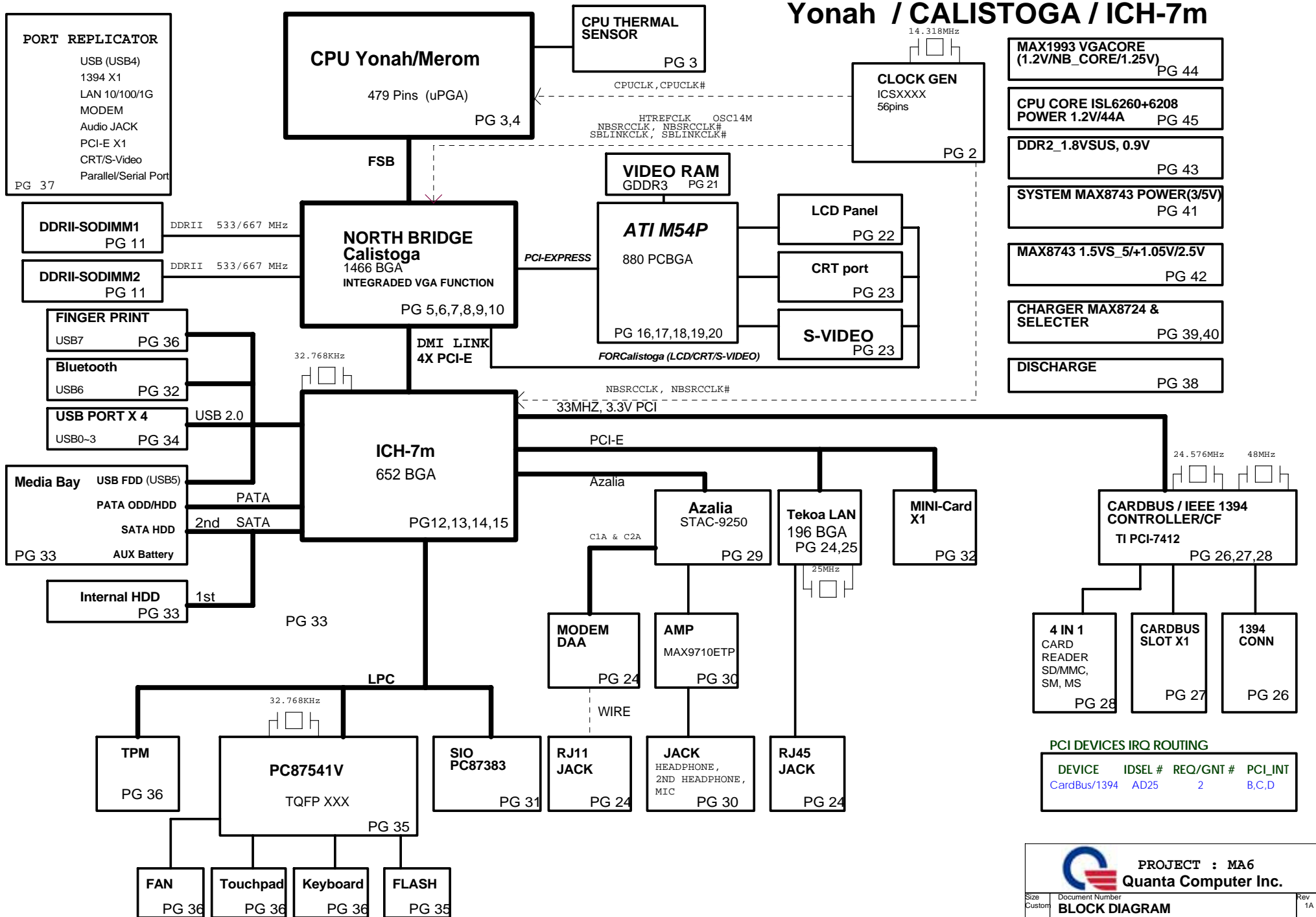


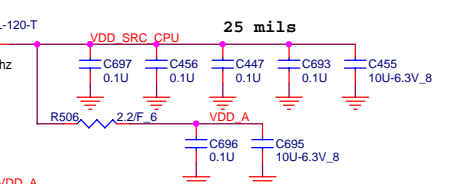
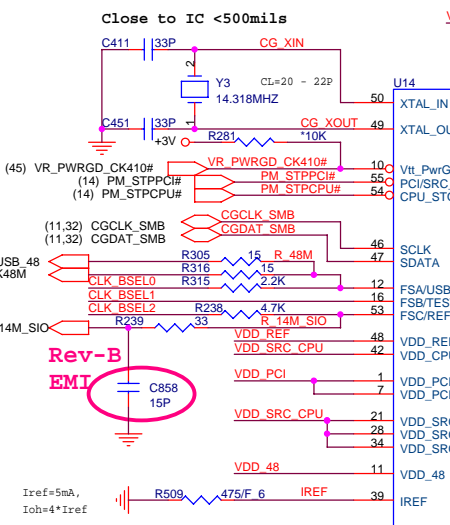
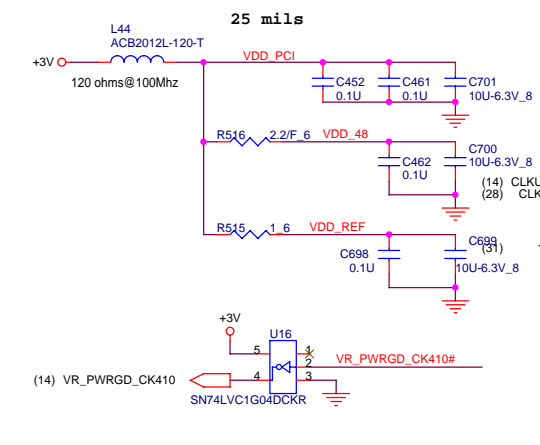
MA6 BLOCK DIAGRAM

Yonah / CALISTOGA / ICH-7m

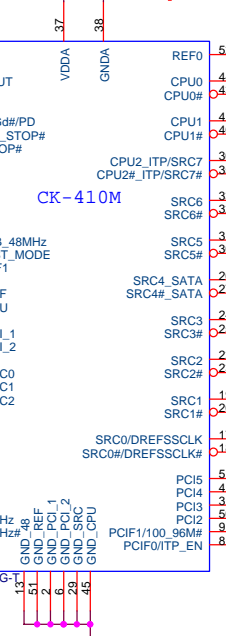


FSC	FSB	FSA	CPU	SRC	PCI
1	0	1	100	100	33
0	0	1	133	100	33
0	1	1	166	100	33
0	1	0	200	100	33
0	0	0	266	100	33
1	0	0	333	100	33
1	1	0	400	100	33
1	1	1	200	100	33

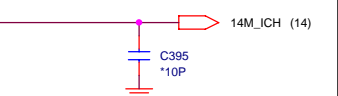
Default



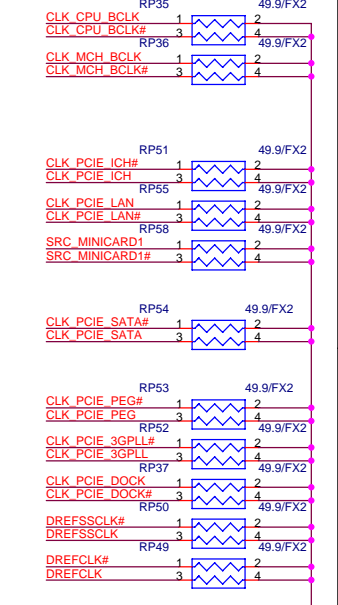
(3,7,8,9,11,12,13,14,15,16,17,18,19,22,23,28,31,32,33,35,36,38,41,44,45) +3V
 (3,4,5,7,8,9,12,15,38,42) +1.05V



Place these termination to close CK410M.

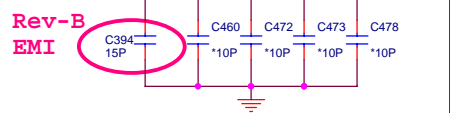
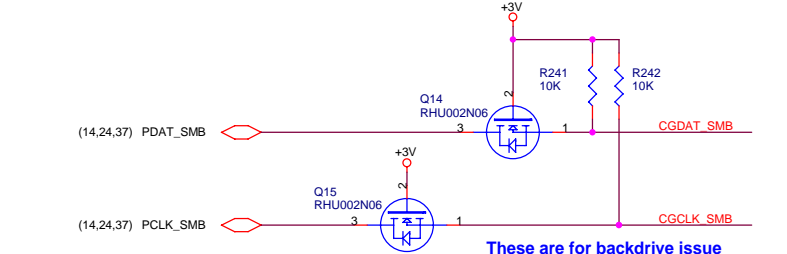
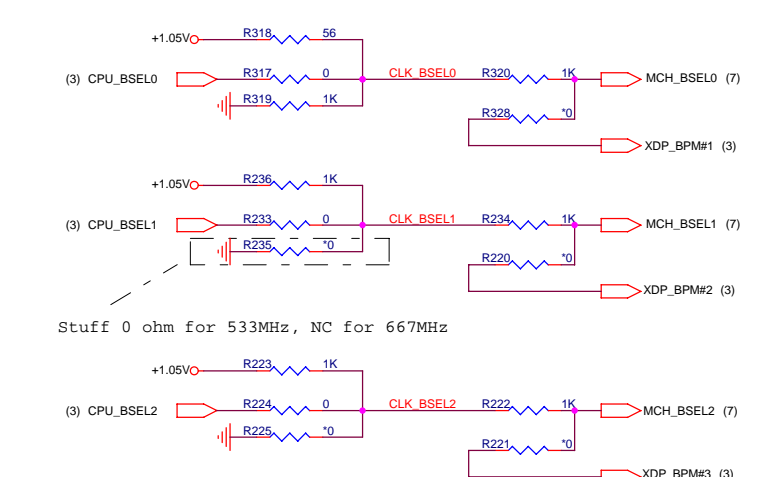


Place these termination to close CK410M.



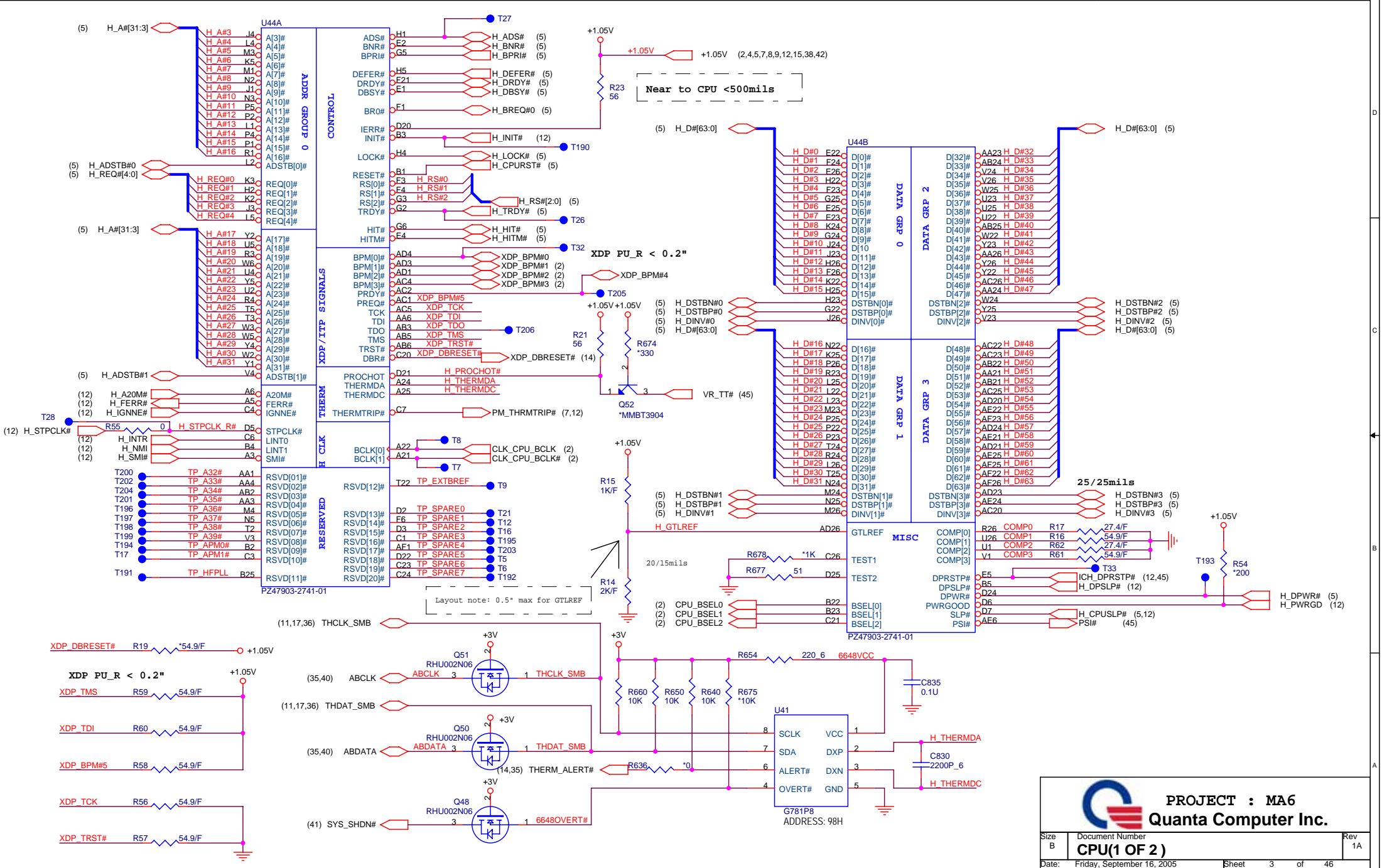
SMBus address D2 /IDT
 IDT CV140 /56pins
 ICS954206AGT /56pins

DREFSSCLK Frequency Select.
 "0": 96MHz "1": 100MHz



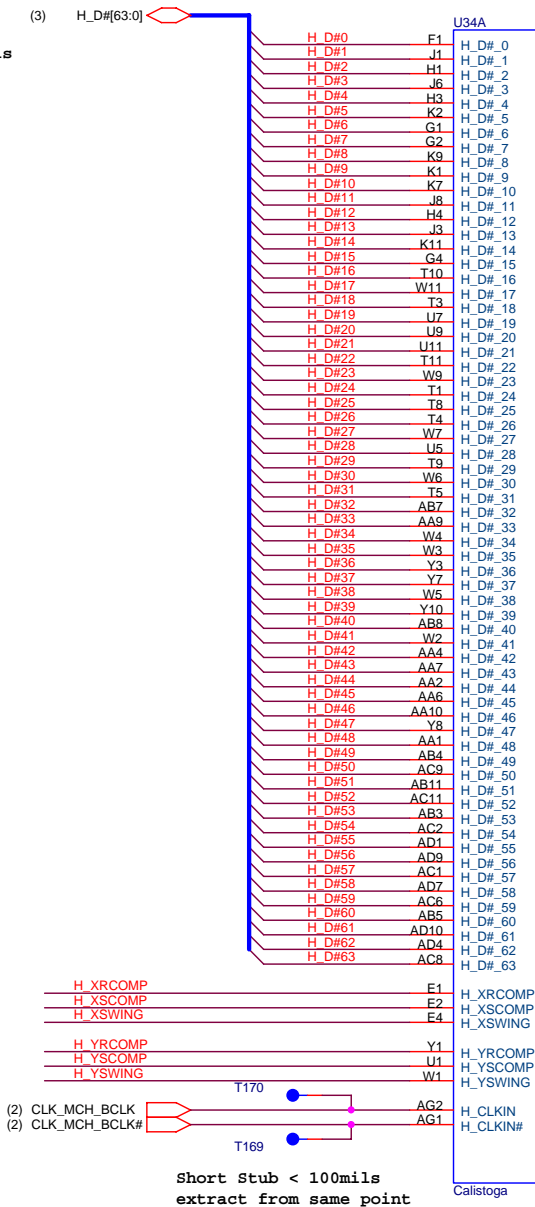
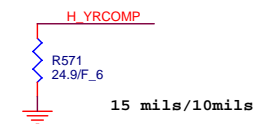
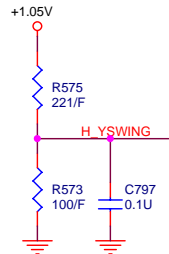
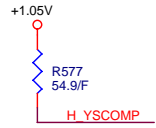
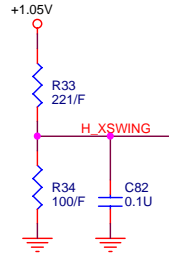
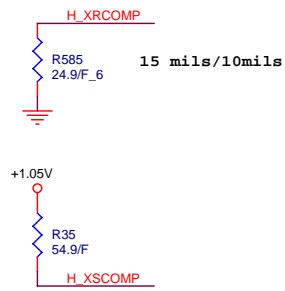
PROJECT : MA6
Quanta Computer Inc.

Size	Document Number	Rev
Custom	CLOCK GENERATOR	2A
Date:	Friday, September 16, 2005	Sheet 2 of 46



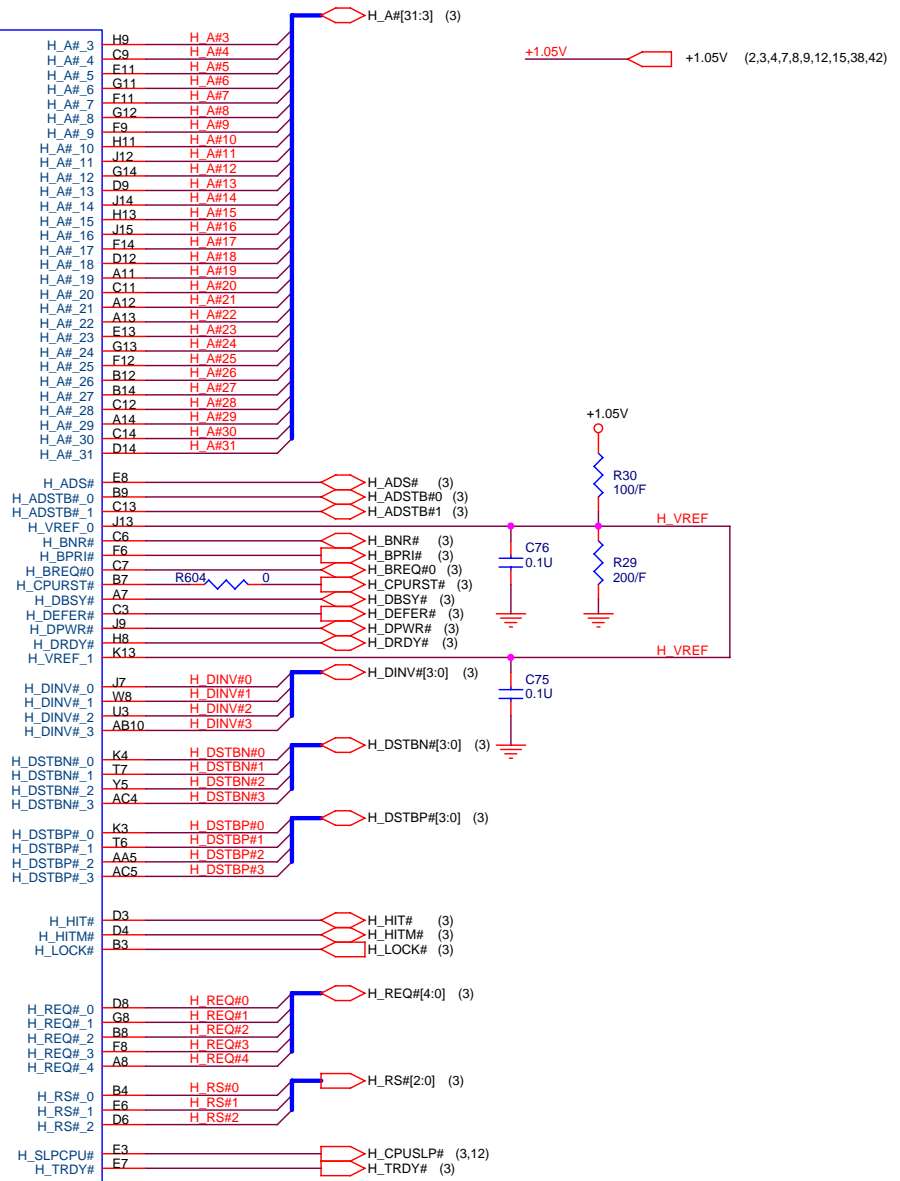
PROJECT : MA6
Quanta Computer Inc.


Size B	Document Number CPU(1 OF 2)	Rev 1A
Date:	Friday, September 16, 2005	Sheet 3 of 46



Short Stub < 100mils
extract from same point

HOST





PROJECT : MA6
Quanta Computer Inc.

Size B	Document Number GMCH HOST(1 OF 6)	Rev 1A
Date: Friday, September 16, 2005	Sheet 5 of 46	

(11) M_A_DQ[63:0]

M_A DQ0	AJ35	SA_DQ0
M_A DQ1	AJ34	SA_DQ1
M_A DQ2	AM31	SA_DQ2
M_A DQ3	AM33	SA_DQ3
M_A DQ4	AJ36	SA_DQ4
M_A DQ5	AK35	SA_DQ5
M_A DQ6	AJ32	SA_DQ6
M_A DQ7	AH31	SA_DQ7
M_A DQ8	AN35	SA_DQ8
M_A DQ9	AP33	SA_DQ9
M_A DQ10	AR31	SA_DQ10
M_A DQ11	AP31	SA_DQ11
M_A DQ12	AN38	SA_DQ12
M_A DQ13	AM36	SA_DQ13
M_A DQ14	AM34	SA_DQ14
M_A DQ15	AN33	SA_DQ15
M_A DQ16	AK26	SA_DQ16
M_A DQ17	AL27	SA_DQ17
M_A DQ18	AM26	SA_DQ18
M_A DQ19	AN24	SA_DQ19
M_A DQ20	AK28	SA_DQ20
M_A DQ21	AL28	SA_DQ21
M_A DQ22	AM24	SA_DQ22
M_A DQ23	AP26	SA_DQ23
M_A DQ24	AP23	SA_DQ24
M_A DQ25	AL22	SA_DQ25
M_A DQ26	AP21	SA_DQ26
M_A DQ27	AN20	SA_DQ27
M_A DQ28	AL23	SA_DQ28
M_A DQ29	AP24	SA_DQ29
M_A DQ30	AP20	SA_DQ30
M_A DQ31	AT21	SA_DQ31
M_A DQ32	AR12	SA_DQ32
M_A DQ33	AR14	SA_DQ33
M_A DQ34	AP13	SA_DQ34
M_A DQ35	AP12	SA_DQ35
M_A DQ36	AT13	SA_DQ36
M_A DQ37	AT12	SA_DQ37
M_A DQ38	AL14	SA_DQ38
M_A DQ39	AL12	SA_DQ39
M_A DQ40	AK9	SA_DQ40
M_A DQ41	AN7	SA_DQ41
M_A DQ42	AK8	SA_DQ42
M_A DQ43	AK7	SA_DQ43
M_A DQ44	AP9	SA_DQ44
M_A DQ45	AN9	SA_DQ45
M_A DQ46	AT5	SA_DQ46
M_A DQ47	AL5	SA_DQ47
M_A DQ48	AY2	SA_DQ48
M_A DQ49	AW2	SA_DQ49
M_A DQ50	AP1	SA_DQ50
M_A DQ51	AN2	SA_DQ51
M_A DQ52	AV2	SA_DQ52
M_A DQ53	AT3	SA_DQ53
M_A DQ54	AN1	SA_DQ54
M_A DQ55	AL2	SA_DQ55
M_A DQ56	AG7	SA_DQ56
M_A DQ57	AE9	SA_DQ57
M_A DQ58	AG4	SA_DQ58
M_A DQ59	AF6	SA_DQ59
M_A DQ60	AG9	SA_DQ60
M_A DQ61	AH6	SA_DQ61
M_A DQ62	AF4	SA_DQ62
M_A DQ63	AF8	SA_DQ63

DDR SYSTEM MEMORY A

SA_BS_0	AU12	M_A_BS#0	M_A_BS#0 (11)
SA_BS_1	AV14	M_A_BS#1	M_A_BS#1 (11)
SA_BS_2	BA20	M_A_BS#2	M_A_BS#2 (11)
SA_CAS#	AY13	M_A_CAS#	M_A_CAS# (11)
SA_DM_0	AJ33	M_A_DM0	M_A_DM[7:0] (11)
SA_DM_1	AM35	M_A_DM1	
SA_DM_2	AL26	M_A_DM2	
SA_DM_3	AN22	M_A_DM3	
SA_DM_4	AM14	M_A_DM4	
SA_DM_5	AL9	M_A_DM5	
SA_DM_6	AR3	M_A_DM6	
SA_DM_7	AH4	M_A_DM7	
SA_DQS_0	AK33	M_A_DQS0	M_A_DQS[7:0] (11)
SA_DQS_1	AT33	M_A_DQS1	
SA_DQS_2	AN28	M_A_DQS2	
SA_DQS_3	AM22	M_A_DQS3	
SA_DQS_4	AN8	M_A_DQS4	
SA_DQS_5	AP3	M_A_DQS5	
SA_DQS_6	AG5	M_A_DQS6	
SA_DQS_7	AK2	M_A_DQS7	
SA_DQS#_0	AU33	M_A_DQS#0	M_A_DQS#[7:0] (11)
SA_DQS#_1	AN27	M_A_DQS#1	
SA_DQS#_2	AM21	M_A_DQS#2	
SA_DQS#_3	AM12	M_A_DQS#3	
SA_DQS#_4	AL8	M_A_DQS#4	
SA_DQS#_5	AN3	M_A_DQS#5	
SA_DQS#_6	AH5	M_A_DQS#6	
SA_DQS#_7			
SA_MA_0	AY16	M_A_A0	M_A_A[13:0] (11)
SA_MA_1	AU14	M_A_A1	
SA_MA_2	AW16	M_A_A2	
SA_MA_3	BA16	M_A_A3	
SA_MA_4	BA17	M_A_A4	
SA_MA_5	AU16	M_A_A5	
SA_MA_6	AV17	M_A_A6	
SA_MA_7	AU17	M_A_A7	
SA_MA_8	AW17	M_A_A8	
SA_MA_9	AT16	M_A_A9	
SA_MA_10	AU13	M_A_A10	
SA_MA_11	AT17	M_A_A11	
SA_MA_12	AV20	M_A_A12	
SA_MA_13	AV12	M_A_A13	
SA_RAS#	AW14	M_A_RAS#	M_A_RAS# (11)
SA_RCVENIN#	AK23	TP_MA_RCVENIN#	T30
SA_RCVENOUT#	AK24	TP_MA_RCVENOUT#	T36
SA_WE#	AY14	M_A_WE#	M_A_WE# (11)

(11) M_B_DQ[63:0]

