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27. CPU CORE (MAX8770)
28. +3.3VA/+5VA/+1.8VS (OZ815)
29. +1.5VS/+1.05VS (OZ8116)
30. VCC SW/ VIN_SW
31. BATT IN / CHARGER (OZ8602)
32. CODEC & AMP/INT_MIC/SPK
33. EXT_MIC / HEADPHONE / MDC
34. RA to RB Ver. History

M/B Schematic Version Change List

M/B Schematic Version Change List				
Release Date	Version	PCB P/N	PCBA P/N	Note
2008/09/15	Rev.A	37GI41000-A0	82GI41000-A0	Initial

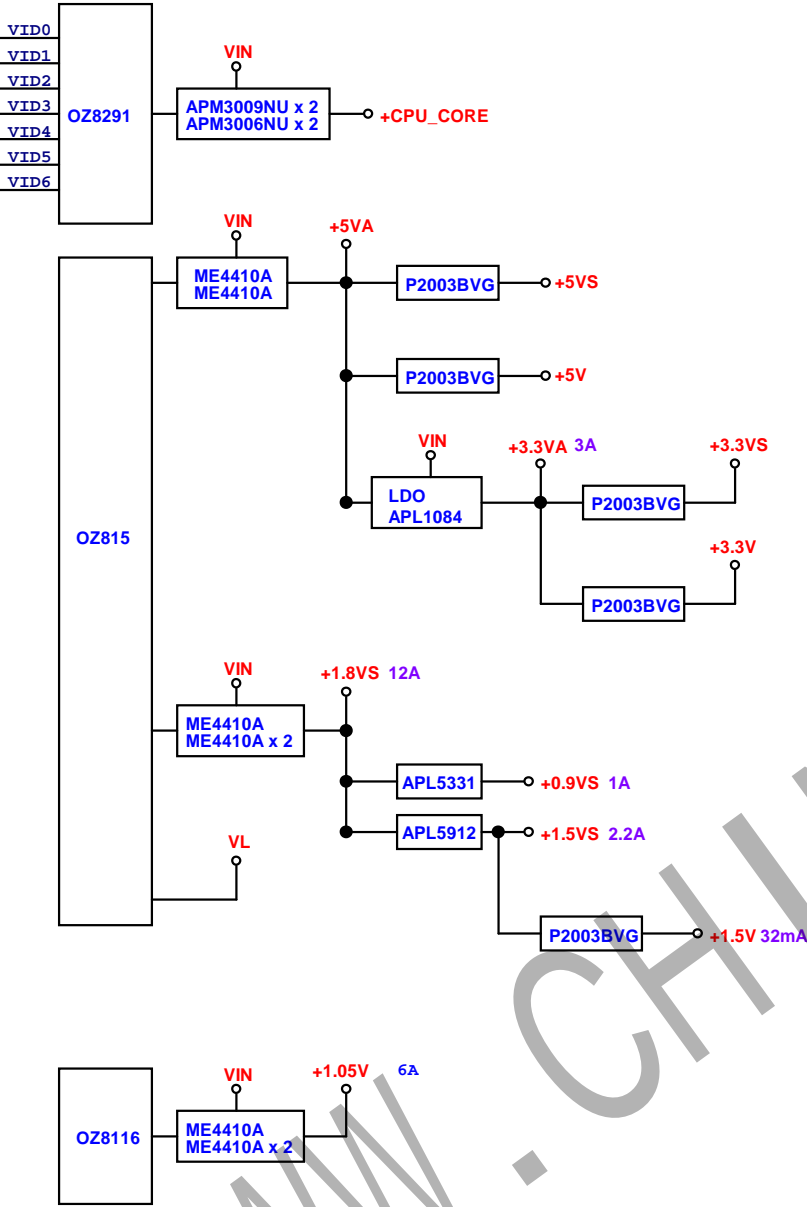
D/B Schematic Version Change List

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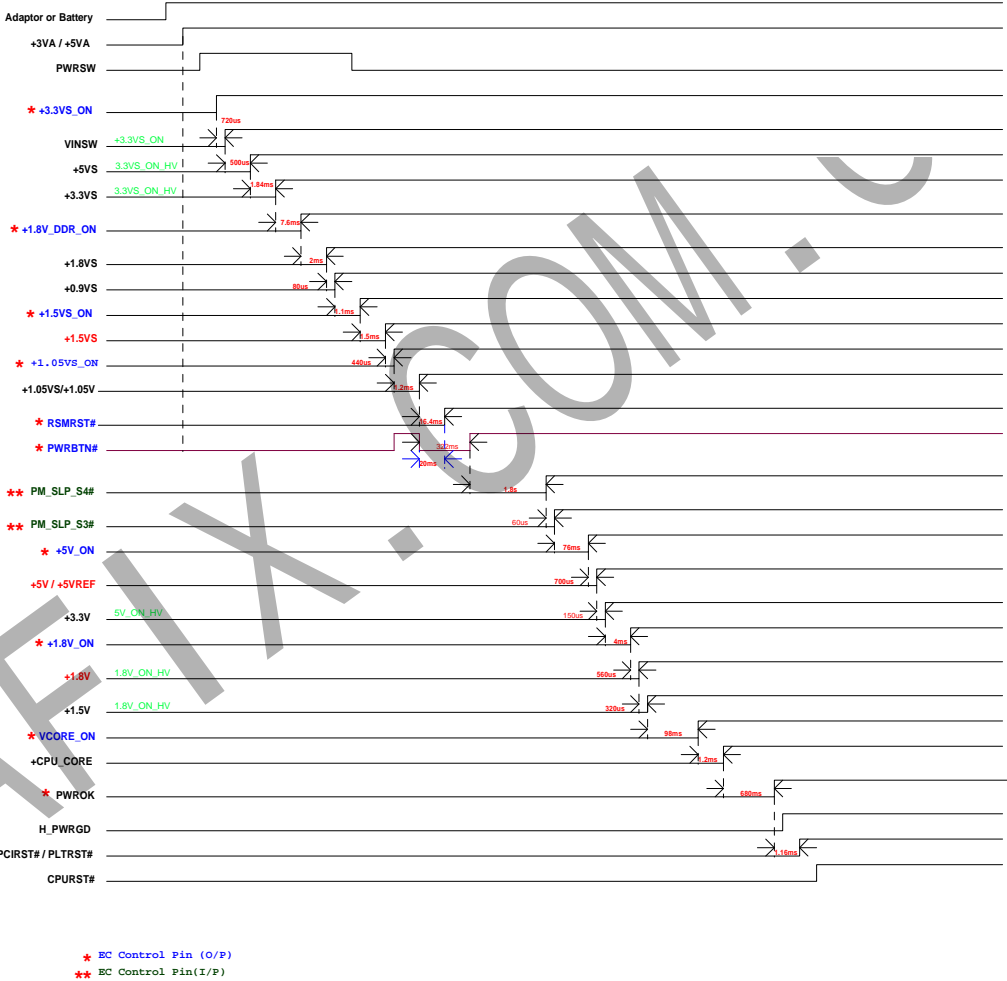
SMT Process Identify Mark

* DIP component

POWER BLOCK DIAGRAM



F50IN0 Power On Sequence B phase(real)



ICH9M GPIO	
GPIO0	PM_BM_BUSY#
GPIO1	EC_EXTSMI#
GPIO2	INT_PIRQ#
GPIO3	INT_PIRQ#
GPIO4	INT_PIRQ#
GPIO5	INT_PIRQ#
GPIO6	BIOS_REC
GPIO7	N.C (TACH3)
GPIO8	N.C
GPIO9	N.C (WOL_EN)
GPIO10	N.C (ALERT#)
GPIO11	SMB_ALERT#
GPIO12	LAN_PHYPC
GPIO13	N.C (GLAN_DOCK#)
GPIO14	N.C (NETDETECT)
GPIO15	PM_STPPCI#
GPIO17	N.C (TACH0)
GPIO18	N.C
GPIO19	SATA1GP
GPIO21	SATA0GP
GPIO22	N.C (SCLOCK)
GPIO23	LDRQ1#
GPIO24	CRB_SV_DET
GPIO25	PM_STPCPU#
GPIO26	PM_SLP_S4_STATE#
GPIO27	QRT_STATE0
GPIO28	QRT_STATE1
GPIO29	USB_OC#5
GPIO30	USB_OC#6
GPIO31	USB_OC#7
GPIO32	PM_CLKRUN#
GPIO33	HDA_DOCK_EN
GPIO34	N.C (HDA_DOCK_RST)
GPIO35	CLK_SATA_OE#
GPIO36	SATA2GP
GPIO37	SATA3GP
GPIO38	ODD_DET
GPIO39	ICH_GPIO39
GPIO40	USB_OC#1
GPIO41	USB_OC#2
GPIO42	USB_OC#3
GPIO43	USB_OC#4
GPIO48	MFG_MODE
GPIO49	H_PWRGD
GPIO50	PCI_REQ#1
GPIO51	PCI_GNT#1
GPIO52	PCI_REQ#2
GPIO53	PCI_GNT#2
GPIO54	PCI_REQ#3
GPIO55	PCI_GNT#3

ITE8512E GPIO	
GPA0	PM_RSMRST#
GPA1	SUSPEND_LED
GPA2	SILENT_LED
GPA3	RF_LED
GPA4	CAPS_LED
GPA5	NUM_LED
GPA6	SCROLL/3G_LED
GPA7	EXTTS#0
GPB0	PM_SLP_S4#
GPB1	PM_SLP_S3#
GPB2	CMI_TX
GPB3	SMB_CLK0
GPB4	SMB_DAT0
GPB5	H_A20GATE
GPB6	H_RCIN#
GPB7	QRT_STATE
GPC0	CMI_RX
GPC1	SMB_CLK1
GPC2	SMB_DAT1
GPC3	KEY_OUT16
GPC4	RF_SW#
GPC5	KEY_OUT17
GPC6	BTL_BEEP
GPC7	SILENT#
GPD0	EC_PREST#
GPD1	PWRBTN#
GPD2	MUTE
GPD3	EC_EXTSMI#
GPD4	N.C
GPD5	SMP1_EN#
GPD6	CHG_ON
GPD7	LCDSW
GPE0	PWRSW
GPE1	SET_V
GPE2	PWROK
GPE3	BT_ON
GPE4	LID#
GPE5	CPPE#
GPE6	FAN_SPD#
GPE7	PCI_RST#
GPF0	EC_CPU_200MHz
GPF1	N.C
GPF2	CHG_G_LED
GPF3	CHG_R_LED
GPF4	TP_CLK
GPF5	TP_DATA
GPF6	N.C
GPF7	N.C
GPG0	SB_RTCSRST
GPG1	EC_WDOG_OK
GPG2	FLFRAME#
GPG6	MPWORK
GPH0	+1.8V_ON
GPH1	+1.8V_DDR_ON
GPH2	VCORE_ON
GPH3	+3.3VS_ON
GPH4	+5V_ON
GPH5	+1.05VS_ON
GPH6	+1.5VS_ON

ITE8512E GPIO	
GPI0	BATT_TEMP
GPI1	ADAPTOR_I
GPI2	ADAP_IN
GPI3	BAT_CHG_I
GPI4	BAT_I
GPI5	CPU_PWR
GPI6	DDR2_TEMP
GPI7	VGA_TEMP
GPJ0	EC_BRGHT
GPJ1	CHG_I
GPJ2	FAN_CTRL0
GPJ3	BROWSER#
GPJ4	MAIL#
GPJ5	PM_THROTTLING#

