Edwards1.1 and Nano1.0 UMA MV Schematic

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MB

P. Leader	Check by	Design by

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Title: COVER SHEET

Size	Document Number	Rev
	Edwards	MV

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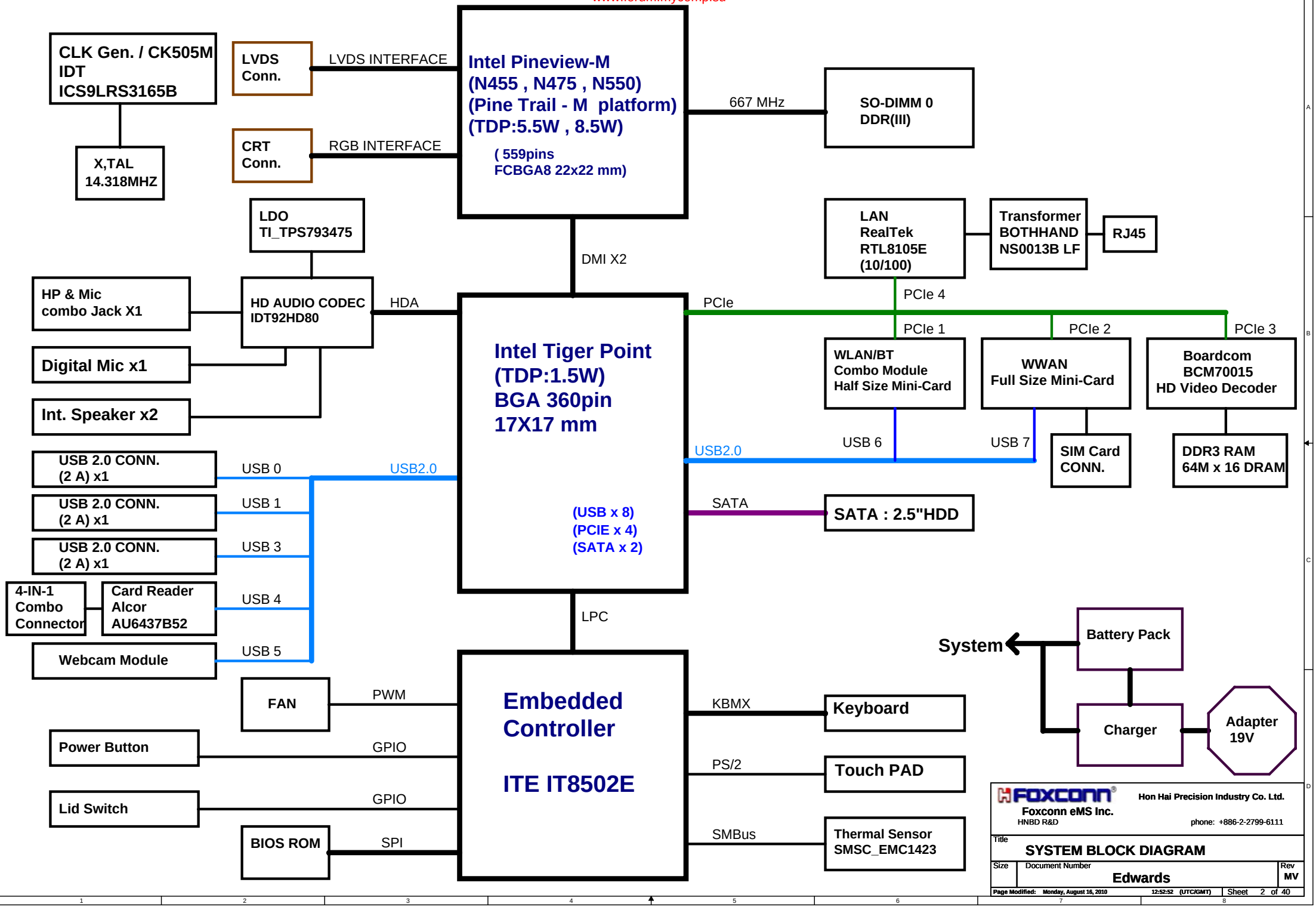

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Title: SYSTEM BLOCK DIAGRAM

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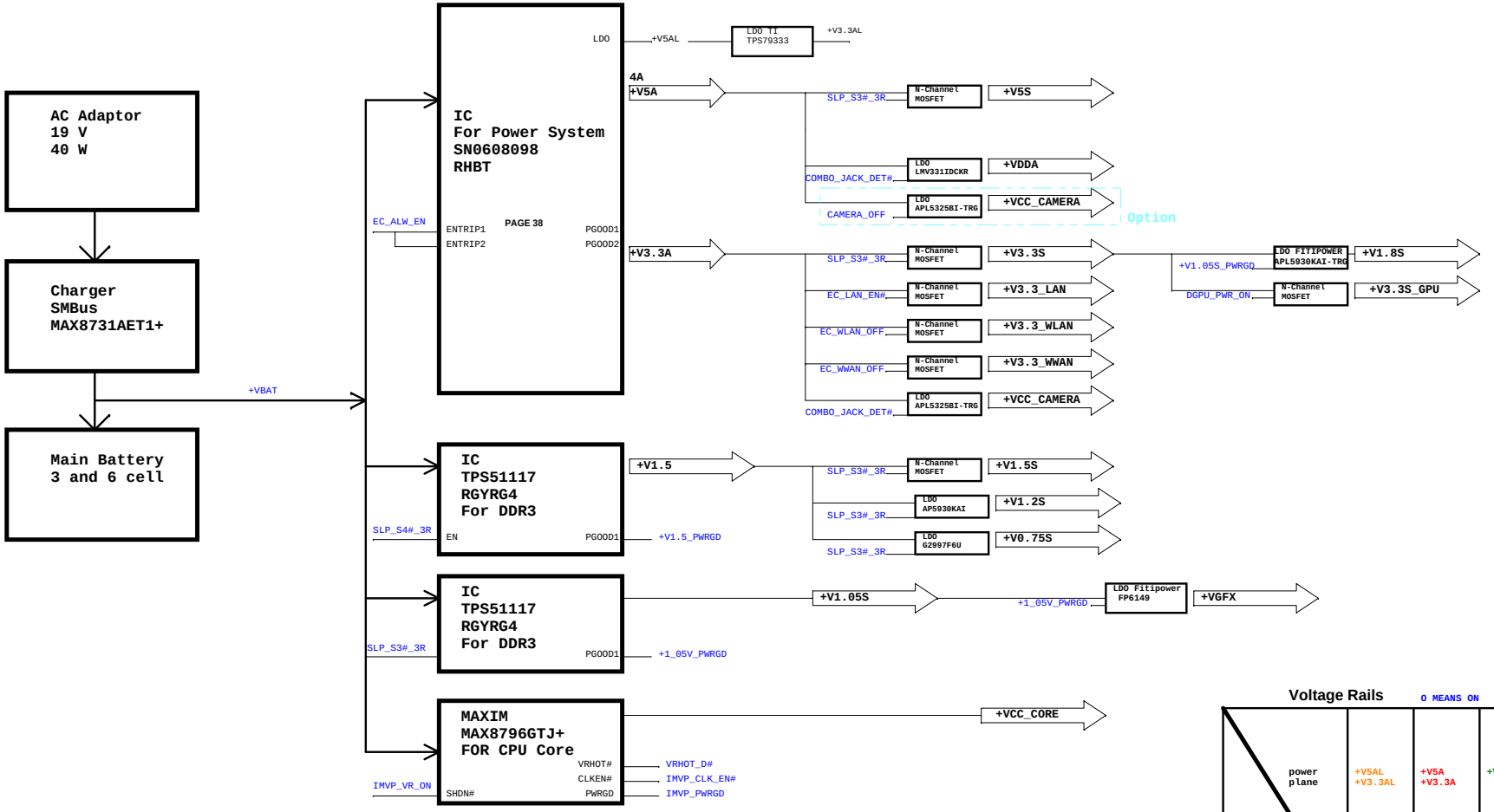
Edwards Power Block Diagram



Voltage Rails

O MEANS ON X MEANS OFF

power plane / State	+V5AL +V3.3AL	+V5A +V3.3A	+V1.5	+V5S +V3.3S +V1.8S +V1.5S +V1.05S +V0.75S +VGFX +VCC_CORE +V1.2S +V1.5S_HD
S0	O	O	O	O
S3	O	O	O	X
S5 S4/AC	O	O	X	X
S5 S4/ Battery only	O	X	X	X
S5 S4/AC & Battery don't exist (G3)	X	X	X	X

S3 : STR
S4 : STD
S5 : SOFT OFF
G3 : ME OFF

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Title: POWER SEQUENCY DIAGRAM
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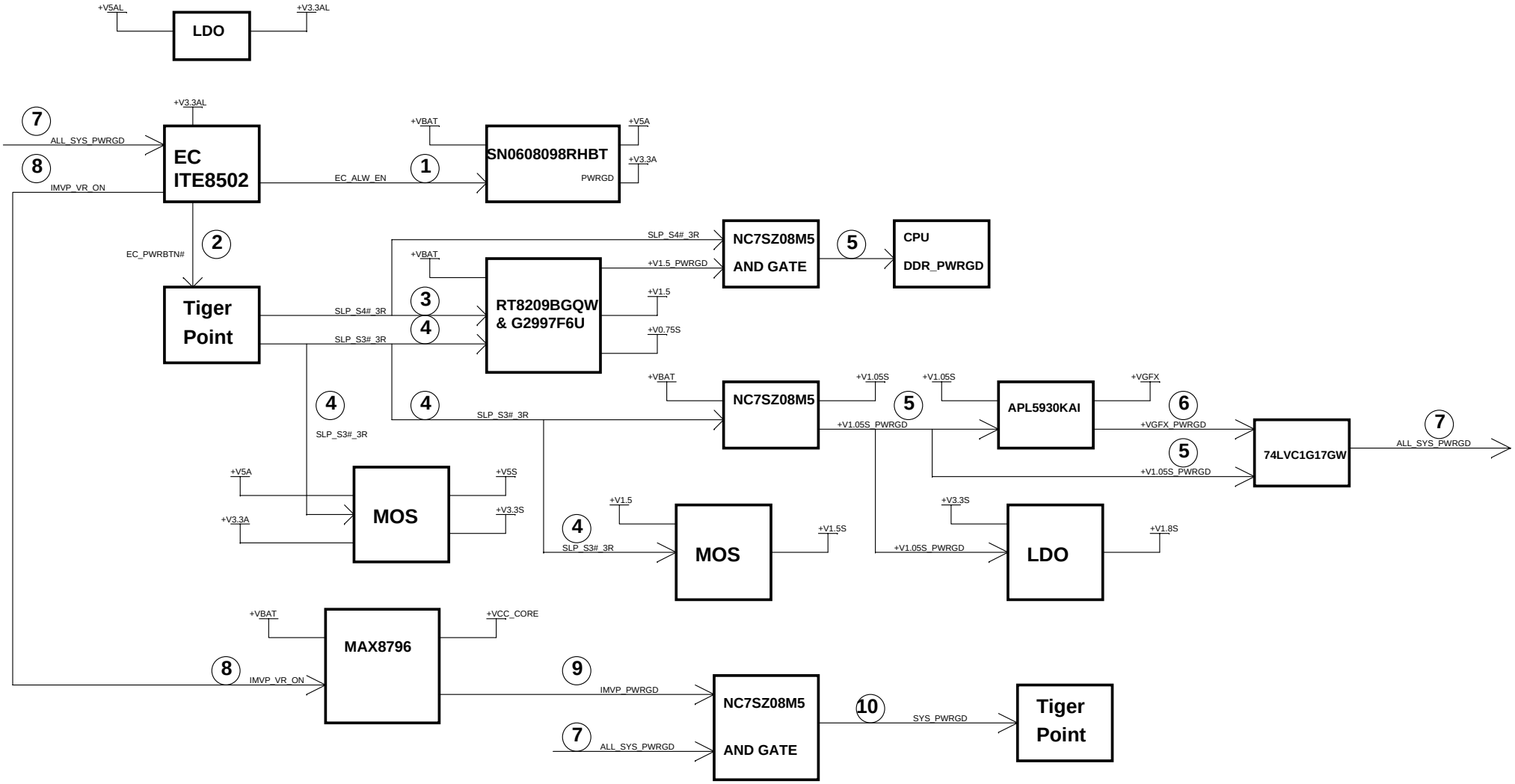

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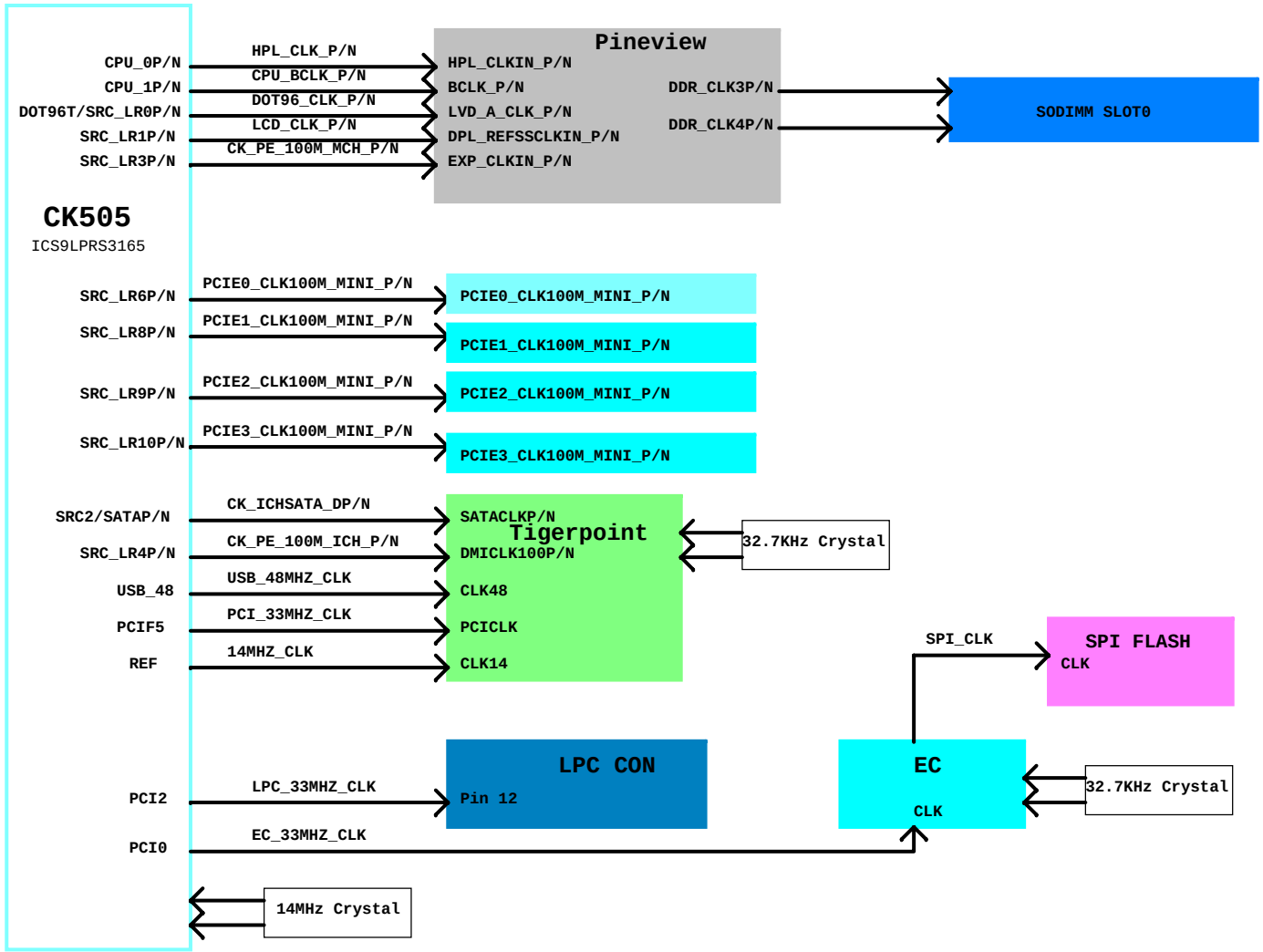

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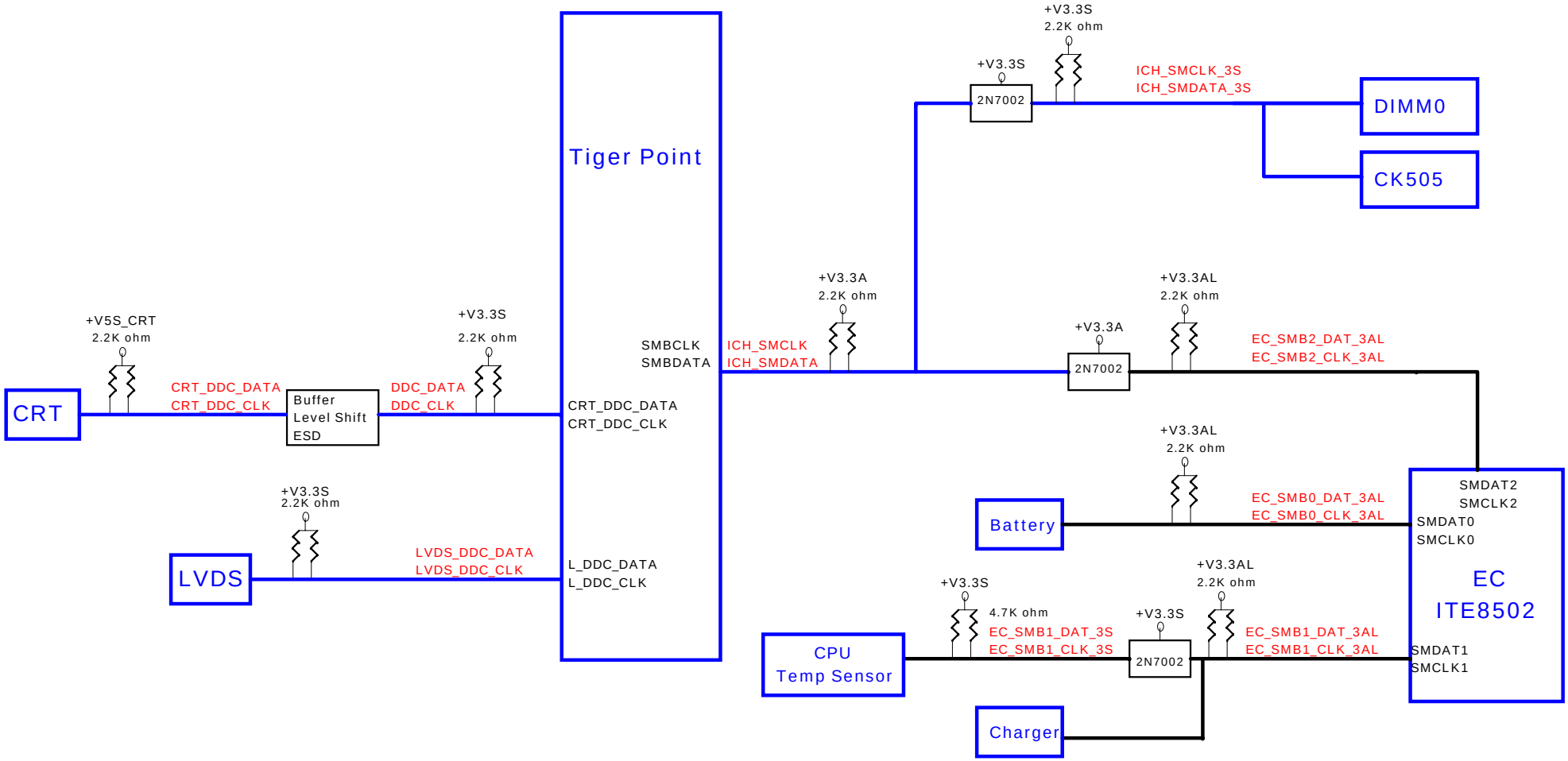
SMBUS&I2C MAP