M_B DQ0	AK39	SB_DQ0
M_B DQ1	AJ37	SB_DQ1
M_B DQ2	AP39	SB_DQ2
M_B DQ3	AR41	SB_DQ3
M_B DQ4	AJ38	SB_DQ4
M_B DQ5	AK38	SB_DQ5
M_B DQ6	AN41	SB_DQ6
M_B DQ7	AP41	SB_DQ7
M_B DQ8	AT40	SB_DQ8
M_B DQ9	AV41	SB_DQ9
M_B DQ10	AU38	SB_DQ10
M_B DQ11	AV38	SB_DQ11
M_B DQ12	AP38	SB_DQ12
M_B DQ13	AR40	SB_DQ13
M_B DQ14	AW38	SB_DQ14
M_B DQ15	AV38	SB_DQ15
M_B DQ16	BA38	SB_DQ16
M_B DQ17	AV36	SB_DQ17
M_B DQ18	AR36	SB_DQ18
M_B DQ19	AP36	SB_DQ19
M_B DQ20	BA36	SB_DQ20
M_B DQ21	AU36	SB_DQ21
M_B DQ22	AP35	SB_DQ22
M_B DQ23	AP34	SB_DQ23
M_B DQ24	AV33	SB_DQ24
M_B DQ25	BA33	SB_DQ25
M_B DQ26	AT31	SB_DQ26
M_B DQ27	AU29	SB_DQ27
M_B DQ28	AU31	SB_DQ28
M_B DQ29	AW31	SB_DQ29
M_B DQ30	AV29	SB_DQ30
M_B DQ31	AW29	SB_DQ31
M_B DQ32	AM19	SB_DQ32
M_B DQ33	AL19	SB_DQ33
M_B DQ34	AP14	SB_DQ34
M_B DQ35	AN14	SB_DQ35
M_B DQ36	AM16	SB_DQ36
M_B DQ37	AN17	SB_DQ37
M_B DQ38	AP15	SB_DQ38
M_B DQ39	AL15	SB_DQ39
M_B DQ40	AJ11	SB_DQ40
M_B DQ41	AH10	SB_DQ41
M_B DQ42	AJ9	SB_DQ42
M_B DQ43	AN10	SB_DQ43
M_B DQ44	AK13	SB_DQ44
M_B DQ45	AK10	SB_DQ45
M_B DQ47	AJ8	SB_DQ47
M_B DQ48	BA10	SB_DQ48
M_B DQ49	AW10	SB_DQ49
M_B DQ50	BA4	SB_DQ50
M_B DQ51	AW4	SB_DQ51
M_B DQ52	AY10	SB_DQ52
M_B DQ53	AY9	SB_DQ53
M_B DQ54	AW5	SB_DQ54
M_B DQ55	AY5	SB_DQ55
M_B DQ56	AV4	SB_DQ56
M_B DQ57	AR5	SB_DQ57
M_B DQ58	AK4	SB_DQ58
M_B DQ59	AK3	SB_DQ59
M_B DQ60	AT4	SB_DQ60
M_B DQ61	AK5	SB_DQ61
M_B DQ62	AJ5	SB_DQ62
M_B DQ63	AJ3	SB_DQ63

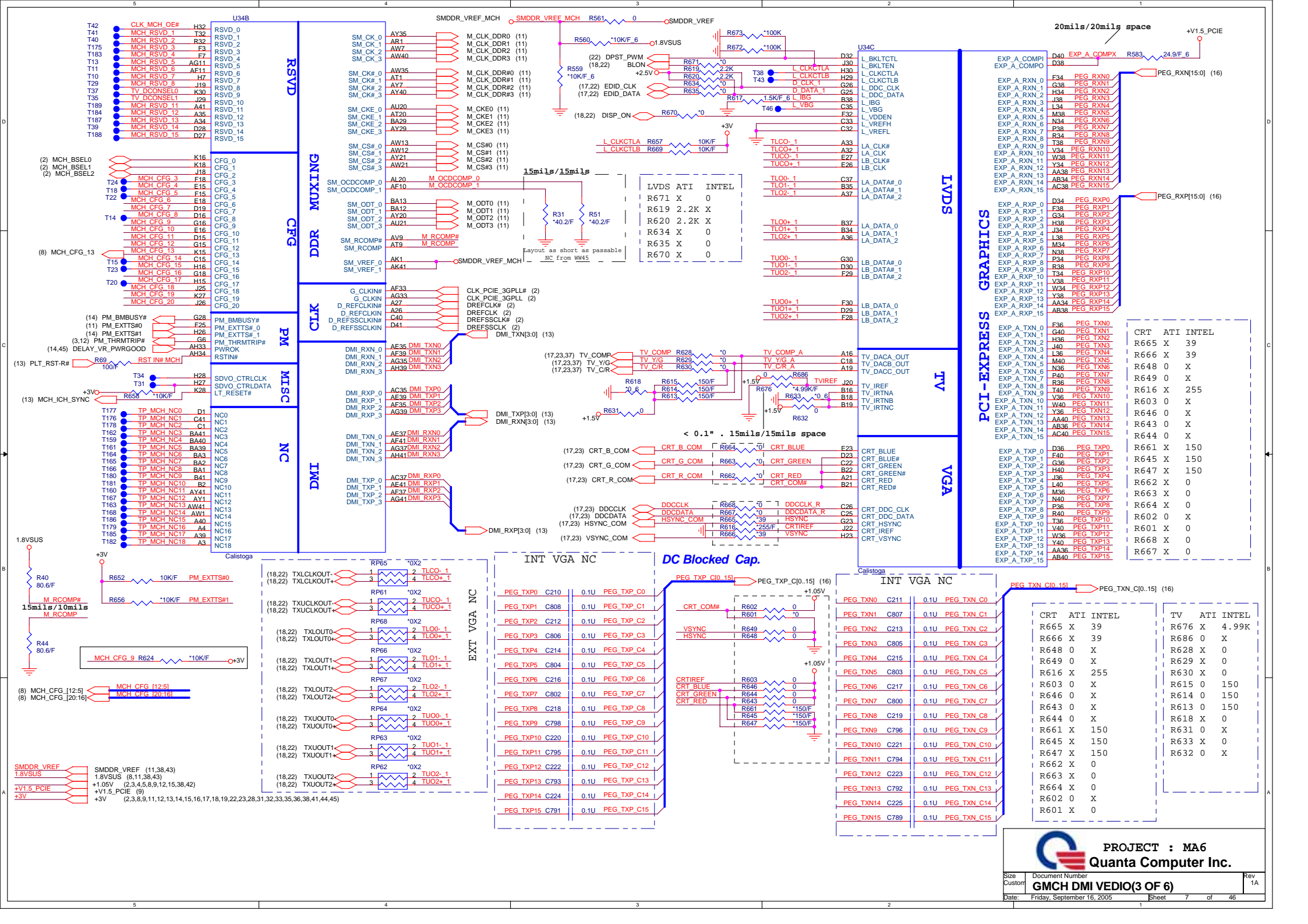
DDR SYSTEM MEMORY B

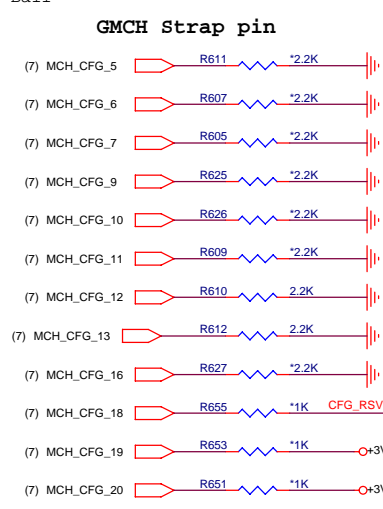
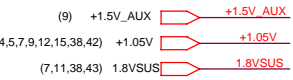
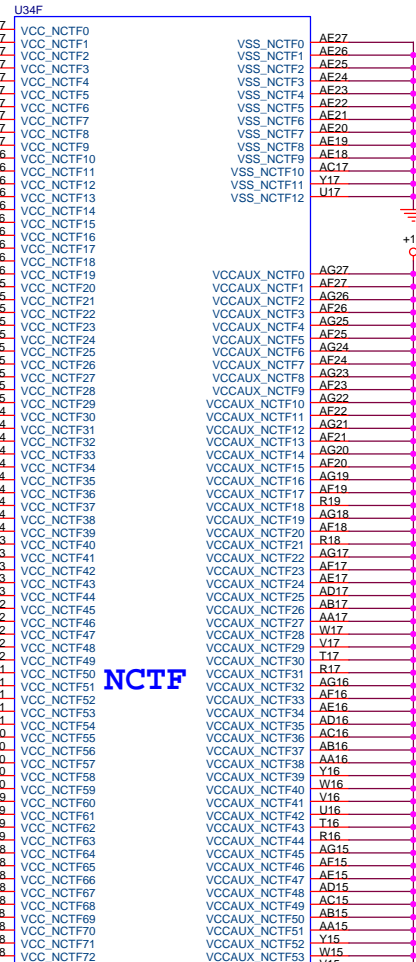
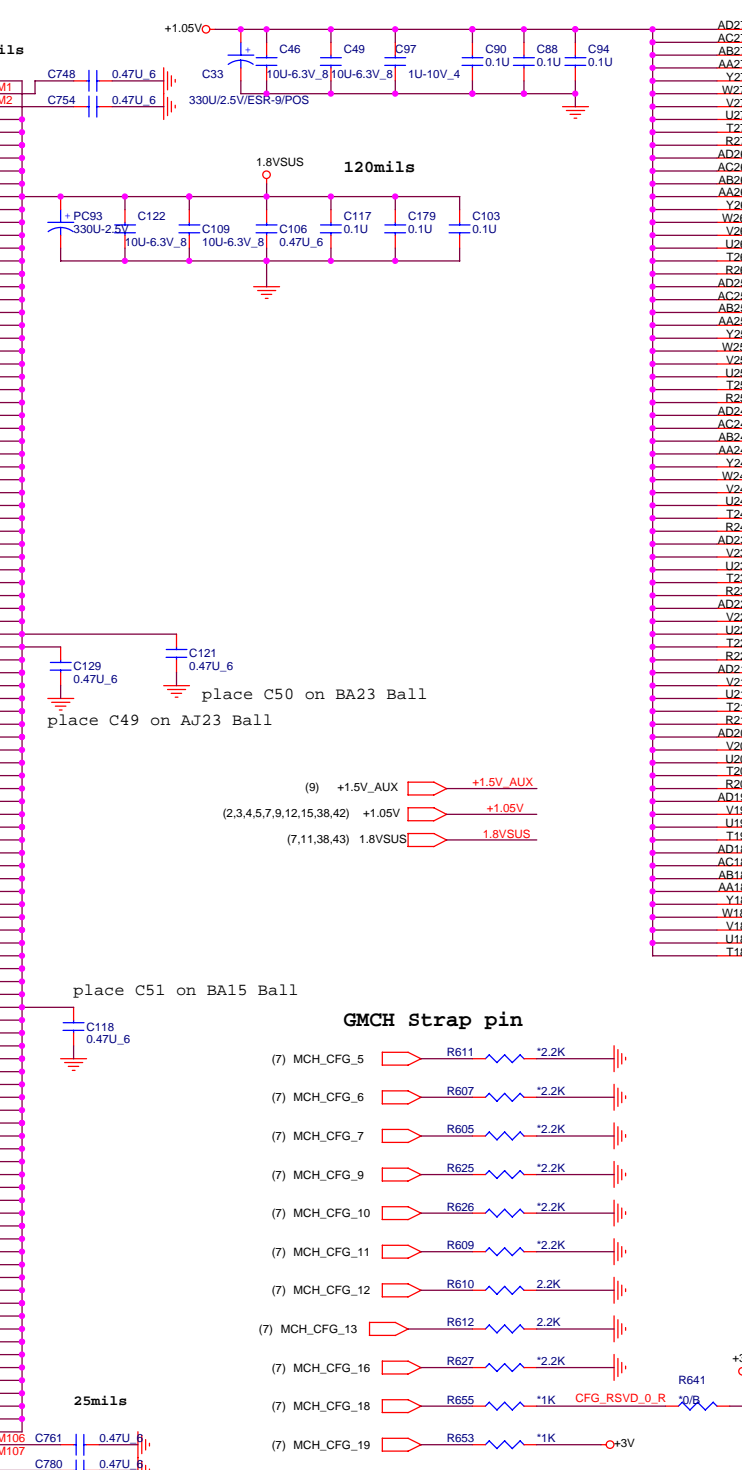
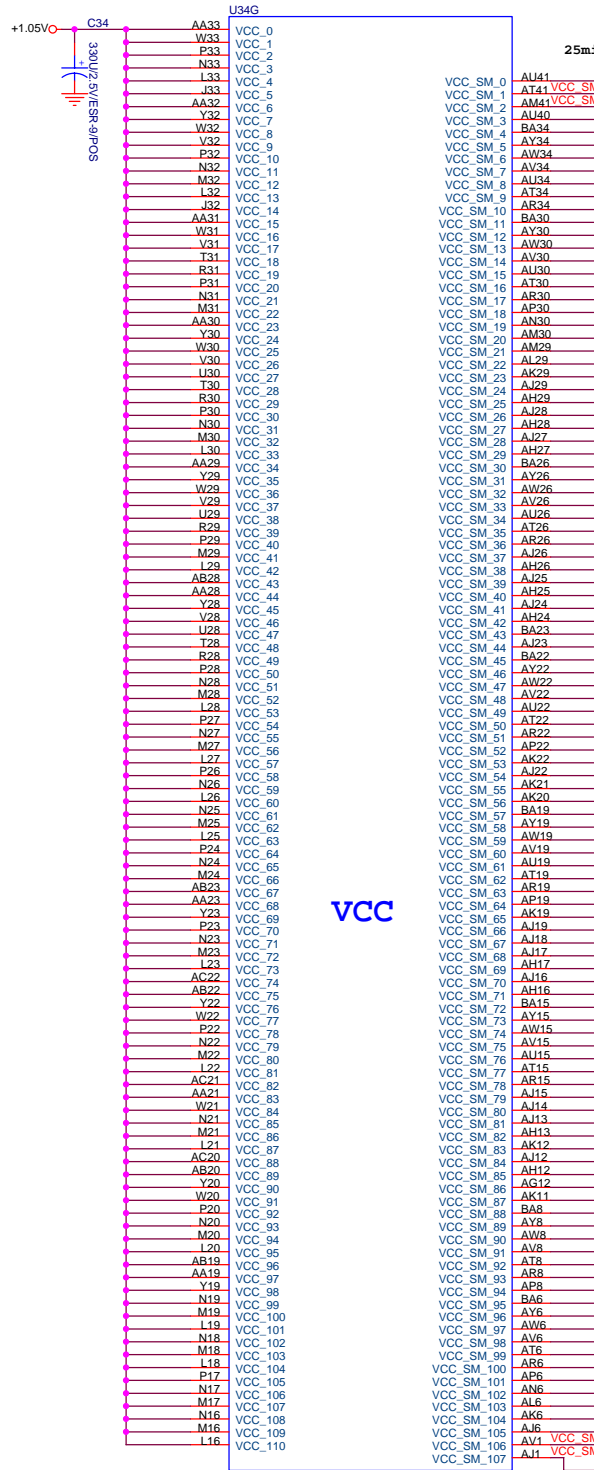
SB_BS_0	AT24	M_B_BS#0	M_B_BS#0 (11)
SB_BS_1	AV23	M_B_BS#1	M_B_BS#1 (11)
SB_BS_2	AY28	M_B_BS#2	M_B_BS#2 (11)
SB_CAS#	AR24	M_B_CAS#	M_B_CAS# (11)
SB_DM_0	AK36	M_B_DM0	M_B_DM[7:0] (11)
SB_DM_1	AR38	M_B_DM1	
SB_DM_2	AT36	M_B_DM2	
SB_DM_3	BA31	M_B_DM3	
SB_DM_4	AL17	M_B_DM4	
SB_DM_5	AH8	M_B_DM5	
SB_DM_6	BA5	M_B_DM6	
SB_DM_7	AN4	M_B_DM7	
SB_DQS_0	AM39	M_B_DQS0	M_B_DQS[7:0] (11)
SB_DQS_1	AT39	M_B_DQS1	
SB_DQS_2	AU35	M_B_DQS2	
SB_DQS_3	AR29	M_B_DQS3	
SB_DQS_4	AR16	M_B_DQS4	
SB_DQS_5	AR10	M_B_DQS5	
SB_DQS_6	AR7	M_B_DQS6	
SB_DQS_7	AN5	M_B_DQS7	
SB_DQS#_0	AM40	M_B_DQS#0	M_B_DQS#[7:0] (11)
SB_DQS#_1	AU39	M_B_DQS#1	
SB_DQS#_2	AT35	M_B_DQS#2	
SB_DQS#_3	AP29	M_B_DQS#3	
SB_DQS#_4	AP16	M_B_DQS#4	
SB_DQS#_5	AT10	M_B_DQS#5	
SB_DQS#_6	AT7	M_B_DQS#6	
SB_DQS#_7	AP5	M_B_DQS#7	
SB_MA_0	AY23	M_B_A0	M_B_A[13:0] (11)
SB_MA_1	AW24	M_B_A1	
SB_MA_2	AY24	M_B_A2	
SB_MA_3	AR28	M_B_A3	
SB_MA_4	AT27	M_B_A4	
SB_MA_5	AT28	M_B_A5	
SB_MA_6	AU27	M_B_A6	
SB_MA_7	AV28	M_B_A7	
SB_MA_8	AV27	M_B_A8	
SB_MA_9	AW27	M_B_A9	
SB_MA_10	AV24	M_B_A10	
SB_MA_11	BA27	M_B_A11	
SB_MA_12	AY27	M_B_A12	
SB_MA_13	AR23	M_B_A13	
SB_RAS#	AU23	M_B_RAS#	M_B_RAS# (11)
SB_RCVENIN#	AK16	TP_MB_RCVENIN#	T19
SB_RCVENOUT#	AK18	TP_MB_RCVENOUT#	T25
SB_WE#	AR27	M_B_WE#	M_B_WE# (11)

Calistoga

PROJECT : MA6
Quanta Computer Inc.

Size B	Document Number	Rev 1A
GMCH DDR(2 OF 6)		
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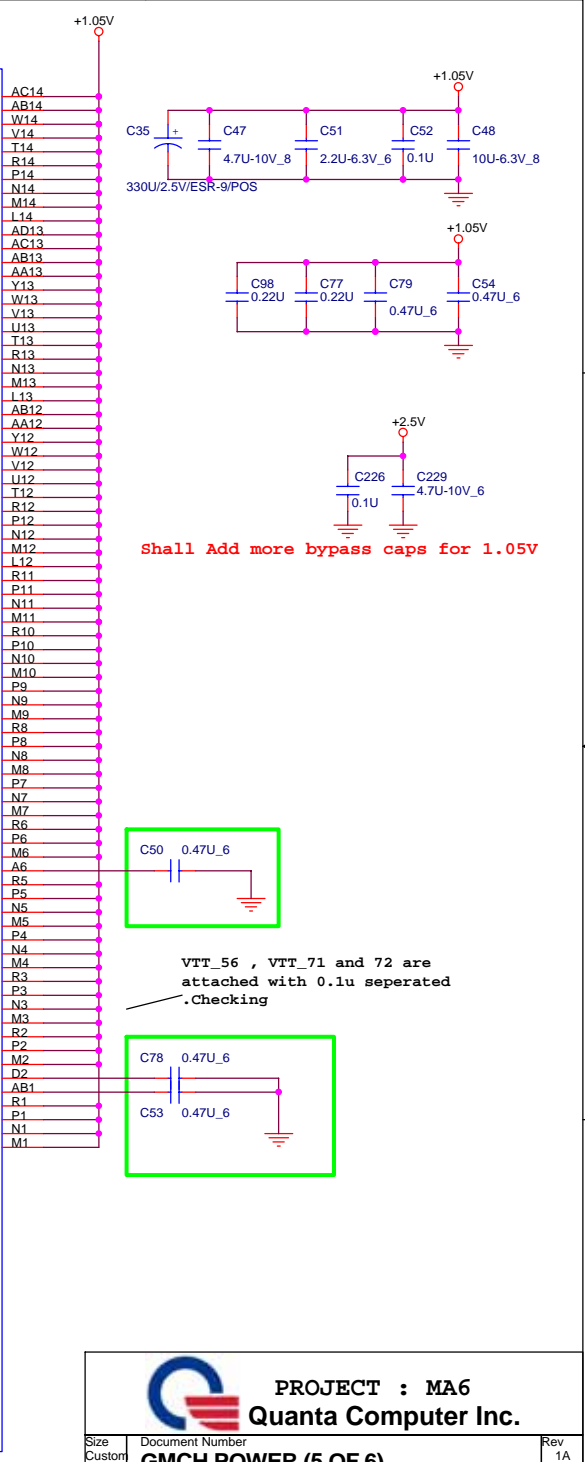
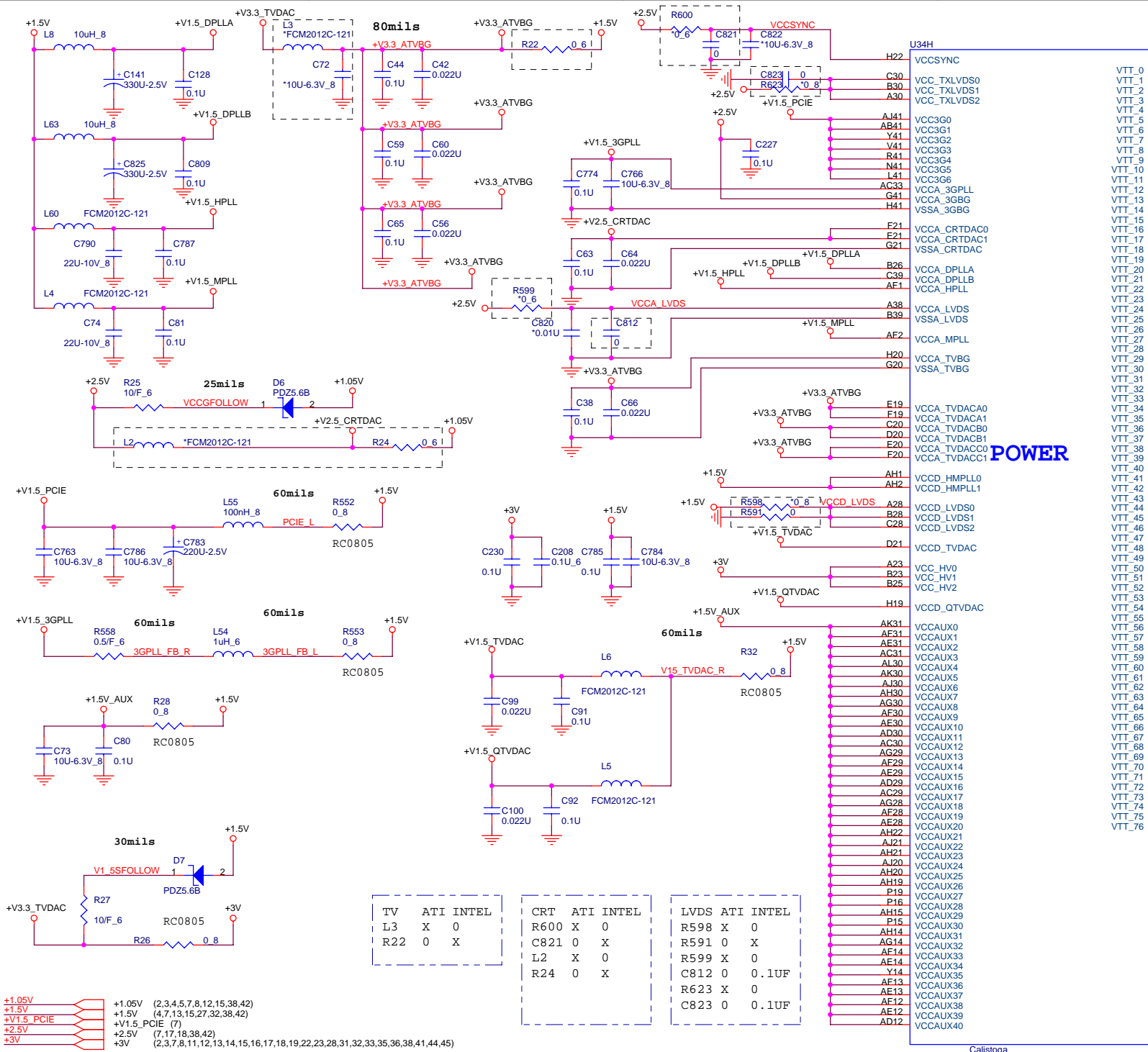




- Calistoga
- 1.MCH_CFG_5 Low = DMI X2, High=DMIX4
 - 2.MCH_CFG_6 DDR : Low =Moby Dick, High= Calistoga (Default)
 - 3.MCH_CFG_7 CPU Strap Low=RSVD, High=Mobile CPU
 - 4.MCH_CFG_9 PCI Exp Graphics Lane: Low =Reserved,High=Mobility
 - 5.MCH_CFG_10 Host PLL VCC Select: Low=Reserved, High=Mobility
 - 6.MCH_CFG_11: No Stuff.
 - 7.MCH_CFG_16 FSB Dymic ODT: Low=Dynamic ODT Disabled, High=Dynamic ODT Enabled.
 - 8.MCH_CFG_18 VCC Select: LOW=1.05V, High=1.5V
 - 9.MCH_CFG_19 DMI LANE Reversal:Low=Normal,High=LANES Reversed.
 - 10.MCH_CFG_20 PCIe Backward interoperability mode: Low only SDVO or PCIe x1 is operational (default),High=SDVO and PCIe x1 are operation simultaneously via the PEG port.

PROJECT : MA6
Quanta Computer Inc.

Size	Document Number	Rev
Customer	GMCH PW & STRAP(4 OF 6)	1A
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Shall Add more bypass caps for 1.05V

VTT_56 , VTT_71 and 72 are attached with 0.1u seperated .Checking

TV	ATI	INTEL	CRT	ATI	INTEL	LVDS	ATI	INTEL
L3	X	0	R600	X	0	R598	X	0
R22	0	X	C821	0	X	R591	0	X
			L2	X	0	R599	X	0
			R24	0	X	C812	0	0.1UF
						R623	X	0
						C823	0	0.1UF

+1.05V	+1.05V	(2,3,4,5,7,8,12,15,38,42)
+1.5V	+1.5V	(4,7,13,15,27,32,38,42)
+V1.5_PCIE	+V1.5_PCIE	(7)
+2.5V	+2.5V	(7,17,18,38,42)
+3V	+3V	(2,3,7,8,11,12,13,14,15,16,17,18,19,22,23,28,31,32,33,35,36,38,41,44,45)

POWER

PROJECT : MA6
Quanta Computer Inc.