Penryn CPU				
	CPU CORE(V)	ICC(A)	W	TEMP(°C)
IMVP-6+	1.25	44.0	46.2	

ITE8512E			
VCC	ICC(mA)	mW	TEMP(°C)
+3.3V	100	330	70

CLOCK GENERATOR ICS9LPR365			
VCC	ICC(mA)	mW	TEMP(°C)
+3.3V	250	825	70

ALC662			
VCC	ICC(mA)	mW	TEMP(°C)
+3.3V(DVDD)	40	132	70
+5V(AVDD)	51	255	

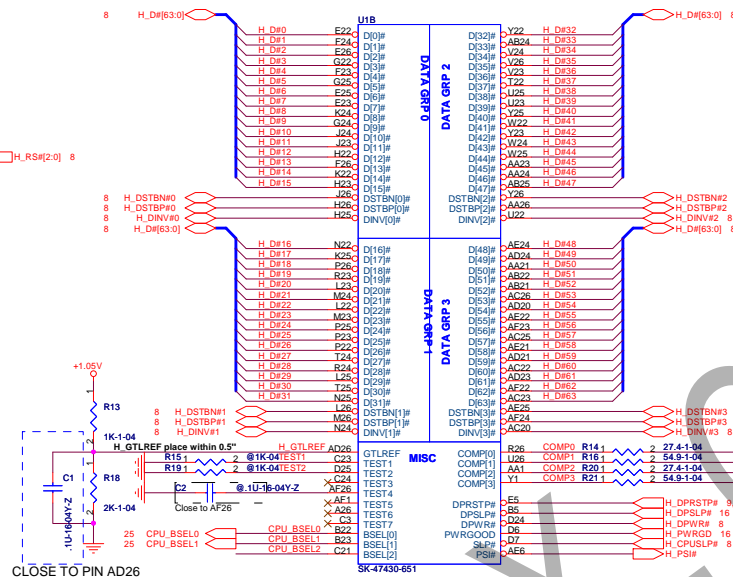
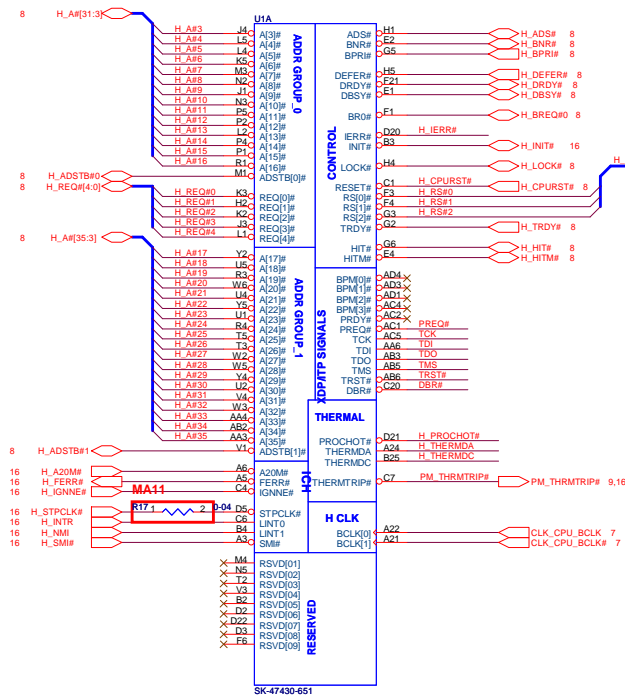
APA2068			
VCC	ICC(mA)	mW	TEMP(°C)
+5V	20	100	85

EMC1402			
VCC	ICC	mW	TEMP(°C)
+3.3V	170uA	0.56	150

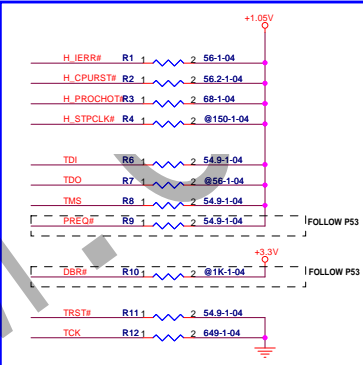
RTL8102E			
VCC	ICC(mA)	mW	TEMP(°C)
+3.3VS	103	339.9	70
+1.8VS	198	356.4	
+1.5VS	367	550.5	

Cantiga			
VCC	ICC(mA)	W	TEMP(°C)
+3.3V	262	0.87	105
+1.8VS	3178	5.73	
+1.5V	86	0.129	
+1.05	14688.52	15.43	

ICH9M			
VCC	ICC(mA)	mW	TEMP(°C)
+5V	2	10	70
+5VS	2	10	
+3.3V	347	1145.1	
+3.3VS	212	699.6	
+1.5V	1988	2982	
+1.05V	1634	1715.7	

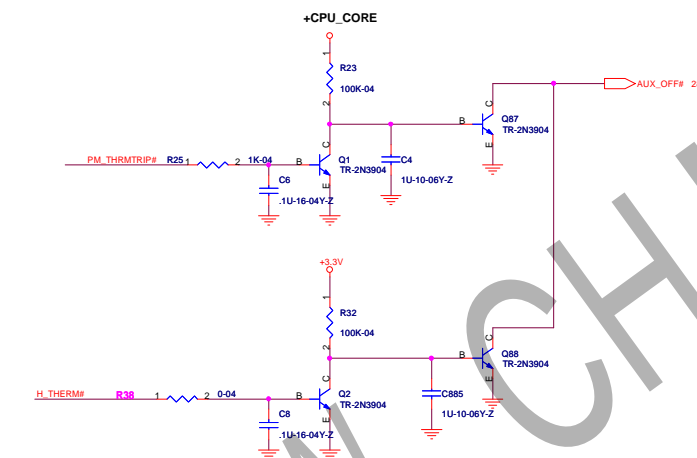
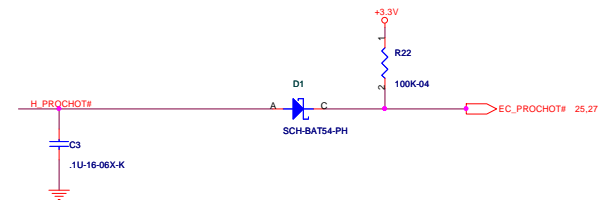


Close to CPU within 20mil



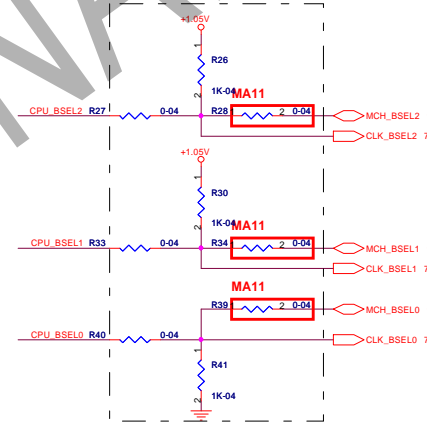
CLOSE TO PIN AD26

FSB	BSEL	BSEL2	BSEL1	BSEL0	MHZ
FSB667	0	1	1	1	166
FSB800	0	1	0	0	200
FSB1066	0	0	0	0	266

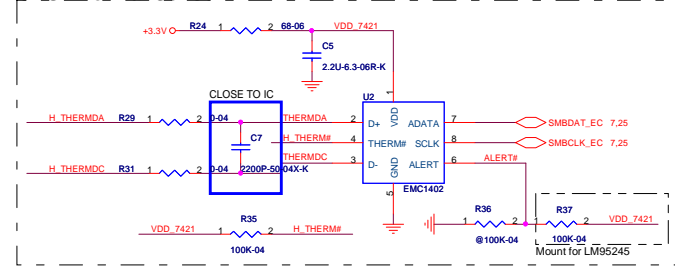


Input	Output
PM_THRMTRIP#	H_THERM#
L	L
L	H
H	L
H	H

Close to CPU

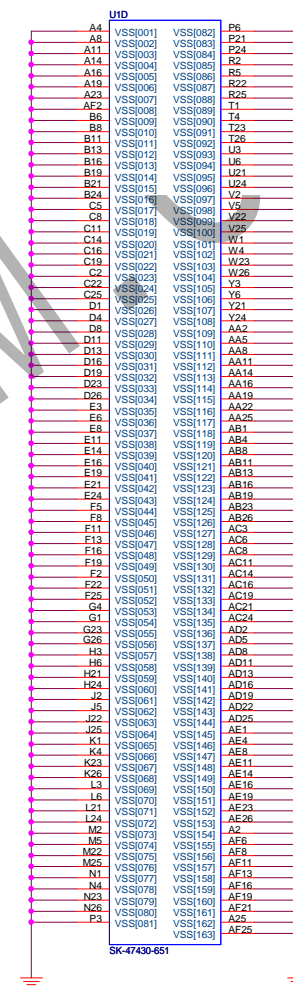
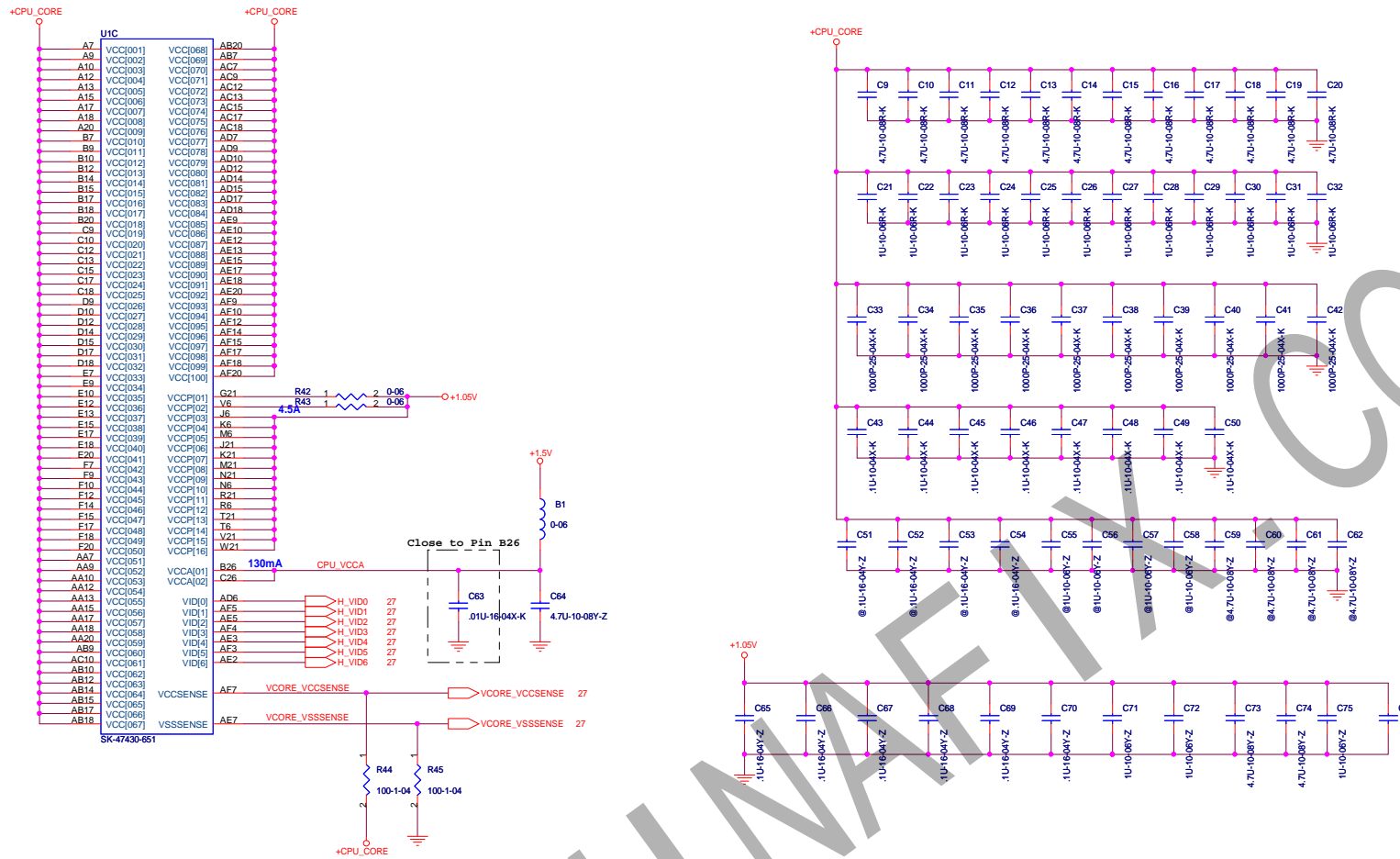


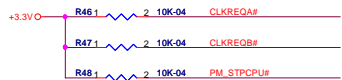
CPU Thermal Sensor



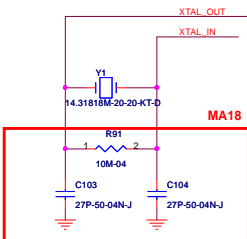
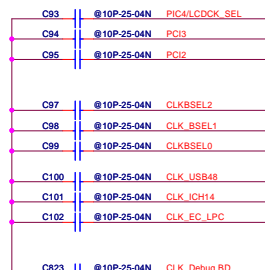
IC	SETTING	R32	R34	R41
EMC1402	0R	0R	@100K	*
ADT7421	100-1-04	100-1-04	@100K	
LM95245	0R	0R	@100K	

R41 can use 100K for 3 vendor real application
R32,R34 can use 0-04 for ADT7421 real application



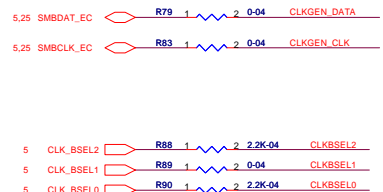


Reserved FOR EMI



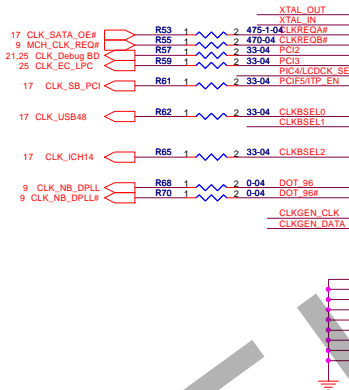
$C_e = 2 * C_L - (C_s + C_i)$
 C_L = Crystal Load Cap = 20P
 C_i = IC internal Cap = 5P
 C_s = 2P
 C_e = Crystal external Cap = 33P

