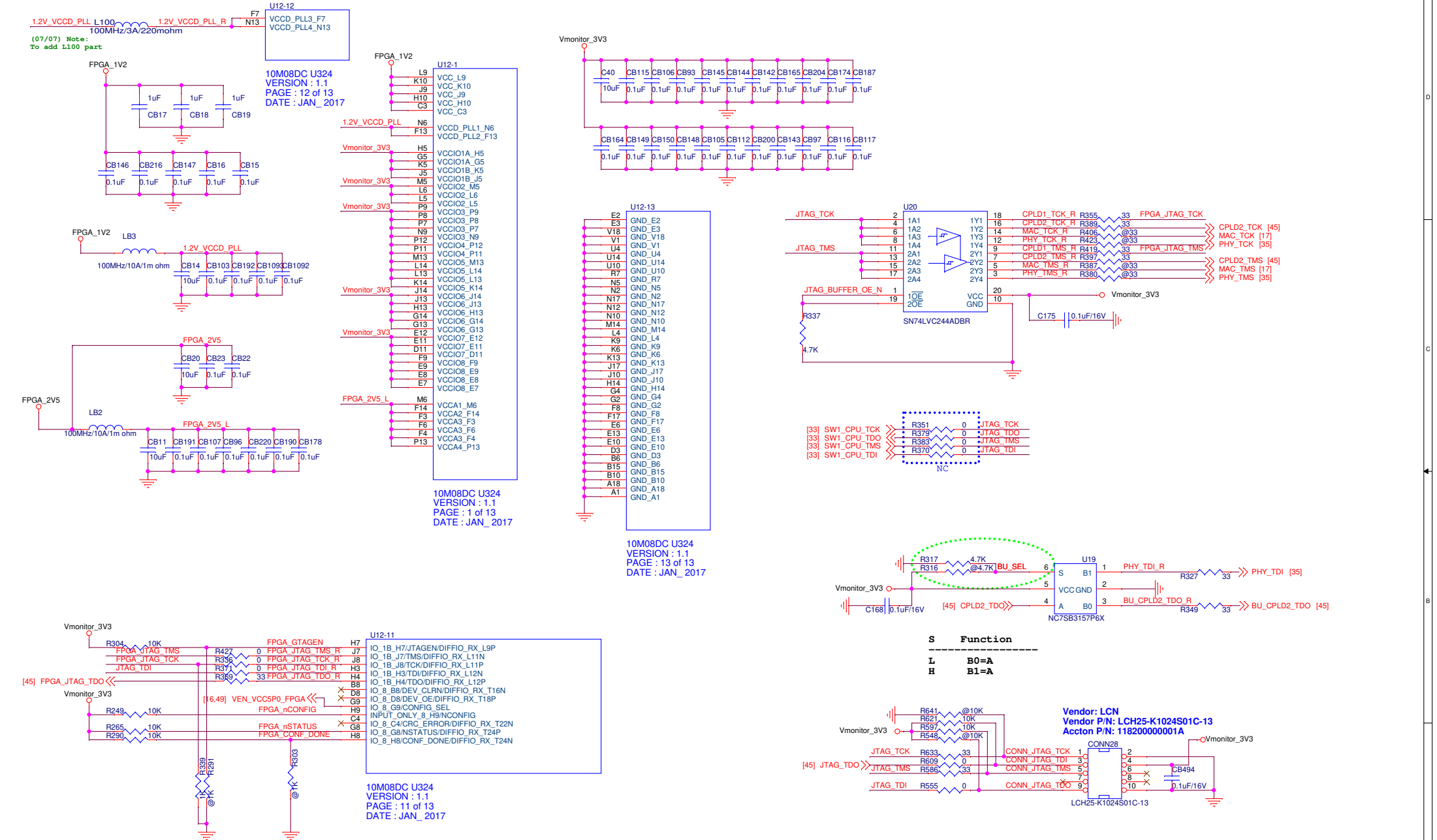


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Model Name		ES5626BQ-1217-111ZZ	Rev	R0C
Size	Page Name	FPGA_CLOCK	Engineer	Dino_Lin
B				
Date: Thursday, July 19, 2018		Sheet	47	of 63



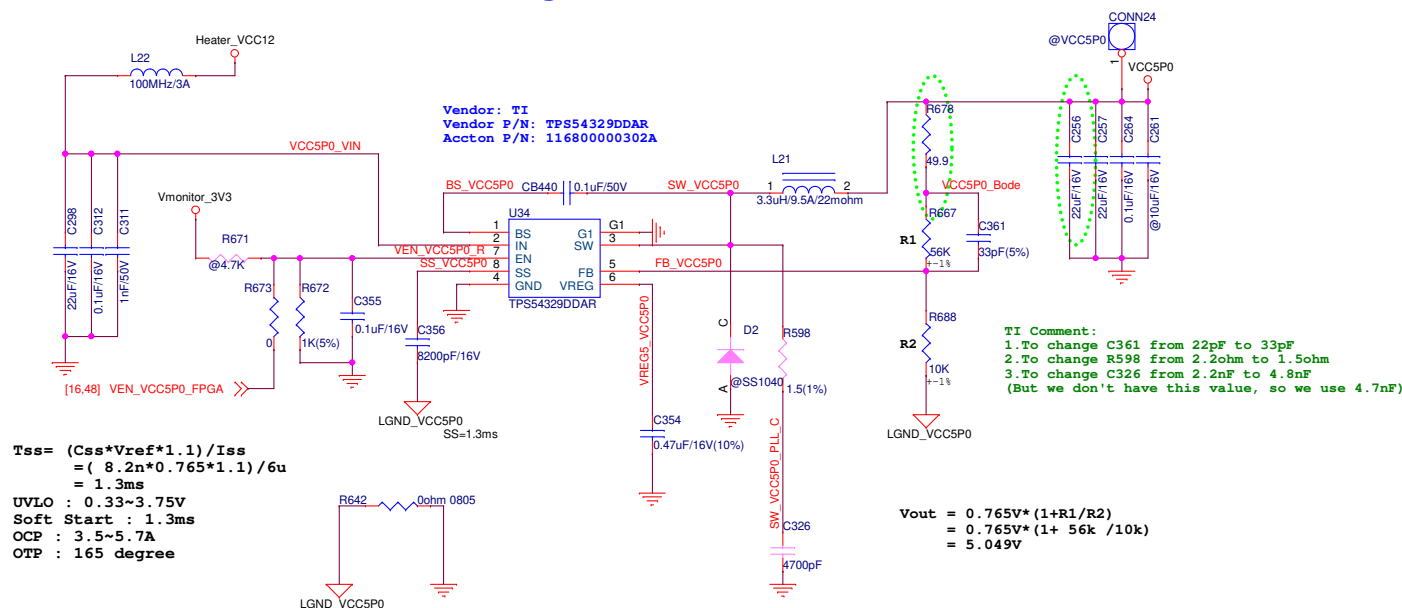
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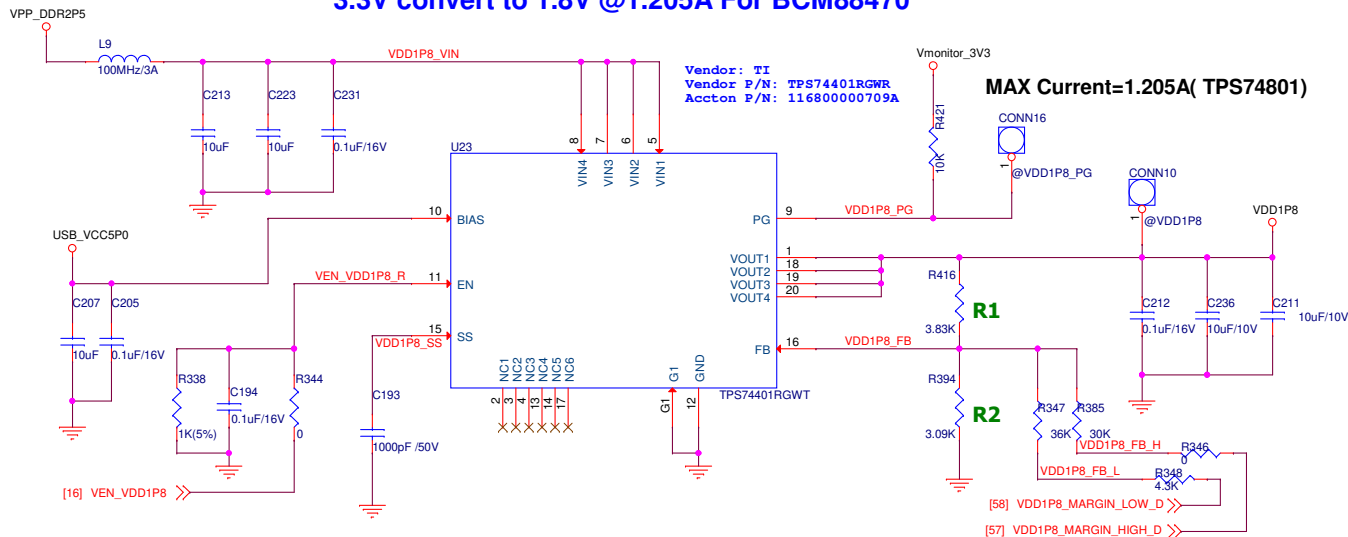
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Model Name		ES5626BQ-1217-111ZZ	Rev	R0C
Size	Page Name	Engineer		
Custom	FPGA_POWER	Dino_Lin		
Date: Thursday, July 19, 2018		Sheet 48 of 63		