Size Custom	Document Number	Rev 1A
GMCH POWER (5 OF 6)		
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U34I			
AC41	VSS_0	VSS_97	AK34
AA41	VSS_1	VSS_98	AG34
V41	VSS_2	VSS_99	AF34
T41	VSS_3	VSS_100	AE34
P41	VSS_4	VSS_101	AC34
M41	VSS_5	VSS_102	C34
J41	VSS_6	VSS_103	AW33
F41	VSS_7	VSS_104	AV33
AV40	VSS_8	VSS_105	AP33
AF40	VSS_9	VSS_106	AE33
AN40	VSS_10	VSS_107	AB33
AK40	VSS_11	VSS_108	Y33
AL40	VSS_12	VSS_109	V33
AH40	VSS_13	VSS_110	T33
AG40	VSS_14	VSS_111	R33
AF40	VSS_15	VSS_112	M33
AE40	VSS_16	VSS_113	H33
E40	VSS_17	VSS_114	G33
AY39	VSS_18	VSS_115	F33
AW39	VSS_19	VSS_116	D33
AV39	VSS_20	VSS_117	B33
AR39	VSS_21	VSS_118	AH32
AN39	VSS_22	VSS_119	AG32
AJ39	VSS_23	VSS_120	AF32
AC39	VSS_24	VSS_121	AE32
AB39	VSS_25	VSS_122	AC32
AA39	VSS_26	VSS_123	AB32
Y39	VSS_27	VSS_124	G32
W39	VSS_28	VSS_125	B32
V39	VSS_29	VSS_126	AY31
T39	VSS_30	VSS_127	AV31
R39	VSS_31	VSS_128	AN31
P39	VSS_32	VSS_129	AJ31
N39	VSS_33	VSS_130	AG31
M39	VSS_34	VSS_131	AB31
L39	VSS_35	VSS_132	Y31
J39	VSS_36	VSS_133	AB30
H39	VSS_37	VSS_134	E30
G39	VSS_38	VSS_135	AT29
F39	VSS_39	VSS_136	AN29
D39	VSS_40	VSS_137	AB29
AT38	VSS_41	VSS_138	T29
AM38	VSS_42	VSS_139	N29
AH38	VSS_43	VSS_140	K29
AG38	VSS_44	VSS_141	G29
AF38	VSS_45	VSS_142	E29
AE38	VSS_46	VSS_143	C29
C38	VSS_47	VSS_144	B29
AK37	VSS_48	VSS_145	A29
AH37	VSS_49	VSS_146	BA28
AB37	VSS_50	VSS_147	AW28
AA37	VSS_51	VSS_148	AU28
Y37	VSS_52	VSS_149	AP28
W37	VSS_53	VSS_150	AM28
V37	VSS_54	VSS_151	AD28
T37	VSS_55	VSS_152	AC28
R37	VSS_56	VSS_153	W28
P37	VSS_57	VSS_154	J28
N37	VSS_58	VSS_155	E28
M37	VSS_59	VSS_156	AP27
L37	VSS_60	VSS_157	AM27
J37	VSS_61	VSS_158	AK27
H37	VSS_62	VSS_159	J27
G37	VSS_63	VSS_160	G27
F37	VSS_64	VSS_161	F27
D37	VSS_65	VSS_162	C27
AY36	VSS_66	VSS_163	B27
AW36	VSS_67	VSS_164	AN26
AV36	VSS_68	VSS_165	M26
AH36	VSS_69	VSS_166	K26
AG36	VSS_70	VSS_167	F26
AF36	VSS_71	VSS_168	D26
AE36	VSS_72	VSS_169	AK25
AC36	VSS_73	VSS_170	P25
C36	VSS_74	VSS_171	K25
B36	VSS_75	VSS_172	H25
BA35	VSS_76	VSS_173	E25
AV35	VSS_77	VSS_174	D25
AR35	VSS_78	VSS_175	A25
AH35	VSS_79	VSS_176	BA24
AB35	VSS_80	VSS_177	AU24
AA35	VSS_81	VSS_178	AL24
Y35	VSS_82	VSS_179	AW23
W35	VSS_83		
V35	VSS_84		
T35	VSS_85		
R35	VSS_86		
P35	VSS_87		
N35	VSS_88		
M35	VSS_89		
L35	VSS_90		
J35	VSS_91		
H35	VSS_92		
G35	VSS_93		
F35	VSS_94		
D35	VSS_95		
AN34	VSS_96		

VSS

U34J			
AT23	VSS_180	VSS_273	J11
AN23	VSS_181	VSS_274	D11
AM23	VSS_182	VSS_275	B11
AH23	VSS_183	VSS_276	AV10
AC23	VSS_184	VSS_277	AP10
W23	VSS_185	VSS_278	AL10
K23	VSS_186	VSS_279	AJ10
AV33	VSS_187	VSS_280	AG10
F23	VSS_188	VSS_281	AC10
C23	VSS_189	VSS_282	W10
AA22	VSS_190	VSS_283	L10
K22	VSS_191	VSS_284	BA9
G22	VSS_192	VSS_285	AW9
F22	VSS_193	VSS_286	AR9
E22	VSS_194	VSS_287	AH9
D22	VSS_195	VSS_288	AB9
A22	VSS_196	VSS_289	Y9
BA21	VSS_197	VSS_290	R9
AV21	VSS_198	VSS_291	G9
AR21	VSS_199	VSS_292	E9
AN21	VSS_200	VSS_293	A9
AL21	VSS_201	VSS_294	AG8
AB21	VSS_202	VSS_295	AD8
Y21	VSS_203	VSS_296	AA8
P21	VSS_204	VSS_297	U8
K21	VSS_205	VSS_298	K8
AB32	VSS_206	VSS_299	C8
H21	VSS_207	VSS_300	BA7
C21	VSS_208	VSS_301	AV7
AW20	VSS_209	VSS_302	AP7
AR20	VSS_210	VSS_303	AL7
AM20	VSS_211	VSS_304	AJ7
AA20	VSS_212	VSS_305	AH7
K20	VSS_213	VSS_306	AF7
B20	VSS_214	VSS_307	AC7
Y20	VSS_215	VSS_308	R7
AN19	VSS_216	VSS_309	G7
AC19	VSS_217	VSS_310	D7
W19	VSS_218	VSS_311	AG6
K19	VSS_219	VSS_312	AD6
G19	VSS_220	VSS_313	AB6
C19	VSS_221	VSS_314	Y6
AH18	VSS_222	VSS_315	U6
K18	VSS_223	VSS_316	N6
H18	VSS_224	VSS_317	K6
D18	VSS_225	VSS_318	H6
A18	VSS_226	VSS_319	B6
AY17	VSS_227	VSS_320	AV5
AR17	VSS_228	VSS_321	AF5
AP17	VSS_229	VSS_322	AD5
AM17	VSS_230	VSS_323	AY4
AK17	VSS_231	VSS_324	AR4
AV16	VSS_232	VSS_325	AP4
AN16	VSS_233	VSS_326	AL4
AL16	VSS_234	VSS_327	AJ4
J16	VSS_235	VSS_328	Y4
F16	VSS_236	VSS_329	U4
C16	VSS_237	VSS_330	R4
AN15	VSS_238	VSS_331	J4
AM15	VSS_239	VSS_332	F4
AK15	VSS_240	VSS_333	C4
N15	VSS_241	VSS_334	AY3
M15	VSS_242	VSS_335	AW3
L15	VSS_243	VSS_336	AV3
B15	VSS_244	VSS_337	AL3
A15	VSS_245	VSS_338	AH3
BA14	VSS_246	VSS_339	AG3
AT14	VSS_247	VSS_340	AF3
AK14	VSS_248	VSS_341	AD3
AD14	VSS_249	VSS_342	AC3
A414	VSS_250	VSS_343	AA3
U14	VSS_251	VSS_344	G3
K14	VSS_252	VSS_345	AT2
H14	VSS_253	VSS_346	AR2
E14	VSS_254	VSS_347	AP2
AV13	VSS_255	VSS_348	AK2
AR13	VSS_256	VSS_349	AJ2
D25	VSS_257	VSS_350	AD2
AM13	VSS_258	VSS_351	AB2
AL13	VSS_259	VSS_352	Y2
AG13	VSS_260	VSS_353	U2
P13	VSS_261	VSS_354	T2
F13	VSS_262	VSS_355	N2
D13	VSS_263	VSS_356	J2
B13	VSS_264	VSS_357	H2
AY12	VSS_265	VSS_358	F2
AC12	VSS_266	VSS_359	C2
K12	VSS_267	VSS_360	AL1
H12	VSS_268		
E12	VSS_269		
AD11	VSS_270		
AA11	VSS_271		
Y11	VSS_272		

VSS

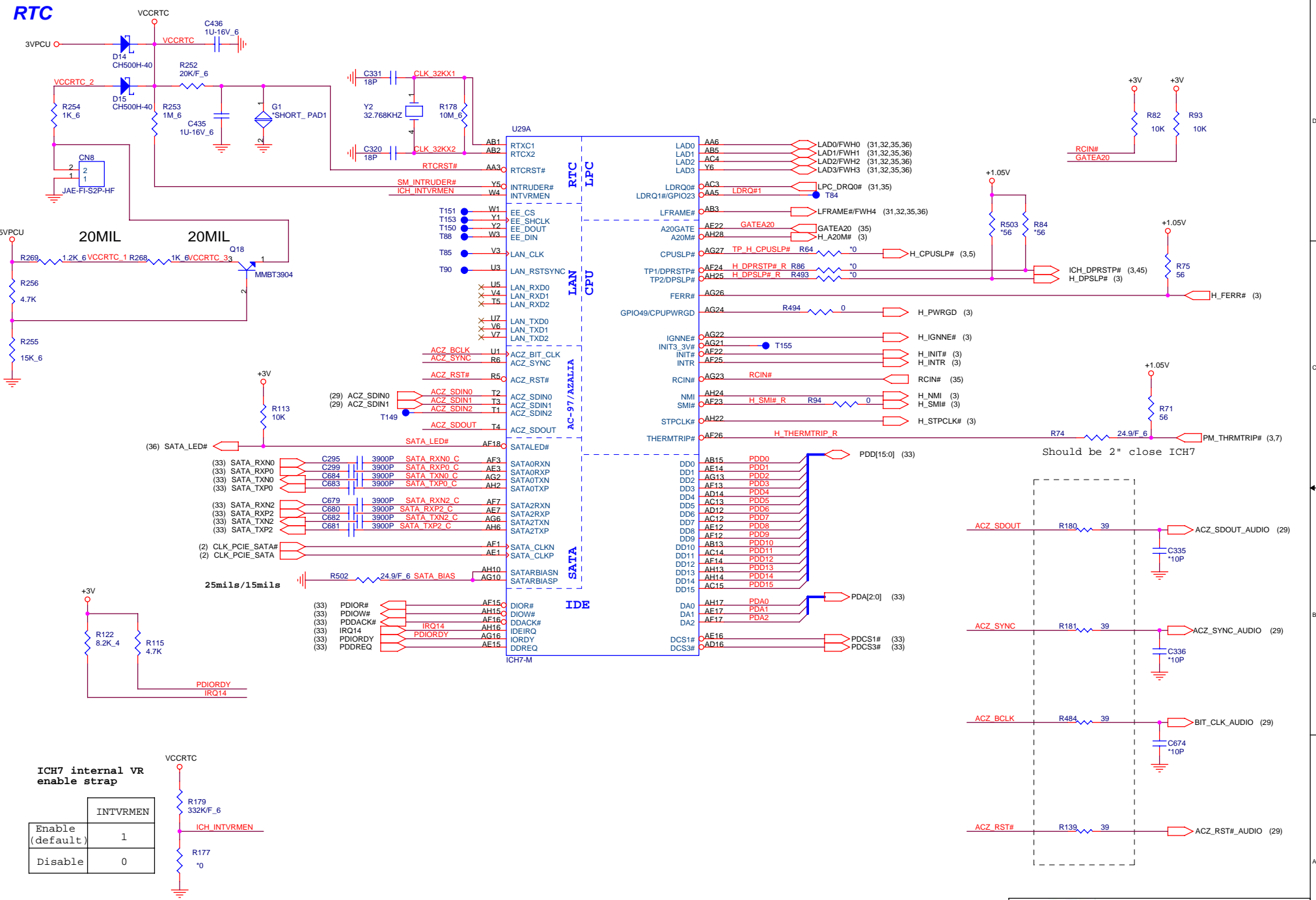
Calistoga



PROJECT : MA6
Quanta Computer Inc.

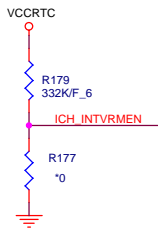
Size Custom	Document Number GMCH GND(6 OF 6)	Rev 1A
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RTC



ICH7 internal VR enable strap

	INTVRMEN
Enable (default)	1
Disable	0





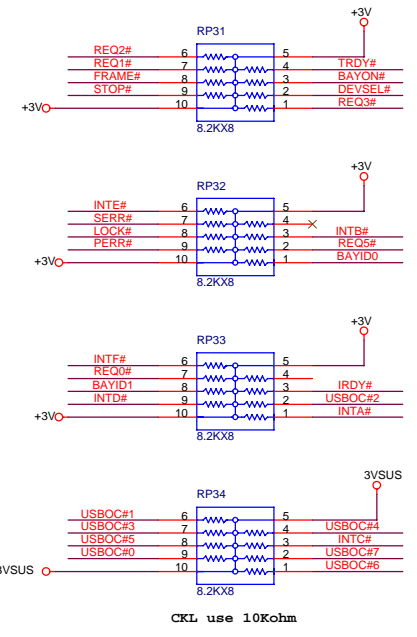
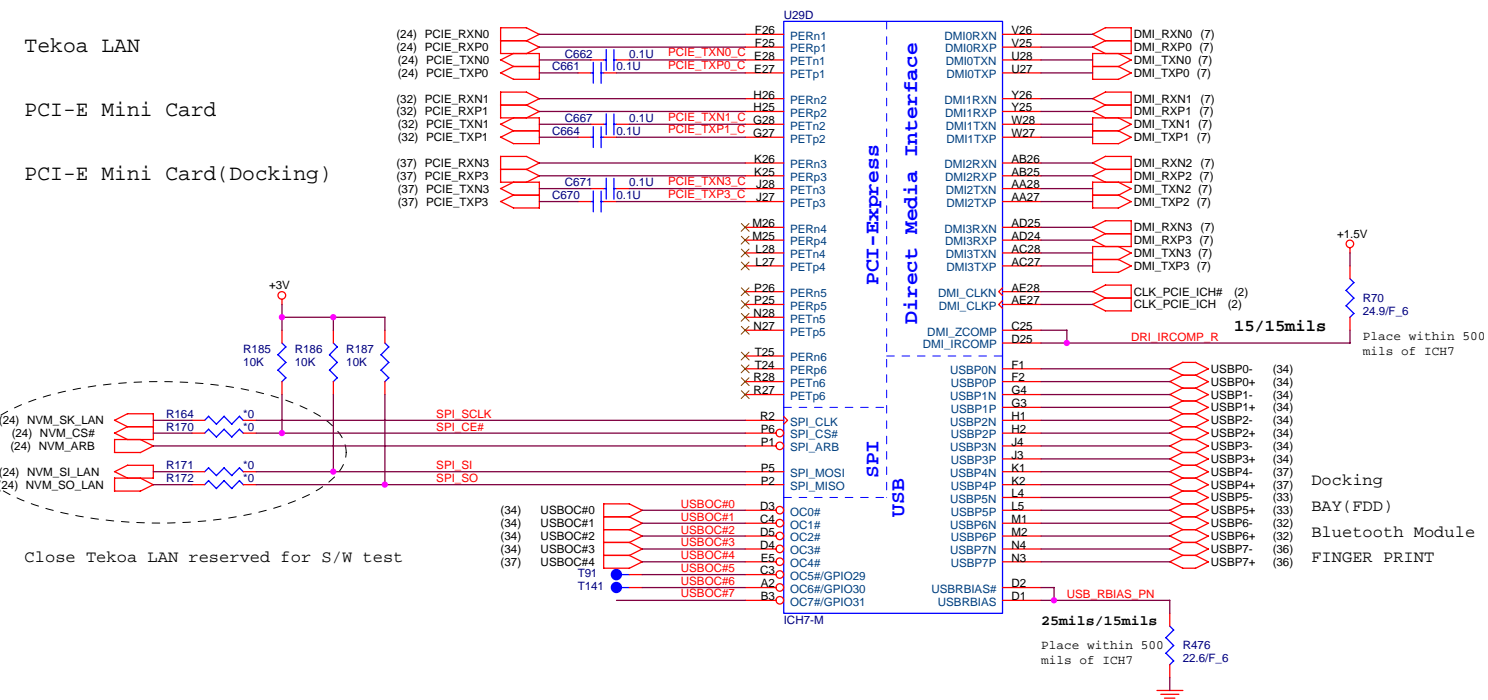
PROJECT : MA6
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Size	Document Number	Rev	1A
Custom	ICH7-M HOST (1 OF 4)		
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Tekoa LAN

PCI-E Mini Card

PCI-E Mini Card(Docking)

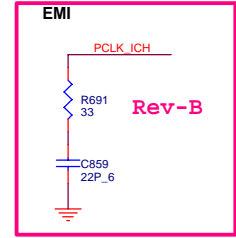
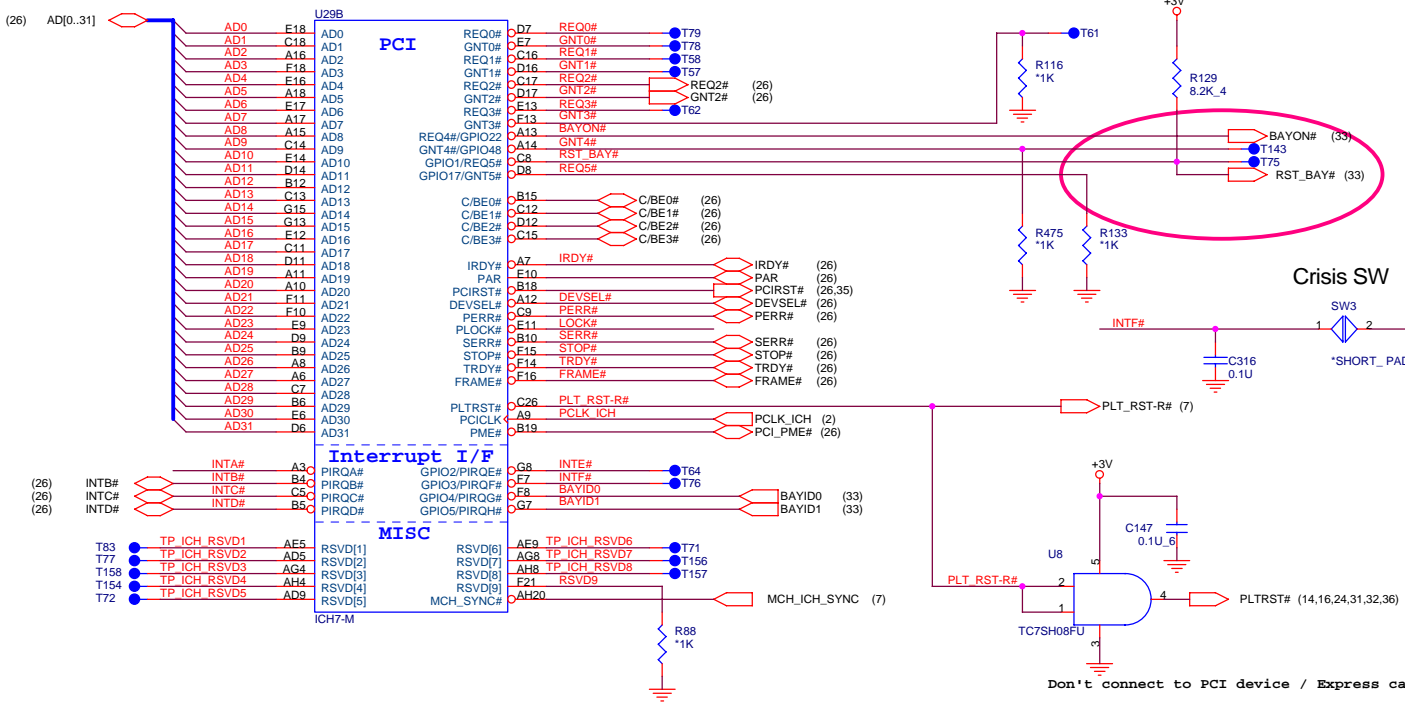


Close Tekoa LAN reserved for S/W test

Docking
BAY (FDD)
Bluetooth Module
FINGER PRINT

ICH7 Boot BIOS select

	STRAP	GNT5# R1	GNT4# R2
LPC (default)	11	UNSTUFF	UNSTUFF
PCI	10	UNSTUFF	STUFF
SPI	01	STUFF	UNSTUFF



PCI DEVICE	IDSEL#	REQ# / GNT#	Interrupts
PCI7412	AD25	REQ2# / GNT2#	INT B/C/D#

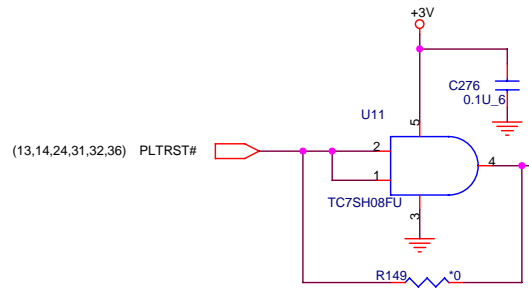
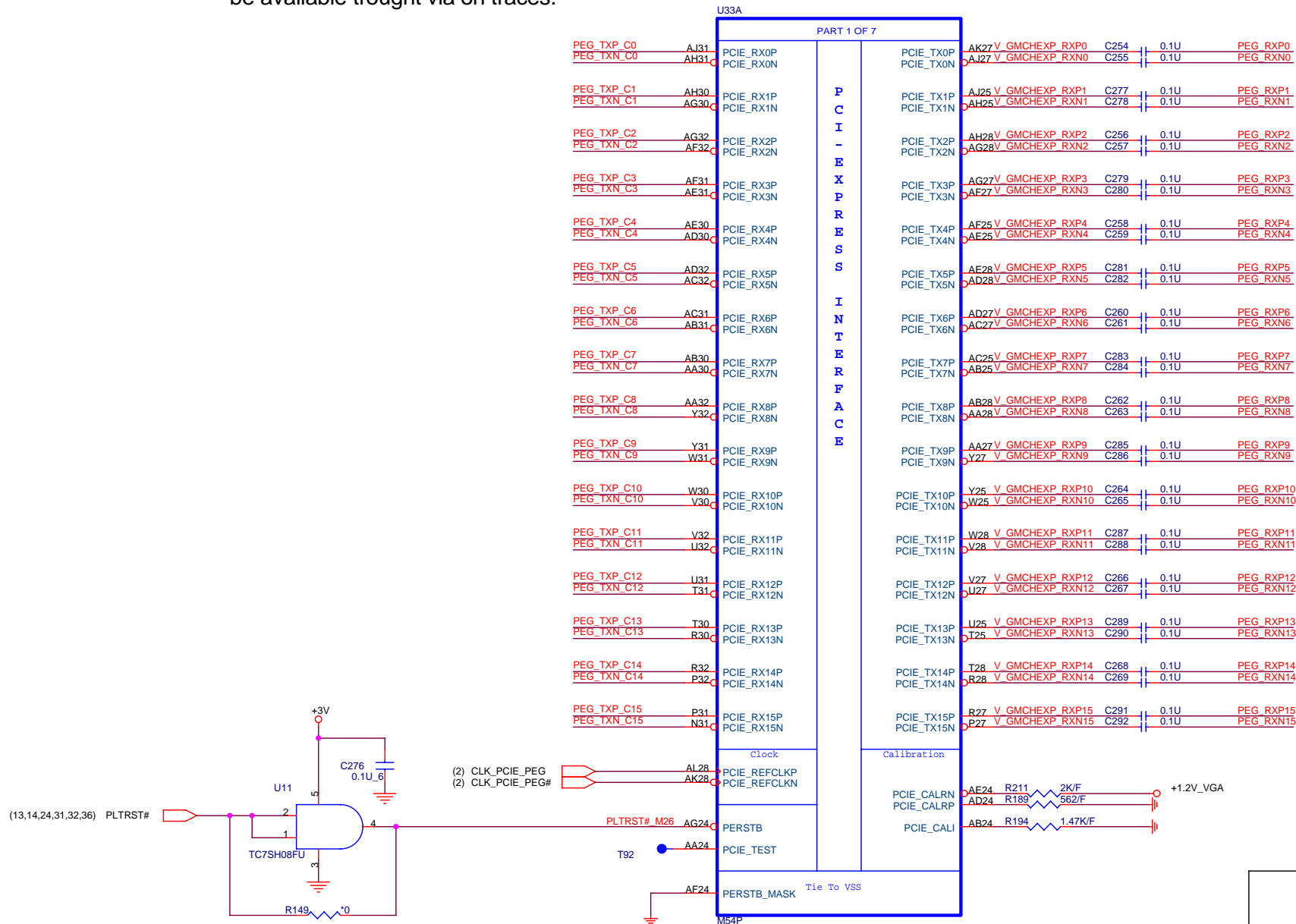
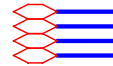
PROJECT : MA6
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Size Custom Document Number **ICH7-M PCI E (2 OF 4)** Rev 2A

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NOTE: some of the PCIE testpoints will be available through via on traces.

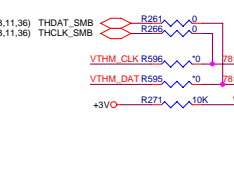
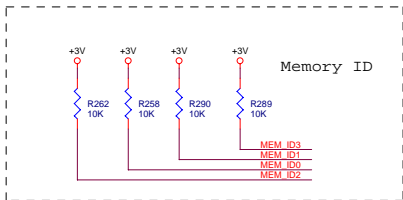
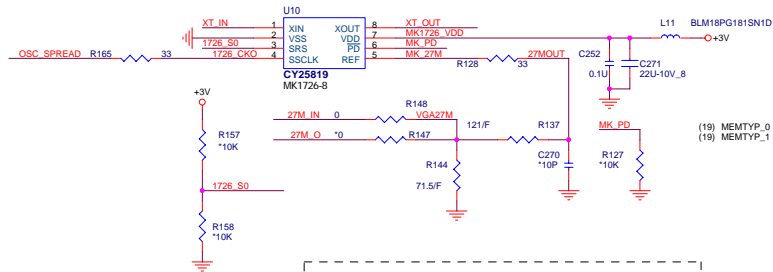
(7) PEG_RXP[15:0]
 (7) PEG_RXN[15:0]
 (7) PEG_TXP_C[0..15]
 (7) PEG_TXN_C[0..15]



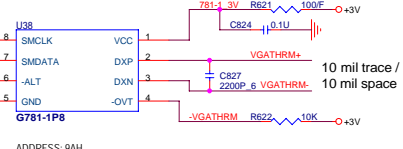
PROJECT : MA6
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Size B	Document Number M54P 1 OF 7	Rev 1A
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MEMORY CLOCK SPREAD SPECTRUM



Thermal Sensor



U33B PART 2 OF 7

Pin	Signal	Function
T107	AG8	GPIO_34
T110	AG7	GPIO_33
T105	AG9	GPIO_32
T109	AG8	GPIO_31
T108	AG10	GPIO_30
T104	AG11	GPIO_29
T102	AG10	GPIO_28
T101	AG9	GPIO_27
T100	AE7	GPIO_26
T112	AE8	GPIO_25
T08	AE9	GPIO_24
T108	AE10	GPIO_22
T08	AE7	GPIO_23
T97	AE8	GPIO_21
T08	AE9	GPIO_20
T94	AE13	GPIO_19
T93	AE14	GPIO_18
AK4	NC_DV0VOMODE_0	NC_DV0VOMODE_0
AL4	NC_DV0VOMODE_1	NC_DV0VOMODE_1
AE2	DVPCNTL_0	DVPCNTL_0
AE1	DVPCNTL_1	DVPCNTL_1
AE2	DVPCNTL_2	DVPCNTL_2
AG1	DVPCCLK	DVPCCLK
AG3	DVDPDATA_0	DVDPDATA_0
AG2	DVDPDATA_1	DVDPDATA_1
AH2	DVDPDATA_2	DVDPDATA_2
AJ2	DVDPDATA_3	DVDPDATA_3
AK2	DVDPDATA_4	DVDPDATA_4
AK1	DVDPDATA_5	DVDPDATA_5
AK3	DVDPDATA_6	DVDPDATA_6
AK2	DVDPDATA_7	DVDPDATA_7
AL2	DVDPDATA_8	DVDPDATA_8
AL3	DVDPDATA_9	DVDPDATA_9
AM3	DVDPDATA_10	DVDPDATA_10
AM2	DVDPDATA_11	DVDPDATA_11
AE4	DVDPDATA_12	DVDPDATA_12
AE4	DVDPDATA_13	DVDPDATA_13
AG4	DVDPDATA_14	DVDPDATA_14
AJ4	DVDPDATA_15	DVDPDATA_15
AK4	DVDPDATA_16	DVDPDATA_16
AL4	DVDPDATA_17	DVDPDATA_17
AM4	DVDPDATA_18	DVDPDATA_18
AM5	DVDPDATA_19	DVDPDATA_19
AE8	DVDPDATA_20	DVDPDATA_20
AE7	DVDPDATA_21	DVDPDATA_21
AG8	DVDPDATA_22	DVDPDATA_22
AG8	DVDPDATA_23	DVDPDATA_23
AD1	GPIO_0	General Purpose I/O
AD2	GPIO_1	General Purpose I/O
AD1	GPIO_2	General Purpose I/O
AD3	GPIO_3	General Purpose I/O
AC1	GPIO_4	General Purpose I/O
AC2	GPIO_5	General Purpose I/O
AC3	GPIO_6	General Purpose I/O
AC4	GPIO_7	BLON
AC5	GPIO_8	General Purpose I/O
AC6	GPIO_9	General Purpose I/O
AC7	GPIO_10	General Purpose I/O
AC8	GPIO_11	General Purpose I/O
AC9	GPIO_12	General Purpose I/O
AC8	GPIO_13	General Purpose I/O
AB8	GPIO_14	General Purpose I/O
AB9	GPIO_15	General Purpose I/O
AB8	GPIO_16	General Purpose I/O
AB7	GPIO_17	General Purpose I/O
AC8	NC_A8B	NC_A8B
AG12	DPLUS	Thermal Diode
AH12	DMINUS	Thermal Diode
AH14	AVDD	PLL & XTAL
AH14	PVSS	PLL & XTAL
AS	MPVDD	PLL & XTAL
AL28	XTALIN	XTAL
AM28	XTALOUT	XTAL
AG14	PLLTTEST	Test
AG22	TESTEN	Test
AS7	ROMCSb	ROM
AE23	GENERIC0	GENERIC (19)
AE18	LVSS2	LVDS PLL and I/O GND
AE22	LVSSR_10	LVDS PLL and I/O GND
AE17	LVSSR_8	LVDS PLL and I/O GND
AE21	LVSSR_6	LVDS PLL and I/O GND