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Title: SMBUS&I2C MAP

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Edwards

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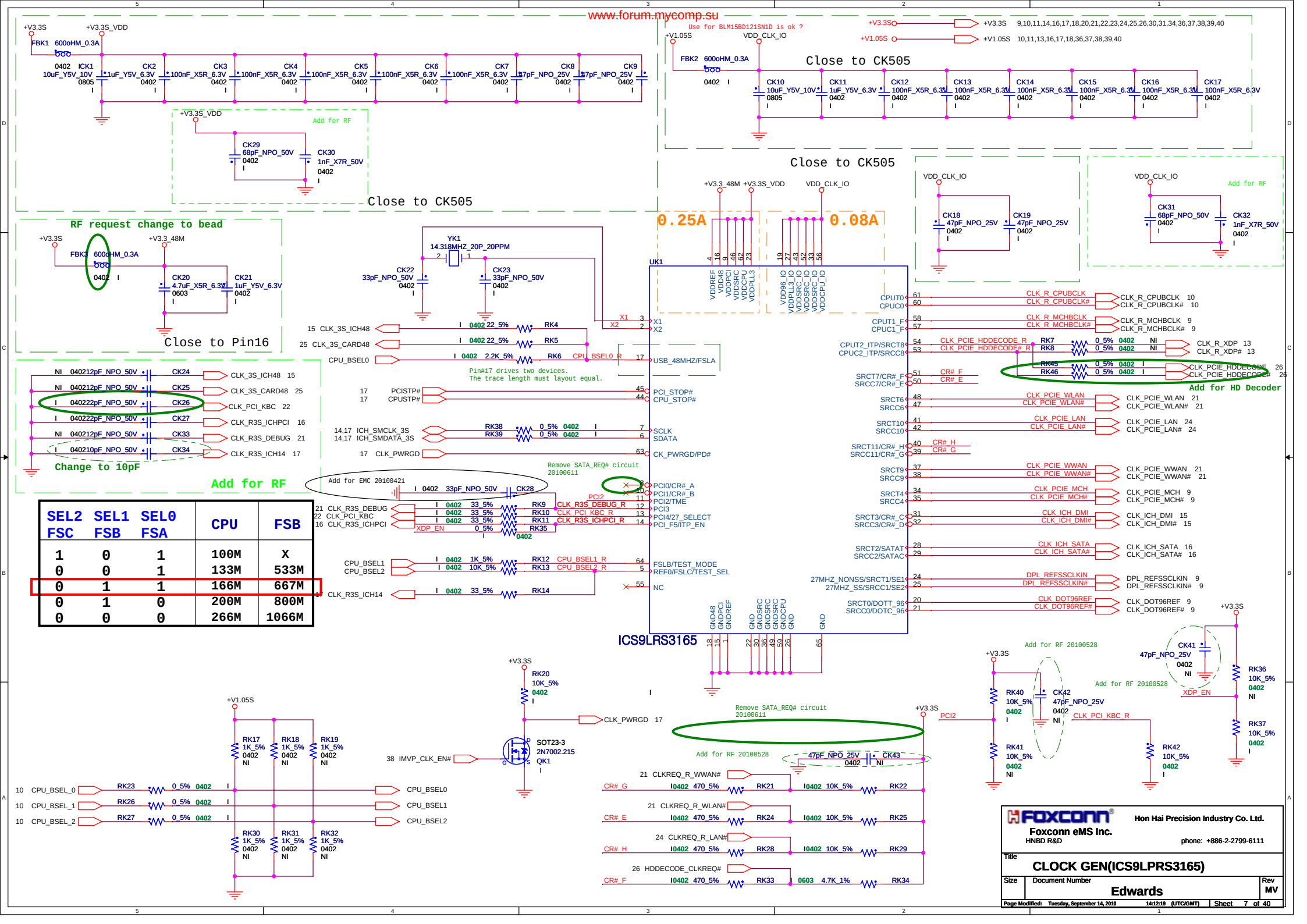

SEL2 FSC	SEL1 FSB	SEL0 FSA	CPU	FSB
1	0	1	100M	X
0	0	1	133M	533M
0	1	1	166M	667M
0	1	0	200M	800M
0	0	0	266M	1066M

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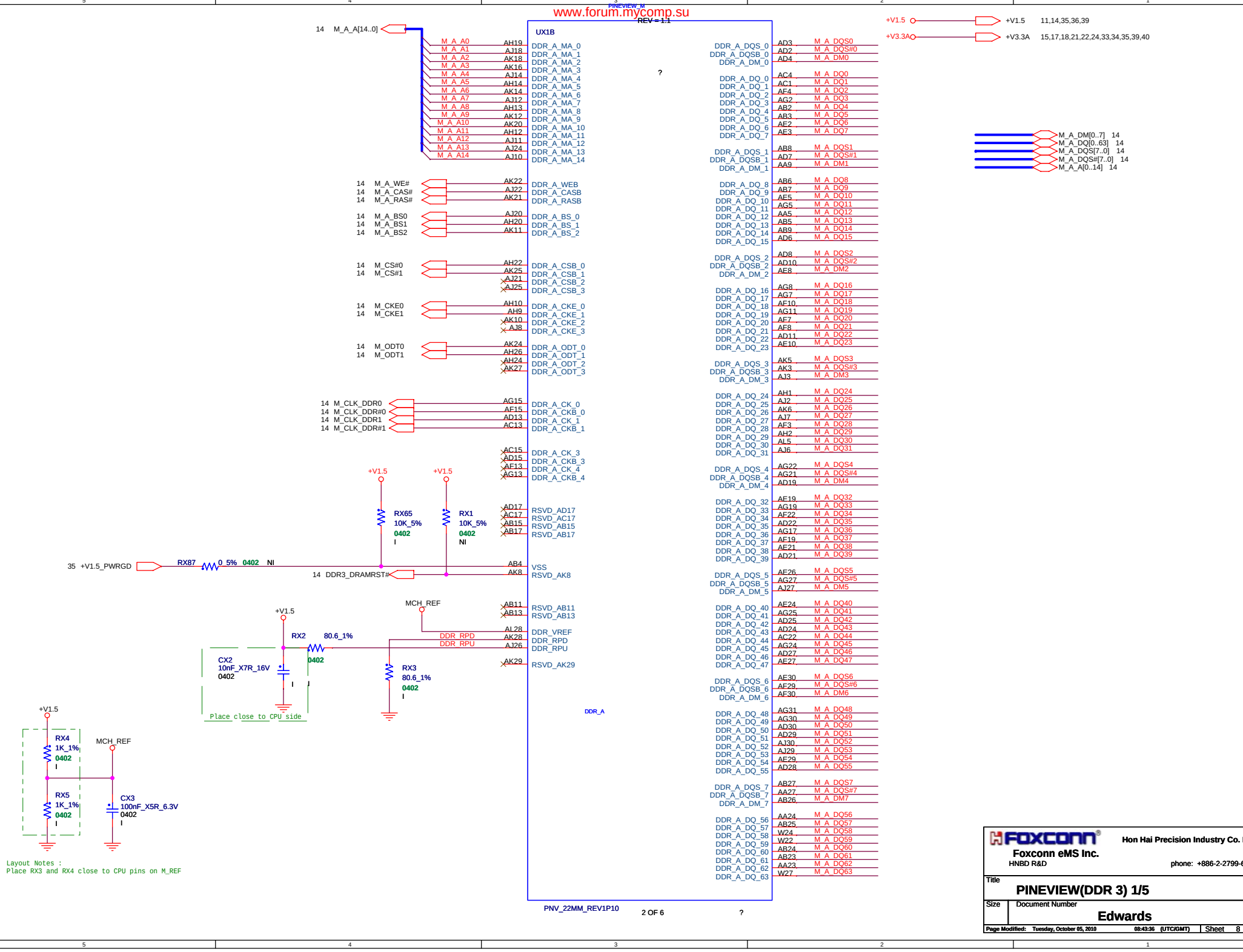

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Title	PINEVIEW(DDR 3) 1/5
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+V3.3S ○—▷ +V3.3S 7,10,11,14,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,39,40

PINEVIEW_M

UX1C

REV = 1.1

LOCATE SERIES RESISTOR STRAPS WITHIN 750MILS OF MCH

XDP_RSVD_00 D12
XDP_RSVD_01 A7
XDP_RSVD_02 D6
XDP_RSVD_03 C5
XDP_RSVD_04 C7
XDP_RSVD_05 C6
XDP_RSVD_06 D8
XDP_RSVD_07 B7
XDP_RSVD_08 A9
XDP_RSVD_09 D9
XDP_RSVD_10 C8
XDP_RSVD_11 B8
XDP_RSVD_12 C10
XDP_RSVD_13 D10
XDP_RSVD_14 B11
XDP_RSVD_15 B10
XDP_RSVD_16 B12
XDP_RSVD_17 C11

XDP_RSVD_9

RSVD L11
RSVD_AA7 AA7
RSVD_AA6 AA6
RSVD_R5 R5
RSVD_R6 R6
RSVD_AA21 AA21
RSVD_W21 W21
RSVD_T21 T21
RSVD_V21 V21

RX11 1K_5% 0402 NI
RX12 1K_5% 0402 I
RX13 1K_5% 0402 NI
RX14 1K_5% 0402 NI

VGA

CRT_HSYNC M30 HSYNC — RX6 0402 10_5% — HSYNC_R — HSYNC_R 30
CRT_VSYNC M29 VSYNC — RX7 0402 10_5% — VSYNC_R — VSYNC_R 30

CRT_RED N31 CRT_R_R
CRT_GREEN P30 CRT_G_R
CRT_BLUE P29 CRT_B_R
CRT_IRTN N30

CRT_R 30
CRT_G 30
CRT_B 30

RX8 150_1% 0402 I
RX9 150_1% 0402 I
RX10 150_1% 0402 I

CRT_DDC_DATA L31 DDC_DATA — DDC_DATA 30
CRT_DDC_CLK L30 DDC_CLK — DDC_CLK 30

DAC_IREF P28 CRT_IREF

DPL_REFCLKINP Y30 CLK_DOT96REF — CLK_DOT96REF 7
DPL_REFCLKINN Y29 CLK_DOT96REF# — CLK_DOT96REF# 7
DPL_REFSSCLKINP AA30 DPL_REFSSCLKIN — DPL_REFSSCLKIN 7
DPL_REFSSCLKINN AA31 DPL_REFSSCLKIN# — DPL_REFSSCLKIN# 7

Layout Notes :
Place RX7 , RX8 and RX9 close to CPU
250 MIL TO BALL

MISC

PM_EXTTS#_1/DPRSLPVR K29 PM_R_DPRSLPVR — RX15 0402 NI 0_5% — PM_EXTTS#1
PM_EXTTS#_0 J30 PM_EXTTS#0 — RX16 0_5% — PM_DPRSLPVR 17,38
PWROK L5 IMVP_PWRGD_R — RX17 0_5% — IMVP_PWRGD — IMVP_PWRGD 17,38
RSTINB AA3 — BUF_PLT_RST# 13,17,21,22,24,26

HPL_CLKINN W8 CLK_R_MCHBCLK# — CLK_R_MCHBCLK# 7
HPL_CLKINP W9 CLK_R_MCHBCLK — CLK_R_MCHBCLK 7

CX51 12pF_NPO_50V 0402 NI
CX52 12pF_NPO_50V 0402 NI

PNV_22MM_REV1P10

3 OF 6

+V3.3S

RX18 2.2K_5% 0402 I
RX19 2.2K_5% 0402 I

DDC_CLK
DDC_DATA

+V3.3S

RX20 10K_5% 0402 NI — PM_EXTTS#1
RX21 0_5% 0402 NI
RX22 10K_5% 0402 I — PM_EXTTS#0

CRT_IREF — RX23 665_1% 0402 I

Layout Notes :
Place RES close to CPU
500 MIL TO BALL

Layout Notes :
AC Couple
TGP Transmit to PNV

PINEVIEW_M

UX1A

REV = 1.1

15 DMI_RXP_0 — CX4 100nF_X5R_6.3V 0402 — DMI_RXP_0_C — F3 DMI_RXP_0
15 DMI_RXN_0 — CX5 100nF_X5R_6.3V 0402 — DMI_RXN_0_C — F2 DMI_RXN_0
15 DMI_RXP_1 — CX6 100nF_X5R_6.3V 0402 — DMI_RXP_1_C — H4 DMI_RXP_1
15 DMI_RXN_1 — CX7 100nF_X5R_6.3V 0402 — DMI_RXN_1_C — G3 DMI_RXN_1

DMI

DMI_TXP_0 G2 — DMI_TXP_0_C — RX24 0_5% 0402 I — DMI_TXP_0 15
DMI_TXN_0 G1 — DMI_TXN_0_C — RX25 0_5% 0402 I — DMI_TXN_0 15
DMI_TXP_1 H3 — DMI_TXP_1_C — RX26 0_5% 0402 I — DMI_TXP_1 15
DMI_TXN_1 J2 — DMI_TXN_1_C — RX27 0_5% 0402 I — DMI_TXN_1 15

7 CLK_PCIE_MCH# — CLK_PCIE_MCH# — N7 EXP_CLKINN
7 CLK_PCIE_MCH — CLK_PCIE_MCH — N6 EXP_CLKINP

EXP_RCOMPO L10
EXP_ICOMPI L9
EXP_RBIAS L8

RSVD_R10 R10
RSVD_R9 R9
RSVD_N10 N10
RSVD_N9 N9

RSVD_N11 N11
RSVD_P11 P11

RSVD_K2 K2
RSVD_J1 J1
RSVD_M4 M4
RSVD_L3 L3

RSVD_K3 K3
RSVD_L2 L2
RSVD_M2 M2
RSVD_N2 N2

RX28 49.9_1% 0402 I
RX29 750_1% 0402 I

MCH COMP0/1 SINGNALS:
TIE TOGETHER AT PINS

WITHIN 500MIL
FROM PNV PINS

PNV_22MM_REV1P10

1 OF 6

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+V3.3S → +V3.3S 7,9,11,14,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,39,40

+V1.05S → +V1.05S 7,11,13,16,17,18,36,37,38,39,40

UX1D — PINEVIEW_M — REV = 1.1

20 LVDS_CLK_N → LVDS_CLK_N → U25 LVD_A_CLKM
20 LVDS_CLK_P → LVDS_CLK_P → U26 LVD_A_CLKP
20 LVDS_DATA0_N → LVDS_DATA0_N → R23 LVD_A_DATAM_0
20 LVDS_DATA0_P → LVDS_DATA0_P → R24 LVD_A_DATAP_0
20 LVDS_DATA1_N → LVDS_DATA1_N → N26 LVD_A_DATAM_1
20 LVDS_DATA1_P → LVDS_DATA1_P → N27 LVD_A_DATAP_1
20 LVDS_DATA2_N → LVDS_DATA2_N → R26 LVD_A_DATAM_2
20 LVDS_DATA2_P → LVDS_DATA2_P → R27 LVD_A_DATAP_2

LVDS_IBG → R22 LVD_IBG
J28 LVD_VBG
LVDS_VREFH → N22 LVD_VREFH
LVDS_VREFL → N23 LVD_VREFL
20,22 LVDS_BK_EN → LVDS_BK_EN → L27 LBKLT_EN
20 LVDS_PWM → LVDS_PWM → L26 LBKLT_CTL
LCTLA_CLK → L23 LCTLA_CLK
LCTLB_CLK → K25 LCTLB_CLK
20 LVDS_DDC_CLK → LVDS_DDC_CLK → K23 LDDC_CLK
20 LVDS_DDC_DATA → LVDS_DDC_DATA → K24 LDDC_DATA
20 LVDS_VDD_EN → LVDS_VDD_EN → H26 LVDD_EN

LVDS

13 XDP_BPM#[3..0] → XDP_BPM#0 → G11 BPM_1B_0
XDP_BPM#1 → E15 BPM_1B_1
XDP_BPM#2 → G13 BPM_1B_2
XDP_BPM#3 → F13 BPM_1B_3

13 XDP_BPM_2#[3..0] → XDP_BPM_2#0 → B18 BPM_2_0#/RSVD
XDP_BPM_2#1 → B20 BPM_2_1#/RSVD
XDP_BPM_2#2 → C20 BPM_2_2#/RSVD
XDP_BPM_2#3 → B21 BPM_2_3#/RSVD

G5 RSVD_G5
13 XDP_TDI → XDP_TDI → D14 TDI
13 XDP_TDO → XDP_TDO → D13 TDO
13 XDP_TCK → XDP_TCK → B14 TCK
13 XDP_TMS → XDP_TMS → C14 TMS
13 XDP_TRST# → XDP_TRST# → C16 TRST_B

CPU

31 H_THERMDA → H_THERMDA → D30 THRMDA_1
CX57 100pF_NPO_50V 0402 NI
31 H_THERMDC → H_THERMDC → E30 THRMDC_1

31 H_THERMDA_2 → H_THERMDA_2 → C30 RSVD_C30
CX58 100pF_NPO_50V 0402 NI
31 H_THERMDC_2 → H_THERMDC_2 → D31 RSVD_D31

4 OF 6
PNV_22MM_REV1P10

TP1 TP_P30

SMI_B E7 → H_SMI# → H_SMI# 16
A20M_B H7 → H_A20M# → H_A20M# 16
FERR_B H6 → H_FERR# → H_FERR# 16
LINT00 E10 → H_INTR → H_INTR 16
LINT10 E11 → H_NMI → H_NMI 16
IGNNE_B E5 → H_IGNNE# → H_IGNNE# 16
STPCLK_B F8 → H_STPCLK# R → RX30 0_5% 0402 → H_STPCLK# → H_STPCLK# 16

DPRSTP_B G6 → H_DPRSTP# → H_DPRSTP# 17,38
DPSLP_B G10 → H_DPSLP# → H_DPSLP# 17
INIT_B G8 → H_INIT# → H_INIT# 16
PRDY_B E11 → XDP_PRDY# → XDP_PRDY# 13
PREQ_B F15 → XDP_PREQ# → XDP_PREQ# 13

THERMTRIP_B E13 → H_THERMTRIP# → H_THERMTRIP# 16

+V1.05S
RX31 68_5% 0402 — Need change to 0603 size
PROCHOT_B C18
CPUPWRGOOD W1 → H_PWRGD → H_PWRGD 13,17
RX32 0_5% 0402 → H_PROCHOT → H_PROCHOT 38
+V1.05S
RX33 1K_1% 0402

GTLREF A13 → CPU_GTLREF
VSS H27
RX35 2K_1% 0402
CX8 220pF_X7R_50V 0402 NI
CX9 1uF_Y5V_6.3V 0402 I

RSVD_L6 L6
RSVD_E17 E17

BCLKN H10 → CLK_R_CPUBCLK# → CLK_R_CPUBCLK# 7
BCLKP J10 → CLK_R_CPUBCLK → CLK_R_CPUBCLK 7

BSEL_0 K5 → CPU_BSEL_0 → CPU_BSEL_0 7
BSEL_1 H5 → CPU_BSEL_1 → CPU_BSEL_1 7
BSEL_2 K6 → CPU_BSEL_2 → CPU_BSEL_2 7

VID_0 H30 → H_VID0 → H_VID0 38
VID_1 H29 → H_VID1 → H_VID1 38
VID_2 H28 → H_VID2 → H_VID2 38
VID_3 G30 → H_VID3 → H_VID3 38
VID_4 G29 → H_VID4 → H_VID4 38
VID_5 F29 → H_VID5 → H_VID5 38
VID_6 E29 → H_VID6 → H_VID6 38

RSVD_L7 L7 — TP2 TP_P30
RSVD_D20 D20 — TP3 TP_P30
RSVD_H13 H13 — TP4 TP_P30
RSVD_D18 D18 — TP5 TP_P30
RSVD_K9 K9 — TP6 TP_P30
RSVD_D19 D19 — TP7 TP_P30
EXTBGREF K7 → CPU_EXTBGREF