12V convert to 5V @3A For MOS Driver and CPU Board



3.3V convert to 1.8V @1.205A For BCM88470



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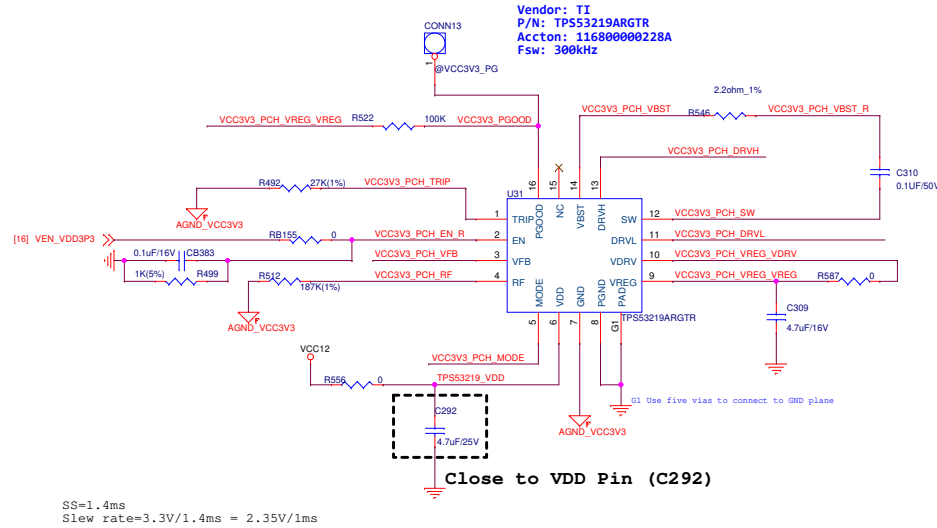
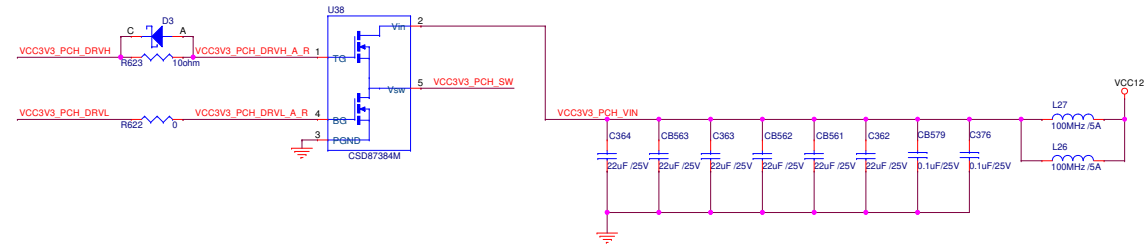
Model Name		ES5626BQ-1217-111ZZ	Rev	R0C
Size	Page Name	Custom	Engineer	Dino_Lin
Date:	Thursday, July 19, 2018	Sheet	49	of 63

VDD3P3/ 13.012A

Table 1. Soft-Start and MODE

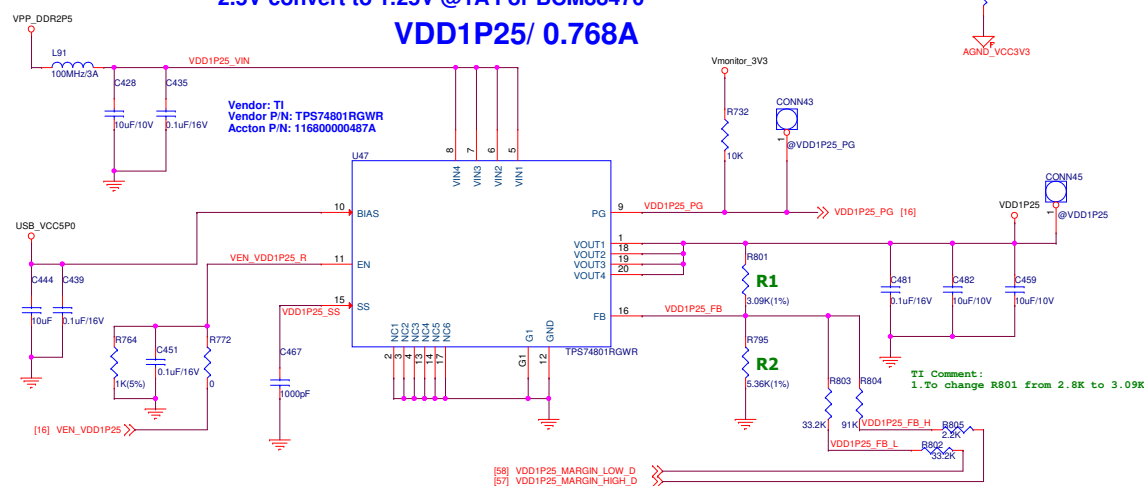
MODE SELECTION	ACTION	SOFT-START TIME (ms)	R _{MODE} (kΩ)
Auto Skip	Pull down to GND	0.7	39
		1.4	100
		2.8	200
		5.6	475
		0.7	39
Forced CCM ⁽¹⁾	Connect to PG00D	1.4	100
		2.8	200
		5.6	475
		0.7	39
		1.4	100

(1) Device goes into Forced CCM after PG00D becomes high.

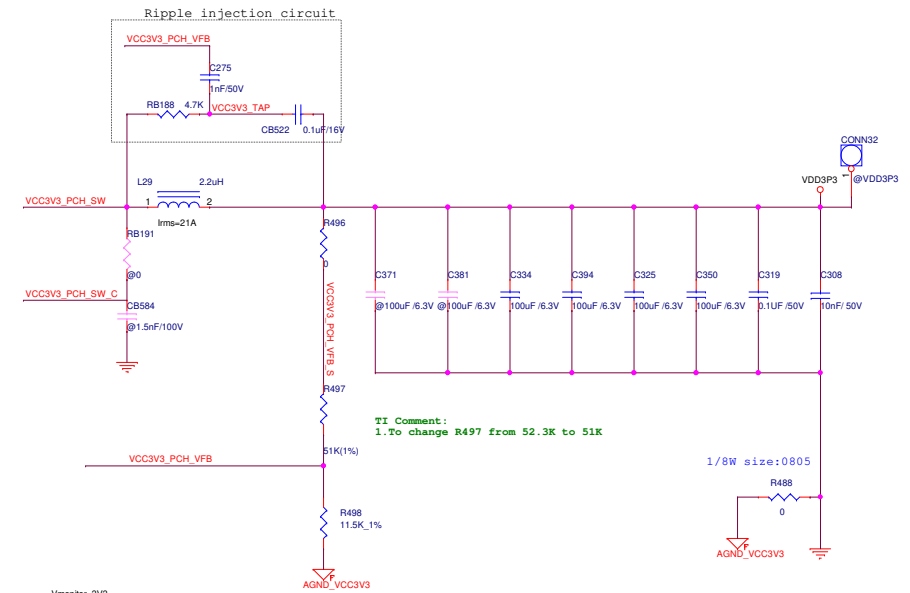


SS=1.4ms
Slew rate=3.3V/1.4ms = 2.35V/1ms

The slew rate of ramp up does not be over 5V/1ms.