VIDEO & MULTIMEDIA

VP Host/External

TMDS

General Purpose I/O

Thermal Diode

PLL & XTAL

XTAL

Test

ROM

GENERIC

LVDS PLL and I/O GND

LVDS PLL and I/O GND

LVDS PLL and I/O GND

LVDS PLL and I/O GND

LVDS PLL and I/O GND

Integrated TMDS

TX0M TXCP

TX0M TXOP

TX1M TX1P

TX2M TX2P

TX3M TX3P

TX4M TX4P

TX5M TX5P

TPVDD

TXVDDR_1

TXVDDR_2

TXVDDR_3

TXVDDR_4

TXVSSR_1

TXVSSR_2

TXVSSR_3

TXVSSR_4

TXVSSR_5

TXVSSR_6

AL9

AK10

AL11

AK9

AK7

AK7

AK7

AK21

AK24

AK23

AK22

AK23

AK23

AK15

AK15

AK14

AK16

AK17

AK17

AL12

AK9

AK9

AK7

AK7

AK7

AK21

AK24

AK23

AK22

AK23

AK23

AK15

AK15

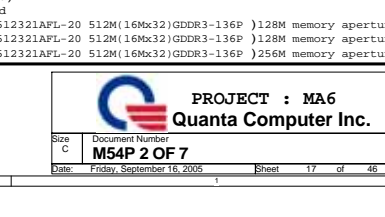
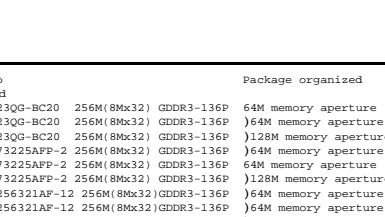
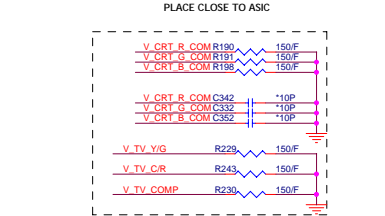
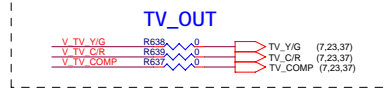
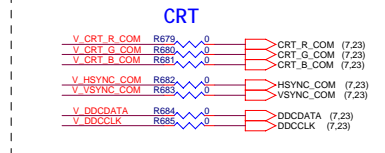
AK14

AK16

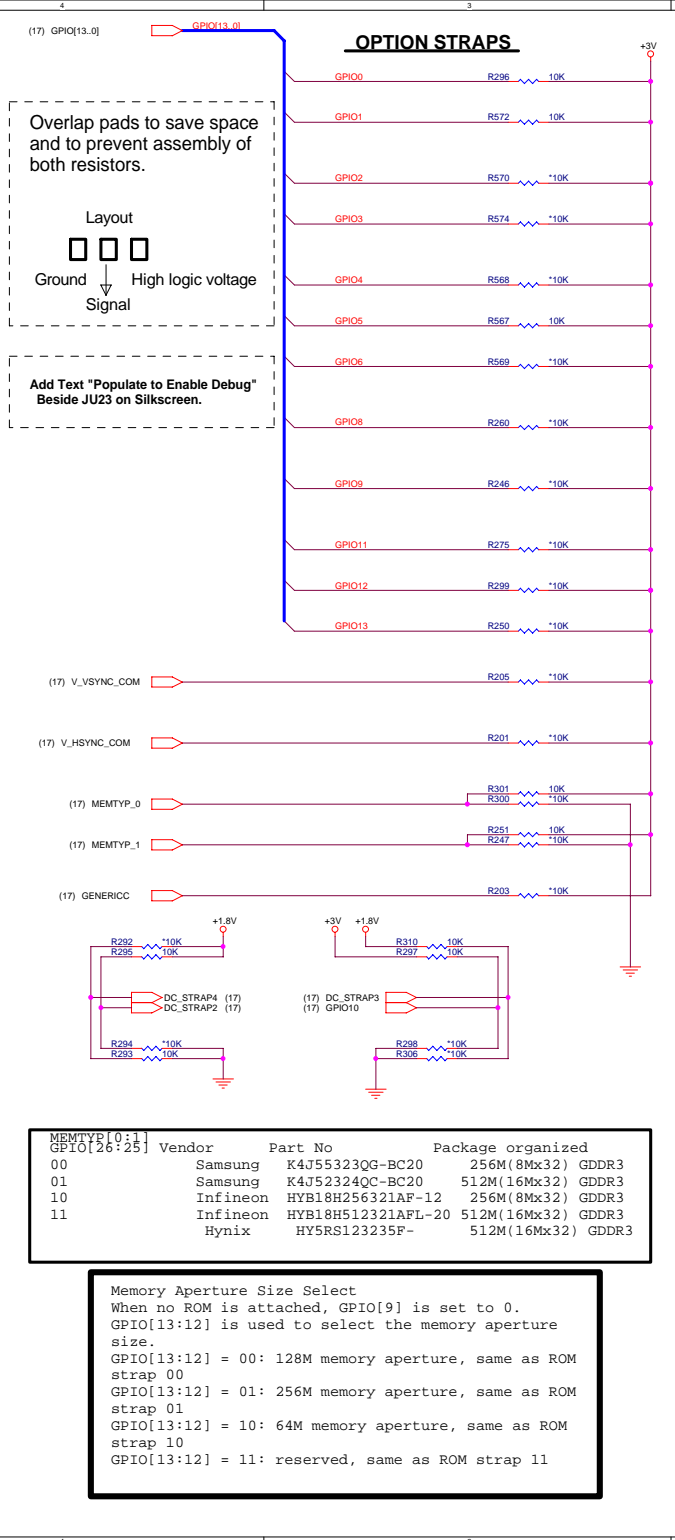
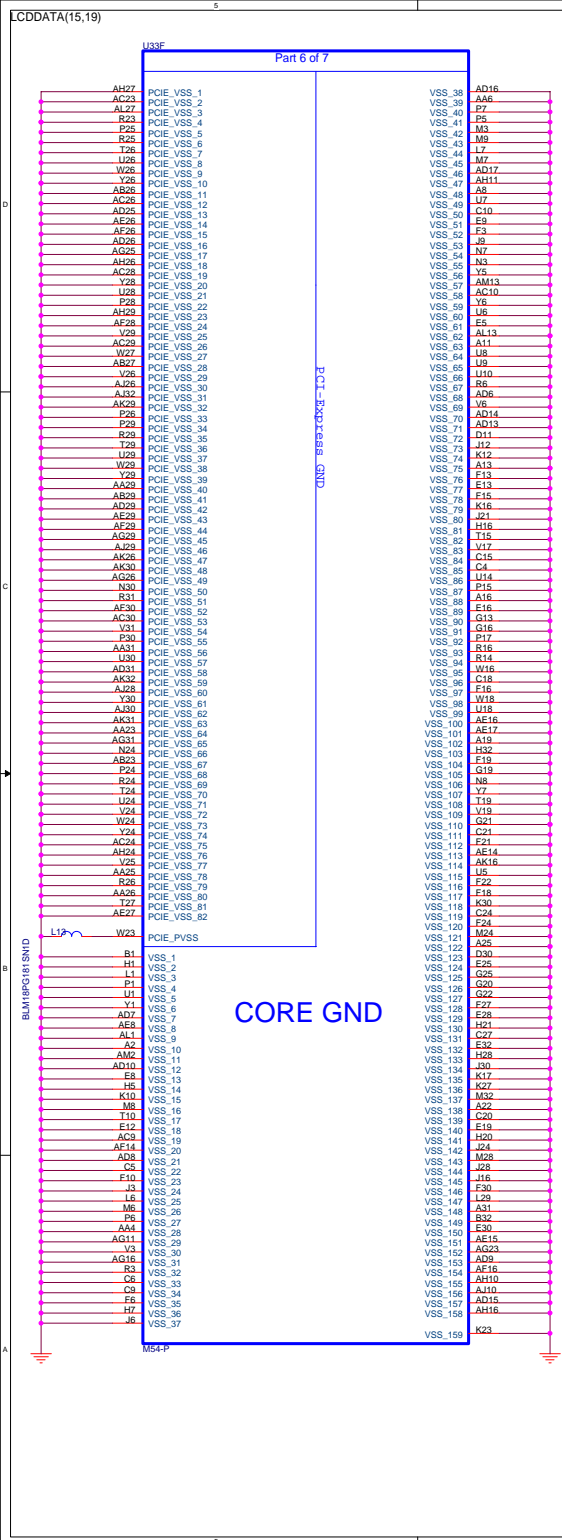
AK17

AK17

AK17



DVDPDATA_ [23:20]	Memory Channel	Vendor	Part No	Package organized
0000	Reserved			
0001	A	Samsung	K4J553230Q-BC20	256M(8Mx32) GDDR3-136P 64M memory aperture
0010	B	Samsung	K4J553230Q-BC20	256M(8Mx32) GDDR3-136P 64M memory aperture
0011	A & B	Samsung	K4J553230Q-BC20	256M(8Mx32) GDDR3-136P 128M memory aperture
0100	A	Hynix	HY5RS573225AEP-2	256M(8Mx32) GDDR3-136P 64M memory aperture
0101	B	Hynix	HY5RS573225AEP-2	256M(8Mx32) GDDR3-136P 64M memory aperture
0110	A & B	Hynix	HY5RS573225AEP-2	256M(8Mx32) GDDR3-136P 128M memory aperture
0111	A	Infineon	HYB18H256321AF-12	256M(8Mx32) GDDR3-136P 64M memory aperture
1000	B	Infineon	HYB18H256321AF-12	256M(8Mx32) GDDR3-136P 64M memory aperture
1001	A & B	Infineon	HYB18H256321AF-12	256M(8Mx32) GDDR3-136P 128M memory aperture
1010	Reserved			
1011	Reserved			
1100	Reserved			
1101	A	Infineon	HYB18H512321AF-20	512M(16Mx32)GDDR3-136P 128M memory aperture
1110	B	Infineon	HYB18H512321AF-20	512M(16Mx32)GDDR3-136P 128M memory aperture
1111	A & B	Infineon	HYB18H512321AF-20	512M(16Mx32)GDDR3-136P 256M memory aperture



STRAPS	PIN	DESCRIPTION	ASIC DEFAULT
TX_PWRS_ENB	GPIO0	Transmitter Power Saving Enable 0: 50% Tx output swing 1: full Tx output swing	
TX_DEEMPH_EN	GPIO1	Transmitter De-emphasis Enable 0: Tx de-emphasis disabled 1: Tx de-emphasis enabled	
	GPIO(3:2)	RSVD	
DEBUG_ACCESS	GPIO4	Strap to set the debug muxes to bring out DEBUG signals even if registers are inaccessible	0
	GPIO5	RSVD	
	GPIO6	RSVD	
Force_Compliance	GPIO8	Force chip to get to compliance state quickly for Tester purposes	0
ROMIDCFG(3:0)	GPIO(9,13:11)	If no ROM attached, controls chip IDIs. If rom attached identifies ROM type 000x - No ROM, MEM_AP_SIZE=00 010x - No Rom, MEM_AP_SIZE=01 011x - No ROM, MEM_AP_SIZE=11 1000 - Parallel ROM, chip IDIs from ROM 1001 - Serial AT25F1024 ROM (Atmel), chip IDIs from ROM 1010 - Serial AT45DB011 ROM (Atmel), chip IDIs from ROM 1011 - Serial M25P10 ROM (ST), chip IDIs from ROM 1100 - Serial M25P65 ROM (ST), chip IDIs from ROM 1101 - Serial NX25F018 ROM (ISSI), chip IDIs from ROM	
VIP_DEVICE	VSYNC	Indicates if any slave VIP host devices drove this pin low during reset. 0 - Slave VIP host port devediced present. 1 - No slave VIP port devices reporting presence during reset	No default
	H2SYNC, V225SYNC, GENERICC	RSVD	
	VSYNC	RSVD	
	HSYNC	RSVD	
	PCIE_TEST	RSVD	

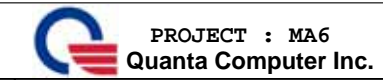
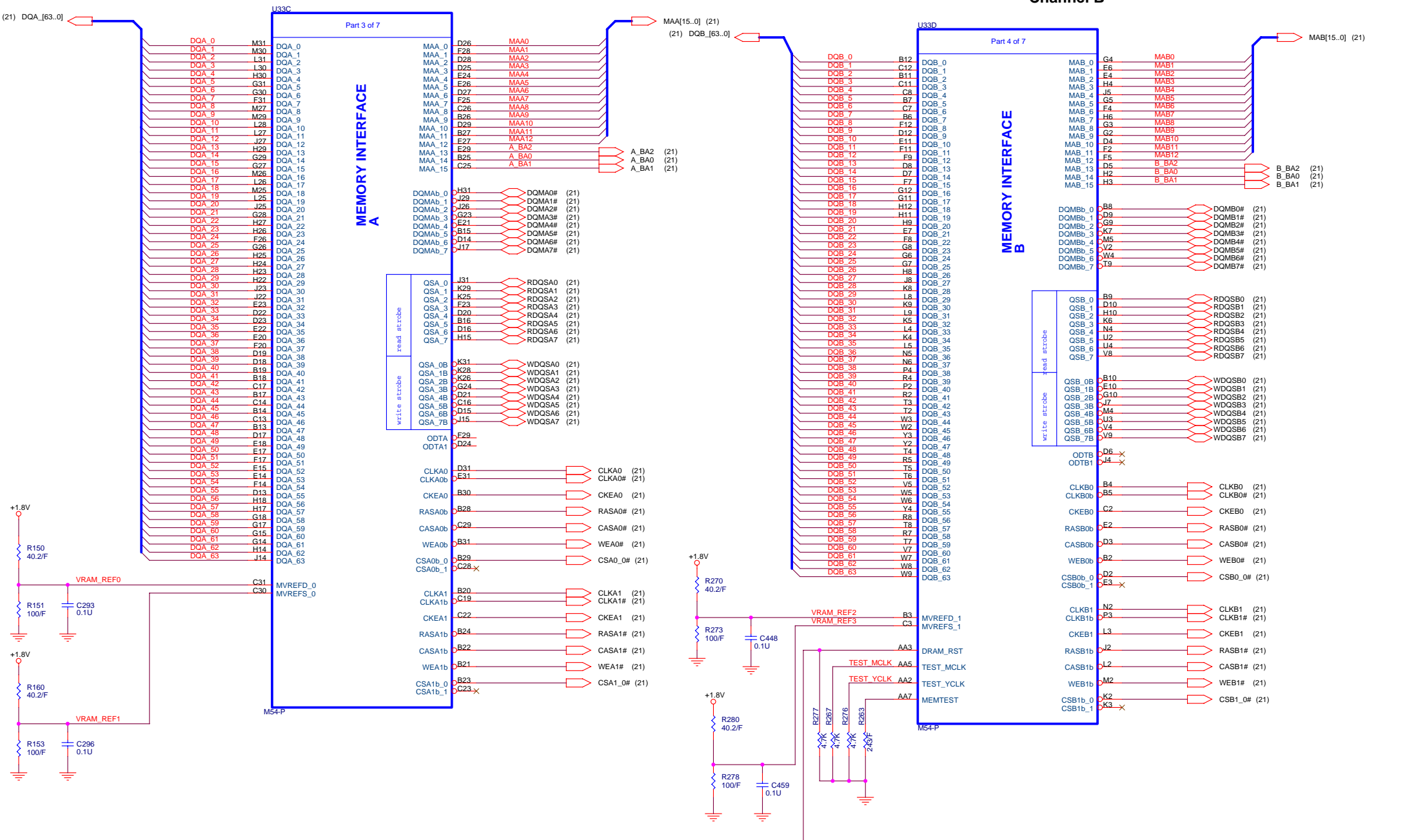
STRAPS	PIN	DESCRIPTION	VALUE
MEMTYP(1:0)	DVALID, PSYNC.	Memory connected to R420 identification for BIOS 00 - Samsung GDDR 3 memory 144 Ball BGA package 01 - TBD 10 - TBD 11 - TBD	000
DC_Strap1	GPIO(10)	Internal TMD5 Enabled 0 - Disabled 1 - Enabled	1
DC_Strap2	LCDDATA(13)	Video Capture Enabled 0 - Disabled 1 - Not detected	0
DC_Strap3	LCDDATA(14)	HDTV out detect 0 - Detected 1 - Enabled	1
DC_Strap4, DEMUX_SEL	LCDDATA(15,19)	Video capture enable 00 - DAC2 Off 01 - DAC2 On as CRT 10 - DAC2 On as TVOUT 11 - DAC2 On as TVOUT and CRT	01
PAL/NTSC	LCDDATA(18)	TV0 Standard Default (Resistor pull-up and switch short to GND) 0 - PAL (on board resistor pull-down and switch closed) 1 - NTSC (on board resistor pull-up)	1

MEMTYP[0:1]	Vendor	Part No	Package organized
00	Samsung	K4J55323QG-BC20	256M(8Mx32) GDDR3
01	Samsung	K4J52324QC-BC20	512M(16Mx32) GDDR3
10	Infineon	HYB18H256321AF-12	256M(8Mx32) GDDR3
11	Infineon	HYB18H512321AFL-20	512M(16Mx32) GDDR3
	Hynix	HY5RS123235F-	512M(16Mx32) GDDR3

Memory Aperture Size Select
When no ROM is attached, GPIO[9] is set to 0.
GPIO[13:12] is used to select the memory aperture size.
GPIO[13:12] = 00: 128M memory aperture, same as ROM strap 00
GPIO[13:12] = 01: 256M memory aperture, same as ROM strap 01
GPIO[13:12] = 10: 64M memory aperture, same as ROM strap 10
GPIO[13:12] = 11: reserved, same as ROM strap 11

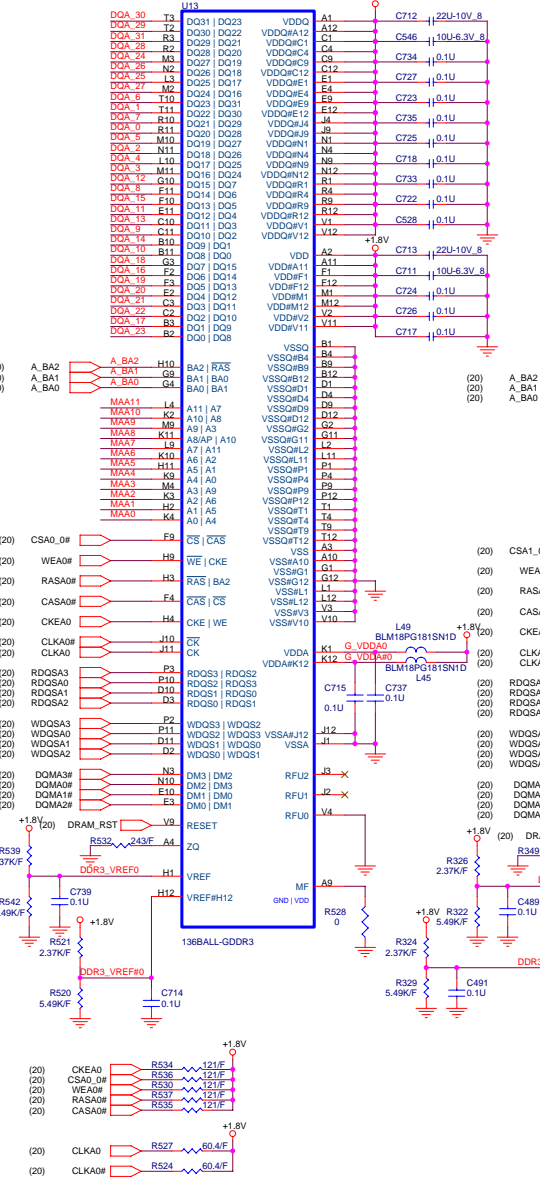
Channel A RV410 MEMORY CHANNELS A and B

Channel B



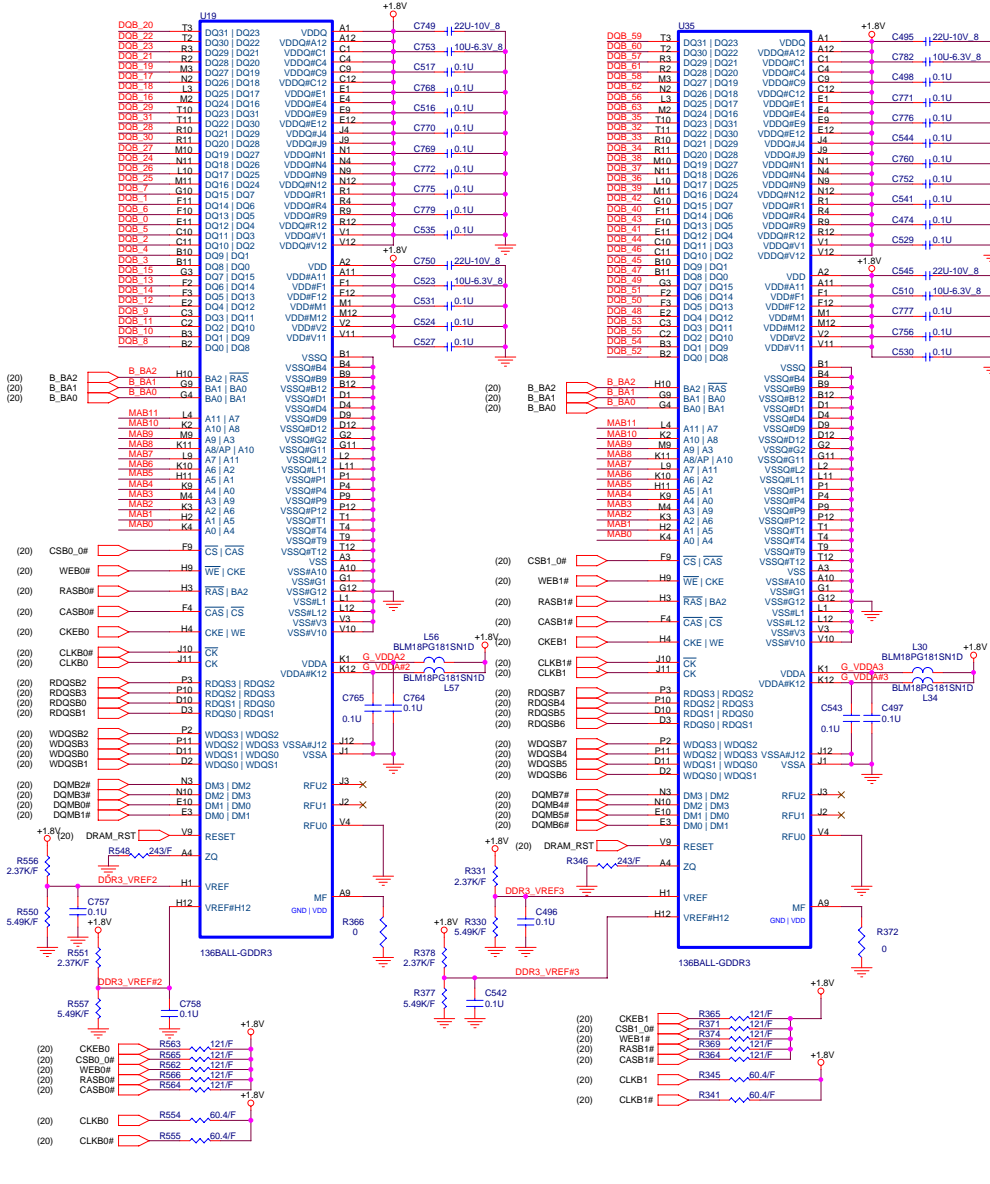
(20) MAA[15..0] MAA[15..0]
(20) DOA_[63..0] DOA_[63..0]

Channel A

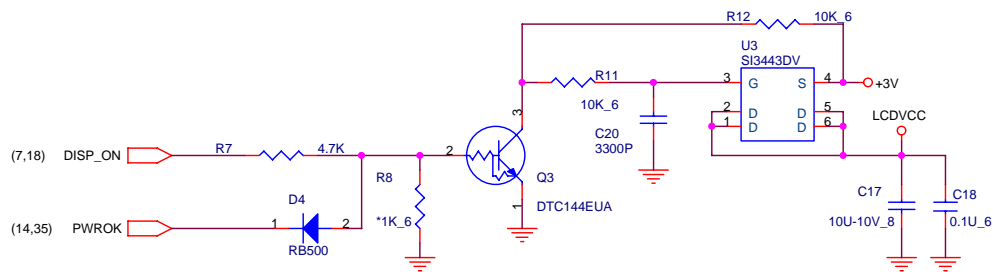


(20) MAB[15..0] MAB[15..0]
(20) DOB_[63..0] DOB_[63..0]