CLK REQ	From	O/P
A	ICH_SATA	SRC2
B	MCH_GCLK	SRC4
H	GLAN	SRC10
G	MINICARD1	SRC9

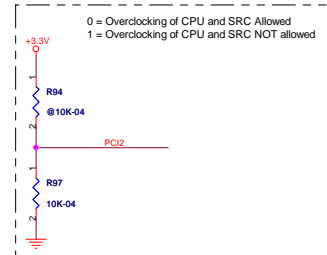
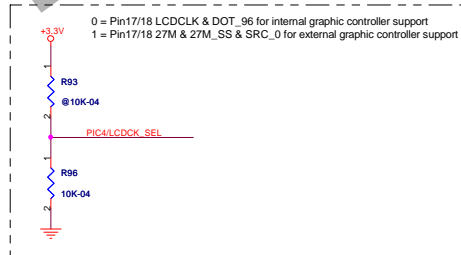
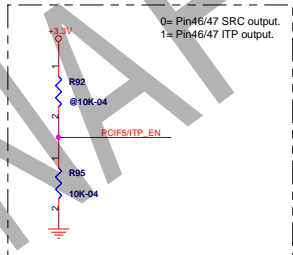


Bsel [0..2] VIH = 0.7V VIL = 0.3V

FSB	BSEL	BSEL2	BSEL1	BSEL0	CPU	PCI	PCI-E
FSB667	0	1	1	166			
FSB800	0	1	0	200			
FSB1066	0	0	0	266			

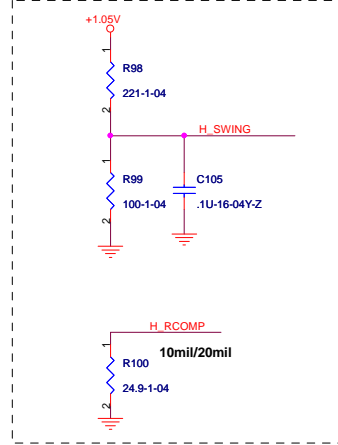


Need reserved space for 72Pin CLOCK GEN



U41			
AL48	VSS_1	VSS_100	AM36
AR48	VSS_2	VSS_101	AE36
AL48	VSS_3	VSS_102	P36
BB47	VSS_4	VSS_103	L36
AN47	VSS_5	VSS_104	F36
AI47	VSS_6	VSS_105	B36
AF47	VSS_7	VSS_106	AH35
AD47	VSS_8	VSS_107	AA35
AB47	VSS_9	VSS_108	Y35
	VSS_10	VSS_109	U35
Y47	VSS_11	VSS_110	T35
T47	VSS_12	VSS_111	BF34
N47	VSS_13	VSS_112	AM34
L47	VSS_14	VSS_113	AJ34
G47	VSS_15	VSS_114	AF34
BD46	VSS_16	VSS_115	AE34
BA46	VSS_17	VSS_116	W34
AY46	VSS_18	VSS_117	B34
AV46	VSS_19	VSS_118	A34
AR46	VSS_20	VSS_119	RG33
AM46	VSS_21	VSS_120	BC33
V46	VSS_22	VSS_121	BA33
R46	VSS_23	VSS_122	AV33
P46	VSS_24	VSS_123	AL33
H46	VSS_25	VSS_124	AH33
F46	VSS_26	VSS_125	AB33
BF44	VSS_27	VSS_126	P33
AH44	VSS_28	VSS_127	L33
AD44	VSS_29	VSS_128	H33
AA44	VSS_30	VSS_129	N32
Y44	VSS_31	VSS_130	K32
U44	VSS_32	VSS_131	F32
T44	VSS_33	VSS_132	C32
M44	VSS_34	VSS_133	A31
F44	VSS_35	VSS_134	AN29
BC43	VSS_36	VSS_135	T29
AV43	VSS_37	VSS_136	N29
AU43	VSS_38	VSS_137	K29
AM43	VSS_39	VSS_138	H29
J43	VSS_40	VSS_139	F29
C43	VSS_41	VSS_140	A29
BG42	VSS_42	VSS_141	BG28
AY42	VSS_43	VSS_142	BD28
AT42	VSS_44	VSS_143	BA28
AN42	VSS_45	VSS_144	AV28
AJ42	VSS_46	VSS_145	AT28
AE42	VSS_47	VSS_146	AR28
N42	VSS_48	VSS_147	AJ28
L42	VSS_49	VSS_148	AG28
BD41	VSS_50	VSS_149	AE28
AU41	VSS_51	VSS_150	Y28
AM41	VSS_52	VSS_151	P28
AH41	VSS_53	VSS_152	K28
AD41	VSS_54	VSS_153	H28
AA41	VSS_55	VSS_154	F28
Y41	VSS_56	VSS_155	C28
U41	VSS_57	VSS_156	BF26
T41	VSS_58	VSS_157	AH26
M41	VSS_59	VSS_158	AF26
G41	VSS_60	VSS_159	AG26
B41	VSS_61	VSS_160	AA26
BG40	VSS_62	VSS_161	C26
BB40	VSS_63	VSS_162	B26
AV40	VSS_64	VSS_163	BH25
AN40	VSS_65	VSS_164	BD25
H40	VSS_66	VSS_165	BB25
E40	VSS_67	VSS_166	AV25
AT39	VSS_68	VSS_167	AR25
AM39	VSS_69	VSS_168	AJ25
AJ39	VSS_70	VSS_169	AC25
AE39	VSS_71	VSS_170	Y25
N39	VSS_72	VSS_171	N25
L39	VSS_73	VSS_172	L25
B39	VSS_74	VSS_173	J25
BH38	VSS_75	VSS_174	G25
BC38	VSS_76	VSS_175	E25
BA38	VSS_77	VSS_176	BF24
AU38	VSS_78	VSS_177	AD24
AH38	VSS_79	VSS_178	AY24
AD38	VSS_80	VSS_179	AT24
AA38	VSS_81	VSS_180	AJ24
Y38	VSS_82	VSS_181	AH24
U38	VSS_83	VSS_182	AE24
T38	VSS_84	VSS_183	AB24
J38	VSS_85	VSS_184	R24
F38	VSS_86	VSS_185	L24
C38	VSS_87	VSS_186	J24
BF37	VSS_88	VSS_187	G24
BB37	VSS_89	VSS_188	F24
AW37	VSS_90	VSS_189	E24
AT37	VSS_91	VSS_190	BH23
AN37	VSS_92	VSS_191	BD23
AJ37	VSS_93	VSS_192	Y23
H37	VSS_94	VSS_193	A23
C37	VSS_95	VSS_194	
BG36	VSS_96	VSS_195	
BD36	VSS_97	VSS_196	
AK15	VSS_98	VSS_197	
AU36	VSS_99	VSS_198	

Reference Voltage for RCOMP

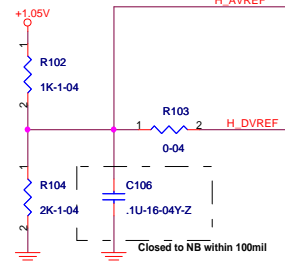


5 H_D# [63:0]

H_D#0	F2
H_D#1	G8
H_D#2	F8
H_D#3	E6
H_D#4	G2
H_D#5	H6
H_D#6	H2
H_D#7	F6
H_D#8	D4
H_D#9	H3
H_D#10	M9
H_D#11	M11
H_D#12	J1
H_D#13	J2
H_D#14	N12
H_D#15	J6
H_D#16	P2
H_D#17	L2
H_D#18	R2
H_D#19	N9
H_D#20	L6
H_D#21	M5
H_D#22	J3
H_D#23	N2
H_D#24	R1
H_D#25	N6
H_D#26	P13
H_D#27	N8
H_D#28	L7
H_D#29	N10
H_D#30	M3
H_D#31	Y3
H_D#32	AD14
H_D#33	Y6
H_D#34	Y10
H_D#35	Y12
H_D#36	Y14
H_D#37	Y17
H_D#38	W2
H_D#39	W2
H_D#40	AA8
H_D#41	Y9
H_D#42	AA13
H_D#43	AA9
H_D#44	AA11
H_D#45	AD11
H_D#46	AD10
H_D#47	AD13
H_D#48	AE12
H_D#49	AE9
H_D#50	AA2
H_D#51	AD8
H_D#52	AD3
H_D#53	AD7
H_D#54	AE14
H_D#55	AF3
H_D#56	AC1
H_D#57	AE3
H_D#58	AC3
H_D#59	AE11
H_D#60	AE8
H_D#61	AG2
H_D#62	AD6
H_D#63	

H_SWING C5
H_RCOMP E3

H_CPURST# C12
H_CPUSLP# GMCH E11



U4A

H_A#_3	A14
H_A#_4	C15
H_A#_5	F16
H_A#_6	H13
H_A#_7	C18
H_A#_8	M16
H_A#_9	J13
H_A#_10	P16
H_A#_11	R16
H_A#_12	N17
H_A#_13	M13
H_A#_14	E17
H_A#_15	F17
H_A#_16	G20
H_A#_17	B19
H_A#_18	J16
H_A#_19	E20
H_A#_20	H16
H_A#_21	J20
H_A#_22	L17
H_A#_23	A17
H_A#_24	B17
H_A#_25	L16
H_A#_26	C21
H_A#_27	J17
H_A#_28	H20
H_A#_29	B18
H_A#_30	K17
H_A#_31	B20
H_A#_32	E21
H_A#_33	K21
H_A#_34	L20
H_A#_35	

H_ADS#	H12	H_ADS# 5
H_ADSTB#_0	B16	H_ADSTB#_0 5
H_ADSTB#_1	G17	H_ADSTB#_1 5
H_BNR#	A9	H_BNR# 5
H_BPRI#	F11	H_BPRI# 5
H_BREQ#	G12	H_BREQ# 5
H_DEFER#	E9	H_DEFER# 5
H_DBSY#	B10	H_DBSY# 5
HPLL_CLK	AH7	CLK_MCH_BCLK 7
HPLL_CLK#	AH6	CLK_MCH_BCLK# 7
H_DPWR#	F9	H_DPWR# 5
H_DRDY#	J11	H_DRDY# 5
H_HIT#	H9	H_HIT# 5
H_HITM#	E12	H_HITM# 5
H_LOCK#	H11	H_LOCK# 5
H_TRDY#	C9	H_TRDY# 5