[56] VDD1P25_MARGIN_LOW_D
[57] VDD1P25_MARGIN_HIGH_D



TI Comment:
1. To change R497 from 52.3K to 51K

1/8W size:0805

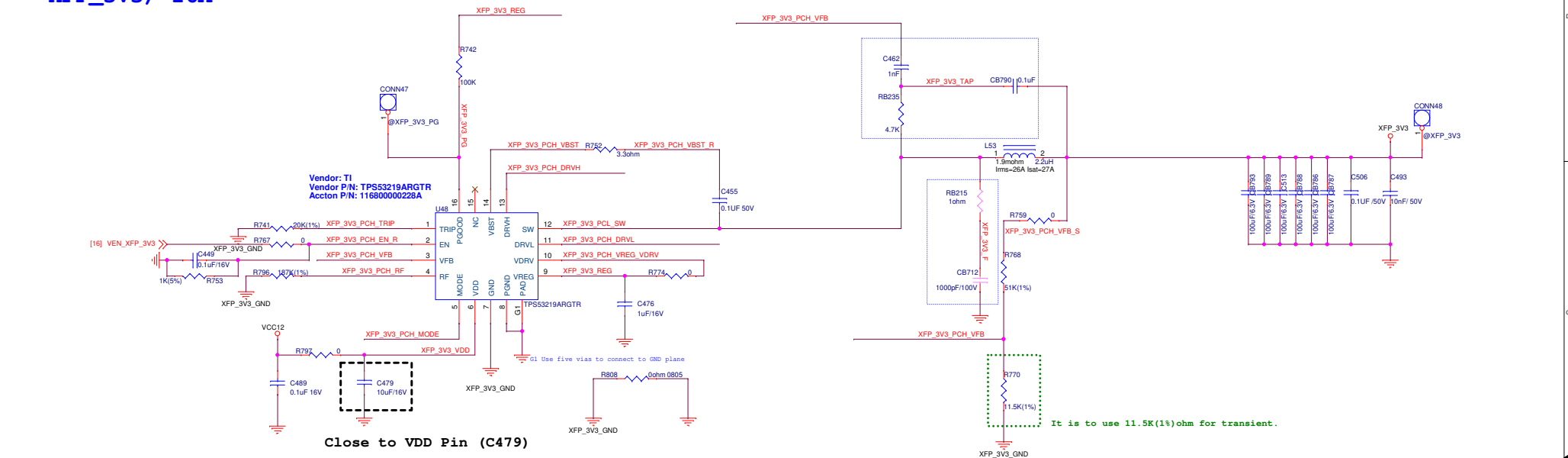
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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Size	C	Page Name	PWR_VDD3P3_VDD1P25
Engineer	Dino_Lin	Date	Thursday, July 19, 2018
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XFP_3V3/ 16A



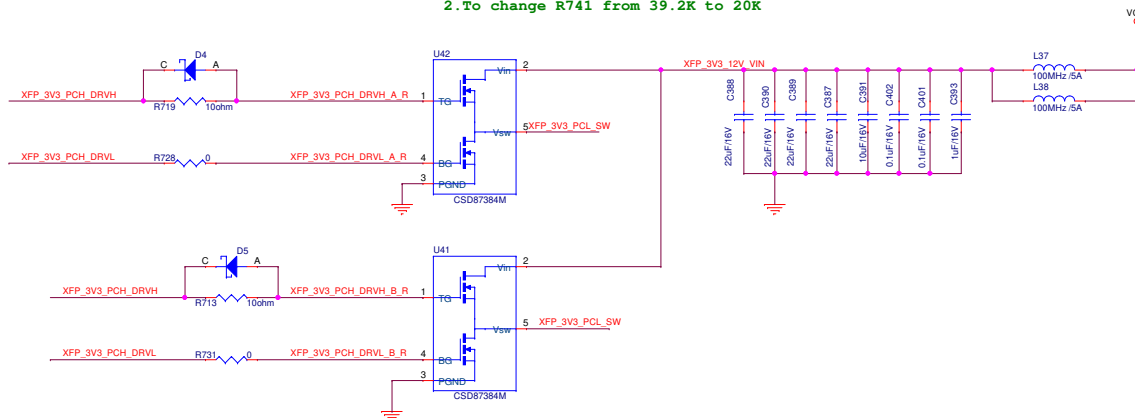
Note:

- To set the U48(TP53219ARGTR) ocp value from 20A to 26.8A.
1. To change R741 from 18k to "39.2k or 39k" for OCP=26.8A.
 2. To add 1uF cap between R790&R789 and R788&R787.
(These are introduced into the design of ROB version.)
 3. To pop the RB215 and CB712 part.
 4. To change R752 from 0ohm to 3.3ohm.
 5. To change Lrms of L53 higher than 26A.
(But it can keep 2.2uH now. If we can get to agree with the part, we will change L53 at once.)

TI Comment:

1. To change R768 from 52.3K to 51K
2. To change R741 from 39.2K to 20K

Part Number	Inductance L0 (uH)±20% @ 0 A	I rms (A) Typ.	I sat 1 (A) Typ.	I sat 2 (A) Typ.	DCR (mΩ) Typ. @25°C	DCR (mΩ) Max. @25°C
STMP1206HP-1R0MG-D	1.0	29	45	53	1.8	2.4
STMP1206HP-1R5MG-D	1.5	26	43	50	2.7	3.2
STMP1206HP-2R2MG-D	2.2	21	34	43	4.0	4.7



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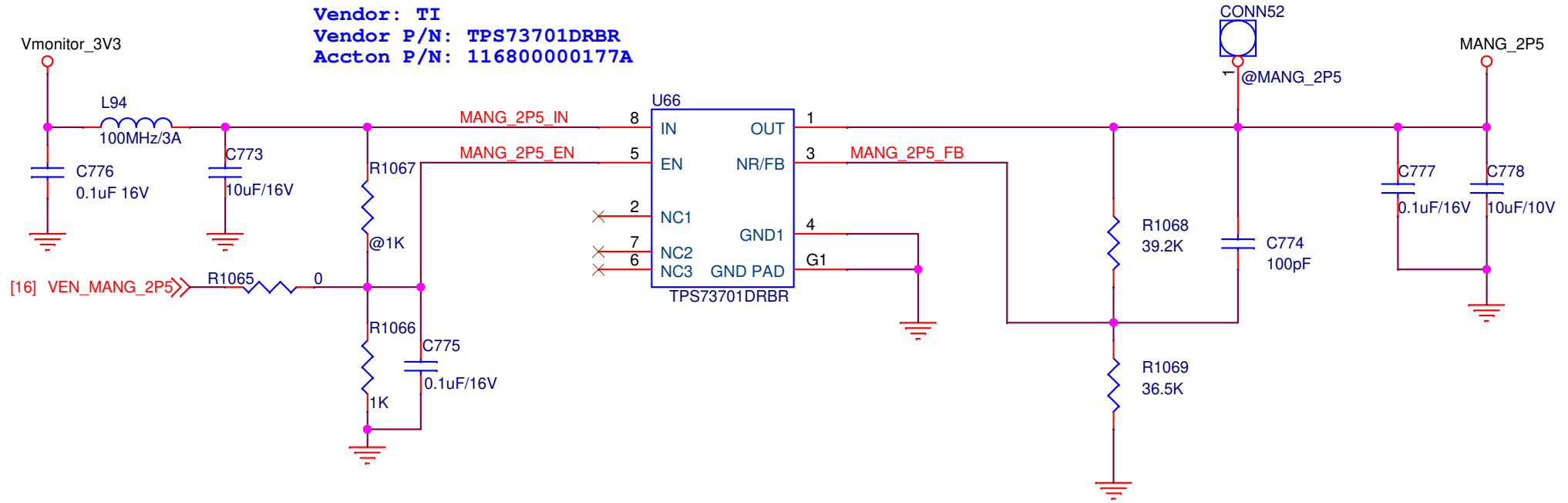


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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Size	C	Page Name	PWR_XFP_3V3
Date	Thursday, July 19, 2018	Engineer	Dino_Lin
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MANG_2P5 / 0.766A