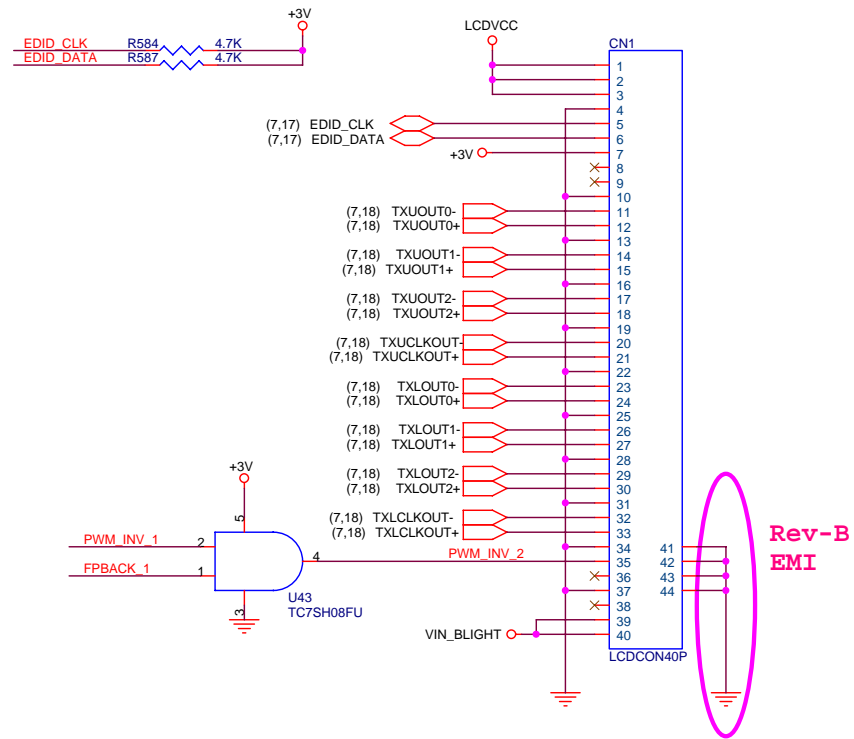
Channel B



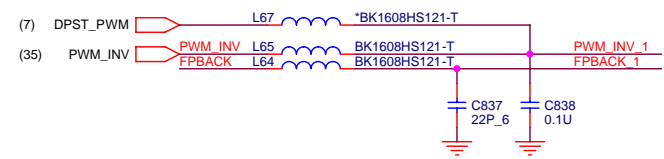
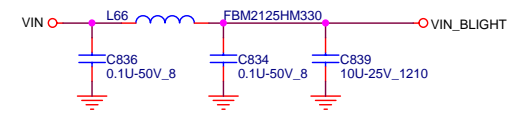
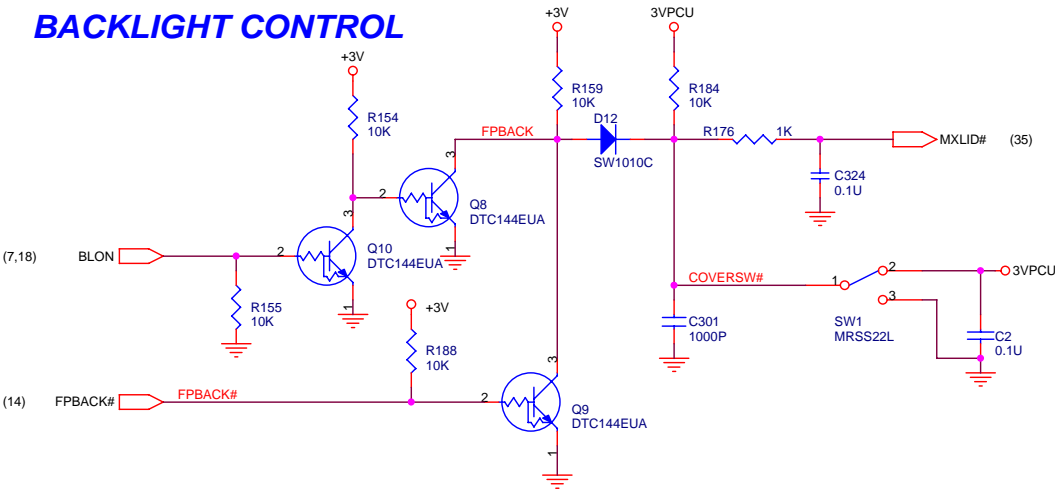
PANEL VCC CONTROL




LCD CONNECTOR



BACKLIGHT CONTROL

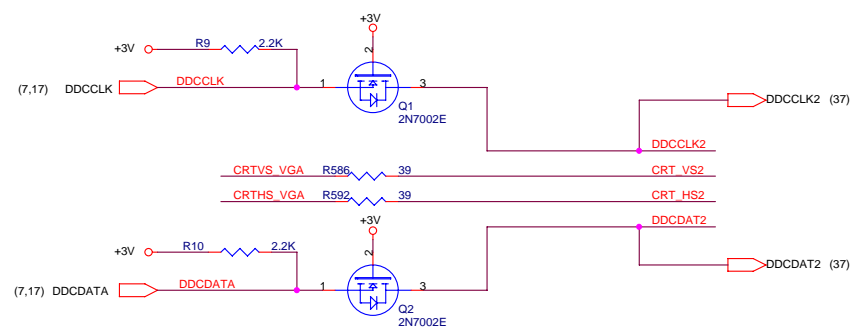
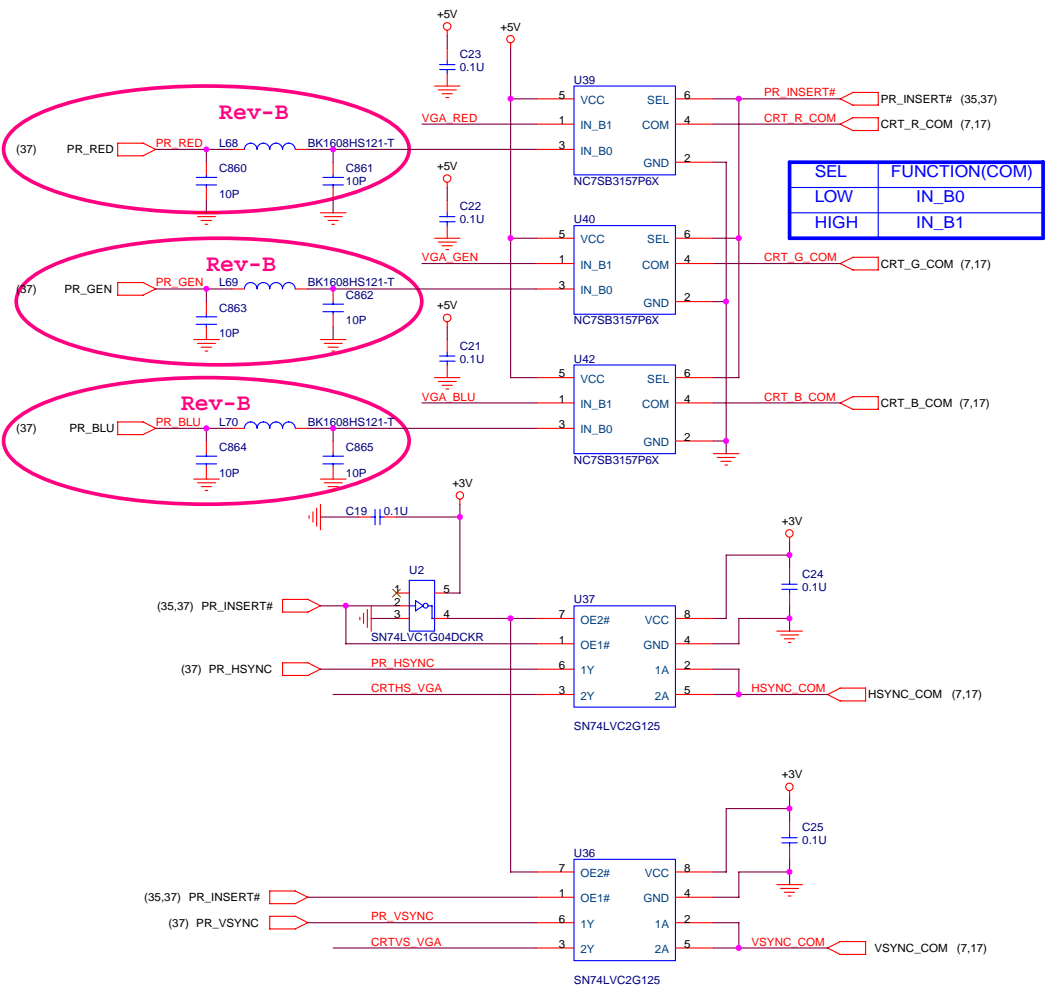




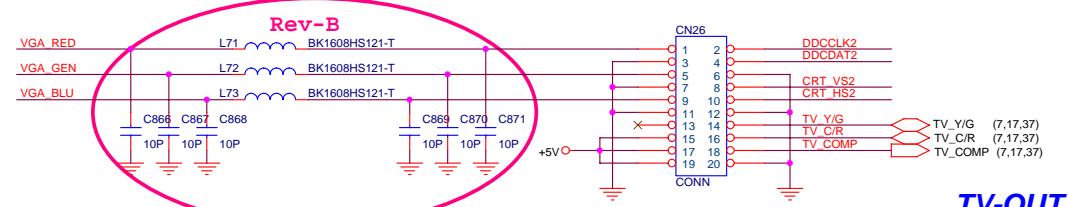
PROJECT : MA6
Quanta Computer Inc.

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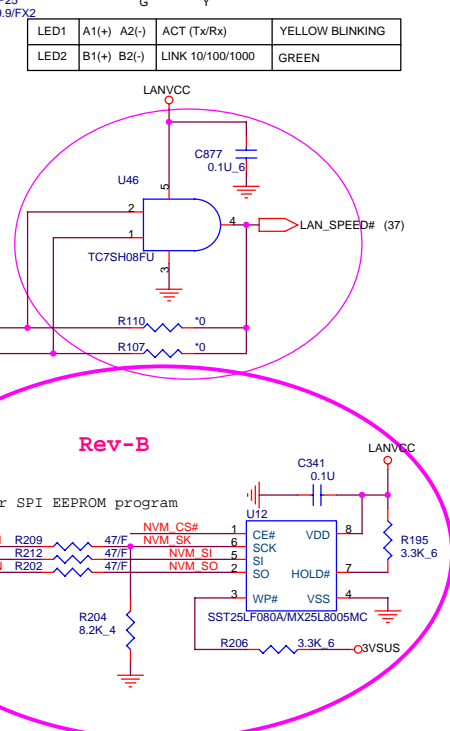
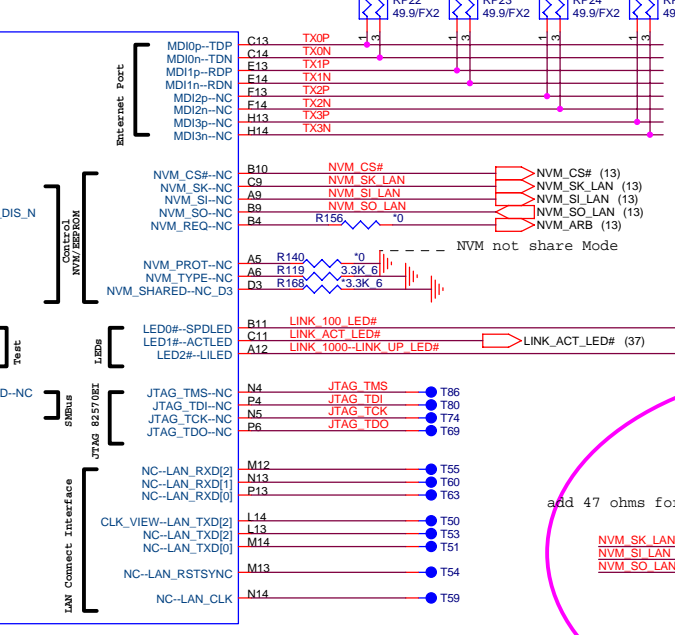
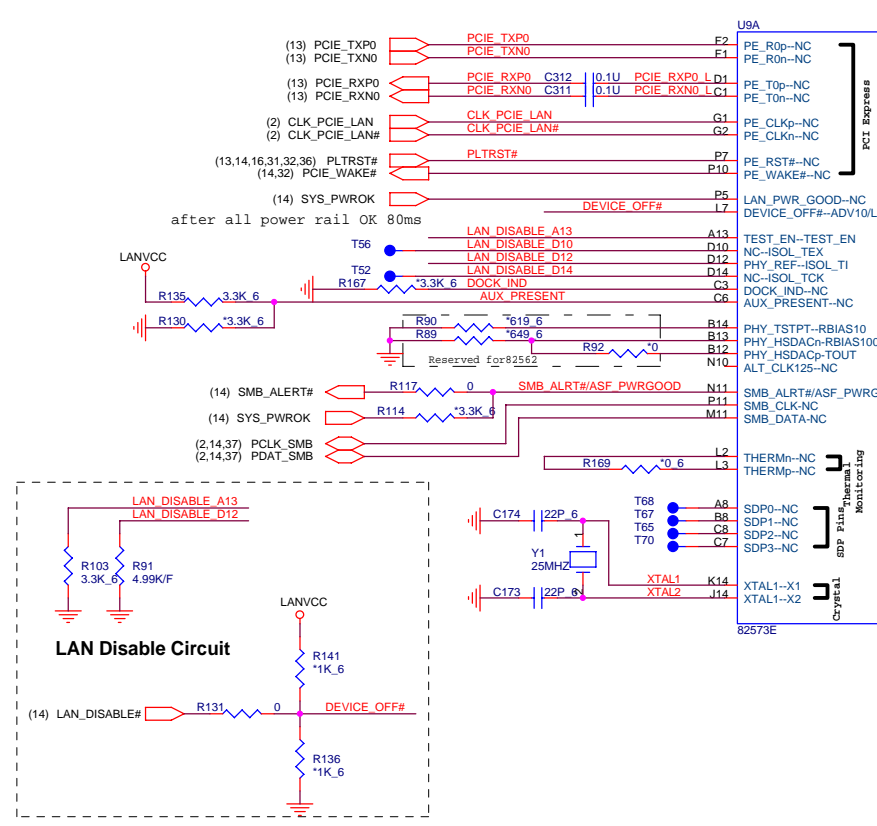
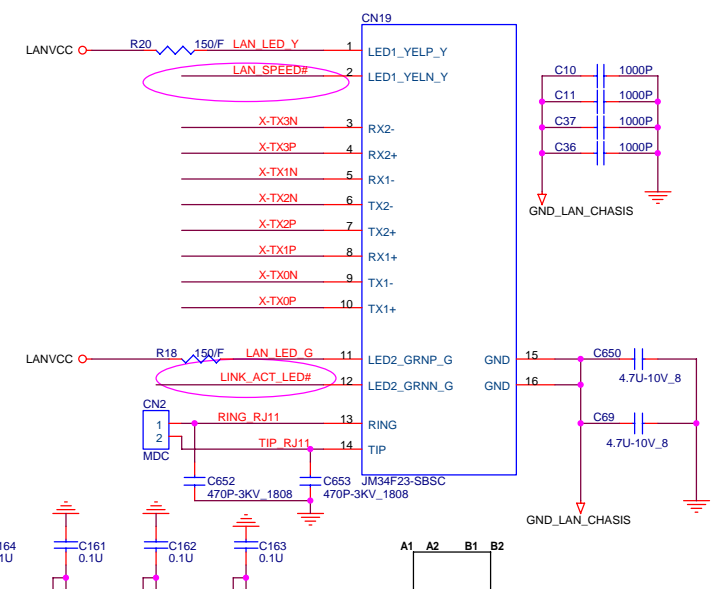
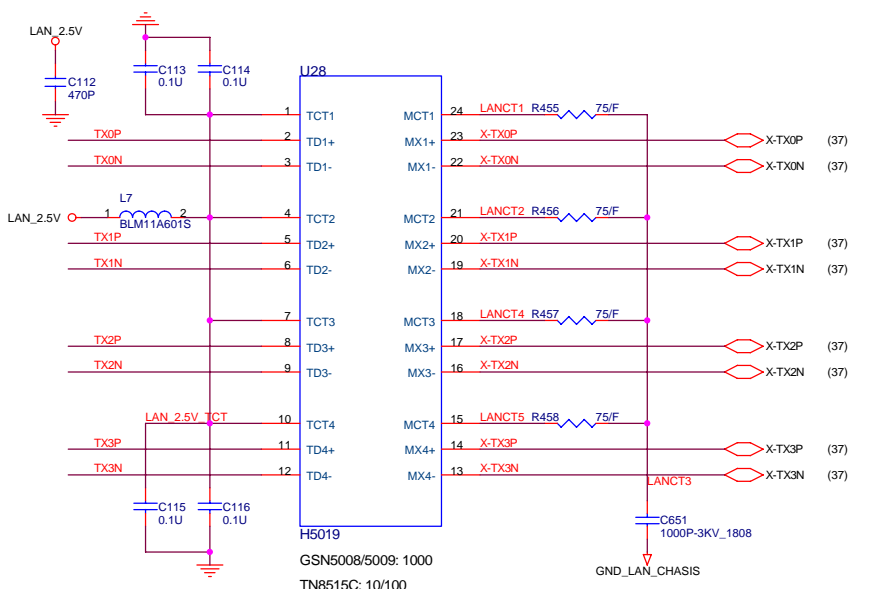
CRT SWITCH

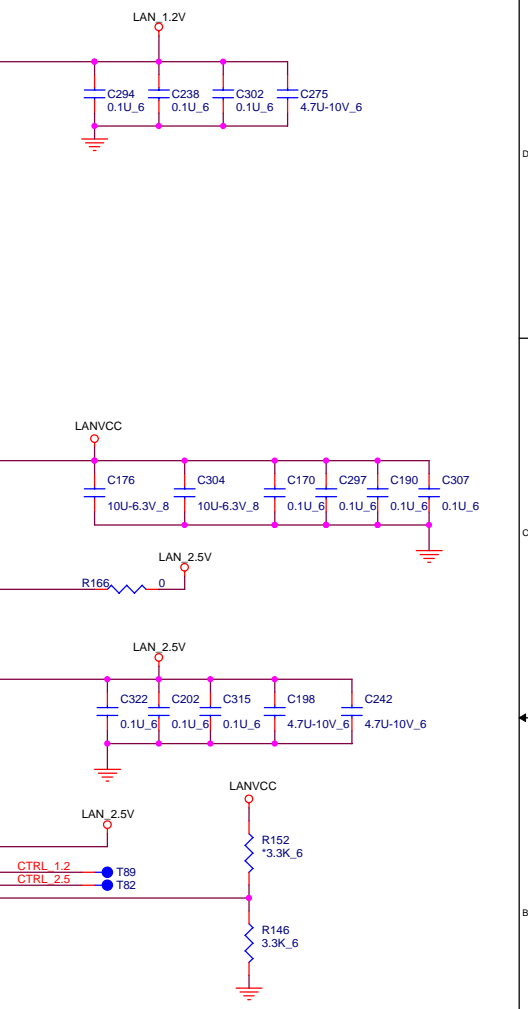
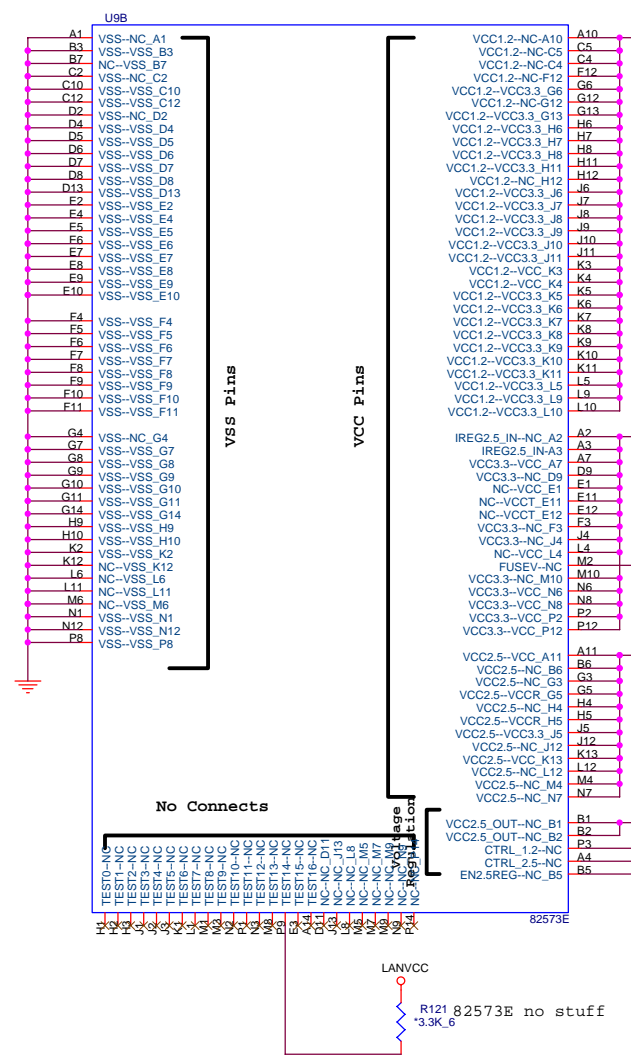
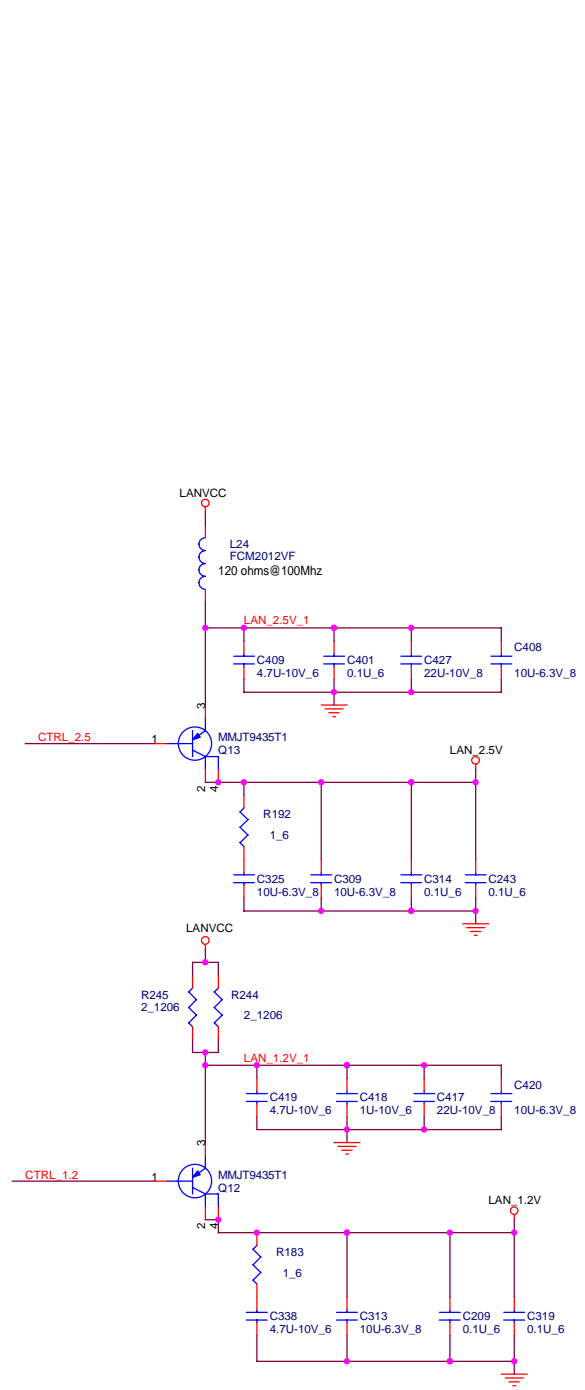


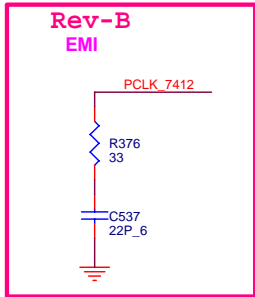
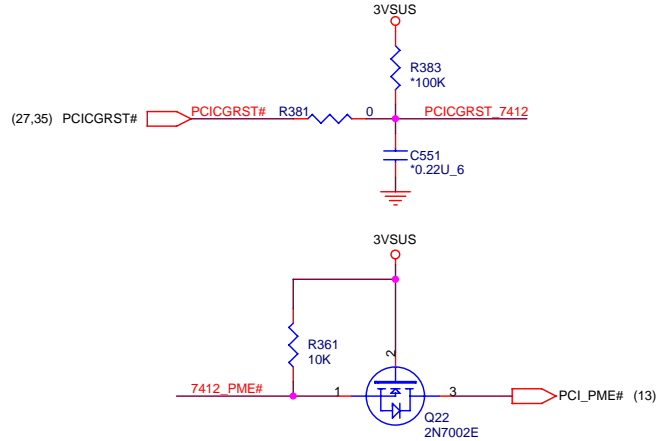
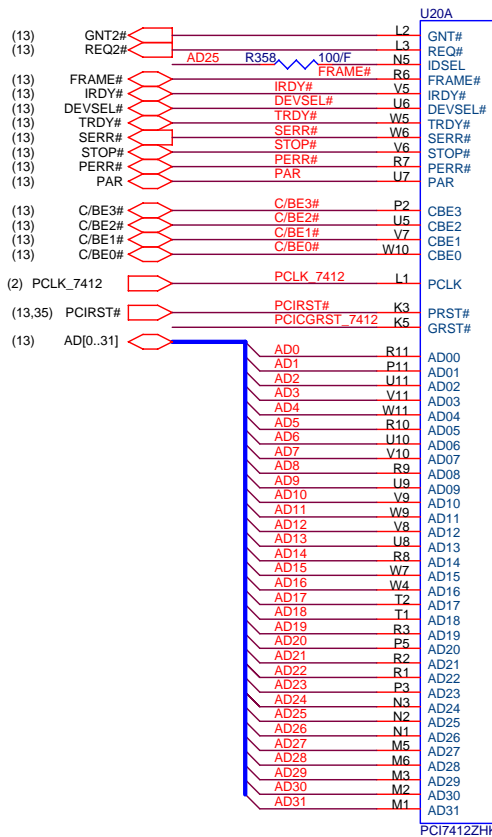
CRT PORT



TV-OUT

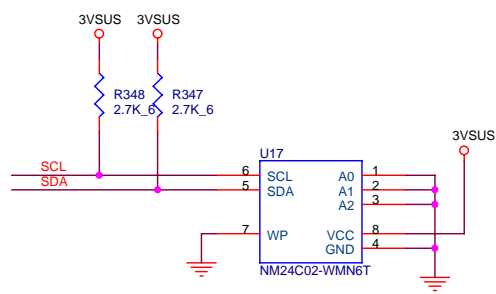
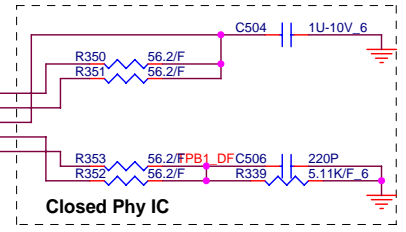
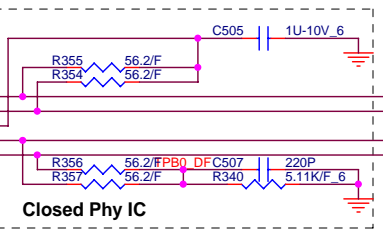
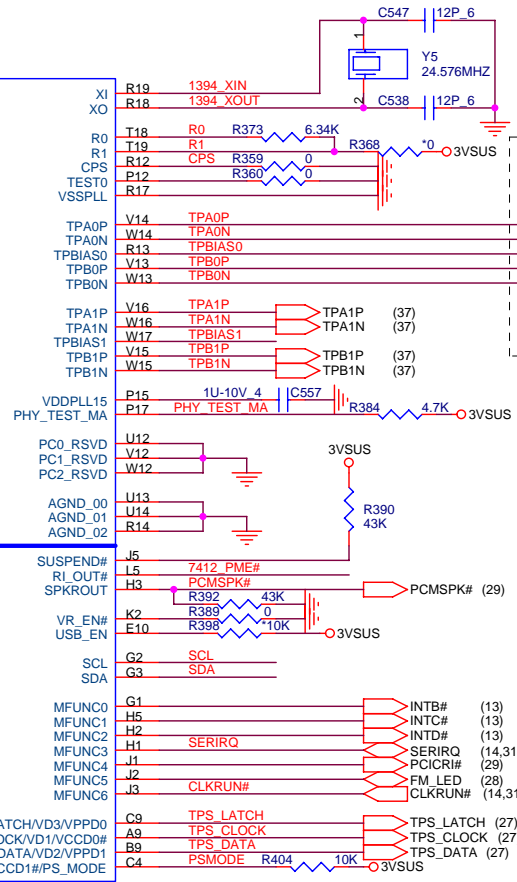