H_DINV#_0	J8	H_DINV#_0 5
H_DINV#_1	L3	H_DINV#_1 5
H_DINV#_2	Y13	H_DINV#_2 5
H_DINV#_3	Y1	H_DINV#_3 5

H_DSTBN#_0	L10	H_DSTBN#_0 5
H_DSTBN#_1	M7	H_DSTBN#_1 5
H_DSTBN#_2	AA5	H_DSTBN#_2 5
H_DSTBN#_3	AE6	H_DSTBN#_3 5

H_DSTBP#_0	L9	H_DSTBP#_0 5
H_DSTBP#_1	M8	H_DSTBP#_1 5
H_DSTBP#_2	AA6	H_DSTBP#_2 5
H_DSTBP#_3	AE5	H_DSTBP#_3 5

H_REQ#_0	B15	H_REQ#_0 5
H_REQ#_1	K13	H_REQ#_1 5
H_REQ#_2	F13	H_REQ#_2 5
H_REQ#_3	B13	H_REQ#_3 5
H_REQ#_4	B14	H_REQ#_4 5

H_RS#_0	B6	H_RS#_0 5
H_RS#_1	F12	H_RS#_1 5
H_RS#_2	C8	H_RS#_2 5

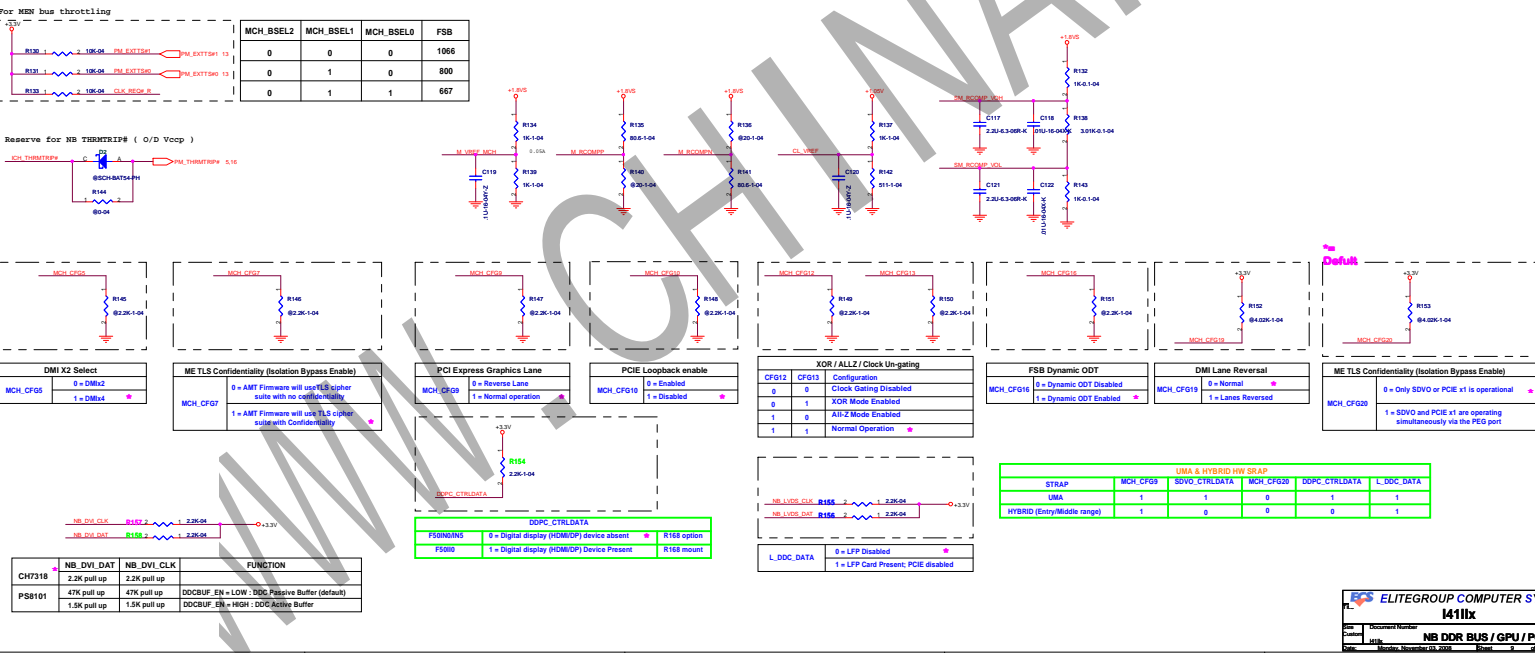
ELITEGROUP COMPUTER SYSTEMS

I411lx

NB HOST/VSS

Monday, November 03, 2008

Sheet 8 of 34



13 MA_DQ[63:0]

UMD

DDR SYSTEM MEMORY A

AC82GL40-B3

13 MB_DQ[63:0]

UAE

DDR SYSTEM MEMORY B

AC82GL40-B3

MB_BA[2:0] 13,26

MB_DM[7:0] 13

MB_DQS[7:0] 13

MB_DQS# [7:0] 13

MBA_A[14:0] 13,26

VSS

VSS NCTF

VSS SCB

NC

VSS NCTF

VSS SCB

NC

VSS NCTF

VSS SCB

NC

VSS NCTF

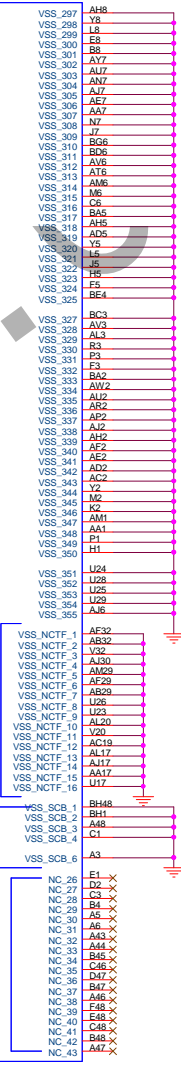
VSS SCB

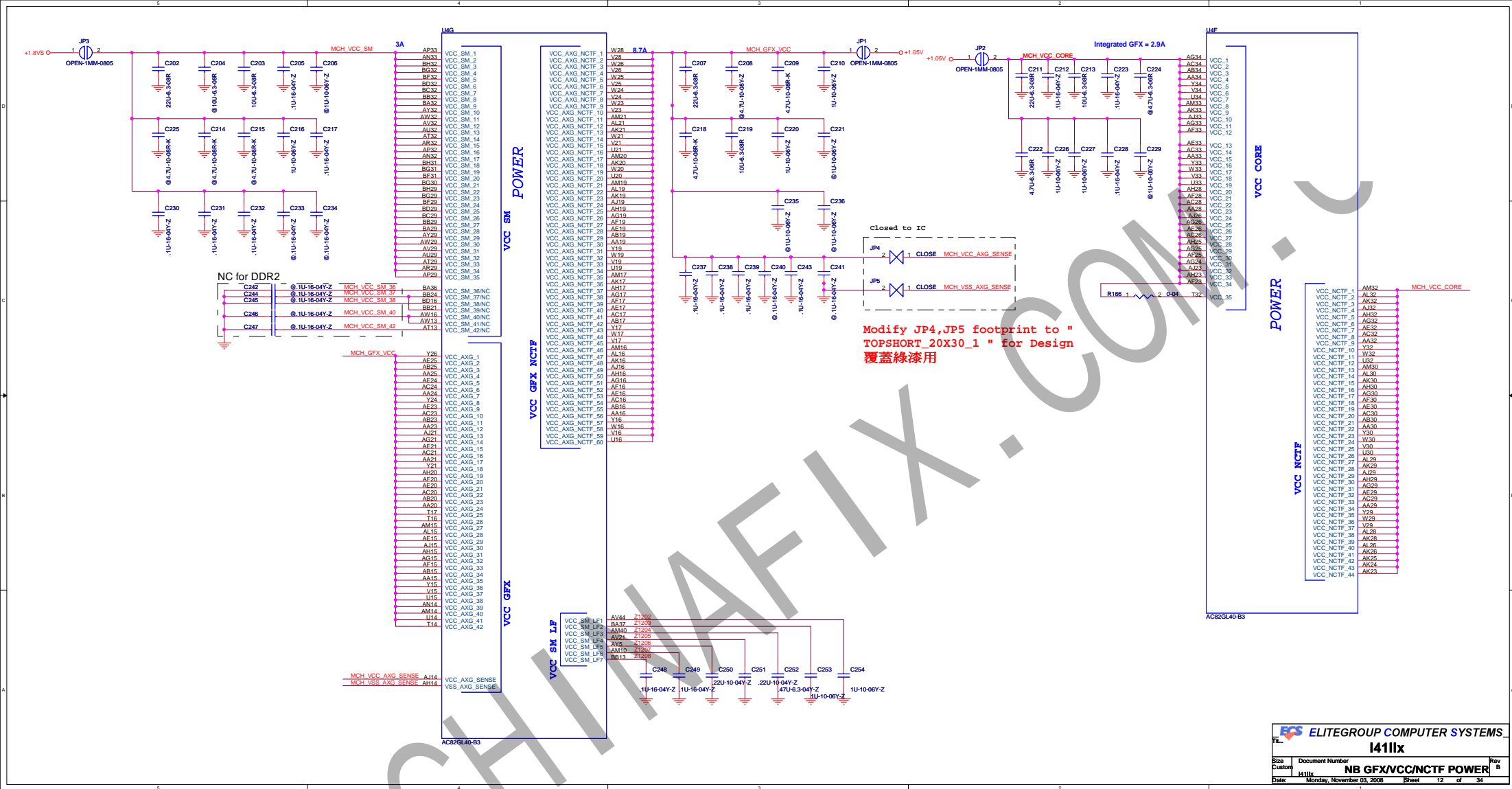
NC

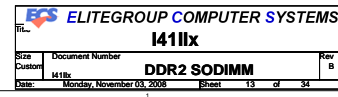
VSS NCTF

VSS SCB

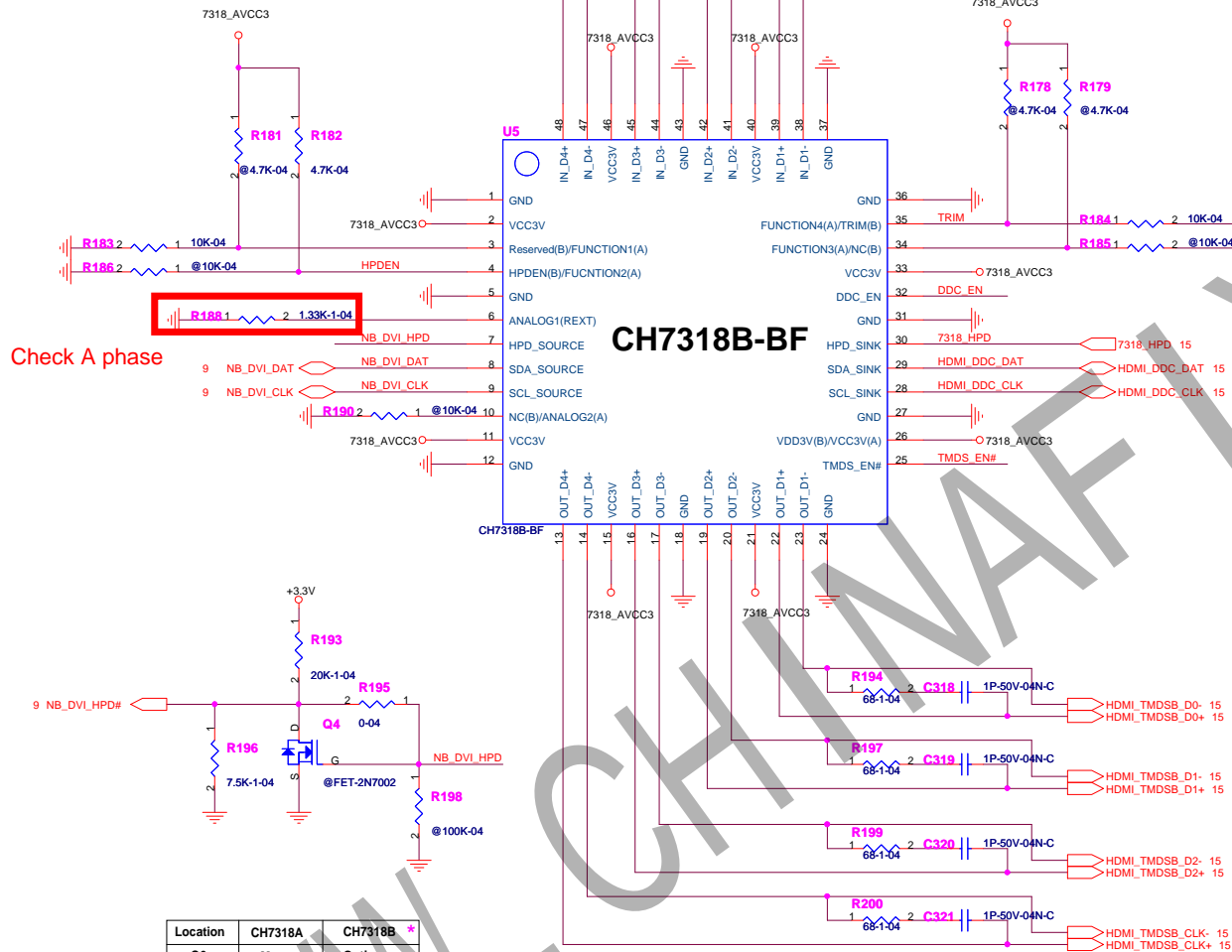
NC







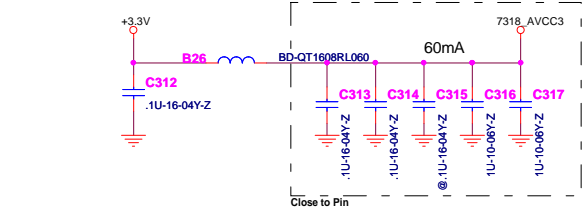
Check A phase



Location	CH7318A	CH7318B *
Q6	Mount	Option
R208	Mount	Option
R1402	Option	Mount

HPDEN	HPD_SOURCE
0	Non-Inverting output
1	Inverting output(Open drain) *

TRIM	Output Current
0	Default *
1	+10%



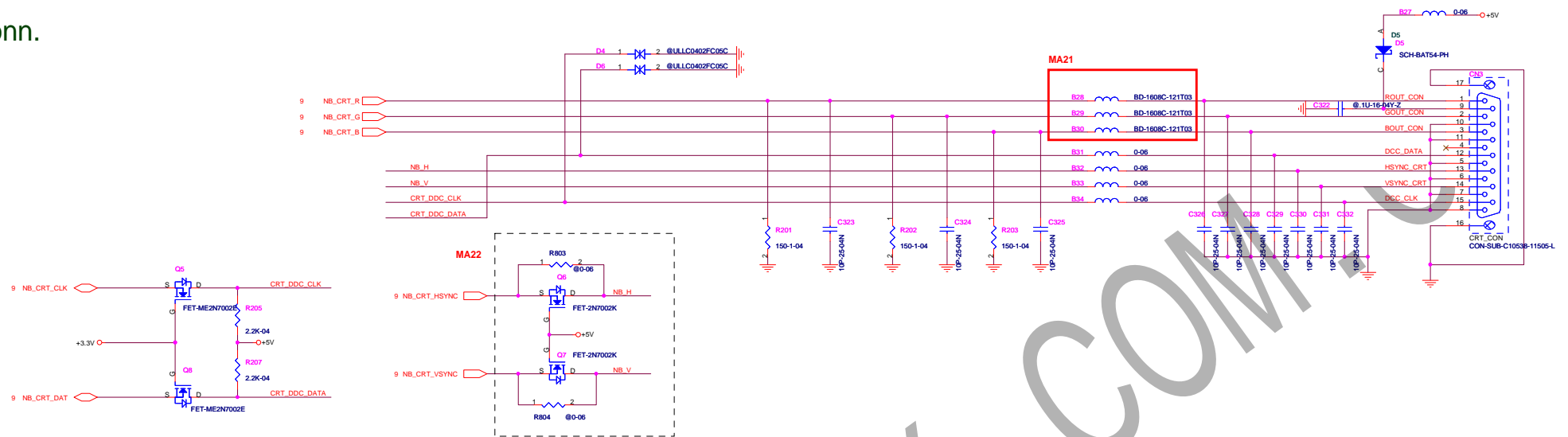
DDC_EN	Passgate
L	Disable
H	Enable

TMDS_EN#	In_Dx	TMDS_OUTx
H	High-Z	High-Z
L	50ohm Termination	Level shifting mode enabled