+V1.05S
RX43 976_1% 0402
CX10 1uF_Y5V_6.3V 0402 I
RX48 3.32K_1% 0402

Layout Notes :
Place TDI/TMS Termination Near CPU

+V1.05S
RX34 51_5% 0402 XDP_TDI
RX36 51_5% 0402 XDP_TMS
Add by Kevin 20100527
RX37 51_5% 0402 XDP_PREQ#
RX38 51_5% 0402 XDP_PRDY#
RX39 51_5% 0402 NI XDP_BPM#0
RX40 51_5% 0402 NI XDP_BPM#1
RX41 51_5% 0402 NI XDP_BPM#2
RX42 51_5% 0402 NI XDP_BPM#3
RX44 51_5% 0402 NI XDP_BPM_2#0
RX45 51_5% 0402 NI XDP_BPM_2#1
RX46 51_5% 0402 NI XDP_BPM_2#2
RX47 51_5% 0402 NI XDP_BPM_2#3

Layout Notes :
Place TCK Termination Near CPU

XDP_TCK RX53 51_5% 0402
XDP_TRST# RX54 51_5% 0402

Thermal sensor For Duo core only

Layout Notes :
PlaceBPM Termination Near CPU

+V3.3S
RX49 2.2K_5% 0402 LVDS_DDC_CLK
RX50 2.2K_5% 0402 LVDS_DDC_DATA
RX51 2.2K_5% 0402 LCTLA_CLK
RX52 2.2K_5% 0402 LCTLB_CLK

RX55 2.37K_1% 0402 LVDS_IBG
RX56 0_5% 0402 LVDS_VREFH
RX57 0_5% 0402 LVDS_VREFL

Layout Notes :
PlaceResistors CLose to CPU

Add for RF
CLK_R_CPUBCLK
CLK_R_CPUBCLK#
CX53 12pF_NPO_50V 0402 NI
CX54 12pF_NPO_50V 0402 NI

+V1.05S
RX58 470_5% 0402
RX59 470_5% 0402
RX60 470_5% 0402
CPU_BSEL_0
CPU_BSEL_1
CPU_BSEL_2

Layout Notes :
Place Near GTLREF'S Pins
CPU GTLREF Need to be at
2/3 of VCCP 1.05s

Layout Notes :
EXTBGREF MAX TRACE LENGTH OF 500 MIL
AND 5 MIL SPACING within 0.5" of CPU

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VCC
Sigle core 6.04A
Dual core 11.54A

Memory Decoupling

Layout Notes :
Place Caps and Resistor
Close to MCH Balls

Add for EMI 20100528

+VGFX	+VGFX	37
+V1.5	+V1.5	8,14,35,36,39
+V1.8S	+V1.8S	37,39
+VCC_CORE	+VCC_CORE	38
+V1.05S	+V1.05S	7,10,13,16,17,18,36,37,38,39,40
+V3.3S	+V3.3S	7,9,10,14,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,39,40
+V1.5S	+V1.5S	15,18,21,26,39

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Title: PINEVIEW(Power) 4/5
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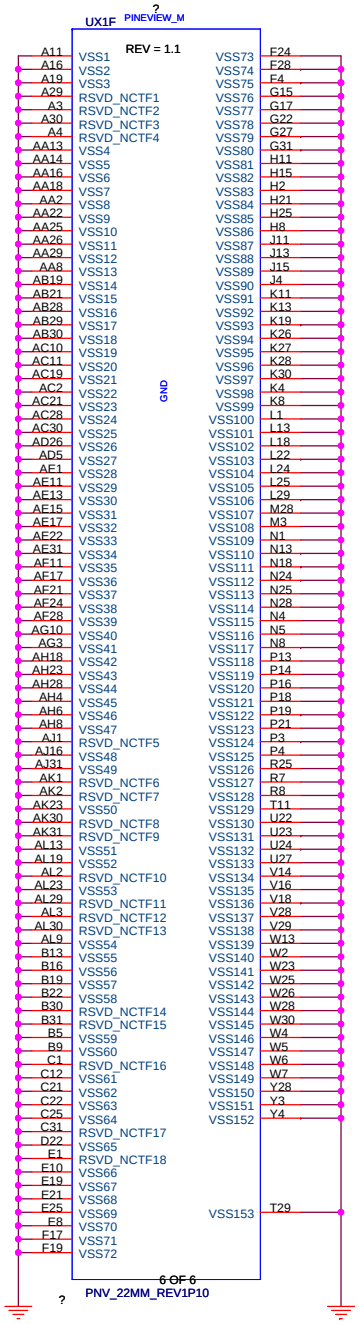

A11	VSS1	VSS73	F24
A16	VSS2	VSS74	F28
A19	VSS3	VSS75	F4
A29	RSVD_NCTF1	VSS76	G15
A3	RSVD_NCTF2	VSS77	G17
A30	RSVD_NCTF3	VSS78	G22
A4	RSVD_NCTF4	VSS79	G27
AA13	VSS4	VSS80	G31
AA14	VSS5	VSS81	H11
AA16	VSS6	VSS82	H15
AA18	VSS7	VSS83	H2
AA2	VSS8	VSS84	H21
AA22	VSS9	VSS85	H25
AA25	VSS10	VSS86	H8
AA26	VSS11	VSS87	J11
AA29	VSS12	VSS88	J13
AA8	VSS13	VSS89	J15
AB19	VSS14	VSS90	J4
AB21	VSS15	VSS91	K11
AB28	VSS16	VSS92	K13
AB29	VSS17	VSS93	K19
AB30	VSS18	VSS94	K26
AC10	VSS19	VSS95	K27
AC11	VSS20	VSS96	K28
AC19	VSS21	VSS97	K30
AC2	VSS22	VSS98	K4
AC21	VSS23	VSS99	K8
AC28	VSS24	VSS100	L1
AC30	VSS25	VSS101	L13
AD26	VSS26	VSS102	L18
AD5	VSS27	VSS103	L22
AE1	VSS28	VSS104	L24
AE11	VSS29	VSS105	L25
AE13	VSS30	VSS106	L29
AE15	VSS31	VSS107	M28
AE17	VSS32	VSS108	M3
AE22	VSS33	VSS109	N1
AE31	VSS34	VSS110	N13
AE11	VSS35	VSS111	N18
AF17	VSS36	VSS112	N24
AF21	VSS37	VSS113	N25
AF24	VSS38	VSS114	N28
AF28	VSS39	VSS115	N4
AG10	VSS40	VSS116	N5
AG3	VSS41	VSS117	N8
AH18	VSS42	VSS118	P13
AH23	VSS43	VSS119	P14
AH28	VSS44	VSS120	P16
AH4	VSS45	VSS121	P18
AH6	VSS46	VSS122	P19
AH8	VSS47	VSS123	P21
AJ1	RSVD_NCTF5	VSS124	P3
AJ16	VSS48	VSS125	P4
AJ31	VSS49	VSS126	R25
AK1	RSVD_NCTF6	VSS127	R7
AK2	RSVD_NCTF7	VSS128	R8
AK23	VSS50	VSS129	T11
AK30	RSVD_NCTF8	VSS130	U22
AK31	RSVD_NCTF9	VSS131	U23
AL13	VSS51	VSS132	U24
AL19	VSS52	VSS133	U27
AL2	RSVD_NCTF10	VSS134	V14
AL23	VSS53	VSS135	V16
AL29	RSVD_NCTF11	VSS136	V18
AL3	RSVD_NCTF12	VSS137	V28
AL30	RSVD_NCTF13	VSS138	V29
AL9	VSS54	VSS139	W13
B13	VSS55	VSS140	W2
B16	VSS56	VSS141	W23
B19	VSS57	VSS142	W25
B22	VSS58	VSS143	W26
B30	RSVD_NCTF14	VSS144	W28
B31	RSVD_NCTF15	VSS145	W30
B5	VSS59	VSS146	W4
B9	VSS60	VSS147	W5
C1	RSVD_NCTF16	VSS148	W6
C12	VSS61	VSS149	W7
C21	VSS62	VSS150	Y28
C22	VSS63	VSS151	Y3
C25	VSS64	VSS152	Y4
C31	RSVD_NCTF17		
D22	VSS65		
E1	RSVD_NCTF18		
E10	VSS66		
E19	VSS67		
E21	VSS68		
E25	VSS69	VSS153	T29
E8	VSS70		
F17	VSS71		
F19	VSS72		

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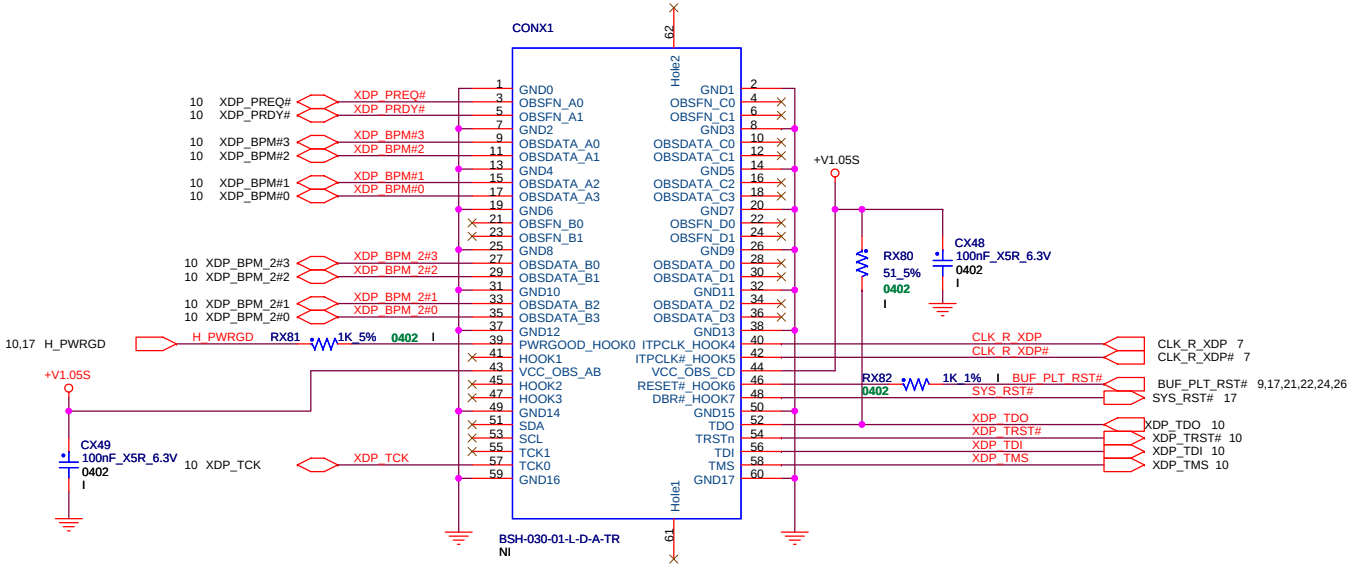
Title: **PINEVIEW(GND) 5/5**

Size | Document Number: **Edwards** | Rev: **MV**

Page Modified: Tuesday, October 05, 2010 08:43:36 (UTC/GMT) | Sheet 12 of 40

+V1.05S → +V1.05S 7,10,11,16,17,18,36,37,38,39,40



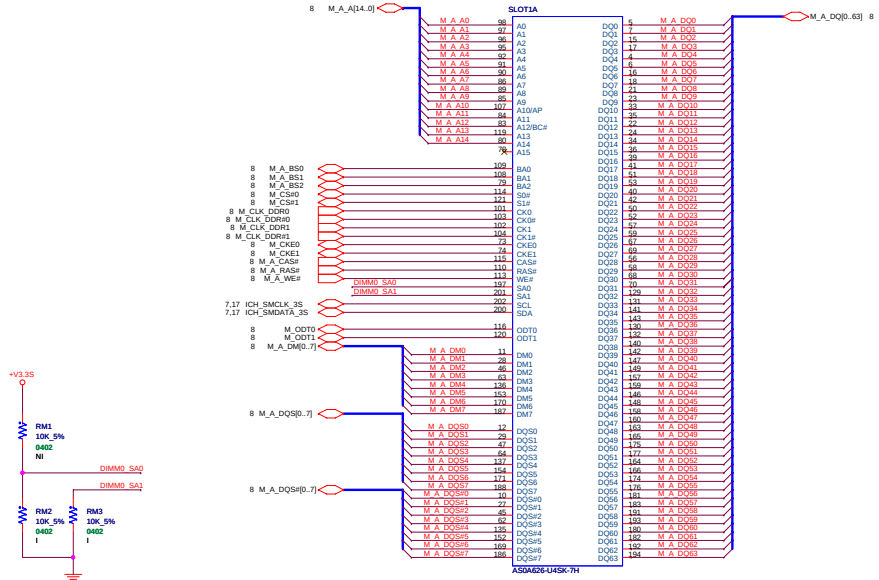
FOXCONN / Foxconn eMS Inc. / HNBD R&D	Hon Hai Precision Industry Co. Ltd. / phone: +886-2-2799-6111	
Title: XDP		
Size: A3	Document Number: Edwards	Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT)	Sheet 13 of 40	

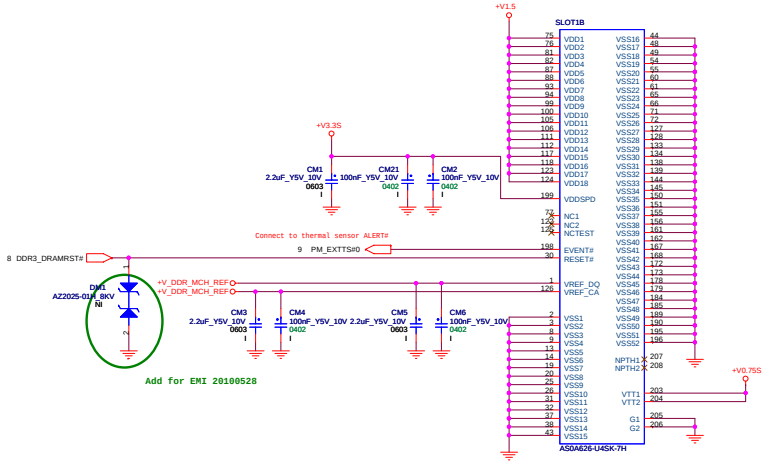
+V3.3S → +V3.3S 7,9,10,11,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,39,40

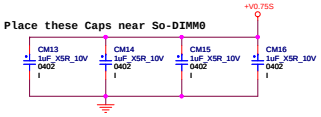
+V1.5 → +V1.5 8,11,35,36,39

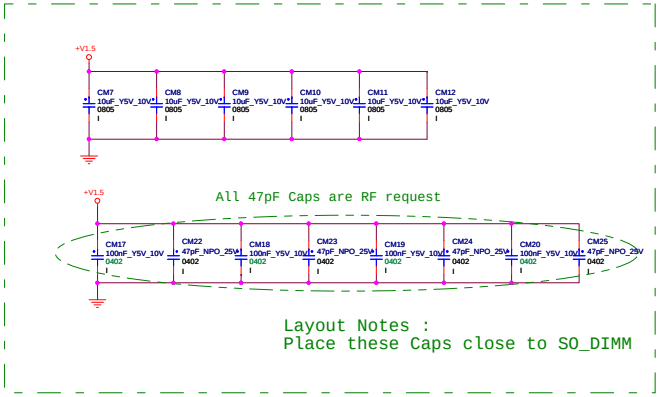
+V0.75S → +V0.75S 35,39

+V_DDR_MCH_REF → +V_DDR_MCH_REF 35









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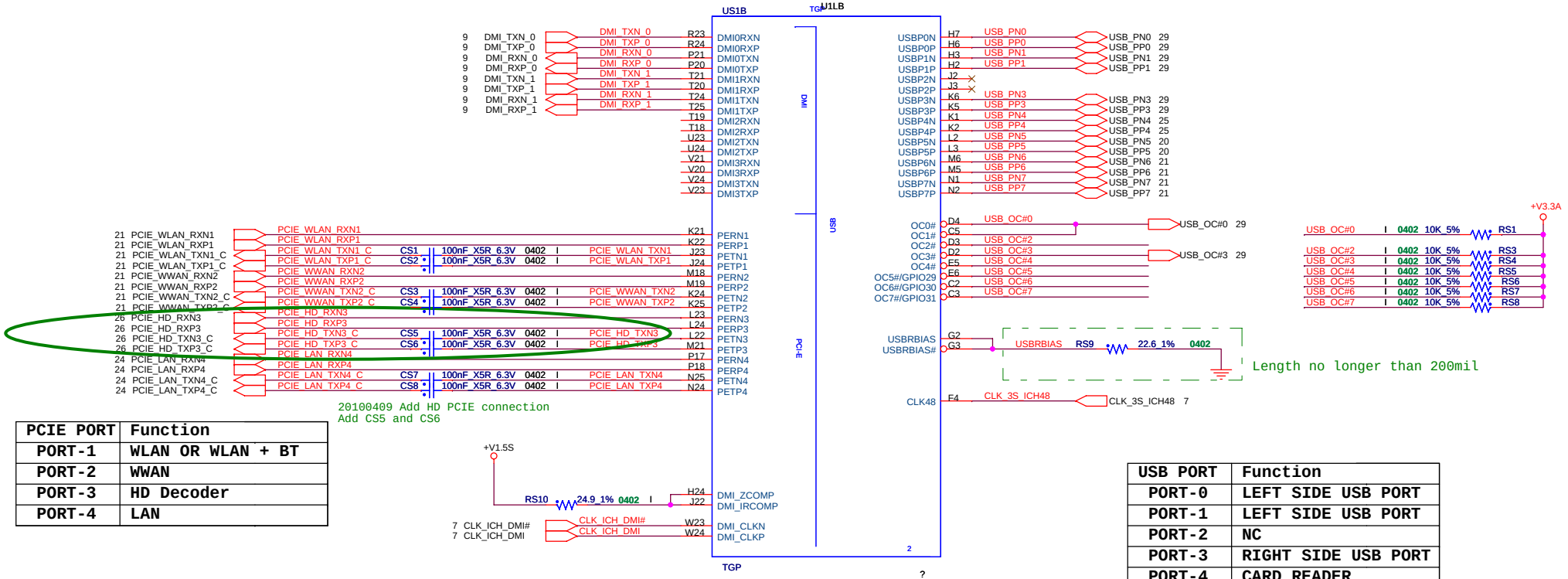
Title: DDR3(SO-DIMM_0)

Size: Custom | Document Number: Edwards | Rev: MV

Page Modified: Tuesday, September 14, 2010 14:12:39 (UTC/GMT) | Sheet 14 of 40

+V1.5S → +V1.5S 11,18,21,26,39

+V3.3A → +V3.3A 17,18,21,22,24,33,34,35,39,40



20100409 Add HD PCIE connection
Add CS5 and CS6

PCIE PORT	Function
PORT-1	WLAN OR WLAN + BT
PORT-2	WWAN
PORT-3	HD Decoder
PORT-4	LAN

USB PORT	Function
PORT-0	LEFT SIDE USB PORT
PORT-1	LEFT SIDE USB PORT
PORT-2	NC
PORT-3	RIGHT SIDE USB PORT
PORT-4	CARD READER
PORT-5	CAMERA
PORT-6	WLAN OR WLAN + BT
PORT-7	WWAN