1394 Interface

Miscellaneous

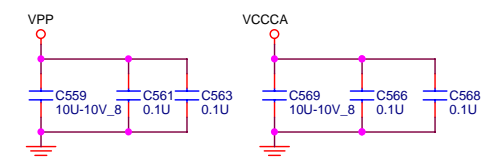
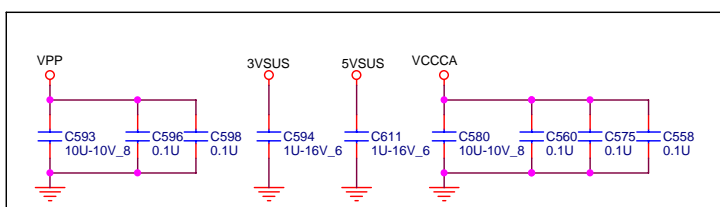
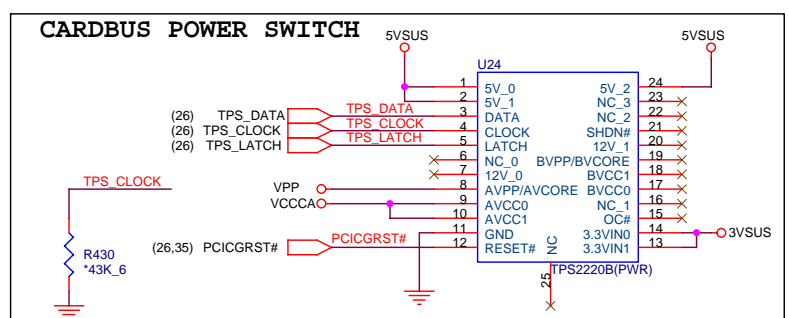
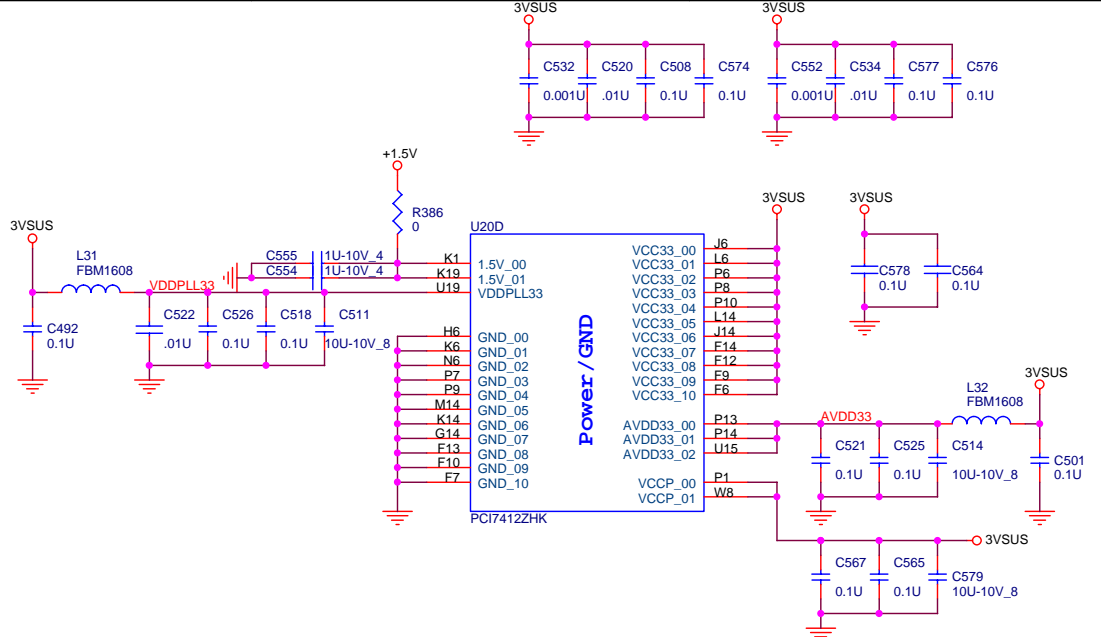
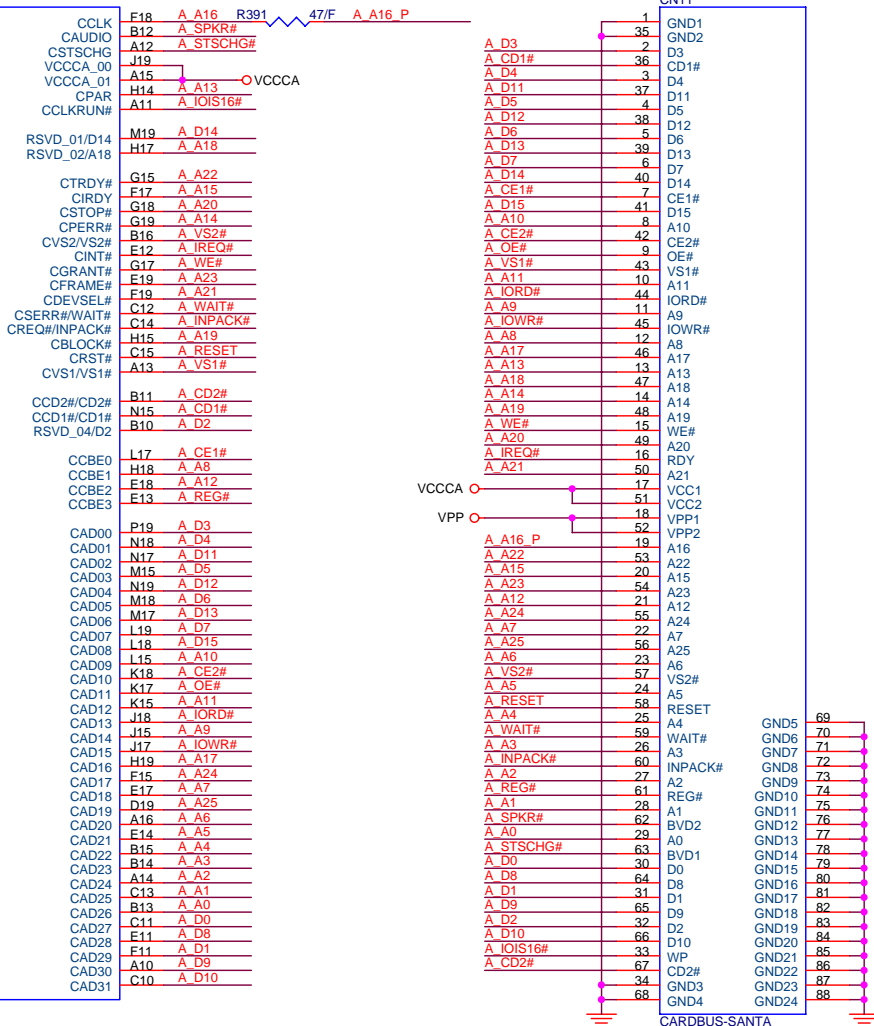


PROJECT : MA6
Quanta Computer Inc.

Size B Document Number
PCI7412 CARBUS Rev 1A

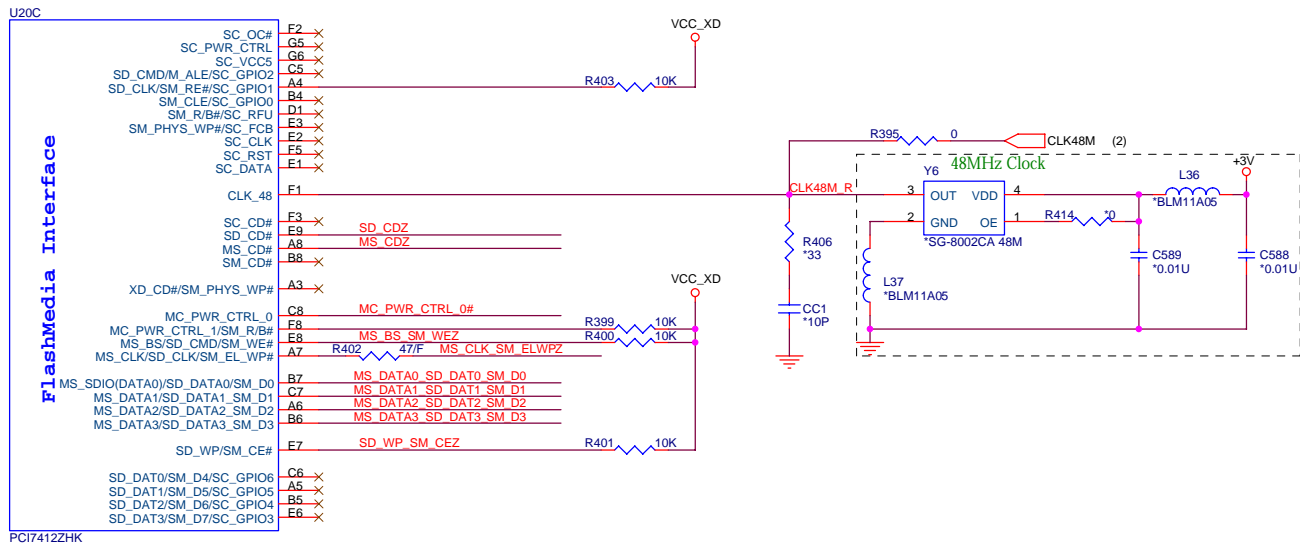
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CardBus Interface

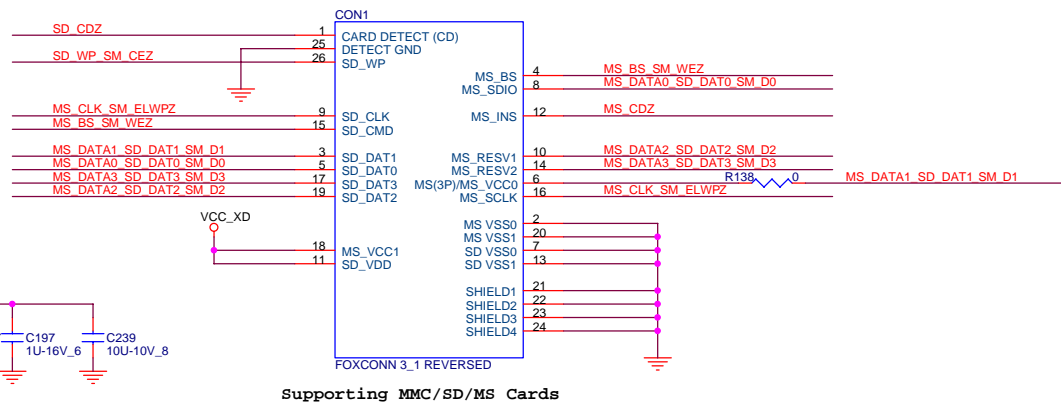


PROJECT : MA6
Quanta Computer Inc.

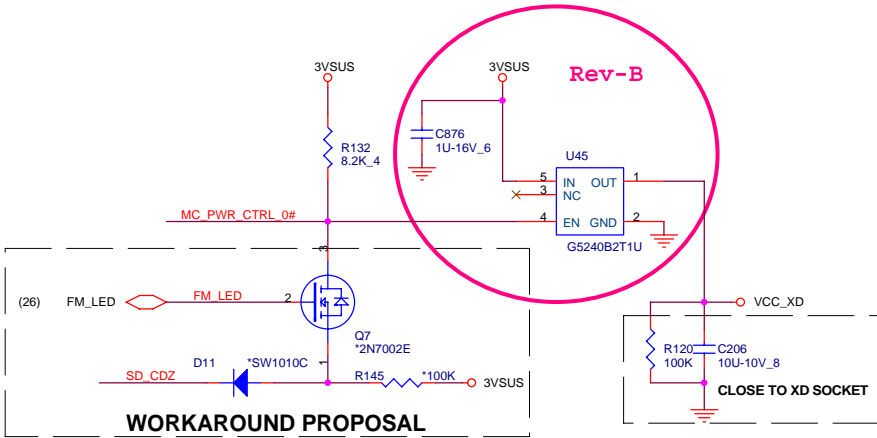
Size B	Document Number PCI7412 CardBus Connector	Rev 1A
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3 IN1 CARD READER



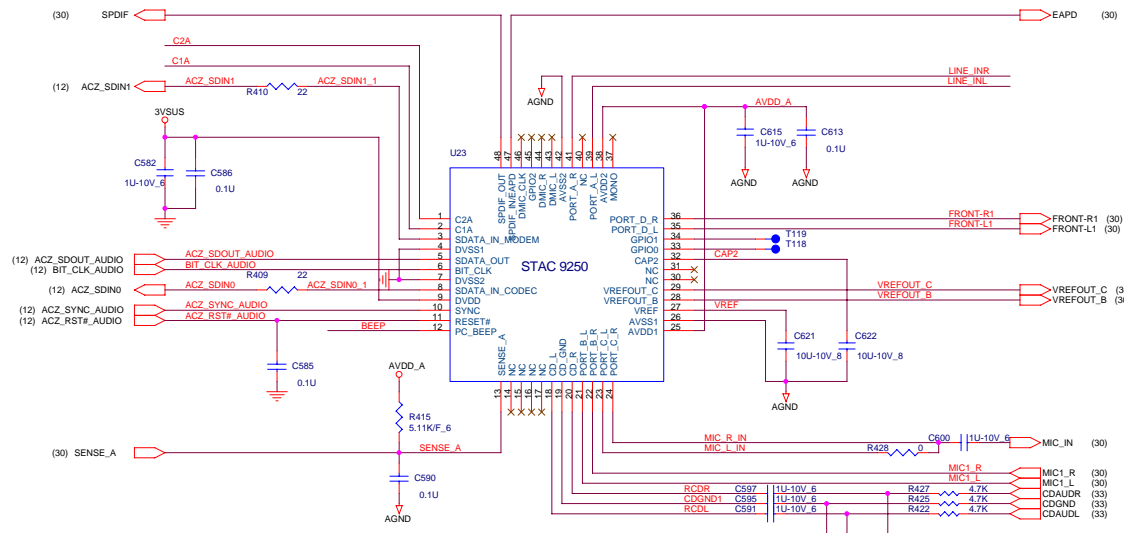
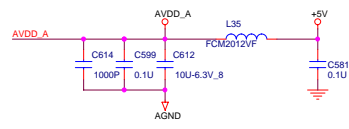
Supporting MMC/SD/MS Cards



WORKAROUND PROPOSAL

PROJECT : MA6
Quanta Computer Inc.

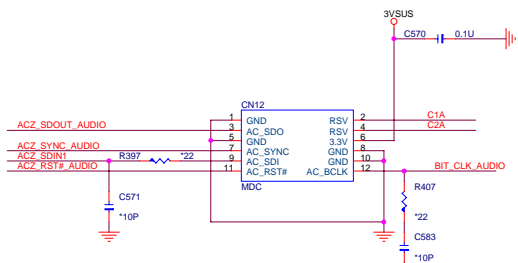
Size	Document Number	Rev
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speakers

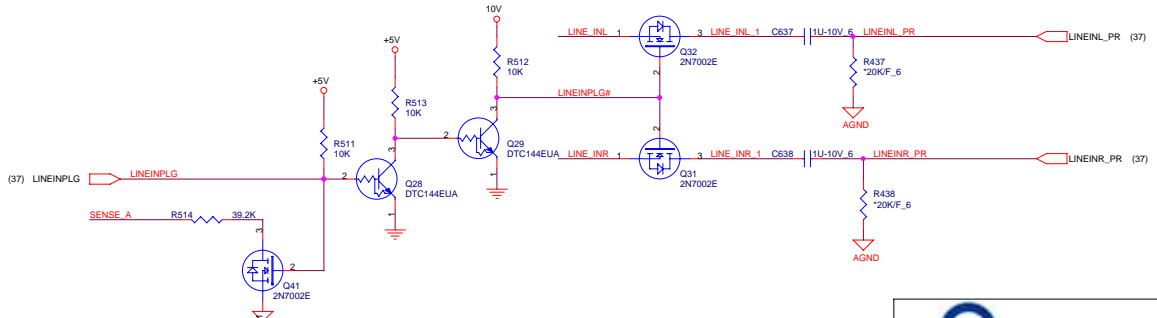
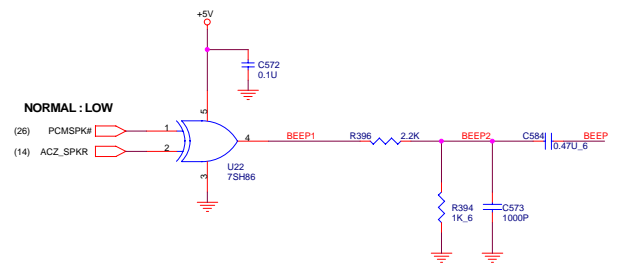
Internal MIC

External MIC

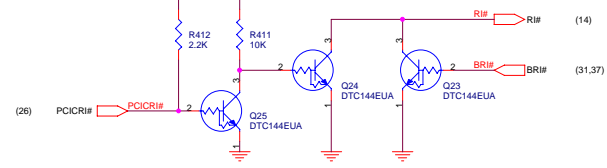


For MDC/DAA Module

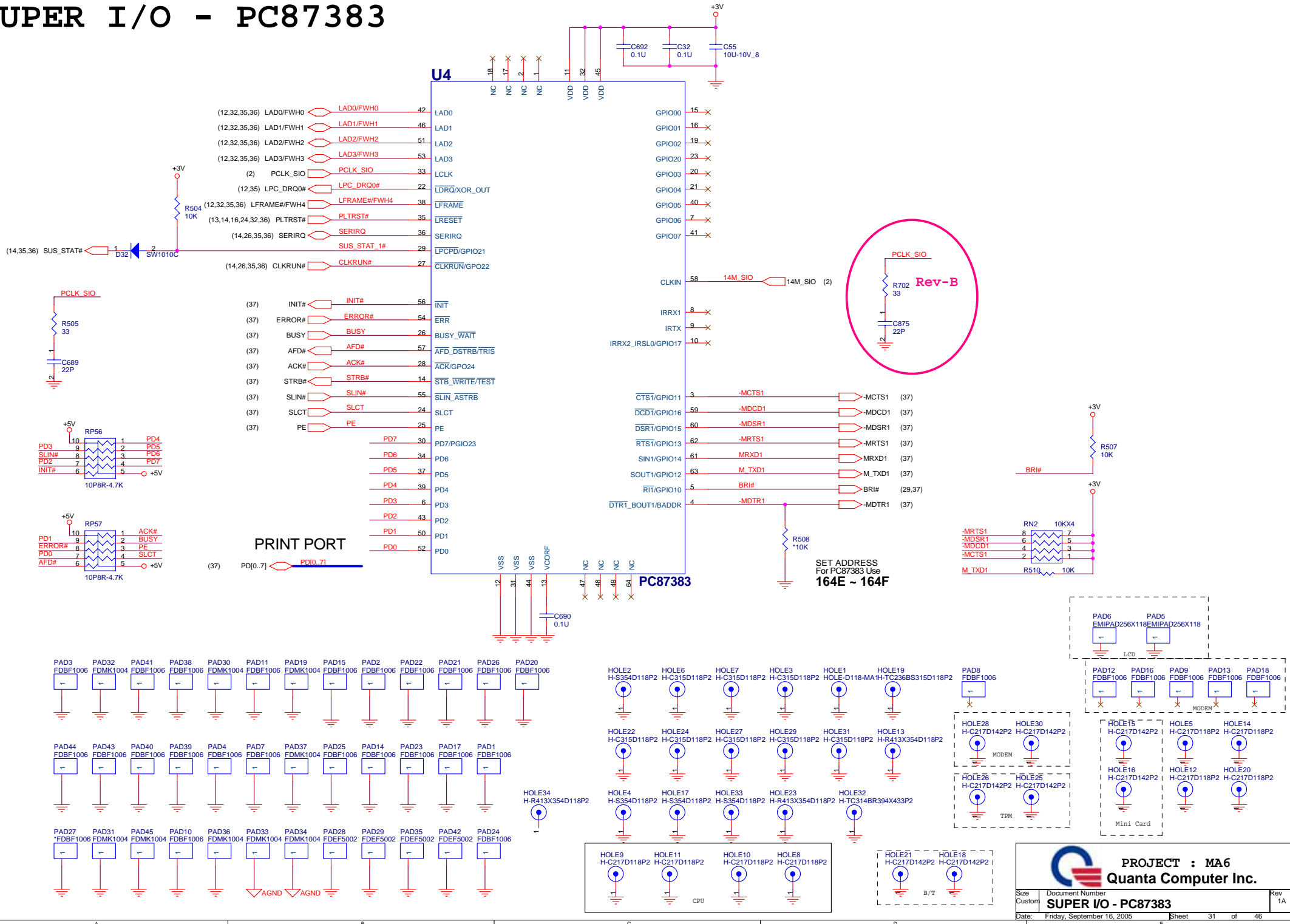
PC BEEP CONTROL



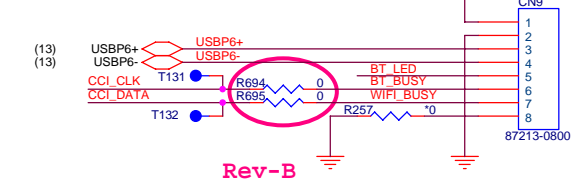
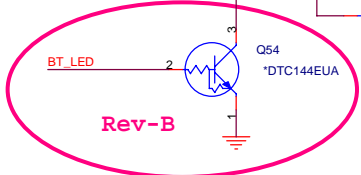
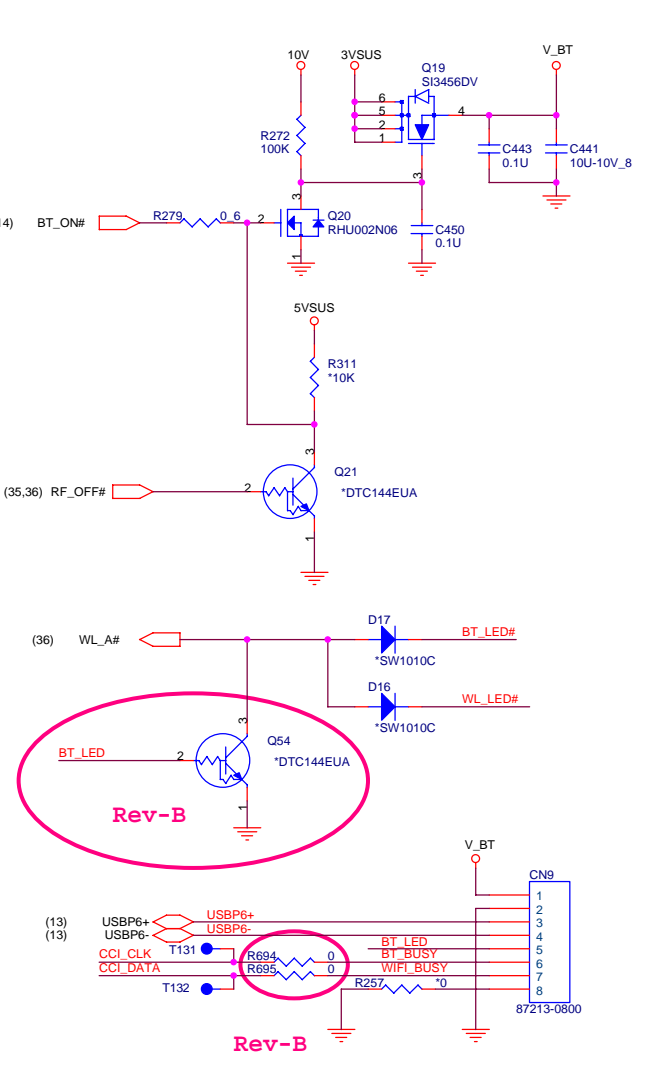
RI FUNCTION



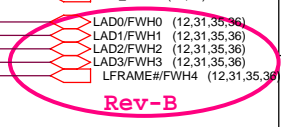
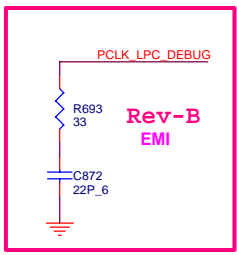
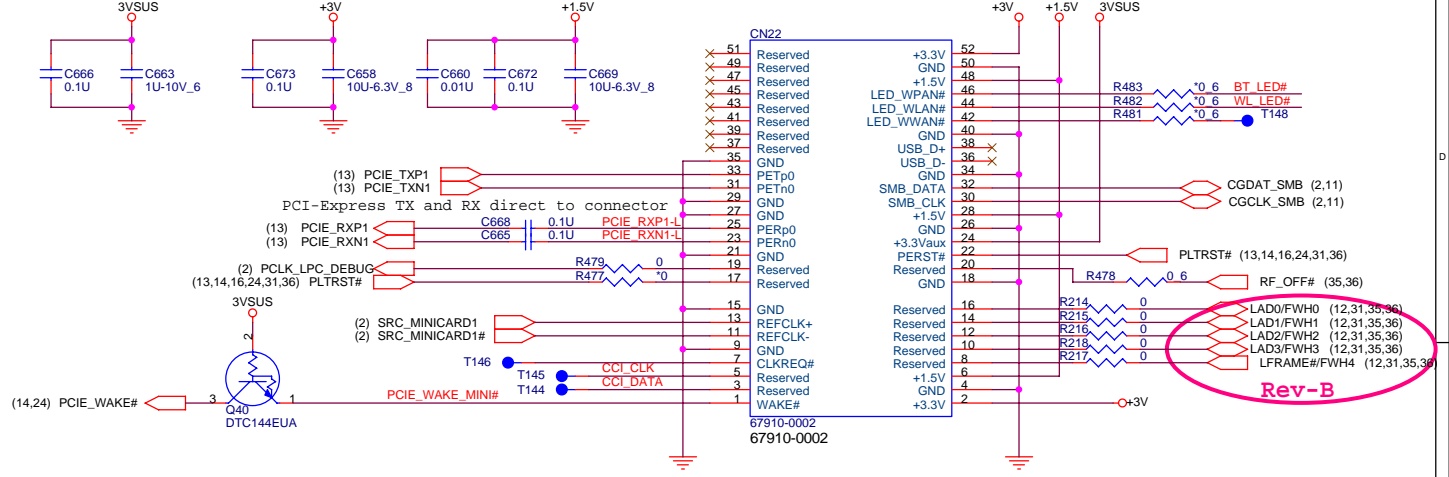
SUPER I/O - PC87383



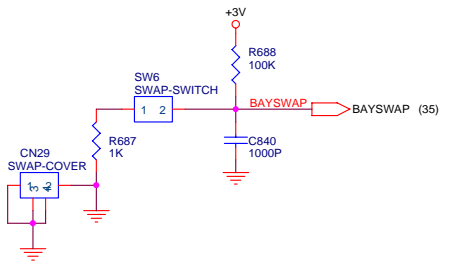
BLUETOOTH CONNECTOR



Mini PCI-E Card 1

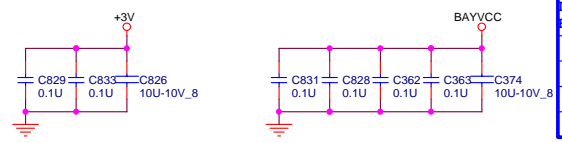
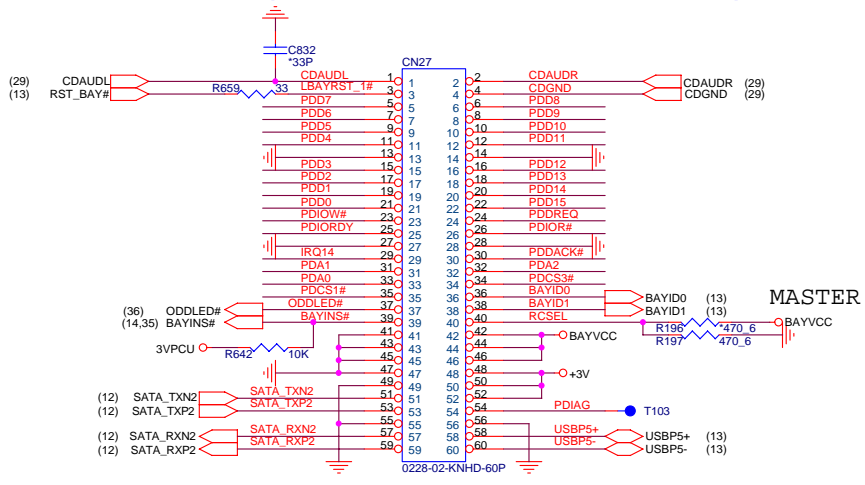