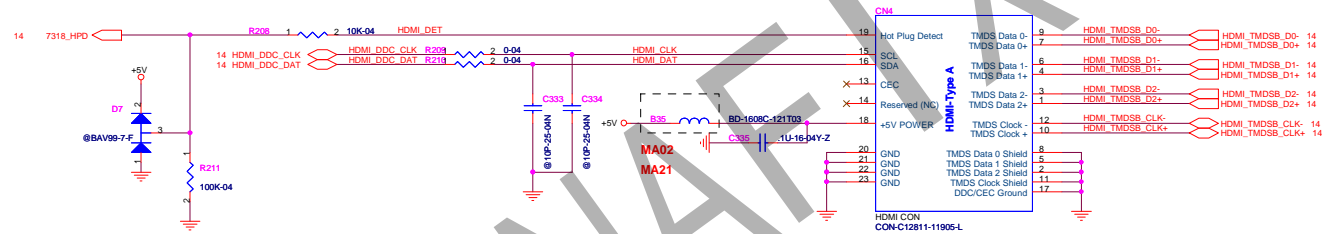
	NB_DVI_DAT	NB_DVI_CLK	FUNCTION
CH7318 *	2.2K pull up	2.2K pull up	
PS8101	47K pull up	47K pull up	DDCBUF_EN = LOW : DDC Passive Buffer (default)
	1.5K pull up	1.5K pull up	DDCBUF_EN = HIGH : DDC Active Buffer

Pin	CH7318B *	PS8101
3	10K pull down	4.7K pull up
4		4.7K pull up
6	1.2K_1	499R_1
10	NC	
28	2.2K pull up	1.5K pull up
29	2.2K pull up	1.5K pull up
32	20K pull down	4.7K pull up
34	NC	4.7K pull up
35	10K pull down	4.7K pull up
13,14	Mount R210,C345	Option R210,C345
16,17	Mount R209,C344	Option R209,C344
19,20	Mount R206,C343	Option R206,C343
22,23	Mount R203,C342	Option R203,C342

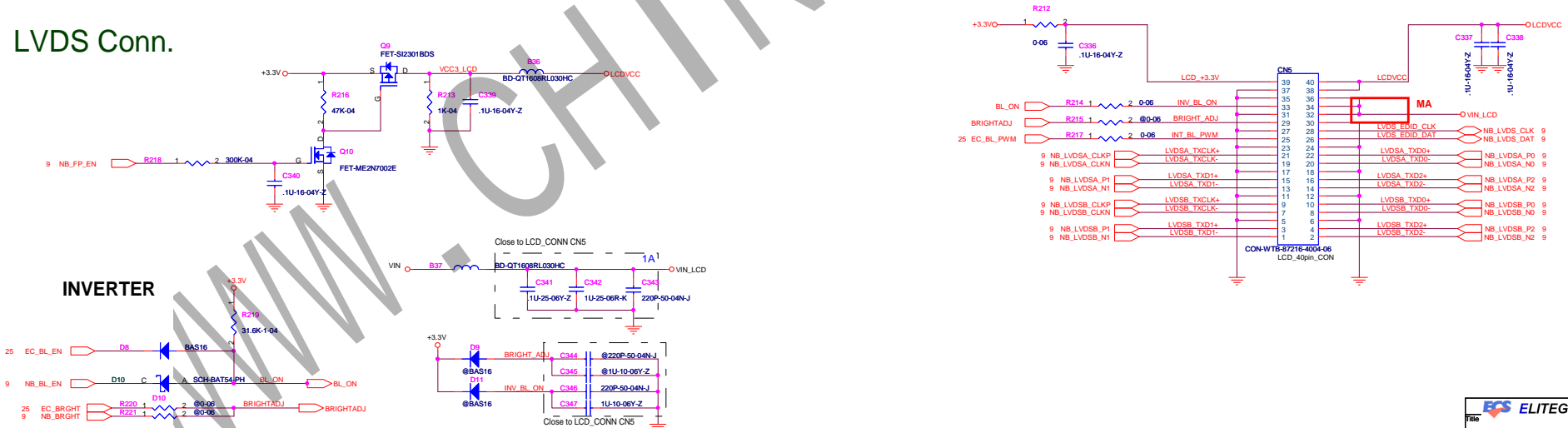
CRT Conn.

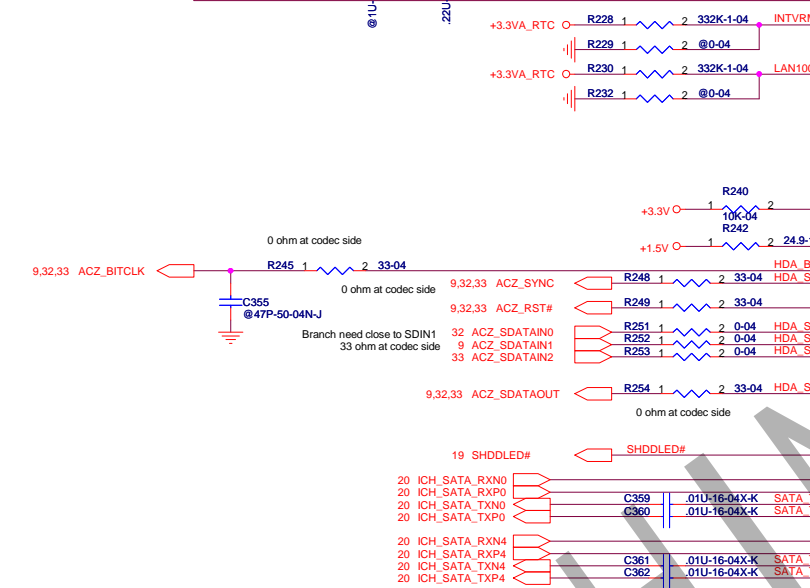


HDMI Conn.



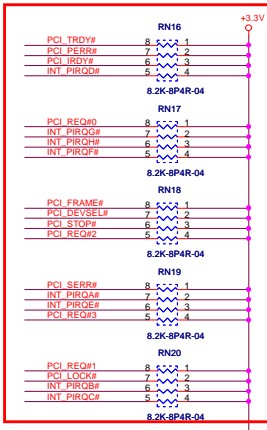
LVDS Conn.



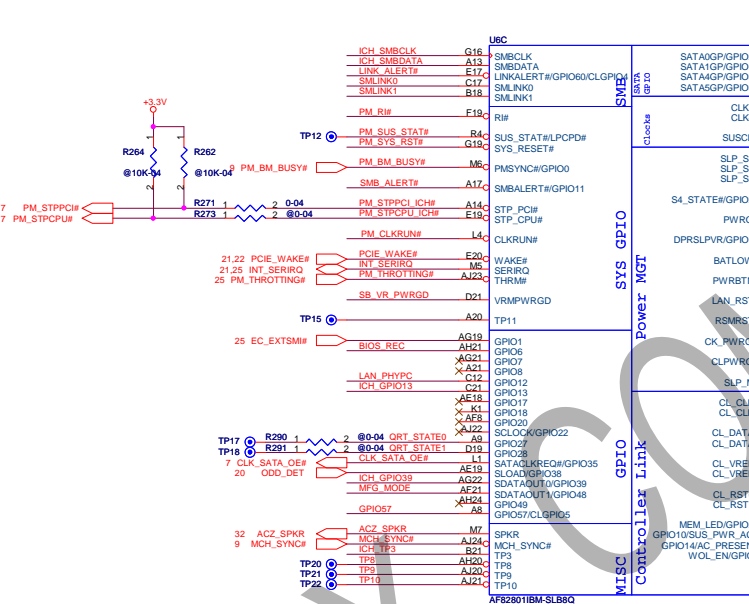
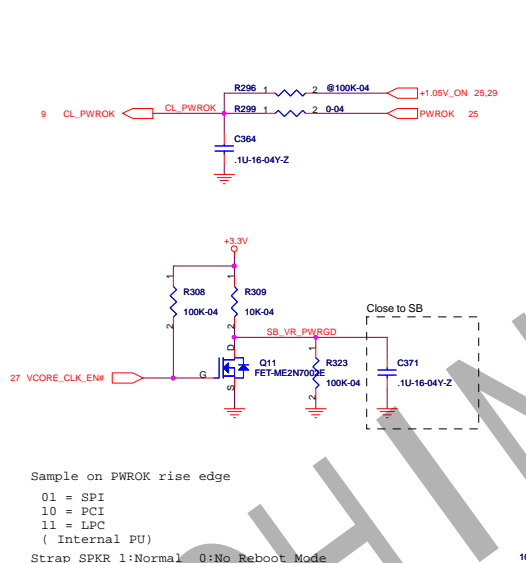
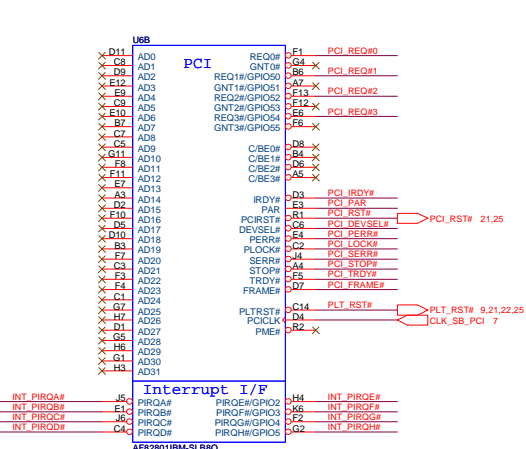
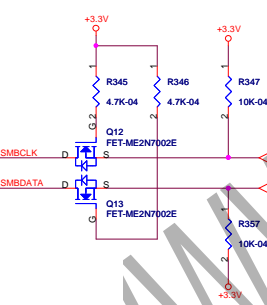
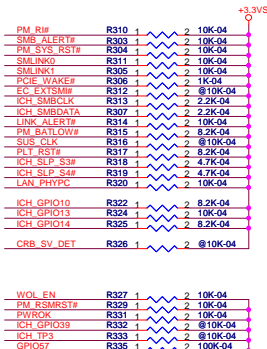
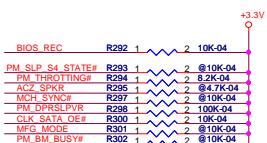
[illegible]

ICH9-M LAN100_SLP Strap (Internal VR for VccLAN1_05 and VccCL1_05)
0 = Internal VR Disabled
1 = Internal VR Enabled *