Vendor: TI
Vendor P/N: TPS73701DRBR
Accton P/N: 116800000177A



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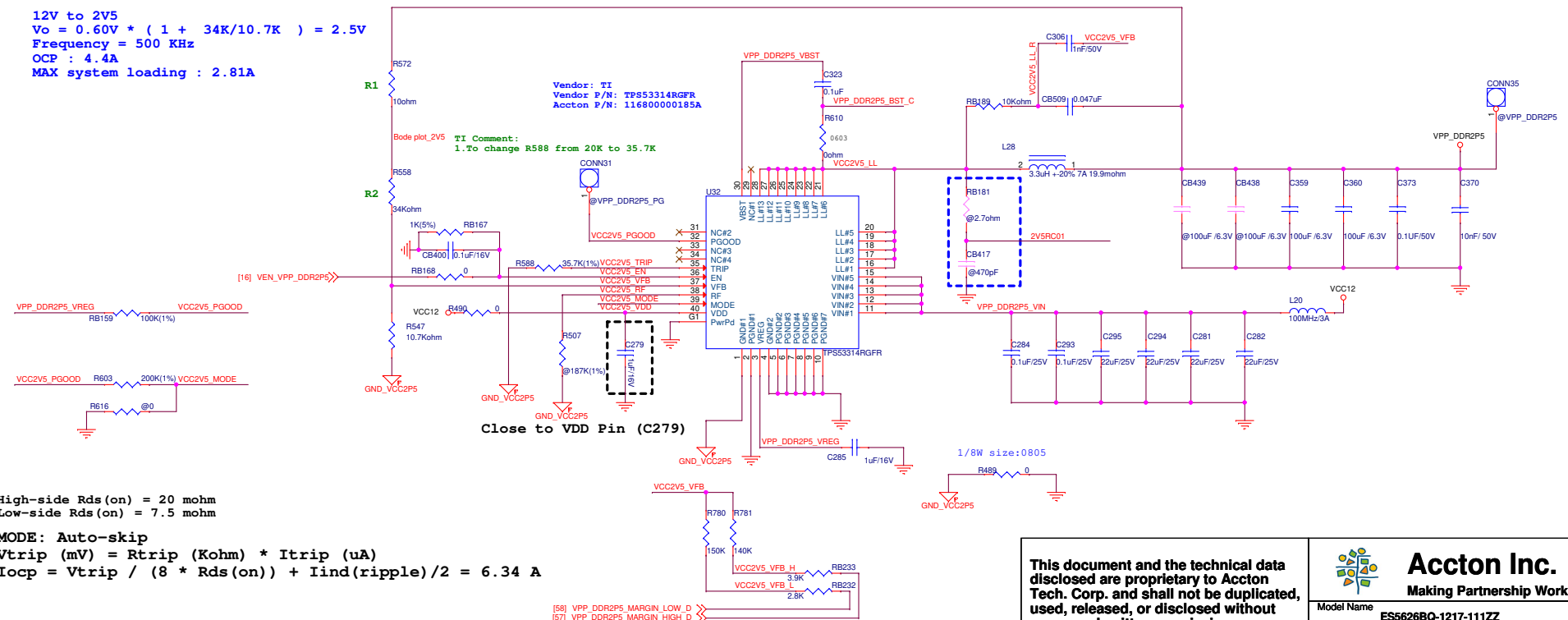


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Model Name		ES5626BQ-1217-111ZZ		Rev	R0C
Size	Page Name	Custom PWR_MANG_2P5		Engineer	
				Dino_Lin	
Date:		Thursday, July 19, 2018		Sheet	52 of 63

12V convert to 2.5V @2A For DDR4 VPP

12V to 2V5
 $V_o = 0.60V * (1 + 34K/10.7K) = 2.5V$
 Frequency = 500 KHz
 OCP : 4.4A
 MAX system loading : 2.81A

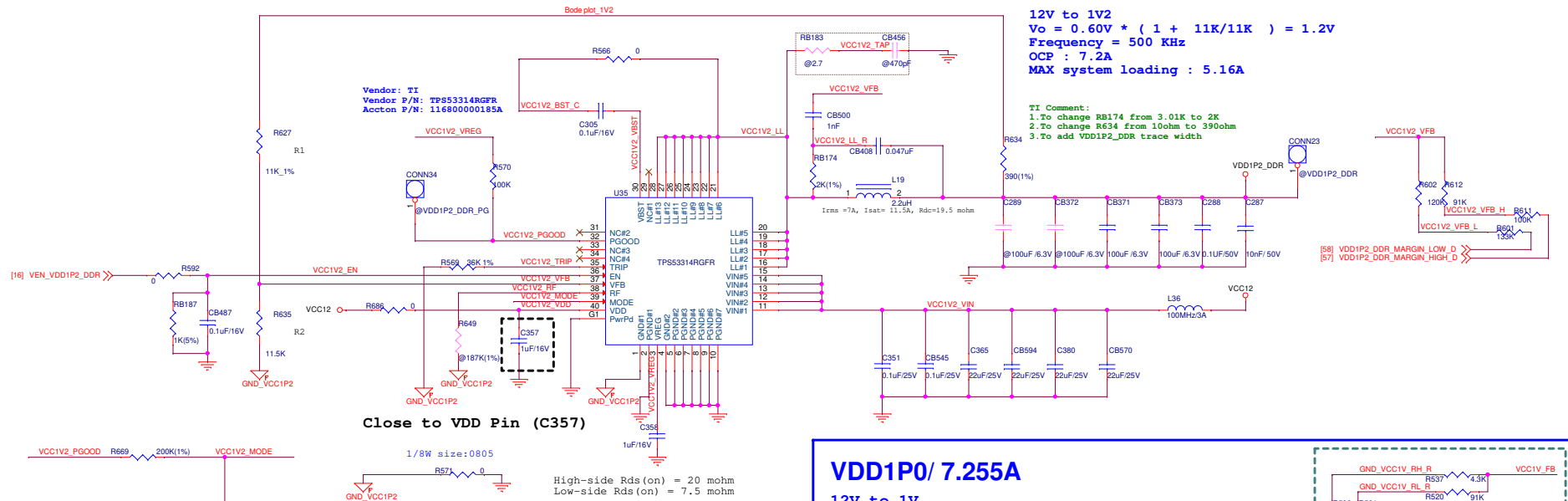


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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Size	Page Name	Engineer	
Custom	PWR_VDD2P5	Dino_Lin	
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VDD1P2_DDR/ 5.153A



VDD0P6/ 1.26A

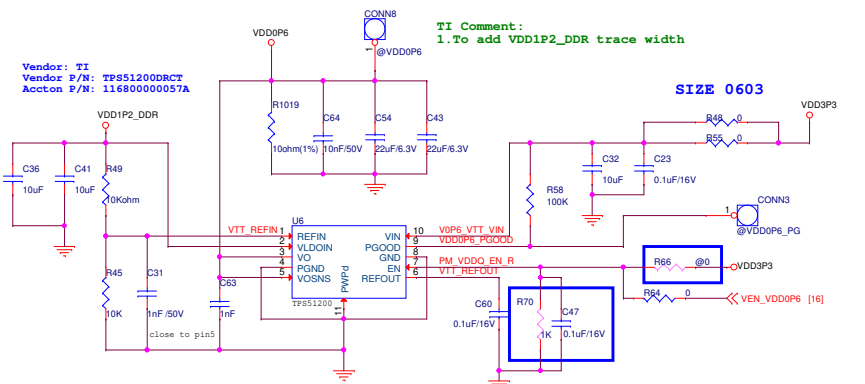


Table 1. Soft-Start and MODE

MODE SELECTION	ACTION	SOFT-START TIME (ms)	R _{MODE} (KΩ)
Auto-Skip	Pull down to GND	0.7	39
		1.4	100
		2.8	200
		5.6	475
		0.7	39
Forced CCM ⁽¹⁾	Connect to PGOOD	1.4	100
		2.8	200
		5.6	475

(1) The device transitions into FCM after the PGOOD pin goes High.

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Model Name	ES5626BQ-1217-111ZZ	Rev	R0C
Size	C	Page Name	PWR_VDD1P2/VDD1P0/VDD0P6
Engineer	Dino_Lin	Sheet	54 of 63

VR12.5
Phase# = 2 phases
Fsw = 600kHz
Vboot = 1V
Icc_TDC = 45A
Icc_MAX = 50A
Over current limit = 33A per phase
Slew rate fast = 5mV/us
Load Line = zero
Disable Dynamic Phase Sheddng

Note:
The chip voltage want to set minimum value for each square (Ex: 5mV). We must be to use "116800000633A_TP53647RTAT", otherwise the "116800000633A_TP53647R58B" can not set value for each square (Ex: 5mV).

Note: Read/Write Flash
We use pmibus tool to write "VDD1P0_ROV" value.
-> R534(Pin39) is setting 20Kohm
If system will re-boot, it read voltage reference outside.
-> R534(Pin39) is setting 100Kohm
If system will re-boot, it read voltage reference flash.

The slew rate of ramp up does not be over 20V/lms.