- (12) PDD[0..15] < PDD[0..15]
- (12) PDDREQ < PDDREQ
- (12) PDIOV# < PDIOV#
- (12) PDIOR# < PDIOR#
- (12) PDIORDY < PDIORDY
- (12) PDDACK# < PDDACK#
- (12) IRQ14 < IRCT4
- (12) PDA1 < PDA1
- (12) PDA0 < PDA0
- (12) PDCS1# < PDCS1#
- (12) PDA2 < PDA2
- (12) PDCS3# < PDCS3#



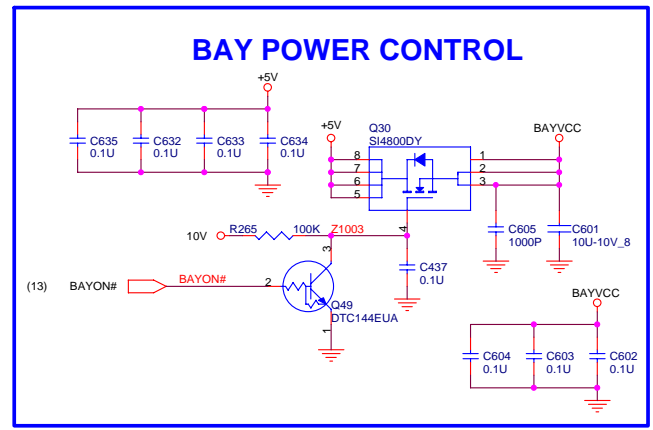
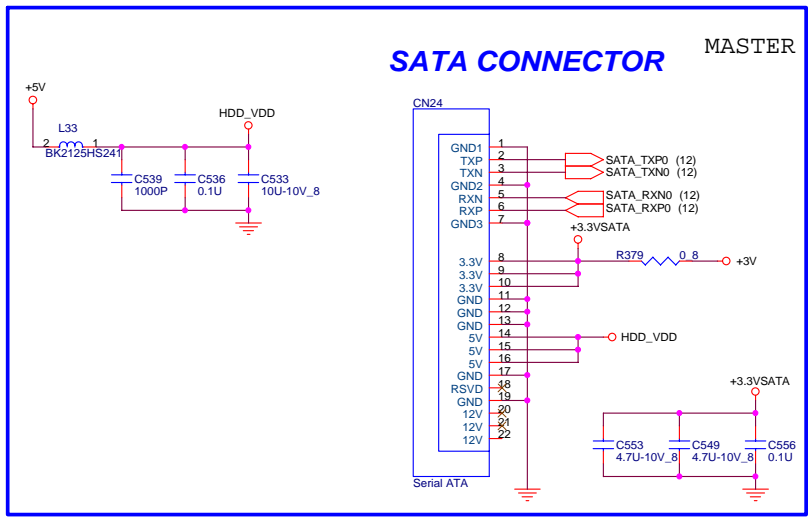
Del Q11
Rev-B

LEFT BAY(CD-ROM, HDD-PATA/SATA, FDD,)

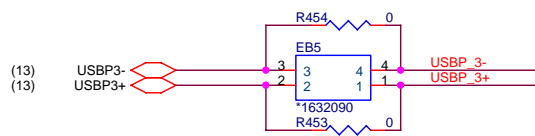
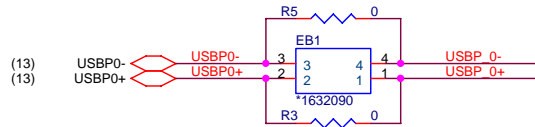
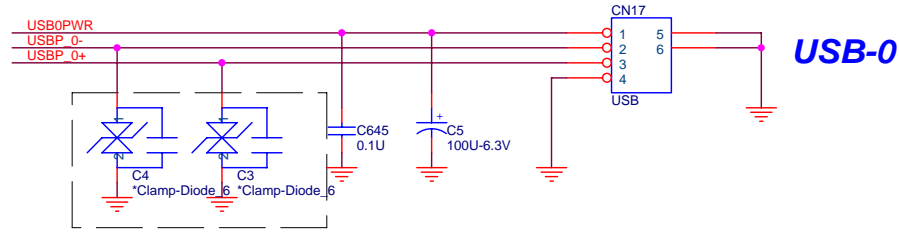
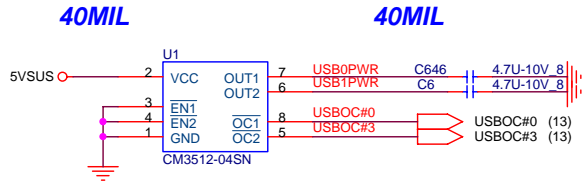


LBAY ID STATUS

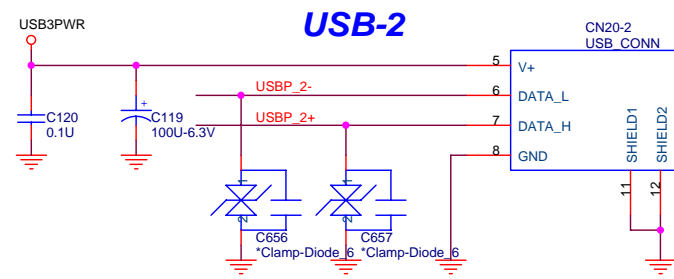
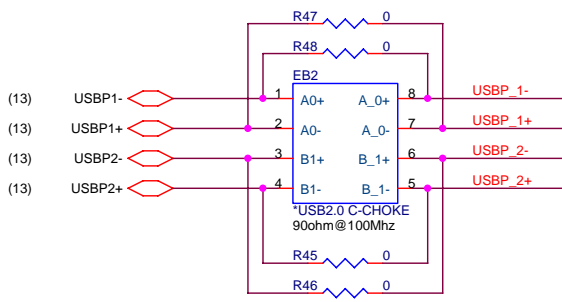
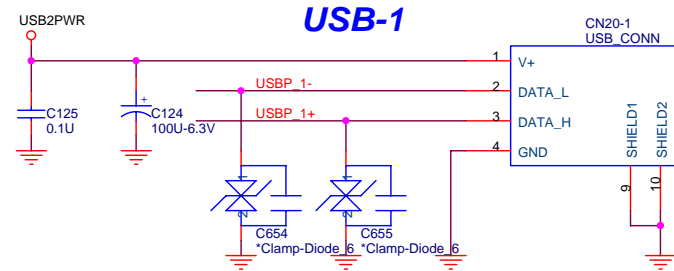
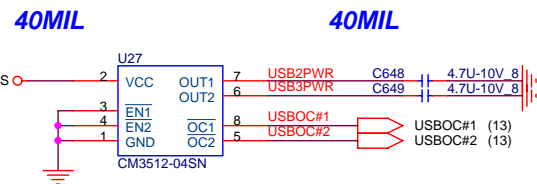
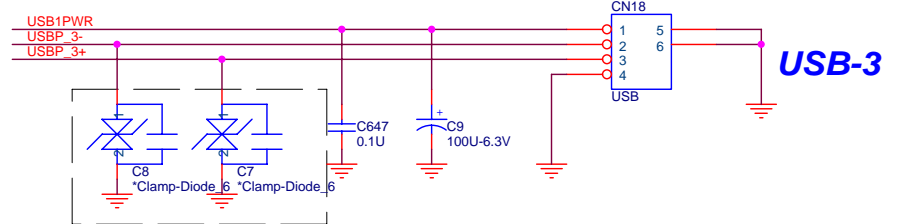
LEFT BAYID1	LEFT BAYID0	STATUS
0	0	HDD (PATA)
0	1	ODD
1	0	HDD (SATA)
1	1	




LEFT SIDE



LEFT SIDE



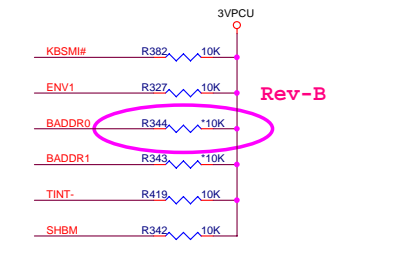
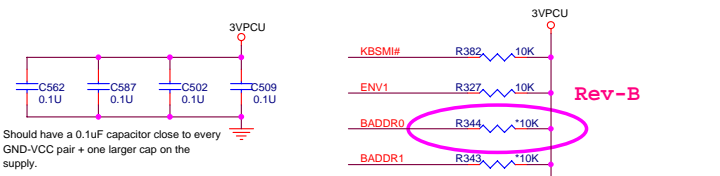
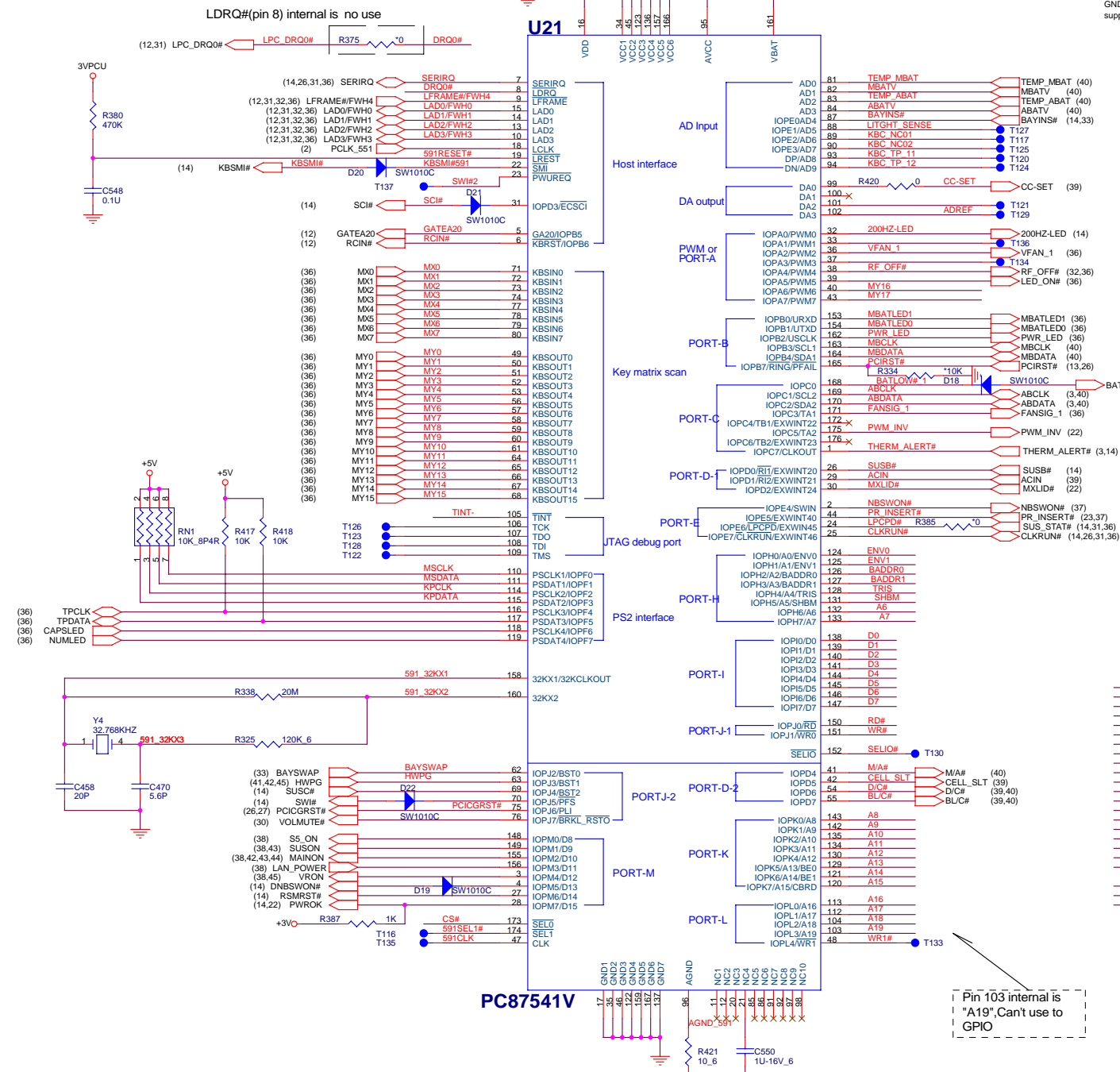
(27,32,37,38,41,43) 5VSUS



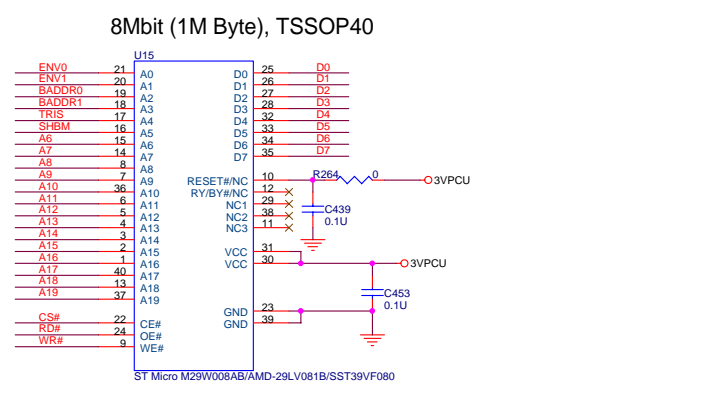
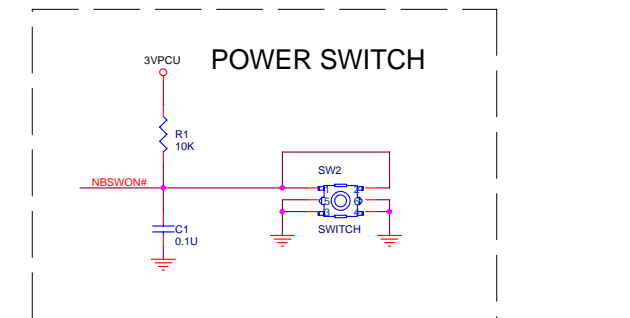
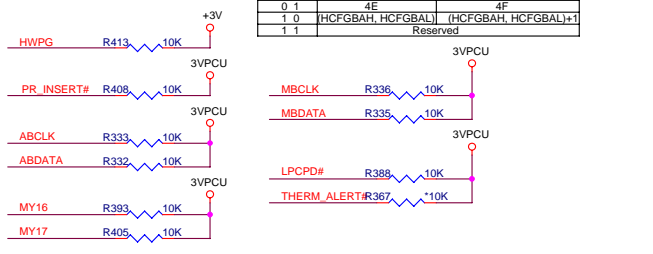
PROJECT : MA6
Quanta Computer Inc.

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KBC-PC87541V

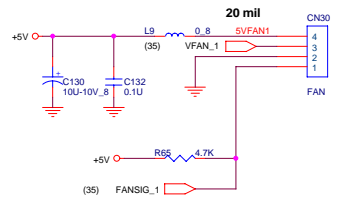


BADDR1-0	Index	Data
0 0	2E	2F
0 1	4E	4F
1 0	HCFGBAH, HCFGBAL	(HCFGBAH, HCFGBAL)+1
1 1		Reserved

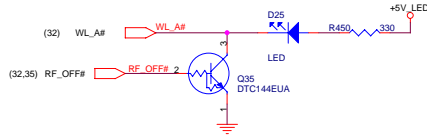


Pin 103 internal is "A19", Can't use to GPIO

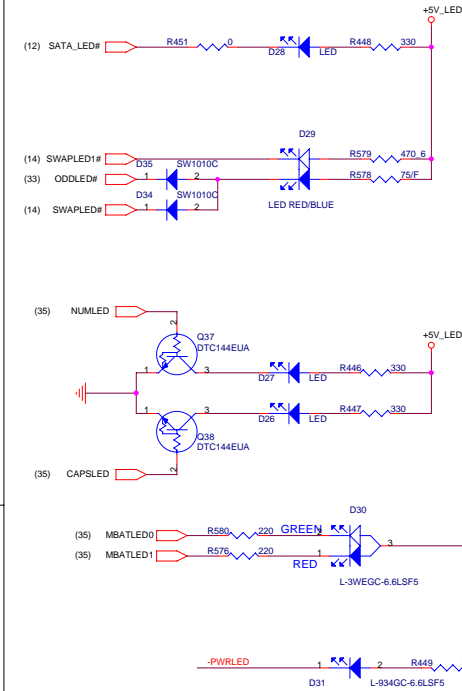
FAN OUT PWM CONNECTOR



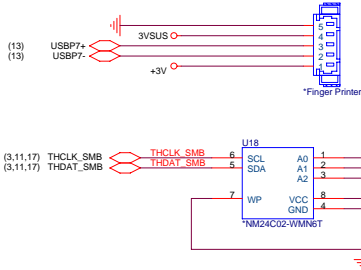
WIRELESS LED



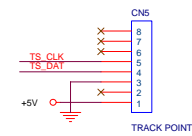
LED INDIATOR



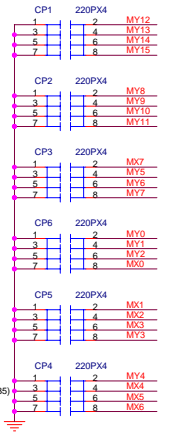
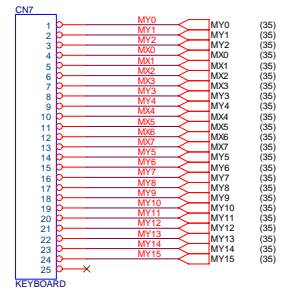
FINGER PRINT



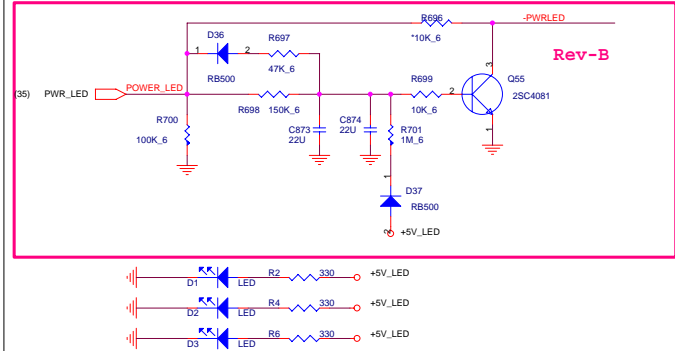
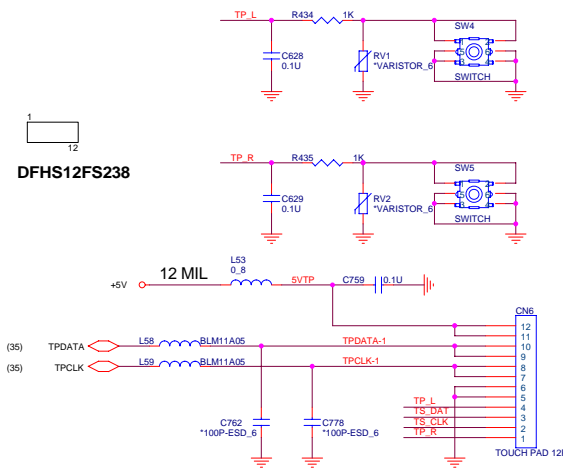
TRACK POINT



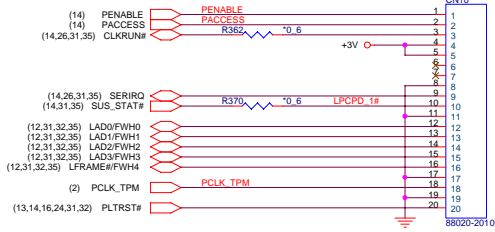
KEYBOARD



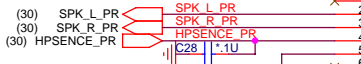
TOUCHPAD



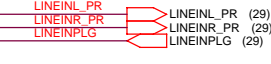
TPM Connector



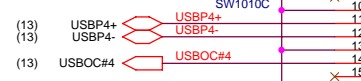
HEADPHONE



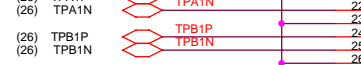
LINE-IN



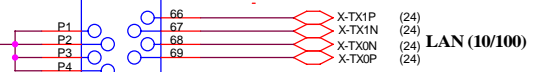
USB4



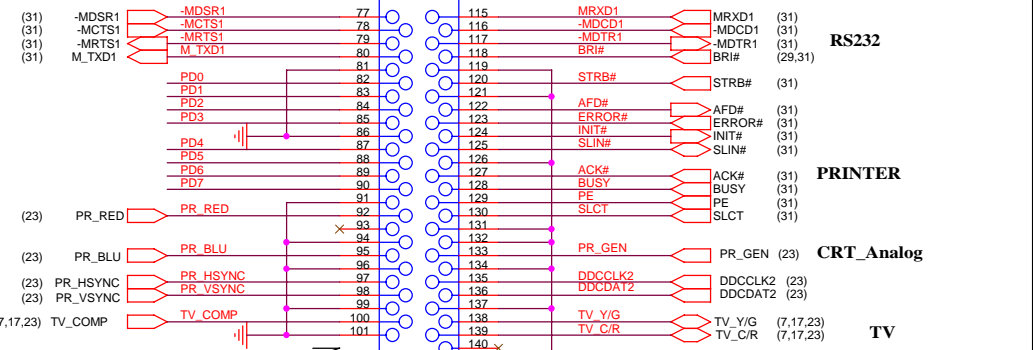
IEEE 1394



LAN (10/100)



PD[0..7] (31)

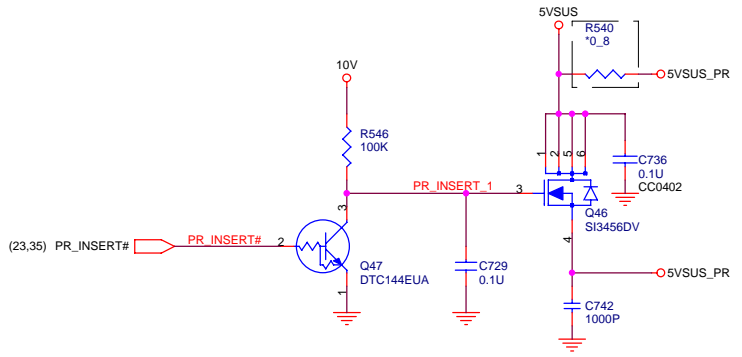
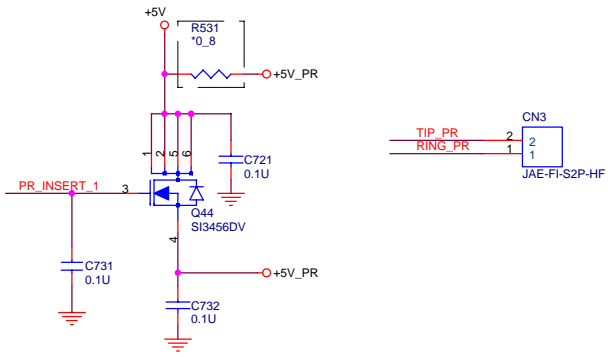
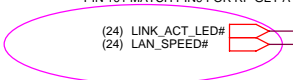


RS232

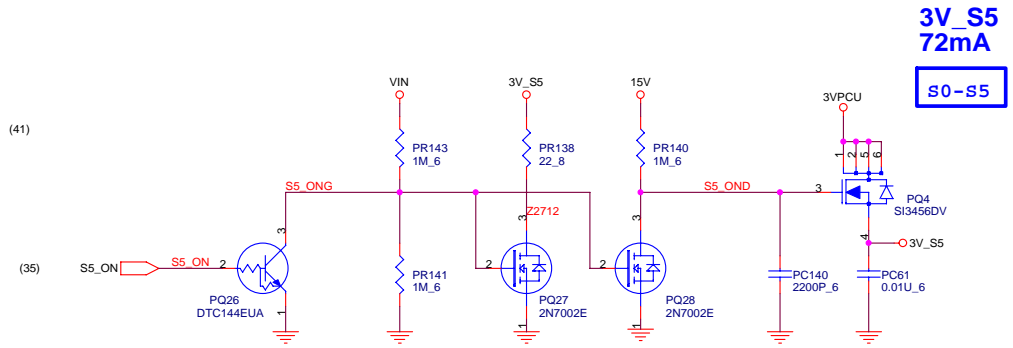
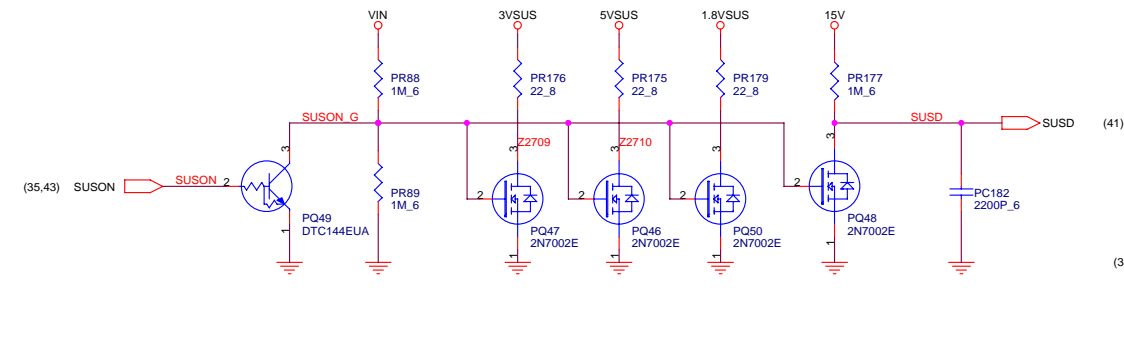
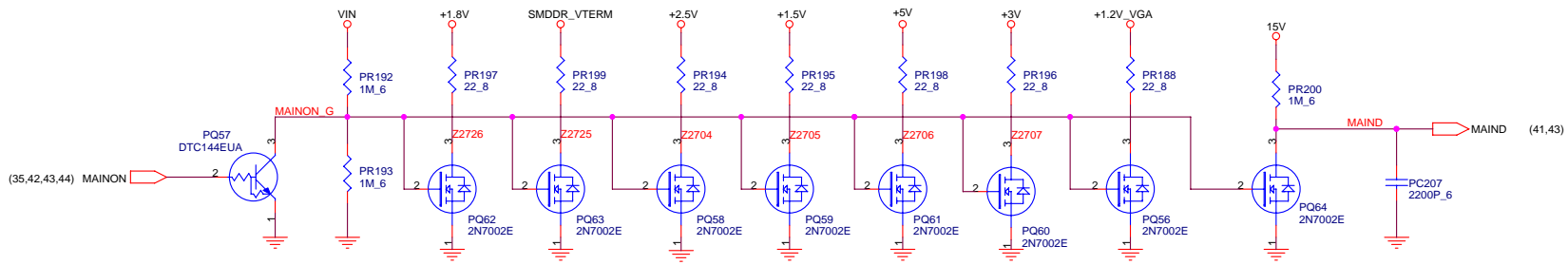
PRINTER