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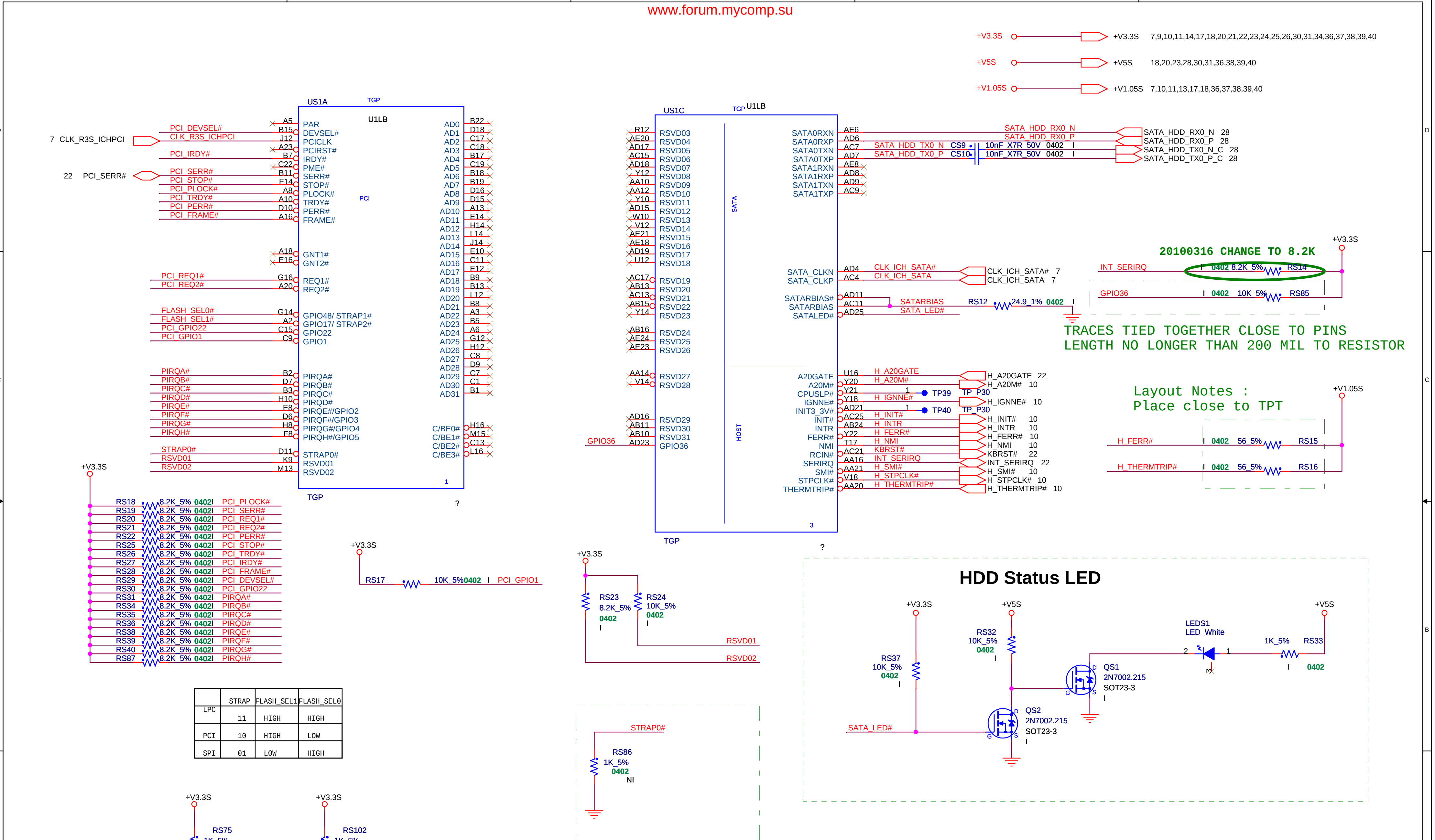
Title: TIGERPOINT(DMI USB PCIE)1/5

Size | Document Number: Edwards | Rev: MV

Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT) | Sheet 15 of 40



	STRAP	FLASH_SEL1	FLASH_SEL0
LPC	11	HIGH	HIGH
PCI	10	HIGH	LOW
SPI	01	LOW	HIGH

STRAP0#:Top-Block Swap Override.
If the signal is sampled low,
this indicates that the system is
strapped to the "top-block swap" mode
(Tiger Point inverts A16 for all cycles targeting FWH BIOS space)

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Title: TIGERPOINT(SATA and PCI)2/5

Size | Document Number: Edwards | Rev: MV

Add for RF

change by kevin 20100715 for HP request

RTC Battery 2mA Add for EMI 20100528

100mA

RTC BAT CON

change by ME 20100423

Delete double PM_CLKRUN# pull high 20100314

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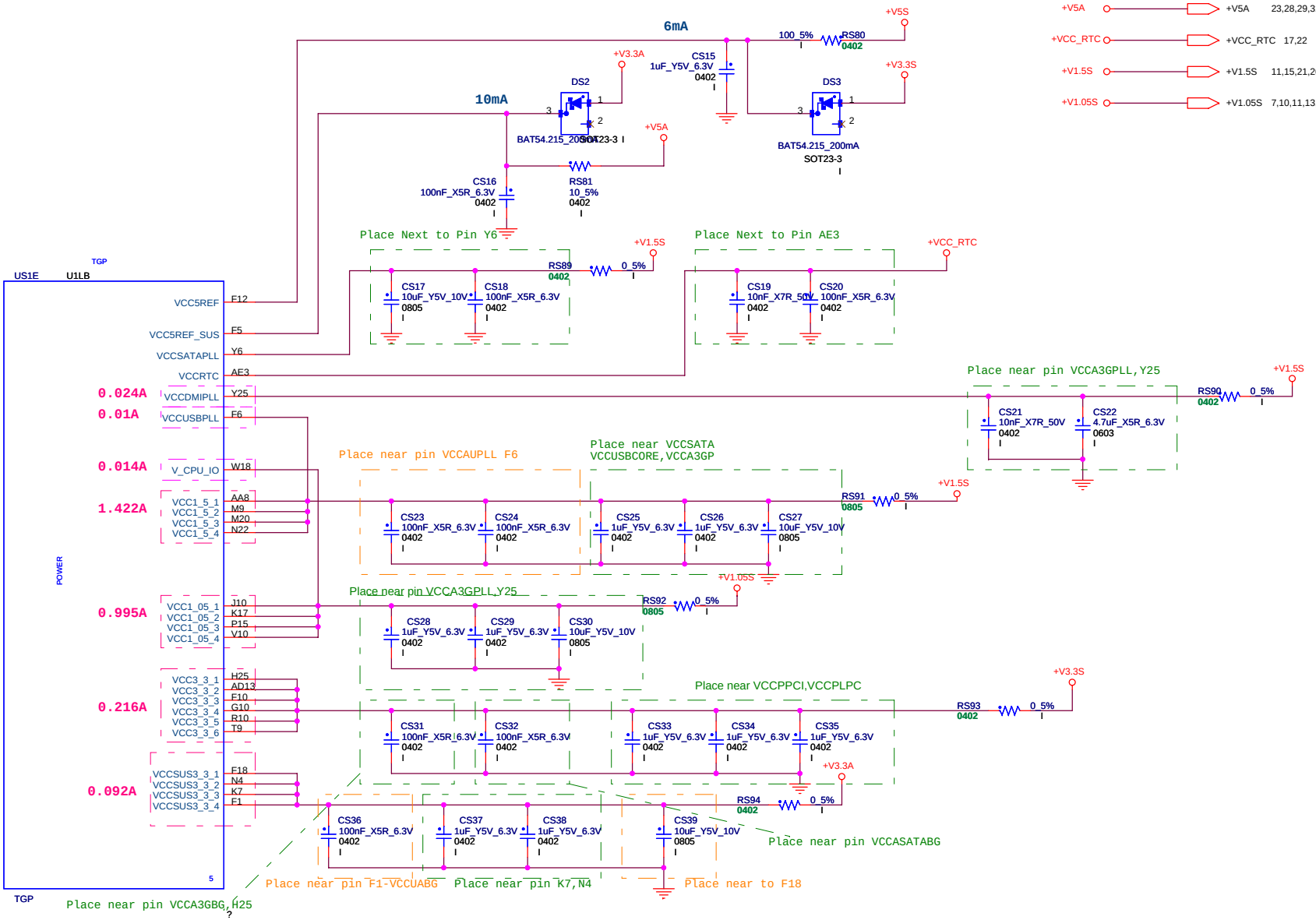
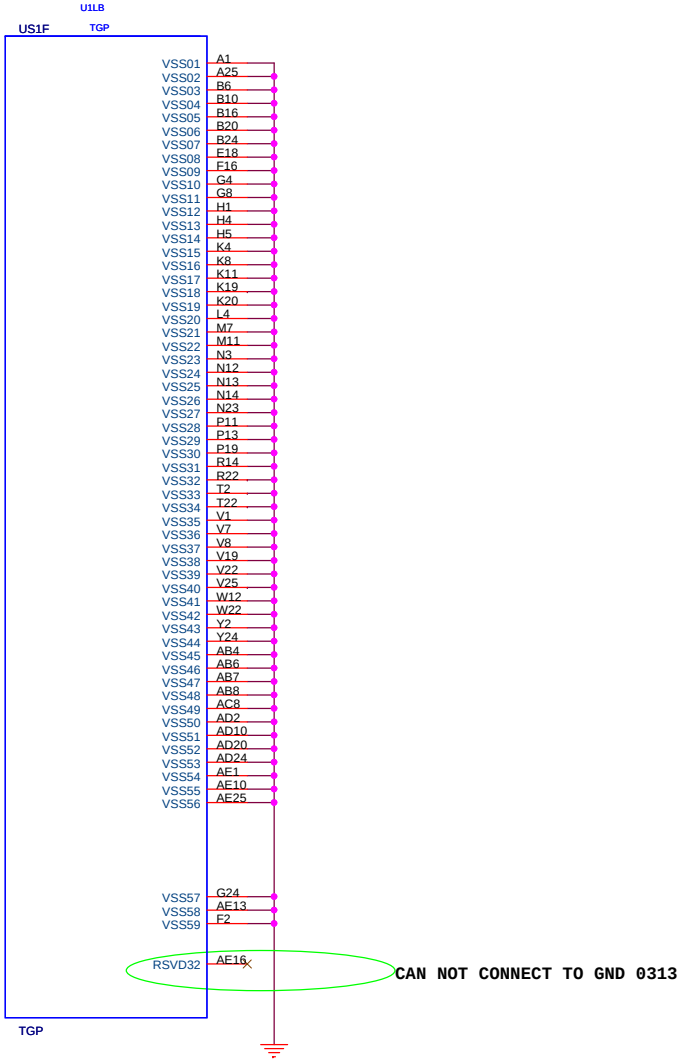
Title	TIGERPOINT(LPC AUDIO)3/5
Size	Document Number: Edwards; Rev: MV
Page Modified: Tuesday, October 05, 2010 08:43:36 (UTC/GMT)	Sheet 17 of 40



Foxconn eMS Inc. HNBD R&D	Hon Hai Precision Industry Co. Ltd. phone: +886-2-2799-6111
Title	TIGERPOINT(POWER)4/5
Size / Document Number	Edwards / Rev MV
Page Modified: Tuesday, October 05, 2010 08:43:36 (UTC/GMT)	Sheet 18 of 40



FOXCONN	Hon Hai Precision Industry Co. Ltd.	
Foxconn eMS Inc. HNBD R&D	phone: +886-2-2799-6111	
Title: TIGERPOINT(GND)5/5		
Size	Document Number: Edwards	Rev: MV
Page Modified: Tuesday, October 05, 2010 08:43:36 (UTC/GMT)	Sheet 19 of 40	

+VBAT → +VBAT 33,34,35,36,38,40

+V3.3S → +V3.3S 7,9,10,11,14,16,17,18,21,22,23,24,25,26,30,31,34,36,37,38,39,40

+V5S → +V5S 16,18,23,28,30,31,36,38,39,40

22 EC_BKLTEN
10,22 LVDS_BK_EN
UB1 74LVC1G08GV.125
BKT_ENABLE
RB22 100K_5% 0402
RB1 100K_5% 0402
RB2 100K_5% 0402

Add for RF 20100612
C65 47pF_NPO_25V 0402
CB34 68pF_NPO_50V 0402
CB8 100nF_Y5V_10V 0402

CONB1 GS12407-11141-9H
LCDVCC

10 LVDS_DDC_CLK
10 LVDS_DDC_DATA
10 LVDS_DATA0_N
10 LVDS_DATA0_P
10 LVDS_DATA1_N
10 LVDS_DATA1_P
10 LVDS_DATA2_N
10 LVDS_DATA2_P
10 LVDS_CLK_N
10 LVDS_CLK_P

10 LVDS_PWM
22 EC_LVDS_PWM
RB3 0_5% 0402 NI
RB4 0_5% 0402 NI
RB121 100K_5% 0402

Add for RF
CB35 68pF_NPO_50V 0402

Add for RF 20100612 add C66
CK35 1nF_X7R_50V 0402
C66 47pF_NPO_25V 0402

Change RB6 from 100K to 4.7K
Change RB7 from 68K to 100K
Add CB40 20100611

QB1 PMV65XP.215
CB3 4.7uF_X5R_6.3V 0603
CB4 100nF_X5R_6.3V 0402 NI
CB40 100nF_X5R_6.3V 0402
RB6 4.7K_5% 0402
RB7 100K_5% 0402
CB5 6.8nF_X7R_50V 0402
RB5 62_5% 0402
SOT23-3 2N7002.215 QB2
CB6 4.7uF_X5R_6.3V 0603
CB7 100nF_X5R_6.3V 0402

10 LVDS_VDD_EN
LVDS_VDD_EN
SOT23-3 2N7002.215 QB3
RB8 100K_5% 0402

Add for RF 20100612 add CB41
CB1 1uF_X5R_25V 0603
CB2 100nF_X7R_25V 0603
CB36 68pF_NPO_50V 0402
CB41 47pF_NPO_25V 0402

RB122 0_5% 0603 NI
LB4
MCM2012B900GBE
RB123 0_5% 0603 NI
15 USB_PP5
15 USB_PN5

change for RF 20100423

23 DMIC_CLK
23 DMIC_DAT
+VCC_WEBCAM

NTH2
NTH1
NTH

Add NC pin connect to GND
RF confirm

Camera Power

+V5S
FBC1 120_0.3A 0603 NI
+VCC_WEBCAM
CB37 68pF_NPO_50V 0402
UC1 APL5325BI-TRG
Vin Vout /SHDN GND Set
RC1 10K_5% 0402
RC2 90.9K_1% 0402
RC3 23.2K_1% 0402
CC4 1uF_X5R_10V 0402
CC1 10uF_Y5V_10V 0805
CC2 1uF_X5R_10V 0402
CC3 470pF_X7R_50V 0402

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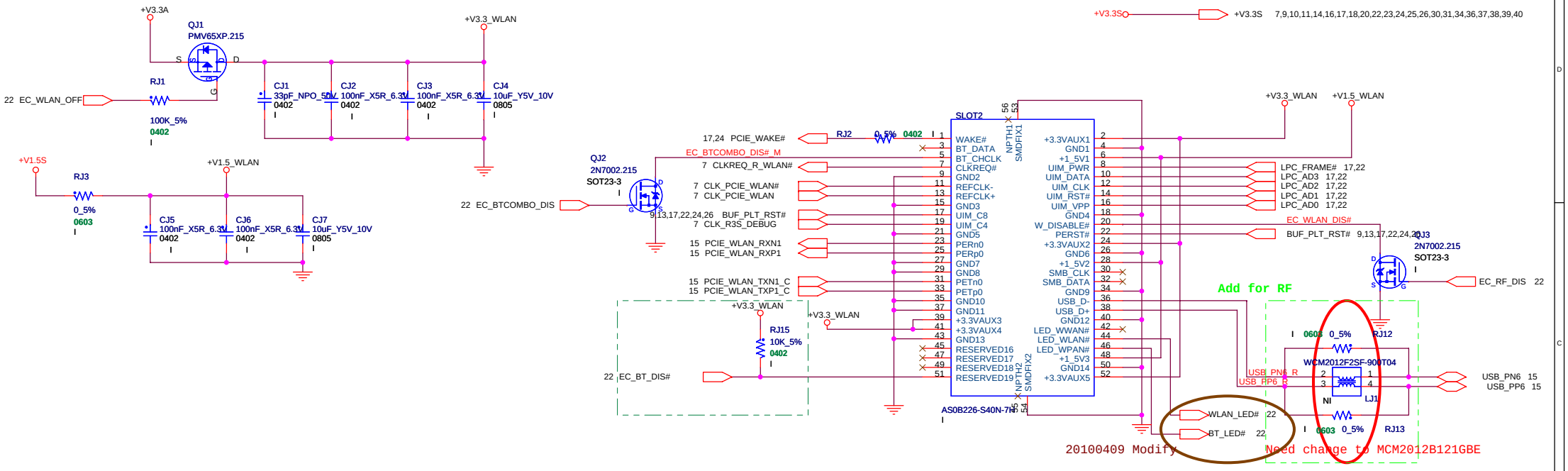
Title: LVDS & Webcam
Size | Document Number: Edwards | Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT) | Sheet 20 of 40

Half Mini Card for WLAN

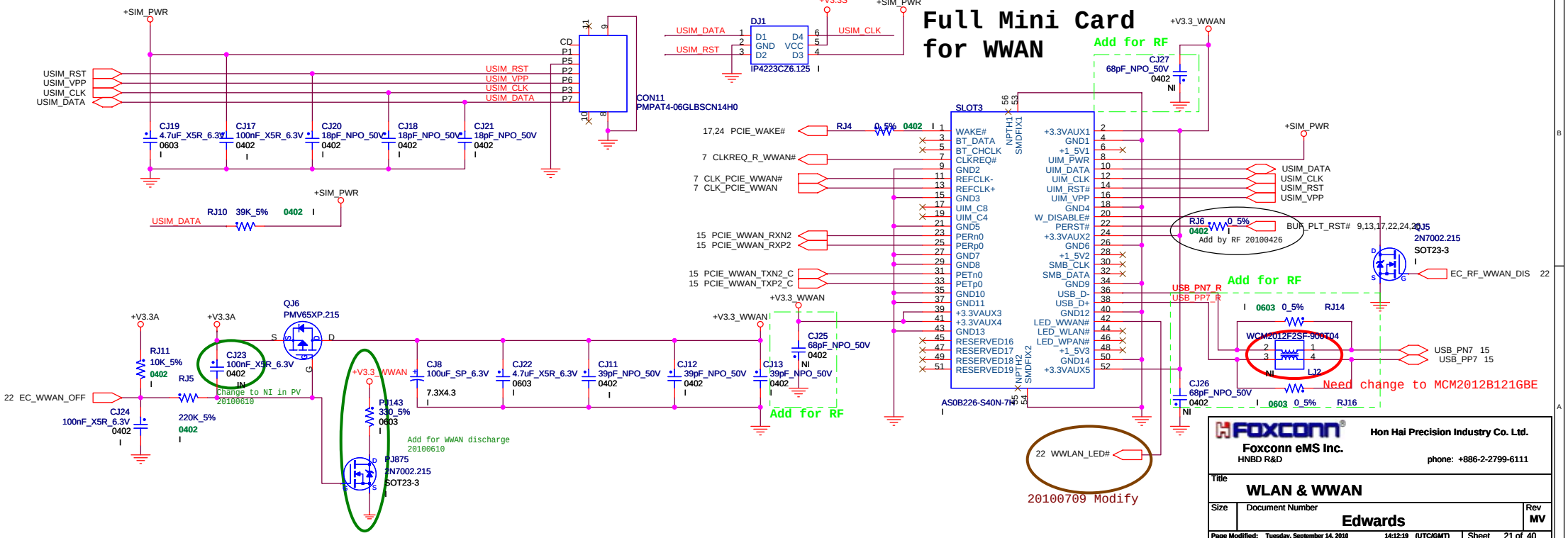


+V3.3A 15,17,18,22,24,33,34,35,39,40

+V1.5S 11,15,18,26,39

+V3.3S 7,9,10,11,14,16,17,18,20,22,23,24,25,26,30,31,34,36,37,38,39,40

Full Mini Card for WWAN



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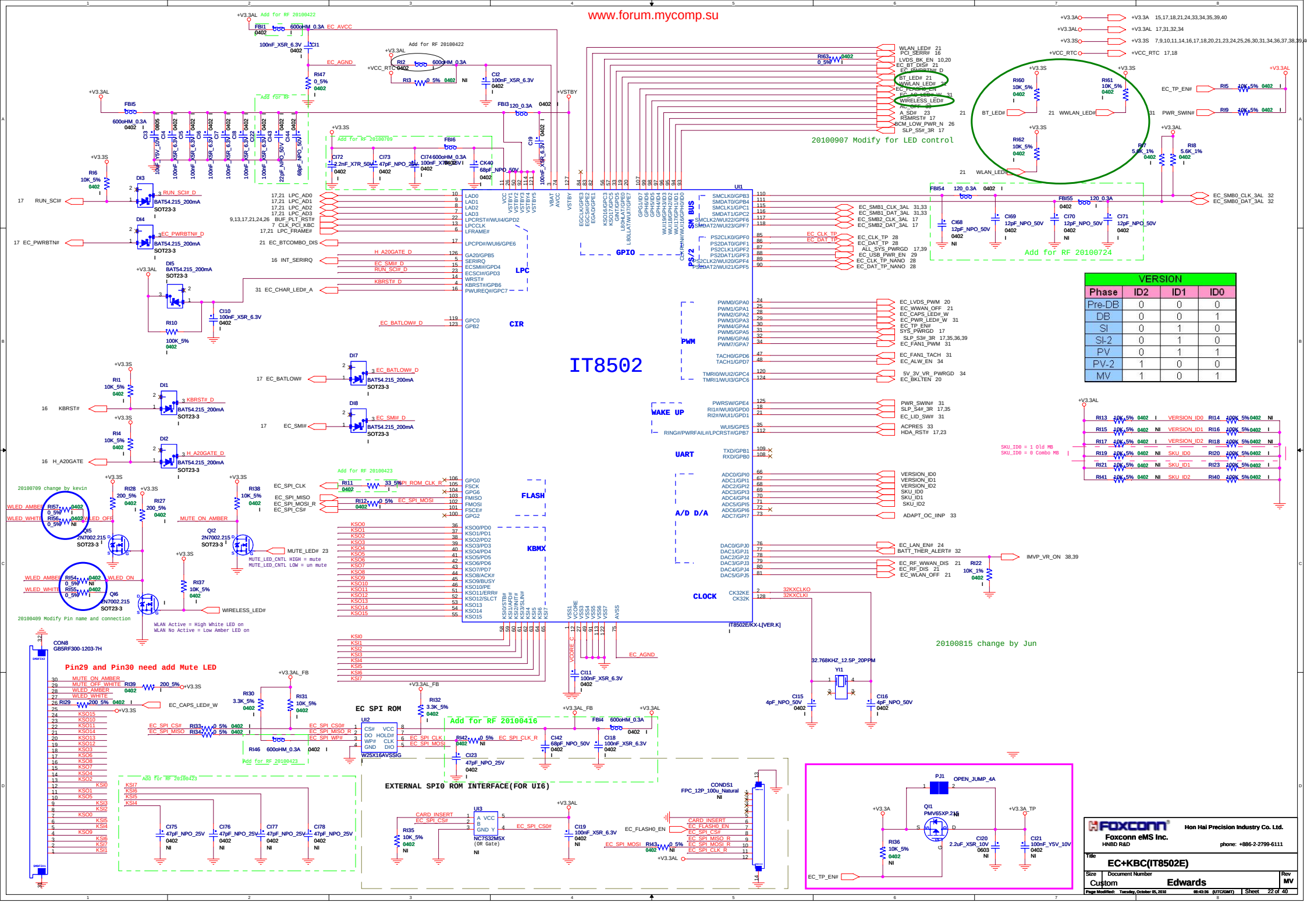
Title	WLAN & WWAN
Size	Document Number: Edwards — Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT)	Sheet 21 of 40