Ramp=80mV
Per-phase valley current=33A

To BCM88470
(R) TP53647_VDD_SENSE+
(S) TP53647_VDD_SENSE-
Differential pair

Place under U1 BCM88470 BGA

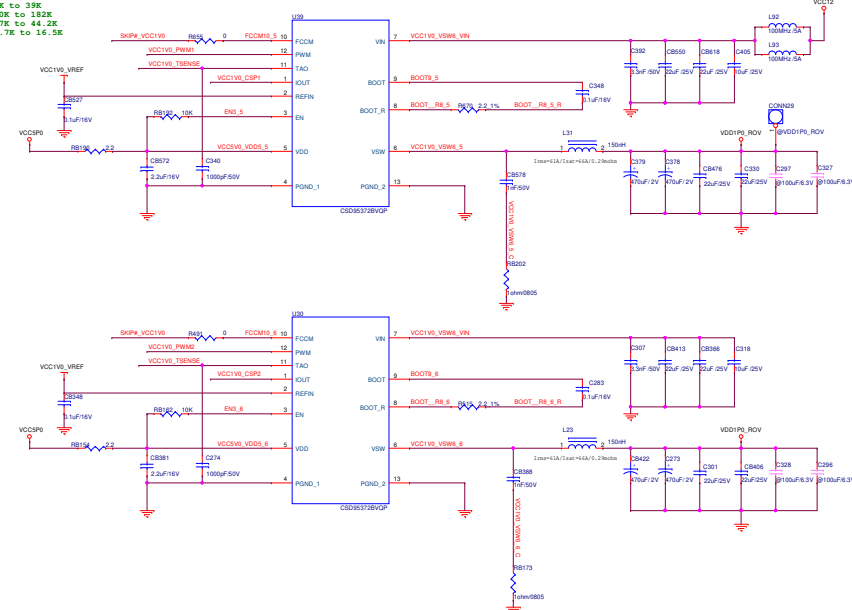
1/8W size:0805

To CPLD1/PCA9548
7bit I2C address : 0x??

ADDR PIN: SVID AND PMBUS ADDRESS SETTING

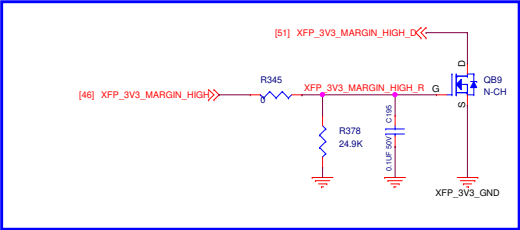
SADDRL	SVID address, lower three bits set (S2, S1, S0)	$R_{ADDR} \leq 20 \text{ k}\Omega$	000	Bin
		$R_{ADDR} = 24 \text{ k}\Omega$	001	
		$R_{ADDR} = 30 \text{ k}\Omega$	010	
		$R_{ADDR} = 39 \text{ k}\Omega$	011	
		$R_{ADDR} = 46 \text{ k}\Omega$	100	
		$R_{ADDR} = 75 \text{ k}\Omega$	101	
		$R_{ADDR} = 100 \text{ k}\Omega$	110	
SADDRH	SVID address, highest bit set (S3)	$R_{ADDR} \leq 100 \text{ k}\Omega$	111	
		$R_{ADDR} \geq 0.877 \text{ V}$	0	
PADDR	PMBus address bits set	$R_{ADDR} \geq 0.877 \text{ V}$	1	
		$V_{ADDR} \leq 0.027 \text{ V}$ or $V_{ADDR} = 0.877 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100000	
		$V_{ADDR} = 0.08 \text{ V}$ or $V_{ADDR} = 0.93 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100001	
		$V_{ADDR} = 0.133 \text{ V}$ or $V_{ADDR} = 0.983 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100010	
		$V_{ADDR} = 0.186 \text{ V}$ or $V_{ADDR} = 1.036 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100011	
		$V_{ADDR} = 0.24 \text{ V}$ or $V_{ADDR} = 1.09 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100100	
		$V_{ADDR} = 0.293 \text{ V}$ or $V_{ADDR} = 1.143 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100101	
		$V_{ADDR} = 0.346 \text{ V}$ or $V_{ADDR} = 1.196 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100110	
		$V_{ADDR} = 0.399 \text{ V}$ or $V_{ADDR} = 1.249 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1100111	
		$V_{ADDR} = 0.452 \text{ V}$ or $V_{ADDR} = 1.302 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1110000	
		$V_{ADDR} = 0.505 \text{ V}$ or $V_{ADDR} = 1.355 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1110001	
		$V_{ADDR} = 0.558 \text{ V}$ or $V_{ADDR} = 1.408 \text{ V}$ with $\pm 10 \text{ mV}$ tolerance	1110010	

Expected totally current=45A

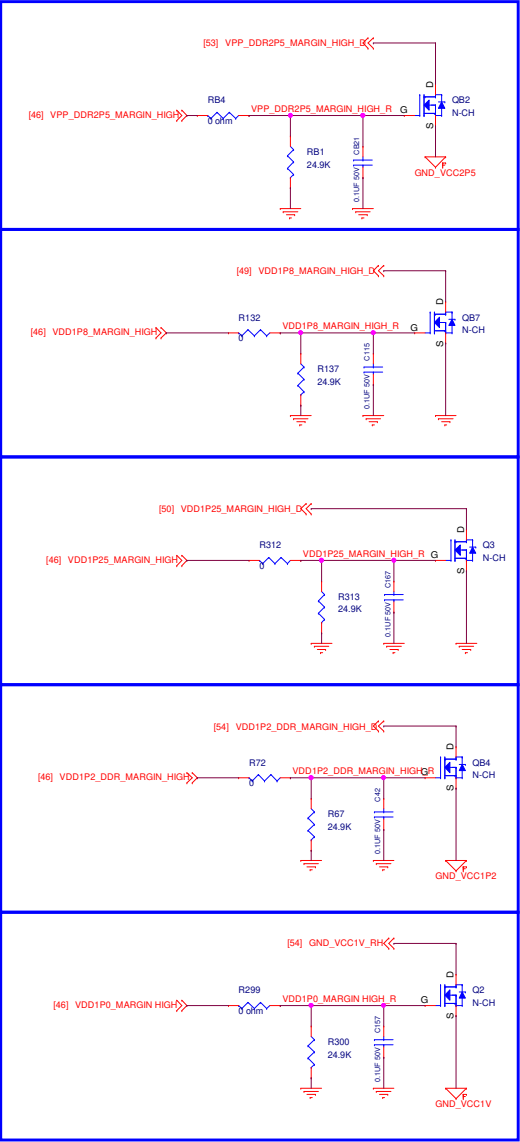


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1



CLOSE to CPLD For XFP



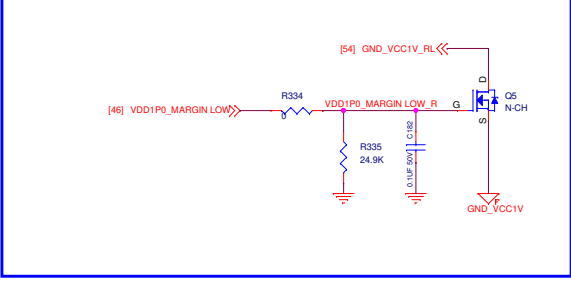
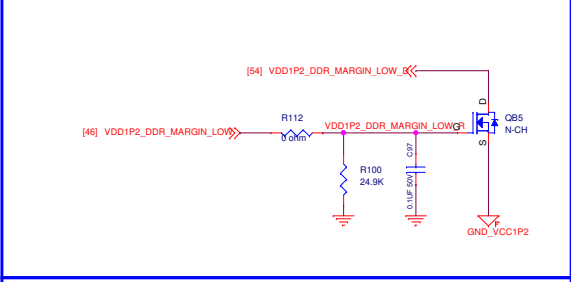
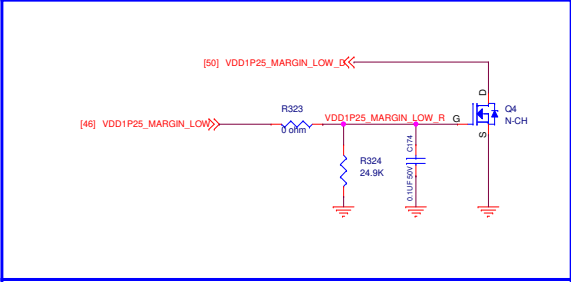
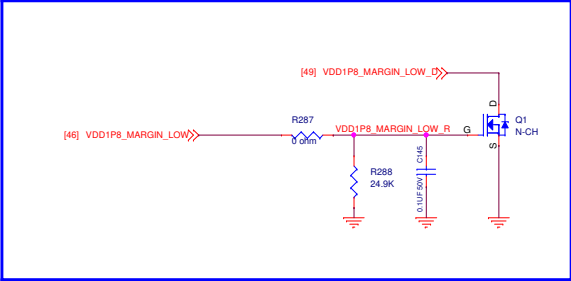
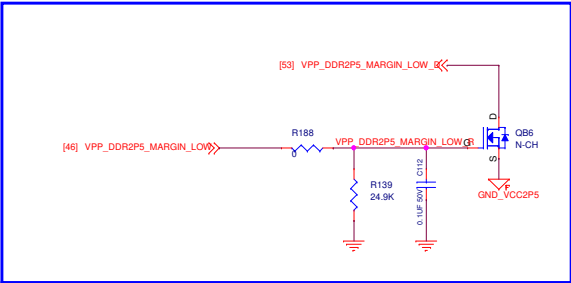
CLOSE to CPLD For BCM88470