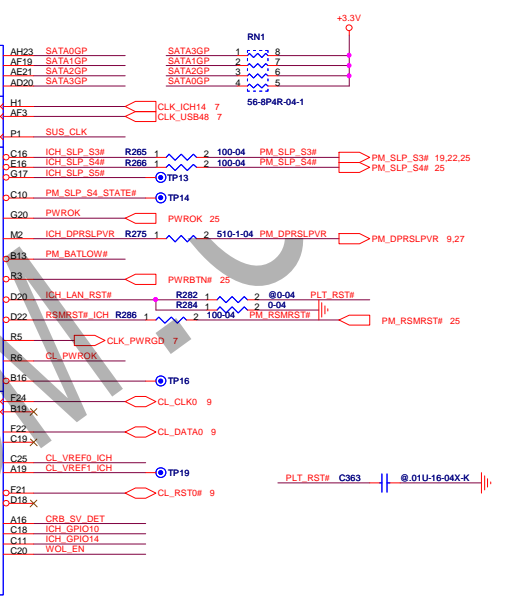
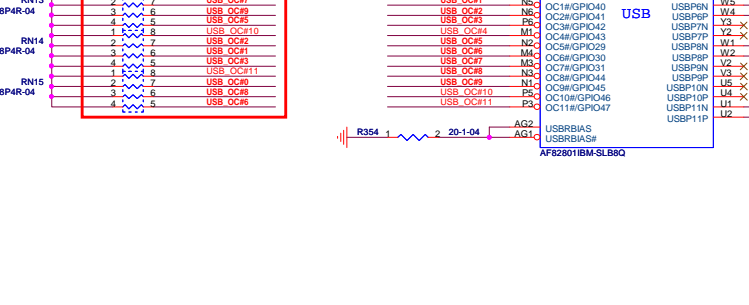
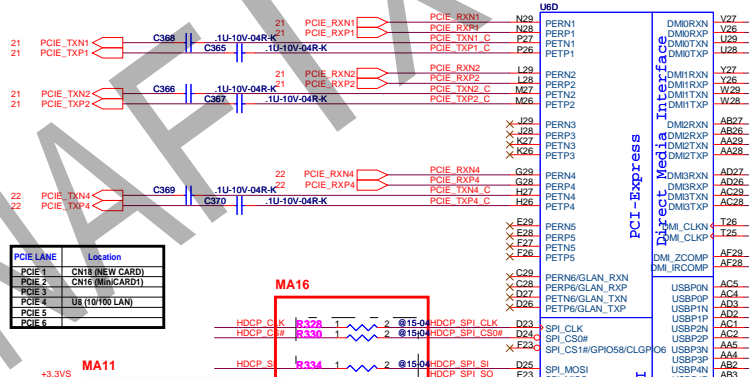
SATA Port	Location
SATA0	Main HDD
SATA1	SATA ODD
SATA4	SATA



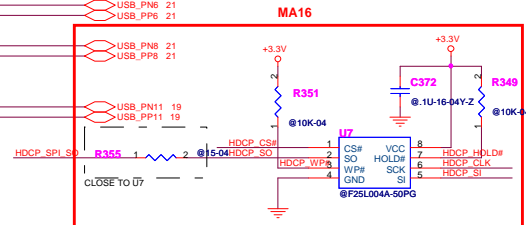
As Test Point



Resume Power GPIO [8:10] [12:15] [25:28]

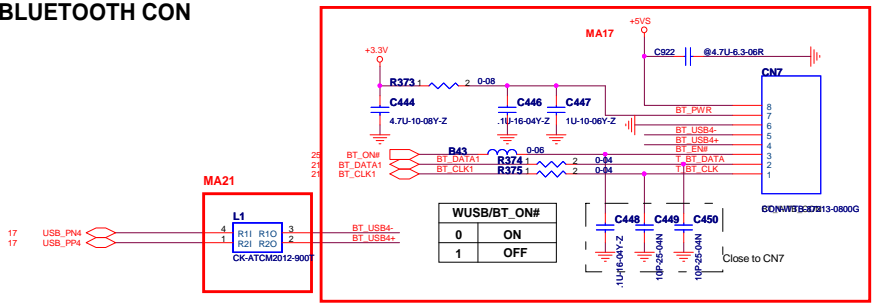


USB	Location
USB 0	CN11 (USB)
USB 1	U10 (CARD)
USB 2	CN11 (USB)
USB 3	CN8 (WEB/CAM)
USB 4	CN7 (USB/BT)
USB 5	CN16 (MiniCARD1)
USB 6	CN17 (3G)
USB 7	
USB 8	CN15/CN18(USB / New Card)
USB 9	
USB 10	
USB 11	CN15 (E-Linear Print)

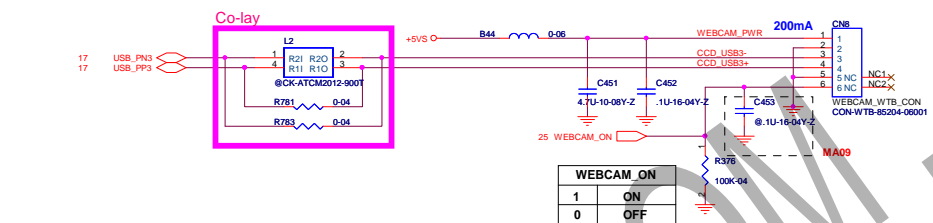




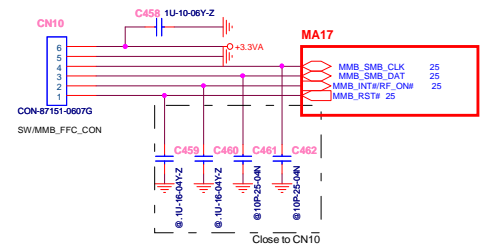
BLUETOOTH CON



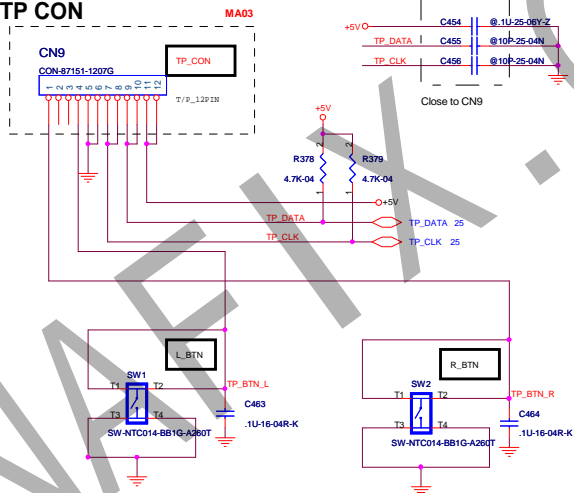
WEBCAM CON



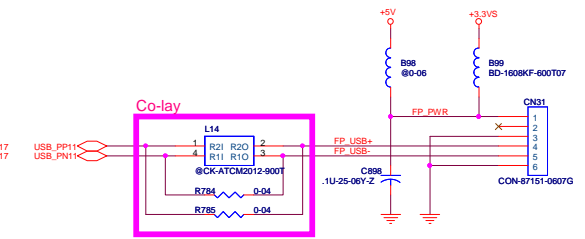
MMB CON



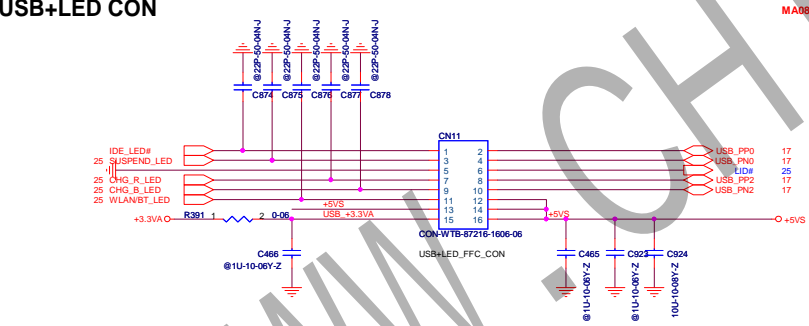
TP CON



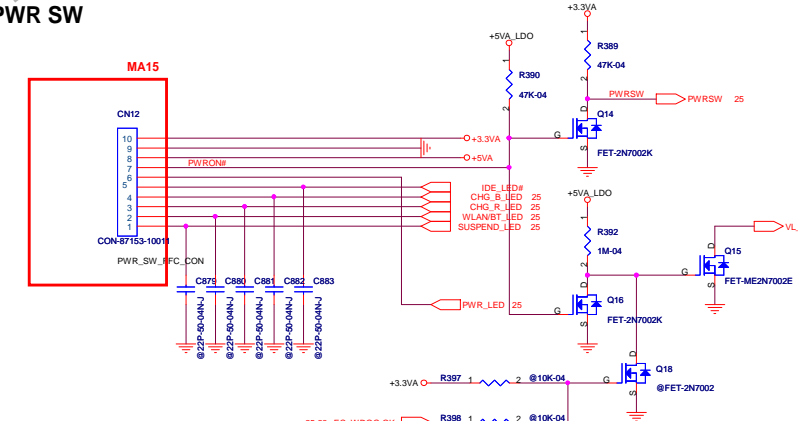
Finger Print CON



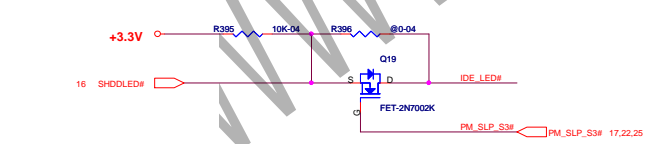
USB+LED CON



PWR SW



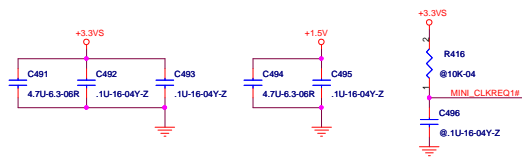
HDD Led



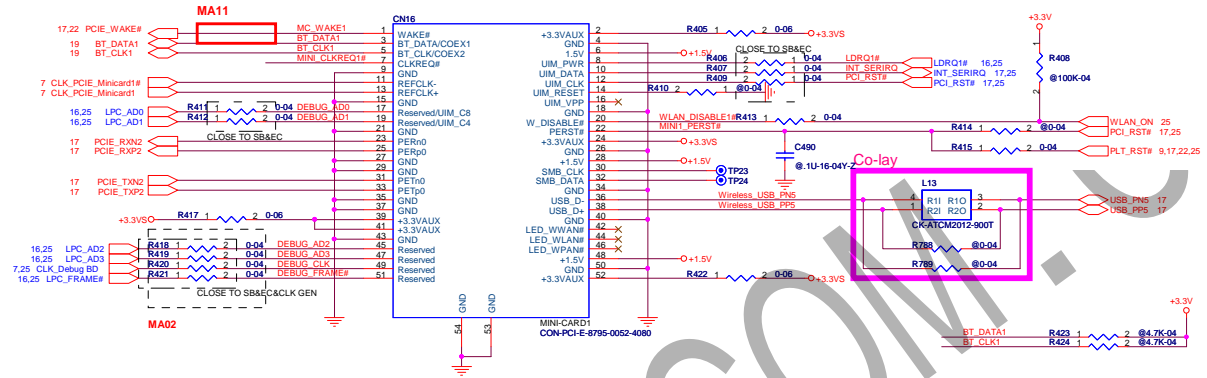
MINI CARD CON

Intel PRO/Wireless 2100 LAN

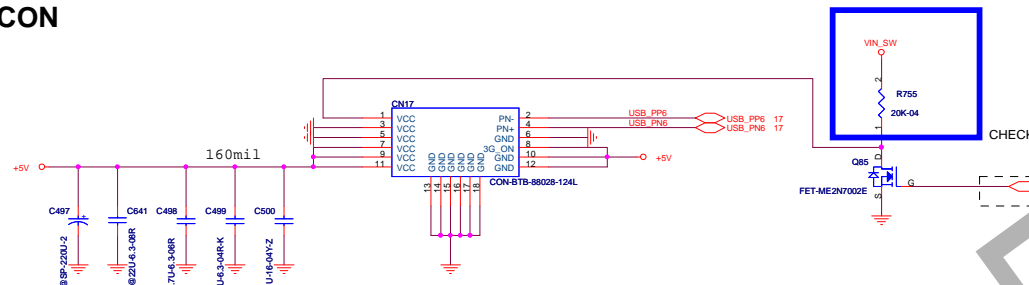
PIN11	LED_WLAN_LINK	H(3.3V) Low(0V)	Solid ON 1 flash/3 sec LED OFF	Associated AP Not Associated with an AP Power OFF or RF_Kill active
PIN12	LED_WLAN_ACT	H(3.3V) Low(0V)	Rapid Blinking Slow Blinking LED OFF	Passing data traffic to AP Beacon traffic to AP Power OFF or not activity or RF_Kill active
PIN13	HW_RadioXMIT_Off#	H(3.3V) Low(0V)	Enable Disable	Radio transmitter is ON Radio transmitter turn off