VERSION			
Phase	ID2	ID1	ID0
Pre-DB	0	0	0
DB	0	0	1
SI	0	1	0
SI-2	0	1	0
PV	0	1	1
PV-2	1	0	0
MV	1	0	1

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Title: EC+KBC(IT8502E)

Size: Custom | Document Number: Edwards | Rev: MV

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+V3.3S → +V3.3S 7,9,10,11,14,16,17,18,20,21,22,24,25,26,30,31,34,36,37,38,39,40
+V12S → +V12S 39
+V5S → +V5S 16,18,20,28,30,31,36,38,39,40
+V5A → +V5A 18,28,29,31,34,35,36,37,38,39

INTERNAL SPEAKER

SPK-L+ SPK-L- SPK-R- SPK-R+
RA1 0_5% 0603
RA2 0_5% 0603
RA3 0_5% 0603
RA4 0_5% 0603
CA1 1nF_X7R_16V 0402 NI
CA2 1nF_X7R_16V 0402 NI
CA3 1nF_X7R_16V 0402 NI
CA4 1nF_X7R_16V 0402 NI
CA5 220nF_X7R_50V 0402
CA6 220nF_X7R_50V 0402
CA7 220nF_X7R_50V 0402
CA8 220nF_X7R_50V 0402
SPK-L+_L SPK-L-_L SPK-R-_L SPK-R+_L
HEADER1 HS8804F-SLH

Close to Pin3 Close to Pin9 Close to Pin1

+V3.3S
CA14 100nF_X5R_6.3V 0402
CA15 1uF_Y5V_6.3V 0402
CA16 100nF_X5R_6.3V 0402
CA17 10uF_Y5V_10V 0805
0.025A

AU_U1
DVDD_CORE DVDD DVDD_IO HDA_BITCLK HDA_SDI HDA_SDO HDA_SYNC HDA_RST# DMIC_CLK/GPIO1 DMIC0/GPIO2 DMIC1/GPIO0/SPDIF_OUT_1 SPDIF_OUT_0 EAPD CAP- CAP+ DVSS AVSS1 AVSS2 AVSS PVSS DAP
AVDD1 AVDD2 PVDD1 PVDD2 SENSE_A SENSE_B HP0_PORT_A_L HP0_PORT_A_R VREFOUT_A_or_F HP1_PORT_B_L HP1_PORT_B_R PORT_C_L PORT_C_R VREFOUT_C SPKR_PORT_D_L+ SPKR_PORT_D_L- SPKR_PORT_D_R- SPKR_PORT_D_R+ PORT_E_L PORT_E_R PORT_F_L PORT_F_R PC_BEEP MONO_OUT CAP2 VREFFILT V- VREG
92HD80B1X5NLGXYD28[VER.YD]

17 HDA_BITCLK — 33_5% 0402 RA5
17 HDA_SDIN0
17 HDA_SDIO
17 HDA_SYNC
17,22 HDA_RST#
CA20 10pF_NPO_50V 0402
20 DMIC_CLK — 33_5% 0402 RA12 DMIC_CLK_R2
20 DMIC_DAT
22 MUTE_LED#
AUD_EAPD
CA21 2.2uF_X5R_10V 0603

0.06A
CA9 100nF_X5R_6.3V 0402
CA10 1uF_Y5V_6.3V 0402
CA11 10uF_Y5V_10V 0805
CA12 1uF_Y5V_6.3V 0402
CA13 100nF_X5R_6.3V 0402
1.3A
RA6 2.49K_1% 0402
CA18 1nF_X7R_16V 0402
SENSEA SENSEB RA7 100K_5% 0402
CA19 1uF_Y5V_6.3V 0402
MIC-REF EX_MIC_JACK
HPOUT-L HPOUT-R
SPK-L+ SPK-L- SPK-R- SPK-R+
CA22 100nF_X5R_16V 0402
CA24 100nF_X5R_16V 0402
RA16 47K_5% 0402
RA17 10K_5% 0402
CA23 100nF_X5R_16V 0402
QA3 2N7002.215 SOT23-3
RA15 10K_5% 0402
HDA_SPKR 17
CA27 2.2uF_X5R_10V 0603
CA28 2.2uF_X5R_10V 0603
CA29 10uF_Y5V_10V 0805
CA30 100nF_X5R_6.3V 0402

Close to Audio Codec

PORT	Discription	Sense
A	Microphone	SENSE_A
B	Headphone	SENSE_A
C	NO USE	
D	SPKR	
E	NO USE	
F	NO USE	

PC BEEP

SENSEA
RA8 20K_1% 0402
RA9 39.2K_1% 0402
RA10 10K_5% 0402
QA1 2N7002.215 SOT23-3
AU_U2 LMV331IDCKR
RA11 560K_1% 0402
EX_MIC_JACK
RA14 47K_5% 0402
RA13 100K_5% 0402
QA2 2N7002.215 SOT23-3
COMBO_JACK_DET#

FBA1 330_1.5A 0805 NI
Waiting CIS symbol
+V5S 200mA max
AU_U3 TPS793475DBVR
CA25 100nF_X5R_6.3V 0402
CA31 10nF_Y5V_25V 0402
CA26 2.2uF_X5R_10V 0603

A_SD#=0V:
Power down Class D SPK amplifer
A_SD#=3.3V:
Power up Class D SPK amplifer

RA56 10K_5% 0402
RA20 4.7K_5% 0402
QA4 2N7002.215 SOT23-3
QA5 2N7002.215 SOT23-3
QA6 2N7002.215 SOT23-3
22 A_SD#
17,22 HDA_RST#
RA23 0_5% 0402 NI

MIC-REF
RA18 47K_5% 0402
RA19 2.2K_5% 0402
CA32 100nF_X5R_16V 0402
DA1 BAT54C.215_200mA SOT23-3
EX_MIC_JACK
FBA2 120_0.3A 0402
CA33 220pF_X7R_50V 0402
CA34 100nF_X5R_16V 0402
DA2 PESD5V2S2UT.215
20100409 Change to Digital GND

HPOUT-L HPOUT-R
RA21 0_5% 0603 NI
RA24 0_5% 0603 NI
RA22 56_5% 0402
RA25 56_5% 0402
change for FAE suggestion
FBA3 600_0.2A 0603
FBA4 600_0.2A 0603
A_HP1_OUTL
A_HP1_OUTR
CA35 1nF_X7R_16V 0402
CA36 1nF_X7R_16V 0402
CA37 10nF_X7R_25V 0402
CA38 10nF_X7R_25V 0402
CA39 100nF_X5R_16V 0402 NI
Change to 10nF and Fix Weego fail item 20100612
COMBO_JACK_DET#
RA26 0_5% 0402
CON6 JA6341-2610T5B-7H
CA40 100nF_X5R_16V 0402
EMI Close Conn

Add for Audio POP noise

+V12S
RA27 200K_5% 0402
QA7 2N7002.215 SOT23-3
QA8 2N7002.215 SOT23-3
N8859713
N8860954
QA10 2N7002.215 SOT23-3
QA11 2N7002.215 SOT23-3
N8860358
Change to 1k ohm 20100610
RA57 1K_5% 0402
CA41 1uF_X5R_25V 0603
QA9 2N7002.215 SOT23-3
A_SD

RA55 0_5% 0603
RA54 0_5% 0603
RA48 0_5% 0603
Analog_ground Digital_ground
Tied at one point only under the 92HD80 or near the 92HD80

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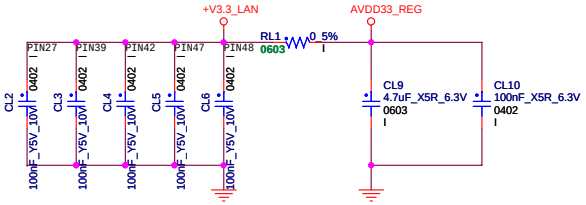
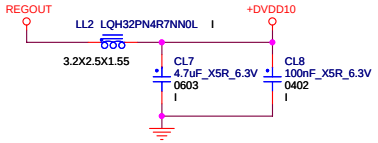
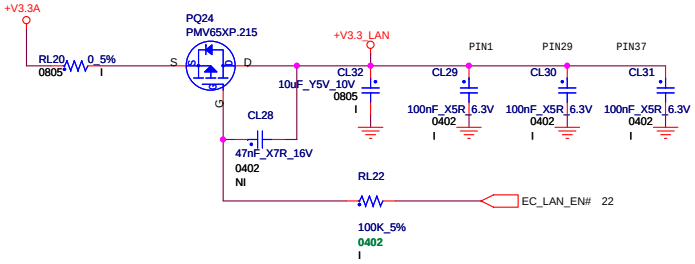
Foxconn eMS Inc.
HNBD R&D
phone: +886-2-2799-6111
Title: CODEC/JACK/SPEAKER/MIC
Size | Document Number: Edwards | Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT) | Sheet 23 of 40

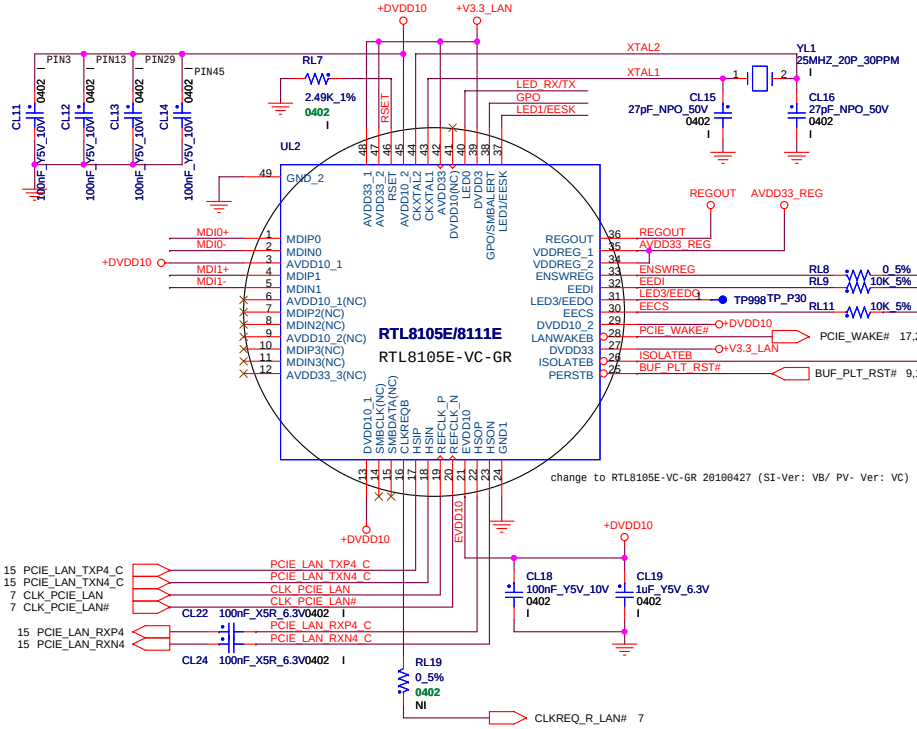
(1) 4.7uH
(2) IDC >= 600mA
(if spec has IDC1 and IDC2, the smaller value of IDC should >= 600mA.)
(3) Tolerance <=20%
(4) RDC(or DCR) <= 0.8ohms @1Mhz. (Usually its not 1Mhz...anyway, we check the value <=0.8 at any freq.)
(5) Measure Efficiency >= 75% @ GbE link speed. (Important, u can use demo board to confirm.)

+V3.3A → +V3.3A 15,17,18,21,22,33,34,35,39,40
+V3.3S → +V3.3S 7,9,10,11,14,16,17,18,20,21,22,23,25,26,30,31,34,36,37,38,39,40





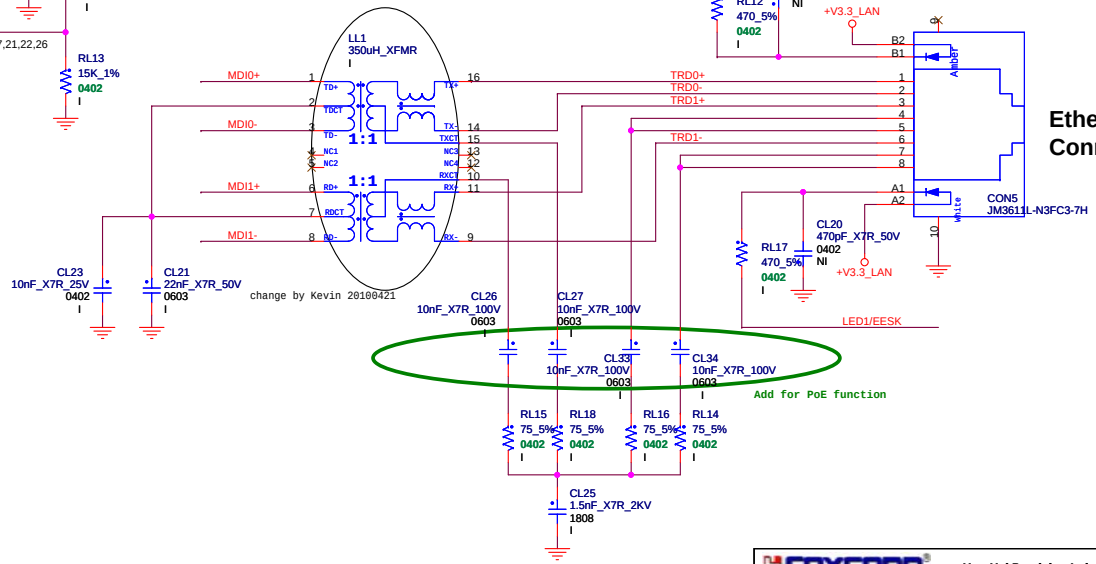




10K ohm close to Host side
GPO RL6 1K_5% 0402 +V3.3_LAN
When using EEPROM(93C46A)

White LED for connectivity and
Amber LED for activity located

GND_TR-->GND
for EMI issue



Ethernet Connector

Hon Hai Precision Industry Co. Ltd.	
Foxconn eMS Inc.	
HNBD R&D	phone: +886-2-2799-6111
Title: LAN (RTL8105EL)	
Size: Custom	Document Number: Edwards
Rev: MV	
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Close to pin3 of UR1

CR3,CR4
Close to CR_U1

CR_C12 Close to CN3

Add for RF

Need change to MCM2012B121GBE

The capacitor CR7 must closes between VDD33P (Pin 5) and VS33P (Pin 8) without via.

The capacitor CR10 must closes between VDD (Pin 11 &Pin 12) and VS33P (Pin 8) without via. If not, it will cause worse jitter at USB signal.

The capacitor CR11 & CR12 must be close to pin15 & 17

+V3.3S: 30 mils

CTRL0 trace length shorter surround with GND.