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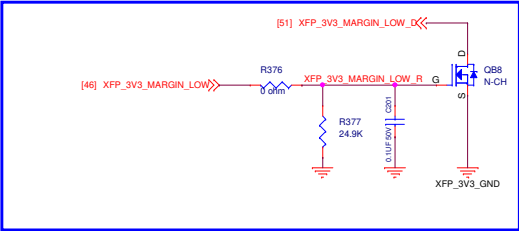


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Size	C	Page Name	MARGIN_HIGH
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CLOSE to CPLD For BCM88470



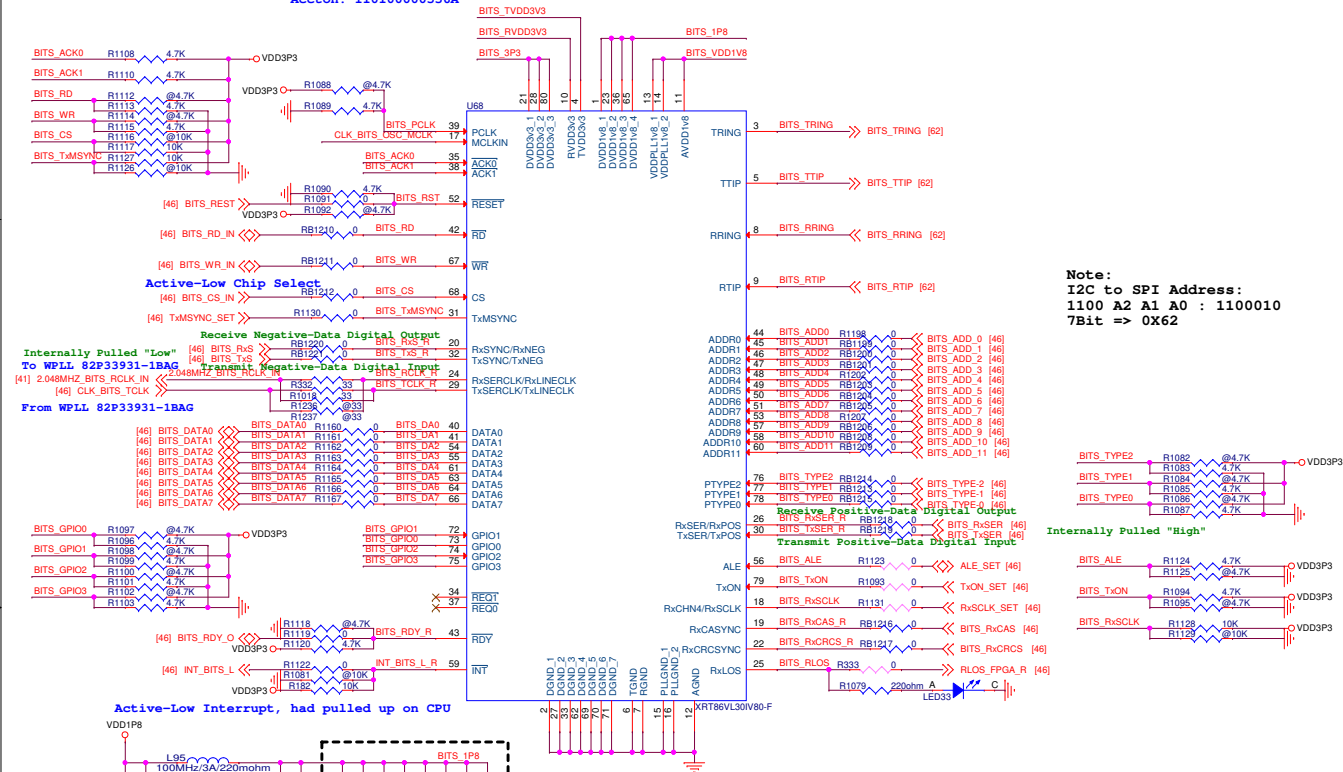
CLOSE to CPLD For XFP

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		Accton Inc. Making Partnership Work	
Model Name	ES5626BQ-1217-111ZZ		Rev R0C
Size C	Page Name MARGIN_LOW	Engineer Dino_Lin	
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Ext Clock XRT86VL30IV80-F

Vendor: EXAR
P/N: XRT86VL30IV80-F
Accton: 11010000556A



Note:
I2C to SPI Address:
1100 A2 A1 A0 : 1100010
7Bit => 0X62

OPERATION MODE	FREQUENCY OF TxINCLK0(MHz)
2.048MVIP non-multiplexed	2.048
4.096MHz non-multiplexed	4.096
8.192MHz non-multiplexed	8.192
12.352MHz Bit-multiplexed (DS1 ONLY)	12.352
16.384MHz Bit-multiplexed	16.384
16.384 HMVIP Byte-multiplexed	16.384
16.384 H.100 Byte-multiplexed	16.384

Microprocessor Type Input:

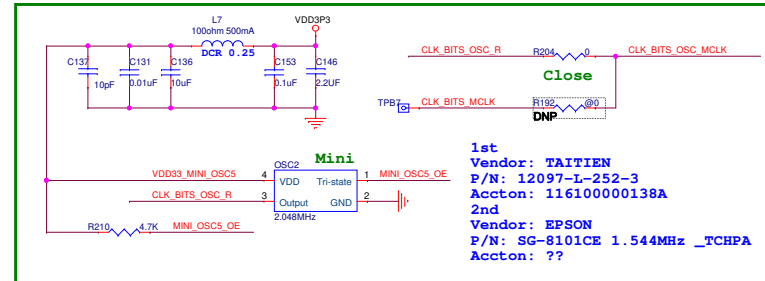
These input pins permit the user to specify which type of Microprocessor/ Microcontroller to be interfaced to the XRT86VL30 device. The following table presents the three different microprocessor types that the XRT86VL30 supports.

°PType2	°PType1	°PType0	MICROPROCESSOR TYPE
0	0	0	Intel Asynchronous
0	0	1	Motorola Asynchronous
1	0	1	IBM POWER PC 403