CRT Analog

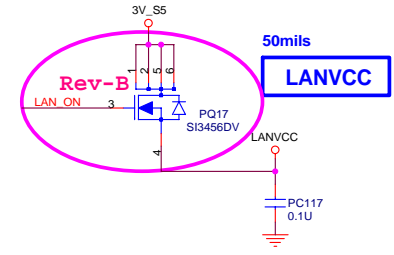
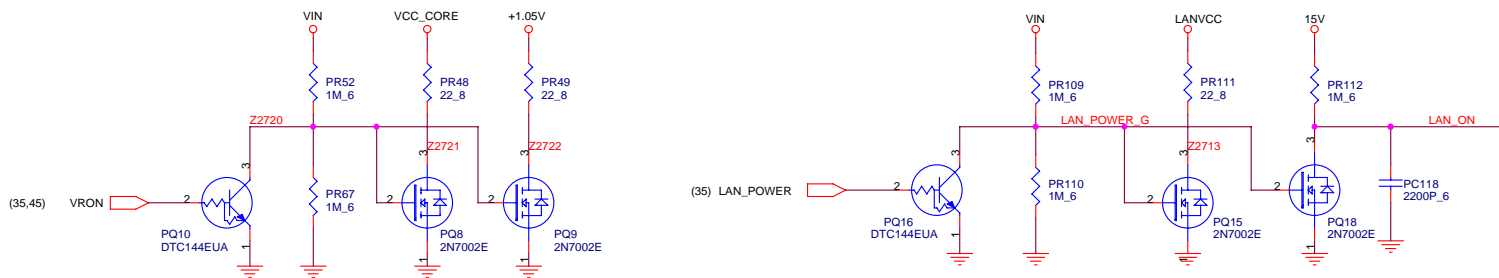
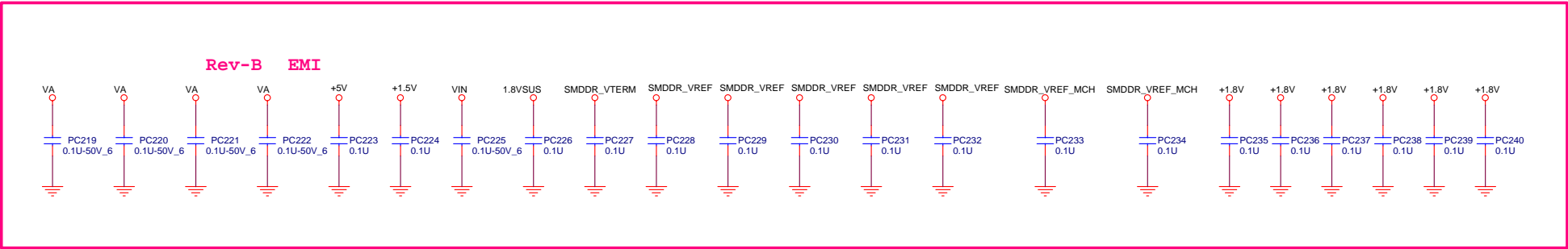
TV

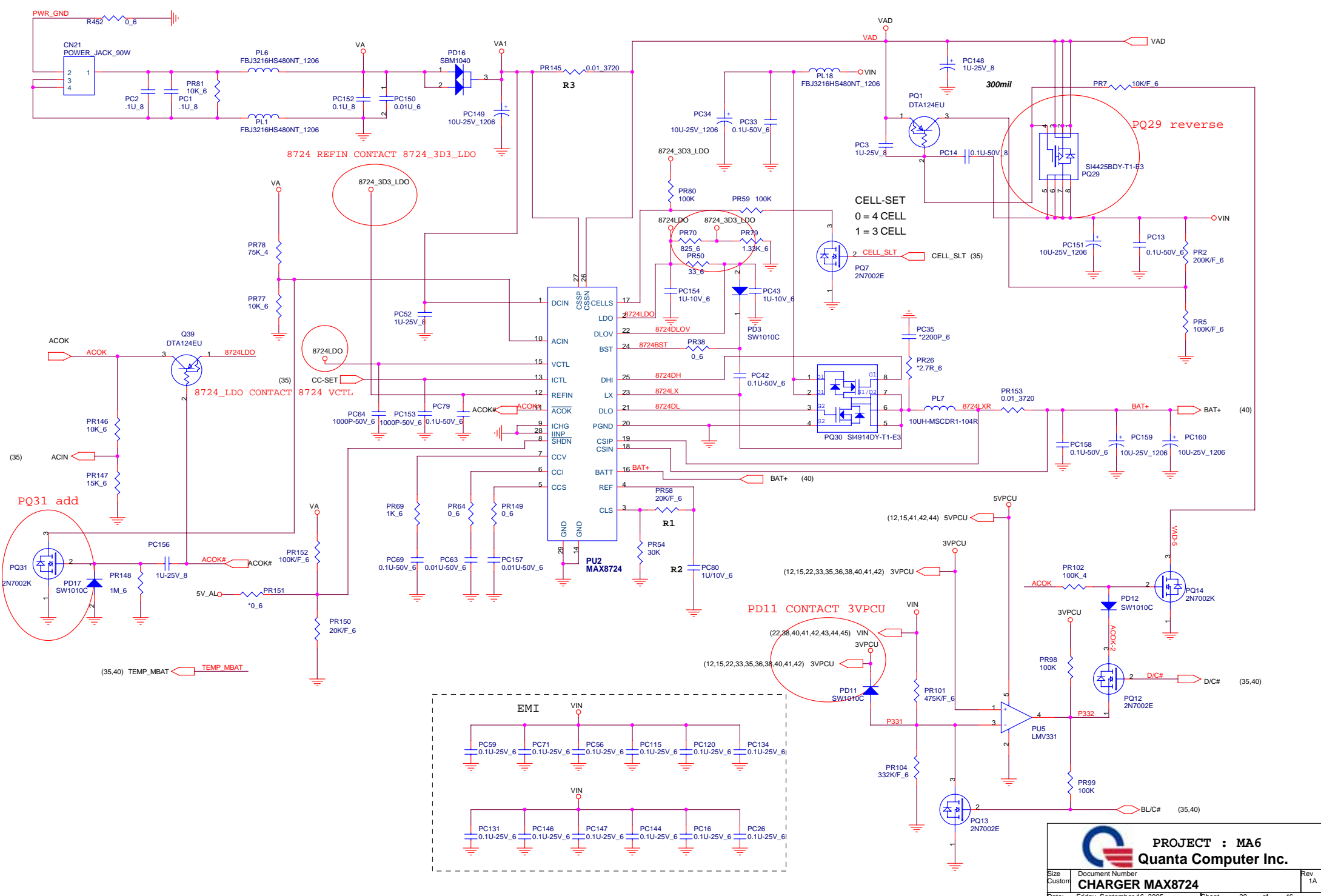



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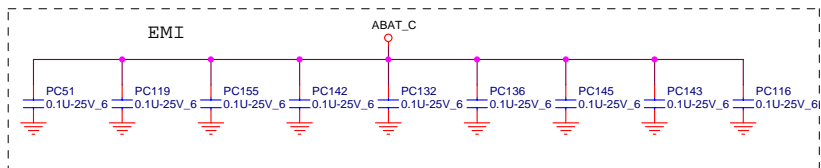
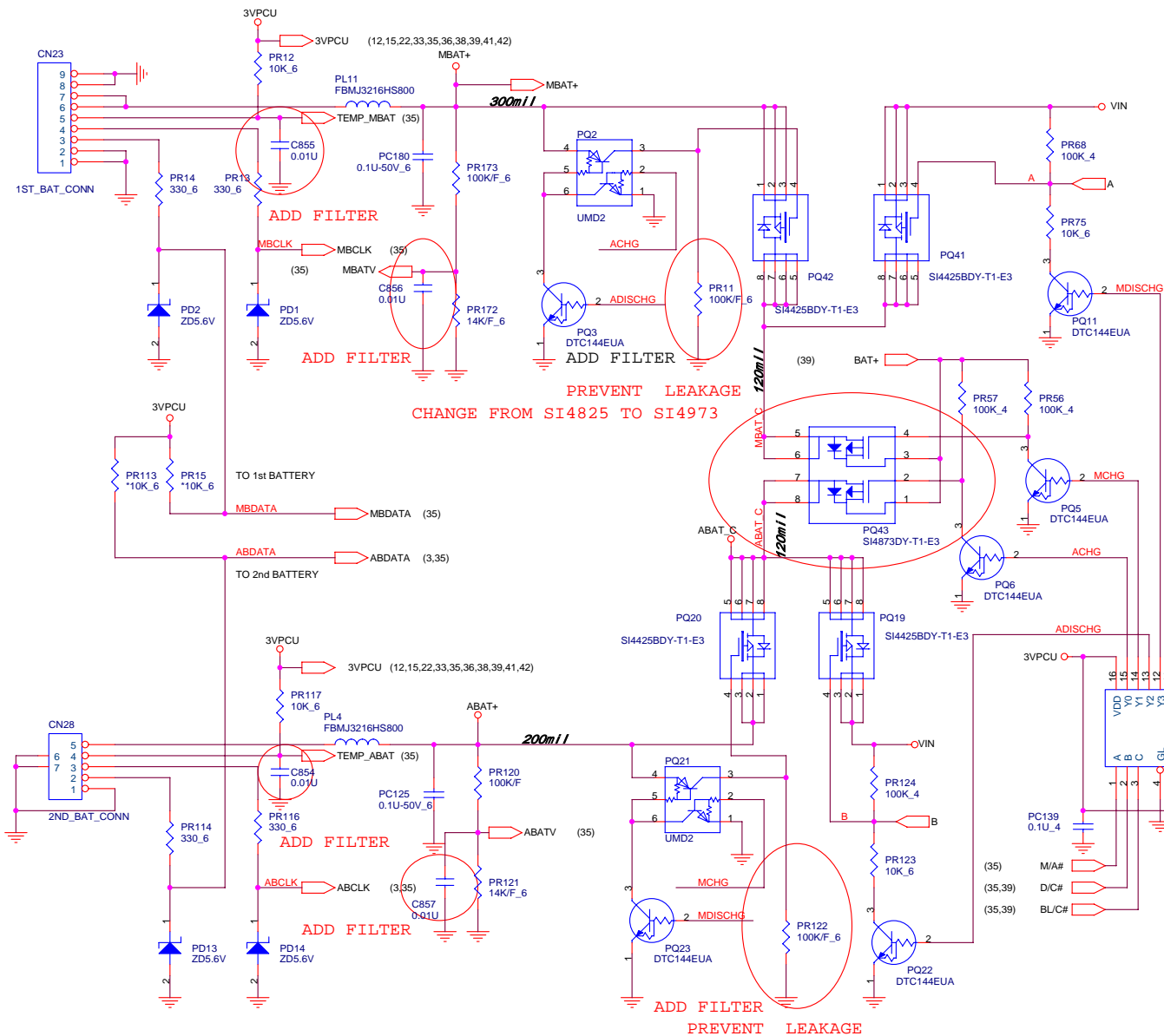


3V_S5
72mA
S0-S5





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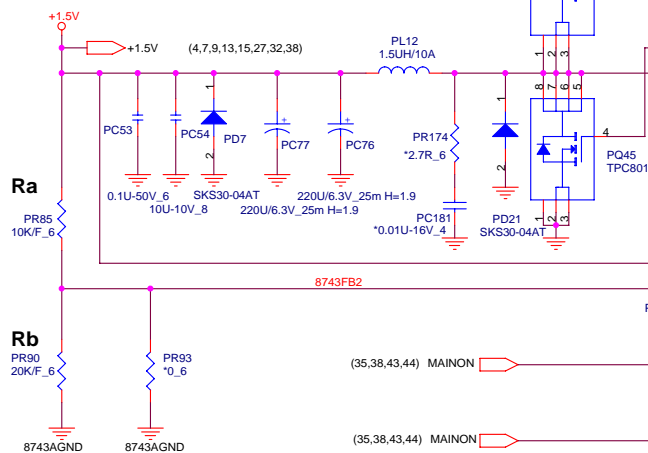


	A	B	C	Y0	Y1	Y2	Y3
(35)	L	L	L	H	L	L	L
(35)	H	L	L	L	H	L	L
(35,39)	L	H	L	L	L	H	L
(35,39)	L	L	H	L	L	L	L
(35)	H	L	H	L	L	L	L
(35)	L	H	H	L	L	L	L
(35)	H	H	H	L	L	L	L

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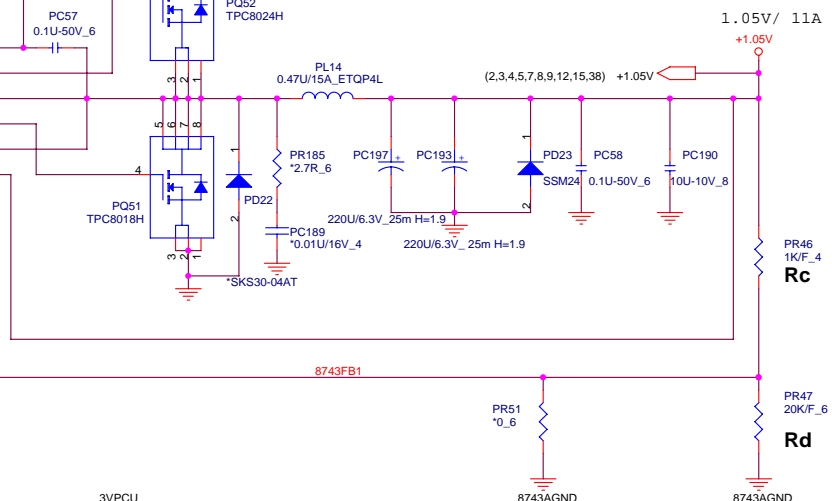
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BBATT SELECTER		
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1.5V / 6A

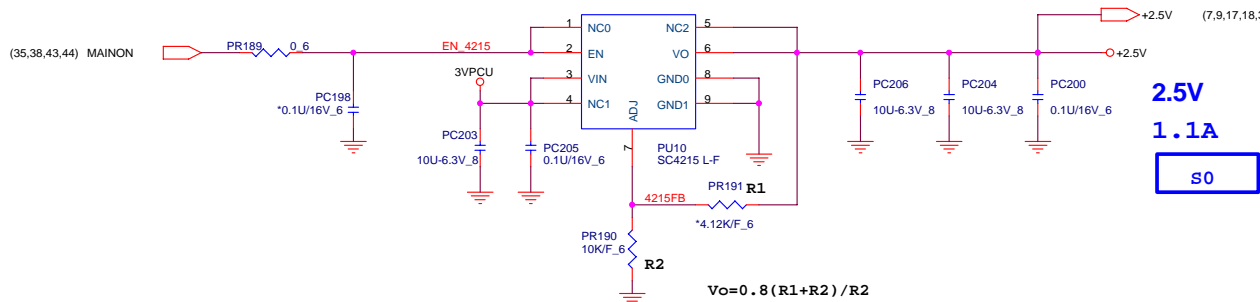
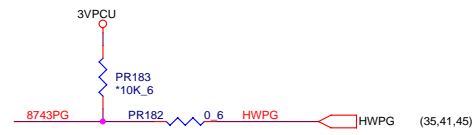
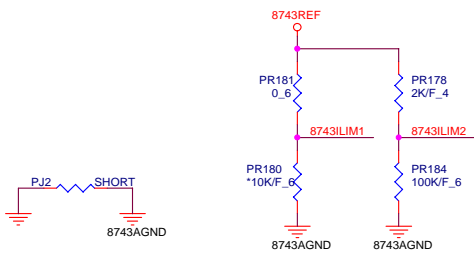


$$V_{out} = (1 + R_a/R_b) * I$$

1.05V / 11A



$$V_{out} = (1 + R_c/R_d) * I$$

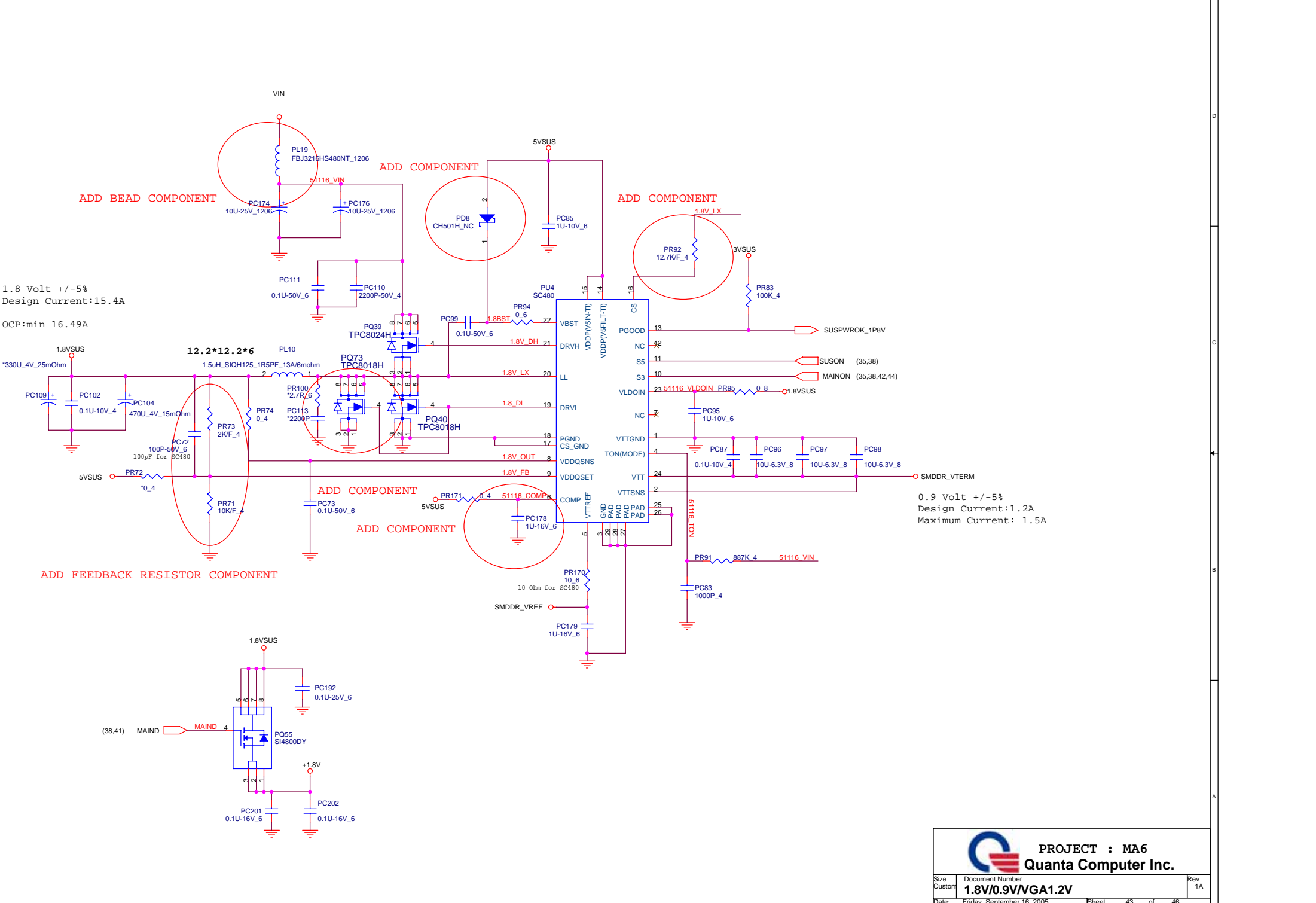


2.5V
1.1A
S0

$$V_o = 0.8 (R_1 + R_2) / R_2$$

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1.8 Volt +/-5%
Design Current: 15.4A

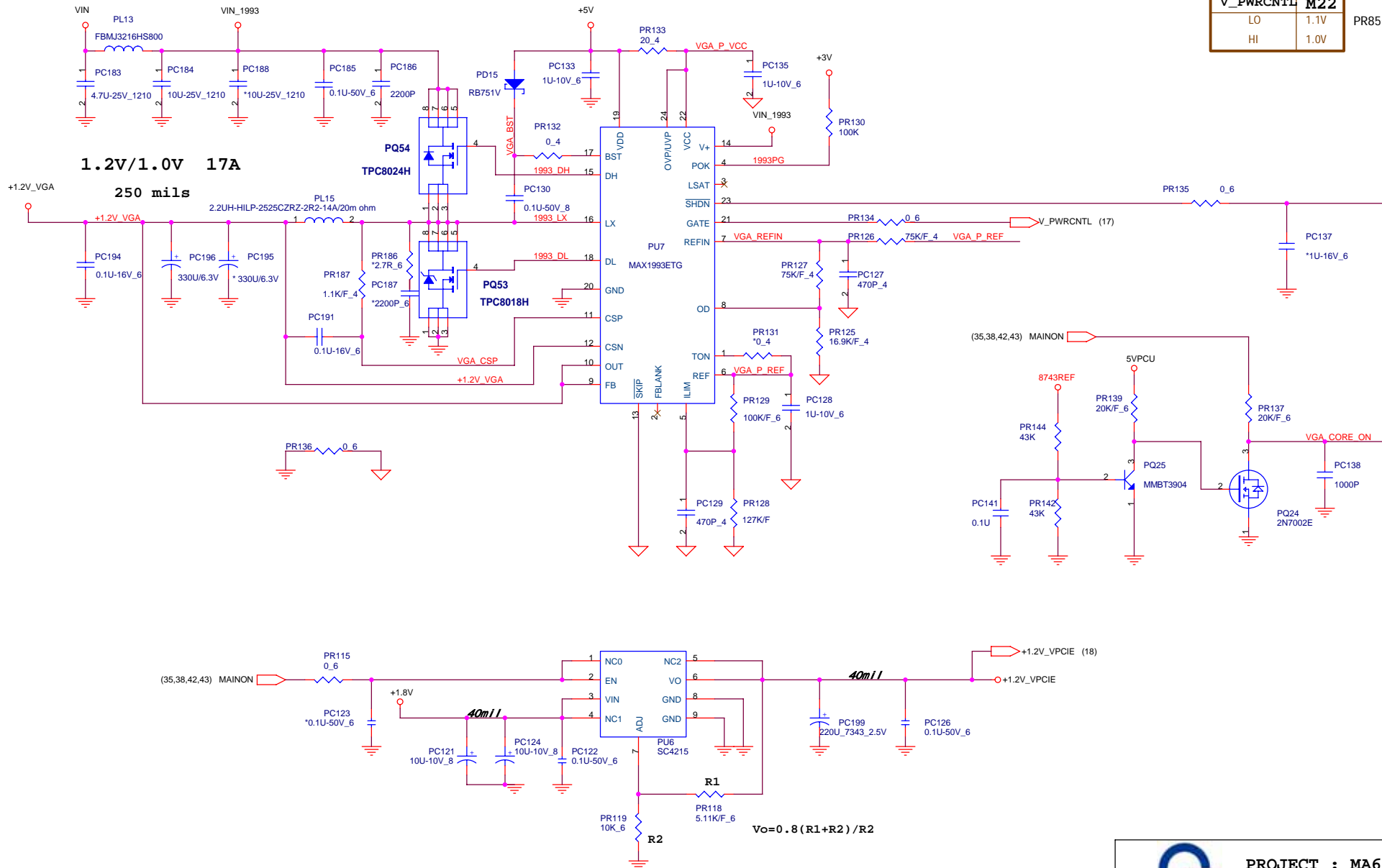
OCP: min 16.49A


0.9 Volt +/-5%
Design Current: 1.2A
Maximum Current: 1.5A

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Size Custom	Document Number 1.8V/0.9V/VGA1.2V	Rev 1A
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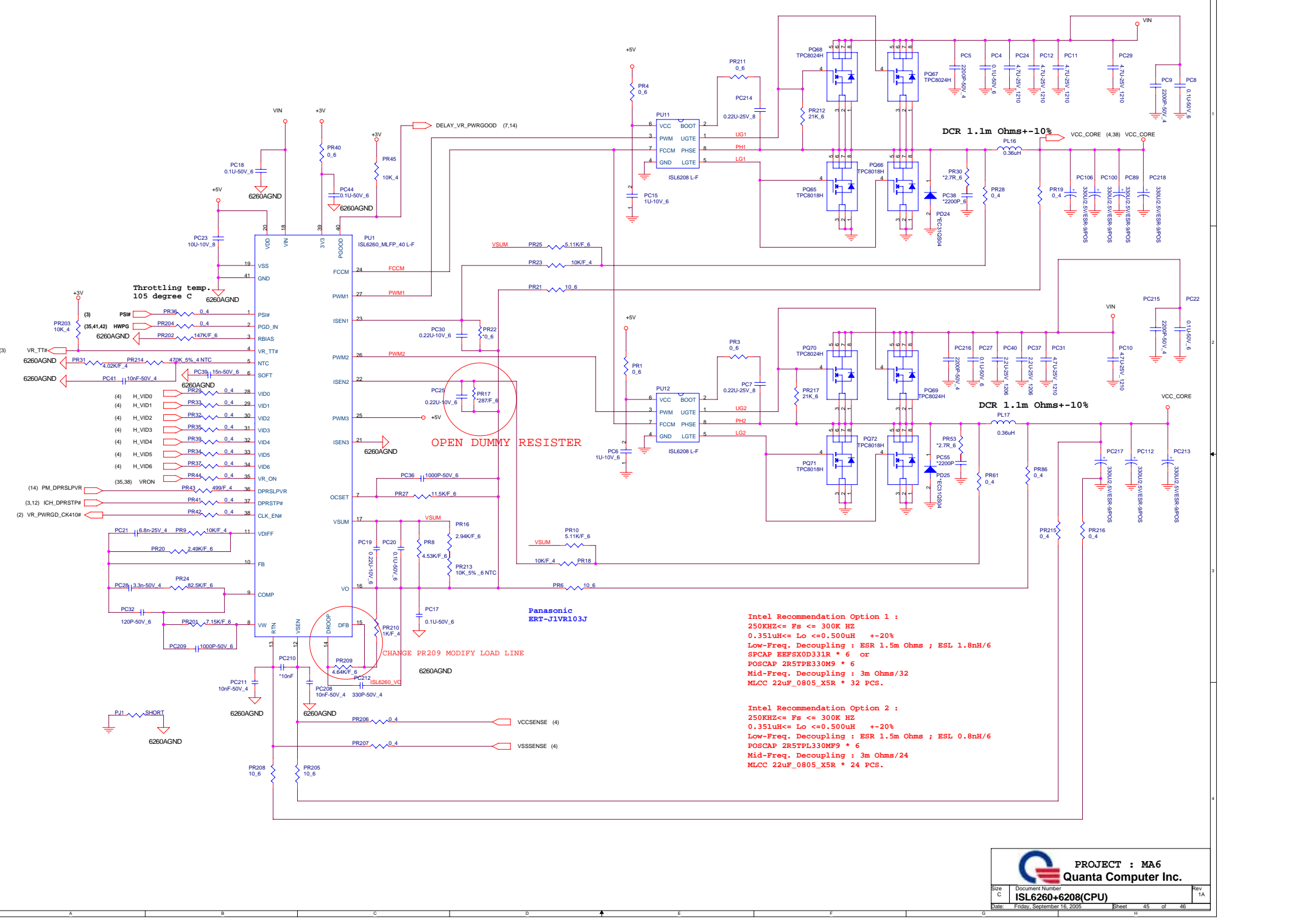
V_PWRCNTL	M24	
LO	1.2V	PR85=37.4K
HI	1.0V	

V_PWRCNTL	M22	
LO	1.1V	PR85=16.9K
HI	1.0V	



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Size B	Document Number	Rev 1A
VGA CORE & +VGA1.2V		
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IMVP Spec. Rev. 0.8

(Nom.)	Yonah-2M	Meron
HFM	1.2875 V	1.1500 V
LFM	0.8375 V	0.8375 V
Deeper	0.7625 V	0.7625 V
VBOOT	1.2000 V	1.2000 V
SLOPE	-2.1 mV/A	-2.1 mV/A

(Max.)	Yonah-2M	Meron
HFM	36 A	44 A
LFM	9.5 A	12.5 A
Deeper	3.5 A	5.5 A
Dynamic	27 A	34.5 A
TDC	26 A	32 A

V _o	VID6	VID5	VID4	VID3	VID2	VID1	VID0
1.5000	0	0	0	0	0	0	0
1.4375	0	0	0	0	1	0	1
1.4000	0	0	0	1	0	0	0
1.3000	0	0	1	0	0	0	0
1.2875	0	0	1	0	0	0	1
1.2000	0	0	1	1	0	0	0
1.1500	0	0	1	1	1	0	0
1.1000	0	1	0	0	0	0	0
1.0000	0	1	0	1	0	0	0
0.9625	0	1	0	1	0	1	1
0.9000	0	1	1	0	0	0	0
0.8375	0	1	1	0	1	0	1
0.8000	0	1	1	1	0	0	0
0.7625	0	1	1	1	0	1	1
0.7500	0	1	1	1	1	0	0
0.7000	1	0	0	0	0	0	0
0.6000	1	0	0	1	0	0	0
0.5000	1	0	1	0	0	0	0
0.3000	1	1	0	0	0	0	0

CCM : Continuous Conduction Mode
DCM : Dis-Continuous Mode