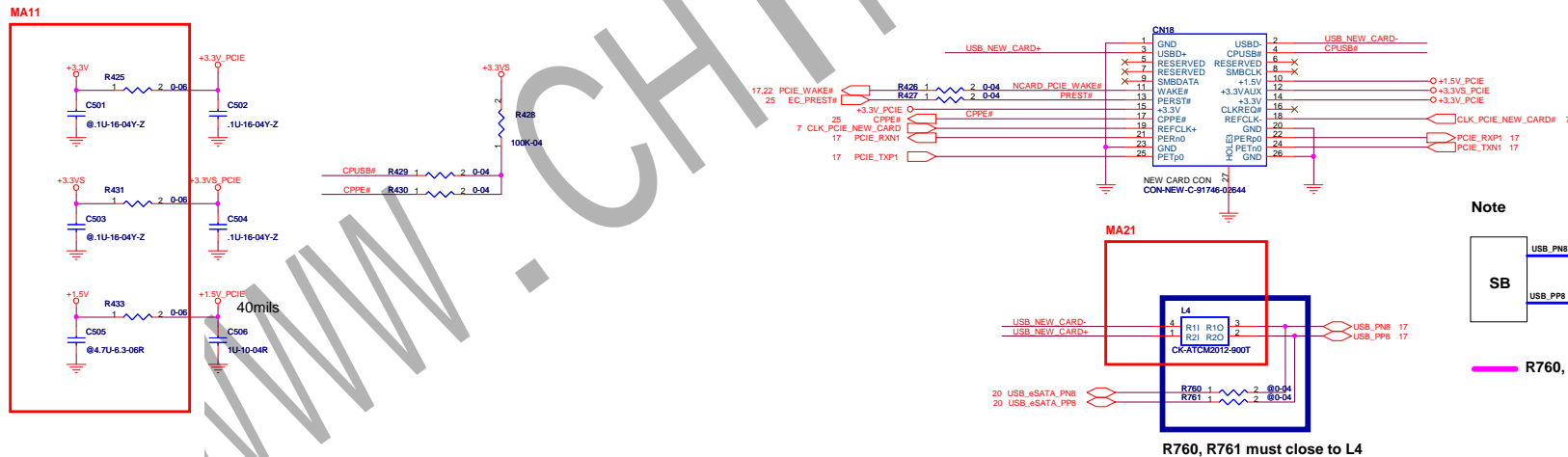
FOR Wireless LAN



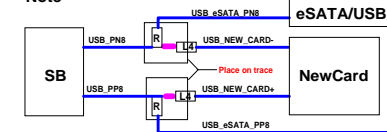
3G CON



NEW CARD SOCKET

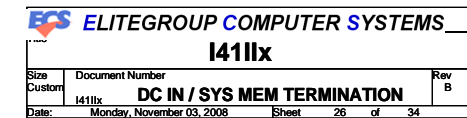


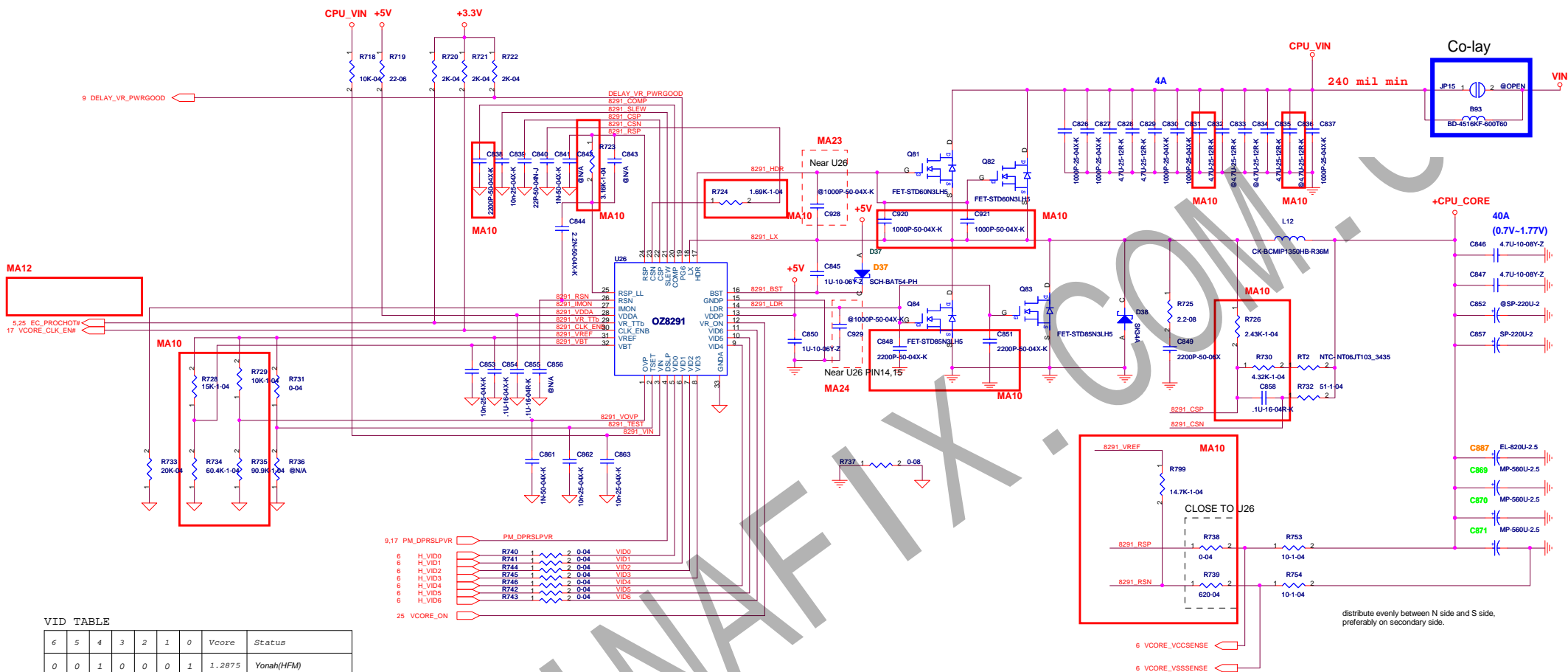
Note



R760, R761 must close to L4

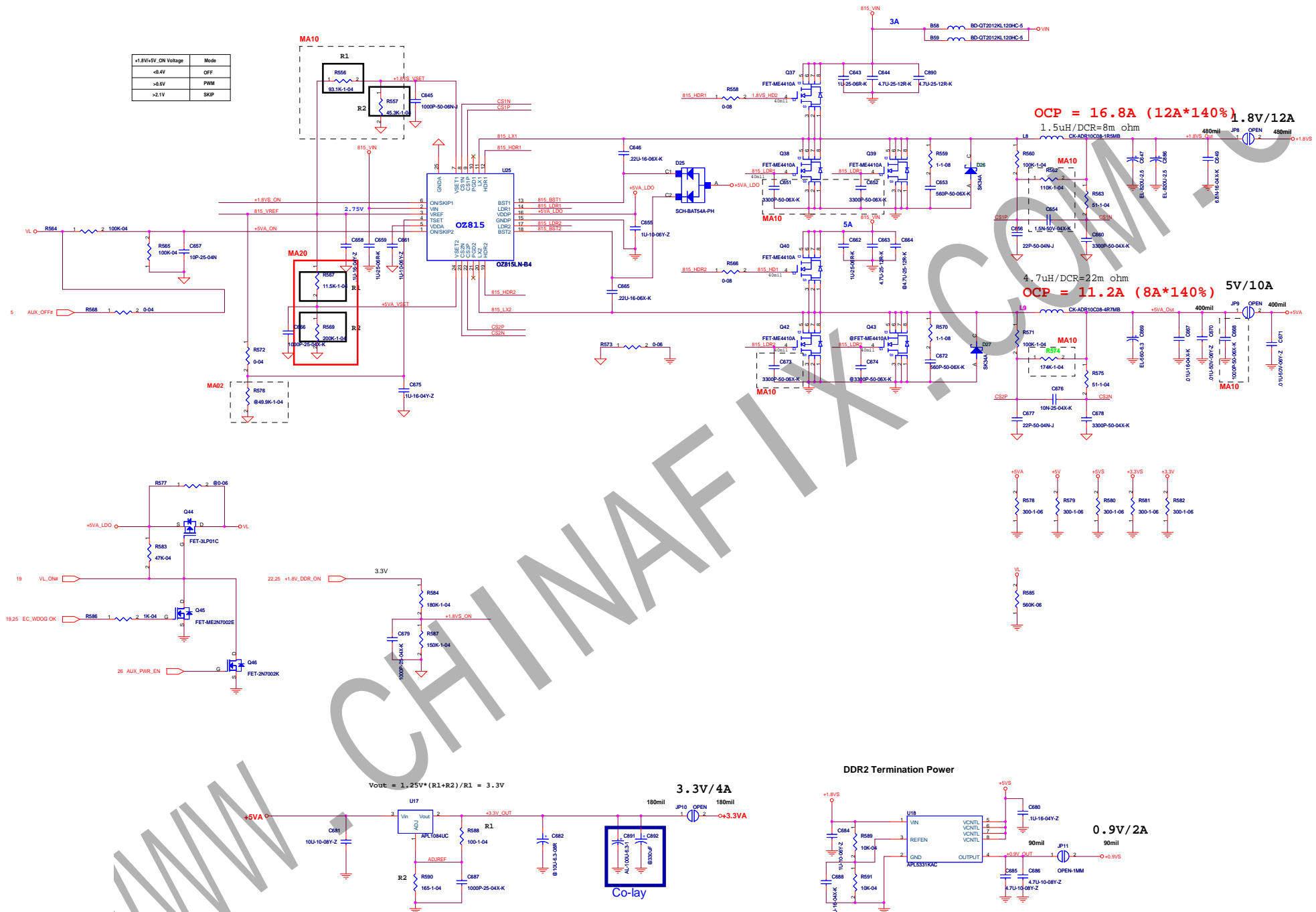
R760, R761 must close to L4



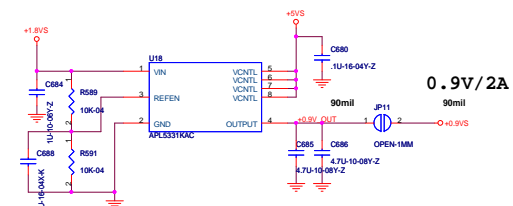


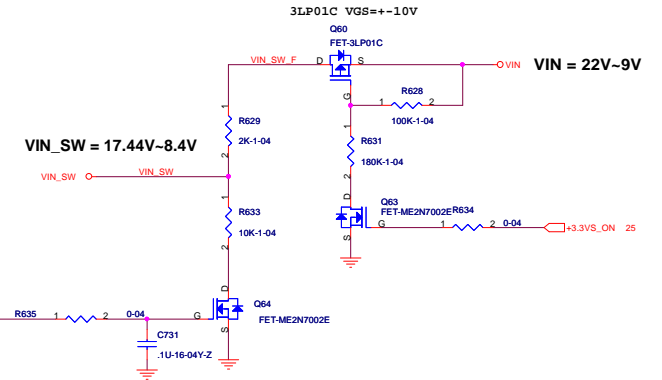
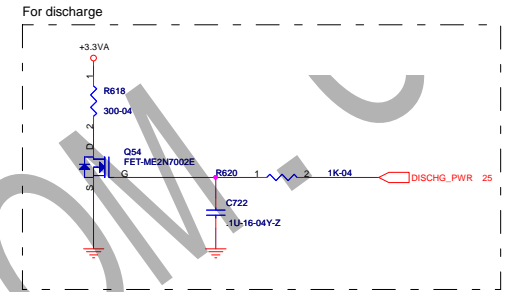
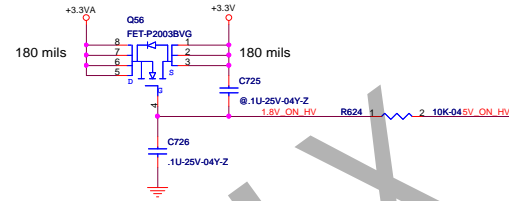
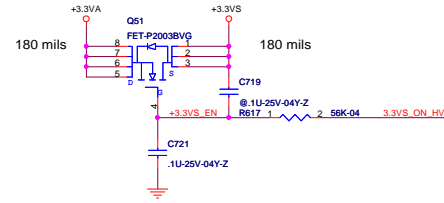
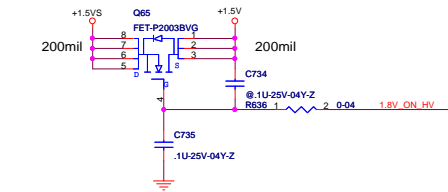
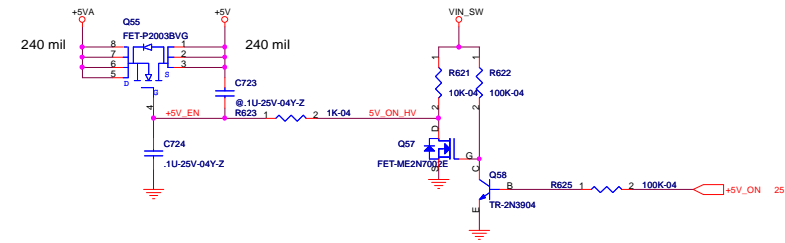
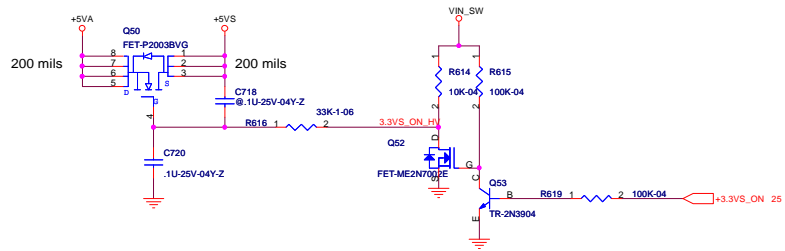
Output Voltage = [Vref x R2/(R1+R2)] x 2