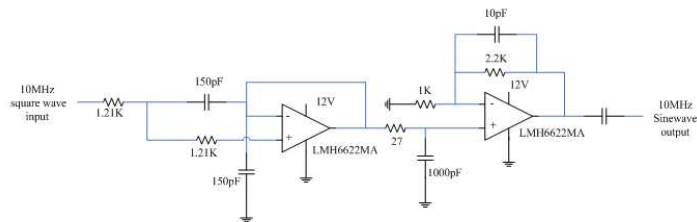
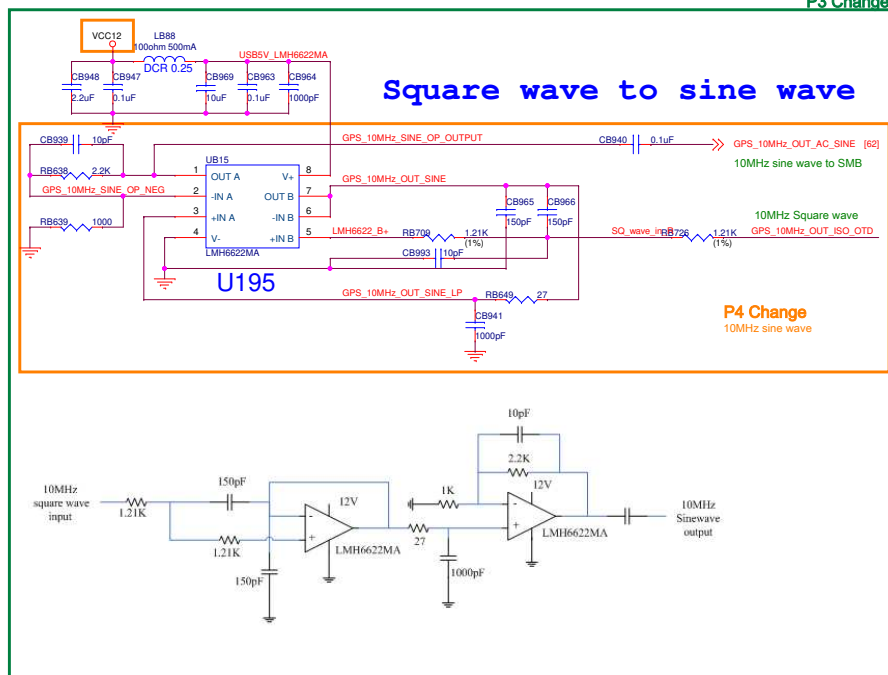
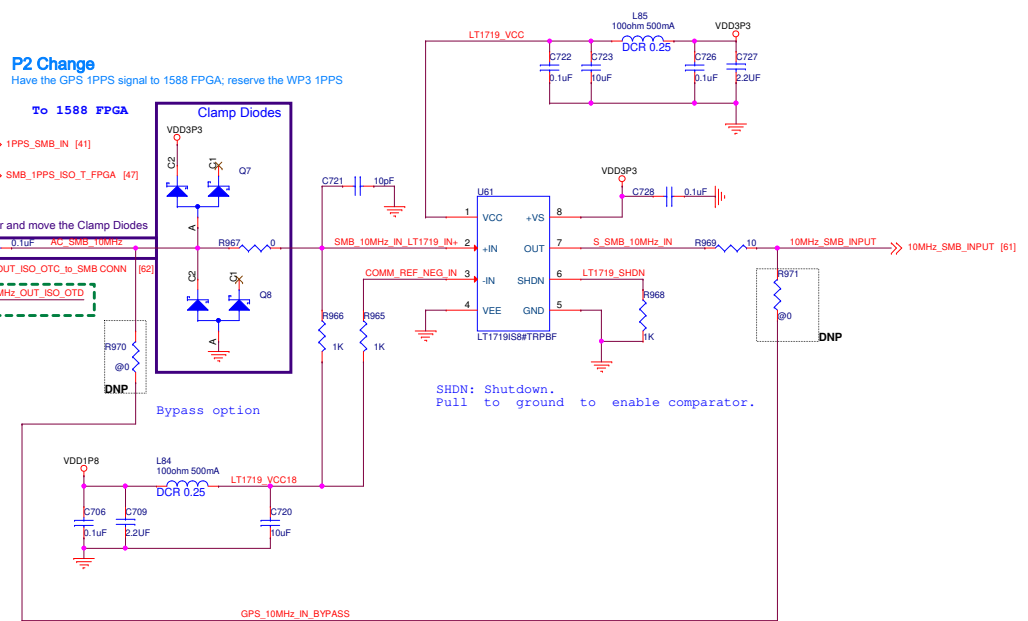
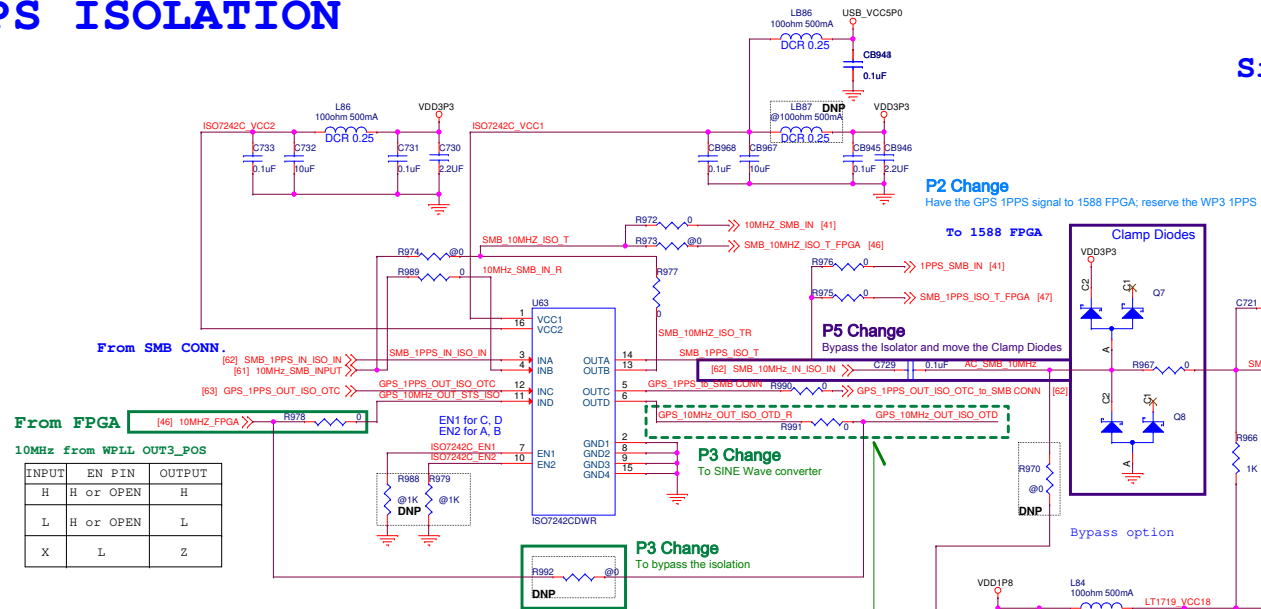
NOTE: These pins are internally pulled "Low"

P2 Change

Have the 2.048MHz Clock for XRT86VL30IV80-F MCLK

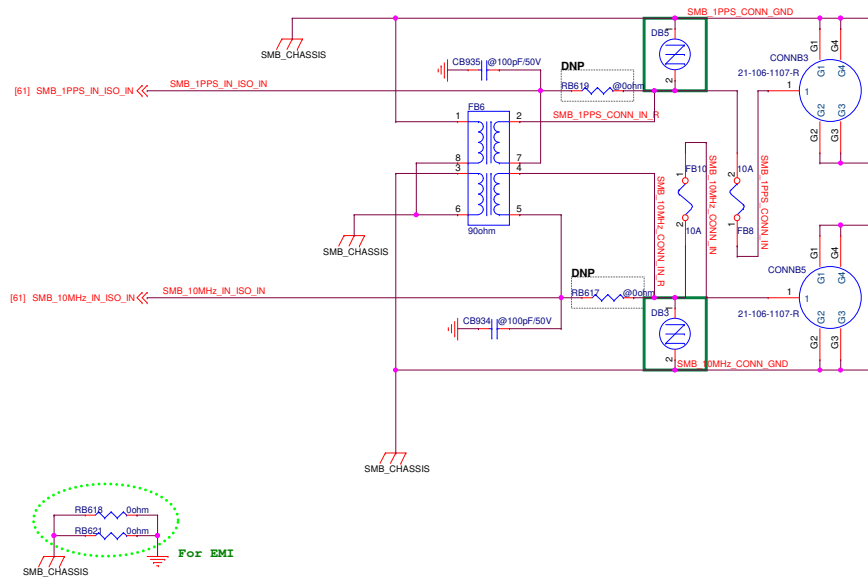


GPS ISOLATION



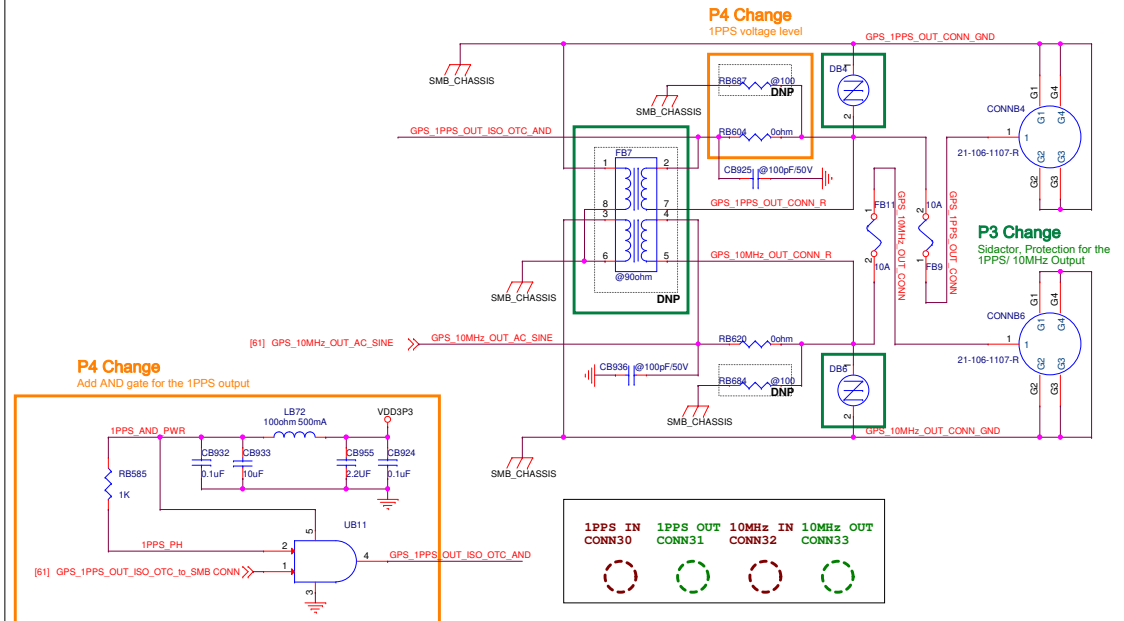
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GPS CONN