Clock input selection
'1' for 48MHz input [Default]
'0' for 12MHz input

SD write protect
1:decided by SDWP[Default]
0:letting SD always write-able

SD interface tri-state
'1' for tri-state
'0' for normal
[Default]

XD CIS check
'1' for check [Default]
'0' for not check

Power saving mode
'1' for enable [Default]
'0' for disable

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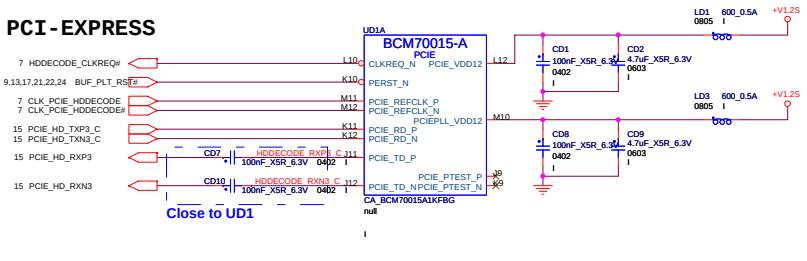
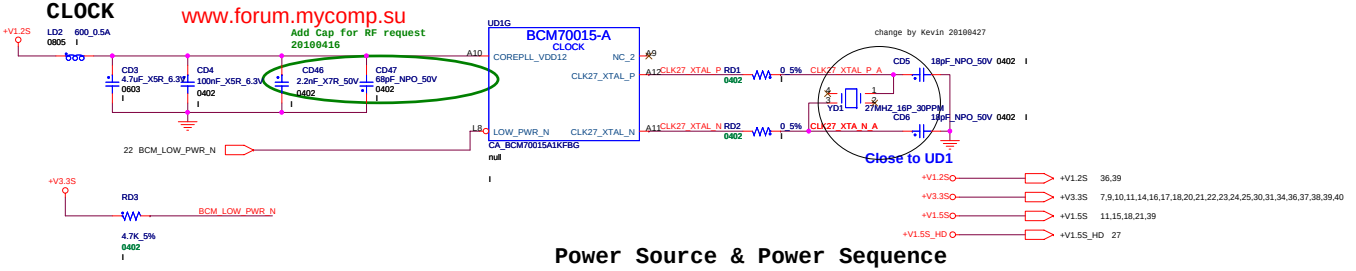
Title	Card Reader
Size / Document Number	Custom / Edwards
Rev	MV
Page Modified: Tuesday, October 05, 2010 08:43:38 (UTC/GMT)	Sheet 25 of 40

PCI-EXPRESS

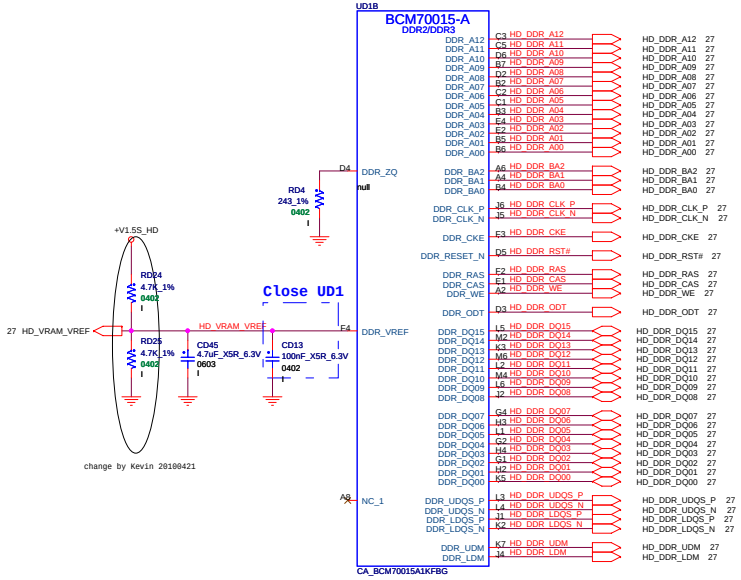


CLOCK

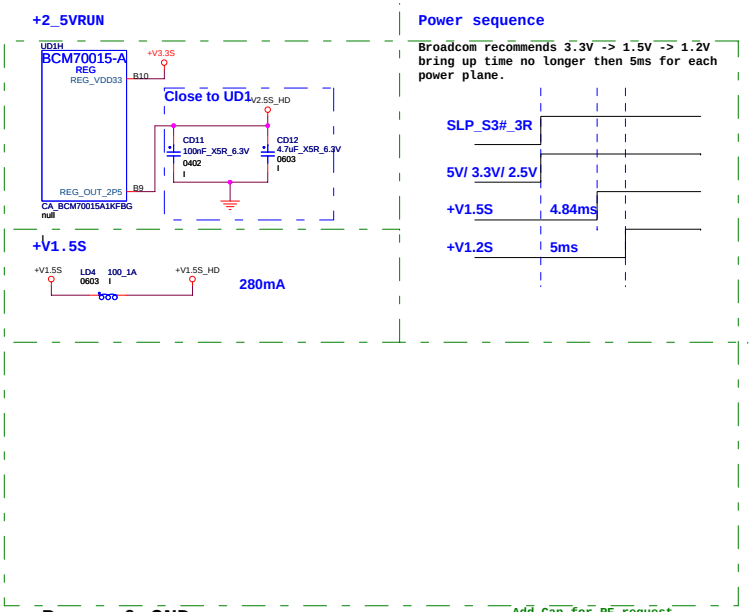


When the LOW_PWR_N signal os driven low,the BCM70015 enters an extremely low-power state(shut off internal logic & clock are inactive)

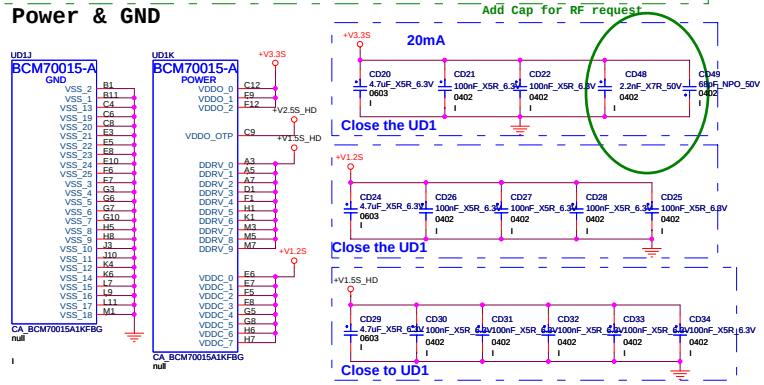
DDR 3 Interface



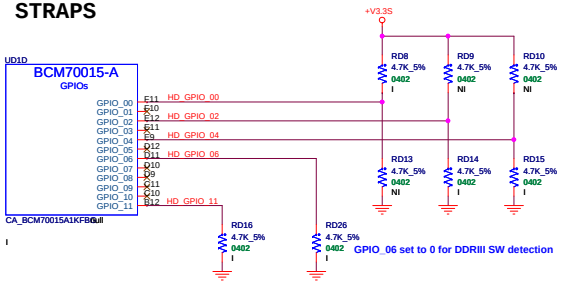
Power Source & Power Sequence



Power & GND

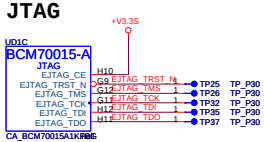


STRAPS

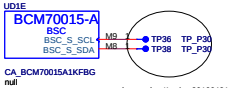


EE ROM

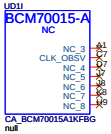
JTAG

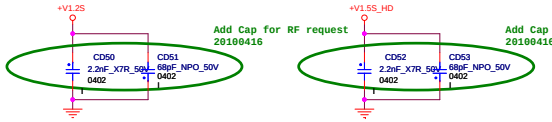


BSC



NC





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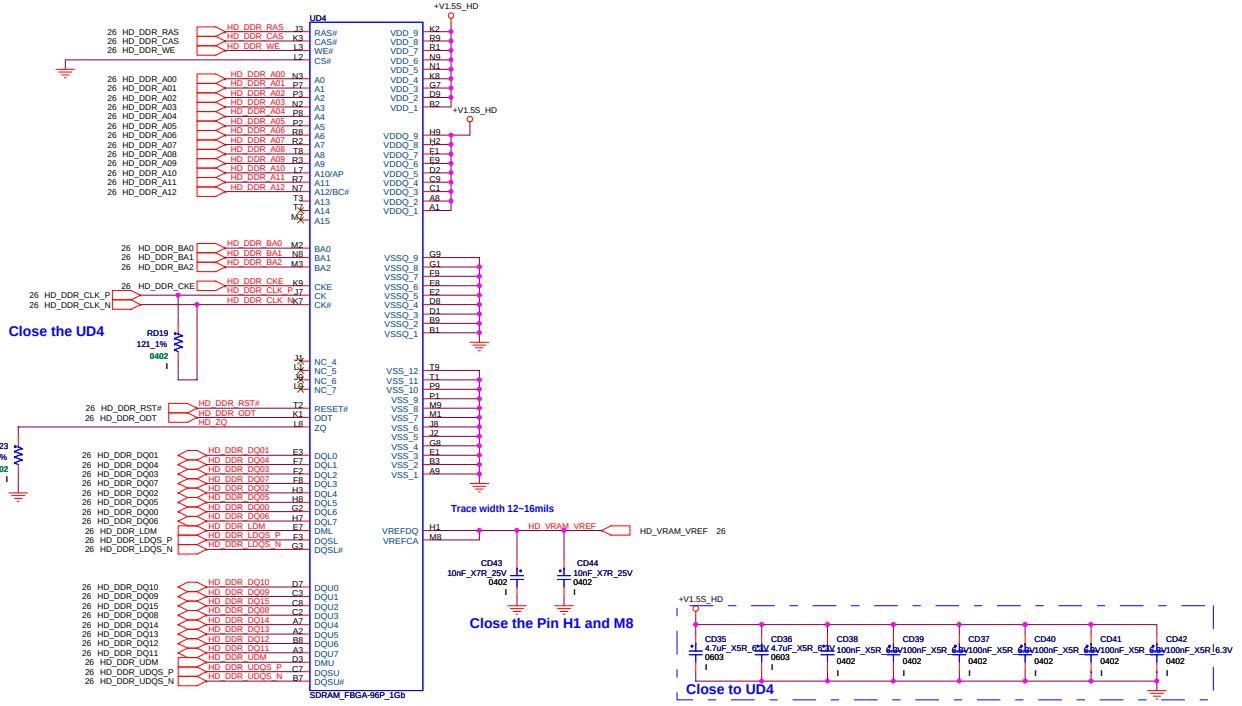
Title: HD_Decode_BCM70015		
Size: A2	Document Number: Edwards	Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:9 (UTC/GMT)		Sheet 26 of 40

+V1.5S_HD → +V1.5S_HD 26

DDR 3 SDRAM



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Title	HD_Decode_DDRIII_VRAM
Size: A2	Document Number: Edwards
Rev: MV	
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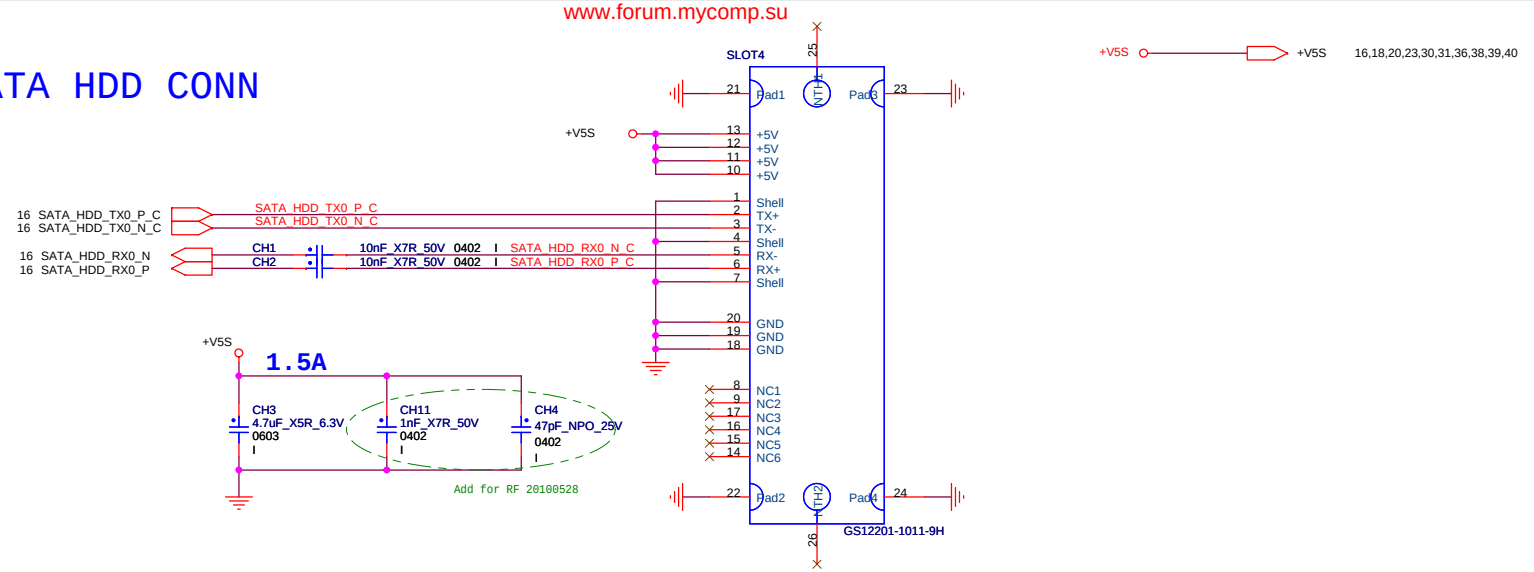
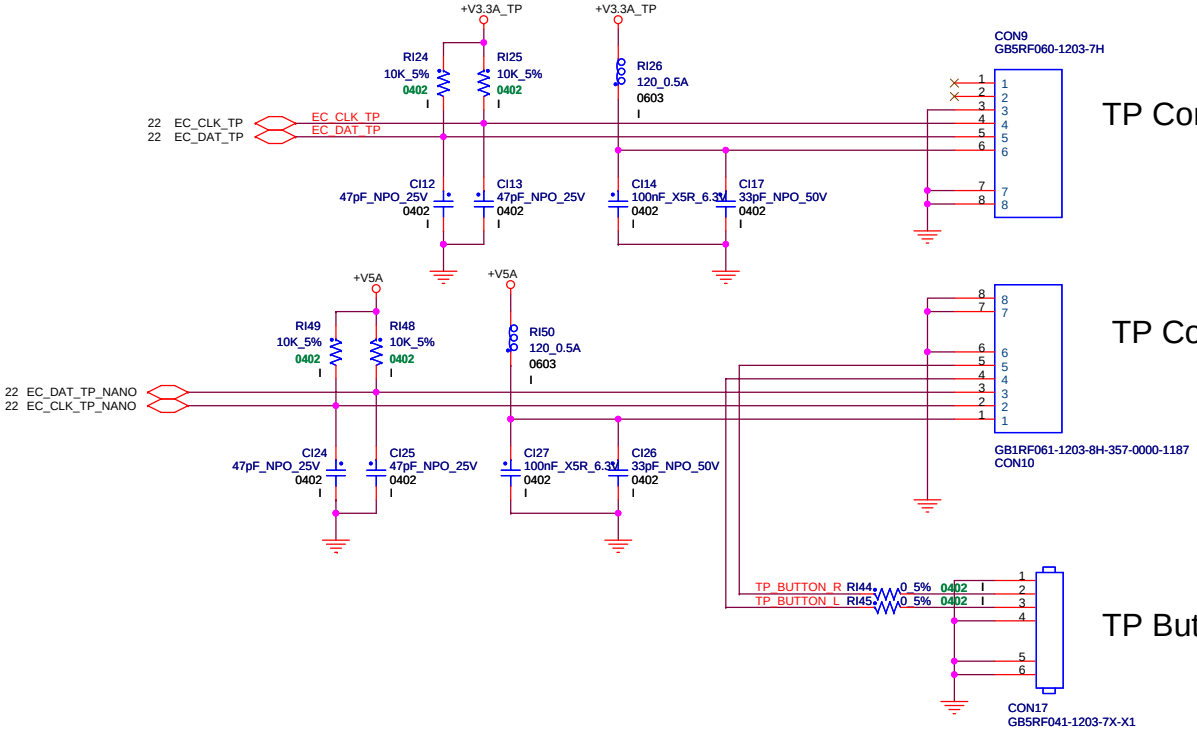
SATA HDD CONN





TP Connector for Edwards use

TP Connector for Nano use

TP Button Board Connector for Nano use

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HNBD R&D
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Title: **SATA CONN & G-SENSOR**

Size	Document Number	Rev
A3	Edwards	MV

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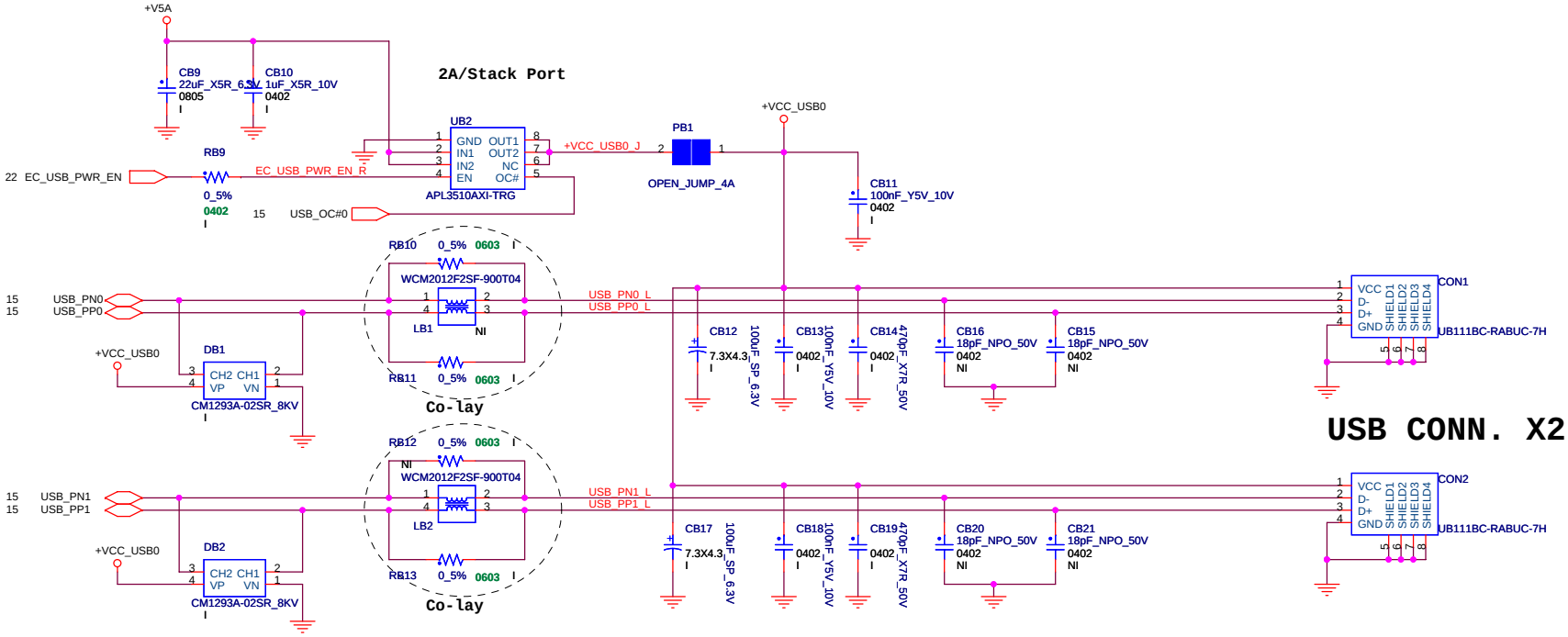
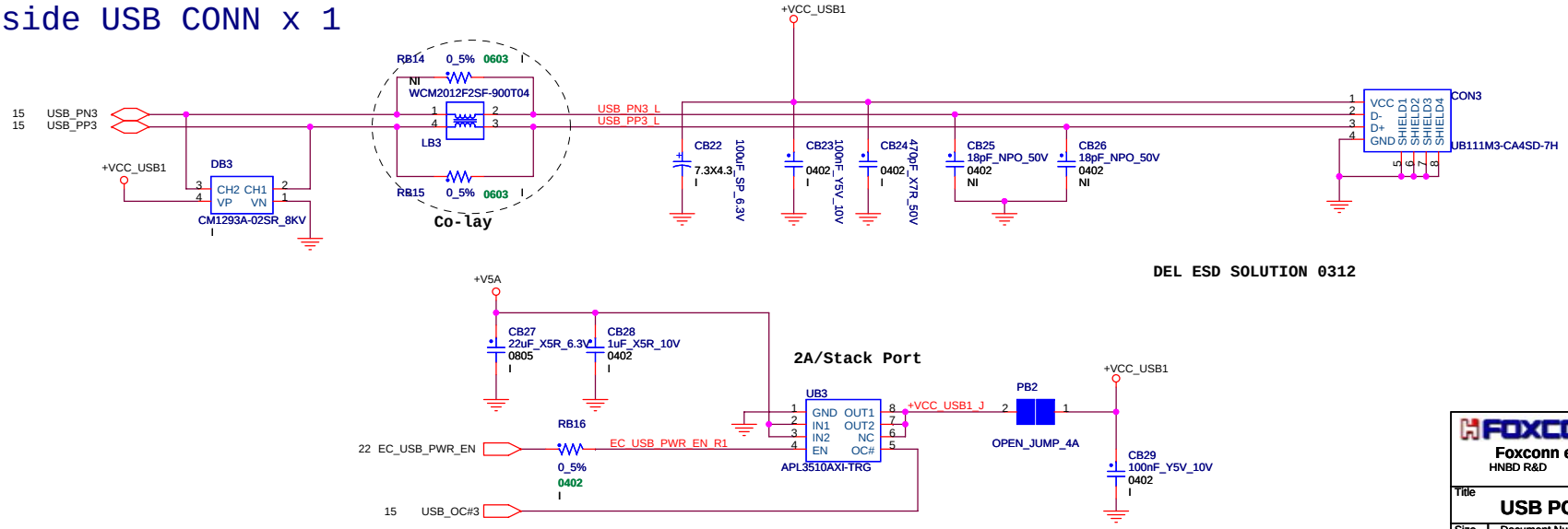
Right side USB CONN x2