+1.8V/+5V_ON Voltage	Mode
<0.4V	OFF
>0.6V	PWM
>2.1V	SKIP

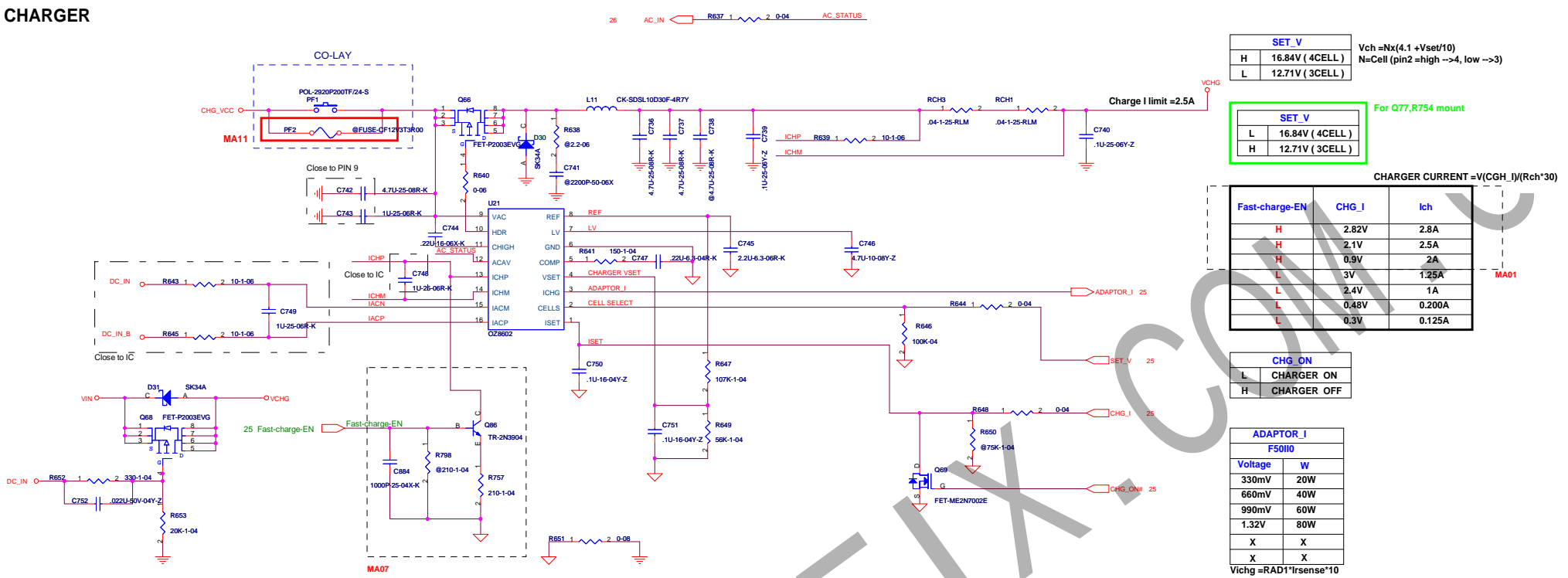


DDR2 Termination Power

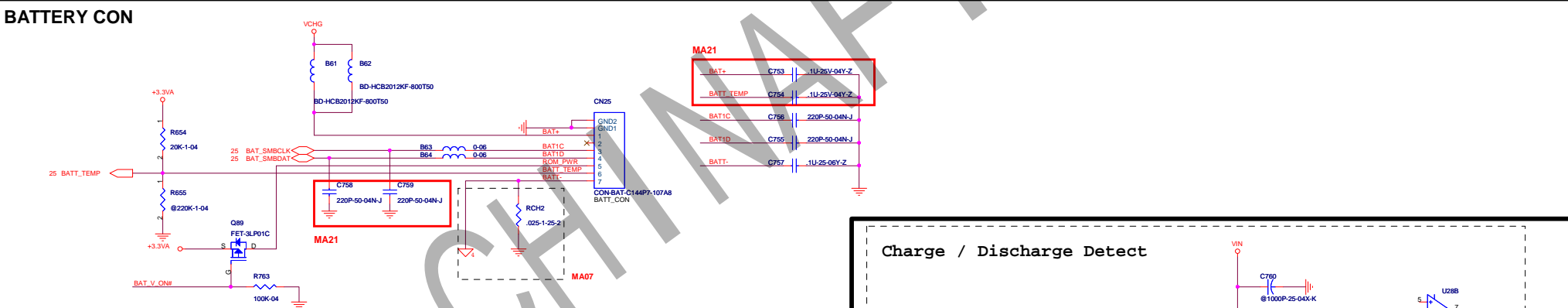




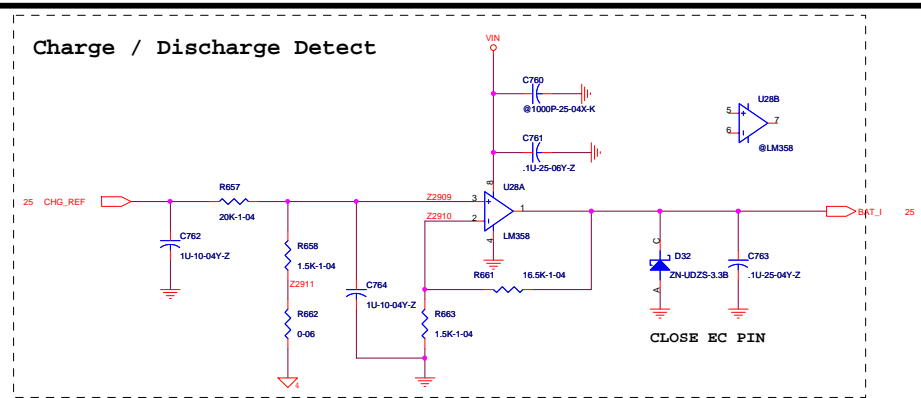
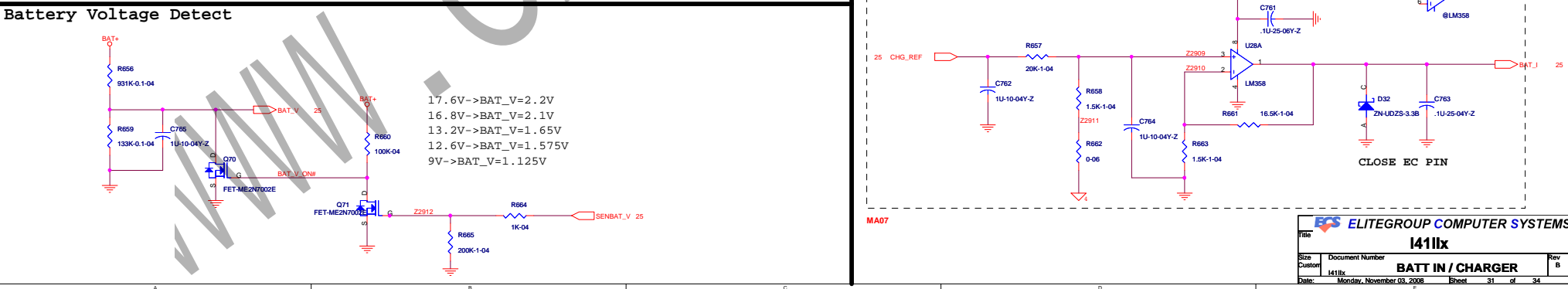
CHARGER

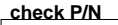
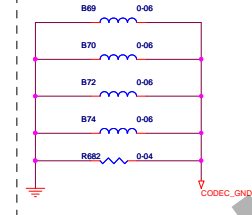


BATTERY CON

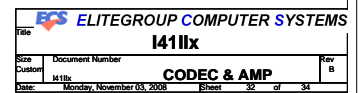


Battery Voltage Detect

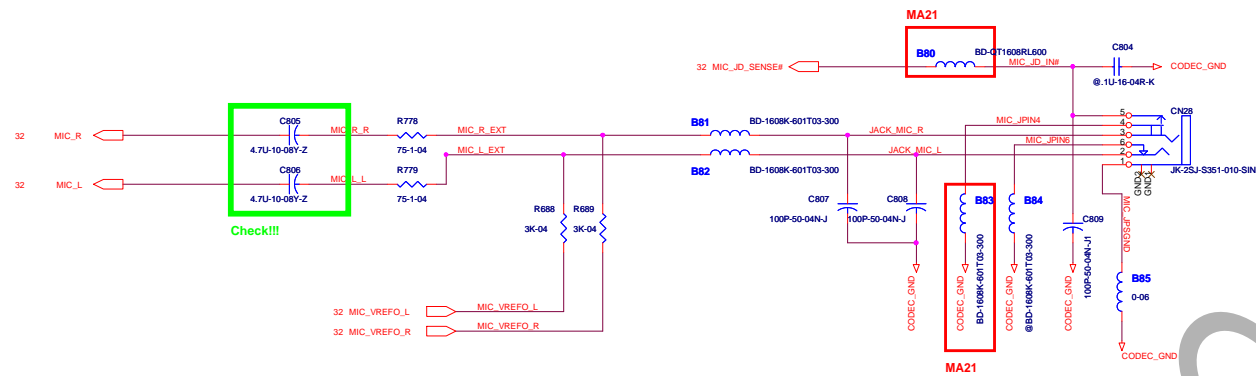




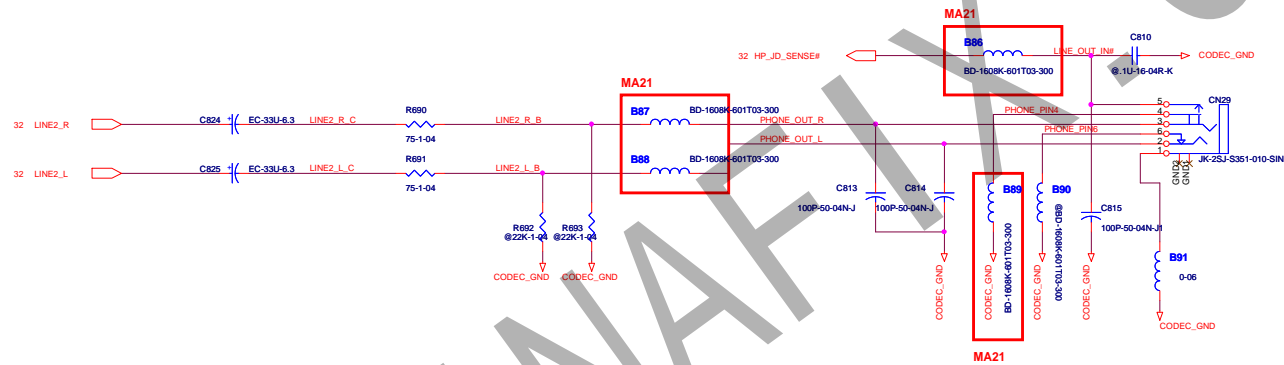
Gain Table



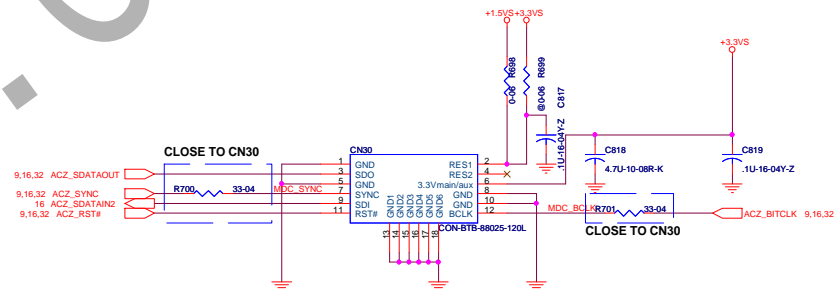
MIC/Line In JACK



HeadPhone JACK



MDC



[illegible]