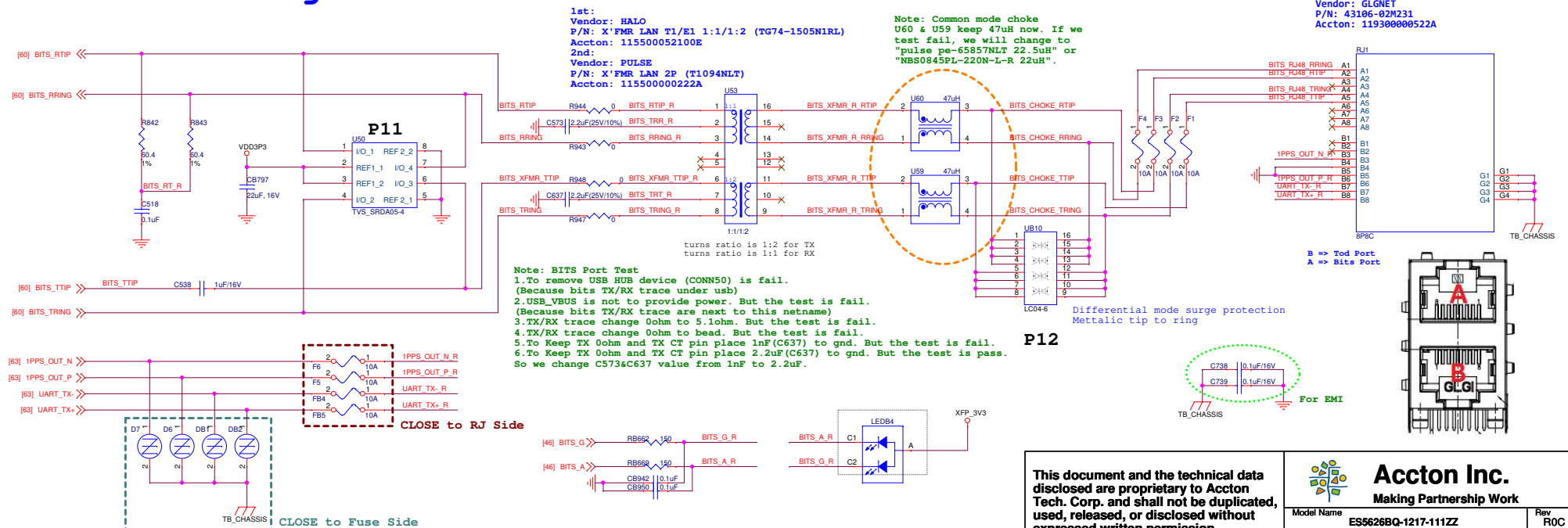


EXT_GPS_INPUT

GPS_OUTPUT



External Timing Reference CONN

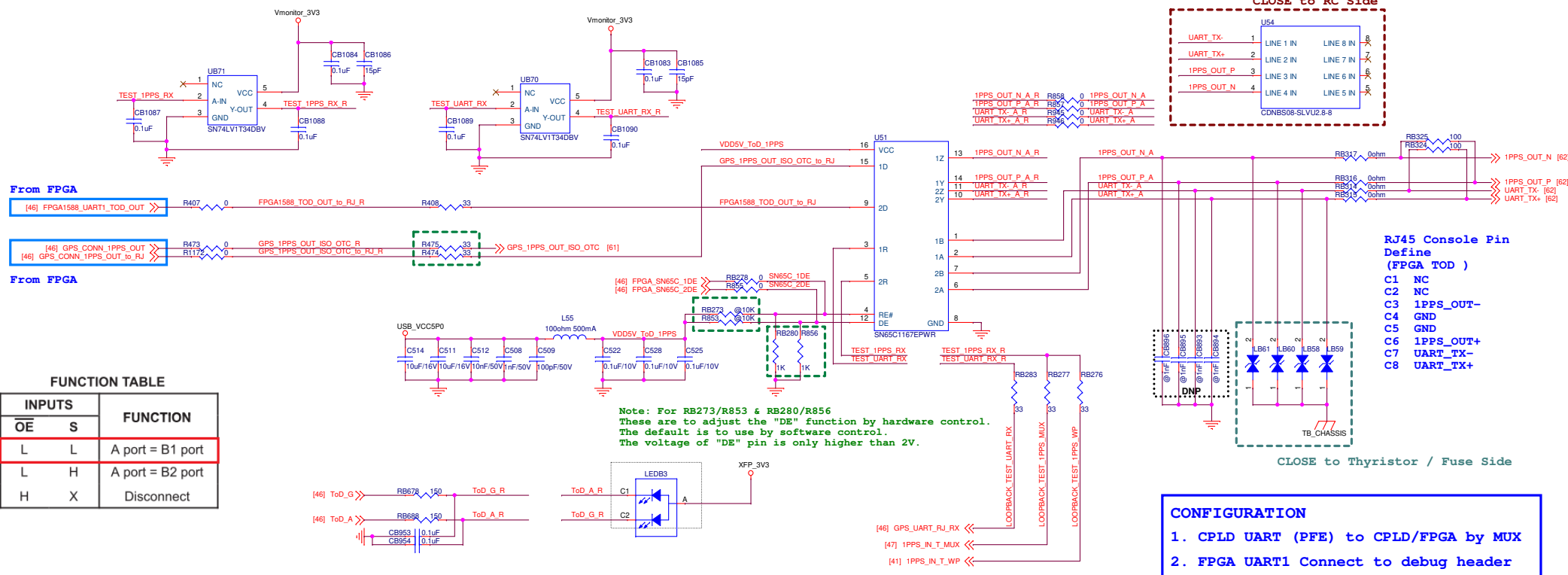


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Size	Page Name	Engineer					
C	TIMING_GPS_EXT_CLK_CONN	Dino_Lin					
Date:	Thursday, July 19, 2018	Sheet	62	of		63	



RJ-45 Pin	Signals	Description	Direction
1	Reserve	No Connect	—
2	Reserve	No Connect	—
3	1PPS_OUT-	Tx 1PPS negative	Out
4	GND	RS-422 level GND	—
5	GND	RS-422 level GND	—
6	1PPS_OUT+	Tx 1PPS positive	Out
7	TX-	Tx TOD Time message negative	Out
8	TX+	Tx TOD time message positive	OUT

FUNCTION TABLES
Each Driver

INPUT D	ENABLE DE	OUTPUTS	
		Y	Z
H	H	H	L
L	H	L	H
X	L	Z	Z

Recommended Operating Conditions

	MIN	NOM	MAX	UNIT
V _{CC} Supply voltage	4.5	5	5.5	V
V _{IC} Common-mode input voltage ⁽¹⁾			±7	V
V _{ID} Differential input voltage			±7	V
V _I Input voltage		0	5.5	V
V _O Output voltage		0	V _{CC}	V
V _{IH} High-level input voltage		2		V
V _{IL} Low-level input voltage			0.8	V
I _{OH} High-level output current			-6	mA
			-20	mA
I _{OL} Low-level output current			6	mA
			20	mA
T _A Operating free-air temperature	-40		85	°C

SN65C1167E, Each Receiver⁽¹⁾

DIFFERENTIAL INPUTS A-B	ENABLE RE	OUTPUT R
V _{ID} ≥ 0.2 V	L	H
-0.2 V < V _{ID} < 0.2 V	L	?
V _{ID} ≤ -0.2 V	L	L
X	H	Z
Open	L	H

(1) H = High level, L = Low level, ? = Indeterminate, X = Irrelevant,
Z = High impedance (off)

SN65C1168E, Each Receiver⁽¹⁾

DIFFERENTIAL INPUTS A-B	OUTPUT R
V _{ID} ≥ 0.2 V	H
-0.2 V < V _{ID} < 0.2 V	?
V _{ID} ≤ -0.2 V	L
Open	H

(1) H = High level, L = Low level, ? = Indeterminate

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