Left side USB CONN x 1



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Title: USB PORT X 3		
Size: A3	Document Number: Edwards	Rev: MV
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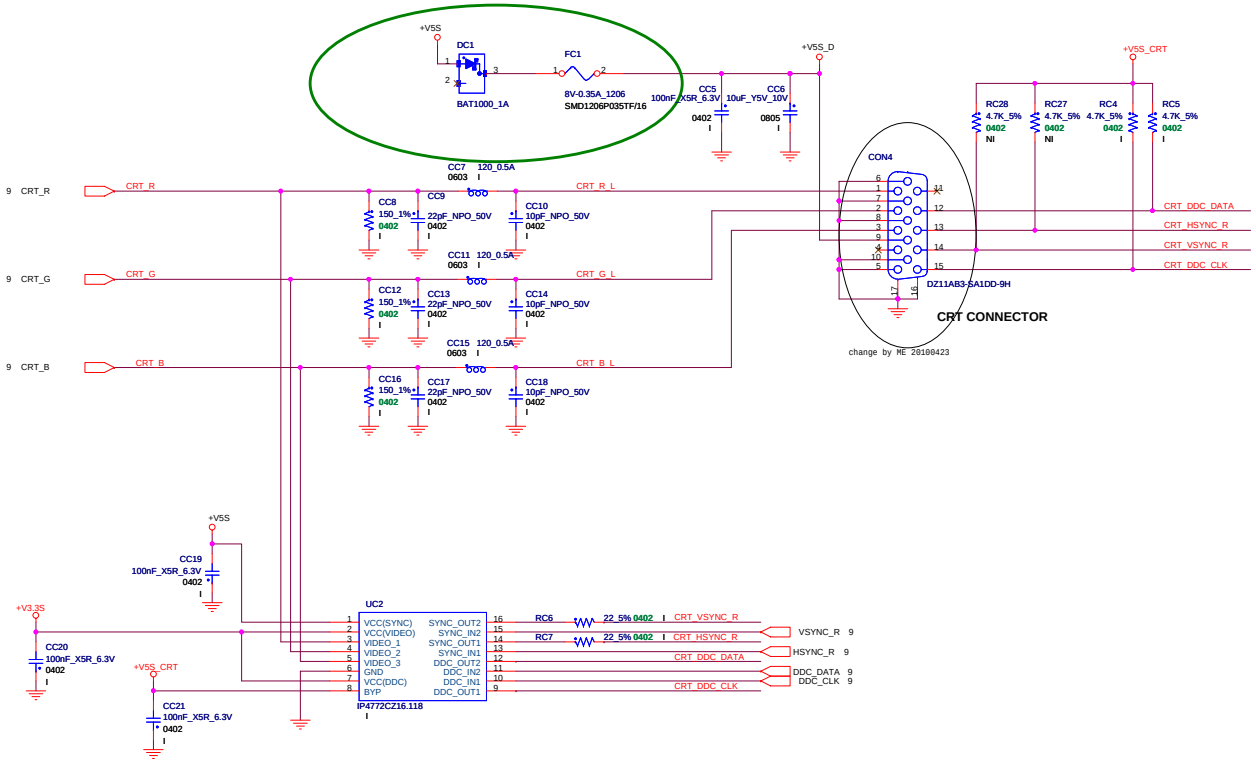
+V3.3S → +V3.3S 7,9,10,11,14,16,17,18,20,21,22,23,24,25,26,31,34,36,37,38,39,40

+V5S → +V5S 16,18,20,23,28,31,36,38,39,40

20100613 Modify



CPU Hole

HOLE21 MOUNTING_HOLE 5x4x3.4 NI

HOLE20 MOUNTING_HOLE 5x4x3.4 NI

EMI SPRING

P1 EMI SPRG PAD I 3.4X3.0

add for RF 20100423

Top x Bottom x Hole(mm)

change screw pad by kevin 20100421

Mini Card Hole

HOLE1 MOUNTING_HOLE 5.5x5.5x3.3 I

HOLE2 MOUNTING_HOLE 5.5x5.5x3.3 I

HOLE10 MOUNTING_HOLE 5.5x5.5x3.3 I

HOLE11 MOUNTING_HOLE 5.5x5.5x3.3 I

FAN Hole

HOLE6 MOUNTING_HOLE 8x6.5x3.3 I

HOLE16 MOUNTING_HOLE 8x6.5x3.3 I

HOLE7 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE14 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE18 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE5 MOUNTING_HOLE 8x6.5x2.8 NI

HOLE9 MOUNTING_HOLE 6.5x6.5x2.8 NI

HOLE13 MOUNTING_HOLE 6.5x6.5x2.8 NI

HOLE4 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE8 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE15 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE17 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE19 MOUNTING_HOLE 8x6.5x3.3 NI

HOLE3 MOUNTING_HOLE 8x6.5x4.5 NI

20100530 change for ME

HOLE24 MOUNTING_HOLE 8x6.5x3.5 I

Foxconn

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HNBD R&D

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Title: CRT

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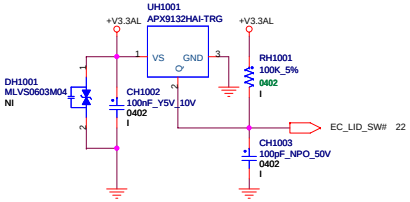
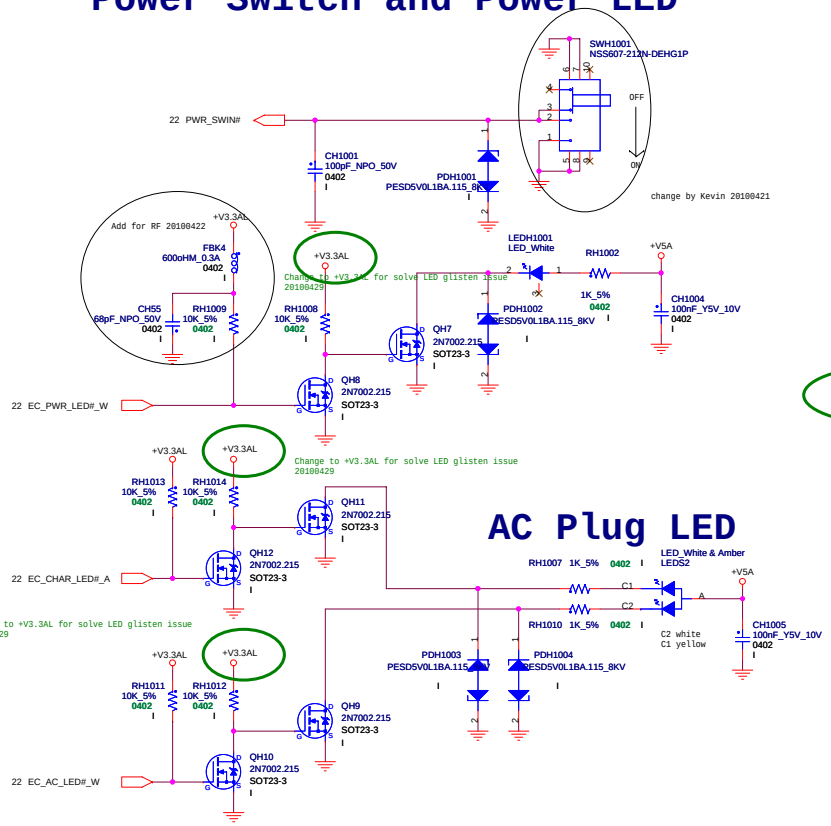
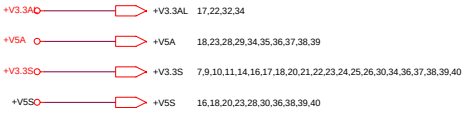
LID Switch



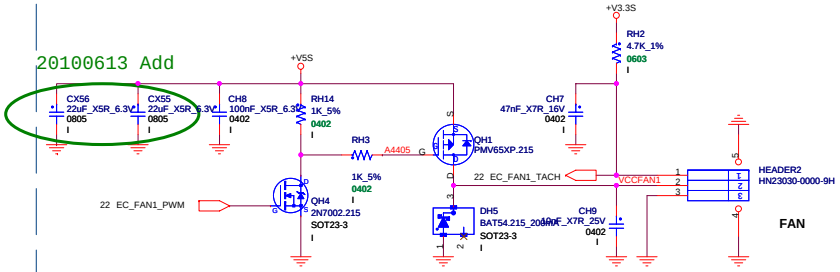
Power Switch and Power LED



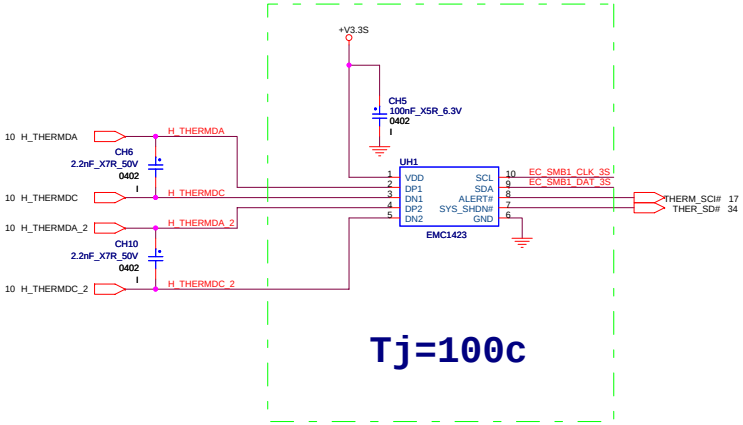
AC Plug LED



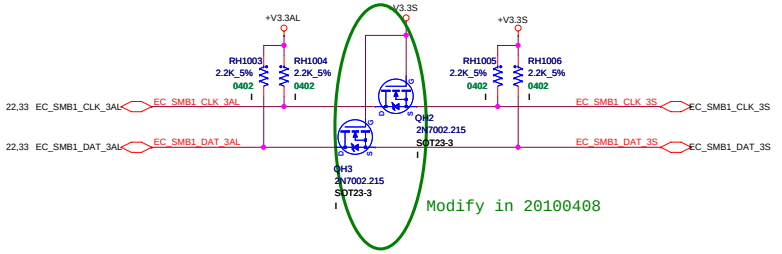
FAN CONNECTOR



Add for Dual Core use



THERMAL SENSOR



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Title: Thermal & Fan		
Size: Custom	Document Number: Edwards	Rev: MV
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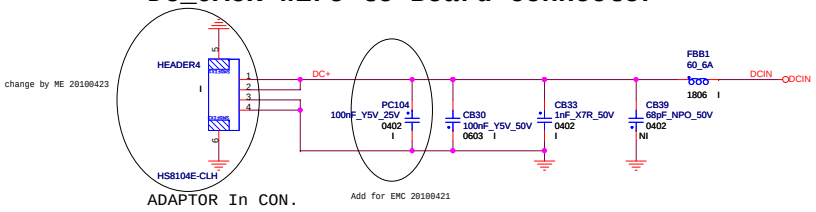
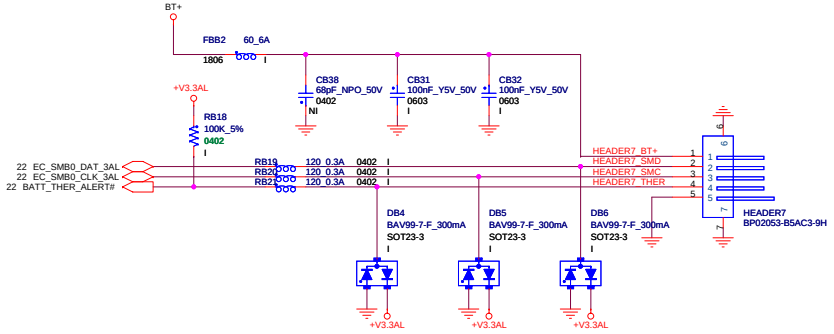
BT+ → BT+ 33
DCIN → DCIN 33
+V3.3AL → +V3.3AL 17,22,31,34

DC_JACK Wire to Board Connector



ADAPTOR In CON.

Add for EMC 20100421



BATTERY CONNECTOR

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Title: DCIN & Battery
Size: Custom
Document Number: Edwards
Rev: MV
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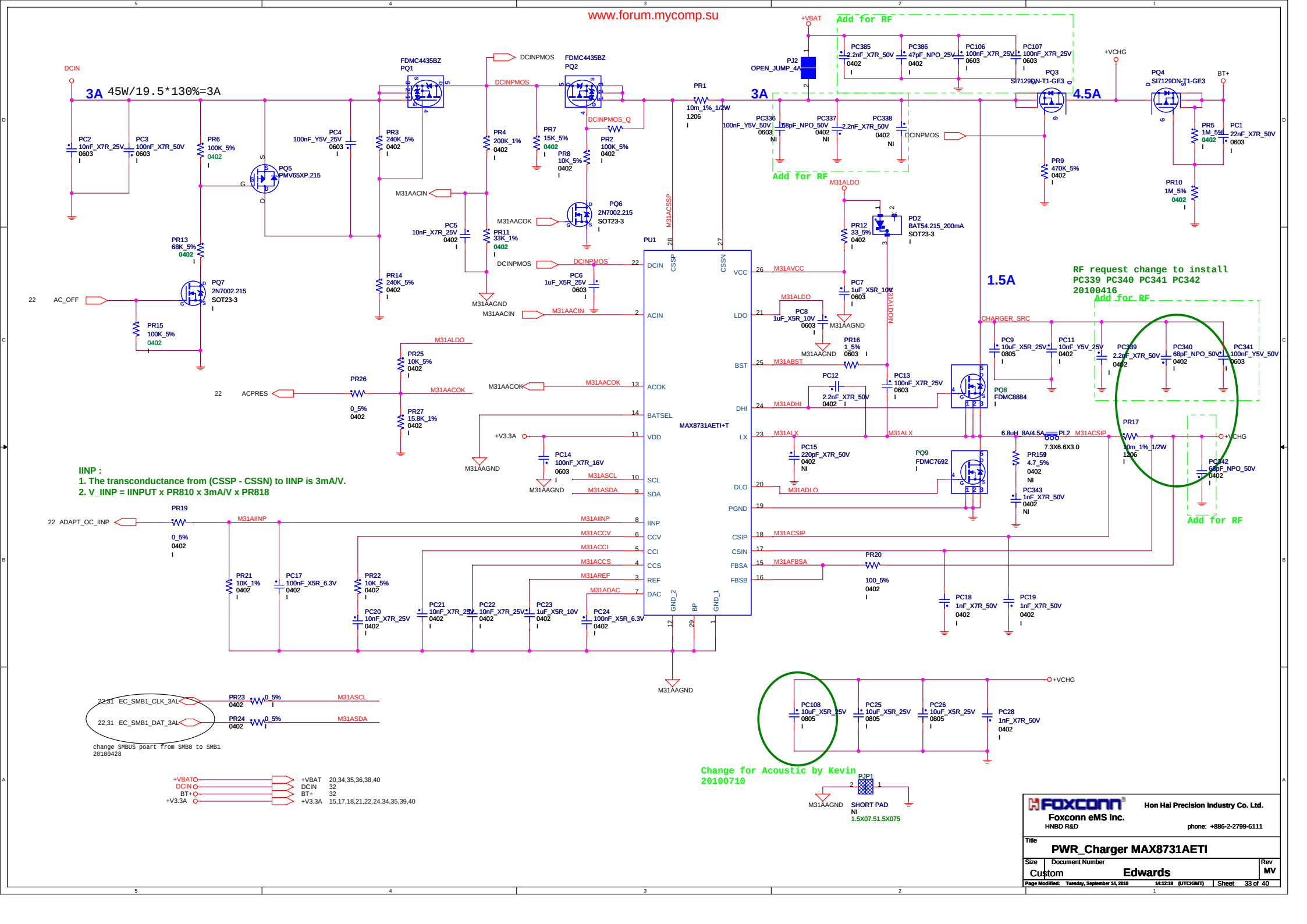

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Title	PWR_Charger MAX8731AETI
Size: Custom	Document Number: Edwards
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+V5A/7A/5.6A

RF request add 68PF
20100531
C53 and C55 change from NI to 47pF
C54 and C64 Change from NI to 2.2nF
20100612

Add for RF

RF request add 68PF
PC382
20100416

RF request change to install
PC347 PC348 PC350
20100416

RF request add 68PF
20100531
C56 change from NI to 47pF
C57 Change from NI to 2.2nF
20100612

Add for RF 20100709

+V3.3A/6/4.8A

+V3.3AL	+V3.3AL	17,22,31,32
+V3.3A	+V3.3A	15,17,18,21,22,24,33,35,39,40
+V3.3S	+V3.3S	7,9,10,11,14,16,17,18,20,21,22,23,24,25,26,30,31,36,37,38,39,40
+VBAT	+VBAT	20,33,35,36,38,40
+V12A	+V12A	39
+V5A	+V5A	18,23,28,29,31,35,36,37,38,39
+V5AL	+V5AL	39

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Title	+V5A/+3.3A SN0608098RHBT		
Size: Custom	Document Number: Edwards	Rev: MV	
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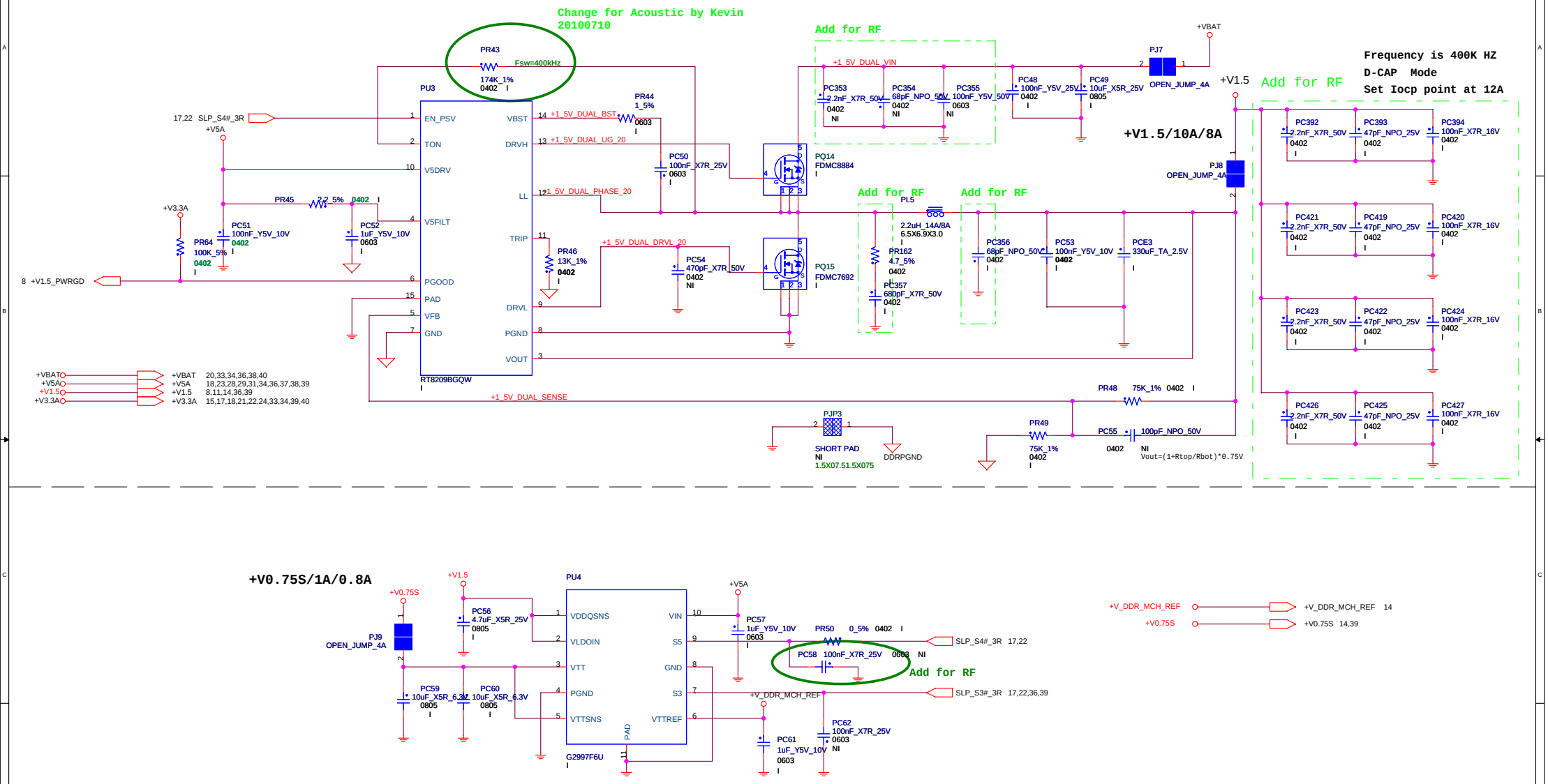

FOXCONN
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Title: DDR3 / +V1.5 & +0.75V

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Frequency is 400K HZ
auto-skip operation mode
Set Iocp point at 9A

Change for Acoustic by Kevin
20100710

RF request change to install
PC358 PC359
20100416

Add for RF

Add for RF

+V1.05S/7A/5.6A

20100409 Add HD Decoder Power

change by Kevin 20100429

Vout=0.8(1+R1/R2)

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Title: +V1.05S		
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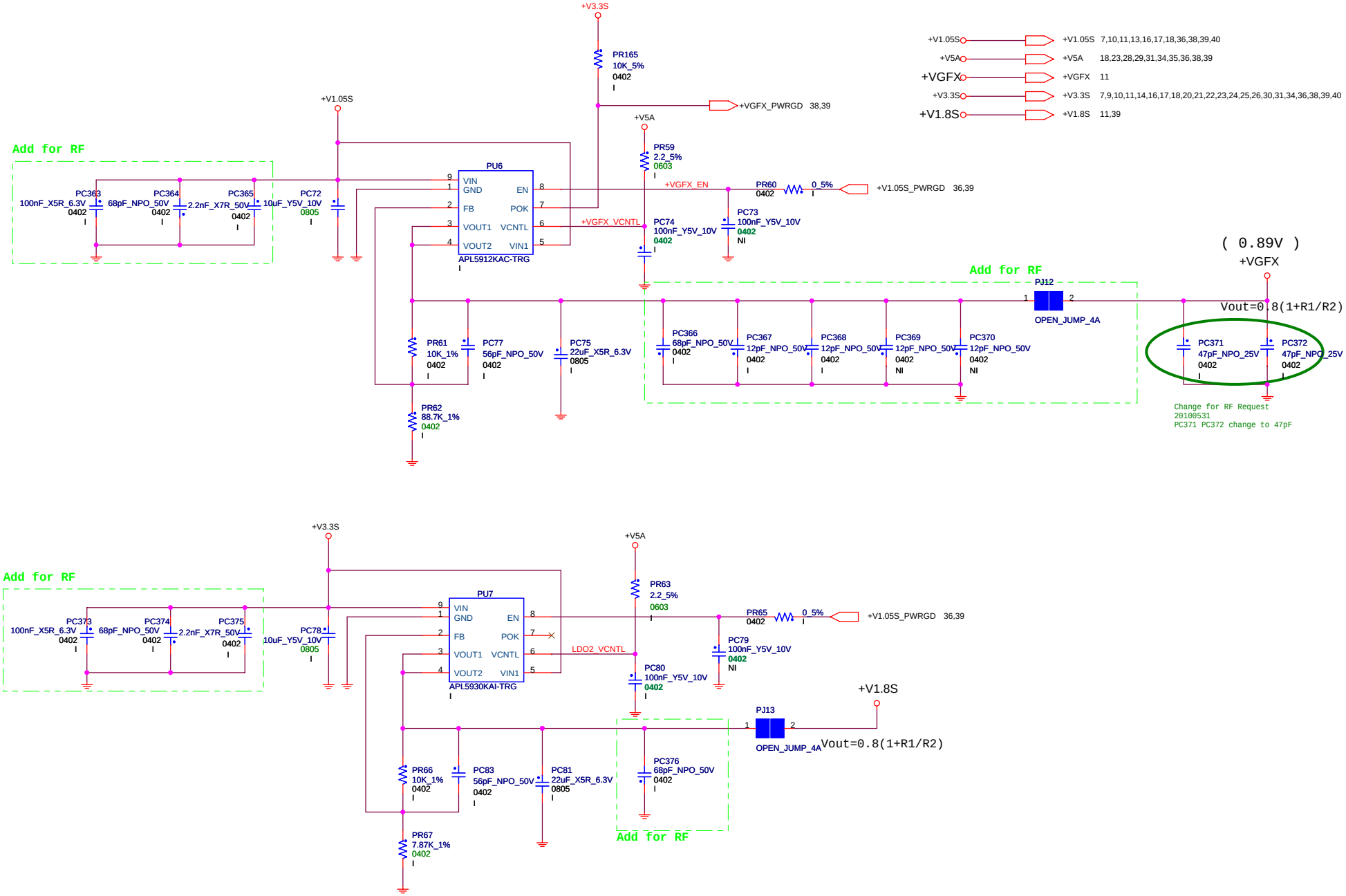

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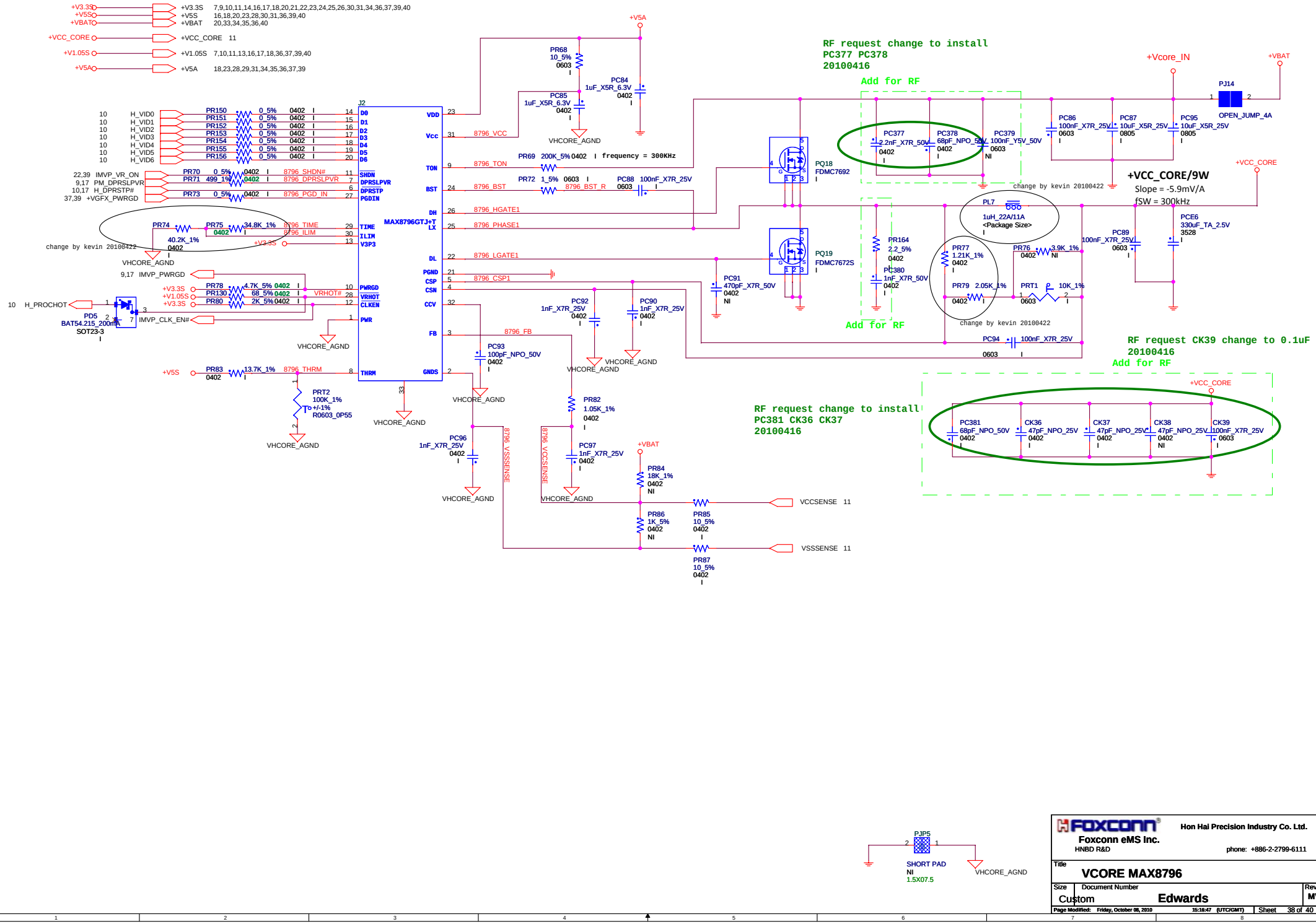
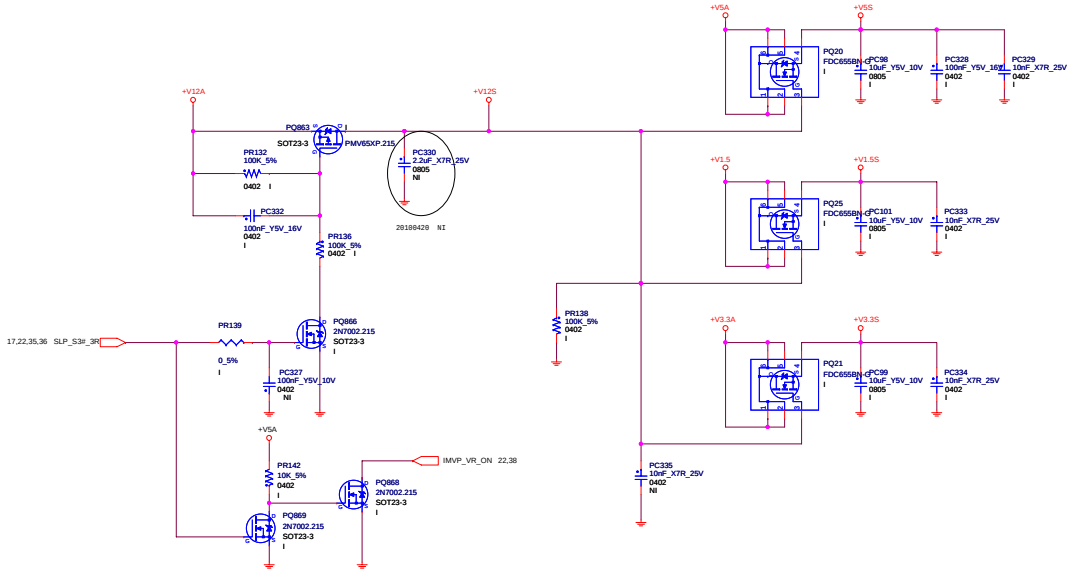
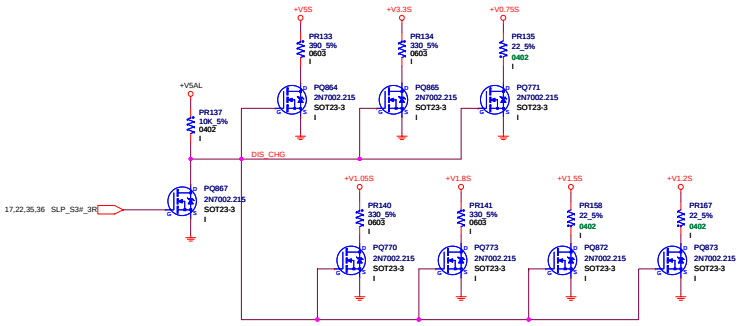
HNBD R&D	phone: +886-2-2799-6111
Title	+VGFX & +V1.8S
Size: Custom	Document Number: Edwards
Rev: MV	
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT)	Sheet 37 of 40

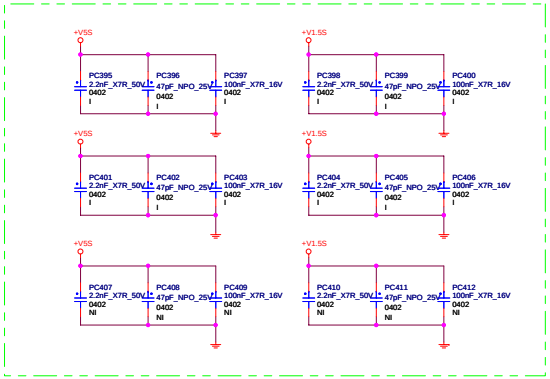


+V12S	+V12S	23
+V5AL	+V5AL	34
+V5A	+V5A	18,23,28,29,31,34,35,36,37,38
+V5S	+V5S	16,18,20,23,28,30,31,36,38,40
+V1.5	+V1.5	8,11,14,35,36
+V1.5S	+V1.5S	11,15,18,21,26
+V3.3A	+V3.3A	15,17,18,21,22,24,33,34,35,40
+V3.3S	+V3.3S	7,9,10,11,14,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,40
+V0.75S	+V0.75S	14,35
+V1.8S	+V1.8S	11,37
+V1.05S	+V1.05S	7,10,11,13,16,17,18,36,37,38,40
+V12A	+V12A	34

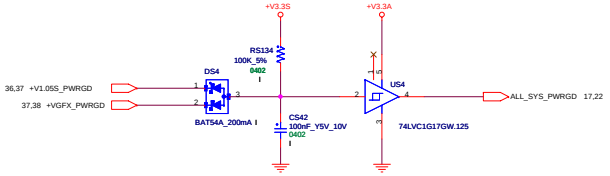




Add for RF 20100709



System Power Good



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Title: System Power and PWRGD		
Size: Custom	Document Number: Edwards	Rev: MV
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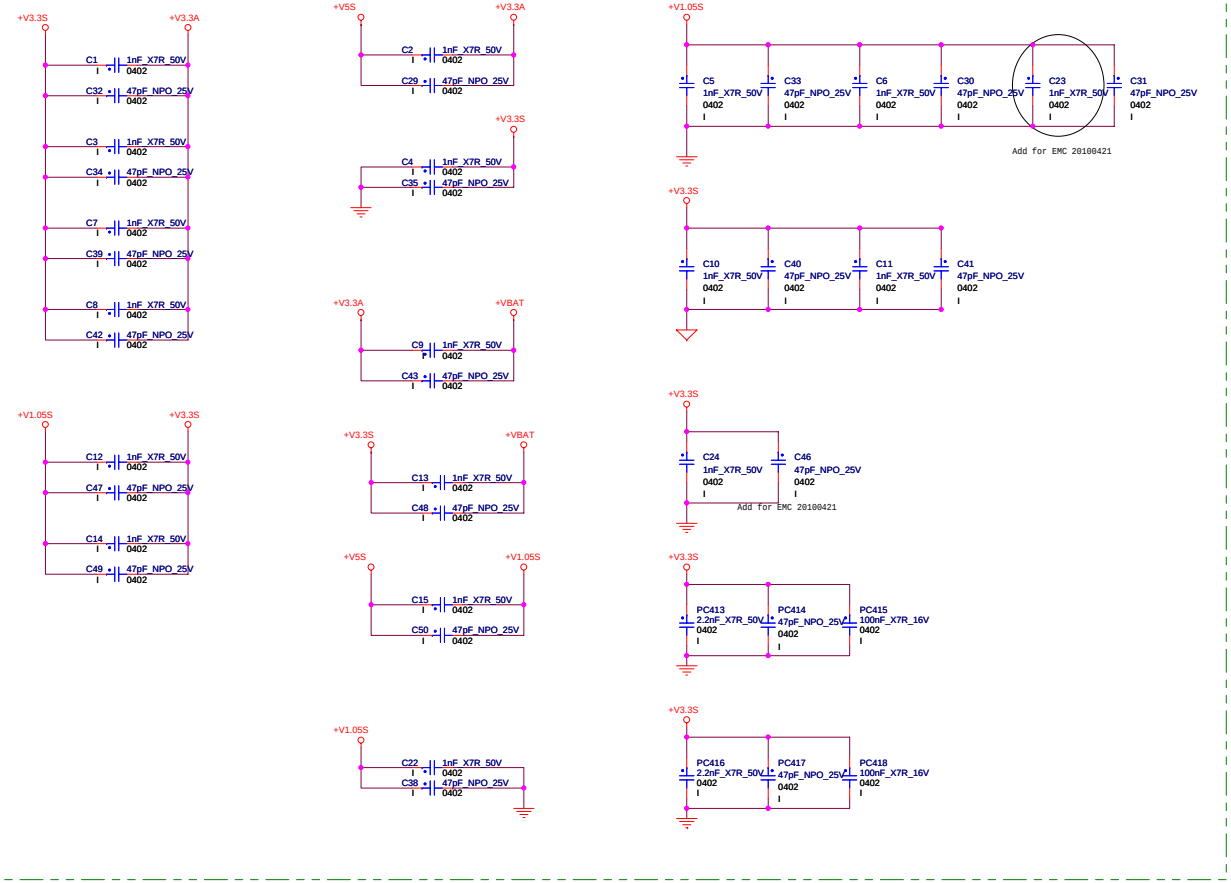
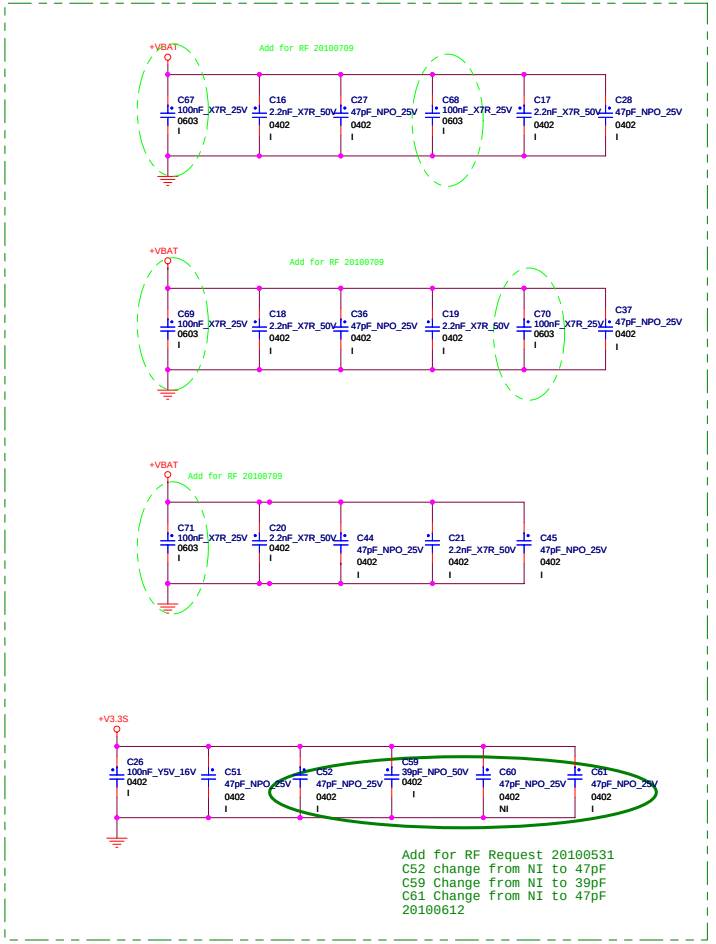
+V3.3S → +V3.3S 7,9,10,11,14,16,17,18,20,21,22,23,24,25,26,30,31,34,36,37,38,39
+V3.3A → +V3.3A 15,17,18,21,22,24,33,34,35,39
+V5S → +V5S 16,18,20,23,28,30,31,36,38,39
+V5A → +V5A 18,23,28,29,31,34,35,36,37,38,39
+VBAT → +VBAT 20,33,34,35,36,38
+V1.05S → +V1.05S 7,10,11,13,16,17,18,36,37,38,39

For EMI Decoupling and All 47pF Caps are all RF Request



For RF Decoupling
All 47pF are RF Request in SI-Small build phase



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Title: +V1.05S		
Size: Custom	Document Number: Edwards	Rev: MV
Page Modified: Tuesday, September 14, 2010 14:12:19 (UTC/GMT)	Sheet 40 of 40	